



Service Manual

**HP Designjet
Z5200ps
Photo Printer**
Version 1: May 2010





HP Designjet Z5200ps GP Photo Printer - Service Manual

For HP Internal Use Only

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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 [Diagnostic Menu on page 73](#) of 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.

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Using this Manual

Purpose

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

- HP Designjet Z5200 Photo Printer 44 inch (Model CQ113A)

For information about using this product, refer to the corresponding User and Quick Reference Guides.

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 [Parts and Diagrams on page 151](#).

Conventions

A small arrow \Rightarrow indicates a link to other parts of the Service Manual where you can find information related to the topic you are consulting.

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8 Printer menu Map

1 Ink Supplies Troubleshooting & Print Quality

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- [Reading the Advanced diagnostic Print Results](#)
- [Troubleshooting Print Quality Problems](#)

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 on page 46](#) 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 (See Note below). Check firmware in **Utilities/Statistics/Code rev.**
- The complete error number (See Note below).
- The Service Configuration Print.
- The Current configuration sheet.
- Which software application the customer is using (name, version, etc.).

 **NOTE:** When reporting the System Error Code, make sure that you supply the full Error Code and the firmware version. Without this information, HP Support Personnel cannot help you.

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 component/assembly that has failed.

 **NOTE:** 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 [Diagnostic Menu on page 73](#) & [Service Menu on page 124](#).

Performing the Necessary Service Calibrations

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

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

Solving Ink Supplies Problems

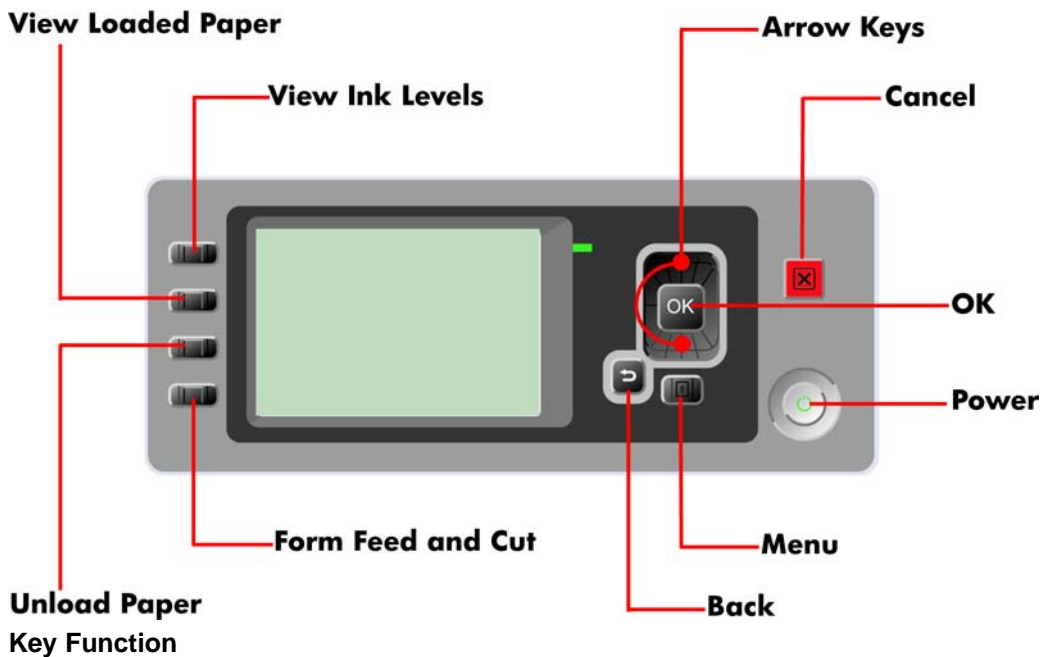
For information on solving Ink Supplies problems see [Solving Ink Supplies problems on page 9](#) in this section.

Solving Print Quality Problems

For information on solving Print Quality problems see [Print Quality on page 23](#) in this section.

Using the Front Panel

Below is a diagram of the front panel.



- **Arrow Keys**
Use the Arrow keys to scroll through a menu or toggle between YES or NO when prompted.
- **Cancel**
Use the Cancel key to abort or stop a procedure or reject test results.
- **OK**
Use the OK key to select a menu option.
- **Power**
Use the Power key to turn the printer ON and OFF.
- **Menu**
Use the Menu key to enter the main menu.
- **Back**
Use the Back key to go back to the previous menu or reject test results.

Service Key Combinations

- Diagnostic mode

With the printer OFF, press and hold the **UP** and **OK** keys. While holding the **Up** and **OK** keys down, press and hold the Power key to turn on the printer. Hold all three keys until the Power key stops flashing, usually about 5 seconds.

- Service Menu (Service Engineers Only)

From the main menu, press and hold the **Up** and **Cancel** keys.

- Service Menu (For users)

From the main menu, press and hold the **Down** and **Cancel** keys.

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. Check to see the LED on the Front Panel Power Switch are **On**.
4. Check that the Front-Panel Cable is correctly connected to the Electronics Module. Also make sure that the Front-Panel cable is not damaged.
5. Replace the Power Supply Unit ⇒ Refer [Electronics Module \(Main PCA and PSU\) on page 298](#).

The Printer Continuously Rejects Printheads

1. Clean the flex contacts on the Printhead and in the Carriage Assembly using the Carriage Interconnect Wiper (Refer to [Flex Contacts Cleaning Tool on page 22](#)) and try again.
2. If ALL the Printheads are rejected (the status message on the Front Panel does NOT show "**OK**" for ALL the Printheads) then perform the Electronic Module Test ⇒ Refer [3. Electronics Module on page 90](#).

What to do if the Front Panel is blank

The LEDs of the formatter (visible through the cover) and the power supply can help you troubleshoot a problem when the Front Panel is blank.

1. The following image shows the Power Supply LED, looking through the cover.



2. The following image shows the Formatter LEDs, which are marked I, II and III.



▲ Use the following table to interpret the LEDs and find the source of the problem. Remember that you should read these LEDs when you push the Power button. Some combinations may require the replacement of two or more components. In this case, always replace one component at a time. Test the printer to see if the problem has disappeared (check the LEDs again). If the same LED sequence continues, replace the next component indicated in the table.

	Power Supply LED	Formatter LED 1	Formatter LED 2	Formatter LED 3	Front Panel Status	Solution (part replacement)
1	Off	Off	Off	Off	Off	Power Electronics Module (Main PCA and PSU) on page 298
2	On	Off	Off	Off	Off	Main PCA Electronics Module (Main PCA and PSU) on page 298
3	On	On	Off	N/A	N/A	Formatter Formatter on page 296
4	On	On (Flashing)	Off	Off	N/A	Hard Disk Hard Disk Drive on page 297
5	On	On	On (flashing)	Off	N/A	Hard Disk Hard Disk Drive on page 297
6	On	On	On	Off	N/A	<ol style="list-style-type: none"> 1. Formatter Formatter on page 296 2. Main PCA Electronics Module (Main PCA and PSU) on page 298
7	On	On	On	On (flashing)	N/A	Main PCA Electronics Module (Main PCA and PSU) on page 298

8	On	On	On	On	Front Panel (Light on)	<ol style="list-style-type: none"> 1. Front Panel Front Panel on page 203 2. Formatter Formatter on page 296 3. Main PCA Electronics Module (Main PCA and PSU) on page 298 4. Front Panel Cable Front Panel on page 203
9	On	On	On	On	Off	Front Panel Front Panel on page 203

Cover Sensors are not Working

1. Perform the Sensors Test ⇒ Refer [5. Sensors on page 101](#).
2. Check if the cable for the faulty sensor is not damaged and is connected correctly.
3. Replace the faulty Sensor.

The Line Sensor has Problems Detecting Media

1. Check the type of media that is being used since the Line sensor may have problems detecting transparent media or some types of Non-HP media. Try loading white HP media in to the Printer and check if the Line sensor detects it.
2. The Line Sensor is not calibrated correctly. Perform the Line Sensor Calibration ⇒ Refer [Line Sensor Calibration on page 146](#).
3. The Line Sensor is damaged or faulty. Replace the Line Sensor ⇒ [Line Sensor on page 267](#).


Problems with Color Accuracy

The Color Sensor (ESP) is a powerful tool unique to the Z series printers to maintain color accuracy. If you notice any problems with colors, perform the Color Sensor (ESP) calibration. Refer to [Color Sensor \(ESP\) Calibration on page 149](#).

Troubleshooting Media Jams/Printhead Crashes

The failure modes "media jam" and "head crash" are grouped together because in many cases a media jam causes the media to lift up into the Carriage path and cause a Printhead crash, thus causing many media jam failures to be reported as head crashes.

1. Did the media jam occur when loading media?
 - If the client has had media jams, it is common for pieces of media to get stuck in the media path. Clear the media path.

 **NOTE:** When clearing a media jam, sometimes media is stuck in the paper path. To clear this, you must lift the Media Lever and insert thicker media into the paper path to push out the media that is still stuck there.
2. Is the customer using non-HP media?
 - The use of non-HP media can easily be the cause of media jams and head crashes (especially head crashes because HP media is specially formulated to avoid cockle, one of the primary causes of head crashes). If the media is not HP approved, advise the customer to use HP media and check to see if the problem is now solved.

Banding at variable extreme environmental conditions


Since the Accuracy Calibration has been done at normal environmental conditions, printing in extreme environmental conditions will cause banding because the advance of the Media Advance Roller does not correspond to the same conditions that the calibration was done in. To solve the problem, try the following:

Perform the Accuracy Calibration in the new environmental conditions (Refer to the User's Guide).

Worm marks on HP Coated media with light area fills

Light bands (S-shaped) in Paper axis direction where light area fills are printed, causing unacceptable Image Quality defect.

- Print the Service Configuration Print and check if the level of Humidity is very low (below 30%). Increasing humidity may help in reducing the severity of the problem.


 **NOTE:** The media is causing the problem and NOT the Printer. Do not attempt to try and replace Printer parts to solve this problem.

Solving Media-Handling Problems

The Front Panel indicates that media is misaligned or incorrectly positioned.

Roll media

- The roll may be loaded the wrong way. The paper should load over the roll toward you.
- Check that the paper is correctly loaded onto the spindle.
- The paper may be loaded at an angle. The right-hand edge must be aligned with the blue line on the Print Platen.

 **NOTE:** Ensure that the paper is wrapped tightly on the roll. This is a very important step to remember because if this is not done, the media may be loaded at an angle, causing the media to be rejected.

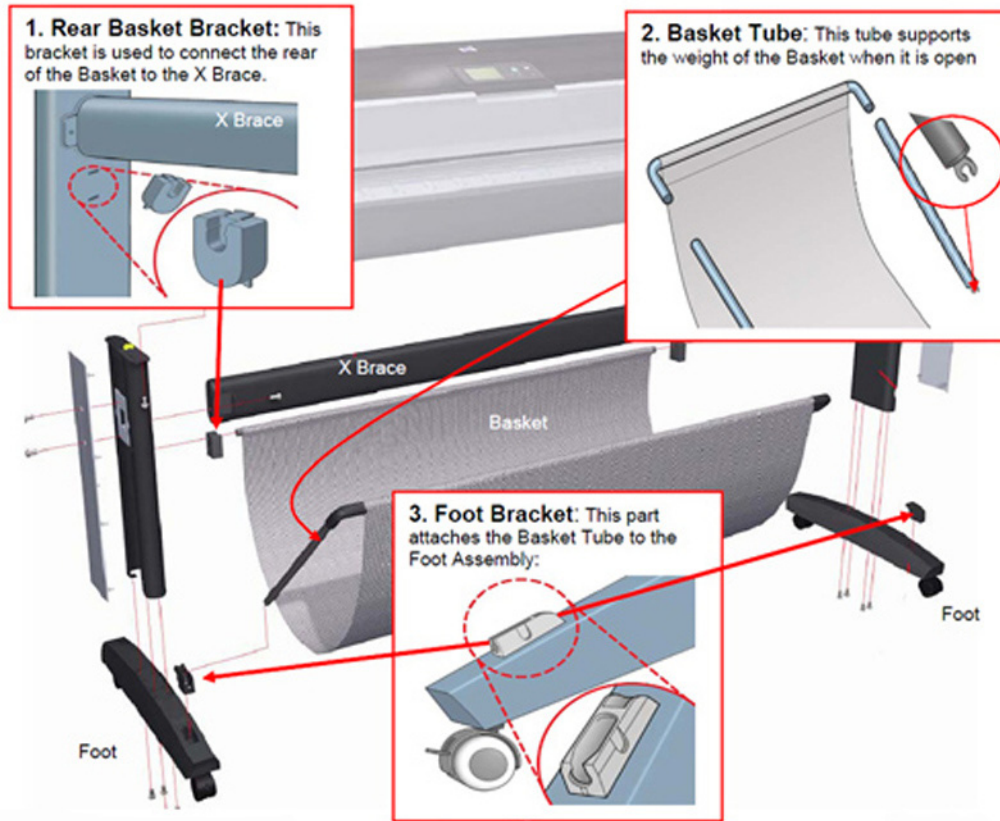
Sheet media

- Always load sheet media using the Rear Input Tray. Do NOT load the media as you would load roll media.
- It must be loaded with the right-hand edge against the blue line on the Print Platen.
- The media may be crumpled or warped or may have irregular edges.
- If hand-cut media is used, the edges may not form a right-angle or they may be rough. If possible, hand-cut media should not be used. Only purchased sheet media should be used in the Printer.
- If you have problems with paper jams, check that the Overdrive is not obstructed by bits of paper or using the Turn Drive Roller Service Utility ⇒ [1. Turn Drive Roller on page 126](#).

What to do when plastic parts on the Media Basket become damaged during printer setup

The following information explains what to do if one or more of the back plastic brackets or the Basket Tube becomes broken. The information helps to identify which service parts to order as replacements.

There are three plastic parts that could break during printer installation and need replacing. Use the pictures below to identify with the customer which part needs replacing (numbers 1, 2 or 3).



Item on drawing above	Part Description	Qty	Service Part number
1	Rear Basket Bracket (Attaches the Basket to the X-Brace)	2	Q5669-67063
2	Basket Tube (includes plastic ends which attaches to the Foot Bracket)	2	
3	Foot Bracket (Attaches the Basket Tube to the Foot Assembly)	2	Q5669-60715

Solving Ink Supplies problems

What are Ink Supplies?

For each of the ink colors used in the printer, there are two components, the Printhead and Ink Cartridge. These components are called Ink Supplies.



Ink Cartridges

The printer's Ink Cartridges provide ink to the Printheads. The color Ink Cartridges supplied with the printer have a capacity of 69ml but optional 130 ml and 300 ml are also available.



The Ink Cartridges require no maintenance or cleaning. As long as each Ink Cartridge is inserted correctly into its slot, the ink will flow to the Printheads. Because the Printheads control the amount of ink transferred to the page, you will continue to see high quality printing results that require no maintenance or cleaning. As long as each Ink Cartridge is inserted correctly into its slot, the ink will flow to the Printheads. Because the Printheads control the amount of ink transferred to the page, you will continue to see high quality printing results even when the ink levels are getting low.

The front panel displays the status of the Ink Cartridge. Using the front panel, detailed information can be checked on the Ink Cartridges.

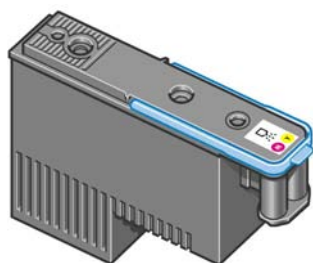
Available Ink Cartridges

Color	Part number 69ml	Part number 130ml	Part number 300ml
HP 70 Matte Black	C9436A	C9448A	CN635A

HP 70 Photo Black	C9437A	C9449A	CN633A
HP 70 Light Gray	C9439A	C9451A	CN634A
HP 70 Cyan	C9440A	C9452A	CN636A
HP 70 Magenta	C9441A	C9453A	CN629A
HP 70 Yellow	C9442A	C9454A	CN630A
HP 70 Light Magenta	C9443A	C9455A	CN631A
HP 70 Light Cyan	C9389A	C9390A	CN632A

Printheads

The Printheads are extremely durable and do not need to be replaced every time an Ink Cartridge is replaced. They are independent of the Ink Cartridges and will continue giving excellent image quality results even if the Ink Cartridges are low on ink.



If you notice a decline in print quality such as lines or dots missing from text/graphics, go to [Troubleshooting Print Quality Problems on page 36](#).

Available Printheads

Printhead Type	Part number
HP 70 Matte Black & Cyan	C9404A
HP 70 Light Magenta & Light Cyan	C9405A
HP 70 Magenta & Yellow	C9406A
HP 70 Photo Black & Light Gray	C9407A

General Information About the Ink Supplies


For optimum results from the printer and modular ink delivery system always follow these guidelines when handling the ink supplies:

- Always install the Ink Cartridges and Printheads before the expiration date, which is on the packaging.
- Install Ink Cartridges and Printheads in their color-coded slots.
- Follow the instructions on the front panel of the Printer during installation.
- Avoid unnecessary removal of the Ink Cartridges and Printheads.

- When turning off the Printer always use the power Off button on the front panel. The Printheads are then stored correctly which prevents them from drying out.
- The Ink Cartridges should never be removed while the printer is printing. They should only be removed when the printer is ready for you to replace them. The front panel will guide you through the removal and installation procedure.

General Precautions When Handling Ink Supplies

Use the following precautions when handling Ink Supplies:

 **NOTE:** Do not touch, wipe or attempt to clean the printhead nozzles. This can damage the printhead.

- Handle the ink supplies with care. In particular the Printhead, which is a high precision device and must be handled carefully.
- Do not touch the Printhead nozzles.
- Do not put the Printhead down on the nozzles.
- Do not be rough when handling the Printheads. Always set them down gently.
- Do not drop the Printheads.
- Proper handling will assure optimum performance throughout the Printhead life.
- Do not touch the end of the Ink Cartridge which is inserted into the printer as there may be a small amount of ink on the connection.
- Avoid storing partially used Ink Cartridges on their ends.

When Should You Replace the Ink Supplies?

When to change the ink supplies is mostly determined by you with guidance from the front panel. In conjunction with the messages displayed in the front panel and the message explanations in this chapter, you will be able to choose for yourself when is the right time to change the ink supplies.

The Printer will also display the ink level and will tell you when the ink supply is low on ink. This means you have constantly updated information about the ink supplies.

Ink Cartridge Levels, Information, and Replacement

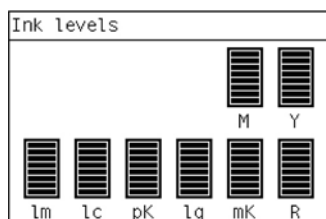
Ink Cartridge Levels

The front panel displays Ink Levels shown as level bars. These bars represent how much ink is remaining in the Ink Cartridges: as ink is used up the bars get shorter in length.

There are two methods for checking the ink levels of your Ink Cartridges.

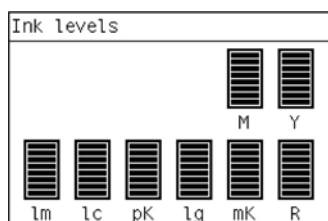
“View Ink Levels” Direct Access Key

- Pressing the “View ink levels” direct access key on the Front Panel will immediately show you the ink levels. For more information about direct access keys, refer [Using the Front Panel on page 3](#).



“View Ink Levels” from the ink menu

- Choosing the **View ink levels** options from the Ink menu will immediately show you the ink levels:

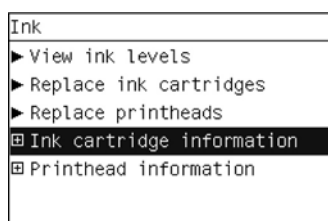


Obtaining Ink Cartridge Information

1. Scroll to the **Ink Menu** icon and press **OK**



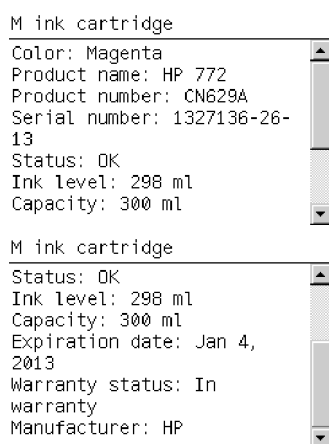
2. In the Ink Menu submenu, scroll to **Ink cartridge information** and press **OK**



3. In the **Ink cartridge information** submenu, scroll to the **Ink Cartridge** that you want information on and press **OK**.



4. The front panel displays information on the selected Ink Cartridge. Use the **Arrow** keys to scroll through the information.




The information supplied is:

- The make of the Ink Cartridge.
- The product number of the Ink Cartridge.
- The serial number of the Ink Cartridge.
- The current status of the Ink Cartridge.
- The current ink level of the ink cartridge in milliliters.
- Original capacity of the ink cartridge in milliliters.
- The manufacturer of the Ink Cartridge (hp is recommended).
- The current warranty status of the Ink Cartridge.

Changing an Ink Cartridge

There are two occasions when you need to remove an ink cartridge:

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

 **NOTE:** Do not try to remove an ink cartridge while printing. Remove an ink cartridge only if you are ready to insert another one.

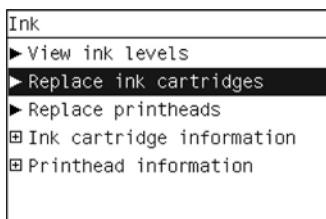
Make sure the printer wheels are locked (the brake lever is pressed down) to prevent the printer from moving.

Change an ink cartridge using the following procedure:

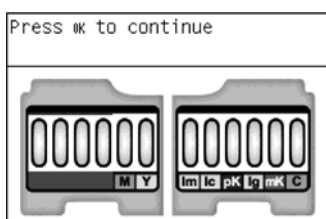
1. Scroll to the **Ink Menu** icon and press **OK**.



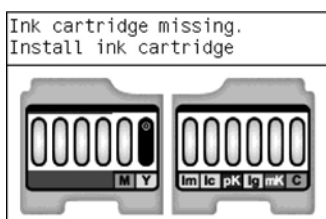
2. In the **Ink Menu** submenu, scroll to **Replace ink cartridges** and press **OK**.



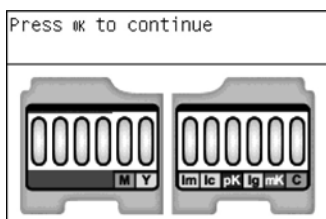
3. The front panel displays the status of the Ink Cartridges.



4. Press **OK** to continue.
5. Open the relevant Ink Cartridge cover for the Ink Cartridge you want to replace.
6. Pull the required Ink Cartridge straight up to remove it from the printer.
7. The front panel indicates the missing Ink Cartridge.



8. Before removing the cartridge from its wrapping, shake it vigorously.
9. Unwrap the new ink cartridge, find the label identifying the ink color. Check that the letter or letters marking the empty slot, matches the letter or letters on the cartridge label.
10. Insert the ink cartridge into its slot.
11. Push the cartridge into the slot until it snaps into position. You should hear a beep and see confirmation that the cartridge has been inserted.

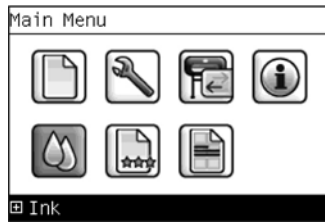


12. When all cartridges have been inserted, close the cover.

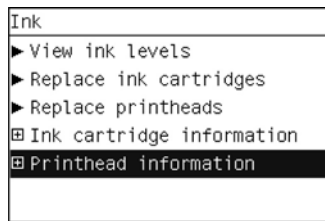
Printhead Information, Replacement and Alignment

Obtaining Printhead Information

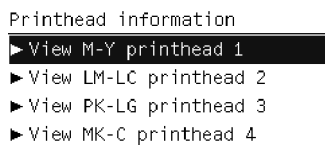
1. Scroll to the **Ink Menu** icon and press **OK**.



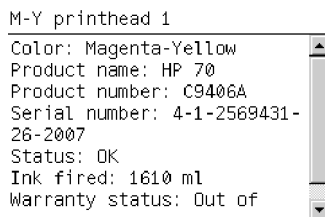
2. In the **Ink Menu** submenu, scroll to **Printhead information** and press **OK**.



3. In the **Printhead Information** submenu, scroll to the **Printhead** that you want information on and press **OK**.




4. The front panel displays information on the selected Printhead.



The information supplied is:

- The make of the printhead.
- The product number of the Printhead.
- The serial number of the Printhead.
- The current status of the printhead.
- How much ink has been fired (consumed) by the printhead.

 **NOTE:** It is possible for a printhead to consume more than one Ink Cartridge.

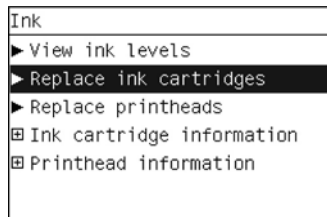
- The current warranty status of the Printhead.

Changing a Printhead


1. Scroll to the **Ink Menu** icon and press **OK**.



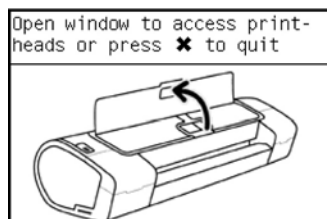
2. In the **Ink Menu** submenu, scroll to **Replace printheads** and press **OK**.



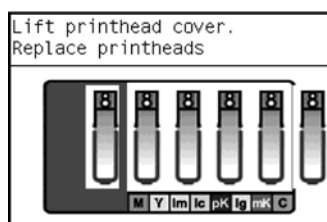
3. The printer moves the Carriage to the correct position to replace Printheads.

 **NOTE:** If the carriage is left in the removal position for more than three minutes without inserting or removing any printheads, it will try to move back to its normal position at the right-hand end.

4. When the carriage has stopped moving, the front panel display will prompt you to open the window and lift the carriage cover.

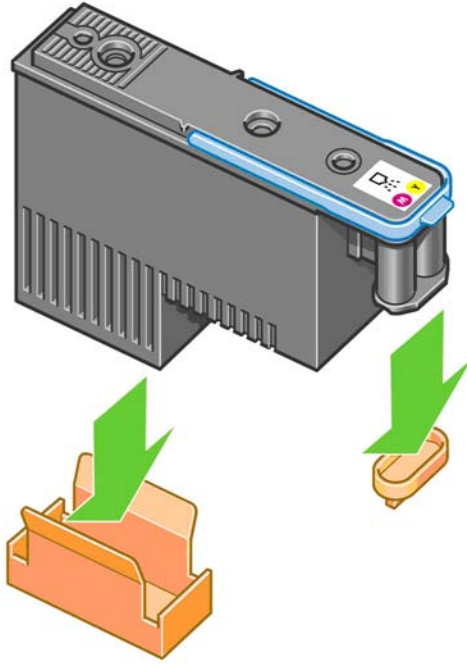


5. Open the window.
6. Lift the Carriage cover to access the printheads.

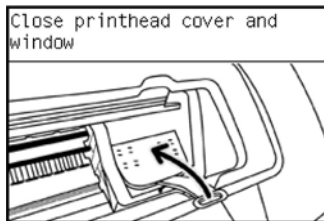


7. Lift the blue handle and pull the Printhead straight up out of the Carriage.

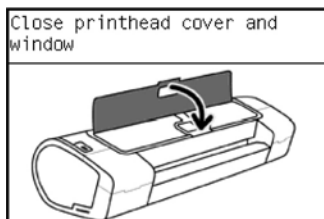
- To insert a new printhead first remove the orange protective caps.



- The printhead is designed to prevent you from accidentally inserting it into the wrong slot. Check that the colored label on the printhead matches the colored label of the carriage slot into which the printhead is to be inserted. Insert the printhead slowly and vertically, straight down. It may be damaged if you insert it too fast, or at an angle, or if you rotate it as you insert it.
- Insert all other printheads that need to be installed, and close the carriage cover.



- Close the Window.




- When all the printheads have been inserted correctly and accepted by the printer, the printer will beep. If the printer does not beep when you insert the printhead and the **Replace** message appears on the front panel display, the printhead may need to be reinserted.

The front panel display confirms that all printheads are correctly inserted. The printer will start checking and preparing the printheads. The front panel display confirms that all printheads are correctly inserted. The printer will start checking and preparing the printheads. The default routine process, when all printheads are changed, takes 25 minutes. If the printer finds problems in preparing the printheads, it will take longer, up to 55 minutes. For a single printhead insertion, the times vary between 15 and 35 minutes. After all printheads are checked and prepared, for the printhead realignment.

Aligning Printheads

Precise alignment between printheads is essential for accurate colors, smooth color transitions, and sharp edges in graphical elements. Your printer has an automatic printhead alignment process which runs whenever a printhead has been accessed or replaced.

In cases where the paper has jammed, you have used a custom paper, or are experiencing problems with color accuracy you may need to align the printheads. If the paper has jammed, it is recommended that you reinsert the printheads and initiate the realignment procedure with the Image Quality Maintenance menu.

 **NOTE:** Do not use transparent and semi-transparent paper to align the printheads. Photo paper is recommended for the best quality.

Reinsert Printheads Procedure

1. If the realignment process is running and the wrong paper is loaded, press the cancel key on the front panel. Do not print if the realignment process has been canceled. You can restart the alignment with the Image Quality Maintenance menu procedure.
2. Load the paper you wish to use. You can use a roll or cut sheet.
3. Remove and reinsert all the printheads, see Remove a printhead and Insert a printhead. This will start the printhead alignment procedure.
4. Ensure the transparent window closed, as a strong light source near the printer during printhead realignment can affect alignment.
5. The process will take about six minutes. Wait until the front panel display shows the process complete before using the printer.

Image Quality Maintenance Procedure

1. Load the paper you wish to use. You can use a roll or cut sheet, however, it must be at least a 16 inches roll, or an A2 portrait sheet (420mm x 594mm). Do not use transparent and semi-transparent paper to align the printheads. Photo paper is recommended for the best results; plain, bond and thin coated papers provide acceptable but marginal results.
2. Press the **Menu** key to return to the main menu and select the **Image Quality Maintenance** menu icon.
3. Select **Align printheads**. The printer will check to see if it has enough paper to run the realignment.

4. If the loaded paper is satisfactory, the printer will run the realignment and print a realignment pattern. Ensure the transparent window is closed, as a strong light source near the printer during printhead realignment can affect alignment.

Figure 1-1 Z5200 Plot:



5. The process will take about eight minutes. Wait until the front panel display shows the process complete before using the printer.

Scanning errors during alignment

If the alignment process fails, a Scanning problems message appears on the front panel. This means that the alignment has not completed successfully. Therefore the printer is not aligned and the alignment should be repeated before printing with good image quality. The problem may be due to:

- The paper used was not valid, repeat the alignment with valid paper.
- Printhead health problems, clean printheads.
- The alignment was done with the transparent window open, repeat the alignment with the window closed.

If the problem persists after using valid paper, cleaning the printheads, and keeping the window closed, there may be a Failure in the scanning system needing reparation or the printheads, although clean, may not work and need to be replaced.

Ink Cartridge and Printhead Status Messages

Ink Cartridge Status Messages

OK	The Ink Cartridge is operating correctly and no action is required.
Missing	There is no Ink Cartridge present, or it is not properly connected to the printer
Low	The Low message is an early warning sign and it is advisable that new supplies should be obtained of that particular color. The amount of ink remaining in the Ink Cartridge depends on it's capacity, but there is approximately 14% of ink available for the user.
Very Low	When the Very Low message is displayed, overnight printing should not be attempted. Changing the Ink Cartridge is strongly recommended to prevent the printer from stopping halfway through a print. There is approximately 8% of ink available for the user.
Empty	The printer will stop and will not be able to continue printing until a new Ink Cartridge has been installed. If this occurs halfway through printing an image, you should check the quality of this image, as stopping mid-plot can affect the print. It would be recommended to reprint the image once a new Ink Cartridge has been installed.
Reseat	You are recommended to remove the Ink Cartridge and then reinsert it.
Replace	You are recommended to replace the Ink Cartridge with a new Ink Cartridge.
Altered	There is something unexpected about the Ink Cartridge's status.
Expired	The Ink Cartridge has passed the expiration date.

Printhead status messages


OK	The Printhead is operating correctly and no action is required.
Missing	There is no Printhead present, or it is not properly connected to the printer.
Test printhead separately	You are recommended to test the printheads individually to find the failing printhead. Remove all the printheads and insert them alone one by one, Closing the latch and the carriage cover after every insertion. The front panel display will indicate the failing one showing the reseat or replace message.
Reseat	You are recommended to start the printhead removal process from the front panel, but instead of removing the printhead, simply press the OK key on the front panel.
Replace	You are recommended to remove the printhead and then reinsert it; if that fails, clean the electrical connections; if that fails, replace the printhead with a new printhead.
Replacement incomplete	A printhead replacement process has not completed successfully, relaunch the replacement process and let it finish completely (it is not needed to change the printheads).
Remove	The printhead is not a suitable type for use in printing (for instance, a setup printhead).

Solving Ink Supplies Problems

Most of the problems that you could encounter when working with the ink supplies are solved with guidance from the front panel. A full list of front panel messages are supplied in the User's Guide.

You Cannot Insert the Ink Cartridge Into the Printer

1. Ensure that you have the correct hp Ink Cartridge.
2. Ensure that the Ink Cartridge is the correct color for that slot.
3. Ensure that the Ink Cartridge is the correct orientation, with the color coded label at the top.

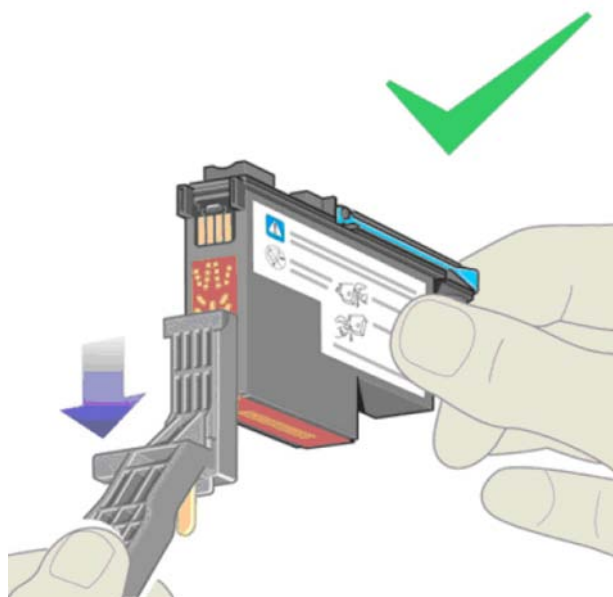
 **NOTE:** Never clean inside the Ink Cartridge slots as this can cause damage to the Printer.

You Cannot Insert the Printhead Into the Printer

1. Ensure that you have the correct hp Printhead.
2. Ensure that the printhead is the correct color for that slot.
3. Ensure that the printhead is in the correct orientation.
4. Ensure that the protective cap is removed from the Printhead.

The front panel says to reset or replace a printhead

1. From the front panel, turn the power off then ON.
2. Check the front panel display message, if it shows the ready message, the printer is ready to print. If the problem remains continue with the next step.
3. Remove the printhead.
4. Clean the electrical connections on the backside of the printhead with a lint free cloth. You can carefully use a mild rubbing alcohol if moisture is needed to remove residue. Do not use water. You can use the Flex Contacts Cleaning Tool.



5. Reinsert the printhead.
6. Check the front panel display message. If the problem remains, try a new printhead.

Maintaining and Cleaning the Printheads

Clean the printheads


As long as the printer is kept turned on, an automatic cleaning is performed periodically. This ensures there is fresh ink in the nozzles and prevents nozzle clogs, which ensures color accuracy.

If you have not already done so, please refer to Horizontal lines across the image (banding) and The Image Diagnostics Print before proceeding.

To clean the printheads, press the Menu key to return to the main menu and select the Image Quality Maintenance menu icon, then Clean printheads. If you have gone through the Image Quality Diagnostic print process, you know which colors are failing. Select to the pair of printheads which contain the failing colors. If you are not sure which colors to clean, you can also select to clean all printheads.


Cleaning all printheads takes about nine minutes. Cleaning a single pair of printheads takes about six minutes. Cleaning all printheads uses more ink than cleaning a single pair.

If you have cleaned the printheads using the Clean printheads procedure from the front panel and are still experiencing image quality problems, you can try cleaning the printhead nozzles manually using the following procedure.

 **NOTE:** This is a delicate process and may damage the printhead. Do not touch the electrical connections on the backside of the printhead.

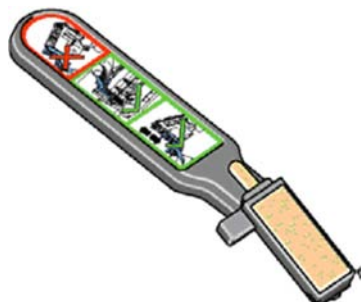
You must remove the printhead (see Remove a printhead) and using a cotton swab and a little de-ionized, distilled water, or Carriage Interconnect Wiper clean the bottom of the printhead until the residue is removed.

Flex Contacts Cleaning Tool

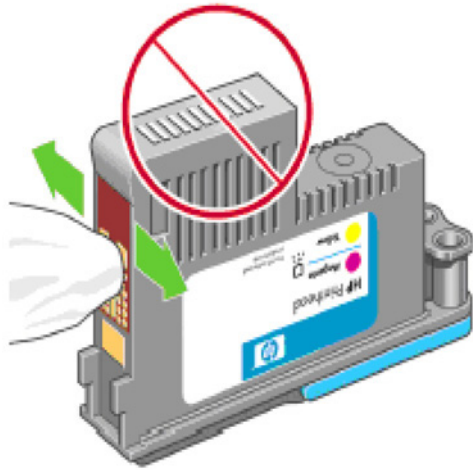
 **NOTE:** The Flex Contacts Cleaning Tool is part of the Maintenance Tool Kit which can be ordered using Part Number Q5669- 60690. All the instructions needed to use the Flex Contacts Cleaning Tool will be packaged with the kit.


Whenever you replace the Printhead, check the empty slots to see if they need cleaning. In extreme circumstances, when a Printhead is inserted, it is possible that the Printer will not recognize it due to the build-up of ink on the electrical connection between the Printhead and the Carriage Assembly.

Included with the Printer is a Flex Contacts Cleaning Tool. This tool is provided in a separate package. It also contains replacement sponges and an instruction sheet. This tool should be used for cleaning the electrical interconnects of both the Carriage Assembly and the Printhead.




If the front panel displays the message “Reseat” or “Replace” next to the offending printhead, try cleaning the flex circuits of the Carriage and the Printheads using the Carriage Interconnect Wiper.



 **NOTE:** Do not touch, wipe or attempt to clean the printhead nozzles. This can damage the printhead and reduce print quality.

Print Quality

Print Quality Troubleshooting Actions

 **NOTE:** Phone support: 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 paper type loaded corresponds to the paper type selected in the front panel and in the software. You can verify the paper type selected through the Front Panel ([Main Menu](#)/ [Paper menu](#)/ [View loaded paper](#)).
 - Make sure that the correct Print Quality settings are used for different types of print content.
 - Dry time should be set to “**Optimal**”.
2. Perform Printhead recovery ([Main Menu](#)/[Image Quality Maintenance](#)/[Clean Printheads](#)).
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. Perform the Printhead Alignment ([Main Menu](#)/ [Image Quality Maintenance](#)/ [Align Printheads](#)), using the same paper type with which you were experiencing unacceptable image quality, if feasible (some paper types are not suitable for Printhead Alignment).
5. Check if the latest version of the firmware is installed. If not, install the latest firmware revision.

The Service Image Quality Diagnostic Print

What is the Service Image Quality Diagnostic Print?

The Printer contains an internal Image Quality Test which helps you to diagnose the possible source of any image quality defects. The Service IQ Diagnostic Print is available in the following options:

1. *Image Quality Service Best Plot.* This plot helps you to diagnose in more detail the possible source of any image quality defects. It is accessible through the Service Utility Menu.

The Image Quality Service Best Plot uses the Best Print Mode and is divided in to three parts as follows:

- Diagnostic Part 1: Printhead Reliability Test. The purpose of this test is to identify which Printhead is faulty.
 - Diagnostic Part 2: Printhead Alignment Test. This test is designed to check any color-to-color and bi-directional misalignment the printer may have.
 - Diagnostic Part 3: Printheads and Paper Advance test. This test is designed to check whether the Printheads and the Media Advance Mechanism are working correctly.
2. *Image Quality Service Normal Plot.* This plot is the same as the *Image Quality Service Best Plot* but uses the Normal Print Mode.
 3. *Advanced Diagnostic Plot.* These tests provide more information of the IQ defects that we could find in the *Image Quality Service* plot. For more information, refer to [The Advanced Diagnostic Prints on page 29](#).

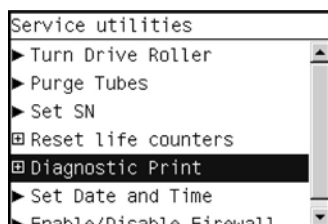
Considerations for Printing the Diagnostic Print

1. The IQ Diagnostic Print prints in A3 and B sizes so you must have media loaded (roll or sheet) that is this size or larger.
2. Use the same type of media that the customer was using when they found the image quality problem.
3. If the customer is using non-HP media and after the Image Quality Test you still have the same image quality problems, change to genuine HP media and repeat the Image Quality Test.
4. If you do not see any problems with the Image Quality Test, the problem may not be with the printer itself. The problem may be with the RIP or the driver.

If you do see problems with the Image Quality Test, continue with the Advanced Diagnostic procedures which will help you diagnose the problem.

Printing the Diagnostic Print

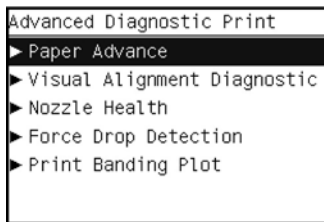
1. In the Service Utilities submenu, scroll to “**Diagnostic Print**” and press **OK**.



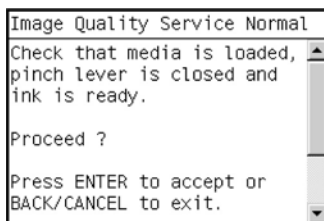
2. You will be given three options. Use the **Arrow** keys to make the selection and press the **OK** key to start printing the required Diagnostic Print or to enter the Advanced Diagnostics menu.



3. If you selected the Advanced Diagnostics Prints in the previous step, use the **Arrow** keys to make the required selection Paper Advance, Visual Alignment Diagnostic, Nozzle Health, Force Drop Detection or Print Banding Plot, and press the **Enter** key to start printing.



4. Make sure media is loaded, the Media Lever is lowered and that the Ink System is correctly installed. Press the **OK** key to print the Diagnostic Print or press **Back/ Cancel** to exit without printing the Diagnostic Print.



5. The selected Diagnostic Print will now be printed.

Reading the Diagnostic Print Results

Diagnostic Part 1: Printhead Reliability

The Nozzle Print Test is designed to check if the Printhead nozzles print correctly.

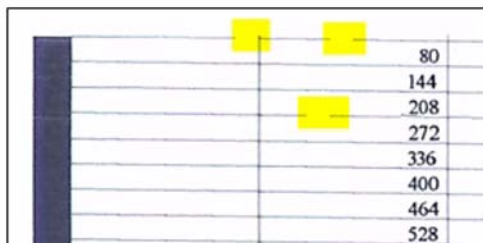
The nozzles (bottom of the plot) are printed in a one-pass full swath mode. The diagnostics test prints out every single nozzle of each Printhead without applying an error hiding or alignment algorithm.

For each Printhead, you can see both the adjacent and the consecutive nozzles.

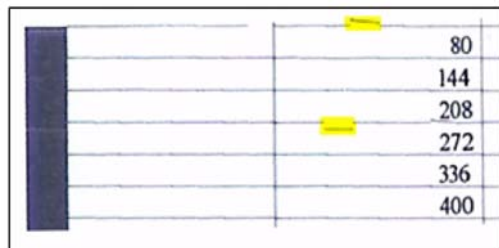


If any nozzles are not printing correctly they will be shown on the right of each Printhead Nozzle test. There is a series of numbered stepped diagonal lines. If one or more of the nozzles are clogged, malfunctioning or mispositioned, you will see that the stepped lines are broken or misdirected in one or more places.

Below, the stepped lines highlighted in yellow are broken. When the line is completely broken, this means the nozzle is out.



Below, the stepped lines highlighted in yellow are misdirected. When the line is misdirected, this means the nozzle is malfunctioning or out of position.



On the left of each Printhead Nozzle test, there is a series of horizontal straight lines. If one or more nozzles are misdirected there will be unequal spaces between the corresponding lines.

Corrective Action

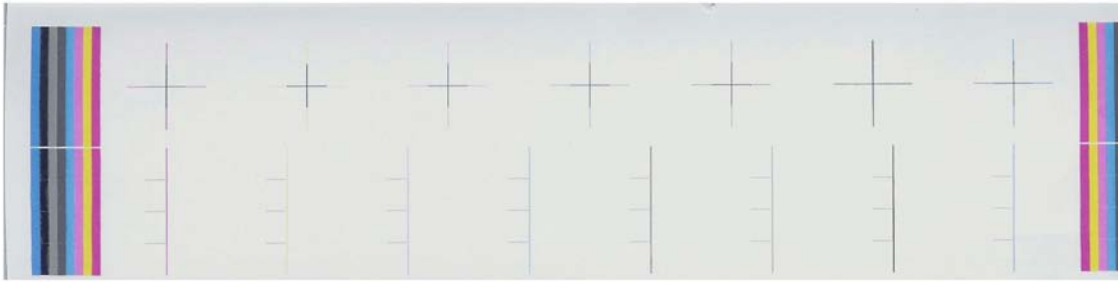
If the printer has nozzle defects, you can still get perfect print quality results. The printer can automatically compensate for nozzle defects, so there is no need to replace the Printhead.

The method of improving Nozzle Defects is to:

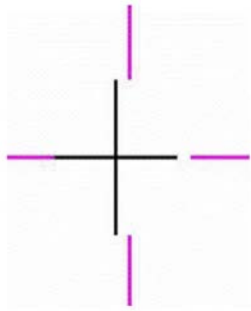
1. Recover the Printheads, using the Front Panel ([Main Menu/Image Quality Maintenance/Clean Printheads](#) option).
2. Reprint the Printhead Nozzles Test Plot to verify that the defective nozzles have been corrected.
3. If the problem continues, replace the defective Printhead.

Diagnostic Part 2: Printhead Alignment

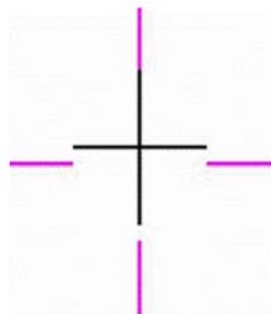
This test is designed to check any color-to-color and bi-directional misalignment the printer may have.



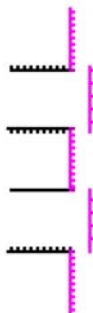
1. If the Printer is experiencing **horizontal** misalignment problems, the Alignment Test will show something like this:



2. If the Printer is experiencing **vertical** misalignment problems, the Alignment Test will show something like this:



3. If the Printer is experiencing **bi-directional** misalignment problems, the Alignment Test will show something like this:



Corrective Action

Perform the Printhead Alignment ([Main Menu](#) / **Image Quality Maintenance** / **Align Printheads**), using the same paper type with which you were experiencing unacceptable image quality, if feasible (some paper types are not suitable for Printhead Alignment).

Diagnostic Part 3: Printheads & Paper Advance

This test is designed to check whether the Printheads and the Paper Advance Mechanism are working correctly. This part of the Image Quality Test should **NOT** be used to check for color consistency or accuracy.

Banding

If the Printer is experiencing a banding problem, you will see repetitive horizontal bands within the printed image.

- Darker horizontal bands or lines repeated along the vertical band (from top to bottom at the same distance).
- Whiter horizontal bands or lines along the vertical band (from top to bottom at the same distance).

The plot is printed in Best or Normal mode (according to the menu option selected) with Error Hiding ON. The top band has 100% ink density patches while the bottom band has 50% ink density patches.



Troubleshooting Banding Problems

If banding **does NOT** occur in ALL the colors, then it is more than likely a Printhead problem. In this case, try the following:

1. Check that the appropriate print quality settings are being used (refer to the User's Guide for more information).
2. Recover the printheads using the option through the Front Panel ([Main Menu/ Image Quality Maintenance/ Clean Printheads](#)). Reprint the Diagnostic Print or the print file and if the problem persists, replace the faulty Printhead.

If banding **does** occur in ALL the colors, then it is more than likely a Paper Advance problem:

- If the bands are light, it means that the paper has advanced too much.
- If the bands are dark, it means that the paper hasn't advanced enough.
- In high quality modes, graininess in ALL colors can indicate problems either with alignment or Paper Advance.

Corrective Action

In order to solve problems that result in banding, try the following:

1. Check that the appropriate print quality settings are being used (refer to the User's Guide for more information).
2. Check that the loaded media is the same type as selected in the printer. You can verify the media type selected through the Front Panel ([Main Menu](#) / **Paper menu** / **View loaded paper**).
3. If the customer is using low quality paper, try recommending better quality paper (preferably HP paper). Printer performance can only be guaranteed by using recommended papers.
4. Perform the Paper Advance Calibration using the same type of paper that will be used for the final print ([Main Menu](#) / **Image Quality Maintenance** / **Paper Advance Calibration** / **Calibrate Paper Advance**).

If there is white point banding in only one color band and the problem cannot be fixed using the Printhead recoveries, in some cases using the force a drop detection option can fix this issue. See [Force Drop Detection on page 35](#).

No Printing Defects Found in the Diagnostic Print

If all the test patterns from the Diagnostic Print are correct and you still experience Image Quality problems, you can use the following procedures to resolve the problem.

- [Reading the Advanced diagnostic Print Results on page 30](#)
- [Printhead Alignment on page 33](#)
- [Nozzle Health on page 34](#)
- [Force Drop Detection on page 35](#)

The Advanced Diagnostic Prints

What are the Advanced Diagnostic Prints?

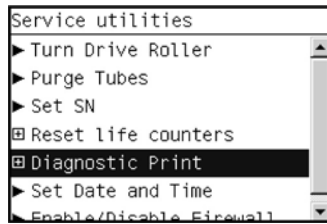
Advanced Diagnostic Plot. These tests provide more information of the IQ defects found in the *Image Quality Service* plot.

The *Advanced Diagnostic Plot* is divided into the following parts:

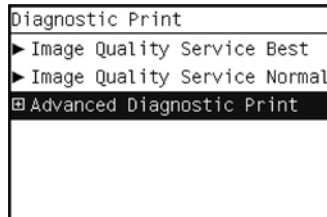
- Visual Media Advanced Diagnostic. Used to check advance reliability.
- Visual Alignment Diagnostic. Used to check pen alignment reliability.
- Visual Nozzle health Diagnostic. Used to check nozzle health reliability.
- Force Drop Detection. Used to reset the nozzle health historic data base and force new drop detection.

Printing the Advanced Diagnostics Print

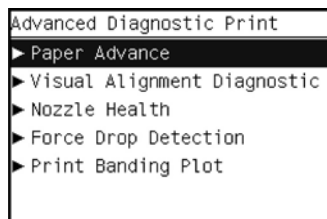
1. In the Service Utilities submenu, scroll to “**Diagnostic Print**” and press **OK**.



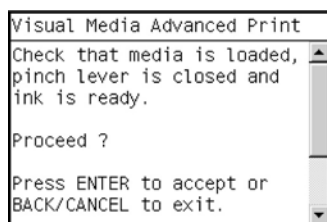
2. You will be given three options. Use the **Arrow** keys to select the **Advanced Diagnostics** menu.



3. From the displayed options, use the **Arrow** keys to make the required selection Paper Advance, Visual Alignment Diagnostic, Nozzle Health, Force Drop Detection or Print Banding Plot, and press the **ENTER** key to start printing.



4. Make sure media is loaded, the Media Lever is lowered and that the Ink System is correctly installed. Press the **OK** key to print the Diagnostic Print or press **Back/ Cancel** to exit without printing the Diagnostic Print.




5. The selected Advanced Diagnostic Print will now be printed.

Reading the Advanced diagnostic Print Results

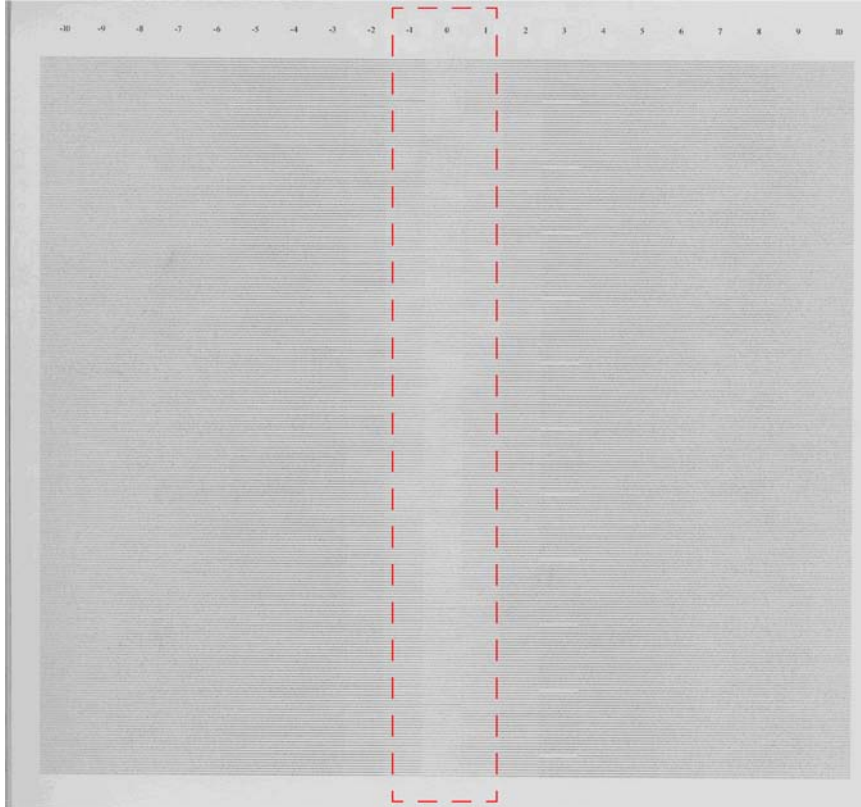
Paper Advance

This plot helps you to visually check any alignment problems of the printer. You use it to precisely measure the media advance error with a one dot row accuracy, and to verify the stability of the media advance.

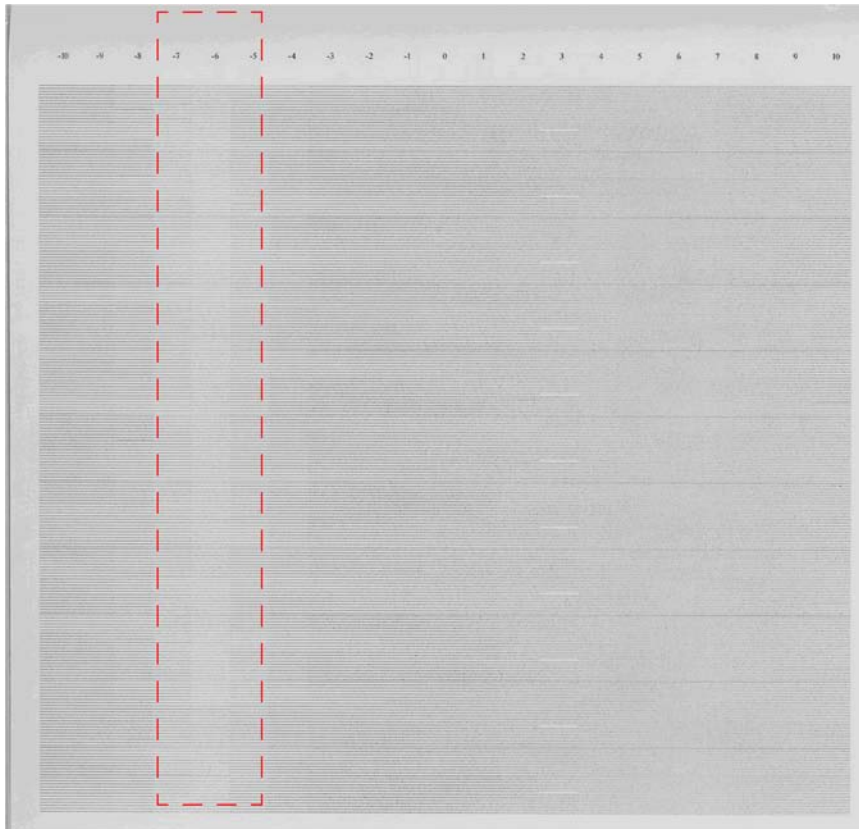
The whitest vertical line should be positioned in the 0 offset column with minor variations between +2 and -2 columns. If the offset is not positioned on the 0 column or between +2 and -2 columns and the whitest vertical varies greatly, the printer requires Paper Advance Calibration ([Main Menu / Image Quality Maintenance / Paper Advance Calibration / Calibrate Paper Advance](#)).

 **NOTE:** It is very important to verify that the loaded media is the same media type as selected in the front panel. You can verify the media type selected through the Front Panel ([Main Menu/ Paper menu/ View loaded paper](#)). The wrong type of paper selected will produce an offset error in the Paper Advance.

The following plot shows correct media advance, there is a straight white line positioned close to the 0 column for the majority of the points.




The following plot shows a bad media advance, there is a straight white line positioned close to the -6 column, instead of the 0 column for the majority of the points.




Corrective Action

To fix Paper Advance problems, try the following:

1. Check the Paper Advance Calibration Status. This can be done by going to [Main Menu/ Paper/ View Loaded Paper](#). At the bottom, the Front Panel displays the Paper Advance Calibration status. There are three status messages:
 - **DEFAULT.** The paper loaded is recognized as HP paper, which is already optimized and calibrated for the printer. Do not calibrate the Paper Advance for this paper.
 - **RECOMMENDED.** The paper loaded is NOT recognized as HP paper, and Paper Advance values have NOT been customized for this paper type. In this case, calibrate the Paper Advance from the user menu.
 - **OK.** This indicates that the paper loaded has been calibrated before. If the printer continues to have banding and graininess problems, calibrate the Paper Advance from the user menu.

 **NOTE:** Whenever the printer's firmware is upgraded, the paper advance calibration values will be reset to factory default.

2. To calibrate the Paper Advance from the user menu, go to [Main Menu/ Image Quality Maintenance/ Paper Advance Calibration/ Calibrate Paper Advance](#).

 **NOTE:** It is very important to verify that the loaded media is the same media type as selected in the front panel. You can verify the media type selected through the Front Panel ([Main Menu/ Paper menu/ View loaded paper](#)). The wrong type of paper selected will produce an offset error in the Paper Advance.

NOTE: Some paper types are not suitable for Paper Advance Calibration. Do not use colored papers or transparent materials such as translucent bond, clear film, matte film, tracing paper, or vellum.

Paper Advance calibration from the user menu will only calibrate the Paper Advance for the paper type loaded in the printer at that moment.

3. If Calibrate Paper Advance has mostly solved the problem, try Adjust Paper Advance to fine tune the Paper Advance ([Main Menu/ Image Quality Maintenance/ Paper Advance Calibration/ Adjust Paper Advance](#)).

Select the percentage of change from -100% to 100%. To correct light banding, decrease the percentage. To correct dark banding, increase the percentage.

4. The Paper Advance calibration from the service menu will calibrate the Paper Advance for ALL paper types. This action is recommended when:
 - The Paper Advance calibration from the user menu does not solve the problem.
 - The Paper Advance problems affect ALL paper types.

The procedure for Paper Advance Calibration is in the service menu [Paper Advance Calibration on page 140](#).

Printhead Alignment

This plot helps you to visually check any alignment problems of the printer. You use it to precisely measure the alignment error with a one dot row accuracy. For the printer to be considered correctly aligned, the results must be within ± 2 dot row.

The illustration shows the complete Printhead Alignment that identifies each of the specific alignment test results covered. The plot is split into four areas printed at different speeds and resolutions: 25ips@1200dpi, 35ips@1200dpi, 36ips@600dpi and 50ips@600dpi.



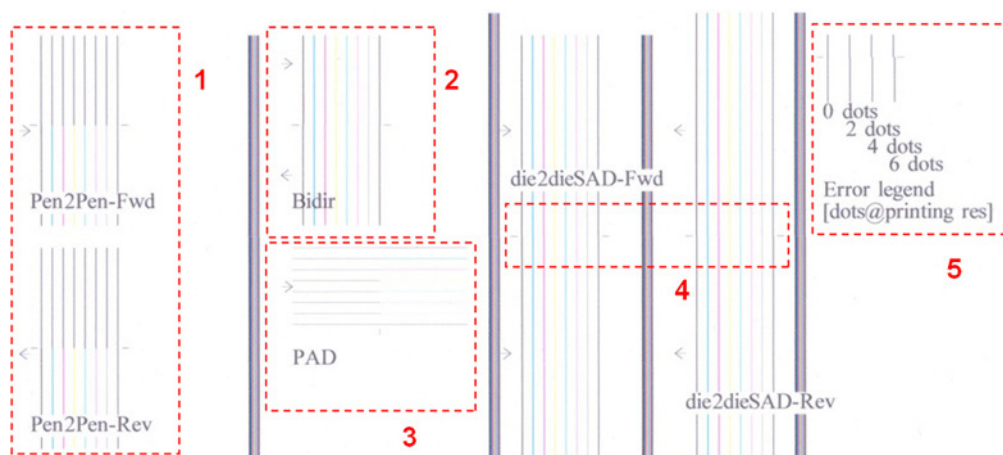
- ▲ In order to know the print modes associated to the speeds and resolutions refer to the following table

Level 1: Paper Type	Level 2: Paper Type Generic/HP Commercial name	Fast (ips)	Normal (ips)	Best (ips)	Superbest (ips)
Photo Paper	HP Premium Instant-Dry Gloss Photo Paper	50@600dpi	50@600dpi	50@600dpi	25@1200dpi
	HP Premium Instant-Dry Satin Photo Paper	50@600dpi	50@600dpi	50@600dpi	25@1200dpi
	HP Professional Satin Photo paper	50@600dpi	50@600dpi	50@600dpi	25@1200dpi
	HP Everyday Pigment Ink Gloss Photo Paper	50@600dpi	50@600dpi	50@600dpi	25@1200dpi
	HP Everyday Pigment Ink Satin Photo Paper	50@600dpi	50@600dpi	50@600dpi	25@1200dpi
	HP Premium Matte Photo Paper	50@600dpi	50@600dpi	35@600dpi	25@1200dpi
	Photo Gloss/Semi-Gloss/Satin Paper	50@600dpi	50@600dpi	50@600dpi	25@1200dpi
	Photo Gloss/Semi-Gloss/Satin Paper (less ink)	50@600dpi	50@600dpi	50@600dpi	25@1200dpi
	Photo Gloss/Semi-Gloss/Satin Paper (more ink)	50@600dpi	50@600dpi	50@600dpi	25@1200dpi
	Photo Matte Paper	50@600dpi	50@600dpi	35@1200dpi	25@1200dpi
Bond & Coated Paper	HP Super Heavyweight Plus Matte Paper	50@600dpi	50@600dpi	35@1200dpi	25@1200dpi
	Plain Paper	30@600dpi	50@600dpi	35@1200dpi	25@1200dpi
	ColorPro Paper	50@600dpi	50@600dpi	35@1200dpi	25@1200dpi
	Coated Paper	50@600dpi	50@600dpi	35@1200dpi	25@1200dpi
	Heavyweight coated Paper	50@600dpi	50@600dpi	35@1200dpi	25@1200dpi
	Super Heavyweight coated Paper	50@600dpi	50@600dpi	35@1200dpi	25@1200dpi

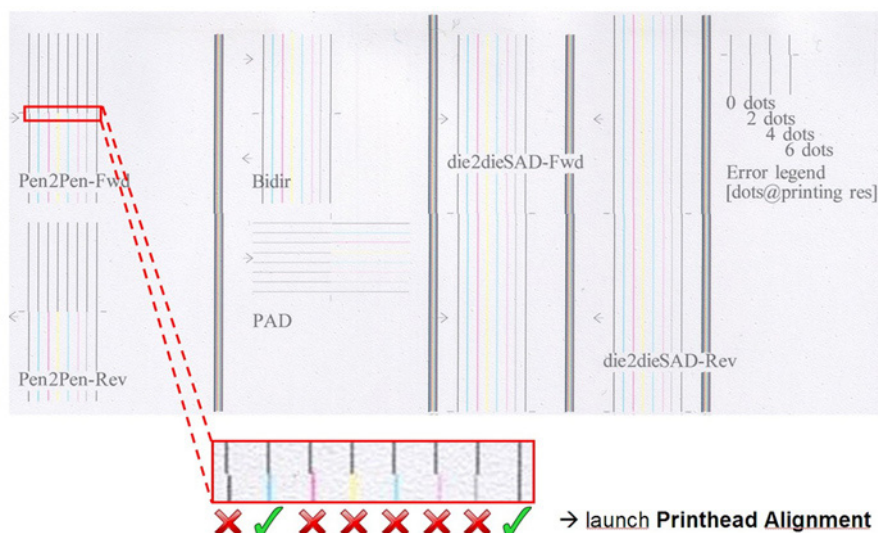
NOTE: For the other types of media and print modes use the reference of 25ips @1200dpi.

What to see in the AutoPen Alignment Diagnostics

1. At the left we have two checks for the pen to pen alignment in scan axis direction (Pen2Pen-Fwd & Pen2Pen-Rev). It is forward and reverse. The area to check is the junction (marked with “-”) of the black with the rest of colors. The arrows show the printing direction
2. The bidirectional check is at the top, marked as number 2 (Bidir). Check that the lines are continuous without a gap. The junction is marked with “-”. The arrows show the printing direction.
3. The pen to pen alignment in paper axis direction (PAD) is marked as number 3. The area to check is the junction (marked with “|”) of the black with the rest of colors
4. The ThetaZ of the printhead are checked in the area marked as 4. It checks in forward and reverse direction. The area to check is the junction (marked with “-”). The lines have to be continuous. The arrows show the printing direction.
5. The area marked as number 5 is a reference legend that shows junction misalignments of 2, 4 and 6 dots. The junction to check has to be equal to or below 2 in all the cases. If the error we appreciate is above 2 dots, then realign the printheads again.



In the next example, the Pen2Pen (both Fwd and Rev) is above these 2 dots and the unit should be realigned. Same happens with the ThetaZ (die2dieSAD). The rest of the pattern shows a right alignment.




Nozzle Health

The print contains three separate parts.



1. The Variable Frequency Nozzle health plot with odd/even nozzles separation. This is used to detect misdirected or weak nozzles, nozzles not working correctly at all frequencies, or even Gloss Enhancer (GE) color problems.
2. Inspector measuring tool test plot.

 **NOTE:** Test 2 should NOT be used by Service Engineers.

3. **Nozzle Print Test** which is also part of the Image Quality Service Plot. This test is designed to check that the Printhead nozzles print correctly. The test prints out every single nozzle of each Printhead. No error hiding or Printhead Alignment algorithm is applied. For each Printhead, you can see both the adjacent and the consecutive nozzles.

This is what you would see in the **Nozzle Print Test** part if there are nozzles not printing correctly:

1. On the right of each Printhead Nozzle test, there is a series of numbered stepped diagonal lines. If one or more of the nozzles are malfunctioning or out of position, you will see that the stepped lines are broken or misdirected in one or more places.
2. On the left of each Printhead Nozzle test, there is a series of horizontal straight lines. If one or more nozzles are misdirected there will be unequal spaces between the corresponding lines.

Corrective Action for Nozzle Defects

If the printer has nozzle defects, it does not mean that you will not get perfect print quality results. The printer has automatic procedures to hide many nozzle defects.

1. Recover the Printheads using the option through the Front Panel ([Main Menu/ Image quality maintenance/ Clean printheads](#)).
2. Reprint the Nozzle Print test to check that the defective nozzles have been corrected.
3. If the problem continues, replace the defective Printhead.

Force Drop Detection

If the **Nozzle Print Test** plot has persistent white point banding in only one color that cannot be fixed with a printhead recovery, you can use this option to resolve the problem by resetting the nozzle health data base so that all nozzles are assumed to be correct.

Once the nozzle health data base has been reset drop detection is forced.

The normal cause of this white point banding in a single color is the incorrect detection of failed nozzles by the drop detector.

Troubleshooting Print Quality Problems

Print Quality General Advice

1. To achieve the best performance from the printer, only genuine HP accessories and supplies should be used.
2. Make sure that the **paper type** selected in the Front Panel is the same as the paper type loaded into the Printer.
3. Make sure to use the most appropriate print quality settings for your purposes. A lower print quality is likely to be seen if the print quality slider has been moved to the **Speed** end of the scale, or the custom quality level set to **Fast**.
4. 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 more information).
5. Check that the ink cartridges and printheads have not exceeded their expiration dates.

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

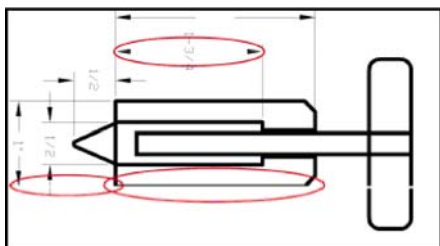
1. Check that the paper type loaded corresponds to the paper type selected in the front panel and in the software. You can verify the paper type selected through the Front Panel ([Main Menu/ Paper menu/ View loaded paper](#)).
2. Check that the appropriate print quality settings are being used (refer to the User's Guide for more information) and reprint the image. In some cases print quality problems can be resolved by selecting a higher print quality level.
3. Print the Service Image Diagnostics Print, and clean any printheads that need cleaning. Reprint the job in case the problem has been solved.

4. Check the paper advance calibration status. If the status is PENDING, perform the Paper Advance Calibration ([Main Menu](#) / **Image Quality Maintenance** / **Paper Advance Calibration** / **Calibrate Paper Advance**).
5. After calibration reprint the job.

Lines are Missing, Too Thin, or Too Thick

Description of problem

Shown below is an example of what you might see if you have this problem:



Corrective Action

1. Check that the paper type loaded corresponds to the paper type selected in the front panel and in the software. You can verify the paper type selected through the Front Panel ([Main Menu](#) / **Paper menu** / **View loaded paper**).
2. Check that the appropriate print quality settings are being used (refer to the User's Guide for more information). Select the custom print quality options in the Print dialog, try turning on the Maximum detail option. Reprint the job in case the problem has been solved.
3. If the resolution of the image is greater than the printing resolution, a loss of line quality may be seen. You can find the Max. Application Resolution option in the Windows driver dialog's Advanced tab, under **Document Options** > **Printer Features**. Reprint the job in case the problem has been solved.
4. Check the Printhead alignment status. If the status is PENDING, perform the Printhead Alignment ([Main Menu](#) / **Image Quality Maintenance** / **Align Printheads**). After alignment reprint the job.
5. Check the paper advance calibration status. If the status is PENDING, perform the paper advance calibration ([Main Menu](#) / **Image Quality Maintenance** / **Paper Advance Calibration** / **Calibrate Paper Advance**). After calibration reprint the job.
6. Use Part 3 of the Image Quality Diagnostic Print, check if there are a significant amount of nozzles out in the color that is **actually causing** the problem (if see you a problem with the Black color in the customer print, then only check the Black printhead in the Image Quality Diagnostic Print). If there is a significant amount of nozzles out then replace the defective Printhead.

Problems with Stepped Lines

Description of problem

When you look at the image you have printed there are '**stepped lines**' in the borders of arrows and diagonal lines. The lines should be straight with no stepping.

Shown below is an example of what you might see if you have problems with Stepped Lines:



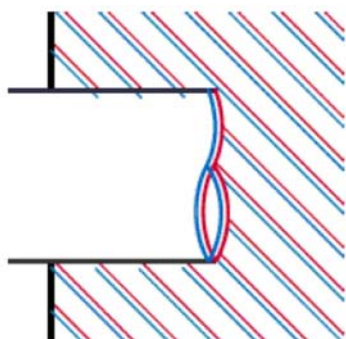
Corrective Action

1. The problems may be inherent in the image that you are trying to print. Try to improve the image with the **application** that generated the file.
2. Check that the appropriate print quality settings are being used (refer to the User's Guide for more information).
3. Turn On the **Maximum Detail** option in the Driver.
4. Change the image rendering resolution to 300 dpi or 600 dpi depending on the printing needs. You can find the Max. Application Resolution option in the Windows driver dialog's Advanced tab, under **Document Options > Printer Features**.

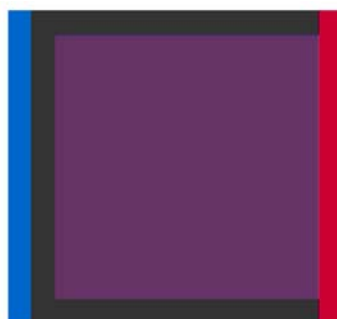
Lines are Printed Double or in Wrong Colors

Description of problem

This problem can have various visible symptoms, as shown below:




Colored lines are printed double, in different colors



Borders of colored blocks are wrongly colored

Corrective Action

Reseat the Printheads by removing them and then reinserting them.


 **NOTE:** As you reseat the printheads, the printer will automatically align the printheads. It is important that the alignment is completed properly. See [Aligning Printheads on page 18](#).

Lines are discontinuous

If the lines are broken in the following way:



1. Check that the appropriate print quality settings are being used (refer to the User's Guide for more information).
2. Reseat the Printheads by removing them and then reinserting them.

 **NOTE:** As you reseat the printheads, the printer will automatically align the printheads. It is important that the alignment is completed properly. See [Aligning Printheads on page 18](#).

Lines are Blurred (Ink Bleeds from Lines)

Description of problem

This problem is often caused by the ink soaking into the paper, making the lines blurred and fuzzy. This could be because of the humidity in the air.



Corrective Action

1. Check that the environmental conditions (temperature, humidity) are suitable for high-quality printing.
2. Make sure that the **paper type** selected in the Front Panel is the same as the paper type loaded into the Printer.
3. Try using a heavier paper type. When printing dense colors, it is recommended to use HP Heavyweight Coated Paper HP Super, Heavyweight Coated Paper or thicker Digital Fine Art papers.
4. If glossy paper is being used, try changing to a different type of glossy paper.
5. Select the custom print quality options in the Print dialog, and turn on the **More passes** option.
6. Allow the prints time to dry separately; do NOT cover or stack them.
7. Align the printheads. See [Image Quality Maintenance Procedure on page 18](#).

Problems with Graininess

Description of problem

Shown below is an example of what you might see if you have problems with graininess:



Corrective Action

1. Check that the paper type loaded corresponds to the paper type selected in the front panel and in the software. You can verify the paper type selected through the Front Panel ([Main Menu/ Paper menu/ View loaded paper](#)).
2. Check that printing is on the correct side of the paper.

3. Check that the appropriate print quality settings are being used (refer to the User's Guide for more information). Select the custom print quality options in the Print dialog, and try turning on the **More passes** detail option. Reprint the job in case the problem has been solved.
4. Check the Printhead alignment status. If the status is PENDING, perform the Printhead Alignment ([Main Menu/ Image Quality Maintenance/ Align Printheads](#)). After alignment reprint the job.
5. Check the paper advance calibration status. If the status is PENDING, perform the paper advance calibration ([Main Menu/ Image Quality Maintenance/ Paper Advance Calibration/ Calibrate Paper Advance](#)).
6. After Paper Advance Calibration, reprint the job.

Paper is not Flat

Description of problem

If the paper does not lie flat when it comes out of the Printer, but has shallow waves in it, you are likely to see visible defects in the printed image, such as vertical stripes. This can happen when you use thin paper that becomes saturated with ink.

Shown below is an example of what you might see if you have problems with the paper not being flat:



Corrective Action

1. Check that the paper type loaded corresponds to the paper type selected in the front panel and in the software. You can verify the paper type selected through the Front Panel ([Main Menu/ Paper menu/ View loaded paper](#)).
2. Try using a heavier paper type. When printing dense colors, it is recommended to use HP Heavyweight Coated Paper HP Super, Heavyweight Coated Paper or thicker Digital Fine Art papers.
3. Make sure that only genuine HP paper is being used.

4. Check that the appropriate print quality settings are being used (refer to the User's Guide for more information).
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).

Print Scuffing or Scratching when Touched

Description of problem

The black ink pigment can smudge when touched by a finger, a pen, or some other object. This is particularly noticeable on coated paper, matte proofing paper, and fine art material.

Glossy paper may be extremely sensitive to damage from the basket or to anything else that it contacts soon after printing, depending on the amount of ink used and the environmental conditions at the time of printing.

Corrective Action

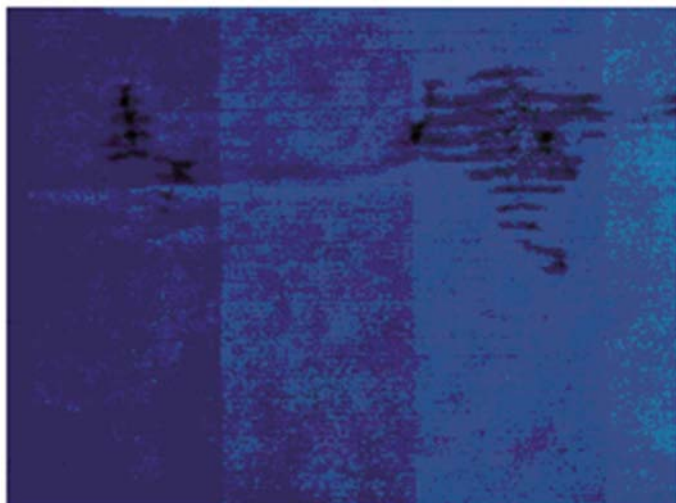
1. Handle prints carefully.
2. Avoid stacking prints on top of each other.
3. Disable the automatic cutter before printing, so that the print will not fall into the basket.

Ink marks on the paper

This problem may occur for several different reasons.

Horizontal smears on the front of coated paper

If a lot of ink is used on plain or coated paper, the paper absorbs the ink quickly and expands. As the printheads move over the paper, the printheads may come into contact with the paper and smear the printed image. This problem is normally seen only on cut sheets of paper (not on roll paper).



Corrective Action

1. Check that the paper type loaded corresponds to the paper type selected in the front panel and in the software. You can verify the paper type selected through the Front Panel ([Main Menu / Paper menu / View loaded paper](#)).
2. Use a recommended paper type and the correct print settings.
3. If using sheet paper, try rotating the sheet 90 degrees. The orientation of the paper fibers may affect performance.

4. Try using a heavier paper type. When printing dense colors, it is recommended to use HP Heavyweight Coated Paper HP Super, Heavyweight Coated Paper or thicker Digital Fine Art papers.
5. Try to increase the margins by relocating the image to the center of the page with the software application being used.

Ink marks on the back of the paper

This can happen after a lot of border less printing, especially with nonstandard paper sizes. Ink residues on the platen are likely to mark the back of the paper.

Corrective Action

Clean the platen with a soft cloth. Clean each rib separately without touching the foam between the ribs.

Problems with the Edges of objects

Stepped or not sharp

The edges of objects or lines appear to be poorly defined or lighter in density than expected.



Corrective Action

If the print quality slider has already been set to **Quality** in the Print dialog, select the custom print quality options, and try setting the quality level to **Normal** (refer to the User's Guide for more information).

Darker than expected

The edges of objects seem darker than expected.



Corrective Action

If the print quality slider has already been set to **Quality** in the Print dialog, select the custom print quality options, and try setting the quality level to **Normal**.

Bronzing

When printing on photo paper with gray and black ink only a gloss differential problem can be encountered when light is directly reflected from the print, producing 'bronzed' reflections where ink has been laid.

Corrective Action

Use the Full set of inks option.

Black and white prints do not look neutral

Consider printing in grayscale (color options submenu inside the printing preference menu). See the User's Guide for more information.

Horizontal lines at the end of a cut sheet print

There is a type of defect that only affects the end of a print, within approximately 30 mm of the trailing edge of the paper. Some very thin horizontal lines may be seen across the print.

Corrective Action

1. Print the Service Image Diagnostics Print, and clean any printheads that need cleaning. Reprint the job in case the problem has been solved.
2. Try printing with roll paper.
3. Try using larger margins around the image.

Vertical lines of different colors

The print has vertical bands of different colors along it.

Corrective Action

1. Try using a heavier paper type. When printing dense colors, it is recommended to use HP Heavyweight Coated Paper HP Super, Heavyweight Coated Paper or thicker Digital Fine Art papers.
2. Use higher print quality settings (refer to the User's Guide for more information).

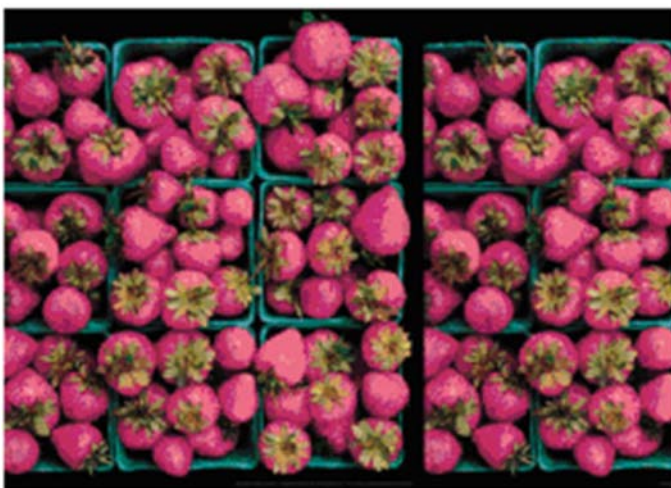
White spots on the print

White spots are seen on the print. This is probably due to paper fibers, dust, or loose coating material.

Corrective Action

1. Clean the paper manually with a brush before printing, to remove any loose fibers or particles.
2. Always keep the cover of the printer closed.
3. Protect paper rolls and sheets by storing them in bags or boxes.

Problems with Color Accuracy



Corrective Action

1. Ensure that the paper type being used has been color calibrated, which will give color consistency from print to print, and from Printer to Printer.
2. Check that printing is on the correct side of the paper.
3. Check that the appropriate print quality settings are being used (refer to the User's Guide for more information). Reprint the job in case the problem has been solved.
4. If the problem consists of color differences between your print and your monitor, please follow the instructions in the "How to calibrate your monitor" section of the HP Color Center. At this point, you may wish to reprint your job in case the problem has been solved.
5. Select suitable options in the application (refer to the User's Guide for more information).
6. Print the Service Image Diagnostics Print, and clean any printheads that need cleaning. Reprint the job in case the problem has been solved.

Color accuracy using EPS or PDF images in page layout applications

Page layout applications such as Adobe InDesign and QuarkXPress do not support color management of EPS, PDF, or grayscale files.

If these types of files have to be used, try to ensure that the EPS, PDF, or grayscale images are already in the same color space that is intended to be used later on in Adobe InDesign or QuarkXPress. For instance, if the final objective is to print the job in a press that follows the SWOP standard, at the time of creating the EPS, PDF or grayscale the image should be converted into SWOP.

Output Only Contains a Partial Print

If the output that was expected only contains a partial image, then try the following to resolve the problem:

1. Was the **Cancel** key pressed before all the data was received by the Printer? If so, send the file again and make sure that the **Cancel** key is not pressed.
2. The **I/O Timeout** setting may be too short. Increase the I/O timeout setting (Setup Menu/I/O Setup/IO Timeout) and then send the file again.
3. There might be a communications problem between the Printer and Computer. Check the USB or network cable between the computer and the Printer to make sure it is not damaged and is connected correctly.
4. Make sure that the software settings are correct for the current page size (e.g. long-axis prints).
5. If network software is being used, make sure it has not timed out.

Problems with Image Clipping

This normally indicates a discrepancy between the actual printable area on the loaded paper and the printable area as understood by the software. This kind of problem can often be identified before printing by previewing the print.

- Check the actual printable area for the paper size that is loaded. printable area = paper size – margins.
- Check what the software understands to be the printable area (which it may call “printing area” or “imageable area”). For example, some software applications assume standard printable areas that are larger than those used in this Printer.
- If a custom page size with very narrow margins has been defined, the printer may impose its own minimal margins, clipping the image slightly. Consider using a larger paper size, or border less printing.

- If the image contains its own margins, it may be possible to print it successfully by using the Clip Contents by Margins option.
- If a very long image needs to be printed on a roll, check that the software is capable of printing an image of that size.
- The page may have been rotated from portrait to landscape on a paper size that is not wide enough.
- If necessary, change the printable area in the software.
- If necessary, reduce the size of the image or document in your software application, so it fits between the margins.

Another Possible Explanation

Some applications, such as Adobe Photoshop, Adobe Illustrator, and CorelDRAW, use an internal 16-bit coordinate system which means that they cannot handle an image of more than 32,768 pixels. If you try to print an image larger than this from these applications, the bottom of the image will be clipped. In this case, the only way to print the whole image is to reduce the resolution so that the whole image requires fewer than 32,768 pixels. The HP-GL/2 printer driver contains an option called **Compatibility with 16-bit applications**, which can be used to reduce the resolution of such images automatically. This option can be found in the Advanced tab, under **Document Options > Printer Features**.

Some objects are missing from the printed image

Large quantities of data may be necessary to print a high-quality large format print job, and in some specific workflow there may be issues that can lead to some objects missing from the output.

Corrective Action

- In the **Advanced** tab, select **Document options, Printer features**, and set Send job as bitmap to **Enabled** (HP-GL/2 driver only).
- In the **Advanced** tab, select **Document options, Printer features**, and set 16-bit App. Compatibility to **Enabled**.
- In the **Advanced** tab, select **Document options, Printer features**, and set Max. Application resolution to **300**.

The above settings are mentioned for troubleshooting purposes and may adversely affect the final output quality or the time necessary to generate the print job. Therefore, they should be restored to their default values if they do not help to solve the problem.

When working under Mac OS, the above settings are not available. Instead, try reducing the resolution of bitmap images in the application software being used.

A PDF file is clipped or objects are missing

In older versions of Adobe Acrobat or Adobe Reader, large PDF files could be clipped or lose some objects when printing with the HP-GL/2 driver at high resolution. Upgrade the Adobe Acrobat or Adobe Reader software to the latest version. From version 7 onwards, these problems should be solved.

2 System Error Codes

- [Introduction](#)
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Introduction

System error codes are hexa-decimal based numbers generally caused by internal system errors. The following pages contain 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 (See Note below). Check firmware in Setup Menu / Information Menu / Show Printer Information.
- The complete error number (See Note below).
- The Service Configuration Print.
- The Current configuration sheet.
- Which software application the customer is using (name, version, etc.).


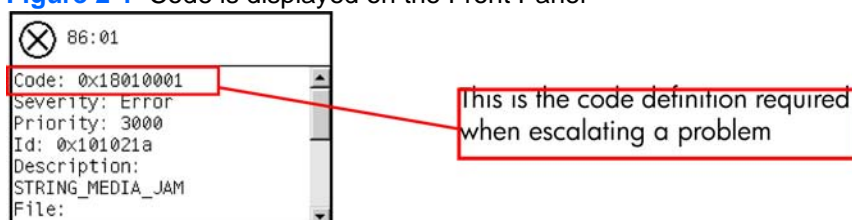

 **NOTE:** When reporting the System Error Code, make sure that you supply the full Internal Error Code and the firmware version. Without this information, HP Support Personnel cannot help you. To view the Internal Error Code, hold the UP key and press the **CANCEL** key at the same when the System Error.

Figure 2-1 Code is displayed on the Front Panel



Continuable and Non-Continuable Error Codes

Some of the Error Codes are continuable, which means you can press **OK** on the front-panel and continue working with the Printer. Non-Continuable Error Codes do not allow you to continue working with the Printer, in this case power the Printer OFF and ON again and see if the System Error disappears. If the Error Code reappears, then the Printer requires an on-site visit in order to resolve the problem.

 **NOTE:** Even though the customer can continue working with a Continuable Error Code, an on-site visit should still be planned to troubleshoot the problem.

System Error Code Brief Descriptions

Reading a System Error Code

System Error Codes explain which component/system is failing and what action should be taken to resolve the problem. System Error Codes are displayed directly on the front panel (but can also be seen on the Information Page) and have been defined in the format **XX.YZ.** or **XX.n:YZ.m.**

- **XX:** Can be a malfunctioning subsystem or process (2 digits).
- **n:** Subsystem or process Index (if more than one used in the product) - Optional.
e.g. Identify the Ink Supply (color and number).
- **Y:** Who should perform the action (1 digit) - (0 for User or 1 for Service Engineer).
- **Z:** Action to perform (1 digit).

System Error Code Table

The following table explains the XX part of the System Error Code or Warning:

Code	Component/System
01.0	Main PCA/Electronics module
01.1	Add-on Electronics module (printmech)
01.2	Print Mech PCA
02.1	Carriage PCA
02.2	Carriage PCA
03	Power supply
05.1	Fan of the Formatter
06	Formatter
08	Front panel
11	Trailing cable
12.n	Carriage flex circuit n to pens
21	Service station
21.1	Service station
22.0	Bongo error BPS0 (ISS Left)
22.1	Bongo error BPS1 (ISS Left)
22.2	Bongo error BPS2 (ISS Right)
24	Tube assembly (IDS)

26.n	Ink Cartridge (color = n)
27	Printhead error
31	Cutter
38	Output Tray
41	Paper-axis motor
41.1	Paper-axis motor
42	Scan-axis motor
44	Aerosol fan
47	Star wheel motor
48	PPS mechanism
51	Window Sensor
52	Drop detector
55	Line sensor
56	Drive roller analog encoder sensor
58	Color sensor (ESP)
61	Error job
62	PC Interface
63	Input/output through LAN card
64	Input/output through USB port
65	Input/output (not known what port)
66	Input/output (not known what port)
67	Input/output through FireWire port
68	Loss of engine counters tracking
71	Memory management
71.19	PrintMech PCA/Formatter
72	Firmware error
73	Servo
74	Firmware upgrade
74.1	Media Profile Update
75.1	Preventive Maintenance kit #1
75.2	Preventive Maintenance kit #2
76	Disk Full
77	Web access application
78	Borderless
78.1	Media Settings
79	Assertion (uncontrolled FW error)
79.1	Recoverable Firmware Error
81	Media advance

81.1	Media advance
84	Roll Feed
85	Media-axis encoder reading
86	Carriage Movement
87	Scan-axis encoder reading
93	Ink Pumping
94	Color calibration
94.1	Profiler
95	Printhead alignment
97	Paper advance calibration


Corrective Actions Table

The following table explains the YZ part of the System Error Code or Warning:

Code	Recovery Action	Response
00	Replace	Possible for customer to perform action
01	Reseat/Reconnect/Clean/Adjust (manually)	
02	Calibrate/Adjust (using Automatic Process)	
03	Power OFF and Restart the Printer	
04	Upgrade System Firmware	
05	Upgrade Driver or Computer Software	
06	Add Accessory	
07	Escalate	
08	Send Plot Again	
09	Wrong Part Installed	
10	Replace	hp qualified personnel assistance required
11	Reseat/Reconnect/Clean/Adjust (manually)	
12	Calibrate/Adjust (using Automatic Process)	
13	Power OFF	
14	Upgrade System Firmware	
15	Upgrade Driver or Computer Software	
16	Add Accessory	
17	Escalate	
18	Send Plot Again	
19	Wrong Part Installed	

System Error Codes - Full Descriptions

This sections describes each of the system error codes and warnings that could be encountered while using the printer and provides the remedial action required to solve the problem detected.

 **NOTE:** Only replace one component at a time and check if the error has gone before replacing another component. Using this procedure you will be able to determine exactly which component failed.

01.0:YZ

Cause	Solution
HCI queue does not end after 2 seconds.	Try the following: <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• If the System Error continues, replace the Formatter ⇒ See Formatter on page 296.• If the System Error continues, replace the Main PCA ⇒ See Electronics Module (Main PCA and PSU) on page 298.

01.1:YZ

Cause	Solution
NVM backup: not found, read, write or read back error.	Try the following: <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• If the System Error continues, replace the PrintMech PCA ⇒ See PrintMech PCA on page 220• If the System Error continues, replace the Formatter ⇒ See Formatter on page 296.

01.2:YZ

Cause	Solution
PrintMech PCA fault or NVM backup failure.	Try the following: <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• If the System Error continues, replace the PrintMech PCA ⇒ See PrintMech PCA on page 220.

02.1:YZ

Cause	Solution
Encoder seems to be wrong.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Check that the Carriage Assembly stopper is correctly installed.• Replace the Carriage Assembly ⇒ See Carriage Assembly (with or without Trailing Cable) on page 244.• If the System Error continues, replace the Encoder Strip ⇒ refer Encoder Strip (with spring and attachment nut) on page 231 and Encoder Sensor ⇒ refer Encoder Disk and Encoder Sensor on page 308.

02.2:YZ

Cause	Solution
Problem with the Carriage PCA.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Check that the Trailing Cable is not damaged.• Check that the Trailing Cable is correctly connected between the Main PCA and Carriage PCA.• Replace the Carriage Assembly ⇒ refer Carriage Assembly (with or without Trailing Cable) on page 244.• If the System Error continues, replace the Formatter ⇒ refer Formatter on page 296.

03:YZ

Cause	Solution
Problem with Power Supply Unit.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Perform the Electronics Module Test Diagnostic to troubleshoot the problem further ⇒ 3. Electronics Module on page 90.• If the System Error continues, replace the Power Supply Unit (PSU) ⇒ refer Electronics Module (Main PCA and PSU) on page 298.

05:1:YZ

Cause	Solution
CPU Fan is stopped or burnt.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Replace the Power Supply Unit (PSU) ⇒ refer Electronics Module (Main PCA and PSU) on page 298.• If the System Error continues, replace the Main PCA ⇒ refer Electronics Module (Main PCA and PSU) on page 298.

06:YZ

Cause	Solution
Main NVM failure - not detected, read/write failed or readback error.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• If the System Error continues, replace the Formatter ⇒ refer Formatter on page 296.

08:YZ

Cause	Solution
Problem with the Front Panel.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Check that the Front Panel interface cable is not damaged and is correctly connected between the Main PCA and the Front Panel.• Check that the memory module in the Formatter is installed correctly• Check that the connections between the Formatter, the Formatter and the Formatter are not damaged and are correctly connected.• Check that the Printer has the latest Firmware version. If not, update the Firmware to the latest version.• If the System Error continues, replace the Main PCA ⇒ refer Electronics Module (Main PCA and PSU) on page 298.• If the System Error continues, replace the Formatter ⇒ refer Formatter on page 296.• If the System Error continues, replace the Front Panel ⇒ refer Front Panel on page 203.

11:YZ

Cause	Solution
Trailing Cable does not seem to be detected.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Check that the Trailing Cable is not damaged.• Check that the Trailing Cable is correctly connected between the Main PCA and Carriage PCA.• If the System Error continues, replace the Formatter ⇒ refer Formatter on page 296.• If the System Error continues, replace the Main PCA ⇒ refer Electronics Module (Main PCA and PSU) on page 298.• If the System Error continues, replace the Carriage PCA ⇒ refer Carriage PCA on page 276.

12.n:YZ

Cause	Solution
Carriage & PCA Main doesn't detect pens.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Check that the Trailing Cable is not damaged.• Check that the Trailing Cable is correctly connected between the Main PCA and Carriage PCA.• Check that the Printhead has not failed and is not erroneous.• Check that the Flex circuit contacts and Printhead contacts are clean.• If the System Error continues, replace the Carriage PCA ⇒ refer Carriage PCA on page 276.• If the System Error continues, replace the Main PCA ⇒ refer Electronics Module (Main PCA and PSU) on page 298.

21:YZ

Cause	Solution
Fail moving Service Station.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Check the Primer Tubes. Reconnect the power cord and power On the Printer.• Make sure that the Service Station path is clear. Remove any visible obstacles (e.g. screws, plastic parts, etc...) restricting the movement of the Service Station.• Perform the Service Station diagnostic test to troubleshoot the problem further ⇒ 8. Service Station on page 110.• If the System Error continues, replace the Service Station ⇒ refer Service Station on page 214.• If the System Error continues, replace the PrintMech PCA ⇒ refer PrintMech PCA on page 220.

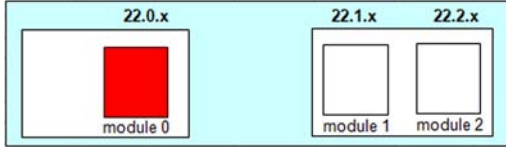
21.1:YZ

Cause	Solution
Service Station servo shutdown.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Check the Primer Tubes. Reconnect the power cord and power On the Printer.• Perform the Service Station diagnostic test to troubleshoot the problem further ⇒ 8. Service Station on page 110.• If the System Error continues, replace the Service Station ⇒ refer Service Station on page 214.• If the System Error continues, replace the PrintMech PCA ⇒ refer PrintMech PCA on page 220.

22.0:YZ

Cause

ISS Left BPS0 error.(Supplies 0, 1, 2) (Module 0 left).



Solution

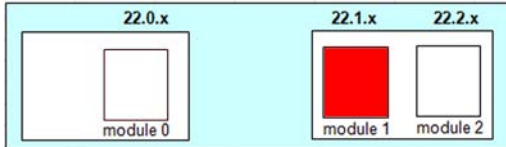
Try the following:

- Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.
- Check that the cables between the Left Ink Supply Station and Main PCA the are not damaged and are correctly connected.
- Perform the Ink Delivery System diagnostic test to troubleshoot the problem further ⇒ [7. Ink Delivery System \(IDS\) on page 106.](#)
- If the System Error continues, replace the Left Ink Supply Station ⇒ refer [Left Ink Supply Station on page 284.](#)
- If the System Error continues, replace the Main PCA ⇒ refer [Electronics Module \(Main PCA and PSU\) on page 298.](#)

22.1:YZ

Cause

ISS Left BPS1 error.(Supplies 3, 4, 5)(Module1 middle right).

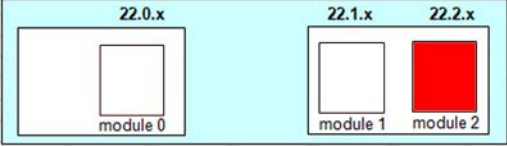


Solution

Try the following:

- Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.
- Check that the cables between the Left Ink Supply Station and PrintMech PCA the are not damaged and are correctly connected.
- Perform the Ink Delivery System diagnostic test to troubleshoot the problem further ⇒ [7. Ink Delivery System \(IDS\) on page 106.](#)
- If the System Error continues, replace the Right Ink Supply Station ⇒ refer [Right Ink Supply Station on page 280](#)
- If the System Error continues, replace the PrintMech PCA ⇒ refer [PrintMech PCA on page 220.](#)

22.2:YZ

Cause	Solution
<p>ISS Right BPS0 error.(Supplies 0, 1, 2)(Module 2 far right).</p> 	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Check that the cables between the Right Ink Supply Station and PrintMech PCA the are not damaged and are correctly connected.• Perform the Ink Delivery System diagnostic test to troubleshoot the problem further ⇒ 7. Ink Delivery System (IDS) on page 106.• If the System Error continues, replace the Right Ink Supply Station ⇒ refer Right Ink Supply Station on page 280.• If the System Error continues, replace the Main PCA ⇒ refer Electronics Module (Main PCA and PSU) on page 298.

24:YZ

Cause	Solution
<p>Ink Setup failure (Ink Delivery System (IDS) Tubes purge failed).</p>	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Check that the cables between the Right Ink Supply Station and PrintMech PCA the are not damaged and are correctly connected.• Try purging the Ink Supply Tubes again once the Printer has been restarted.• Install new Cartridges in the printer and try purging the Ink Supply Tubes again.

26.n:YZ (color = n)

Cause	Solution
<p>Order of Ink Supplies incorrect.</p>	<p>Try the following:</p> <ul style="list-style-type: none">• Remove the Ink Supply Cartridges and check that they are the correct ones for this printer and are in the proper order.• Check that the Printer has the latest firmware. If not, update the firmware to the latest version.

27:YZ

Cause	Solution
An error has occurred in Printhead detection.	Try the following: <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Remove the Printheads from the Carriage Assembly and reinsert them.• Replace the Printheads.• Replace the Carriage Cover (Flex Circuit) ⇒ refer Carriage Cover (includes Carriage Latch) on page 272.• Replace the Carriage PCA ⇒ refer Carriage PCA on page 276.• Replace the Formatter ⇒ refer Formatter on page 296.

29.n:YZ

Cause	Solution
An error has occurred in Printhead detection.	Try the following: <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Remove the Printheads from the Carriage Assembly and reinsert them.• Replace the Printheads.• Replace the Carriage Cover (Flex Circuit) ⇒ refer Carriage Cover (includes Carriage Latch) on page 272.• Replace the Carriage PCA ⇒ refer Carriage PCA on page 276.• Replace the Formatter ⇒ refer Formatter on page 296.

31:YZ

Cause	Solution
An error has been detected with the cutter.	Try the following: <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Check the Cutter Assembly for blockage or any other obvious problems.• Replace the Cutter Assembly ⇒ refer Cutter Assembly on page 199.

38:YZ

Cause	Solution
An error has been detected with the Media Output Tray.	Try the following: <ul style="list-style-type: none"><li data-bbox="853 324 1444 414">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.<li data-bbox="853 425 1444 481">• Check the Media Output Assembly for blockage or any other obvious problems.<li data-bbox="853 504 1444 571">• Replace the Media Output Assembly ⇒ refer Media Output Assembly on page 178.

41:YZ

Cause	Solution
Electrical fault or current limit in Media-Axis Motor.	Try the following: <ul style="list-style-type: none"><li data-bbox="853 806 1444 896">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.<li data-bbox="853 907 1444 1052">• Open the Window and check for any visible obstacles restricting the movement of the Media Advance Roller. If there is a wrinkled mass of media inside the paper path, lift the Pinch wheels (using Media Lever) and clear the obstruction.<li data-bbox="853 1064 1444 1131">• Perform the Paper Drive diagnostic test to troubleshoot the problem further ⇒ 2. Paper Drive on page 87.<li data-bbox="853 1142 1444 1209">• Check that the Media Advance Drive cable is not damaged and is correctly connected to the Main PCA.<li data-bbox="853 1220 1444 1288">• Replace the Media Advance Drive ⇒ refer Media Advance Drive on page 311.<li data-bbox="853 1299 1444 1400">• If the System Error continues, replace the Main PCA ⇒ refer Electronics Module (Main PCA and PSU) on page 298.

41.1:YZ

Cause	Solution
Electrical fault or current limit in Media-Axis Motor.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Open the Window and check for any visible obstacles restricting the movement of the Media Advance Roller. If there is a wrinkled mass of media inside the paper path, lift the Pinch wheels (using Media Lever) and clear the obstruction.• Perform the Paper Drive diagnostic test to troubleshoot the problem further ⇒ 2. Paper Drive on page 87.• Check that the Media Advance Drive cable is not damaged and is correctly connected to the Main PCA.• Replace the Media Advance Drive ⇒ refer Media Advance Drive on page 311.• If the System Error continues, replace the Main PCA ⇒ refer Electronics Module (Main PCA and PSU) on page 298.

42:YZ

Cause	Solution
Electrical fault or current limit in Scan-Axis Motor.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Open the Window and check for any visible obstacles restricting the movement of the Media Advance Roller. If there is a wrinkled mass of media inside the paper path, lift the Pinch wheels (using Media Lever) and clear the obstruction.• Perform the Scan Axis diagnostic test to troubleshoot the problem further ⇒ 1. Scan Axis on page 76.• Check that the Scan-Axis Motor cable is not damaged and is correctly connected to the PrintMech PCA.• Replace the Scan-Axis Motor ⇒ refer Scan-Axis Motor on page 257.• If the System Error continues, replace the PrintMech PCA ⇒ refer PrintMech PCA on page 220.

44:YZ

Cause	Solution
Electrical fault or current limit in Scan-Axis Motor.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Check that the Aerosol Fan cable is not damaged and is correctly connected to the PrintMech PCA.• Replace the Aerosol Fan Assembly ⇒ refer Aerosol Fan Assembly on page 219.• If the System Error continues, replace the PrintMech PCA ⇒ refer PrintMech PCA on page 220.

47:YZ

Cause	Solution
Star wheels motor error.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Check that the Starwheel Assembly cable is not damaged and is correctly connected to Main PCA.• Open the Window and check for any visible obstacles restricting the movement of the Starwheel Assembly, then clear the obstruction.• Perform the Scan Axis Starwheel diagnostic test to troubleshoot the problem further ⇒ Star Wheel Lifter test on page 76.• Replace the Starwheel Motor ⇒ refer Starwheel Motor on page 325.• If the System Error continues, replace the Main PCA ⇒ refer Electronics Module (Main PCA and PSU) on page 298.

48:YZ

Cause	Solution
PPS system failure.	Try the following: <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Check that the Pen to Paper Space (PPS) Solenoid cable is not damaged and is correctly connected to the PrintMech PCA.• Perform the Scan Axis PRS diagnostic test to troubleshoot the problem further ⇒ PRS Test on page 78.• Replace the Pen to Paper Space (PPS) Solenoid ⇒ refer Pen to Paper Space (PPS) Solenoid on page 221.• If the System Error continues, replace the PrintMech PCA ⇒ refer PrintMech PCA on page 220.

51:YZ

Cause	Solution
Window Sensor failure.	Try the following: <ul style="list-style-type: none">• Check that the Window Position Sensor cable is not damaged and is correctly connected to the PrintMech PCA.• Perform the Sensors Test to troubleshoot the problem further ⇒ 5. Sensors on page 101.• Replace the Window Position Sensor ⇒ refer Window Position Sensor on page 208.

52:YZ

Cause	Solution
The printer has detected a problem with the Drop Detector.	<p data-bbox="853 271 1021 309">Try the following:</p> <ul data-bbox="853 324 1445 902" style="list-style-type: none"><li data-bbox="853 324 1445 414">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.<li data-bbox="853 430 1445 497">• Check that the Drop Detector cable is not damaged and is correctly connected to the PrintMech PCA.<li data-bbox="853 512 1445 580">• Check that the Service Station cable is not damaged and is correctly connected to the PrintMech PCA.<li data-bbox="853 595 1445 663">• Replace the Drop Detector ⇒ refer Drop Detector on page 217.<li data-bbox="853 678 1445 745">• Reset the Calibration Flag of the Drop Detector ⇒ Drop Detector Calibration on page 145.<li data-bbox="853 761 1445 828">• If the System Error continues, replace the PrintMech PCA ⇒ refer PrintMech PCA on page 220.<li data-bbox="853 844 1445 902">• If the System Error continues, replace the Formatter ⇒ refer Formatter on page 296.

55:YZ

Cause	Solution
Problem with the Line Sensor (Tetris). The printer has detected a failure to access Line Sensor EEPROM).	<p data-bbox="853 1079 1021 1117">Try the following:</p> <ul data-bbox="853 1133 1445 1525" style="list-style-type: none"><li data-bbox="853 1133 1445 1223">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.<li data-bbox="853 1238 1445 1305">• Perform the Carriage Test to troubleshoot the problem further ⇒ 4. Carriage Assembly on page 95.<li data-bbox="853 1321 1445 1359">• Check the Line Sensor connections to the Carriage PCA.<li data-bbox="853 1375 1445 1442">• Replace the Line Sensor ⇒ refer Line Sensor on page 267.<li data-bbox="853 1458 1445 1525">• If the System Error continues, replace the Carriage PCA ⇒ refer Carriage PCA on page 276.

56:YZ

Cause	Solution
Drive roller analog encoder sensor fail or calibration failed.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Perform the Media Path Test to troubleshoot the problem further ⇒ 2. Paper Drive on page 87.• Replace the Encoder Disk and Encoder Sensor ⇒ refer Encoder Disk and Encoder Sensor on page 308.• If the System Error continues, replace the Main PCA ⇒ refer Electronics Module (Main PCA and PSU) on page 298.

58:YZ

Cause	Solution
The Color Sensor (Spectrophotometer-ESP) of the printer is not working well.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• The Color Sensor (ESP) shutter has not opened.• Perform the Color Sensor diagnostic test to troubleshoot the problem further ⇒ 6. Color Sensor (ESP) on page 104.• If the System Error continues, replace the Color Sensor (ESP) ⇒ refer Color Sensor (ESP) on page 262.

61:YZ

Cause	Solution
The file format is incorrect and the Printer cannot process the job.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Check the graphic language setting of the Printer (Refer to the User's Guide).• Resend the file to the printer.• Check that the Printer has the latest Firmware version. If not, update the Firmware to the latest version.• The PostScript™ fonts are missing. Upgrading the Firmware will re-install the fonts.• The file cannot be printed because it is password protected. Resend the file without password protection.

62:YZ

Cause	Solution
PC Interface	Try the following: <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Get the latest version of the firmware.

63:YZ

Cause	Solution
Input/Output problem through the Network Card.	Try the following: <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Check that the Network cable is correctly connected to the Formatter.• Check that the Printer has the latest Firmware version. If not, update the Firmware to the latest version.• If the System Error continues, replace the Formatter ⇒ refer Formatter on page 296.• If the System Error continues, replace the Main PCA ⇒ refer Electronics Module (Main PCA and PSU) on page 298.

64:YZ

Cause	Solution
Input/Output problem through the USB Port.	Try the following: <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Check that the USB cable is correctly connected to the Printer.• Check that the Printer has the latest Firmware version. If not, update the Firmware to the latest version.• If the System Error continues, replace the Formatter ⇒ refer Formatter on page 296.• If the System Error continues, replace the Main PCA ⇒ refer Electronics Module (Main PCA and PSU) on page 298.

65:YZ

Cause	Solution
Memory Driver Internal I/O error, I/O Socket Manager Internal I/O error.	Try the following: <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Check that the unknown port cable is correctly connected to the Printer.• Check that the Printer has the latest Firmware version. If not, update the Firmware to the latest version.• If the System Error continues, replace the Formatter ⇒ refer Formatter on page 296.• If the System Error continues, replace the Main PCA ⇒ refer Electronics Module (Main PCA and PSU) on page 298.

66:YZ

Cause	Solution
Cannot print file on current paper type. The paper type has changed since the file was sent, so the file cannot be printed on the paper type currently loaded.	Try the following: <ul style="list-style-type: none">• Resend the file to be printed on the current paper type.• Change the paper type to the type that was loaded when the file was originally sent.

67:YZ

Cause	Solution
Input/Output problem through a Firewire Port.	Try the following: <ul style="list-style-type: none">• Check that the firewire cable is correctly connected to the Printer.• Check that the Printer has the latest Firmware version. If not, update the Firmware to the latest version.• If the System Error continues, replace the Main PCA ⇒ refer Electronics Module (Main PCA and PSU) on page 298.

68:YZ

Cause	Solution
Loss of engine counters tracking.	Try the following: <ul style="list-style-type: none">• Reboot the printer. The printer will continue to function correctly, but the life counters will not continue counting until you restart the printer.

71:YZ

Cause	Solution
Out of memory failure.	Try the following: <ul style="list-style-type: none">It is recommended that you remove any unnecessary files from the Hard Disk Drive of the Formatter using the Web Server.

71:19

Cause	Solution
Default Serial Number found in the main and backup NVM. It seems that both the PrintMech PCA and Hard Disk Drive have been replaced together.	Try the following: <ul style="list-style-type: none">Perform the "Error 71:19 Recovery" Service Utility ⇒ 13. Error 71:19 Recovery on page 120. <p>NOTE: You MUST NEVER replace both the Formatter, or Hard Disk and the PrintMech PCA at the same time. If both parts need to be replaced, you MUST first replace one part and then power ON the Printer until it completely initializes. Then you can power OFF the Printer and replace the other part.</p>

72:YZ

Cause	Solution
Generic Firmware error.	Try the following: <ul style="list-style-type: none">Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.Check that the Printer has the latest Firmware version. If not, update the Firmware to the latest version.

73:YZ

Cause	Solution
Servo Error.	Try the following: <ul style="list-style-type: none">Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.Check that the Printer has the latest Firmware version. If not, update the Firmware to the latest version.Perform the Scan Axis Test to troubleshoot the problem further ⇒ 1. Scan Axis on page 76.If the System Error continues, perform the Media Drive diagnostic test to troubleshoot the problem further ⇒ 2. Paper Drive on page 87.

74:YZ

Cause	Solution
Error uploading firmware update file.	Try the following: <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Make sure the connection between the computer and the printer is functioning properly.• Try to update the Firmware again.

74.1:YZ

Cause	Solution
Error uploading media profile update file.	Try the following: <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Make sure the connection between the computer and the printer is functioning properly.• Try to upload the media profile update file again.

75.1:YZ

Cause	Solution
Preventive Maintenance Kit #1 counter active (Scan Axis Components, Ink Supply Tubes, Trailing Cable, Carriage).	Try the following: <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Change the Belt Assembly, the Scan-Axis Motor, the Ink Supply Tubes, Carriage Assembly (this does not include the Carriage PCA but it does include the Trailing Cable). You should change Preventive Maintenance Kit #1. Refer to Preventive Maintenance Kit #1 on page 330.• Once the parts have been changed, use the Service Menu to reset the counters that affect PMKit #1.

75.2:YZ

Cause	Solution
Preventive Maintenance Kit #2 counter active.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Change the Left Spittoon foams and Belt Assembly, the Scan-Axis Motor, the Ink Supply Tubes, and Carriage Assembly (this does not include the Carriage PCA and Color Sensor (ESP), but it does include the Trailing Cable). <p>You should change Preventive Maintenance Kit #2. Refer to Preventive Maintenance Kit #2 on page 331.</p> <ul style="list-style-type: none">• Once the parts have been changed, use the Service Menu to reset the counters that affect PMKit #2. See 4. Reset Life Counters on page 131.

76:YZ

Cause	Solution
Hard disk drive is full.	<p>Try the following:</p> <ul style="list-style-type: none">• Remove any unnecessary files from the hard disk using the web server.

77:YZ

Cause	Solution
Web access application. The web server is not functioning correctly.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Check that the Printer has the latest Firmware version. If not, update the Firmware to the latest version.

78:YZ

Cause	Solution
Borderless printing not possible. Setting ignored.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Send the plot again.

78.1:YZ

Cause	Solution
Media settings area missing in media settings file.	<p>Try the following:</p> <ul style="list-style-type: none"> • Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer. • Check that the Printer has the latest Firmware version. If not, update the Firmware to the latest version. • Update the OMES.

79:YZ

Cause	Solution
Generic Firmware error.	<p>Try the following:</p> <ul style="list-style-type: none"> • Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer. • Check that the Printer has the latest Firmware version. If not, update the Firmware to the latest version.

79.1:YZ

Cause	Solution
Recoverable firmware error that does not stop the printing process.	<p>Try the following:</p> <ul style="list-style-type: none"> • Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer. • Check that the Printer has the latest Firmware version. If not, update the Firmware to the latest version.

81:YZ

Cause	Solution
Problem with paper advance.	<p>Try the following:</p> <ul style="list-style-type: none"> • Open the Window and check for any visible obstacles restricting the movement of the Drive Roller. If there is a wrinkled mass of media inside the paper path, lift the Pinchwheels (using the Media Lever) and clear the obstruction. • Perform the Media Drive diagnostic test to troubleshoot the problem further ⇒ 2. Paper Drive on page 87. • Check the connections on the Main PCA; the Media Advance Drive is connected to the connector labeled Paper Motor. • If the System Error continues, replace the Media Advance Drive ⇒ Media Advance Drive on page 311.

81.1:YZ

Cause	Solution
Problem finding the Drive Roller zero.	Try the following: <ul style="list-style-type: none">• Open the Window and check for any visible obstacles restricting the movement of the Drive Roller. If there is a wrinkled mass of media inside the paper path, lift the Pinchwheels (using the Media Lever) and clear the obstruction.• Perform the Media Drive diagnostic test to troubleshoot the problem further ⇒ 2. Paper Drive on page 87.• Check the connections on the Main PCA; the Media Advance Drive is connected to the connector labeled Paper Motor.• If the System Error continues, replace the Media Advance Drive ⇒ Media Advance Drive on page 311.

84:YZ

Cause	Solution
Back tension servo shutdown (roll feeding).	Try the following: <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• If the problem persists, contact HP support.

85:YZ

Cause	Solution
Problem finding the Drive Roller zero.	Try the following: <ul style="list-style-type: none">• Perform the Media Drive diagnostic test to troubleshoot the problem further ⇒ 2. Paper Drive on page 87.

86:YZ

Cause	Solution
Possible Paper Jam.	Try the following: <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• If the problem persists, contact HP support. Open the Window and check for any visible obstacles restricting the movement of the Drive Roller. If there is a wrinkled mass of media inside the paper path, lift the Pinch wheels (using the Media Lever) and clear the obstruction.

87:YZ

Cause	Solution
Problem finding the Scan-axis encoder reading.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Movement jam.• Possible paper jam.• Mechanical Initiator scan axis measure error.• Check that the Scan-Axis Motor is correctly connected.• Check that the Encoder Sensor is correctly connected.• Remove the Encoder Strip and clean it.• Perform the Scan Axis diagnostic test to troubleshoot the problem further ⇒ 1. Scan Axis on page 76.

93:YZ

Cause	Solution
Unable to pressurize the Ink Delivery System.	<p>Try the following:</p> <ul style="list-style-type: none">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.• Perform the Ink Delivery System diagnostic test to further troubleshoot the problem. ⇒ 7. Ink Delivery System (IDS) on page 106.• If the problem persists, contact HP support.

94:YZ

Cause	Solution
Color calibration Error.	<p>Try the following:</p> <ul style="list-style-type: none">• Profiling failed due to a different error (not algorithm / data processing).• Perform the Color Sensor (ESP) calibration. You must use glossy paper for this calibration.• If the System Error continues, replace the Carriage PCA ⇒ refer Carriage PCA on page 276.• If the System Error continues, replace the Formatter ⇒ refer Formatter on page 296.

94.1:YZ

Cause	Solution
Profiling algorithm failed.	<p data-bbox="852 271 1023 306">Try the following:</p> <ul data-bbox="852 322 1447 622" style="list-style-type: none"><li data-bbox="852 322 1447 383">• Profiling failed due to a different error (not algorithm / data processing).<li data-bbox="852 398 1447 459">• Perform the Color Sensor (ESP) calibration. You must use glossy paper for this calibration.<li data-bbox="852 474 1447 535">• If the System Error continues, replace the Carriage PCA ⇒ refer Carriage PCA on page 276.<li data-bbox="852 551 1447 622">• If the System Error continues, replace the Formatter ⇒ refer Formatter on page 296.

98:YZ

Cause	Solution
Automatic backup print mode enabled.	<p data-bbox="852 808 1023 844">Try the following:</p> <ul data-bbox="852 860 1447 996" style="list-style-type: none"><li data-bbox="852 860 1447 949">• Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.<li data-bbox="852 965 1447 996">• Recover the printheads.


3 Diagnostic Menu

Diagnostic Mode UP + OK

- [1. Scan Axis on page 76](#)
 - [Star Wheel Lifter test on page 76](#)
 - [PRS Test on page 78](#)
 - [Scan Axis Test on page 80](#)
 - [Cutter test on page 84](#)
- [2. Paper Drive on page 87](#)
- [3. Electronics Module on page 90](#)
- [4. Carriage Assembly on page 95](#)
- [5. Sensors on page 101](#)
- [6. Color Sensor \(ESP\) on page 104](#)
- [7. Ink Delivery System \(IDS\) on page 106](#)
 - [Ink Delivery System on page 106](#)
 - [Check Ink Supplies on page 109](#)
 - [Check Leakage on page 110](#)
- [8. Service Station on page 110](#)
- [9. I/O Information on page 117](#)
- [10. Unit Information on page 117](#)
- [11. EEROM Reset on page 119](#)
- [12. Set Unit Configuration on page 120](#)
- [13. Error 71:19 Recovery on page 120](#)
 - [Set Serial Number on page 120](#)
 - [Select Right S/N on page 122](#)

Introduction

This chapter explains how to use the built-in diagnostic menus and what to do if any of the Service Tests FAIL.


 **NOTE:** 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 refer to the chapter [System Error Codes on page 46](#).

Phone Support

 **NOTE:** 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. Remember that the Key combination for the Customer to Enter the Service Tests and Utilities is different from the one that the Customer Engineer will use.

Service Tests (Diagnostics)

The following is a list of all internal Service Tests available in the Printer. Refer [Entering the Service Tests Menu on page 76](#) for instructions to enter the Service Tests menu.

1. Scan Axis Test ⇒ Refer [1. Scan Axis on page 76](#).

The purpose of this test is to verify the operation of components related to the Scan Axis. The tests verify the operation of the:

- Starwheel lifter test
- PRS
- Scan Axis
- Cutter

2. Paper Drive Test ⇒ Refer [2. Paper Drive on page 87](#).

The purpose of this test is to verify the operation of components related to the Media Axis.

3. Electronics Module ⇒ Refer [3. Electronics Module on page 90](#)

The purpose of this test is to verify the operation of the:

- Main PCA (Formatter).
- Printer Configuration.
- Power Supply Unit.
- PrintMech.
- Carriage Communication.

4. Carriage Assembly Test ⇒ Refer [4. Carriage Assembly on page 95](#).

The purpose of this test is to verify the operation of the Carriage Assembly.

5. Sensors Test ⇒ Refer [5. Sensors on page 101](#).

The purpose of this test is to verify the operation of the following Sensors:

- Window Sensor.
- Media Lever Sensor.
- Media Sensor.

6. Color Sensor Test (SOL) ⇒ Refer [6. Color Sensor \(ESP\) on page 104](#).

The purpose of this test is to verify the operation of the Color Sensor (ESP).

7. Ink Delivery Test ⇒ Refer [7. Ink Delivery System \(IDS\) on page 106](#).

The purpose of this test is to verify the operation of components related to the Ink Delivery System. The tests verify the operation of the:

- The Ink Delivery System
- The Ink Supplies
- Check for leakages

8. Service Station Test ⇒ Refer [8. Service Station on page 110](#).

The purpose of this test is to verify the operation of the Service Station.

9. I/O Information ⇒ Refer [9. I/O Information on page 117](#).

The purpose of this test is to verify the TCP/IP configuration.

10. Unit Information ⇒ Refer [10. Unit Information on page 117](#).

This option allows you to view the Firmware Version, Part Number, and Serial Number of the Printer.

11. EEROM Reset ⇒ Refer [11. EEROM Reset on page 119](#).

The purpose of this test is to reset the EEROM values.


12. Set Unit Configuration ⇒ Refer [12. Set Unit Configuration on page 120](#).

Not implemented.

13. Error 71:19 Recovery ⇒ Refer [13. Error 71:19 Recovery on page 120](#).

The purpose of this utility is to set the Serial Number and Part Number in case both the Formatter and the PrintMech PCA are replaced at the same time or select the correct Serial Number and Part Number if only one of the components has been replaced.

Entering the Service Tests Menu

 **NOTE:** In order to enter the Service Utility Menu, please refer to the instructions on [Entering the Service Utilities Menu on page 124](#).

1. Make sure the printer is switched OFF from the power switch on the front of the printer and **NOT** from the power switch on the back of the printer.
2. For On-Site Engineers, hold the **Up** arrow key and the **OK** key down and switch the printer **ON** using the front power switch. Wait until the LED of the power switch stops flashing (usually after 5 seconds) before releasing ALL three keys.
3. Once inside the Service Tests Menu use the **Arrow** keys to scroll through the “Service Tests” selections. Press the **OK** key to begin a specific test when the required Service Test is highlighted.

 **NOTE:** Contact Phone support \ On-site support for further assistance.

NOTE: The Service Tests work in a special Mode which does NOT require the full Initialization of the Printer. Therefore it is important that once you have finished with the Service Tests, you **MUST** power OFF the Printer and Power ON again before trying to print or before executing another Service Test.

NOTE: In some cases a quick press of a button may not be recognized by the Printer. When pressing a button, be sure to press it deliberately and all the way to the bottom of its travel.

NOTE: If the Printer hangs up during a test, switch the Printer OFF and restart from step 1.

1. Scan Axis


The complete Scan Axis test consists of individual tests for the different components related to the Scan Axis. The subsystem that are included in this assembly are:

- Star Wheel Lifter
- Automatic PPS Adjustment
- Scan Axis Servosystem
- Cutter

You must perform the Scan-Axis Test after:

- System Error Code 87:XZ.
- System Error Code 42:XZ.
- System Error Code 47:XZ.
- System Error Code 73:XZ.
- System Error Codes related to Scan-Axis shutdown or Carriage jam.

Diagnostic tests also need to be performed after removing or replacing certain printer components. If you have removed or replaced printer components, check the Service Calibration Guide to Removal and Installation to see which tests and calibrations you need to perform. Refer to [Service Calibration Guide to Removal and Installation on page 170](#).


 **NOTE:** ALL THE COVER SENSORS ARE DISABLED WHEN IN THE SERVICE TESTS MENU. IF THE CARRIAGE IS MOVING IT WILL NOT STOP IF THE WINDOW IS OPENED, SO BE VERY CAREFUL NOT TO PUT YOUR HANDS INSIDE.

NOTE: IF POSSIBLE, ALWAYS PERFORM THIS TEST BEFORE REPLACING ANY COMPONENT OF THE SCAN-AXIS.

Star Wheel Lifter test

The Star Wheel Lifter subassembly is designed to move the Start Wheel support to the up and down positions. This is used to load roll or sheet media and avoid damage to the Star Wheel caused by paper jams etc.

Perform the Scan Axis - Starwheel lifter test as follows:

 **NOTE:** Perform this test with the Printheads and the Tubes System installed in order to get values that can be compared correctly.

1. In the Diagnostics menu, scroll to **1. Scan Axis** and press **OK**.
2. The Front Panel will show the **1. Scan Axis** submenu.
3. In the **Scan Axis** submenu, scroll to **Star Wheel Lifter** and press **OK** to start the test.

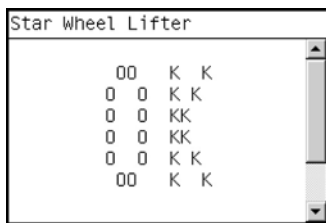
If there is a Failure at any point during the tests, the Front Panel will display the relevant System Error Code. To trouble shoot any displayed error codes, refer [System Error Codes - Full Descriptions on page 50](#).

4. The printer then starts the Star wheel lifter PWM control test to verify the subsystem. As the test executes the Front Panel displays the following messages:
 - Starting Horsburgh.
 - Starting Tests PWM.
 - Starting Tests GPIO
 - Booting up the Carriage.
 - Starting SVS Motor.
 - Starting Carriage Motor.
 - Starting Service Station.
 - Starting Scan Axis.
 - Moving SVS out of Scan.
 - Homing Scan Axis.
 - Move Carriage out of SVS path.
 - Starting Servicing Services.
 - Capping SVS.
 - Uncapping SVS.
 - Starting Star Wheels Motor.
 - Checking SVS capped.
 - Getting SWL path length.
 - Checking SWS length.
 - Checking SWL PWM Forward.
 - Moving & Getting traces.
 - Moving SWL Motor
 - Dumping motor traces.

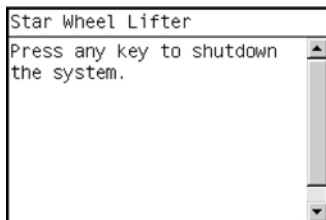
- Analyzing motor traces.
- Checking PWM results.
- Checking SWL PWM Backward.
- Moving & Getting traces.
- Moving SWL Motor
- Dumping motor traces.
- Analyzing motor traces.
- Checking PWM results.

If there is a Failure at any point during the test, the Front Panel will display the relevant System Error Code. To troubleshoot any displayed error codes, refer [System Error Codes - Full Descriptions on page 50](#).

5. Once the test has been completed the Front Panel displays the test results.
6. Press any key to finish.
7. The Front Panel shows the test complete display for a few seconds.



8. The Front Panel prompts you to shutdown the printer to complete the test.




9. Press any key to shutdown the printer.

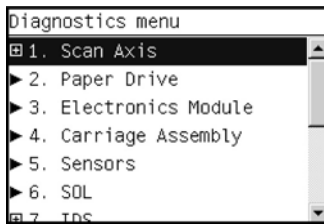
PRS Test

The PRS subsystem is designed to move the carriage assembly between two predetermined vertical positions with respect to print platen plane. This allows different media of different thicknesses to be used without losing print quality.

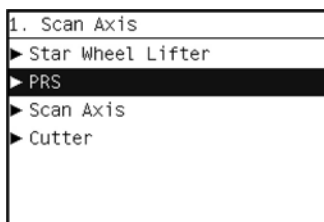
Perform the Scan Axis - PRS test as follows:

 **NOTE:** Perform this test with the Printheads and the Tubes System installed in order to get values that can be compared correctly.

1. In the Diagnostics menu, scroll to **1. Scan Axis** and press **OK**.



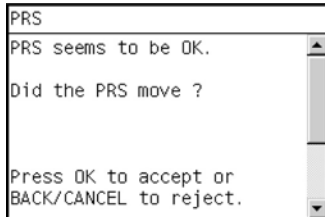
2. The Front Panel will show the **1. Scan Axis** submenu.



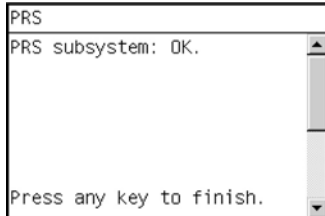
3. In the **Scan Axis** submenu, scroll to **PRS** and press **OK** to start the test. The Printer will start the Scan Axis subsystem Common Initialization and PRS test initialization. If there is a Failure at any point during the tests, the Front Panel will display the relevant **System Error Code**. To troubleshoot any displayed error codes, refer [System Error Codes - Full Descriptions on page 50](#).
4. The printer then starts the PRS test to verify the subsystem. As the test executes the Front Panel displays the following messages:
 - Starting Horsburgh.
 - Starting Tests PWM.
 - Starting Tests GPIO.
 - Booting up the Carriage.
 - Starting SVS Motor.
 - Starting Carriage Motor.
 - Starting PpsMotor.
 - Starting Service Station.
 - Starting Scan Axis.
 - Moving SVS out of Scan.
 - Homing Scan Axis.
 - Move Carriage out of SVS.
 - Homing SVS.
 - Starting Servicing Services.
 - Reading PRS Position.
 - Moving PRS position to HIGH position.

If there is a Failure at any point during the test, the Front Panel will display the relevant System Error Code. To trouble shoot any displayed error codes, refer [System Error Codes on page 46](#).

5. Once the test has completed the Front Panel displays the test result.

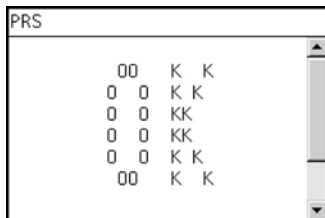


```
PRS
PRS seems to be OK.
Did the PRS move ?
Press OK to accept or
BACK/CANCEL to reject.
```



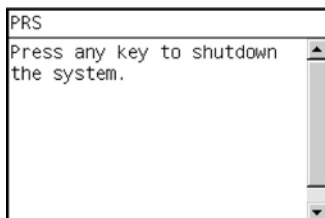
```
PRS
PRS subsystem: OK.
Press any key to finish.
```

6. Press any key finish.
7. The Front Panel shows the test complete display for a few seconds.



```
PRS
      00  K  K
     0 0  K  K
     0 0  KK
     0 0  KK
     0 0  K  K
      00  K  K
```

8. The Front Panel prompts you to shutdown the printer to complete the test.




```
PRS
Press any key to shutdown
the system.
```

9. Press any key to shutdown the printer.

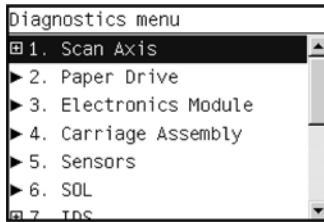
Scan Axis Test

The Scan Axis subsystem is designed to move the carriage assembly between two predetermined horizontal positions with respect to the print platen plane. This allows media of different widths to be used without losing print quality.

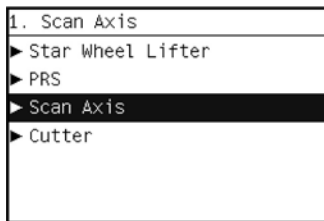
Perform the Scan Axis - Scan Axis test as follows

 **NOTE:** Perform this test with the Printheads and the Tubes System installed in order to get values that can be compared correctly.

1. In the Diagnostics menu, scroll to **1. Scan Axis** and press **OK**.



2. The Front Panel will show the **1. Scan Axis** submenu



3. In the **Scan Axis** submenu, scroll to **Scan Axis** and press **OK** to start the test.

The Printer will start the Scan Axis subsystem Common Initialization. If there is a Failure at any point during the tests, the Front Panel will display the relevant **System Error Code**. To trouble shoot any displayed error codes, refer [System Error Codes - Full Descriptions on page 50](#).

4. The printer then starts the Scan Axis test initialization. As the test executes the Front Panel displays the following messages:

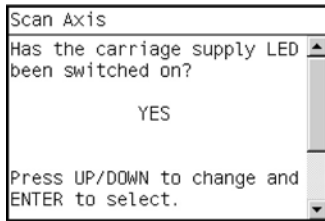
- Starting Horsburgh.
- Starting PWMManagerDelSol.
- Starting Tests PWM.
- Starting Tests GPIO.
- Starting Nvm.

If there is a Failure at any point during the test, the Front Panel will display the relevant System Error Code. To trouble shoot any displayed error codes, refer [System Error Codes - Full Descriptions on page 50](#).

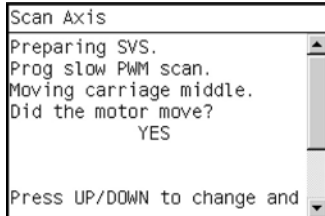
5. The printer then starts the PSU check. As the test executes the Front Panel displays the following messages:

- Clear GPIO psu_sleep.
- Clear GPIO psu_Carr.
- Clear GPIO psu_fanspeed.
- Checking Voltage.
- Set GPIO psu_Carr.
- Set GPIO psu_sleep.
- Checking Voltage.

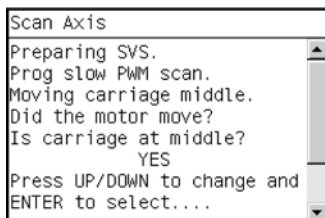
6. The Front Panel prompts you to confirm that the carriage supply LED is switched on.



7. Open the Window and verify that the LED is on. The LED can be seen through the slots in the carriage cover.
8. Press **OK** if the LED is on. If the LED is not on or use the **Arrow** keys to select **NO** and press **OK**.
9. The printer then continues the Scan Axis test. As the test executes the Front Panel displays the following messages:
 - Booting Up Carriage.
 - Getting Part Number.
 - Getting Scan Axis Size
 - Preparing SVS.
 - Prog slow PWM scan.
 - Moving Carriage middle.
10. The Front Panel prompts you to confirm that the Carriage has moved.



11. Use the **Arrow** keys to select whether or not the motor moved the carriage.
12. Press **OK** to continue.
13. The Front Panel prompts you to confirm that the Carriage has moved to the middle position.



14. Use the **Arrow** keys to select whether or not the carriage has moved to the middle.
15. Press **OK** to continue.

16. The printer then continues the Scan Axis test. As the test executes the Front Panel displays the following messages:
 - Preparing SVS.
 - Prog slow PWM scan.
 - Moving Carriage middle.
 - Starting Carriage.
 - Encoder.
17. The Front Panel prompts you to move the carriage to check the encoder readings.

```

Scan Axis
Checking encoder readings.
Please keep out from platen
zone and press
UP(left)/DOWN(right) to
move the carriage.

Remaining movements: 10
Last movement: 0 eu
  
```

18. Use the **Arrow** keys to move the Carriage left or right as prompted to by the Front Panel.
19. Repeat step 18 to complete the ten Carriage movements used to check the encoder.
20. The Front Panel displays the encoder check results. 21

```

Scan Axis
Max,Min mov: 528,464 eu
Avg mov: 493 eu
There is encoder feedback.

Encoder seems to be OK.

Press any key to continue.
  
```

21. Press any key to continue.
22. The printer then continues the Scan Axis test. As the test executes the Front Panel displays the following messages:
 - Starting Carriage Motor.
 - On/Off Carriage Motor.
 - Doing a right side bump.
 - Doing a left side bump.
 - Exit bump position.
 - Checking scan axis length.
 - Starting PpsMotor.
 - Starting Scan Axis.
 - Doing PWM test.

23. The Front Panel displays the PWM check results.

```
Scan Axis
PWM Average got (Fw/Bw):
11750.036 / 11518.189
PWM min diff limit: 40
PWM min diff got (Fw/Bw):
11004.00 / 11246.00
Press any key to finish.
```

24. Press any key finish.

25. The printer then continues the Scan Axis test. As the test executes the Front Panel displays the following messages:

- Moving PRS to High Position.

26. The Front Panel displays the PRS position check results.

```
Scan Axis
PRS Position : HIGH.
Press any key to finish.
```

27. Press any key finish.

28. The Front Panel shows the test complete display for a few seconds.

```
Scan Axis
      00  K  K
     0 0  K  K
     0 0  KK
     0 0  KK
     0 0  K  K
      00  K  K
```

29. The Front Panel prompts you to shutdown the printer to complete the test.

```
Scan Axis
Press any key to shutdown
the system.
```

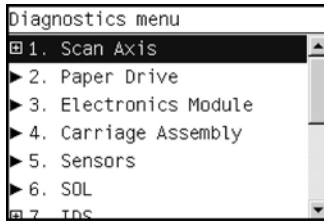
30. Press any key to shutdown the printer.

Cutter test

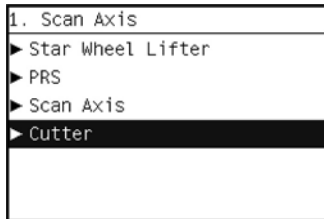
The Cutter is designed to cut roll media after printing for the size of sheet defined. Before executing this test you should run the Scan Axis, Media Drive and Carriage tests to ensure that each of these subsystems is operating correctly.

Perform the Scan Axis - Cutter test as follows:

1. In the Diagnostics menu, scroll to **1. Scan Axis** and press **OK**.



2. The Front Panel will show the **1. Scan Axis** submenu.



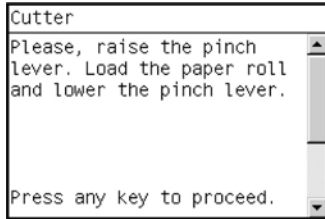
3. In the **Scan Axis** submenu, scroll to Cutter and press **OK** to start the test.

The Printer will start the Scan Axis subsystem Common Initialization and Cutter test initialization. If there is a Failure at any point during the tests, the Front Panel will display the relevant **System Error Code**. To trouble shoot any displayed error codes, refer [System Error Codes - Full Descriptions on page 50](#).

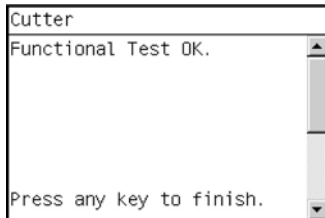
4. The printer then starts the Cutter test to verify the subsystem. As the test executes the Front Panel displays the following messages:

- Starting Horsburgh.
- Starting TestsGPIO.
- Starting Nvm Motor
- Getting Part Number.
- Starting SvsMotor.
- Starting CarriageMotor.
- Starting ServiceStation.
- Moving SVS to rear bump.
- Homing Scan Axis.
- Move Carriage out of SVS.
- Homing Service Station.
- Starting ServicingServices.
- Capping Service Station.
- Uncapping Service Station.

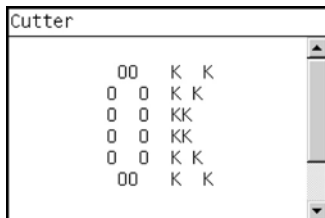
5. The Front Panel prompts you to load roll media.



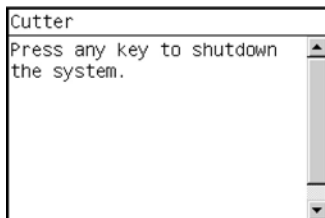
6. Raise the Media Lever, load roll media, lower the Media Lever, and press any key to continue.
7. The printer then starts an actual test cut of the media. As the test executes the Front Panel displays the following messages:
- Advance paper.
 - Engaging cutter.
 - Cutting paper.
 - Disengaging cutter.
8. Once the test has completed the Front Panel displays the test result.



9. Press any key finish.
10. The Front Panel shows the test complete display for a few seconds.



11. The Front Panel prompts you to shutdown the printer to complete the test.




12. Press any key to shutdown the printer.

2. Paper Drive

The Paper Drive test diagnoses Failures of components of the Media-Axis. You must perform the Paper Drive Test after:


- System Error Code 81:XZ.
- System Error Code 41:XZ.
- System Error Code 73:XZ.

Diagnostic tests also need to be performed after removing or replacing certain printer components. If you have removed or replaced printer components, check the Service Calibration Guide to Removal and Installation to see which tests and calibrations you need to perform. Refer to [Service Calibration Guide to Removal and Installation on page 170](#)

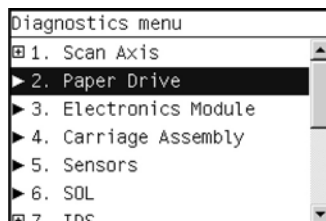
 **NOTE:** ALL THE COVER SENSORS ARE DISABLED WHEN IN THE SERVICE TESTS MENU. IF THE CARRIAGE IS MOVING IT WILL NOT STOP IF THE WINDOW IS OPENED, SO BE VERY CAREFUL NOT TO PUT YOUR HANDS INSIDE.

NOTE: IF POSSIBLE ALWAYS PERFORM THIS TEST BEFORE REPLACING ANY COMPONENT OF THE MEDIA-AXIS.

Perform the Paper Drive test as follows:

 **NOTE:** Perform this test with the Printheads and the Tubes System installed in order to get values that can be compared correctly.

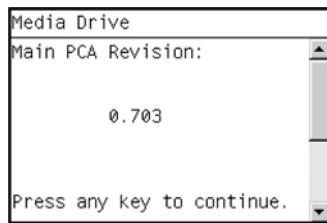
1. In the Diagnostics menu, scroll to **2. Paper Drive** and press **OK**.



2. The printer starts the Paper Drive test to verify the subsystem. As the test executes the Front Panel displays the following messages:

- Starting Horsburgh.
- Starting Tests PWM.
- Starting Tests GPIO.
- Booting up the Carriage.
- Starting DelSol1.
- Starting Carriage
- Starting AnalogEncoder.
- Starting Nvm.
- Getting Part Number.
- Part Number
- Getting PCA revision.

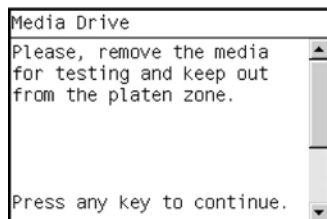
3. The Front Panel then displays the Main PCA Revision (this value should be always between 0 and 3.3) and prompts you to press any key to continue.



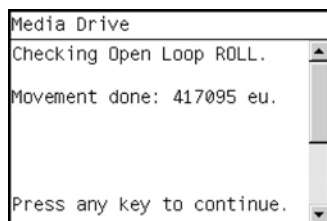
4. Press any key to continue.
5. The Front Panel displays the following messages:

- Starting Nvm.
- Getting Part Number.
- Checking PCA rev.
- Prog slow PWM paper.

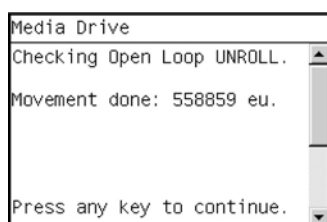
6. The Front Panel then prompts you to remove the media.



7. Remove the media.
8. Press any key to continue.
9. The Front Panel then displays the Open Loop ROLL test result.



10. Press any key to continue.
11. The Front Panel then displays the Open Loop UNROLL test result.

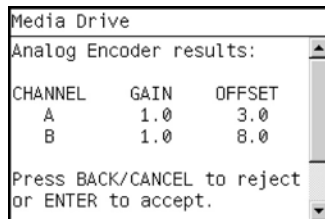


12. Press any key to continue.

13. The Front Panel then displays:

- Starting Paper Motor.
- Starting Paper Axis.
- Calib. Analog Decoder.

14. The Front Panel then displays the Analog Decoder calibration results.

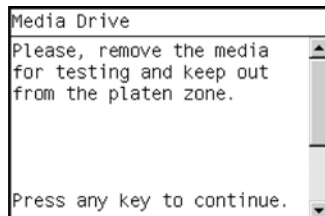


- The GAIN for channel A must be **between 0 and 3.5**.
- The GAIN for channel B must be **between 0 and 4.5**.
- The OFFSET for channel A must be **between -63.5 and 63.5**.
- The OFFSET for channel B must be **between 63.5 and 63.5**.

15. If the results are correct, press **OK** to accept the results. If the results are not correct, press **Back / Cancel** to reject the results and FAIL the test.

- Starting Media Path.
- Homing and repeatability test.

16. The Front Panel then prompts you to remove the media.



17. Remove the media.

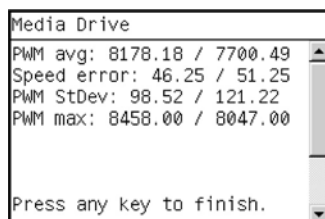
18. Press any key to continue.

19. The Front Panel then displays:

- PWM test without paper.

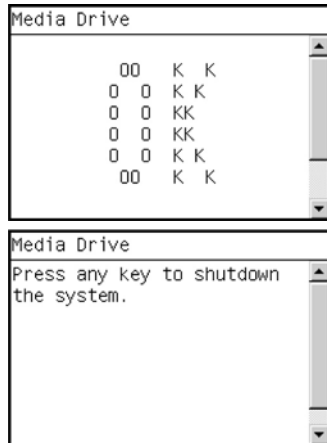
20. The Front Panel then displays the test results.

21. Press any key to continue.



22. The Front Panel shows the test complete display for a few seconds.

23. The Front Panel prompts you to shutdown the printer to complete the test.



24. Press any key to shutdown the printer.

3. Electronics Module

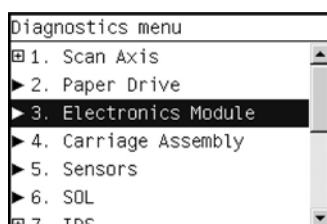
The Electronics Module test diagnoses Failures of the following components:

- Main PCA components.
- Electronics Module to Carriage interfacing.
- Print Mech PCA components.
- Power Supply Unit voltages.

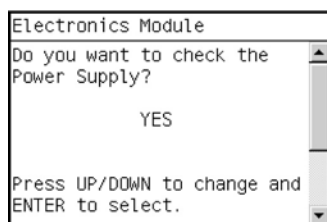
Diagnostic tests also need to be performed after removing or replacing certain printer components. If you have removed or replaced printer components, check the Service Calibration Guide to Removal and Installation to see which tests and calibrations you need to perform. Refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Perform the Electronics Module test as follows:

1. In the Diagnostics menu, scroll to **2. Electronics Module** and press **OK**.



2. The printer starts the Electronics Module test to verify the subsystem and prompts you to test the Power Supply:



3. Press **OK** to test the Power Supply. If you do not wish to test the power supply use the **Arrow** keys to select **NO** and press **OK**

4. The Power supply test starts and the Front Panel displays the following messages:
 - Starting Horsburgh.
 - Starting DelSol7.
 - Starting Carriage.
 - Getting PSU voltages.

5. The Front Panel then displays the Power Supply test results.

```

Electronics Module
Power supply voltages:
Volt. (45/32/5):
    43.70/31.58/5.03
Volt (3.3/3.3_F/2.5):
    3.313/3.313/2.436
Volt (1.25A/1.25_B):
    1.199/1.225
Press any key to continue.
  
```

6. Press any key to continue.

7. The Fan Speed test starts and the Front Panel displays:
 - Starting Horsburgh.
 - Starting Tests PWM.
 - Starting Tests GPIO.
 - Booting up the Carriage.

8. The Front Panel then displays the Fan Speed test result and prompts you to press any key to continue.

```

Electronics Module
PSU Fan Speed: OK

Press any key to continue.
  
```

9. Press any key to continue.

10. The Front Panel then prompts you to test the Formatter.

```

Electronics Module
Do you want to check the
Formatter?

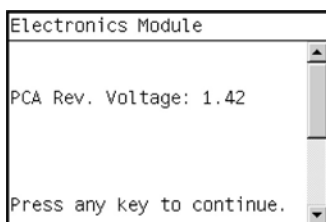
    YES

Press UP/DOWN to change and
ENTER to select.
  
```

11. Press **OK** to the test the Formatter. If you do not wish to test the Formatter use the **Arrow** keys to select **NO** and press **OK**.

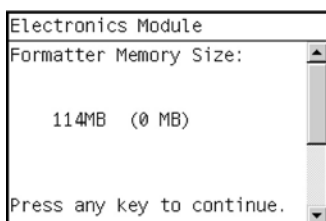
12. The Formatter voltage test starts and the front Panel displays the following messages:
 - Starting DelSol1.
 - Getting PCA revision.

13. The Front Panel then displays PCA Rev. Voltage test result and prompts you to press any key to continue.



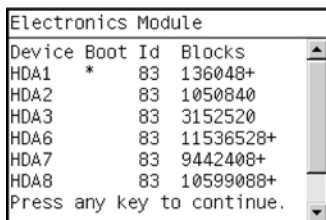
14. Press any key to continue.
15. The Formatter memory size test starts and the Front Panel displays the following messages:
- Starting DelSol1.
 - Getting PCA Revision.
 - Checking Memory Size.

16. The Front Panel then displays Formatter Memory Size and prompts you to press any key to continue.



17. Press any key to continue.
18. The Formatter hard disk test starts and the Front Panel displays the following messages:
- Starting DelSol1.
 - Getting PCA Revision.
 - Checking Memory Size.
 - Getting HDA info.

19. The Front Panel then displays Formatter Hard Disk information test results and prompts you to press any key to continue.



20. Press any key to continue.
21. The Formatter hard disk file information test starts and the Front Panel displays the following messages:
- Starting DelSol1.
 - Getting PCA Revision.

- Checking Memory Size.
- Getting HDA Info.
- Getting File System Info.

22. The Front Panel then displays Formatter Hard Disk File information test results and prompts you to press any key to continue.

Device	1k-Blocks	%Used
HDA1	3102972	64%
HDA2	3102972	64%
HDA3	3102972	64%
HDA6	3102972	64%
HDA7	3102972	64%
HDA8	3102972	64%

Press any key to continue.

23. Press any key to continue.

24. The Main Board Revision Voltage test starts and the Front Panel displays the following messages:

- Starting DelSol1.
- Getting PCA Revision.
- Checking Memory Size.
- Getting HDA Info.
- Getting File System Info.
- Getting MainBoard Rev.

25. The Front Panel then displays Main Board Voltage test results (the value should always be between 0 and 3.3) and prompts you to press any key to continue.

MainBoard Revision voltage:
0.696

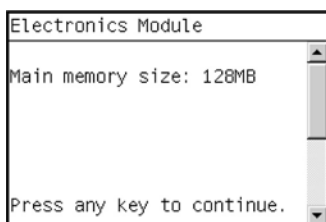
Press any key to continue.

26. Press any key to continue.

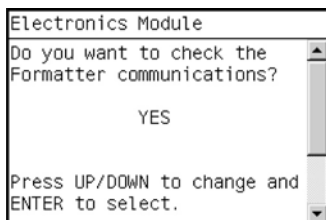
27. The Main Memory Size test starts and the Front Panel displays the following messages:

- Starting DelSol1.
- Getting PCA Revision.
- Checking Memory Size.
- Getting HDA Info.
- Getting File System Info.
- Getting MainBoard Rev.
- Getting Main Memory Size.

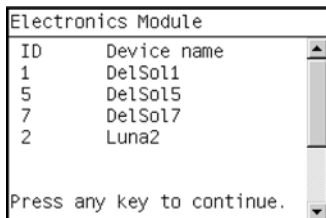
28. The Front Panel then displays Main Memory size test results and prompts you to press any key to continue.



29. Press any key to continue.
30. The Front Panel then prompts you to test the Formatter Communications.

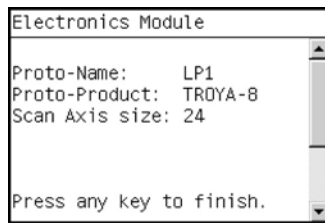


31. Press **OK** to test the Formatter. If you do not wish to test the Formatter use the **Arrow** keys to select **NO** and press **OK**.
32. The Formatter Communications test starts and the front Panel displays the following messages:
- Starting Micci2Bus.
 - Starting Micci2BusProxy.
 - Checking Communications.
33. The Front Panel then displays Formatter Communications test results and prompts you to press any key to continue.

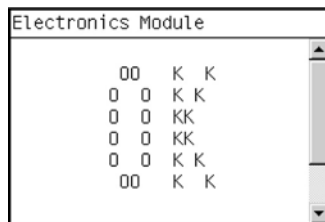


34. Press any key to continue.
35. The Plotter information test starts and the Front Panel displays the following messages:
- Starting Nvm.
 - Accessing Nvm.
 - Getting Plotter info.

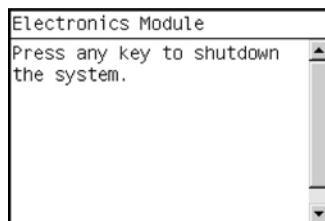
36. The Front Panel then displays the Plotter Information results and prompts you to press any key to finish.



37. Press any key to finish.
38. The Front Panel shows the test complete display for a few seconds.



39. The Front Panel prompts you to shutdown the printer to complete the test.



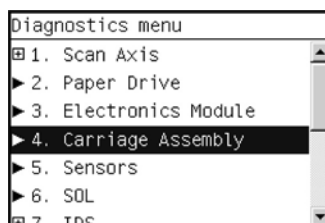
40. Press any key to shutdown the printer.

4. Carriage Assembly

The Carriage assembly test diagnoses Failures of any components of the Carriage. Always run this test before replacing the Carriage Assembly.

Diagnostic tests also need to be performed after removing or replacing certain printer components. If you have removed or replaced printer components, check the [Service Calibration Guide to Removal and Installation](#) to see which tests and calibrations you need to perform. Refer to [Service Calibration Guide to Removal and Installation on page 170](#).

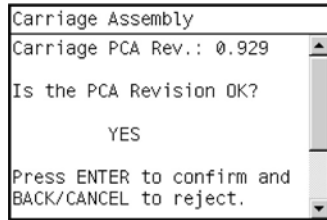
1. In the Diagnostics menu, scroll to **4. Carriage Assembly** and press **OK**.



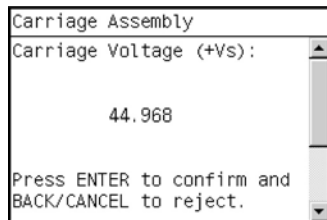
2. The Power supply test starts and the Front Panel displays the following messages:
 - Starting Horsburgh.
 - Starting AdcManagerHorus.
 - Starting Carriage.

- Getting Carriage PCA Rev
 - Starting Nvm.
3. The Front Panel prompts you to verify the Carriage Assembly PCA revision.

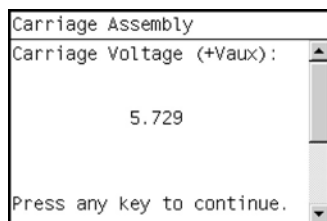
The PCA Rev must be **between 0.823 and 1.005**.



4. If the results are correct, press **OK** to accept the results. If the results are not correct, press **Back** \ **Cancel** to reject the results and FAIL the test.
5. The Carriage Assembly test starts and the Front Panel displays the following messages followed by their results:
 - Getting Part Number.
 - Getting Scan Access size.
 - Getting Vs Carriage Voltage.
6. The Front Panel then displays the Carriage Voltage (+Vs) test results. The +vs Voltage should be **between 43.6 and 46.3**.



7. If the results are correct, press **OK** to accept the results. If the results are not correct, press **Back** \ **Cancel** to reject the results and FAIL the test.
8. The Carriage Assembly Vaux test starts and the Front Panel displays:
 - Getting Vaux Carriage Voltage.
9. The Front Panel then displays the Carriage Voltage (+Vaux) test results.



10. Press any key to continue.

11. The Carriage Assembly UVC flag test starts and the Front Panel displays:
 - Clearing UVC flag.
 - Reading UVC flag.
 - Checking UVC flag.
12. The Front Panel then displays the UVC flag test results.

```
Carriage Assembly
Clearing UVC flag.
Reading UVC flag.
Checking UVC flag.
UVC Flag is OK

Press any key to continue.
```

13. Press any key to continue.
14. The Carriage Assembly Pens Voltage test starts and the Front Panel displays:
 - Getting Vpp.
15. The Front Panel then displays the Pens Voltage test results. The result must be **between 26.5 and 33 Volts**.

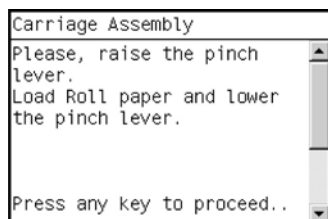
```
Carriage Assembly
Pens Voltage (Vpp):

      30.315


Press ENTER to confirm and
BACK/CANCEL to reject.
```

16. If the results are correct, press **OK** to accept the results. If the results are not correct, press **Back** \ **Cancel** to reject the results and FAIL the test.
17. The Carriage Assembly test continues and the Front Panel displays:
 - Starting Line Sensor Leds.
 - Starting Light Sensor.
 - Starting Line Sensor.
System Error Code 55:YZ. Refer [55:YZ on page 62](#).
 - Starting SVS Motor.
 - Starting Carriage Motor.
 - Moving SVS out of Sax.
 - Moving Carriage middle.
 - Initializing LineSensor.

18. The Front Panel then prompts you to load roll media.



19. Load roll media.

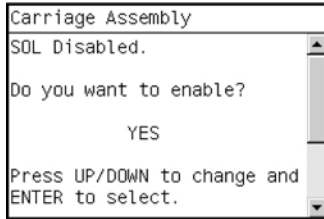
 **NOTE:** For the LED test to work properly, the paper must be loaded completely through the carriage path.

20. Press any key to continue.

21. The Carriage Assembly test continues and the Front Panel displays the result of each phase of the test:

- Setting LS low intensity.
For each color LED: Blue, Green, Red, and Amber
- Setting LS max intensity.
For each color LED: Blue, Green, Red, and Amber
- Checking Tolerance.
- Starting NvmLineSensor.
- Initializing NvmLineSensor.
- Getting LS Serial Number.
- Reading LS Nvm.
- Writing new LS Nvm.
- Checking LS Serial Number.
- Starting Service Station.
- Starting Scan Axis.
- Moving SVS out of sax.
- Homing Scan Axis.
- Moving Carriage out of SVS.
- Homing Service Station.
- Starting Servicing Services.
- Starting ColorSensor.

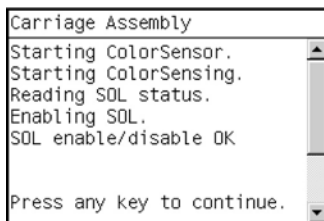
22. The Front Panel then prompts you to enable the Color Sensor (ESP).



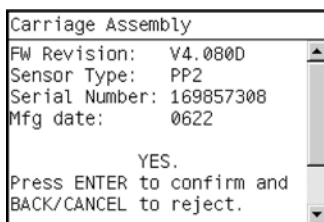
23. Press **OK** to enable the Color Sensor (ESP). If you do not wish to enable the Color Sensor (ESP) use the **Arrow** keys to select **NO** and press **OK**.
24. The Color Sensor (ESP) enable test starts and the front Panel displays the following messages:

- Starting ColorSensor.
- Starting ColorSensing.
- Reading Color Sensor (ESP) status.
- Enabling Color Sensor (ESP).

25. The Front Panel then displays Color Sensor (ESP) enable test result and prompts you to press any key to continue.



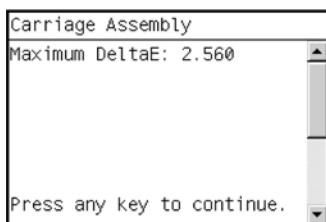
26. Press any key to continue.
27. The Front Panel then prompts you to confirm the information.



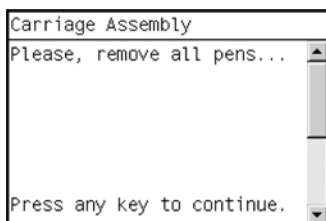
28. Press **OK** to confirm the information. If you want to reject the information use the **Arrow** keys to select **NO** and press **OK**.
29. The Carriage Assembly calibration test starts and the front Panel displays the following messages:

- Starting ColorSensor.
- Starting ColorSensing.
- Reading Color Sensor (ESP) status.
- Reading registers.
- Performing calibration.

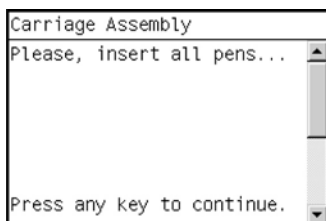
30. The Front Panel then displays DeltaE test result and prompts you to press any key to continue.



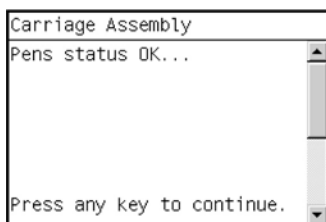
31. Press any key to continue.
32. The Carriage moves into the print path and the front Panel then prompts you to remove all pens.



33. Open the Window.
34. Open the Carriage cover.
35. Remove all the Printheads from the Carriage.
36. Press any key to continue.
37. The Carriage Assembly pens test executes and checks the pens status.
38. The Front Panel then prompts you to replace all the Printheads.

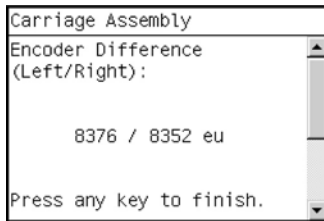


39. Replace all the Printheads.
40. Close the Carriage Cover.
41. Close the Window.
42. Press any key to continue.
43. The Carriage Assembly pens test continues and checks the pens status.
44. The Front Panel then displays the test result.

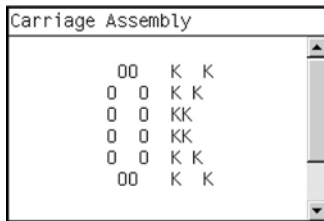


45. Press any key to continue.

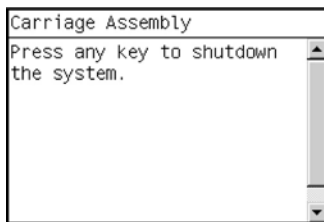
46. The Encoder Manager test starts and the Front Panel displays the result of each phase of the test.
47. The Front Panel then displays Encoder Difference (Left/Right) test result and prompts you to press any key to finish.



48. Press any key to finish.
49. The Front Panel shows the test complete display for a few seconds.



50. The Front Panel prompts you to shutdown the printer to complete the test.



51. Press any key to shutdown the printer.

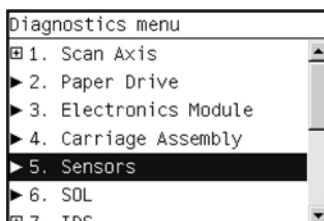
5. Sensors

The Sensors test diagnoses Failures of any sensors of the printer. Always run this test before replacing any of the following sensors:

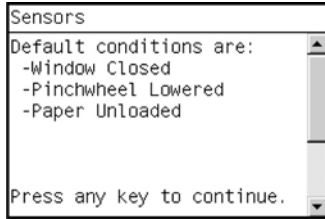
- Window sensor.
- Media Lever position sensor.
- Media sensor.

Diagnostic tests also need to be performed after removing or replacing certain printer components. If you have removed or replaced printer components, check the Service Calibration Guide to Removal and Installation to see which tests and calibrations you need to perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

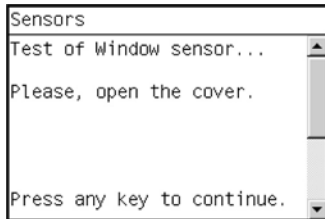
1. In the Diagnostics menu, scroll to **5. Sensors** and press **OK**.



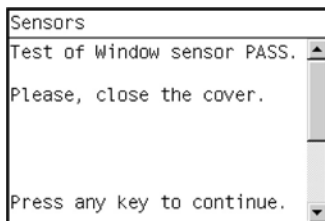
2. The Sensors test starts and the Front Panel prompts you to verify default sensor positions:



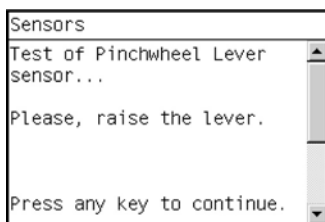
3. Verify that the sensors are in the default positions and any key to continue.
4. The Window sensor test starts and the Front Panel prompts you to open the Window:



5. Open the Window.
6. Press any key to continue.
7. The Window sensor test continues and the Front Panel prompts you to close the Window:

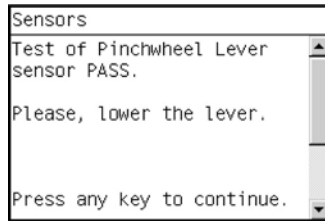


8. Close the Window.
9. Press any key to continue.
10. The Media Lever sensor test starts and the Front Panel prompts you to raise the Media Lever:



11. Raise the Media Lever.
12. Press any key to continue

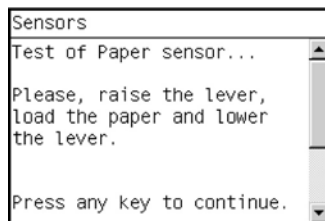
13. The Media Lever sensor test continues and the Front Panel prompts you to lower the Media Lever:



14. Lower the Media Lever.

15. Press any key to continue.

16. The Media sensor test starts and the Front Panel prompts you load media:



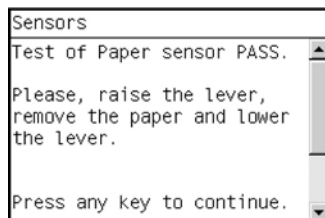
17. Raise the Media Lever.

18. Load media.

19. Lower the Media Lever.

20. Press any key to continue.

21. The Media sensor test continues and the Front Panel prompts to remove media:



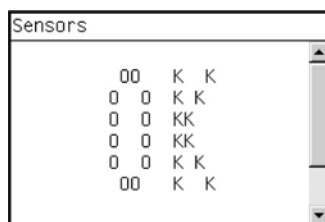
22. Raise the Media Lever.

23. Unload the media.

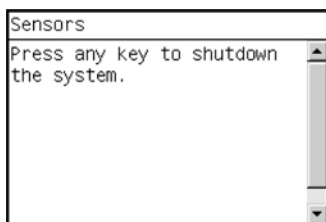
24. Lower the Media Lever.

25. Press any key to continue.

26. The Front Panel shows the test complete display for a few seconds.



27. The Front Panel prompts you to shutdown the printer to complete the test.



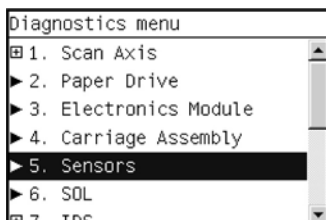
28. Press any key to shutdown the printer.

6. Color Sensor (ESP)

The Color Sensor (ESP) test diagnoses Failures of the Color Sensor located on the carriage. Always run this test before replacing the Color sensor.

Diagnostic tests also need to be performed after removing or replacing certain printer components. If you have removed or replaced printer components, check the Service Calibration Guide to Removal and Installation to see which tests and calibrations you need to perform. Refer to [Service Calibration Guide to Removal and Installation on page 170](#).

1. In the Diagnostics menu, scroll to **6. Color Sensor (ESP)** and press **OK**.



2. The Color Sensor (ESP) test starts and the front Panel displays the following messages:

- Starting Horburgh.
- Starting Carriage.
- Starting Nvm.
- Getting Part Number.
- Getting Scan Axis size.
- Starting Service Station.
- Starting Scan Axis.
- Moving SVS out of Sax.
- Homing Scan Axis.
- Moving Carriage out of SVS.
- Homing Service Station.
- Starting Servicing Services.
- Capping Service Station.
- Starting ColorSensor.

- The Front Panel then prompts you to enable the Color Sensor (ESP).

```
SOL
SQL Disabled.
Do you want to enable?
      YES
Press UP/DOWN to change and
ENTER to select.
```

- Press **OK** to enable the Color Sensor (ESP). If you do not wish to enable the Color Sensor (ESP) use the **Arrow** keys to select **NO** and press **OK**.
- The Color Sensor (ESP) enable test starts and the front Panel displays the following messages:

- Starting ColorSensor.
- Starting ColorSensing.
- Reading Color Sensor (ESP) status.
- Enabling Color Sensor (ESP).

- The Front Panel then displays Color Sensor (ESP) enable test result and prompts you to press any key to continue.

```
SOL
Starting ColorSensor.
Starting ColorSensing.
Reading SQL status.
Enabling SQL.
SQL enable/disable OK
Press any key to continue.
```

- Press any key to continue.
- The Front Panel then displays the Color Sensor (ESP) details and prompts you to press any key to continue.

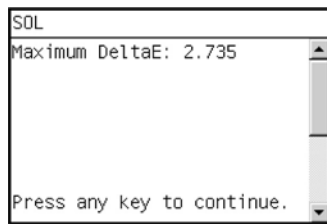
```
SOL
FW Revision:  V4.080D
Sensor Type:  PP2
Serial Number: 169857228
Mfg date:    0622
      YES.
Press ENTER to confirm and
BACK/CANCEL to reject.
```

- The Front Panel then prompts you load media:

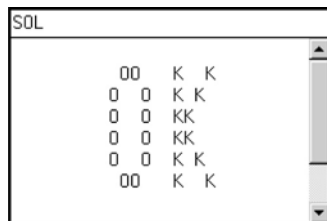
```
SOL
Please, raise the pinch
lever.
Load Roll paper and lower
the pinch lever.
Press any key to proceed.
```

- Raise the Media Lever.
- Load media.
- Lower the Media Lever.

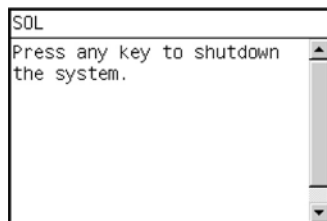
13. Press any key to continue.
14. The Front Panel then displays the DeltaE test result and prompts you to press any key to continue.



15. Press any key to continue.
16. The Front Panel shows the test complete display for a few seconds.



17. The Front Panel prompts you to shutdown the printer to complete the test.



18. Press any key to shutdown the printer.

7. Ink Delivery System (IDS)

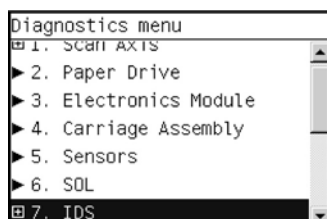
The complete Ink Delivery System test consists of individual tests for the different components related to this subsystem. These tests are:

- Ink Delivery System
- Check Ink Supplies

Diagnostic tests also need to be performed after removing or replacing certain printer components. If you have removed or replaced printer components, check the Service Calibration Guide to Removal and Installation to see which tests and calibrations you need to perform. Refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Ink Delivery System

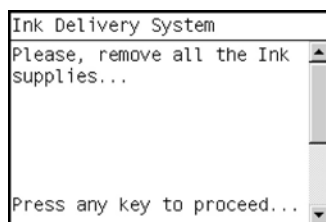
1. In the Diagnostics menu, scroll to **7. IDS** and press **OK**.



- The Front Panel will show the **7. IDS** submenu.

```
7. IDS
▶ Ink Delivery System
▶ Check Ink Supplies
```

- In the **IDS** submenu, scroll to **Ink Delivery System** and press **OK** to start the test.
- The Ink Delivery System test starts and the front Panel prompts you to remove all the Ink Supplies.

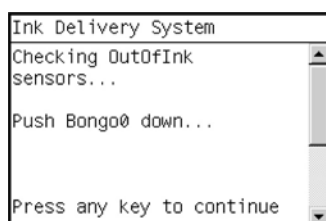


A screenshot of a terminal window titled "Ink Delivery System". The text inside the window reads: "Please, remove all the Ink supplies..." followed by "Press any key to proceed..." at the bottom. There are scroll bars on the right side of the window.

- Remove all the Ink Cartridges.
- Press **OK** to continue.
- The test continues and the front Panel displays the following messages:

- Starting Horsburgh.
- Starting Mips.
- Starting Nvm.
- Getting Part Number.
- Starting ISS Motors.
- Moving Bongos down.
- Reading Bongos down.
- Moving Bongos up.
- Reading Bongos up.
- Starting OutOfInk sensors.
- Reading OutOfInk.

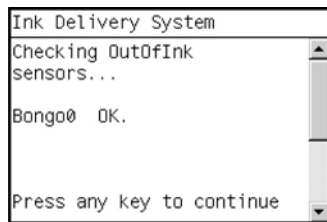
- The Front Panel then prompts you push down Bongo0. 9



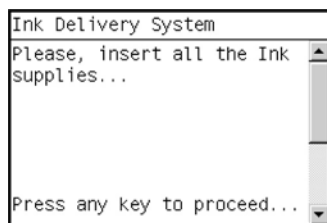
A screenshot of a terminal window titled "Ink Delivery System". The text inside the window reads: "Checking OutOfInk sensors..." followed by "Push Bongo0 down..." and "Press any key to continue" at the bottom. There are scroll bars on the right side of the window.

- Press and hold down Bongo0 which is located at the furthest left Ink Cartridge position.
- Press any key.

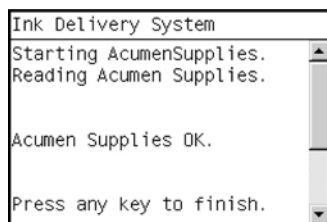
11. Release Bongo0.
12. Press any key.
13. The Front Panel then displays the Bongo0 test results.



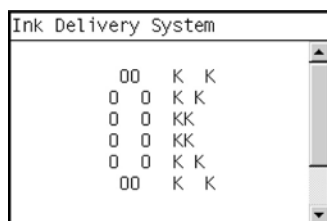
14. Press any key to continue.
15. Repeat steps 8 through 14 for the remaining Out of Ink sensors for each of the Ink Cartridges.
16. The front Panel prompts you to insert all the Ink Supplies.



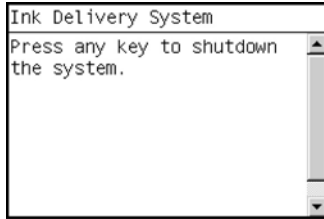
17. Install all the Ink Cartridges.
18. Press **OK** to continue.
19. The Acumen Supplies test and the front Panel displays the following messages:
 - Starting AcumenSupplies.
 - Reading AcumenSupplies.
20. The Front Panel then displays Acumen Supplies test results.



21. The Front Panel shows the test complete display for a few seconds.



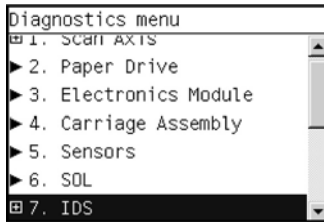
22. The Front Panel prompts you to shutdown the printer to complete the test.



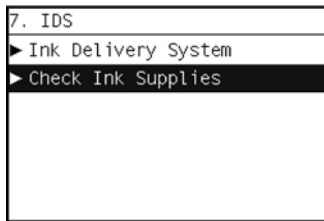
23. Press any key to shutdown the printer.

Check Ink Supplies

1. In the Diagnostics menu, scroll to **7. IDS** and press **OK**.

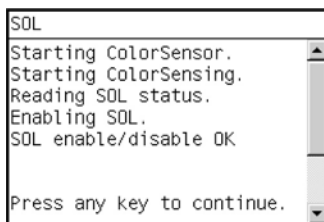


2. The Front Panel will show the **7. IDS** submenu.



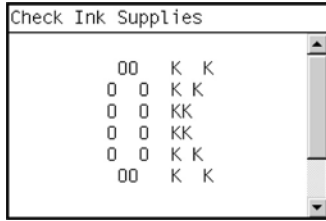
3. In the **IDS** submenu, scroll to **Check Ink Supplies** and press **OK** to start the test.
4. The Check Ink Supplies test starts and the front Panel displays the following messages:
 - Starting Horburgh & Mips.
 - Starting Nvm.
 - Getting Part Number.
 - Starting Supplies.
 - Starting AcumenSupplies.
 - Reading Ink Supplies.

5. The Front Panel then displays Check Ink Supplies test results.

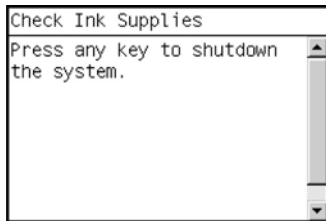


6. Press any key to continue.

- The Front Panel shows the test complete display for a few seconds.



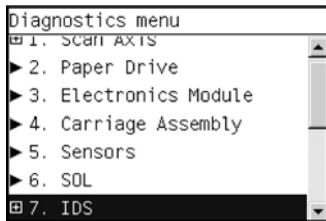
- The Front Panel prompts you to shutdown the printer to complete the test.



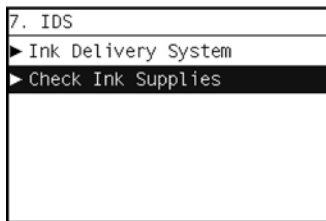
- Press any key to shutdown the printer.

Check Leakage

- In the Diagnostics menu, scroll to **7. IDS** and press **OK**.



- The Front Panel will show the **7. IDS** submenu.



- In the **IDS** submenu, scroll to Leakage and press **OK** to start the test.
- The Check Ink Leakage test checks that there is no ink in the tubes or ink cartridge

8. Service Station

The complete Service Station test consists of individual tests for the different components related to this subsystem.

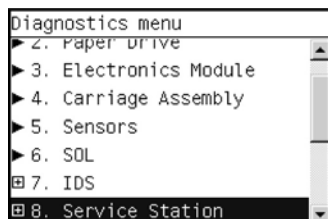
These tests are:

- Service Station
- Primer Motor
- Aerosol Fan

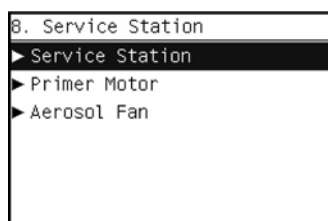
Diagnostic tests also need to be performed after removing or replacing certain printer components. If you have removed or replaced printer components, check the Service Calibration Guide to Removal and Installation to see which tests and calibrations you need to perform. Refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Service Station

1. In the Diagnostics menu, scroll to **8. Service Station** and press **OK**.



2. The Front Panel will show the **8. Service Station** submenu.



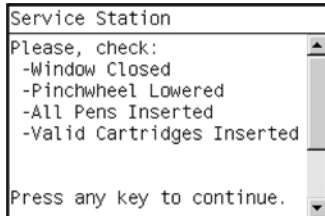
3. In the **8. Service Station** submenu, scroll to **Service Station** and press **OK** to start the test.

4. The Service Station test starts and the front Panel displays the following messages:

- Starting Horsburgh.
- Booting up Carriage.
- Starting SVS Motor.
- Starting Nvm.
- Getting Part Number.
- Starting Service Station.
- Starting Scan Axis.
- Moving SVS out of Sax.
- Homing Scan Axis.
- Moving Carriage out of SVS.
- Homing Service Station.
- Moving to Spit Rear pos.
- Moving to Spit Front pos.
- Moving to Wipe forward pos.
- Moving to Wipe reverse pos.
- Moving to Cleaner pos.
- Moving to Color Sensor (ESP) pos.

- Homing Scan Axis.
- Starting ServicingServices.
- Capping Service Station.
- Uncapping Service Station.
- Starting Mechanical Init.

5. The Front Panel then prompts you to check the status of the printer.

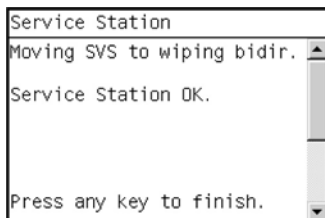


6. Check that:

- The Window is closed.
- The Media Lever is lowered.
- All Printheads are inserted.
- Valid Cartridges are inserted.

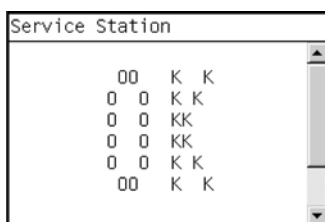
7. Press **OK** to continue.

8. The Front Panel then displays test results.

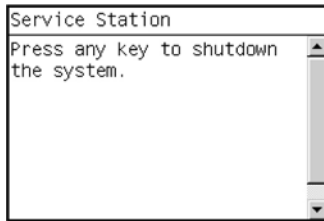


9. Press any key to finish the test.

10. The Front Panel shows the test complete display for a few seconds.



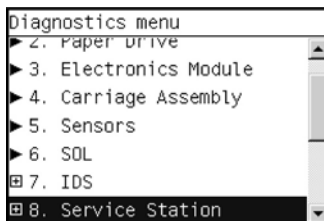
11. The Front Panel prompts you to shutdown the printer to complete the test.



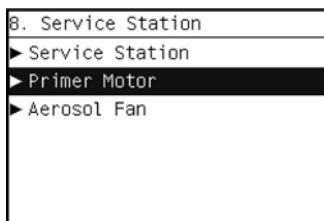
12. Press any key to shutdown the printer.

Primer Motor

1. In the Diagnostics menu, scroll to **8. Service Station** and press **OK**.



2. The Front Panel will show the **8. Service Station** submenu.



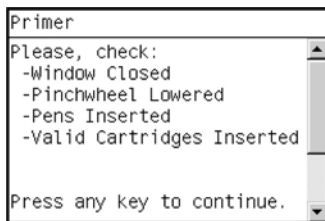
3. In the **8. Service Station** submenu, scroll to **Primer Motor** and press **OK** to start the test.

4. The Primer Motor test starts and the front Panel displays the following messages:

- Starting TestsGpio.
- Starting Horsburgh.
- Booting up Carriage.
- Starting SVS Motor.
- Starting Nvm.
- Getting Part Number.
- Starting Service Station.
- Starting Scan Axis.
- Moving SVS out of Sax.
- Homing Scan Axis.
- Moving Carriage out of SVS.
- Homing Service Station.
- Moving to Spit Rear pos.

- Moving to Spit Front pos.
- Moving to Wipe forward pos.
- Moving to Wipe reverse pos.
- Moving to Cleaner pos.
- Moving to Color Sensor (ESP) pos.
- Homing Scan Axis.
- Starting ServicingServices.
- Capping Service Station.
- Uncapping Service Station.
- Starting Mechanical Init.

5. The Front Panel then prompts you to check the status of the printer.

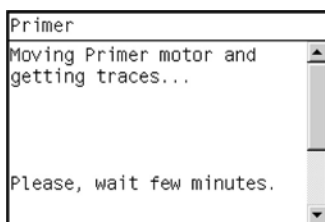


6. Check that:

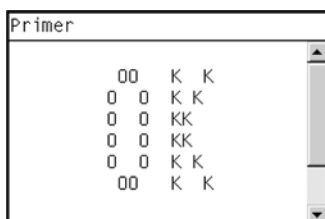
- The Window is closed.
- The Media Lever is lowered.
- All Printheads are inserted.
- Valid Cartridges are inserted.

7. Press **OK** to continue.

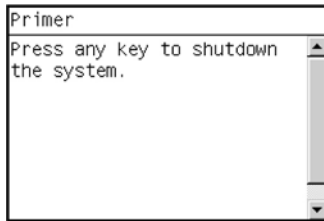
8. The Primer Motor test continues and the Front Panel shows the progress of the test.



9. The Front Panel shows the test complete display for a few seconds.



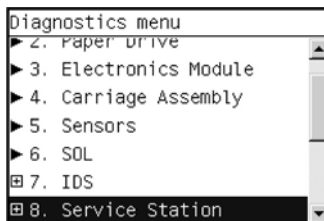
10. The Front Panel prompts you to shutdown the printer to complete the test.



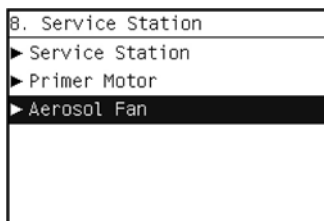
11. Press any key to shutdown the printer.

Aerosol Fan

1. In the Diagnostics menu, scroll to **8. Service Station** and press **OK**.



2. The Front Panel will show the **8. Service Station** submenu.

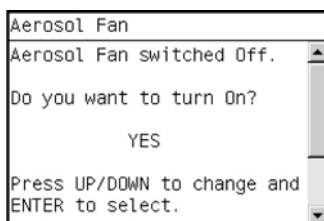


3. In the **8. Service Station** submenu, scroll to **Aerosol Fan** and press **OK** to start the test.

4. The Aerosol Fan test starts and the front Panel displays the following messages:

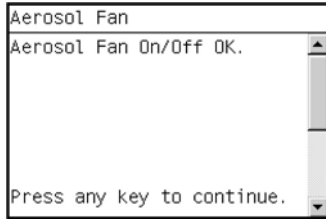
- Starting Horsburgh.
- Booting TestsGpio.
- Starting Nvm.

5. The front Panel then prompts you switch on the Aerosol Fan.

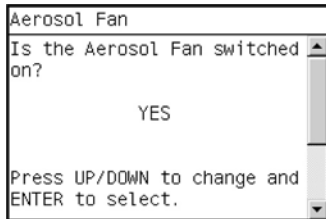


6. Press **OK** to switch on the Aerosol Fan. If you do not wish to switch on the Aerosol Fan use the **Arrow** keys to select **NO** and press **OK**.

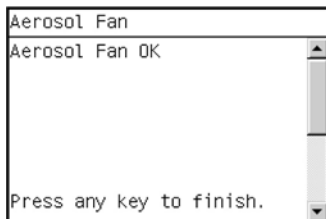
7. The test continues and the Front Panel displays the results.



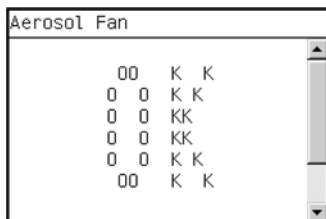
8. Press any key to continue.
9. The front panel prompts you to check if the Aerosol Fan is operating.



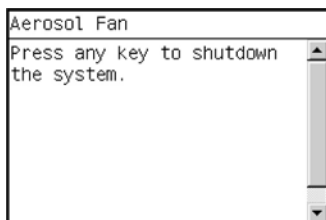
10. Listen carefully to check if the Aerosol Fan is operating.
11. If it is operating, use the **Arrow** keys to select **YES** and press **OK** . If it is NOT operating, select **NO** and press **OK** .
12. The Front Panel shows the test result.



13. Press any key to finish.
14. The Front Panel shows the test complete display for a few seconds.



15. The Front Panel prompts you to shutdown the printer to complete the test.

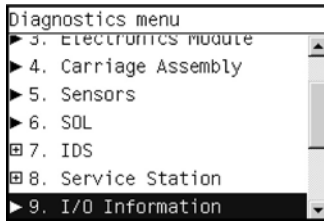


16. Press any key to shutdown the printer.

9. I/O Information

The I/O Information test retrieves the TC/IP Network configuration parameters from the printer.

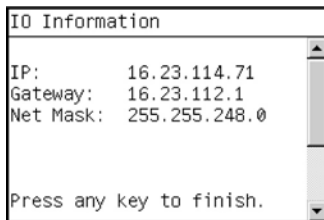
1. In the Diagnostics menu, scroll to **8. I/O Information** and press **OK**.



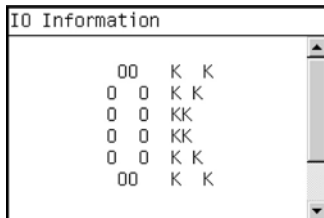
2. The I/O Information test starts and the front Panel displays the following message:

- Getting IO Interface.
- Starting ColorSensor.

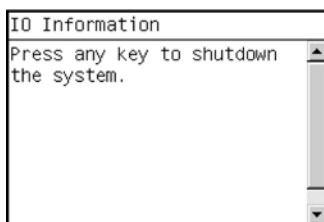
3. The Front Panel displays the I/O Information.



4. Press any key to finish.
5. The Front Panel shows the test complete display for a few seconds.



6. The Front Panel prompts you to shutdown the printer to complete the test.

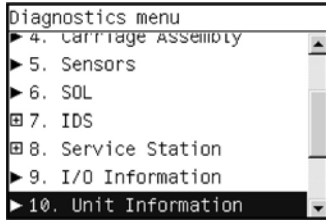


7. Press any key to shutdown the printer.

10. Unit Information

1. The Unit Info test recovers the Firmware Version, Serial Number and Part Number of the printer.

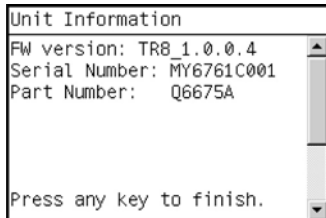
2. In the Diagnostics menu, scroll to **10. Unit Information** and press **OK**.



3. The Unit Information test starts and the front Panel displays the following message:

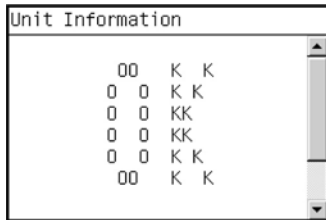
- Starting Horsburgh.
- Starting Nvm.
- Getting FW version.
- Getting Serial.
- Getting Part Number.

4. The Front Panel shows the result of the test.

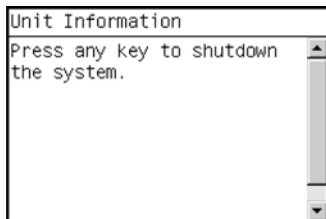


5. Press any key to continue.

6. The Front Panel shows the test complete display for a few seconds.



7. The Front Panel prompts you to shutdown the printer to complete the test.

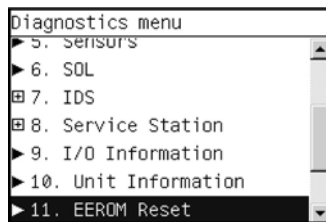


8. Press any key to shutdown the printer.

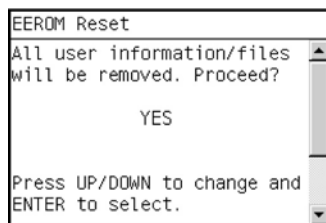
11. EEROM Reset

The EEROM Reset test resets the printer to the factory defaults and delete any user information/files.

1. In the Diagnostics menu, scroll to **11. EEROM** and press **OK**.



2. The EEROM Reset test starts and the front Panel prompts you to request if you want to continue.

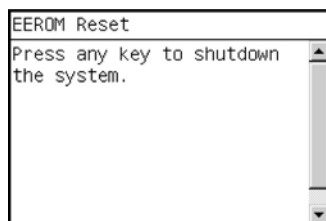


3. If you do want to continue the test, use the Arrow keys to select **YES** and press **OK**. If you do NOT want to continue, select **NO** and press **OK**.

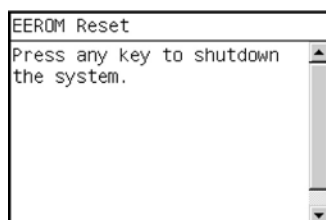
4. The EEROM Reset test continues and the front Panel displays the following message:

- Starting Horsburgh.
- Starting Nvm.
- Getting Part Number.
- Setting default config.

5. The Front Panel shows the result of the test.

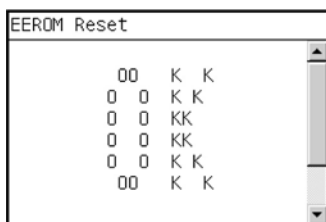


6. Press any key to continue. The Front Panel warns you that you will have to calibrate the printheads after rebooting the printer.

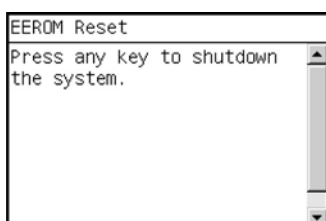


7. Press any key to continue.

- The Front Panel shows the test complete display for a few seconds.



- The Front Panel prompts you to shutdown the printer to complete the test.



- Press any key to shutdown the printer.
- Recover the Printheads. See Image Quality Maintenance Procedure, refer [Image Quality Maintenance Procedure on page 18](#).

12. Set Unit Configuration

The purpose of this test is to automatically configure the Printer either as Standard or Productivity.

- In the Diagnostics menu, scroll to **12. Set Unit Configuration** and press **OK**.
- The Set Unit Configuration test starts and the front Panel prompts you to request if you want to continue.
- If you do want to continue the test, use the **Arrow** keys to select **YES** and press **OK**. If you do NOT want to continue, select **NO** and press **OK**.
- The Set Unit Configuration continues and the front Panel displays the several messages.
- The Front Panel shows the result of the test.
- Press any key to continue.
- The Front Panel shows the test complete display for a few seconds.
- The Front Panel prompts you to shutdown the printer to complete the test.
- Press any key to shutdown the printer.

13. Error 71:19 Recovery

This diagnostic test utility is used to set the Serial Number and Part Number if either the Formatter or the Printmech PCA or both have been replaced.

The complete Error 71:19 Recovery utility consists of individual utilities to handle different serial and part number setting requirements. These tests are:

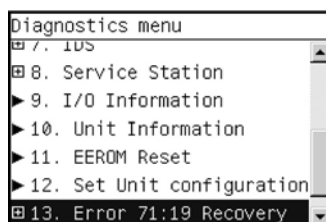
- Set Serial Number
- Select Right S/N

Set Serial Number

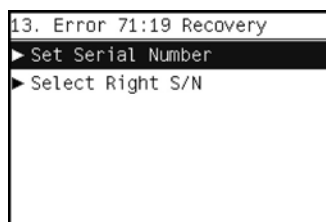
The purpose of this utility is to set the Serial Number and Part Number in case both the Formatter and the PrintMech PCA are replaced at the same time.

Set the Serial Number as follows:

1. In the Diagnostics menu, scroll to **11. Error 71:19 Recovery** and press **OK**.



2. The Front Panel will show the **1. Error 71:19 Recovery** submenu.

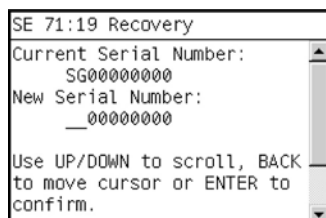


3. In the **11. Error 71:19 Recovery** submenu, scroll to **Set Serial Number** and press **OK** to start the test.

4. The Set Serial Number test starts and the front Panel displays the following messages:

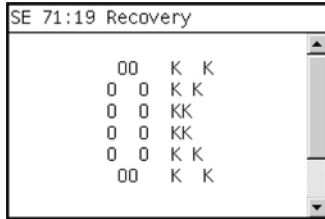
- Checking SE Log.
- Starting Horsburgh & Mips.
- Starting NvmBackup.
- Starting NvmMain.
- Getting Serial Number.
- Checking Serial Number.
- Starting Nvm.
- Getting Part Number.
- Setting default config.

5. The Front Panel prompts you to enter the Serial Number.

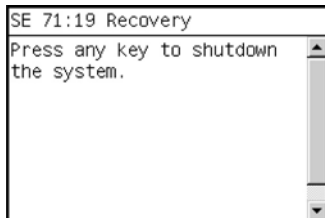


6. Use the **UP**, **DOWN** and **BACK** keys to select each character of the Serial Number and use the **OK** to confirm.

- The Front Panel shows the test complete display for a few seconds.



- The Front Panel prompts you to shutdown the printer to complete the test.



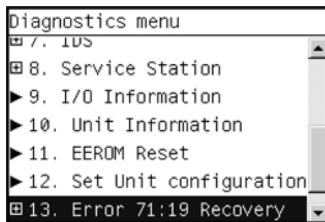
- Press any key to shutdown the printer.

Select Right S/N

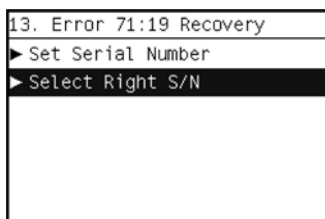
The purpose of this utility is to set the correct Serial Number and Part Number in case either the Formatter or the Printmech PCA have been replaced.

Set the correct Serial Number as follows:

- In the Diagnostics menu, scroll to **11. Error 71:19 Recovery** and press **OK**.

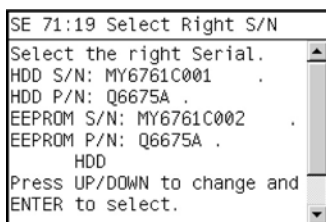


- The Front Panel will show the **11. Error 71:19 Recovery** submenu.
- In the **11. Error 71:19 Recovery** submenu, scroll to **Select Right S/N** and press **OK** to start the test.



- The Select Right S/N test starts and the front Panel displays the following message:
 - Checking SE Log.
 - Starting Horsburgh.
 - Starting NvmMain
 - Starting NvmBackup.
 - Getting Serial Number.

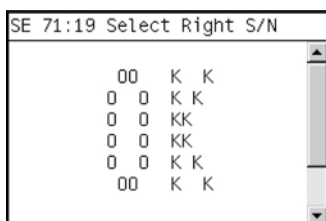
5. The Front Panel prompts choose the correct Serial Number and Part Number.



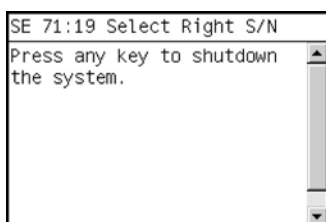
6. Use the **Arrow** keys to select the location containing the correct Serial and Part Number, HDD for the Formatter or EEPROM for the PrintMech PCA.
7. Press **OK** to confirm your choice.
8. The Select Right S/N test continues and the front Panel displays the following messages as the correct Serial Number and Part Number are copied from the selected location to the other memory location:

- Starting NvmMain.
- Starting NvmBackup.
- Getting Serial Number.
- Checking Serial Number.
- Getting Part Number.
- Writing the right S-N.

9. The Front Panel shows the test complete display for a few seconds.



10. The Front Panel prompts you to shutdown the printer to complete the test.



11. Press any key to shutdown the printer.

4 Service Menu

Service Utilities Down + Cancel (Service Engineers remote support)

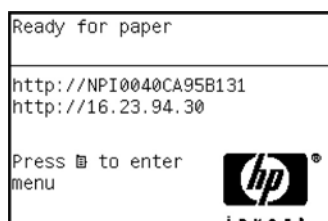
- [1. Turn Drive Roller on page 126](#)
- [2. Purge Tubes on page 128](#)
- [5. Diagnostic Print on page 132](#)
- [6. Set Date and Time on page 132](#)
- [7. Enable/Disable Firewall on page 133](#)
- [8. Enable/Disable Sleep Mode on page 134](#)
- [9. SNMP Language Write Access on page 135](#)
- [10 Borderless Cut Distance on page 137](#)

Service Utilities UP + Cancel (Service Engineers only).

- [3. Set SN on page 130](#)
- [4. Reset Life Counters on page 131](#)


Entering the Service Utilities Menu

1. Once the message “Ready” or “Ready for paper” is displayed on the front panel, press the [Main Menu](#) key. For information regarding the front panel buttons, Refer [Using the Front Panel on page 3](#).




2. To have the user to perform certain Service Utilities, once inside the “Main Menu”, press the [Down](#) arrow key and the [Cancel](#) key together. You are now in the **Service Tools** Menu.



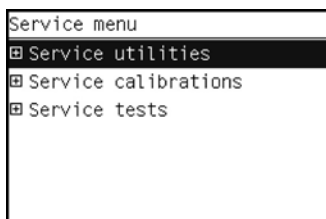
 **NOTE:** Contact Phone support for further assistance.

3. For On-Site Engineers, once inside the “Main Menu”, press the **Up** arrow key and the **Cancel** key together. You are now in the **Service Menu** Menu.

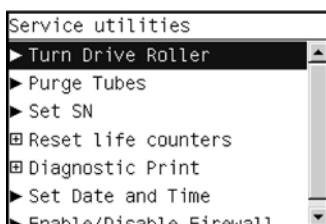



 **NOTE:** Contact On-site support for further assistance.

4. Use the **Arrow** keys to scroll to the “Service Utilities” menu option and press the **OK** key.



5. Use the **Arrow** keys to scroll through the “Service Utilities” selections and press the **OK** key to begin a specific operation when the required Service Utility is highlighted.



 **NOTE:** If the printer is not used for 135 seconds, the printer exits out of the Service Utilities Menu and you must repeat the above steps to enter Service Utilities again.

NOTE: In some cases a quick press of a button may not be recognized by the Printer. When pressing a button, be sure to press it deliberately and all the way to the bottom of its travel.

Introduction

The following is a list of all internal Service Utilities available in the Service Menu. Instructions for entering the Service menu are given on [Entering the Service Utilities Menu on page 124](#).

1. Turn Drive Roller ⇒ Refer [1. Turn Drive Roller on page 126](#).

The purpose of this Service Utility is to rotate the Drive Roller and the Overdrive in order to clean them.

2. Purge Tubes ⇒ Refer [2. Purge Tubes on page 128](#).

The purpose of this Service Utility is to Prime the Tubes when the Ink Tubes are NOT new and they need to be re-primed or automatic priming was not completed correctly.

3. Set SN ⇒ Refer [3. Set SN on page 130](#).

The purpose of this Service Utility is to set the Serial Number of the Printer.

4. Reset Life Counters ⇒ Refer [4. Reset Life Counters on page 131](#).

The purpose of this Service Utility is to reset the internal life counters. There are two submenus that allow you to:

- Reset ALL the counters related to a Preventive Maintenance Kit (PMK).
- Reset only the counters related to a specific replaced part.

5. Diagnostic Print ⇒ Refer [5. Diagnostic Print on page 132](#).

The purpose of this Service Utility is to print the Diagnostic Print in order to identify image quality problems.

- Image Quality Service Best
- Image Quality Service Normal
 - Paper Advance
 - Printhead alignment
 - Nozzle Health
 - Force Drop Detection
 - Print Banding Plot

6. Set Date and Time ⇒ Refer [6. Set Date and Time on page 132](#).

The purpose of this Service Utility is to set the Real Time Clock (RTC) of the Printer.

7. Enable/Disable Firewall ⇒ Refer [7. Enable/Disable Firewall on page 133](#).

The purpose of this Service Utility is to enable or disable the built-in system firewall.

8. Enable/Disable Sleep Mode enables or disables Sleep Mode ⇒ Refer [8. Enable/Disable Sleep Mode on page 134](#).

9. Enable/Disable SNMP ⇒ Refer [9. SNMP Language Write Access on page 135](#)

10. Borderless Cut Distance ⇒ Refer [10 Borderless Cut Distance on page 137](#)

1. Turn Drive Roller

The purpose of this Service Utility is to rotate the Drive Roller and the Overdrive in order to clean them.

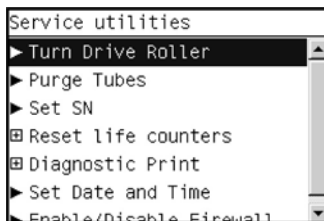
 **NOTE:** REMOVE THE MEDIA BEFORE PERFORMING THIS OPERATION.

NOTE: OPEN THE WINDOW OF THE PRINTER AND ACTIVATE THE WINDOW SENSOR (USE A PIECE OF PAPER TO COVER THE SENSOR) BEFORE PERFORMING THIS SERVICE UTILITY.



Perform the Turn Drive Roller utility as follows:

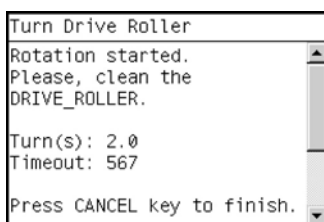
1. In the Service Utilities submenu, scroll to **Turn Drive Roller** and press **OK**.



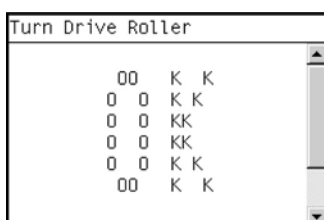
2. The Printer checks to see if media is loaded and the Front panel displays the following message. If media is loaded, the Front Panel will display a message. Unload the media and start again from step 1:


- Checking Media Presence Sensor

3. The Drive Roller begins to turn slowly and the following message is displayed on the Front Panel:




4. Refer to the Cleaning Instructions on [Cleaning the Drive Roller and Overdrive on page 329](#).
5. Once you have finished cleaning the Drive Roller and the Overdrive, press the **Cancel** key to finish the utility.
6. If the utility exits correctly, **OK** will be displayed on the Front Panel.



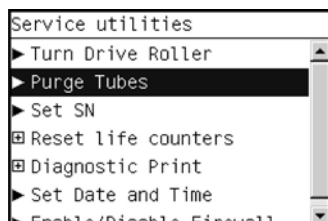
 **NOTE:** REMEMBER TO REMOVE THE PIECE OF PAPER FROM THE WINDOW SENSOR BEFORE CLOSING THE WINDOW AS THIS COULD DAMAGE THE WINDOW AND THE SENSOR.

2. Purge Tubes

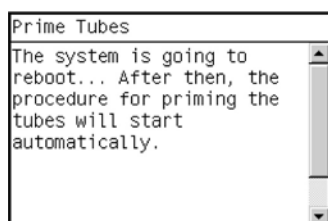
The purpose of this Service Utility is to Prime the Tubes when the Ink Tubes are NOT new and they need to be re-primed or automatic priming was not completed correctly.

 **NOTE:** Make sure that NEW Ink Cartridges are installed or that the ink volume remaining in the Ink cartridges is below 88% before starting to prime the tubes. If you do not comply, you will get a warning message and cannot finish the test.

1. In the **Service Utilities** submenu, scroll to **Purge Tubes** and press **OK**.

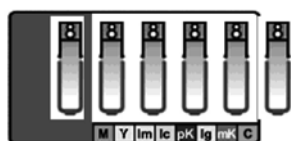


2. In the **Service Utilities** submenu, scroll to **Purge Tubes** and press **OK**. When the front panel prompts you to reboot the system, you must select whether you would like to continue with the procedure by pressing the Enter key, in which case the Printer will reboot. Press **Back** or **Cancel** to exit the procedure at this point.
3. The Front Panel displays a message to say the Printer is going to reboot.



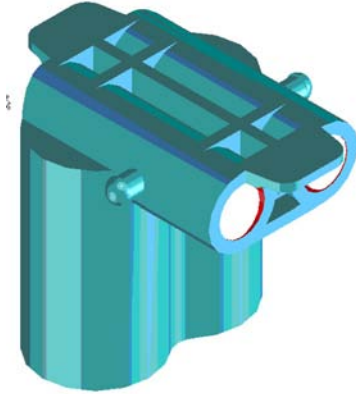
4. Once the Printer has rebooted, the Front Panel will instruct you to open the Window and remove ALL the Printheads installed in the Carriage.

Lift printhead cover.
Replace printheads

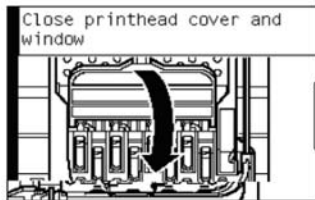


5. Once ALL the Printheads have been removed, the Front Panel will instruct you to install the Setup Printheads into the Carriage.

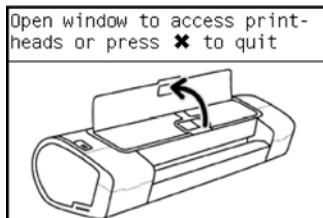
6. Install the Setup Printheads in the carriage.



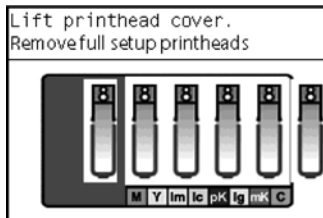
7. Once all the Setup Printheads are installed, the following message will appear on the front panel. Close the carriage cover and close the window.



8. The printer will begin to purge the tubes system.
9. Once the tubes system has been purged, the following message will instruct you to open the Window and the carriage to access the printheads:

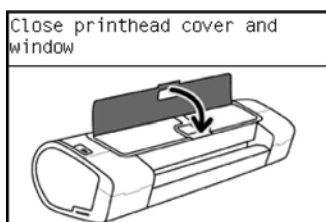


10. When the following message appears on the Front Panel, open the Carriage cover and check the window on top of each Setup Printhead. If the Ink Supply Tubes have been primed correctly, the windows will contain ink. If the windows on top of each Setup Printhead does NOT contain ink, then you may need to repeat the Prime Tubes process from the beginning.

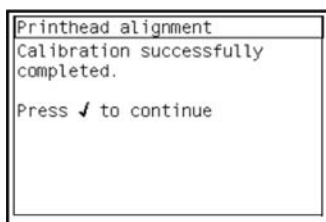


11. Remove ALL the Setup Printheads from the Carriage and install the previously removed Printheads.

- Once ALL the Printheads are installed, the Front Panel will instruct you to close the Carriage cover and close the Window.



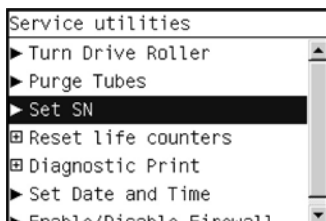
- The Printer will now perform the Printhead Alignment and Front Panel will prompt you to continue with the Printhead Alignment, select **Align now** and press the **OK** key.
- Once the Printhead Alignment is completed, the following message will be displayed on the Front Panel. Press the **OK** key to continue.



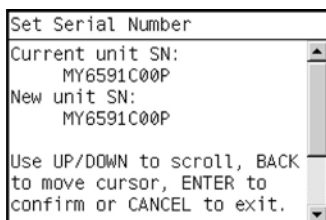
3. Set SN

The purpose of this Service Utility is to set the Serial Number of the Printer. Perform the Set SN utility as follows:

- In the Service Utilities submenu, scroll to **Set SN** and press **OK**.



- The Printer will display the current Serial Number and the new Serial Number of the Printer. Use the **Up** and **Down** keys to go through the digits and press the **OK** key to go to the next digit. You can press the **Cancel** key at any time to exit the utility without making any changes.



If the Serial Number or the Part Number cannot be read, the Front Panel will display the relevant System Error code. Refer [System Error Codes - Full Descriptions on page 50](#).


- Once the new Serial Number has been entered, the Front Panel will display the Serial Number and Model Number of the Printer. Press the **OK** to confirm the Serial Number or the **Cancel** key to exit the utility without making any changes or the **Back** key to modify again.

4. If the utility exits correctly, **OK** will be displayed on the Front Panel.
5. When the printer is restarted after a serial number change an NVM setting sequence is initiated to synchronize the serial number stored in the backup memory.

4. Reset Life Counters

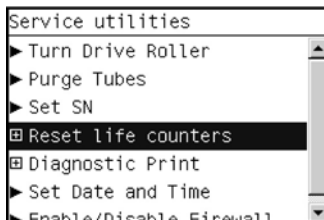
The purpose of this Service Utility is to reset the internal life counters. There are two submenus that allow you to:

- Reset ALL the counters related to a Preventive Maintenance Kit (PMK).
- Reset only the counters related to a specific replaced part.

 **NOTE:** ALWAYS RESET THE LIFE COUNTER OF A CORRESPONDING PART AFTER REPLACING IT.

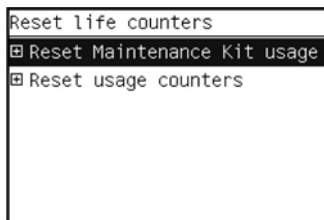
Perform the Reset Life Counters utility as follows:

1. In the Service Utilities submenu, scroll to **Reset Life Counters** and press .




2. Select **Reset Maintenance Kit usage** to reset the Life Counter for ALL parts included in a Preventative Maintenance Kit (PMK).

Select **Reset usage counters** to reset the Life Counter of a single part.



alf you select **Reset Maintenance usage**, which will reset the Life Counter for ALL parts included in a Preventive Maintenance Kit (PMK), you can choose from the following Preventive Maintenance Kits:

- Preventive Maintenance Kit 1 (PMK1). See Preventive Maintenance Kit #1, [Preventive Maintenance Kit #1 on page 330](#).
- Preventive Maintenance Kit 2 (PMK2). See Preventive Maintenance Kit #2, [Preventive Maintenance Kit #2 on page 331](#).

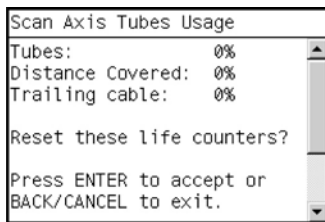
 **NOTE:** The counters that are reset are show Preventive Maintenance ⇒ [4. Carriage Assembly on page 95](#).

NOTE: It is also advisable to check the status of the Life Counters related to the other Preventive Maintenance Kits to avoid multiple trips to the customer.

bf you select to **Reset usage counters**, which will reset the Life Counter of a single part, you can choose from the following parts:

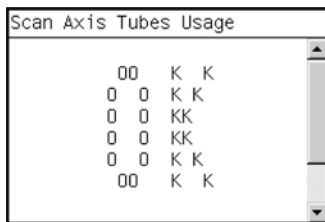
- Trailing Cable and Tubes
- Scan-Axis Belt

- Scan Motor
 - Left Spittoon
 - Right Spittoon
 - Full Bleed Foams
 - Aerosol Fans
 - Carriage
 - Service Station
3. Once you have selected a Life Counter to reset, the following message will be displayed on the Front Panel. Press the **OK** key to reset the selected Life Counter or press **Back \ Cancel** to exit without resetting the Life Counter.



If the Usage Counter information cannot be read, the Front Panel will display “Unable to get usage counter”. This could be a possible Firmware error. In this case, make sure you have the latest version of the Firmware.

4. If the utility exits correctly, **OK** will be displayed on the Front Panel.



5. Diagnostic Print

The purpose of this Service Utility is to print the Diagnostic Print in order to identify Print Quality problems. Information regarding the Diagnostic Print is located in the following sections:

The procedure to make a Diagnostic Print can be found at [Printing the Diagnostic Print on page 24](#).

The procedure to make an Advanced Diagnostic Print can be found at [The Advanced Diagnostic Prints on page 29](#).

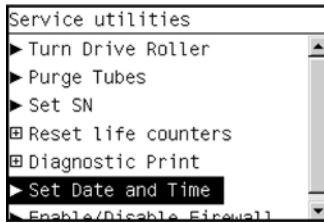
Additional print quality information such as troubleshooting and corrective measures can be found at [Print Quality on page 23](#).

6. Set Date and Time

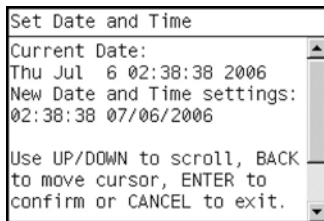
The purpose of this Service Utility is to set the internal clock of the Printer.

Perform the Set Date and Time utility as follows:

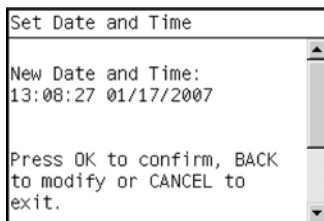
1. In the Service Utilities submenu, scroll to **Set Date and Time** and press **OK**.



2. The Printer will display the current time and the new time. Use the **UP** and **Down** keys to go through the digits and press the **OK** key to go to the next digit. You can press the **Cancel** key at any time to exit the utility without making any changes.

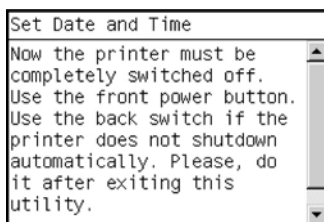


3. Once the new time has been entered, the Front Panel prompts you to confirm the new date and time.



4. Press **OK** to confirm the new date and time. Press **Back** to modify the new date and time. Press **Cancel** to exit without changing the date and time.
5. Once the new time has been entered, the Front Panel will prompt you to shut down the printer.

If the current RTC Clock cannot be set, it could be a possible Firmware error. Make sure you have the latest version of the Firmware.



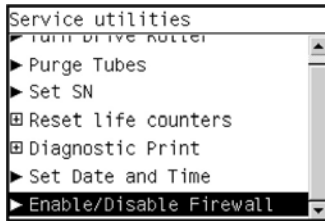
6. Restart the printer.

7. Enable/Disable Firewall

The purpose of this Service Utility is to enable or disable the system firewall.

Perform the Enable/Disable Firewall utility as follows:

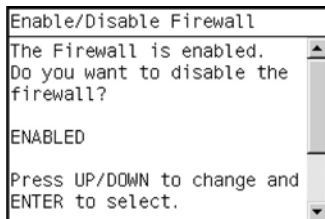
1. In the Service Utilities submenu, scroll to **Enable/Disable Firewall** and press **OK**.



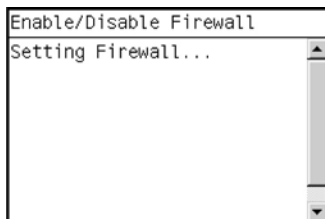
2. The utility checks to see if the firewall is enabled or disabled and the Front panel displays the following message:

- Getting Information of Firewall.

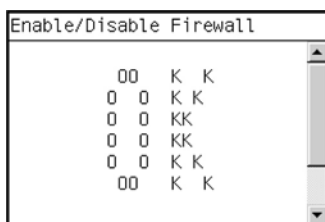
3. When the following message appears on the front panel, you must select whether you would like to enable or disable the firewall. Use the **UP** and **Down** keys to make your selection and press the **OK** key.



4. The system upgrades the internal memory to reflect the chosen selection.



5. The Front Panel shows the test complete display for a few seconds.



8. Enable/Disable Sleep Mode

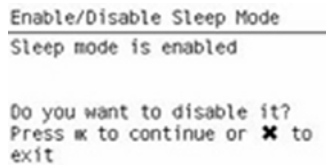
The purpose of this Service Utility is to enable or disable the system sleep mode of the printer.

Configure the Enable/Disable Sleep mode utility as follows:

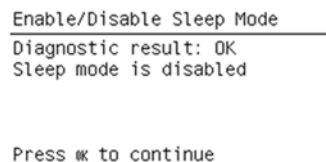
1. In the Service Utilities submenu, scroll to **Enable/Disable Sleep Mode** and press **OK**.



2. The Front Panel tells you whether sleep mode is currently enabled or disabled. Press **OK** to continue or **Cancel** to leave the sleep mode status unchanged.



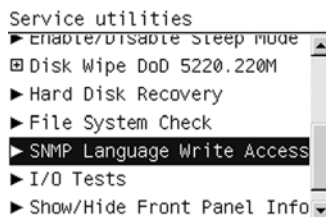
3. The Front Panel displays the sleep mode status. Press **OK** to return to the menu.



9. SNMP Language Write Access

The purpose of this utility is to prevent SNMP tools from changing the printer language remotely. This is provided as a possible workaround to a rare issue that has been seen with some SNMP tools that set the printer language in order to control the localization applied to some SNMP OIDs, but do not restore the printer language afterwards.

1. In the Service Utilities submenu, scroll to **SNMP Language Write Access** and press **OK**.



2. The utility checks whether the printer language can currently be changed using SNMP, and shows one of the following messages:

```
SNMP Language Write Access
-----
Printer localization CAN be
changed remotely by SNMP

Press ▲ and ▼ to change the
value

Press ⏎ to confirm or
✘ to exit
```

```
SNMP Language Write Access
-----
Printer localization CANNOT
be changed remotely by SNMP

Press ▲ and ▼ to change the
value

Press ⏎ to confirm or
✘ to exit
```

3. Use the Up and Down keys to choose the desired behavior and press **OK** to confirm your selection. The system updates the internal memory to reflect the chosen selection.

```
SNMP Language Write Access
-----
Changing configuration
```

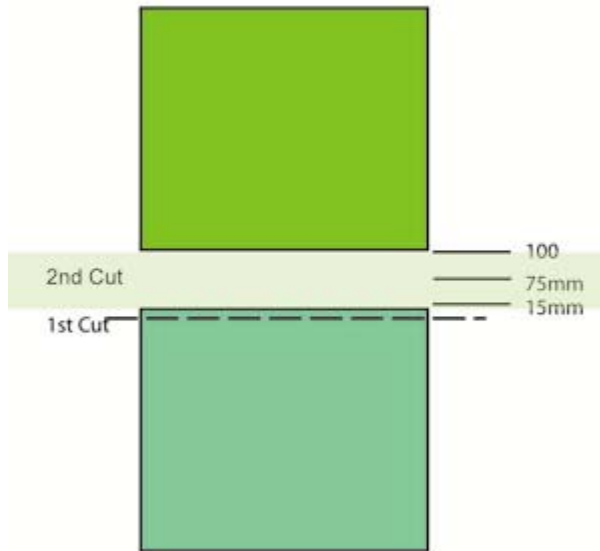
4. The Front Panel shows the “test complete” display until you press **OK**.

```
SNMP Language Write Access
-----
Diagnostic result: OK

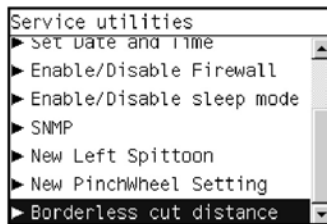
Press ⏎ to continue
```

10 Borderless Cut Distance

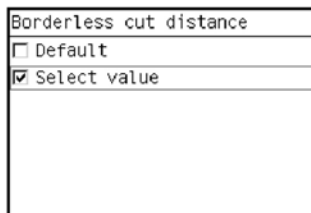
How borderless cutting functions: The printer will always cut the roll of media twice, once at the end of the last job and then again before the next job starts. If the complete space of the media has been printed on (full bleed), a very small section will be cut in the 1st cut. The second cut can be changed by using the setting '**Borderless Cut Distance**'. The second cut can be set from 15mm to a maximum of 100mm (default is 75mm).



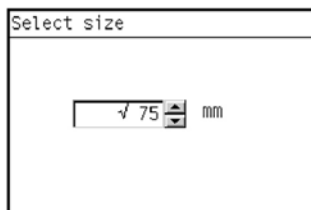
1. In the Service Utilities submenu, scroll to Borderless cut Distance and press OK.



2. Select the value in mm of the distance before the second cut, and press OK.




3. Use the up and down keys to select the amount in mm before the media is cut. Minimum 15mm, maximum 75mm.



Service Calibrations

The Printer has several calibration procedures that must be performed under certain conditions.

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

The following is a list of all internal service calibrations available in the Printers. Instructions for entering the service calibrations menu are given on [Entering the Service Calibrations Menu on page 139](#).

1. Scan Axis Calibration ⇒ Refer [Scan Axis Calibration on page 139](#).

The purpose of this Service Calibration is to carry out a PWM check, and calibrate the intensity of the Line Sensor.

2. Service Station Calibration ⇒ Refer [Service Station Calibration on page 140](#).

The purpose of this Service Calibration is to calibrate the Drop Detector (located in the Service Station) in relation to the Carriage Assembly.

3. Paper Advance Calibration ⇒ Refer [Paper Advance Calibration on page 140](#).

The purpose of this Service Calibration is to calibrate the nominal advance of the media. This calibration is necessary to control the exact movement of the media in order to avoid print quality problems like banding.

4. Drop Detector Calibration ⇒ Refer [Drop Detector Calibration on page 145](#).

The purpose of this Service Calibration is to calibrate the Drop Detector (located in the Service Station) in relation to the Carriage Assembly.


5. Line Sensor Calibration ⇒ Refer [Line Sensor Calibration on page 146](#).

The purpose of this Service Calibration is to calibrate the intensity of the Line Sensor. An incorrect calibration can result in edge-detection failures during media loading and incorrect reading of prints that are used for alignment or calibration.

6. Carriage ⇒ Refer [Carriage PCA on page 149](#).

The purpose of this Service Calibration is to reset the ink short thresholds after replacing the Carriage PCA.

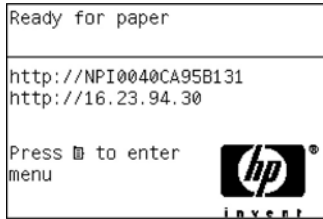
7. Color Sensor ⇒ Refer [Color Sensor \(ESP\) Calibration on page 149](#).

 **NOTE:** If ALL the Calibrations need to be performed (for example, when both the Formatter and the PrintMech PCA have been replaced), you must perform them in the following order:

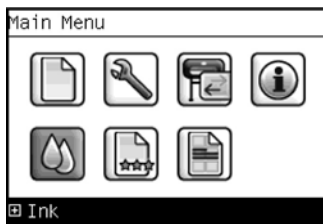
- Drop Detector/Service Station Calibration.
- Line Sensor/Scan Axis Calibration.
- Paper Advance Calibration.


Entering the Service Calibrations Menu

1. Once the message “Ready” or “Ready for paper” is displayed on the front panel, press the **Menu** key.



2. To have the user to perform certain Service Utilities, once inside the “Main Menu”, press the **Down** arrow key and the **Cancel** key together. You are now in the **Service Tools** Menu.




 **NOTE:** Contact the Phone support for further assistance.

3. For On-Site Engineers, once inside the “Main Menu”, press the **UP** arrow key and the **Cancel** key together. You are now in the **Service Menu** Menu.



 **NOTE:** Contact the On-site support for further assistance.


 **NOTE:** If the printer is not used for 135 seconds, the printer exits out of the Service Utilities Menu and you must repeat the above steps to enter Service Calibrations again.

NOTE: In some cases a quick press of a button may not be recognized by the Printer. When pressing a button, be sure to press it deliberately and all the way to the bottom of its travel.

Scan Axis Calibration

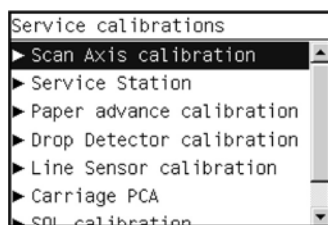
The purpose of this Service Calibration is to carry out a PWM check, calibrate the intensity of the Line Sensor and calibrate the Line Sensor position to the Black Printhead. This calibration is integrated into the Scan Axis diagnostic test. Refer [1. Scan Axis on page 76](#).

Perform the Scan Axis Calibration as follows:

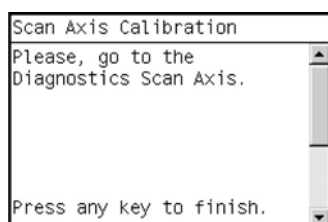
 **NOTE:** Make sure you load one of the following media into the Printer before performing this calibration:

- HP Bond Paper.
- HP Glossy Media.
- HP Coated Paper.
- HP Productivity Photo Gloss.

- HP Heavyweight Coated Paper.
 - HP Super Heavyweight Coated Paper.
 - HP Bright White Inkjet Paper.
1. In the Service Calibrations submenu, scroll to **Scan Axis Calibration** and press **Enter**.



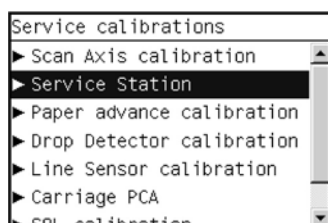
2. To calibrate the Scan Axis, run the Scan Axis diagnostic test. Refer [1. Scan Axis on page 76](#).



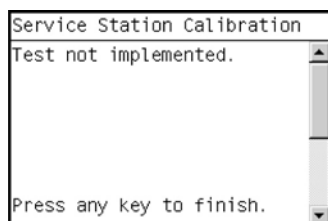
Service Station Calibration

The purpose of this Service Calibration is to calibrate the Service Station in relation to the Carriage Assembly. This calibration is integrated into the Scan Axis diagnostic test. Refer [8. Service Station on page 110](#).

1. In the Service Calibrations submenu, scroll to **Service Station** and press **Enter**.




2. To calibrate the Service Station, run the Service Station diagnostic test. Refer [8. Service Station on page 110](#).



Paper Advance Calibration

The purpose of this Service Calibration is to calibrate the nominal advance of the media. This calibration is necessary to control the exact movement of the media in order to avoid print quality problems like banding.

If you need to perform a Paper Advance Calibration to solve a print quality problem, it is recommended that you first try the Paper Advance Calibration from the user menu, which will calibrate the printer to a specific paper type.

 **NOTE:** you must order the Paper Advance Calibration Kit, which contains two sheets of HP Universal Instant-Dry Photo Gloss paper. For the correct part number of the media, refer to the [Parts and Diagrams on page 151](#).


Perform the Service Accuracy Calibration whenever:

- Banding is detected in prints.

Service calibrations also need to be performed after removing or replacing certain printer components. If you have removed or replaced printer components, check the Service Calibration Guide to Removal and Installation to see which tests and calibrations you need to perform. Refer to [Service Calibration Guide to Removal and Installation on page 170](#).


The Paper Advance Calibration is split into three parts and should **always** be done in this order:

1. Print Calibration Pattern - The Printer first calibrates the Analog Encoder and then prints the Paper Advance Calibration pattern.
2. Scan Calibration Pattern - The Printer scans the Paper Advance Calibration pattern in order to calibrate the nominal advance of the media.

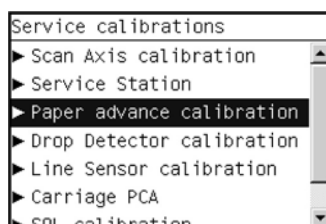
 **NOTE:** Only scan the Calibration Pattern in the Printer that was used to actually print it. Using the Calibration in a different Printer could cause it to experience media advance problems. After scanning the Calibration Pattern, it should be discarded.

3. Clean Drive Roller - After loading media that the customer will use, the Printer “prepares” the media path to prevent any future advance problems.

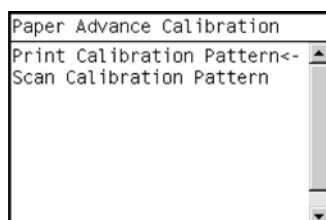
Perform the Paper Advance Calibration as follows:

 **NOTE:** Make sure that you unload media from the Printer before performing the Paper Advance Calibration.

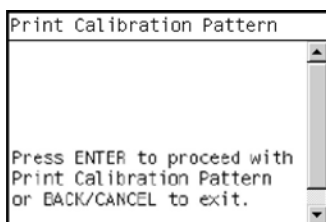
1. In the Service Calibrations submenu, scroll to “Paper Advance Calibration” and press **OK**.



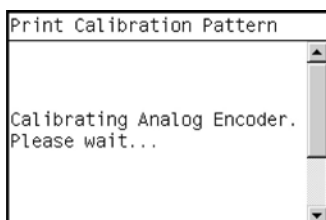
2. In the **Paper Advance Calibration** submenu, scroll to **Print Calibration Pattern** and press **OK**.



- When the following message appears on the front panel, you must select whether you would like to continue with the calibration by pressing the **OK** key. Press **Back** or **Cancel** to exit the calibration.

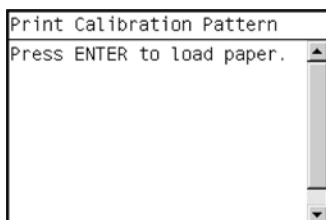


- The Printer will start to calibrate the Analog Encoder and the following message will be displayed on the Front Panel.

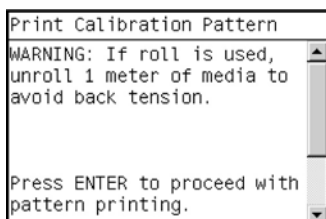


If the Calibration is not done or if the values are out of the limits, a warning message will appear on the Front Panel. In this case, try the following:

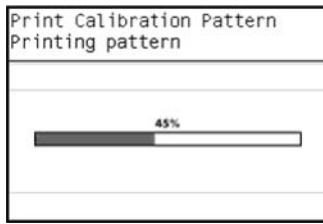
- Check that the Printer has the latest Firmware version. If not, update the Firmware to the latest version.
 - Retry the Paper Advance Calibration.
- Once the Analog Encoder has been calibrated correctly, the following message will appear on the Front Panel. Press the **OK** key in order to start the media load process.



- Load a sheet of HP Productivity Gloss Media that was included in the Paper Advance Calibration Kit (refer to [Parts and Diagrams on page 151](#)) following the instructions on the Front Panel. If the kit is not available, cut a piece of HP Productivity Gloss Media that is 36 inches wide and at least 45 inches long.
- Once the media is loaded into the Printer, the following message will appear on the Front Panel. If roll media has been used instead of cut sheet media, you will need to unroll a minimum of 1 meter of media in order to prevent any back tension which could cause any media advance problems. Press the **OK** key to continue.




8. The Printer will start to print the Paper Advance Calibration Pattern. This could take several minutes during which the following message will be displayed on the Front Panel.



9. Once the Accuracy Calibration Pattern has been printed successfully, the Front panel will prompt you to continue.
10. Press the **Enter** key to continue.

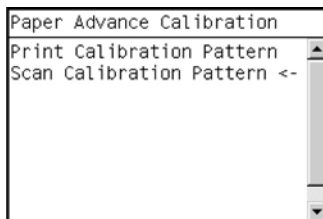
If the Paper Advance Calibration fails for any reason, a warning message will appear on the Front Panel. In this case, try the following:

- Retry the Paper Advance Calibration.
- If necessary, perform a Printhead Recovery through the Front Panel and retry the calibration.

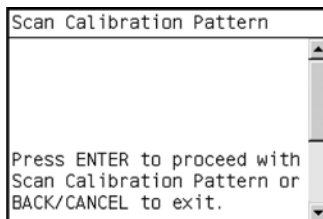
 **NOTE:** Remove the pattern from the printer and leave it to dry for a few minutes before continuing with the Calibration.

MAKE SURE NO MEDIA IS LOADED INTO THE PRINTER BEFORE STARTING TO SCAN THE CALIBRATION PATTERN.

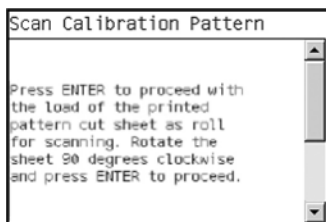
11. You will need to re-enter the Paper Advance Calibration submenu and scroll to Scan Calibration Pattern and press **OK**.




12. When the following message appears on the front panel, you must select whether you would like to continue with the calibration by pressing the **OK** key. Press **Back** or **Cancel** to exit the calibration.



13. A message will appear advising you that you will need to load the Calibration Pattern in to the Printer. Make sure that you rotate the printed pattern 90° clockwise and reload it printed-side down, so that the black arrows go into the printer first. Press the **OK** key to continue.

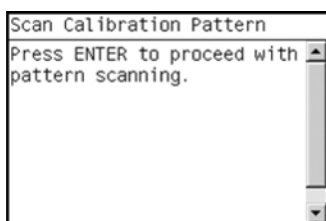


 **NOTE:** Take note that the Calibration Pattern will be loaded as a Roll and NOT as a Sheet.

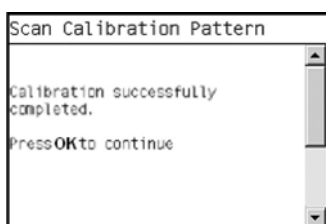
NOTE: Only scan the Calibration Pattern in the Printer that was used to actually print it. Using the Calibration in a different Printer could cause it to experience media advance problems.

After scanning the Calibration Pattern, it should be discarded. When Loading the Calibration Pattern, use the Cutter blade on the Print Platen to align the edge of the sheet. If you follow this advice, you will prevent the cutter from cutting a section of the Calibration Pattern, which could cause the Calibration to FAIL.

14. Load the Calibration Pattern following the instructions on the Front Panel. Once the Calibration Pattern is loaded correctly, the following message will be displayed on the Front Panel. Press the **OK** key to continue.



15. The Printer will scan the Calibration Pattern which could take several minutes. Once the calibration is completed successfully, the following message will be displayed on the Front Panel. Press the **OK** key to continue.



If the Paper Advance Calibration fails for any reason, a warning message will appear on the Front Panel. In this case, try the following:

- Check that the Calibration Pattern was not incorrectly cut (trimming the actual pattern) during the media load process. If this is the case, perform the Paper Advance Calibration again from **step 1**.
- Perform a Line Sensor Calibration (Refer ⇒ refer [Line Sensor Calibration on page 146](#)) and then rescan the Calibration pattern.
- Replace the Line Sensor ⇒ refer [Line Sensor on page 267](#).
- If the problem continues, replace the Media Advance Drive ⇒ refer [Media Advance Drive on page 311](#).

Drop Detector Calibration

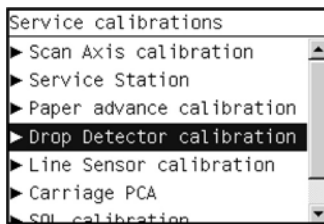
The purpose of this Service Calibration is to calibrate the Drop Detector (located in the Service Station) in relation to the Carriage Assembly.

Service calibrations also need to be performed after removing or replacing certain printer components. If you have removed or replaced printer components, check the Service Calibration Guide to Removal and Installation to see which tests and calibrations you need to perform. Refer to [Service Calibration Guide to Removal and Installation on page 170](#).

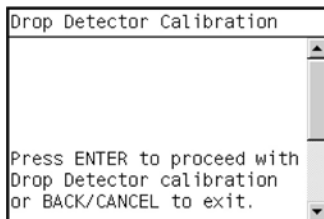
Calibrate Drop Detector

Perform the Drop Detector Calibration as follows:

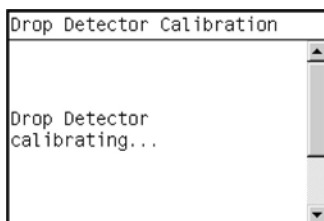
1. In the Service Calibrations submenu, scroll to **Drop Detector Calibration** and press **OK**.



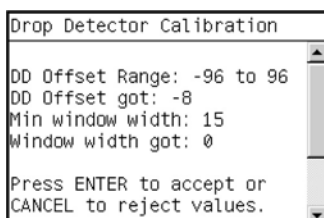
2. When the following message appears on the front panel, you must select whether you would like to continue with the calibration by pressing the **OK** key. Press **Back** or **Cancel** to exit the calibration.



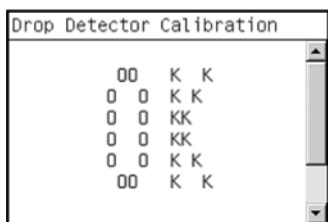
3. The Printer will start to calibrate the Drop Detector.



4. Once the Drop Detector has been calibrated, the results will be displayed on the Front Panel. Press **OK** to finish the calibration.



- Once the calibration is completed, **OK** will be displayed on the Front Panel.



Line Sensor Calibration


The purpose of this Service Calibration is to calibrate the intensity of the line sensor in the Carriage PCA. An incorrect calibration can result in edge detection failures during media loading and incorrect reading of prints that are used for alignment or calibration.

Perform the Line Sensor Calibration whenever:

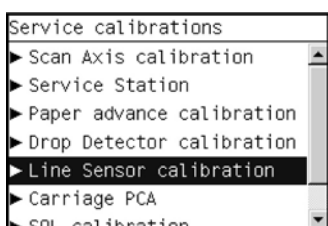
- Edge detect procedure fails during media loading.
- Carriage is disassembled or replaced.
- Line Sensor is disassembled or replaced.
- Banding is detected in prints.
- Misalignment between colors is detected.

Service calibrations also need to be performed after removing or replacing certain printer components. If you have removed or replaced printer components, check the Service Calibration Guide to Removal and Installation to see which tests and calibrations you need to perform. Refer to [Service Calibration Guide to Removal and Installation on page 170](#).

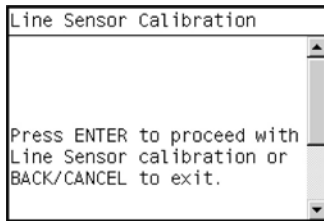
Perform the Line Sensor Calibration as follows:

 **NOTE:** Make sure you load one of the following media into the Printer before performing this calibration:

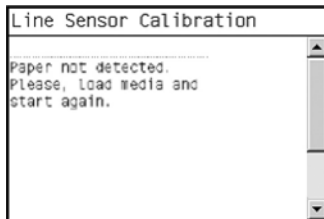
- HP Bond Paper.
 - HP Glossy Media.
 - HP Coated Paper.
 - HP Productivity Photo Gloss.
 - HP Heavyweight Coated Paper.
 - HP Super Heavyweight Coated Paper.
 - HP Bright White Inkjet Paper.
- In the Service Calibrations submenu, scroll to Line Sensor Calibration and press **OK**.



- When the following message appears on the front panel, you must select whether you would like to continue with the calibration by pressing the **OK** key. Press **Back** or **Cancel** to exit the calibration.




- If media is not loaded, the following message appears on the front panel. Load media in to the Printer and start again from **step 1**.



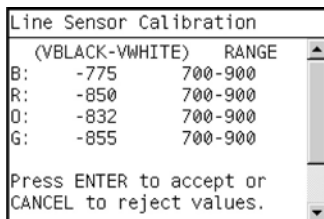
Before continuing, the Printer will check the following:

- The Media Lever is in the lowered position.
- The correct paper type is loaded (check list on previous page).
- The correct paper size (minimum paper size 24 inches).

If these conditions are **not** met, a warning will be displayed on the Front Panel and you will need to restart the Calibration from **step 1**.

 **NOTE:** Make sure you keep your hands away from the Print Platen as the Carriage will be moving at high speed and you could injure yourself or damage the Carriage Assembly.

- The printer will start to calibrate the Line Sensor. Once the Line Sensor has been calibrated, the results will be displayed on the Front Panel. Press **OK** to continue or press **Back** or **Cancel** to exit the calibration.



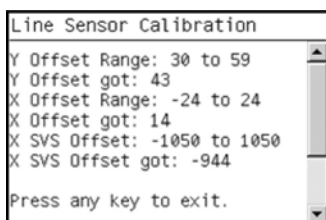
If the values are not within the range specified, an error will appear on the Front Panel. In this case, try the following:

- Try the Scan-Axis Calibration again.
- Replace the Line Sensor

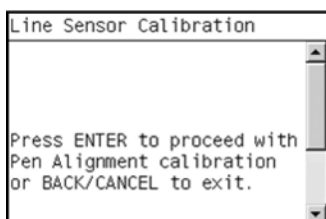
- The Printer will start to calibrate the Line Sensor position to the Black Printhead. The printer will print a line of black dots and then scan them:



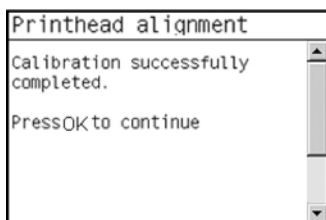
- Once the Line Sensor has been calibrated, the results will be displayed on the Front Panel. If the values are within the range, press **OK** to accept the results. If the values are NOT within the range, press **Back** or **Cancel** to exit and FAIL the calibration. Once the Line Sensor has been calibrated, the results will be displayed on the Front Panel. Press **OK** to finish the calibration or press **Back** or **Cancel** to exit the calibration.



- The Printer will now perform the Printhead Alignment. When the following message appears on the front panel, you must select whether you would like to continue with the calibration by pressing the **OK** key. Press **Back** or **Cancel** to exit the calibration.



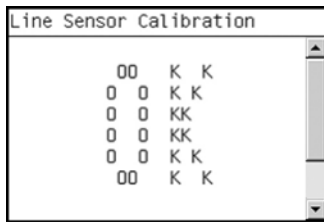
- Once the Printhead Alignment is completed, the following message will be displayed on the Front Panel. Press the **OK** key to continue.



If the Printhead Alignment fails for any reason, a warning message will appear on the Front Panel. In this case, try the following:

- Enter the Front Panel menu and retry the Printhead Alignment. If the Alignment completes successfully, then perform the Color Calibration.
- If the Alignment fails again, check the Alignment pattern to see if any of the Printheads are printing incorrectly. If necessary, perform a Printhead Recovery through the Front Panel and retry the Printhead Alignment.

- If the Alignment fails again, check the Alignment pattern to see if any of the Printheads are printing incorrectly. If necessary, perform a Printhead Recovery through the Front Panel and retry the Printhead Alignment.

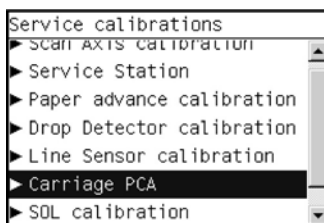


Carriage PCA

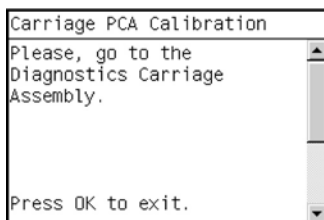
The purpose of this Service Calibration is to reset the ink short thresholds after replacing the Carriage PCA. This calibration is integrated into the Scan Axis diagnostic test. See [4. Carriage Assembly on page 95](#).

Perform the Carriage Setup as follows:

- In the Service Calibrations submenu, scroll to Carriage PCA and press **OK**.



- To calibrate the Carriage PCA, run the Carriage Assembly diagnostic test. See [4. Carriage Assembly on page 95](#).



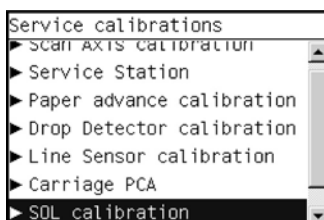
Color Sensor (ESP) Calibration

The purpose of this Service Calibration is to calibrate the Color Sensor (Color Sensor (ESP)).

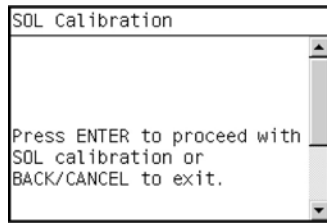
Service calibrations also need to be performed after removing or replacing certain printer components. If you have removed or replaced printer components, check the Service Calibration Guide to Removal and Installation to see which tests and calibrations you need to perform. Refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Perform the Color Sensor (ESP) Calibration as follows:

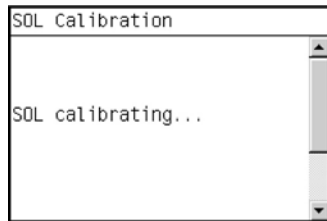
- In the Service Calibrations submenu, scroll to Color Sensor (ESP) Calibration and press **OK**.



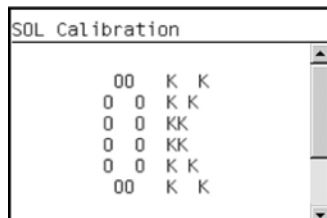
- When the following message appears on the front panel, you must select whether you would like to continue with the Carriage Setup by pressing **OK**. Press **Back** or **Cancel** to exit the utility.



- The printer will start to calibrate the Color Sensor:



Once the Color Sensor calibration has completed successfully, **OK** will be displayed on the Front Panel.

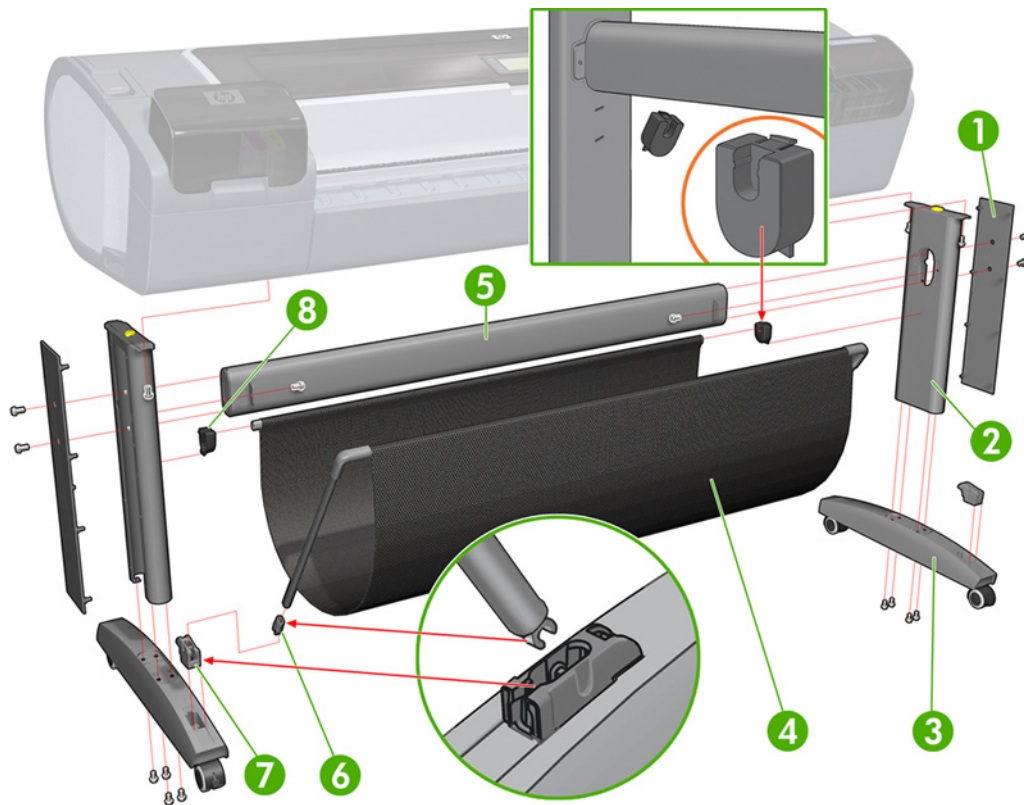


5 Parts and Diagrams

- [Printer Support on page 152](#)
- [Center Covers \(Front\) on page 153](#)
- [Center Covers \(Rear\) on page 154](#)
- [Right Cover on page 155](#)
- [Left Cover on page 156](#)
- [Right Hand Assemblies on page 157](#)
- [Left Hand Assemblies on page 158](#)
- [Carriage Assembly on page 159](#)
- [Scan-Axis Assemblies on page 160](#)
- [Paper Path Assemblies \(Front\) on page 161](#)
- [Paper Path Assemblies \(Rear\) on page 162](#)
- [Tools 1 on page 163](#)
- [Tools 2 on page 164](#)
- [Miscellaneous Parts on page 165](#)

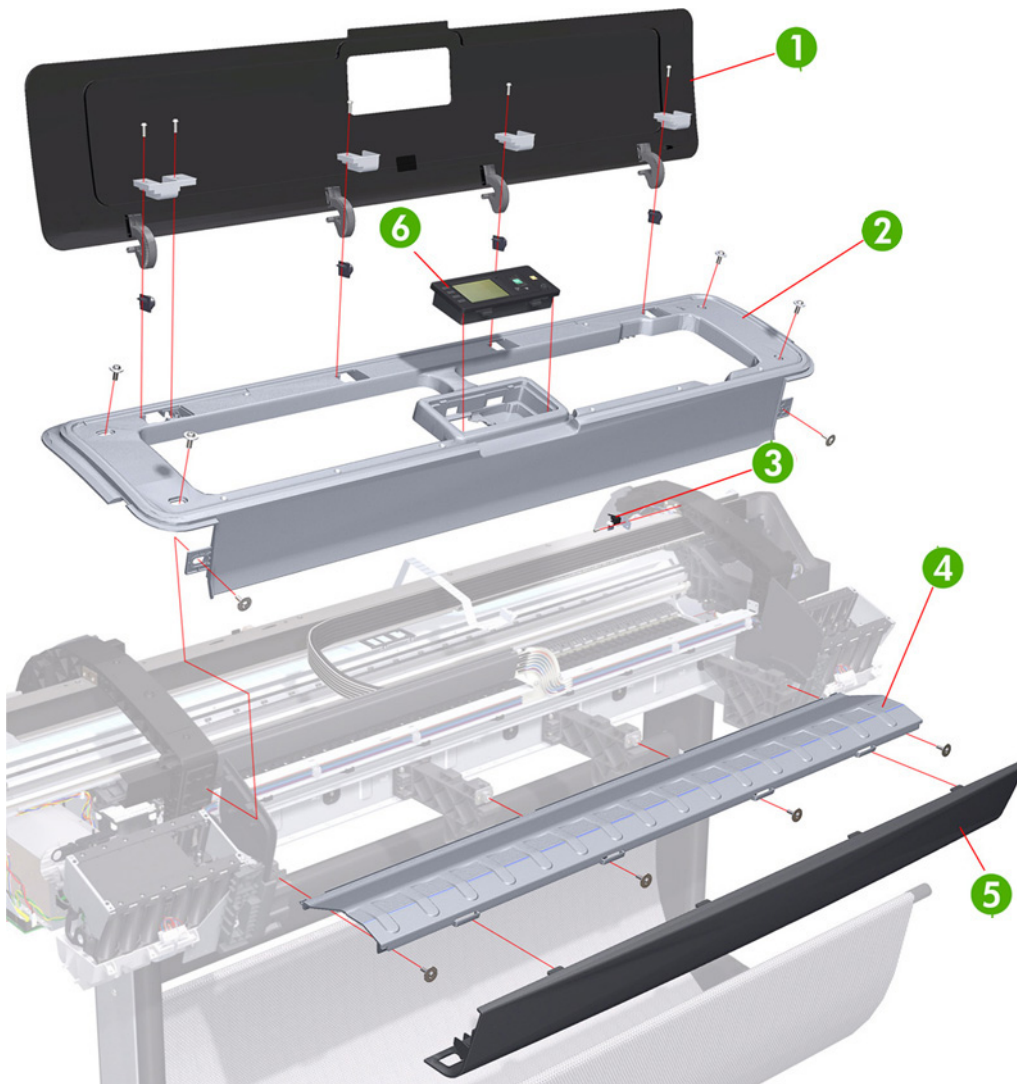
Printer Support

Reference on Figure	HP Part Number	Part Description	Page ^a
1	Q5669-60718	Leg Cover	N/A
2	Q5669-60716	Legs Assembly	N/A
3	Q5669-60715	Foot Assembly (includes 1 foot and 1 support tube)	N/A
4	Q6659-60237	Bin assembly (includes the Bin Support)	N/A
5	Q5669-60236	X-Brace	N/A
7	Q5669-60715	Foot Bracket (part of Foot Assembly)	N/A
6-&-8	Q5669-67063	Tube Basket & Rear Basket Bracket (Includes screws for Legs Assembly)	N/A



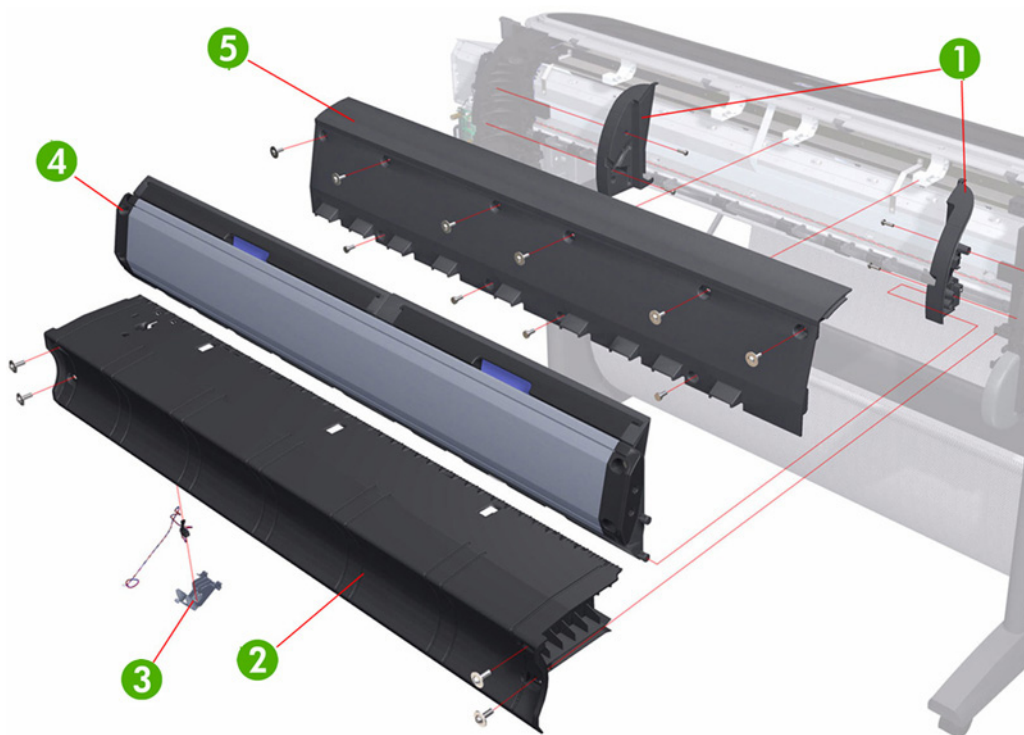
Center Covers (Front)

Reference on Figure	HP Part Number	Part Description	Page ^a
1	CH538-67030	Window	Window on page 174
2	CQ113-67002	Top cover	
3	CH538-67071	Window Position Sensor (with shield)	Window Position Sensor on page 208
4	Q6659-60089	Anti-ESD Media Output Assembly	Media Output Assembly on page 178
5	Q6659-60165	Front cover	Front Cover on page 177
6	Q6675-60060	Front Panel	Front Panel on page 203



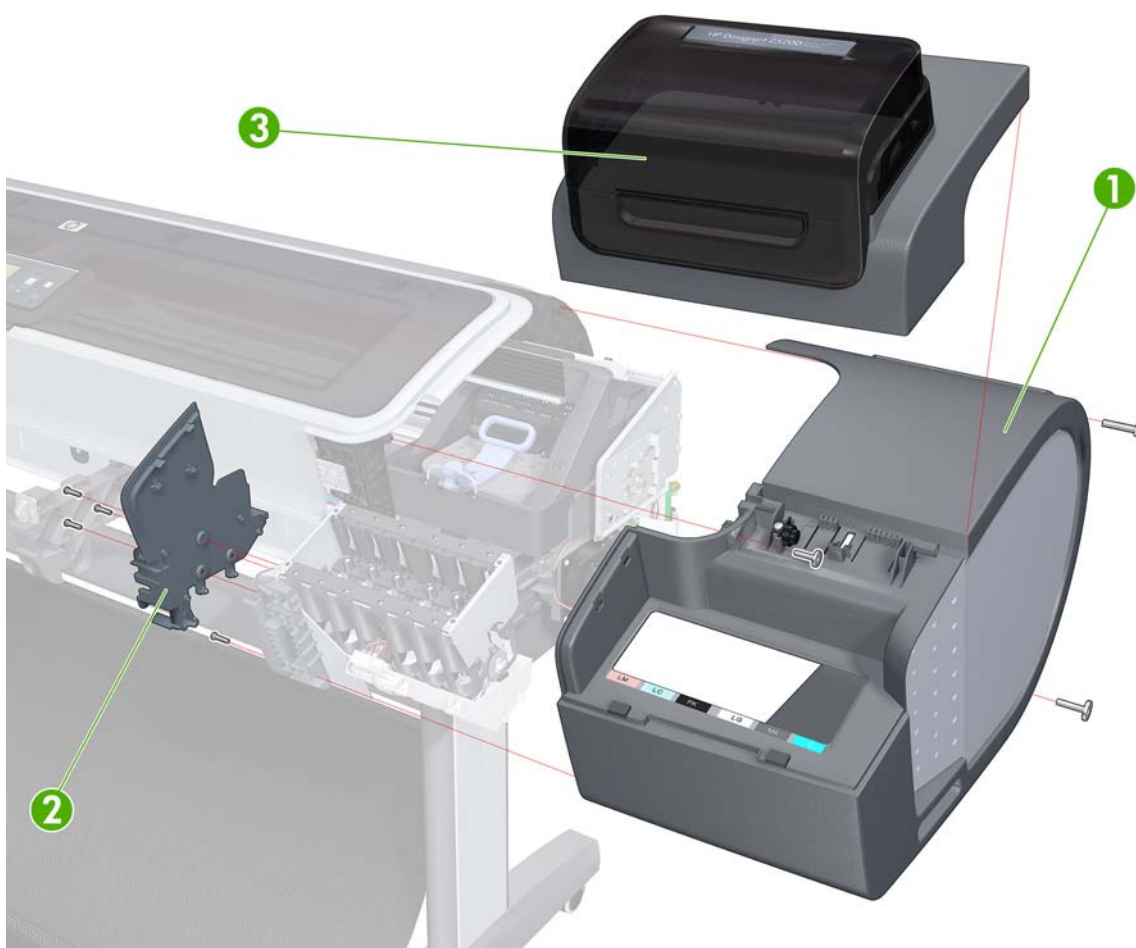
Center Covers (Rear)

Reference on Figure	HP Part Number	Part Description	Page ^a
1	Q5669-60660	Rear Tray Supports	Right Rear Tray Support on page 200
2	Q6687-67801	Clean Out Assembly	Clean Out Assembly on page 225
3	Q5669-67801	Out Of Paper Sensor	Out Of Paper Sensor on page 226
4	Q6659-60170	Rear Tray	Rear Tray on page 194
5	Q6659-60164	Rear cover	Rear Cover on page 195



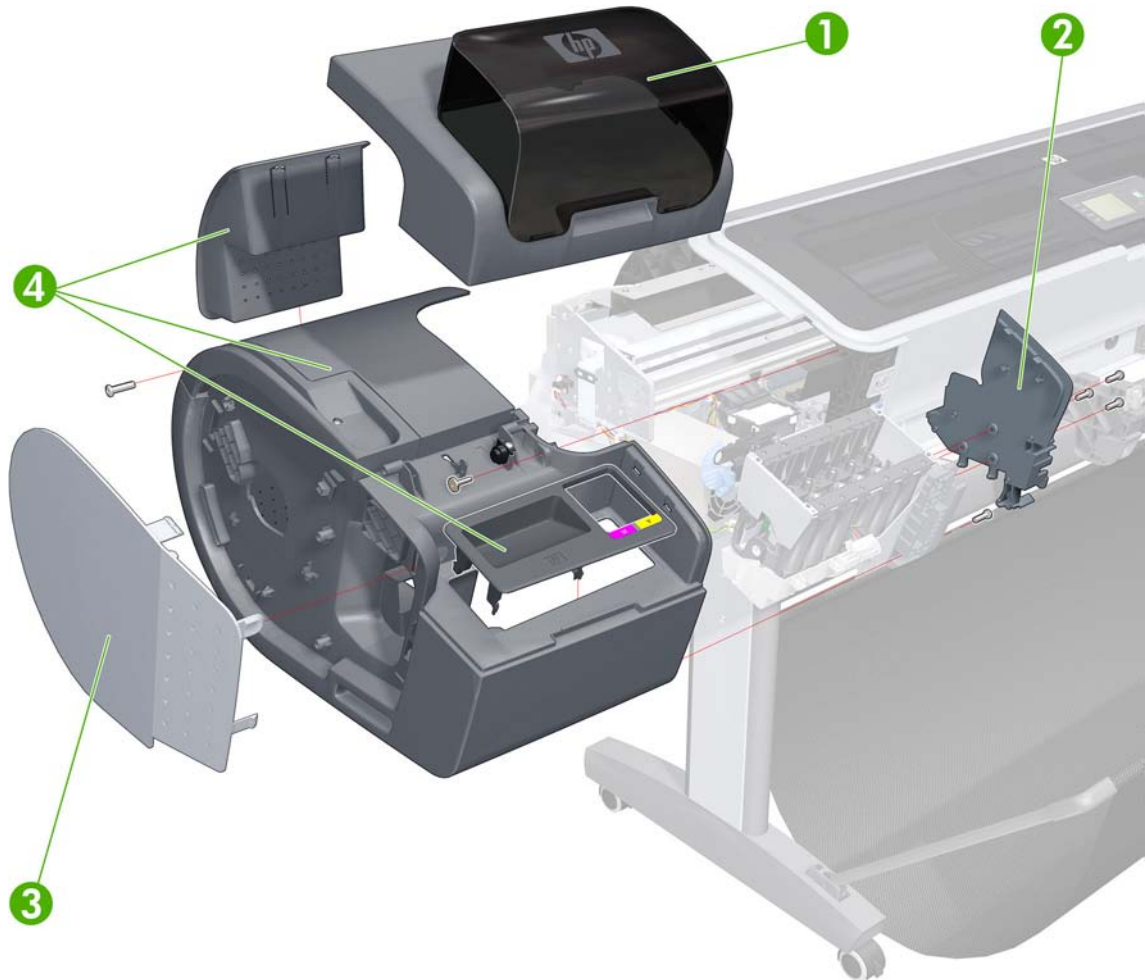
Right Cover

Reference on Figure	HP Part Number	Part Description	Page ^a
1	CQ113-67005	Right Cover	Right Cover on page 185
2	Q6675-60109	Integrated front Trim	Right Front Trim on page 179
3	CQ113-67015	Right Ink Cartridge Door	Right Ink Cartridge Door on page 182



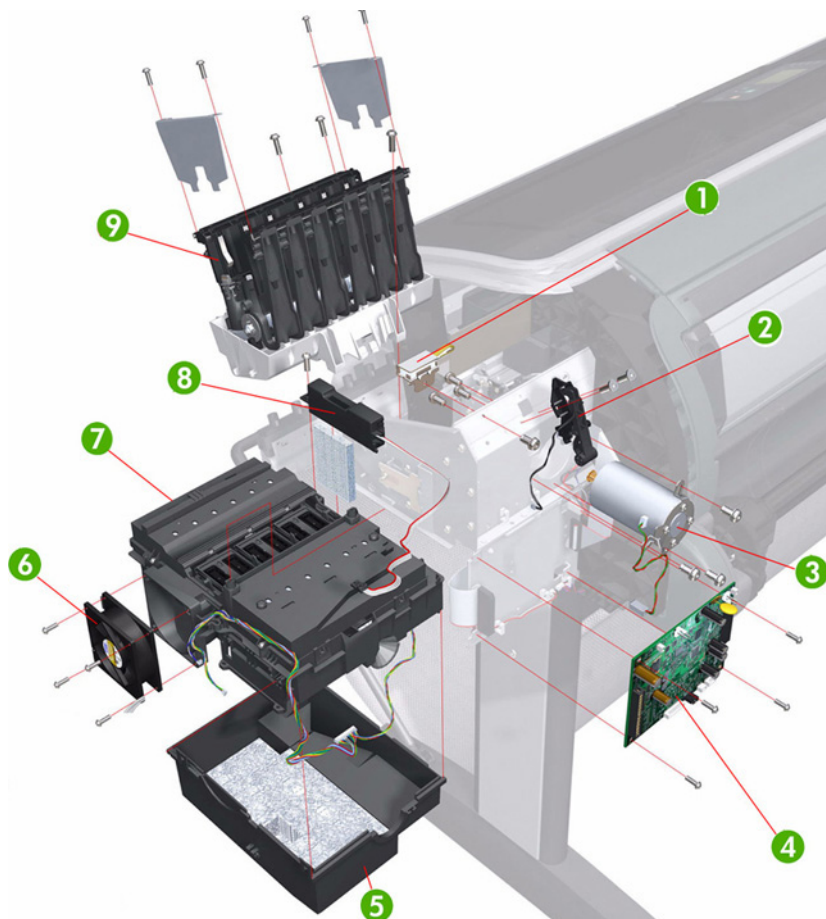
Left Cover

Reference on Figure	HP Part Number	Part Description	Page ^a
1	CQ113-67006	Left Ink Cartridge Door	Left Ink Cartridge Door on page 183
2	Q6675-60109	Left Front Trim/Right Front Trim (Right not shown)	Left Front Trim on page 181
3	CQ113-67007	Left Side Panel	Left Cover on page 188
4	CQ113-67004	Left Cover	Left Cover on page 188



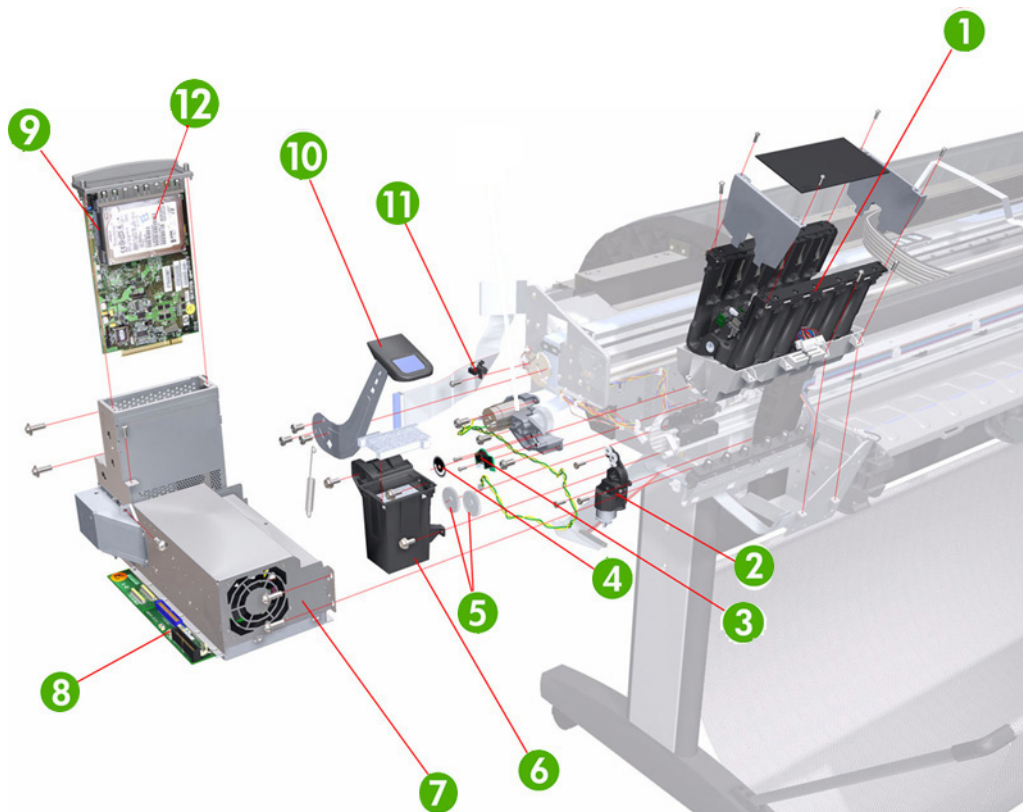
Right Hand Assemblies

Reference	HP Part Number	Part Description	Page
1	Q6675-60043	Carriage Rail Oiler	Carriage Rail Oiler on page 260
2	Q5669-60677	Pen to Paper Space (PPS) Solenoid	Pen to Paper Space (PPS) Solenoid on page 221
3	CH538-60141	Scan-Axis Motor	Scan-Axis Motor on page 257
4	Q6675-60018	PrintMech PCA	PrintMech PCA on page 220
5	Q5669-60667	Service Station Spittoon	Service Station on page 214
6	Q5669-60664	Aerosol Fan Assembly	Aerosol Fan Assembly on page 219
7	Q6718-67025	Service Station (Includes Drop Detector, Aerosol Fan Assembly, Primer Assembly, and Service Station Spittoon)	Service Station on page 214
8	Q5669-60666	Drop Detector	Drop Detector on page 217
9	Q6675-60020	Right Ink Supply Station	Right Ink Supply Station on page 280



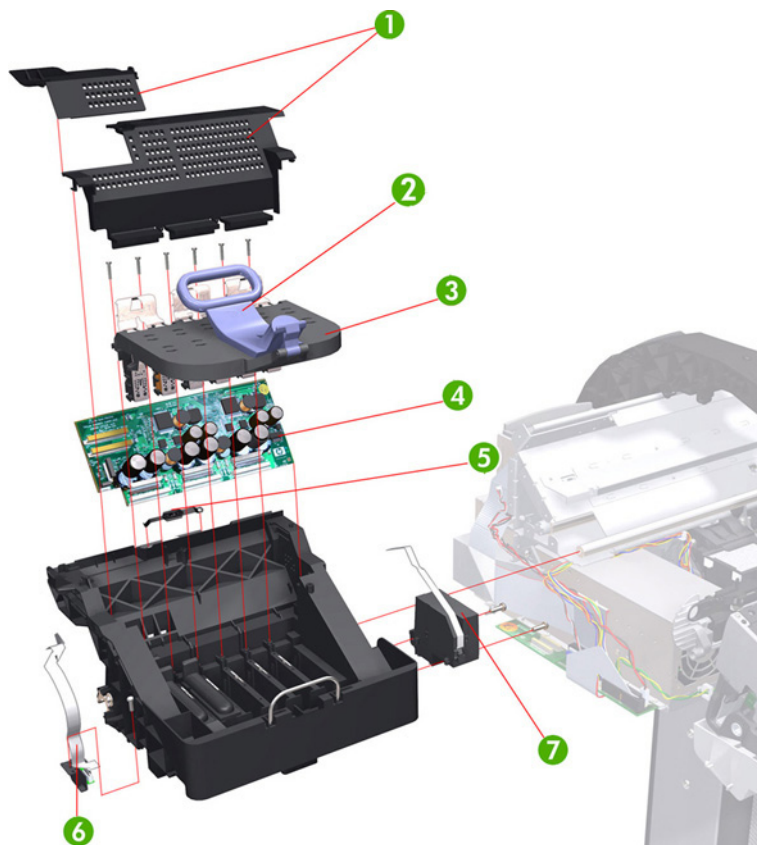
Left Hand Assemblies

Reference	HP Part Number	Part Description	Page
1	Q6675-60019	Left Ink Supply Station	Left Ink Supply Station on page 284
2	Q6718-67017	Starwheel Motor	Starwheel Motor on page 325
3	Q5669-60703	Encoder Sensor	Encoder Disk and Encoder Sensor on page 308
4	Q5669-60702	Encoder Disk	Encoder Disk and Encoder Sensor on page 308
5	CH538-67027	Media Advance Transmission	Media Advance Drive on page 311
6	Q5669-67049	Left Spittoon	Left Spittoon on page 306
7	Q5669-60693	Power Supply Unit (PSU) Assembly	Electronics Module (Main PCA and PSU) on page 298
8	Q6677-67005	Main PCA with Power Supply Unit (PSU) Assembly	Electronics Module (Main PCA and PSU) on page 298
9	CK837-67026	Formatter	Formatter on page 296
10	Q5669-60705	Media Lever	Media Lever on page 196
11	Q5669-60706	Media Lever Position Sensor	Media Lever Position Sensor on page 198
12	CQ113-67013	HDD 160 GB (Contains Z5200 firmware)	Hard Disk Drive on page 297



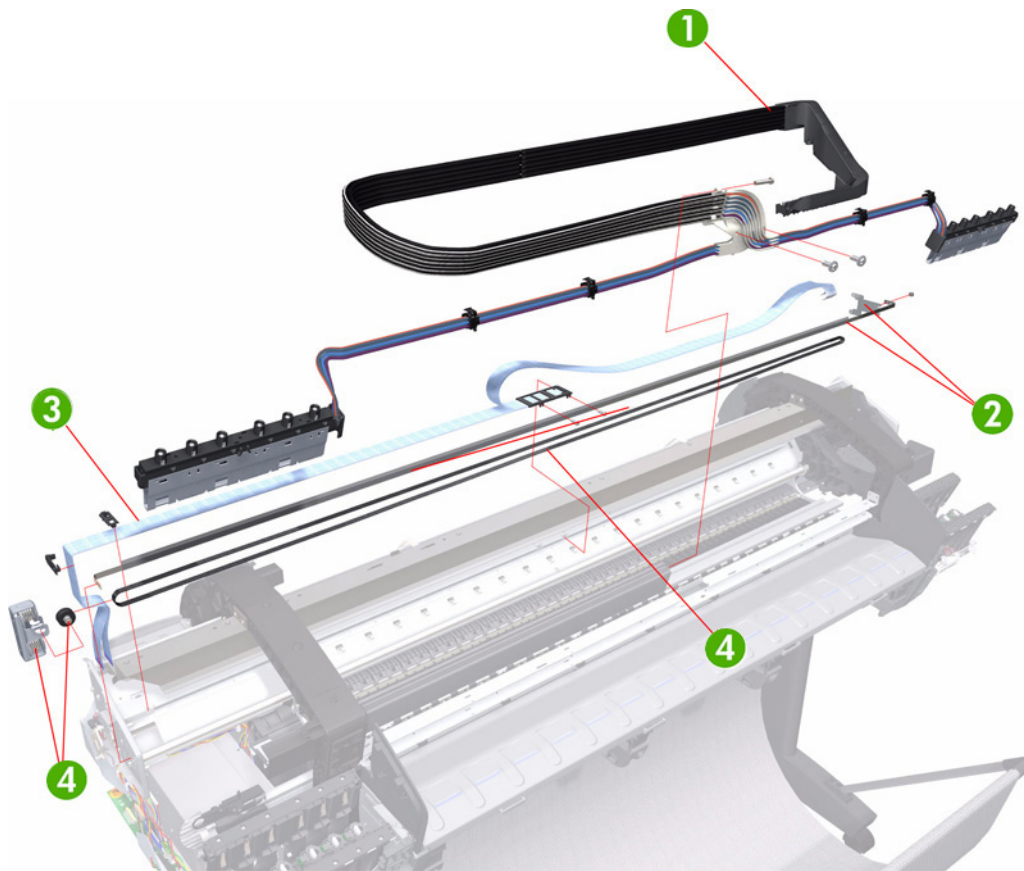
Carriage Assembly

Reference on Figure	HP Part Number	Part Description	Page ^a
1	CQ113-67011	Carriage PCA Covers	Carriage Cover (includes Carriage Latch) on page 272
2	Q5669-60685	Carriage Latch	Carriage Cover (includes Carriage Latch) on page 272
3	Q5669-60686	Carriage Cover (includes Carriage Latch)	Carriage Cover (includes Carriage Latch) on page 272
4	Q5669-60682	Carriage PCA	Carriage PCA on page 276
5	Q5669-60687	Carriage Rear Bushing	Carriage Rear Bushing on page 254
6	Q5669-60683	Line Sensor	Line Sensor on page 267
7	Q5669-60684	Color Sensor (ESP)	Color Sensor (ESP) on page 262
1 - 7	CQ113-67010	Carriage Assembly (includes: Line Sensor, Carriage Cover, Carriage Latch, Carriage PCA, Carriage Rear Bushing, and Color Sensor (ESP))	Carriage Assembly (with or without Trailing Cable) on page 244
8	CQ113-67014	Trailing Cable & PCA Cover	



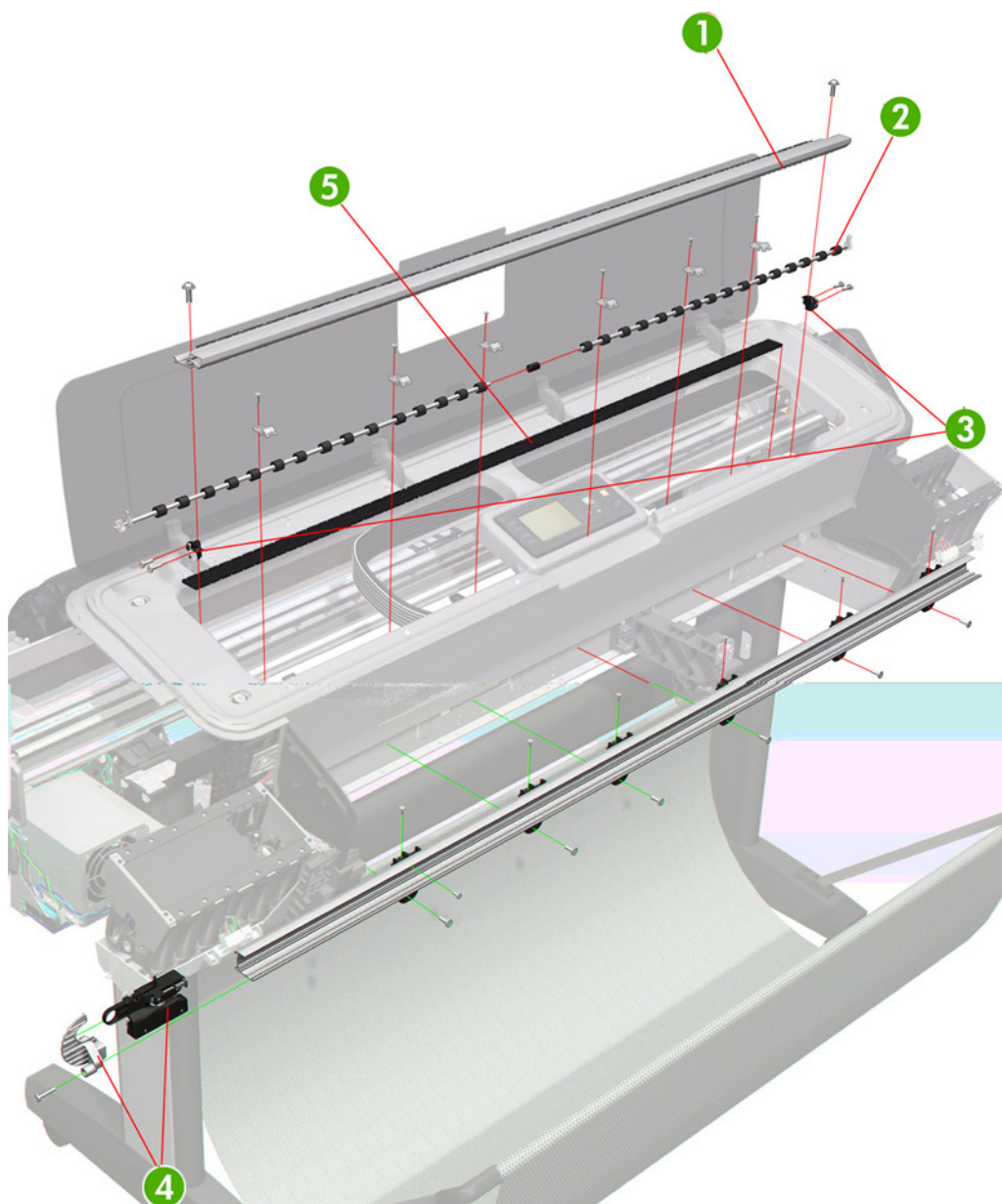
Scan-Axis Assemblies

Reference on Figure	HP Part Number	Part Description	Page
1	Q6677-60007	Ink Supply Tubes	Ink Supply Tubes on page 288
2	Q6677-60024	Encoder Strip (including Encoder Strip Spring and Nut)	Encoder Strip (with spring and attachment nut) on page 231
3	LQ113-67014	Trailing Cable	
4	CH538-67018	Belt with tensioner	Belt Assembly on page 256



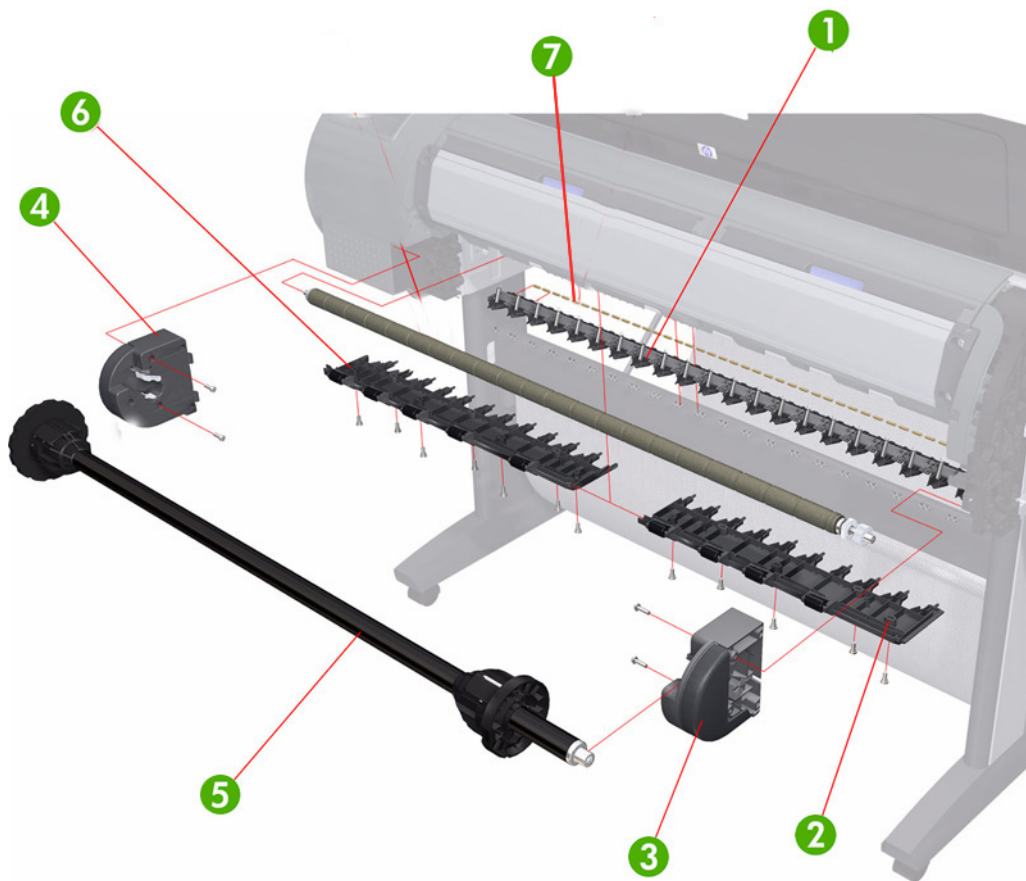
Paper Path Assemblies (Front)

Reference on Figure	HP Part Number	Part Description	Page
1	Q6659-67016	Starwheel with Actuator	Starwheel Assembly on page 301
2	Q6718-67006	Overdrive	Print Zone Overdrive on page 302
3	Q5669-67054	Starwheel Support Assembly	Left Starwheel Lifter on page 320
4	Q5669-60713	Cutter Assembly	Cutter Assembly on page 199
5	Q6659-60182	Full Bleed Foam Kit	Full Bleed Foam on page 326



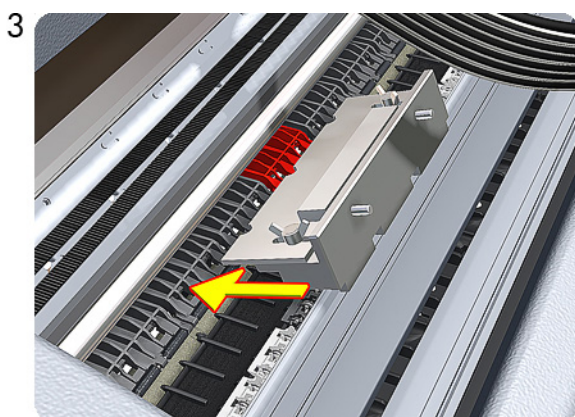
Paper Path Assemblies (Rear)

Reference on Figure	HP Part Number	Part Description	Page
1	Q6718-67006	Pinchwheel Assembly	Pinchwheel Assembly on page 314
2	Q6677-60019	Left Roll Guide	Left Roll Guide on page 229
3	Q5669-60711	Left Spindle Holder	Left Spindle Holder on page 224
4	Q5669-60712	Right Spindle Holder	Right Spindle Holder on page 224
5	Q6659-60183	Spindle	Spindle on page 223
6	Q6675-60044	Right Roll Guide	Right Roll Guide on page 230
7	Q5669-60708	Pinch Roller	Pinch Roller on page 319
-	Q6675-60093	3 inch Spindle Adaptor Kit	N/A



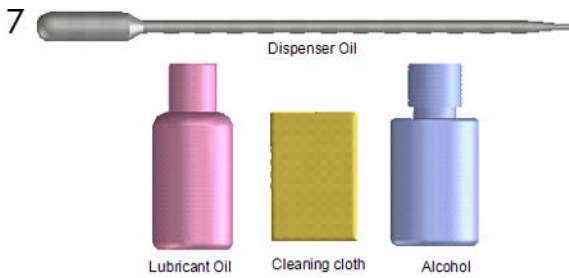
Tools 1

	HP Part Number	Part Description	Printer Model
1	Q6675-67018	Media Driver Tool Kit (includes the Handle for Media Driver Tool Support and the Media Driver Adjustment Tool)	All
2	Q5669-60690	Flex Contacts Cleaning Tool (CSR A)	All
3-4	Q6687-60084	Pinchwheel Insertion Tool	All



Tools 2

	HP Part Number	Part Description	Printer Model
5	Q6675-67017	Spanner Tool	All
6	Q6683-67001	Tool Kit (includes pinchwheel alignment tool, paper driver tool, spanner # 13, oil dispenser, insert spring tool, tweezers, T15 screwdriver, 100 cc isopropyl alcohol, lubricant oil, plastic gloves, flex contacts cleaning tool and cleaning kit)	All
7	Q6683-67028	Lubrication Kit	All



Miscellaneous Parts

HP Part Number	Part Description
CQ113-67009	Preventive Maintenance Kit #1
Q6675-67012	Preventive Maintenance Kit #2
Q6675-60068	Serial Number Label
Q6675-67004	Ink System Purgers (6 Units)
Q6675-67005	Ink System Purgers (100 Units)

6 Removal and Installation

- [Introduction on page 169](#)
- [Service Calibration Guide to Removal and Installation on page 170](#)
- [Window on page 174](#)
- [Front Cover on page 177](#)
- [Media Output Assembly on page 178](#)
- [Right Front Trim on page 179](#)
- [Left Front Trim on page 181](#)
- [Right Ink Cartridge Door on page 182](#)
- [Left Ink Cartridge Door on page 183](#)
- [Right Cover on page 185](#)
- [Left Cover on page 188](#)
- [Rear Tray on page 194](#)
- [Rear Cover on page 195](#)
- [Media Lever on page 196](#)
- [Media Lever Position Sensor on page 198](#)
- [Cutter Assembly on page 199](#)
- [Right Rear Tray Support on page 200](#)
- [Left Rear Tray Support on page 201](#)
- [Front Panel on page 203](#)
- [Top Cover on page 205](#)
- [Window Position Sensor on page 208](#)
- [Ink Supply Tubes Support Rail on page 209](#)
- [Service Station on page 214](#)
- [Drop Detector on page 217](#)
- [Aerosol Fan Assembly on page 219](#)
- [PrintMech PCA on page 220](#)
- [Pen to Paper Space \(PPS\) Solenoid on page 221](#)


- [Spindle on page 223](#)
- [Left Spindle Holder on page 224](#)
- [Right Spindle Holder on page 224](#)
- [Clean Out Assembly on page 225](#)
- [Out Of Paper Sensor on page 226](#)
- [Left Roll Guide on page 229](#)
- [Right Roll Guide on page 230](#)
- [Encoder Strip \(with spring and attachment nut\) on page 231](#)
- [Encoder Strip on page 236](#)
- [Trailing Cable on page 237](#)
- [Carriage Assembly \(with or without Trailing Cable\) on page 244](#)
- [Carriage Rear Bushing on page 254](#)
- [Belt Assembly on page 256](#)
- [Scan-Axis Motor on page 257](#)
- [Carriage Rail Oiler on page 260](#)
- [Color Sensor \(ESP\) on page 262](#)
- [Line Sensor on page 267](#)
- [Carriage Cover \(includes Carriage Latch\) on page 272](#)
- [Carriage PCA on page 276](#)
- [Right Ink Supply Station on page 280](#)
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- [Ink Supply Tubes on page 288](#)
- [Formatter on page 296](#)
- [Hard Disk Drive on page 297](#)
- [Electronics Module \(Main PCA and PSU\) on page 298](#)
- [Starwheel Assembly on page 301](#)
- [Print Zone Overdrive on page 302](#)
- [Left Spittoon on page 306](#)
- [Encoder Disk and Encoder Sensor on page 308](#)
- [Media Advance Drive on page 311](#)
- [Pinchwheel Assembly on page 314](#)
- [Pinch Roller on page 319](#)
- [Left Starwheel Lifter on page 320](#)
- [Right Starwheel Lifter on page 322](#)

- [Starwheel Motor on page 325](#)
- [Full Bleed Foam on page 326](#)

Introduction


This chapter is a step-by-step guide to the removal and installation of the key components of the printer. You may find it useful to check off the steps as they are performed. Use the illustrations for each procedure to identify the parts referred to in the text.

The procedures appear in order of removal. The whole machine can be stripped down by starting at the beginning of this chapter and working through the subsequent procedures.

 **NOTE:** Before using this chapter to remove and install a new component, always make sure that you have performed the relevant service test. If the test passes you will not need to replace the component.

Safety Precautions

Review the instructions identified by WARNING and CAUTION symbols before you service the printer. Follow these warnings and cautions for your protection and to avoid damaging the printer.

 **NOTE:** 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 plotter 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.

Required Tools

All the special tools and equipment required to disassemble, service and repair the Printer are provided in the Toolkit P/N Q6683–67001. Some tools can be ordered separately from the toolkit. Refer to [Parts and Diagrams on page 151](#).

The Toolkit contains the following tools:

Table 6-1 Toolkit P/N Q6683-67001

Description/Comments	HP Part Number
13 mm Combination Spanner	Q6675-67011
Alcohol	Q6675-60070

Table 6-1 Toolkit P/N Q6683-67001 (continued)

Allen Key #2	Q6675-60041
Cleaning Cloth	9300-2531
Flex Contacts Cleaning Support	Q1271-40384
Lubricant Oil	Q6675-60061
Media Driver Adjustment Tool	Q6675-67009
Handle for Media Driver Tool Support	Q6675-67010
Spanner	Q6675-67011
Oil Dispenser	Q6675-60062
Pinchwheel Alignment Tool	Q5669-20595
Pinchwheel Insertion Tool	Q5669-20594
Protective Plastic Gloves	Q6675-60035
Screwdriver	8710-2456
Tweezers	Q6675-60037
Cleaning Assembly	C6071-60218

You will also need the following standard hand tools:

Table 6-2 Standard Tool Requirements

Description/Comments	Size
Long Torx Screwdriver	1/4 inch drive
Torx Bit (75 mm)	8
	10
	15
	20
Phillips Screwdriver	1
Pliers	N/A
Snips	N/A
Pipe Spanner	5.5 mm
Flat Bladed Screwdriver	N/A

Service Calibration Guide to Removal and Installation


Using the Service Calibration Guide

When you remove most printer components, you will need to perform a particular set of Service Calibrations and Diagnostic tests to ensure proper printer performance.

The Service Calibration Matrix shows which service calibrations and diagnostic tests need to be performed whenever you remove and install particular printer components (left most column).

The calibrations must be performed in the order they are shown in the row.

Start by locating the component you have removed and installed in the left most column.

 **NOTE:** Even if you do not replace the removed component with a new component, you still need to perform the calibrations indicated by the matrix.

The Service Calibration Matrix

	Service Calibration or Test (Perform in the order shown)
Service Station	8. Service Station test, Drop Detector Calibration
Aerosol Fan Assembly	8. Service Station test, Drop Detector Calibration
Drop Detector	8. Service Station test, Drop Detector Calibration
Service Station Spittoon	8. Service Station test, Drop Detector Calibration
Primer Assembly	8. Service Station test, Drop Detector Calibration
Left Ink Supply Station	7. Ink Delivery System Test (IDS)
Right Ink Supply Station	7. Ink Delivery System Test (IDS)
Carriage Cover	4. Carriage Assembly, Line Sensor Calibration, 3. Electronics Module
Carriage Latch	4. Carriage Assembly, Line Sensor Calibration, 3. Electronics Module
Carriage PCA	4. Carriage Assembly, Line Sensor Calibration, 3. Electronics Module
PrintMech PCA	3. Electronics Module
Front Panel	3. Electronics Module
Power Supply Unit (PSU)	3. Electronics Module
Main PCA	3. Electronics Module
Ink Supply Tubes	Scan Axis Test, 3. Electronics Module
Media Advance Drive	2. Paper Drive, Paper Advance Calibration, Electronics Module
Encoder Disk	2. Paper Drive, Paper Advance Calibration, Electronics Module
Encoder Sensor	2. Paper Drive, Paper Advance Calibration, Electronics Module
Media Advance Roller	2. Paper Drive, Paper Advance Calibration, Electronics Module, Sensors
Carriage Assembly	4. Carriage Assembly, Scan Axis Test, Line Sensor Calibration, 5. Sensors, Cutter Test
Belt Tensioner	4. Carriage Assembly, Scan Axis Test, Line Sensor Calibration, 5. Sensors
Belt Assembly	4. Carriage Assembly, Scan Axis Test, Line Sensor Calibration, 5. Sensors
Scan-Axis Motor	4. Carriage Assembly, Scan Axis Test, Line Sensor Calibration, 5. Sensors
Trailing Cable	4. Carriage Assembly, Scan Axis Test, Line Sensor Calibration, 5. Sensors
Carriage Rear Bushing	4. Carriage Assembly, Scan Axis Test, Line Sensor Calibration, 5. Sensors, Cutter Test
Line Sensor	Line Sensor Calibration, 5. Sensors, Electronics module
Window Position Sensor	5. Sensors, Electronics module
Out of Paper Sensor	5. Sensors

Right Roll Guide	5. Sensors
Left Roll Guide	5. Sensors
Clean Out Assembly	5. Sensors
Pen to Paper Space (PPS) Solenoid	PRS Test
Encoder Strip	Scan axis
Starwheel Assembly	Starwheel Lifter Test
Starwheel Motor	Starwheel Lifter Test, Electronics Module
Left Starwheel Lifter	Starwheel Lifter Test, Electronics Module
Right Starwheel Lifter	None
Print Zone Overdrive	Starwheel Lifter Test
Media Lever Position Sensor	5. Sensors
Pinchwheel Assembly	2. Paper Drive 5. Sensors
Pinch Roller	2. Paper Drive 5. Sensors
Preventive Maintenance Kit #1	4. Carriage Assembly, Scan Axis Test, Line Sensor Calibration, 5. Sensors
Preventive Maintenance Kit #2	8. Service Station Calibration, Drop Detector Calibration
Cutter Assembly	Cutter Test
Color Sensor (ESP)	Color Sensor (ESP) Calibration, 5. Sensors, Electronics Module
Top Cover	Electronics Module
Ink Supply Tubes Support Rail	Electronics Module, 5. Sensors

Performing the Service Calibrations and Diagnostic Tests


When you are ready to perform the service calibrations and diagnostic tests that correspond to the component you have installed or replaced, consult the following page numbers for procedures:

- PRS Test - Refer to [PRS Test on page 78](#).
- Scan Axis Test - Refer to [1. Scan Axis on page 76](#).
- Cutter test - Refer to [Cutter test on page 84](#).
- Star Wheel Lifter test - Refer to [Star Wheel Lifter test on page 76](#).
- 2. Paper Drive - Refer to [2. Paper Drive on page 87](#).
- 3. Electronics Module - Refer to [3. Electronics Module on page 90](#).
- 4. Carriage Assembly - Refer to [4. Carriage Assembly on page 95](#).
- 5. Sensors - Refer to [5. Sensors on page 101](#).

- 6. Color Sensor (ESP) - Refer to [6. Color Sensor \(ESP\) on page 104.](#)
- 7. Ink Delivery System (IDS) - Refer to [7. Ink Delivery System \(IDS\) on page 106.](#)
- 8. Service Station - Refer to [8. Service Station on page 110.](#)
- Paper Advance Calibration - Refer to [Paper Advance Calibration on page 140.](#)
- Drop Detector Calibration - Refer to [Drop Detector Calibration on page 145.](#)
- Line Sensor Calibration - Refer to [Line Sensor Calibration on page 146.](#)

Window

Removal

 **NOTE:** Switch off the printer and remove the power cable.

NOTE: The Window can also be removed with the Top Cover to avoid scratching the Window. To remove the Window with the Top Cover, refer to [Top Cover on page 205](#).

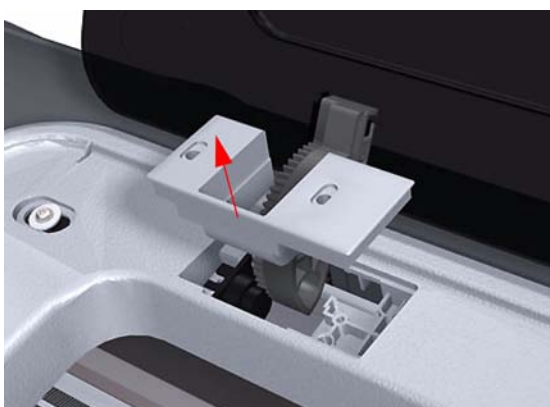
1. Open the Window.



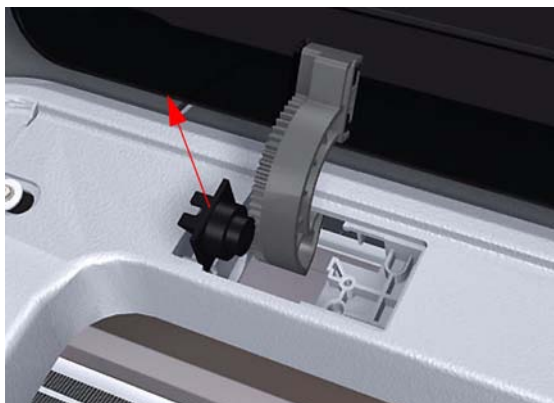
2. Remove the two T-15 screws that secure the left Window hinge locking plate to the Top Cover.



3. Remove the left Window hinge locking plate from the Top Cover.



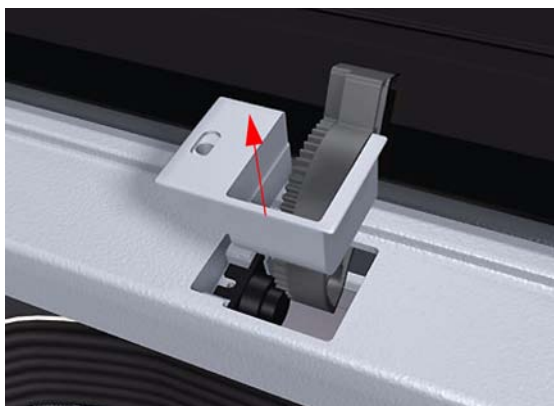
4. Remove the Damper Rotary from the Top Cover.



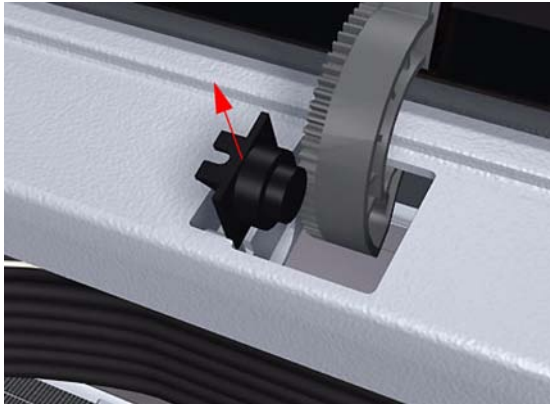
5. Remove the T-15 screws that secure each of the remaining three Window hinge locking plates to the Top Cover.



6. Remove the remaining three Window hinge locking plates from the Top Cover.



7. Remove the remaining three Damper Rotary pieces from the Top Cover.



8. Grip the Window at the left and right edges and move it horizontally towards the right as far as it will go.



9. Pull the Window towards the front to disengage the hinges.




10. Lift the Window vertically out of the printer.



Front Cover

Removal

 **NOTE:** Switch off the printer and remove the power cable.

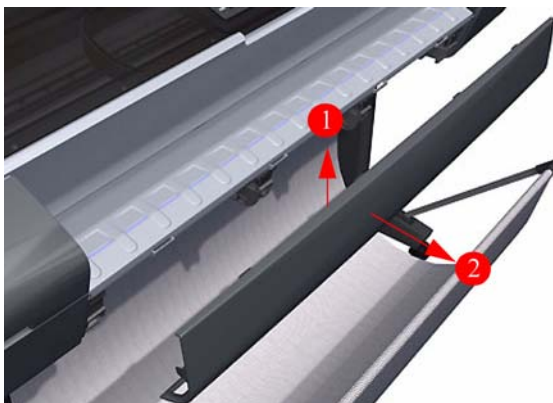
1. Squeeze each of the four attachment clips under the Front Cover, to release the cover from the printer.



2. Carefully pull the bottom of the Front Cover forwards until you can release it from its attachments.




3. Unhook the Front Cover from the four attachments and remove it from the printer.



Media Output Assembly

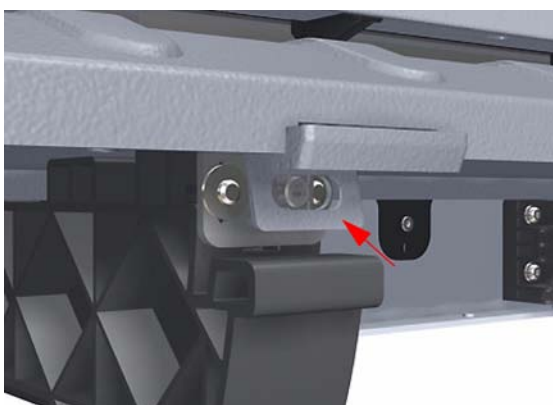
Removal

 **NOTE:** Switch off the printer and remove the power cable.

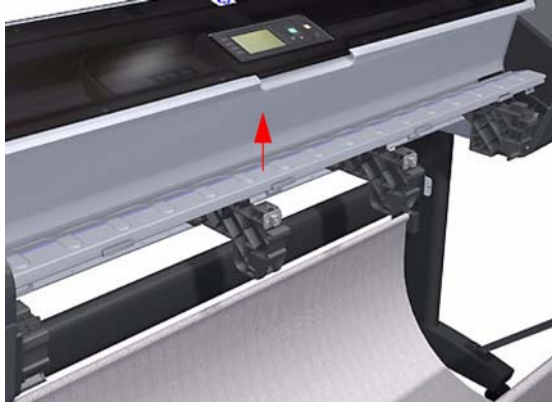
1. Remove the Front Cover (refer [Front Cover on page 177](#)).
2. Remove four T-15 screws that secure the Media Output Assembly to the printer.



3. Release the four attachment clips.



4. Lift the front of the Media Output Assembly.




5. Slide the Media Output Assembly forwards out of the printer.

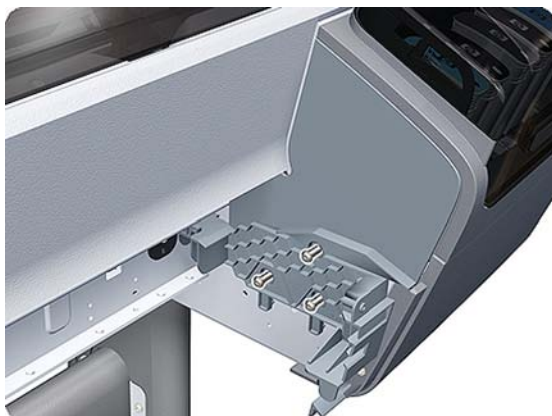


Right Front Trim

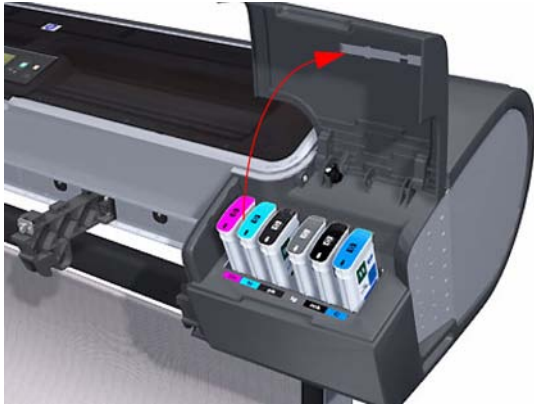
Removal

 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Front Cover (refer [Front Cover on page 177](#)).
2. Remove the Media Output Assembly (refer [Media Output Assembly on page 178](#)).
3. Remove two T-15 screws that secure the Right Front Trim to the printer.



4. Open the Right Ink Cartridge Door.



5. Unclip the Right Front Trim.




6. Remove Right Front Trim from the printer.

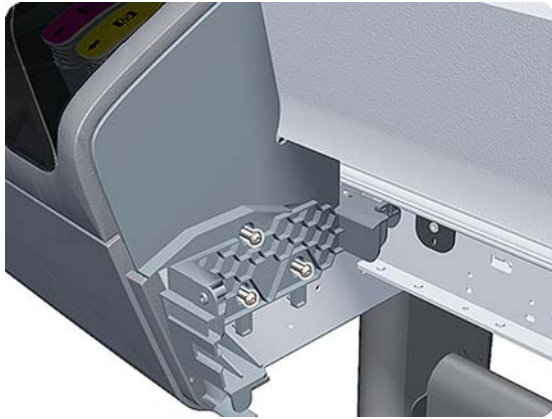


Left Front Trim

Removal

 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Front Cover (refer [Front Cover on page 177](#)).
2. Remove the Media Output Assembly (refer [Media Output Assembly on page 178](#)).
3. Remove two T-15 screws that secure the Left Front Trim to the printer.



4. Open the Left Ink Cartridge Door.



5. Unclip the Left Front Trim.




6. Remove Left Front Trim from the printer.

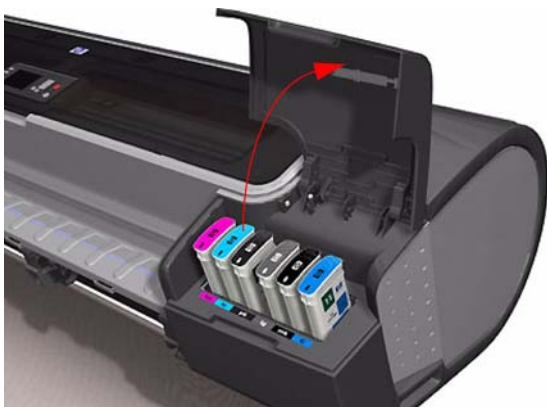


Right Ink Cartridge Door

Removal

 **NOTE:** Switch off the printer and remove the power cable.

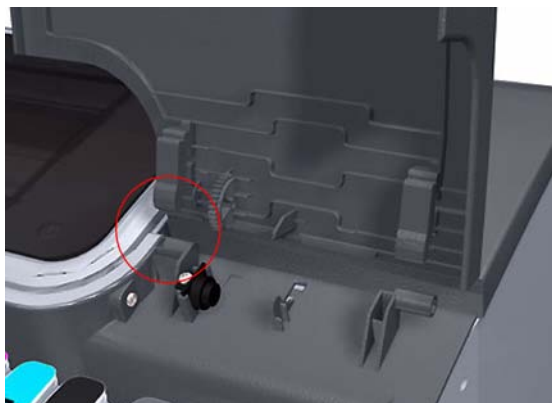
1. Open the Right Ink Cartridge Door.



2. Unclip the right side of the Right Ink Cartridge Door.



3. Unclip the left side of the Right Ink Cartridge Door.




4. Remove the Right Ink Cartridge Door.

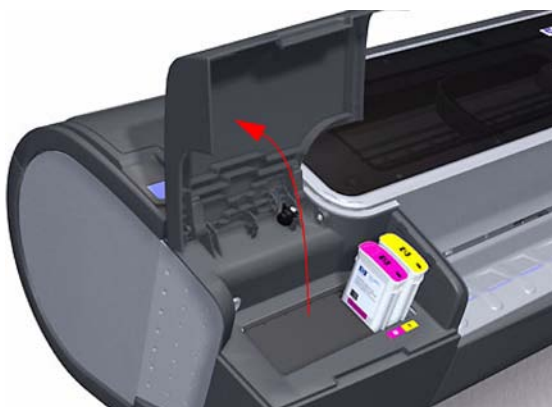


Left Ink Cartridge Door

Removal

 **NOTE:** Switch off the printer and remove the power cable.

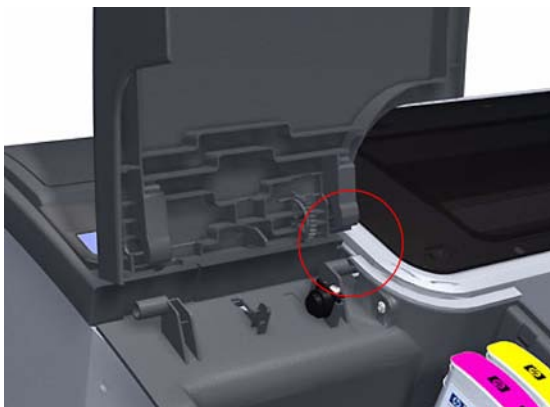
1. Open the Left Ink Cartridge Door.



2. Unclip the left side of the Left Ink Cartridge Door.



3. Unclip the right side of the Left Ink Cartridge Door.




4. Remove the Left Ink Cartridge Door.



Right Cover

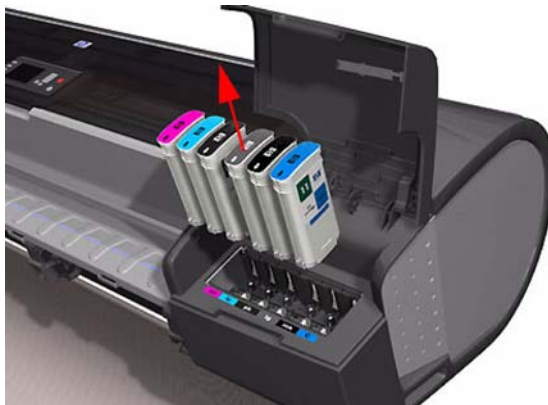
Removal

 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Front Cover (refer [Front Cover on page 177](#)).
2. Open the Right Ink Cartridge Door.



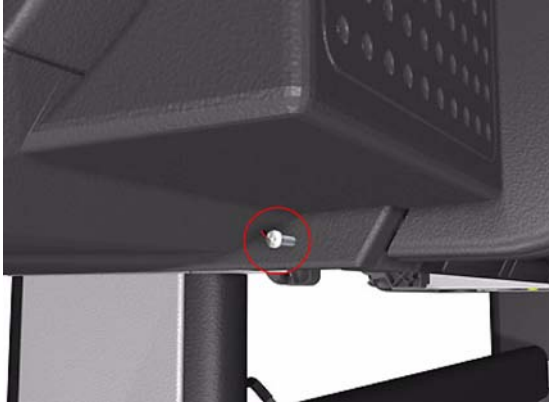
3. Remove the Ink Cartridges from the printer.



4. Remove one T-15 screw that secures the Right Cover to the printer (at the rear of the Printer).



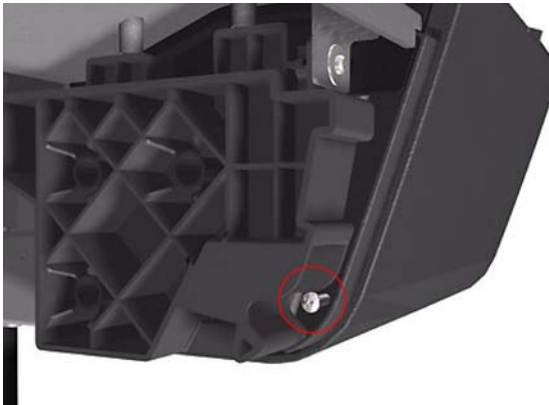
5. Remove one T-15 screw that secures the Right Cover to the printer (at the rear of the Printer).



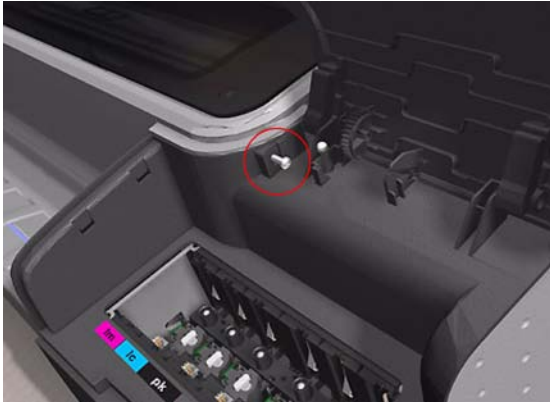
6. Remove one T-15 screw that secures the Right Cover to the printer (at the rear of the printer).



7. Remove one T-15 screw that secures the Right Cover to the printer (accessible under the Front Cover).



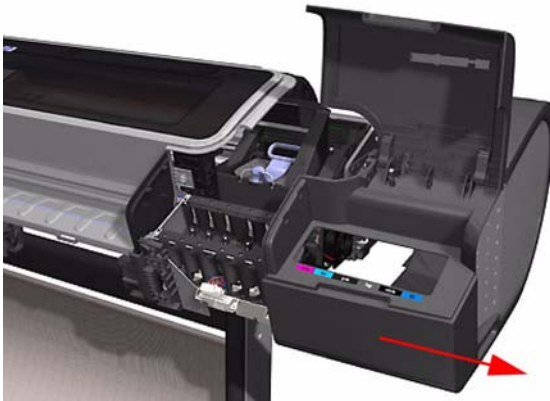
8. Remove one T-15 screw that secures the Right Cover to the printer (accessible from within the cartridge bay).



9. Unclip the Right Trim.




10. Remove the Right Cover from the printer.

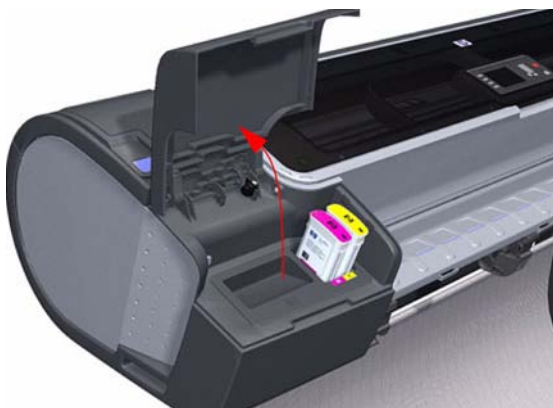


Left Cover

Removal

 **NOTE:** Switch off the printer and remove the power cable.

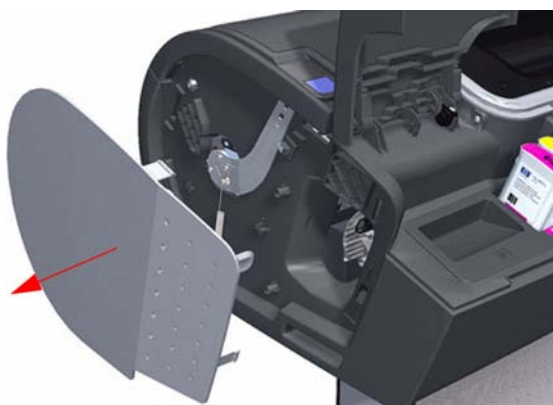
1. Remove the Front Cover (refer [Front Cover on page 177](#)).
2. Open the Left Ink Cartridge Door.



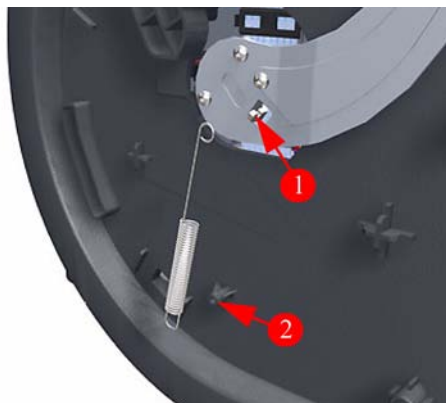
3. Press the clip to release the Left Cover Finishing Panel.



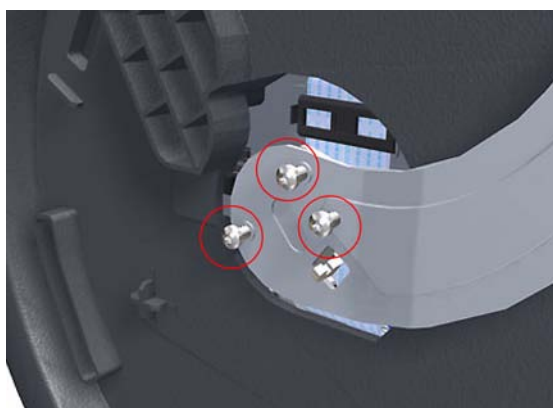
4. Remove the Left Cover Finishing Panel.



5. Unclip the spring from the attachment points on the Media Lever and Left Cover.



6. Remove three T-15 screws that secure the Media Lever.



7. Remove all the Ink Cartridges from the Printer.



- Carefully push the edge of the Ink Cartridge Blanking Plate to the left.



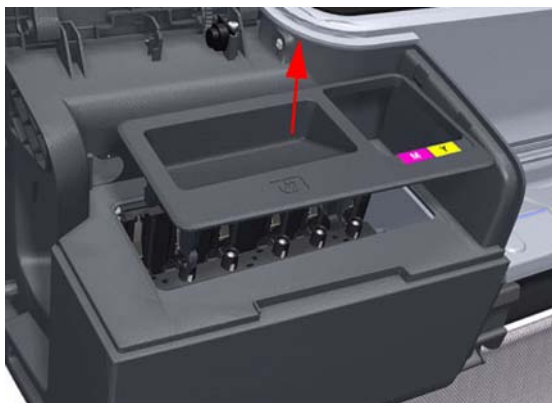
- Carefully push the edge of the Ink Cartridge Blanking Plate to the left.



- Lift the right edge of the Ink Cartridge Blanking Plate.



11. Remove the Ink Cartridge Blanking Plate from the Printer.



12. Use a flat bladed screwdriver to unclip the two attachment clips of the Formatter Housing.



13. Lift the Formatter Housing out of the printer.



14. Remove one T-15 screw that secures the Left Cover (top rear, accessible under the Formatter Housing).



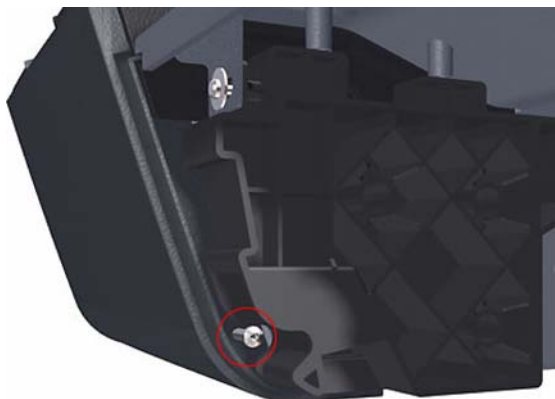
15. Remove one T-15 screw that secures the Left Cover (bottom rear).



16. Remove one T-15 screw that secures the Left Cover (bottom rear).



17. Remove one T-15 screw that secures the Left Cover (bottom front, accessible under Front Cover).



18. Remove one T-15 screw that secures the Left Cover (top front, accessible Ink Cartridge Door).



19. Unclip the Left Trim.




20. Remove the Left Cover from the Printer.



Rear Tray

Removal

 **NOTE:** Switch off the printer and remove the power cable.

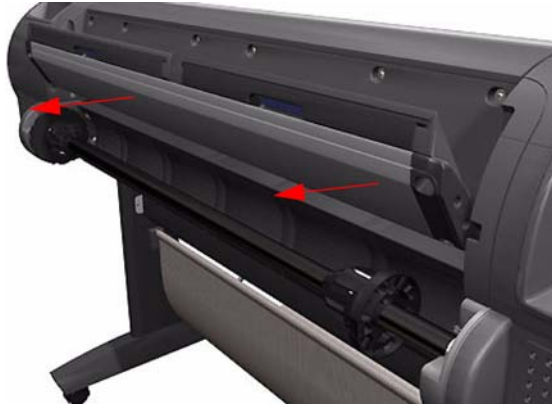
1. Open the Rear Tray to approximately 10 degrees less than the fully open position.



2. Lift the Rear Tray vertically enough (approximately 20 mm) to allow the rear attachment lugs to be out of the locked position.




3. Carefully slide the Rear Tray out of the printer.



Rear Cover

Removal

 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Rear Tray (refer [Rear Tray on page 194](#)).
2. Remove the Right Cover (refer [Right Cover on page 185](#)).
3. Remove the Left Cover (refer [Left Cover on page 188](#)).
4. Remove ten T-15 screws that secure the Rear Cover to the printer.




5. Remove the Rear Cover from the printer.

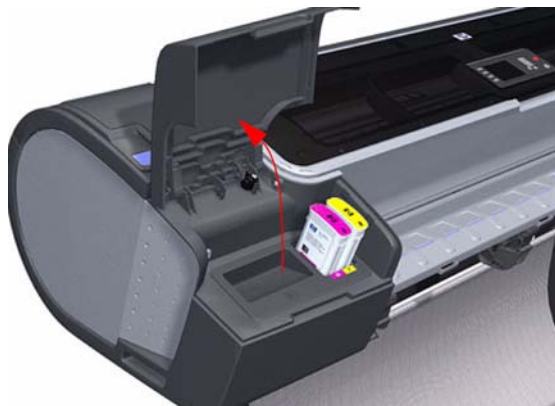


Media Lever

Removal

 **NOTE:** Switch off the printer and remove the power cable.

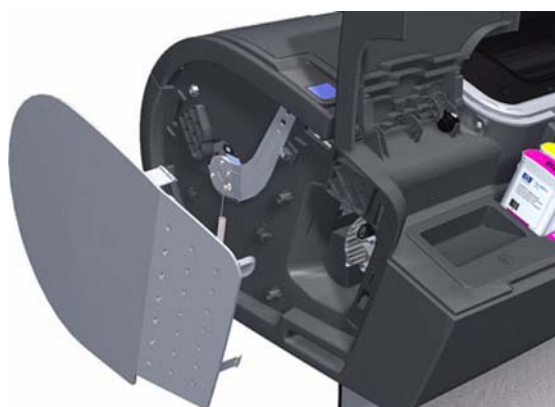
1. Open the Ink Cartridge Door.



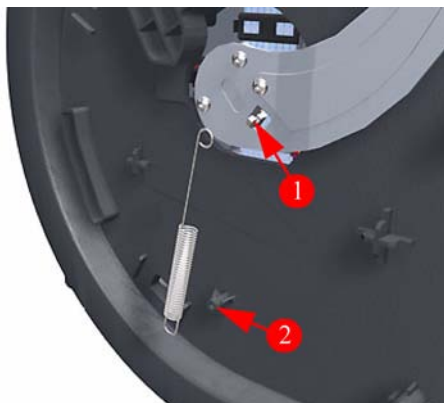
2. Press the clip to release the Left Cover Finishing Panel.



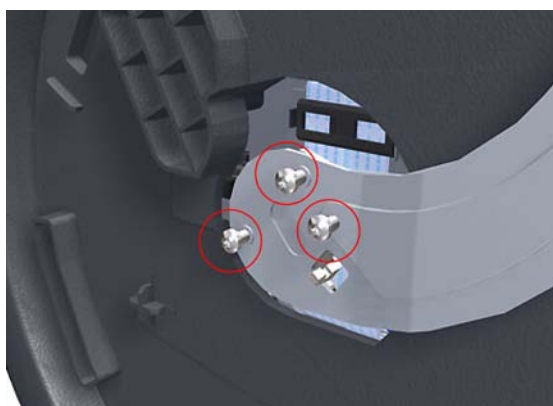
3. Remove the Left Cover Finishing Panel.



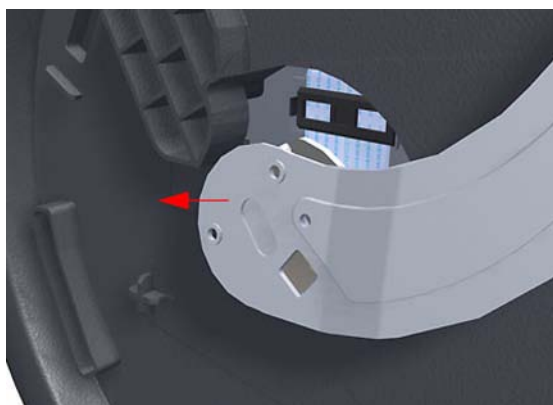
4. Unclip the spring from the attachment points on the Media Lever and Left Cover.



5. Remove three T-15 screws that secure the Media Lever.



6. Lift the Media Lever of the mounting.




7. Remove the Media Lever from the printer.

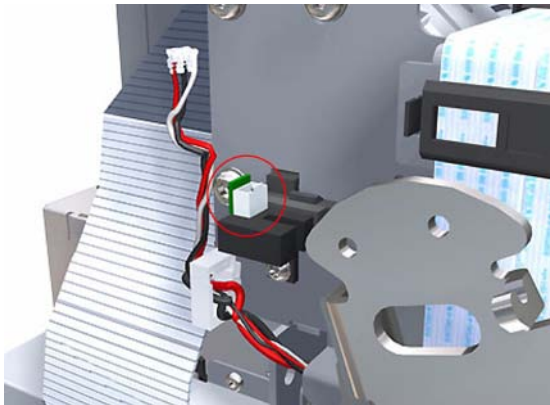


Media Lever Position Sensor

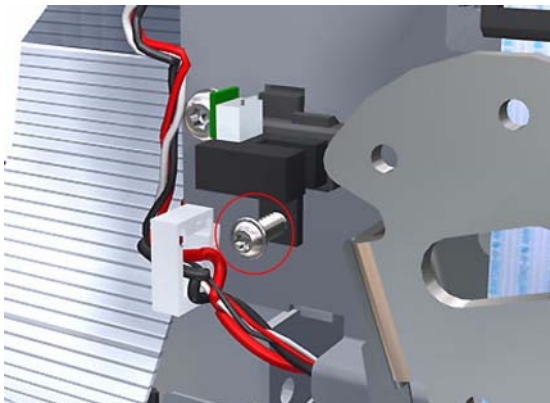
Removal

 **NOTE:** Switch off the printer and remove the power cable.

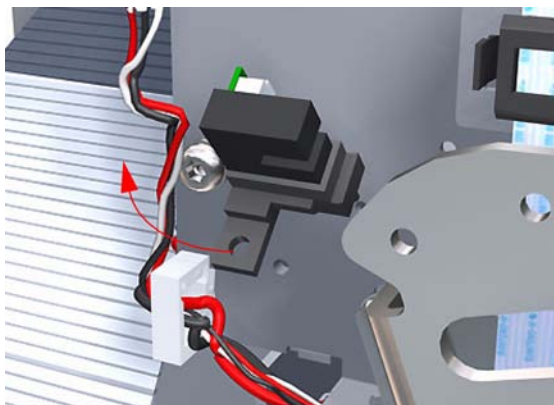
1. Raise the Media Lever.
2. Remove the Left Cover (refer [Left Cover on page 188](#)).
3. Disconnect the Media Lever Position Sensor.



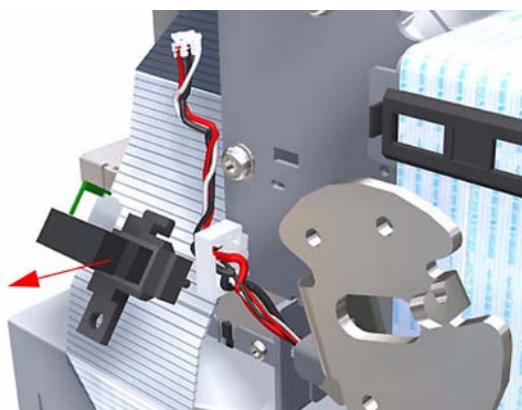
4. Remove one T-15 screw that secures the Media Lever Position Sensor to the Scan Side Panel.




5. Rotate the Media Lever Position Sensor vertically to disengage the attachment lug from the Scan Side Panel.




6. Remove the Media Lever Position Sensor.



 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Cutter Assembly

Removal

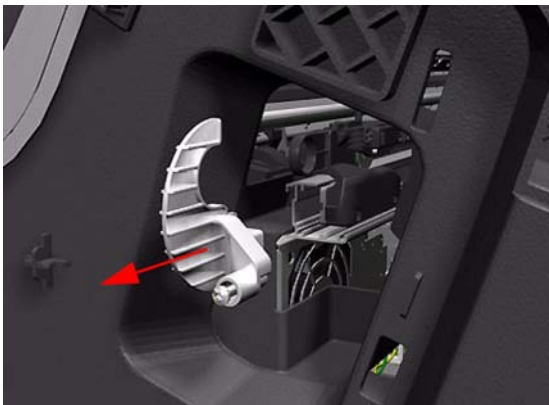
 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Left Cover Finishing Panel (refer to step 3 for the removal procedure of the [Left Cover on page 188](#)).


2. Fully loosen the cutter rail end cap attachment screw.

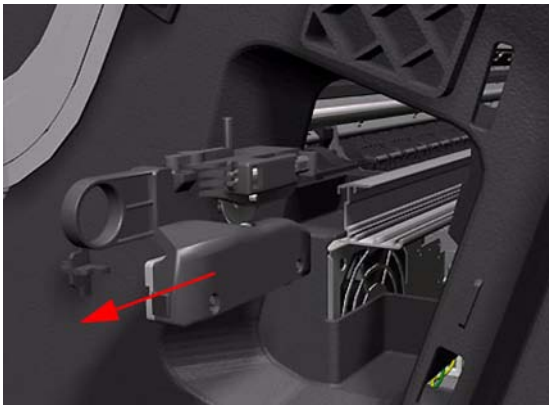


3. Remove the cutter rail end cap.




4. Slide the Cutter Assembly out of the printer.

 **NOTE:** When you install the new Cutter Assembly, follow the installation instructions provided with the new Cutter Assembly.



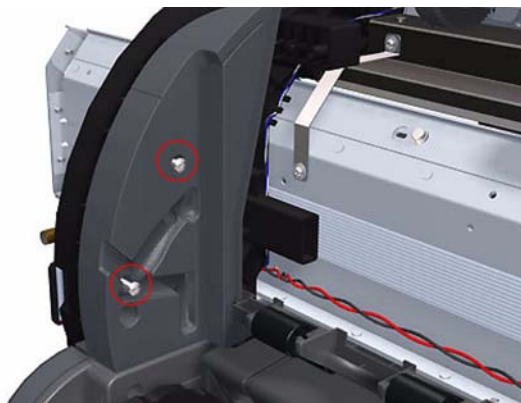
Right Rear Tray Support

Removal

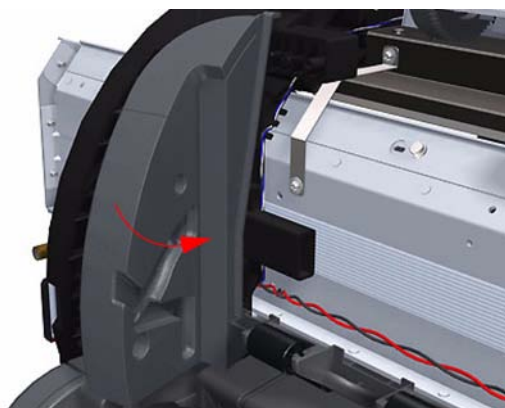
 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Rear Tray (refer [Rear Tray on page 194](#)).
2. Remove the Right Cover (refer [Right Cover on page 185](#)).

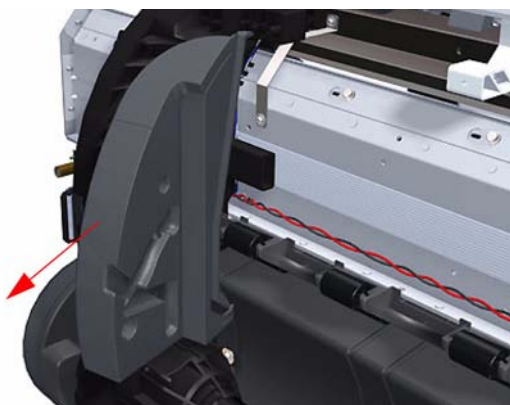
3. Remove the Left Cover (refer [Left Cover on page 188](#)).
4. Remove the Rear Cover (refer [Rear Cover on page 195](#)).
5. Remove two T-15 screws that secure the Right Rear Tray Support to the printer.



6. Rotate the Right Rear Tray Support counterclockwise approximately 30 degrees.




7. Remove the Right Rear Tray Support from the printer.



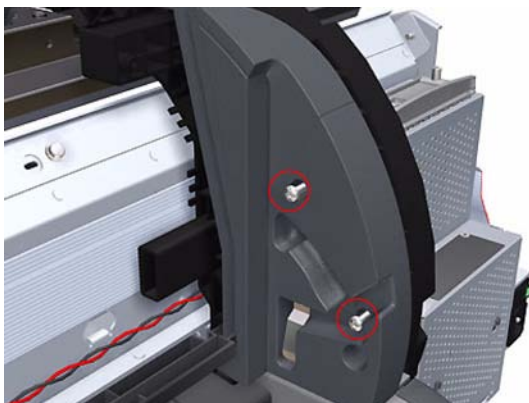
Left Rear Tray Support

Removal

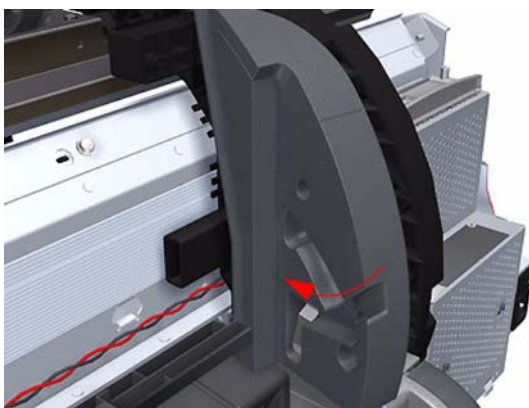
 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Rear Tray (refer [Rear Tray on page 194](#)).
2. Remove the Right Cover (refer [Right Cover on page 185](#)).

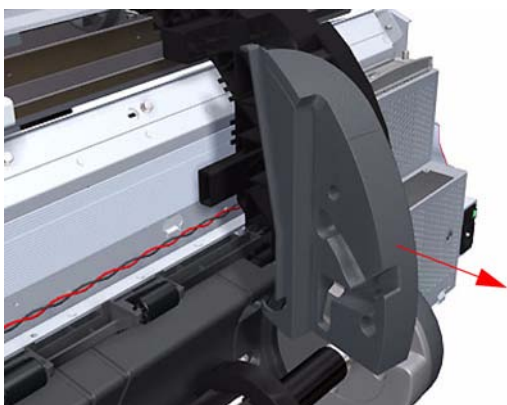
3. Remove the Left Cover (refer [Left Cover on page 188](#)).
4. Remove the Rear Cover (refer [Rear Cover on page 195](#)).
5. Remove two T-15 screws that secure the Left Rear Tray Support to the printer.



6. Rotate the Left Rear Tray Support clockwise approximately 30 degrees.




7. Remove the Left Rear Tray Support from the printer.



Front Panel

Removal

 **NOTE:** Switch off the printer and remove the power cable.

1. Open the Window.



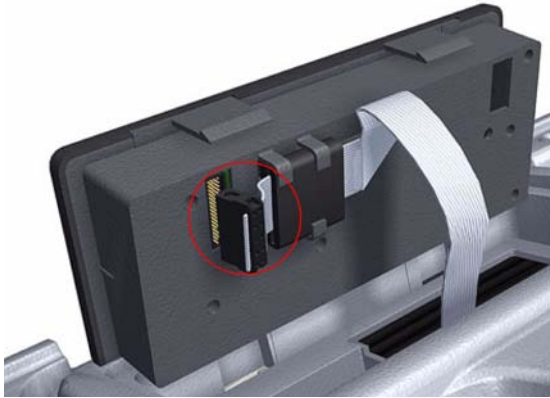
2. With strong pressure, squeeze the top edge of the front panel enough to release the attachment clips, and begin rotating the Front Panel vertically in the next step.



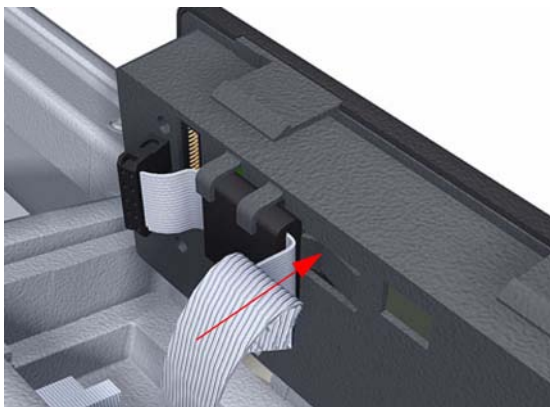
3. Rotate the front panel vertically.



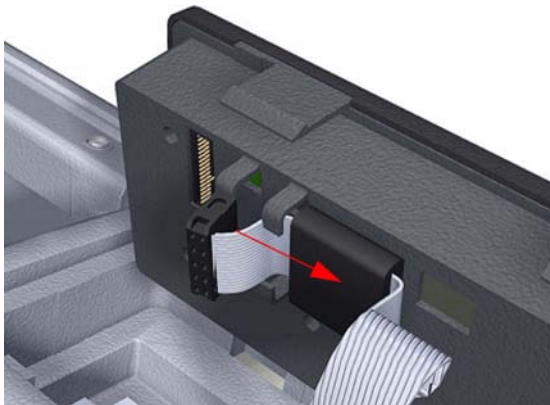
4. Disconnect the interface cable from the Front Panel.




5. Push in the clip that prevents the Ferrite Core from being removed.

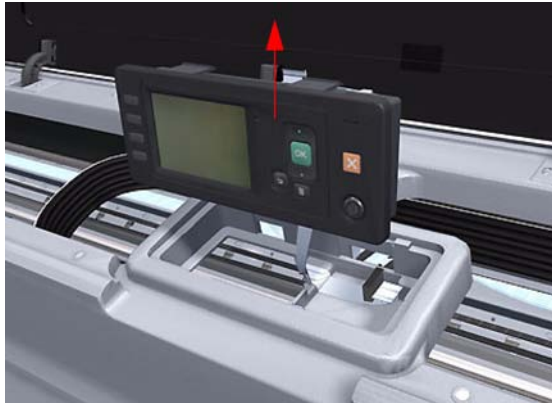



6. Slide the Ferrite Core out of the brackets.



7. Remove the Front Panel.


 **NOTE:** When you reinstall the Front Panel, you must make sure that the Ferrite Core is correctly positioned. The Ferrite Core is necessary to avoid electrostatic interference being generated.



 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, Refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Top Cover

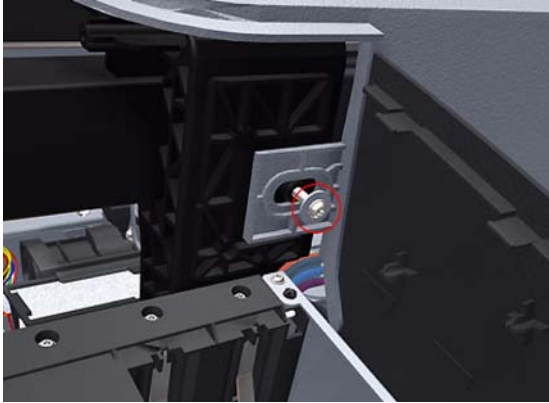
Removal

 **NOTE:** Switch off the printer and remove the power cable.

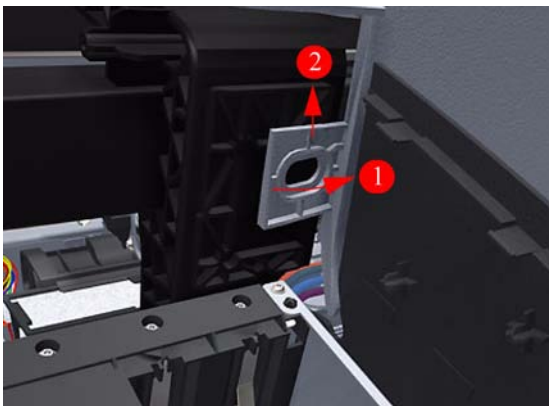
1. Remove the Window (refer [Window on page 174](#)).
2. Remove the Right Cover (refer [Right Cover on page 185](#)).
3. Remove the Left Cover (refer [Left Cover on page 188](#)).
4. Remove the Rear Tray (refer [Rear Tray on page 194](#)).
5. Remove the Rear Cover (refer [Rear Cover on page 195](#)).
6. Remove the Front Panel (refer [Front Panel on page 203](#)).
7. Remove the four T-15 top screws that secure the Top Cover to the printer.



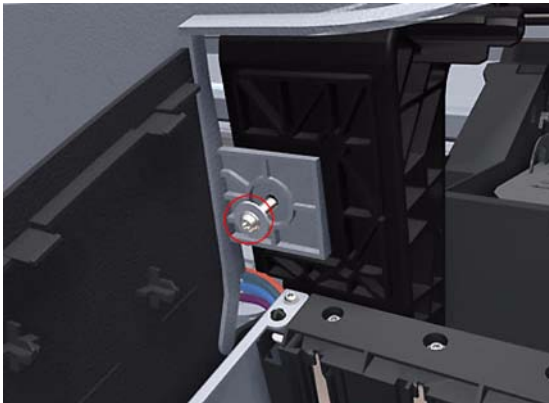
8. Remove the front T-15 screw that secures the front left side of the Top Cover to the printer.



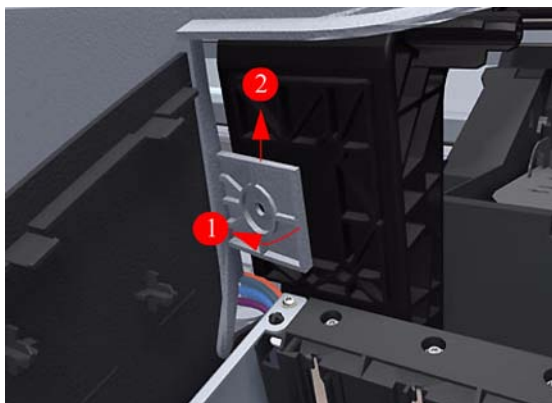
9. Carefully pull the attachment clip forward until you can lift the bottom left corner of the Top Cover approximately 10 mm.



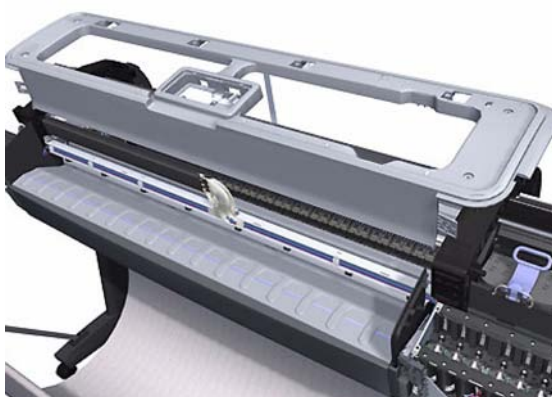
10. Remove the front T-15 screw that secures the front left side of the Top Cover to the printer.



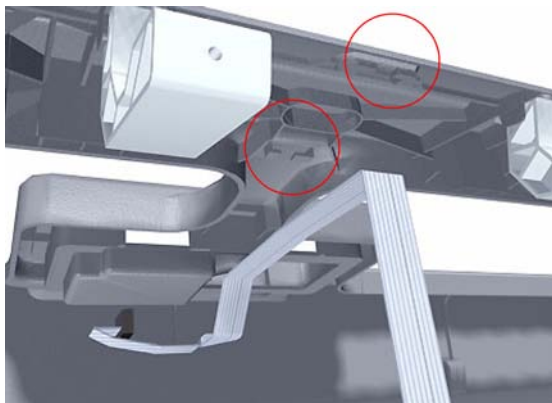
11. Carefully pull the attachment clip forward until you can lift the bottom left corner of the Top Cover approximately 10 mm.



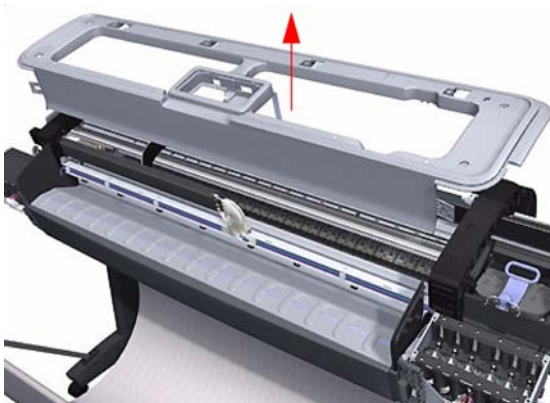
12. Lift the Top Cover of the printer sufficiently to gain access to the Front Panel ribbon cable.




13. Unroute the Front Panel ribbon cable from the two cable clamps on the bottom surface of the Top Cover.



14. Lift the Top Cover off the printer.



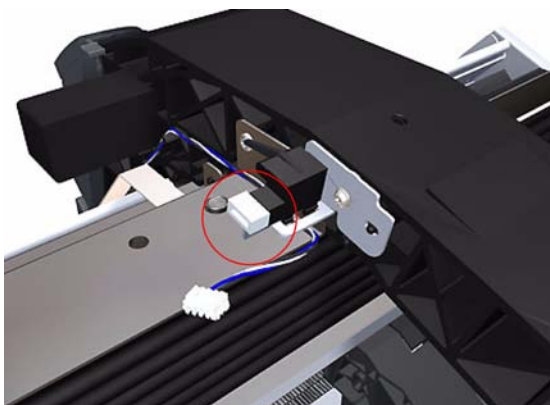
 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Window Position Sensor

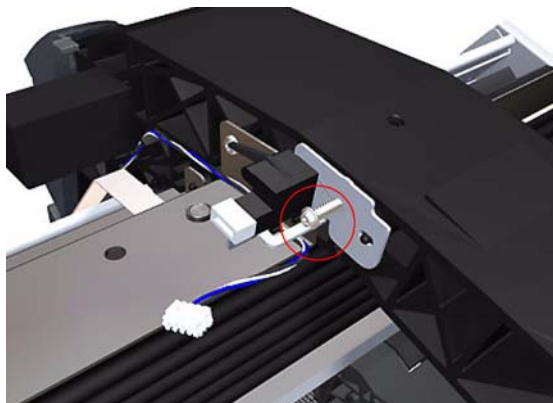
Removal

 **NOTE:** Switch off the printer and remove the power cable.

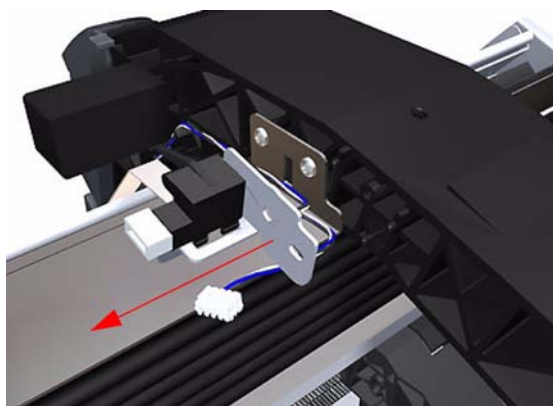
1. Remove the Right Cover (refer [Right Cover on page 185](#)).
2. Remove the Left Cover (refer to [Left Cover on page 188](#)).
3. Remove the Front Panel (refer [Front Panel on page 203](#)).
4. Remove the Top Cover (refer [Top Cover on page 205](#)).
5. Disconnect the Window Position Sensor.




6. Remove one T-15 screw that secures the Window Position Sensor to the printer.




7. Remove the Window Position Sensor to the printer.



 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Ink Supply Tubes Support Rail

Removal

 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Right Cover (refer [Right Cover on page 185](#)).
2. Remove the Left Cover (refer [Left Cover on page 188](#)).
3. Remove the Front Panel (refer [Front Panel on page 203](#)).
4. Remove the Top Cover (refer [Top Cover on page 205](#)).
5. Remove the Window Position Sensor (refer [Window Position Sensor on page 208](#)).

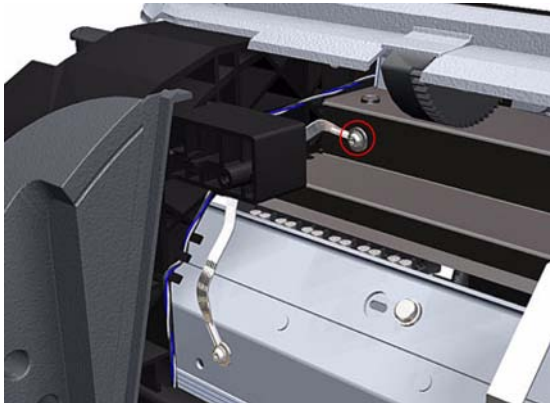
6. Remove the Ink Supply Tubes from the Ink Supply Tubes Support Rail.



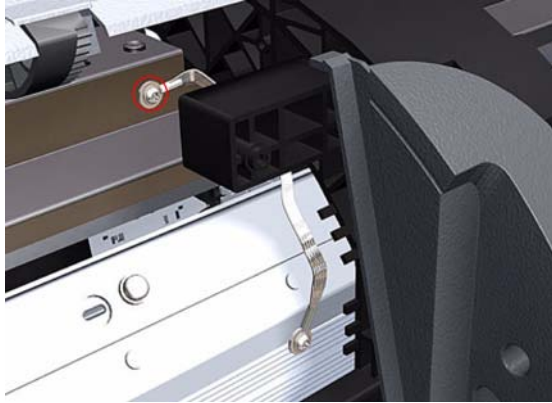
7. Remove the T-15 screws that secure the rear attachment brackets to the Ink Supply Tubes Support Rail.



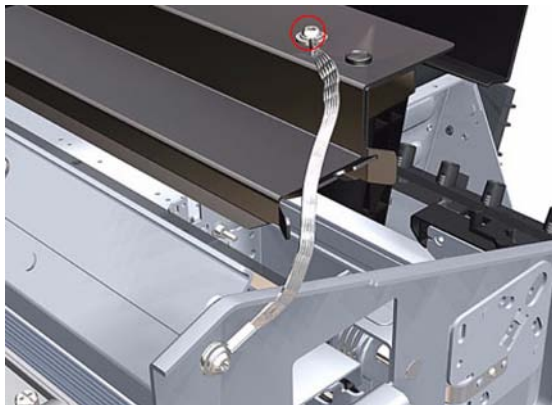
8. Remove the T-15 screw that attaches the right bonding cable.



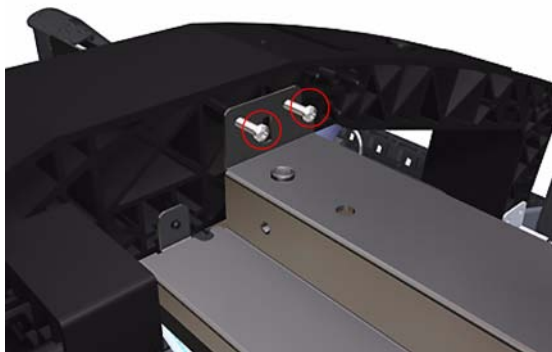
9. Remove the T-15 screw that attaches the left bonding cable.



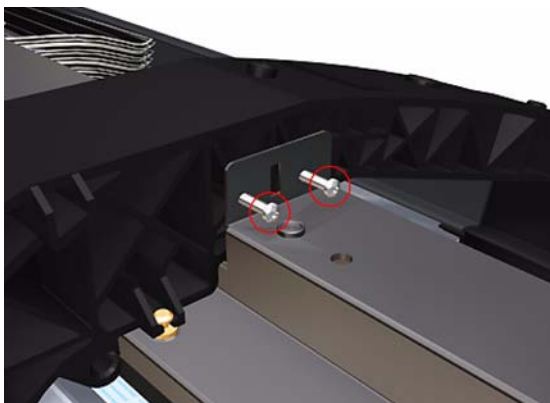
10. Remove the T-15 screw that attaches the left bonding cable.



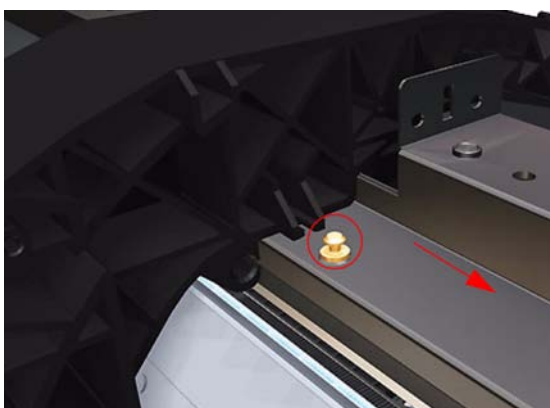
11. Remove two T-15 screws that secure the Ink Supply Tubes Support Rail to the right Top Cover Support.



12. Remove two T-15 screws that secure the Ink Supply Tubes Support Rail to the left Top Cover Support.



13. Slide the rail enough to disengage it from the attachment lug.




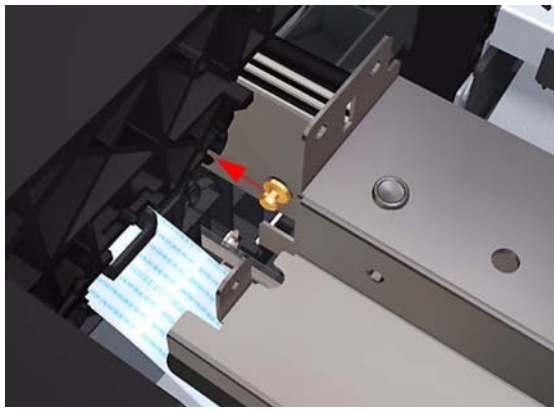
14. Carefully slide the Ink Supply Tubes Support Rail to the left until the right end is clear of the right Top Cover Support.





15. Remove the Ink Supply Tubes Support Rail from the printer.



 **NOTE:** When you reinstall the Ink Supply Tubes Support Rail make sure that the attachment lug is correctly engaged with the right Top Cover Support.




 **NOTE:** When you reinstall the Ink Supply Tubes Support Rail make sure all the attachment brackets and bonding leads are correctly connected. These are important to avoid electrostatic interference being generated.


 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, Refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Service Station

Removal

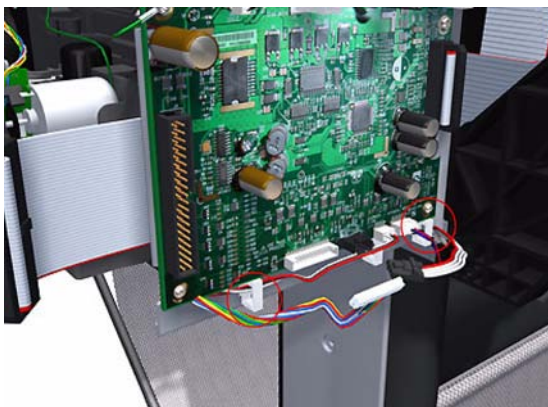
 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Right Cover (refer [Right Cover on page 185](#)).
2. Disconnect the Ink Supply Station ribbon connector and two lower connectors from the PrintMech PCA.

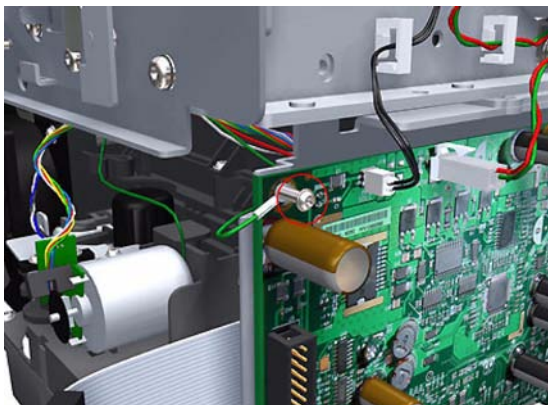
 **NOTE:** The Ink Supply Station ribbon connector has to be disconnected so the other cables can be unrouted.



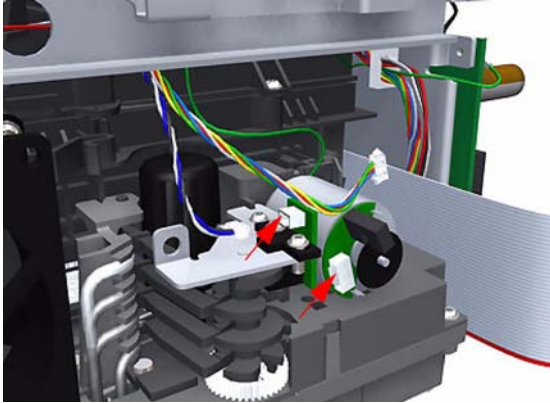
3. Unroute the two cables disconnected in step 2 from the two cable clamps below the PrintMech PCA.



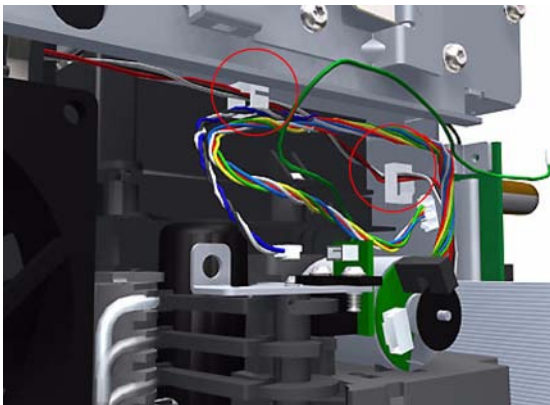
4. Remove the grounding cable attachment screw from the PrintMech PCA.



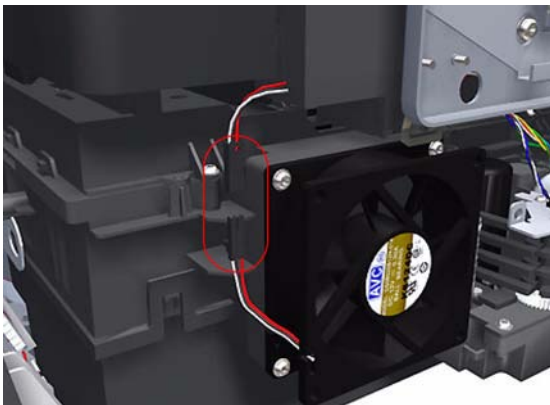
5. Disconnect connector from the Drop Detector Motor and Drop Detector Sensor.



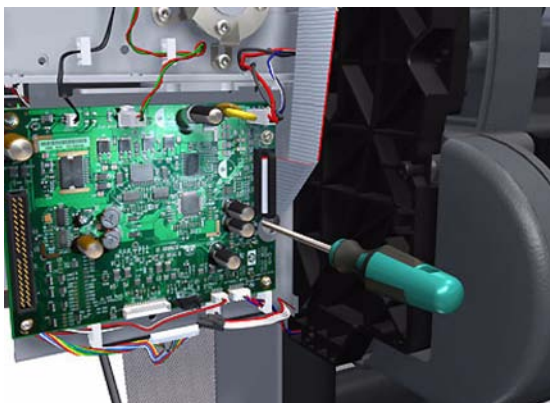
6. Unroute the cables disconnected in steps 4 and 5 from the two cable clamps.



7. Disconnect the Aerosol Fan Assembly inline connector.




8. Loosen the T-10 uncapping screw sufficiently so you can manually move the Carriage Assembly in step 9.



9. Push the Carriage Assembly into the print path to gain access to two T-15 screws that secure the Service Station to the Carriage Rail.

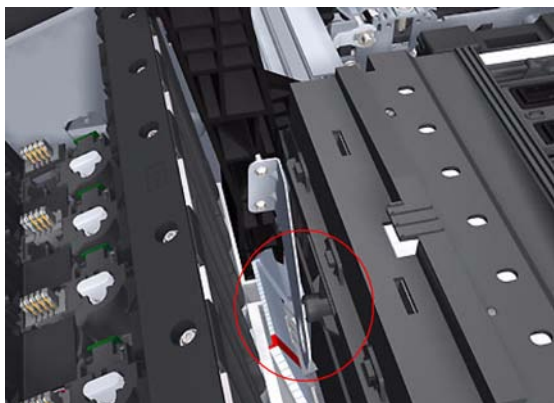


10. Use an allen key provided in the tool kit to remove two allen screws that secure the Service Station to the Carriage Rod.

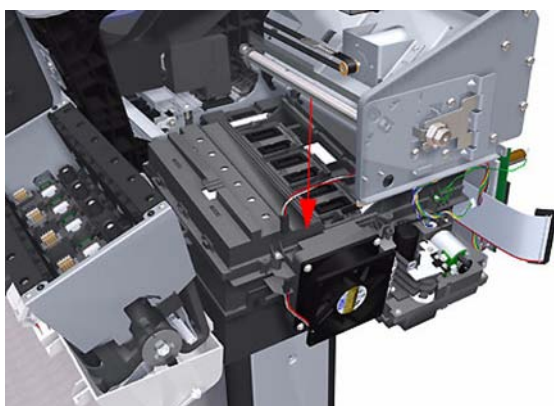
 **NOTE:** Support the Service Station so it does not fall when you remove the attachment screws.



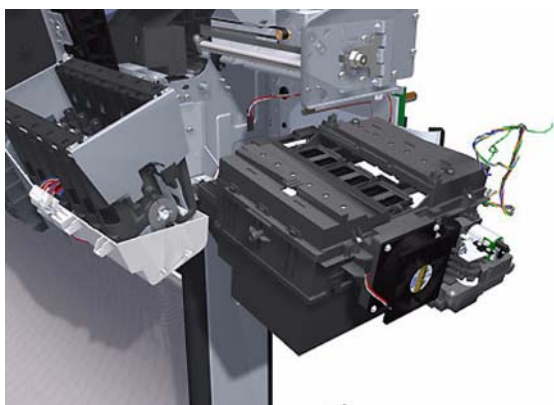
11. Unclip the clip to release the Service Station from the printer.




12. Lower the Service Station from the printer.




13. Lower the right of the Service Station enough to allow you to slide it carefully out of the printer.



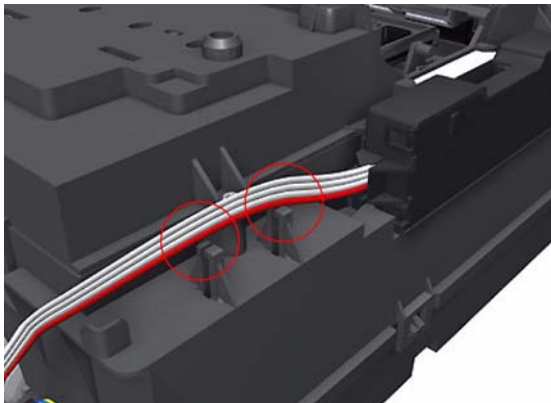
 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Drop Detector

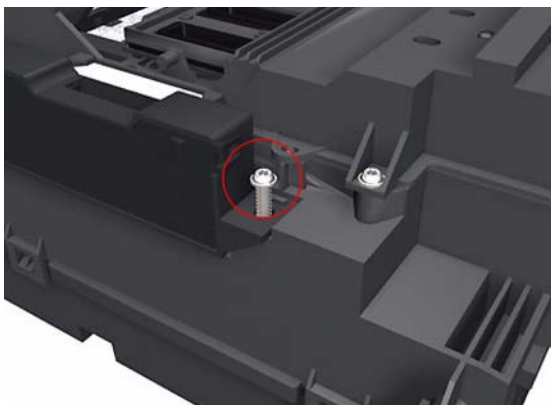
Removal

 **NOTE:** Switch off the printer and remove the power cable.

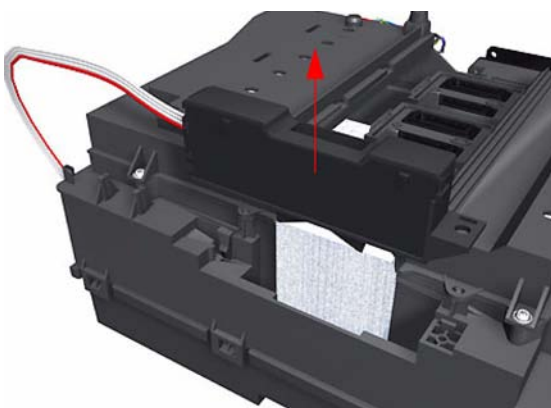
1. Remove the Right Cover (refer [Right Cover on page 185](#)).
2. Remove the Service Station (refer [Service Station on page 214](#)).
3. Unroute the Drop Detector ribbon cable from the Service Station cable clamps.




4. Remove the T-15 screw that secures the Drop Detector to the Service Station.




5. Lift the Drop Detector off the Service Station.



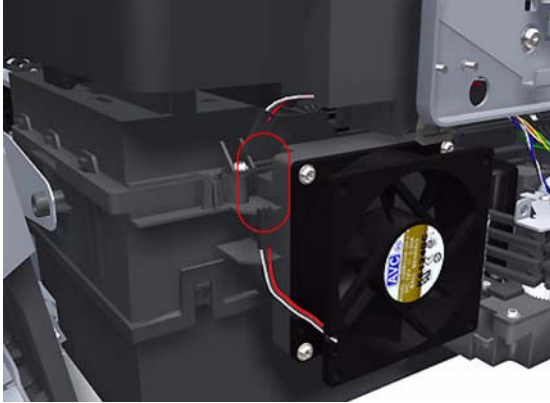
 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Aerosol Fan Assembly


Removal

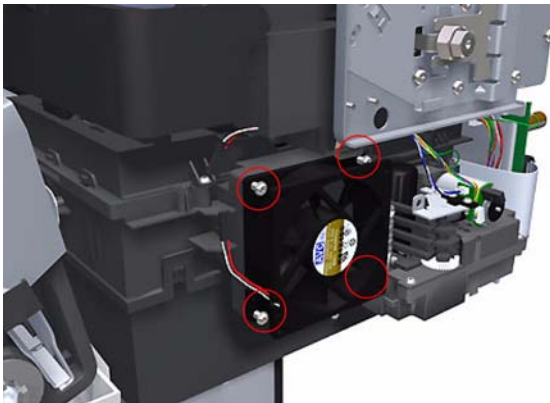
 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Right Cover (refer [Right Cover on page 185](#)).
2. Disconnect the Aerosol Fan Assembly inline connector.




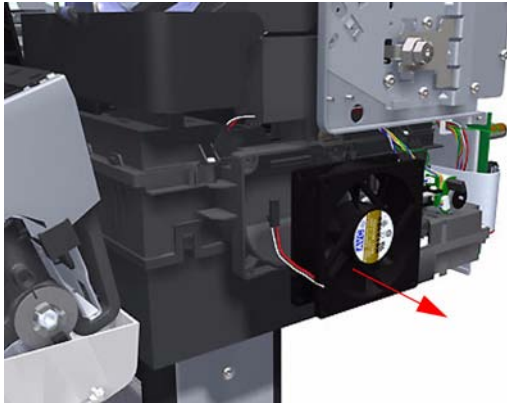
3. Remove the four T-15 screws that secure the Aerosol Fan Assembly to the Service Station.


 **NOTE:** The four access holes in the Aerosol Fan Assembly housing are the same size as the attachment screw diameter so you will need a normal Torx Screwdriver, not a multi-tool, to remove the screws.



4. Remove the Aerosol Fan Assembly from the Service Station.


 **NOTE:** When you reinstall the Aerosol Fan Assembly make sure you position it so that the power cable is on the outside exiting to the right.



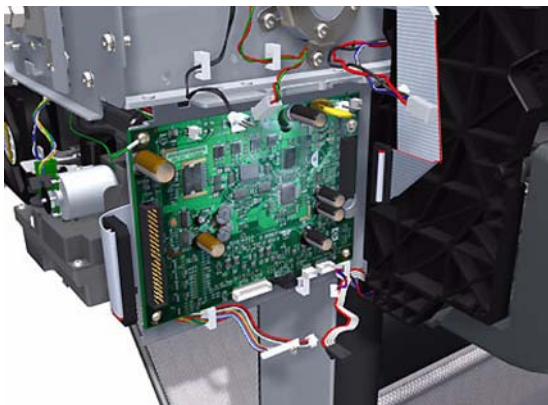
 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

PrintMech PCA

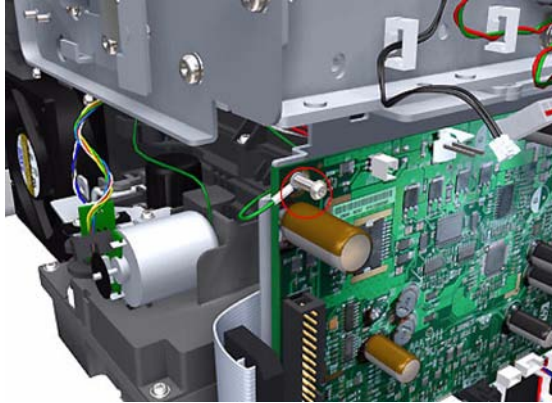
Removal

 **NOTE:** Switch off the printer and remove the power cable.

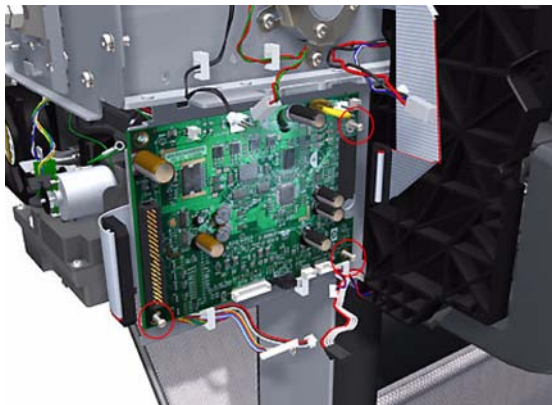
1. Remove the Right Cover (refer [Right Cover on page 185](#)).
2. Disconnect all the electrical connectors from the PrintMech PCA.



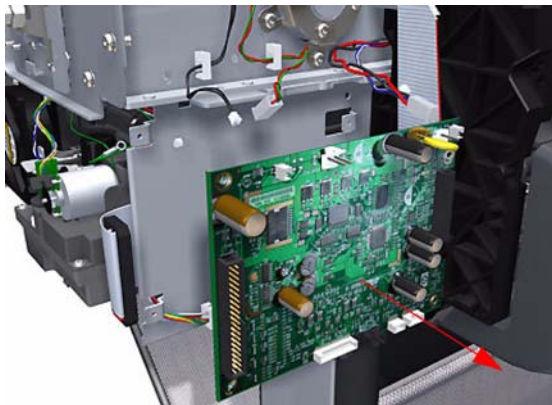
3. Remove the grounding cable attachment screw from the PrintMech PCA.




4. Remove the three T-15 screws that secure the PrintMech PCA to the Service Station.




5. Remove the PrintMech PCA from the printer.



 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

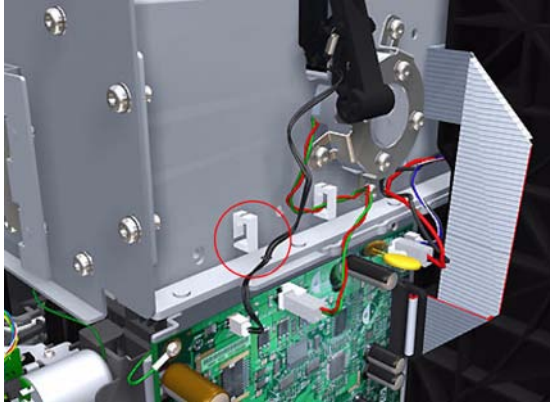
Pen to Paper Space (PPS) Solenoid

Removal

 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Right Cover (refer [Right Cover on page 185](#)).

2. Unroute the Pen to Paper Space (PPS) Solenoid cable from the cable clamp.



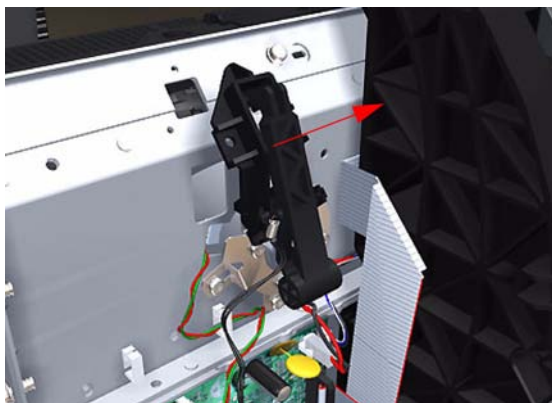
3. Disconnect the Pen to Paper Space (PPS) Solenoid connector from the PrintMech PCA.




4. Remove two T-15 screws that secure the Pen to Paper Space (PPS) Solenoid to the printer.




5. Remove the Pen to Paper Space (PPS) Solenoid from the printer.



 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Spindle

Removal

 **NOTE:** Switch off the printer and remove the power cable.

1. Pull the left end of the Spindle (viewed from the front of the printer) out of the Left Spindle Holder.




2. Lift the Spindle out of the printer towards the left (viewed from the front of the printer).



Left Spindle Holder

Removal

 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Spindle (refer to [Spindle on page 223](#)).
2. Remove two T-15 screws that secure the Left Spindle Holder to the printer.



3. Rotate the Left Spindle Holder towards the left.




4. Remove the Left Spindle Holder from the printer.



Right Spindle Holder

Removal

 **NOTE:** Switch off the printer and remove the power cable.

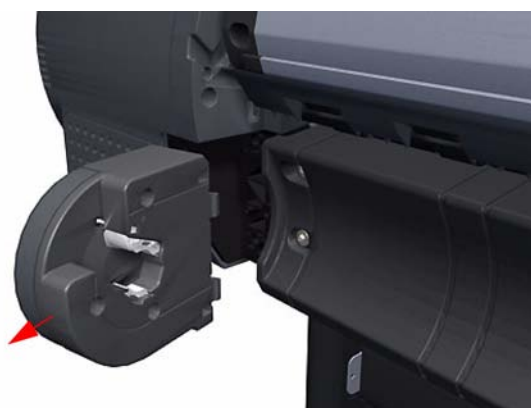
1. Remove the Spindle (refer to [Spindle on page 223](#)).
2. Remove two T-15 screws that secure the Right Spindle Holder to the printer.



3. Rotate the Right Spindle Holder towards the right.




4. Remove the Right Spindle Holder from the printer.



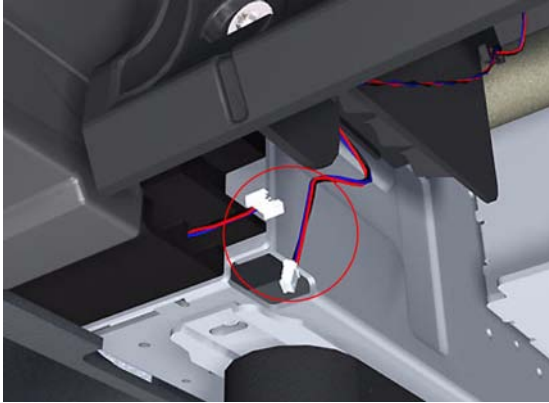
Clean Out Assembly

Removal

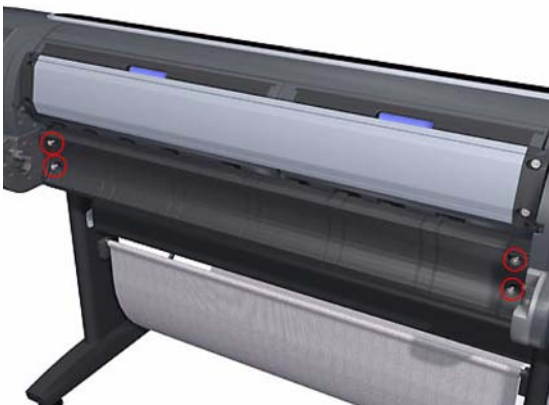
 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Spindle (refer to [Spindle on page 223](#)).

2. Disconnect the Out Of Paper Sensor in-line connector and unrout its cable.




3. Remove the four T-15 screws that secure Clean Out Assembly to the printer.




4. Beginning with the **left** side, slide the Clean Out Assembly out of the printer. Double check that the Out Of Paper Sensor on the left side of the Clean Out Assembly has not been damaged.



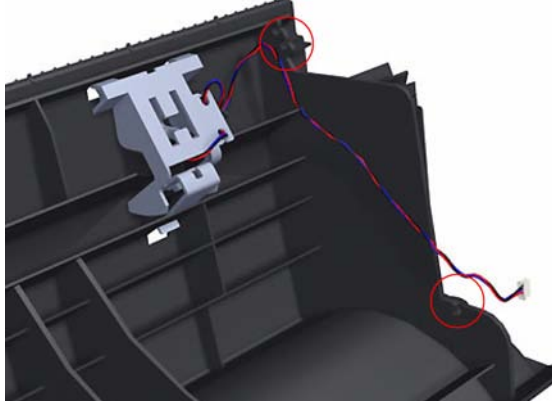
 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Out Of Paper Sensor

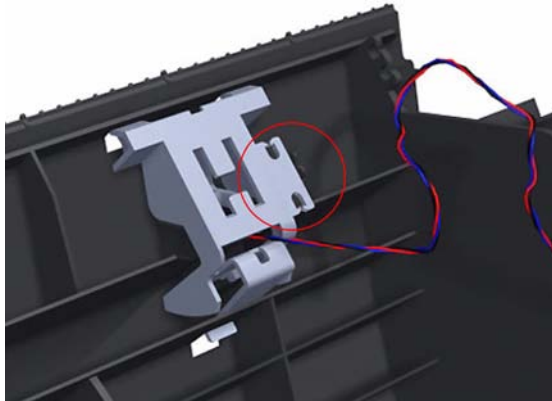
Removal

 **NOTE:** Switch off the printer and remove the power cable.

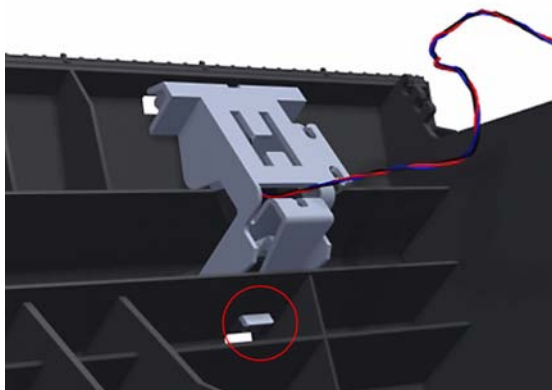
1. Remove the Spindle (refer to [Spindle on page 223](#)).
2. Remove the Clean Out Assembly (refer [Clean Out Assembly on page 225](#)).
3. Unroute the Out Of Paper Sensor electrical cables from the Clean Out Assembly.



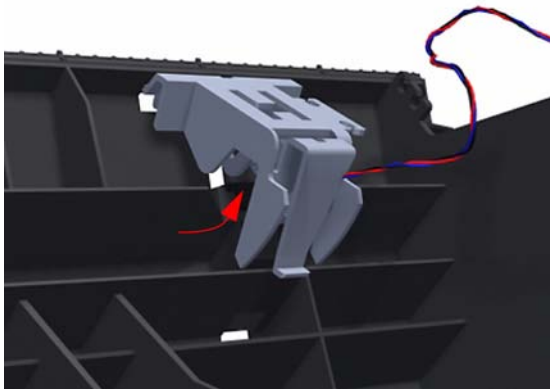
4. Unroute (unwind) the Out Of Paper Sensor electrical cables from the Out Of Paper Sensor cover.



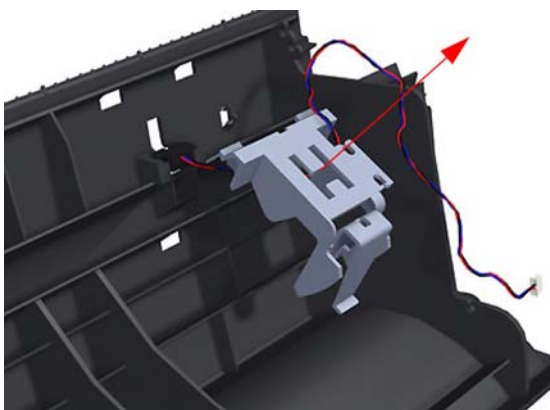
5. Press the clip to remove the Out Of Paper Sensor cover from the Clean Out Assembly.



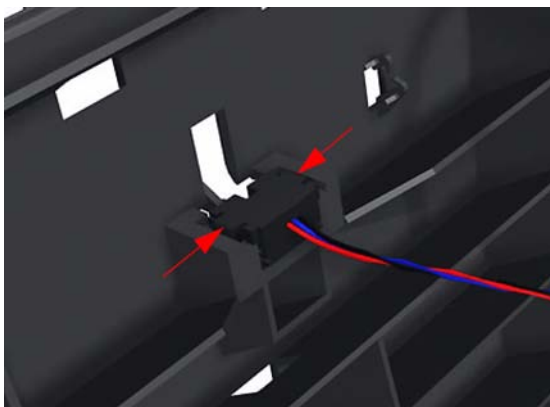
6. Rotate the Out Of Paper Sensor cover approximately 45 degrees.



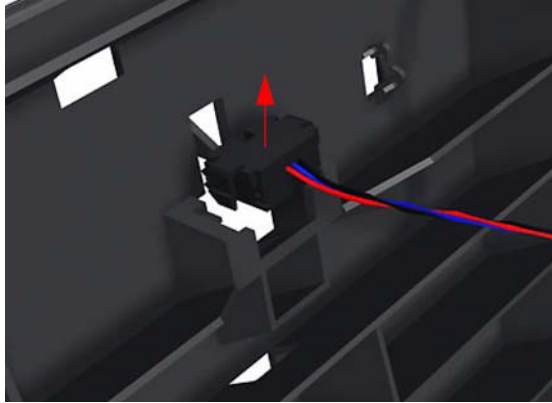
7. Remove the Out Of Paper Sensor cover from the Clean Out Assembly.




8. Squeeze the Out Of Paper Sensor attachment clips to remove it from the Clean Out Assembly.




9. Lift the Out Of Paper Sensor out of the Clean Out Assembly.



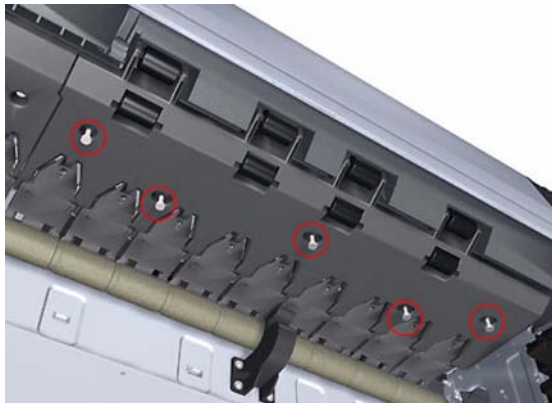
 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Left Roll Guide

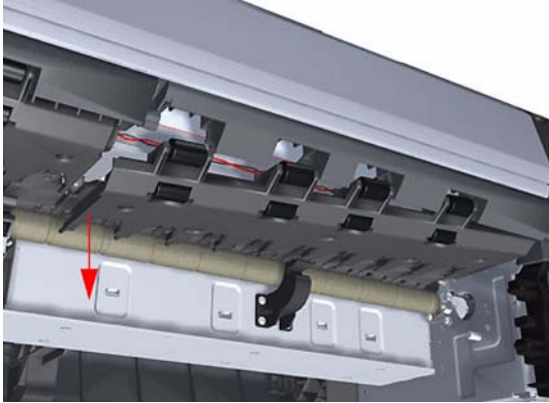
Removal


 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Spindle (refer to [Spindle on page 223](#)).
2. Remove the Clean Out Assembly (refer [Clean Out Assembly on page 225](#)).
3. Remove five T-15 screws that secure Left Roll Guide to the printer.




4. Lower the left end and remove the Left Roll Guide from the printer.



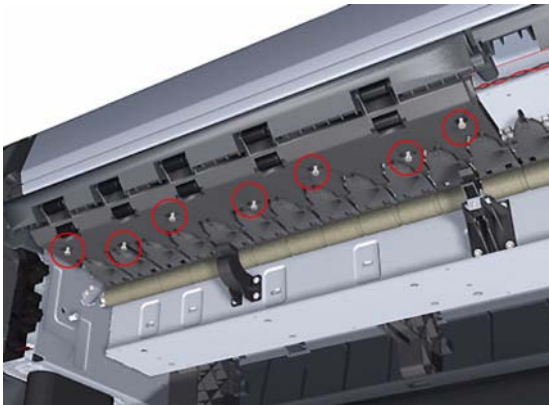
 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Right Roll Guide

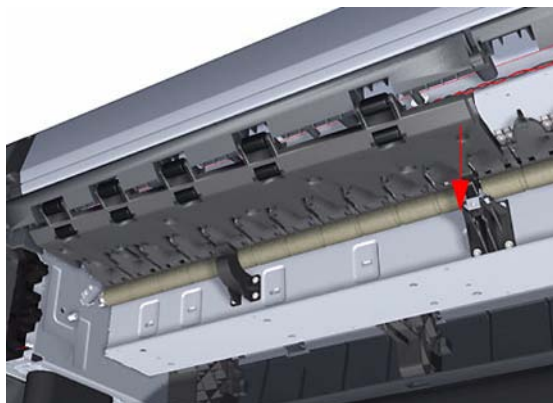
Removal


 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Spindle (refer to [Spindle on page 223](#)).
2. Remove the Clean Out Assembly (refer [Clean Out Assembly on page 225](#)).
3. Remove the Left Roll Guide (refer [Left Roll Guide on page 229](#)).
4. Remove seven T-15 screws that secure Right Roll Guide to the printer.




5. Lower the right end and remove the Right Roll Guide from the printer.



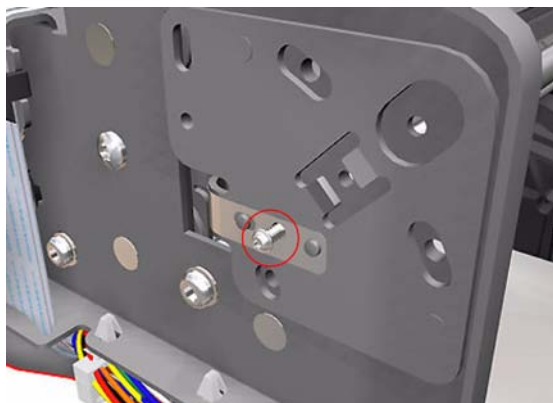
 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Encoder Strip (with spring and attachment nut)

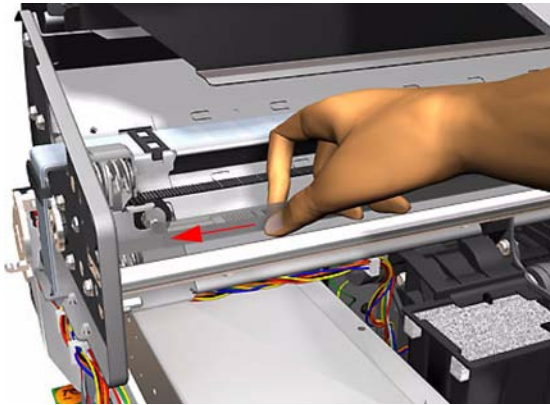
Removal

 **NOTE:** Switch off the printer and remove the power cable.

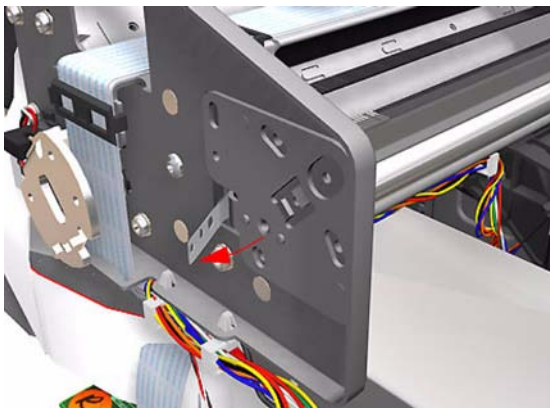
1. Remove the Right Cover (refer [Right Cover on page 185](#)).
2. Remove the Left Cover (refer [Left Cover on page 188](#)).
3. Remove the T-15 screw that secures Encoder Strip to the printer.



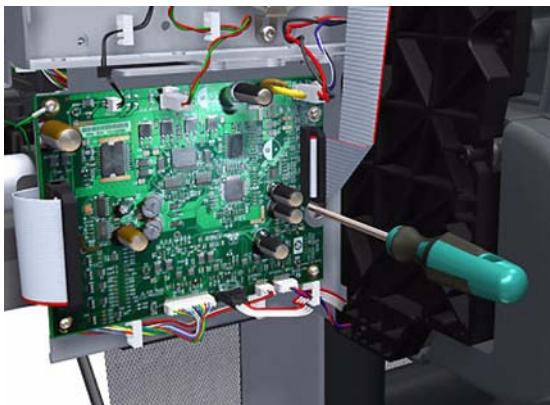
4. Grip the Encoder Strip and move it towards the left to take off the tension until you have completed the next step.



5. Unclip the Encoder Strip from its attachment lugs.



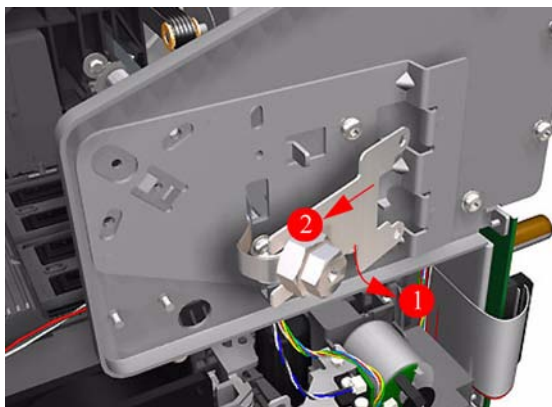
6. Loosen the T-10 uncapping screw sufficiently so you can manually move the Carriage Assembly in step 7.



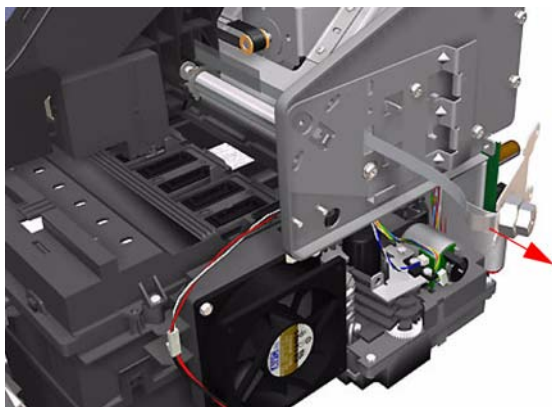
7. Push the Carriage Assembly into the print path.




8. Unclip the Encoder Strip tensioner from the right hand end.



9. Carefully pull the Encoder Strip out of the printer from the right hand end.



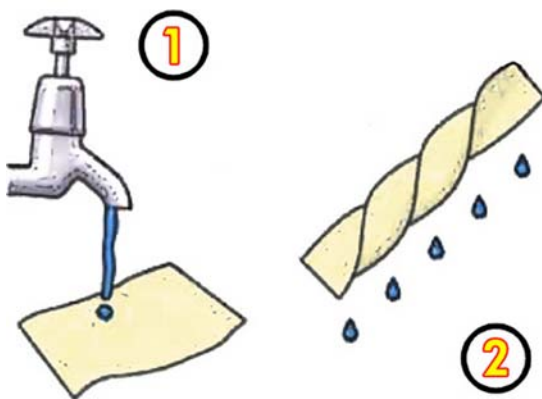
 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Clean Encoder Strip Procedure

1. Make sure that the printer is OFF and that the carriage assembly is located at the service station on the far right side of the printer.



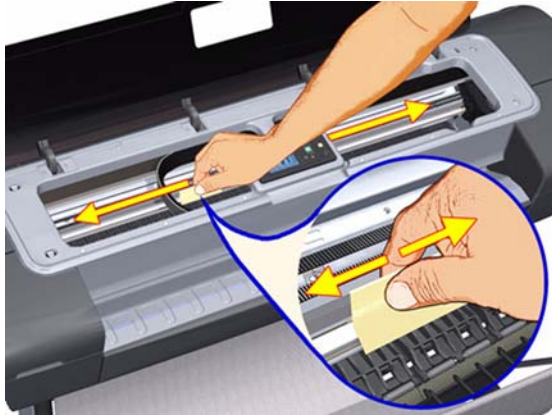
2. Use tap water and a small cloth that will not leave fibers in the printer to clean the encoder strip. Dampen the cloth and remove any excess water so that the cloth is damp but not wet.



3. Open the window.



4. Hold the cloth in an inverted "U" shape around the encoder strip and carefully wipe until no ink residue appears on the cloth. Be very careful not to scratch the encoder strip with your fingernail or any other object.



5. Do not hold the cloth as shown.



6. Hold the cloth as shown, in the appropriate "U" shape.

7. Do not move the carriage assembly away from the service station.




8. Close the window.

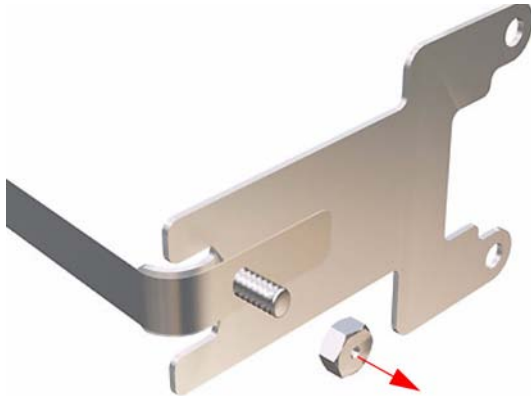


Encoder Strip

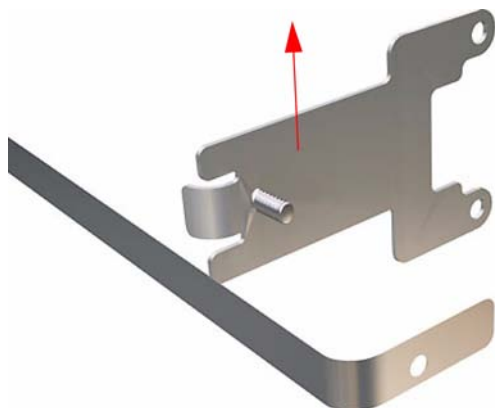
Removal


 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Right Cover (refer [Right Cover on page 185](#))
2. Remove the Left Cover (refer [Left Cover on page 188](#))
3. Remove the Encoder Strip (with spring and attachment nut) (refer [Encoder Strip \(with spring and attachment nut\) on page 231](#))
4. Use the spanner provided in the tool kit to remove the 13 mm locking nut that secures the Encoder Strip to the Encoder Strip Spring.




5. Remove the Encoder Strip Spring.



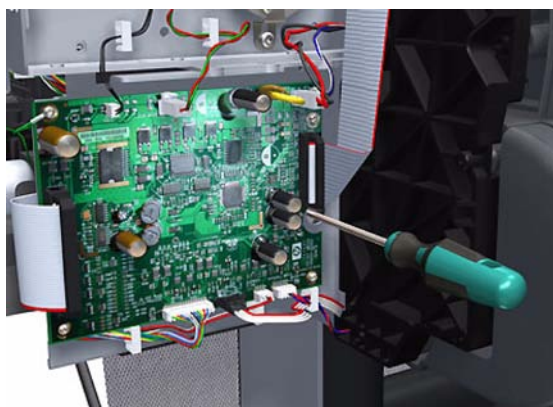
 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Trailing Cable

Removal

 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Left Cover (refer [Left Cover on page 188](#)).
2. Remove the Right Cover (refer [Right Cover on page 185](#)).
3. Remove the Front Panel (refer [Front Panel on page 203](#)).
4. Remove the Top Cover (refer [Top Cover on page 205](#)).
5. Remove the Window Position Sensor (refer [Window Position Sensor on page 208](#)).
6. Remove the Ink Supply Tubes Support Rail (refer [Ink Supply Tubes Support Rail on page 209](#)).
7. Loosen the T-10 uncapping screw sufficiently so you can manually move the Carriage Assembly in step 8.



8. Push the Carriage Assembly into the print path.



9. Unclip the small cover of the Carriage PCA.



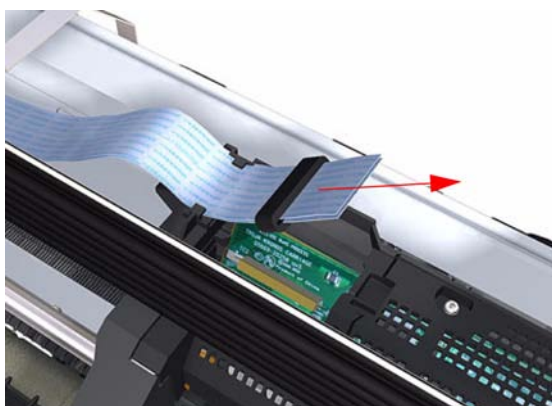
10. Remove the small cover of the Carriage PCA.



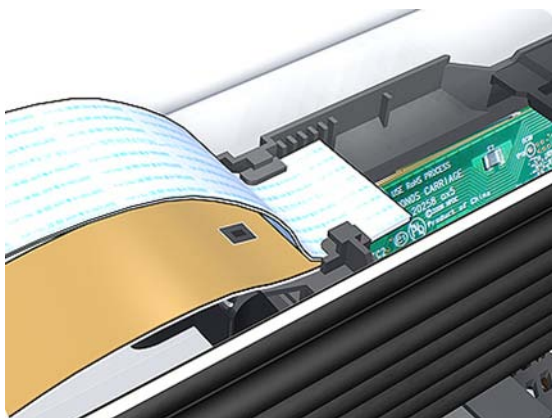
11. Disconnect the two ribbon cables of the Trailing Cables from the Carriage PCA.



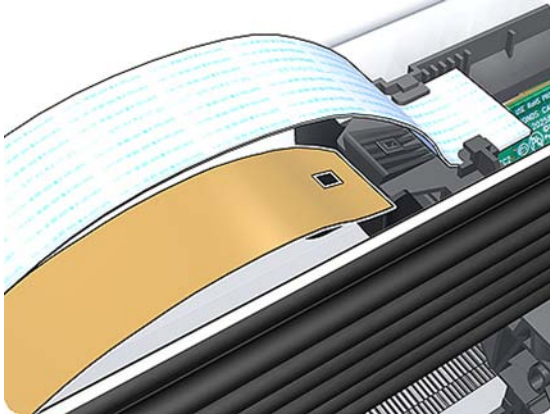
12. Straighten the two ribbon cables of the Trailing Cables and remove the Ferrite Core.



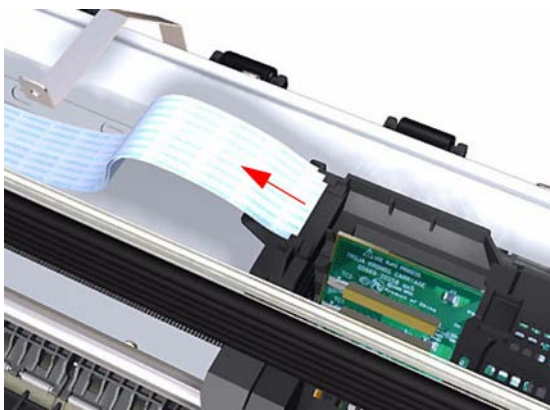
13. Lift up the top trailing cable.



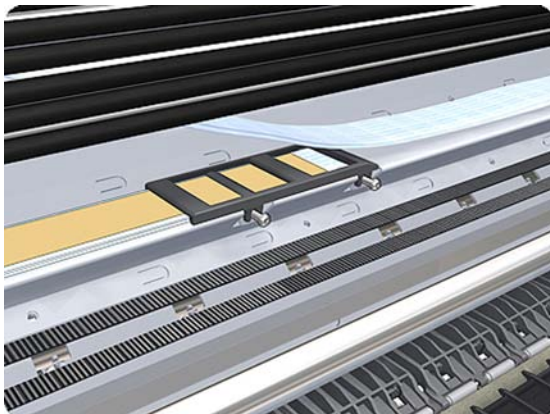
14. Remove the lower part of the trailing cable.



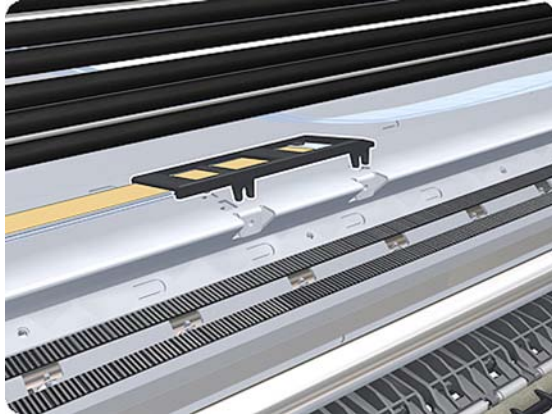
15. Slide the Trailing Cables out of the attachment clips of the Carriage Assembly.



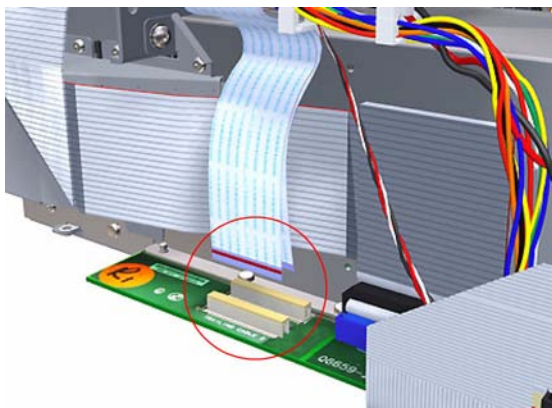
16. Use a short torx screwdriver to remove the two T-10 screws that secure the center attachment of the Trailing Cables.



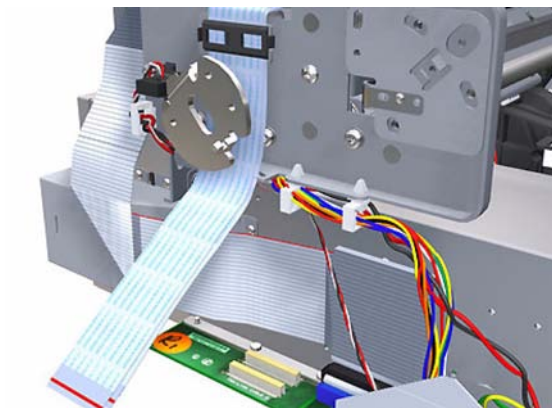
17. Unclip the center attachment of the Trailing Cables.



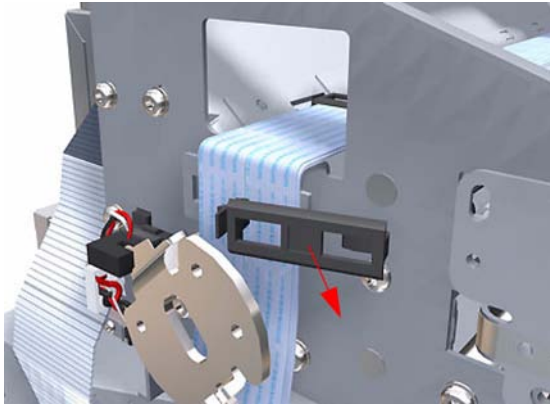
18. Disconnect the two ribbon cables of the Trailing Cables from the Electronics Module.



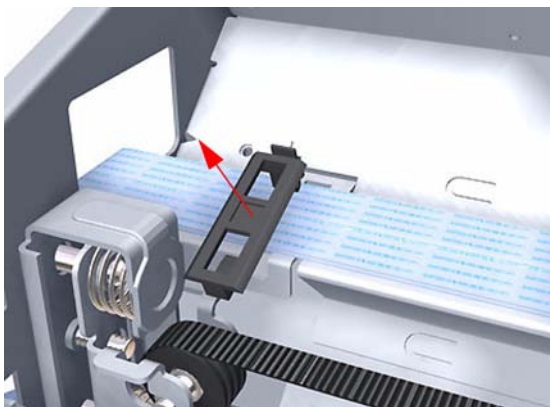
19. Unroute the Trailing Cables.



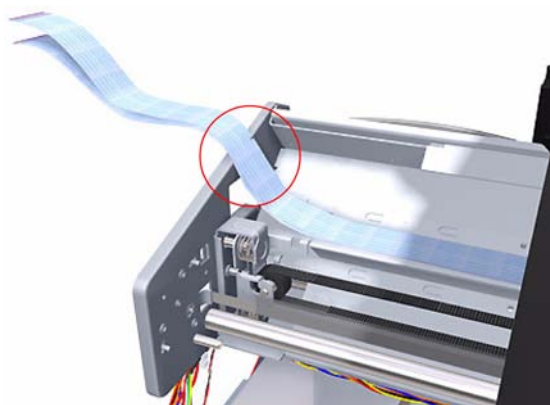
20. Unclip and remove the cable clamp of the Trailing Cables.



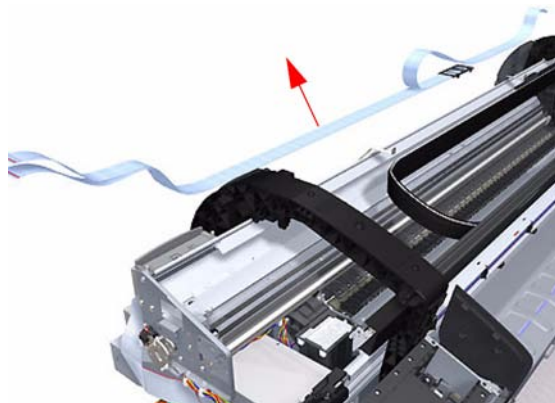
21. Unclip and remove the cable clamp of the Trailing Cables.




22. Unroute the Trailing Cables.



23. Remove the Trailing Cables from the printer.

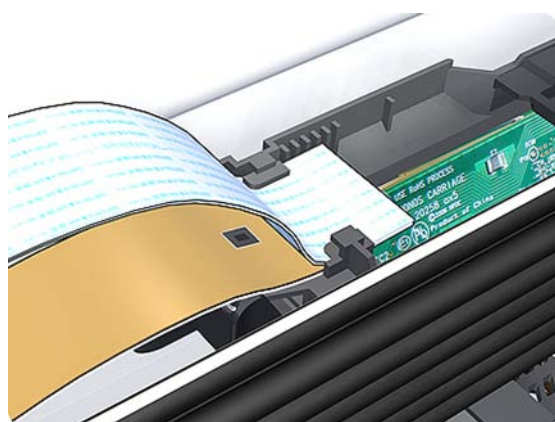


Installation

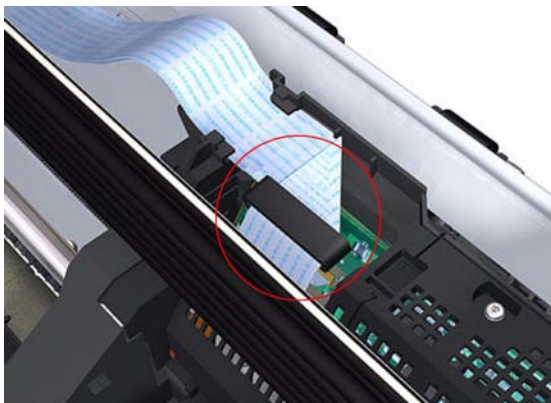
 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

NOTE: Make sure you carry out the following actions during the installation of the Trailing Cable.

1. Use an alcohol (from the Lubrication Kit or Tool Kit) dampened cloth to remove all traces of residual adhesive (remaining from the double sided pads removed from the printer before applying new pads in the same positions as the original pads).
2. Make sure both ribbon cables of the Trailing Cable are routed below the lower attachment clips of the Carriage Assembly.



3. Make sure that the Ferrite Core is correctly positioned so that the small cover of the Carriage PCA closes correctly to avoid possible friction damage to the Trailing Cable during operation of the printer.



Carriage Assembly (with or without Trailing Cable)

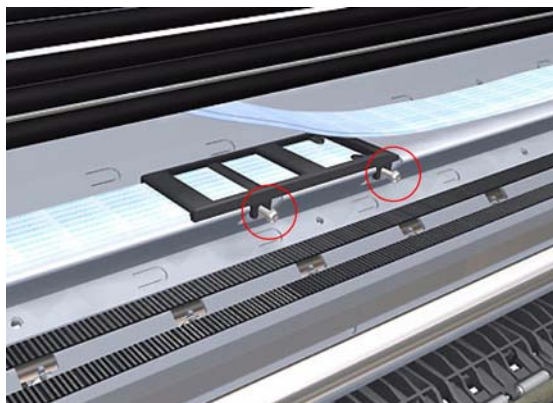
Removal

 **NOTE:** Switch off the printer and remove the power cable.

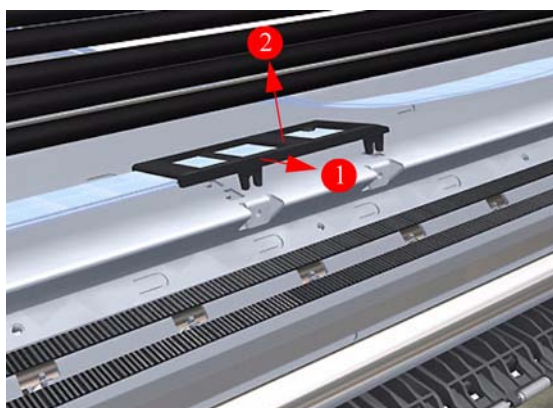
NOTE: If you replace the Carriage Assembly with service parts Q6683-60231 (24 inch) or Q6687-60087 (44 inch) that include a Trailing Cable, remember to remove the Trailing Cable with the Carriage Assembly.

1. Remove the Front Cover (refer [Front Cover on page 177](#)).
2. Remove the Right Cover (refer [Right Cover on page 185](#)).
3. Remove the Left Cover (refer [Left Cover on page 188](#)).
4. Remove the Cutter Assembly (refer [Cutter Assembly on page 199](#)).
5. Remove the Front Panel (refer [Front Panel on page 203](#)).
6. Remove the Top Cover (refer [Top Cover on page 205](#)).
7. Remove the Window Position Sensor (refer [Window Position Sensor on page 208](#)).
8. Remove the Ink Supply Tubes Support Rail (refer [Ink Supply Tubes Support Rail on page 209](#)).
9. Manually uncap the Service Station before removing the Encoder Strip (with spring and attachment nut) (refer [Encoder Strip \(with spring and attachment nut\) on page 231](#)).
10. Remove the Encoder Strip (with spring and attachment nut) (refer [Encoder Strip \(with spring and attachment nut\) on page 231](#)).
11. If necessary manually move the Carriage Assembly fully right into the docking station.

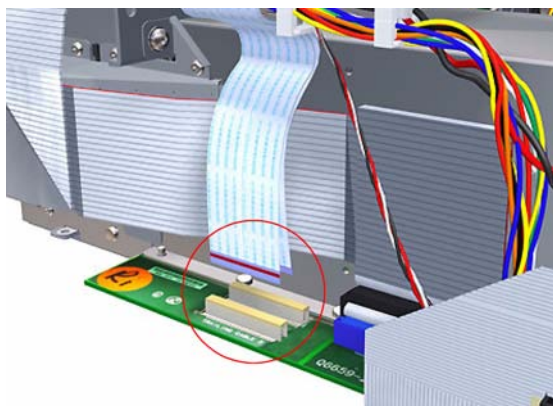
12. Use a short torx screwdriver to remove the two T-10 screws that secure the center attachment of the Trailing Cables.



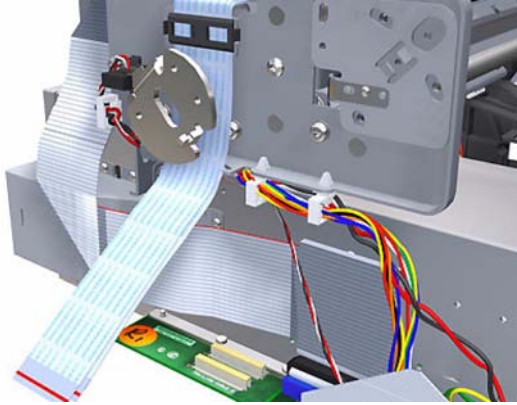
13. Unclip the center attachment of the Trailing Cables.



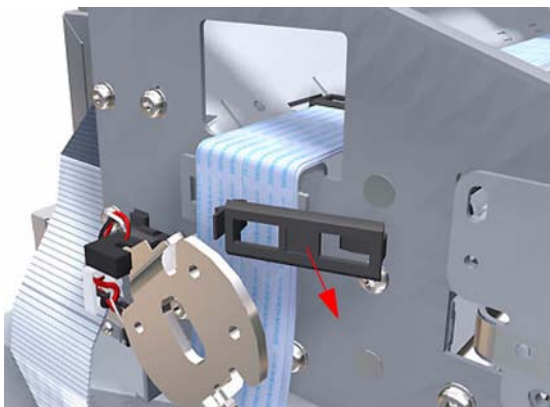
14. Disconnect the two ribbon cables of the Trailing Cables from the Electronics Module.



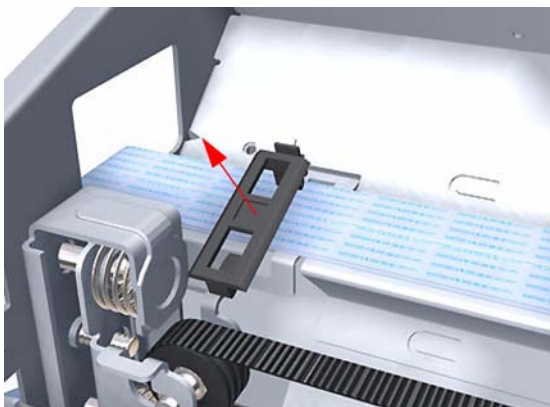
15. Unroute the Trailing Cables.



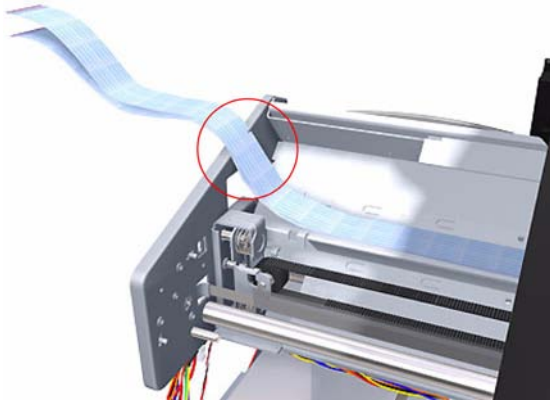
16. Unclip and remove the cable clamp of the Trailing Cables.



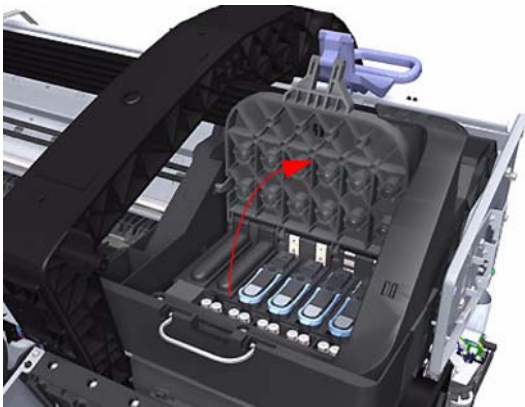
17. Unclip and remove the cable clamp of the Trailing Cables.



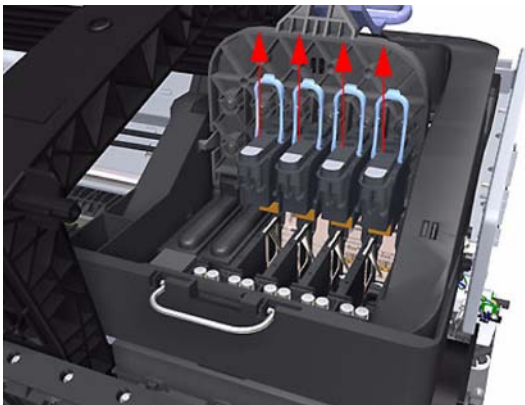
18. Unroute the Trailing Cables.



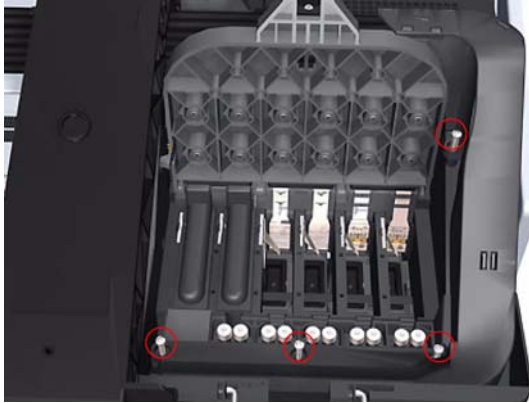
19. Open the Carriage Cover.



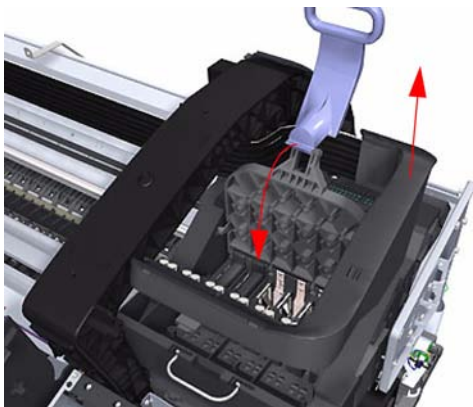
20. Remove all the Printheads.



21. Remove the four T-15 screws that secure the Ink Supply Tubes to the Carriage Assembly.



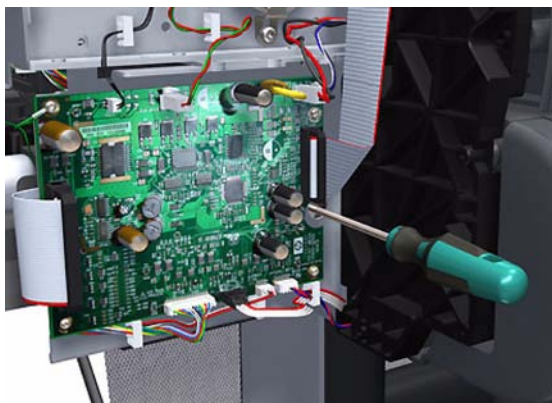
22. Carefully lift out the Ink Supply Tubes and close the carriage cover at the same time.



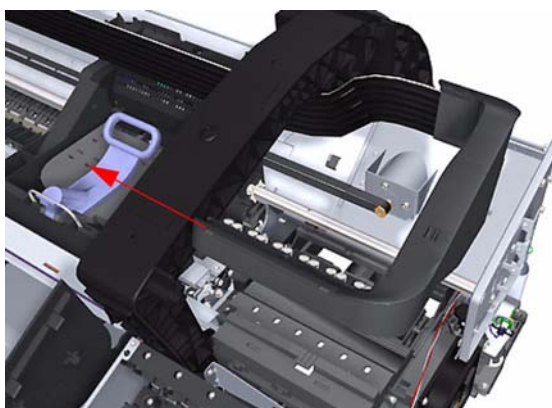
23. Close and lock the Carriage Cover.



24. Loosen the T-10 uncapping screw sufficiently so you can manually move the Carriage Assembly in step 26.



25. Push the Carriage Assembly into the print path.



26. Unclip the small cover of the Carriage PCA.



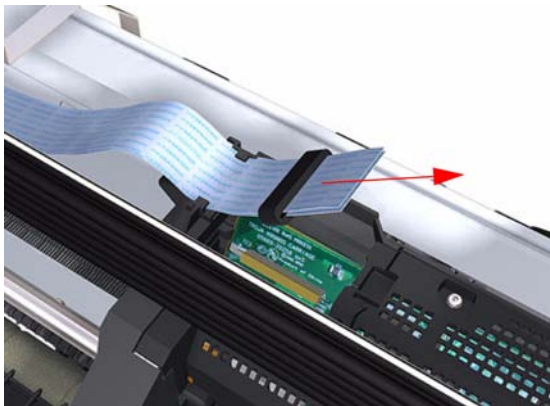
27. Remove the small cover of the Carriage PCA.



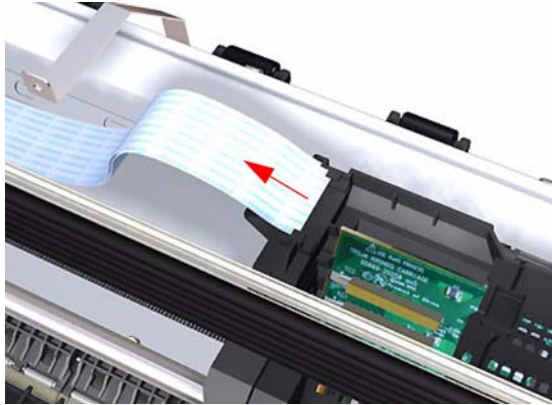
28. Disconnect the two ribbon cables of the Trailing Cables from the Carriage PCA.



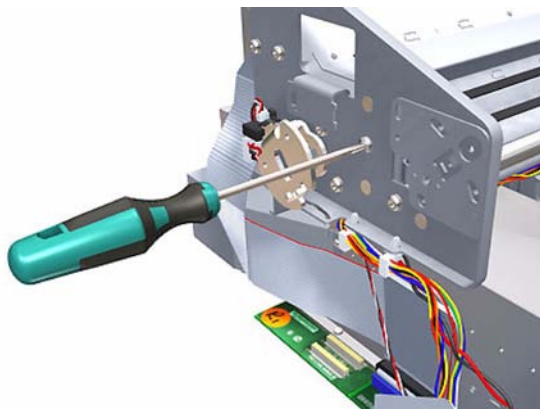
29. Straighten the two ribbon cables of the Trailing Cables and remove the Ferrite Core.




30. Slide the Trailing Cables out of the attachment clips of the Carriage Assembly.

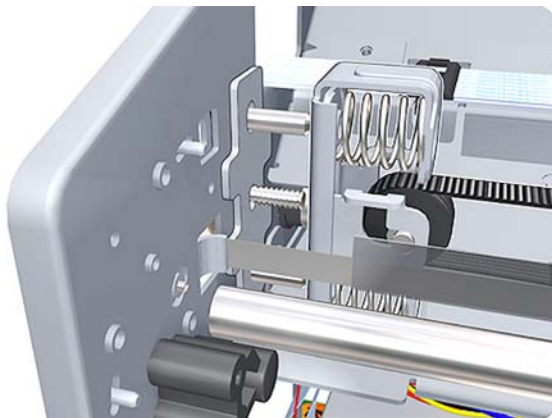


31. Loosen the T-15 screw Belt Tensioner to the printer to remove the tension from the belt.

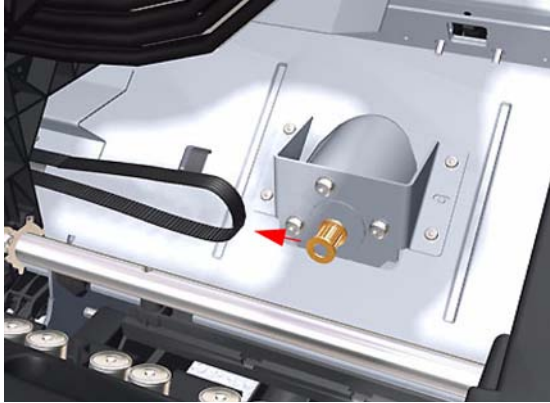


32. Leave the Belt Tensioner in place with all the tension removed.

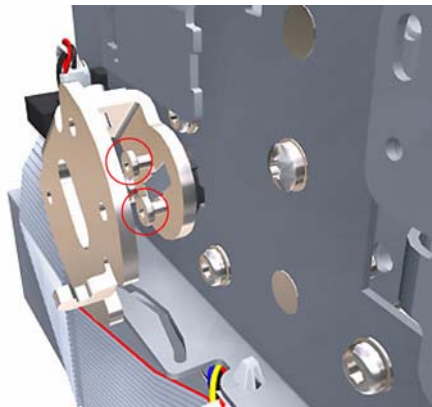
 **NOTE:** The belt tensioner has a spacer between the tensioner and the right end plate.



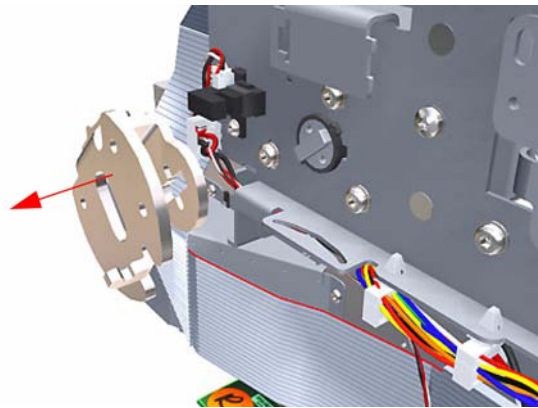
33. Remove the Belt Assembly from the Scan- Axis Motor drive wheel.



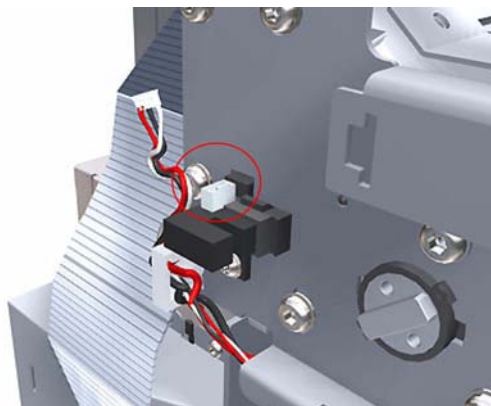
34. Remove the two T-15 screw that secure the Media Lever attachment plate.



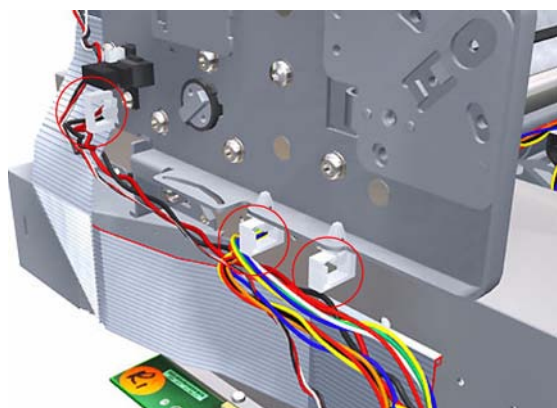
35. Remove the Media Lever attachment plate.



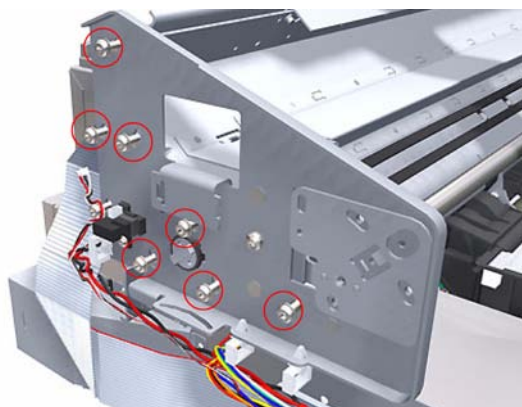
36. Disconnect the Pinchwheel Lifter Sensor.



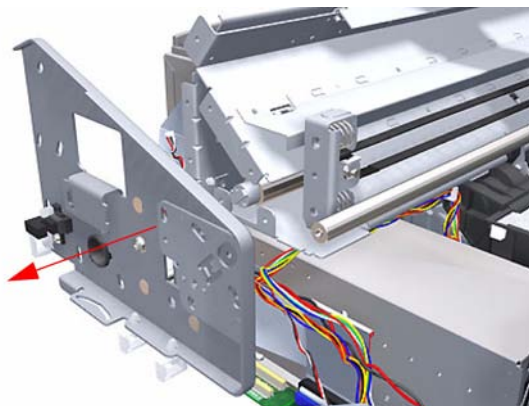
37. Unroute the cables from the cable clamps on the Scan Side Panel.




38. Remove the seven T-15 screw that secure the Scan Side Panel to the printer.




39. Remove the Scan Side Panel.



40. Carefully slide the Carriage Assembly and Belt Assembly out of the printer (and the Trailing Cable if you are removing it with the Carriage Assembly).

 **NOTE:** Before you reinstall the Carriage Assembly use an alcohol dampened cloth to remove all traces of residual adhesive (remaining from the double sided pads removed in step 14) from the printer before applying new pads in the same positions as the original pads.



 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Carriage Rear Bushing

Removal

 **NOTE:** Switch off the printer and remove the power cable.


1. Remove the Front Cover (refer [Front Cover on page 177](#)).
2. Remove the Right Cover (refer [Right Cover on page 185](#)).
3. Remove the Left Cover (refer [Left Cover on page 188](#)).
4. Remove the Cutter Assembly (refer [Cutter Assembly on page 199](#)).
5. Remove the Front Panel (refer [Front Panel on page 203](#)).
6. Remove the Top Cover (refer [Top Cover on page 205](#)).
7. Remove the Window Position Sensor (refer [Window Position Sensor on page 208](#)).
8. Remove the Ink Supply Tubes Support Rail (refer [Ink Supply Tubes Support Rail on page 209](#)).

9. Remove the Encoder Strip (with spring and attachment nut) (refer [Encoder Strip \(with spring and attachment nut\) on page 231](#)).
10. Remove the Carriage Assembly (with or without Trailing Cable) (refer [Carriage Assembly \(with or without Trailing Cable\) on page 244](#)).
11. Squeeze the left hand clip of the Carriage Rear Bushing sufficiently to be able to release it from the Carriage Assembly.




12. Rotate the Carriage Rear Bushing vertically and remove it from the Carriage Assembly.




 **NOTE:** When you reinstall the Carriage Rear Bushing, use the Oil and Oil Dispenser from the Lubrication Kit to add 2-3 drops of oil to the small depression in it.



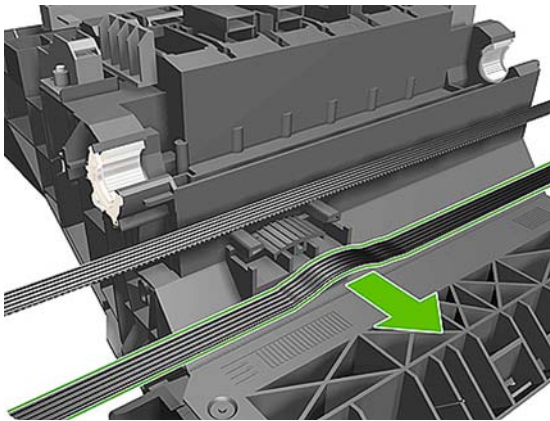
 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Belt Assembly

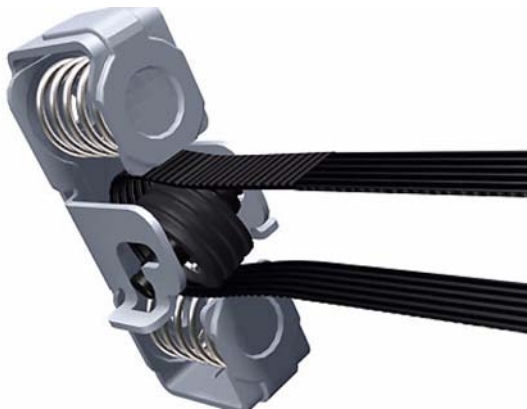
Removal


 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Carriage Assembly (with or without Trailing Cable) (refer [Carriage Assembly \(with or without Trailing Cable\) on page 244](#)).
2. Slide the Belt Assembly out of the attachment on the Carriage Assembly.



3. Remove the pulley to release the Belt Assembly from the Belt Tensioner.

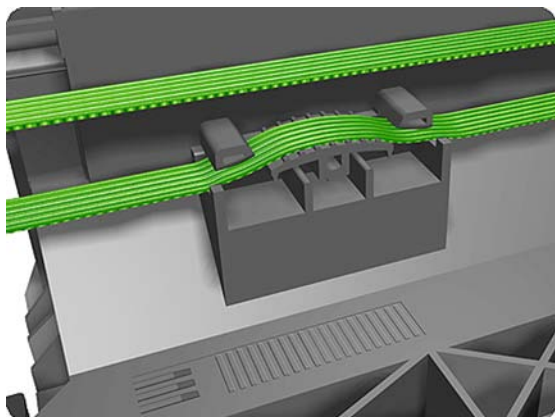


 **NOTE:** There is a spacer between the right end plate and the tensioner.

NOTE: When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).


Installation

- ▲ When installing the new belt, make sure the belt is correctly installed under the carriage assembly.

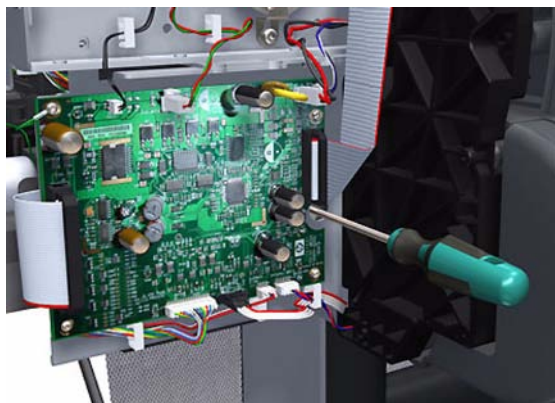


Scan-Axis Motor

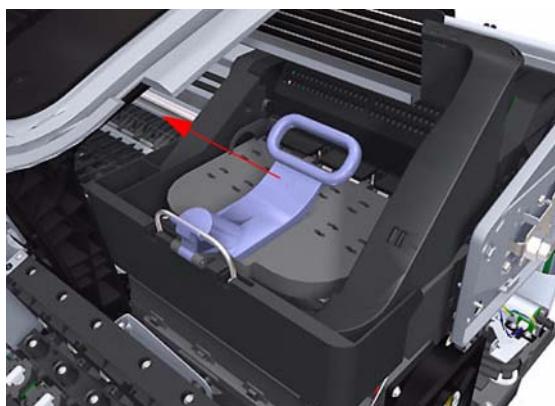
Removal

 **NOTE:** Switch off the printer and remove the power cable.

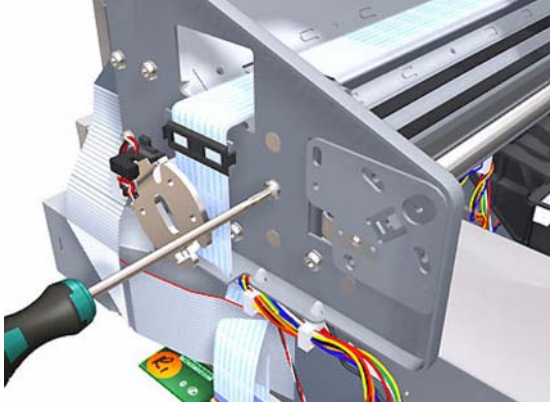
1. Remove the Right Cover (refer [Right Cover on page 185](#)).
2. Remove the Left Cover (refer [Left Cover on page 188](#)).
3. Loosen the T-10 uncapping screw sufficiently so you can manually move the Carriage Assembly in step 4.



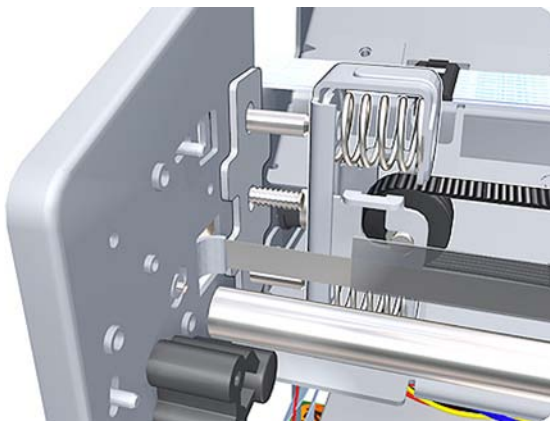
4. Push the Carriage Assembly into the print path.




5. Loosen the T-15 screw Belt Tensioner to the printer to remove the tension from the belt.



6. Leave the Belt Tensioner in place.



 **NOTE:** There is a spacer between the right end plate and the tensioner.

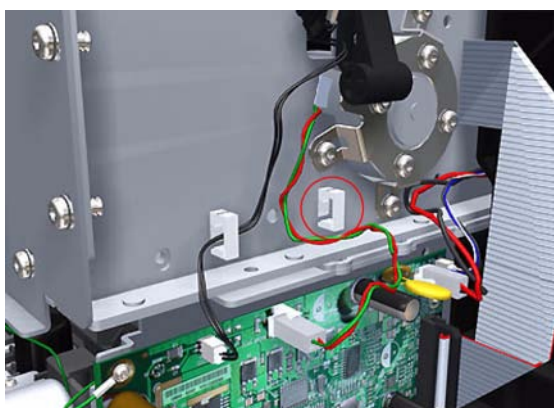
7. Remove the Belt Assembly from the drive wheel of the Scan-Axis Motor.



8. Remove three T-15 screws that secure the Scan-Axis Motor to the printer.



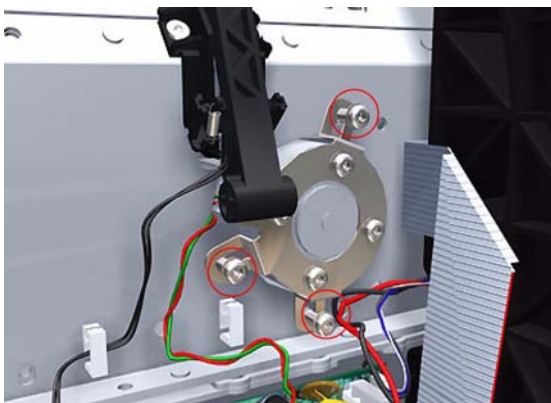
9. Unroute the Scan-Axis Motor supply cable from the cable clamp.



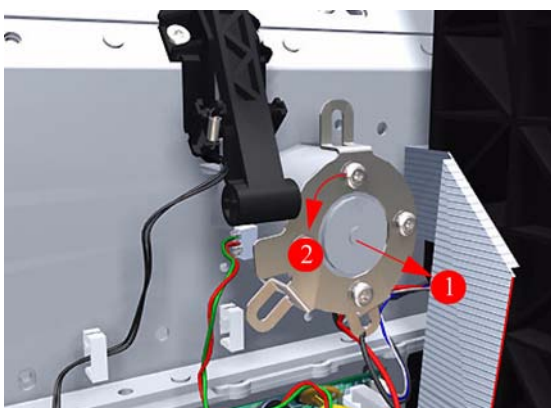
10. Disconnect the Scan-Axis Motor supply connector from PrintMech PCA.



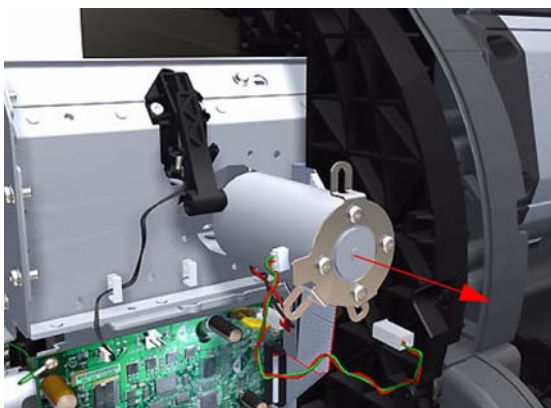
11. Remove three T-15 screws that secure the Scan-Axis Motor to the printer.




12. Carefully pull the Scan-Axis Motor out of the printer (10 mm) until you can rotate it approximately 30 degrees counterclockwise.




13. Remove the Scan-Axis Motor from the printer.



 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Carriage Rail Oiler

Removal

 **NOTE:** Switch off the printer and remove the power cable.


1. Remove the Right Cover (refer [Right Cover on page 185](#)).

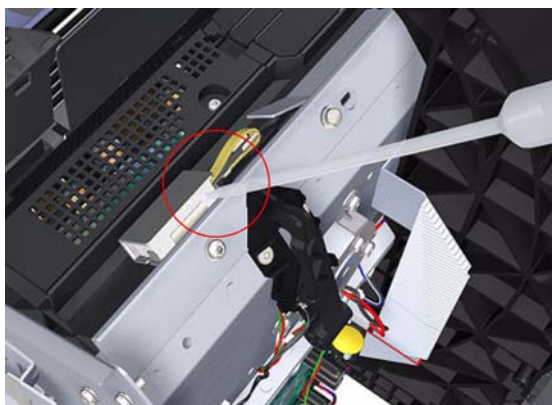
2. Remove the T-15 Carriage Rail Oiler attachment screw.



3. Remove the Carriage Rail Oiler from the printer.



 **NOTE:** When you reinstall the Carriage Rail Oiler, use the Oil and Oil Dispenser from the Lubrication Kit to add 2-3 drops of oil to the foam of the Carriage Rail Oiler and in the small depression of the Carriage Rear Bushing.




4. Add 2 or 3 drops of oil in the depression where the Slider fits.



Color Sensor (ESP)

Removal

 **NOTE:** Switch off the printer and remove the power cable.

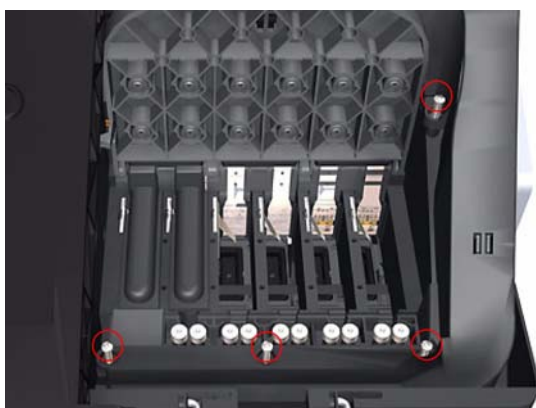
1. Remove the Right Cover (refer [Right Cover on page 185](#)).
2. Remove the Left Cover (refer [Left Cover on page 188](#)).
3. Remove the Front Panel (refer [Front Panel on page 203](#)).
4. Remove the Top Cover (refer [Top Cover on page 205](#)).
5. Remove the Window Position Sensor (refer [Window Position Sensor on page 208](#)).
6. Remove the Ink Supply Tubes Support Rail (refer [Ink Supply Tubes Support Rail on page 209](#)).
7. Open the Carriage Cover.



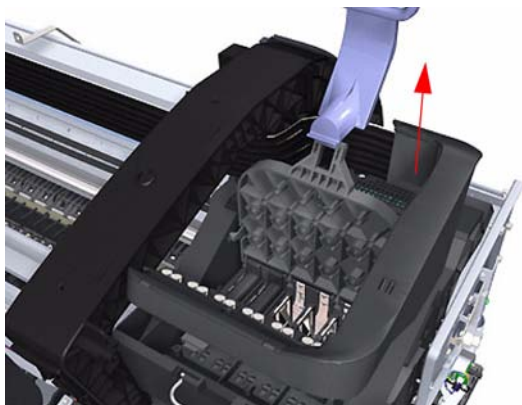
8. Remove all the Printheads.



9. Remove the four T-15 screws that secure the Ink Supply Tubes to the Carriage Assembly.



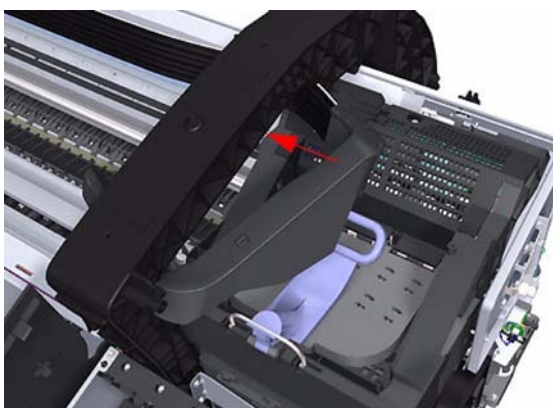
10. Carefully lift out the Ink Supply Tubes and close the carriage cover at the same time.



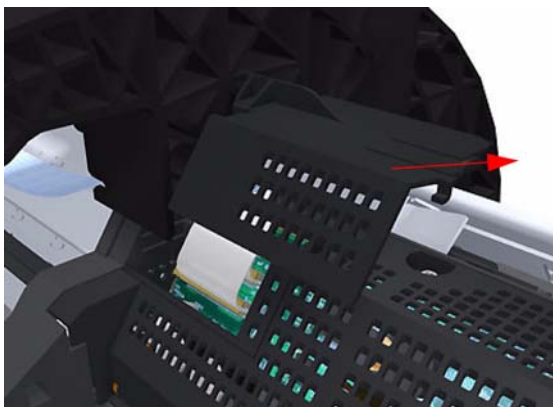
11. Close and lock the Carriage Cover.



12. Carefully move the Ink Supply Tubes into the print path.



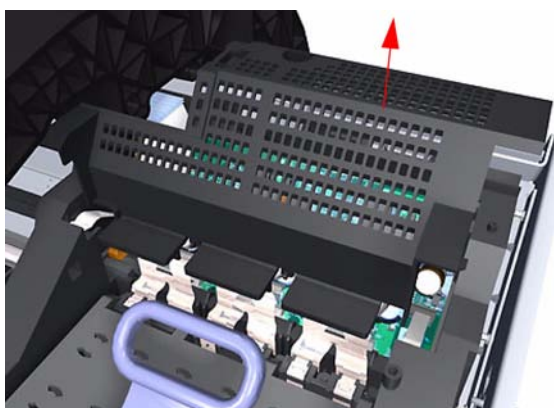
13. Unclip and slide off the small cover of the Carriage Assembly Carriage PCA.



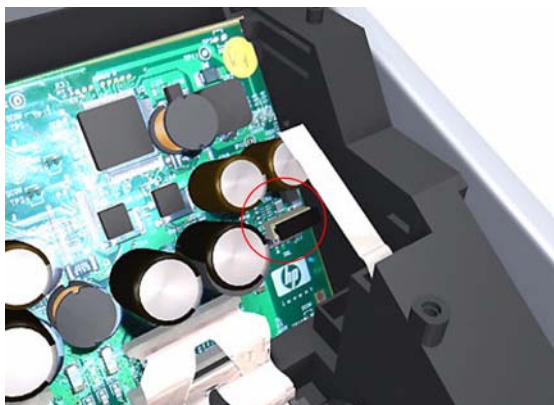
14. Remove one T-15 screws that secures the large cover of the Carriage PCA.



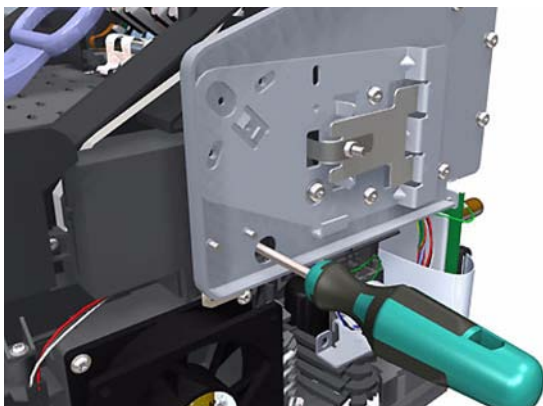
15. Remove the large cover of the Carriage PCA.



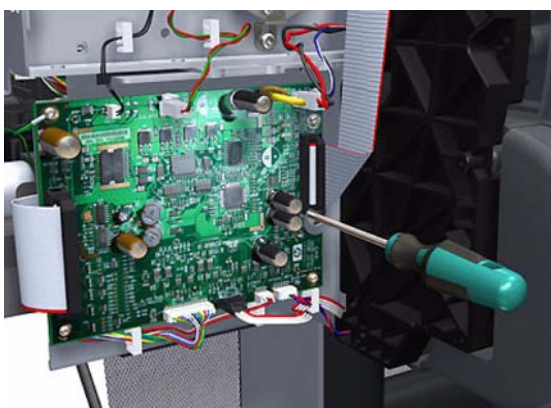
16. Disconnect the Color Sensor (ESP) electrical connection from the Carriage PCA.



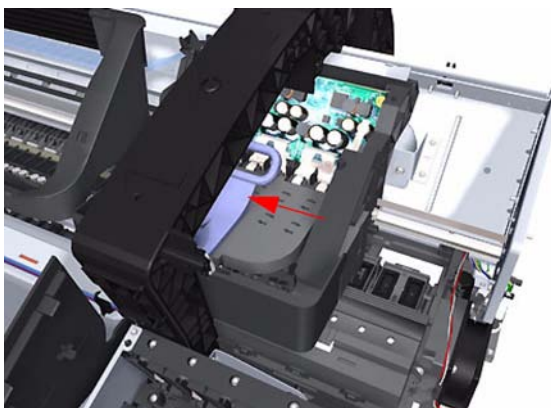
17. Remove one T-10 screw that secures the Color Sensor (ESP) to the Carriage Assembly.



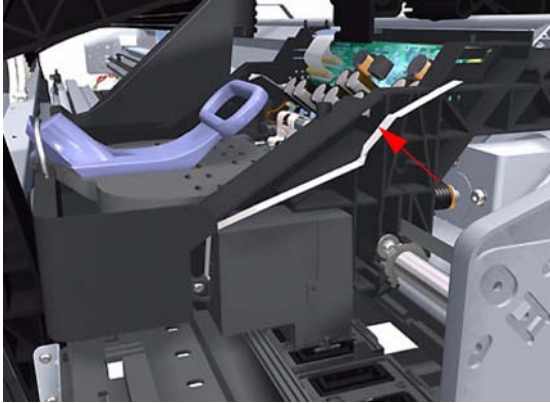
18. Loosen the T-10 uncapping screw sufficiently so you can manually move the Carriage Assembly in step 26.



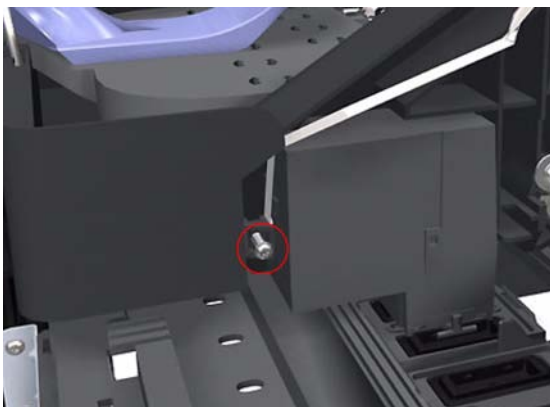
19. Push the Carriage Assembly into the print path enough to allow access to the Color Sensor (ESP).




20. Carefully unrout the Color Sensor (ESP) cable from the Carriage Assembly.



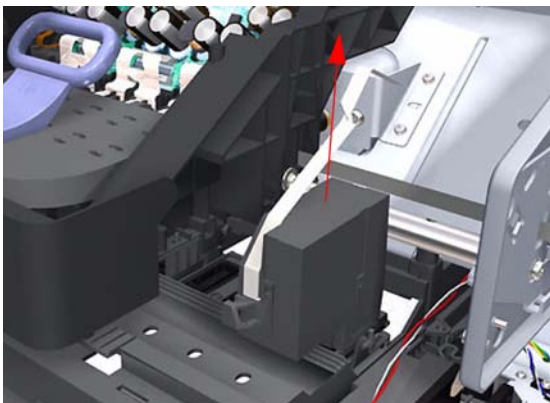
21. Remove one T-10 screw that secures the Color Sensor (ESP) to the Carriage Assembly.



22. Remove the Color Sensor (ESP) from Carriage Assembly.


 **NOTE:** When you reinstall the Color Sensor (ESP), be very careful not to overtighten the attachment screw because this will damage cause irreparable damage to it.

Take care when you route the Color Sensor (ESP) cable so it lays flat and is not twisted. This ensures that when you reconnect it to the connector in the Carriage Assembly it is connected correctly. If the cable has been twisted during the routing there is a danger that the connection is inverted.

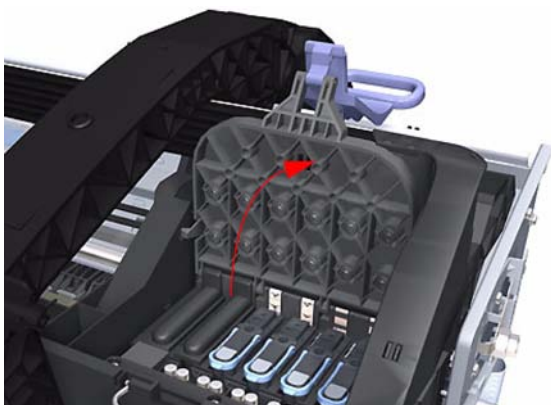


Line Sensor

Removal

 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Right Cover (refer [Right Cover on page 185](#)).
2. Remove the Left Cover (refer [Left Cover on page 188](#)).
3. Remove the Front Panel (refer [Front Panel on page 203](#)).
4. Remove the Top Cover (refer [Top Cover on page 205](#)).
5. Remove the Window Position Sensor (refer [Window Position Sensor on page 208](#)).
6. Remove the Ink Supply Tubes Support Rail (refer [Ink Supply Tubes Support Rail on page 209](#)).
7. Open the Carriage Cover.



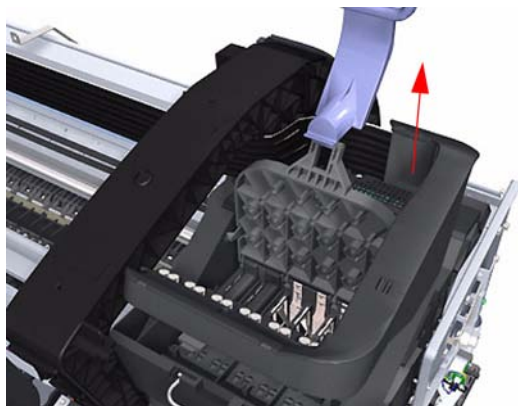
8. Remove all the Printheads.



9. Remove the four T-15 screws that secure the Ink Supply Tubes to the Carriage Assembly.



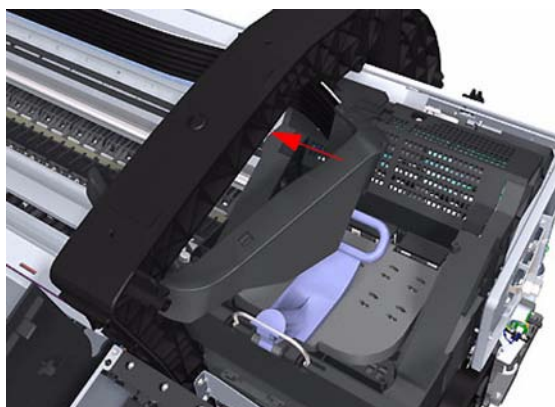
10. Carefully lift out the Ink Supply Tubes and close the carriage cover at the same time.



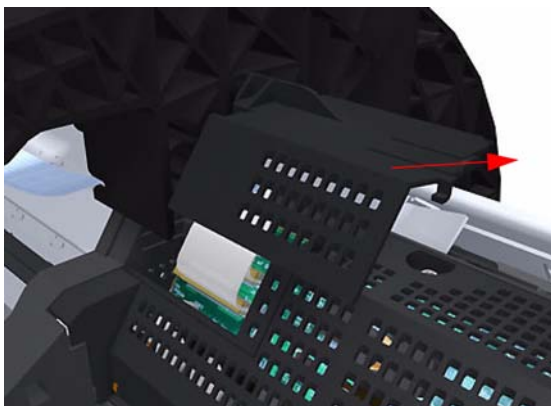
11. Close and lock the Carriage Cover.



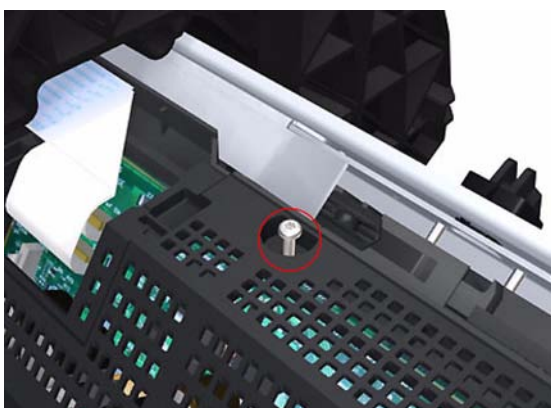
12. Carefully move the Ink Supply Tubes into the print path.



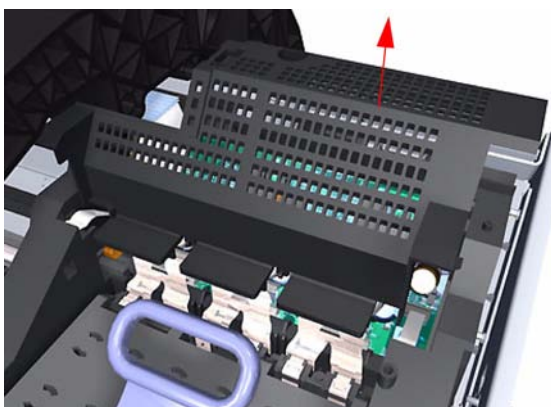
13. Unclip and slide off the small cover of the Carriage Assembly Carriage PCA.



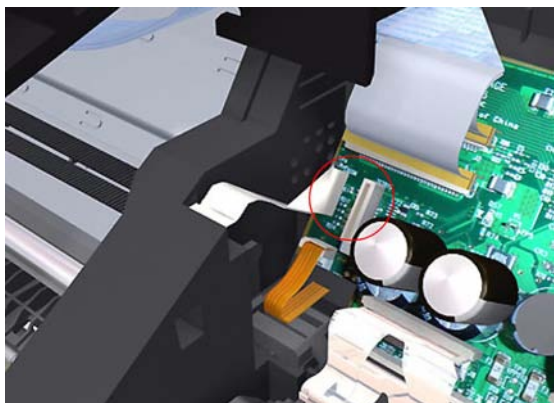
14. Remove one T-15 screws that secures the large cover of the Carriage PCA.



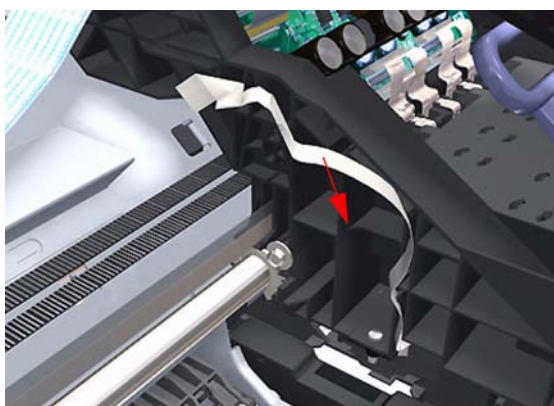
15. Remove the large cover of the Carriage PCA.



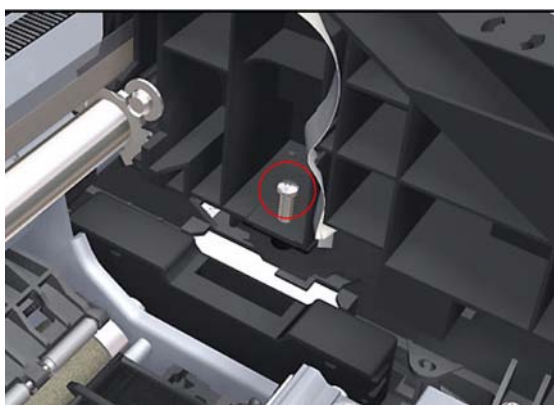
16. Disconnect the Line Sensor electrical connection from the Carriage PCA.



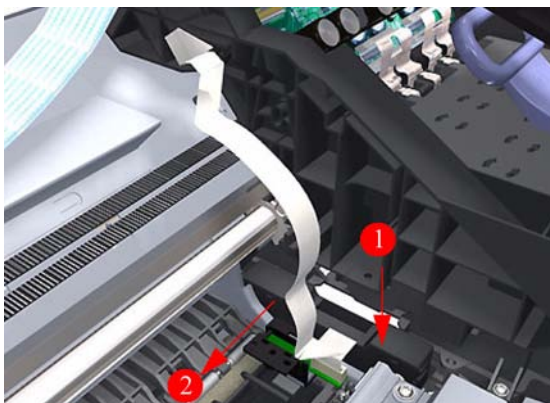
17. Carefully unrout the Line Sensor cable from the Carriage Assembly.




18. Remove one T-10 screw that secures the Line Sensor to the Carriage Assembly.




19. Remove the Line Sensor from Carriage Assembly.



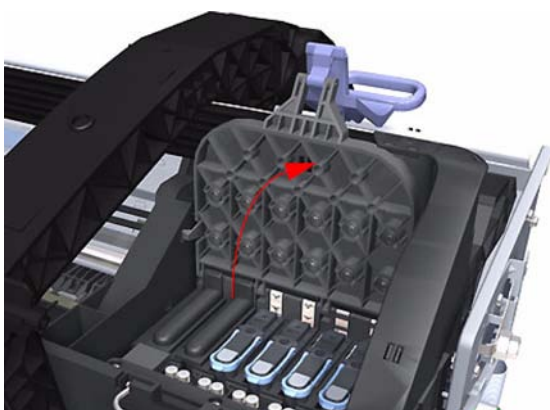
 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Carriage Cover (includes Carriage Latch)

Removal

 **NOTE:** Switch off the printer and remove the power cable.

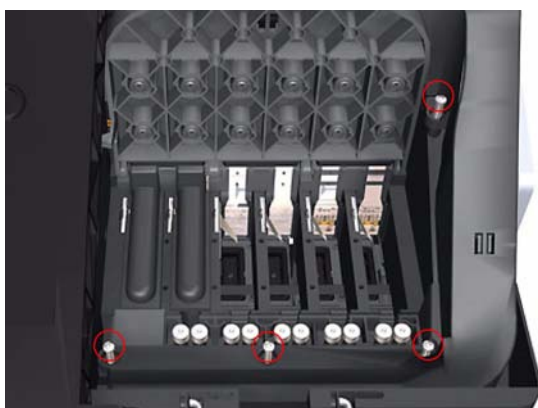
1. Remove the Right Cover (refer [Right Cover on page 185](#)).
2. Remove the Left Cover (refer [Left Cover on page 188](#)).
3. Remove the Front Panel (refer [Front Panel on page 203](#)).
4. Remove the Top Cover (refer [Top Cover on page 205](#)).
5. Remove the Window Position Sensor (refer [Window Position Sensor on page 208](#)).
6. Remove the Ink Supply Tubes Support Rail (refer [Ink Supply Tubes Support Rail on page 209](#)).
7. Open the Carriage Cover.



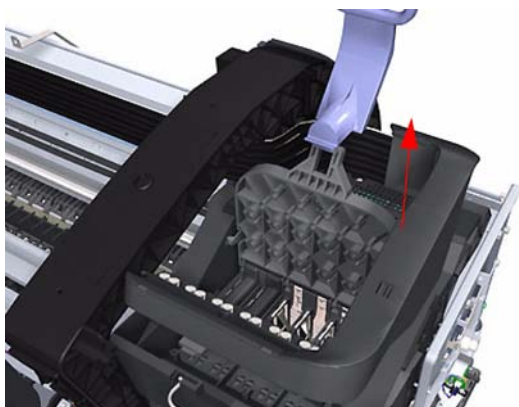
8. Remove all the Printheads.



9. Remove the four T-15 screws that secure the Ink Supply Tubes to the Carriage Assembly.



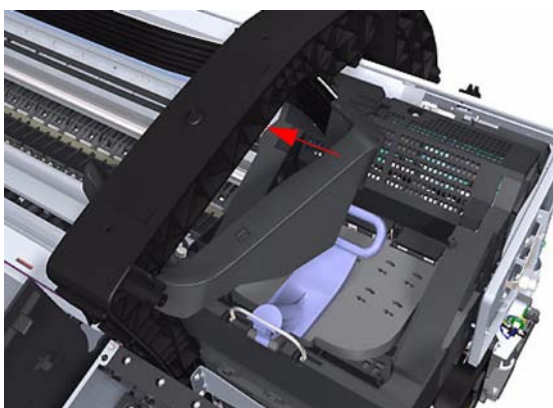
10. Carefully lift out the Ink Supply Tubes and close the carriage cover at the same time.



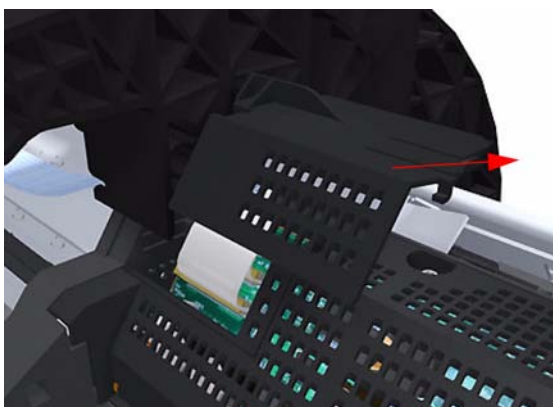
11. Close and lock the Carriage Cover.



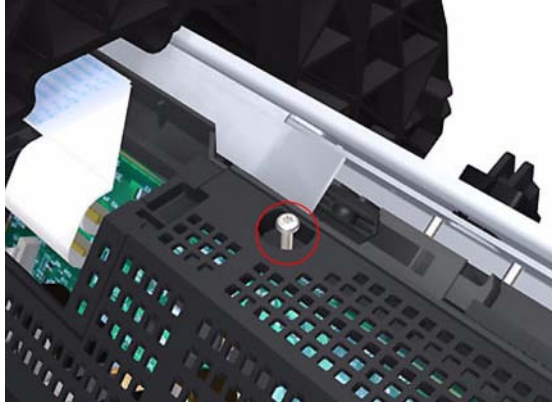
12. Carefully move the Ink Supply Tubes into the print path.



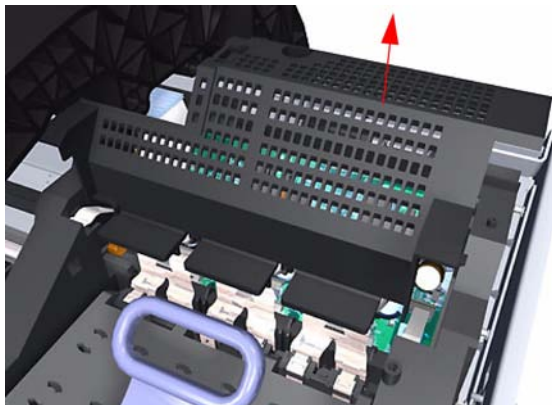
13. Unclip and slide off the small cover of the Carriage Assembly Carriage PCA.



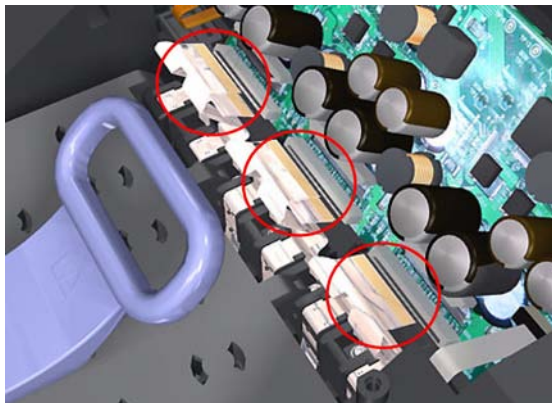
14. Remove one T-15 screws that secures the large cover of the Carriage PCA.



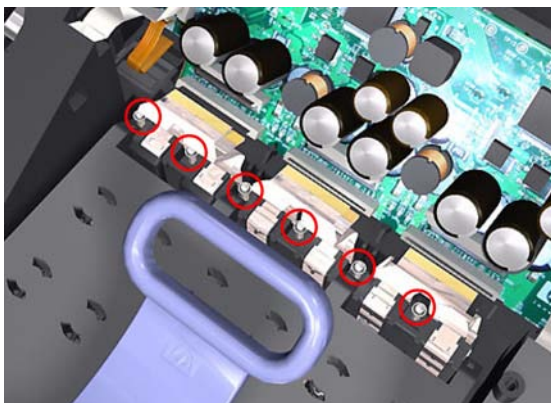
15. Remove the large cover of the Carriage PCA.



16. Disconnect the six ribbon cables of Carriage Cover from the Carriage Assembly PCB.




17. Remove six T-10 screws that secure the Carriage Assembly Cover hinge.




18. Carefully lift the Carriage Cover in the vertical position to remove it from the Carriage Assembly.



 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

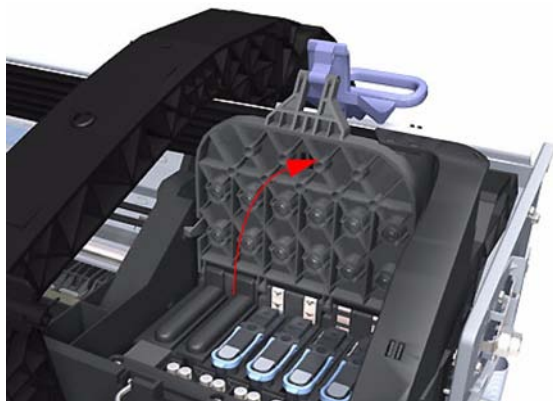
Carriage PCA

Removal

 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Right Cover (refer [Right Cover on page 185](#)).
2. Remove the Left Cover (refer [Left Cover on page 188](#)).
3. Remove the Front Panel (refer [Front Panel on page 203](#)).
4. Remove the Top Cover (refer [Top Cover on page 205](#)).
5. Remove the Window Position Sensor (refer [Window Position Sensor on page 208](#)).
6. Remove the Ink Supply Tubes Support Rail (refer [Ink Supply Tubes Support Rail on page 209](#)).

7. Open the Carriage Cover.



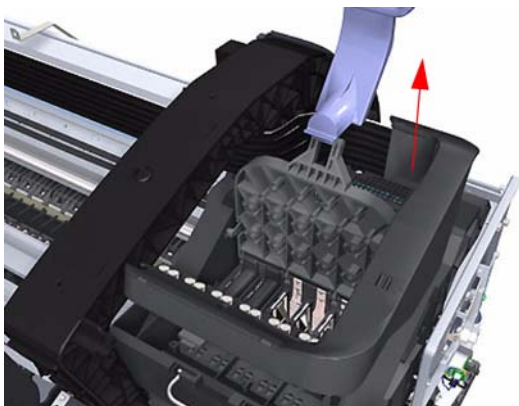
8. Remove all the Printheads.



9. Remove the four T-15 screws that secure the Ink Supply Tubes to the Carriage Assembly.



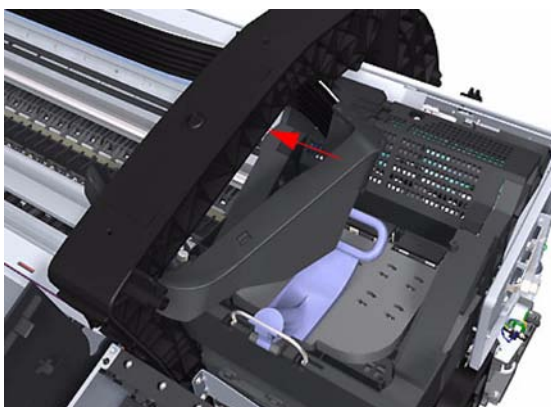
10. Carefully lift out the Ink Supply Tubes and close the carriage cover at the same time.



11. Close and lock the Carriage Cover.



12. Carefully move the Ink Supply Tubes into the print path.



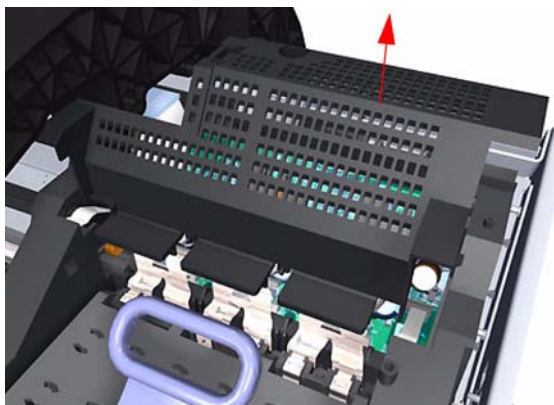
13. Unclip and slide off the small cover of the Carriage Assembly Carriage PCA.



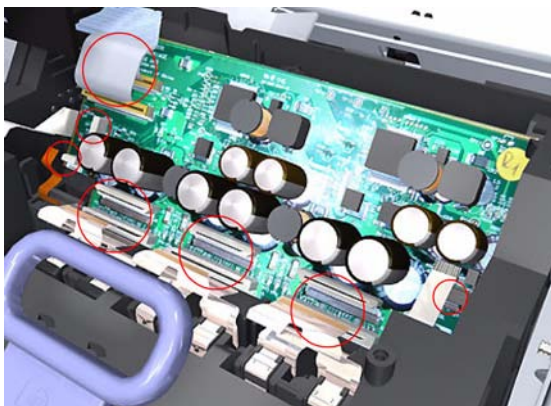
14. Remove one T-15 screws that secures the large cover of the Carriage PCA.



15. Remove the large cover of the Carriage PCA.



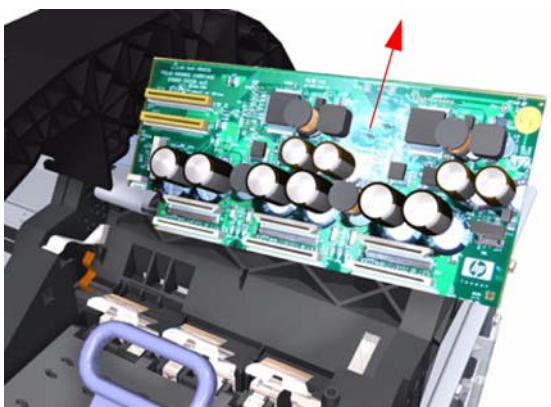
16. Disconnect the ten ribbon cables from the Carriage Assembly PCB.




17. Press the locking clip to release the Carriage Assembly PCB from the carriage.



18. Remove the Carriage PCA from the carriage.



 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

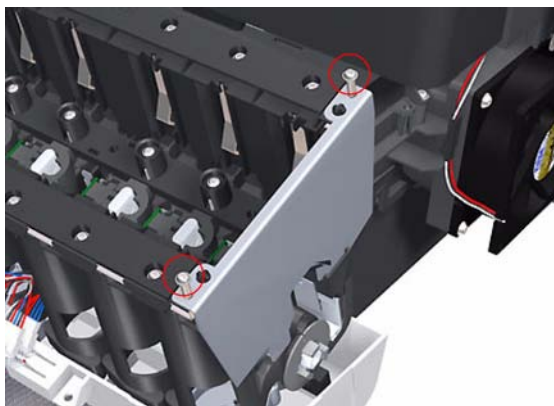
Right Ink Supply Station

Removal

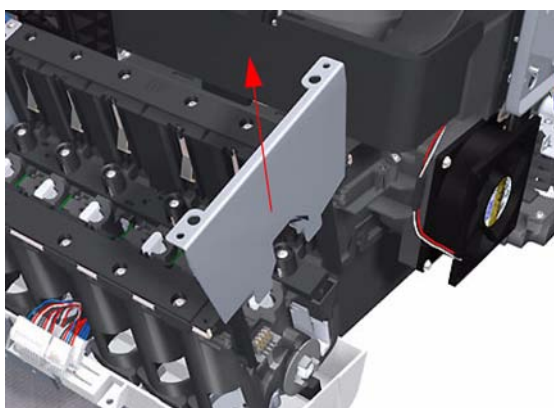
 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Right Cover (refer [Right Cover on page 185](#)).

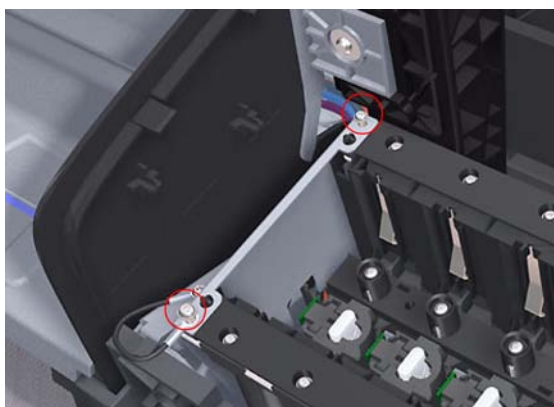
2. Remove two T-10 screws that secure the Right Side Plate of the Ink Supply Station.



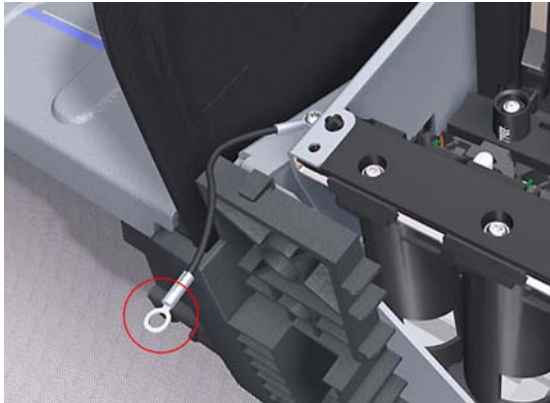
3. Remove the Right Side Plate of the Right Ink Supply Station.



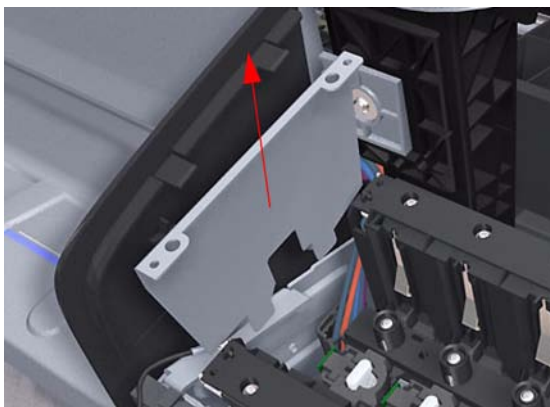
4. Remove two T-10 screws that secure the Left Side Plate of the Right Ink Supply Station.



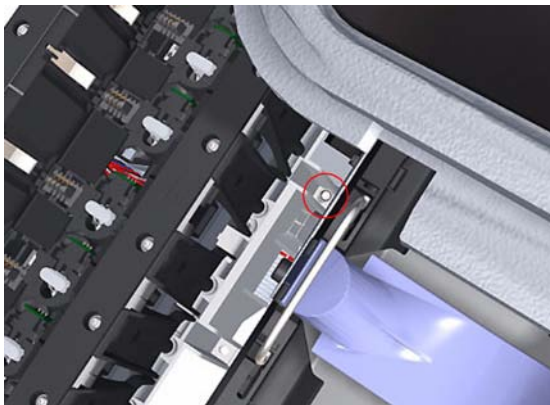
5. Remove the Right Ink Supply Station bonding cable.



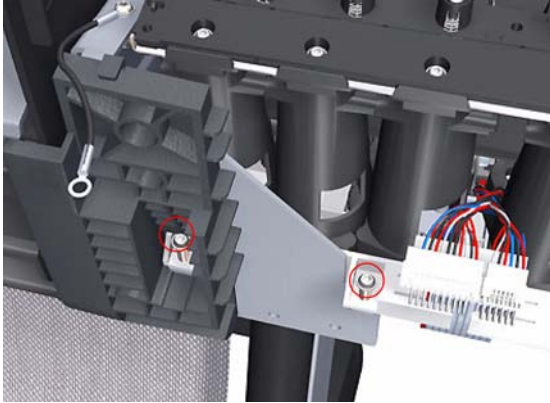
6. Remove the Right Side Plate of the Right Ink Supply Station.




7. Remove the T-15 screw that secures the Right Ink Supply Station to the printer.

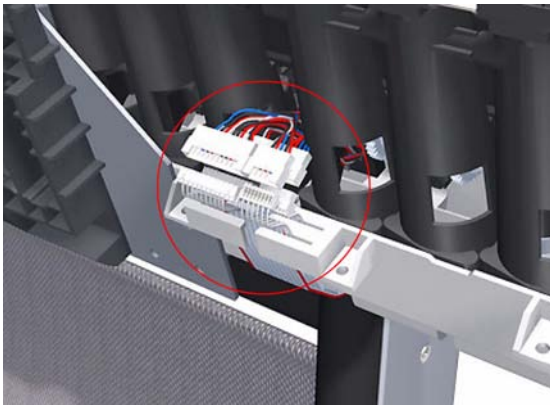


8. Remove the two T-15 screws that secure the Right Ink Supply Station to the printer.

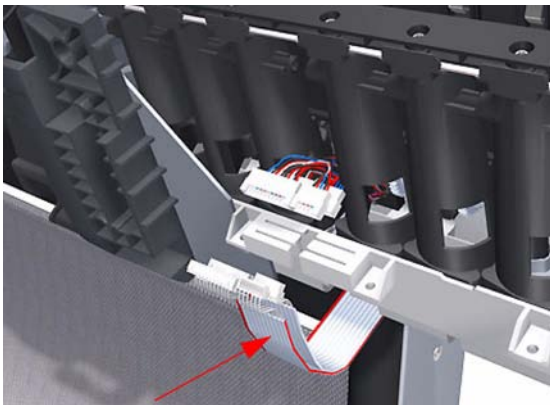


9. Disconnect the three connectors from the Right Ink Supply Station.

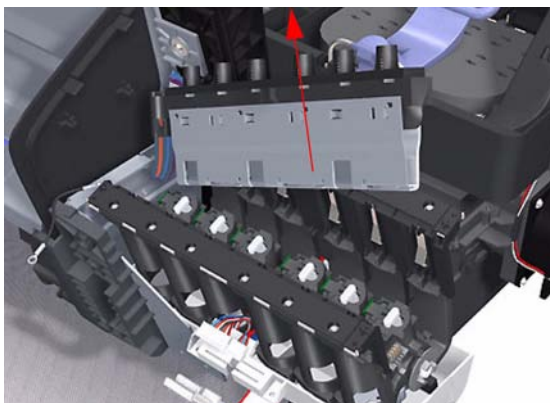
 **NOTE:** If you need to change the ISS Harness Cable, make sure you keep the previously used plastic connector. The new cable will arrive with a female end, which you will replace with the existing male end.



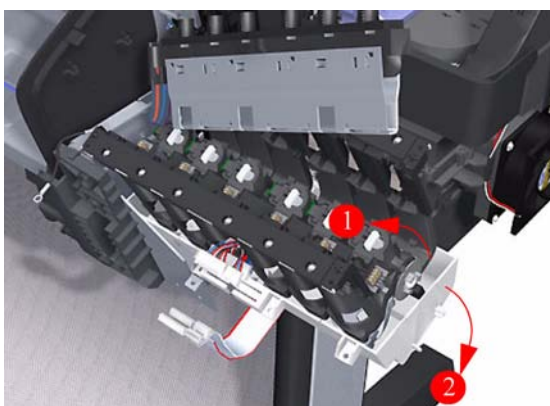
10. Unroute the three cables from the Right Ink Supply Station.



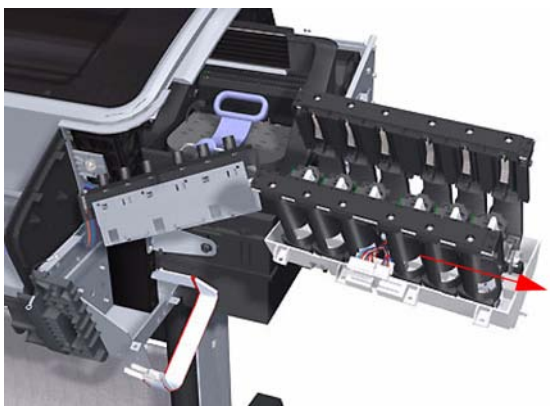
11. Carefully lift the Cartridge Tubes Connector out of the Right Ink Supply Station.




12. Carefully lift the Right Ink Supply Station enough so that you can rotate it clockwise to release the front attachment from the printer.




13. Carefully lift the Right Ink Supply Station completely out of the printer.



 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

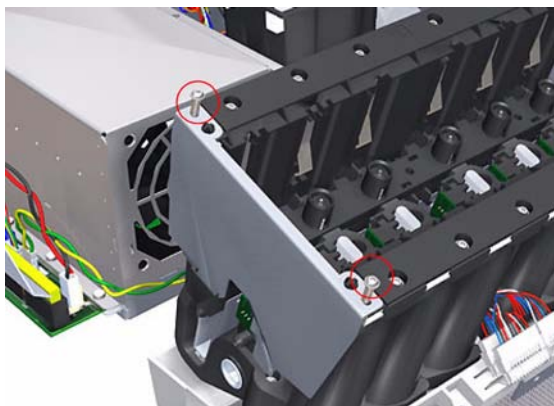
Left Ink Supply Station

Removal

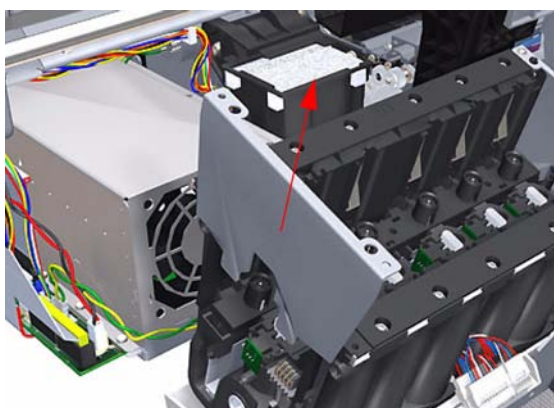
 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Left Cover (refer [Left Cover on page 188](#)).

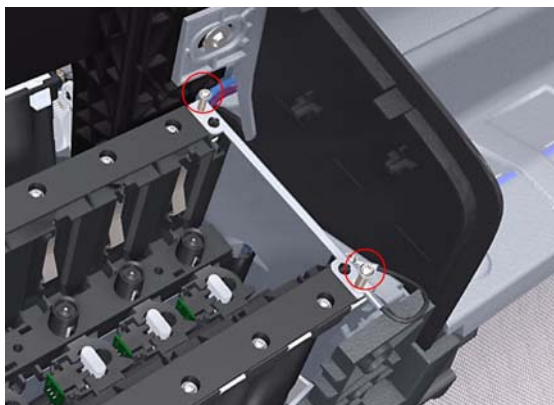
2. Remove two T-10 screws that secure the Left Side Plate of the Left Ink Supply Station.



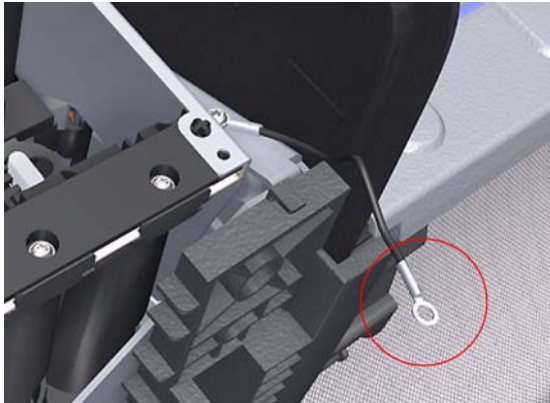
3. Remove the Left Side Plates of the Left Ink Supply Station.



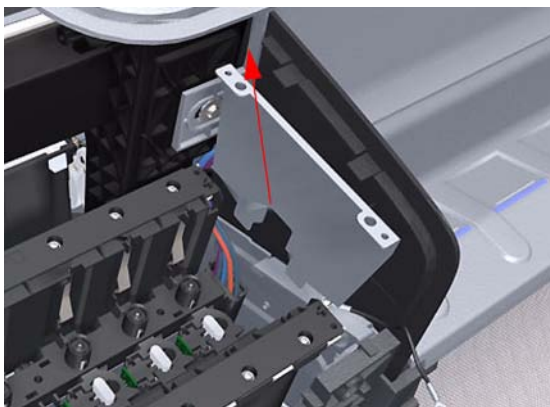
4. Remove two T-10 screws that secure the Right Side Plate of the Left Ink Supply Station.



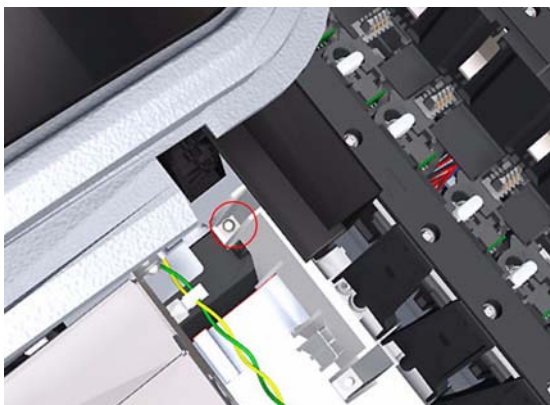
5. Remove the Left Ink Supply Station bonding cable.



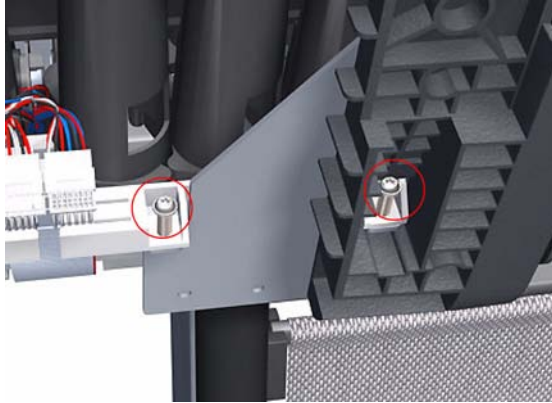
6. Remove the Right Side Plate of the Left Ink Supply Station.




7. Remove the T-15 screw that secures the Left Ink Supply Station to the printer.

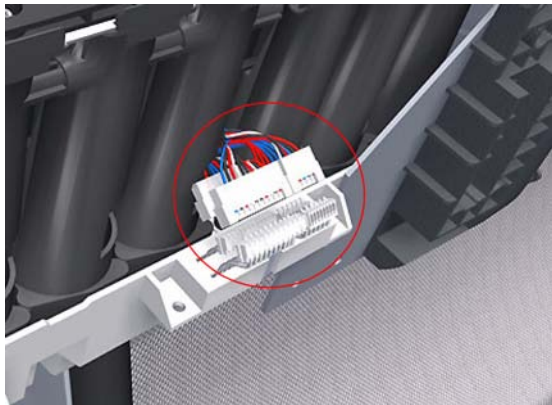


8. Remove the two T-15 screws that secure the Left Ink Supply Station to the printer.

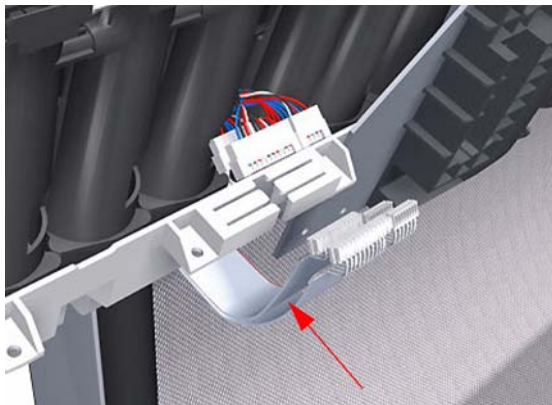


9. Disconnect the three connectors from the Left Ink Supply Station.

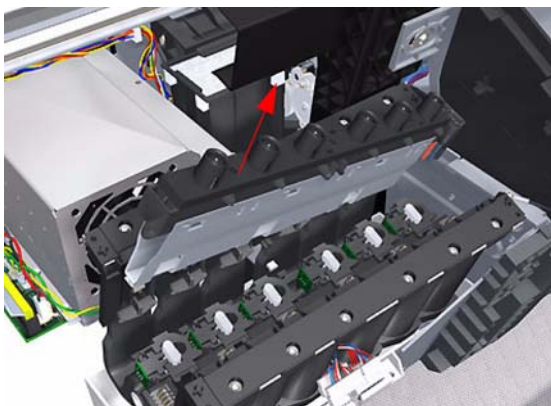
 **NOTE:** If you need to change the ISS Harness Cable, make sure you keep the previously used plastic connector. The new cable will arrive with a female end, which you will replace with the existing male end.



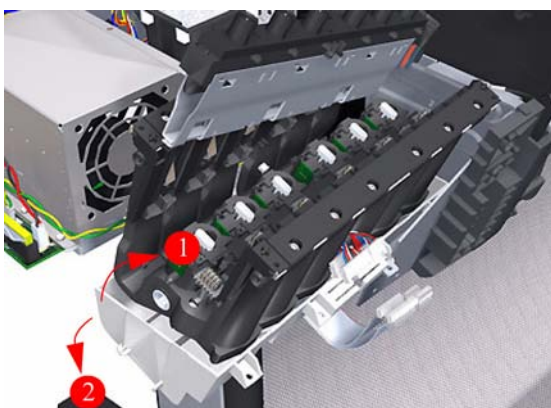
10. Unroute the three cables from the Left Ink Supply Station.



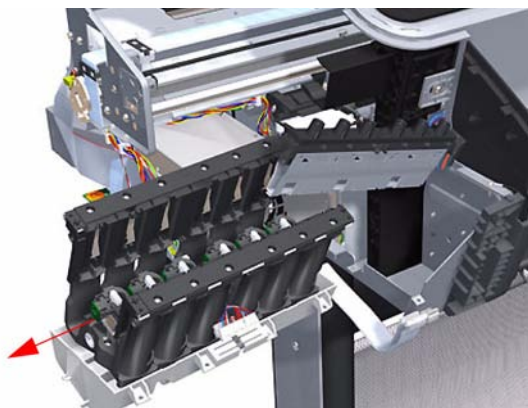
11. Carefully lift the Cartridge Tubes Connector out of the Left Ink Supply Station.




12. Carefully lift the Left Ink Supply Station enough so that you can rotate it counterclockwise to release the front attachment from the printer.




13. Carefully lift the Left Ink Supply Station completely out of the printer.



 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Ink Supply Tubes

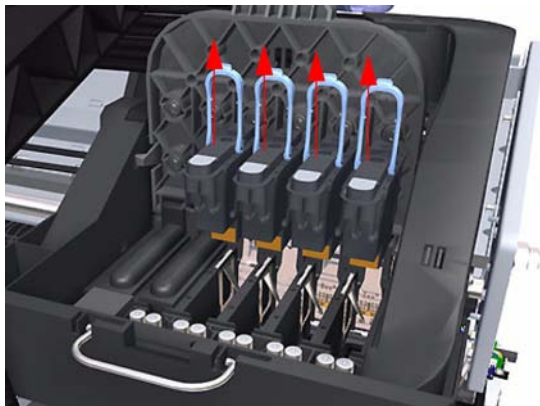
Removal

 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Right Cover (refer [Right Cover on page 185](#)).
2. Remove the Left Cover (refer [Left Cover on page 188](#)).
3. Remove the Front Panel (refer [Front Panel on page 203](#)).
4. Remove the Top Cover (refer [Top Cover on page 205](#)).
5. Open the Carriage Cover.



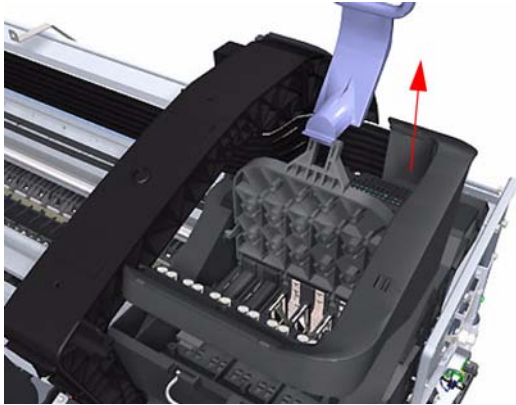
6. Remove all the Printheads.



7. Remove the four T-15 screws that secure the Ink Supply Tubes to the Carriage Assembly.



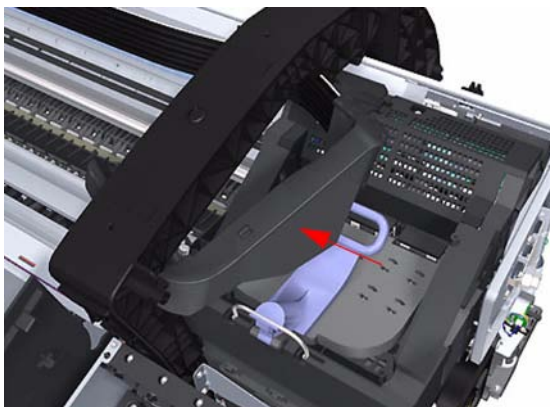
8. Carefully lift out the Ink Supply Tubes and close the carriage cover at the same time.



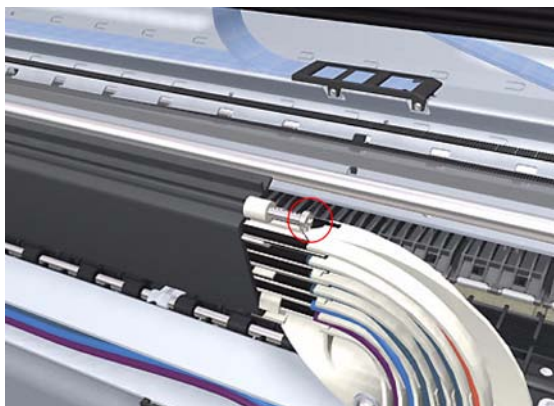
9. Close and lock the Carriage Assembly cover.



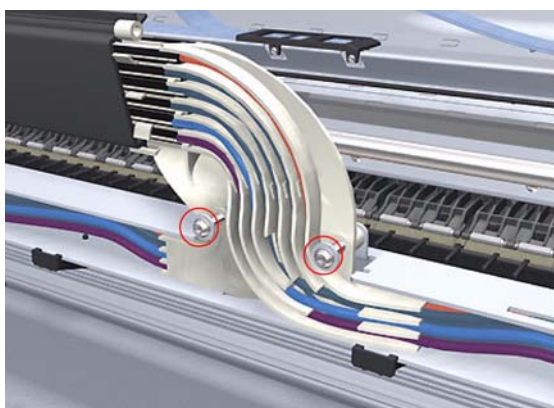
10. Carefully feed the Ink Supply Tubes into the print path area.



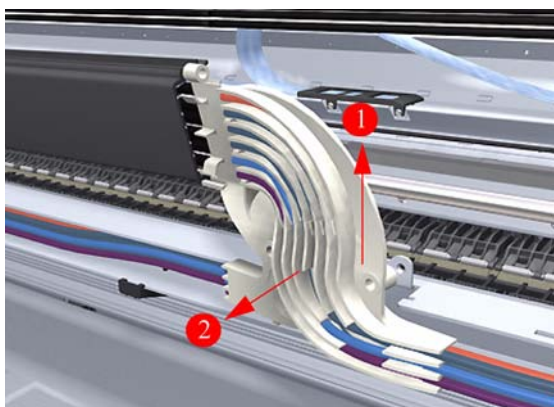
11. Remove the top T-15 screw that secures Ink Supply Tubes guide to the printer.



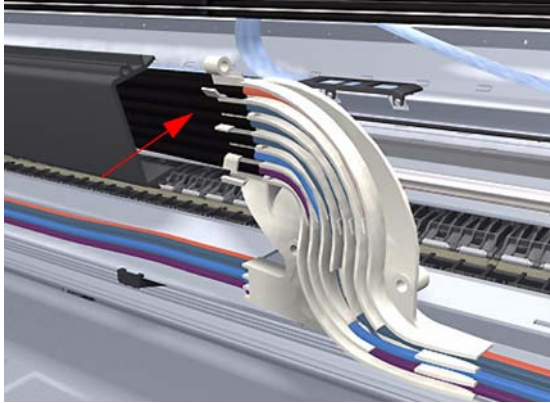
12. Remove the two front T-15 screws that secure Ink Supply Tubes guide to the printer.



13. Carefully lift the Ink Supply Tubes guide enough until you can slide it forwards out of the printer.



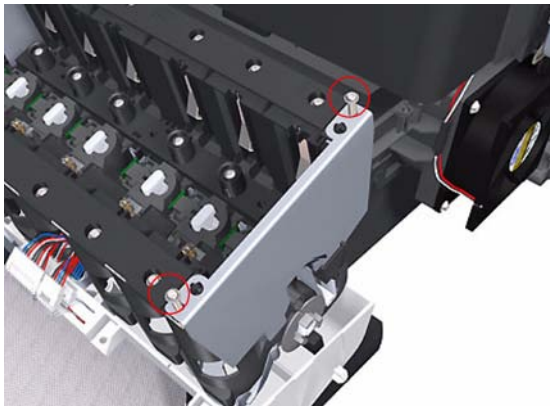
14. Gently move the Ink Supply Tubes from the printer.



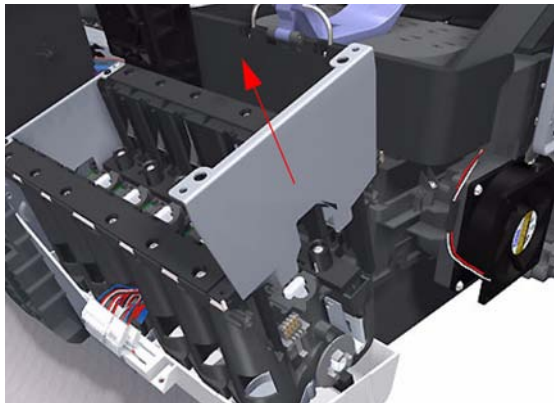
15. Use a flat bladed screwdriver to release all the Ink Supply Tubes clamps from the printer.



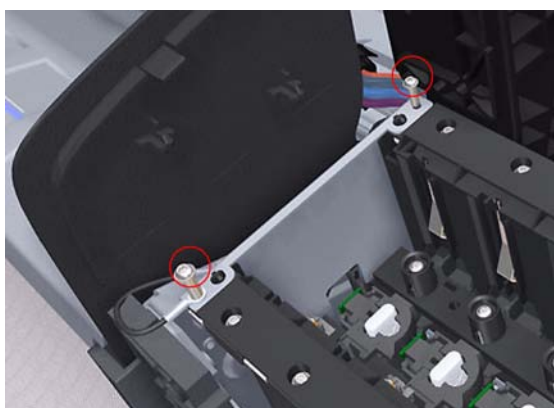
16. Remove two T-10 screws that secure the right Side Plate of the Right Ink Supply Station.



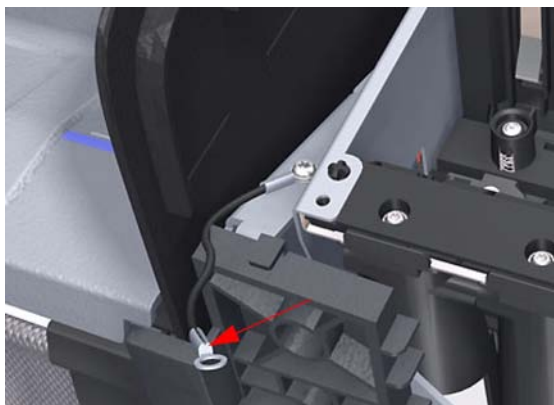
17. Remove the Right Side Plate of the Right Ink Supply Station.



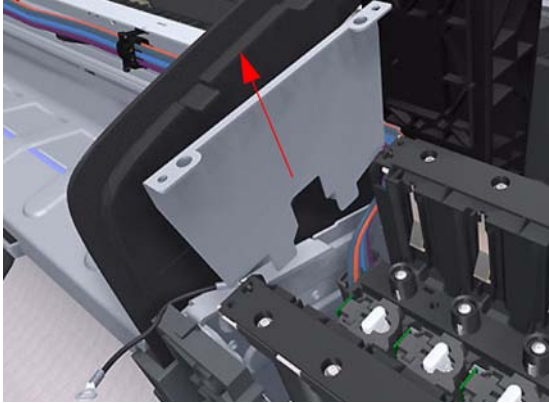
18. Remove two T-10 screws that secure the left Side Plate of the Right Ink Supply Station.



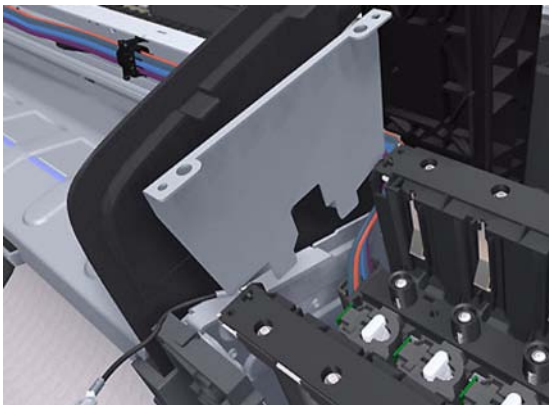
19. Remove the Right Ink Supply Station bonding cable.



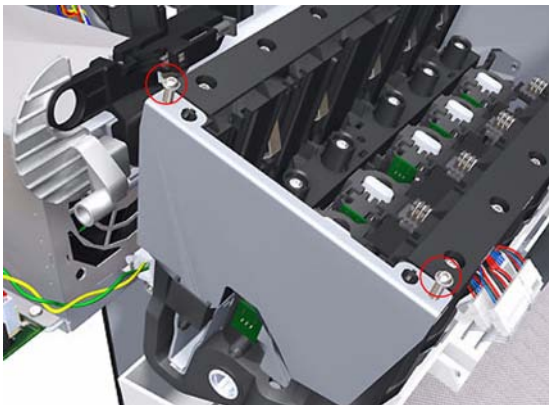
20. Remove the left Side Plate of the Right Ink Supply Station.



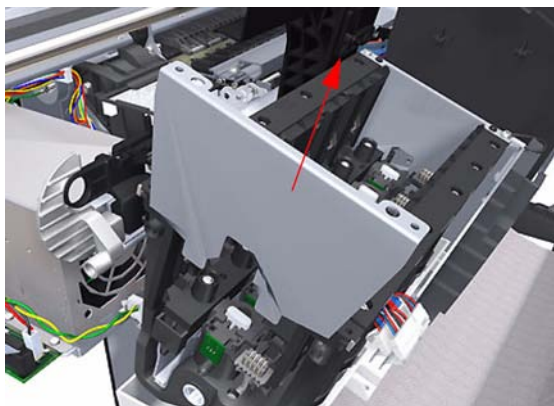
21. Carefully lift the Cartridge Tubes Connector out of the Right Ink Supply Station.



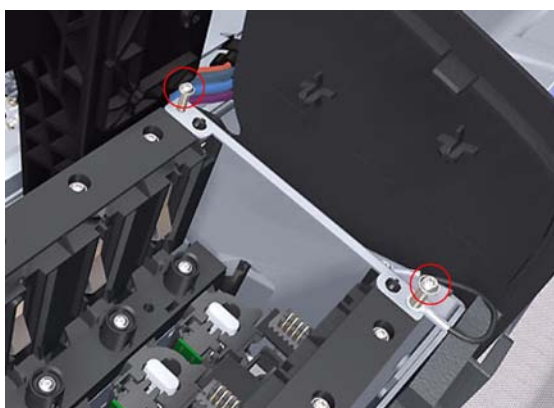
22. Remove two T-10 screws that secure the left Side Plate of the Left Ink Supply Station.



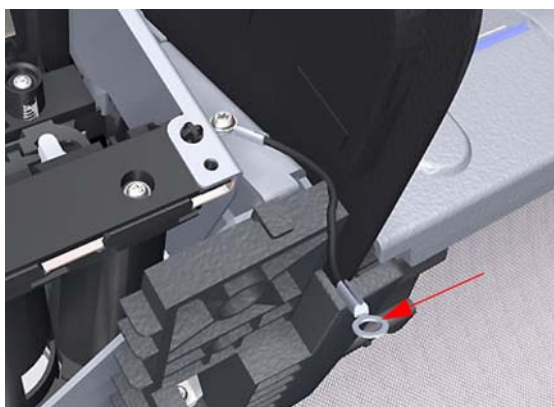
23. Remove the left Side Plate of the Left Ink Supply Station.



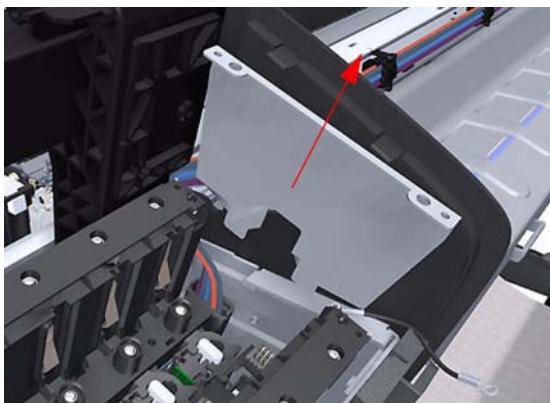
24. Remove two T-10 screws that secure the right Side Plate of the Left Ink Supply Station.



25. Remove the Left Ink Supply Station bonding cable.




26. Remove the right Side Plate of the Left Ink Supply Station.




27. Carefully lift the Ink Supply Tubes out of the printer.



 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Formatter

Removal

 **NOTE:** Switch off the printer and remove the power cable.


1. Fully loosen the two locking thumbscrews that secure the Formatter in the printer.



2. Begin lifting the Formatter from the printer. Push the clips and provide upward force at the same time.



3. Lift the Formatter out of the printer.

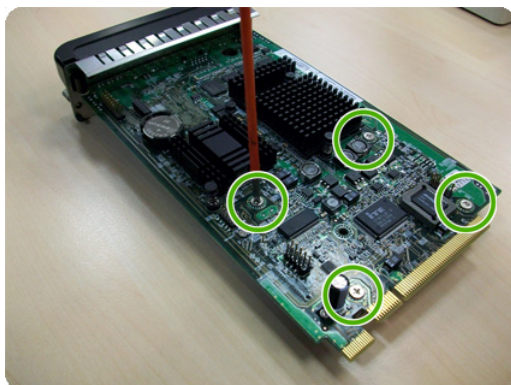
 **NOTE:** When you install a new formatter follow the instructions provided on the Flyer that accompanies it to set up the printer.



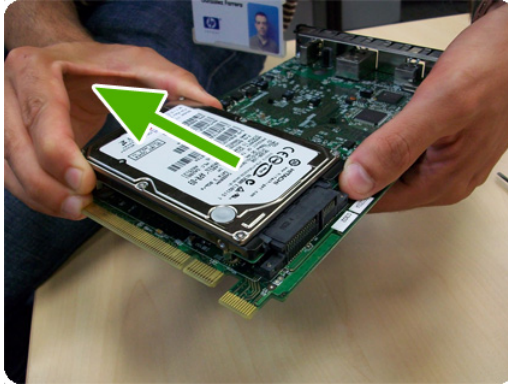
Hard Disk Drive

Removal and installation

1. Remove the [Formatter on page 296](#).
2. Unscrew four screws in the formatter.




3. Remove the hard disk drive from the formatter by applying force in the direction of the arrow.



4. Insert a new hard disk drive.




 **NOTE:** If you try to insert a previously used hard disk drive, the printer displays a System Error and will not start successfully.

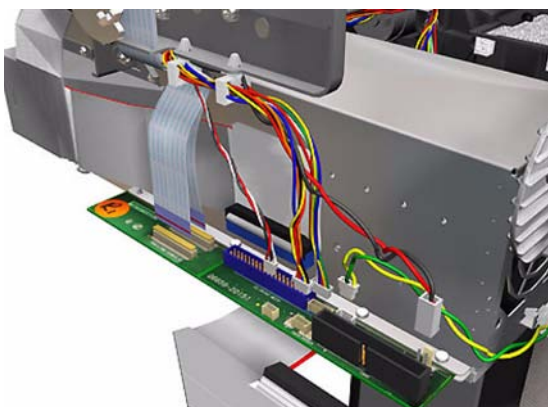
5. Replace all screws that you removed earlier.

Electronics Module (Main PCA and PSU)

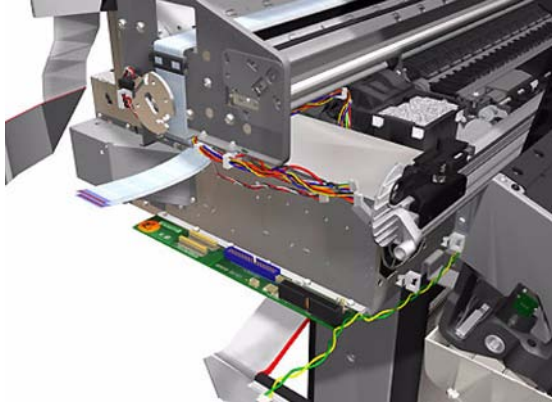
Removal

 **NOTE:** Switch off the printer and remove the power cable.

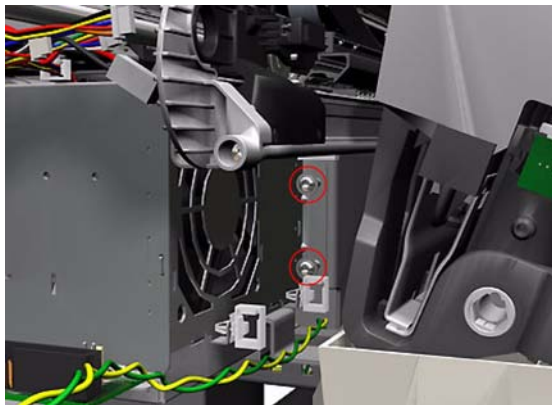
1. Remove the Left Cover (refer [Left Cover on page 188](#)).
2. Disconnect all the connectors on the Electronics Module.



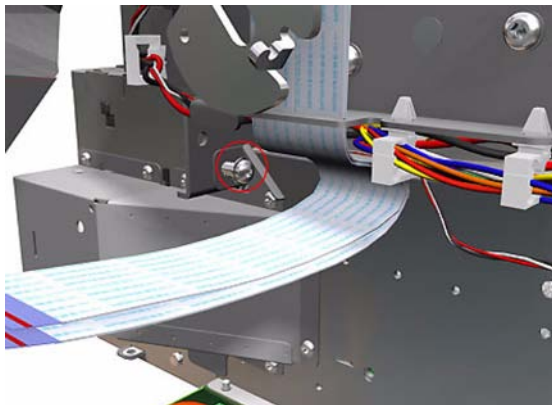
3. Unroute all the cables disconnected in the previous step.



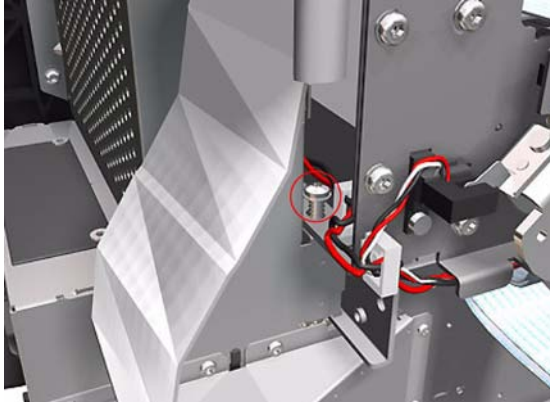
4. Remove two T-15 screws that secure the Electronics Module to the Printer.



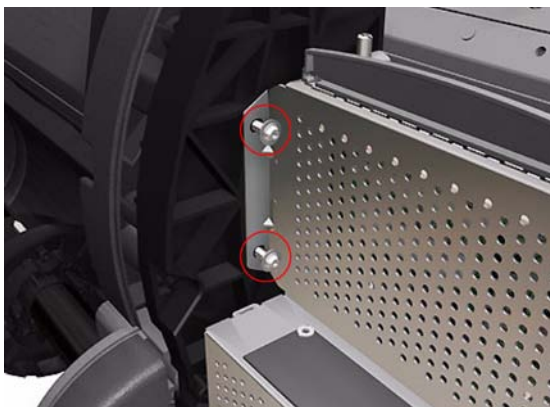
5. Remove one T-15 screw that secures the Electronics Module to the Printer.



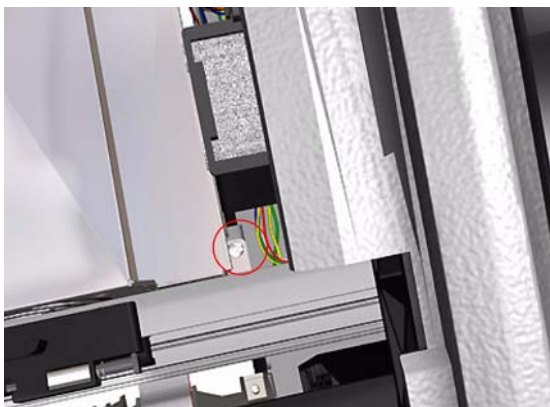
6. Remove one T-15 screw that secures the Electronics Module to the Printer.



7. Remove two T-15 screws that secure the Electronics Module to the Printer.




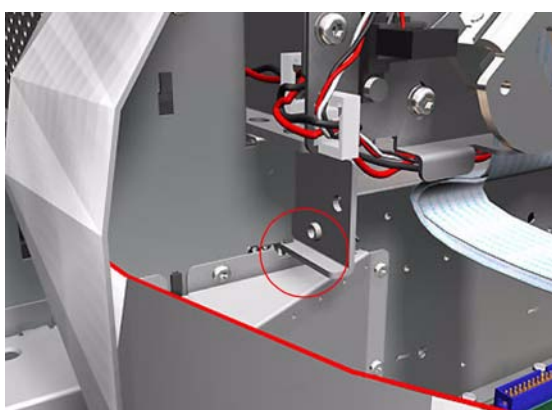
8. Remove one T-15 screw that secures the Electronics Module to the printer.




9. Carefully lift the Electronics Module out of the printer.




 **NOTE:** When you install the Electronics Module make sure it is correctly aligned with the mounting rail.



 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Starwheel Assembly

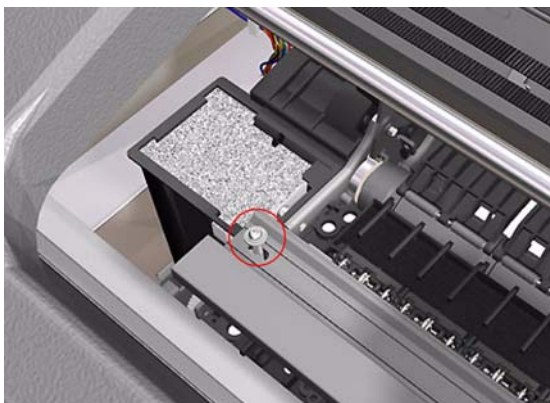
Removal

 **NOTE:** Switch off the printer and remove the power cable.

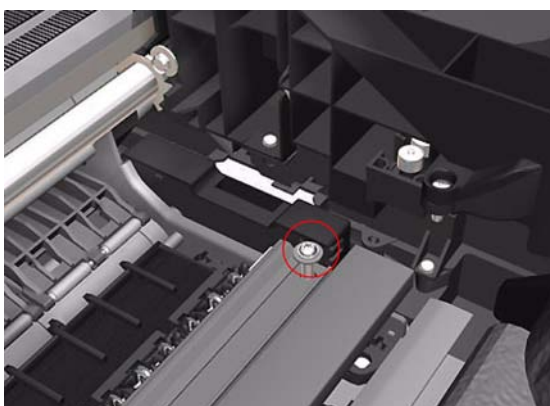
1. Open the Window.



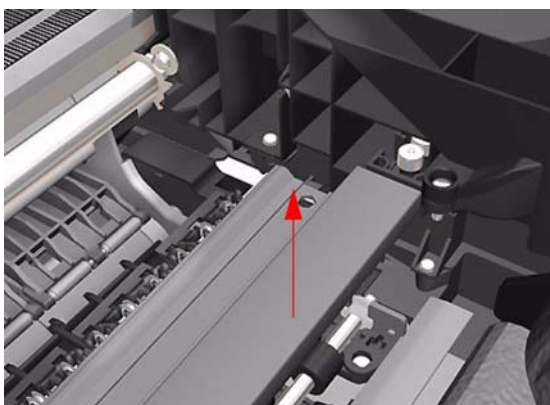
2. Remove one T-15 screw that secures the Starwheel Assembly to the Printer.




3. Remove one T-15 screw that secures the Starwheel Assembly to the Printer.




4. Carefully lift the Starwheel Assembly out of the printer.




 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Print Zone Overdrive

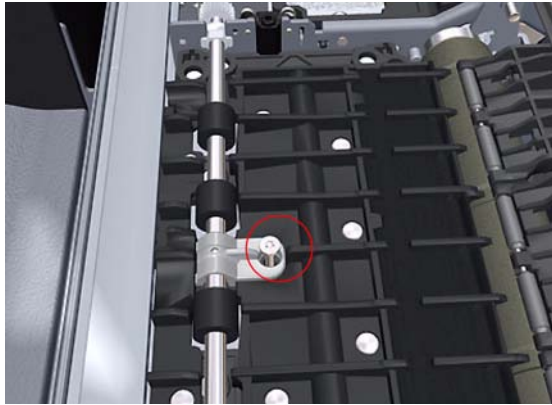
Removal

 **NOTE:** Switch off the printer and remove the power cable.

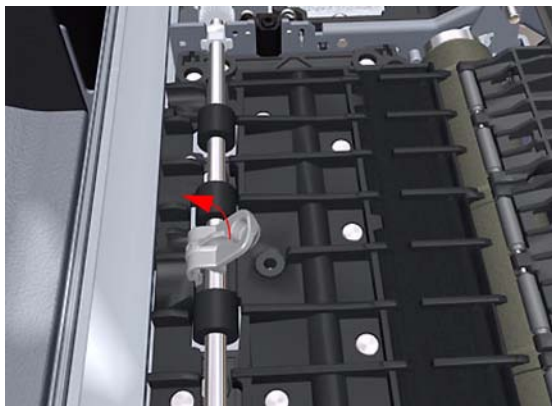
1. Remove the Starwheel Assembly (refer [Starwheel Assembly on page 301](#)).

 **NOTE:** The Print Zone Overdrive is in two sections (left and right). This procedure describes the removal of both of the sections. If you only want to remove one of the sections skip the steps for the other section.

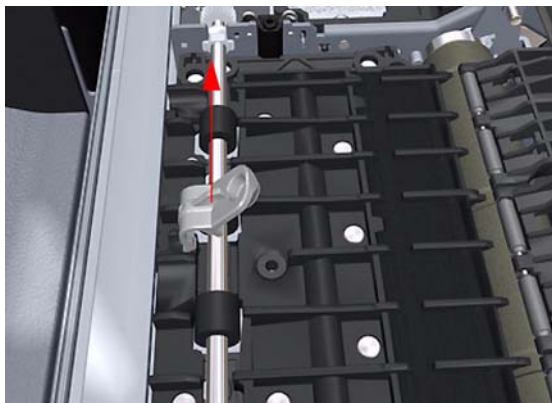
2. Remove one T-15 screw that secures the left clamp of the Print Zone Overdrive to the Platen.



3. Lift the attachment clamp vertically to release it from the Platen.



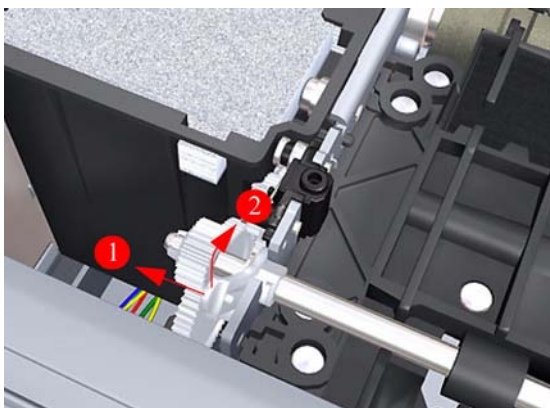
4. Remove the clamp.



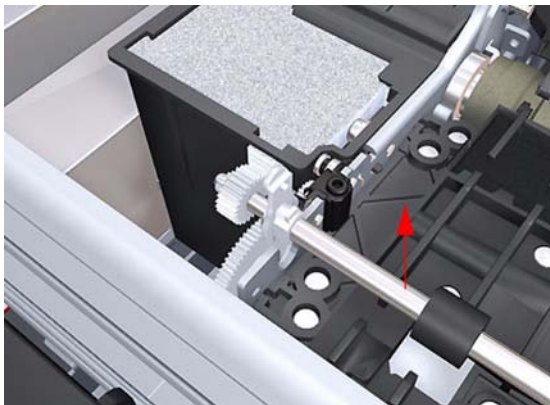
5. Repeat steps 2 to 4 to remove the remaining five attachment clamps.



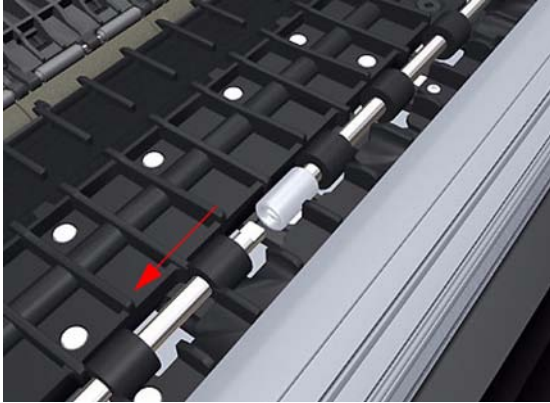
6. Use a flat bladed screwdriver to unclip the left Print Zone Overdrive retaining clip and rotate the clip vertically.



7. Carefully lift the left Print Zone Overdrive enough 10 mm) so you can slide it to the left.



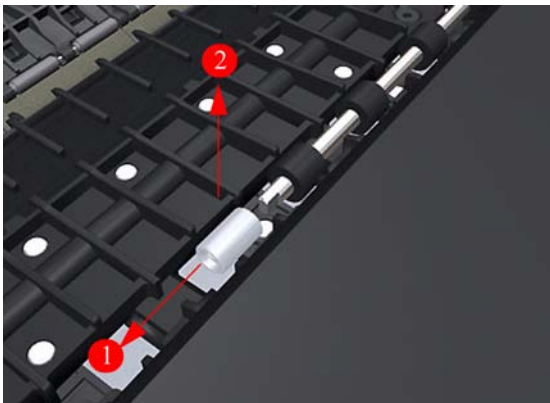
8. Slide the left Print Zone Overdrive to the left disengage the center coupling.



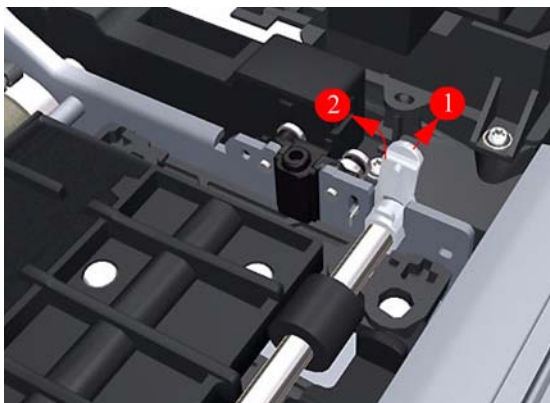
9. Carefully left Print Zone Overdrive out of the printer.



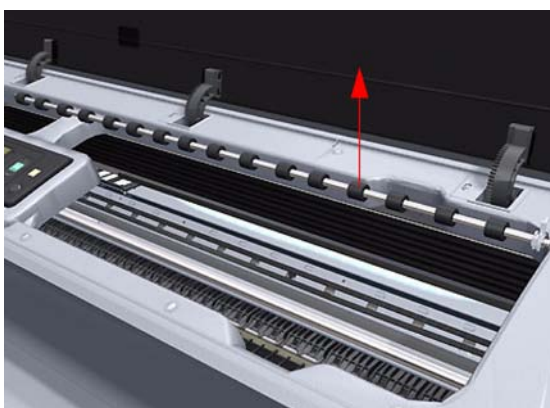
10. Remove the center coupling.




11. Use a flat bladed screwdriver to unclip the left Print Zone Overdrive retaining clip and rotate the clip vertically.



12. Carefully lift the right Print Zone Overdrive out of the printer.




 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Left Spittoon

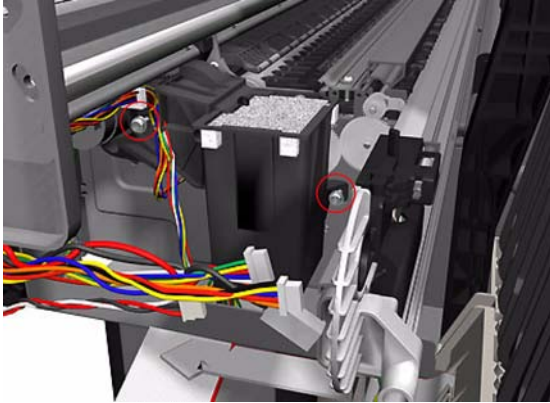
Removal

This procedure describes how to remove the complete Left Spittoon which is necessary to gain access to other components. If you only need to replace the Foams of the Left Spittoon, use the protective gloves and the tweezers (provided in the Tool Kit) to remove them with it in place.

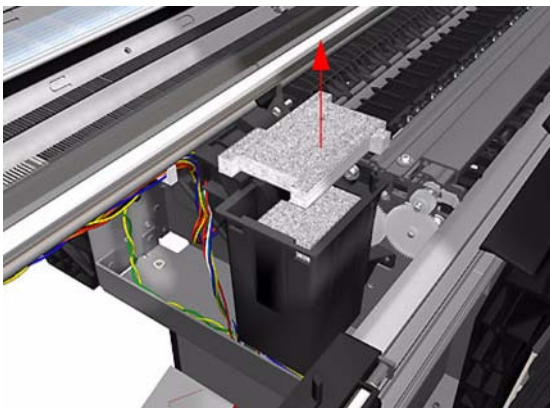
 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Left Cover (refer [Left Cover on page 188](#)).
2. Remove the Electronics Module (Main PCA and PSU) (refer [Electronics Module \(Main PCA and PSU\) on page 298](#)).

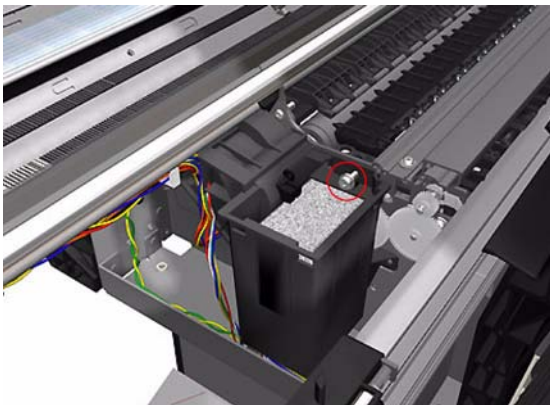
3. Remove two T-8 screws that secure the Left Spittoon to the printer.



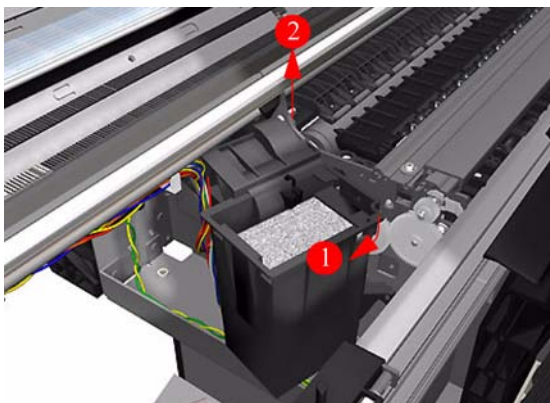
4. Use protective gloves and remove the top segment of foam from the Left Spittoon (to gain access to the last attachment screw).



5. Remove one T-10 screw that secures the Left Spittoon to the printer.




6. Rotate the Left Spittoon clockwise approximately 45 degrees and carefully lift it out of the printer.




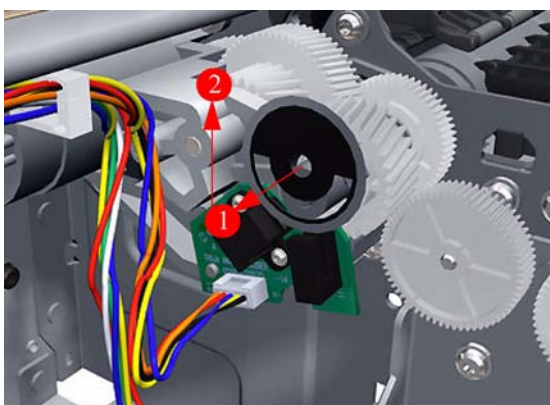
Encoder Disk and Encoder Sensor

Removal

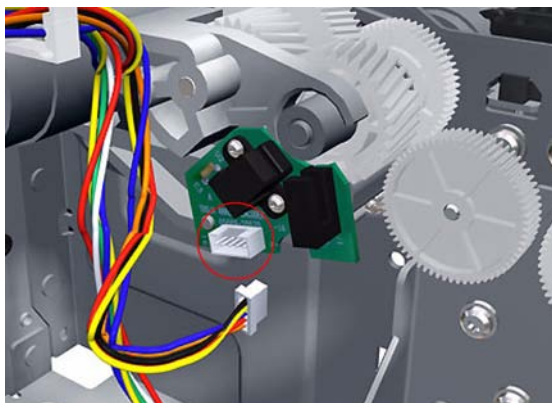
 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Left Cover (refer [Left Cover on page 188](#)).
2. Remove the Electronics Module (Main PCA and PSU) (refer [Electronics Module \(Main PCA and PSU\) on page 298](#)).
3. Remove the Left Spittoon (refer [Left Spittoon on page 306](#)).
4. Remove the Encoder Disk straight off Media Advance Roller spindle, lift it straight out of the printer.

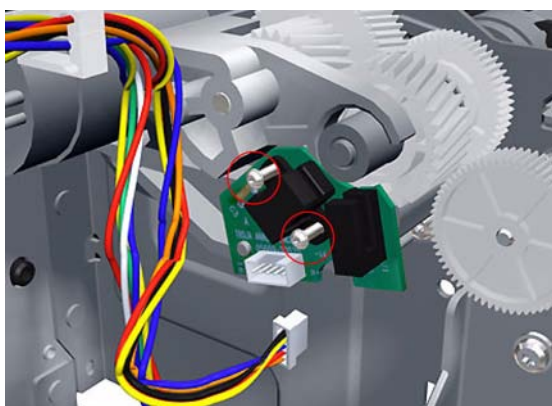
 **NOTE:** The Media Advance Roller spindle is delicate. Remove the Encoder Disk gently.



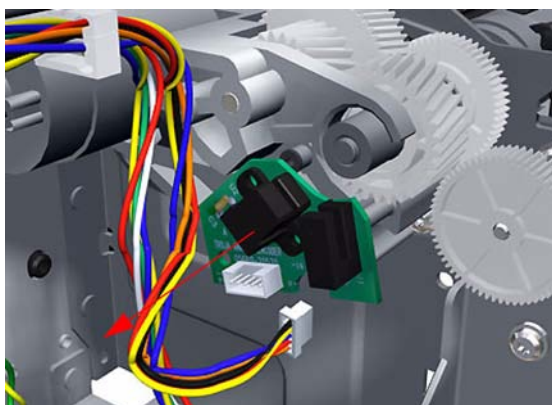
5. Disconnect the Encoder Sensor connector.




6. Remove two T-6 screws that secure the Encoder Sensor to the Media Advance Drive.



7. Remove the Encoder Sensor PCA from the printer.



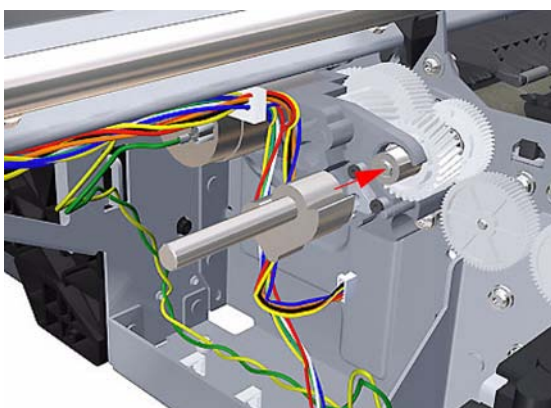
Installation

 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

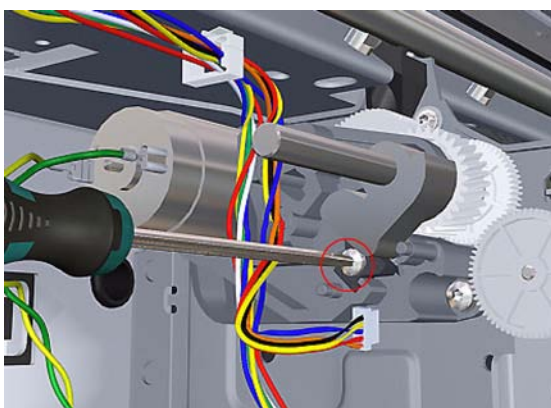
NOTE: When you replace the Encoder Disk, clean it with the alcohol included in the toolkit.

NOTE: If you are installing the Encoder Sensor after replacing the Media Advance Drive with a new unit, you will need to adjust the Encoder Sensor position on the Media Advance Drive. To do this you will need Media Advance Drive Adjustment Tool from the HP Designjet Printer Tool Kit (Q6683- 67001).

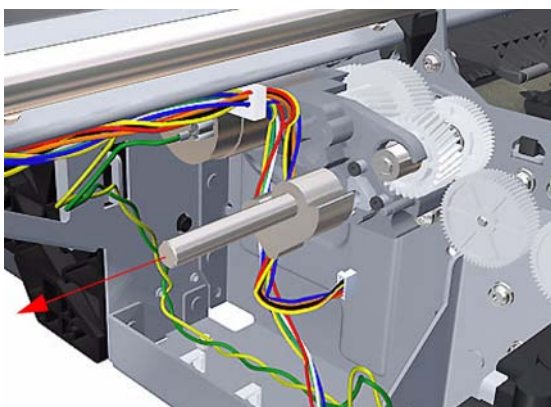
1. If you are installing the Encoder Sensor after replacing the Media Advance Drive with a new unit, first fully loosen the Encoder Sensor position adjustment screw. Ignore this step if you are replacing the previously removed Media Advance Drive.
2. Position the Media Advance Drive Adjustment Tool on the end Media Advance Roller shaft, push it firmly onto the shaft and maintain a constant pressure to ensure it is flush to the Media Advance Drive.



3. While still maintaining pressure on the Media Advance Drive Adjustment Tool, fully tighten the Encoder Sensor position adjustment screw.




4. Remove the Media Advance Drive Adjustment Tool.
5. Complete the installation of the Encoder Sensor and a new Encoder Disk.

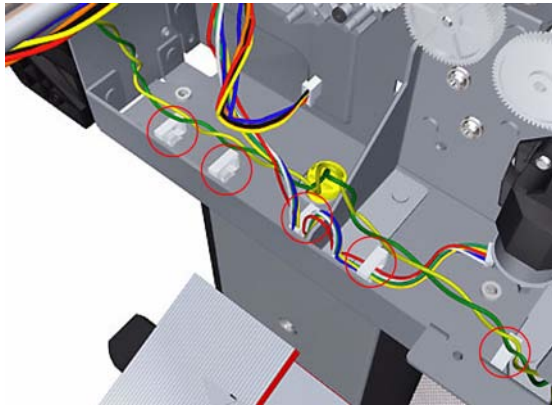


Media Advance Drive

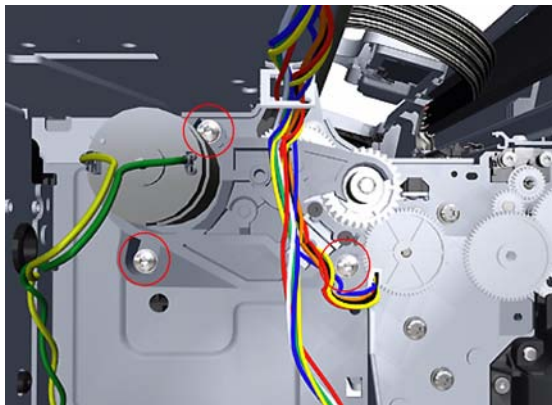
Removal

 **NOTE:** Switch off the printer and remove the power cable.

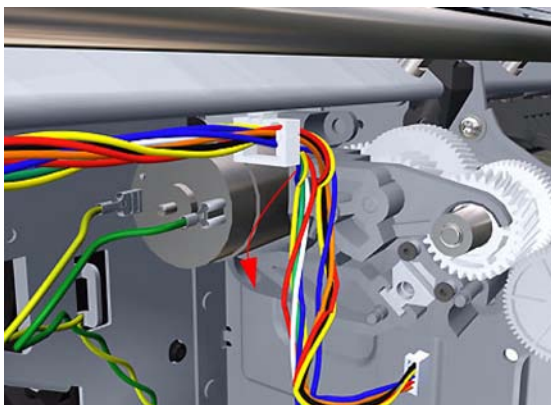
1. Remove the Left Cover (refer [Left Cover on page 188](#)).
2. Remove the Electronics Module (Main PCA and PSU) (refer [Electronics Module \(Main PCA and PSU\) on page 298](#)).
3. Remove the Left Spittoon (refer [Left Spittoon on page 306](#)).
4. Remove the Encoder Disk and Encoder Sensor (refer [Encoder Disk and Encoder Sensor on page 308](#)).
5. Unroute the Media Advance Drive power cable.



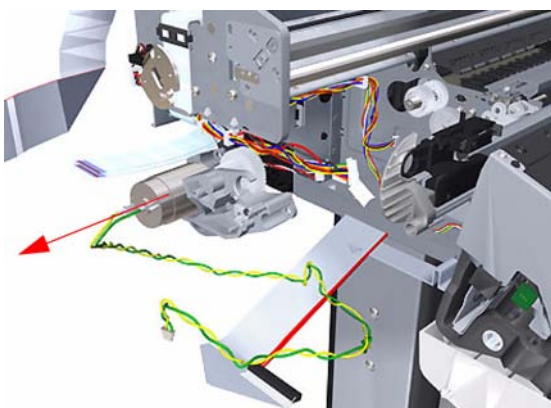
6. Remove three T-15 screws that secure the Media Advance Drive to the printer.




7. Grip the motor housing of the Media Advance Drive and gently pull it towards you sufficiently to allow you disengage the Media Advance Drive from printer.



8. Carefully lift the Media Advance Drive out of the printer.

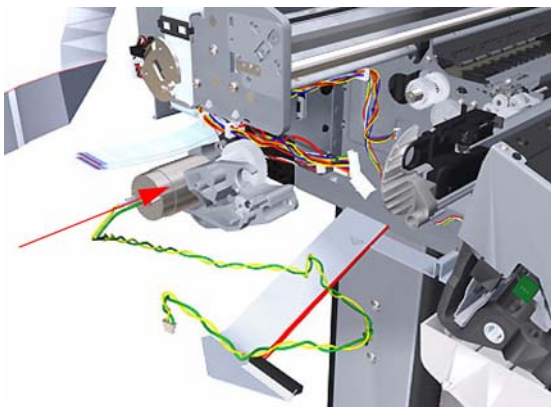


Installation

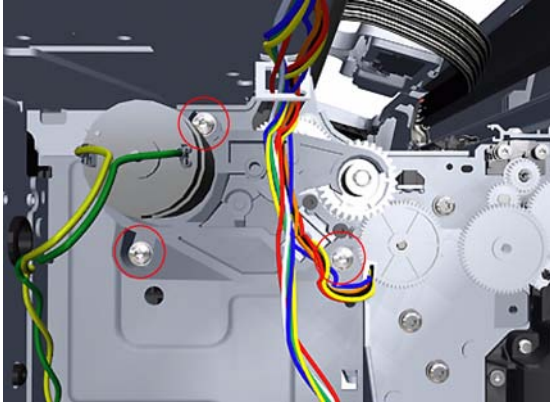
-  **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

NOTE: Use the following procedure to install and correctly adjust a new Media Advance Drive. You will need Media Advance Drive Adjustment Tool from the HP Designjet Printer Tool Kit (Q6683-67001). If you are installing the Encoder Sensor after replacing the Media Advance Drive with a new unit, you will need to adjust the Encoder Sensor position on the Media Advance Drive (refer [Media Advance Drive on page 311](#)).

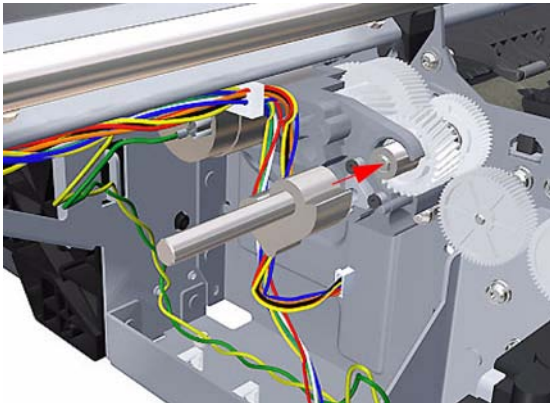
1. Carefully position the Media Advance Drive in the printer.



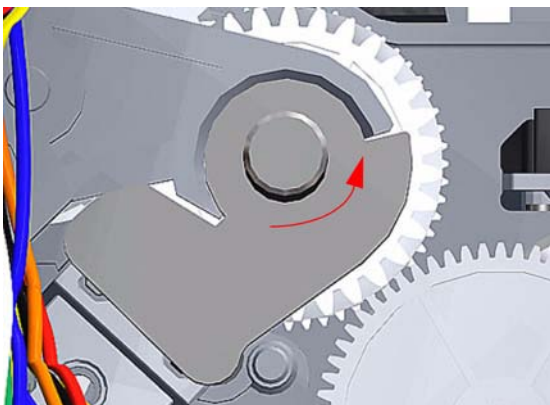
2. Insert the three T-15 attachment screws but do NOT fully tighten them.



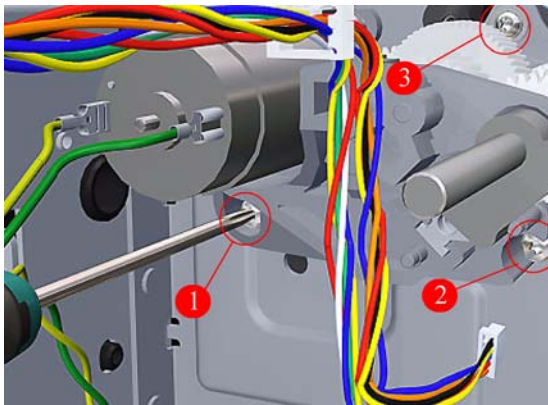
3. Position the Media Advance Drive Adjustment Tool on the end Media Advance Roller shaft, push it firmly onto the shaft and maintain a constant pressure to ensure it is flush to the Media Advance Drive.



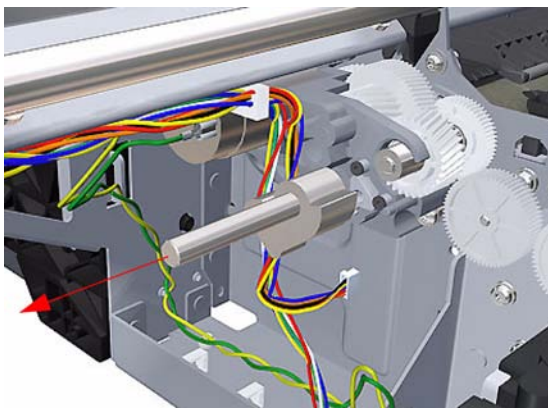
4. Rotate the Media Advance Drive Adjustment Tool fully counter-clockwise to ensure its flat surface of the tool is firmly against the flat surface of the Media Advance Drive mounting.



5. While maintaining pressure on the Media Advance Drive Adjustment Tool, fully tighten the three T-15 attachment screws in the order shown.




6. Remove the Media Advance Drive Adjustment Tool.



Pinchwheel Assembly

Removal

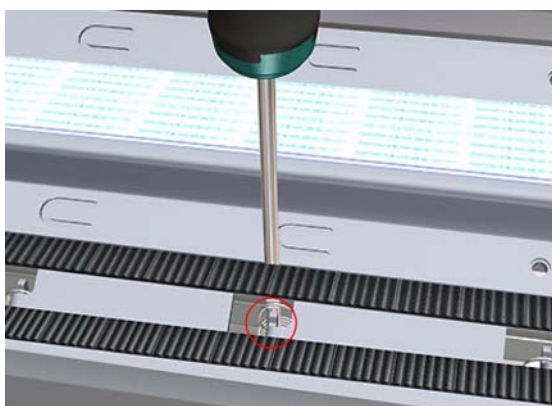
 **NOTE:** Switch off the printer and remove the power cable.

1. Remove the Window (refer [Window on page 174](#)).
2. Remove the Spindle (refer [Spindle on page 223](#)).
3. Remove the Left Roll Guide (refer [Left Roll Guide on page 229](#)).
4. Remove the Right Roll Guide (refer [Right Roll Guide on page 230](#)).

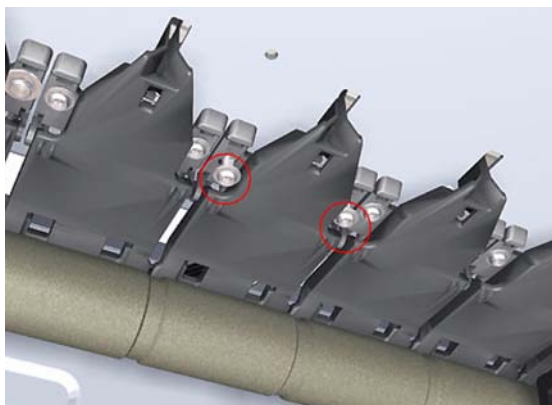
5. Raise the Media Lever.



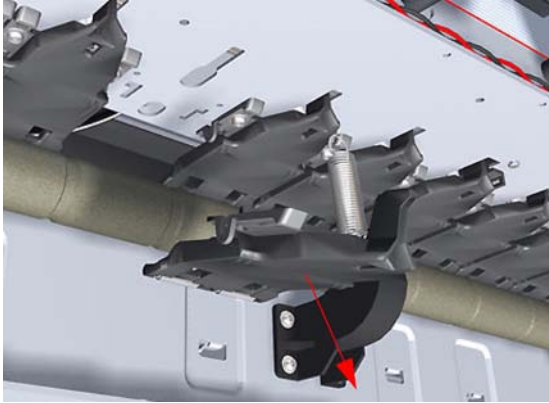
6. Use the Pinchwheel Insertion Tool to remove the spring from the attachment on the printer.




7. Remove two T-15 screws that secure the Pinchwheel Assembly to the printer.



8. Remove the Pinchwheel Assembly from the printer.




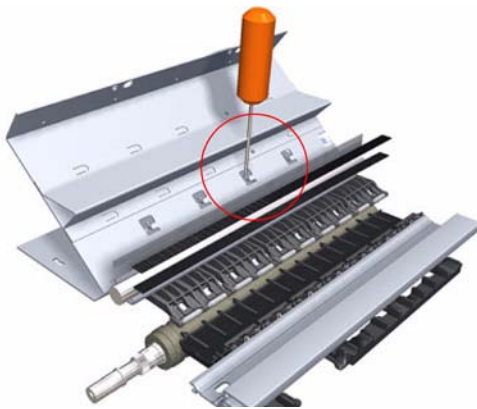
Installation

 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

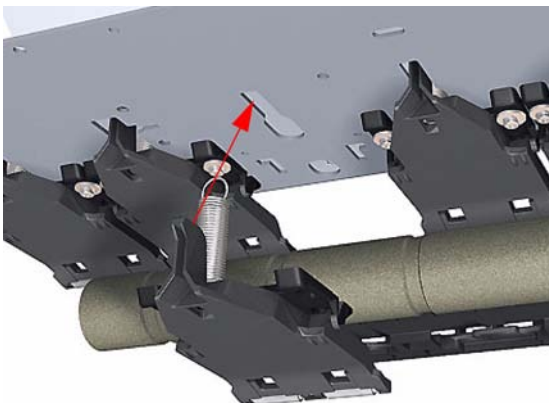
NOTE: Use the following procedure to align the Pinchwheel Assembly using the Pinchwheel Alignment Tool during reassembly

1. Insert the Pinchwheel Insertion Tool through the appropriate access hole for the Pinchwheel Assembly you are installing. This tool is provided with the kit part number Q6687–60084.

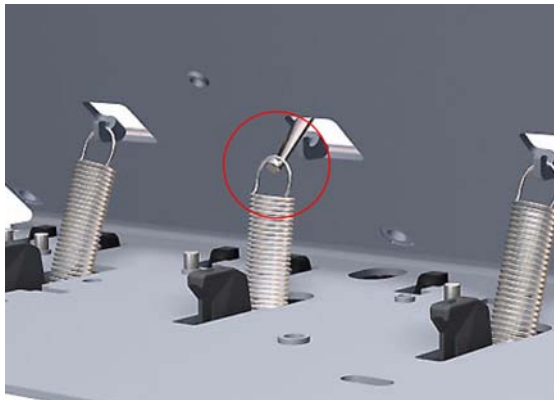
 **NOTE:** Be very careful not to damage the Encoder Strip or the Belt Assembly with the Pinchwheel Insertion Tool.



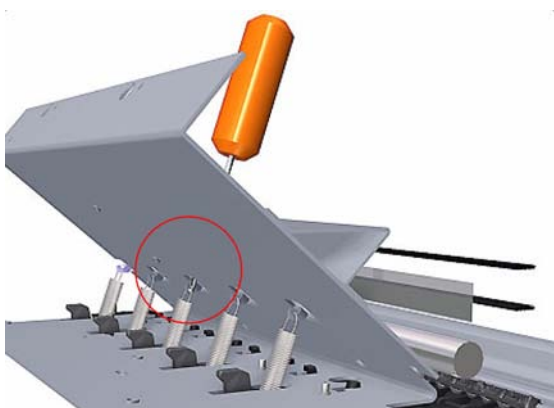
2. Position the new Pinchwheel Assembly correctly on its hanger.



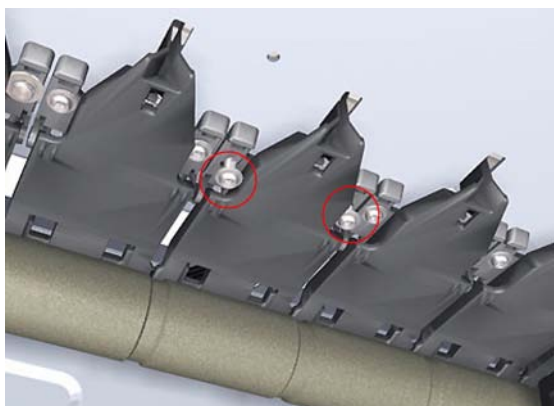
3. Hook the spring of the Pinchwheel Assembly you are installing with the Pinchwheel Insertion Tool.



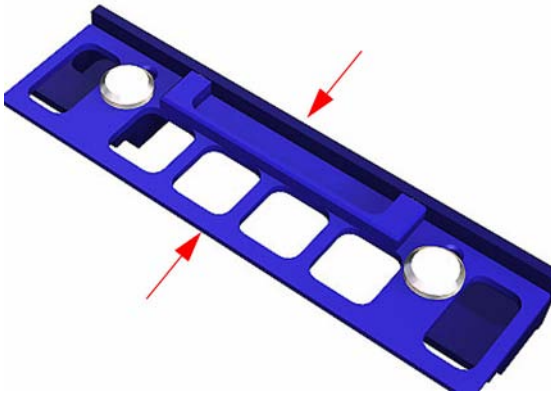
4. Attach the spring to its attachment point on the hanger and remove the Pinchwheel Insertion Tool.



5. Attach the new Pinchwheel Assembly with the two T-15 screws that secure to the printer but do fully NOT tighten the screws.



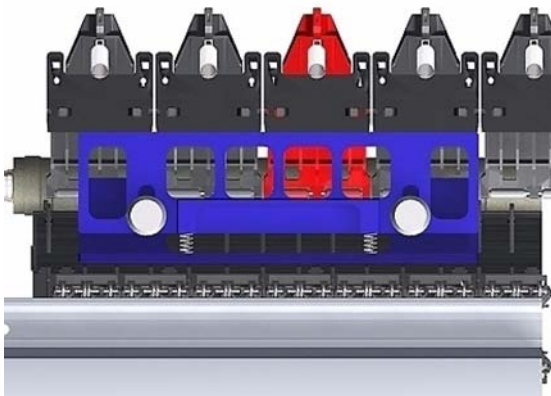
6. Compress the Pinchwheel Alignment Tool.



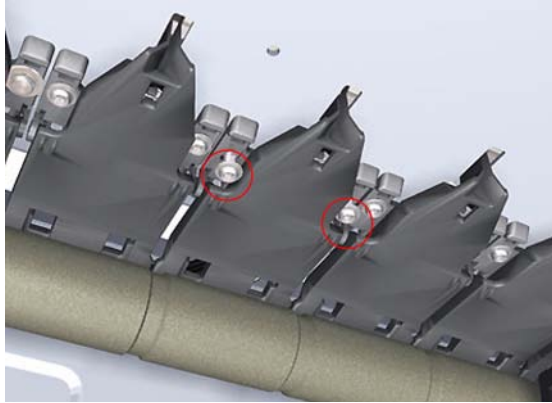
7. Position the Pinchwheel Alignment Tool on the platen so it is aligned with the two adjacent Pinchwheels to the one you are installing.



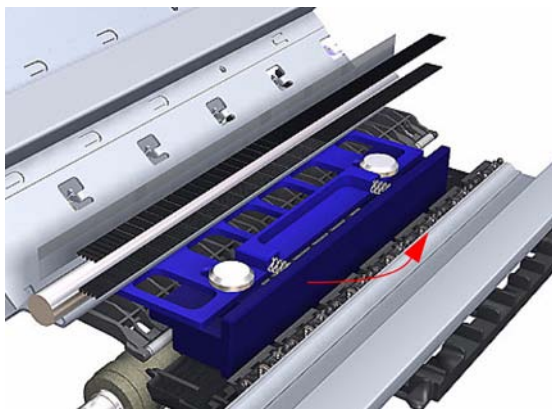
8. Push the replacement Pinchwheel Assembly fully forward so it is firmly against the Pinchwheel Alignment Tool to align it correctly.



9. Fully tighten the two T-15 attachment screws.




10. Remove the Pinchwheel Alignment Tool.



Pinch Roller

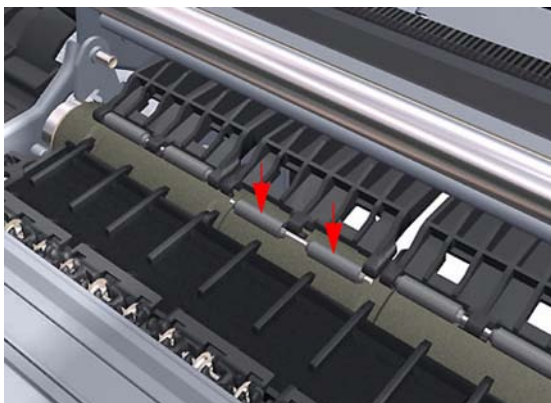
Removal

 **NOTE:** Switch off the printer and remove the power cable.

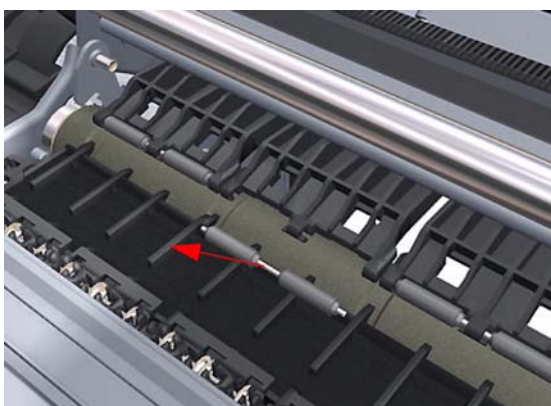
1. Open the Window
2. Raise the Media Lever.




3. Apply enough downward pressure to the Pinch Roller to release it from the Pinchwheel Assembly.




4. Remove the Pinch Roller.



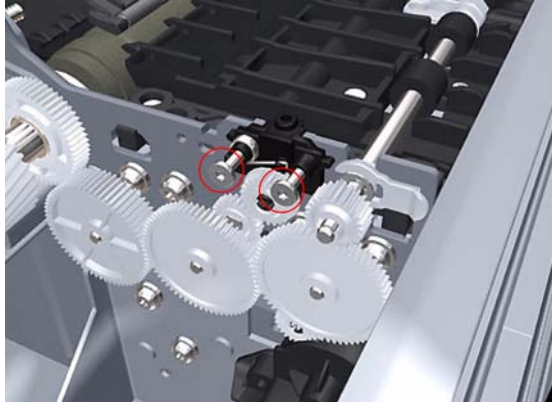
 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Left Starwheel Lifter

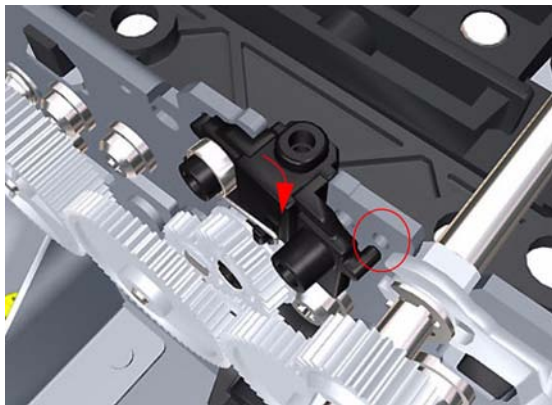
Removal

-
-  **NOTE:** Switch off the printer and remove the power cable.
-
1. Remove the Front Cover (refer [Front Cover on page 177](#)).
 2. Remove the Left Cover (refer [Left Cover on page 188](#)).
 3. Remove the Electronics Module (Main PCA and PSU) (refer [Electronics Module \(Main PCA and PSU\) on page 298](#)).
 4. Remove the Left Spittoon (refer [Left Spittoon on page 306](#)).
 5. Remove the Starwheel Assembly (refer [Starwheel Assembly on page 301](#)).

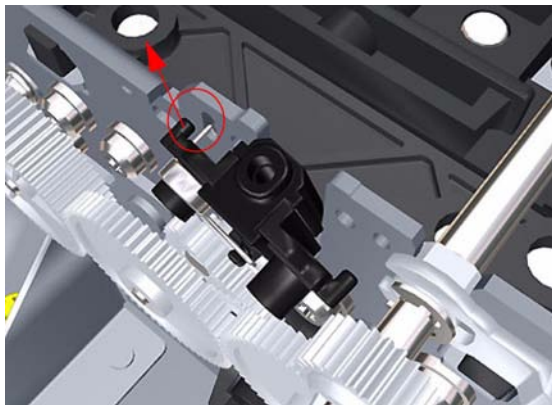
6. Remove two T-8 screws that secure the Left Starwheel Lifter to the printer.



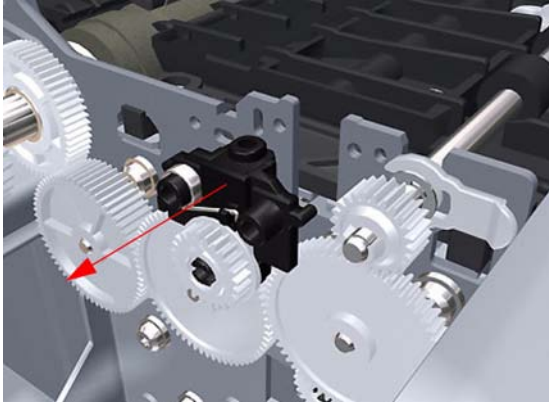
7. Rotate the Left Starwheel Lifter sufficiently to disengage the right attachment lug.




8. Tilt the Left Starwheel Lifter sufficiently to disengage the left attachment lug.




9. Remove the Left Starwheel Lifter from the printer.

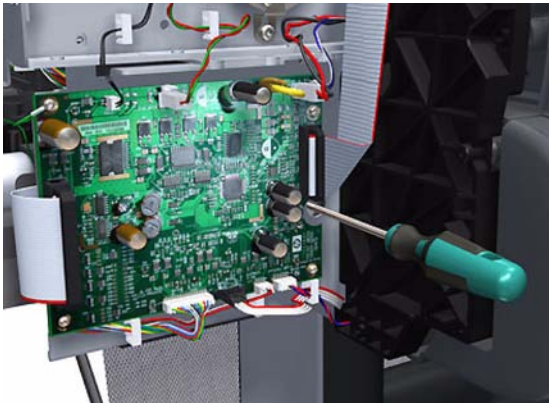


 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

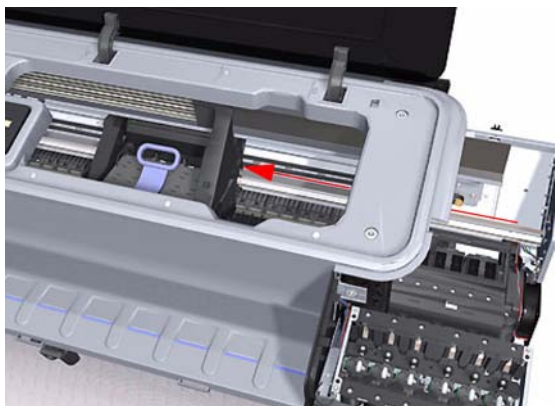
Right Starwheel Lifter

Removal

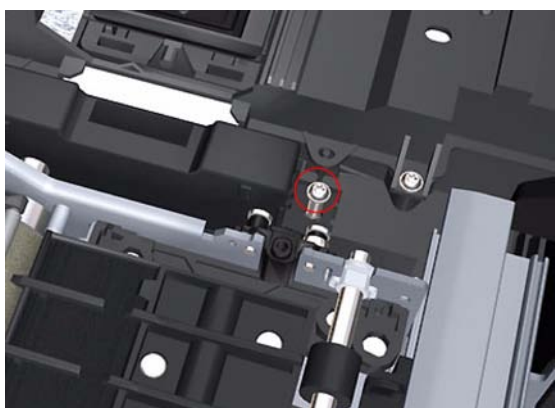
-
-  **NOTE:** Switch off the printer and remove the power cable.
-
1. Remove the Front Cover (refer [Front Cover on page 177](#)).
 2. Remove the Right Cover (refer [Right Cover on page 185](#)).
 3. Remove the Starwheel Assembly (refer [Starwheel Assembly on page 301](#)).
 4. Loosen the T-10 uncapping screw sufficiently so you can manually move the Carriage Assembly in step 5.



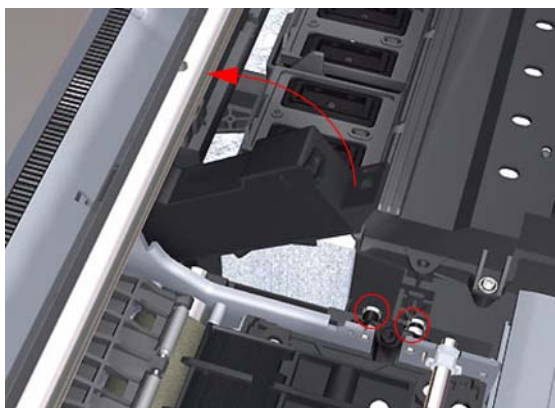
5. Push the Carriage Assembly into the print path.



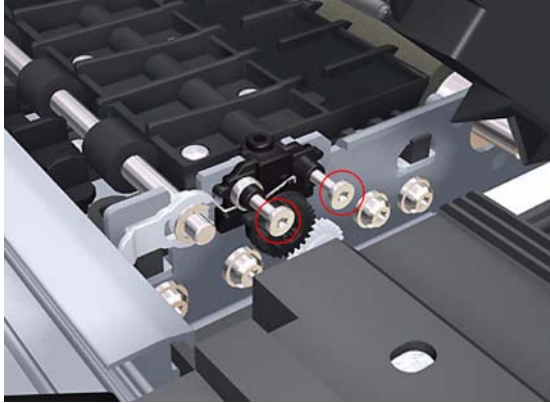
6. Remove one T-15 screw that secures the Drop Detector to the Service Station.



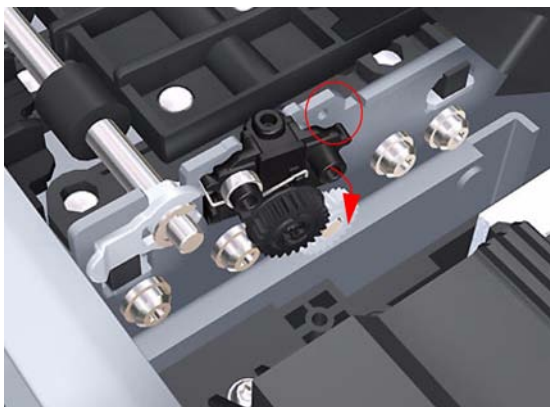
7. Rotate the Drop Detector vertically to gain access to the two screws that secure the Right Starwheel Lifter.



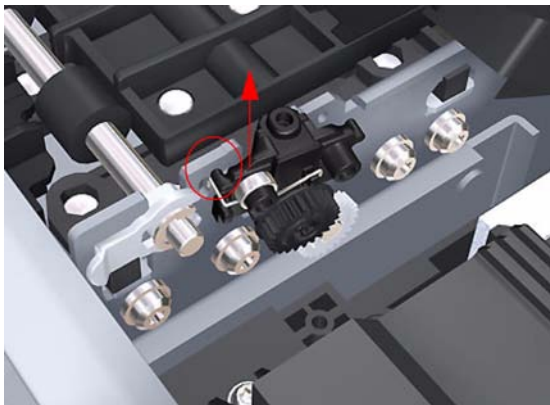
8. Remove two T-8 screws that secure the Right Starwheel Lifter to the printer.



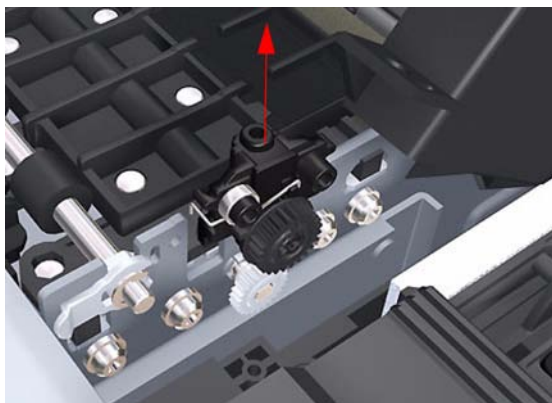
9. Rotate the Right Starwheel Lifter sufficiently to disengage the right attachment lug.




10. Tilt the Right Starwheel Lifter sufficiently to disengage the left attachment lug.




11. Remove the Right Starwheel Lifter from the printer.



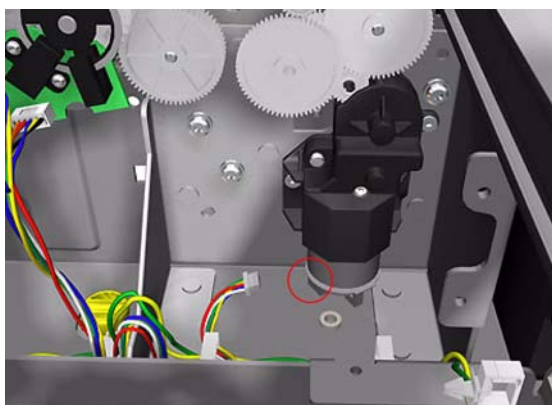
 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

Starwheel Motor

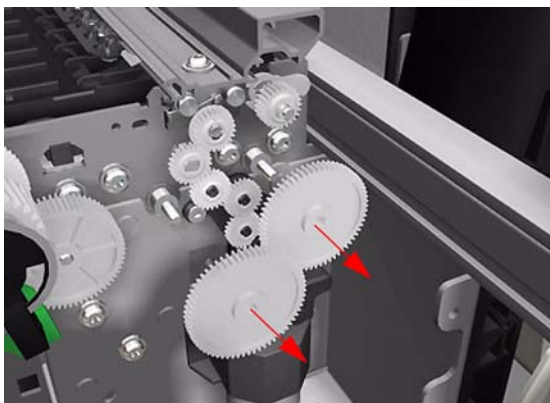
Removal

 **NOTE:** Switch off the printer and remove the power cable.

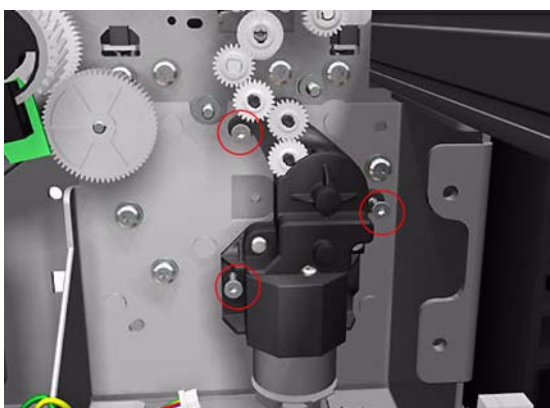
1. Remove the Front Cover (refer [Front Cover on page 177](#)).
2. Remove the Left Cover (refer [Left Cover on page 188](#)).
3. Remove the Electronics Module (Main PCA and PSU) (refer [Electronics Module \(Main PCA and PSU\) on page 298](#)).
4. Remove the Left Spittoon (refer [Left Spittoon on page 306](#)).
5. Disconnect the Starwheel Motor electrical connector.



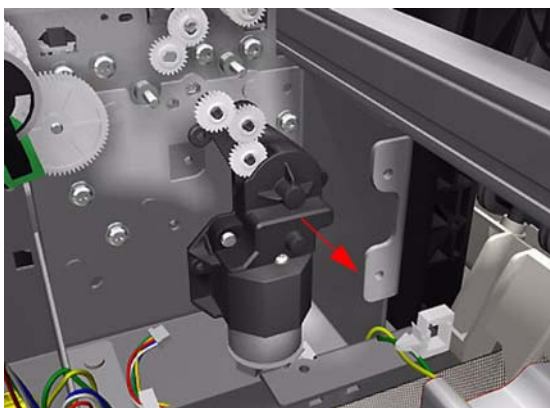
- Carefully pull the two gear wheels off their shafts to gain access to the Starwheel Motor attachment screws.




- Remove three T-15 screws that secure the Starwheel Motor to the printer.




- Lift the Starwheel Motor out of the printer.



 **NOTE:** When you finish installing or replacing this component, you must perform the necessary Service Calibrations. To find which calibrations you must perform, refer to [Service Calibration Guide to Removal and Installation on page 170](#).

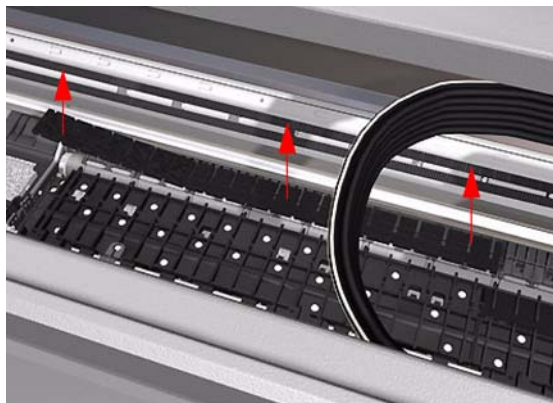
Full Bleed Foam


Removal

 **NOTE:** Switch off the printer and remove the power cable.

The complete Full Bleed Foam is constructed of three separate sections, left, center and right. This procedure only describes how to remove the left section. Removal of the other two sections is identical.

1. Open the Window.
2. Remove the Left Full Bleed Foam from the left platen.
3. Remove the Platen Middle Foams that are exposed once the Full Bleed Foam has been removed.



 **NOTE:** When you reinstall the full bleed foams, take care to correctly seat them to avoid possible damage to the Carriage Assembly.

7 Preventive Maintenance

- [Preventive Maintenance](#)
- [Preventive Maintenance Kits](#)

Preventive Maintenance

Moisture on the Printer

Users should use the Printer in an environment between 20% and 80% relative humidity. To recover from moisture condensation, turn the Printer Off, and, using the main roller as a reference, wait until the Printer is completely dry before using it again.

Noisy Carriage Bushing

To prevent noisy movement of the carriage, remove aluminum or dust particles from the bushing at the back of the carriage, and from the slider path along which the bushing moves. Lubricate the slider path using the Lubrication Kit (refer to the parts and diagrams chapter [Tools 2 on page 164](#)).

Belt Swelling

To prevent new belts from swelling incorrectly, keep them in their bags with desiccant until you need to install them.

Cleaning the Printer

To maintain the Printer in good operating condition, keep it free of dust accumulation, ink, and other contamination. Cleaning intervals are determined by the Printer environment and by the types of Printer supplies used.

Carriage Assembly Lubrication

To ensure correct operation of the printer you must lubricate the Carriage Assembly whenever any of the following are encountered if:

- The Front Panel displays "Maintenance #1 required".
- There is excessive noise when moving the Carriage Assembly.
- A shut down of the carriage PWM error message appears.
- There are IQ (vertical banding problems).

You should also lubricate the Carriage Assembly whenever you change any of the following service parts:


- The Carriage Rear Bushing.
- The Carriage Assembly.
- The Carriage Rail Oiler.

To lubricate the Carriage Assembly you will require the Lubrication Kit (refer to the parts and diagrams chapter [Tools 2 on page 164](#). Use the following procedure to lubricate the Carriage Assembly:

1. Use the IPA alcohol (Q6675-60070) and the cleaning cloth to clean the Carriage Rail and the Carriage Slider Rod.
2. Use an Oil Dispenser (Q6675-60062) to lubricate the Carriage Rail and the Carriage Slider Rod.
3. Replace the Carriage Rail Oiler (refer to [Carriage Rail Oiler on page 260](#)) with the new one contained in the kit and add 2-3 drops of oil to the foam of the Carriage Rail Oiler.
4. Use an Oil Dispenser (Q6675-60062) to lubricate the Carriage Rear Bushing.


General Cleaning

Proper general cleaning should include the following:

 **NOTE:** To prevent an electric shock, make sure that the Printer is switched OFF and unplugged before any cleaning is performed. Do NOT let any water get inside the Printer.

1. Blow away dust accumulation with compressed air if available.
2. Clean the outer surface of the Printer with a damp sponge or cloth. Use a mild soap and water solution if necessary. Do not use abrasive cleaners.
3. Wipe the Printer dry with a soft lint-free cloth.

Cleaning the Drive Roller and Overdrive

 **NOTE:** If ink is spilled on the Overdrive, remove the ink immediately. Due to the ink's reflectance, ink on the Overdrive can disrupt the Printer's edge-sensing function.

To remove any ink from the Overdrive, perform the following procedure:

Prevent water or other liquids from running onto electrical components or circuits, or through openings in the Electronics Module.

1. Perform the Turn Drive Roller Utility (Refer to [1. Turn Drive Roller on page 126](#)).
2. Open the window and apply any common household cleaning solution (water based only) to a soft, lint-free rag and apply it to the Drive Roller and Overdrive surface while it is rotating. Make sure that you thoroughly clean the Drive Roller and Overdrive surface.
3. Press Enter when you have completed the cleaning procedure.
4. Allow the Drive Roller to dry before loading media in to the Printer.

Level of Printer Usage

Normal printer use means 6,000,000 Carriage Cycles (which corresponds to approximately 100,000 A0 prints on average). Under normal usage conditions, it will be approximately 5 years before the printer needs maintenance. If the printer is used more than the normal usage conditions, then it will need maintenance service much more frequently.

One of the EEROM counters is assigned to counting the number of carriage cycles.

Service Part	LIFE_VALUE	Maintenance Advice
Belt Cycles	3000000	PMKIT1
Bushings Life	3000000	PMKIT1
Trailing Cable Cycles	3000000	PMKIT1
Scan Axis Cycles	3000000	PMKIT1
Scan Axis Distance Covered	4500000	PMKIT1
Tubes Cycles	3000000	PMKIT1
Right Spittoon Volume	600000000	PMKIT2
Left Spittoon Volume	51000000	PMKIT2
Cutter Life	25000	PMKIT3

When these components of the Printer exceed this amount, the front panel displays the following message:

"Maintenance #1 required"

"Maintenance #2 required"

Once one of the maintenance advised messages is displayed, the relevant 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.

Preventive Maintenance Kits

Preventive Maintenance Kit #1

The Preventive Maintenance Kit #1 is available using the following part number **CQ113-67009** and contains the following parts:

P/N CQ113-67009:

Part Number	Description
CQ113-67010	Carriage Assy SV
CQ113-67014	Trailing Cable 44 SV
Q6677-60007	Ink Supply Tubes 44 SV
CH538-67018	Belt
CH538-60141	Scan-Axis Motor
Q5669-60692	Lubrication Kit SV

Preventive Maintenance Kit #2

The Preventive Maintenance Kit #2 is available using the following part number **Q6675-67012** and contains the following parts:

Part Number	Description
Q6718-67025	Service Station SV
Q5669-67049	Left spittoon SV

8 Printer menu Map

The following pages show the Menu Map print which is available through the front panel **Internal Prints>User Information Prints>Print menu Map**. These menus can be used for guiding the customer through the menu system when troubleshooting a printer issue remotely.

Figure 8-1 Paper Menu

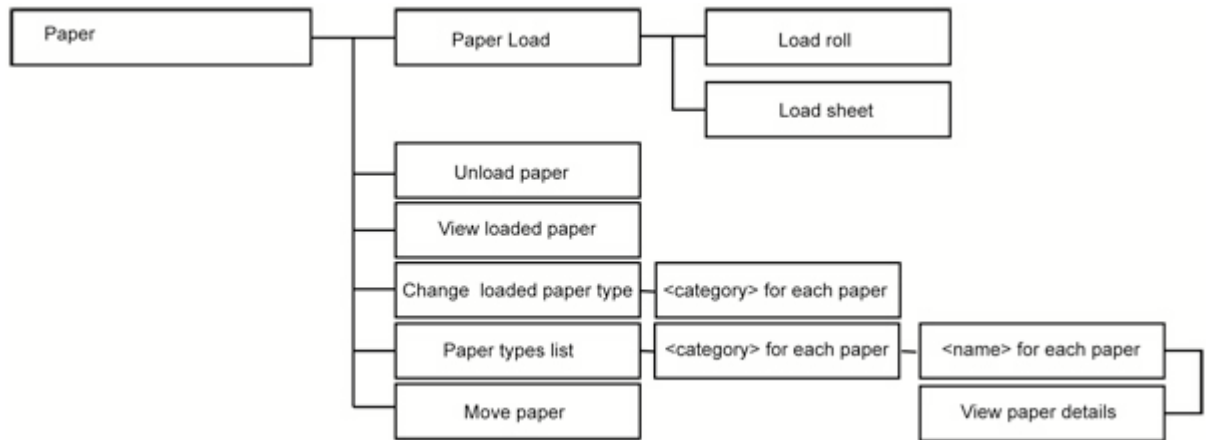


Figure 8-2 Job Management Menu

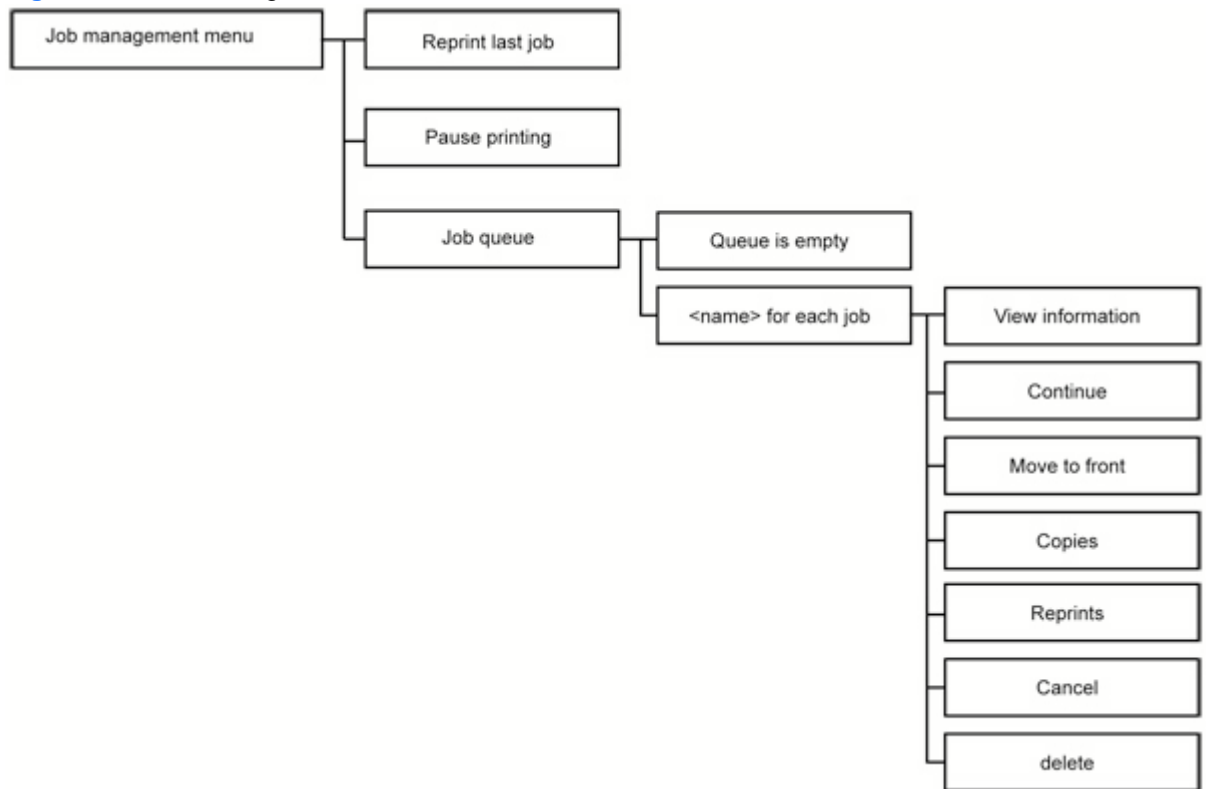


Figure 8-3 Ink Menu

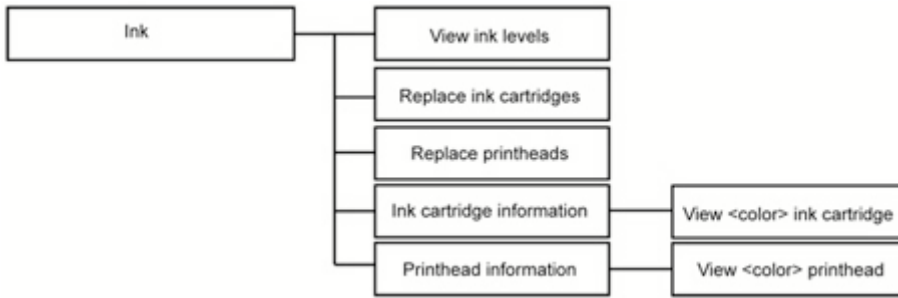


Figure 8-4 Setup Menu

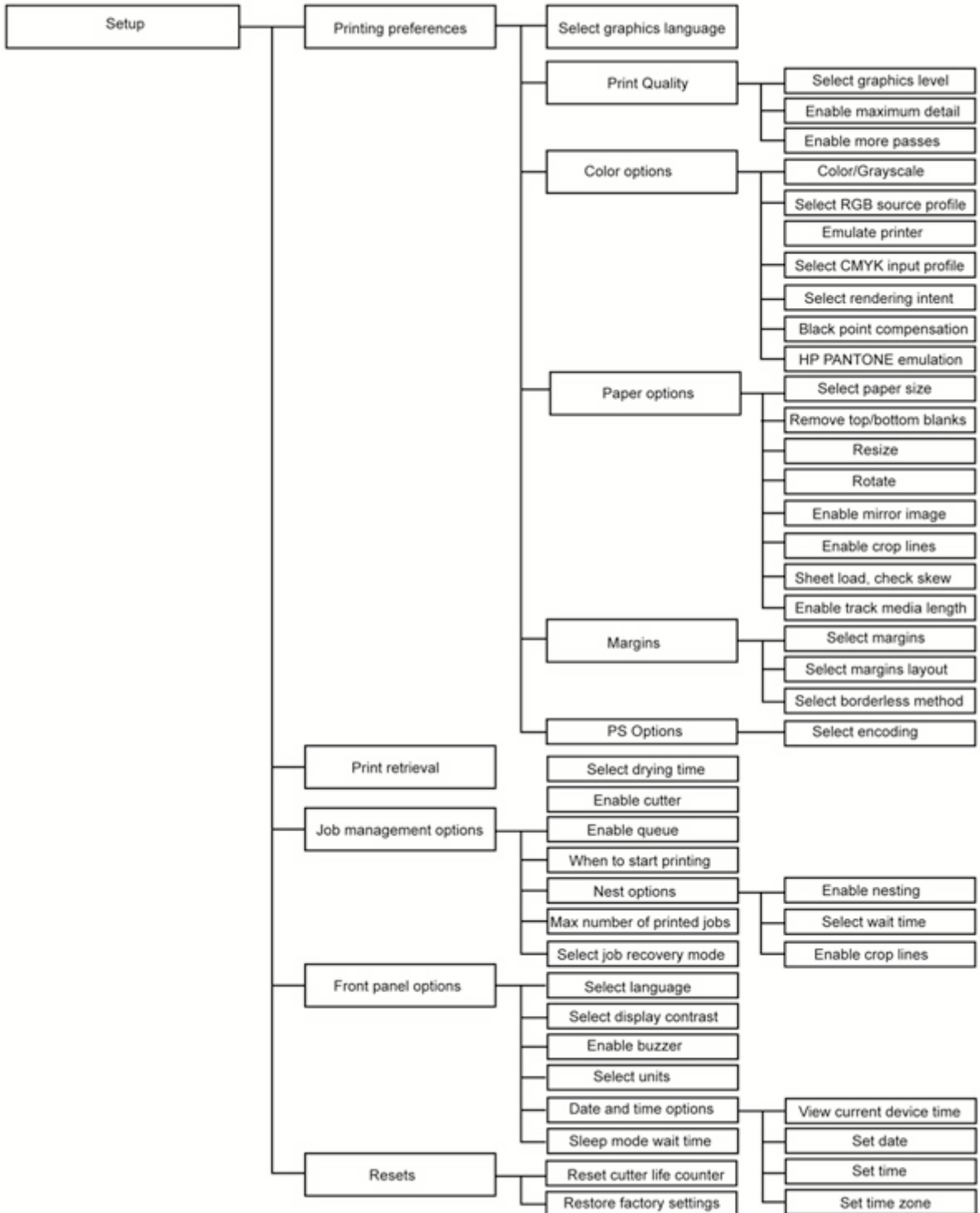


Figure 8-5 Image quality maintenance menu

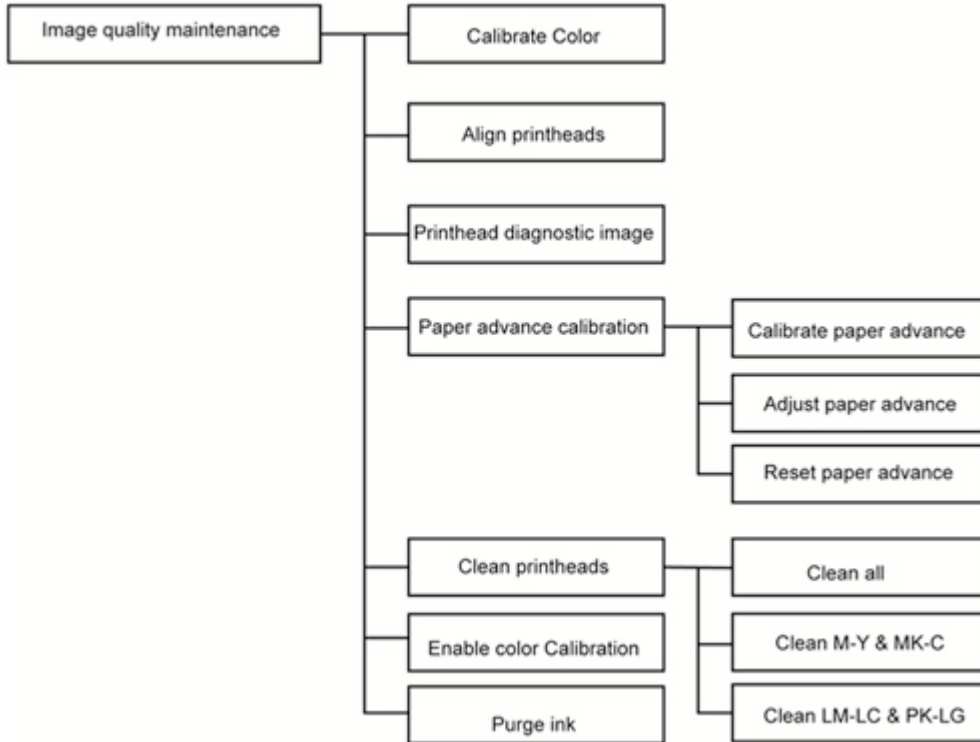


Figure 8-6 Connectivity Menu

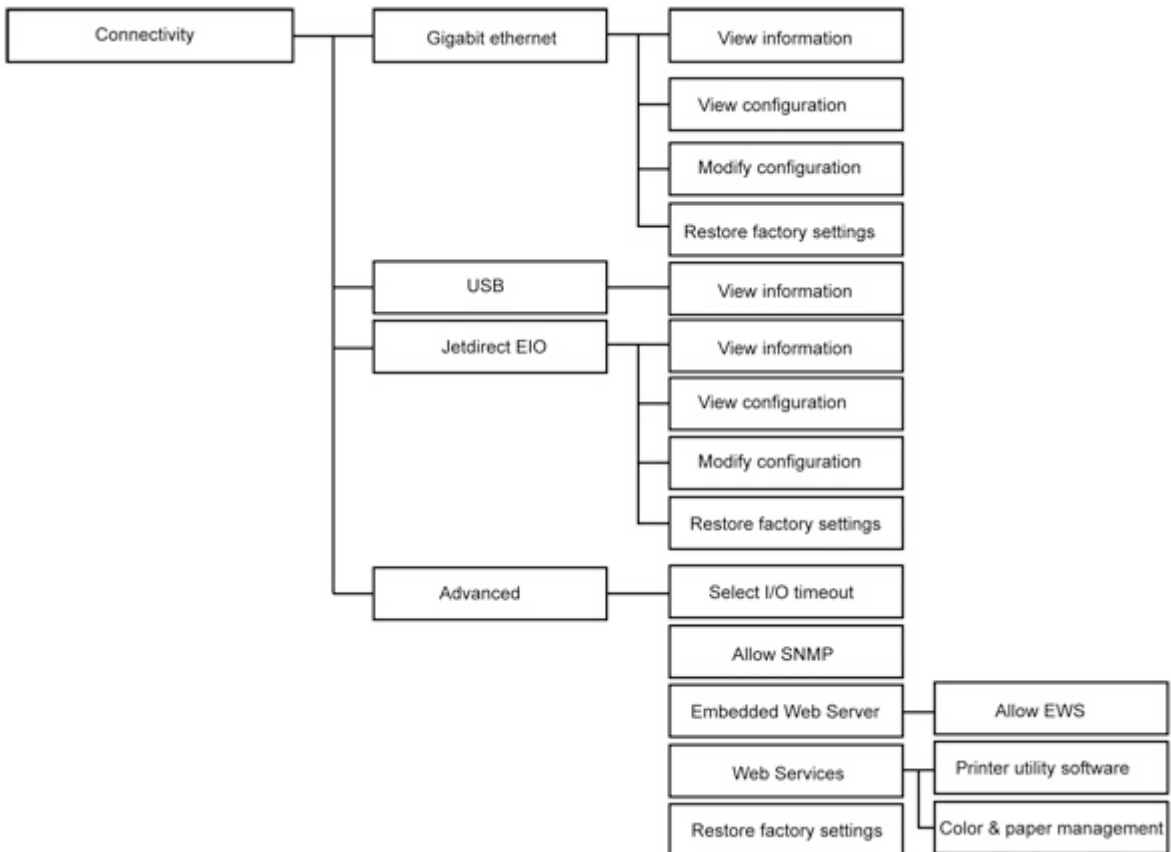


Figure 8-7 Internal Prints Menu

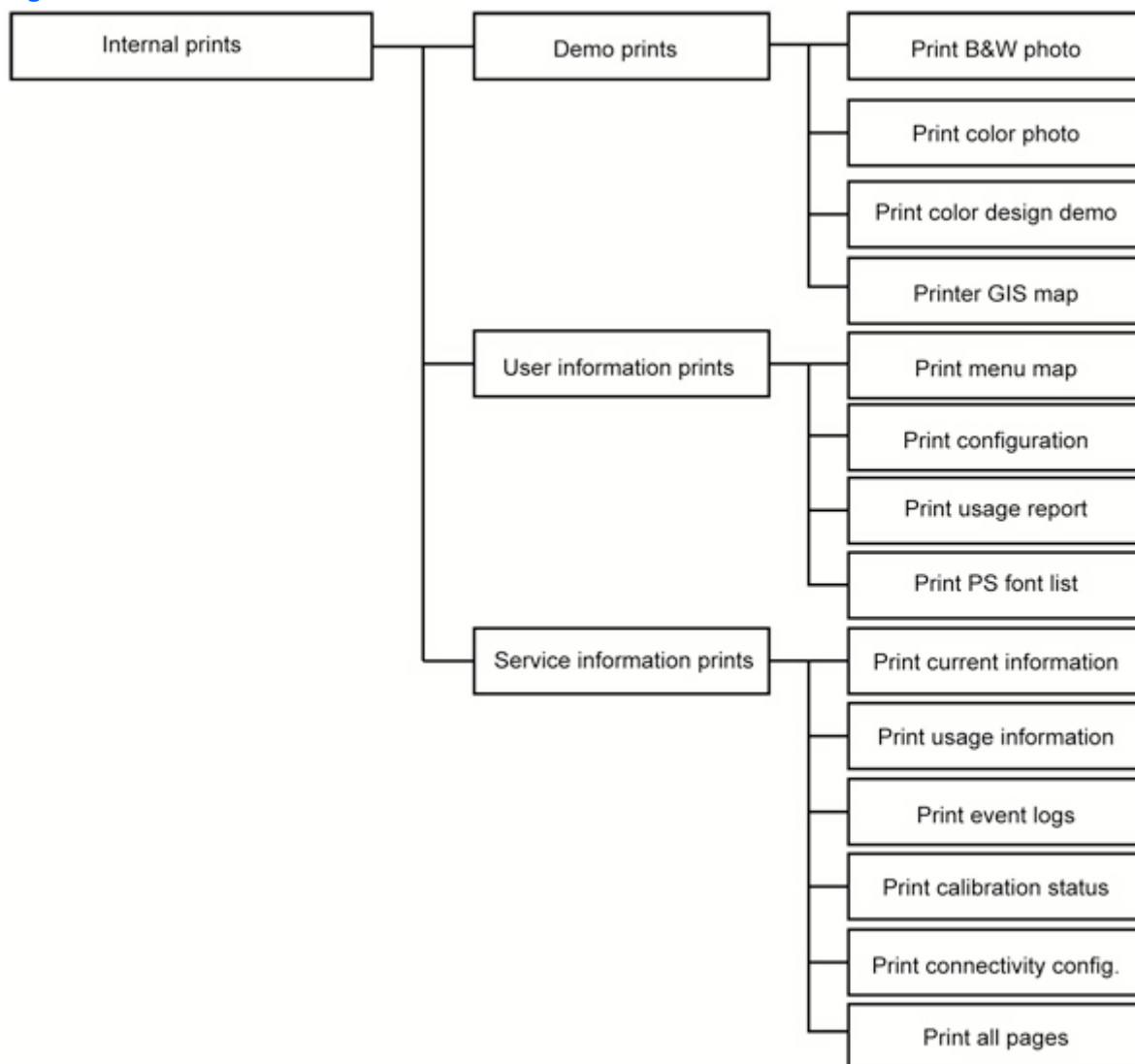


Figure 8-8 Information Menu

