Service Calibrations

5

Introduction

The Printer has several calibration procedures that must be performed under certain conditions. Refer to the table on the next page to determine when calibrations are required.

PHONE SUPPORT

Phone Support

In certain circumstances, a Call Agent can try and troubleshoot the Printer by requesting the Customer to perform a Service Calibration via the phone. In Phone Support the user will have access to a limited number of Calibrations (on-site repair calibrations are excluded).

If a Service Calibration fails, a four digit (xxxx) calibration error code is reported which can be used to determine whether the Printer requires any on-site maintenance. Up to three error codes can be reported for each Calibration. To troubleshoot Service Calibration Error Codes refer to the Page *5-26*.

NOTE **If a calibration fails, the Printer will use the previous successful calibration. If you have a Print Quality problem you must troubleshoot the error to restore quality.**

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

Which Calibrations Need To Be Done				
When Required	**Scan Axis**	**Service Station**	**Accuracy**	**Carriage Height**
Carriage is disassembled or replaced	**Yes**	**Yes**	No	**Yes**
Paper-Axis Motor is disassembled or replaced	No	No	**Yes**	No
Platen Assembly is disassembled or replaced	**Yes**	No	No	**Yes**
Service Station is disassembled or replaced	No	**Yes**	No	No

NOTE **Refer to the following page for the relevant Calibration.**

Service Calibrations

The following is a list of all internal Service Calibrations available in the Printers. Instructions for entering the Service Calibrations menu are given on Page *5-4*.

1. Scan Axis Calibration ⇒ Page *5-7*

   The purpose of this Service Calibration is to calibrate the Printhead in relation to the media and the Platen Assembly. This Calibration also allows you to calibrate the Line Sensor and define the Line Sensor ID.

2. Service Station ⇒ Page *5-11*

   The purpose of this Service Calibration is to calibrate the Service Station in relation to the Carriage Assembly.

3. Accuracy Calibration ⇒ Page *5-14*

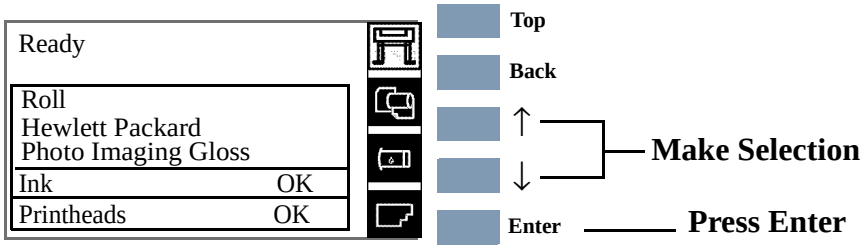
   The purpose of this Service Calibration is to calibrate the nominal advance of the Paper-Axis Motor, changing the factory default values stored on the EEROM. This calibration is necessary to control the exact movement of the media in order to avoid print quality problems like banding.

- Carriage Height Calibration ⇒ Page *5-18*

  The purpose of this Service Calibration is to adjust the distance between the Carriage and the Center Platen. This calibration is necessary in order to prevent problems like Printhead crashes.

Entering the Service Calibrations Menu

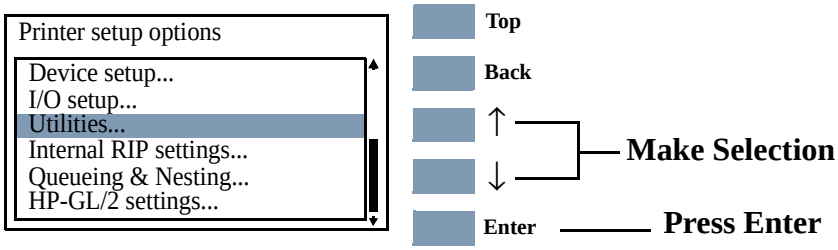
1. Once the message "Ready" is displayed on the front-panel, scroll to "Printer Setup Options" icon and press the **Enter** key.



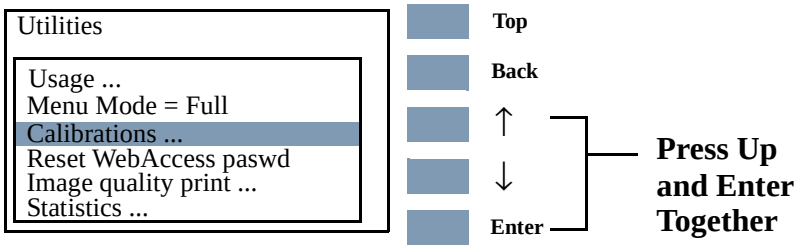
ON-SITE REPAIR

For On-Site Engineers accessing the complete list of Service Calibrations

a Once inside the "Printer Setup Options" menu, use the **Arrow** keys to scroll to the "Utilities" menu and press the **Enter** key.



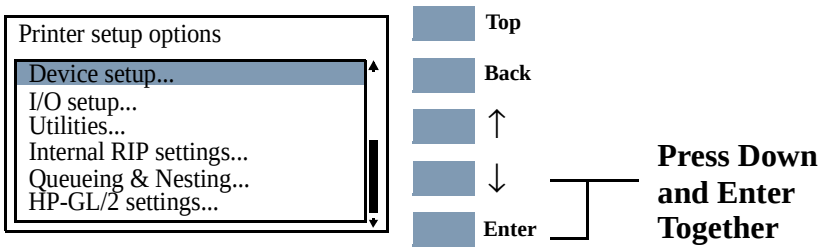
b Once inside the "Utilities" Menu, press the following key combination to access the complete list of Service Calibrations.



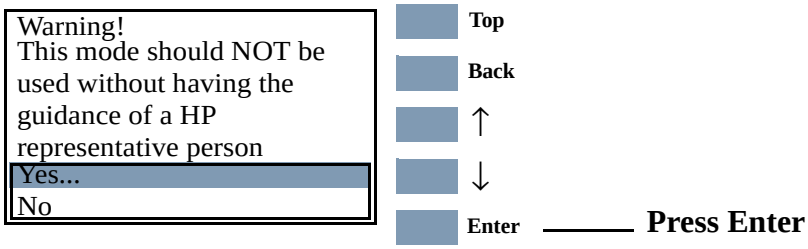
PHONE SUUPORT

For Call Agents requesting the User to access a limited number of Service Calibrations

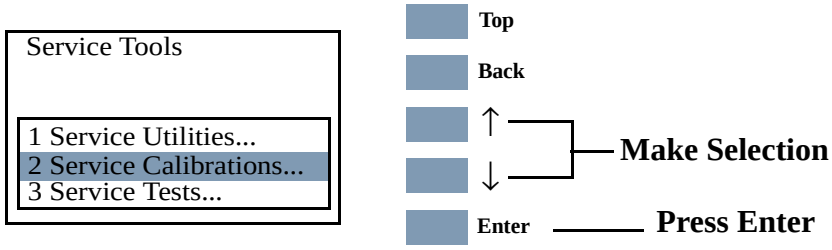
a Once inside the "Printer Setup Options" menu and the "Device setup" menu is highlighted, press the following key combination:



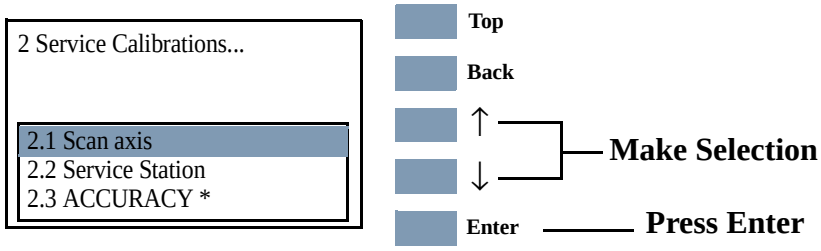
2 The message below is displayed. Select **Yes** to continue.



3. You are now in the **Service** Menu. Use the **Arrow** keys to scroll to the "Service Calibrations" menu and press the **Enter** key.



4. Use the **Arrow** keys to scroll through the "Service Calibrations" selections. Press the **Enter** key to begin a specific operation when the Service Calibration required is highlighted.



* This appears in the On-Site Repair Menu only.

NOTE **If the Printer is not used for 3 minutes, the Printer exits out of the Service Calibrations 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.**

NOTE **If the Printer hangs up during an operation, switch the Printer OFF and restart from step 1.**

1. Scan-Axis Calibration

PHONE SUPPORT

The purpose of this Service Calibration is to calibrate the Printhead in relation to the media and the Platen Assembly. This Calibration also allows you to calibrate the Line Sensor and define the Line Sensor ID.

The Scan-Axis Calibration performs the following:

- Line Sensor to calibrate the intensity of the Line Sensor in the Carriage PCA.
- Printhead to Media Spacing.

NOTE **If you get an error code, refer to Page 5-26, *Calibration Error Codes* for its description and resolution.**

NOTE **To perform this Service Calibration for a specific LED in the Line Sensor, the Line Sensor identifier (ID) is required. The Line Sensor identifier is indicated on the label on the side of the Line Sensor Assembly on the right side of the Carriage. If you do not specify a correct value, the Printer will use default values for the calibration. For the 5000 Series use the ID: 00 and for the 5500 Series use the ID: 20.**

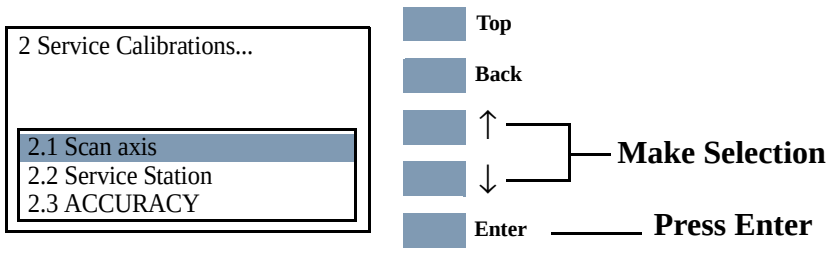
Perform Scan-Axis Calibration whenever:

- Carriage is disassembled or replaced.
- Encoder strip is disassembled or replaced.
- Center platen is disassembled or replaced.

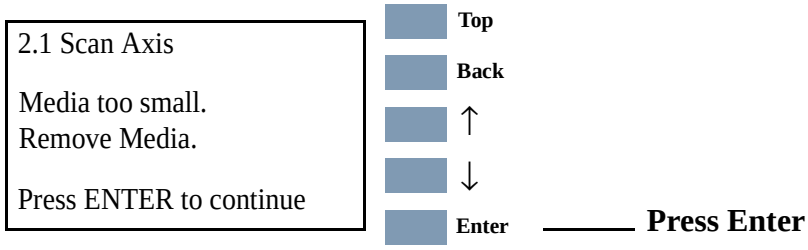
Perform the Scan-Axis Calibration as follows:

NOTE **To perform this Calibration, make sure you load white medium that is the full width of the Printer.**

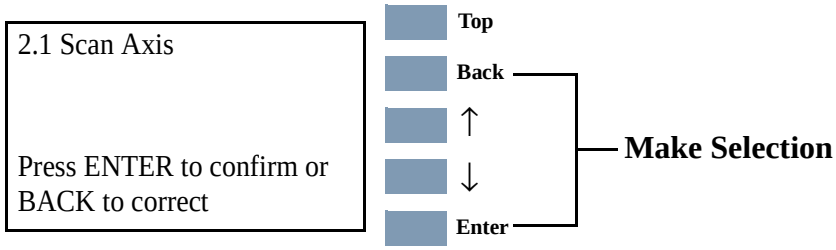
1. In the Service Calibrations submenu, scroll to "2.1 Scan axis" and press **Enter**.



If the Media loaded is not the right size, the following message is displayed. Press **Enter** to exit. Load the correct media and repeat the procedure.



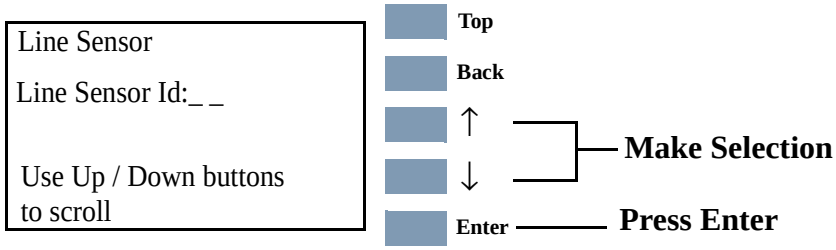
2. If the correct media is loaded, the following message is displayed. Press **Enter** to confirm or **Back** to return to the Service Calibrations menu.



3. When the following message is displayed, you will need to enter the Line Sensor id.

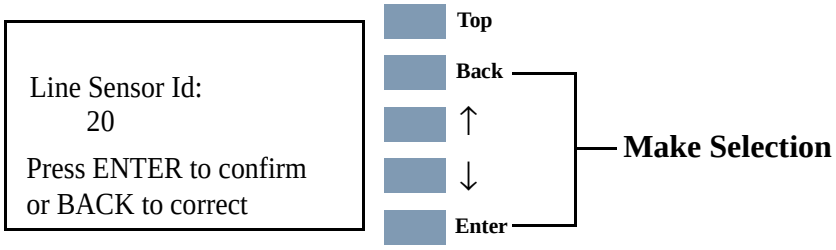
NOTE **The Line Sensor Id. is a two digit figure in a 01 - 99 range which can be located on the label on the side of the Line Sensor Assembly on the right side of the Carriage. For the 5000 Series use the ID: 00 and for the 5500 Series use the ID: 20.**

To insert a number use the **UP** and **DOWN** keys to scroll through a list of characters in the following ranges: **1...9** and ◄ (Backspace) to delete a character previously confirmed using the **Enter** key. After selecting the first digit, press **Enter** to insert the second digit. Press **Enter** to continue when both digits have been entered.



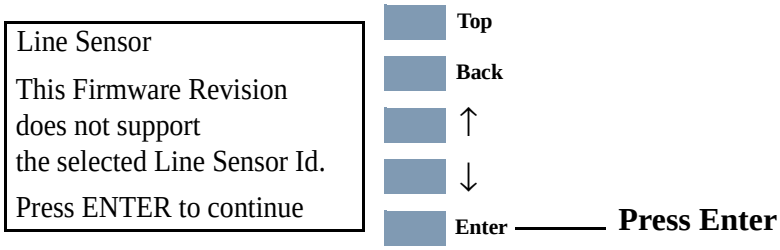
- If the Line Sensor ID is not indicated on the Line Sensor, use the default value which is "0".

4. When you have inserted the Line Sensor Id. the message below is displayed. Press **Enter** to confirm the number and continue the calibration or **Back** to modify the number.

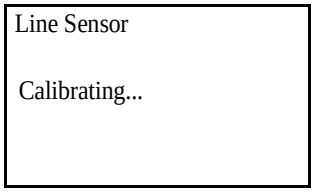


5. If you do not insert correct values the message below is displayed. Press **Enter** to continue the calibration using default values.

NOTE **If Scan Axis Calibration is performed without inserting the correct Line Sensor Id., each time the user performs a Color Calibration, a continuable System Error will be reported - See Chapter 2, *System Error Codes*.**



6. Once the media is detected, the Calibration starts and the following message is displayed:



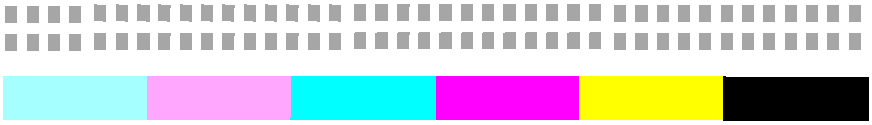
During this stage the Printer will print the following pattern.

7. The Printer then performs the Printhead to media spacing calibration and displays the following message:

```
Printhead to media
spacing

Calibrating...
```

During this stage the Printer will print the following pattern.

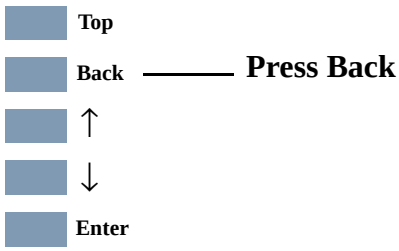


8. On successfully completing the Calibration, the following message is displayed:

```
2.1 Scan Axis Calib

Calibration performed
correctly

Press BACK to return
to previous menu
```



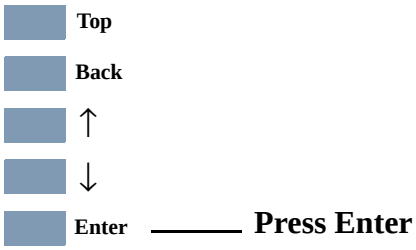
9. Press **Back** to return to the Service Calibrations menu.

If the Calibration fails the following message is displayed. Press **Enter** to continue.

```
2.1 Scan Axis Calib

Calibration Error
(xxxx)

Press ENTER to continue
```



NOTE **Refer to page 5-26, *Calibration Error Codes* to troubleshoot error codes.**

NOTE **After the Calibration has been performed, print the Service Configuration print to be sure that it has correctly been stored in the EEROM. For information on the Service Config Print ⇒ Page *1-37*.**

PHONE SUPPORT

2. Service Station Calibration

The purpose of this Service Calibration is to calibrate the Service Station in relation to the Carriage Assembly. The Service Station Calibration performs the following calibrations:

- Line Sensor to Black Pen.
- Drop Detector.
- Primer.

Perform the Service Station Calibration whenever:

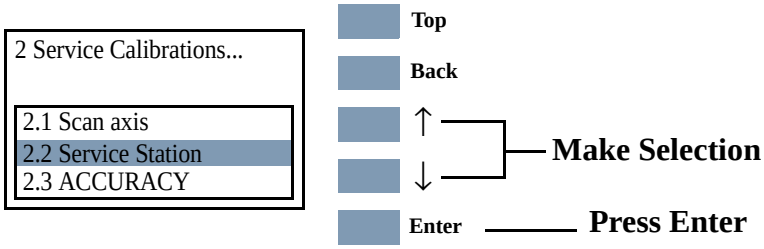
- Carriage Assembly is disassembled or replaced.
- Service Station is disassembled or replaced.

NOTE **If you get an error code, refer to Page 5-26, *Calibration Error Codes* for its description and resolution.**

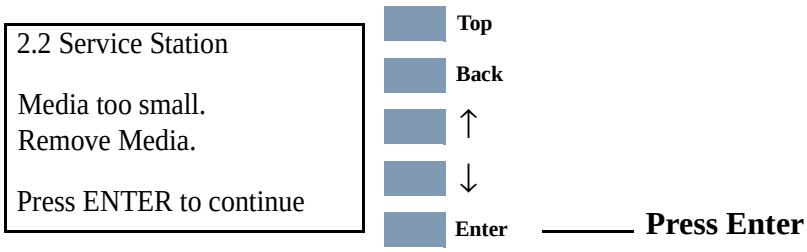
Perform the Service Station Calibration as follows:

NOTE **To perform this Calibration, make sure you load white medium that is minimum A3/B size.**

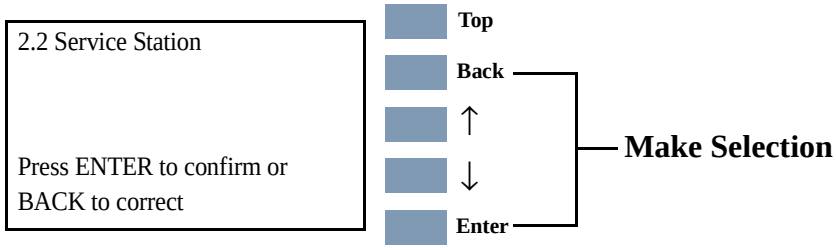
1. In the Service Calibrations submenu, scroll to "2.2 Service Station" and press **Enter**.



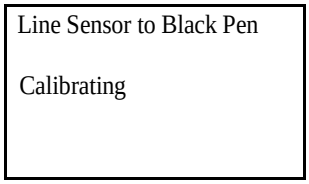
If the Media loaded is not the right size, the following message is displayed. Press **Enter** to exit. Load the correct media and repeat the procedure.



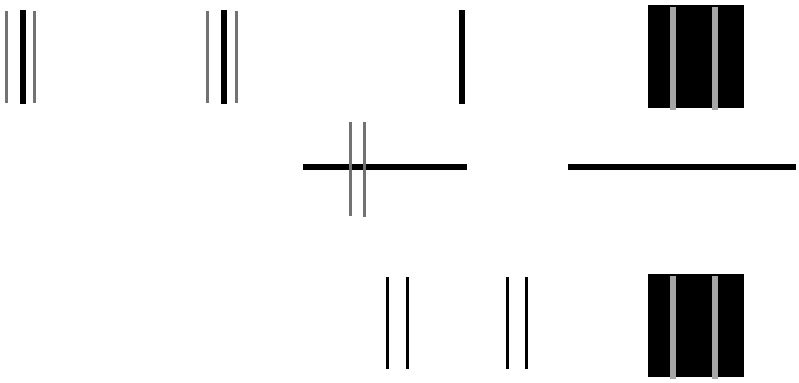
2. If the correct media is loaded, the following message is displayed. Press **Enter** to confirm or **Back** to return to the Service Calibrations menu.



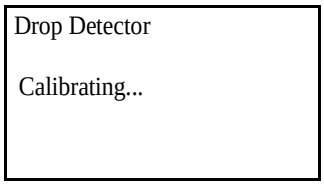
3. Once the media is detected, the calibration starts and the following message is displayed:



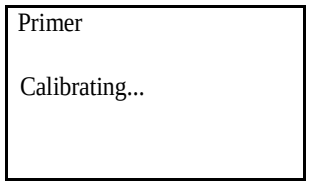
During this stage the Printer will print the following pattern.



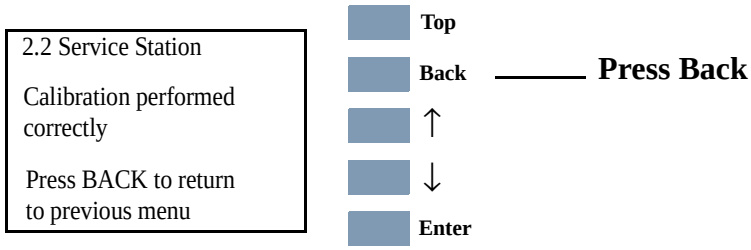
4. On completing the Line Sensor to Black Printhead calibration, the following message is displayed:



5. On completing the Drop Detector calibration, the following message is displayed:

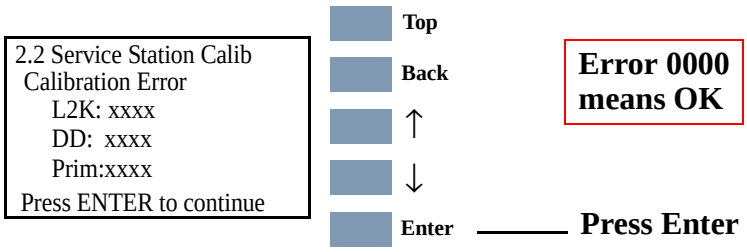


6. On completing the calibration successfully, the following message is displayed.



7. Press **Back** to return to the Service Calibrations menu.

   If the Calibration fails, the following message is displayed. Error codes are displayed for L2K (Line Sensor to black Printhead), DD (Drop Detection) and Prim (Primer). Press **Enter** to continue.



NOTE **Refer to 5-26, *Calibration Error Codes* to troubleshoot error codes.**

NOTE **After the Calibration has been performed, print the Service Configuration print to be sure that it has correctly been stored in the EEROM. For information on the Service Config Print ⇒ Page *1-37*.**

3. Accuracy Calibration

The purpose of this Accuracy Calibration is to set the nominal advance of the media, changing the factory default values stored on the EEROM. This calibration is necessary to control the exact movement of the media in order to avoid print quality problems like banding.

NOTE **This changes the factory default value for the nominal advance of the media.**

Perform the Service Accuracy Calibration whenever:

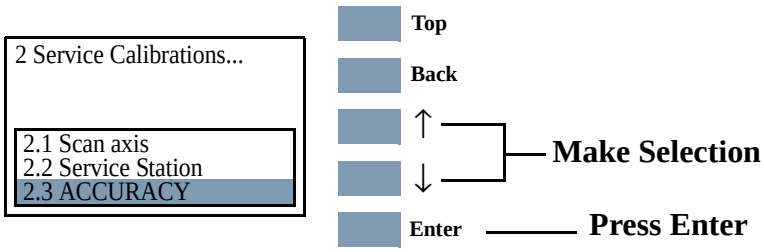
- Paper-axis Assembly is disassembled or replaced.

NOTE **If you get an error code, refer to Page 5-26, *Calibration Error Codes* for its description and resolution.**

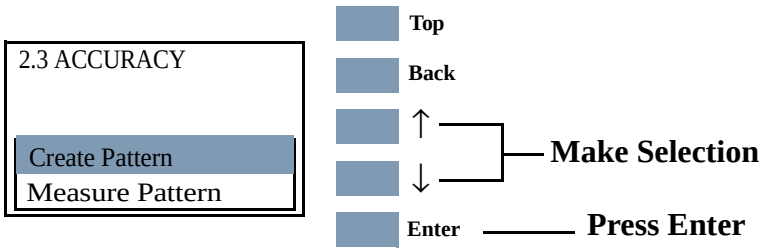
Perform the Accuracy Calibration as follows:

WARNING **Make sure you load HP High Gloss Photo Paper into the Printer before performing this calibration. Do NOT use any other type of media apart from HP High Gloss Photo Paper.**

1. In the Service Calibrations submenu, select "2.3 Accuracy" and press **Enter**.

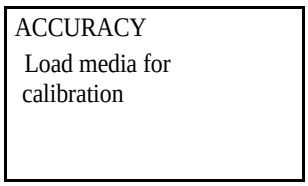


2. When the following message appears on the front panel, select "Create Pattern" and press **Enter**.

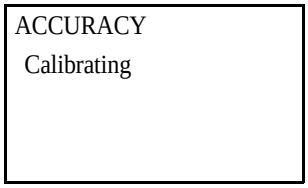


3. If media is not loaded, the following message appears on the front panel and you must load media into the Printer. Press the **Load/ Unload Media** button (see the User's Guide for detailed information on loading media).

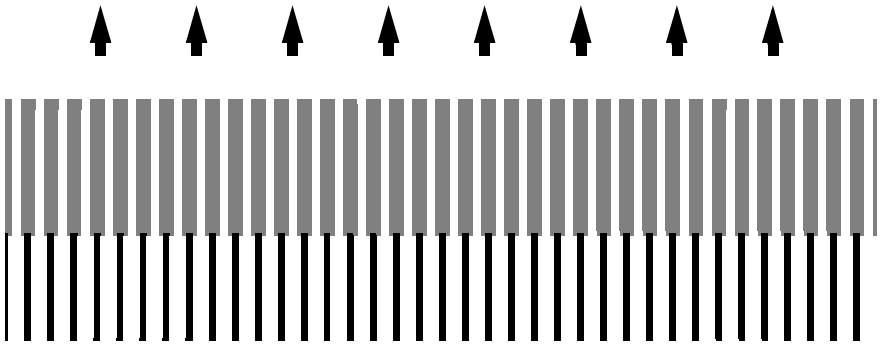
NOTE **Do NOT use any other type of media apart from HP High Gloss Photo Paper.**



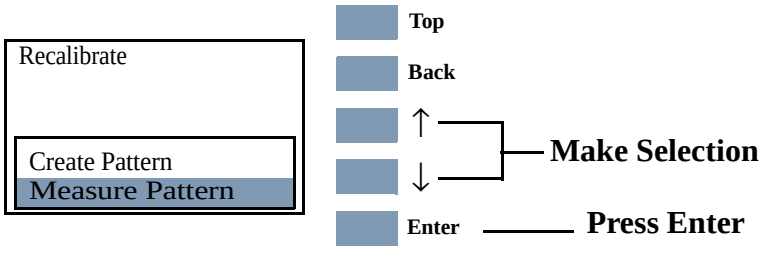
4. The Printer will start to print the Accuracy Calibration Pattern and the following message will be displayed on the front panel:



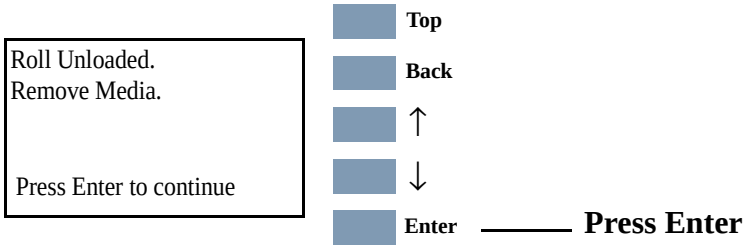
Below is a sample of the pattern printed.



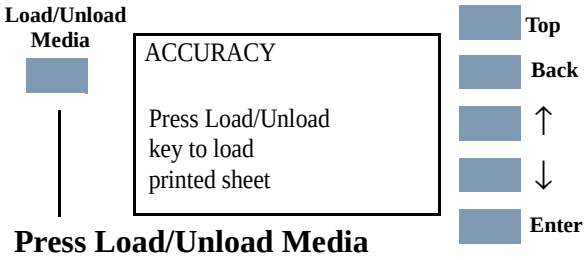
5. Once the Accuracy Calibration Pattern is completed, the following message will be displayed. Select "Measure Pattern" and press **Enter** to automatically start the Load/Unload Media procedure.



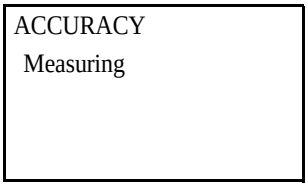
6. The Printer will unload the media and request you to remove it from the Printer. Press **Enter** to continue.



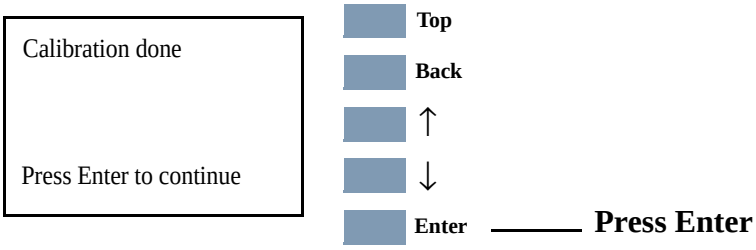
7. The following message is displayed. Press **Load/Unload Media** to start the load procedure for the printed sheet.



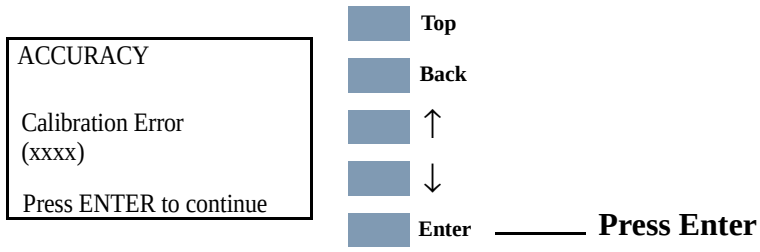
8. When loading, rotate the pattern so that the edge with the arrows points to the leading edge, and then reload the pattern with the arrow edge print facing down. The Printer will load the pattern and then measure the alignment marks using the Line Sensor on the Carriage Assembly. The following message will be displayed while the Printer measures the pattern:



9. Once the calibration is completed, the following message will be displayed. Press **Enter** to return to the Accuracy Calibration menu.



If the Calibration fails the following message is displayed. Press **Enter** to continue.



NOTE **Refer to 5-26, *Calibration Error Codes* to troubleshoot error codes.**

NOTE **After the Calibration has been performed, print the Service Configuration print to be sure that it has correctly been stored in the EEROM. For information on the Service Config Print ⇒ Page *1-37*.**

Carriage Height Calibration

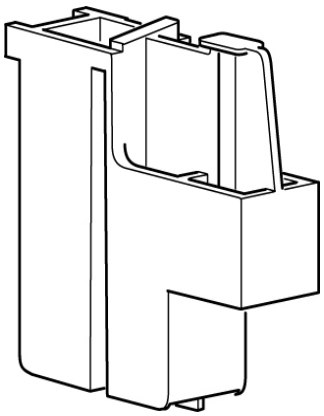
The purpose of this Service Calibration is to adjust the distance between the Carriage Assembly and the Center Platen. This calibration is necessary in order to prevent problems like Printhead crashes.

Perform the Carriage Height Calibration whenever:

- Carriage Assembly is replaced.
- Center Platen is disassembled or replaced.
- Continuous Printhead Crashes.

Perform the Carriage Height Calibration as follows:

NOTE **The procedure should be carried out using the Carriage Height Tool (See Figure 1 below) that came with the new Carriage Assembly or Center Platen Assembly.**



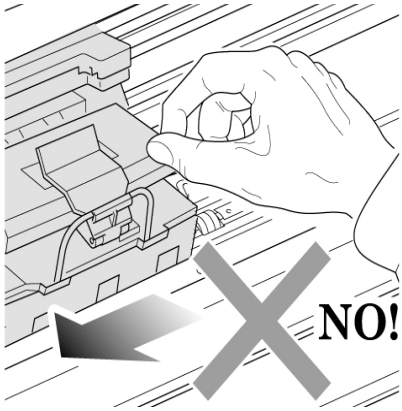
Carriage Height Tool

Figure 1:

NOTE

During the Carriage Height Calibration procedure the Carriage Assembly has to be moved along the length of the Printer for correct calibration. Make sure that the Carriage Assembly is only ever moved by pulling the Belt and never by direct contact with the Carriage itself (See Figure 2 below).

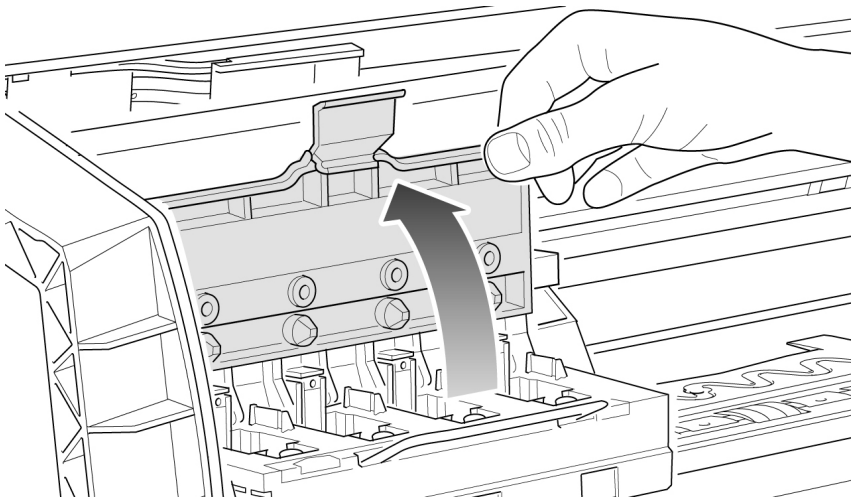
Correct:
move using the Belt.



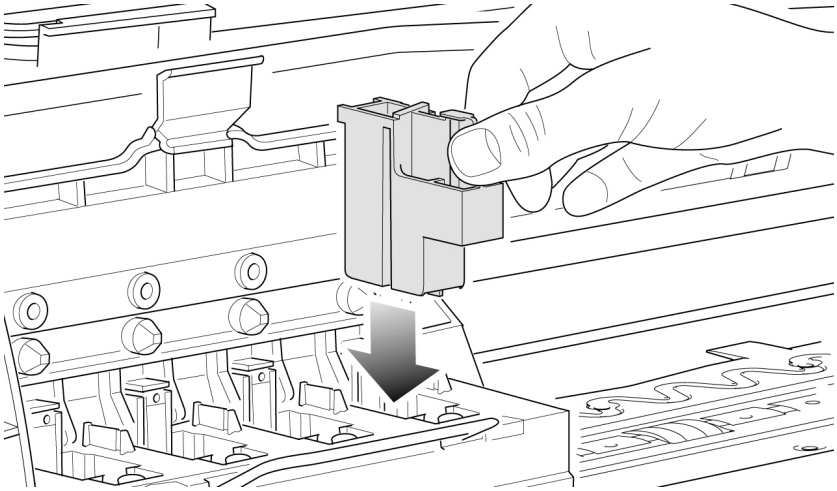
Incorrect:
never move using Carriage Assembly.

Figure 2:

1. Remove the Top Cover - Refer to Page *8-5*.
2. Remove the Back Cover - Refer to Page *8-23*.
3. Remove the Top EMC Cover - Refer to Page *8-32*.
4. Open the Carriage Cover on the left hand side of the printing area.

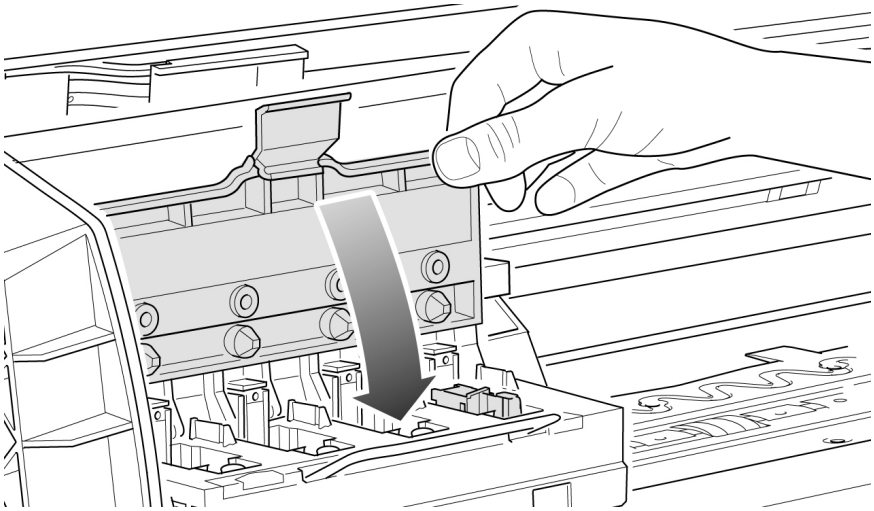


5. Insert the Carriage Height Tool into the black Printhead slot.



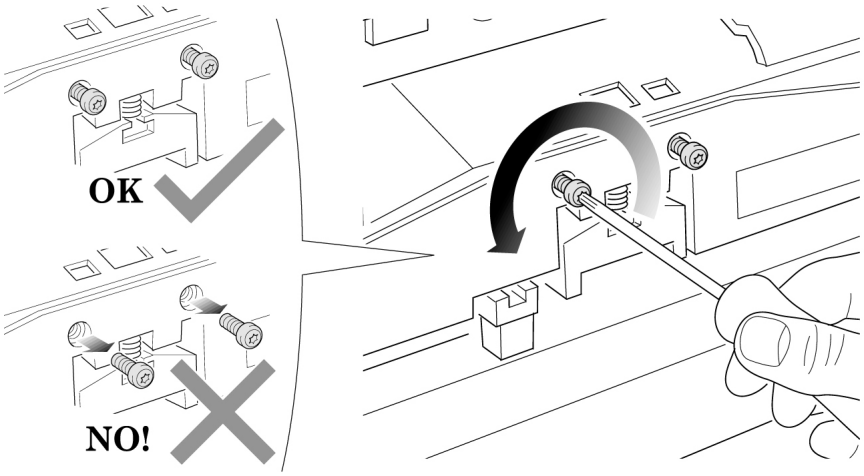
6. Close the Carriage Cover

.

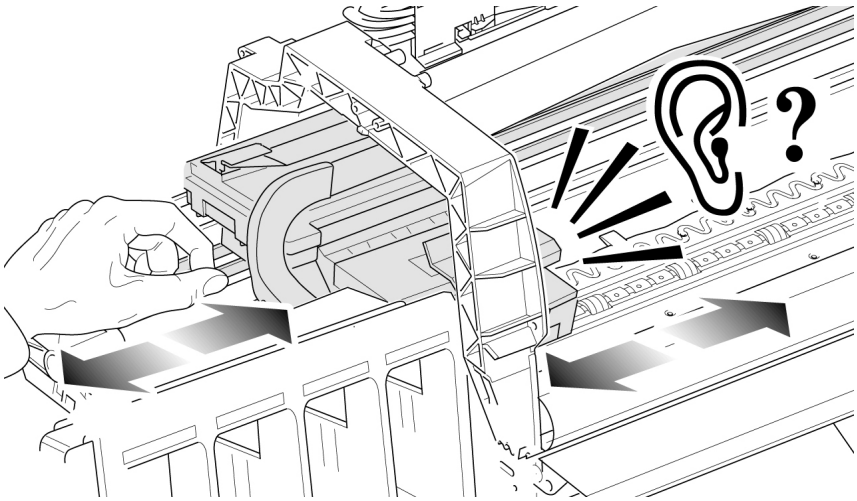


7. Loosen the two T10 screws at the back of the Carriage Assembly.

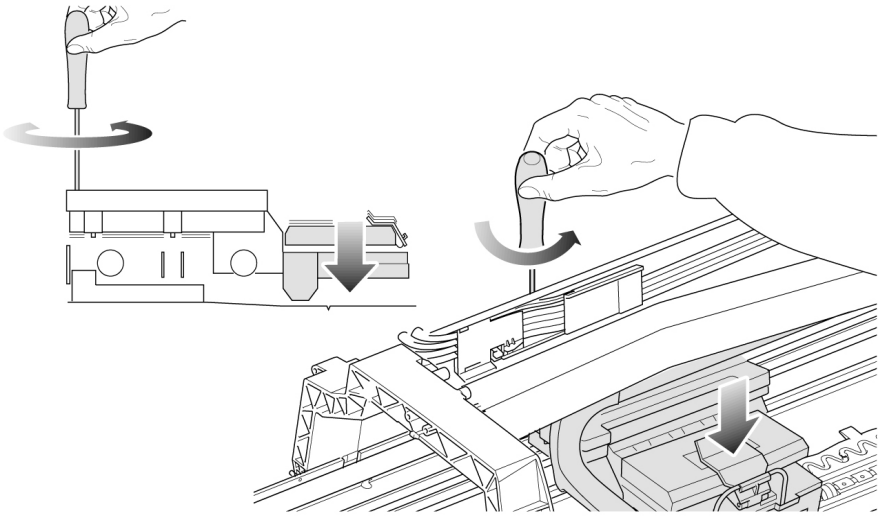
NOTE The screws should not be removed.



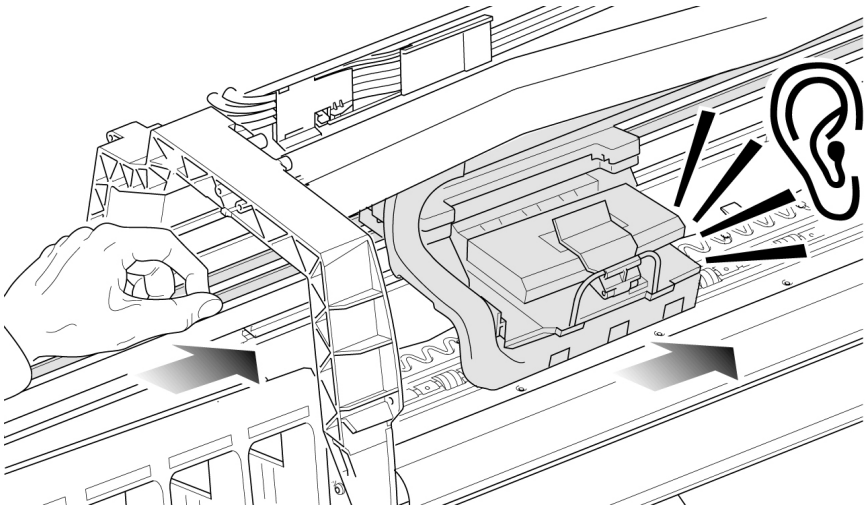
8. Using the Belt, and beginning on the left hand side of the starting position (where the left hand edge of the paper is positioned when printing), move the Carriage Assembly back and forth along the length of the Printer. Listen for a scraping sound: if you hear a sound already you may proceed directly with step 9, if not you must lower the Carriage Assembly (step 8), and try again until a scraping sound is heard.



9. Lower the Carriage Assembly slightly, by turning the T9 screw shown below anti-clockwise and then check for a scraping sound again as shown previously in step 7.

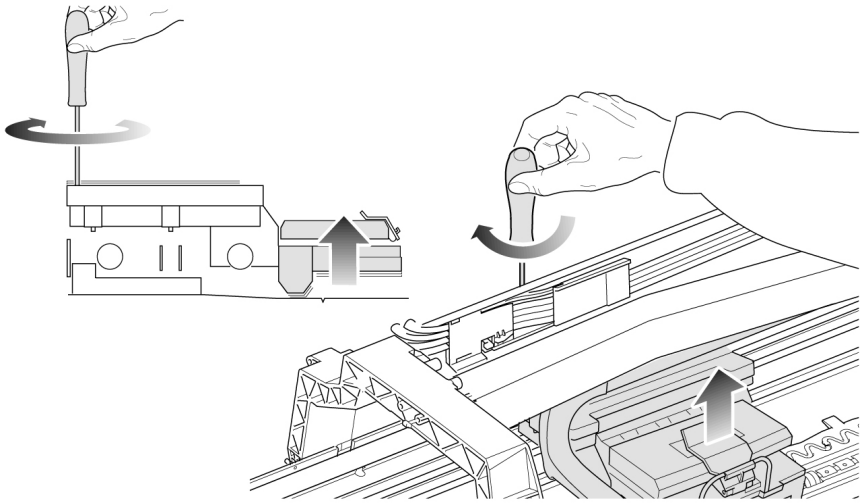


10. On moving the Carriage Assembly along the length of the Printer you should now hear a scraping sound: this sound indicates that you need to raise the Carriage Assembly (if there is no sound repeat step 8).

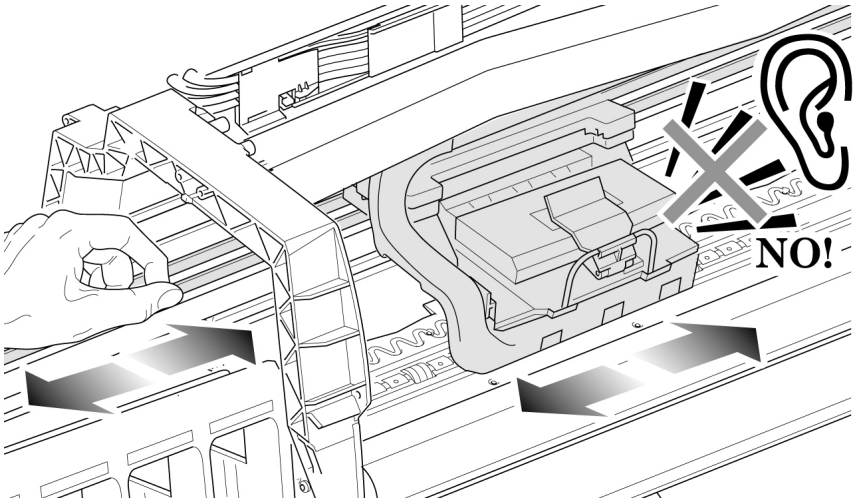


11. Raise the Carriage Assembly slightly, by turning the T9 screw (shown below) clockwise

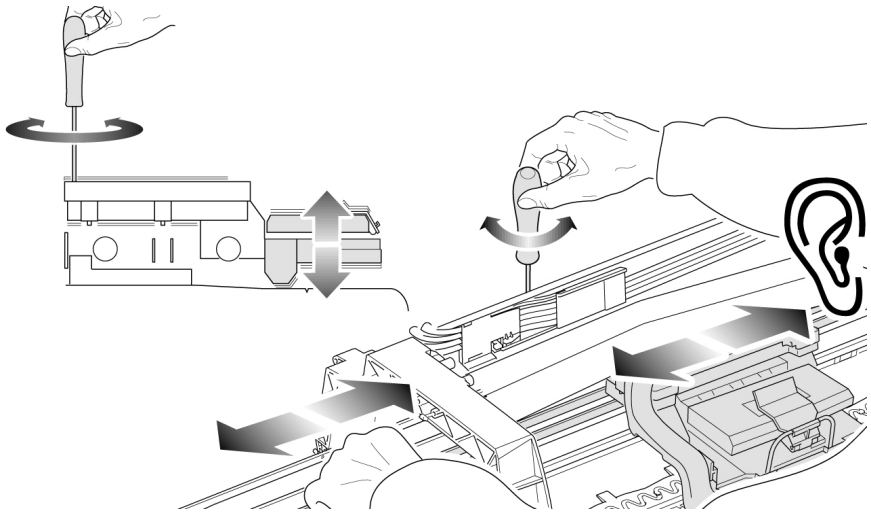
.



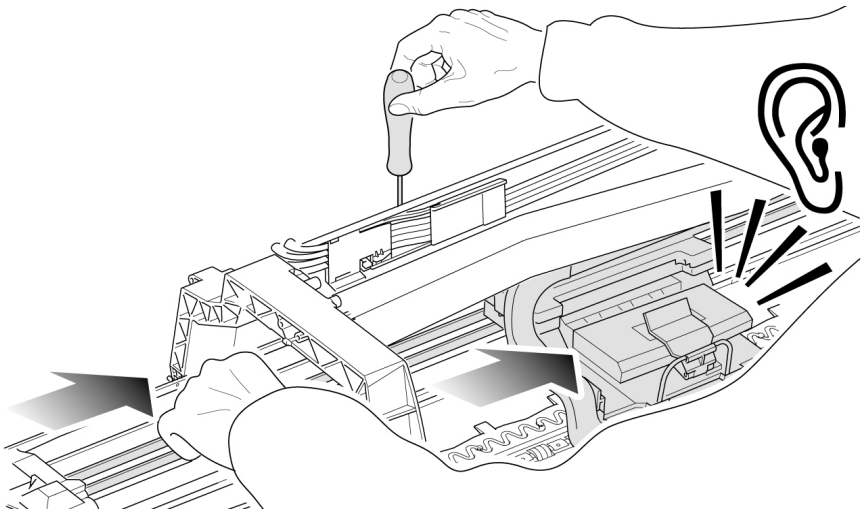
12. Check that there is no longer a scraping sound.



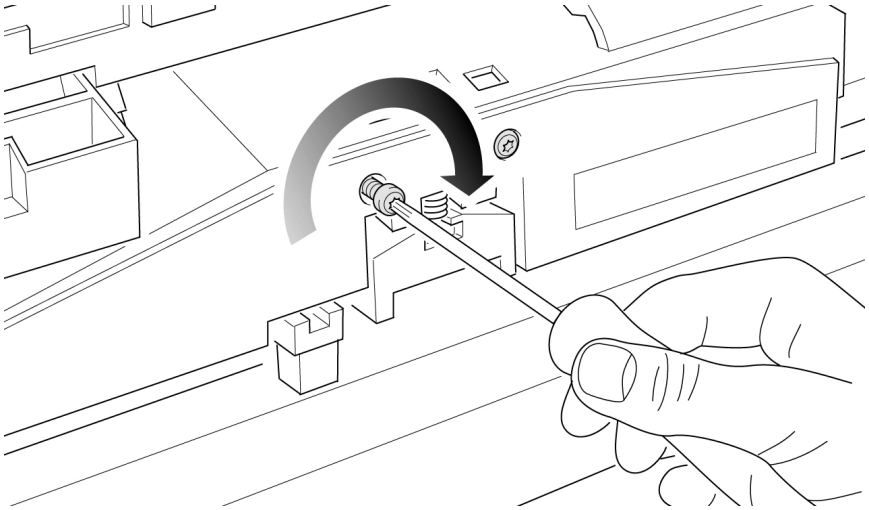
13. When the scraping has been eliminated it is important to leave the Carriage Assembly as close as possible to the Center Platen: move the Carriage Assembly back and forth across the area where the scraping sound was, gently lowering and raising the Carriage Assembly until you are sure that it is as close as it possibly can be to the Center Platen without touching.



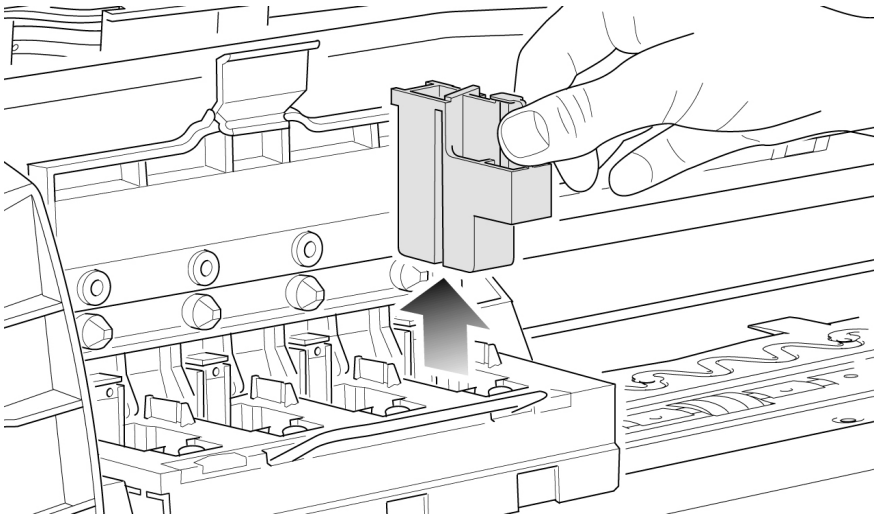
14. Continue checking the full length of the Printer until you arrive at the blue line used to load the cut sheet paper, repeating steps 10, 11 and 12 whenever a scraping sound is heard.



15. When the complete length of the Printer is calibrated (clear of any scraping sound), tighten the two T10 screws at the back of the Carriage Assembly to secure the current position.



16. Remove the Carriage Height Tool.



Calibration Error Codes

Introduction

NOTE **Calibration Error Codes are continuable, which means you can press Enter on the Front Panel to continue working with the Printer. If you have a Print Quality problem you must troubleshoot the error to restore quality.**

NOTE **The Printer will use the previous successful calibrations if a calibration is cancelled (User Calibrations only), or if it is not successful.**

Calibration Error Codes refer to both User and Service Calibrations and include their descriptions and recommended corrective actions. If a code can only be obtained for either Service or User Calibrations, the code will be followed by **(User)** or **(Service)**.

Calibration error codes consist of a four digit number [XXXX].

You may get up to a maximum of three error codes for a single calibration. Only try one recommended corrective action at a time and retry the Calibration to check if the error code has disappeared.

PHONE SUPPORT

If a problem persists, a Call Agent can try and troubleshoot the problem by requesting the Calibration Error Code from the Customer via the phone. Using this process, it can be determined whether the Printer requires any on-site maintenance.

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.

Calibration Error: 0000

NOTE **This code is not an error. See the other codes reported.**

Calibration Error: 0001

Problem Description: Pen voltage error.

Corrective Action: Try the following:

- Power the Printer OFF and ON again using the Power Switch at the back of the Printer and if a **(XXXX)Replace** message for a particular Printhead is displayed, replace that Printhead.
- If the **(XXXX)Replace** message is for all Printheads, replace the Carriage Assembly ⇒ Page *8-46*.

Calibration Error: 0002 and 0003

Problem Description: Line sensor could not calibrate.

Corrective Action: Check the media used for the Calibration is WHITE.

Try the following:

- Replace the Lens Cover Assembly ⇒ Page *9-5*.
- Replace the Carriage Assembly ⇒ Page *8-46*.

Calibration Error: 0004

Problem Description: The Line Sensor pattern is not printed. Firmware error.

Corrective Action: Try the following:

- Power the Printer OFF and ON again using the Power Switch at the back of the Printer to reset the memory.
- Upgrade the Firmware ⇒ Page *9-13*.

Calibration Error: 0005

Problem Description: Line Sensor error.

Corrective Action: Try the following:

- Replace the Carriage Assembly ⇒ Page *8-46*.

Calibration Error: 0020

Problem Description: Line Sensor error.

Corrective Action: Check the media used for the Calibration is WHITE.

- Replace the Lens Cover Assembly ⇒ Page *9-5*.

Calibration Error: 0021

Problem Description: Line Sensor error.

Corrective Action: Check the colors in the calibration pattern. If a color is absent the Printhead has failed for that color:

- Replace the Printhead for that color.

Calibration Error: 0022

Problem Description: Line Sensor error.

Corrective Action: Try the following:

- Replace the Lens Cover Assembly ⇒ Page *9-5*.
- Clean the Mark Encoder on the Overdrive ⇒ Page *9-9*.
- Replace the Carriage Assembly ⇒ Page *8-46*.

Calibration Error: 0100

Problem Description: Printhead error.

Corrective Action: Try the following:

- Check the colors in the calibration pattern. If the quality of a color is not acceptable the Printhead has failed for that color. Perform Recovery (⇒ Page *6-15*) for the Printhead and repeat the calibration.
- If the error persists for that color, replace the Printhead.

Calibration Error: 1001 **(User)**

Problem Description: Line Sensor Error.

Corrective Action:

- Replace the Carriage Assembly ⇒ Page *8-46*.

Calibration Error: 1002 **(User)**

Problem Description: The Line Sensor pattern is not printed. Firmware error.

Corrective Action: Try the following:

- Power the Printer OFF and ON (using the power switch at the back of the printer) to reset the memory.
- Upgrade the Firmware ⇒ Page *9-13*.

Calibration Error: 1003 **(User)**

Problem Description: Firmware Error.

Corrective Action: Try the following:

- Perform Printhead Recovery (⇒ Page *6-15*) and repeat the Printhead Alignment (⇒ See the User's Guide).
- Power the Printer OFF and ON (using the power switch at the back of the printer) to reset the memory.
- Upgrade the Firmware ⇒ Page *9-13*.

Calibration Error: 1004 **(User)**

Problem Description: The Line Sensor cannot detect all the lines in the printed pattern.

Corrective Action: Try the following:

- Perform Printhead Recovery (⇒ Page *6-15*).
- Perform the Service Scan-Axis Calibration ⇒ Page *5-7*.
- Check the pattern to see if a Printhead is not printing correctly and, if there are defects in the pattern, recover the failing Printhead(s) ⇒ Page *6-15*.
- If Printhead recovery does not solve the problem, replace the failing Printhead(s) and repeat the Printhead Alignment (⇒ See the User's Guide).
- If the media used is a color media try the Printhead Alignment with opaque media with no patterns and if the error persists, replace the Lens Cover ⇒ Page *9-5*.
- Replace the Carriage Assembly ⇒ Page *8-46*.

Calibration Error: 1005 **(User)**

Problem Description: Paper Axis Error.

Corrective Action: Try the following:

- Perform Printhead Recovery (⇒ Page *6-15*).
- Reseat ALL the Printheads and repeat the Printhead Alignment (⇒ See the User's Guide).
- Replace the Carriage Assembly ⇒ Page *8-46*.

Calibration Error: 1040 **(User)**

Problem Description: Scan-Axis Alignment Error in "slow" speed section in Black and Magenta Pattern.

Corrective Action: Try the following:

- Perform Printhead Recovery (⇒ Page *6-15*).
- Perform the Service Scan-Axis Calibration ⇒ Page *5-7*.
- Replace the Black and Magenta Printheads and repeat Printhead Alignment (⇒ See the User's Guide).
- If the media used is a color media try the Printhead Alignment with white media and if the error persists replace the Lens Cover ⇒ Page *9-5*.
- Replace the Carriage Assembly ⇒ Page *8-46*.

Calibration Error: 1041 **(User)**

Problem Description: Scan-Axis Alignment Error in "slow" speed section in Cyan and Yellow Pattern.

Corrective Action: Try the following:

- Perform Printhead Recovery (⇒ Page *6-15*).
- Perform the Service Scan-Axis Calibration ⇒ Page *5-7*.
- Replace the Cyan and Yellow Printheads and repeat the Printhead Alignment (⇒ See the User's Guide).
- If the media used is a color media try the calibration with white media and if the error persists replace the Lens Cover ⇒ Page *9-5*.
- Replace the Carriage Assembly (⇒ Page *8-46*).

Calibration Error: 1042 **(User)**

Problem Description: Scan-Axis Alignment Error in "slow" speed section in Light Cyan and Light Magenta Pattern.

Corrective Action: Try the following:

- Perform Printhead Recovery (⇒ Page *6-15*).
- Perform the Service Scan-Axis Calibration (⇒ Page *5-7*).
- Replace both Printheads and repeat Printhead Alignment.
- If the media used is a color media try the calibration with white media. If the error persists replace the Lens Cover ⇒ Page *9-5*.
- Replace the Carriage Assembly ⇒ Page *8-46*.

Calibration Error: 1060 **(User)**

Problem Description: Scan-Axis Alignment Error in "fast" speed section in Black and Magenta Pattern.

Corrective Action: Refer to Calibration Error Code 1040.

Calibration Error: 1061 **(User)**

Problem Description: Scan-Axis Alignment Error in "fast" speed section in Cyan and Yellow Pattern.

Corrective Action: Refer to Calibration Error Code 1041.

Calibration Error: 1062 **(User)**

Problem Description: Scan-Axis Alignment Error in "fast" speed section in Light Cyan and Light Magenta Pattern.

Corrective Action: Refer to Calibration Error Code 1042.

Calibration Error: 2001 **(User)** and 2002 **(User)**

Problem Description: Closed Loop Color plot file is not available or is in the wrong format.

Corrective Action:

- Download a Firmware Upgrade ⇒ Page *9-13*.

Calibration Error: 2003 **(User)**

Problem Description: The Printer has used all its SWAP memory and does not have sufficient memory to read the plot.

Corrective Action:

- Power the Printer OFF and ON from the back of the Printer.

Calibration Error: 2004 **(User)**

Problem Description: Media Profile Error.

Corrective Action: Try the following:

- Download a Media Profile for the current medium.
- Power the Printer OFF and ON from the rear of the Printer.
- Download a Firmware Upgrade ⇒ Page *9-13*.

Calibration Error: 2005 **(User)**

Problem Description: Closed Loop Color Pattern Error.

Corrective Action: Try the following:

- Turn the Printer OFF and ON from the rear of the Printer to reset the memory.
- Download a Firmware Upgrade ⇒ Page *9-13*.

Calibration Error: 2006 **(User)** and 2007 **(User)**

Problem Description: Media Profile Corrupted.

Corrective Action: Try the following:

- Download Media Profile.
- Power the Printer OFF and ON from the back of the Printer.
- Download a Firmware Upgrade ⇒ Page *9-13*.

Calibration Error: 2008 **(User)**

Problem Description: Firmware Error.

Corrective Action:

- Download the latest Firmware ⇒ Page *9-13*.

Calibration Error: 2101 (through to 2607) **(User)**

Problem Description: Firmware Error.

Corrective Action: Try the following:

- Repeat the Closed Loop Color calibration (⇒ See the User's Guide).
- Download the latest Firmware ⇒ Page *9-13*.

NOTE **System Errors from 2101 to 2607 indicate the same type of error and the Corrective Action is identical. It is important to report the exact error code as this will help in identifying and resolving any errors that occur.**

Calibration Error: 3100

Problem Description: Firmware Error.

Corrective Action: Try the following:

- Power the Printer OFF and ON again using the Power Switch at the back of the Printer to reset the memory.
- Upgrade the Firmware ⇒ Page *9-13*.

Calibration Error: 3110

Problem Description: Black Printhead does not allow paper advance calibration.

Corrective Action: Try the following:

- Recover the Black Printhead ⇒ Page *6-15*.
- Replace the Black Printhead.

Calibration Error: 3120

Problem Description: Firmware Error.

Corrective Action: Try the following:

- Power the Printer OFF and ON again using the Power Switch at the back of the Printer to reset the memory.
- Upgrade the Firmware ⇒ Page *9-13*.

Calibration Error: 3130

Problem Description: Firmware Error.

Corrective Action: Try the following:

- Power the Printer OFF and ON again using the Power Switch at the back of the Printer to reset the memory.
- Upgrade the Firmware ⇒ Page *9-13*.

Calibration Error: 3200

Problem Description: Error while scanning calibration pattern. It is also possible that when it calibrates the Line Sensor, the Carriage positions itself directly over one of the black arrows of the calibration pattern. If this happens, the Printer thinks it has black or colored media loaded and the calibration fails.

Corrective Action: Try the following:

- Check that the media used for the calibration is white.
- If the media used is too dark, try the calibration with white media. If the error persists, replace Lens Cover Assembly ⇒ Page *9-5*.
- If the Carriage positions itself directly over the black arrow, try loading the media a few millimeters to the right or left of the blue line on the Platen - this should be enough to prevent the error. Alternatively, paint the black arrows with white correction fluid or stick a white label on top of the arrows.
- Replace the Carriage Assembly ⇒ Page *8-46*.

Calibration Error: 4000 **(Service)**

NOTE **This code is not an error. See the other codes reported.**

Calibration Error: 4001 **(Service)** and 4002 **(Service)**

Problem Description: Firmware error.

Corrective Action: Try the following:

- Power the Printer OFF and ON again using the Power Switch at the back of the Printer and retry the calibration.
- Download the latest Firmware ⇒ Page *9-13*.

Calibration Error: 4003 **(Service)**

Problem Description: Line Detection Error.

Corrective Action: Try the following:

- Check that the Lens Cover is clean.
- Replace the Lens Cover Assembly ⇒ Page *9-5*.
- Download the Firmware ⇒ Page *9-13*.

Calibration Error: 4004 **(Service)**

Problem Description: Firmware Error.

Corrective Action: Use full Printer width media.

Try the following:

- Verify the Black Printhead status and perform Recovery ⇒ Page *6-15*.
- Replace Black Printhead.
- Download the Firmware ⇒ Page *9-13*.

Calibration Error: 4005 **(Service)**, 4006 **(Service)** and 4007 **(Service)**

Problem Description: Firmware error.

Corrective Action: Try the following:

- Power the Printer OFF and ON again using the Power Switch at the back of the Printer and retry the calibration.
- Download the latest Firmware ⇒ Page *9-13*.

Calibration Error: 5000 **(Service)**

NOTE **This code is not an error. See the other codes reported.**

Calibration Error: 5001 **(Service)**

Problem Description: Out of memory.

Corrective Action: Try the following:

- Reset the memory by Powering the Printer OFF and ON again using the Power Switch at the back of the Printer.

Calibration Error: 5002 **(Service)**

Problem Description: Black Printhead failure.

Corrective Action: Try the following:

- Perform Recovery for Black Printhead ⇒ Page *6-15*.
- Replace the Black Printhead.

Calibration Error: 5003 **(Service)**

Problem Description: Wrong media type or no media.

Corrective Action: Try the following:

- Make sure you load white medium that is the full width of the Printer.

Calibration Error: 5004 **(Service)**

Problem Description: Mechanical error.

Corrective Action: Try the following:

- Check the path and remove any obstructions e.g. media.
- Check all the cables of the Scan-Axis Motor and make sure they are correctly connected and are NOT damaged.
- Replace the Scan-Axis Motor ⇒ Page *8-57*.
- Replace the Carriage Assembly ⇒ Page *8-46*.
- If the Error Code continues, replace the Main PCA ⇒ Page *8-81*

Calibration Error: 5005 **(Service)**, 5006 **(Service)** and 5007 **(Service)**

Problem Description: Could not detect pattern.

Corrective Action: Try the following:

- Make sure you load white medium that is the full width of the Printer (the Printer may have problems calibrating with non-white media).
- Replace the Lens Cover Assembly ⇒ Page *9-5*.
- Replace the Carriage Assembly ⇒ Page *8-46*.

Calibration Error: 5010 **(Service)**

Problem Description: Too many Black Printhead nozzles not working.

Corrective Action: Try the following:

- Recover the Black Printhead (⇒ Page *6-15*) and if the problem persists replace the Black Printhead.

Calibration Error: 5011 **(Service)** and 5012 **(Service)**

Problem Description: Printhead Cleaner detection error.

Corrective Action: Try the following:

- Verify Printhead Cleaners are correct type.
- Replace the Lens Cover Assembly ⇒ Page *9-5*.
- Replace the Carriage Assembly ⇒ Page *8-46*.

Calibration Error: 5013 **(Service)**

Problem Description: Two scans of the pattern do not match each other.

Corrective Action: Try the following:

- Replace the Lens Cover Assembly ⇒ Page *9-5*.
- Replace the Carriage Assembly ⇒ Page *8-46*.

Calibration Error: 5014 **(Service)**

Problem Description: Could not detect Printhead Cleaner.

Corrective Action: Try the following:

- Insert a Printhead Cleaner.

Calibration Error: 5015 **(Service)**

Problem Description: Printhead Cleaner is not correct type.

Corrective Action: Try the following:

- Check that the Printhead Cleaner type matches the ink set installed (Dye or UV).

Calibration Error: 6000 **(Service)**

NOTE **This code is not an error. See the other codes reported.**

Calibration Error: 6001 **(Service)**

Problem Description: Drop Detector not working.

Corrective Action: Try the following:

- Turn the Printer OFF and ON and repeat the Service Station Calibration ⇒ Page *5-11*.
- Replace the Drop Detector Assembly ⇒ Page *8-72*.
- If the Error Code continues, replace the Main PCA ⇒ Page *8-81*.

Calibration Error: 6003 **(Service)**

Problem Description: Drop Detector did not calibrate for Black Printhead.

Corrective Action: Refer to Error Code 6001.

Calibration Error: 6004 **(Service)**

Problem Description: More than one Printhead not calibrated.

Corrective Action: Refer to Error Code 6001.

Calibration Error: 6005 **(Service)**

Problem Description Drop Detector did not detect Printhead nozzles spitting.

Corrective Action: Try the following:

- Check the path and remove any obstructions e.g. media.
- Check all the cables of the Scan-Axis Motor and make sure they are correctly connected and are NOT damaged.
- Replace the Scan-Axis Motor ⇒ Page *8-57*.
- Replace the Carriage Assembly ⇒ Page *8-46*.
- If the Error Code continues, replace the Main PCA ⇒ Page *8-81*

Calibration Error: 6006 **(Service)**

Problem Description: Drop Detector failed to reach position for calibration.

Corrective Action: Refer to Error Code 6005.

Calibration Error: 6007 **(Service)**

Problem Description: Drop Detector failed to uncap pens.

Corrective Action: Refer to Error Code 6005.

Calibration Error: 6008 **(Service)**

Problem Description: Calibration failed for Cyan Printhead.

Corrective Action: Try the following:

- Recover the Cyan Printhead ⇒ Page *6-15*.
- Replace the Cyan Printhead.

Calibration Error: 6009 **(Service)**

Problem Description: Calibration failed for Magenta Printhead.

Corrective Action: Try the following:

- Recover the Magenta Printhead ⇒ Page *6-15*.
- Replace the Magenta Printhead.

Calibration Error: 6010 **(Service)**

Problem Description: Calibration failed for Yellow Printhead.

Corrective Action: Try the following:

- Recover the Yellow Printhead ⇒ Page *6-15*.
- Replace the Yellow Printhead.

Calibration Error: 6011 **(Service)**

Problem Description: Calibration failed for Black Printhead.

Corrective Action:

- Recover the Black Printhead ⇒ Page *6-15*.
- Replace the Black Printhead.

Calibration Error: 6012 **(Service)**

Problem Description: Calibration failed for Light Cyan Printhead.

Corrective Action:
- Recover the Light Cyan Printhead ⇒ Page *6-15*.
- Replace the Light Cyan Printhead.

Calibration Error: 6013 **(Service)**

Problem Description: Calibration failed for Light Magenta Printhead.

Corrective Action:
- Recover the Light Magenta Printhead ⇒ Page *6-15*.
- Replace the Light Magenta Printhead.

Calibration Error: 6014 **(Service)**

Problem Description: Calibration position out of range for Cyan Printhead.

Corrective Action: Replace the Drop Detector Assembly ⇒ Page *8-72*.

Calibration Error: 6015 **(Service)**

Problem Description: Calibration position out of range for Magenta Printhead.

Corrective Action: Replace the Drop Detector Assembly ⇒ Page *8-72*.

Calibration Error: 6016 **(Service)**

Problem Description: Calibration position out of range for Yellow Printhead.

Corrective Action: Replace the Drop Detector Assembly ⇒ Page *8-72*.

Calibration Error: 6017 **(Service)**

Problem Description: Calibration position out of range for Black Printhead.

Corrective Action: Replace the Drop Detector Assembly ⇒ Page *8-72*.

Calibration Error: 6018 **(Service)**

Problem Description: Calibration position out of range for Light Cyan Printhead.

Corrective Action: Replace the Drop Detector Assembly ⇒ Page *8-72*.

Calibration Error: 6019 **(Service)**

Problem Description: Calibration position out of range for Light Magenta Printhead.

Corrective Action: Replace the Drop Detector Assembly ⇒ Page *8-72*.

Calibration Error: 7000 **(Service)**

NOTE **This code is not an error. See the other codes reported.**

Calibration Error: 7006 **(Service)**

Problem Description: Firmware error.

Corrective Action: Try the following:

- Power the Printer OFF and ON again using the Power Switch at the back of the Printer to reset the memory.

User Calibrations

The following is a list of internal User Calibrations available in the Printers.

1. Printhead Alignment ⇒ Page *5-43*
2. Close-Loop-Color Calibration ⇒ Page *5-43*
3. Banding Calibration ⇒ Page *5-44*
4. Accuracy Calibration ⇒ Page *5-45*

Printhead Alignment

The printer will normally perform an alignment automatically whenever any printhead is replaced. However, you can turn Off this automatic alignment by choosing the **printer icon**, then Internal RIP Setting > Align Calibration > Off.

You can also request a Printhead Alignment from the front panel at any time by choosing the **printer icon**, then Utilities > Calibrations > Printhead Alignment. In this case the printer will align the printheads immediately; or, if an image is being printed, as soon as the current print job is finished. The alignment procedure requires a minimum paper size of A1/D-size (24 inches).

You should also perform the Printhead Alignment if the Image Quality Print indicates an alignment error.

Close-Loop-Color (CLC) Calibration

CLC Calibration improves color consistency between prints, and from one printer to another. The printer calibrates the color by printing a "calibration strip" and then scanning the strip with a built-in optical sensor. The printer will then calculate the color correction required, which is then applied to all the subsequent prints.

CLC Calibration can be performed automatically or manually. To turn the automatic calibration On or Off, choose the **printer icon**, then Internal RIP Settings > Color Calibration.

ON - An Automatic calibration is performed whenever the current set of printheads and the current printing material have not previously been calibrated together.

OFF - The printer uses a default color correction, different for each printing material and print quality setting.

A CLC calibration can be started manually at any time: choose the **printer icon**, then Utilities > Calibrations > Color Calibration.

Banding Calibration

The banding calibration is intended to eliminate the problem of banding, by optimizing the media advance settings to suit the printing material, and the environmental conditions such as humidity and temperature.

It is available only for paper types with short drying times; all HP coated papers, plus HP Bright White InkJet paper, HP Productivity Photo Gloss, and HP Productivity Photo Semi-Gloss.

The Banding Calibration is most likely to be useful in the fastest print modes (Max Speed and Production).

To perform the Banding Calibration:

1. At the printer's front panel, choose the **printer icon**, then Utilities > Calibrations > Banding > Recalibrate. The printer will print the calibration print nice times using nine different media advance settings, in the print mode currently selected in the front panel. This takes about seven minutes, depending on the print mode and the printing material.
2. When prompted to select a print in the front panel, choose the print that shows the best image quality in your opinion; or select **Cancel** to cancel the calibration.

The Banding Calibration has now been completed for the selected printing material. Whenever the same printing material is used in the future, the media advance settings chosen will be used.

If required, the process can be repeated for another printing material.

If the Image Quality is worse after the Banding Calibration, the original settings can be returned: choose Utilities > Banding > Restore Factory.

Accuracy Calibration

The printer is calibrated at the factory to ensure that it operates with the greatest accuracy in normal environmental conditions. If the printer is operated under significantly different conditions, it should be recalibrated as explained here. The printer should also be recalibrated if non-HP printing material is being used or if Image Quality problems are being experienced for some other reason. Before recalibrating the printer, the Image Quality print should always be used to verify the appearance of any Image Quality problems caused by media advance problems.

NOTE **The Accuracy Calibration applies only to the media type currently selected in the front panel. Other media types will keep their original media advance settings.**

To perform the Accuracy Calibration:

1. At the printer's front panel, choose the **printer icon**, then Utilities > Calibrations > Accuracy > Recalibrate > Create Pattern.
2. Once the Accuracy Calibration print is completed, choose the **printer icon**, then Utilities > Calibrations > Accuracy > Recalibrate > Measure Pattern. Then reload the print back into the printer.

For more information and detail about the Accuracy Calibration, refer to the Accuracy calibration (for service) ⇒ Page *5-14*.