



HP DesignJet 430
HP DesignJet 450C
HP DesignJet 455CA
Printers

**Quick Reference
Service Manual**

ENGLISH

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

Troubleshooting

Always Use the Latest Firmware Revision.

Always check which firmware revision the printer is using and if necessary update it. To check the firmware revision, *Print the Service Configuration Plot*.

Perform a Service Test on the Failed Component/Assembly.

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

Perform the Accuracy Calibration.

Perform the accuracy calibration whenever the:

- EEROM is erased.
- Electronics module is replaced.
- Drive roller is removed/replaced.
- Media (X-axis) motor is removed/replaced.
- Drive-roller gear is removed/replaced.
- Cartridge carriage is replaced.
- Mark encoder is removed/replaced.
- Optical sensor is removed/replaced.

How to Solve Print-Quality Problems.

Whenever a Print-Quality problem appears, it is advisable to print the Print-Quality Plot to help diagnose the problem. The Print-Quality Print will help you differentiate between possible Cartridge errors and other problems such as incorrect front-panel selection, driver or RIP configuration or mechanical problems.

If Line Sensor has Problems Detecting Media.

Clean the drive-roller. Perform accuracy calibration. Replace the Carriage Assembly.

If the Carriage is Noisy.

Dirty Carriage bushings. Remove dust particles from the Carriage bushings and from the slider rod along which the Carriage moves. Apply lubricant to the slider rod. Make sure that the belt is correctly positioned on the Y-axis motor. Remove dust particles from the Back Beam and, if necessary, apply grease. Perform Carriage Axis Test.

If the Carriage Assembly has problems parking in the Service Station.

The trailing cable may be preventing the carriage from reaching the left-hand stop. Make sure that the trailing cable is positioned under the plastic tabs at the back of the carriage cover, and not above them. Check and, if necessary, adjust the Carriage height. The Belt is not correctly positioned over the idler pulley. Check for a faulty bail lever mechanism because the Carriage may have trouble passing over it.

What can I do if the Printer continuously rejects Cartridges?

If you are in Service Mode 1, the cover sensor is disabled. In order to test a new Cartridge set, the Printer must be powered OFF and ON again.

Remove tape and align cartridges. When nozzle failures occur, clean the flex contacts on the cartridge and in the Carriage. Remove all cartridges from the Carriage and try installing just the rejected cartridge. If the cartridge is still rejected then replace the cartridge with a new one. If the new cartridge is not rejected then check, one by one, if the other cartridges are rejected or not. Replace the black cartridge with one with USE BEFORE date of May '96 or later. Make sure that the springs that hold the Cartridges in the Carriage are not broken or misplaced. Perform Carriage Test. Replace Trailing Cable or Carriage Assembly.

What can I do if the Media continuously crashes?

Check if the media loaded is HP approved. If not, advise the customer to use HP media and check to see if the problem is now solved. If the anti-static brush (located under the entry platen) is damaged or removed, static charge can build up on the media. A charge can cause the media to stick to itself and jam the Printer. Check and if necessary adjust the carriage-to-media distance and try to load the media again. The Drive Roller is installed incorrectly. The overdrive wheels turn free in both directions, creating bubbles in the media. Make sure that the Clutch assembly is installed correctly and is not faulty. Make sure that all the starwheels on the bail assembly are correctly installed and turn properly. Make sure that all the Media deflectors are installed.

What can I do if the Printer does not Power ON?

Check that the power cord is connected correctly. Check that the ROM SIMM (firmware) is installed correctly in the correct slot (the slot furthest from you) at the back of the Printer. Try to disconnect all the cables, apart from the Front Panel Cable, from the Electronics Module and then try to power ON the Printer again. If nothing appears on the front-panel display, then replace the Electronics Module. If the Printer does Power On with the cables disconnected, then the problem must be with another component of the Printer. To find the faulty component, power OFF the Printer and connect one of the cables and power ON again. Once the faulty component is connected, it will not allow the Printer to power ON. This component should then be replaced.

What can I do if the Printer has problems with the Cutter?

If the Carriage Assembly has problems picking up the Cutter:

- Check that the cable for the Front-Panel Assembly is not loose and is routed correctly in the cover clips. A loose cable can be trapped by the Cutter, preventing the Cutter from moving.
- Make sure that the Spittoon Assembly is correctly installed and is aligned with the Overdrive Assembly. If the Spittoon is loose or mispositioned, the cutter will have problems parking in the right cover.

If the media crashes when moving the Cutter:

- Make sure that there is no media trapped inside the Cutter mechanism. Remove the Cutter to inspect it correctly.
- Remove the Cutter and make sure that both rotary blades are touching each other by the flat sides and not the sloping sides. If the rotary blades are touching each other by the sloping sides, you must reseal them.
- The Printer must be placed as close to the edge as possible to make sure that the media that is coming out falls correctly, or else the cutter will crash into it.

What can I do if the Cover Sensor isn't Working?

Before troubleshooting, make sure that you are **not** in Service Mode 1 because the Cover sensor is disabled and Printer will think that the cover is always closed. Power OFF the Printer and switch it back ON again and check if the Cover sensor works. Check if the cable for front-panel assembly is connected correctly to the electronics module. Replace the front-panel assembly.

What can I do if the Printer has problems with Media Loading?

Check that the Media Sensor is installed correctly. Check if the cable for Media Sensor is connected correctly. Check if the Pincharms are down (the Pincharm lever should be **up**). Make sure that the Line Sensor is installed correctly. If necessary, perform the Carriage Test. Perform the Accuracy Calibration. Replace the Media Sensor (part of the overdrive assembly). Replace the Carriage Assembly.

What can I do if the Bail Mechanism Fails?

Check that there are no obstructions in the way of the Bail Assembly. The cam gear and engaging gear may not make correct contact with the left drive-roller gear even though the carriage is actuating the engaging lever. This can happen due to excessive wearing of parts. Another problem may be that the bail cable has broken. The carriage may not properly locate the engagement lever, preventing the gears from engaging. Any problems with the carriage-motor control system (for example, the encoder strip) or associated mechanics could cause this problem. Also, if the carriage cannot find the true left stop during initialization (caused by interference), the engaging lever cannot be located. The bail may fall from the up position. This can happen if the cam is over or under-rotated. The notch on the cam, used to engage the left bail bracket, is not properly located for the "bail up" condition, and the bail falls abruptly. Perform a bail cycle test. If the carriage moves over the engaging lever without raising it, you may need to adjust the carriage angle on the slider rod. However, be careful not to jeopardize the print quality, which is very sensitive to the carriage angle.

System Error Codes

WARNING: *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.*

System Error: Steady KLM - An error which the customer could probably solve, like a paper jam, minor cartridge problem etc. In order to get more information on the error, the **CANCEL** key must be pressed which will display a **Subcode**. Use the error codes below to find information on the subcode.

System Error: Flashing KLM - This error code indicates a severe problem which will require a Service Engineer to troubleshoot. In order to get more information on the error, the **CANCEL** key must be pressed which will display a **Subcode**. Use the error codes below to find information on the subcode.

System Error: Steady DK - RAM SIMM installed is not an original HP supported part. RAM SIMM badly connected. Faulty RAM SIMM. Faulty electronics module.

System Error: Steady DL - Cartridges faulty or badly seated. Faulty or badly connected trailing cable. Dirty carriage flex circuit. Faulty carriage. Faulty electronics module.

System Error: Steady DM - Obstacle or friction in X-axis. Faulty or badly connected X-axis Encoder Cable. Faulty media motor, or motor cable pinched. Faulty electronics module.

System Error: Steady DEFK - Not enough memory for current plot. Add extra memory. If this error code appeared while performing the Accuracy Calibration: Check that the quality of the Accuracy Calibration print is good. If the quality is bad, try to clean the black cartridge or replace it. Make sure that you load the Accuracy Calibration print in the correct position and orientation, and make sure that you select the correct media type. Make sure that the line sensor on the carriage is clean. Faulty Trailing Cable. Faulty Carriage Assembly. Faulty Electronics Module.

System Error: Steady DFK - Check the Bail Assembly. Check the Capping Position in the Service Station.

System Error: Steady DEFM - Check the bail-lift system to see if it is working correctly. Use the bail cycle test to help troubleshoot.

System Error: Steady DLM - Is X-axis calibration done? Did you load media in correct orientation? Are the marks visible on the plot? If not, check cartridges. Are cartridges correctly aligned? If so, the problem may be in the electronics module, media motor or drive-roller gear; if alignment is incorrect, the problem may be in the carriage.

System Error: Steady FL - The Printer is using an old Firmware revision - Install the latest firmware revision.

System Error: Steady DEFL - Report the problem to your HP Response Center. Note conditions and actions before error occurred. Include setup sheet and service configuration plot in report.

System Error: Steady DEL - Incorrect configuration in communications speed/protocol. Incorrect communications cable. Error in host computer.

System Error: Steady DFL - Replace the Electronics Module.

System Error: Steady DKL - The line on the mark encoder is dirty or missing. Faulty or badly connected trailing cable. Faulty or badly connected carriage sensor. Faulty or badly connected X-axis Encoder Cable. The drive roller has shifted slightly from the expected position (mechanics). Check that the carriage sensor lights just over the white mark on the drive roller when starting. Faulty carriage PCA. Faulty X-motor. Faulty Y-motor. Faulty electronics module.

System Error: Steady EFL - Problems in the Centronics Communications. Probably due to the bad contacts of the connector.

System Error: Steady FKL - Carriage assembly is not present. Faulty or badly connected trailing cable. Faulty carriage PCA. Faulty electronics module.

System Error: Steady EKL - After replacing a new electronics module, it must be configured either as a DesignJet 430, 450C or 455CA. If a new module does not show this error, it means that it has been installed previously and was probably calibrated with other parameters. After configuring the module, Error code **Steady DLM** will appear which means the accuracy calibration must be done. After the accuracy calibration is done, all other calibrations must be done. If configuring the module does not remove the error, even after switching the Printer OFF and ON, then the EEROM in the main PCA is probably defective. Before trying to replace the electronics module try clearing the EEROM and perform all the calibrations again and see if that solves the problem.

System Error: Steady EK - Switch the Printer OFF and ON again and see if the error remains. If the error appears continuously, replace the Electronics Module. The Calibrations in the EEROM have been lost. Perform the Accuracy Calibration.

System Error: Steady FK - Fan faulty or badly connected. Faulty ROM SIMM. Faulty RAM SIMM. Faulty Electronics Module.

System Error: Steady EM - Problems with the Cutter Assembly. Clear any binding due to a media jam. Turn the Printer off. Manually move the carriage along the carriage axis. Check for any areas where the carriage may be binding. Ensure that the belt and belt pulley are in correct working order. Remove dirt from the pulley that could cause the belt to slip. Perform the carriage-axis test and the servo/encoder test to check for problems with the carriage motor, encoder strip, and electronics module. Remove dirt from the slider rod and chassis beam. Apply oil (Anderol 4068, HP part number: 6040-0858) to the carriage bushings. At high temperatures, and if the fan is not working correctly, the internal resistance of the motor driver may increase, causing a decrease in the voltage between the motor contacts, and a shutdown of the motor. Ensure that the encoder strip is not inverted, damaged or absent. Reconnect or replace the trailing cable. Replace the carriage assembly.

System Error: Steady DEM - Something is causing excessive friction in the Y-axis (carriage axis). The carriage touches the bail as it moves.

System Error: Steady DFM - Incorrect routing of the motor cables. Electrical noise in motors. Faulty motor encoder. Motor received an electrostatic discharge while operating.

System Error: Steady EFM - Damaged or broken encoder strip. Faulty or badly connected trailing cable. Incorrect routing of the motor cables. Electrical noise in motors. Faulty motor encoder. Trailing Cable received an electrostatic discharge while the Printer was operating. Replace the Trailing Cable.

System Error: Steady EL - Faulty Cartridges. Dirty or incorrect media. Faulty Line Sensor. Faulty Carriage Assembly. Faulty Electronics Module.

Service Tests

Entering Service Mode 1

While holding the **Reprint** key down, switch the Printer ON. Once the the LEDs begin to light up one by one, release the **Reprint** key.

Entering Service Mode 2

While holding the **Media Source** key down, switch the printer ON. Once the the LEDs begin to light up one by one, release the **Media Source** key.

Stopping a Test

The service tests are continuously repeated in Service Mode 1 until you press the **Cancel and Media Source** keys. To stop a test in Service Mode 2, press any of the front-panel keys. To exit any Service Mode, you must power OFF the Printer.

Front Panel Test

Purpose - Verify the operation of the front-panel keys and LEDs.

In service mode **1**, press **Front Panel Test** (Form Feed Key).

Check that all LEDs are functioning correctly when they flash.

Each time a key is pressed, the Coated LED (**LED I**) will be lit.

If a key fails, the Coated LED (**LED I**) will remain OFF.

If the test fails: Check that the cable for the Front Panel Assembly is connected to the Electronics Module. Also make sure that the cable is NOT damaged or twisted. Replace the Front Panel Assembly. Replace the Electronics Module.

Carriage Axis (Y-axis) Test

Purpose - Verify the operation of the components of the Carriage Axis.

Always make sure that the carriage is parked in the service station before starting this test.

In service mode **1**, press **Carriage-Axis Test** (Reprint Key).

If the test passes, the Fast LED (**LED A**) will light up after the first cycle.

If there is a Y-axis shutdown, the Fast LED (**LED A**) will start to flash.

If the test fails: Clear any binding due to a media jam. Turn the Printer off and manually move the carriage along the carriage axis. Check for any areas where the carriage may be binding. Ensure that the belt and belt pulley are in correct working order. Remove dirt from the pulley that could cause the belt to slip. Remove dirt from the slider rod and chassis beam. Apply oil (Anderol 4068, HP part number: 6040-0858) to the carriage bushings. At high temperatures, and if the fan is not working correctly, the internal resistance of the motor driver may increase, causing a decrease in the voltage between the motor contacts, and a shutdown of the motor. Ensure that the encoder strip is not inverted, damaged or absent. Reconnect or replace the trailing cable. Replace the carriage assembly.

Carriage Test

Purpose - Verify the operation of the Carriage subsystems, like the Line Sensor and analog multiplexer and also checks the connection between the carriage flex circuit and the cartridges.

In service mode **1**, press **Carriage Test** (Print Quality Key).

Refer to the following list to check which LED is associated with which test. If the test **passes**, the following LEDs will be lit (**ON**). If the test **fails**, the following LEDs will be flashing:

Cartridge LED - Black Cartridge Continuity.

Film LED - Magenta Cartridge Continuity.

Coated LED - Cyan Cartridge Continuity.

Glossy LED - Yellow Cartridge Continuity.

Align Media LED - Analog Multiplexer.

Fast LED - Line Sensor.

Cartridge Continuity Test Failure

If any cartridge Continuity test fails: Remove the failing Cartridge and clean the flex contacts on the Carriage and the Cartridge. Reseat the Cartridge and try the test again. Replace the Cartridge of the relevant failing color and perform this test again. Check and if necessary replace the Trailing Cable. Replace the Carriage Assembly. Replace the Electronics Module.

Line Sensor Test Failure

If the Line Sensor test fails: Performing the accuracy calibration. Check and if necessary replace the Trailing Cable. Replace the Carriage Assembly. Replace the Electronics Module.

Analog Multiplexer Test Failure

If the Analog Multiplexer test fails: Check and if necessary replace the Trailing Cable. Replace the Carriage Assembly. Replace the Electronics Module.

Sensors Test

Purpose – Checks the operation of the cover sensor, pincharm sensor and media sensor.

In service mode **1**, press **Sensors Test** (Media Type Key).

Activate the necessary sensor and check that the relevant LED status changes (ON/OFF). Refer to the following list to check which LED is associated with which sensor:

Media LED - Media Sensor.

Sheet LED - Pinchwheel Sensor.

Film LED - Cover Sensor.

If the cover sensor fails, check that the front-panel assembly is correctly connected to the electronics module or else replace the front-panel assembly. If the Pincharm sensor fails, check that the sensor cable is correctly connected to the electronics module or else replace the pincharm sensor. If the Media sensor fails, check that the sensor cable is correctly connected to the electronics module or else replace the overdrive assembly (the media sensor is included as part of the overdrive assembly). As a last resort replace the Electronics Module.

Media-Axis (X-Axis) Test

Purpose - Verify the operation of the components of the Media Axis.

In service mode **1**, press **Media-Axis Test** (Media Load Button).

If the test passes, the Glossy LED (**LED J**) will light up after the first cycle.

If there is a shutdown, the Glossy LED (**LED J**) will start to flash after the first cycle.

If the test fails: Switch OFF the Printer and manually moving the carriage along the slider rod, check for obstacle or friction in the X-axis. Check for a faulty or badly connected X-axis Encoder Cable. Replace media motor. Replace electronics module.

Bench Run

THIS TEST HAS BEEN DESIGNED TO BE USED DURING THE MANUFACTURING STAGE AND NOT IN THE FIELD. DO NOT AT ANYTIME ENTER THIS TEST WHEN TROUBLESHOOTING THE PRINTER.

The way to enter into **Bench Run** is to press the **Media Source** and **Form Feed** keys in Service Mode **1**. If these keys are accidentally pressed, **you must immediately EXIT the Bench Run by switching OFF the Printer and powering ON again while pressing the Print Quality and Media Source keys.**

Modular Test

This test has been created to check the interaction between various components of the Printer. It combines the Carriage-axis, Carriage, Media-axis, front-panel and sensors tests:

Always make sure that the carriage is parked in the service station before starting this test.

In service mode **1**, press **Modular Test** (Media Source Key).

The printer first performs the Front-panel Test and once it is fully completed (once all the keys are pressed) then continues with the rest of the above tests in parallel.

Refer to the following list to check which LED is associated with which test. If the test **passes**, the following LEDs will be lit (**ON**). If the test **fails**, the following LEDs will be flashing:

Cartridge LED - Cartridge Continuity (all).

Align Media LED - Analog Multiplexer.

Fast LED - Carriage-axis.

Best LED - Line Sensor.

Media LED - Media Sensor.

Sheet LED - Pinchwheel Sensor.

Film LED - Cover Sensor.

Coated LED - Front-Panel Sensor.

Glossy LED - X-axis .

*The result of the Encoder sensor test is only reported via the serial output and not via the front-panel. To perform the encoder sensor test, move the carriage **slightly** so that the encoder sensor can detect the change in status. If the carriage is not moved at all, the Encoder Sensor test will always fail. If the carriage is moved and **ONLY** the Encoder Sensor test fails, then you need to replace the Carriage Assembly.*

If any of the tests fail, refer to the individual test documented in this chapter.

Electronics Test

Purpose - Verify the operation of the FIBIS Column address and the shuffler.

In service mode **1**, press **Electronics Test** (Media Source and Reprint Keys).

If the test passes, the Sheet LED (**LED O**) will light up.

If the test fails, the Sheet LED (**LED O**) will start to flash.

If the test fails, replace the Electronics Module.

Bail Test

Purpose - Tests the operation of the bail system, Service Station and the Y-axis by engaging and disengaging the bail-lift mechanism and capping/uncapping the cartridges.

In service mode **2**, press **Bail Test** (Setup Key).

If the Printer does not raise the Bail Assembly then the test has failed.

If the bail fails the test, replace the Bail-lift mechanism.

Electrical Test

This tests the operation of some of the electrical components of the electronics module.

In service mode **2**, press **Electrical Test** (Form Feed Key).

If the test fails, an error code will appear on the front-panel. Refer to System Error Codes section in order to correctly troubleshoot the failure.

Servo/Encoder Test

The servo/encoder test performs the Media-axis and Carriage-axis encoder test and also records the maximum friction detected in the EEROM, which can viewed on the service configuration plot.

In service mode **2**, press **Servo/Encoder Test** (Media Type Key).

To view the results of the test, you must print the Service Configuration Plot (Print Quality and Media Type keys).

If the test fails, an error code will appear on the front-panel. Refer to System Error Codes section in order to correctly troubleshoot the failure.

Service Monitor (Data Display)

The service monitor is useful to find out why the Printer is not plotting what you expect it to plot. Instead of plotting the drawing that you send, the Printer prints the beginning and end of the code that would otherwise have been used to plot the drawing.

In service mode **2**, load a sheet of media (A3 size or B size minimum) in portrait orientation and press **Service Monitor** (Media Type and Media Source Keys).

Send the file from the computer through the serial or parallel ports (**Ready LED** flashes).

Wait until the **computer** has indicated that it has sent the file (**Ready LED** continues to flash).

While the **Ready LED** is flashing, press **Service Monitor** (Media Type and Media Source Keys) again.

EEROM Model ID Configuration Procedure

The EEROM model ID configuration procedure only needs to be carried out if:

- A pre-configured board is being reused.
- The current board is incorrectly configured to the wrong model ID.
- The Printer shows an unconfigured model ID system error (**Steady EKL**).

- 1 Remove the right-end cover.
- 2 Disconnect the media motor encoder cable from the main PCA (connector ENC X).
- 3 Turn the Printer ON while holding the **Reprint** key down.
- 4 Press the **Media Source** and **Media Type** keys together to enter the **deconfiguration mode**. The Fast, Normal and Best LEDs (**LEDs ABC**) will light up.
- 5 Using a suitable tool, short-circuit pins 1 and 2 (the first two pins on the right) of the media motor encoder connector (ENC X). The Cartridges, Data and Media LEDs (**LEDs KLM**) should light up as you short-circuit the two pins.
- 6 Once you have short-circuited the two pins, the Fast, Normal and Best LEDs (**LEDs ABC**) should light up again.
- 7 Press the **Cancel** and **Media Source** keys together to exit the **deconfiguration mode**.
- 8 Configure the Printer with the correct model ID as follows:

Only one opportunity is given to perform this procedure and there is no indication that it was successful.

If the Printer is to be configured as a DesignJet 450C (Color) Printer, hold the **Media Source** key down and press the two **Color Configuration (Print Quality + Media Type)** keys at the same time.

If the Printer is to be configured as a DesignJet 430 (Monochrome)Printer, hold the **Media Source** key down and press the two **Mono Configuration (Print Quality + Setup)** keys at the same time.

If the Printer is to be configured as a DesignJet 455CA (LFP) Printer, hold the **Media Source** key down and press the two **LFP Configuration (Print Quality + Reprint)** keys at the same time.

- 9 Turn the Printer OFF.
- 10 Reconnect the media motor encoder cable to the main PCA (connector ENC X).
- 11 Turn the Printer ON. After initializing, error code “DLM” will appear because the Accuracy Calibration must still be performed.
- 12 Press the **Cancel** key and print the Demo Plot to check if the Printer has been correctly configured as a DesignJet 430, 450C or 455CA.

If the Printer is still incorrectly configured then Error Code “EKL” will be displayed on the front panel. Turn the Printer OFF and perform the EEROM Model ID configuration procedure again from step 2.

- 13 Perform the accuracy calibration.

Printing the Service Configuration Plot

- 1 In service mode **2**, load a sheet in portrait orientation.
 - 2 When the **Ready** LED lights up, press the **Print Quality and Media Type** keys.
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Clearing the EEROM

CAUTION

If you clear the calibration parameters, you will then need to perform the Printer calibrations. Clearing the EEROM also resets the factory spittoon value to 0% used. Keep in mind that the value printed on the service configuration plot may greatly underestimate the amount of ink in the spittoon.

Clearing Just the Benchrun and Calibration Parameters

- 1 Switch the Printer OFF.
- 2 While holding down the **Form Feed, Cancel** and **Media Type** keys down, switch the Printer ON.
- 3 Once the the LEDs begin to light up one by one, release the keys.

Clearing Just the User-Defined Setup Parameters

- 1 Switch the Printer OFF.
- 2 While holding down the **Reprint, Cancel, Media Type** and **Media Source** keys down, switch the Printer ON.
- 3 Once the the LEDs begin to light up one by one, release the keys.

Clearing All Parameters

- 1 Switch the Printer OFF.
 - 2 While holding down the **Setup, Form Feed, Reprint, Print Quality** and **Media Type** keys down, switch the Printer ON.
 - 3 Once the the LEDs begin to light up one by one, release the keys
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Calibrations

Performing the Accuracy Calibration

- 1 Place a sheet of HP Matte Film over the top of the Printer for 10 minutes to let the sheet stabilize to the environmental conditions.

Use a sheet of approximate size A1 or D.

You must use HP Matte Film. *Otherwise the optical sensor on the carriage will be calibrated incorrectly, and the Printer will have problems loading some types of media.*

- 2 Enter into **Service Mode 2**, by powering ON the Printer while holding down the **Media Source** key.
- 3 Set the **Media Type** on the front panel to **Coated Paper**.

4 Load the film, with the matte (dull) side down, in portrait orientation into the Printer.

5 When the **Ready** LED lights up, press **Reprint** key.

*The **Ready** LED begins to flash and the Printer takes several minutes to plot the calibration plot. The Printer ejects the sheet, and the **Load Media** LED lights up.*

6 Unload the sheet.

7 Wait until the ink on the sheet is dry.

8 Cut the sheet along the dotted line and reload the sheet **facedown** into the Printer, in the direction indicated by the arrows on the calibration plot.

*The **Ready** LED begins to flash. The Printer takes less than 10 minutes to: read the calibration sheet; calculate the calibration data; save the data in the **EEROM**; and eject the sheet.*

9 Unload the sheet.