4

Service Tests

Introduction

This chapter explains how to use the built-in Service Tests (Diagnostics) and what to do if the tests fail. 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 the Printer is switched on, it automatically performs a series of internal self tests and mechanical initialization sequences. If the Printer is switched ON in Service Mode, the front-panel display will show a code next to the message “Initializing”. These codes refer to the part which the printer is testing at that moment. If any of these parts fail, a system error will appear and you should consult the System Error Codes ➧ Chapter 2.

Code	Parts Tested	System Error if failed
b	Sensors and X-Encoder Fuse	010023
c	Interconnect Boards detection	010030
d	ADC in the Main PCA	010036
e	Fans	010032
f	DC Motor Driver ASIC	010033
g	DC Motors detection	010034
h	Stepper Motors detection	010035
i	ADC in the Carriage PCA	010037
j	Printhead Voltage in Main PCA	010038
k	Printhead Voltage in Carriage PCA	010039
l	Printhead Primitive Driver ASIC	010031
A	RAM SIMM	010021
B	Flash SIMM	010020
C	Swath RAM	010022
I	Hard Disk Drive	08xxxx

Service Tests (Diagnostics)

The following is a list of all internal service tests available in the Printers. Instructions for entering the service tests menu are given on page 4-5.

WARNING

ALL THE COVER SENSORS ARE DISABLED WHEN IN THE DIAGNOSTICS 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.

1 Electronics ➧ page 4-6

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

- Electronics Module.
- Line Sensor (only presence).
- Trailing Cable.
- Carriage Assembly.

2 Line Sensor ➧ page 4-9

The purpose of this test is to verify the operation of the Line Sensor which is installed on the carriage assembly.

3 Carriage Axis ➧ page 4-11

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

4 Media Axis ➧ page 4-13

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

5 Service Station ➧ page 4-15

The purpose of this test is to verify the operation of the Service Station, which also includes the Primer Assembly.

6 Refill ➧ page 4-16

The purpose of this test is to verify the operation of the Refill Assembly and the Elevator Assembly.

7 Front Panel ➧ page 4-17

The purpose of this test is to verify the operation of the front-panel keys and the LEDs.

8 Sensors ➧ page 4-18

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

- Window Sensor.
- Right Door Sensor.
- Left Door Sensor.
- Refill Valve Sensors.
- Standby Button Sensor.
- Media Sensor.
- Pincharm Sensor.

9 MIO Presence ➧ page 4-21

The purpose of this test is to verify the presence of the MIO Card and the communication between the MIO Card and Main PCA.

10 Cutter ➧ page 4-22

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

11 Bail ➧ page 4-23

The purpose of this test is to verify the operation of the bail stepper motor.

12 Image Quality ➧ page 4-24

The purpose of this test is to verify the image quality attributes of the printer.

13 Printhead ID ➧ page 4-26

The purpose of this test is to check the printhead ID.

14 Printhead Continuity ➧ page 4-27

The purpose of this test is to display the primitives and address maps of the printheads.

15 Clean Roller ➧ page 4-28

The purpose of this test is to enable you to rotate the Drive Roller when it requires cleaning.

16 Erase EEROM ➧ page 4-29

The purpose of this test is to clear the EEROM.

17 Reset Counters ➧ page 4-30

The purpose of this test is to reset the internal counters.

18 Not Applicable

19 Hard Disk Drive Revision ➧ page 4-31

The purpose of this test is to show the revision of the internal Hard Disk Drive.

Entering the Service Tests (Diagnostics) Menu System

1. Make sure the printer is switched OFF from the power switch on the back of the printer and **not** from the standby button on the front of the printer.
2. Hold the UP and ENTER keys down and switch the printer **O**N. Wait until the message "Status/Initializing" is displayed on the front-panel before releasing the UP and ENTER keys.

   The reason for entering the Service Tests by powering ON is because various tests are performed during the initialization of the printer and also certain System Errors will cause an abnormal start up and will never reach the "Status/Ready" message on the front-panel.
3. Once the message "Status/Ready" is displayed on the front-panel, press the **Enter** key.
4. Use the **Arrow** keys to scroll to the "Utilities" menu display and press the **Enter** button. Make sure that you are in the Full menu mode because otherwise you will not be able to access the "Service Tests" submenu.
5. Use the **Arrow** keys to scroll to the "Service Tests" menu display and press the **Enter** button.
6. Use the **Arrow** keys to scroll to the "Diagnostics" menu display and press the **Enter** button.
7. Use the **Arrow** buttons to scroll through the test selections.
8. Press the **Enter** button to begin a specific test when the required test is displayed.

   If the printer is not used for 5 minutes, the printer exits out of the Service Mode and you must repeat the above steps to enter the service mode again.

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

   If the Printer hangs up during a test, switch the Printer OFF and restart from step 2.

Once you are inside the Diagnostics submenu, the front-panel keys can be used in the following way:

- **Up Arrow** - Go to the next test.
- **Down Arrow** - Go to the previous test.
- **Previous** - Exit the current test.
- **Enter** - Perform the current test.

D01. Electronics

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

- Electronics Module.
- Hard Disk.
- Line Sensor (only presence).
- Trailing Cable.
- Carriage Assembly.

This test does not test the MIO Card. For testing the MIO Card, refer to the MIO Presence test ➧ *page 4-21*.

IF POSSIBLE ALWAYS PERFORM THIS TEST BEFORE REPLACING THE ELECTRONICS MODULE, TRAILING CABLE, HARD DISK OR THE CARRIAGE ASSEMBLY. IF THIS TEST PASSES, DO NOT REPLACE THE ELECTRONICS MODULE, TRAILING CABLE, LINE SENSOR OR THE CARRIAGE ASSEMBLY.

Perform the Electronics test as follows:

1 In the Diagnostics submenu, scroll to "D01 Electronics" and press **Enter**.

2 The test will start and a row of "***" will be displayed on the front-panel.

3 After a short while the message "Access Printheads / Continue" will be displayed on the front-panel. Open the window and reseat all the Printheads. Press the **Down Arrow** when you have reseated the Printheads.

4 The test will continue and a row of "***" will be displayed on the front-panel.

5 If the test passes, the "D0100 OK" message is displayed on the front-panel.

IF THIS TEST PASSES, DO NOT REPLACE THE ELECTRONICS MODULE, TRAILING CABLE, HARD DISK OR THE CARRIAGE.

6 If the test fails, an error message will be displayed on the front-panel. The error messages are split into different areas depending on which component failed.

The test is continued on the next page.

Electronics Failure

If there is a problem with the components within the Electronics module then the following messages will appear.

- "D0101 Fail" - The Swath RAM has failed.
- "D0102 Fail" - The Writing System and Printhead control ASIC rotator failed.
- "D0103 Fail" - The EEROM is corrupted.

In these cases, *Replace the Electronics Module* ➧ *page 8-6.*

Hard Disk Failure

If there is a problem with the Hard Disk then the following message will appear.

- "D0104 Fail" - The Hard Disk has failed.

In this case, try one of the following:

1. *If the Error Code appears again then check that the Hard Disk data cable is correctly connected at both ends. Also check that the Hard Disk Power Cable is correctly connected.*
2. *Replace the Hard Disk data cable* ➧ *page 8-12.*
3. *If the Error Code continues to appear, then replace the Hard Disk* ➧ *page 8-12.*

Line Sensor Failure

If there is a problem with the Line Sensor then the following message will appear.

- "D0105 Fail" - The Line Sensor presence test failed.

In this case, try one of the following:

1. *Check if the Line Sensor is installed and connected correctly.*
2. *Check and if necessary replace the Trailing Cable* ➧ *page 8-36.*
3. *Replace the Carriage Assembly* ➧ *page 8-42.*

Only replace one component at a time and perform the test again before replacing another component. Using this procedure you will be able to determine exactly which component failed.

The test is continued on the next page.

Carriage Failure

If there is a problem with the components within the Carriage Assembly then the following message will appear.

- "D0106 Fail" - The problem could be related to several areas.

In this case, try one of the following:

1. *Remove the Printheads and clean the flex contacts on the Carriage and the Printheads. Reseat the Printheads and try the test again.*
2. *Perform the Printhead Continuity test ➧ page 4-27 to see if any of the Printheads are having a continuity problem. If any of the Printheads are having a continuity problem, replace the complete Ink Delivery System of that color.*
3. *Replace the complete Ink Delivery System of each color one by one, performing this test each time.*
4. *Check and if necessary replace the Trailing Cable ➧ page 8-36.*
5. *Replace the Carriage Assembly ➧ page 8-42.*

D02. Line Sensor

The purpose of this test is to verify the operation of the Line Sensor which is installed on the carriage assembly.

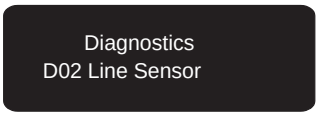
IF POSSIBLE ALWAYS PERFORM THIS TEST BEFORE REPLACING THE LINE SENSOR. IF THIS TEST PASSES, DO NOT REPLACE THE LINE SENSOR.

Perform the Line Sensor test as follows:

Load GLOSSY or COATED media before performing this test.

REPLACE THE LENS COVER BEFORE YOU PERFORM THIS TEST IN ORDER TO PREVENT ANY AEROSOL PROBLEMS.

1 In the Diagnostics submenu, scroll to "D02 Line Sensor" and press **Enter**.



2 If media is not loaded the test will stop and the message "Load Media" will be displayed on the front-panel. Load media in order to continue the test.

3 The message "Move Carriage" will be displayed on the front-panel. Use the following keys to move the carriage left and right over the loaded media.

- **Cancel** - Move the carriage to the left.
- **Form Feed and Cut** - Move the carriage to the right.

4 Make sure that the window is closed and then press **Enter** when the line sensor of the carriage is placed over the media.

5 While the test is being performed, a row of "***" will be displayed on the front-panel.

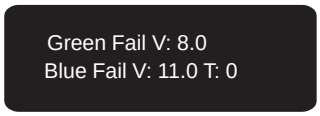
6 If the test passes, a message similar to the following is displayed on the front-panel.

IF THIS TEST PASSES, DO NOT REPLACE THE LINE SENSOR.

7 Press **Previous** when you have completed the test. The "D0200 Done" message is displayed on the front-panel if the test exits correctly.

The test is continued on the next page.

8 If the test fails, a message similar to the following is displayed on the front-panel.



Refer to the following table in order to know the limits for value **V** (Saturated Input Voltage) for the Green and Blue LEDs**:**

LED	**V**	
	Minimum	**Maximum**
Green	7	10
Blue	7	12

If the test fails to resolve the problem, try one of the following:

1. *The lens cover, which is installed on the line sensor, is dirty. Replace the lens cover ➧ Users Guide, Chapter 10 (Lens Maintenance).*
2. *Make sure that the Mark Encoder on the Drive Roller is clean.*
3. *Perform the Electronics test ➧ page 4-6.*
4. *Check if the Media used is suitable for the printer.*
5. *Check if the Line Sensor is installed and connected correctly.*
6. *If the problem continues, replace the Carriage Assembly ➧ page 8-42.*

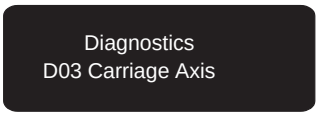
D03. Carriage Axis (Y-axis)

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

IF POSSIBLE ALWAYS PERFORM THIS TEST BEFORE REPLACING THE Y-AXIS MOTOR OR THE ENCODER STRIP. IF THIS TEST PASSES, DO NOT REPLACE THE Y-AXIS MOTOR ASSEMBLY OR THE ENCODER STRIP.

Perform the Carriage Axis test as follows:

1 In the Diagnostics submenu, scroll to "D03 Carriage Axis" and press **Enter**.



2 While the test is being performed, a row of "***" will be displayed on the front-panel.

3 If the test passes, the "D0300 OK" message is displayed on the front-panel.

IF THIS TEST PASSES, DO NOT REPLACE THE Y-AXIS MOTOR ASSEMBLY OR THE ENCODER STRIP.

4 If the test fails, an error message will be displayed on the front-panel. The error messages are split into different areas depending on which component failed.

Y-axis Failure

If there is a problem with the components of the Y-axis then the following messages will appear:

- "D0301 Fail" - The Static test has failed
- "D0302 Fail" - The PWM test has failed (PWM too low)
- "D0303 Fail" - The PWM test has failed (PWM too high)

In these cases, try one of the following:

1 *Apply lubricant on the slider rods.*

2 *Replace the Encoder Strip* ➧ *page 8-32.*

3 *Replace the Y-axis Motor Assembly* ➧ *page 8-45.*

Only replace one component at a time and perform the test again before replacing another component. Using this procedure you will be able to determine exactly which component failed.

The test is continued on the next page.

Encoder Strip Failure

If there is a problem with the Encoder Strip then the following message will appear:

- “D0304 Fail” - The Encoder Strip has failed.

In this case, *Replace the encoder strip* ➧ *page 8-32*.

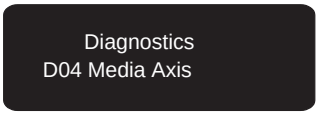
D04. Media Axis (X-axis)

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

IF POSSIBLE ALWAYS PERFORM THIS TEST BEFORE REPLACING THE X-AXIS MOTOR. IF THIS TEST PASSES, DO NOT REPLACE THE X-AXIS ASSEMBLY.

Perform the Media Axis test as follows:

1 In the Diagnostics submenu, scroll to "D04 Media Axis" and press **Enter**.



2 While the test is being performed, a row of "***" will be displayed on the front-panel.

3 If the test passes, the "D0400 OK" message is displayed on the front-panel.

IF THIS TEST PASSES, DO NOT REPLACE THE X-AXIS ASSEMBLY.

4 If the test fails, an error message will be displayed on the front-panel. The error messages are split into different areas depending on which component failed.

X-axis Failure

If there is a problem with the components of the X-axis then the following messages will appear:

- "D0401 Fail" - The Accuracy test has failed.
- "D0402 Fail" - The PWM test has failed (PWM too low).
- "D0403 Fail" - The PWM test has failed (PWM too high).

In these cases, *Replace the X-axis Assembly ➧ page 8-66.*

Mark Encoder Failure

If there is a problem with the Mark Encoder then the following message will appear:

- "D0404 Fail" - Problem finding the Mark Encoder.

The test is continued on the next page.

In this case, try one of the following:

1. *Clean the Mark Encoder if necessary.*
2. *Make sure the Line Sensor is installed correctly.*
3. *Perform the Service Accuracy Calibration ➧ Page 5-16.*
4. *Replace the lens cover which is installed on the line sensor.*
5. *Replace the Trailing Cable ➧ Page 8-36.*
6. *Replace the Carriage Assembly ➧ Page 8-42.*
7. *Replace the Electronics Module ➧ page 8-6.*

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.

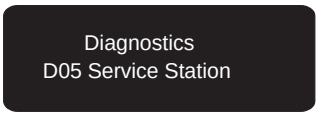
D05. Service Station

The purpose of this test is to verify the operation of the Service Station, which also includes the Primer Assembly.

IF POSSIBLE ALWAYS PERFORM THIS TEST BEFORE REPLACING THE SERVICE STATION ASSEMBLY OR THE PRIMER ASSEMBLY. IF THIS TEST PASSES, CHECK THE TUBES CONNECTING THE PRIMER ASSEMBLY TO THE SERVICE STATION.

Perform the Service Station test as follows:

1 In the Diagnostics submenu, scroll to "D05 Service Station" and press **Enter**.



2 While the test is being performed, a row of "***" will be displayed on the front-panel.

3 If the test passes, the "D0500 OK" message is displayed on the front-panel.

IF THIS TEST PASSES, DO NOT REPLACE THE SERVICE STATION ASSEMBLY OR THE PRIMER ASSEMBLY.

4 If the test fails, an error message will be displayed on the front-panel. The error messages are split into different areas depending on which component failed.

Primer Assembly Failure

If there is a problem with the Primer Assembly then the following message will appear:

- "D0501 Fail" - Problem detected in the Primer Assembly.

In this case, *Replace the Primer Assembly ➧ page 8-29.*

Service Station Assembly Failure

If there is a problem with the Service Station Assembly then the following message will appear:

- "D0502 Fail" - Problem in the Hot Initialization of the Service Station.

In this case, try one of the following:

1 *Check if the Service Station flag is installed correctly.*

2 *Check that the interconnect cable for the Service Station Assembly is connected correctly ➧ page 8-87.*

3 *Replace the Service Station Assembly ➧ page 8-26.*

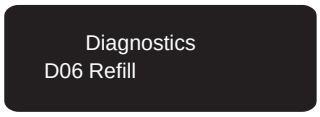
D06. Refill

The purpose of this test is to verify the operation of the Refill Assembly and the Elevator Assembly.

IF POSSIBLE ALWAYS PERFORM THIS TEST BEFORE REPLACING THE REFILL ASSEMBLY OR THE ELEVATOR ASSEMBLY. IF THIS TEST PASSES, DO NOT REPLACE THE REFILL ASSEMBLY OR THE ELEVATOR ASSEMBLY.

Perform the Refill test as follows:

1 In the Diagnostics submenu, scroll to “D06 Refill” and press **Enter**.



2 While the test is being performed, a row of “***” will be displayed on the front-panel.

3 If the test passes, the “D0600 OK” message is displayed on the front-panel.

IF THIS TEST PASSES, DO NOT REPLACE THE REFILL ASSEMBLY OR THE ELEVATOR ASSEMBLY.

4 If the test fails, an error message will be displayed on the front-panel. The error messages are split into different areas depending on which component failed.

Refill Assembly Failure

If there is a problem with the Refill Assembly then the following message will appear:

- “D0601 Fail” - Problem detected in the Refill Assembly.

In this case, try one of the following:

1 *Check that the Refill interconnect cable is connected correctly.*

2 *Replace the Refill Assembly* ➧ *page 8-55*.

Elevator Assembly Failure

If there is a problem with the Elevator Assembly then the following message will appear:

- “D0602 Fail” - Problem detected in the Elevator Assembly.

In this case, *Replace the Elevator Assembly* ➧ *page 8-52*.

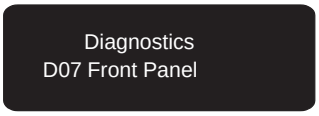
D07. Front Panel

The purpose of this test is to verify the operation of the front-panel keys.

IF POSSIBLE ALWAYS PERFORM THIS TEST BEFORE REPLACING THE FRONT-PANEL ASSEMBLY. IF THIS TEST PASSES, DO NOT REPLACE THE FRONT-PANEL ASSEMBLY.

Perform the Front Panel test as follows:

1 In the Diagnostics submenu, scroll to “D07 Front Panel” and press **Enter**.



2 All the LEDs on the front-panel will illuminate and you will be requested to press each key on the front panel separately. If you do not press the required key within 10 seconds, the “D0701 Fail” message is displayed on the front-panel.

3 If all the keys are pressed and the test passes, the “D0700 OK” message is displayed on the front-panel and all the LEDs on the front-panel will go out.

IF THIS TEST PASSES, DO NOT REPLACE THE FRONT-PANEL ASSEMBLY.

4 If any of the keys are pressed but not recognized then the test has failed and the “D0701 Fail” message will displayed on the front-panel after 10 seconds.

If the test fails, to resolve the problem, try one of the following:

1 *Check that the cable for the Front Panel Assembly is connected to the Electronics Module.*

2 *Replace the Front Panel Assembly* ➧ *page 8-24*.

D08. Sensors

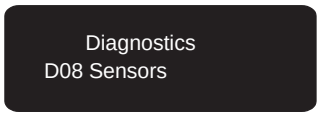
The purpose of this test is to verify the operation of the following Sensors:

- Window Sensor.
- Right Door Sensor.
- Left Door Sensor.
- Refill Valve Sensors.
- Standby Button Sensor.
- Media Sensor.
- Pincharm Sensor.

IF POSSIBLE ALWAYS PERFORM THIS TEST BEFORE REPLACING ANY OF THE SENSORS. IF THIS TEST PASSES, DO NOT REPLACE ANY OF THE SENSORS.

Perform the Sensors test as follows:

1 In the Diagnostics submenu, scroll to “D08 Sensors” and press **Enter**.



2 Follow the instructions on the front-panel display. If you do not complete each step within 10 seconds, the “08XX Fail” message is displayed on the front-panel.

The XX corresponds to the sensor which you were testing.

3 If you follow all the instructions and the test passes, the “0800 OK” message is displayed on the front-panel.

IF THIS TEST PASSES, DO NOT REPLACE ANY OF THE SENSORS.

4 If the test fails, an error message will be displayed on the front-panel. The error messages are split into different areas depending on which component failed.

Cover Sensor Failure

If there is a problem with the Cover Sensor then the following message will appear:

- “D0801 Fail” - Window Sensor failed.

The test is continued on the next page.

In this case, try one of the following:

1. *Check that the Window Sensor is seated correctly.*
2. *Check that the cable for the Window Sensor is connected correctly.*
3. *Replace the Window Sensor ➧ page 8-21.*

Right Door Sensor Failure

If there is a problem with the Right Door Sensor then the following message will appear:

- "D0802 Fail" - Right Door Sensor failed.

In this case, try one of the following:

1. *Check that the Right Door Sensor is seated correctly.*
2. *Check that the cable for the Right Door Sensor is connected correctly.*
3. *Replace the Right Door Sensor ➧ page 8-21.*

Left Door Sensor Failure

If there is a problem with the Left Door Sensor then the following message will appear:

- "D0803 Fail" - Left Cover Sensor failed.

In this case, try one of the following:

1. *Check that the Left Door Sensor is seated correctly.*
2. *Check that the cable for the Left Door Sensor is connected correctly.*
3. *Replace the Left Door Sensor ➧ page 8-18.*

Refill Valve Sensors Failure

If there is a problem with the Refill Valve Sensors then one of the following messages will appear:

- "D0804 Fail" - Black Refill Valve Sensor failed.
- "D0805 Fail" - Magenta Refill Valve Sensor failed.
- "D0806 Fail" - Cyan Refill Valve Sensor failed.
- "D0807 Fail" - Yellow Refill Valve Sensor failed.

The test is continued on the next page.

In these cases, try one of the following:

1. *Check that the cable for the Refill Valve Sensors is connected correctly.*
2. *Check that the Refill interconnect cable is connected correctly.*
3. *Replace the Refill Assembly ➧ page 8-55.*

Standby Button Sensor Failure

If there is a problem with the Standby Button Sensor then the following message will appear:

- "D0808 Fail" - Standby Button Sensor failed.

In this case, try one of the following:

1. *Check that the cable for the Standby Button Sensor is connected correctly.*
2. *Replace the Standby Button Assembly ➧ page 8-24.*

Media Sensor Failure

If there is a problem with the Media Sensor then the following message will appear:

- "D0809 Fail" - Media Sensor failed.

In this case, try one of the following:

1. *Check that the cable for the Media Sensor is connected correctly.*
2. *Replace the Media Sensor Assembly ➧ page 8-78.*

Pincharm Sensor Failure

If there is a problem with the Pincharm Sensor then the following message will appear:

- "D0810 Fail" - Pincharm Sensor failed.

In this case, try one of the following:

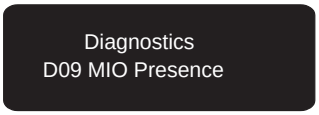
1. *Check that the cable for the Pincharm Sensor is connected correctly.*
2. *Replace the Pincharm Sensor Assembly ➧ page 8-84.*

D09. MIO Presence

The purpose of this test is to verify the presence of the MIO Card and the communication between the MIO Card and Main PCA.

Perform the MIO Presence test as follows:

1. In the Diagnostics submenu, scroll to “D09 MIO Presence” and press **Enter**.



2. If the test passes, the “D0900 OK” message is displayed on the front-panel.
3. If the test fails, or if the MIO card is not installed, the “D0901 Fail” message is displayed on the front-panel.

   If the MIO card fails the test, try one of the following:

   1. *Reseat the MIO card and perform the MIO test again.*
   2. *Replace the MIO card and perform the MIO test again.*

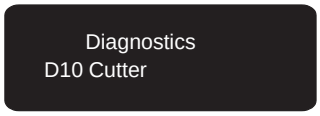
D10. Cutter

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

IF POSSIBLE ALWAYS PERFORM THIS TEST BEFORE REPLACING THE CUTTER ASSEMBLY. IF THIS TEST PASSES, DO NOT REPLACE THE CUTTER ASSEMBLY.

Perform the Cutter test as follows:

1 In the Diagnostics submenu, scroll to "D10 Cutter" and press **Enter**.



2 While the test is being performed, a row of "***" will be displayed on the front-panel. During the test, the Carriage picks up the cutter and runs it along the length of the printer twice.

3 Once the test is completed, the "D1000 Done" message is displayed on the front-panel.

If the carriage picks up the Cutter Assembly and runs it along the length of the printer twice, then the test has passed.

IF THIS TEST PASSES, DO NOT REPLACE THE CUTTER ASSEMBLY.

If the carriage does not pick up the Cutter Assembly then the test has failed. To resolve the problem, try one of the following:

1 *Check if the Cutter has been disabled through the front-panel (**Device Setup** | **Cutter**).*

2 *Perform the Carriage test ⏵ page 4-11.*

3 *Replace the Cutter Assembly ⏵ page 8-42.*

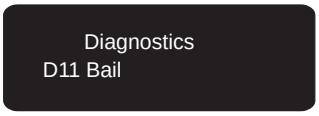
D11. Bail

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

IF POSSIBLE ALWAYS PERFORM THIS TEST BEFORE REPLACING THE BAIL ASSEMBLY. IF THIS TEST PASSES, DO NOT REPLACE THE BAIL ASSEMBLY.

Perform the Bail test as follows:

1 In the Diagnostics submenu, scroll to “D11 Bail” and press **Enter**.



2 While the test is being performed, a row of “***” will be displayed on the front-panel. During the test, the bail is raised once.

3 Once the test is completed, the “D1100 Done” message is displayed on the front-panel.

If the Bail Assembly is raised, then the test has passed.

IF THIS TEST PASSES, DO NOT REPLACE THE BAIL ASSEMBLY.

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

If the bail fails the test, try replacing one of the following components:

1 *Bail stepper motor ➧ page 8-62.*

2 *Bail assembly ➧ page 8-58.*

Only replace one component at a time and perform the test again before replacing another component. Using this procedure you will be able to determine exactly which component failed.

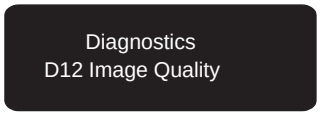
D12. Image Quality

The purpose of this test is to verify the image quality attributes of the printer.

Perform the Image Quality test as follows:

Load media before performing this Test.

1 In the Diagnostics submenu, scroll to “D12 Image Quality” and press **Enter**.



2 If media is not loaded the test will stop and the message “Load Media to align Printheads” will be displayed on the front-panel. Load media in order to continue the test.

3 The printer will print two printhead alignment patterns. During the printing, the message “Aligning Printheads” will be displayed on the front-panel.

4 If after aligning the Printheads the message “Bad Printhead Alignment” is displayed on the front-panel then try the following to solve the problem:

   1 *Try recovering the printheads using the front-panel menu and try the test again.*

   2 *If the test fails again, check the alignment pattern to check if any of the colors are printed badly. If a color is printing badly then replace the complete Ink Delivery System of the color that is bad.*

   3 *The Line Sensor is not calibrated correctly. Perform the Line Sensor calibration ➧ page 5-9.*

   4 *The lens cover, which is installed on the line sensor, is dirty. Replace the lens cover ➧ Users Guide, Chapter 10 (Lens Maintenance).*

   5 *Check if the Line Sensor is installed and connected correctly.*

   6 *Perform the Line Sensor Test ➧ page 4-9.*

   7 *Perform the Electronics Test ➧ page 4-6.*

The test is continued on the next page.

5 When the printer has finished aligning the Printheads, the message “SAD Cyan: #.# / SAD Magenta #.#” will be displayed on the front-panel.

6 Press the **Up Arrow** key and the message “SAD Yellow: #.# / SAD Black #.#” will be displayed on the front-panel.

7 Press the **Up Arrow** key and the message “C2C X Cyan: #.# / C2C X Magenta #.#” will be displayed on the front-panel.

8 Press the **Up Arrow** key and the message “C2C X Yellow: #.# / C2C X Black #.#” will be displayed on the front-panel.

9 Press the **Up Arrow** key and the message “C2C Y Cyan: #.# / C2C Y Magenta #.#” will be displayed on the front-panel.

10 Press the **Up Arrow** key and the message “C2C Y Yellow: #.# / C2C Y Black #.#” will be displayed on the front-panel.

11 Press the **Up Arrow** key and the message “BIDIR 20: #.# / BIDIR 28 #.#” will be displayed on the front-panel.

12 Press **Previous** when you have completed the test. The “D1200 Done” message is displayed on the front-panel if the test exits correctly.

*For steps 5 thru 12, if the values of the Printheads are **between −1.0 and +1.0** for any of the Printheads then the test has **passed**.*

*For steps 5 thru 12, if the values of the Printheads are **NOT between −1.0 and +1.0** for any of the Printheads then the test has **failed**.*

*If the test **fails**, to resolve the problem, try one of the following:*

1 *Perform the Printhead Alignment Calibration ➧ page 5-12.*

2 *The Line Sensor is not calibrated correctly. Perform the Line Sensor calibration ➧ page 5-9.*

3 *The lens cover, which is installed on the line sensor, is dirty. Replace the lens cover ➧ Users Guide, Chapter 10 (Lens Maintenance).*

4 *Perform the Electronics test ➧ page 4-6.*

5 *Check if the Media used is suitable for the printer.*

6 *Check if the Line Sensor is installed and connected correctly.*

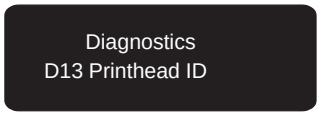
7 *Replace the Carriage Assembly ➧ page NO TAG.*

D13. Printhead ID

The purpose of this test is to verify the default settings of the printheads.

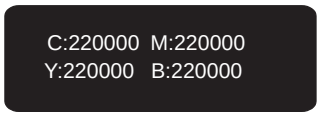
Perform the Printhead ID test as follows:

1. In the Diagnostics submenu, scroll to “D13 Printhead ID” and press **Enter**.



2. If the Printer is using **HP DesignJet CP Ink System** (Inks for Imaging), the following message will be displayed on the front-panel.

3. If the Printer is using **HP DesignJet CP Ink System UV** (UV Durable Inks), the following message will be displayed on the front-panel.



   This test is for information only. This information might be requested in the event of an escalation in order to understand the problem.

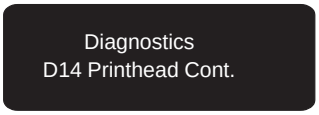
4. Press **Previous** when you have completed the test. The “D1300 Done” message is displayed on the front-panel if the test exits correctly.

D14. Printhead Continuity

The purpose of this test is to display the primitives and address maps of the printheads.

Perform the Printhead Continuity test as follows:

1 In the Diagnostics submenu, scroll to "D14 Printhead Cont." and press **Enter**.



2 The following message is displayed on the front-panel:

PH	addr:	#
Cyan	PS:	#

3 Use the **Up** and **Down** arrow keys to show the values of the different colors.

*The values shown on the front-panel for all Printheads should be **0**. If a different value is shown then that Printhead has a continuity problem.*

Try the following to solve the problem:

1 *DO NOT replace any parts. **This will cause extra problems**. Remove the Printheads and clean the flex contacts on the Carriage and the Printheads. Reseat the Printheads and try the test again.*

2 *Even if one of the Printheads failed the Printhead Continuity test, you must remove **all** the Printheads from the Carriage and try installing them **one by one**. Before installing each Printhead, check the continuity of all four Printheads. The front-panel should display a 3ffff / 3fff result for each Printhead that is not inserted and the original values (the value that was displayed before the Printhead was removed) for the Printheads when they are inserted. If you get a value that is different than 3ffff / 3fff when the Printheads are removed then you must perform step **1** again. If you get the same results after repeating step 1, then the carriage is damaged. Replace the Carriage Assembly ➧ page 8-42. When you insert each Printhead, the values **should change only** for that Printhead. If the values of other Printheads also change, then the problem is the Printhead itself and **not** the actual Printer. In this case you **must** replace the complete Ink Delivery System of the color that failed.*

3 *If you continue getting the original value (the value that was displayed before the Printhead was first removed) then you **must** replace the complete Ink Delivery System of the color that failed and try the test again.*

4 *As a **last resort**, replace the Carriage Assembly ➧ page 8-42.*

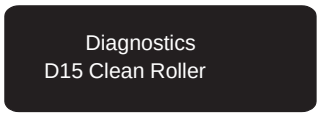
4 Press **Previous** when you have completed the test. The "D1400 Done" message is displayed on the front-panel if the test exits correctly.

D15. Clean Roller

The purpose of this test is to enable you to rotate the Drive Roller when it requires cleaning.

Perform the Clean Roller test as follows:

1. In the Diagnostics submenu, scroll to “D15 Clean Roller” and press **Enter**.



2. The “Unload Media” message is displayed on the front-panel. Remove the media (if loaded).
3. The “Move Roller” message is displayed on the front-panel. Use the **Up Arrow** to rotate the drive roller clockwise and the **Down Arrow** to rotate the drive roller counter-clockwise.

   The cover sensors are disabled during this test so the window can be opened without having to over-ride the sensor.

4. Press **Previous** when you have completed the test. The “D1500 Done” message is displayed on the front-panel if the test exits correctly.

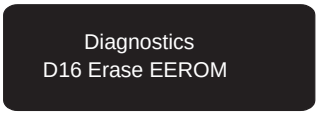
D16. Erase EEROM

The purpose of this test is to clear the EEROM.

Perform the Erase EEROM test as follows:

Before erasing the EEROM, it is recommended that a configuration plot is printed for setup reference because you will need to re-configure the front-panel settings.

1 In the Diagnostics submenu, scroll to “D16 Erase EEROM” and press **Enter**.



2 The “Yes=Enter No=Prev” message is displayed on the front-panel.

3 If you DO NOT want to erase the EEROM press the **Previous** key. The message “D1600 Cancelled” will be displayed.

4 If you want to erase the EEROM press the **Enter** key. While the EEROM is being erased, a row of “***” will be displayed on the front-panel.

5 Once the EEROM is erased, the “D1600 OK” message is displayed on the front-panel.

6 If the test fails, the “D1601 Fail” message is displayed on the front-panel.

***If the test fails**, Replace the Electronics Module ➧ page 8-6.*

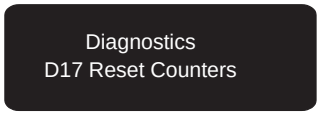
D17. Reset Counters

The purpose of this test is to reset the internal counters.

Perform the Reset Counters test as follows:

This test does not reset the Preventive Maintenance Counter. To reset the preventive Maintenance Counter perform the Maintenance Calibration ⏵ 5-18.

1 In the Diagnostics submenu, scroll to “D17 Reset Counters” and press **Enter**.



2 The “Yes=Enter No=Prev” message is displayed on the front-panel.

3 If you DO NOT want to reset the counters, press the **Previous** key. The message “D1700 Cancelled” will be displayed.

4 If you want to reset the counters, press the **Enter** key. While the counters are being reset, a row of “***” will be displayed on the front-panel.

5 When the Counters have been reset, the “D1700 OK” message is displayed on the front-panel.

6 If the test fails, the “D1701 Fail” message is displayed on the front-panel.

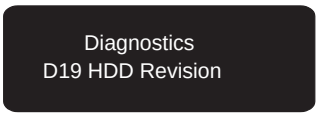
***If the test fails**, Replace the Electronics Module ⏵ page 8-6.*

D19. Hard Disk Drive Revision (Only available in DesignJet 2500CP/3500CP printer)

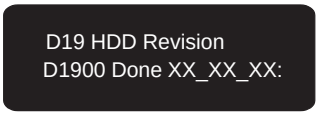
The purpose of this test is to show the revision of the internal Hard Disk Drive.

Perform the HDD Revision test as follows:

1 In the Diagnostics submenu, scroll to “D19 HDD Revision” and press **Enter**.



2 A message similar to the following will be displayed on the front-panel.



The following table shows the compatibility between the Hard Disk Drive Revision and the Firmware Revison:

NOTE FOR HP DESIGNJETS 2500CP ONLY

IF THE HARD DISK VERSION IS LOWER THAN A.02.08 THEN YOU MUST INFORM THE CUSTOMER TO ORDER THE UV UPGRADE KIT BY FAXING THE SHEET THAT THEY RECEIVED WITH THE PRINTER INFORMING THEM ABOUT THE UV UPGRADE KIT. THEY CAN ALSO FAX THE SHEET ON THE FOLLOWING URL:

http://www.hp.com/go/designjet

YOU CAN ALSO ORDER THE FIRMWARE UPGRADE KIT WHICH INCLUDES A CD-ROM TO UPGRADE THE HARD DISK DRIVE CONTENTS (REFER TO CHAPTER 7 FOR THE PART NUMBER).

NOTES