

# Service Tests and Utilities

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## Introduction

This chapter explains how to use the built-in Service Tests and Service Utilities and what to do if any of the Service 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 Printer is switched ON, it automatically performs a series of internal self tests and mechanical initialization sequences. If any of the parts fail, a system error will appear and you should consult Chapter 2 - *System Error Codes*.

### Phone Support

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

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

## Service Tests (Diagnostics)

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

**1** Scan Axis Test ⇒ Page 4-7

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

**2** Media Drive Test ⇒ Page 4-12

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

**3** Electronics System ⇒ Page 4-17

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

- Main PCA (Formatter).
- Printer Configuration.
- Gamut PCI PCA.
- Power Supply Unit.
- PrintMech.
- Interconnect PCA.
- Carriage Communication.
- ISS Communication.

**4** Carriage Assembly Test ⇒ Page 4-27

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

**5** Sensors Test ⇒ Page 4-28

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

- Window Sensor.
- Printhead Cleaner (PHC) Access Door Sensor.
- Media Lever Sensor.
- Media Sensor.

**6** Ink Delivery System Test ⇒ Page 4-32

The purpose of this test is to verify the operation of the Ink Supply Tubes.

**7** SVS/Aerosol Fan Test ⇒ Page 4-33

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

**8** Air Pump System Test ⇒ Page 4-34

The purpose of this test is to verify the operation of the Air Pressurization System (APS).

**9** Vacuum Fan Test ⇒ Page 4-35

The purpose of this test is to verify the operation of the Vacuum Fans.

**10** Others ⇒ Page 4-36

This option allows you to:

- Recover the Printer from a Bag Broken error ⇒ Page 4-36.
- View the information relating to the IO ⇒ Page 4-39.
- View the Firmware Version, Part Number, Serial Number and PS Unit Configuration ⇒ Page 4-40.
- Verify which Ink Cartridges are valid for the purge process and what is their current available ink level ⇒ Page 4-42.

**11** EEROM Reset ⇒ Page 4-44

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

**12** Set Unit Configuration ⇒ Page 4-46

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

**13** Error 71:19 Recovery ⇒ Page 4-47

The purpose of this utility is to set the Serial Number and Part Number in case both the Hard Disk Drive and the Ink Supply Tubes are replaced at the same time.

**14** I/O Tests ⇒ Page 4-49

The purpose of this test is to check the installed and active I/O Interfaces.

## Entering the Service Tests Menu

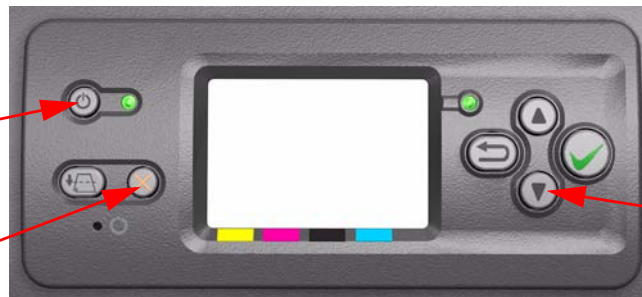
**In order to enter the Service Utility Menu, please refer to the instructions on Page 4-52.**

- 1 Make sure the printer is switched OFF from the power switch on the front of the printer and **NOT** from the power switch on the back of the printer.
- 2 For Call Agents who will request the User to Perform certain troubleshooting action, hold the **Down** arrow key and the **Cancel** key down and switch the printer **ON** using the front power switch. Wait until you hear one beep (usually after 5 seconds) before releasing ALL 3 keys.

**PHONE SUPPORT**

Switch Printer ON

Hold Cancel  
key



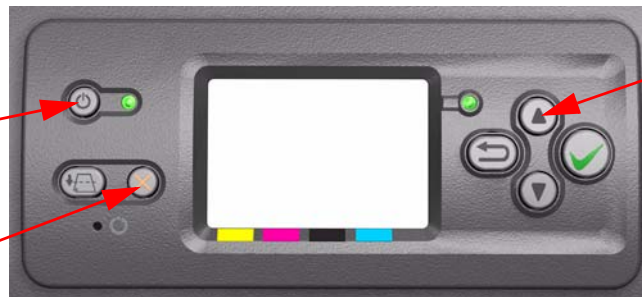
Hold DOWN  
key

- 3 For On-Site Engineers, hold the **Up** arrow key and the **Cancel** key down and switch the printer **ON** using the front power switch. Wait until you hear one beep (usually after 5 seconds) before releasing ALL 3 keys.

**ON-SITE REPAIR**

Switch Printer ON

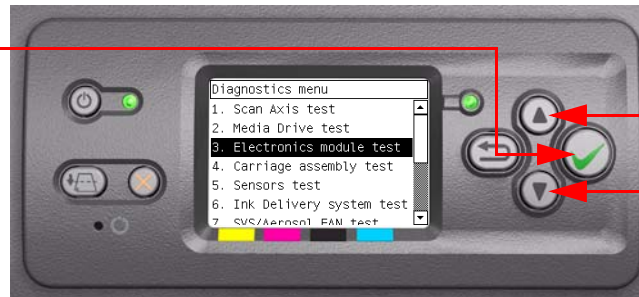
Hold Cancel  
key



Hold UP key

- 4** Once inside the Service Tests Menu use the **Arrow** keys to scroll through the "Service Tests" selections. Press the **Enter** key to begin a specific test when the required Service Test is highlighted.

Press Enter to  
confirm selection



Use UP and  
DOWN keys  
to select

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

**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.**

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

**PHONE SUPPORT**

## 1. Scan Axis Test

The purpose of this test is to diagnose a failure in the operation of components related to the Scan Axis.

You must perform the Scan-Axis Test after:

- System Error Code 86:XX.
- System Error Code 42:XX.
- System Error Code 73:XX.
- System Error Codes related to Scan-Axis shutdown or Carriage jam.

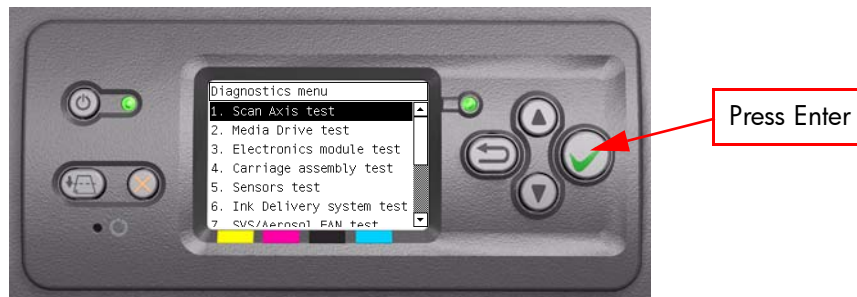
**ALL THE COVER SENSORS ARE DISABLED WHEN IN THE SERVICE TESTS MENU. IF THE CARRIAGE IS MOVING IT WILL NOT STOP IF THE WINDOW IS OPENED, SO BE VERY CAREFUL NOT TO PUT YOUR HANDS INSIDE.**

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

Perform the Scan Axis test as follows:

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

- 1 In the Service Tests submenu, scroll to "1. Scan Axis test" and press **Enter**.



- 2 The Printer will start to initialize the Scan-Axis system and the Front Panel will display the following information:

- Starting Gamut.
- Starting Tests PWM.
- Starting Tests GPIO.
- Set GPIO psu\_lpm.

If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

- Checking voltage.

If there is a failure at this point, the Front Panel will display **System Error Code 03:10**. For more information on troubleshooting this error code, refer to Page 2-5. Check also **System Error Code 01.0:10** (refer to Page 2-3).

- Clear GPIO psu\_lpm.

If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

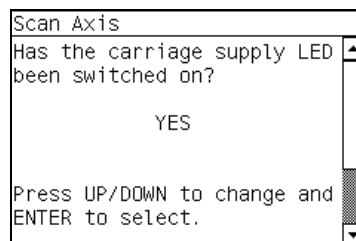
- Checking voltage.

If there is a failure at this point, the Front Panel will display **System Error Code 03:10**. For more information on troubleshooting this error code, refer to Page 2-5. Check also **System Error Code 01.0:10** (refer to Page 2-3).

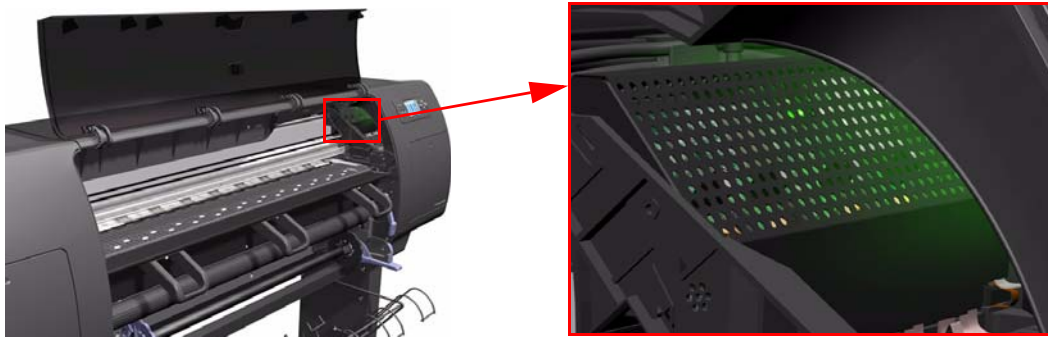
- Config GPIO drv\_enable.

If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

- 3 After initializing the Scan-Axis system, the following message will appear on the Front Panel.



- 4 Open the Window and check that the Carriage power light is ON (a green light on the carriage PCA). Select **Yes** or **No** by using the **Up** and **Down** keys and press **Enter** to confirm your selection.



If you select **No** at this point, the Front Panel will display **System Error Code 02.1:10**. For more information on troubleshooting this error code, refer to Page 2-4. Check also **System Error Code 11:10** (refer to Page 2-7) or **System Error Code 07:10** (refer to Page 2-6).

If you select **Yes**, then the Front Panel will display:

- Booting up the Carriage.

If there is a failure at this point, the Front Panel will display **System Error Code 02.1:10**. For more information on troubleshooting this error code, refer to Page 2-4. Check also **System Error Code 11:10** (refer to Page 2-7) or **System Error Code 01.1:10** (refer to Page 2-3).



**Unit Hangs Up** - If no System error code is displayed on the Front Panel but the Printer hangs up and the last message on the Front Panel is "Booting up the Carriage" it means that the Carriage ASIC could not be detected. Troubleshoot this problem in the same way as if **System Error Code 02.1:10** had appeared.

- 5 Once the Carriage is booted up, the Service Station will be prepared and moved to a safe position so that the Carriage can be moved. During this process, the following information will be displayed on the Front Panel:

- Starting SVS Motor.

If there is a failure at this point, the Front Panel will display **System Error Code 21:12**. For more information on troubleshooting this error code, refer to Page 2-8. Also, try to perform the Service Station Test (refer to Page 4-33).

**Unit Hangs Up** - If no System error code is displayed on the Front Panel but the Printer hangs up and the last message on the Front Panel is "Starting SVS Motor" it means that the SVS Motor could not be initialized. Troubleshoot this problem in the same way as if **System Error Code 21:12** had appeared.

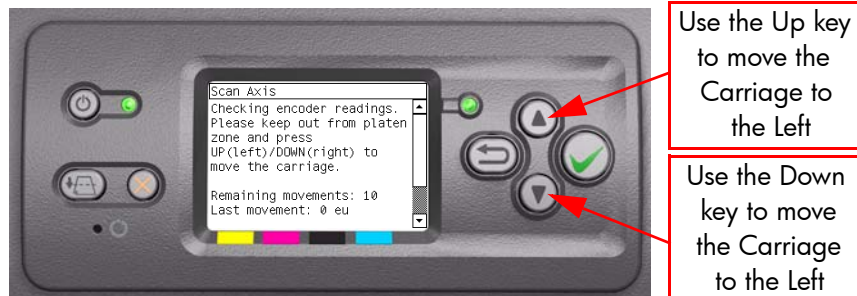
- 6 The Printer will program the duty cycle for the PWM test for the Scan-Axis Movement and leave it disabled and the following information will be displayed on the Front Panel:

- Prog slow PWM scan.
- Moving carriage middle.
- Prog fast PWM scan.

If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

- 7 The Carriage will be moved to the middle of the Center Platen. If there is a failure in moving the Carriage, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

- 8 The printer will now check that it can read the Encoder Strip. When the following message appears on the Front Panel, open the Window and press the **Up** key to move the Carriage to the left and the **Down** key to move the Carriage to the right. Make sure that you move the Carriage in both directions and check that the Carriage actually moves when a key is pressed.



If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3. If the Carriage only moves in one direction, troubleshoot the problem as **System Error Code 01.1:10** (refer to Page 2-3).

- 9 At the end of 10 Carriage movements, the Front Panel will display the maximum and minimum length (in encoder units) of the 10 movements and the overall average.

```

Scan Axis
Max,Min mov: 1120,1086 eu
Avg mov: 1100 eu
There is encoder feedback.

Encoder seems to be OK.

Press any key to continue.

```

If Carriage movement has not been detected or if Carriage movement was very short, the Front Panel will ask you "Did the motor move?". If the answer is **Yes** (the Carriage had moved) press **Enter**. If the answer is No (the Carriage had not moved) press the **Back** key.

If you select **No** (the Carriage had not moved), the Front Panel will display **System Error Code 42:10**. For more information on troubleshooting this error code, refer to Page 2-14. Check also **System Error Code 01.1:10** (refer to Page 2-3) or **System Error Code 01.0:10** (refer to Page 2-3).

If you select **Yes** (the Carriage had moved), the Front Panel will display **System Error Code 02:10**. For more information on troubleshooting this error code, refer to Page 2-4. Check also **System Error Code 11:10** (refer to Page 2-7) or **System Error Code 01.0:10** (refer to Page 2-3).

If any max. or min. movement length is outside the + or - 20% average, then this warning message will be displayed on the Front Panel "Some movements out of avg +20% range: Intermittent movements. PWM test needed". This warning means that there is a mechanical problem in the Printer (Encoder Strip, friction, Carriage Belt, Slider Rod, etc...). Press any key to continue with the PWM test.

- 10 The Printer will now start to initialize the Scan-Axis servo and the Front Panel will display the following information:

- Starting Carriage Motor.
- Off/On Carriage Motor.
- Doing a right side bump.
- Doing a left side bump
- Exit bump position.

If there is a failure at this point, the Front Panel will display **System Error Code 86:10**. For more information on troubleshooting this error code, refer to Page 2-24.

- 11 The Printer checks the complete length of the Scan-Axis and displays the result on the Front Panel. The length has to be between **1158629** and **1164616**.

```

Scan Axis
Checking scan axis length.

Total length: 1162304.

Press any key to continue.

```

If it is shorter, it means that there is an obstacle blocking the Scan-Axis path and the Front Panel will display **System Error Code 86:11**. For more information on troubleshooting this error code, refer to Page 2-24.

If the length is longer, it means that the carriage has a datum broken or the Carriage Stopper is not installed and the Front Panel will display **System Error Code 02:10**. For more information on troubleshooting this error code, refer to Page 2-4.

**Make sure you keep your hands away from the Print Platen as the Carriage will be moving at high speed and you could injure yourself or damage the Carriage Assembly.**

- 12** The Printer will now check the Scan-Axis PWM and the following information will be displayed on the Front Panel:

- Starting Scan Axis.
- PWM test.

If there is a failure at this point, the Front Panel will display **System Error Code 86:10**. For more information on troubleshooting this error code, refer to Page 2-24.

- 13** The Printer will test the PWM at 61 ips and display the results on the Front Panel.

```

Scan Axis
PWM avg range: 0 to 31160
PWM avg got: 27798.8
PWM min diff limit: 3100
PWM min diff got: 8824

Press any key to finish.
  
```

If some of the results are incorrect, the Front Panel will show "High Friction". Depending on the actual results received, the following should be done:

- If **PWM avg got** is more than 31160 and **PWM min diff got** is less than 3100 then there is high friction along the Scan-Axis. In this case you should:
  - Clean the Slider Rods and Apply Oil along the complete axis of the Slider Rods. After applying the Oil, perform the test again.
  - Check that the Carriage Belt is installed correctly.
- If **PWM min diff got** is less than 3100 but **PWM avg got** is less than 31160 then there is a problem in the Scan-Axis. In this case you should:
  - Check that the Encoder Strip is clean. If necessary, clean Encoder Strip using a damp cloth.
  - Check that the Ink Supply Tubes and Trailing Cable is installed correctly.

If there is a failure processing the PWM results, the Front Panel will display **System Error Code 86:11**. In this case try repeating the test again.

- 14** Once the test is completed, OK will be displayed on the Front Panel.

**PHONE SUPPORT**

## 2. Media Drive Test

The purpose of this test is to diagnose a failure in the operation of components related to the Media Axis.

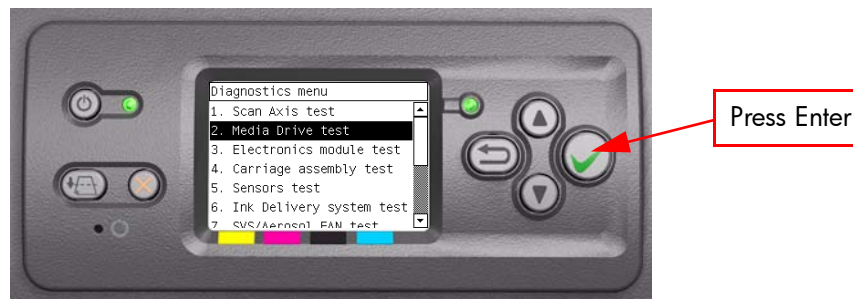
You must perform the Media Drive Test after:

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

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

Perform the Paper Axis test as follows:

- 1 In the Service Tests submenu, scroll to "2. Media Drive test" and press **Enter**.



- 2 The Printer will start to initialize the Scan-Axis system and the Front Panel will display the following information:

- Starting Gamut.
- Starting Tests PWM.
- Starting Tests GPIO.
- Set GPIO psu\_lpm.

If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

- Checking voltage.

If there is a failure at this point, the Front Panel will display **System Error Code 03:10**. For more information on troubleshooting this error code, refer to Page 2-5. Check also **System Error Code 01.0:10** (refer to Page 2-3).

- Clear GPIO psu\_lpm.

If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

- Checking voltage.

If there is a failure at this point, the Front Panel will display **System Error Code 03:10**. For more information on troubleshooting this error code, refer to Page 2-5. Check also **System Error Code 01.0:10** (refer to Page 2-3).

■ Config GPIO drv\_enable.

If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

■ Booting up the Carriage.

If there is a failure at this point, the Front Panel will display **System Error Code 02.1:10**. For more information on troubleshooting this error code, refer to Page 2-4. Check also **System Error Code 11:10** (refer to Page 2-7) or **System Error Code 01.1:10** (refer to Page 2-3).

**Unit Hangs Up** - If no System error code is displayed on the Front Panel but the Printer hangs up and the last message on the Front Panel is "Booting up the Carriage" it means that the Carriage ASIC could not be detected. Troubleshoot this problem in the same way as if **System Error Code 02.1:10** had appeared.

- 3 The Printer will now check the revision of the PCA and the following message will be displayed on the Front Panel:

■ Checking PCA rev.

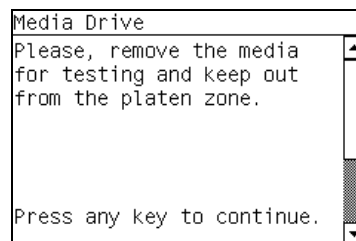
The value for the PCA revision must be more than 0.625V, if not the Front Panel will display **System Error Code 01.1:10**. For more information on troubleshooting this error code, refer to Page 2-3.

- 4 The Printer will program the duty cycle for the PWM test for the Media Drive Movement and leave it disabled and the following message will be displayed on the Front Panel:

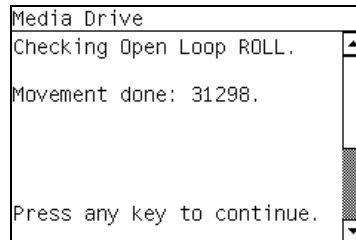
■ Prog slow PWM paper.

If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

- 5 Before continuing, the following message will appear on the Front Panel. Remove the media if it is still loaded and make sure you stay out of the Print Platen area if the Window is open.

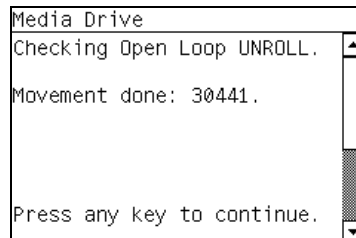


- 6** The Printer will now test the Media Drive moving in an open loop in one direction and the following message will be displayed on the Front Panel. Press any key to continue the test:



Check that the movement done is more than 100 encoder units (in absolute value). If the movement done is less than 100 encoder units then open the Window and check for any visible obstacles restricting the movement of the Drive Roller or the Overdrive Assembly. In this case, press any key to finish the test.

- 7** The Printer will now test the Media Drive moving in an open loop in the opposite direction and the following message will be displayed on the Front Panel. Press any key to continue the test:



Check that the movement done is **more** than 100 encoder units (in absolute value). If the movement done is **less** than 100 encoder units then open the Window and check for any visible obstacles restricting the movement of the Drive Roller or the Overdrive Assembly.

If the Encoder Units is **less** than 100, the Printer will request you to follow these instructions:

- a** Manually load a sheet of paper in to the Printer (an A4 sheet).
- b** The Printer will test the Media Drive moving in an open loop.
- c** Perform a visual check during the test. The Front Panel will ask you if the paper moved or not:
  - If the paper moved, the Front Panel will display **System Error Code 56:10**. For more information on troubleshooting this error code, refer to Page 2-17.
  - If the paper **did not** move, the Front Panel will display **System Error Code 41:10**. For more information on troubleshooting this error code, refer to Page 2-13.
- d** A "FAIL" message will be displayed on the Front Panel and the test will be terminated at this point.

- 8 The Printer will now check the Media Drive servo system and the following messages will be displayed on the Front Panel:

- Starting Paper Motor.
- Off/On Paper Motor.
- Starting Paper Axis.

If there is a failure at this point, the Front Panel will display **System Error Code 81:10**. For more information on troubleshooting this error code, refer to Page 2-23.

- Calib. Analog Encoder.

If there is a failure at this point, the Front Panel will display **System Error Code 56:03**. For more information on troubleshooting this error code, refer to Page 2-17.

Once the Analog Encoder calibration is completed, the Front Panel will display the results:

Media Drive		
Analog Encoder results:		
CHANNEL	GAIN	OFFSET
A	005	019
B	005	019
Press BACK/CANCEL to reject or ENTER to accept.		

Acceptable values are:

- Gain: between 3 and 31.
- Offset: between 12 and 25.

If the results are acceptable, press **Enter**. If the results are unacceptable, then press the **Back/Cancel** key and the Front Panel will display **System Error Code 56:10**. For more information on troubleshooting this error code, refer to Page 2-17.

- Starting Media Path.

If there is a failure at this point, the Front Panel will display **System Error Code 81:10**. For more information on troubleshooting this error code, refer to Page 2-23.

- Homing and repeat. test.

If there is a failure at this point, the Front Panel will display **System Error Code 56:10**. For more information on troubleshooting this error code, refer to Page 2-17.

- 9 The Printer will now check the Media Drive PWM. You must load media in to the Printer and press any key to continue the test.

Media Drive	
Please, raise the pinch lever. Load the paper roll and lower the pinch lever.	
Press any key to proceed.	

- 10** When the PWM check is being performed, the following message will be displayed on the Front Panel:

■ PWM test with paper.

- 11** Once the PWM check is done, the results will be displayed on the Front Panel. Press any key to finish the test:

```
Media Drive
PWM avg: 16000 to 20000
PWM avg got: 16993.8
Speed error limit: 40
Speed error got: 25
PWM StDev: 1.00 to 850.00
PWM StDev got: 349.51
Press any key to finish.
```

If there is a failure at this point, the Front Panel will display:

```
Media Drive
WARNING: High Friction.
PWM avg: 16000 to 20000
PWM avg got: 13300.0
Speed error top limit: 40
Speed error got: 20
PWM StDev: 1.00 to 850.00
PWM StDev got: 120.53
Press any key to finish.
```

- 12** Once the test is completed, OK will be displayed on the Front Panel.

```
Media Drive

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



**PHONE SUPPORT**

### 3. Electronics Module Test

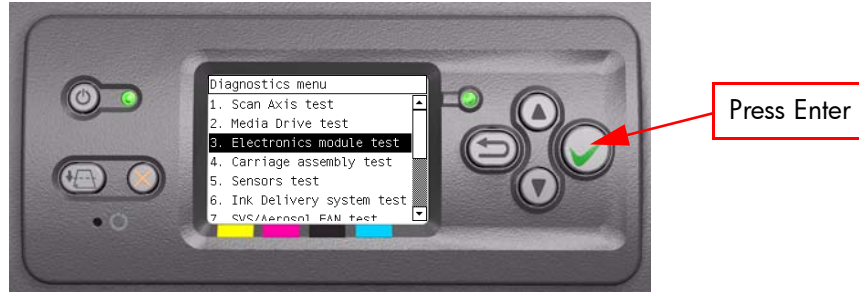
The purpose of this test is to diagnose a failure in the operation of the:

- Components of the Electronics Module.
- Electronics Module to Carriage and ISS Communication.

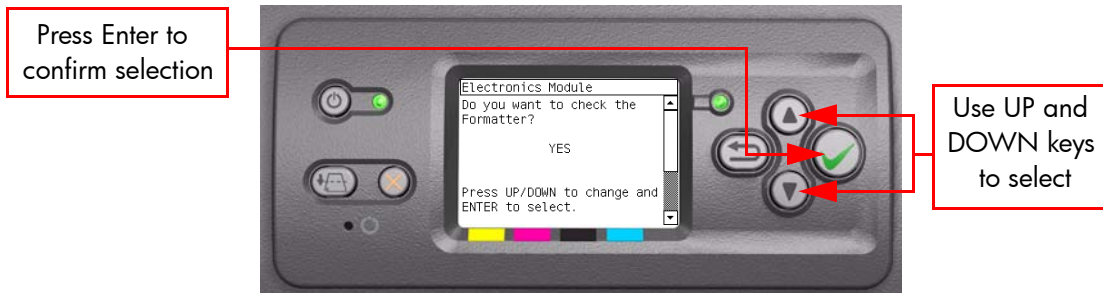
**This test does not test the EIO Card or the Hard Disk Drive.**

Perform the Electronics Module test as follows:

- 1 In the Service Tests submenu, scroll to "3. Electronics Module Test" and press **Enter**.



- 2 A message will appear on the Front Panel asking whether you would like to check the Formatter. Select **Yes** or **No** by using the **Up** and **Down** keys and press **Enter** to confirm your selection. If you select **No**, the printer skips this test and goes to the next one:



- 3 If you select **Yes**, the printer will get the CPU information and display the information on the Front Panel. Press any key to continue the test:

```

Electronics Module
CPU information:
Processor: 0, GenuineIntel
CPU family: 15, model 2
Name: Intel(R) Celeron(R)
CPU 2.00GHz
Stepping: 9
CPU MHz: 1999.793
Press any key to continue.
  
```

- 4 The printer will now get the Main Board (MB) information and display the information on the Front Panel. Press any key to continue the test:

```

Electronics Module
Main Board information:
Temp. (sys/CPU/amb):
    28.00/34.00/30.00
Volt (1.5/1.8/2.5/3.3):
    1.516/1.763/2.552/3.352
Volt (5/12/Vccp):
    5.078/11.875/1.500
Press any key to continue.
  
```

- 5 The printer will now get the CPU Fan Speed and display the information on the Front Panel. Press any key to continue the test:

```

Electronics Module
CPU Fan Speed: 5228
Press any key to continue.
  
```

If the CPU Fan Speed is less than 2500, the Front Panel will display **System Error Code 05.1:10**. For more information on troubleshooting this error code, refer to Page 2-5.

- 6 The printer will now calculate the amount of memory installed and display the information on the Front Panel. Press any key to continue the test:

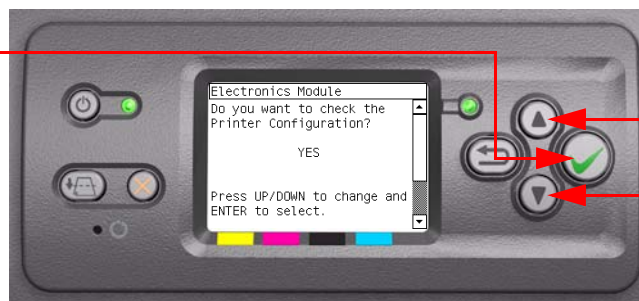
```

Electronics Module
Main memory size: 256MB
Press any key to continue.
  
```

A minimum of 256 megabytes of memory must be installed in the Printer. If not, the Front Panel will display **System Error Code 05.3:10**. For more information on troubleshooting this error code, refer to Page 2-5.

- 7 A message will appear on the Front Panel asking whether you would like to check the Printer Configuration. Select **Yes** or **No** by using the **Up** and **Down** keys and press **Enter** to confirm your selection. If you select **No**, the printer skips this test and goes to the next one:

Press Enter to  
confirm selection



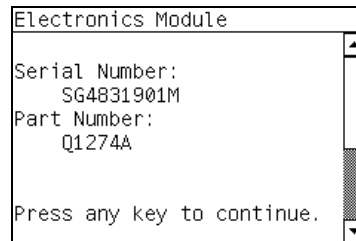
Use UP and  
DOWN keys  
to select

- 8 If you select **Yes**, the Printer will start the CDS and the following information will be displayed on the Front Panel:

■ Starting CDS.

If there is a failure at this point, the Front Panel will display **System Error Code 79:03**. For more information on troubleshooting this error code, refer to Page 2-27.

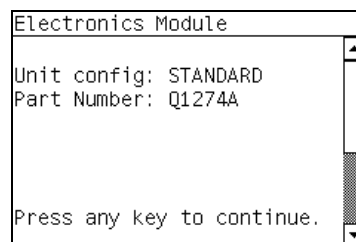
- 9 The printer will then check the Serial Number and Part Number and display the information on the Front Panel. Press any key to continue the test:



If the Serial Number or the Part Number cannot be read, the Front Panel will display **System Error Code 74:00**. For more information on troubleshooting this error code, refer to Page 2-20.

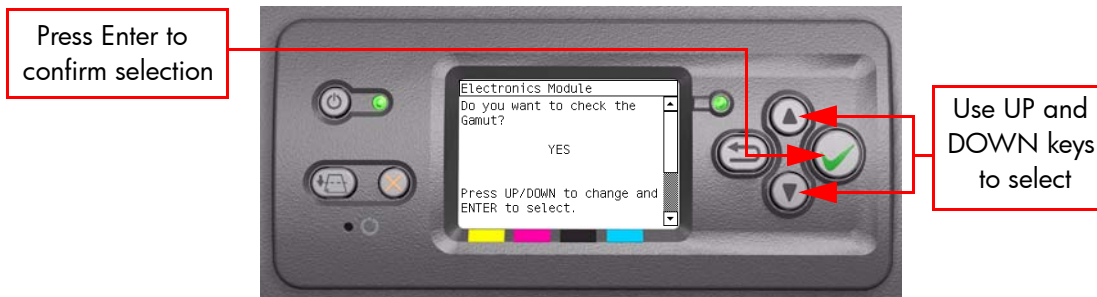
If the Serial Number does not have assigned a correct 10 character format or the Part number does not have assigned a correct 6 character format, a fail message will appear on the Front Panel. In this case, re-enter in to the Service Tests submenu and use the diagnostic "13. Error 71:19 Recovery" to set the correct Serial Number (refer to Page 4-47).

- 10 The Printer will now check the unit configuration (whether it is Standard or Productivity) and the Part Number and display the information on the Front Panel. Press any key to continue the test:



If the unit configuration is incorrect according to the part number, the Front Panel will display a fail message. In this case, re-enter in to the Service Tests submenu and use the diagnostic "12. Set Unit Configuration" to set the correct configuration (refer to Page 4-46).

- 11** A message will appear on the Front Panel asking whether you would like to check the Gamut. Select **Yes** or **No** by using the **Up** and **Down** keys and press **Enter** to confirm your selection. If you select **No**, the printer skips this test and goes to the next one:

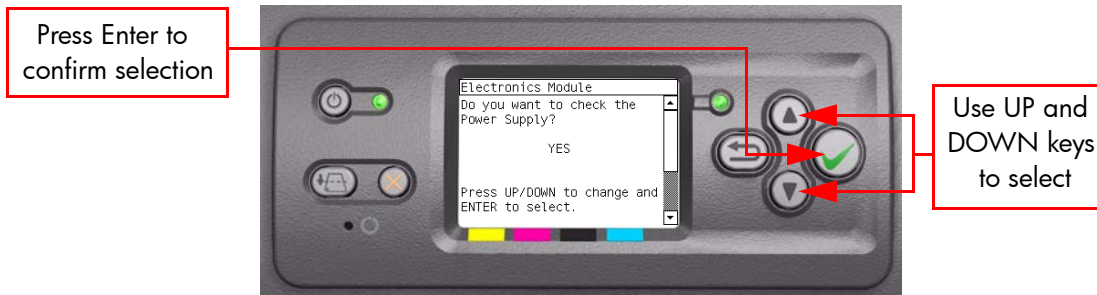


- 12** If you select **Yes**, the Printer will check the Gamut PCI PCA and the following messages will be displayed on the Front Panel:

- Checking Gamut PCI.
- Checking ARM Gamut.
- Starting Gamut.
- Checking Gamut memory I.
- Checking Gamut memory II.

If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

- 13** A message will appear on the Front Panel asking whether you would like to check the Power Supply. Select **Yes** or **No** by using the **Up** and **Down** keys and press **Enter** to confirm your selection. If you select **No**, the printer skips this test and goes to the next one:



- 14** If you select **Yes**, the Printer will check the Power Supply Unit and the following messages will be displayed on the Front Panel:

- Starting Gamut.
- Starting Tests GPIO.
- Set GPIO psu\_lpm.

If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

#### ■ Checking voltage.

If there is a failure at this point, the Front Panel will display **System Error Code 03:10**. For more information on troubleshooting this error code, refer to Page 2-5.

#### ■ Clear GPIO psu\_lpm.

If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

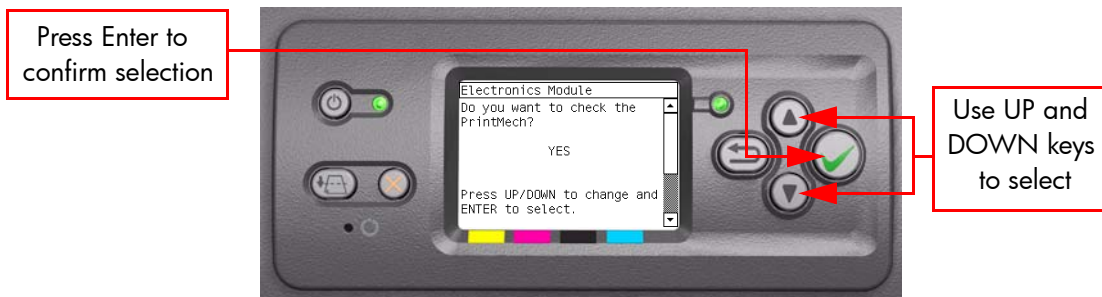
#### ■ Checking voltage.

If there is a failure at this point, the Front Panel will display **System Error Code 03:10**. For more information on troubleshooting this error code, refer to Page 2-5.

#### ■ Starting CDS.

If there is a failure at this point, the Front Panel will display **System Error Code 79:03**. For more information on troubleshooting this error code, refer to Page 2-21.

- 15 A message will appear on the Front Panel asking whether you would like to check the PrintMech. Select **Yes** or **No** by using the **Up** and **Down** keys and press **Enter** to confirm your selection. If you select **No**, the printer skips this test and goes to the next one:



- 16 If you select **Yes**, the Printer will check the PrintMech and the following messages will be displayed on the Front Panel:

- Starting Gamut.
- Starting Tests GPIO.

If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

#### ■ Checking PCA rev.

The value for the PCA revision must be more than 0.625V, if not the Front Panel will display **System Error Code 01.1:10**. For more information on troubleshooting this error code, refer to Page 2-3.

- Clear GPIO psu\_lpm.

If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

- Disable Vacuum Fans.
- Checking Vacuum Fans.
- Enable Vacuum Fans.
- Checking Vacuum Fans.
- Disable Vacuum Fans.

If there is a failure at this point, the Front Panel will display either **System Error Code 01.0:10** or **System Error Code 01.1:10**. For more information on troubleshooting either of these error codes, refer to Page 2-3.

- Starting CDS.

If there is a failure at this point, the Front Panel will display **System Error Code 79:03**. For more information on troubleshooting this error code, refer to Page 2-21.

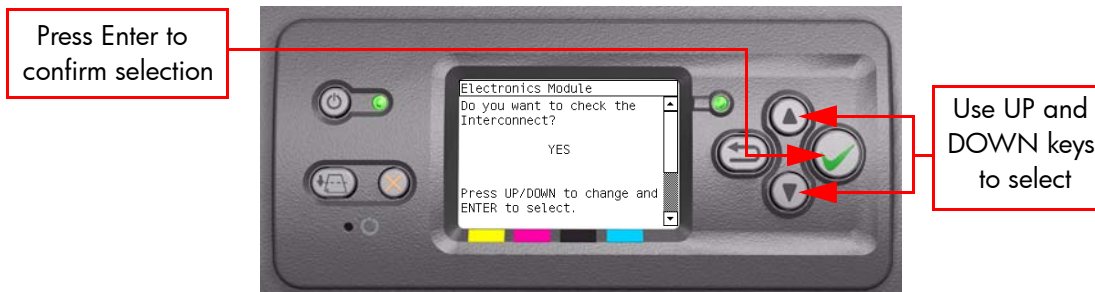
- Getting unit config.

If the Part Number cannot be read, the Front Panel will display **System Error Code 74:00**. For more information on troubleshooting this error code, refer to Page 2-20.

If the current Part Number is not in the correct 6 character format, the Front Panel will display a fail message. In this case, re-enter in to the Service Tests submenu and use the diagnostic "13. Error 71:19 Recovery" to set the correct Serial Number (refer to Page 4-47).

If the unit configuration is incorrect according to the part number, the Front Panel will display a fail message. In this case, re-enter in to the Service Tests submenu and use the diagnostic "12. Set Unit Configuration" to set the correct configuration (refer to Page 4-46).

- 17** A message will appear on the Front Panel asking whether you would like to check the Interconnect. Select **Yes** or **No** by using the **Up** and **Down** keys and press **Enter** to confirm your selection. If you select **No**, the printer skips this test and goes to the next one:



- 18** If you select **Yes**, the Printer will check the Interconnect PCA and the following messages will be displayed on the Front Panel:

- Starting CDS.

If there is a failure at this point, the Front Panel will display **System Error Code 79:03**. For more information on troubleshooting this error code, refer to Page 2-27.

#### ■ Getting unit config.

If the current Part Number is not in the correct 6 character format, the Front Panel will display a fail message. In this case, re-enter in to the Service Tests submenu and use the diagnostic "13. Error 71:19 Recovery" to set the correct Serial Number (refer to Page 4-47).

If the unit configuration is incorrect according to the part number, the Front Panel will display a fail message. In this case, re-enter in to the Service Tests submenu and use the diagnostic "12. Set Unit Configuration" to set the correct configuration (refer to Page 4-46).

#### ■ Starting Tests GPIO.

If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

#### ■ Checking GPIO channels.

At this stage, the Printer reads and checks the default GPIO values in the Interconnect PCA when all the cables are connected and all the sensors give the default value or the current state. The results will be displayed on the Front Panel and you can press any key to scroll through the information.

Electronics Module

Revision Id 1:	0 OK
Revision Id 2:	0 OK
Revision Id 3:	0 OK
Window Sensor:	0 OK
SVS Door:	0 OK
Media Sensor:	0 OK

Press any key to continue.

Electronics Module

Pinch Lever:	0 OK
BT Standby:	0 OK
Sheet Sensor:	* 1 OK
Back Channel Sensor:	* 0 OK
Feed Pinch Lever 0:	* 0 OK
Feed Pinch Lever 1:	* 0 OK

Press any key to continue.

Electronics Module

Roll Box 0:	* 1 OK
Roll Box 1:	* 1 OK
Roll Box 2:	* 1 OK
PM Check Cable:	0 OK
DD Goods:	0 OK
Media Jam Sensor:	* 0 OK

Press any key to continue.

Electronics Module

Load Paper SW:	* 0 OK
----------------	--------

Press any key to continue.

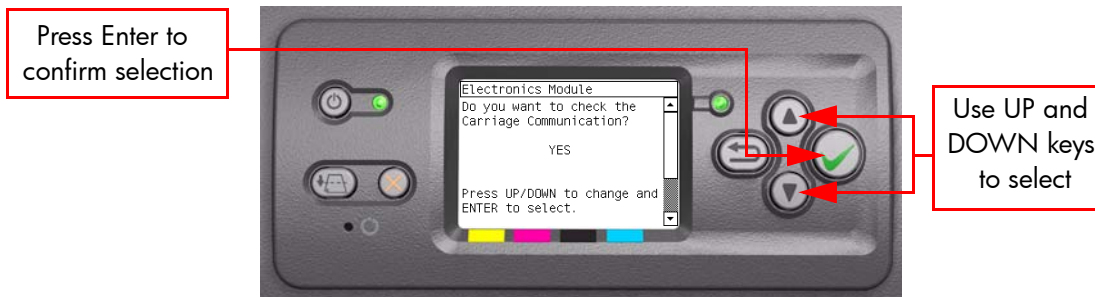
\* Items marked with an asterisk are not important and can be ignored.

If any of the channels cannot be read, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

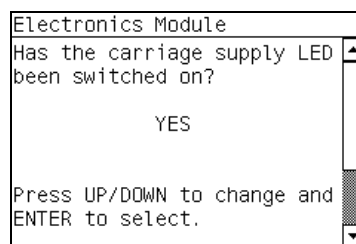
If any of the read values do not match the expected default, the Front Panel will display **System Error Code 07:10**. For more information on troubleshooting this error code, refer to Page 2-6.



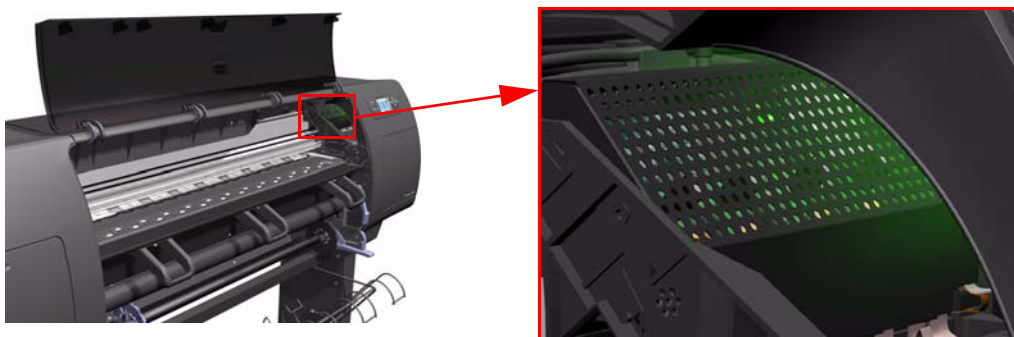
- 19** A message will appear on the Front Panel asking whether you would like to check the Carriage Communication. Select **Yes** or **No** by using the **Up** and **Down** keys and press **Enter** to confirm your selection. If you select **No**, the printer skips this test and goes to the next one:



- 20** If you select **Yes**, the following message will appear on the Front Panel:



- 21** Open the Window and check that the Carriage power light is ON (a green light on the carriage PCA). Select **Yes** or **No** by using the **Up** and **Down** keys and press **Enter** to confirm your selection.



If you select **No** at this point, the Front Panel will display **System Error Code 07:10**. For more information on troubleshooting this error code, refer to Page 2-6. Check also **System Error Code 11:10** (refer to Page 2-7) or **System Error Code 02.1:10** (refer to Page 2-4).

If you select **Yes**, then the Front Panel will display:

- Starting Carriage.

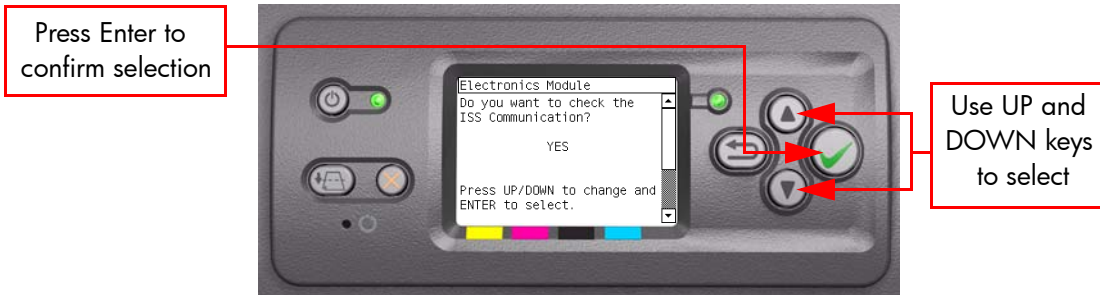
If there is a failure at this point, the Front Panel will display **System Error Code 02.1:10**. For more information on troubleshooting this error code, refer to Page 2-4. Check also **System Error Code 11:10** (refer to Page 2-7) or **System Error Code 01.0:10** (refer to Page 2-3).

- Checking Carriage rev.



If there is a failure at this point, the Front Panel will display **System Error Code 02.1:10**. For more information on troubleshooting this error code, refer to Page 2-4. Check also **System Error Code 11:10** (refer to Page 2-7).

- 22** A message will appear on the Front Panel asking whether you would like to check the ISS Communication. Select **Yes** or **No** by using the **Up** and **Down** keys and press **Enter** to confirm your selection. If you select **No**, the printer skips this test and goes to the next one:



- 23** If you select **Yes**, the Printer will check the ISS Communication and the following information will be displayed on the Front Panel:

■ Starting Gamut.

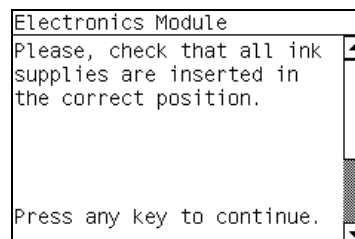
If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

■ Checking ISS PCA rev.

The value for the ISS PCA revision must be more than 0.625V, if not the Front Panel will display **System Error Code 01.2:10**. For more information on troubleshooting this error code, refer to Page 2-4. Check also **System Error Code 01.0:10** (refer to Page 2-3)

If there is a problem in reading the values, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

- 24** When the Front Panel displays the following message, open the Ink Cartridge Door and check that all the Ink cartridges are correctly installed. Press any key to continue.



- 25** The Printer will continue with the ISS Communication test and the following messages will be displayed on the Front Panel:

■ Starting ISS Ink Sup.

If there is a failure at this point, the Front Panel will display **System Error Code 13.n:10**. For more information on troubleshooting this error code, refer

to Page 2-7. Check also **System Error Code 01.2:10** (refer to Page 2-4) or **System Error Code 01.0:10** (refer to Page 2-3).

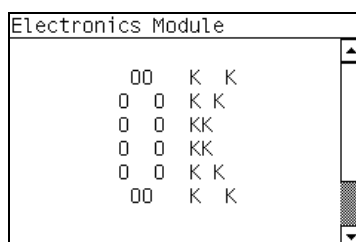
■ Getting ISS data.

If there is a failure at this point, the Front Panel will display **System Error Code 74:00**. For more information on troubleshooting this error code, refer to Page 2-20.

■ Checking ISS Ink Sup.

If there is a failure at this point, the Front Panel will display **System Error Code 26.n:10**. For more information on troubleshooting this error code, refer to Page 2-10. Check also **System Error Code 13.n:10** (refer to Page 2-7).

- 26** Once the test is completed, OK will be displayed on the Front Panel.



**PHONE SUPPORT**

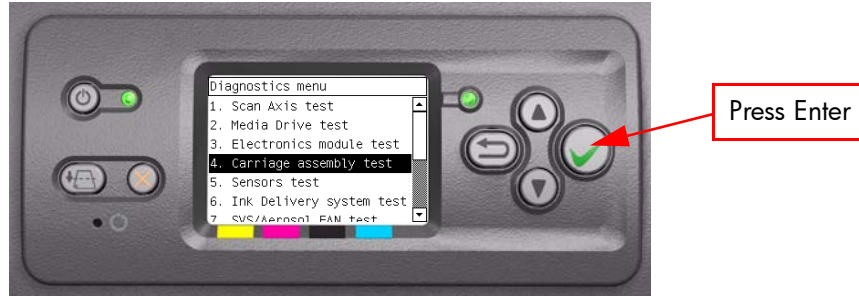
## 4. Carriage Assembly Test

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

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

Perform the Carriage Assembly test as follows:

- 1 In the Service Tests submenu, scroll to "4. Carriage Assembly Test" and press **Enter**.



- 2 This test has not yet been implemented.

**PHONE SUPPORT**

## 5. Sensors Test

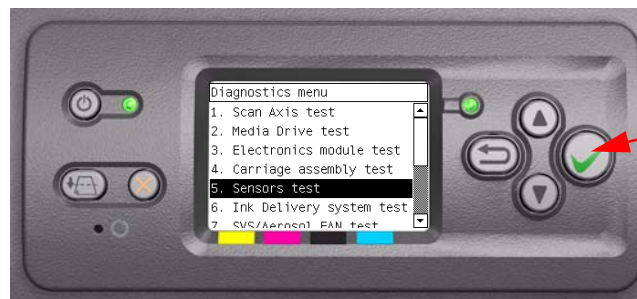
The purpose of this test is to verify the operation of the following Sensors:

- Window Sensor.
- Printhead Cleaner (PHC) Access Door Sensor.
- Media Lever Sensor.
- Media Sensor.

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

Perform the Sensors test as follows:

- 1 Before starting, first make sure that:
  - The Window is closed.
  - The Printhead Cleaner Access Door is closed.
  - The Media Lever is in the lowered position.
  - Media is loaded.
- 2 In the Service Tests submenu, scroll to "5. Sensors Test" and press **Enter**.



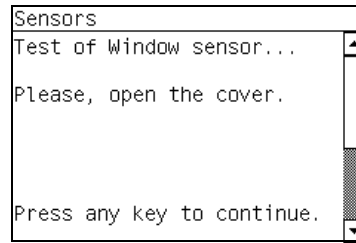
- 3 The Printer will start to initialize and the Front Panel will display the following messages:
  - Starting Gamut.
  - Starting Tests GPIO.

If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

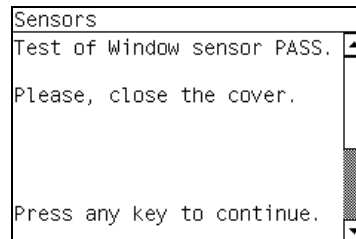
- 4 Before starting to test the sensors, the following message will be displayed. Press any key to continue:

```
Sensors
Test of sensors.
Default conditions are:
-Window Closed
-Right Door Closed
-Pinch Wheel Down
-Paper Loaded
Press any key to continue.
```

- 5 The Window Sensor will be tested first. When the following message is displayed on the Front Panel, open the Window and press any key to continue.

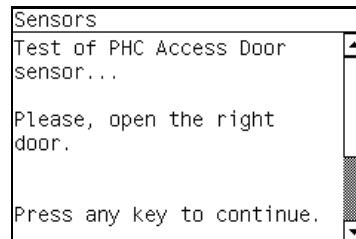


- 6 If the Window Sensor passes the test, the following message is displayed on the Front Panel. Close the Window and press any key to continue.

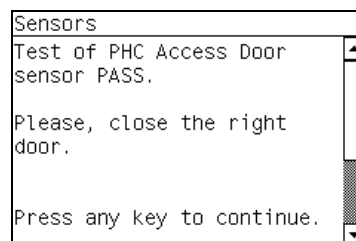


If the Window Sensor fails the test, the Front Panel will display **System Error Code 51:10**. For more information on troubleshooting this error code, refer to Page 2-15. Check also **System Error Code 07:10** (refer to Page 2-6).

- 7 The PHC Access Door Sensor will be tested next. When the following message is displayed on the Front Panel, open the PHC Access Door and press any key to continue.



- 8 If the PHC Access Door Sensor passes the test, the following message is displayed on the Front Panel. Close the PHC Access Door and press any key to continue.



If the PHC Access Door Sensor fails the test, the Front Panel will display **System Error Code 51.1:10**. For more information on troubleshooting this error code, refer to Page 2-15. Check also **System Error Code 07:10** (refer to Page 2-6).

- 9 The Media Lever Sensor will be tested next. When the following message is displayed on the Front Panel, raise the Media Lever and press any key to continue.

```
Sensors
Test of Pinchwheel Lever
sensor...

Please, raise the lever.

Press any key to continue.
```

- 10 If the Media Lever Sensor passes the test, the following message is displayed on the Front Panel. Lower the Media Lever and press any key to continue.

```
Sensors
Test of Pinchwheel Lever
sensor PASS.

Please, lower the lever.

Press any key to continue.
```

If the Media Lever Sensor fails the test, the Front Panel will display **System Error Code 54:10**. For more information on troubleshooting this error code, refer to Page 2-16. Check also **System Error Code 07:10** (refer to Page 2-6).

- 11 The Media Lever Sensor will be tested next. When the following message is displayed on the Front Panel, raise the Media Lever and remove the Media from the Printer and press any key to continue.

```
Sensors
Test of Paper sensor...

Please, remove the paper
and lower the lever.

Press any key to continue.
```

- 12 If the Media Lever Sensor passes the test, the following message is displayed on the Front Panel. Press any key to continue.

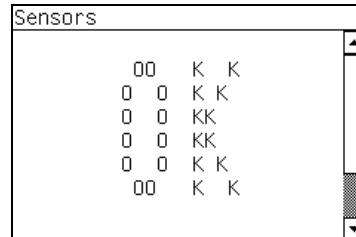
```
Sensors
Test of Paper sensor PASS.

Press any key to continue.
```

If the Media Lever Sensor fails the test, the Front Panel will display **System Error Code 53:10**. For more information on troubleshooting this error code, refer to Page 2-16. Check also **System Error Code 07:10** (refer to Page 2-6).

If there is a failure in reading the GPIO channel, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3. Check also **System Error Code 07:10** (refer to Page 2-6).

- 13 Once the test is completed, OK will be displayed on the Front Panel.

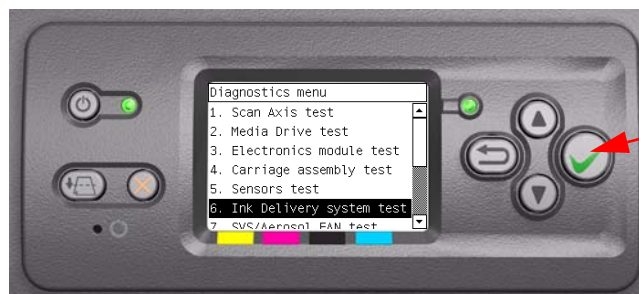


**PHONE SUPPORT**

## 6. Ink Delivery System Test

The purpose of this test is to verify the operation of the Ink Delivery System. Perform the Ink Delivery System test as follows:

- 1 In the Service Tests submenu, scroll to "6. Ink Delivery System Test" and press **Enter**.



Press Enter

- 2 This test has not yet been implemented.



**PHONE SUPPORT**

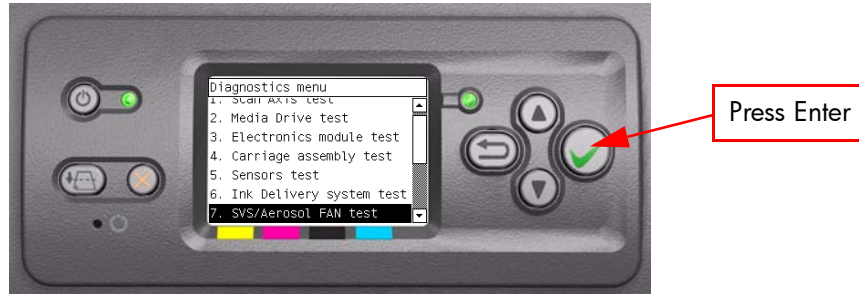
## 7. SVS/Aerosol Fan Test

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

**IF POSSIBLE ALWAYS PERFORM THIS TEST BEFORE REPLACING THE SERVICE STATION/AEROSOL FAN. IF THIS TEST PASSES, DO NOT REPLACE THE SERVICE STATION/AEROSOL FAN.**

Perform the SVS/Aerosol Fan test as follows:

- 1 In the Service Tests submenu, scroll to "7. SVS/Aerosol Fan Test" and press **Enter**.



- 2 This test has not yet been implemented.

**PHONE SUPPORT**

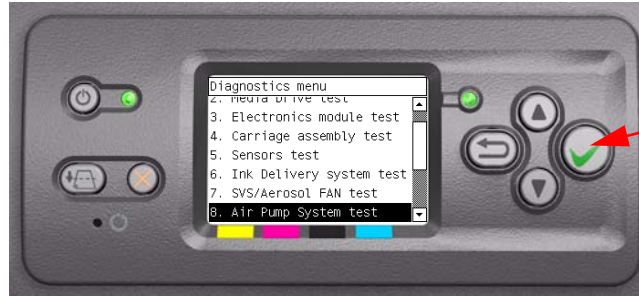
## 8. Air Pump System Test

The purpose of this test is to verify the operation of the Air Pressurization System (APS).

**IF POSSIBLE ALWAYS PERFORM THIS TEST BEFORE REPLACING THE APS. IF THIS TEST PASSES, DO NOT REPLACE THE APS.**

Perform the Air Pump System test as follows:

- 1 In the Service Tests submenu, scroll to "8. Air Pump System Test" and press **Enter**.



- 2 This test has not yet been implemented.

**PHONE SUPPORT**

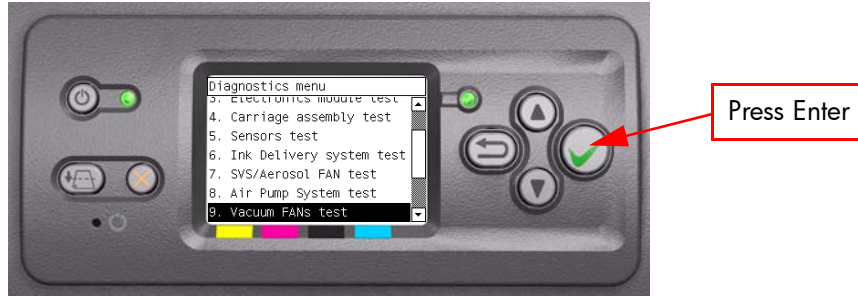
## 9. Vacuum Fans Test

The purpose of this test is to verify the operation of the Vacuum Fans.

**IF POSSIBLE ALWAYS PERFORM THIS TEST BEFORE REPLACING THE VACUUM FAN. IF THIS TEST PASSES, DO NOT REPLACE THE VACUUM FAN.**

Perform the Vacuum Fans test as follows:

- 1 In the Service Tests submenu, scroll to "9. Vacuum Fans Test" and press **Enter**.



- 2 This test has not yet been implemented.

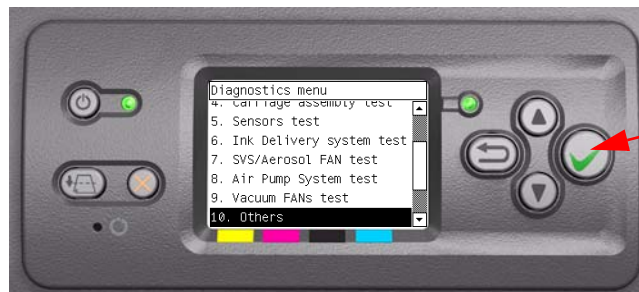
**PHONE SUPPORT**

## 10.1 Others >>> Bag Broken Recovery

This option allows to recover the Printer from a Bag Broken error.

Perform the Bag Broken Recovery as follows:

- 1 In the Service Tests submenu, scroll to "10. Others" and press **Enter**.



- 2 In the Others submenu, scroll to "10.1 Bag Broken Recovery" and press **Enter**.



- 3 The Printer will start to initialize and the Front Panel will display the following messages:

- Starting Gamut.
- Starting TestGPIO.

If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

- 4 The Printer will now detect for a broken bag in the Ink cartridges and the Front Panel will display the following messages:

- Detecting Bag Broken.

If the Printer does not detect that any of the Ink cartridges have a broken bag, then the message "No ink short detected on supplies" will be displayed on the Front Panel.

If there is a problem while reading the Bag Broken signal, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3. Check also **System Error Code 01.2:10** (refer to Page 2-4).

If the Printer detects that one or more of the Ink Cartridges have a broken bag, then the message "Please, replace one of the defective cartridges (0, 1, 2 or 3) and press any key to continue" will be displayed on the Front Panel. In this case, remove the faulty Ink Cartridge as indicated by the Front Panel and install a new Ink Cartridge.

0 = Yellow  
1 = Magenta  
2 = Black  
3 = Cyan

If the Bag Broken error is still active even after replacing the faulty Ink cartridge, the Front Panel will display **System Error Code 01.2:10**. For more information on troubleshooting this error code, refer to Page 2-4. Check also **System Error Code 01.0:10** (refer to Page 2-3).

- 5 If the Printer does not detect that any of the Ink cartridges have a broken bag, then it will read the Acumen of the Ink cartridge to check if there had been an ink short previously. During this check, the Front Panel will display the following messages:

- Starting AcumenSupplies.
- Getting ISS data.

If the Printer does not detect that any of the Ink Cartridges previously had a Bag Broken error, then the message "No Broken Bag detected on supplies" will be displayed on the Front Panel.

If there is a problem while reading the Acumen, the Front Panel will display **System Error Code 26.n:10**. For more information on troubleshooting this error code, refer to Page 2-10. Check also **System Error Code 13.n:10** (refer to Page 2-7), **System Error Code 01.2:10** (refer to Page 2-4) or **System Error Code 01.0:10** (refer to Page 2-3).

If it is not possible to get the ISS Data, the Front Panel will display **System Error Code 74:00**. For more information on troubleshooting this error code, refer to Page 2-20.

If the Printer detects that an Ink Cartridge had previously experienced a Bag Broken error, the Front Panel will display **System Error Code 26.n:10**. For more information on troubleshooting this error code, refer to Page 2-10. Check also **System Error Code 01.2:10** (refer to Page 2-4) or **System Error Code 01.0:10** (refer to Page 2-3).

- 6 If no Ink Cartridges have been identified with Bag Broken, the Printer will try a Self Recovery test. When the following message is displayed on the Front Panel, remove the Left Cover and check if the tubes from the APS to the ISS are clean. Select **Yes** or **No** by using the **Up** and **Down** keys and press **Enter** to confirm your selection.



If you select **No**, the Front Panel will display **System Error Code 23:10**. For more information on troubleshooting this error code, refer to Page 2-8.

- 7** If you select **Yes**, the following message will appear on the Front Panel. Check if the Ink Supply Tubes from the ISS to the Carriage contain visible air. Select **Yes** or **No** by using the **Up** and **Down** keys and press **Enter** to confirm your selection.

Press Enter to confirm selection

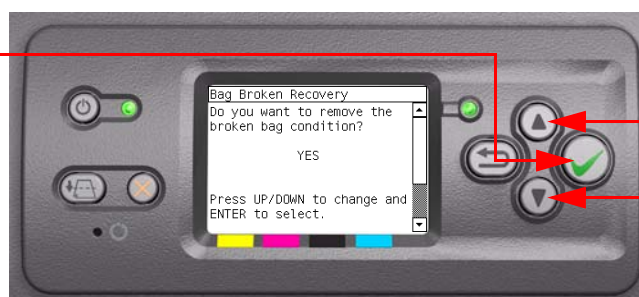


Use UP and DOWN keys to select

If you select **Yes**, the Front Panel will display **System Error Code 24:10**. For more information on troubleshooting this error code, refer to Page 2-9.

- 8** If you select **No**, the following message will appear on the Front Panel. You can now remove the Broken Bag condition causing the initial problem. Select **Yes** or **No** by using the **Up** and **Down** keys and press **Enter** to confirm your selection.

Press Enter to confirm selection



Use UP and DOWN keys to select

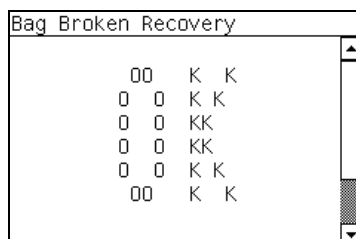
- 9** If you select Yes, the following messages will appear on the Front Panel:

■ Start Supplies Conf.

If there is a problem at this stage, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

■ Removing leakage.

- 10** Once the process is completed, OK will be displayed on the Front Panel.



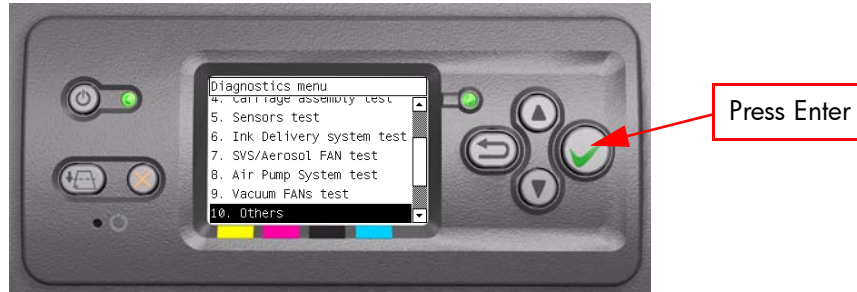
**PHONE SUPPORT**

## 10.2 Others >>> IO Information

This option allows you to view the information relating to the IO.

View the IO Information as follows:

- 1 In the Service Tests submenu, scroll to "10. Others" and press **Enter**.



- 2 In the Others submenu, scroll to "10.2 IO Information" and press **Enter**.



- 3 The Printer will start to initialize and the Front Panel will display the following messages:

- Getting IO Interface.
- Getting Interface info.

If there is a failure at this point, the Front Panel will display **System Error Code 74:00**. For more information on troubleshooting this error code, refer to Page 2-20.

If no active interface is found, the Front Panel will display "No active interface found. Press any key to finish".

- 4 Once the IO information is obtained, it is displayed on the Front Panel. Press any key to exit.

```

IO Information
IP:      16.23.60.239
Gateway: 16.23.56.1
Net Mask: 255.255.248.0

Press any key to finish.
  
```

- 5 Once the process is completed, OK will be displayed on the Front Panel.

**PHONE SUPPORT**

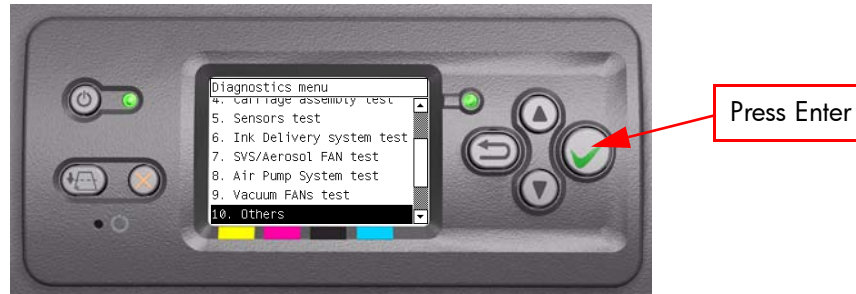
### 10.3 Others >>> Unit Information

This option allows you to view the following Printer information:

- Firmware version.
- Serial Number.
- Part Number.
- PS Language (for HP Designjet 4000PS)

View the Unit Information as follows:

- 1 In the Service Tests submenu, scroll to "10. Others" and press **Enter**.



- 2 In the Others submenu, scroll to "10.3 Unit Information" and press **Enter**.



- 3 The Printer will start to initialize and the Front Panel will display the following messages:

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

If there is a failure at this point, the Front Panel will display **System Error Code 79:03**. For more information on troubleshooting this error code, refer to Page 2-21.

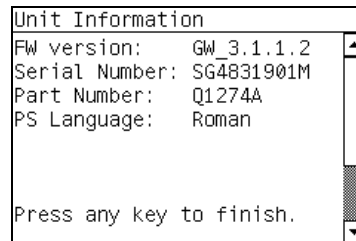
If the Serial Number does not have assigned a correct 10 character format or the Part number does not have assigned a correct 6 character format, a fail message will appear on the Front Panel. In this case, re-enter in to the Service Tests submenu and use the diagnostic "13. Error 71:19 Recovery" to set the correct Serial Number (refer to Page 4-47).

- Getting PS Language (for HP Designjet 4000PS).

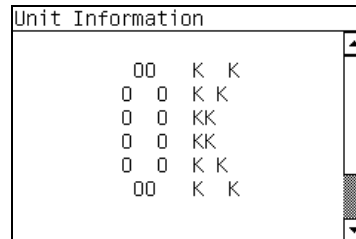
If there is a failure at this point, the Front Panel will display **System Error Code 74:00**. For more information on troubleshooting this error code, refer to Page 2-20.



- 4 Once the Unit information is obtained, it is displayed on the Front Panel. Press any key to exit.



- 5 Once the process is completed, OK will be displayed on the Front Panel.



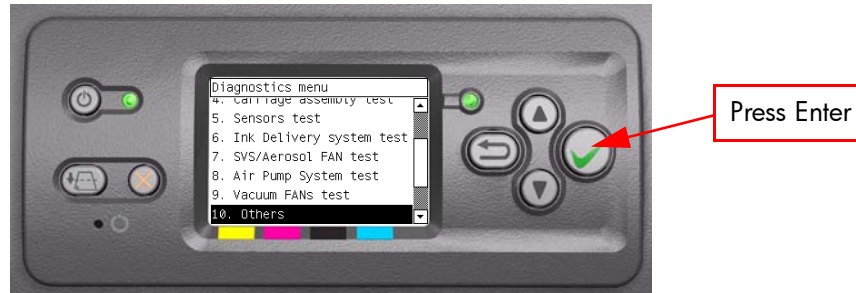
**PHONE SUPPORT**

## 10.4 Others >>> Check Ink Supplies

The purpose of this test is to verify which Ink Cartridges are valid for the purge process and what is their current available ink level. Some Ink Cartridges may not be able to be accessed (unable to read the Acumen) if previously there had been a failure (faulty, broken bag, etc...).

View the Unit Information as follows:

- 1 In the Service Tests submenu, scroll to "10. Others" and press **Enter**.



- 2 In the Others submenu, scroll to "10.4 Check Ink Supplies" and press **Enter**.



- 3 The Printer will start to initialize and the Front Panel will display the following messages:

- Starting Gamut.

If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

- Starting AcumenSupplies.

If there is a problem while reading the Acumen, the Front Panel will display **System Error Code 26.n:10**. For more information on troubleshooting this error code, refer to Page 2-10. Check also **System Error Code 13.n:10** (refer to Page 2-7), **System Error Code 01.2:10** (refer to Page 2-4) or **System Error Code 01.0:10** (refer to Page 2-3).

- Reading Ink Supplies.

If there is a failure at this point, the Front Panel will display the message "Replace failing ink supplies after running this utility: (Yellow, Magenta, Black or Cyan)".

- 4 Once the Ink Supplies information is obtained, it is displayed on the Front Panel. Press any key to exit.

```

Check Ink Supplies
      Y   M   B   C
OK purge:   NO  NO  NO  NO
Purge done: YES YES YES YES
Ink (%):    094 094 093 095
Ink (CC):   378 378 373 380
Press any key to finish.
  
```

If any part of the Acumen information is invalid, the Front Panel will display **System Error Code 74:00**. For more information on troubleshooting this error code, refer to Page 2-20.

- 5 Once the process is completed, OK will be displayed on the Front Panel.

```

Check Ink Supplies
      00   K   K
      0 0  K K
      0 0  KK
      0 0  KK
      0 0  K K
      00   K   K
  
```

**PHONE SUPPORT**

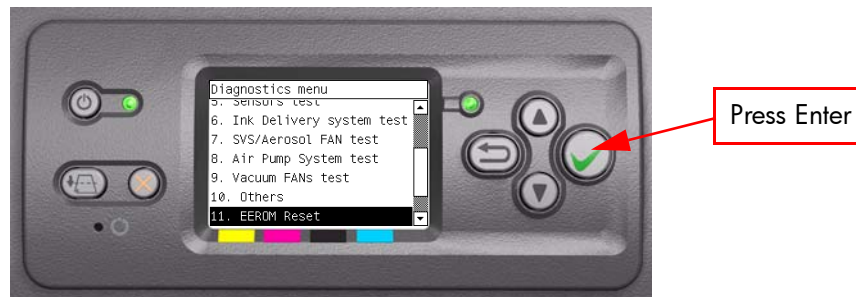
## 11. EEROM Reset

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

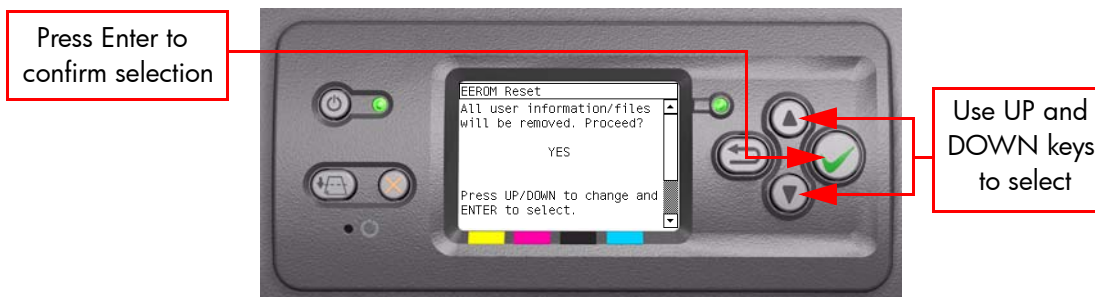
**Once the EEROM has been reset, the Printer will act as if it is being started for the first time, except that the Ink Supply Tubes have already been primed.**

Perform an EEROM Reset as follows:

- 1 In the Service Tests submenu, scroll to "11. EEROM Reset" and press **Enter**.



- 2 A message will appear on the Front Panel advising you that all user information/files will be removed. If you would like to proceed select **Yes** or **No** by using the **Up** and **Down** keys and press **Enter** to confirm your selection. If you select **No**, the process will end at this point.



- 3 If you select **Yes**, the Printer will begin the process to reset the EEROM and the following messages will appear on the Front Panel:

- Starting Gamut.

If there is a failure at this point, the Front Panel will display **System Error Code 01.0:10**. For more information on troubleshooting this error code, refer to Page 2-3.

- Starting NVM.
- Setting default config.
- Restoring tubes state.

If there is a failure at this point, the Front Panel will display **System Error Code 79:03**. For more information on troubleshooting this error code, refer to Page 2-21.

- 4 Once the EEROM has been reset, the following message will appear on the Front Panel. Press any key to continue.

```

EEROM Reset
After rebooting there will
be a printhead error.
Please, select printhead
replacement to launch the
printhead calibration.

Press any key to continue.
  
```

**After rebooting the Printer, make sure you select Printhead replacement through the Front Panel in order to launch the Printhead calibration.**

- 5 Once the process is completed, OK will be displayed on the Front Panel.

```

EEROM Reset

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

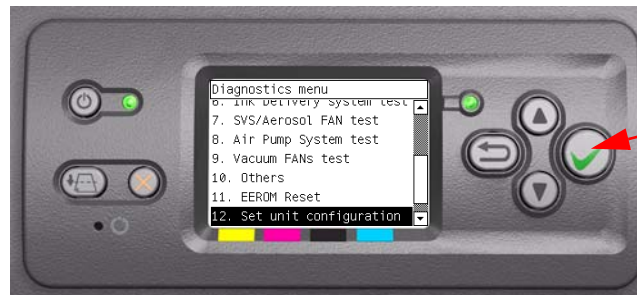
**PHONE SUPPORT**

## 12. Set Unit Configuration

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

Set the Unit Configuration as follows:

- 1 In the Service Tests submenu, scroll to "12. Set Unit Configuration" and press **Enter**.



- 2 The Printer will start the configuration process and the Front Panel will display the following messages:
  - Starting Nvm.
  - Getting Part Number: (will show either Q1273A/Q1274A or Q1271A/Q1272A).

If there is a failure at this point, the Front Panel will display **System Error Code 79:03**. For more information on troubleshooting this error code, refer to Page 2-21.

- 3 The following message will be displayed on the Front Panel. Press any key to finish the configuration.

```

Set Unit Configuration
Starting Nvm.
Getting Part Number: Q1274A
Setting new config:

        STANDARD

Press any key to continue.
  
```

If there is a failure at this point, the Front Panel will display **System Error Code 79:03**. For more information on troubleshooting this error code, refer to Page 2-21.

- 4 Once the process is completed, OK will be displayed on the Front Panel.

```

Set Unit Configuration

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

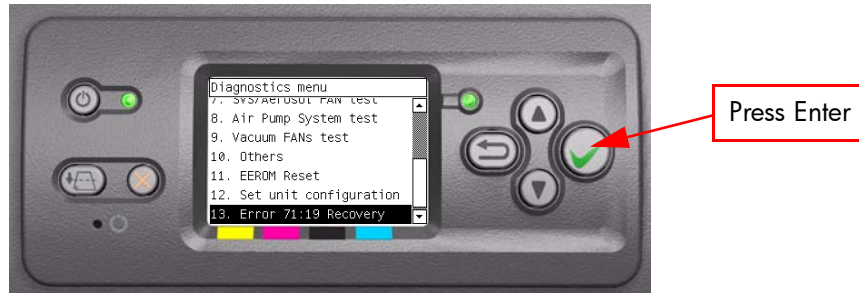
**PHONE SUPPORT**

### 13. Error 71:19 Recovery

The purpose of this utility is to set the Serial Number and Part Number in case both the Hard Disk Drive and the Ink Supply Tubes are replaced at the same time.

Set the Serial Number as follows:

- 1 In the Service Tests submenu, scroll to "Error 71:19 Recovery" and press **Enter**.



- 2 The Printer will check if the System Error Code 71:19 has been recorded and the following message will appear on the Front Panel:

■ Checking SE log.

If the Printer fails to find the System Error Code 71:19, the Front Panel will display **Error: Utility not available**. In this case press any key to exit.

- 3 If System Error Code is detected, the Printer will start the recovery procedure and the following messages will be displayed on the Front Panel:

■ Starting NvmBackup.

■ Starting NvmMain.

■ Getting Serial Number.

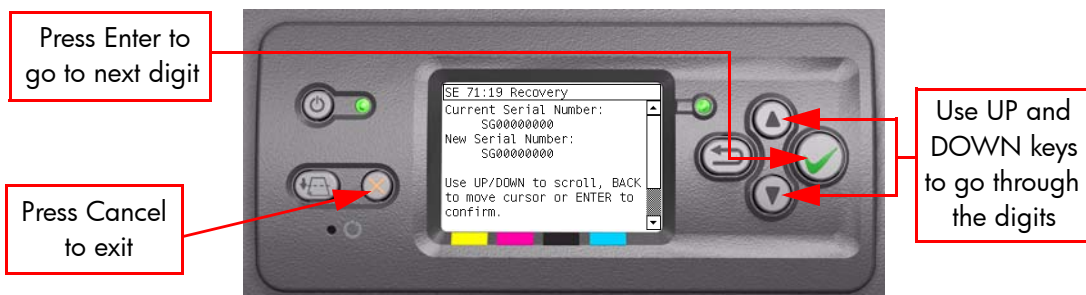
■ Checking Serial Number.

■ Starting Nvm.

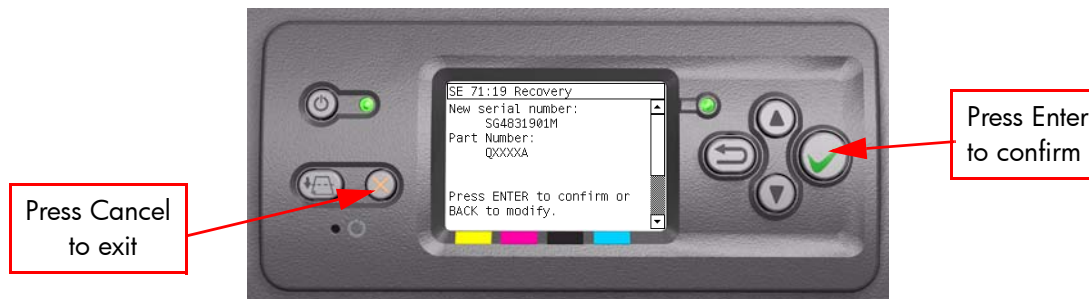
■ Getting Part Number.

If there is a failure at this point, the Front Panel will display **System Error Code 79:03**. For more information on troubleshooting this error code, refer to Page 2-21.

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

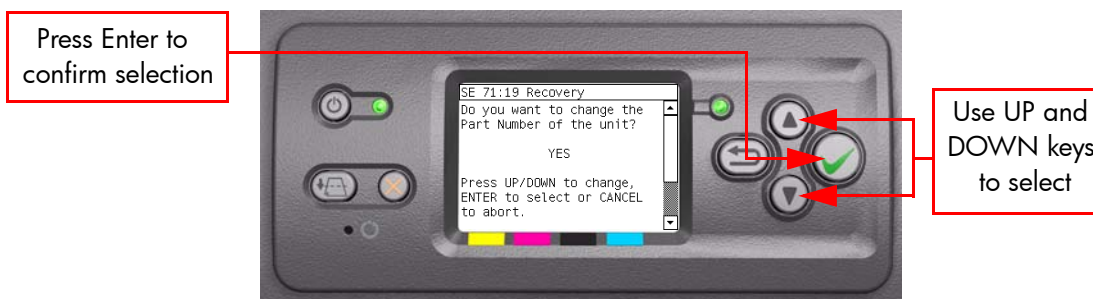


- 5 Once the new Serial Number has been entered, the Front Panel will display the Serial Number and Model Number of the Printer. Press the **Enter** key to confirm the Serial Number or the **Cancel** key to exit the utility without making any changes.



If there is a failure at this point, the Front Panel will display **System Error Code 79:03**. For more information on troubleshooting this error code, refer to Page 2-27.

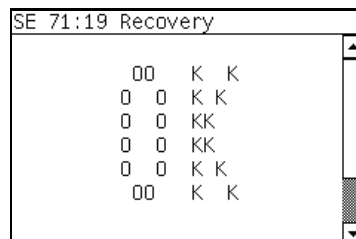
- 6 A message will appear on the Front Panel asking you if you would like to change the Part Number of the Printer. Select **Yes** or **No** by using the **Up** and **Down** keys and press **Enter** to confirm your selection. If you select **No**, the process will end at this point.



- 7 If you select **Yes**, the Front Panel will display the new Serial Number and Part Number. Press the **Enter** key to accept.

If there is a failure at this point, the Front Panel will display **System Error Code 79:03**. For more information on troubleshooting this error code, refer to Page 2-27.

- 8 Once the process is completed, OK will be displayed on the Front Panel.



**Once the Printer has recovered from the System Error Code 71:19, the Printer will be configured as HP Designjet 4000 (part number Q1273A). If the Printer was originally a HP Designjet 4000ps (part number Q1274A), you must contact the HP Customer Support Center for further information.**



**PHONE SUPPORT**

## I/O Tests

The purpose of this test is to check the installed and active I/O Interfaces. Perform the I/O tests as follows:

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



- 2 Once inside the "Printer Setup Menus" menu, press the **UP or Down** arrow key and the **Cancel** key together. You are now in the **Service Tools** Menu.



- 3 Use the **Arrow** keys to scroll to the "Service Tests" menu and press the **Enter** key.



- 4 In the Service Tests submenu, scroll to "I/O Tests" and press **Enter**.



- 5 When the following message appears on the front panel, you must select whether you would like to continue with the test by pressing the **Enter** key. Press **Back** or **Cancel** to exit the calibration.



- 6 The Printer will get information on the I/O Interfaces. Once the information has been read, the following message will be displayed on the Front Panel. Press any key to continue with the test:

```

I/O Tests
Interface select.: AUTO
Active interface: FAST_ETH
Active int. installed: YES
Active int. MAC state: UP

Press any key to continue.
  
```

This screens shows which interface is currently installed and active. If a connection is made to the active interface, the "Active int. MAC state" will be displayed as UP, otherwise it will displayed as DOWN.

- 7 If an active interface is installed, the Printer will test the active interface and if it passes it will display the following message on the Front Panel:

```

I/O Tests
I/O test for 'FAST_ETH'
interface has passed.
  
```

- 8 Once the process is completed, OK will be displayed on the Front Panel.

## Service Utilities

The following is a list of all internal Service Utilities available in the Printers. Instructions for entering the Service Utilities menu are given on Page 4-52.

**1** Turn Drive Roller ⇒ Page 4-54

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

**2** Prime Tubes ⇒ Page 4-56

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

**3** Set SN ⇒ Page 4-60

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

**4** Reset Life Counters ⇒ Page 4-61

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

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

**5** Diagnostic Print ⇒ Page 4-63

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

**6** Sleep Mode ⇒ Page 4-64

The purpose of this Service Utility is to enable/disable the sleep mode so that the Printer is never switched Off automatically if not used for a certain period of time (one hour by default).

**7** Replace Cutter ⇒ Page 4-65

The purpose of this Service Utility is to move the Carriage to a position where the Cutter can be replaced easily.

**8** Set RTC Clock ⇒ Page 4-66

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

**9** Carriage Setup ⇒ Page 4-67

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

## Entering the Service Utilities Menu

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

Press Enter to confirm selection

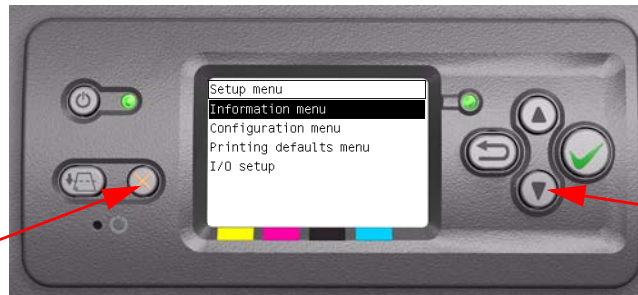


Use UP and DOWN keys to select

- 2 For Call Agents who will request the user to perform certain Service Utilities, once inside the "Printer Setup" menu, press the **Down** arrow key and the **Cancel** key together. You are now in the **Service Tools** Menu.

**PHONE SUPPORT**

Press Cancel key

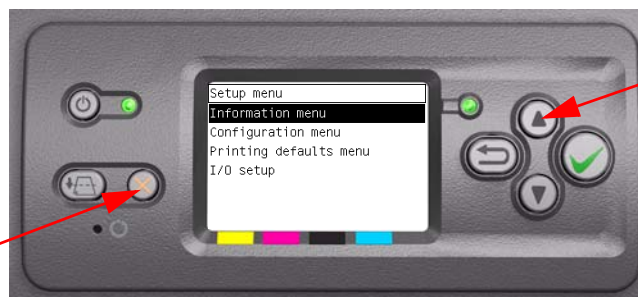


Press DOWN key

- 3 For On-Site Engineers, once inside the "Printer Setup" menu, press the **Up** arrow key and the **Cancel** key together. You are now in the **Service Tools** Menu.

**ON-SITE REPAIR**

Press Cancel key



Press UP key

- 4 Use the **Arrow** keys to scroll to the "Service Utilities" menu and press the **Enter** key.



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



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

**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.**

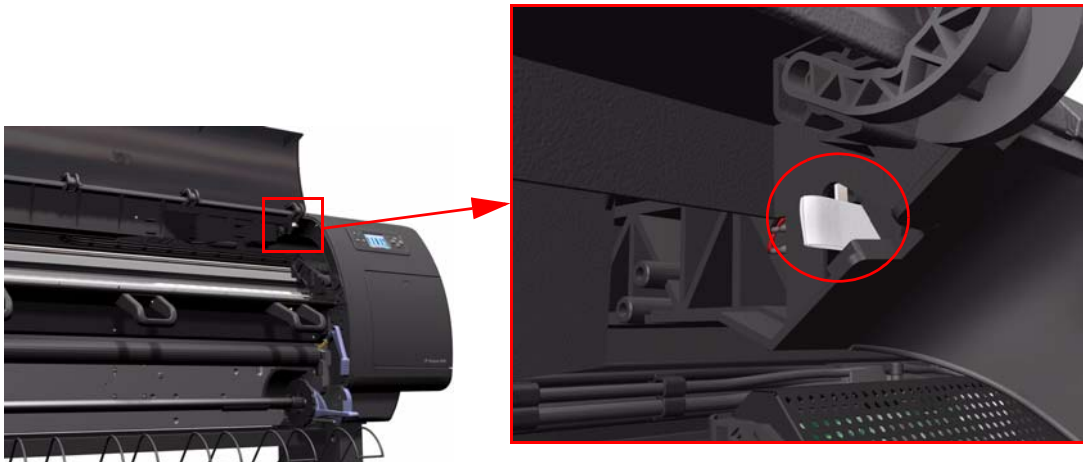
**PHONE SUPPORT**

## 1. Turn Drive Roller

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

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

**OPEN THE WINDOW OF THE PRINTER AND ACTIVATE THE WINDOW SENSOR (USING A PIECE OF PAPER) BEFORE PERFORMING THIS SERVICE UTILITY.**



Perform the Turn Drive Roller utility as follows:

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



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

```

Turn Drive Roller
Paper detected.
Please, remove media
completely and start again.
  
```

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

```

Turn Drive Roller
Rotation started.
Please, clean the roller.

Turn(s): 0.3
Timeout: 595

Press CANCEL key to finish.
  
```

- 4 Refer to the Cleaning Instructions on Page 9-3.
- 5 Once you have finished cleaning the Drive Roller and the Overdrive, press the **Cancel** key to finish the utility.
- 6 If the utility exits correctly, OK will be displayed on the Front Panel.

```

Turn Drive Roller

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

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



## 2. Prime Tubes

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

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

Perform the Prime Tubes utility as follows:

- 1 In the Service Utilities submenu, scroll to "Prime Tubes" and press **Enter**.

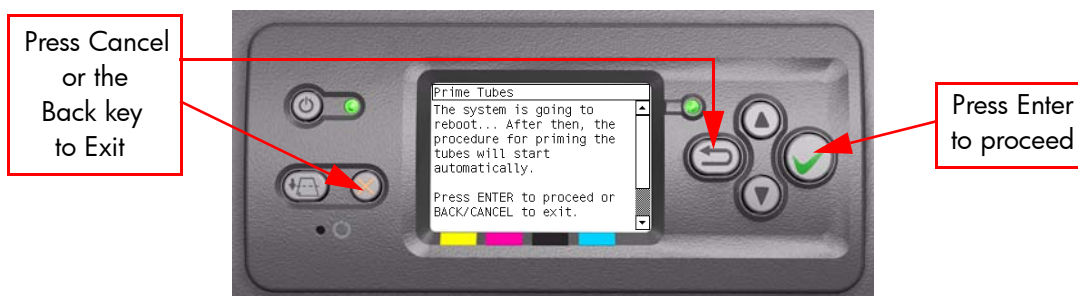


- 2 If the Ink Cartridges are not suitable for priming, the following message will appear on the Front Panel. Replace the installed Ink Cartridges with Ink Cartridges that are new or contain less than 88% of ink. Press any key to finish the utility.

```
Prime Tubes
Some of the current ink
supplies are not valid for
purge (0 1 2 3). Please,
replace them by valid
cartridges for purge and
start again.

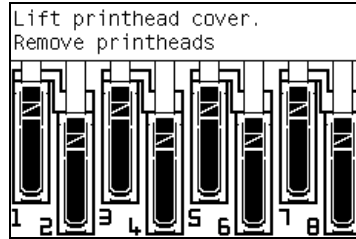
Press any key to finish.
```

- 3 When the following message appears on the front panel, you must select whether you would like to continue with the procedure by pressing the **Enter** key, in which case the Printer will reboot. Press **Back** or **Cancel** to exit the procedure at this point.

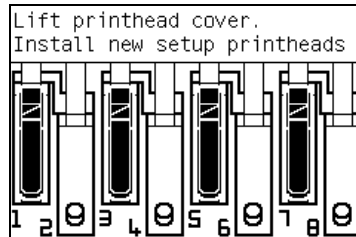




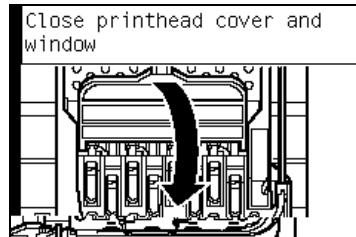
- 4** Once the Printer has rebooted, the Front Panel will instruct you to open the Window and remove ALL the Printheads installed in the Carriage.



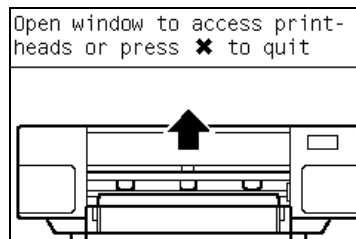
- 5** Once ALL the Printheads have been removed, the Front Panel will instruct you to install the Setup Printheads into the Carriage. Make sure you install the Setup Printheads in stalls 1, 3, 5 and 7.



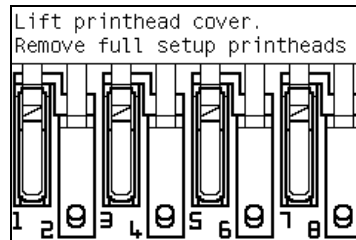
- 6** Once all the Setup Printheads are installed, the following message will appear on the front panel. Close the carriage cover and close the window.



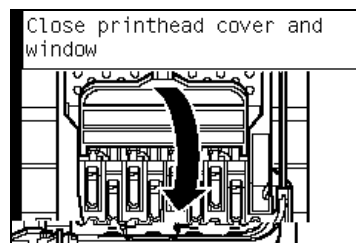
- 7** The printer will begin to purge the tubes system.
- 8** Once the tubes system has been purged, the following message will instruct you to open the Window:



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



- 10** Remove ALL the Setup Printheads from the Carriage and install the previously removed Printheads.
- 11** Once ALL the Printheads are installed, the Front Panel will instruct you to close the Carriage cover and close the Window.



- 12** Open the right cover and make sure the Printhead Cleaners are installed in the Service Station.



- 13** The Printer will now perform the Printhead Alignment and the following message will be displayed on the Front Panel. To continue with the Printhead Alignment, select "Align now" and press the **Enter** key.

Press Enter to  
confirm selection



Use UP and  
DOWN keys  
to select

- 14** Once the Printhead Alignment is completed, the following message will be displayed on the Front Panel. Press the **Enter** key to continue.

Printhead alignment
Calibration successfully completed.
Press ✓ to continue

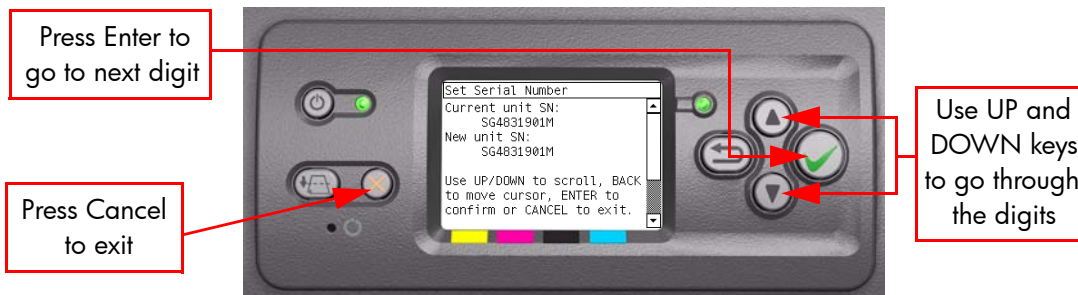
### 3. Set SN

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

- 1 In the Service Utilities submenu, scroll to "Set SN" and press **Enter**.

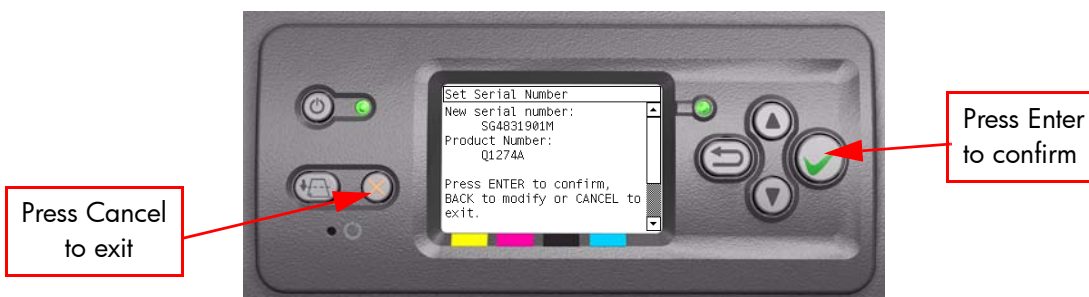


- 2 The Printer will display the current Serial Number and the new Serial Number of the Printer. Use the **Up** and **Down** keys to go through the digits and press the **Enter** key to go to the next digit. You can press the **Cancel** key at any time to exit the utility without making any changes.



If the Serial Number or the Part Number cannot be read, the Front Panel will display **System Error Code 74:00**. For more information on troubleshooting this error code, refer to Page 2-20.

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



- 4 If the new Serial Number cannot be set, the Front Panel will display **System Error Code 74:00**. For more information on troubleshooting this error code, refer to Page 2-20.
- 5 If the utility exits correctly, OK will be displayed on the Front Panel.

## 4. Reset Life Counters

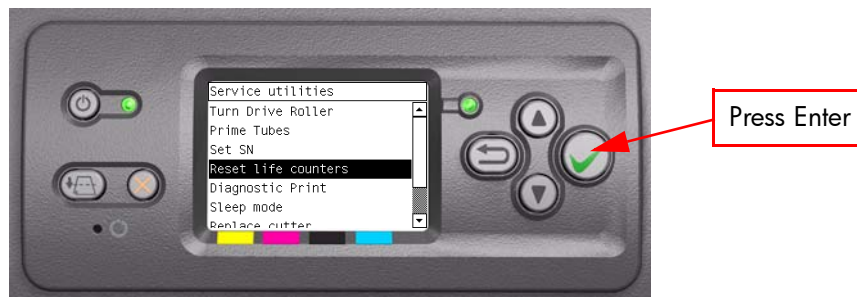
The purpose of this Service Utility is to reset the internal life counters. There are two submenus that allow you to:

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

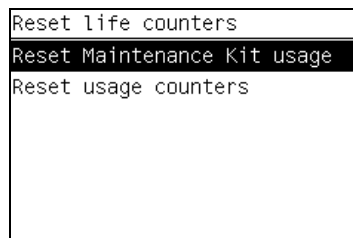
**ALWAYS RESET THE LIFE COUNTER OF A CORRESPONDING PART AFTER REPLACING IT.**

Perform the Reset Life Counters utility as follows:

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

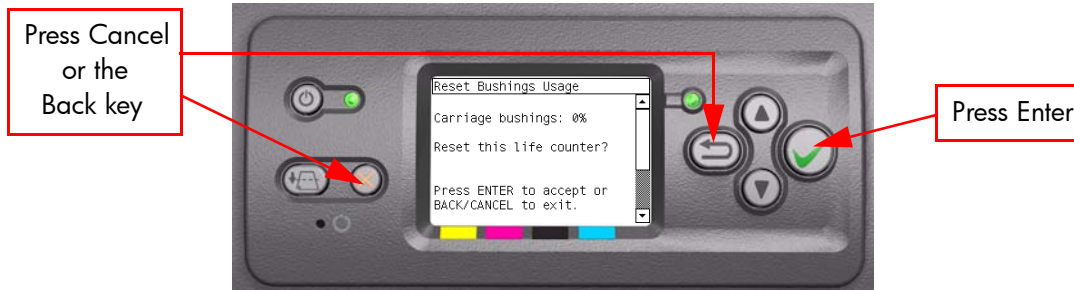


- 2 You will be given an option to either reset the Life Counter for ALL the parts related to a Preventive Maintenance Kit (PMK) or to just reset the Life Counter for a particular part:



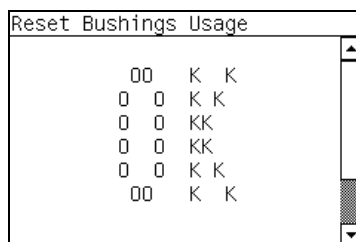
- a If you select to reset the Life Counter for ALL the parts related to a Preventive Maintenance Kit (PMK), you will be given an option to reset the Life Counter of:
  - Preventive Maintenance Kit 1 (PMK1).
  - Preventive Maintenance Kit 2 (PMK2).
- b If you select to reset the Life Counter for a particular part, you will be given an option to reset the Life Counter of the:
  - Scan-Axis Motor.
  - Trailing Cable and Tubes.
  - Carriage Belt.
  - Carriage (Bushing).
  - Most Left Spittoon.
  - Middle Left Spittoon.
  - PHC Spittoons.

- 3** Once you have selected a Life Counter to reset, the following message will be displayed on the Front Panel. Press the **Enter** key to reset the selected Life Counter or press **Back/Cancel** to exit without resetting the Life Counter.



If the Usage Counter information cannot be read, the Front Panel will display "Unable to get usage counter". This could point to a possible Firmware error.

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



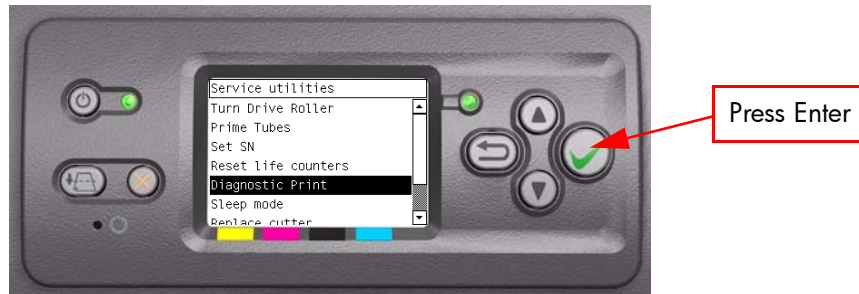
**PHONE SUPPORT**

## 5. Diagnostic Print

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

Print the Diagnostic Print as follows:

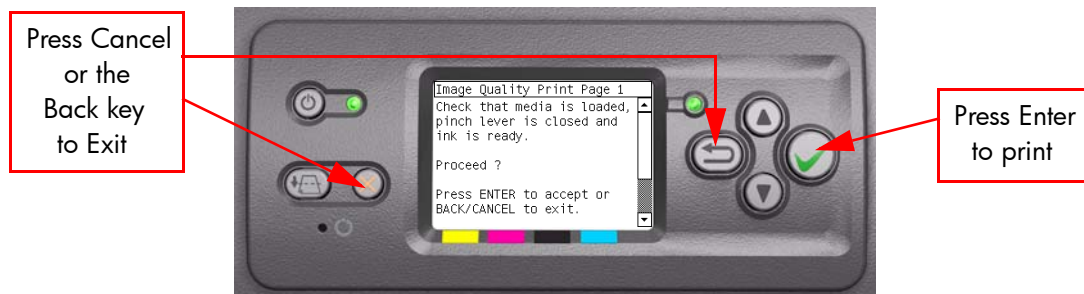
- 1 In the Service Utilities submenu, scroll to "Diagnostic Print" and press **Enter**.



- 2 You will be given an option to either print the "Image Quality User Plot" or the "Image Quality Service Plot". Use the **Arrow** keys to make the selection and press the **Enter** key to start printing the required Diagnostic Print.



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



- 4 The selected Diagnostic Print will now be printed. For further information on how to use troubleshoot Image Quality problems, refer to Chapter 6.

**PHONE SUPPORT**

## 6. Sleep Mode

The purpose of this Service Utility is to enable/disable the sleep mode so that the Printer is never switched Off automatically if not used for a certain period of time (one hour by default).

Perform the Sleep Mode utility as follows:

- 1 In the Service Utilities submenu, scroll to "Sleep Mode" and press **Enter**.

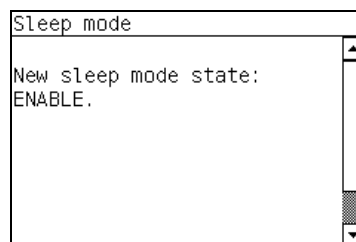


- 2 When the following message appears on the front panel, use the **Up** and **Down** arrow keys to either disable or enable the sleep mode. Press the **Enter** or **Cancel** key to confirm the selection.



If the current sleep mode cannot be read, it could point to a possible Firmware error.

- 3 Once the selection is confirmed, the Front Panel will display the new sleep mode state:



If the current sleep mode cannot be set, it could point to a possible Firmware error.

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



**PHONE SUPPORT**

## 7. Replace Cutter

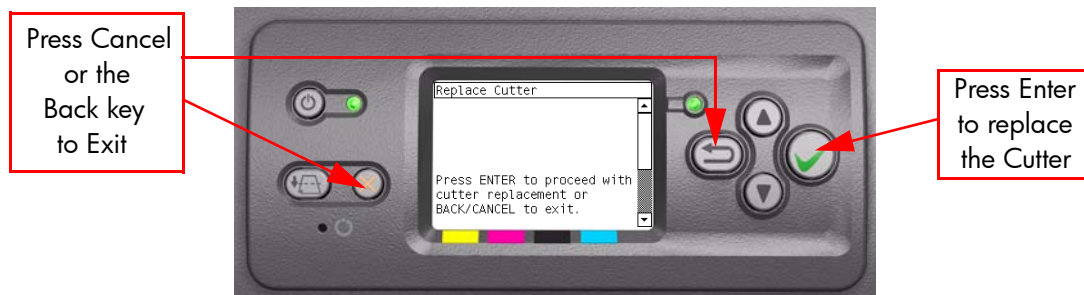
The purpose of this Service Utility is to move the Carriage to a position where the Cutter can be replaced easily.

Perform the Replace Cutter utility as follows:

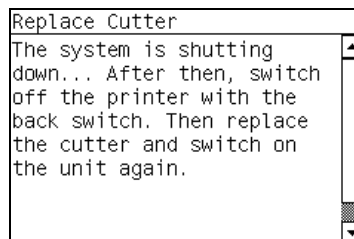
- 1 In the Service Utilities submenu, scroll to "Replace Cutter" and press **Enter**.



- 2 When the following message appears on the front panel, you must select whether you would like to continue with replacing the Cutter by pressing the **Enter** key. Press **Back** or **Cancel** to exit the utility.



- 3 The Carriage will move to the Cutter replacement position and the following message will be displayed on the Front Panel. After a few seconds the Printer will begin to shutdown.



- 4 Before replacing the Cutter, make sure that you switch the Printer OFF from the rear.

**PHONE SUPPORT**

## 8. Set RTC Clock

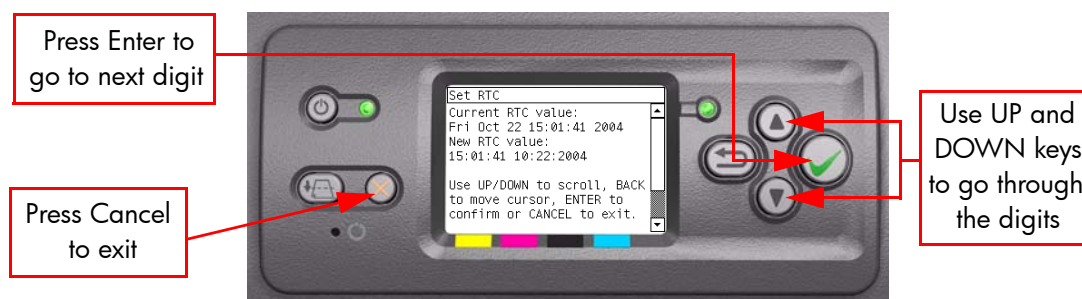
The purpose of this Service Utility is to set the Real Time Clock of the Printer.

Perform the Set RTC Clock utility as follows:

- 1 In the Service Utilities submenu, scroll to "Set RTC Clock" and press **Enter**.



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



- 3 Once the new time has been entered, the Front Panel will display the time that you have requested. Press the **Enter** key to confirm the time or the **Cancel** key to exit the utility without making any changes or the **Back** key to modify again.



If the current RTC Clock cannot be set, it could point to a possible Firmware error.

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

**PHONE SUPPORT**

## 9. Carriage Setup

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

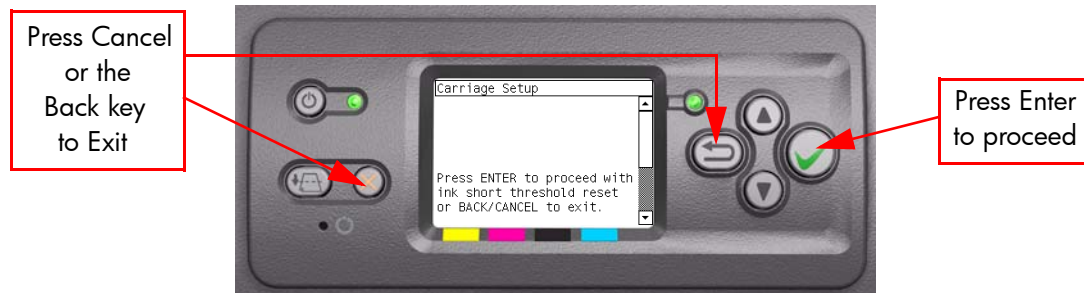
**From Firmware Version 4.x.x.x, "Carriage Setup" has been renamed "Carriage PCA Calibration" and has moved from Service Utilities to the Service Calibrations section.**

Perform the Carriage Setup utility as follows:

- 1 In the Service Utilities submenu, scroll to "Carriage Setup" and press **Enter**.



- 2 When the following message appears on the front panel, you must select whether you would like to continue with the Carriage Setup by pressing **Enter**. Press **Back** or **Cancel** to exit the utility.



- 3 If the Ink Short Thresholds have been reset correctly, the following message will be displayed on the Front Panel. Press any key to exit:

```
Carriage Setup
Ink short thresholds have
been reset.

Press any key to exit.
```

If any of the Printhead ink short thresholds cannot be reset or if the Printheads info cannot be accessed, it could point to a possible Firmware error.

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

