Preventive Maintenance 9

Introduction

This chapter explains how to perform service preventive maintenance procedures when they are required, and routine maintenance procedures that are recommended when Service Engineers perform Removal and Installation procedures.

Service Preventive Maintenance

NOTE **Maintenance information can be obtained from Printer Setup/ Utilities/Service Configuration Print**.

As the frequency of service maintenance depends on how the Printer is used, there are no specific preventive maintenance intervals. For Service Maintenance purposes, Printer usage is defined by the number of cycles performed by the following components:

- Scan-Axis System - movement of the carriage and flex circuit Printhead insertions.
- Tubes - movement and Tubes septum Printhead insertions.

The number of cycles performed by a part depends on the print mode and the total length of prints performed by the Printer. For example, if Max. Quality print mode is used on Glossy media, the Printer performs 10 passes per inch, whereas Max. Speed on Coated media only requires 1 pass per inch.

There are two different EEROM counters for the number of Carriage cycles and Tubes cycles. For information on Carriage and Tubes usage limits see *Warning/Stop Triggers* on Page *9-3*.

There is also an EEROM counter for the number of Printhead insertions in the Carriage. If there are Printhead insertion problems, or Ink Supplies Error Codes occur frequently (see Page *3-12*), the Service Configuration Print (available in Printer Setup/Utilities/Test Prints), indicates usage limits to see whether excessive wear is the likely cause of the problem. Printhead insertion limits are:

- 600 Carriage flex circuit insertions.
- 350 Tubes septum insertions.

There are no warning triggers when the Printhead insertion limits are reached.

Warning/Stop Triggers

NOTE **If the Ink Tubes System needs to be replaced, this can be performed by the User.**

The Printer will advise the User when the Scan-Axis System and/or Tubes need to be replaced by displaying a Warning message. The Warning message is triggered by the following number of cycles:

- 6.5 million for the Carriage.
- 6.5 million for the Tubes.

The number of cycles can be checked at anytime by printing the Service Configuration Print.

NOTE **Remember to perform the Reset Life Counters Service Utility (Refer to ⇒ Page *4-29*), to set the usage cycles to zero for the worn parts replaced with parts from the Service Preventive Maintenance Kit. Service preventive maintenance messages will not disappear until the counter is reset for the part replaced.**

"Printer Maintenance Advised"

If **BOTH** the Scan-Axis System and the Ink Tubes have done more than 6.5 million cycles, then this message will appear on the Front Panel. In this case, you must replace **BOTH** the Service Preventive Maintenance Kit and the Ink Tubes System (either Dye or UV, depending on which ink system the User has installed).

"(3) Printer Maintenance Advised"

If **ONLY** the Scan-Axis System has done more than 6.5 million cycles, then this message will appear on the Front Panel. In this case, you must replace **Only** the Service Preventive Maintenance Kit.

"Ink Tube Maintenance Advised"

If **ONLY** the Ink Tubes have done more than 6.5 million cycles, then this message will appear on the Front Panel. In this case, you must replace **ONLY** the Ink Tubes System (either Dye or UV, depending on which ink system the User has installed).

If the Ink Tubes reach 7 million cycles, they risk breakage. The Printer is stopped and the following message is displayed:

"Ink Tube Maintenance Required Now"

If the Ink Tubes are not replaced, the following message is displayed each time a job is sent to the Printer. To continue printing without replacing the Ink Tubes, press **Enter**:

"Have Ink Tube Replaced or Risk Printer Damage
Contact HP
Press ENTER to continue"

WARNING **If Printing is continued, the Tubes can break causing a significant ink spillage. It is advisable to replace the Ink Tubes as soon as possible.**

For the necessary part numbers, refer to Chapter 7, *Parts and Diagrams* of this Service Manual.

Refer to Chapter 8, *Removal and Installation* of this Service Manual as a guide to replace the necessary parts.

User Maintenance

Warranty Statement

HP's limited warranty covers only those defects which arise as a result of appropriate use of the product, and does not apply to any:

a. Improper or inadequate maintenance or modification;

b. Software, interfacing, media, parts, or supplies not provided or supported by HP; or

c. Operation outside the product's specifications.

Routine printer maintenance operations, such as cleaning and preventive maintenance services (including parts contained in the preventive maintenance kit and HP service engineer visits), are not covered by HP's limited warranty, but in some countries may be covered under a separate support contract.

User's receive a User Maintenance Kit when they purchase the Printer. The Kit provides the User with all the tools and instructions required to perform routine maintenance procedures. This Kit consists of the following:

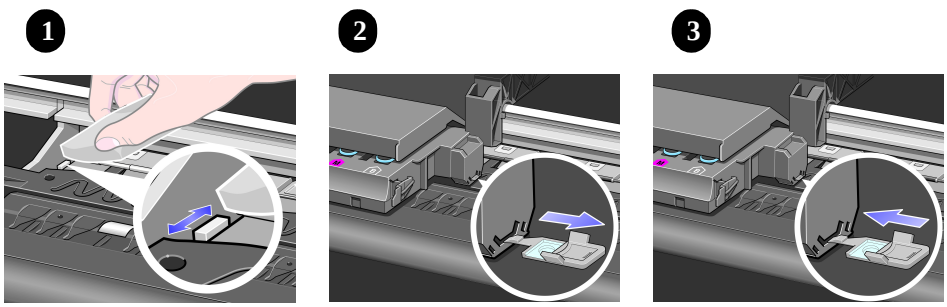
- Lens Maintenance Kit.
- Carriage Interconnect Wiper Kit.
- Roller Lubrification Kit.
- Slider Rods Lubrification Kit.
- Platen cleaning instructions.

Service Engineers should perform these procedures only when troubleshooting Printer problems.

Lens Maintenance

To perform Lens Maintenance, select Printer Setup/Utilities/Lens Maintenance:

1. Clean the Mark Encoder.
2. Remove the Lens Cover and clean it.
3. Reinsert the Lens Cover or replace it.



Carriage Interconnect Wiper

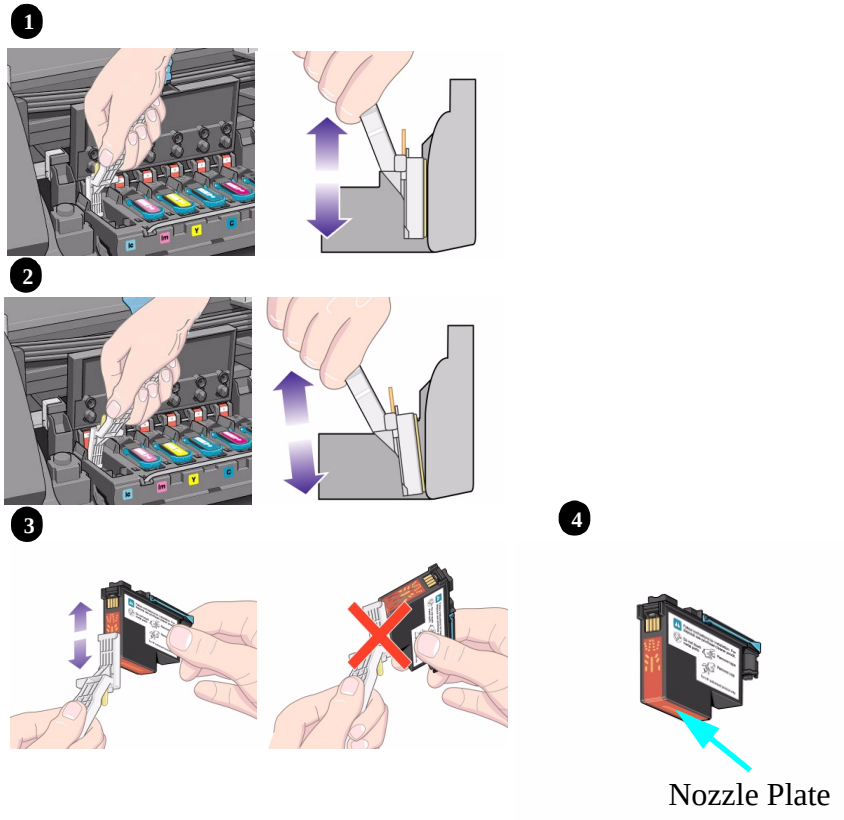
NOTE **The Carriage Interconnect Wiper also comes with the Carriage.**

To clean the Printheads and Printhead connects select Replace Printheads in the Printhead menu to remove the Printheads from the Carriage Assembly:

1. Insert the Carriage Interconnect Wiper into the Printhead slot and move it up and down to clean the connections.
2. Change the angle of wipe as shown in 2 below, to properly clean all the connections.
3. Clean the Printhead connections on the Printhead.

WARNING **Do not handle or attempt to clean the Nozzles on the bottom of the Printhead.**

4. Carefully avoiding contact with the Nozzles, remove any dirt or fibers close to the edges of the Nozzle Plate using a clean wipe.



Roller Lubrification Kit

WARNING **This procedure is for Service Engineers only. Users should perform the procedure described in the User's Guide.**

WARNING **Prevent water or other liquids from running onto electrical components or circuits, or through openings in the module.**

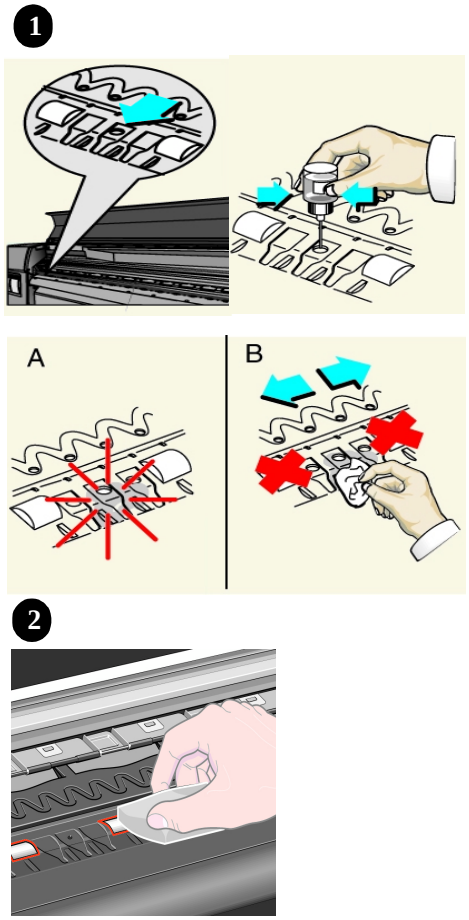
1 Open the window and apply 10 drops of oil to each hole in the Platen.

NOTE **Avoid oil spills and make sure you remove any excess oil.**

2 To clean the Roller Wheels, close the window and perform the Turn Drive Roller Utility (see Page *4-18*).Use the cloth provided.

WARNING **Do not touch the rotating Wheels with your hands.**

3 Press **Cancel** when you have completed the cleaning procedure.



Slider Rods Lubrification Kit

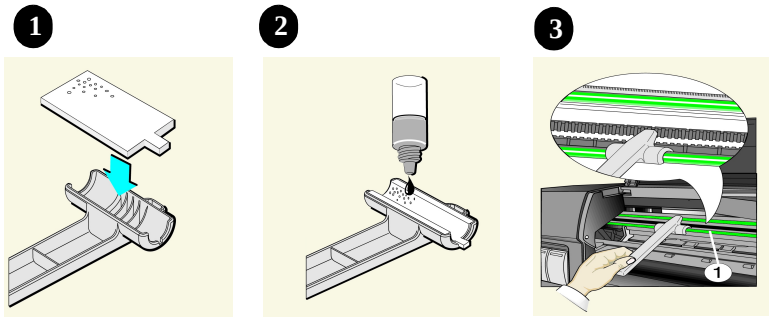
In addition to the wearing of the Scan-Axis Motor, the friction in this area can increase due to the accumulation of ink particles and dust from the media or the atmosphere in the vicinity of the Slider Rods.

Scan-Axis maintenance requires the cleaning of the Slider Rods properly, and a lubricant to apply onto the Rods. Use the User's Slider Rods Lubrification Kit to do this.

NOTE **The most important parts to keep clean are the upper and internal sides of the Rods.**

NOTE **Power Off the Printer and remove the Power Cord.**

1. Insert a new cleaning pad in the cleaning tool.
2. Apply 50 drops of the oil supplied to the pad.
3. Slide the cleaning tool along the Slider Rod until it is well oiled.
4. Replace the cleaning pad and repeat steps 2 and 3 for the second Slider Rod.



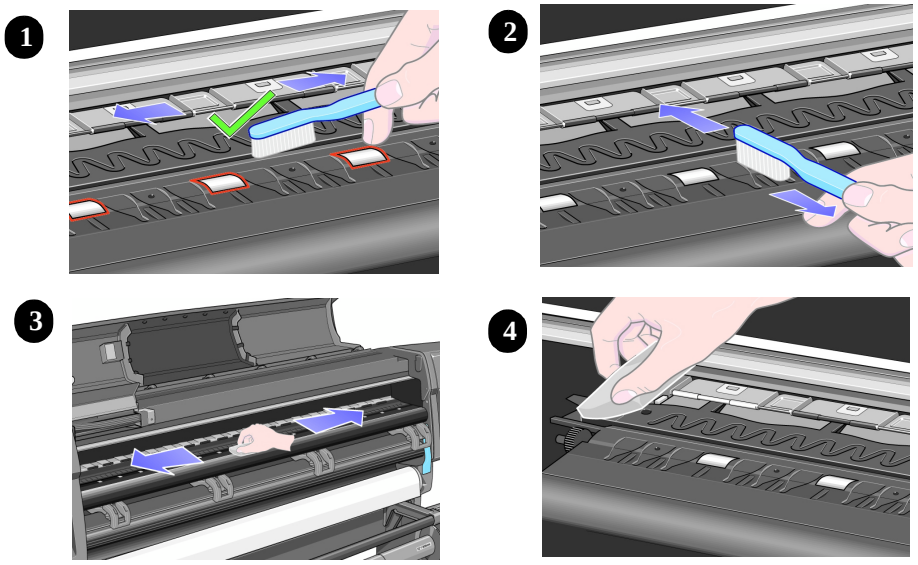
Cleaning the Platen

WARNING **This procedure is for Service Engineers only. Users should perform the procedure described in the User's Guide.**

WARNING **Prevent water or other liquids from running onto electrical components or circuits, or through openings in the module.**

To clean the Platen, perform the following procedure:

1. Open the window and using a dry brush, remove the ink deposits from the cutter groove.
2. With the dry brush remove the ink deposits from the Platen surface. Using a vacuum cleaner with a brush attachment will make this process easier.
3. Use a clean slightly damp cloth to wipe off the loosened ink deposits from the Platen. Do not wipe the Rollers with this cloth. Using a vacuum cleaner will make this part easier.
4. Perform the Turn Drive Roller Utility (see Page *4-18*) to clean the exposed part of the Roller, while it is rotating, with another slightly damp cloth. It is important that the cloth is not too damp, otherwise you will leave too much moisture behind and the Roller will not work well when it is wet. Also make sure that you clean the Mark Encoder on the left side of the Driver Roller.
5. Press **Cancel** when you have completed the cleaning procedure.



Moisture on the Printer

Users should use the Printer in an environment between 20% and 80% relative humidity. To recover from moisture condensation, turn the Printer Off, and, using the main Roller as a reference, wait until the Printer is completely dry before using it again.

Noisy Carriage Bushing

To prevent noisy movement of the Carriage, remove aluminum or dust particles from the bushing at the back of the Carriage, and from the Slider Rods along which the bushing moves. Use the User's Slider Rods Lubrification Kit to do this - see the User's Guide.

Belt Swelling

To prevent new Belts from swelling incorrectly, keep them in their bags with desiccant until you need to install them.

General Cleaning

To maintain the Printer in good operating condition, keep it free of dust accumulation, ink, and other contamination. Cleaning intervals are determined by the Printer environment and by the types of Printer supplies used. Proper general cleaning should include the following:

1. Blow away dust accumulation with compressed air if available.
2. Clean the outer surface of the Printer with a damp sponge or cloth. Use a mild soap and water solution if necessary. Do not use abrasive cleaners.
3. Wipe the Printer dry with a soft lint-free cloth.

Firmware Upgrade

This section explains how to perform the System Software (Firmware) Upgrade and the Internal Demo Prints Upgrade (Only for the PostScript Printer) when they are required. There are 3 ways of upgrading the System Software:

1. Downloading the Firmware from the DesignJet Online Website http://www.designjet.hp.com.
2. Using the Firmware Upgrade CD (See part number on Page *7-58*).
3. Replacing the Hard Disk Drive (HDD).

NOTE **Only replace the HDD when there is an actual hardware problem with the HDD. The HDD should NOT be replaced solely for the purpose of upgrading the Firmware.**

Downloading the Firmware from the DesignJet Online Website

You can check for newer releases of the firmware at the Hewlett-Packard DesignJet Online Web site at http://www.designjet.hp.com. Select the Technical Support link and select the product.

5000 SERIES ONLY **When you download Firmware from this site, it is supplied with a utility called "DesignJet System Maintenance", to simplify the process of upgrading Printer Firmware and media profiles. For a detailed description of the Utility, refer to the System Maintenance Utility documentation.**

5500 SERIES ONLY **Use the download utility inside the internal webserver.**

NOTE **To troubleshoot Firmware Upgrade problems, refer to the DesignJet System Maintenance Utility documentation or, for I/O Card configuration problems, the LAN Card documentation.**

Using the Firmware Upgrade CD

Upgrading the Firmware using the Firmware Upgrade CD is the fastest and easiest method. If possible, always use this method since downloading the Firmware from the website could take a long time because of the size of the files.

Upgrade Instructions - 5000 Series ONLY

5500 SERIES ONLY **UPGRADE INSTRUCTIONS FOR THE 5500 SERIES CAN BE FOUND IN THE USER'S GUIDE**

WARNING **The Firmware Upgrade process will delete all pending print jobs.**

NOTE **Ensure that the Printer is powered ON and that the Media has been removed from the Printer.**

NOTE **If you upgrade the firmware while media is loaded, you will get the system error "0d0000 033f019C". In this case, press Enter and you will get the message "no media profiles available". The solution is to unload the media and switch the Printer ON and OFF again. This problem only appears when you try to upgrade from Non-UV ink firmware to UV ink firmware while the media is loaded.**

If you are running the utility from Windows or Mac OS, do the following:

WARNING **If the previous Firmware version is A.01.xx, then you MUST also upgrade the internal demo prints.**

1. Download and save the installation application to the Computer hard disk.
2. After downloading all the files, double-click on the only executable file you will have. The application will automatically expand the files and install the application in your computer.
3. The application will automatically start and will install all the necessary files first. The application will then analyze each of the Printers configured for the computer and report on their current state (upgrade or emergency).

NOTE **If the application doesn't start automatically, go to the Start button and look for Programs > HP DesienJet folder and run it from there.**

4. If the Firmware for the Printer is out of date, the application will prompt you to update it. The update process sends a special file to the Printer. Once the update is complete, the Printer may restart.

NOTE **The upgrade process may take several minutes. Do not Power OFF the Printer during this process.**