

hp no.80 Ink Supplies Troubleshooting

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What are hp no.80 Supplies?

For each of the four ink colors used in the printer, there are three separate components. The printhead and the printhead cleaner are supplied together, and the ink cartridge is supplied separately. All of these components are called the hp no.80 Supplies. They are coded with an hp no.80 selection number to identify the correct replacement supplies.



Ink Cartridges

The hp no.80 ink cartridges for the hp designjet 1000 series printers require no maintenance or cleaning. As long as each ink cartridge is inserted correctly into its slot, the ink will flow to the printheads.

The front panel displays the status of the Ink Cartridge. With the front panel, detailed information can be checked on the Ink Cartridges.

Printheads and Printhead Cleaners

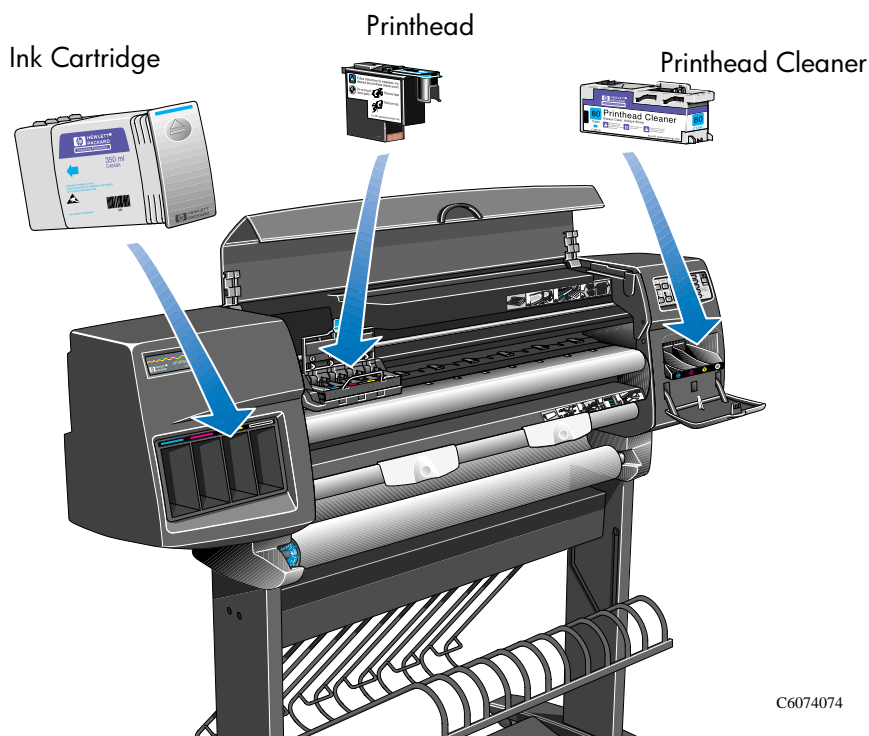
The hp no.80 printheads are extremely durable and do not need to be replaced every time an ink cartridge is replaced. They are independent of the ink cartridges and will continue giving excellent image quality results even if the ink cartridges are low on ink. See page 3-5, *When Should You Replace the hp no.80 Supplies?*

If you notice a decline in print quality such as lines or dots missing from text/graphics, go to page 6-12, *Troubleshooting Print Quality Problems*.

The hp no.80 printhead cleaners keep the printheads in good condition and they prevent them from being damaged when the printer is not active. They service the printhead, making sure it's always ready to be used.

Identifying the Components

The following illustration will help you identify the components of the hp no.80 supplies.



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General Information About hp no.80 Supplies

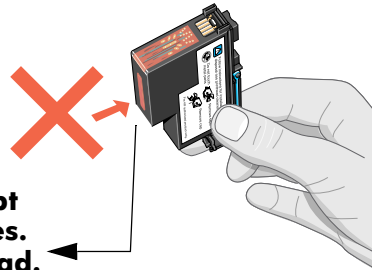
For optimum results from the printer and modular ink delivery system always follow these guidelines when handling the hp no.80 supplies:

- Always install the ink cartridges, printheads and printhead cleaners before the expire date, which is on the packaging.
- Install a new printhead cleaner every time you change a printhead.
- Allow the printer and printhead cleaners to automatically clean the printheads.
- Install ink cartridges, printheads and printhead cleaners in their color-coded slots.
- Follow the instructions on the front panel of the printer during installation.
- Avoid unnecessary removal of the ink cartridges and printheads.
- When turning off the printer always use the power Off button on the front panel. The printheads are then stored correctly which prevents them from drying out.
- The ink cartridges should never be removed while the printer is printing. They should only be removed when the printer is ready for you to replace them. The front panel will guide you through the removal and installation procedure. See page 3-5, *When Should You Replace the hp no.80 Supplies?*

Some General Precautions When Handling hp no.80 Supplies



Do not touch, wipe or attempt to clean the printhead nozzles. This can damage the printhead.



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Handle the hp no.80 supplies with care. In particular the printhead, which is a high precision device and must be handled carefully.

- Do not touch the printhead nozzles.
- Do not put the printhead down on the nozzles.
- Do not be rough when handling the printheads. Always set them down gently.
- Do not drop the printheads.
- Proper handling will assure optimum performance throughout the printhead life.
- The printhead cleaner should always be handled and stored upright to avoid a potential spillage of ink.
- Do not touch the end of the ink cartridge which is inserted into the printer as there may be a small amount of ink on the connection.
- Avoid storing partially used ink cartridges on their ends.

Priming the Ink System

When the customer first receives the printer, it is supplied with a set of four setup printheads pre-installed in the printhead carriage. These setup printheads are used for the priming of the tubes in the modular ink delivery system. The customer must not remove the setup printheads from the carriage without following the procedures in the *Setup Guide*.

When the Printer is powered ON for the first time, the printer will automatically perform the priming process. Without the priming process, the customer will NOT be able to use the printer.

Why does the Printer require priming:

- The Tubes System is empty when the customer receives the Printer.
- The Tubes System has to be pressurized and filled with ink, ejecting any air bubbles.



If the Printing Printheads are installed in the carriage during the priming process, they will be rejected and the front panel will show the "Wrong Model" message.

When Should You Replace the hp no.80 Supplies?

When to change the hp no.80 supplies is mostly determined by you with guidance from the front panel. In conjunction with the messages displayed in the front panel and the message explanations in this chapter, you will be able to choose for yourself when is the right time to change the hp no.80 supplies.

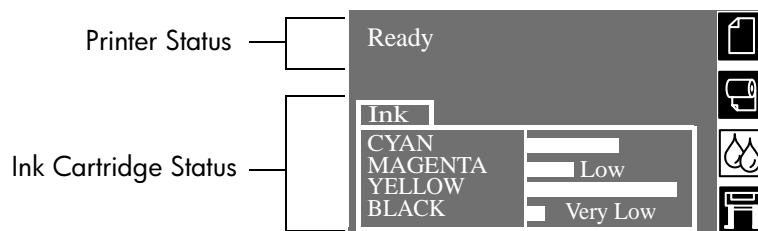
The printer will also display the ink level and will tell you when the ink supply is low, very low or empty. This means you have constantly updated information about the hp no.80 supplies.

Printhead life is anticipated to be 700ml or twelve months in the printer, whichever occurs first, provided that the printhead is used under normal operating conditions (using HP Ink Cartridges only) and its "install before date" has not lapsed. However results vary depending on the print quality setting being used.

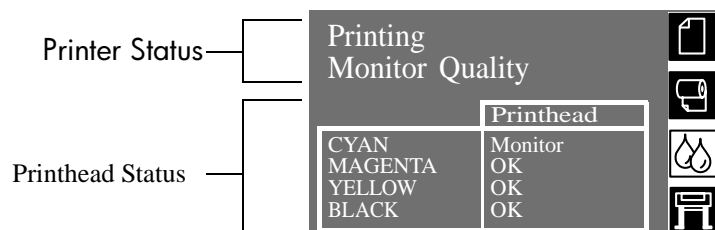
The Front Panel Display

The front panel display has a dedicated area to report the status of your hp no.80 supplies. There are two different screens:

- One screen displays information on the ink cartridges:



- The other screen displays information on the printheads and the printhead cleaners.



- During normal operation the front panel displays the ink levels, however if there is a printhead status message such as: **monitor** for example see page 3-11, *Printhead Status Messages While Printing*, the printhead message will take precedence. This is the case until you replace the printhead. If you need to see the ink levels when they are not being displayed you can use the ink systems menu to check them.

Obtaining Ink Cartridge Information

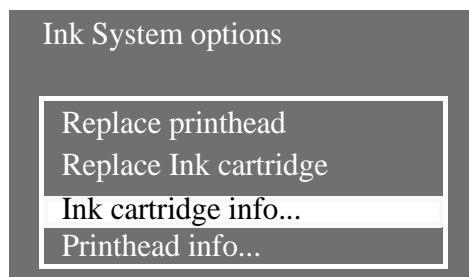
- 1 To get information on the ink cartridges press the **Top** key on the front panel to go to the main menu.



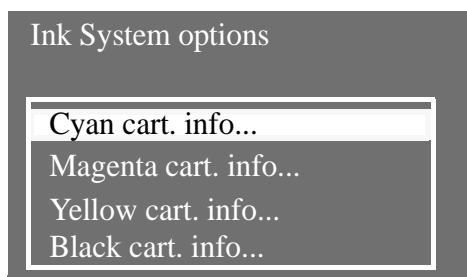
- 2 Press the \uparrow or \downarrow key until the front panel displays the ink system menu. Press **Enter**.



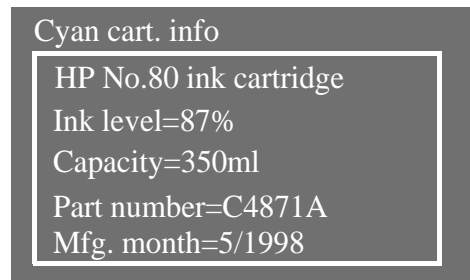
- 3 Press the \uparrow or \downarrow key until the front panel highlights "Ink Cartridge info". Press the **Enter** key.



- 4 Press the \uparrow or \downarrow key until the front panel highlights the color that you want to see information on. Press the **Enter** key.



- 5 The front panel displays information on the selected ink cartridge.



The information supplied is:

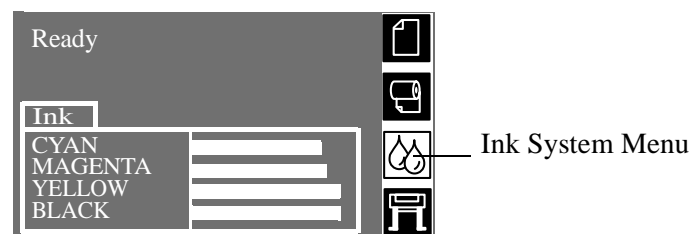
- The make of the ink cartridge (hp no.80 are recommended).
- The percentage of how much ink is remaining.
- Original capacity of the ink cartridge in milliliters.
- Re-order part number of the ink cartridge.
- The month and year that the ink cartridge was manufactured.

Obtaining Printhead Information

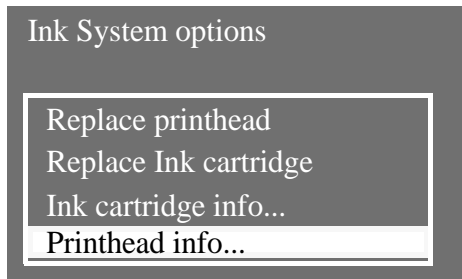
- 1 To get information on your printheads, press the **Top** key on the front panel to go to the main menu.



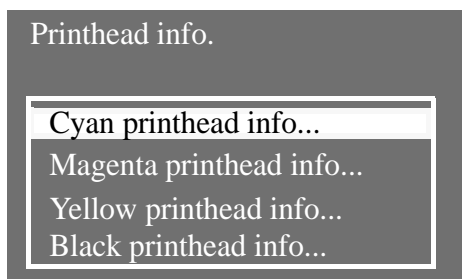
- 2 Press the \uparrow or \downarrow key until the front panel displays the ink system menu. Press **Enter**.



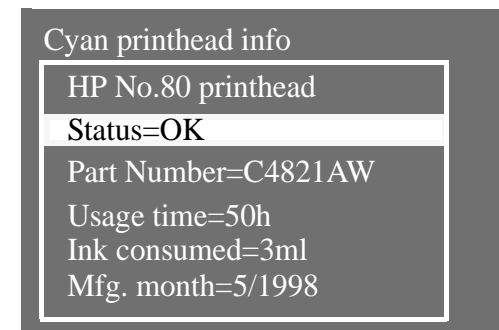
- 3 Press the ↑ or ↓ key until the front panel highlights "Printhead info". Press the **Enter** key.



- 4 Press the ↑ or ↓ key until the front panel highlights the color that you want to see information on. Press the **Enter** key.



- 5 The front panel displays information on the selected printhead.



The information supplied is:

- The make of the printheads (hp no.80 are recommended).
- The current status of the printhead.
- Re-order part number of the printhead.
- The time that the printhead has been operating in the printer.
- How much ink has been consumed by the printhead. **Note:** It is possible for a printhead to consume more than one ink cartridge.
- The year and the month that the printhead was manufactured.

Ink Cartridge Status Messages

Status Bars

The front panel displays four horizontal bars. These bars represent how much ink is remaining in the ink cartridges: as ink is used up the bars get shorter in length. To see how much ink you have remaining, go to the 'Ink Cartridge Info' menu. See page 3-7, *Obtaining Ink Cartridge Information*

Ink Cartridge Status While Printing

Low

The **Low** message is an early warning sign and it is advisable that new supplies should be obtained of that particular color. The amount of ink remaining in the Ink Cartridge depends on its capacity:

- Approx. 43.8 ml remaining in a 175 ml Ink Cartridge.
- Approx. 63.8 ml remaining in a 350 ml Ink Cartridge.

To check how much ink is remaining, refer to page 3-7, *Obtaining Ink Cartridge Information*.

Very Low

When the **Very Low** message is displayed, overnight printing should not be attempted. Changing the Ink Cartridge is strongly recommended to prevent the printer from stopping halfway through a print. The amount of ink remaining in the Ink Cartridge will be approx. 25 ml.

To check how much ink is remaining, refer to page 3-7, *Obtaining Ink Cartridge Information*.

Empty

The printer will stop and will not be able to continue printing until a new ink cartridge has been installed. If this occurs halfway through printing an image, you should check the quality of this image, as stopping mid-plot can affect the print.

Ink Cartridge Status While Replacing

The printer can report the following status messages while the Ink Cartridge is being replaced:

Faulty

The ink cartridge is faulty and must be replaced, before you can continue printing.

Reseat

The ink cartridge is having continuity problems. Try reseating the Ink Cartridge.

Wrong Model

The ink cartridge is not recognized by the printer and needs to be replaced before the printer can continue.

Unknown

The ink cartridge installed is not approved and must be replaced by a genuine hp no.80 Ink Cartridge.

The main actions for all 4 status messages is as follows:

- 1 Reseat the Ink Cartridge.

- 2 If reseating does not resolve the status message, replace the Ink Cartridge.
- 3 If the Status messages continue to appear, even after replacing the Ink Cartridge, replace the complete Tubes System ⇒ Page 8-61.

Printhead Status Messages While Printing

Detailed below are the printhead status messages that may be displayed while printing.

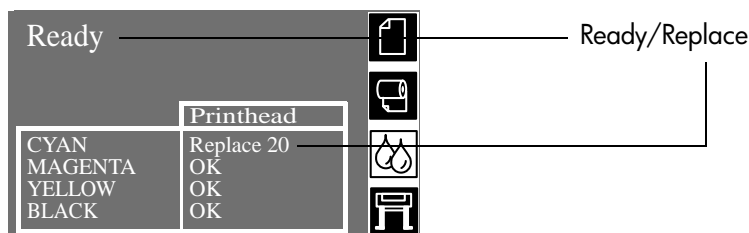
OK

The printhead is operating correctly and will provide an acceptable level of print quality. To find more information on the printheads, refer to page 3-8, *Obtaining Printhead Information*.

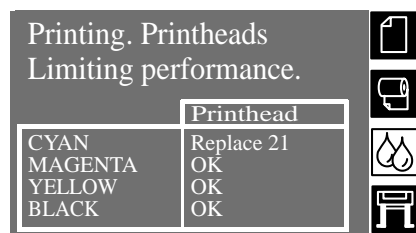
Ready/Replace

The front panel displays Ready and the printhead status is REPLACE. The printer is giving an early warning that there may be a degradation of print quality. The Printer has detected more than 4 black nozzles or 7 color nozzles out in 5 out of every 8 servicing procedures.

A new printhead should be bought. Depending on the print mode you are using (best, normal or draft) you may still be able to print with an acceptable print quality, there may be however, a slight loss in speed. Refer to the table below for more details.



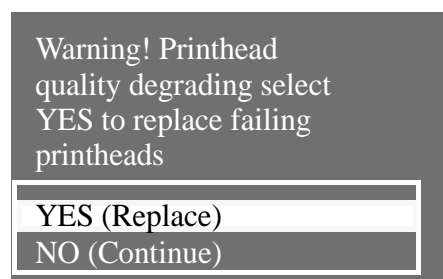
The printer can still operate with a printhead that needs replacing. The front panel will display:



Front panel displays Ready/Replace		
Draft	Normal	Best
Print Quality is Affected	Print Quality is maintained but the printer changes the printing process to compensate for an ageing printhead. Subsequently the printer will print slower.	Printer will try to compensate for an ageing printhead
Speed not affected	Speed is affected	Speed not affected

Replace Printhead

The front panel displays a warning, meaning that the printhead has quite a few nozzles operating incorrectly. There is a risk that media could be wasted. The printer will stop at the beginning of every print job and the front panel will display:



Press the ↓ or ↑ down key to select YES or NO. Press the **Enter** key. If you select **YES** the print job will be cancelled and a replacement will be started. If you say **NO**, the printer will continue printing. Next time you print, the same message will appear until you select YES (Replace).

If this message continues to appear (for example after installing new printheads), try the following:

- 1 Reseat the Printheads and check if the message disappears.
- 2 Remove the Drop Detector and make sure that there are no obstacles inside which are blocking the sensor.
- 3 Print the Print Quality Test ⇒ Page 6-4. Check that the Printhead nozzles are firing correctly.
- 4 Perform the Service Station Calibration ⇒ Page 5-11.
- 5 Replace ALL the Printheads

Failed 11

If you have installed a new tubes system and the printer is priming them, the printer has detected the "normal" printheads have been installed instead of the correct setup printheads. Remove the printhead(s) and replace with the setup printhead(s).

The printer could also have detected that you have installed an incorrect type of printhead. Ensure that you have hp no. 80 printheads installed.

Failed 15

This message generally indicates that the printhead must be replaced. However, the problem may be corrected by reseating the printhead. See *Problems reseating the printhead* for more information. If by reseating the printhead the **failed 15** message disappears but then reappears later, change the printhead. This situation must be corrected before the printer will operate.

Failed 16 and 17

The printer was printing and the printhead temperature has reached an excessive level. It is possible to continue to print with this printhead, but it may void the printhead warranty if you continue for long periods. This situation must be corrected before the printer will operate. See *Problems reseating the printhead* for more information. If the failed message disappears but then reappears later, replace the printhead.

Monitor

When this message is displayed it means that the printhead has reached its life expectancy.

To find out how to see the amount of ink consumed by the printhead and the usage time, go to page 3-8, *Obtaining Printhead Information*.

Printhead life is anticipated to be 700ml or twelve months (9,000 hours) in the printer, whichever occurs first, provided that the printhead is used under normal operating conditions (using HP ink cartridges only) and its "install before date" has not lapsed. However results vary depending on the print quality setting used. The printer will attempt to warn the user when this stage is reached with the monitor message.

Even with the monitor message being displayed good image quality can still be obtained, but it could start degrading. The customer will have to check the images being printed and decide if they are of an acceptable print quality. If the customer wants to ensure optimum print quality with maximum unattendedness, they should consider buying a new printhead and replacing the old printhead with a new one.

Printhead Status Messages While Replacing

The following are the printhead status messages that may be displayed while replacing the Printheads.

Setup 4

The Printer has detected that a Setup Printhead is installed. Remove the setup printhead(s) and replace with normal printhead(s).

Used

The Printer has detected that a USED Setup Printhead is installed. Remove the setup printhead(s) and replace with normal printhead(s).

Insert

No Printhead has been detected in that Carriage stall. If a Printhead is

installed in the Carriage stall when this status message is shown:

- 1 Reseat the Printhead, making sure it is installed correctly.
- 2 Clean the Carriage and Printhead flex circuits using the Carriage Interconnect Wiper ⇒ Page 3-16.
- 3 Replace the Printhead.
- 4 Perform the Electronic Systems Test ⇒ Page 4-5.

If all 4 Printheads are installed but have the Status message "Insert", it is possible that the Carriage Assembly is faulty.

Reseat 2, 6, 8 and 13

The printhead has moved slightly and is not making good electrical contact with the carriage assembly. Reseat the printhead into the correct position. This situation must be corrected before the printer will operate.

- 1 Reseat the Printhead in the correct position.
- 2 Clean the Carriage and Printhead flex circuits using the Carriage Interconnect Wiper ⇒ Page 3-16.
- 3 Replace the Printhead.
- 4 Perform the Electronic Systems Test ⇒ Page 4-5.

If all 4 Printheads have the Status "Reseat", it is possible that the Carriage Assembly is faulty.

Faulty 3, 10, 12 and 14

The smartchip on the printhead is not correct or the digital communications between the Carriage and the Printhead is incorrect. This situation must be corrected before the printer will operate.

- 1 Reseat the Printhead.
- 2 Clean the Carriage and Printhead flex circuits using the Carriage Interconnect Wiper ⇒ Page 3-16.
- 3 Replace the Printhead.
- 4 Perform the Electronic Systems Test ⇒ Page 4-5.

If all 4 Printheads have the Status "Faulty", it is possible that the Carriage Assembly is faulty.

Wrong Model

The printer does not recognize the printhead or printhead cleaner that you have inserted into the printer. You will have to remove it before the printer can continue.



If the Printing Printheads are installed in the carriage during the priming process, they will be rejected and the front panel will show the "Wrong Model" message.

Unknown 18

The Printhead installed is not approved and must be replaced by a genuine hp no.80 Printhead. Ensure that you have hp no.80 printheads installed.

Summary of Solving hp no.80 Supplies Problems

Most of the problems that you could encounter when working with the hp no.80 supplies are solved with guidance from the front panel. A full list of front messages are supplied in the Users Guide.

Problems reseating the printhead

If you have inserted the printhead into the printhead carriage assembly and the printer does not "BEEP" try the following steps.

Check that during the priming process, the Setup Printheads are installed in the Carriage. If the printing Printheads are installed in the carriage during the priming process, they will be rejected and the front panel will show the "Wrong Model" message.

- Check that you have removed the protective tape from the printhead.
- Insert the printhead into the carriage assembly but this time close the cover using the latch.
- Clean the electrical contacts on both the printheads and the printhead carriage assembly using the carriage interconnect wiper ⇒ Page 3-16
- Replace the printhead with a new one.

You Cannot Insert the Ink Cartridge Into the Printer

- 1 Ensure that you have the correct hp no.80 ink cartridge.
- 2 Ensure that the Ink Cartridge is the correct color for that slot.
- 3 Ensure that the Ink Cartridge is the correct orientation, with the color coded label at the top.

Never clean inside the ink cartridge slots.

You Cannot Insert the Printhead Into the Printer

- 1 Ensure that you have the correct hp no.80 printhead.
- 2 Ensure that the printhead is the correct color for that slot.
- 3 Ensure that the printhead is the correct orientation.
- 4 Ensure that the protective cap is removed from the Printhead.

You Cannot Insert the Printhead Cleaner Into the Printer

- 1 Ensure that you have the correct hp no.80 printhead cleaner.
- 2 Ensure that the printhead cleaner is the correct color for that slot.
- 3 Ensure that the printhead cleaner is the correct orientation.

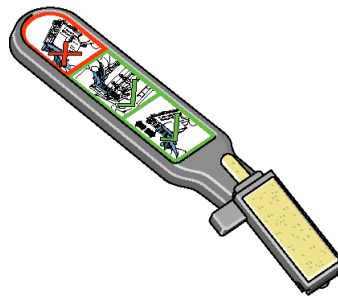
Carriage Interconnect Wiper

When you order the Carriage Assembly, the Carriage Interconnect Wiper will come with it. All the instructions needed to use the Carriage Interconnect Wiper will be packaged with the part.

Whenever you replace the printhead, check the empty slots to see if they need cleaning. In extreme circumstances, when a printhead is inserted, it is possible that the printer will not recognize it due to the build-up of ink on the electrical connection between the printhead and the printhead carriage.

Included with the HP DesignJet Printer, is a Carriage Interconnect Wiper. This tool is provided in a separate package. It also contains replacement sponges and an instruction sheet. This tool should be used for cleaning the electrical interconnects of both the printhead carriage and the printhead.

If the front panel displays the message "Reseat" or possibly "Failed" next to the offending printhead, try cleaning the flex circuits of the carriage and the Printheads.



Do not touch, wipe or attempt to clean the printhead nozzles. This can damage the printhead and reduce print quality.