

# HP DesignJet Z6100 Printer series

Product: 2007-2008 HP DesignJet Z6100 Series Printer Service Repair Workshop Manual

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## Service manual



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### WARNING

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#### Electrical Shock Hazard

Serious shock hazard leading to death or injury may result if you do not take the following precautions:

- Ensure that the ac power outlet (mains) has a protective earth (ground) terminal.
- Disconnect the Printer from the power source prior to performing any maintenance.
- Prevent water or any other liquids from running onto electrical components or circuits, or through openings in the enclosure.

#### Electrostatic Discharge

Refer to the beginning of Chapter 4 of this manual, for precautions you should take to prevent damage to the Printer circuits from electrostatic discharge.

#### Safety Symbols

General definitions of safety symbols are given immediately after the table of contents.

### WARNING

The Warning symbol calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury. Do not proceed beyond a Warning symbol until the indicated conditions are fully understood and met.

#### CAUTION

The Caution symbol calls attention to an operating procedure, practice, or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product. Do not proceed beyond a Caution symbol until the indicated conditions are fully understood and met.

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# HP Designjet Z6100 Printer series



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Service manual



# Using this Manual

## Purpose

This Service Manual contains information necessary to test, calibrate and service:

- HP Designjet Z6100 42-inch Printer (Model Q6651A)
- HP Designjet Z6100 60-inch Printer (Model Q6652A)

For information about using these printers, refer to the corresponding User and Quick Reference Guides.

## Readership

The procedures described in this Service Manual are to be performed by HP Certified service personnel only.

## Part Numbers

Part Numbers for Printer options, accessories and service parts are located in Chapter 7.

## Conventions

A small arrow  $\Rightarrow$  is used to indicate other parts of the Service Manual where you can find information related to the topic you are consulting.

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## Troubleshooting the printer

Refer to Section 6 for troubleshooting Image Quality issues.

### Printer Education and Training

Before any attempt is made to troubleshoot the printer, it is critical that you have the relevant training on the HP Designjet Z6100 Printer series. If you are not trained on this printer, please contact HP Education or HP Training to enquire about becoming 'HP Service Qualified' for this printer.

### Firmware upgrade

The first step to take when trying to clear an error with the printer is to check that the firmware installed in the printer is the latest available. Firmware updates often include fixes for some of the problems that are found in the following pages, simply updating the firmware can often resolve the problem. New firmware can be downloaded from the following url: <http://www.hp.com/go/designjet/downloads>

If the error with the printer does not allow you to upgrade the firmware using the normal process, try upgrading the firmware using the emergency .plt file procedure ⇒ page 130

## Troubleshooting system error codes

Chapter 2, System Error Codes contains a list of system error codes and their respective descriptions and recommended corrective actions. Only try one recommended action at a time and check if the error code has disappeared.

If you have an error code which is not documented in this Service Manual or you have an error which you cannot resolve, then report the error to the HP Response Center or the nearest HP Support Office. When reporting the error, have the following information ready:

- Model and Serial Number of the printer.
- Which firmware revision the printer is using (See Note below). Check firmware in Utilities / Statistics / Code rev.
- The complete error number.




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**NOTE:** When reporting the System Error Code, make sure that you supply the full Error Code and the firmware version. Without this information, HP Support Personnel cannot help you.

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- The Service Configuration Print.
- The Current configuration sheet.
- Which software application the customer is using (name, version, etc.).

## Performing a service test on a failed assembly

If possible, always perform a Service Test on the component/assembly that you are about to replace, just to make sure that is the component/assembly that has failed.




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

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For information on the Service Tests and how to use them see Chapter 4, Service Tests and Utilities.

## Performing the necessary service calibrations

Is the printer calibrated correctly after replacing a component? For information on the Service Calibrations and how to use them see Chapter 5, Service Calibrations.



**NOTE:** Remember that certain Calibrations are required even if an Assembly has been disassembled to gain access to another Assembly or Component.

## Solving print quality problems

Whenever a Print Quality problem appears, it is advisable to print the Diagnostic Print to help diagnose the problem. The Diagnostic Print will help you differentiate between possible printhead errors and other problems such as incorrect front-panel selection, driver or RIP configuration or mechanical problems. For information on solving Print Quality problems see Chapter 6, Print Quality.

## The printer does not power on

To resolve printer power up problems, do the following:

1. Check that the power cord is connected correctly to the Printer and to the Power Socket.
2. Check that the Power Switch on the BACK of the Printer is in the ON position.
3. Check to see if any of the LEDs on the Power Switch are On. If any of the LEDs are On, then refer to See page 15 for more information.
4. Check that the Front-Panel Cable is correctly connected to the Electronics Module. Also make sure that the Front-Panel cable is not damaged.
5. Replace the CPU Fan ⇒ See page 371
6. Replace the Power Supply Unit ⇒ See page 379.

## Printer hangs during printing and displays 'processing'

It has been seen under certain circumstances that the printer hangs whilst printing, this may happen immediately after printing, or only a partial print. In some cases when this occurs if the machine is rebooted a system error 79:04 is displayed, although rebooting again appears to clear this error. After this point, although the printer displays that it is in the "Ready" state, attempting to print anymore plots will once again hang the printer, including internal demo plots.

### Reason

The reason for this error is that a large spooled file (11Gb for example) has been sent to the printer and has been placed in the disk partition which is related to the print queue. The file completely fills up all the disk space, because of this it will never successfully print, and so the file remains in the disk partition. Even after restarting the printer the file remains, subsequent print requests also fail as there is not sufficient space available in the partition to process anything else.

### Solution

Perform the following few steps to clear the error.

1. Check that the firmware is the latest available (at least 7.0.03)
2. Turn Off and ON the printer.
3. Set Queue to OFF.
4. Set 'When Start Printing' to 'Immediately'.

Please guide the customer through the front panel of the printer to set up the "Queue" to "OFF" and "When Start Printing" to "Immediately".

### Wipe disk solution

If the above procedure does not clear the error, use the wipe the hard disk procedure (Unsecure mode) ⇒ See page 145. This will delete all previous jobs, ICC profile, media profiles that were present on the hard disk. This procedure has an advantage for the customer in that it solves the issue without the need to wait for an onsite engineer to come to their premises and remove and replace the HDD (which would also have the same affect of deleting all the previous jobs, ICC profiles and media profiles). The whole procedure should not take more than 30-35 minutes.

Important step is that you need to select the Unsecure mode

## The printer continuously rejects printheads

To resolve printhead rejection problems, do the following:

1. Clean the flex contacts on the Printhead and in the Carriage Assembly using the Carriage Interconnect Wiper (Refer to Chapter 3) and try again.
2. If ALL the Printheads are rejected (the status message on the Front Panel does NOT show "OK" for ALL the Printheads) then perform the Electronic Systems Test ⇒ See page 105.

## A new Maintenance Cartridge is incorrectly detected as 'used'

This can occur if the printer has detected the previous Maintenance Cartridge was nearly full, and when a new Maintenance Cartridge is installed the Front Panel displays an error that the cartridge is 'used'. To resolve the problem, do the following:

1. Ensure the firmware installed in the printer is the latest available.
2. Once the latest firmware is installed repeat the Maintenance installation procedure with the same cartridge.
3. Manuall reset the counter of the Maintenance Cartridge ⇒ See page 138

## Cover sensors are not working

To resolve cover sensor problems, do the following:

1. Perform the Sensors Test ⇒ See page 112.
2. Check if the cable for the faulty sensor is not damaged and is connected correctly.
3. Replace the faulty Sensor.

## The line sensor has problems detecting media

To resolve line sensor media detection problems, do the following:

1. Check the type of media that is being used since the Line sensor may have problems detecting transparent media or some types of Non-HP media. Try loading white HP media in to the Printer and check if the Line sensor detects it.
2. Excessive ink deposits on the Platen surface can fool the sensor by reflecting the light. Clean the Center Platen.
3. Clean the Encoder Strip ⇒ See page 454.
4. The Line Sensor is not calibrated correctly. Perform the Line Sensor Calibration ⇒ See page 163.
5. The Line Sensor is damaged or faulty. Replace the Line Sensor ⇒ See page 390.

## Troubleshooting Media Jams/Printhead Crashes



**NOTE:** If you are using HP Coated Media when the problem occurred, please also refer to Page 1-6.

The failure modes “media jam” and “head crash” are grouped together because in many cases a media jam causes the media to lift up into the Carriage path and cause a Printhead crash, thus causing many media jam failures to be reported as head crashes.

1. Did the media jam occur when loading media?



**NOTE:** When clearing a media jam, sometimes media is stuck in the paper path. To clear this, you must lift the Media Lever and insert thicker media into the paper path to push out the media that is still stuck there.

- If the client has had media jams, it is common for pieces of media to get stuck in the media path. Clear the media path.
2. Is the customer using non-HP media?
    - The use of non-HP media can easily be the cause of media jams and head crashes (especially head crashes because HP media is specially formulated to avoid cockle, one of the primary causes of head crashes). If the media is not HP approved, advise the customer to use HP media and check to see if the problem is now solved.
  3. Check that the Vacuum Fan works correctly.

## Troubleshooting shutdowns

If a shutdown occurs, you will get the message “Switch Power Off” followed by one of these messages:

- Check Maintenance Cartridge Path.
- Check Paper Path.

- Check Printhead Path.



**NOTE:** A shutdown in each path will require different steps to resolve the problem as explained below. In each case, make sure that you power OFF the printer before attempting any procedures to resolve the problem.

## Printhead Maintenance Cartridge Path

Open the right door of the printer and check for any visible obstacles restricting the movement of the Service Station. Manually move the Service Station, checking for smooth and free movement.

## Paper Path

To resolve paper path problems, do the following:

1. Open the Window and check for any visible obstacles restricting the movement of the Drive Roller. Make sure that the mylar is not damaged. If there is a wrinkled mass of media inside the paper path, lift the Pinch wheels (using the Media Load Handles) and clear the obstruction.
2. If this shutdown happens at the end of a Roll of Media, it could be because the media is stuck firmly to the Roll. Lift the Pinch wheels (using the Media Load Handles) and pull the media clear.
3. Replace media spindle if broken.
4. Replace the Media-Axis Motor ⇒ See page 349.

## Printhead path

When a shutdown occurs in the Printhead path, you will get the message “Switch Power Off / Check Printhead Path (\*). The (\*) will be a number, which will give an indication on where the failure occurred:

## PWM shutdown

To resolve a PWM shutdown, do the following:

1. Clean Slider Rods and Apply Oil along the complete axis of the Slider Rods. After applying the Oil, perform the Scan-Axis Test ⇒ See page 97 and check that the values are within the given limits.
2. Clean the Encoder Strip ⇒ See page 454.
3. Replace the Scan-Axis Motor ⇒ See page 346.

## Velocity shutdown

To resolve a velocity shutdown, do the following:

1. Open the Window and check for any visible obstacles restricting the movement of the Carriage Assembly. Try and move the Carriage Assembly manually, checking for smooth and free movement.
2. Check that the Encoder Strip is clean. If necessary, clean Encoder Strip using a damp cloth.

## Energy shutdown

To resolve an energy shutdown, do the following:

1. Clean Slider Rods and Apply Oil along the complete axis of the Slide Rods. After applying the Oil, perform the Scan-Axis Test ⇒ See page 97 and check that the values are within the given limits.
2. Clean the Encoder Strip ⇒ See page 454.

3. Replace the Scan-Axis Motor ⇒ See page 346.

## Vacuum suction much lower at high altitudes

At altitudes above 3,000 meters, the vacuum force holding down the media will be lower, therefore the media will not be held in place properly causing:

- Ink Smearing on the Media.
- Printhead crashes against the Media.
- Roll Media loading problems (low probability).

PRINTER LIMITATION - NO SOLUTION AVAILABLE.

## Banding at variable extreme environmental conditions



**NOTE:** This problem is only applicable if the OMAS is disabled.

Since the Accuracy Calibration has been done at normal environmental conditions, printing in extreme environmental conditions will cause banding because the advance of the Drive Roller does not correspond to the same conditions that the calibration was done in. To solve the problem, try the following:

Perform the Accuracy Calibration in the new environmental conditions (Refer to the User's Guide).

## Printhead Crashes/Smears on High Density Prints Using Coated Media

High density prints can cause cockle mainly on HP Coated Media. This causes two main problems:

1. Cockling in the borders - Because the printer places too much ink on the Coated Media, the borders of the print become raised, causing the Printhead to crash against the media. To solve the problem, try the following:
  - Change the paper margins to 15mm, either in the Front Panel or in the Driver. If the customer is printing PostScript images, send them a PPD file containing the extended margins of 15mm.
2. Cockling within the print - If the Printer places too much ink within the print, the media starts to ripple, causing the Printhead to smear against the media. To solve the problem, try the following:
  - Check in the Front Panel if **Ink Limiting** is ON or OFF. If Ink Limiting is OFF, turn it ON.
  - Never use HP Coated Media for High Density prints. As a substitute use HP Heavy Coated Media.

## Banding due to ink cartridge replacement while printing

A user has removed the Ink Cartridge while the printer was printing, which has caused the printer to stop. If the user does not replace the Ink Cartridge immediately, when the printer starts to print again, a band will appear in the position where the printing restarted. This is because the wet ink interacts with the dried ink on the media causing the band to appear. To solve the problem, try the following:

- Do NOT remove the Ink Cartridge while the Printer is Printing. Only replace/remove Ink Cartridges in between Prints.
- If the Ink Cartridge was replaced due to the “Empty” status on the Front Panel, then advise the customer to replace the Ink Cartridge when the “Very Low” status is showing on the Front Panel.
- Reprint the file (without remove the Ink Cartridge).

## 34" Rice Paper not supported

Roll length is 34" (Non-standard) and the pinch wheels can't control edge of media causing ink smears and Printhead crashes in middle of prints with or without area fills.

PRINTER LIMITATION - NO SOLUTION AVAILABLE.

## Worm marks on HP Coated media with light area fills

Light bands (S-shaped) in Paper axis direction where light area fills are printed, causing unacceptable Image Quality defect.

- Print the Service Configuration Print and check if the level of Humidity is very low (below 30%). Increasing humidity may help in reducing the severity of the problem.




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**NOTE:** The media is causing the problem and NOT the Printer. Do not attempt to try and replace Printer parts to solve this problem.

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## Solving Media-Handling Problems

The Front Panel Keeps Indicating that Media Is Misaligned or Incorrectly Positioned.

- The roll may be loaded the wrong way. The paper should load over the roll toward you.
- Check that the paper is correctly loaded onto the spindle.
- The paper may be loaded at an angle. The right-hand edge must be aligned with the blue line on the Print Platen.




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**NOTE:** Ensure that the paper is wrapped tightly on the roll. This is a very important step to remember because if this is not done, the media may be loaded at an angle, causing the media to be rejected.

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## Difficult to load media “Too much skew”

If you encounter a high failure rate when loading media and the Front Panel reports “Too Much Skew” it is likely that:

- The encoder strip must be cleaned (this can be carried out by the customer using the User Maintenance Kit).
- The Line Sensor must be cleaned.
- The Blue Line calibration must be performed (see “8. Platen Blue Line Calibration” on page 177).

# Troubleshooting a failure with the Take UP Reel (TUR)

Use this section to troubleshoot failures with the TakeUP Reel.

## Take Up Reel LED status information

LED status	Issue	Print job interrupted	Possible cause	Print job interrupted?
Blinking quickly	Take Up Reel not winding	Yes	Sensor beam blocked for more than 3 seconds	Ensure the Take Up Reel sensors are not blocked by a strip of paper, the collection bin or other objects. Also ensure the Take Up Reel power switch is in the On position.
Blinking slowly	Take Up Reel not winding	No	The sensor cables are loose or unplugged	Ensure the sensor cables are correctly connected.
Solid red	Take Up Reel not winding	No	There is too much resistance on the Take Up Reel motor	ENSURE THAT THE TUR Spindle Lever is CLOSED! Ensure the paper is not winding too tightly. A loop-shaping core should be inserted and hanging down.
Solid green	Take Up Reel not winding	No	The Take Up Reel power switch is in the Off position	Ensure the Take Up Reel power switch is in the On position.
Solid green	Take Up Reel winding in the wrong direction, and not stopping the job.	No	The Take Up Reel wind direction switch is in the wrong winding position. after 3 seconds, the printer will recognize the problem and interrupt the print job. In this case, see the first error listed in this table.	Flip the Take Up Reel wind-direction switch to the correct position.

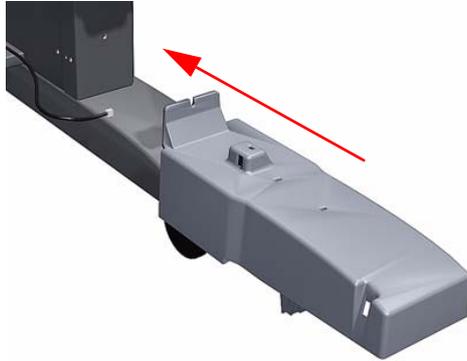


**NOTE:** If the LED is flashing but there is no message on the front panel, restart the printer.

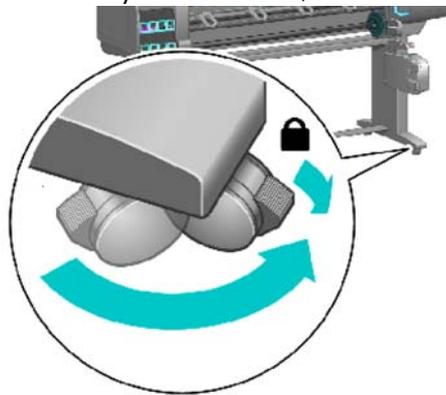
## Checking the Take Up Reel is correctly installed

Many system error codes are displayed as a result of the Take UP Reel not being installed correctly or because parts have moved or become dislodged from their correct positions. This troubleshooting procedure checks the machnical installation of the Take Up Reel.

1. Check that the Take UP Reel sensor unit is correctly installed on the right foot.



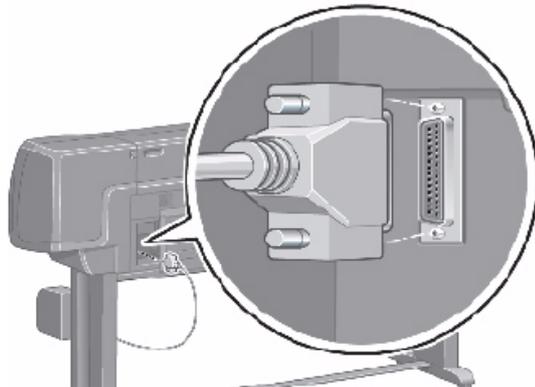
2. To correctly install the foot, the wheel has to be positioned as shown.



3. Check the cables linking the sensors to the Take Up Reel Motor Assembly are correctly connected.



4. Check that the Take UP Reel motor assembly is correctly connected to the rear of the printer.



## How the Take UP Reel Works

There are two different setups:

1. The Take Up Reel has been installed via the front panel from the media menu – how to check it: If the words 'Take Up Reel installed' is blanked out, this means that the Take Up Reel is not installed in the front panel.
2. The Take UP Reel has not been install via the front panel – how to check it: When selecting the media menu, there is no line 'Take Up Reel installed'. This does not mean that the Take Up Reel will not work, it just means that if there is a paper jam detected by the Take Up Reel, there will be no warning system error displayed on the front panel. The printer will not stop.

### How to install the Take Up Reel:

From the Media menu -> Take Up Reel -> Enable Take Up Reel. The main differences between the two modes (Take Up Reel installed or not installed on the front panel), what will happen if the Take Up Reel is installed:

- In case of Take Up Reel Paper jam system error, a warning is reported on the front panel, and the printer is no more printing (pause)
- The cutter is disabled between jobs
- When unloading the media, the front panel will ask you to manually cut the media.

### How it works?

When the bottom of the 'loop shaper' is lower enough and it cuts the signal between the 2 sensors, the Take Up Reel starts to move the motor until the signal between the 2 sensors is passing through again.

If after the few seconds of turning the Take Up Reel, the signal between two sensors is still cut, the Take Up Reel reports a 'Take Up Reel paper jam' error:

- In all case, the LED of the Take Up Reel is blinking quickly
- and if the Take Up Reel is enabled on the front panel, a 'Take Up Reel' paper jam will be displayed.

## Using the buzzer at power-up for troubleshooting problems

When the Printer is powered up, it doesn't make a "Beeping Sound" until it is completely powered-up and ready to use. If there is a beep during the power-up sequence, this may signify that there is a problem within the Electronics Module. The following table will help you to use the "Beeping Sound" to diagnose certain problem:

Number of Beeps	Problem Description	Corrective Action
1	Processor absent	<ul style="list-style-type: none"> <li>• Replace the Main PCA ⇒ See page 375.</li> </ul>
2	Faulty Main PCA or PSU	<ul style="list-style-type: none"> <li>• Replace the Main PCA ⇒ See page 375.</li> <li>• Replace the PSU ⇒ See page 379.</li> </ul>
3	Faulty Memory Module	<ul style="list-style-type: none"> <li>• Check that the Memory Module is installed correctly.</li> <li>• Try installing the Memory Module in the other Memory slot and check if the problem reappears.</li> <li>• If the problem reappears, replace the Memory Module ⇒ See page 373.</li> <li>• If the problem does NOT reappear, then the original slot could be faulty. In this case, replace the Main PCA ⇒ See page 375.</li> </ul>

Number of Beeps	Problem Description	Corrective Action
4	Faulty Video Card (not used)	<ul style="list-style-type: none"> <li>Replace the Main PCA ⇒ See page 375.</li> </ul>
5	Faulty PCI Card	<ul style="list-style-type: none"> <li>Replace the Main PCA ⇒ See page 375</li> </ul>
6	BIOS Damaged	<ul style="list-style-type: none"> <li>Replace the Main PCA ⇒ See page 375</li> </ul>
7	Motherboard damaged	<ul style="list-style-type: none"> <li>Replace the Main PCA ⇒ See page 375</li> </ul>
8	Hard Disk Drive damaged or missing	<ul style="list-style-type: none"> <li>Remove the Main PCA Cover and (with the Printer switch On) check that the HDD is spinning (you should feel it spinning when you touch it or at least hear it spinning). If the HDD is <b>not</b> spinning, then it could be damaged. In this case, replace the HDD ⇒ See page 377.</li> <li>Make sure that ALL cables connected to the HDD are not damaged and are connected correctly.</li> <li>Replace the HDD ⇒ See page 377</li> <li>Replace the Main PCA ⇒ See page 375</li> </ul>

## Using the Power-up Sequence to Troubleshoot

When the Printer is powered up, it performs the Boot-UP sequence which initializes the major components of the Printer. If for some reason the Boot-Up sequence fails because a components has failed to initialize, the following explanations will help you to locate the failing component.



Step	Initialization Process
BULNEX KERNEL BOOT	
30	rc.sysinit rerun through initlog.
29	<ul style="list-style-type: none"> <li>Environmental variables PATH, NETWORKING, HOSTNAME set.</li> <li>Source /etc/init.d functions.</li> </ul>
28	<ul style="list-style-type: none"> <li>Fix console loglevel.</li> <li>Mount /proc.</li> <li>Dismount the initrd, if necessary.</li> <li>Configure kernel parameters.</li> </ul>
27	Set the system clock.
26	Load keymap.

Step	Initialization Process
25	Load system font.
24	Start up swapping.
23	<ul style="list-style-type: none"> <li>Set the hostname.</li> <li>Initialize USB controller and HID devices</li> </ul>
22	<ul style="list-style-type: none"> <li>Set variables for options to be later used for filesystem check</li> <li>Turn Off DMA on CD-ROMs</li> <li>Turn On Hard Disk optimization</li> </ul>
21	Perform file system check on root volume.
20	Update quotas if fsck was run on root
19	Setup pnp
18	<ul style="list-style-type: none"> <li>Remount the root filesystem read-write.</li> <li>LVM initialization.</li> <li>Clear mtab.</li> <li>Enter root, /proc and (potentially /proc/bus/usb and devfs into mtab.</li> <li>Remove /lib/modules/preferred and /lib/modules/default.</li> <li>Tweak isapnp settings if needed.</li> <li>Load sound modules if the need persistent DMA buffers.</li> </ul>
17	<ul style="list-style-type: none"> <li>Load modules from /etc/rc.modules.</li> <li>File system check.</li> <li>Add raid devices.</li> </ul>
16	<ul style="list-style-type: none"> <li>Setup Logical Volume Management.</li> <li>Check filesystems on all volumes found on /etc/fstab.</li> </ul>
15	Mount local filesystems.
14	Check remaining quotas other than root.
13	Enable local filesystem quotas.
12	<ul style="list-style-type: none"> <li>Configure machine if necessary (if the respective configure files exist).</li> <li>Reread in network configuration data.</li> </ul>
11	<ul style="list-style-type: none"> <li>Clean out /etc, (w/u)tmpx files, /var.</li> <li>Reset pam_console permissions.</li> <li>Cleanup utmp/wtmp.</li> <li>Delete X locks.</li> <li>Delete VNC and X locks.</li> <li>Delete Postgres sockets.</li> <li>Turn On swap in case we swap to files.</li> </ul>
10	<ul style="list-style-type: none"> <li>Initialize the Serial Ports.</li> <li>If a SCSI tape has been detected, load the st module unconditionally.</li> <li>Load usb storage to match most other things.</li> <li>If ide-scsi is required, load it.</li> <li>Generate a header that defines the boot kernel.</li> </ul>
9	<ul style="list-style-type: none"> <li>Dump the syslog ring in /var/log/dmesg.</li> <li>Keep kernel symbols in /var/log/ksyms.</li> <li>Create the crash indicator flag to warn on crashes, offer fsck with timeout.</li> </ul>
8	Export this variable BOOT_PART and INSTALL_PART.
PRINT APPLICATION STARTING POINT	
7	IO kernel mode initialization (basically).
6	Printer Application Infrastructure startup.

Step	Initialization Process
5	Printer IO startup.
4	Front Panel application startup (but wait for engine launching, i.e. Front Panel is not cleared yet).
3	Engine startup, start EE and Mechanical initialization.
2	HPGL/PS parsers startup.
	All subsystems launched.
1	Wait for Front Panel application to clear the Front Panel and start signaling the initialization sequence.

## Corrective Actions for Power-Up Problems

To resolve power-up problems, use the following corrective actions:

1. If the Printer's Power-Up process stops when the front panel is displaying the number **17**, this indicates that there is a problem with the file system on the Printer's Hard Disk Drive, so the Printer is checking the whole file system and making any necessary corrections. This problem can arise when there has been a power cut while the Printer was switched On, or if there is a physical problem with the Hard Disk Drive.

Checking the whole file system normally takes about half an hour (but could take much longer). There is nothing that can be done to speed up the file checking process. If you turn Off the Printer during the checking process, the file system check will restart whenever you turn it On again.

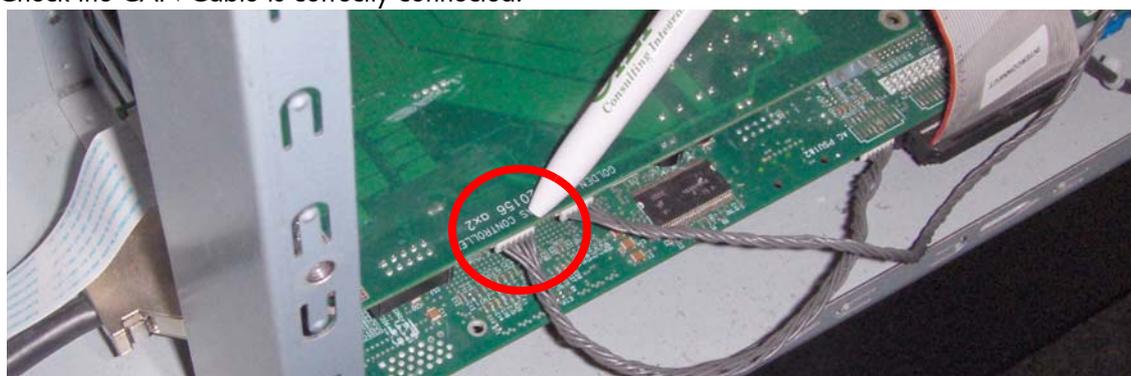
If you experience this problem repeatedly when there has been no power cut, then this could mean that the Hard Disk Drive is faulty. In this case, replace the Hard Disk Drive ⇒ See page 377.

2. If the printer's start-up process stops when the front panel is displaying any number between **1** to **30**, then try the following:
  - Switch the Power OFF from the back of the Printer and disconnect the Power cord. Reconnect the power cord and power On the Printer.
  - If the Printer continues to stop during the power-up process, replace the Hard Disk Drive ⇒ See page 377.

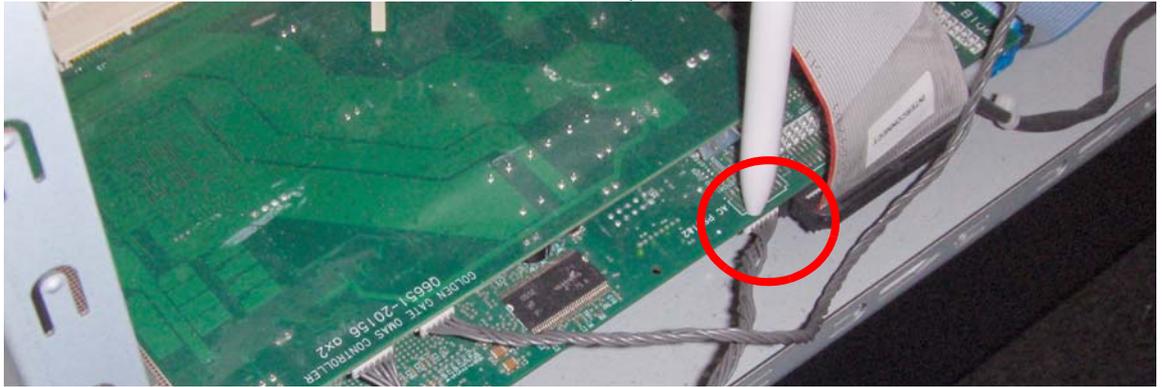
## Troubleshooting OMAS problem

A problem with the OMAS board may cause the printer to display a **50.2:10 service error**, this can be fixed by checking the following connections.

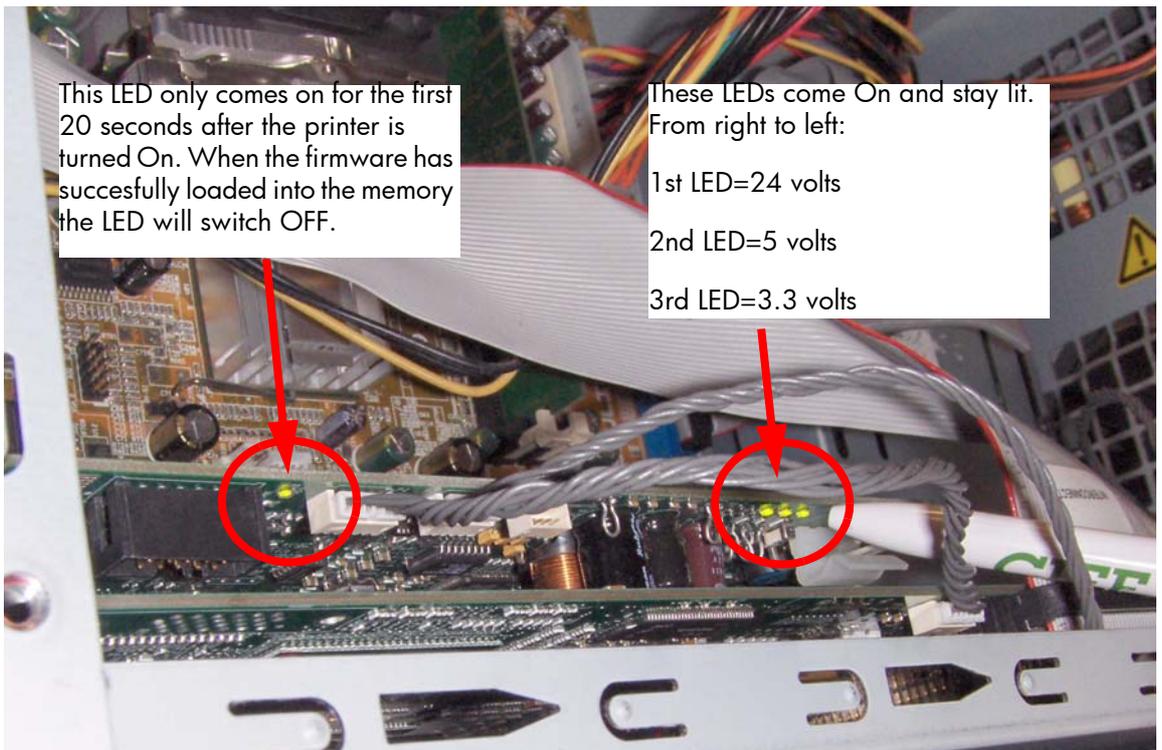
1. Check the CAN Cable is correctly connected.



- 2. Check the other end of the CAN cable is also correctly connected

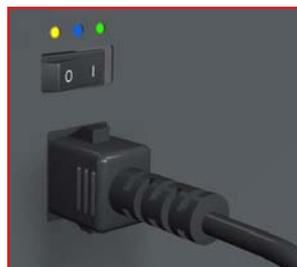


- 3. Check the LEDs under the OMAS board.



## Using the Power Switch LEDs to Troubleshoot

In certain circumstances, the LEDs located on top of the power switch (located at the rear of the Printer) can help to troubleshoot the Printer. The LEDs can either be ON or Off and using different combinations can indicate different problems:



Amber is on the Left  
Blue is in the center  
Green is on the Right

Make sure you look directly at the LEDs and not at an angle.

1. When only the **Amber LED** is On:
  - The Printer has been switched Off from the Front Panel (after having pressed the On/Off button).
  - The Power Supply Unit only delivers a 5 V “Standby”; power that is needed to restart the Printer after the Front Panel On/Off button is pressed (the Formatter/Main PCA will initiate the Printer to start).
2. When the **Blue LED** is On: Deliver standard “ATX” power for the Electronics Module PCAs (+12V, +5V, -5V, -12V, etc...). All the functions of the Electronics Module are fully operational (EWS, etc...).
3. When the **Green LED** is On: Deliver “analog” 24V and 42V to enable printing.

The Printer monitors and reports different signals: PSU fan issues, 24V and 42V delivery failures (specific System Error reported pointing to PSU failure).

PSU Blue LED Status	PSU Green LED Status	Left LED (on Front Panel) Status	Printer Status
ON	OFF	Red (Front Panel Black)	Standby (with Embedded Web Server up and running)
ON	OFF	Green (flashing)	Initializing
ON	ON	Green	Ready (but not printing)
ON	ON	Green	Printing or preparing to print
OFF	ON	Any	Not possible
ON	ON	Red (Front Panel Black)	Not possible

## Using the PCA LEDs to Troubleshoot

In certain circumstances, the LEDs located on the Interconnect PCA and PrintMech PCA can help to troubleshoot the Printer. The LEDs can either be ON or Off and using different combinations can indicate different problems.

### Interconnect PCA

The following illustration shows the locations of the LEDs on the Interconnect PCA



**5V** - Comes from the PSU after the fuse on Interconnect PCA. Used to power On Front Panel and some Interconnect Electronics. Should be ON at the same time as Blue Power Switch LED.

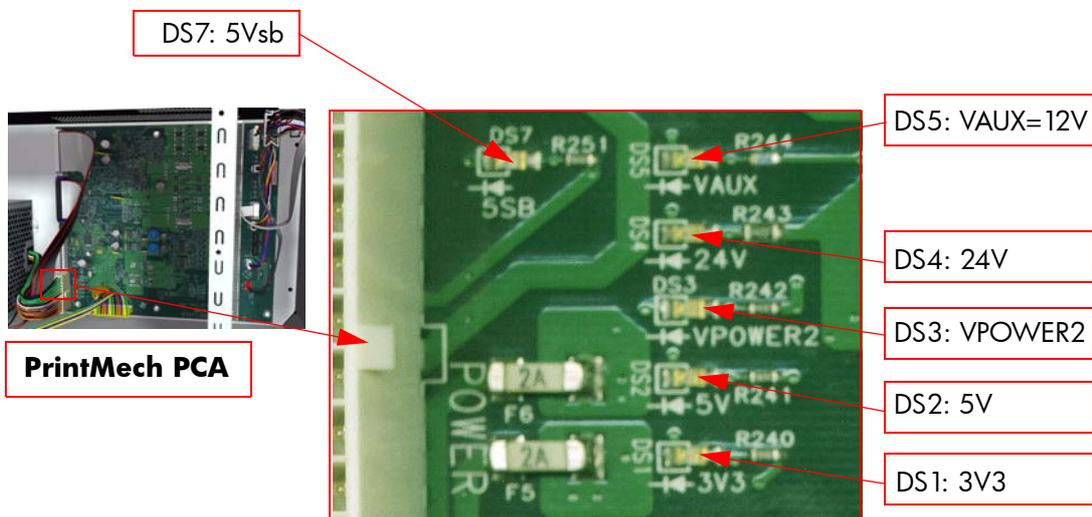
**5Vsb** - Comes from the PSU after the fuse on Interconnect PCA. Used to power On the Printer from the Front Panel. Should be ON at the same time as Blue or Amber Power Switch LED.

**24V** - Comes from the PSU after a fuse on the PrintMech PCA.

**VPOWER2** - Comes from the PSU (42V) after a fuse on the Interconnect PCA. Used to power the Carriage PCA. Should be ON at the same time as Green Power Switch LED.

## PrintMech PCA

The following illustration shows the locations of the LEDs on the PrintMech PCA.



**5Vsb** - Comes from the PSU after the fuse on PrintMech PCA.

**3V3** - Comes from the Power Supply Unit.

**5V** - Comes from the Power Supply Unit.

**VPOWER2** - Comes from the PSU (42V) after a fuse on the PrintMech PCA.

**VAUX** - Comes from the PSU (12V) after a fuse on the PrintMech.

## Identifying faults from LED status

Use the following procedure to identify faults from the status of the LEDs.

1. If the Printer cannot be turned ON:

Signal	LED on Interconnect PCA	LED on PrintMech PCA	Power Switch LED	Corrective Action
5Vsb	OFF	ON	Amber	<ul style="list-style-type: none"> <li>• Check the connection between the PSU and the Interconnect PCA.</li> <li>• If connection OK, replace the Interconnect PCA ⇒ See page 357.</li> </ul>
5Vsb	ON	OFF	Amber	<ul style="list-style-type: none"> <li>• Check the connection between the PSU and the PrintMech PCA.</li> <li>• Make sure that ALL cables between the PSU and PrintMech are not damaged and are connected correctly.</li> </ul>

Signal	LED on Interconnect PCA	LED on PrintMech PCA	Power Switch LED	Corrective Action
5Vsb	OFF	OFF	Amber or no LED	<ul style="list-style-type: none"> <li>Check the connection between the PSU and the PrintMech PCA and Interconnect PCA.</li> <li>If connection OK, check that power reaches the PSU (check the power outlet).</li> <li>If power reaches PSU, replace the PSU ⇒ See page 379.</li> </ul>

2. If the Printer starts (after having pressed the ON button on the Front Panel) but the front Panel remains black:

Signal	LED on Interconnect PCA	LED on PrintMech PCA	Power Switch LED	Corrective Action
5V	OFF	ON	Blue	<ul style="list-style-type: none"> <li>Check the connection between the PSU and the Interconnect PCA.</li> <li>If connection OK, replace the Interconnect PCA ⇒ See page 357.</li> </ul>
5V	ON	ON	Blue	<ul style="list-style-type: none"> <li>Check the connection between the Front Panel and the Interconnect PCA.</li> <li>If connection OK, replace the Interconnect PCA ⇒ See page 384 and the Front Panel ⇒ See page 292.</li> </ul>

3. The Printer is up and running, or may have a System Error at the end of the power-up sequence. For the Carriage PCA connection, perform the Scan-Axis Test ⇒ See page 97:

Signal	LED on Interconnect PCA	LED on PrintMech PCA	Power Switch LED	Corrective Action
5V	OFF	ON	Blue	<ul style="list-style-type: none"> <li>Check the connection between the PSU and the Interconnect PCA.</li> <li>If connection OK, replace the Interconnect PCA ⇒ See page 357.</li> </ul>
24V	ON	ON	Blue and Green	<ul style="list-style-type: none"> <li>Check the System Error that is produced and run the corresponding Diagnostic Test (either Scan-Axis or Media-Axis Test).</li> </ul>
24V	OFF	OFF	Blue and Green	<ul style="list-style-type: none"> <li>Check the connection between the PSU and the PrintMech PCA and Interconnect PCA.</li> <li>If connection OK, run the Electronics Module Test to further diagnose the problem.</li> </ul>

Signal	LED on Interconnect PCA	LED on PrintMech PCA	Power Switch LED	Corrective Action
24V	OFF	ON	Blue and Green	<ul style="list-style-type: none"> <li>Check the connection between the PSU and the Interconnect PCA.</li> <li>If connection OK, run the Electronics Module Test to further diagnose the problem.</li> </ul>
24V	ON	OFF	Blue and Green	<ul style="list-style-type: none"> <li>Check the connection between the PSU and the PrintMech PCA.</li> <li>If connection OK, run the Electronics Module Test to further diagnose the problem.</li> </ul>

- On the PrintMech PCA, if the 3V3 LED is ON, 5V LED is ON, ERIDANI LED is ON, VAUX LED is ON and the VAN LED is OFF, then try the following:
  - Run the Electronics Module Test to further diagnose the problem.
  - Replace the PrintMech PCA ⇒ See page 384.
- If the Power Switch LED is Green and the 3V3 LED is ON, 5V LED is ON, ERIDANI LED is ON, VAUX LED is ON, VAN LED is ON and the VPOWER2 LED is OFF, then try the following:
  - Check the connection between the PSU and the PrintMech PCA.
  - Run the Electronics Module Test to further diagnose the problem.
  - Replace the PrintMech PCA ⇒ See page 384.

## How to Interpret the Service Information Pages

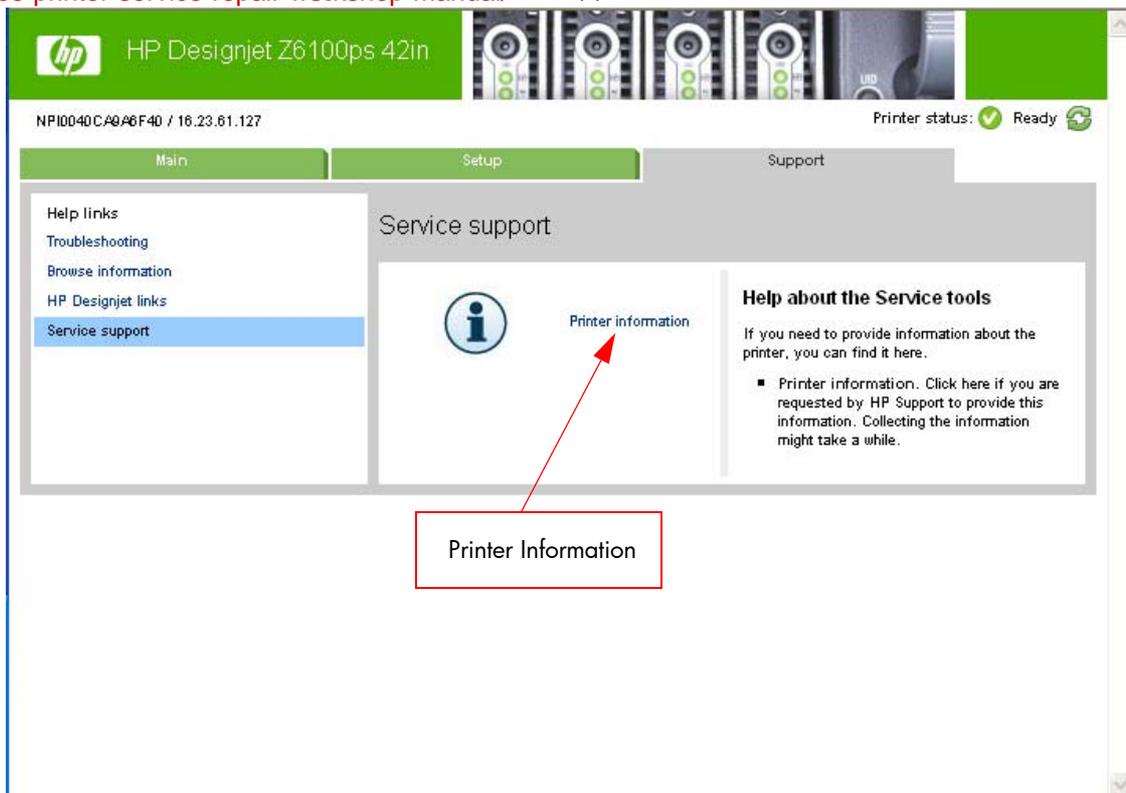
The Service Information Pages contain the following information:

- Current Configuration
- Current Information.
- Usage Information.
- Event Logs.
- Calibration Status.
- Connectivity Configuration
- All Pages.

It is possible to print the Service Information Pages either through the Front Panel or through the Embedded Web Server:

- Front Panel: Setup menu ⇒ Information Menu ⇒ Internal Prints ⇒ Print Service Information.

Product: 2007-2008 HP DesignJets Z6100 Series Printer Service Repair Workshop Manual  
 Full Download: <https://www.arepairmanual.com/downloads/2007-2008-hp-designjets-z6100-series-printer-service-repair-workshop-manual/>  
 Embedded Web Server: Support tab ⇒ Service Support ⇒ Printer Information.



Even if the Printer cannot print, the Information Pages are still accessible through the Embedded Web Server.

## Main Characteristics

- Only available in English (except the current information page).
- From the Front Panel, you can choose to print ALL pages or just select the specific pages that are needed. If ALL pages are printed:
  - Nesting is turned ON automatically (and turned OFF once all the pages have been printed).
  - Nesting cannot be mixed with other jobs in the queue.
- Each page can be printed from the Web browser when using the Embedded Web Server.
- Each page can be sent by e-mail from the Web Browser when using the Embedded Web Server (File ⇒ Send ⇒ Page by E-mail).
- You can see the same Server information through the Front Panel or the Embedded Web Server.

Sample of manual. Download All 472 pages at:

<https://www.arepairmanual.com/downloads/2007-2008-hp-designjets-z6100-series-printer-service-repair-workshop-manual/>