



# Troubleshooting

To better help our customers - this HP Laserjet 4100 series troubleshooting page is simply a guide / additional information for your convenience, as you search for assistance in repairing your machine. Although this information is provided for your convenience it is recommended, for the most part, that a technician inspects your office equipment.

It is recommended to consult with a professional when ordering your printer part(s).

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# Troubleshooting the printing system

## Preliminary operating checks

Before troubleshooting a specific printer problem, you should ensure that:

- The printer is being maintained on a regular basis as described in chapter 4.
- The customer is using acceptable print media as specified in the *HP LaserJet Printer Family Print Media Guide*.
- The printer is positioned on a solid, level surface.
- The line voltage does not vary more than 10 percent from the nominal rated value as specified on the power rating label.
- The operating environment for the printer and paper is within the temperature and humidity specifications listed in chapter 1 of this manual.
- The printer is never exposed to ammonia fumes such as those produced by diazo copiers or office cleaning materials.
- The printer is not exposed to direct sunlight.
- Non-HP components (such as refilled toner cartridges, EIO accessories, and DIMMS) are removed from the printer.

### Note

When moving the printer into a warm room from a cold location such as a warehouse, various problems can occur as a result of condensation in the printer. Additionally, if the photosensitive drum is cold, the resistance of the photoconductive layer will be high. This will lead to incorrect contrast. Leave the printer running for 10 to 20 minutes before its first job.

## Power on

### Note

It is important to have the printer control panel functional as soon as possible in the troubleshooting process so that the printer's diagnostics can assist in locating printing errors.

**Table 36. Power on defect or blank display**

<b>Problem</b>	<b>Action</b>
The power cord is not plugged into the wall outlet and the printer.	Make sure the power cord is firmly plugged into the printer and the outlet.
Proper AC power is not available.	Measure the voltage at the outlet. If necessary, plug the power cord into another AC circuit outlet.
The power switch is off.	<p>Set the switch to the on position. You should hear the switch toggle. If the front right side cover has been removed recently, be sure that the rod leading to the power supply moves as the rocker switch is toggled.</p> <p>If the printer still does not turn on, the power switch might be defective.</p> <ol style="list-style-type: none"><li>1. Remove the engine controller board.</li><li>2. Measure the resistance between the two terminals of the power switch (SW1) by applying the tester probes to the terminals. The resistance must be low (under 1 K<math>\Omega</math>) when the power is turned on, and high (over 6 M<math>\Omega</math>) when the switch is turned off.</li><li>3. Replace the engine controller board, if necessary.</li></ol>
The overcurrent/ overvoltage detection circuit is activated.	Wait for more than two minutes before turning the printer back on.
A fuse is blown.	<ol style="list-style-type: none"><li>1. Check the fuses (FU1 and FU2) on the engine controller board.</li><li>2. Replace the fuses if necessary.</li></ol>

**Table 36. Power on defect or blank display (continued)**

<b>Problem</b>	<b>Action</b>
<p>The fan does not turn on when the printer is first powered up.</p>	<p><b>Note</b> An operational fan indicates the following:</p> <ol style="list-style-type: none"><li>1. AC power is present in the printer.</li><li>2. DC power supply is functional (both 24 VDC and 3.5 VDC are being generated).</li><li>3. The engine controller board's microprocessor is functional.</li></ol> <p><b>If the fan is not working:</b></p> <ol style="list-style-type: none"><li>1. Turn the printer off and remove the formatter. Disconnect the optional accessories.</li><li>2. Turn the printer on and check the fan again.</li></ol> <p>If the fan is still not working, perform the following steps:</p> <ol style="list-style-type: none"><li>1. Verify that the fan is connected to the engine controller board.</li><li>2. Replace the fan.</li><li>3. Replace the engine controller board.</li></ol> <p><b>Note</b> The fan only operates during initial power on and while printing, unless the temperature inside the printer is too high. If the temperature is too high, the fan turns on to cool the inside of the printer.</p>
<p>The fan works, but the control panel display is blank.</p>	<ol style="list-style-type: none"><li>1. Print an engine test. See "Engine test" on page 190.</li><li>2. If the engine test is successful, perform the following steps:<ol style="list-style-type: none"><li>a. Reseat the control panel and formatter connector.</li><li>b. Replace the control panel assembly.</li><li>c. Replace the firmware DIMM.</li><li>d. Replace the cable from the control panel.</li></ol></li><li>3. If the engine test is not successful, replace the engine controller board.</li></ol>

## Engine test

The printer has a built-in test pattern (pairs of vertical lines). The test print can be made by pressing the test print switch located on the left side of the printer (see figure 93 on page 190) once—after the photosensitive drum has stopped and the printer has entered the standby mode. If the switch is held down, the test pattern is printed continuously. The switch can be used when paper is loaded in any tray other than tray 1.

The engine test:

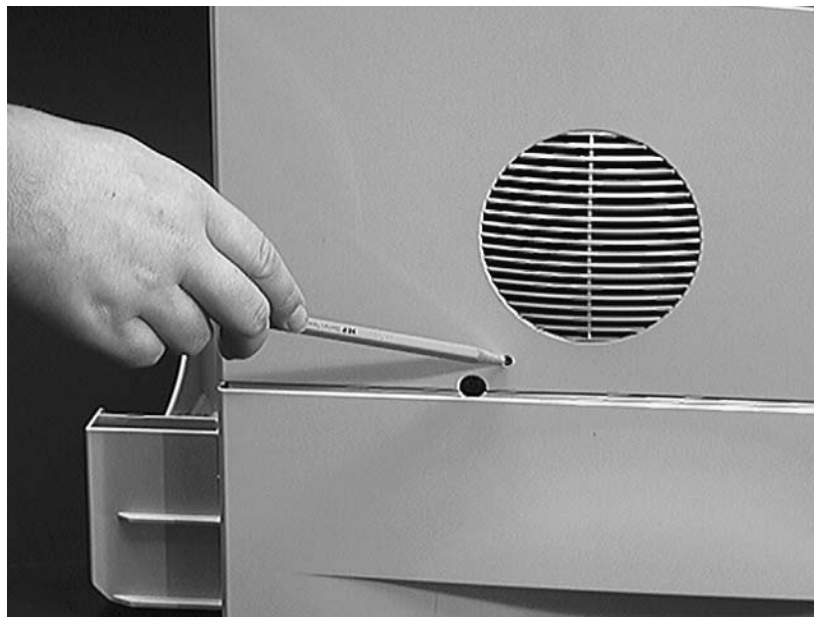
- Verifies if the print engine is functioning correctly (the formatter is completely bypassed during an engine test)
- Is used for isolating printer problems
- Is used for checking and adjusting registration
- Prints from tray 2, 3, or 4 only, not from tray 1
- Can be activated with the formatter removed

### Note

For the printer to perform an engine test, tray 2, 3, or 4 must be installed and loaded with paper, and the toner cartridge must be installed in the printer.

### Location of engine test button

The engine test button is located on the left side of the printer, below the fan vent, as shown figure 93 on page 190.



**Figure 93.** Location of the engine test button

## Display

The control panel should display **READY**, **OFFLINE**, or **POWERSAVE ON**. If the display is blank, see page 188. If an error message is displayed, refer to the printer messages table starting on page 194 and perform the necessary actions to correct the error condition.

## Event log

Use the event log to diagnose and troubleshoot printer errors and intermittent failures. You can either display or print the event log.

Access the event log from the control panel information menu. (Select **PRINT EVENT LOG** or **SHOW EVENT LOG**.) The event log retains the printer's last 20 error messages.

**HP LaserJet 4100 series printers**

**Event Log Page** 1

Current Page Count: 57      Serial Number: XXXXXXXXX

Number	Error	Page Count	Description	Personality
20	13.10.02	51	DUPLEX TURN AROUND, PAPER LATE JAM	
19	13.10.02	50	DUPLEX TURN AROUND, PAPER LATE JAM	
18	13.10.02	47	DUPLEX TURN AROUND, PAPER LATE JAM	
17	13.10.02	47	DUPLEX TURN AROUND, PAPER LATE JAM	
16	13.6.02	42	FUSER OUTPUT, PAPER STOPPED JAM	
15	13.20.02	40	PRINTER COULD NOT AUTOMATICALLY EJECT PAPER	
14	13.2.02	40	PAPER FEED 1, PAPER STOPPED JAM	
13	13.5.02	38	FUSER OUTPUT, PAPER LATE JAM	
12	13.1.02	36	PAPER FEED 1, PAPER LATE JAM	
11	13.5.02	35	FUSER OUTPUT, PAPER LATE JAM	
10	13.20.02	33	PRINTER COULD NOT AUTOMATICALLY EJECT PAPER	
9	13.1.02	32	PAPER FEED 1, PAPER LATE JAM	
8	13.1.02	30	FUSER OUTPUT, PAPER LATE JAM	
7	13.1.02	27	PAPER FEED 1, PAPER LATE JAM	
6	13.2.02	23	PAPER FEED 1, PAPER STOPPED JAM	
5	13.10.02	22	DUPLEX TURN AROUND, PAPER LATE JAM	
4	13.10.02	21	DUPLEX TURN AROUND, PAPER LATE JAM	
3	13.10.02	18	DUPLEX TURN AROUND, PAPER LATE JAM	
2	13.10.02	15	DUPLEX TURN AROUND, PAPER LATE JAM	
1	13.10.02	14	DUPLEX TURN AROUND, PAPER LATE JAM	

**Figure 94.** Sample event log

## Print the event log

The printer's internal event log stores the last 20 errors and can be printed at any time. To print the event log:

- 1 Press **MENU** until INFORMATION MENU appears.
- 2 Press **ITEM** until PRINT EVENT LOG appears.
- 3 Press **SELECT** to print the event log.

## Display the event log

If the printer cannot print or move any media, follow these steps to display the event log.

- 1 Press **MENU** until INFORMATION MENU appears.
- 2 Press **ITEM** until SHOW EVENT LOG appears.
- 3 Press **SELECT** to show the event log. The control panel will show the sequence, the error type, and the page count at which it occurred.
- 4 Press **+** to scroll through the event log.
- 5 Write down the error messages.
- 6 Check the event log for specific error trends in the last 10,000 printed pages.
- 7 Ask the customer for any observed error trends. (For example, do jams tend to occur in a specific area of the printer?)
- 8 Record any specific error trends.
- 9 If the control panel displays **READY**, **OFFLINE**, or **POWERSAVE ON**, go to the next section. If it displays any other message, refer to the printer messages table starting on page 194 and perform the necessary corrective action.

## Interpret the event log

The event log is the key tool in troubleshooting printer problems. Figure 94 on page 191 shows a typical event log. The event log shows the current page count at the top left of the page with the printer's serial number directly to the right of the page count. The left column is the error sequence number (the highest sequence number is the most recent error logged). The second column is the error type. The next column is the page count at the time of the error, and the last column is the personality (PCL or PostScript) column or the cause of the jam at the time of the error.

To interpret the event log:

- Each individual entry in the log is called an "error," while all errors occurring at the same page count are called an "event." Read the recommended action for each error comprising an event to gain a clear picture of what took place during that event.
- Use the printer messages table in this section to associate errors in the event log with the control panel error message. Follow the recommended action listed in the table for each error or event.