



Troubleshooting

To better help our customers - this HP Laserjet 5100 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, make sure that the following conditions are met:

- The printer is being maintained on a regular basis and in accordance with the procedures described in chapter 4.
- The customer is using acceptable print media as specified in the *HP LaserJet Printer Family Paper Specification 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 specified on the power-rating label.
- The operating environment for the printer and print media is within the temperature and humidity specifications listed in chapter 1 of this manual.
- The printer is never exposed to ammonia fumes, including 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, font cartridges, and memory boards) are removed from the printer.

Note

When the printer is moved into a warm room from a cold location such as a warehouse, various problems can result because of cold printer parts and condensation in the printer. For example, if the photosensitive drum is cold, the resistance of the photoconductive layer will be high. This will lead to incorrect contrast. Leave the printer idle for 10 to 20 minutes before printing so that the printer can warm to the temperature of the room and to dissipate condensation.

Power on

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 29. Power on defect or blank display

Problem	Action
Is the power cord plugged into the wall and the printer? Is ac and dc power available?	Verify that power is available. See table 30 on page 189 and table 31 on page 189.
Is the power switch set to on?	Set the switch to the on position. You should hear the switch toggle. If the front right side cover has been removed recently, make sure that the rod that leads to the power supply moves as the rocker-switch is toggled.
Does the fan turn on briefly when you turn on the printer?	<p>Note: fan operation is significant because the dc controller controls the fan. An operational fan indicates the following conditions:</p> <ol style="list-style-type: none">1. Ac power is present in the printer.2. Dc power supply is functional (24 Vdc, 5 Vdc, and 3.4 Vdc are being generated). <p>If the fan is not working:</p> <ol style="list-style-type: none">1. Turn off the printer and remove the formatter. Disconnect all of the paper-handling options.2. Turn on the printer and check the fan again. <p>If the fan is still not working, perform the following steps:</p> <ol style="list-style-type: none">1. Verify that the fan is connected to the power supply.2. Replace the fan.3. Replace the power supply.4. Replace the dc controller <p>If the fan is working but the printer control panel is blank:</p> <ol style="list-style-type: none">1. Print an engine test. See "Engine test" on page 190. If the engine test is successful, try the following remedies:<ol style="list-style-type: none">a. Reseat the control panel and formatter.b. If the problem persists, replace the control panel assembly.c. If the problem persists, replace the formatter.d. If the problem persists, replace the cable from the control panel.2. If the engine test is not successful:<ol style="list-style-type: none">a. Remove the formatter and try again. If the engine test is now successful, replace the formatter. If the problem persists, replace the dc controller.b. If the problem persists, verify that the button on paper-handling PCA and the cable to dc controller are in working order. Replace as necessary.c. If the problem persists, replace the dc controller.d. If the problem persists, replace the power supply.

Table 30. No ac power

Cause	Action
No correct voltage present at the outlet.	Plug the power cord into another ac circuit outlet. Inform the customer that the correct line voltage is not available at the outlet.
The power cord is not firmly plugged into the printer and the outlet.	Insert the plug on the power cord firmly.
Blown fuse.	1. Check the fuses—F1 and F2—on the power supply. 2. Replace the fuses if necessary.
Defective power switch.	Remove the dc controller and power supply. Measure the resistance between the two terminals of the power switch (SW101) by applying the tester probes to the terminals. The resistance must be low (under 1 K Ω) when the power is turned ON, and high (over 6 M Ω) when the switch is turned OFF. If resistance does not meet these thresholds, replace the printer power supply.
Defective ac receptacle or printer power supply.	Check the printer's ac receptacle and wiring for the ac power line. If no problem is found, replace the power supply.

Table 31. No dc power

Cause	Action
No ac power is supplied.	Check the ac power supply (see table 30).
The overcurrent/overvoltage detection circuit is activated.	If the problem is not rectified after the power switch is turned off and on again, find the cause of activation of the overcurrent/overvoltage detection circuit in the power supply. Wait for more than two minutes before turning the printer back on.
Blown fuse.	1. Check the fuses—F1 and F2—on the power supply. 2. Replace the fuses if necessary.
Defective power supply unit.	Replace the printer power supply.

Engine test

The engine test verifies that the print engine is functioning correctly. The formatter is bypassed during an engine test, but it can still interfere with the test. The engine test is very useful for isolating printer problems. Because the engine test prints a full page of lines across the entire printable area, it is also useful for checking and adjusting registration.

Note

Make sure that the toner cartridge is installed in the printer before you perform an engine test.

The engine test prints either from Tray 2 (the default), or from the last tray used, and can be activated with the formatter removed. If the last tray that was used is empty or if the last source was the duplexer, then the engine test will print from Tray 2.

If Tray 2 is empty, and the last tray that was used is empty, or if the last page went through the duplexer, or if the printer is in PowerSave mode, then the engine test will not function.

Engine test button location

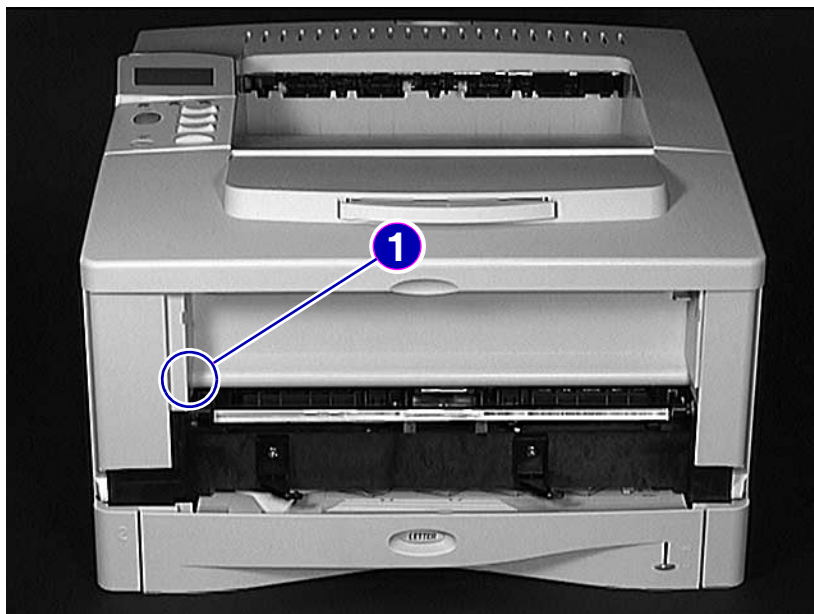


Figure 122. Location of the engine test button (callout 1)

Printing an engine test

To print an engine test, use a nonmetallic object of 40 mm (1.5 inches) minimum length to press the engine test button. A single test page with horizontal lines prints. To print multiple test pages, hold down the engine test button.

Display

The control panel should show `READY`, `OFFLINE`, or `POWERSAVE ON` when the printer is on and idle. For information about error messages, see “Printer messages” on page 193, or see the event log. If the display is blank, see “Preliminary operating checks” on page 187.

Event log

Use the event log to diagnose and troubleshoot printer errors and intermittent failures. You can either view the event log on the control panel, or you can print it.

Open 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 30 error messages.

See the list of printer messages that begins on page 193 for more information about correcting event log messages on the printer.

Note

The event log codes and the error message that appears on the control panel do not always correspond exactly. The numbers in the control panel message might not be the same in the event log; the decimal numbers might be shifted by one digit. For example, 13.1 on the control panel appears as 13.01 in the event log.

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Event Log Page

Current Page Count: 170 Serial Number: XXXXXXXXXX

Number	Error	Page Count	Description or Personality
20	41.03.00	135	PCLXL
19	13.1 50	134	PAPER FEED 1, PAPER LATE JAM
18	41.03.00	112	PCLXL
17	41.03.00	111	PCLXL
16	41.03.00	110	PCLXL
15	41.03.00	109	PCLXL
14	41.03.00	106	PCLXL
13	13.1 50	103	PAPER FEED 1, PAPER LATE JAM
12	41.03.00	101	PCLXL
11	41.03.00	100	PCLXL
10	41.03.00	99	PCLXL
9	41.03.00	92	PCLXL
8	41.03.00	91	PCLXL
7	41.03.00	90	PCLXL
6	41.03.00	89	PCLXL
5	41.03.00	72	PCLXL
4	41.03.00	71	PCLXL
3	41.03.00	70	PCLXL
2	41.03.00	69	PCLXL
1	50.02.00	0	

Figure 123. Event log page

View the event log at the control panel

If the printer cannot print or move any paper, follow these steps to view the event log at the control panel:

- 1 Press [MENU] until INFORMATION MENU appears.
- 2 Press [ITEM] until SHOW EVENT LOG appears.
- 3 Press [SELECT] to show the event log.
- 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 See table 32, “Printer messages,” on page 193 and follow the recommended action.
- 10 If the control panel shows READY, OFFLINE, or POWERSAVE ON, go to the next section. If it shows any other message, see “Printer messages” on page 193.

Print the event log

The printer’s internal event log stores the last 30 errors. To print the event log:

- Press [MENU] until INFORMATION MENU appears.
- Press [ITEM] until PRINT EVENT LOG appears.
- Press [SELECT] to print the event log.

Interpret the event log

The event log is the key tool for troubleshooting printer problems. Figure 123 shows a typical event log. The event log shows the current page count at the top, left of the page. The printer’s serial number appears directly to the right of the page count. The left column shows the error sequence number, with the most recent error listed first (the highest sequence number is the most recent error logged). The next column is the page count at the time of the error. The last column contains a short description of the error or the personality (PCL or PostScript) at the time of the error.

The event log might record errors in a different format than the format that appears on the control panel. For example, if 50.1 FUSER ERROR / CYCLE POWER appears on the control panel, the event log shows a 50.02.01 error, in which the 02 signifies that two sensors were blocked. Likewise, when messages 13.1 through 13.9 appear on the control panel, the event log shows 13.0x.01 through 13.0x.09, where x= the number of sensors that were blocked in the printer.

Note

Whenever a 13.XX appears on the control panel, a good practice is to clear all jams from the printer and print the event log. If you cannot print the event log, you can still view it on the control panel.

To interpret the event log:

- Each individual entry in the log is called an “error,” and all errors that occur at the same page count are called an “event.” Read the recommended action for each error within an event to gain a clear picture of what took place during that event. Events usually conclude with a time-out or with no response from the printer (Error 66.XX in the event log) which requires a power cycle of the print engine.
- Use the message column in table 32, “Printer messages,” on page 193, to associate error messages in the event log with the control panel error messages. Follow the recommended action listed in the table for each error or event.