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## TECH TIPS June 2004



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### PRINTER PARTS



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### PRINTER REPAIRS



### PRINTER TRAINING

### PRINTER MANUALS

### PRINTER TECH SUPPORT

- *This Issue Contains:*
- HP2100/222 Attention Light.
- Tech Tips Index



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## HP LASERJET 2100/2200 FLASHING ATTENTION LIGHT: WHAT DOES IT MEAN?

*(note: The attention light mentioned in this article is not unique to the HP LaserJet 2100/2200. All of HP's status light type printers have a similar light, and the aspects of trouble-shooting the errors mentioned is generally the same.)*

A flashing attention light on the HP LaserJet 2100/2200, with no other lights on or flashing, is used to indicate basic, low-level problems that can often be solved without replacing any parts. This is as opposed to fatal errors, which usually indicate a defective component in the printer. Despite its simple function, the attention light seems to cause more than its share of confusion. The problem is that this one light is used for multiple error conditions, and some troubleshooting is required to determine which problem the printer has (or thinks it has). Let's step through this trouble-shooting.

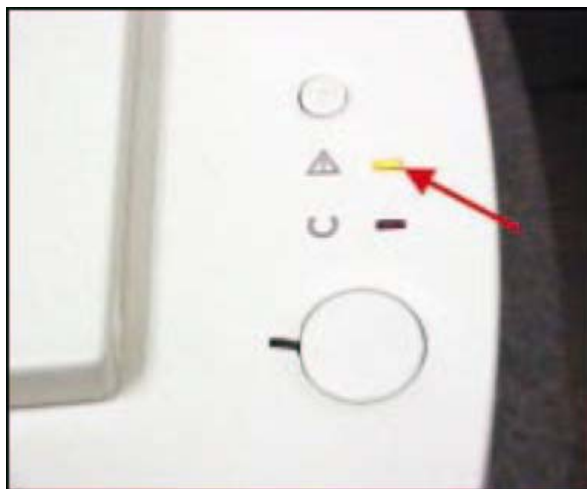
### **Four Basic Errors**

There are four basic error conditions that can be indicated by the attention light:

1. Door open
2. No toner cartridge
3. Paper jam
4. Paper out

In the LaserJet 2200, all 4 conditions are indicated by a flashing attention light (Figure 1 -)

*note: All pictures are of the 2200 . The 2100 is similar in most cases.).*



**Figure 1 - Red arrow shows a flashing attention light on the HP LaserJet 2100/2200.**

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In the 2100, only the first three conditions are indicated by the flashing light; “paper out” is indicated by a solidly lit attention light. If one or more of these conditions actually exists, a simple inspection will reveal the problem and the solution. If none of the conditions exists, then one or more of the printer’s sensors and switches is malfunctioning, and trouble-shooting will be required.

### **Shortcuts**

Before we get into the locations of all the relevant sensors and switches, there are some shortcuts to be aware of:

If the error occurs on power up—after the initialisation sequence—the problem could be any of those listed above. However, if the error doesn’t occur until you try to print something, then it is always a paper jam. We will get into the details of how to trouble-shoot paper jams a little later. When everything is working, the printer will briefly run the main motor—or “turn over”—on power up and whenever the cover is opened and closed. When the attention light is flashing, you can narrow down the possibilities listed above by noting whether or not this engine turn over occurs. If the printer thinks the cover is open, or there is a paper jam in the registration or exit area, it will not turn over. If it does, you can eliminate these as possible causes.

Conversely, if it does not turn over, you don’t have to worry about the toner cartridge sensing or “paper out,” because these conditions do not prevent the engine from turning over.

On the 2100, “paper out” can be distinguished from the other conditions because the attention light will be solidly lit, rather than blinking.

The 2200 is a bit different. This printer is happy if it finds paper in either tray 1 or the cassette, and will only complain about “paper out” if it thinks both trays are empty. If the attention light is flashing and paper is loaded in both trays, you are probably not dealing with a false “paper out” condition, since it is rare that both sensors would be malfunctioning. Likely, one of the other three problems is your culprit. However, if the printer goes to a “ready” state with paper in both trays, but flashes the attention light when one tray runs out of paper, then it is definitely a false “paper out” error, and the tray with paper in it is the one with the malfunctioning sensor. Now let’s look at how to troubleshoot the four possible error conditions. We’ll save paper jams for last, since they’re the most complicated.

### **Door Open**

The door open switch is mounted to the upper right edge of the printer body, about halfway back (Figure 2), and is activated by the right cover hinge (Figure 3).

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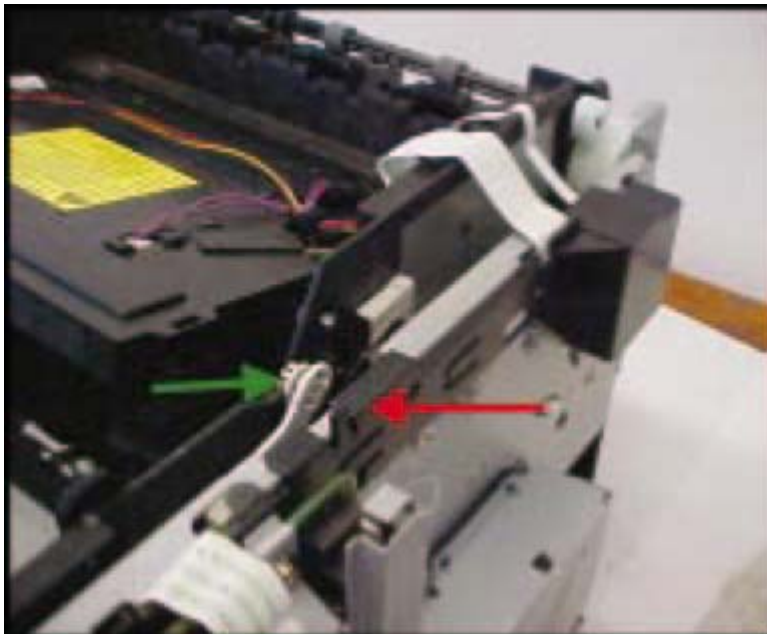


Figure 2 - Door open switch (red arrow) and toner coupling arm (green arrow).

You will have to remove the top cover to see the switch or to test it. Make sure that the cover and switch are mounted correctly, so that the hinge activates the switch when the cover is closed. Remember that you only need to check this if the engine does **not** turn over on power up.

### **No Toner Cartridge**

The 2100 and 2200 sense the toner cartridge electrically, through a high voltage connection on the right side of the printer. It is possible for the detection circuit to fail (in the 2100, this circuit is on the engine controller board, part number RG5-4125; in the 2200, it is on the power supply board, part number RG5-5564), but it is more likely to be a connection problem. The connection is made through a pin in the toner cartridge drive hub on the right side of the printer (Figure 4).

There are two ways this pin can fail to make a good connection to the toner cartridge. The most common way is for the pin to fall out or lose its spring (if you push it in, it should spring back). If this happens, the best course of action is to replace the entire drive assembly (RG5-4131 in the 2100, RG5-5562 in the 2200), because there are several other small parts that work with the pin, and it's difficult to get them all installed correctly. The other failure scenario occurs when the drive hub doesn't extend and retract properly. This action is controlled by the toner coupling arm (Figures 2 and 3), and can be observed by opening and closing the lid without a toner cartridge installed. One end of the arm attaches to the right cover hinge, and the other end attaches to the printer's main drive assembly. Make sure that this arm is connected on both ends and that the hub is extending and retracting properly when the lid is opened and closed.

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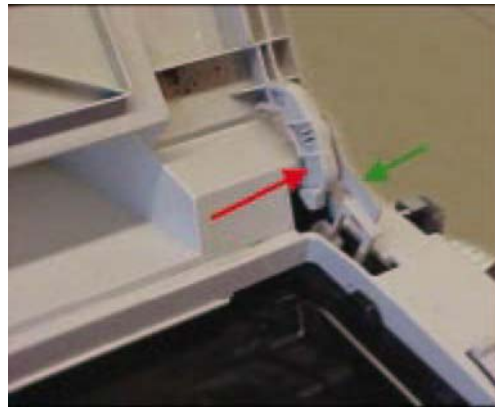
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**Figure 4 - Toner sensing pin (red arrow).**



**Figure 3 - Right cover hinge (red arrow) and toner coupling arm (green arrow).**

If the arm is missing or broken, the best solution is again to replace the entire drive assembly, which includes the arm.

### **Paper Out**

Each paper tray in the printer (including the manual feed tray) has a paper out sensor, consisting of a U-shaped photo sensor and a flag that moves in and out of the sensor, depending on the presence or absence of paper in the tray. If you have a false “paper out” indication (trouble- shoot this as described under “Shortcuts” above), check the flags and sensors for each tray. Sensors rarely fail unless they are physically cracked or broken, but it is very common for flags to get stuck or misaligned.

The flag for the manual tray extends up into the tray, just right of centre. On cassette trays, the flag hangs down into the tray just right of the pickup roller. Make sure that these flags rotate freely when paper is inserted, and that they return to the initial position when no paper is present. If any work has been done in the cassette pickup area—such as replacing the roller—it is easy to reassemble things in such a way that the paper out flag does not line up with the sensor, so be sure to check for this. The same types of sensors are used for both “paper out” and paper jam sensing, so we will postpone further discussion of sensors and their locations until after we have discussed paper jams. Then we can include all the sensors at once.

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## **POD Policy**

### **RMA- RETURN MERCHANDISE AUTHORIZATION**

- An RMA number assigned by POD must be put on the outside and inside of your returned product package for adequate identification. Products returned without a valid RMA number will be refused at POD.
- The customers RMA number is valid only for 30 calendar days from date of issue.

### **EXCHANGE ITEMS**

- Products must be:
  - 1) Returned within the specified date on the Exchange Docket.
  - 2) Repairable, no alterations, or missing parts.
  - 3) Be an exact equivalent of the part shipped out.

### **RETURNED PROCESS**

- On receipt of RMA and Exchange parts POD will inspect it to confirm that it is:
  - 1) The correct part returned.
  - 2) Eligible for product return.
- If not, then POD will have the option of:
  - 1) Returning it with an explanation
  - 2) Providing no refund for a RMA
  - 3) Not accepting the part as an Exchange unit.

### **RESTOCKING FEE**

- POD at its discretion may charge a restocking fee to recover costs in processing and re-testing goods returned. A minimum fee of \$20.00 may be applicable.

### **MISCELLANEOUS**

- Manuals, rollers and special order items are not returnable.
- POD is not responsible for damages incurred in transit.
- The customer is responsible for return shipping.
- All products must be returned within the allocated time issued by POD.

### **WARRANTY PERIOD**

- New products carry the Original Manufacturer Warranty.
- Exchange Units carry a 90 day warranty.

These policies are to be read in conjunction with PODs Terms and Conditions.

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