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TECH TIPS May 2004



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PRINTER REPAIRS



PRINTER TRAINING

PRINTER MANUALS

PRINTER TECH SUPPORT

- *This Issue Contains:*
- 50 Errors on the HP4100
- Error in The HP1100,1200,1330 Service manual.



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50 Errors on the HP4100

The 4100 printer has had more than its expected share of problems in its already short life. One that we have been hearing about for a while is a "50 service" error message caused by the fuser. Often technicians would change out the fuser only to find another "50 service" caused by that fuser too — what's a technician to do? In this article, we'll look at what happened and what you can do to fix a "50 service" error message if you come across one on a 4100.

To start off, the heating element in the 4100 fuser is not a lamp but a ceramic heater with a film rotating around it. Many technicians have become familiar with this technology since we have seen it around since the 4L and 4P days, progressing into the 5P, 6P, 5L, 6L, 3100, 3150, 3200, 4000, 4050 & 5000. This fuser film assembly in the 4100 is different from the others in that it contains three heating elements and not just one.

The reason for putting three elements in the fuser-heating element is to be able to focus heat across the different lengths of the fuser film. That is, when a customer is printing on envelopes, the heat is focused in the centre of the roller where the envelope is, and not on the outside edges where the envelope is not. The problem with heat being generated outside the paper, or envelope in this case, isn't just to keep from wasting energy, it also can create image defect problems. Leftover toner that is rotating around the fuser film because paper was not present may start to melt to and thus stick to the film and lower roller, then drop off on a full size sheet that may follow the envelope.

The 4100 fuser is a more complicated device, as the ubiquitous "50 service" error message indicates. Along with three separate heating elements in the fuser, there are two thermistors (temperature sensors), and one thermo switch (temperature protection switches). Position of these is important to record correct temperatures for the different elements. Figure 1 shows the positioning of the thermistors and thermo switch on top of the three-element ceramic heater of the 4100.

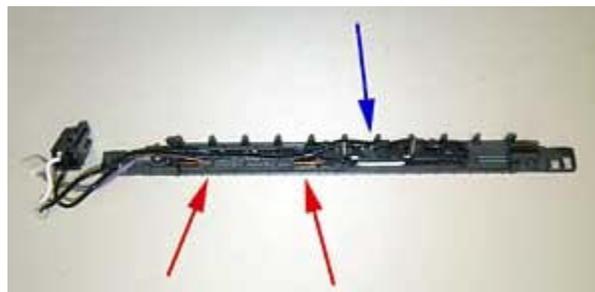


Figure 1

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After examining some of the failed fuser units, it appears the thermo switch causes the "50 service" errors. This thermo switch in the 4100 fuser is highly specialized and can only be found as a part of the 4100 fuser film assembly. Although a replacement fuser assembly seems like a quick fix, it isn't. Replacing the fuser with a new one caused the same error message to appear after a few days in some instances. We came across some customers who were on their fifth or sixth fuser and getting frustrated with the reoccurring error message.

Since that time, HP did come out with a new version of the 4100 fuser and not only fixed the "50 service" message problem, but also made another nifty improvement.

If you remember, when the 4100 was first introduced, many customers were complaining about crease marks in the paper. These crease marks were made by the fuser and by design to keep the paper from curling up. The 4100 fuser applies a lot more pressure between the fuser film and the lower pressure roller. So much so that paper exiting the fuser would naturally want to curl up. Anticipating complaints, HP put four crease marks lightly into the paper that ran from the top of the page to the bottom which seemed to fix the curling problem. The reason for the added pressure between the two rollers is due to the size of the ceramic heating element. The larger heating element requires a softer lower pressure roller and increased pressure so paper would be exposed to all three elements. Looking at Figure 2, note the greater width of the 4100 heating element as compared to the one in the 4000. Also pictured is the increased size of the lower pressure rollers compared to the 4000 version. Technically, the creases were made by the fuser delivery rollers as can be seen in figure 3. The delivery rollers on the new 4100 fuser no longer contain these crease makers. Apparently the paper curl issue was not as common as first thought.



Figure 2



Figure 3

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ERRORS IN THE HP LASERJET 1150/1300/1300n

In a previous Tech Tip we listed and corrected several errors that appeared in the Troubleshooting section of the HP LaserJet 1200 Series Service Manual. Since the 1150 and 1300 have the same configuration of buttons and lights as the 1200 series, and use basically the same error codes, we wondered if the same errors might have found their way into the 1150/1300 Service Manual.

After some experimenting, we found that some of the same errors do appear in the 1150/1300 manual. These errors, and their corrections, are shown in the table below

| Fatal Error: Secondary Light Pattern Really | Error as Listed in Service Manual | What the Pattern |
|---|--|-----------------------------|
|  | Laser/scanner error | Motor error |
|  | | |
|  | Motor error | Laser/scanner error |
|  | | |

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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.

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- 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.

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

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