

From the
TECH FILES
 of Liberty Parts Team...

The 49/79 Error in HP LaserJets

The 49/79 error is not the most common problem that you will see in a laser printer (that would be the 13 Paper Jam), but it is one of the more mysterious. Numerous things can trigger it, and it can be difficult to determine the exact cause. But the more you know about what the code means and what kinds of things can cause it, the better equipped you will be to troubleshoot it.

Note: due to their similarity, we will refer to the 49 and 79 errors as a single error.

Background on Firmware

In a previous article (“Firmware Upgrades,” available on our web site), we discussed in detail what firmware is and what it does. See that article for full details, but in brief, the printer’s formatter board is a computer of sorts, and firmware is the program that tells the formatter board what to do and how to do it. It is permanently stored in ROM chips, either on the formatter board itself or on a SIMM or DIMM that plugs into the formatter.

Firmware Addresses

Both the 49 and 79 errors are firmware errors, and they are always accompanied by a 4-digit firmware address (for example, 49.4C02, or 79.01FE). The four characters after the decimal point are the firmware address at which the error occurred. In theory, this is important information – if you had access

to the firmware source code, and were able to understand it, you could see exactly what the firmware was trying to do at that address, and that would help pinpoint the cause of the problem.

However: (1) For any given printer, there are thousands of firmware addresses – far too many to list them all in a service manual; (2) Even if you could see the firmware source code, it would be unintelligible to you unless you are a software engineer; (3) The firmware is proprietary – HP does not want people to be able to see the source code. For these reasons, the 49 and 79 errors are listed in the manuals as 49.xxxx or 79.xxxx. For our purposes, the specific address is useless, and we must troubleshoot these errors on general principles.

The 49/79 error is telling you that the normal operation of the formatter’s CPU executing firmware instructions has come to a halt. There are three types of things that can cause this: (1) the firmware itself is bad or corrupted; (2) the formatter’s CPU has failed or is being hung up by some other hardware problem, such as a defective accessory plugged into the formatter; (3) the formatter has received bad data or illegal/invalid commands from the computer or network, and does not know how to respond.

Troubleshooting Sequence

1. Cycle the printer power to see if the error clears;

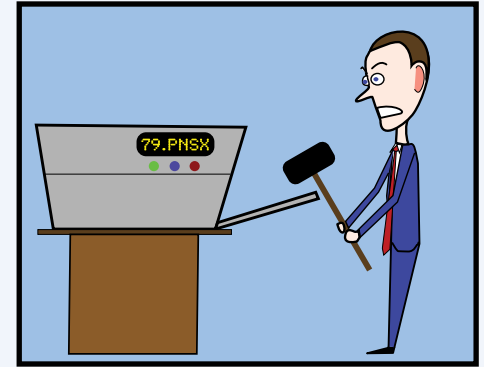
if not, go to Step 2.

2. With the printer powered off, disconnect it from the computer or network, and remove any JetDirect cards. Now perform a cold reset (details of this procedure differ for different printer models – consult the appropriate service manual).

3. If either Step 1 or Step 2 cleared the error, there is a good chance that the cause was a driver problem (the printer driver is the software on the computer or network that communicates with the printer) or a firmware problem. For most printer models, both the driver and the firmware are available as free downloads from HP’s web site. You can find details on how to download these files in our “Firmware Upgrades” article. Note that flashing the firmware as described in that article only works if you can get the printer to a “Ready” state. If you cannot clear the error, you may have to physically replace the firmware SIMM or DIMM (see Step 5).

4. If neither Step 1 nor Step 2 cleared the error, there is definitely a hardware problem. Either the formatter board or something plugged into this board is bad. Power off and remove all unnecessary accessories such as hard disk drives, extra memory, etc. (If the printer has a firmware SIMM or DIMM, this must remain plugged in, and some printer models will not work unless at least one memory DIMM is present). If the error clears, one of the removed items is probably bad. You can determine which one by plugging them back in one at a time (cycling the power each time – never plug or unplug an accessory with the printer powered on).

5. If you get down to the bare minimum (formatter



with only the firmware SIMM or DIMM plugged into it) and still cannot clear the error, all that is left is to replace these items one at a time. We recommend starting with the firmware SIMM or DIMM, since this is the less expensive alternative. Finally, if nothing else has worked, replace the formatter.

Note that the final step still involves a bit of trial and error, but much less than if you had to replace every possible item one at a time. By following this troubleshooting sequence, you can either solve the problem or eliminate most of the potential causes before spending any money!

—Dennis Kosterman

