

PRINTER TECH ARTICLE

Paper Jam Troubleshooting in the LJ 4000, 4050, 4100

The most common and complex problem occurring in laser printers is the 13 paper jam. We at LPT have systemized years of observed printer behavior into a method for troubleshooting this error in the 4000, 4050 and 4100.

The first thing to check for is whether there is paper stuck inside the printer. Check underneath the toner cartridge, by the cassettes, or in the fuser. If you find paper in the machine, go to I.

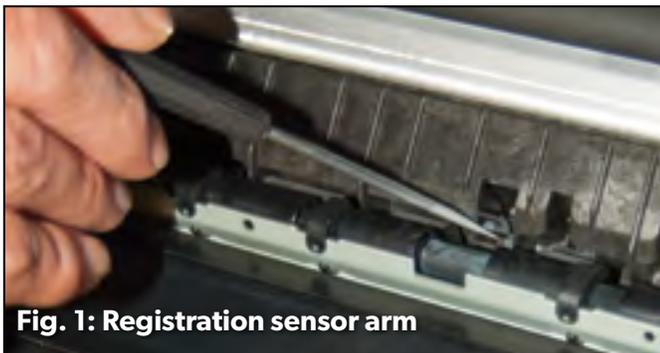


Fig. 1: Registration sensor arm

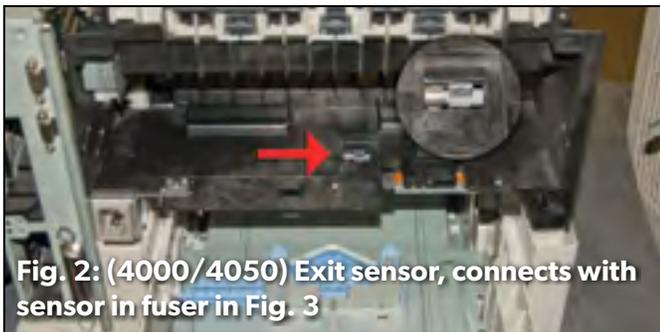


Fig. 2: (4000/4050) Exit sensor, connects with sensor in fuser in Fig. 3



Fig. 3: (4000/4050) Sensor arm, connects with sensor in Fig. 2

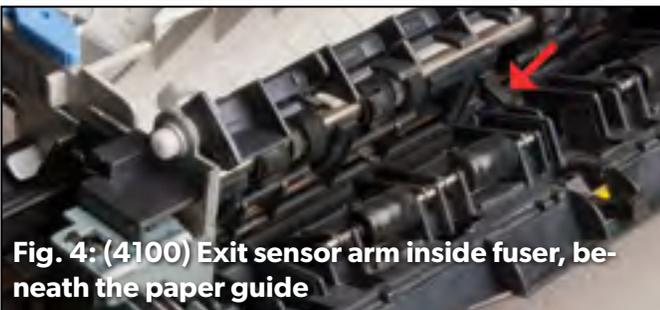


Fig. 4: (4100) Exit sensor arm inside fuser, beneath the paper guide

If there is no paper in the machine, disconnect the printer from the computer or network and restart it, in case there is a job in the queue that is trying to print. More importantly, it will tell us whether the error occurs immediately after powering on, or only when a print job has been sent.

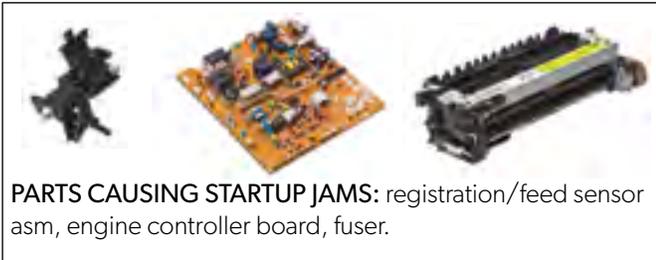
If there is a paper jam message after powering on the printer, AND no paper is stuck inside, go to II.

If there is a paper jam message only after sending a print job to the printer, AND no paper is stuck inside, go to III.

I. PAPER IS FOUND IN PATH

- A. If the paper stops just after a sensor and is not folded or crumpled, that sensor is probably not functioning properly. Go to II.
- B. Check for slick or non-turning pickup rollers (see IIIA2, IIA3).
- C. If the paper is folding or crumpling, you can usually find the problem at the leading edge of the paper. It could be a worn roller, a foreign object, or skewing outside of the paper path.
- D. In cases where the location of the problem is not obvious, run paper through all possible paths. If the jam occurs in all paths, look at the areas that are common to all (the registration area and the fuser). If the jam only occurs in certain paths, look at areas particular to that path (usually the pickup and feed rollers associated with a given tray).
- E. One other clue is the printed image. If the page, or part of the page, is past the toner/transfer area and blank, either the timing is so far off that the printer didn't even attempt to generate an image, or the input sensor did not "see" the paper. In this case, the problem is usually in the input section, even though the paper may be found considerably farther along than that. If the image is shifted up or down on the page, the registration assembly (which controls image position) is probably defective.





PARTS CAUSING STARTUP JAMS: registration/feed sensor asm, engine controller board, fuser.

II. STARTUP JAMS: 13 ERROR AT POWERUP (NO PAPER FOUND)

If the printer still powers up with a paper jam error, one or more of the printer's paper movement sensors are stuck or broken. There are four places to check.

A. **REGISTRATION SENSOR ARM** (Fig. 1). Remove the toner cartridge and pull back the registration asm. Locate the registration sensor arm and make sure it has tension, is intact and free of paper. It is part of the registration/feed sensor assembly, a popular item at Liberty Parts Team and well worth stocking.

B. EXIT SENSOR ARM (1)

1. 4000/4050. In the 4000/4050, this is divided into two parts, one part in the fuser, the other on the engine controller board.

a. **ECB SENSOR:** Remove the fuser and locate the sensor on the engine controller board (Fig. 2). Make sure it is not being interfered with and is unbroken. Replace the engine controller board if the arm is broken.

b. **FUSER SENSOR** (Fig. 3). On the fuser there is an exit sensor flag which interacts with the above sensor. See that it is not broken and replace the fuser if it is.

2. 4100. (Fig. 4) The sensor is inside the fuser. Open the paper guide. If the arm is not operating, replace the fuser.

C. **EXIT SENSOR ARM (2)** (Fig. 5). Check for paper near the exit sensor flag inside the fuser. Move this flag (a in Fig. 5) and see that the plastic piece on the side (b) also moves.

D. **FEED SENSOR ARM** (Fig. 6). Remove the tray one pickup assembly and locate and check the feed sensor. It should move with tension. Replace the registration/feed sensor assembly if it is broken.

E. As a last resort, replace the engine controller board.

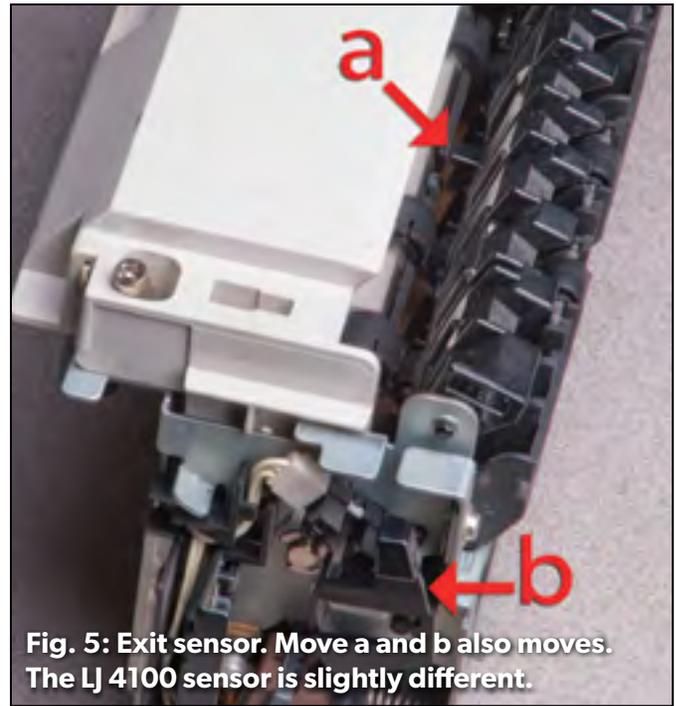


Fig. 5: Exit sensor. Move a and b also moves. The LJ 4100 sensor is slightly different.



Fig. 6: Feed sensor arm (Tray 1 Pickup Asm removed)

III. ERROR OCCURS AFTER PRINT JOB (NO PAPER FOUND) This always indicates paper pick-up failure.

A. COMMON CAUSES. Check all.

1. The printer, because of a malfunctioning paper-out sensor, is trying to pick up from an empty tray. This is especially common in the manual feed tray, the first default option. Replace the Tray 1 pickup assembly in this case. If it occurs in the cassettes, replace the appropriate pickup drive asm.
2. Insufficient friction between the pickup roller and the paper, either because the roller is worn and slick, or because the paper has not lifted completely (defective lifter mechanism). Check the pickup rollers (4) for the cassettes; or the Tray 1 pickup roller as required.
3. The pickup roller is not turning. This can indicate a problem related to the the pickup drive asm.

4. If the pickup & feed/sep rollers don't move during the print job, replace the feed asm.

B. OTHER POSSIBILITIES.

1. Replace the pickup drive asm.
2. The engine controller board may not be sending the proper signals to the pickup drive asm. Replace the ECB.
3. Among other duties, the feeder control PCA transmits the signal that drives the cassette pickup solenoid. If it fails to do this, there will be a pickup failure with an accompanying 13 paper jam error message.

4. In the cassettes, the torque limiter can cause both feed failure and multi-feeding.

