Lotem 800 - Troubleshooting

Problem: Misregistration

Problem Description:

Plate loading appears to proceed without problems. Either before or after processing, misregistration is noticed.

Note: Misregistration can occur due to the plate being improperly positioned on the drum, and/or due to carriage problems.

Error Message:

None

Machines Affected:

Lotem™ 800 (S-speed)

Lotem™ 800 (F-speed)

Lotem™ 800 Quantum

Lotem™ 800 Spectrum

Component:

Drum

Carriage

Software Products and Versions:

N/A

Operating System:

N/A

Probable Causes:

- Damaged or defective plate or plate edge
- Improper loading of plates in Cassette
- Incorrect plate definition
- Damaged Cassette components (Plate Guides or Exit Rollers)
- Machine not leveled
- XY Bar Suction Cup and/or vacuum malfunction
- Plate Support Roller malfunction
- Plate Leading Roller malfunction
- Tail Gripper and/or Spoiler malfunction
- Head Gripper malfunction
- Drum Vacuum Holes clogged

- Drum Vacuum malfunction
- Inappropriate Drum Pin size
- Loading Roller malfunction
- Wall air pressure problems
- Spiral punch problems
- Leadscrew malfunction
- Inappropriate values entered for specific parameters

Documentation Key

This document uses two graphic indicators, as follows:

✓ The check mark indicates items that need to be checked and/or verified.

⇨ The arrow indicates an action that needs to be taken. Each action pertains to the item directly above it.

Note: If at any point in the troubleshooting procedure you feel that the problem has been resolved, you can either perform plate loading, or continue to the end of the procedure.

Before the Customer calls the Response Center

There are several troubleshooting steps that the customer should complete before calling the Response Center. These steps can prevent extensive down-time and expensive service calls by enabling the customer to solve problems independently. These steps are fully explained in the section titled, "Troubleshooting Procedure". Ideally, the customer will have completed these steps before calling the Response Center, and also, reviewed the following questions and written the answers down. Either way, it is mandatory that you review the following questions with the customer, and verify whether the troubleshooting procedure was properly performed.

1) Keep any processed plates.
2) Ask the customer the following questions (record the answers):

✓ When was the last time Preventive Maintenance was performed, and by whom?

✓ When was the last time the machine worked properly?

✓ What was done since then? For example,

- Were any parts replaced on the machine?

✓ Double-check the service record to verify whether the Spiral Punch was recently replaced. If it was:

⇨ Verify whether the size of the installed Spiral Punch matches that of the Drum Pin. If it does not, see step 13.

- Was the machine moved?
- Was the machine cleaned?

- Was a new batch or type of plates used?
- Did plate fly-off occur (did the plate detach from the Drum during loading)?

  Note: Plate fly-off can cause one or more of the Loading Rollers to detach. See step 6 for details about checking the Loading Roller.

✓ Was an error message displayed on screen? If yes, what did it say (include numbers, if any).

✓ What is the software version?

⇨ In the PC Controller, select **Utilities > Machine Info**. The version is displayed.

✓ Do you use custom-sized plates, or cut plates to a custom size yourself?

✓ Does the problem happen all the time (with all plates), or just some of the time? For example,

- With a particular plate brand, type and/or size?
- Does the problem seem to be a random occurrence?

✓ What are the temperature and humidity levels in the plate storage room?

✓ What is the wall air pressure level? Check the gauge on the wall unit and verify that the level is not less than 6 bar, and that it is constant. If it is not:

⇨ Contact the person who is responsible for this type of maintenance in your building. If the problem persists:

⇨ Check air pressure requirements (TechPlanet), and replace the Air Filter System, as required (TechPlanet).

Troubleshooting Procedure

1) Inspect the processed plate(s). Look for:

✓ Defective plate edge: May indicate manufacturer's defect, or damage that was caused to the plate during handling. Plate edges must be smooth, straight, free of burrs, folds, dents and/or emulsion. If found:

⇨ Load new, undamaged plates. If the problem persists, proceed to the next step.

✓ Bent corners: May indicate use of a problematic plate size, or a problem with the Plate Guides in the Cassette. Either of these problems may cause the Tail Grippers to hit and bend the corner(s) of the plate during loading. If found:

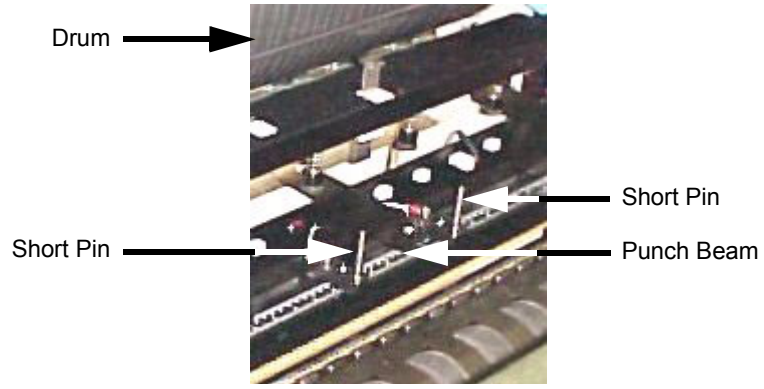
⇨ Check and make note of the plate size.

Note: Measure the plate using a ruler or tape measure.

⇨ Proceed to step 4. If the problem persists:

⇨ Contact the PSS.

- ✓ Dents in the Leading Edge: If no emulsion is found on the Leading Edge:
  - ✓ Open the Front Door and visually inspect the Short Pins for dirt or debris.



If found:

⇨ Clean the Short Pins and instruct the customer as to the proper procedure. If the problem persists:

  - ✓ Use a multimeter to check the electronic function of the Short Pins. If malfunction is found:

⇨ Run the Diagnostic Program and select **Machine > Short Pins**. If the result is **Fail**:

⇨ Replace the Short Pins related electronic board.

If the result is **Pass** and the problem persists:

⇨ Adjust the value for the "X rep Extra in Punch" parameter in the Registry, as required.

- ✓ Rough edges inside the notch: The notch should be smoothly cut. If it is not:

⇨ Replace the Spiral Punch. Ensure that the Punch size matches that of the Drum Pin.

2) Compare the notches in all separations of several of the most recently processed plates. Verify that:
   - ✓ All the notches are of equal depth. If they are not:

⇨ Perform Spiral Punch Adjustment (TechPlanet).

3) Verify that the plate has been correctly defined during Cassette loading, as follows:
   - ✓ In the PC Controller, select **Settings > Plate Definitions**, and in the **Media Definition** dialog box, verify that the plates currently being loaded are correctly defined (the measured plate size must be within +/-1 mm of standard specifications). If they are not correctly defined:

⇨ Have the customer modify the plate definition or create a new plate definition, as described in the user manual, and provide instructions as to the proper procedure. Perform plate loading. If the problem persists:

4) Check the Cassette. Verify that:
   - ✓ All the Cassette Exit Rollers (shown below) are in place, and are not damaged, bent or worn out.



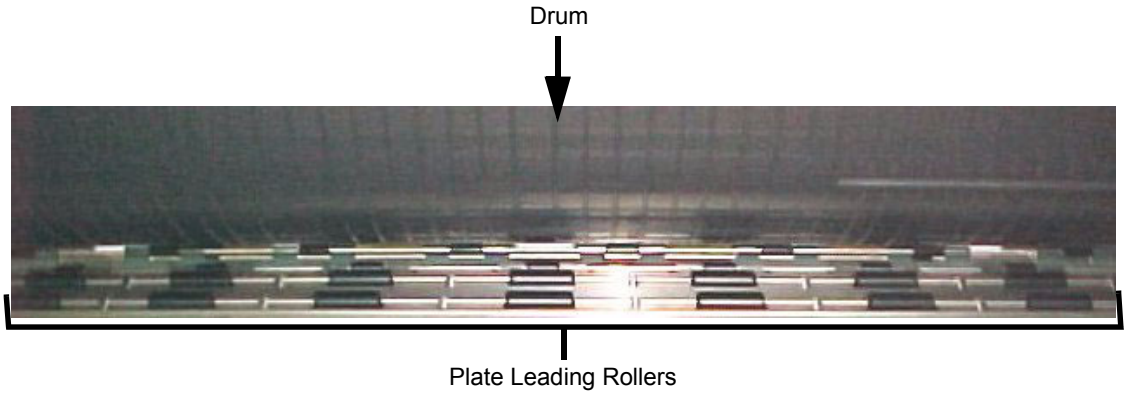
   If not in place, or if damaged, bent or worn out:
   - ⇨ Repair or replace the Cassette Exit Rollers, as required.
   - ✓ Plates are not partially caught under the Cassette Plate Guides. If they are:
     - ⇨ Align the Cassette Plate Guides. Instruct the customer as to the proper procedure.
   - ✓ Plates are properly loaded and positioned in the Cassette. If they are not:
     - ⇨ Have the customer load plates into the Cassette and provide instructions as to the proper procedure.

5) Use a spirit level to verify that the machine is properly leveled. If it is not:
   - ⇨ Have the customer use a spirit level to check machine leveling, and provide instructions as to the proper method, as required. If the machine is not level, perform machine leveling (TechPlanet).

6) Open the Front Door, manually move the Loading System toward the Cassette and raise the XY Bar to its highest position. Inspect the suction cups. Look for:
   - ✓ Damage of any type: Place a finger under each suction cup and:
     - ✓ Inspect the edges for signs of wear, tear and/or cracking.
     - ✓ Gently press upward and look for tears and/or cracks anywhere in the rubber. If found,
       - ⇨ Replace the damaged XY Bar Suction Cup(s) (TechPlanet). Verify that the correct number of washers are installed for each suction cup, as described in step 17.

- ✓ Debris or dirt: This indicates that Preventive Maintenance is not being properly and/or regularly performed. If found:
  - ⇨ Clean the XY Bar suction cups.

7) Visually inspect the Plate Support Rollers. From the front of the machine, shine a flashlight on the Plate Support Rollers and verify that:
   - ✓ All the Rollers are in place, are not damaged, and turn freely. In addition, verify that each roller's securing screw is not bent. If not in place, or if damaged, or bent:
     - ⇨ Repair or replace the Plate Support Rollers, as required.
8) Visually inspect the Plate Leading Rollers (shown below).



   Verify that:
   - ✓ All the Rollers are in place, and are not damaged, bent or worn out. If not in place, or if damaged, bent or worn out:
     - ⇨ Repair or replace the Plate Leading Rollers, as required.
9) From the rear of the machine, manually turn the Drum until the Tail Gripper is accessible. Manually move the Tail Gripper to the pre-load position (as shown in the label on the upper panel of the machine—this enables you to thoroughly inspect the drum). Verify that:
   - ✓ The Drum is clean, especially under each Tail Gripper and the Spoiler (refer to the user guide for details). If it is not clean:
     - ⇨ Clean the Drum, Tail Gripper and/or Spoiler using a lint-free cloth, and instruct the customer as to the proper procedure while you are working.
10) Check the date on which the Drum vacuum holes were last cleaned, and to what depth. Look for:
    - ✓ Debris or dirt: This indicates that Preventive Maintenance is not being properly and/or regularly performed. If found:
      - ⇨ Clean the Drum vacuum holes and instruct the customer as to the proper procedure while you are working. Explain why it is important to clean the vacuum holes properly (to a depth of 1 inch) and regularly.

11) From the rear of the machine, further inspect each Tail Gripper and the Spoiler. Look for:

- ✓ Debris, plate ablation and/or foreign objects, such as plate slug(s). If found:
  - ⇨ Clean each Tail Gripper and the Spoiler, as follows, and instruct the customer as to the proper procedure while you are working.
    - Open each Tail Gripper by pressing the V-groove on each one.
    - Remove any dirt and/or debris by passing a piece of plate back and forth under each Tail Gripper and the Spoiler, as required.

    Note: Be sure to wear protective gloves when handling the piece of plate.

12) Inspect the Tail Spoiler. Verify that the Tail Spoiler is properly installed and adjusted, as follows:

- ✓ Use a feeler gauge to measure the distance between the Tail Spoiler and the Drum. It should measure 0.05 mm. If it is not correct:
  - ⇨ Adjust the Tail Spoiler, as required (TechPlanet).
- ✓ Gently jiggle the Tail Spoiler and verify that it is not fixed in place. If it does not move:
  - ⇨ Adjust the Tail Spoiler, as required (TechPlanet).

13) Verify that the Spiral Punch and the Drum Pin are properly aligned to each other and of appropriate size by performing the following:

- From the rear of the machine, manually turn the Drum until the Head Gripper is accessible.
- Open the Head Gripper by pressing down on the Head Gripper V-groove, and locate the Drum Pin.
- ✓ Visually inspect the Head Gripper and Drum Pin for dirt, debris and/or obstruction such as slugs. If found:
  - ⇨ Remove any debris and/or obstruction, and clean the Head Gripper and/or Drum Pin, as follows:
    - Pass a piece of plate back and forth under the Head Gripper, as required. In addition:
    - Use the piece of plate to dislodge and debris and/or plate ablation from the Drum Pin, as required.

    Note: Be sure to wear protective gloves when handling the piece of plate.
- ✓ Use a caliper to measure the diameter of the Drum Pin.
- ✓ Use a caliper to measure the diameter of the notch in one of the processed plates. If it is smaller or larger than the diameter of the Drum Pin:
  - ⇨ Replace the Drum Pin. Ensure that the pin size matches that of the Spiral Punch.

✓ Verify that the Punch is correctly aligned with the Drum Pin (TechPlanet). If it is not:

⇨ Perform Punch alignment (TechPlanet).

14) Inspect the Loading Rollers (especially if the customer reported that plate fly-off had occurred), as follows:

- Open the Right or Left Side Door.
- Remove the upper panel.
- Remove the unloading tray.
- Shine a flashlight on the Loading Rollers and using your hand, verify that:

✓ All rollers and springs are in place, and are not damaged or worn out. If not in place, or if damaged or worn out:

⇨ Replace rollers and/or springs, as required (TechPlanet).

15) Check the date on which Preventive Maintenance was last performed for the Carriage and/or Leadscrew. Then:

✓ Verify that the Carriage and Leadscrew are clean and properly oiled. If they are not, or if Preventive Maintenance has not been performed as required:

⇨ Perform Preventive Maintenance for the Carriage and Leadscrew (TechPlanet).

✓ Inspect the Carriage/Leadscrew Coupling and verify that the three setscrews in the coupling firmly secure the Carriage to the Leadscrew, and that there is no play. If there is play:

⇨ Firmly tighten the three setscrews.

✓ Inspect the blue, rubber Leadscrew/Motor Coupling and verify that it is not torn, worn and/or damaged in any way. If it is:

⇨ Replace the Leadscrew/Motor Coupling (TechPlanet).

16) Verify that the Carriage is consistently arriving at the Home Position (HP), and that both the Course and Fine Detectors are functioning, as follows:

- In the PC Controller, select **Utilities > Hardware**. The Hardware window is displayed.
- In the Hardware tree, double-click **Expose System > Carriage System > Carriage Course Detector**. The Carriage Course Detector dialog box is displayed. The Course Detector status is **OFF**.
- In the Hardware tree, double-click **Carriage Fine Detector**. The Carriage Fine Detector dialog box is displayed. The Fine Detector status is **ON**.
- In the Hardware tree, double-click **Expose System > Carriage System > Carriage Motor**. The Carriage Motor dialog box is displayed.
  - Display the Operation tab, as required.

- In the Operation tab, select Home Position, and click the **Start** button. Verify that:

✓ The Course Detector status changes from **OFF** to **ON** and then to **OFF** again, and the Fine Detector Status remains **ON**. If they do not:

⇨ Remove the Rear Panel, and:

✓ Inspect the Course Detector. Verify that it is clean and free of debris and/or obstruction. If it is not:

⇨ Clean the Course Detector using a Q-tip dipped in alcohol. Be sure that no bits of cotton remain on the detector.

✓ Inspect the Course Detector wiring. Verify that the wires are properly connected and that there are no signs of wear or damage. If they are not properly connected, or if signs of wear and/or damage are found:

⇨ Secure and/or replace the wires, as required.

✓ Inspect the Fine Detector. Verify that the slot in the Fine Detector Wheel is pointing downward and is perpendicular to the floor (6 O'clock). In addition, verify that the setscrew that secures the wheel to the shaft is fully tightened. If it is not:

⇨ Adjust the Fine Detector Wheel, as required (TechPlanet). Be sure to fully tighten the setscrew that secures the wheel to the shaft. Then:

⇨ Adjust the value for the "Height Start Image Area" parameter in the Registry, as required.

✓ Inspect the Fine Detector. Verify that it is clean and free of debris and/or obstruction. If it is not:

⇨ Clean the Fine Detector using a Q-tip dipped in alcohol. Be sure that no bits of cotton remain on the detector.

✓ Inspect the Fine Detector wiring. Verify that the wires are properly connected and that there are no signs of wear or damage. If they are not properly connected, or if signs of wear and/or damage are found:

⇨ Secure and/or replace the wires, as required. Then:

⇨ Replace and secure the Rear Panel.

17) Leave the doors open and, using a cheater, perform plate loading using undamaged plates (inspect the plates before loading them into the Cassette). Be sure that there is no emulsion on the plate edges, and that they are not damaged or too cold to use due to poor storage conditions. Using the Ask Before Do function, visually follow the plate as it progresses through the machine, and verify that the loading sequence is smooth and correct, and that the plate does not hit, and is not hit by, any machine parts as it progresses. Check the following components:

- ✓ Verify that the plate is properly secured by all the XY Bar Suction Cups when being lifted from the Cassette. When the plate is lifted by the XY Bar, stop the machine and gently tap the plate next to each suction cup. If one or more of the suction cups do not fully secure the plate:
  - ✓ Remove the XY Bar Cover and verify that the correct number of spacers (washers that are placed on the inside of the XY Bar, through which each XY Bar Suction Cup Vacuum Tube runs) are present for each suction cup, as follows:
    - ✓ Two washers for each of the two suction cups on the right of the XY Bar.
    - ✓ No washers for each of the three suction cups in the center of the XY Bar.
    - ✓ Two washers for each of the two suction cups on the left of the XY Bar.

    If the correct number of spacers is not present for each suction cup:

    ⇨ Install the spacers, as required. Then:
  - ✓ Inspect the XY Bar Suction Cup vacuum tubes for kinks or damage. If found:

    ⇨ Straighten kinked tubes, and/or replace damaged tubes, as required. If the problem persists:

    ⇨ Verify that the XY Suction Cup vacuum level is correct by using a vacuum gauge to check the vacuum level (TechPlanet).
- ✓ Cassette—Verify that the plate is individually lifted and smoothly removed from the Cassette. If it is not, then:

  ⇨ If the plate is partially caught under the Cassette Plate Guides, align the Cassette Plate Guides, as described in step 4.

  ⇨ If the plate hits the Cassette frame, Cassette Exit Rollers or the front frame of the machine when being lifted out of the Cassette, adjust the value for the following parameter in the Registry, as required:

  ⇨ ...\Loading System\Loading System Setup "Prepare Y to catch Plate (mm)

- ✓ Centering System—Verify that the plate is not moved too far to either the left or right by the Centering System during centering. If it is:
  - ⇨ Rearrange the Spacers on the right and left of the Cassette Entrance on the front of the machine, as follows:
    - Remove the Cassette from the Lotem.
    - Remove one of the Spacers from the left or right of the Cassette Entrance on the front of the Lotem and install it on the opposite side, according to the position of the plate after centering. (If you remove the right Spacer, install it on the left side. If you remove the left Spacer, install it on the right side.)
    - Reinsert the Cassette and perform plate loading.
- ✓ Punch Entry—Verify that the plate smoothly enters the Punch. If it does not:
  - ⇨ If the plate hits the Punch Guide(s), adjust the value for the following parameter in the Registry, as required:
    - ⇨ ...Loading System\Loading System Setup "y Enter To Punch (mm)"

      Note: If the customer is using thin (02 mm) plates, adjust the value for the "y Enter To Punch For 02 (mm)" parameter.
  - ⇨ If the plate is forcefully jammed against the Short Pins causing the Leading Edge to be dented, adjust the value for the following parameter in the Registry, as required:
    - ⇨ ...Loading System\Loading System Setup "x Rep Extra In Punch (mm)"
  - ⇨ If the plate hits the Plate Support Rollers, adjust the value for the following parameter in the Registry, as required:
    - ⇨ ...Loading System\Loading System Setup "X Prepare To Drum (mm)

18) Using a flashlight, verify that the Loading Roller presses the plate against the drum in a manner that enables the Tail Edge to be grasped by the Tail Gripper. Verify that:

- ✓ Just before the Tail Gripper closes on the Tail Edge of the plate, the distance between the plate edge and the Drum is not too large (approximately 1 or 2 mm). If it is too large:
  - ⇨ Loosen the three securing screws on the right and left of the Loading Roller Assembly, manually move the Loading Roller Assembly slightly closer to the Drum, and tighten the securing screws. Then, perform plate loading again.
- ✓ When the plate is just about to enter the Head Gripper and the Actuator is activated, the Drum does not move. If it does:
  - ⇨ Adjust the value for the "Load Head Gripper location" parameter in the Registry, as required.

- ✓ From the rear of the machine, verify that the plate is properly positioned and secured on the Drum. If it is not:
  - ✓ Use a flashlight to verify that the Drum Pin is firmly positioned in the bottom center of the notch. If it is not:

    ⇨ Align the Punch, as described in step 13.
  - ✓ Verify that the Tail Gripper grasps the Tail Margin of the plate properly. If it grasps too little, or only a portion of the plate:

    ⇨ Increase the value for the Loading System Setup\"Tail gripper on plate" parameter in the Registry.
  - ✓ Visually inspect the Drum for additional holes that may have been drilled to accommodate large plates. These holes may have rough edges, and are usually found next to, and in line with, the original drum holes on the far right and left of the Drum. If additional holes are found:

    ⇨ Seal the holes with epoxy.

    Note: You can ask the customer if additional holes were drilled, and/or check the machine's service record.
  - ✓ Verify that the Drum vacuum level is correct: Check the vacuum level using a vacuum gauge (TechPlanet). If it is not:
    - ✓ Inspect the Drum vacuum tubes for kinks or damage. If found:

      ⇨ Straighten kinked tubes, and/or replace damaged tubes, as required. If the problem persists:
    - ✓ Check the Drum Vacuum Swivel Unit. Verify that the vacuum hose is white. If it is not:

      ⇨ Install the new Drum Vacuum Swivel Unit vacuum hose, FCO # 27488B.
    - ✓ Verify that the vacuum hose is securely attached, the band is tightly closed and there is no leakage. If leakage is found:

      ⇨ Tighten the vacuum hose securing band. If leakage persists:
    - ✓ Inspect the vacuum hose for leaks. If found:

      ⇨ Replace the vacuum hose. If the problem persists:
    - ✓ Check for leakage where the Swivel Unit attaches to the Drum. If leakage persists:

      ⇨ Replace the Swivel Unit according to the FCO #27488B.

Before You Leave

Before leaving the customer's site, complete the following:

1) Have the customer expose several plates of different sizes (at least three), and verify that the problem is resolved.

   Note: This is a very important cost-saving step that can prevent you from having to make additional service visits to take care of the same problem.

2) Verify whether the customer is responsible for performing Preventive Maintenance procedures on the machine, or Creo is responsible.

   ✓ If the customer is responsible:

   ⇨ Verify that Preventive Maintenance is being performed properly and regularly. Remind the customer of the importance of performing the Preventive Maintenance procedures properly and regularly, and provide instructions, as required.

   ✓ If Creo is responsible:

   ⇨ Verify the service record, and either:

   - Perform Preventive Maintenance procedures, as required, or:
   - Schedule a service visit, or:
   - Alert the service department so that they can contact the customer and schedule the service visit.

     Note: Inform the customer as to the action taken.

See Also

Lotem 800 Plate Loading Sequence

Suggested Keywords

Carriage

Drum

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