Kodak

ThermoFlex Narrow and Mid II Hybrid
Platesetter

Offset Upgrade Procedure
English

DRAFT

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Introduction

To expose offset plates, your Kodak® ThermoFlex® Hybrid platesetter requires the following additional hardware (shown on page 2):

- **Registration pins and holder**: Registration pins adhere the offset plate to the drum. The registration pin holder is connected to the interlock system to help ensure that pins are not left in the drum or elsewhere before plate exposure.
- **Registration bar**: Located on the drum, contains registration pin holes customized for the customer's configuration
- **Offset plate roller**: Helps to adhere the plate smoothly to the drum.
- **Side-to-side detectors**: Help to ensure safety by detecting the presence of registration pins accidentally left in the drum.
- **Optic lens 1:3**: Enables quality imaging on offset plates without reducing image and throughput on flexo plates.

  Note: Devices whose serial number is FN188 (Narrow) or FM207 (Mid II) or higher already have optic lens 1:3.

This document describes in detail the hardware procedures required to upgrade the device.

Note: The relevant software procedures (ITP, backup, and calibration) can be found on TechPlanet.

The full offset upgrade procedure includes the following steps:

1. Performing ITP
2. Backing up the registry and database
3. Installing the registration bars
4. Installing the pin holder and plate roller, and adding safety labels
5. Replacing the lens assembly
6. Updating the software
7. Testing the new hardware
8. Calibrating the platesetter
9. Performing ITP

Products

- Kodak ThermoFlex Narrow Hybrid
- ThermoFlex Mid II Hybrid

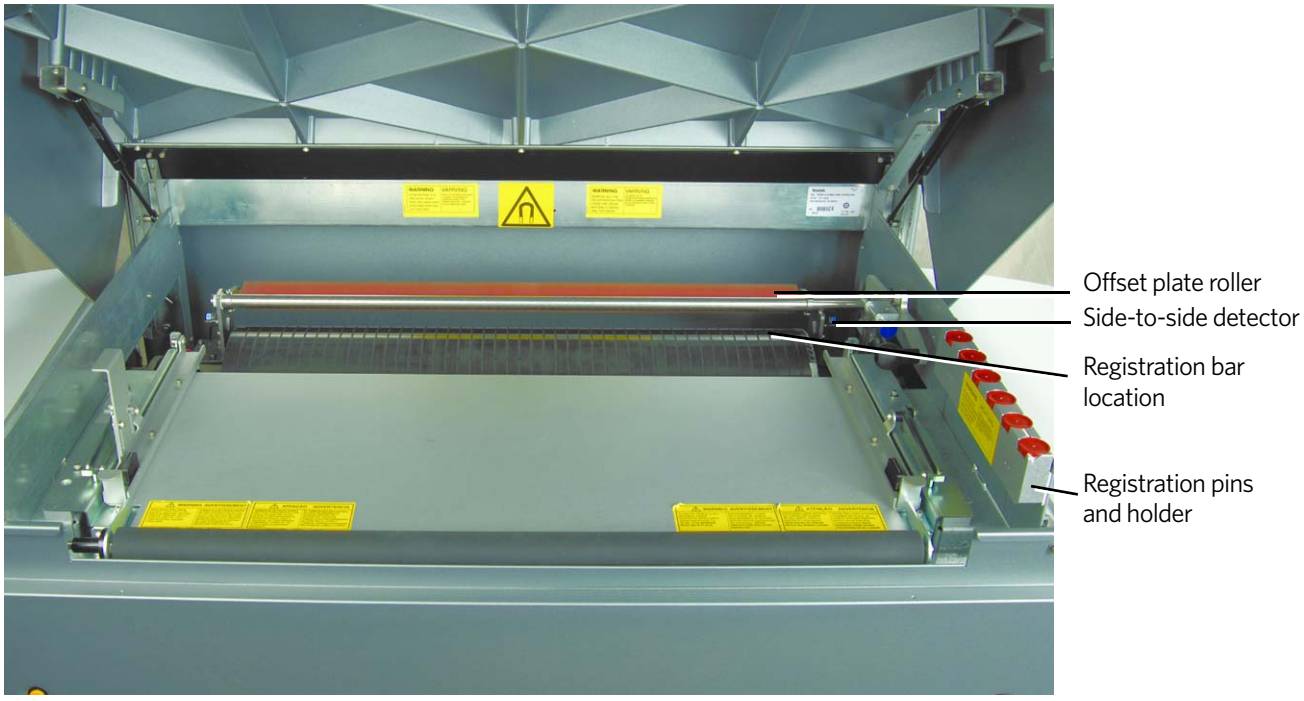


Figure 1: ThermoFlex Narrow Hybrid offset components



Figure 2: ThermoFlex Mid II Hybrid offset components

Tools

- Densitometer
- Optic head outer key (291B7B867)



Figure 3: Optic head outer key (291B7B867)

- Focus jig (291B5A539)
- Focus spacer for new lens (690-01426)
- Elevation jig
- For Mid II: Operation buttons replacement jig (690-00784A)

Performing ITP

➢ Using the resolution that the customer works with, expose an ITP file. This file will serve as a basis for comparison.

Note: Find the ITP procedure and test files on Tech Planet on the installation page.

Backing Up the Registry and Database

➢ Back up the registry and database. For devices running Windows XP, back up drive C or the entire hard disk.

Note: Find the backup and restore procedures on TechPlanet on the Procedures page.

Replacing the Hardware

Shutting Down the Platesetter

Narrow Devices

1. In ThermoFlex Controller, send the carriage to position 300, or any position that enables you to work comfortably on the lens assembly.
2. In ThermoFlex Controller, open the top door.
3. Quit ThermoFlex Controller, turn off the platesetter, and disconnect the main power supply.
4. Open the right and left side doors.

Mid II Devices

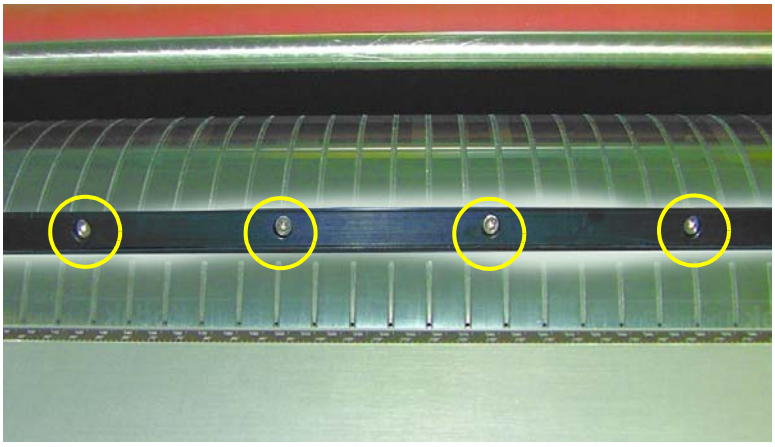
1. In ThermoFlex Controller, send the carriage to position 700, or any position that enables you to work comfortably on the lens assembly.
2. In ThermoFlex Controller, open the loading table.
3. In ThermoFlex Controller, open the service door.
4. Quit ThermoFlex Controller, turn off the platesetter, and disconnect the main power cable.
5. Open the right and left side doors and the front panel.

Installing the Registration Bar

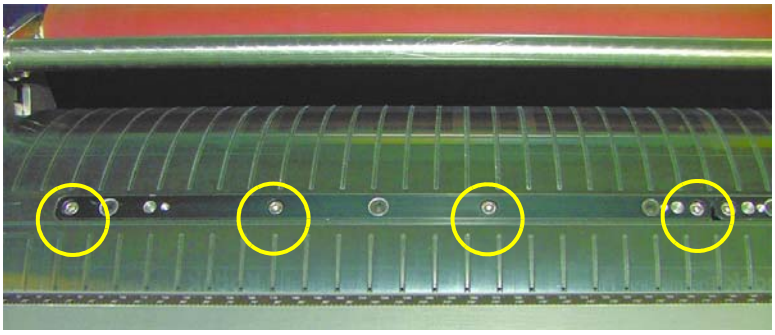
The platesetter has a blank registration bar that must be replaced with a custom registration bar.

Note: This procedure is similar for both Narrow and Mid II Hybrid platesetters. Note that each platesetter may have one or more registration bars, and that each registration bars may have any number of hex screws.

1. From the registration bar, remove the hex screws.



2. Use a small, flat screwdriver to remove the registration bar.
3. Insert the new registration bar.
4. Insert and tighten the screws that you removed in step 1.



5. If your configuration has more than one registration bar, repeat steps 1 to 4 for each registration bar.

Installing the Pin Holder and Plate Roller on ThermoFlex Narrow Platesetters

Note: For Mid II platesetters, proceed to page 11.

Important: If your device's serial number is lower than FN300, you must first replace the pin holder support bracket. If your device's serial number is FN300 or higher, proceed to Installing the Pin Holder on page 7.

Replacing the Support Bracket

1. If there are labels on the support bracket, note their location, and then carefully remove the lables and stick them on the new pin holder assembly.
2. On the **support bracket**, open the two crosshead screws and open the light cover.
3. Remove the six hex screws that secure the support bracket to the mainframe, and remove the support bracket.

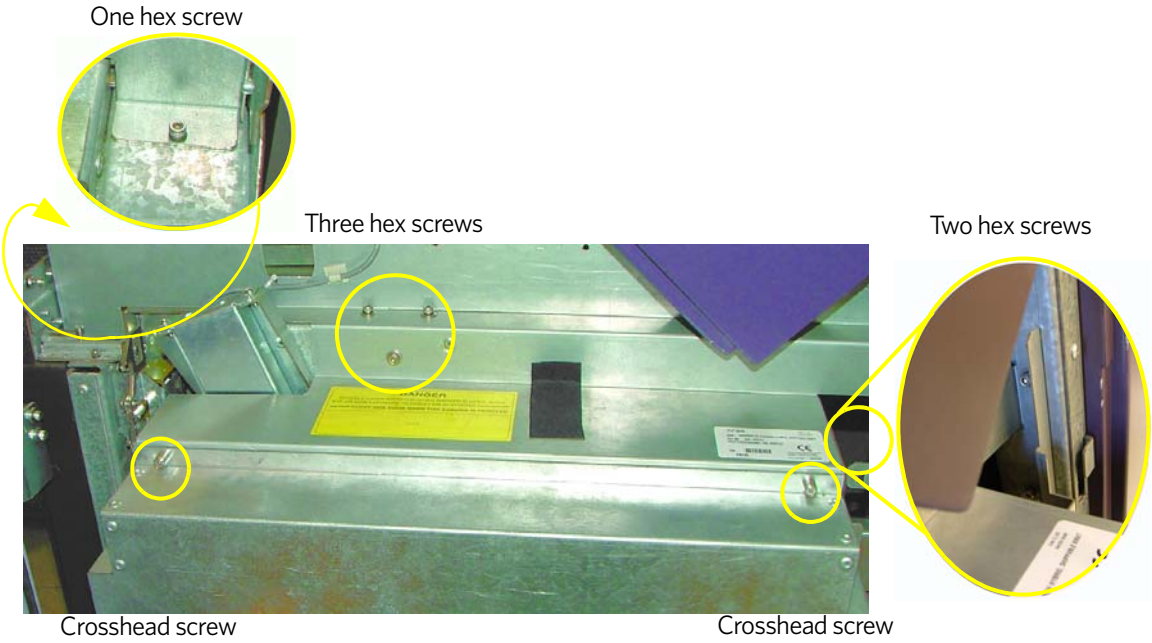


Figure 4: Screws on pin holder support bracket

4. Install the new pin holder assembly and secure it to the mainframe with the six hex screws that you removed in the previous step.

Installing the Pin Holder

1. Insert the registration pin holder and secure it with the three crosshead screws.

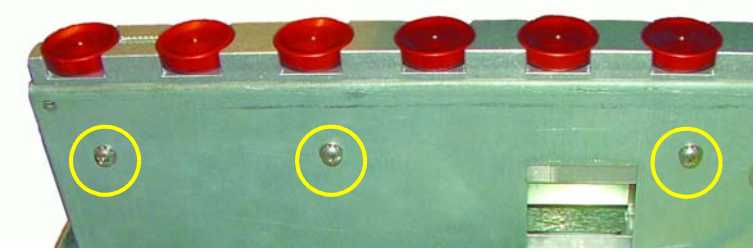


Figure 5: Crosshead screws on pin holder bracket

2. Thread the pin holder wiring through the hole in the bracket.

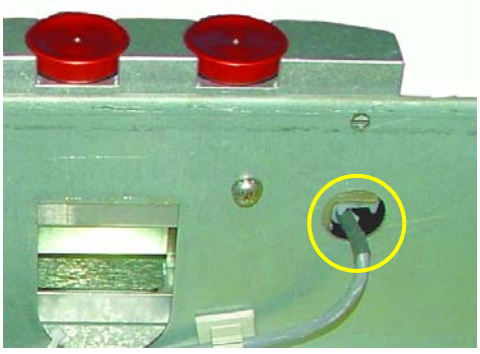


Figure 6: Pin holder wiring threaded through the pin holder bracket hole.

3. Connect the pin holder wiring:

Devices with SN FN300 or higher only:

- On the right side of the device, on the harness, disconnect the short plug and connect the pin holder wiring (shown in step 2) to the connector.

Devices with SN lower than FN300:

a. Disconnect the interlock connector.

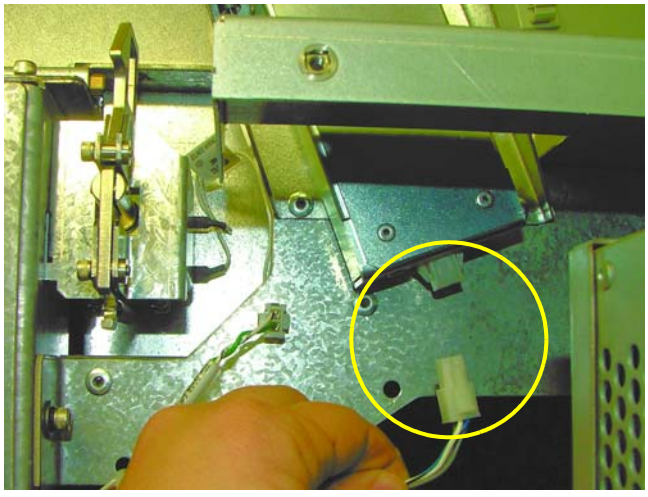


Figure 7: Interlock connector disconnected

b. Connect the registration pin holder wiring connector to the interlock connector.

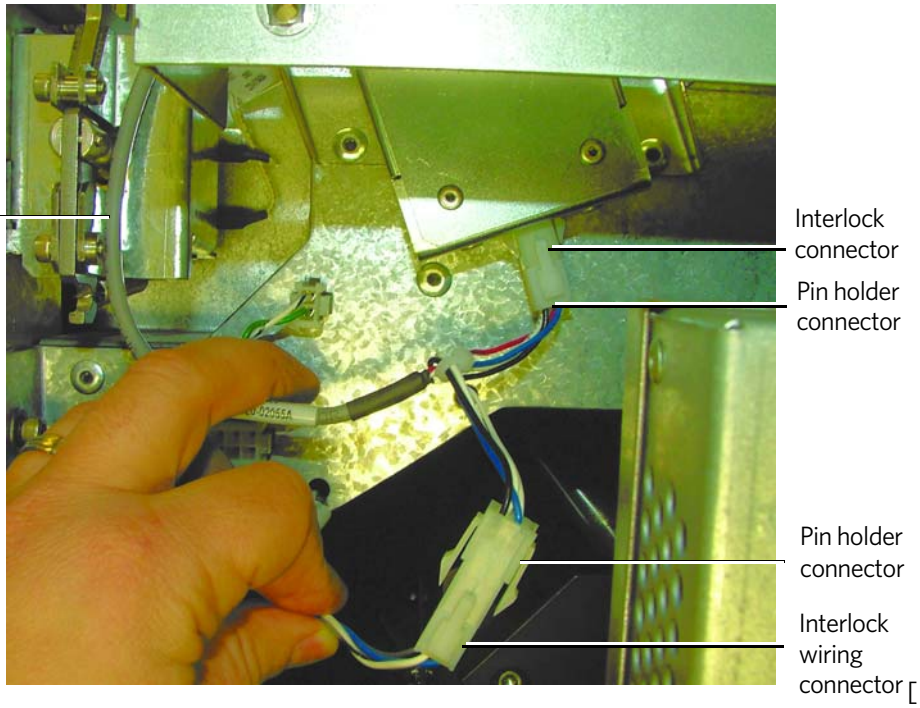
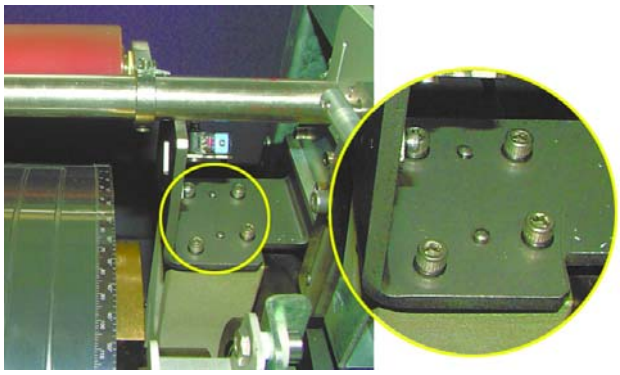


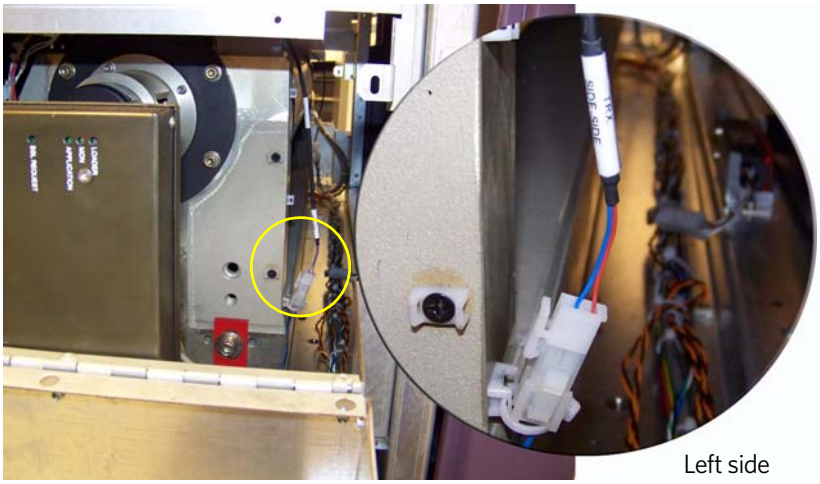
Figure 8: Narrow lower than FN300

Installing the Plate Roller and Side-to-Side Detectors

1. Place the roller assembly so that the four holes on the roller assembly bracket align with the four holes on the device bracket, as shown, and insert the four screw on each side.



2. On each side of the device, connect the side-to-side detector wiring to the connectors on the main harness.



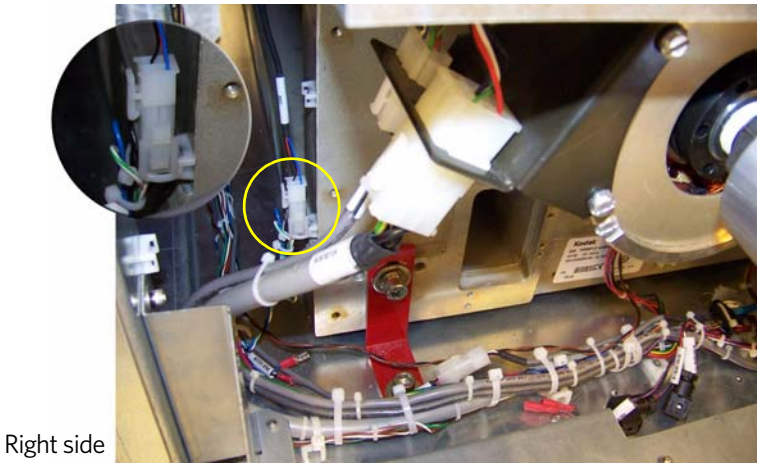
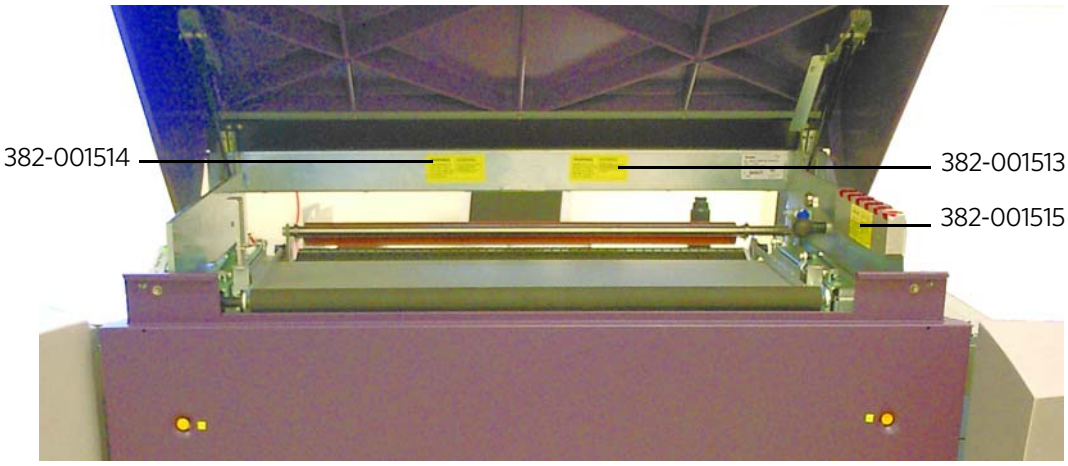


Figure 9: ThermoFlex Narrow Hybrid left and right side-to-side detector wiring

Attaching the Safety Labels

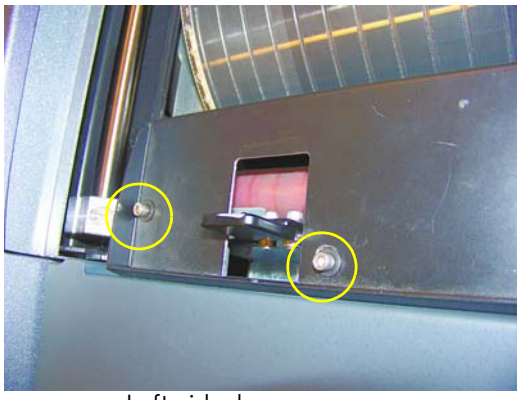
➢ Attach the safety labels to the platesetter as shown.



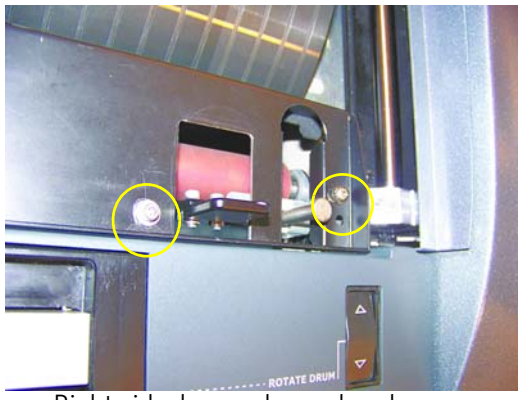
Note: For more offset safety information, see the *ThermoFlex Narrow and Mid II Hybrid Safety Precautions* guides for Operator and Service.

Installing the Pin Holder and Plate Roller on ThermoFlex Mid II Devices

1. To remove the front operation bar:
   a. On the roller protector, remove the three hex screws and the crosshead screw.

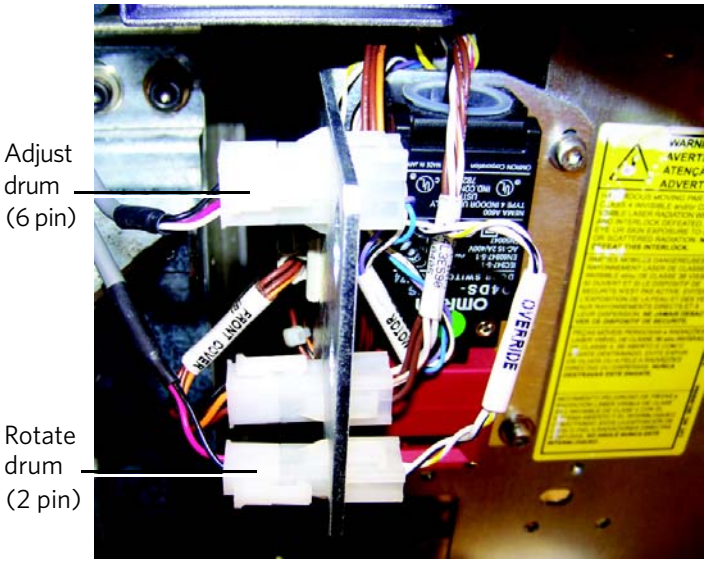


Left side, hex screws



Right side, hex and crosshead screw

   b. On the right side of the front operation bar, disconnect the Rotate Drum switch (2-pin) connector and the Adjust Drum (6-pin) button connector.



c. On each side of the front operation bar, remove the hex screw.

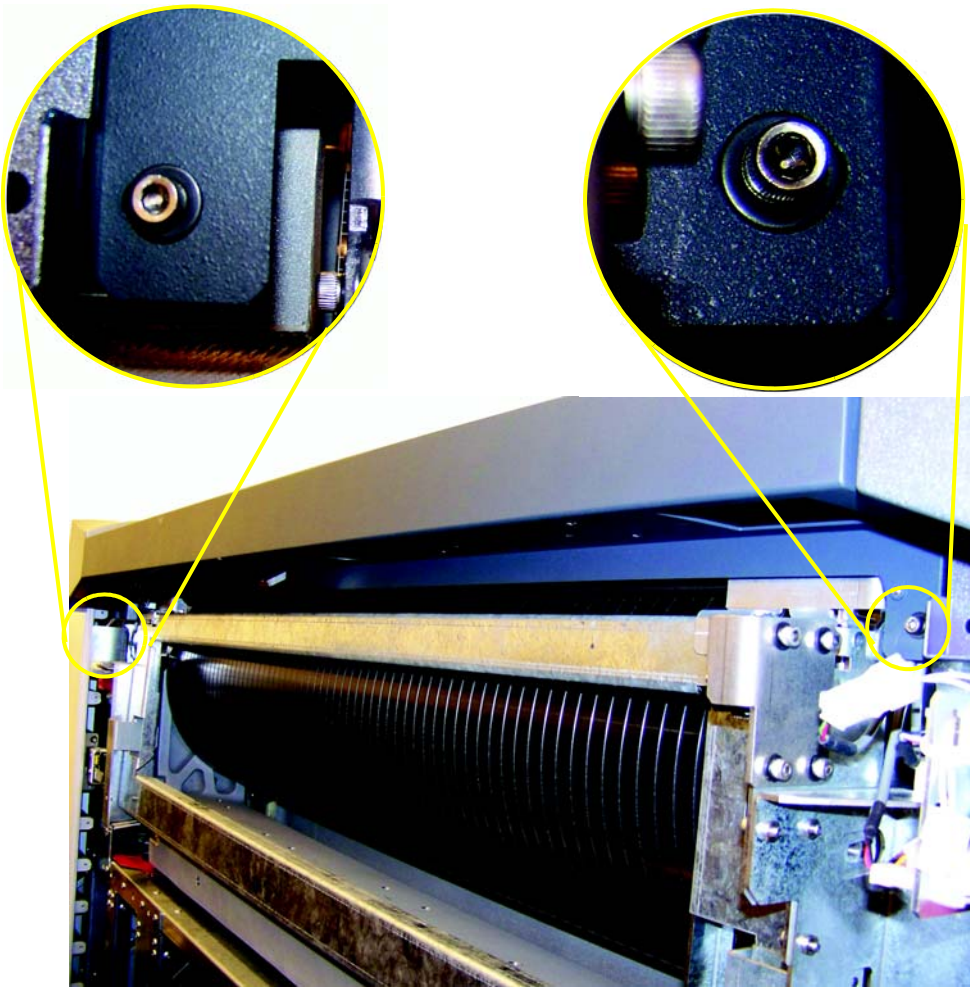


Figure 10: Front operation bar hex screws

d. Remove the front operation bar.

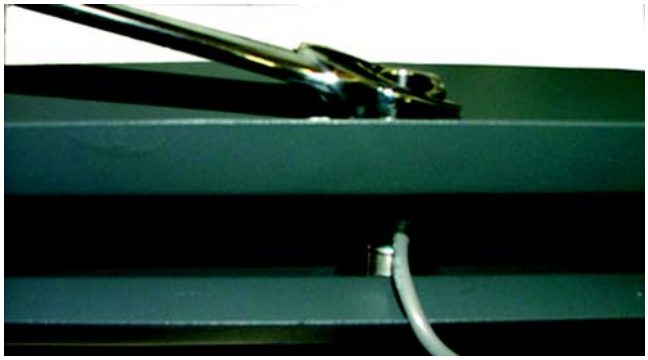
Note: The following steps, 2 to 4, will not be required on future offset updates, in which the front operation bar will be supplied with the Rotate Drum switch and Adjust Drum button installed.

2. From the old front operation bar, remove the Rotate Drum switch, and install it on the new front operation bar.



Figure 11: Rotate Drum switch

3. Remove the Adjust Drum button:
   a. Attach the jig to the Adjust Drum button, making sure that the wiring goes through the entire jig, as shown in step 4c.
   b. With an open wrench, carefully turn the jig until the button is released.



4. Install the Adjust Drum button on the new front operation bar:
   a. Insert a rubber washer on the button threading.

      Important: If you do not insert a rubber washer, you will not be able to remove the button.

   b. Thread the button and its wiring into the jig, as shown, and insert the button in place.

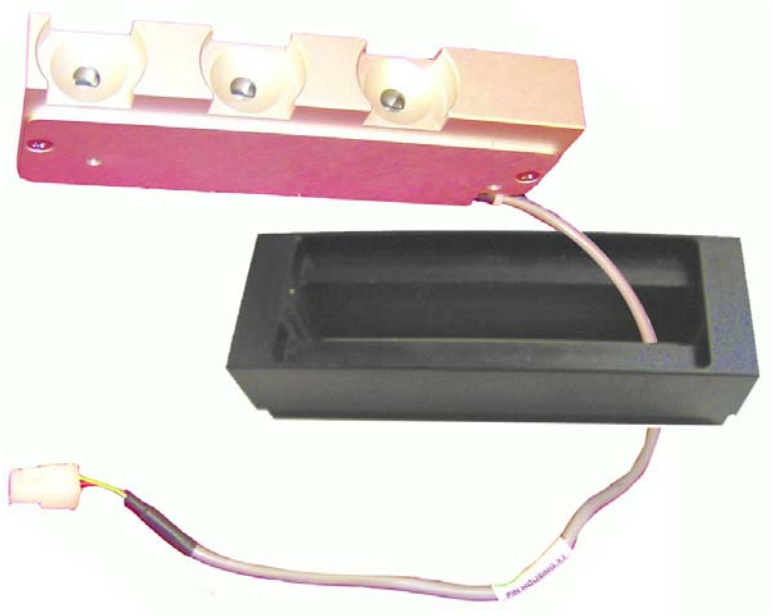


   c. With the jig, carefully tighten the button in place, as shown in step 3b.

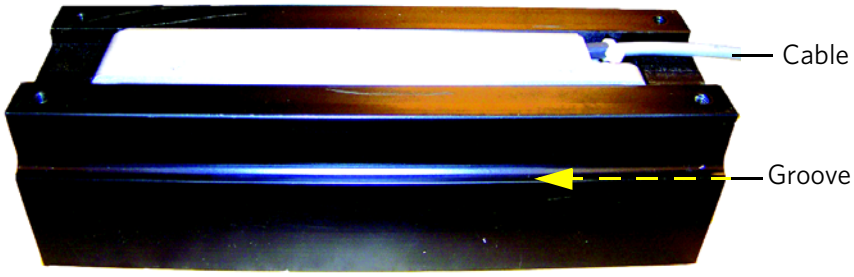
5. Install the registration pin holders (there may be one or two holders):

   Note: Step 5 will not be required on future offset updates, in which you will need only to remove a cover(s) on the front operation bar and install the registration pin holder(s).

   a. Insert the pin holder in the pin holder bracket, threading the connector through first.



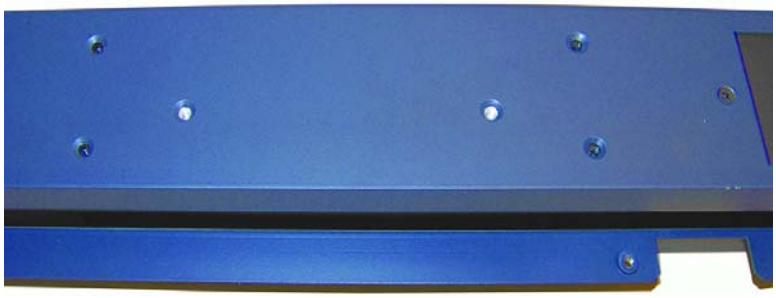
   b. Route the pin holder cable along the groove in the side of the front operation bar.



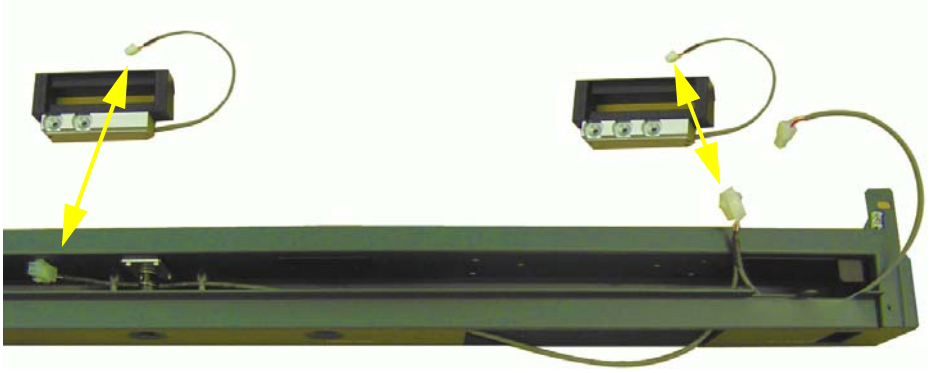


c. Turn the front operation bar upside down and insert and tighten the six crosshead screws for each registration pin holder.

Note: Use blue Loctite® on the six crosshead screws.

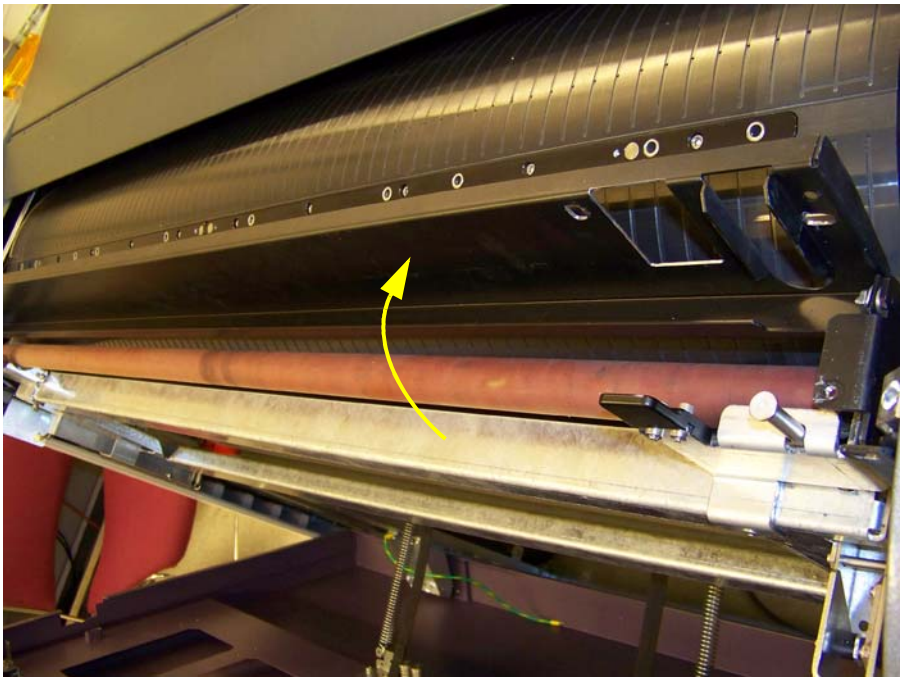


d. Connect the interlock connector to the connectors on the split harness.

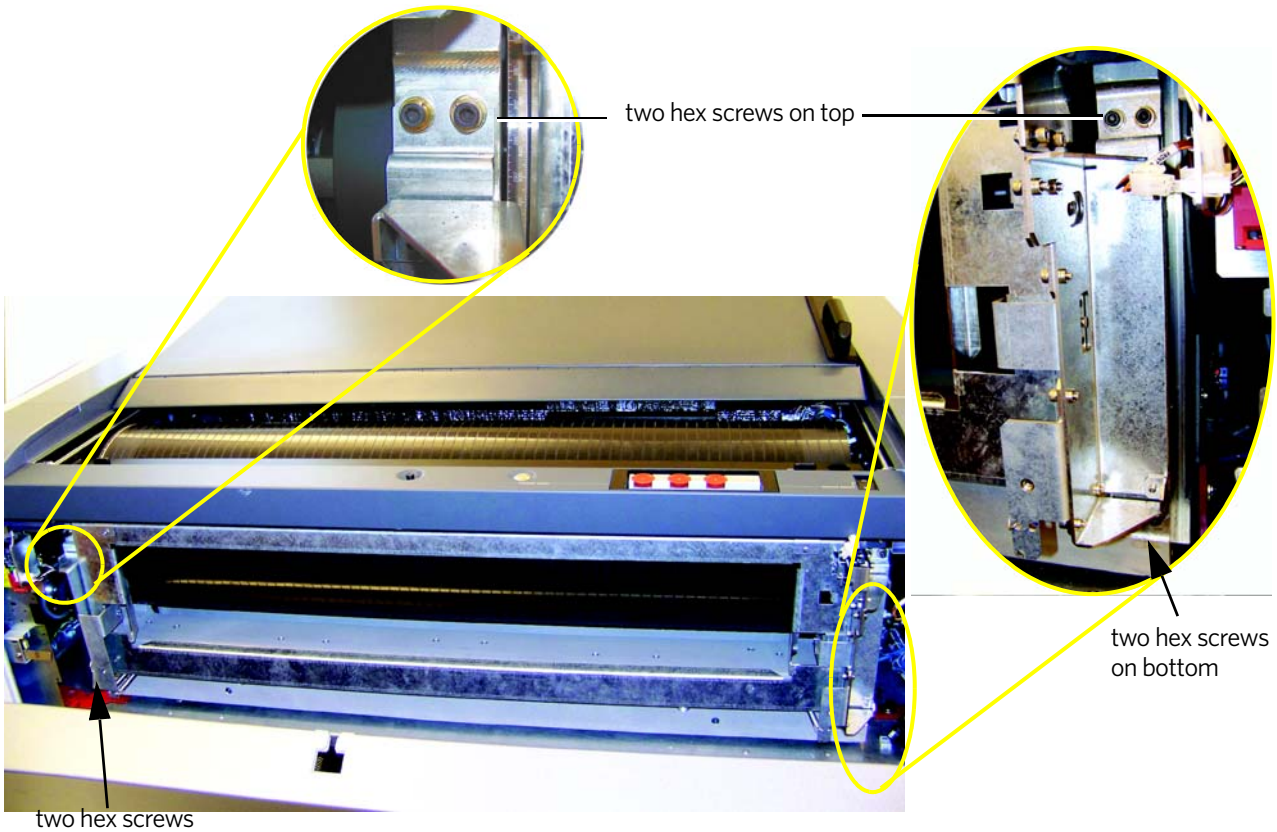


To replace the roller assembly:

1. Open the roller protector.



2. On each side of the roller assembly, remove the four hex screws:

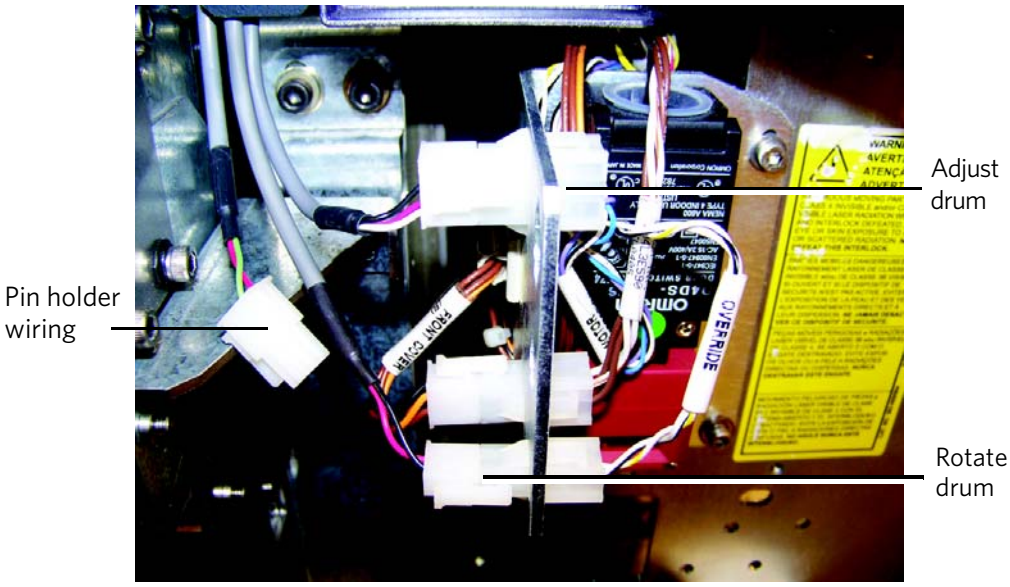


3. Remove the roller assembly and insert the new roller assembly.
4. Insert and tighten the four hex screws on each side of the roller assembly.
5. Close the roller protector.
6. On the roller protector, insert and tighten the three hex screws and the crosshead screw.

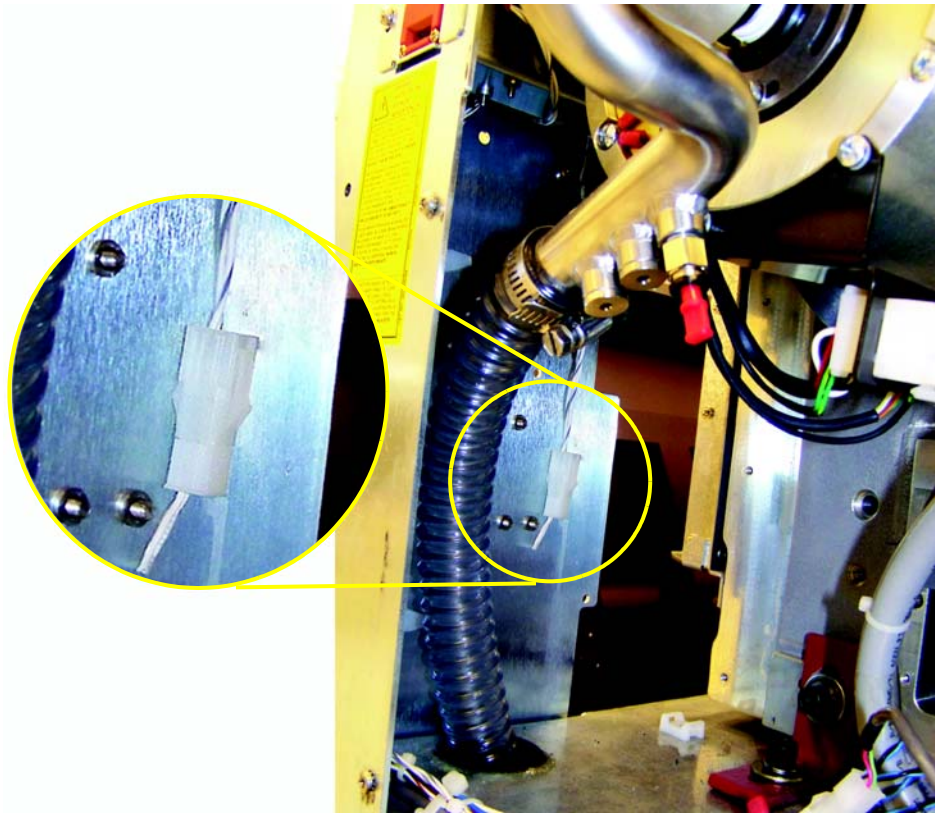
To install the new front operation bar

1. Insert the front operation bar and secure it with one hex screw on each side.
2. Connect the Adjust Drum wiring and the Rotate Drum wiring.

   Note: The Adjust Drum wiring connector is labeled "motor direction" and the Rotate Drum connector is labeled "override".



3. On the right side of the platesetter, look for a short plug, disconnect it, and connect the pin holder wiring plug.



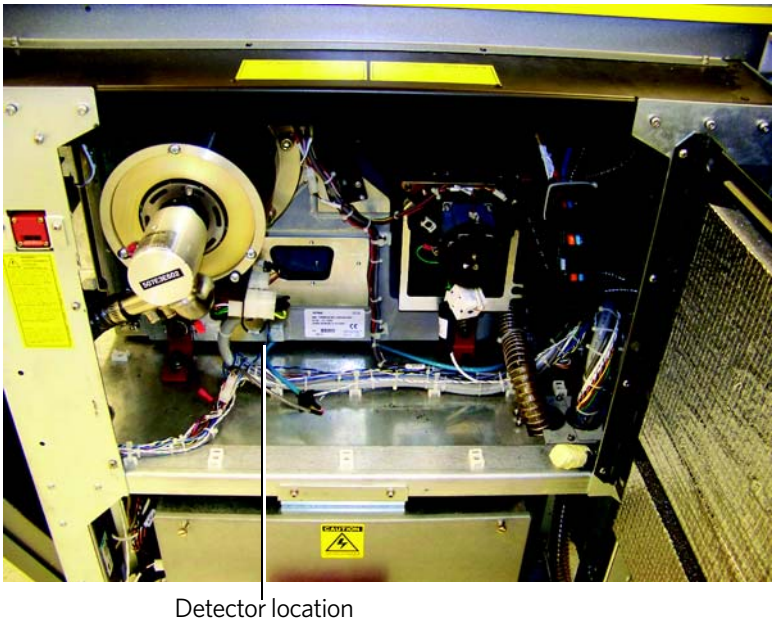
4. Use a cable tie to secure the cables of the pin holder, Rotate Drum switch, and Adjust Drum button.
5. Attach the safety labels to the device as shown:





Installing the Side-to-Side Detectors on ThermoFlex Mid II Devices

1. On each side of the device, install the side to side detector bracket with two hex screws.



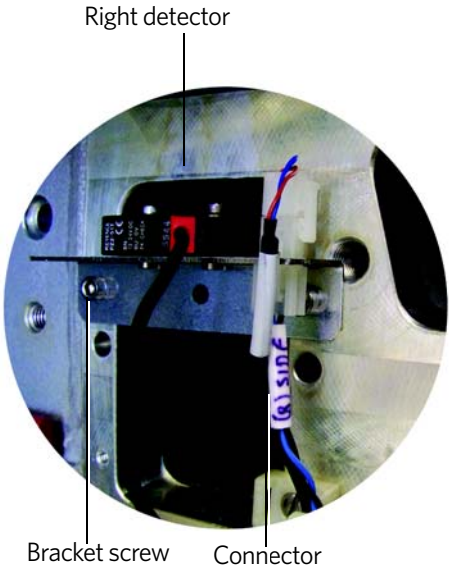
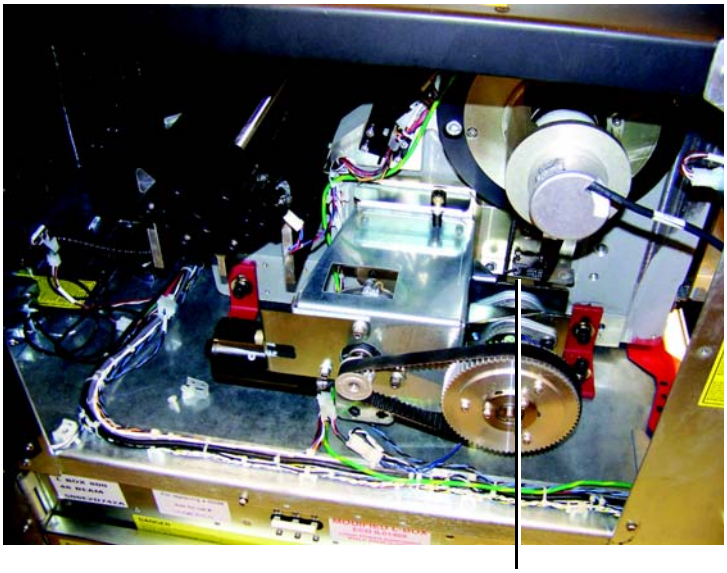


Figure 12: Right side-to-side detector



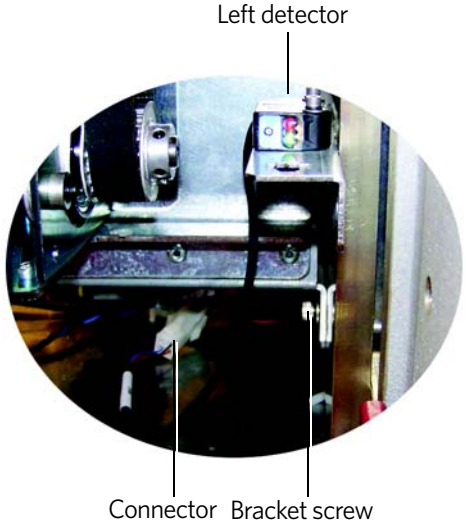


Figure 13: Left side-to-side detector

2. Connect each side-to-side detector's wiring to the connectors on the main harness.

Note: The ThermoFlex Mid II Hybrid side-to-side detectors' filter is white (not blue as on the ThermoFlex Narrow Hybrid).

Replacing the Optic Lens Assembly

Note: If your device's serial number is FN188 or higher (Narrow) or FM207 or higher (Mid II), you do not need to replace the optic lens assembly. Continue to Updating the Software on page 25.

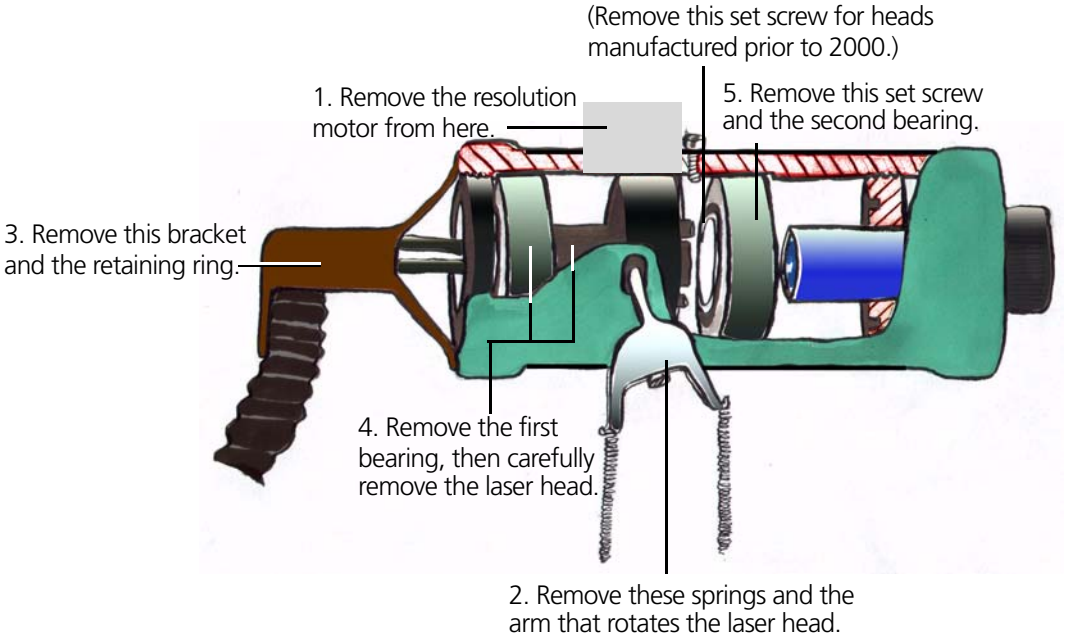


Figure 14: Basic lens assembly replacement steps

Removing the Resolution Motor and Head Rotation Arm

When removing the motor and springs, mentally note how to reassemble them. Pay close attention to how the resolution motor fits with the head rotation arm.

1. Disconnect the two detector connectors and the motor power connector.

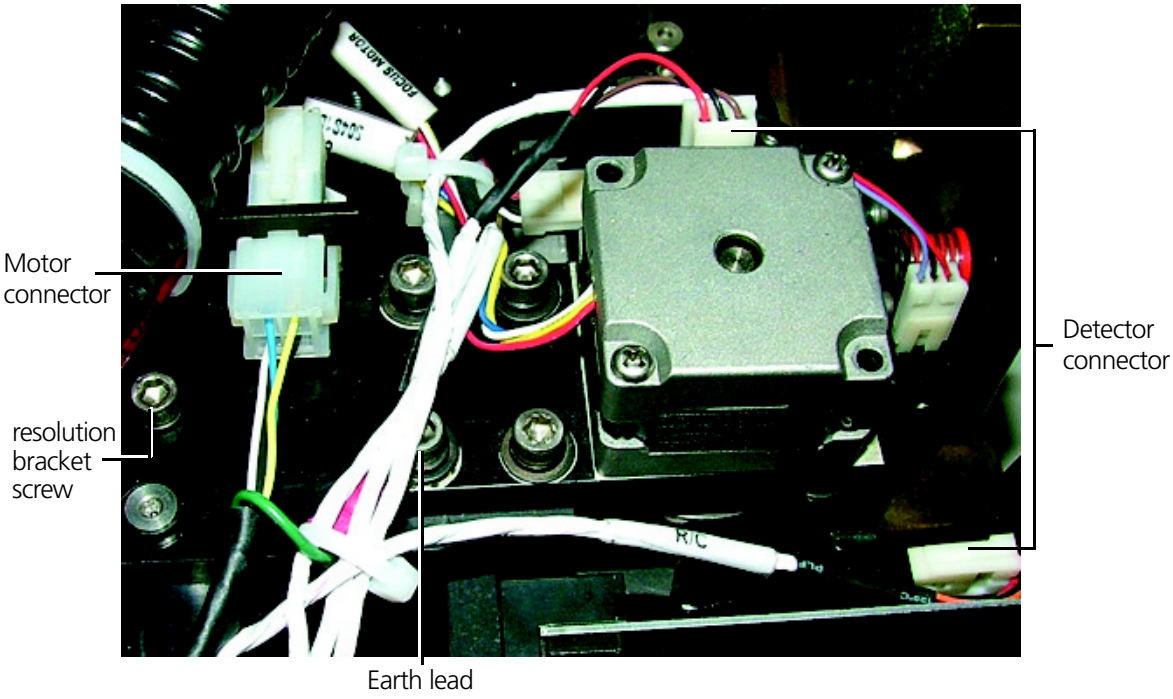


Figure 15: Resolution motor

2. Manually rotate the resolution motor disk counterclockwise so that the fork moves as far down as possible. This reduces the tension on the head rotation arm springs.

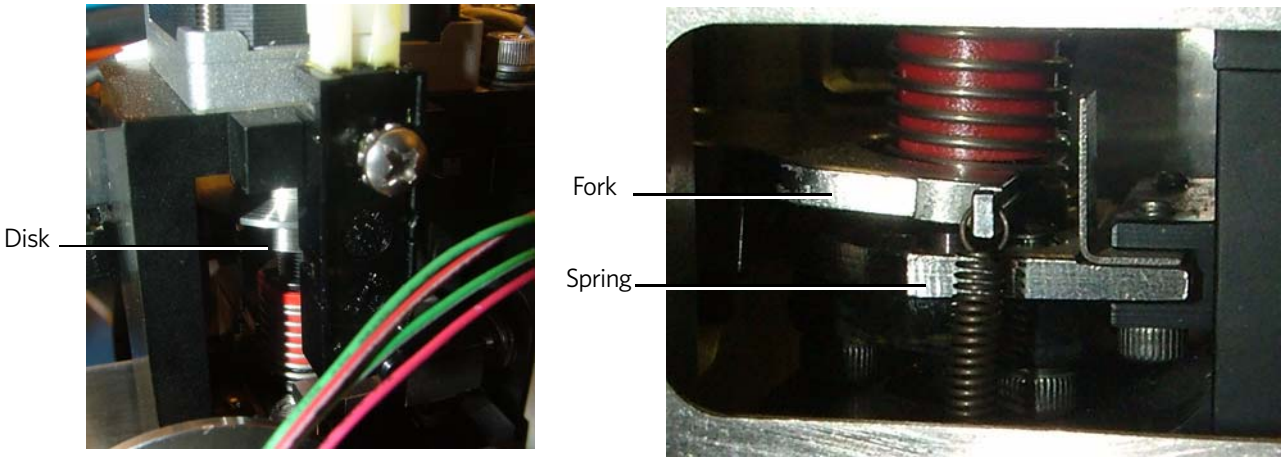


Figure 16: Resolution motor disk, fork, and spring

3. Release the two resolution bracket screws shown in Figure 15 on page 21.
4. Remove the earth lead screw shown in Figure 15 on page 21.

5. With the resolution motor assembly released, unhook the two springs (underneath the motor). The arm and springs are shown in Figure 14 on page 20.
6. Remove the resolution motor assembly and set it aside.
7. Using a screwdriver, remove the head rotation arm from where it protrudes from the telescope, as shown in Figure 14 on page 20.

Removing the Laser Head

Note: Before removing the cable ties in the next step, pay attention to how they are threaded through the two brackets. You must reinstall them the same way.

1. At the back of the telescope, cut and remove the cable wraps that secure the black plastic tubing in place.

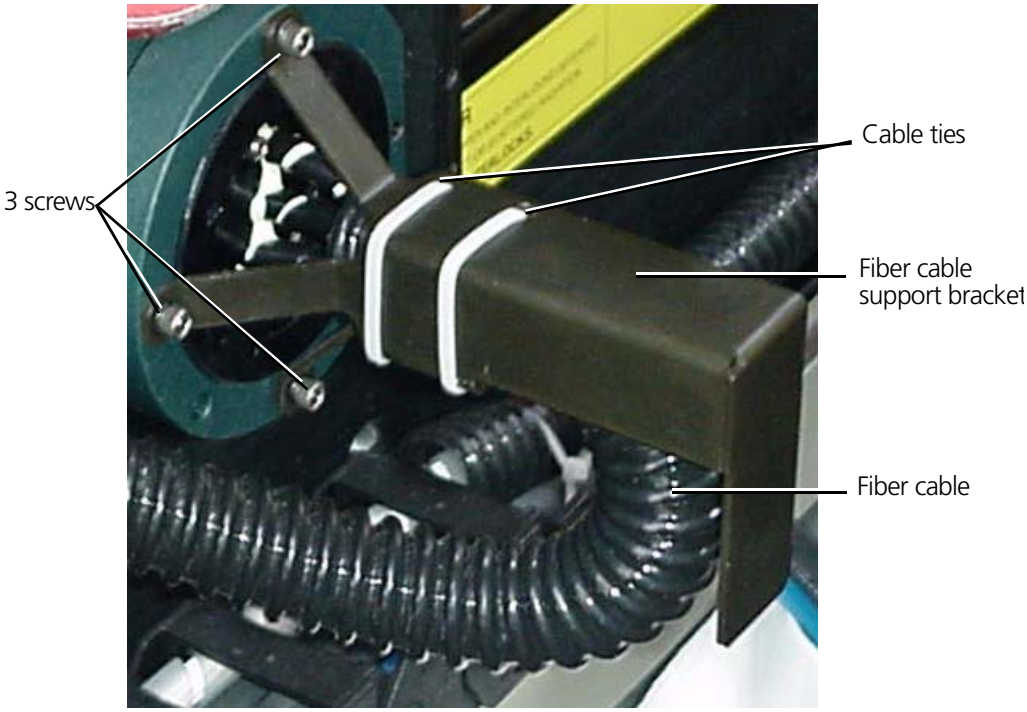


Figure 17: Fiber cable support bracket

Important: From this point on, the fibers are unsupported. You must be very careful with them.

2. Remove the three screws from the fiber cable support bracket (Figure 17) and set the cable support bracket aside.

3. From the back of the head/lens assembly telescope, remove the black retaining ring, using the optic head outer key.

   Note: There is a large spring washer directly behind the retaining ring. The washer will fall out when you remove the retaining ring. Remember to put it back at the end of the procedure.

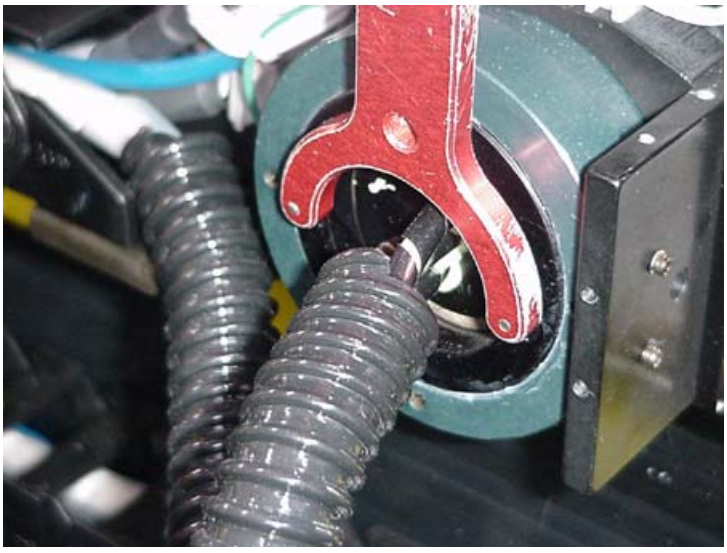


Figure 18: Removing the retaining ring

Note: To prevent rotation as you unscrew, temporarily reinsert the head rotation arm through the telescope so that you can hold it.

4. Set aside the retaining ring and remove the bearing behind it, as shown in Figure 14 and in Figure 19.
5. Remove the laser head and lay it over the V-block.

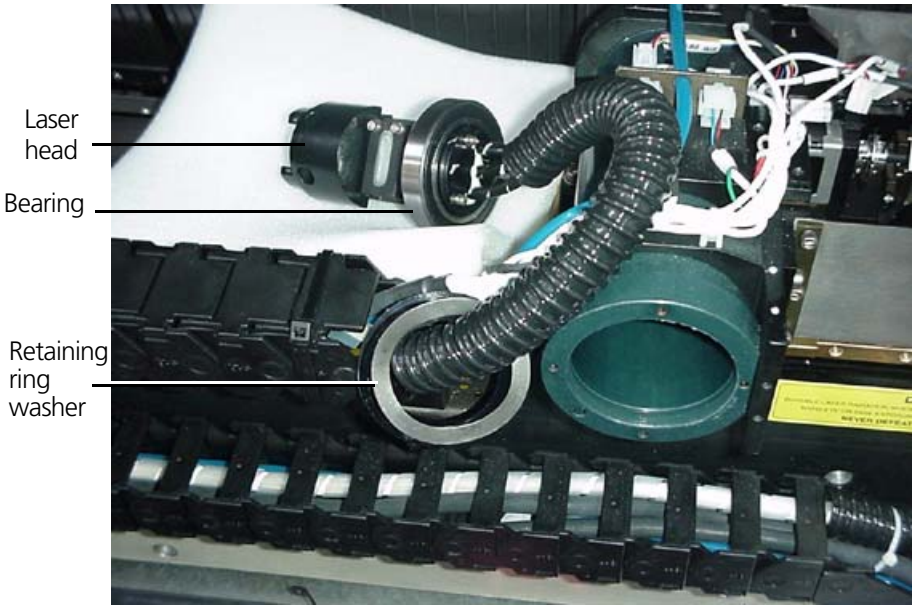


Figure 19: Laser head on the V-block

6. Remove the telescope holder screws and pull the telescope with the lens assembly out of the holder.

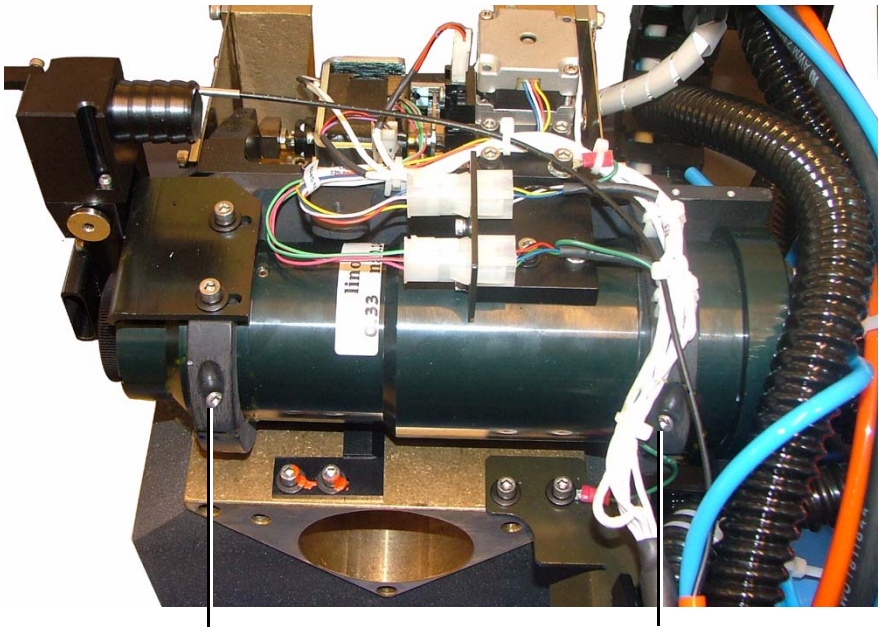


Figure 20: Telescope holder screws

Installing the Lens Assembly

1. In the new telescope, remove the stickers and coverings from the openings on the telescope.
2. Insert the telescope into the telescope holder and tighten the screws.
3. Carefully insert the laser head into the telescope so that the rotation arm can pass through the telescope and screw into it.
4. From the back of the telescope, insert the bearing and then use the optic head outer key to secure the black retaining ring, as shown in Figure 18.

   Note: Do not overly tighten the retaining ring: that will cause an unsmooth resolution rotation. The retaining ring should protrude slightly, as shown in Figure 14.

5. Insert the fiber cable support bracket and secure it with the three screws that you removed in step 2 on page 22.
6. Secure the black tubing to the fiber cable support bracket with cable ties, as described in step 1 on page 22.
7. Thread the rotation arm through the telescope and screw the rotation arm back into the head assembly.
8. Put the resolution motor assembly in place and then connect the two springs, as shown in Figure 14, to secure the rotation arm.
9. Install and tighten the earth lead screw as shown in Figure 15 on page 21.
10. Install and tighten the two resolution bracket screws.
11. Connect the detector connectors and the motor power connector.

Updating the Software

➢ Install the latest ThermoFlex Controller software version. (See the TechPlanet Reference and Download pages.)

Testing the New Hardware

1. Close all doors and panels, and turn on the platesetter.
2. In ThermoFlex Controller, open the top door (Narrow Hybrid) or loading table (Mid II)

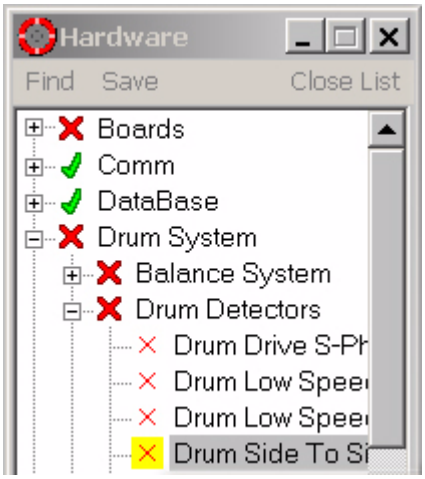
Testing the Registration Pin Holder

➢ Remove a registration pin from the pin holder, and then close all platesetter doors and verify that the following error message appears. Repeat this step for each registration pin.

Testing the Side-to-side Detectors

Note: If the status of the side-to-side detector does not appear as required, see the Troubleshooting instructions after this test.

1. In the Hardware tree, select **Drum System>Drum Detectors** and then double-click **Drum Side To Side Detector.**



2. Place a registration pin in the first registration pin hole.
3. In the Drum Side To Side Detector dialog box, confirm that the status is **OFF**.



4. Manually rotate the drum so that the registration pin passes between the transmitter and receiver of the side-to-side detector, as shown, and watch the monitor to confirm that the status changes to **ON** and remains on.

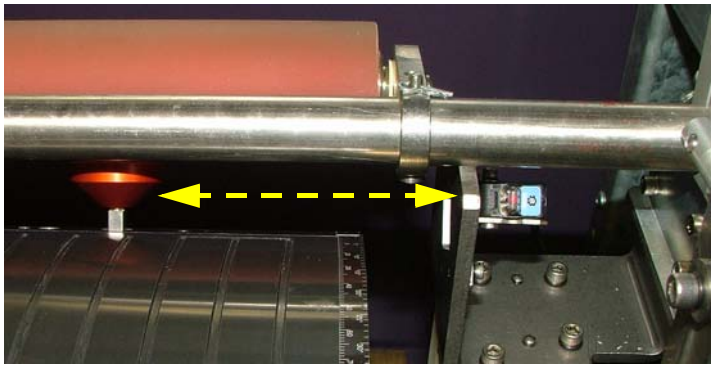


Figure 21: Pin in drum and side-to-side detector

Note: The picture above shows the side-to-side detector on a ThermoFlex Narrow Hybrid device, but the principle is the same for ThermoFlex Mid II Hybrid.

5. In the Drum Side To Side Detector dialog box, click **Reset Latch** to reset the status to **OFF**.
6. Move the pin to the next registration pin hole.
7. Repeat steps 3-6 for each registration pin hole.

Troubleshooting for Side-to-Side Detectors

On ThermoFlex Narrow Hybrid, status does not change to OFF for any of the pins

1. Check the side-to-side filter color.
2. If the filter is not blue, install the blue filter into each of the new side-to-side detectors.

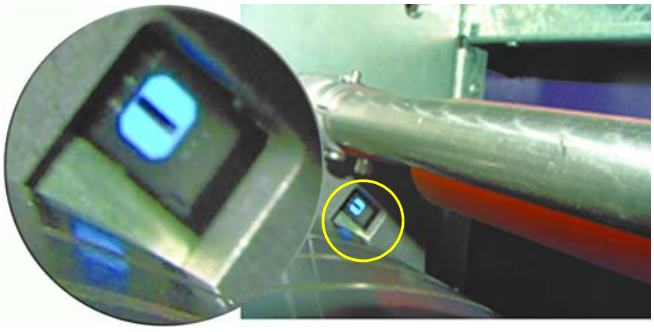
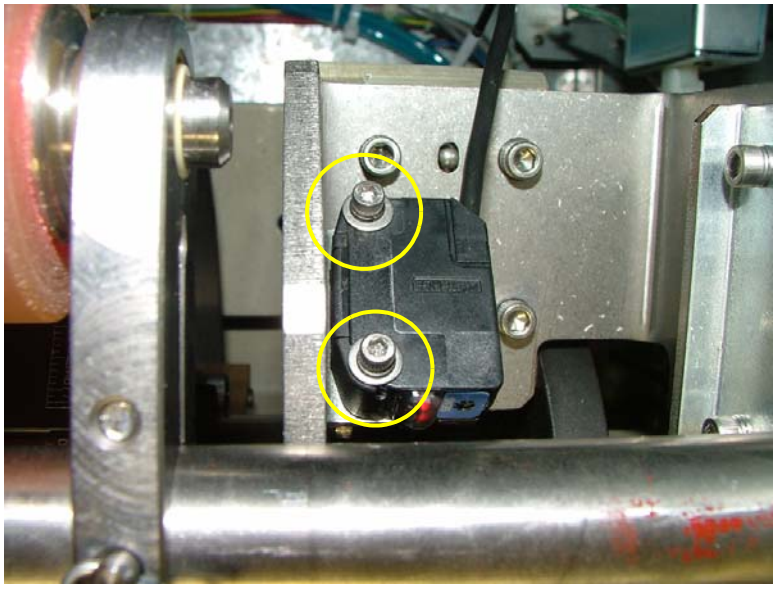


Figure 22: Blue side-to-side detector filter

3. If the filter is still not blue, replace the side-to-side detector.

Status changes to OFF for side pins but not for center pins:

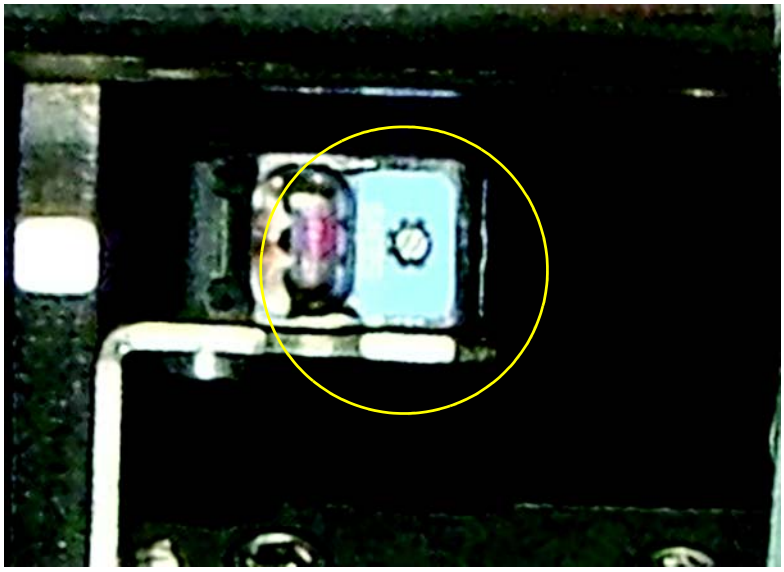
1. Insert a registration pin in the center registration pin hole, and rotate the drum so that the registration pin is aligned with the side-to-side detector.
2. On the right (transmit) side, open the side-to-side detector screw and manually move the side-to-side detector back and forth to see if it detects the pin.
   - ❒ Pin is detected: Tighten the detector's two hex screws.



❒ Pin is not detected:

a. Tighten the two screws shown above.

b. Turn the sensitive screw shown below in both directions to see if the pin is detected.



c. Replace the side-to-side detector and repeat the test.

a. Replace the MCF board.

Testing the Lens

1. Verify that the resolution motor moves freely.
2. Load the media that you plan to work with.
3. Adjust the focus motor position:
   a. Move the carriage so that the lens is in front of the media.
   b. Move the focus motor to the required position for that specific media. For example, for a 1.7 mm plate, the focus motor position should be 3400 steps, for a 2.7 mm plate it should be 2400 steps, etc.
   c. Measure the space between the edge of the lens and the media. It should be 20.5 mm. If it is not, open the two hex screws on the telescope holder and move the telescope accordingly.

      Note: You can use the jig spacer p/n 690-01426A to set the space between the edge of the lens and the drum surface.

   d. From the Resolution Motor menu, in **Properties** tab, check the **Max Pos App** value, and then move the resolution motor back and forth a few times between home position (HP) and the **Max Pos App** value.

      Note: The resolution for 2540 dpi should be 1400–1900.

4. Verify that the focus motor moves freely:
   a. Select **Hardware > Database > Focus Motor** and check the **Max Pos App** value.
   b. From the **Focus Motor** menu, move the focus motor back and forth a few times between HP and the **Max Pos App** value.

Calibrating the Platesetter

- Fully calibrate the platesetter, including focus, intensity, resolution, delay and elevation, as described on TechPlanet in the ThermoFlex Mid or Narrow Procedures under Calibration.

  Note: Adjust the focus stopper location as described on TechPlanet in the Focus Calibration Test.

Performing ITP

- Expose an ITP file to verify improved image quality for both offset and flexo plates.