Procedure

English

# ThermoFlex Mid II Adjusting Door and Panel Interlocks

DRAFT

731-00807A-EN Rev A

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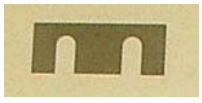
# Background

Doors and panels whose interlocks are properly aligned and adjusted are not affected by the platesetter's vibrations during operation, and do not cause interlock- and laser-related false alarms. This procedure describes how to check to confirm that the doors and panels on the *Kodak ThermoFlex* Mid II platesetter close completely, and that the depth of the interlock operation key and the positioning of the interlocks on the various doors and panels are correct. In addition, this procedure describes how to adjust the the interlocks if required.

# Requirements

- Digital voltmeter (DVM)
- Long hex key
- Masking tape
- Doors and interlocks adjustment jigs kit (shown following)

**Door and Interlocks Adjustment Jigs and Spacers Kit (518-01637A)**

| Item | Part Number | Qty | |
|---|---|---|---|
| Omron side doors jig | 690-00724A | 1 |  |
| Omron Flexo service door jig | 690-00787A | 1 |  |
| Ormon unload panel/back panel jig | 690-00723A | 1 |  |
| Omron side doors M400/front panel TFX jig | 690-00736A | 1 |  |
| Angle support, interlock, Flexo | 690-00788A | 1 |  |
| SOC HD CAP STS 8*32*1/2 (hex screw for angle) | 380A05061 | 2 | |
| Interlock 4 pin jig cable | 220-01407A | 1 |  |
| Interlock 6 pin jig cable | 220-01512A | 1 |  |
| Interlock spacers | 252-10209A | 10 |  |

# Procedure

This procedure consists of two basic stages that you perform on all relevant doors and panels of the platesetter:

1. Testing play between the doors, panels, and mainframe, and adjusting locker positions to reduce play (if required)
2. Testing the function of the interlocks, and adjusting the depth and position of the interlocks (if required)

You must perform both stages on each of the following doors and panels of the platesetter:

- Front panel
- Side doors
- Service/top door
- Upper and lower back panels

The kit contains different jigs for each type of door or panel of the platesetter. While some of the jigs appear to be similar, each jig is a different size, according to the location in which it is used.

# Testing and Adjusting the Front Panel Lockers and Interlocks

The jig and procedure described in this section are relevant for the other sections, with the exception of the side doors, in which a different jig is used.

While some of the jigs appear to be similar, each jig is a different size, according to the location in which it is used.

**Note:** The upper and lower back panel jig does not have the leg to check the lockers, as the back panels do not have lockers.

## Interlock Adjustment Jig Description

The interlock adjustment jig has two functions:

- **Jig leg**: Checks the lockers to verify that there is no excess play. The thickness of the leg is the amount of play allowed. If there is too much play, you must adjust the lockers.
- **Jig edges**: Check whether the interlocks function properly. If the interlocks tdo not function properly, you must adjust the operation keys depth and position.

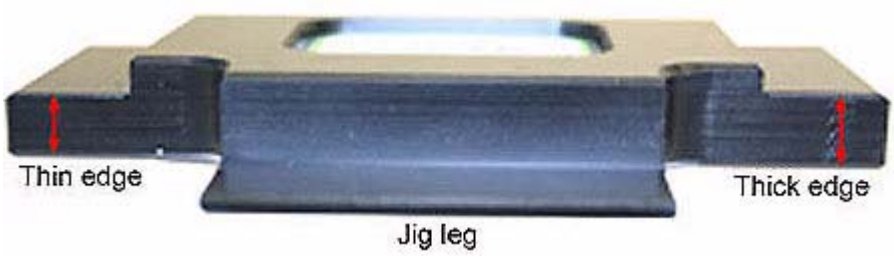



Figure 1: Interlock adjustment jig

# Testing the Front Panel Locker

1. Open the front panel.
2. Insert the jig leg between the front panel and the mainframe of the platesetter and close the front panel.

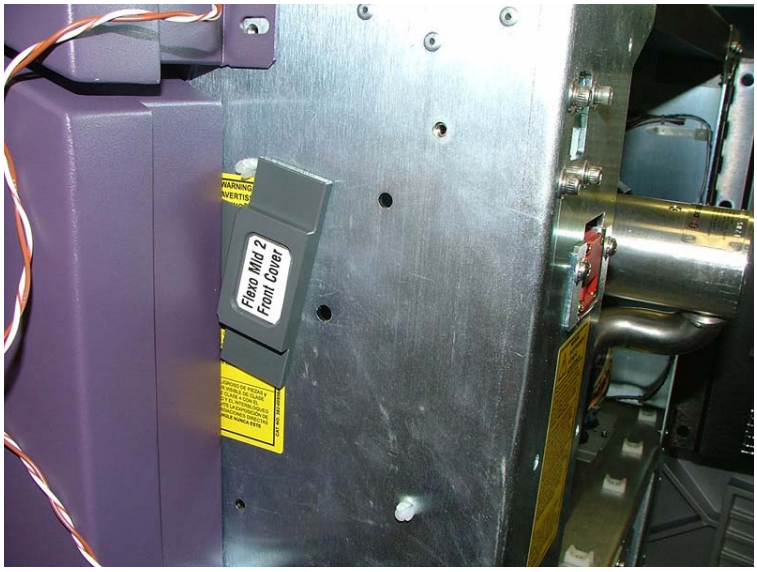



Figure 2: Front door jig

With the jig leg between the panel and the mainframe, there should be no play.

- There is play: Proceed to the *Adjusting the Front Panel Locker* on page 6 section.
- There is no play: Proceed to *To test the DVM:* on page 7.

# Adjusting the Front Panel Locker

If the locker test revealed play between the front door and the mainframe, adjust the locker position, described following.




Figure 3: Frontpanel locker, viewed from the outside

1. Loosen the four hex screws that secure the front panel locker.

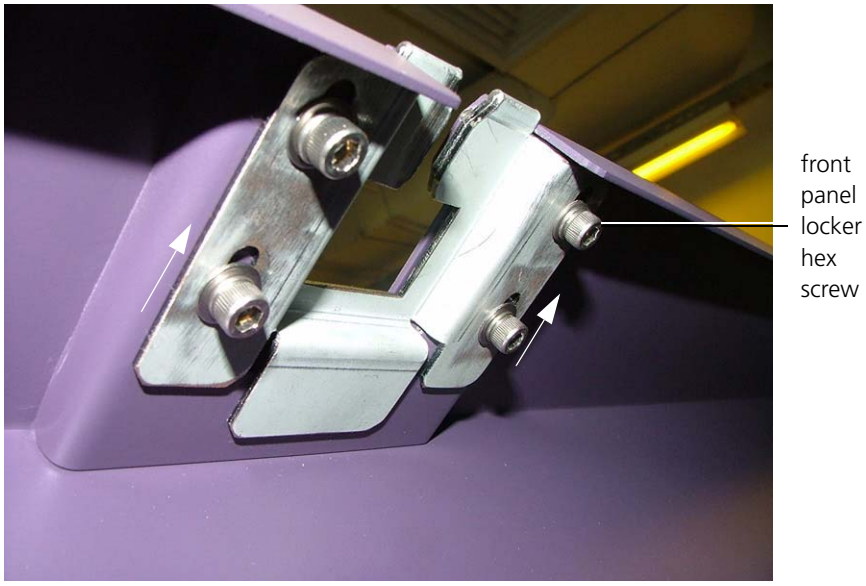



Figure 4: Front panel locker adjustment screws and adjustment direction

2. Adjust the position of both sides of the front panel locker, as shown in Figure 4, and then tighten the hex screws.
3. Close the front panel and test the locker again, as described in *Testing the Front Panel Locker* on page 5.
4. If required, readjust the front panel locker position.

# Testing the Front Panel Interlocks

Before you can test the interlocks, you must make sure that the DVM is working properly.

**To test the DVM:**

1. Set the DVM to ohm position.

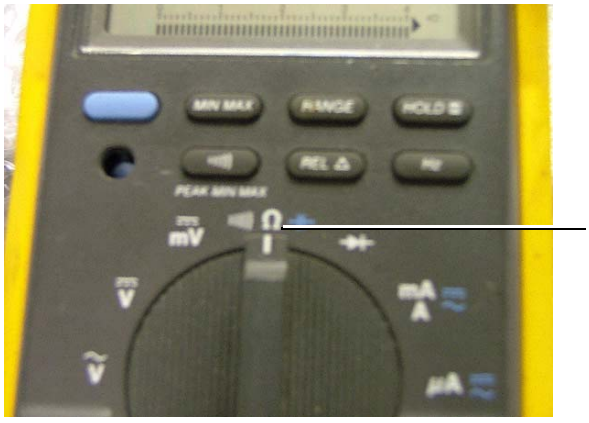



Figure 5: DVM ohm position start setting

2. If there are any probe cables connected to the DVM, unplug the probe cables.
3. Plug the interlock jig cables from the kit into the DVM.
   - **Black cable end**: Negative (common) jack
   - **Red cable end**: Volt/ohm/temp jack (not A or mA jack)




Figure 6: Interlock jig cables connected to the DVM

4. Using one of the two DVM probes, touch the other probe. When the two probes are touching, the DVM should beep.

**To test the Front Panel Interlocks:**

**Note:** Perform this test on both of the front panel interlocks.

1. Open the front panel.
2. Disconnect the harness from the interlock connector.

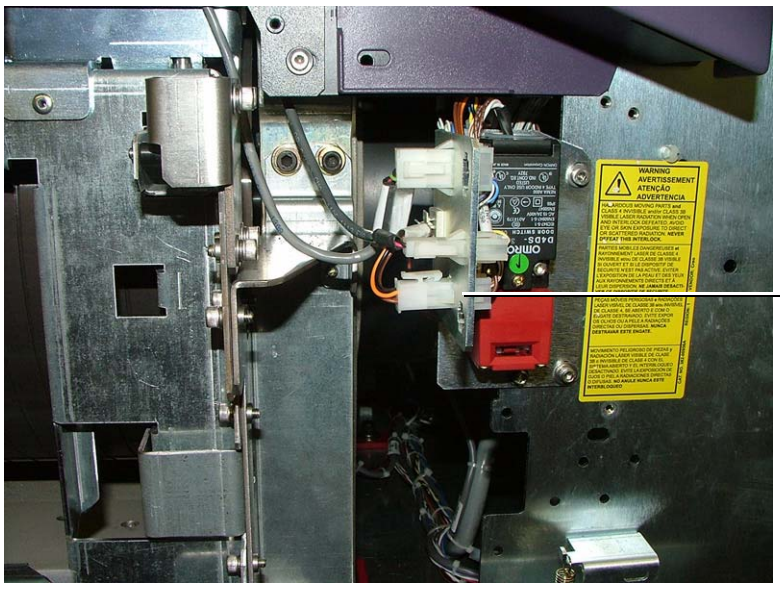
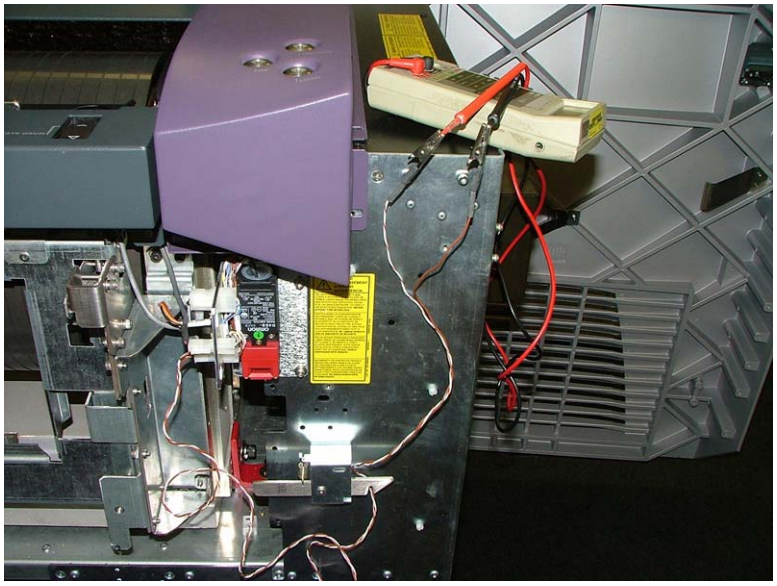



Figure 7: Front panel interlock cable connection

3. Connect the interlock jig cables to the interlock connector.



4. Connect the other side of the interlock jig cables to the black and red interlock jig cables that are connected to the DVD.
5. To enable closing the front panel, route the DVM with the connected interlock jig cables to a resting place inside the platesetter, and then close the front panel.

6. With the front panel closed, insert the jig's thin edge between the panel and the mainframe, just above the interlock. The DVM should beep.
   - DVM beeps: Proceed to step 7.
   - DVM does not beep: Adjust the interlock operation key depth, as described in *Adjusting the Interlock Keys* on page 10.

**Note:** Figure 8 shows the jig checking the service door, and not the side panel, but the principle is the same.




Figure 8: Jig's thin edge inserted between the service door and the mainframe

7. Open the front panel and remove the jig.
8. Reinsert the jig's thick edge in the same position and close the front panel. The DVM should not beep.
   - DVM does not beep: Proceed to *Testing and Adjusting the Side Doors Interlocks* on page 12.
   - DVM beeps: Adjust the interlock operation key position, as described in *Adjusting the Interlock Keys* on page 10.

**Note:** When you have finished testing the front panel interlocks, be sure to reconnect the interlock connectors.

# Adjusting the Interlock Keys

This section describes how to adjust the interlock keys. This procedure is relevant for the interlocks keys on all doors and panels.

**To adjusting the interlock key depth:**

When the thin edge of the jig is inserted, if the DVM does not beep, adjust the interlock key depth by adding a spacer, as follows:

1. Mark the outline of the interlock key as a guide.
2. Loosen the two hex screws on the interlock key.

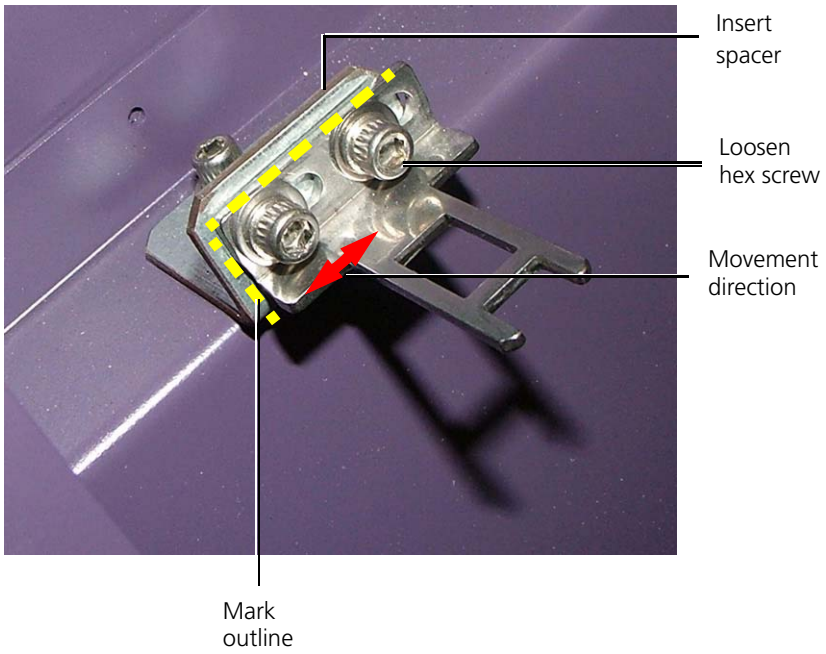



Figure 9: Interlock operation key

3. Add a spacer.
4. Make sure that the interlock key is positioned according to the guide that you marked in step 1, and tighten the two hex screws.



Figure 10: Spacer

**To check and Adjust the interlock key position:**

1. Place a strip of masking tape over the interlock key's entry point.



Figure 11: Taped interlock entry point

2. Close the door/panel just enough for the interlock key to punch holes in the masking tape.
3. Manually open the door/panel.
   - Punched holes are centered in the masking tape: The interlock is correctly positioned.



Figure 12: Punched holes in masking tape make by correctly positioned interlock operation key

   - Punched holes are not centered: Readjust the interlock key position, as described in *To adjusting the interlock key depth:* on page 10.
4. To check the adjustment, repeat the section *Open the front panel.* on page 8.

# Testing and Adjusting the Side Doors Interlocks

The locker housing on the side doors is set permanently and cannot be moved. Therefor, side door lockers are less likely to require adjustment, as compared with the lockers in other locations.

To check the side door interlocks, you must first install the support angle, and then test the interlocks with a jig. The side door jig is different than the jigs used for the rest of the platesetter doors and panels.

**Note:** Perform this test on both of the side door interlocks.

## Testing the side door interlocks

1. Open the side doors.
2. Using a long hex key, install the support angle, as shown:

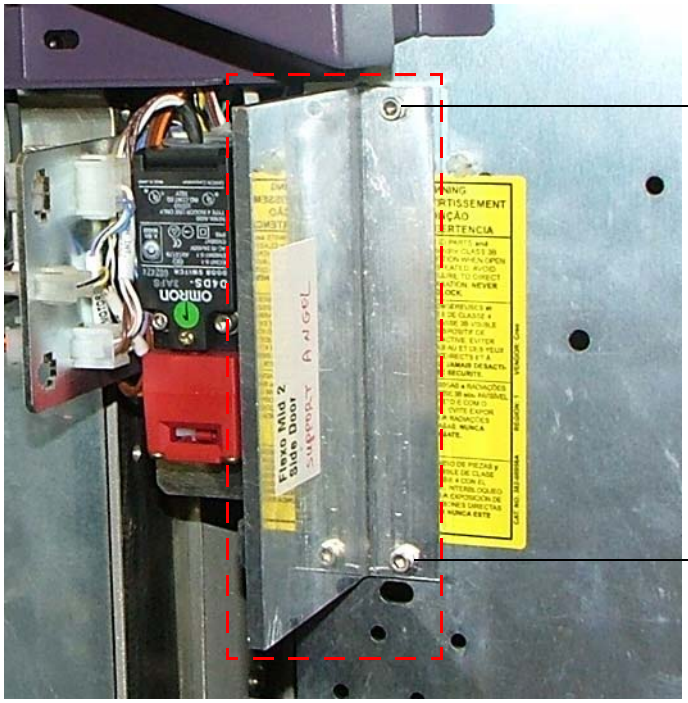



Figure 13: Support angle installed

3. Close the side door.

4. Insert the side door jig against the support angle.




Figure 14: Side door jig

5. Adjust the side door jig dial until only the first tooth cannot enter the space between the door and the support angle.

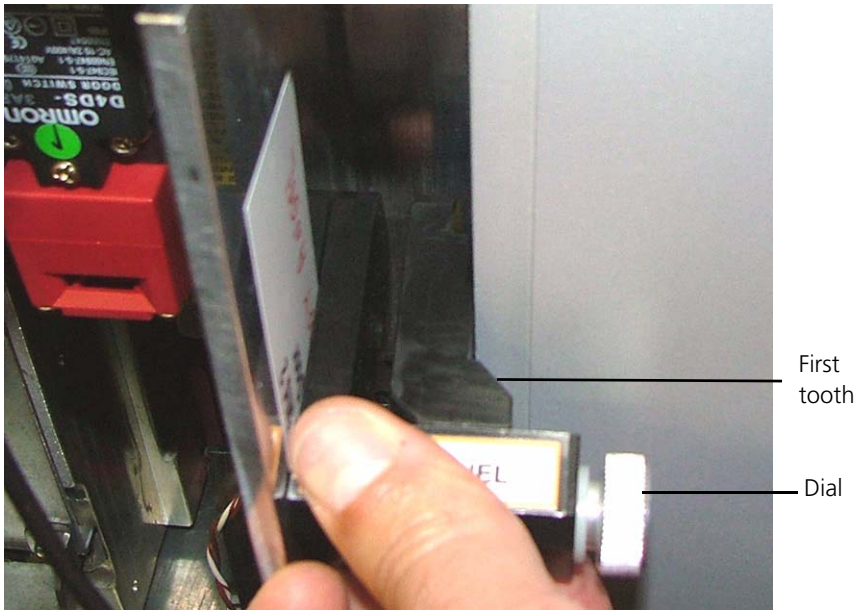
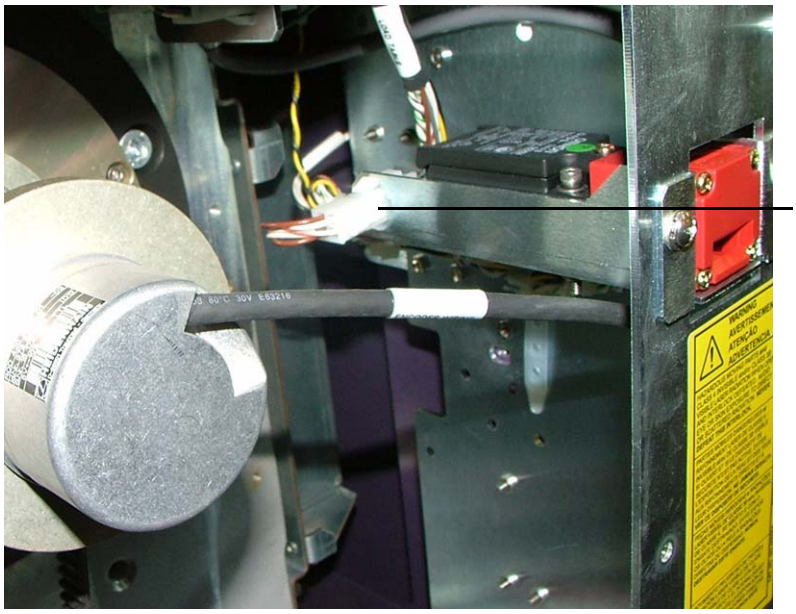



Figure 15: Side door jig inserted up to the first tooth

6. Open the side door.

7. Disconnect the harness from the interlock connector.




8. Connect the interlock jig cables to the interlock connector
9. Connect the other side of the interlock jig cables to the black and red interlock jig cables that are connected to the DVD.
10. Close the door until only the third tooth of the side door jig can enter the space between the side door and the support angle.

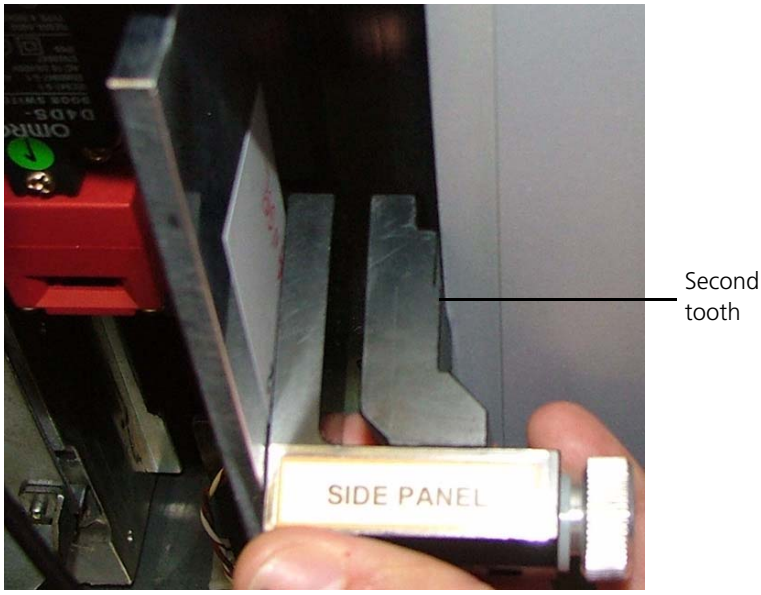



Figure 16: Side door jig inserted up to the second tooth

11. Close the side door. The DVM should beep.

    - The DVM beeps: Proceed to *Testing and Adjusting the Service/Top Door Lockers and Interlocks* on page 16.
    - The DVM does not beep: Adjust the side panel interlocks in the same manner as described in *Adjusting the Interlock Keys* on page 10.



**Note:** When you have finished testing the side door interlocks, be sure to reconnect the interlock connectors.

# Testing and Adjusting the Service/Top Door Lockers and Interlocks

**Note:** The section *Testing and Adjusting the Front Panel Lockers and Interlocks* on page 4 contains detailed descriptions of the procedures required for this section.

## Testing the Service Door Lockers

**Note:** Perform this test on both of the service door interlocks.

1. Open the loading table and the service door.
2. Insert the jig leg between the service door and the mainframe of the platesetter and verify that there is no play.



Figure 17: Checking the service door locker

- If there is no play: Proceed to *Testing the Service Door Interlocks* on page 18.
- If there is play: Apply the *Adjusting the Interlock Keys*. procedure on page 10 to the service door.

# Adjusting the Service Door Locker

If the locker test revealed play between the service door and the mainframe, adjust the locker position, described following.

1. Loosen the four hex screws that secure the service door locker.

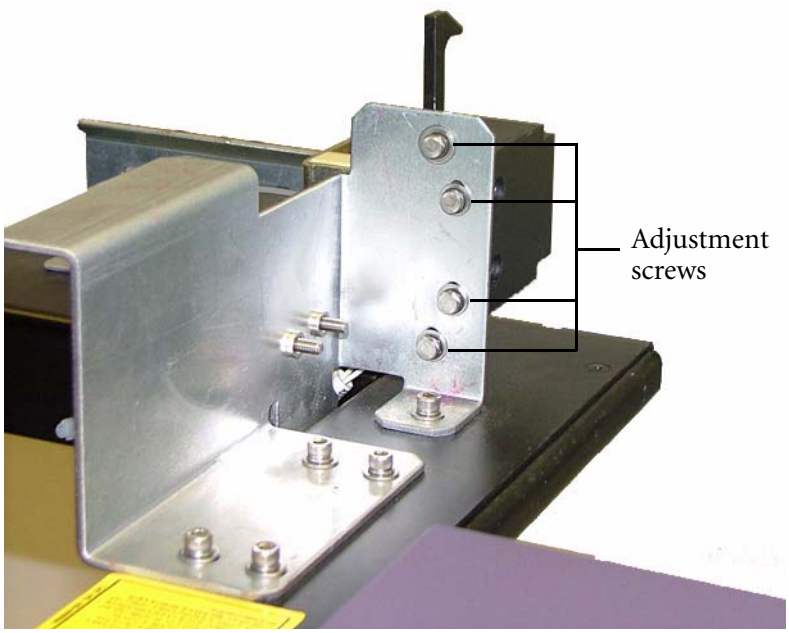



Figure 18: Service door locker adjustment screws

2. Adjust the position of the service door locker, and then tighten the hex screws.
3. Test the locker again, as described in *Testing the Service Door Lockers* on page 16.
4. If required, readjust the service door locker position.

# Testing the Service Door Interlocks

**Note:** Perform this test on both of the service door interlocks.

1. Disconnect the harness from the interlock connector.
2. Connect the interlock jig cables to the interlock connector.

**Note:** Use the six-pin harness for the service door.

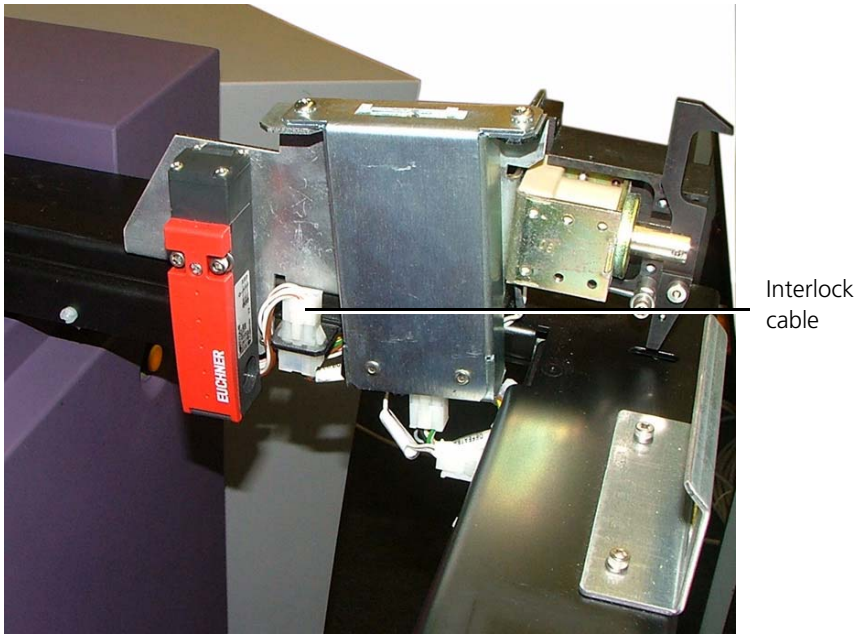



Figure 19: Interlock cable

3. Connect the other side of the interlock jig cables to the black and red interlock jig cables that are connected to the DVD.

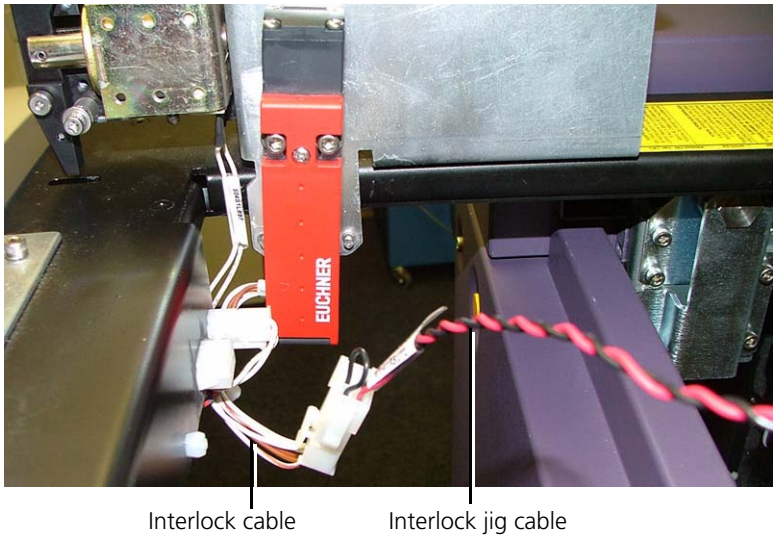



Figure 20: Interlock cable connected to the interlock jig cables

4. To enable closing the service door, route the DVM with the connected interlock jig cables to a resting place inside the platesetter, but do not yet close the service door.
5. Insert the jig's thin edge between the service door and the mainframe of the platesetter.

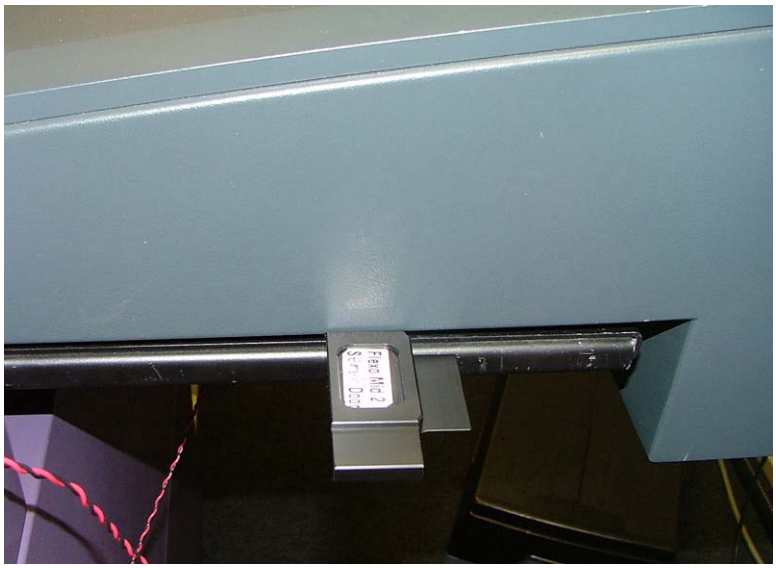


Figure 21: Checking the interlock

6. Close the service door. The DVM should beep.
   - If the DVM beeps: Proceed to step 7.
   - If the DVM does not beep, adjust the interlock key depth, as described in section *Adjusting the Interlock Keys* on page 10.
7. Open the service door and remove the jig.
8. Reinsert the jig's thick edge in the same position and close the service door. The DVM should not beep.
   - If the DVM does not beep: Proceed to *Testing and Adjusting the Back Panels Interlocks* on page 20.
   - If the DVM beeps: Adjust the interlock key depth, as described in *Adjusting the Interlock Keys* on page 10.
9. Open the service door and remove the jig.

**Note:** When you have finished testing the service door interlocks, be sure to reconnect the interlock connectors.

# Testing and Adjusting the Back Panels Interlocks

**Note:** The back panels do not have lockers.

1. Open the service door, and then open the side doors.
2. Test and adjust the back panels interlocks with the same method that you used for the front panel interlocks, as described on page 7–page 11.




Figure 22: Omron back panel jig