

Replacing the Beamsplitter and Mask

This procedure outlines the steps necessary to replace the beamsplitter and mask in the ACQUITY PDA detector^a.

NOTE: Except where noted, the term “ACQUITY PDA Detector” refers to two detectors:

- ACQUITY UPLC Photodiode Array (PDA) Detector
- ACQUITY UPLC PDA Extended Wavelength ($e\lambda$, or $e\lambda$) Detector

Parts Required

Table 1: Parts Required

Part Number	Description	Quantity
700002777	Beamsplitter Assembly	1
405003705	M1 Mask	1

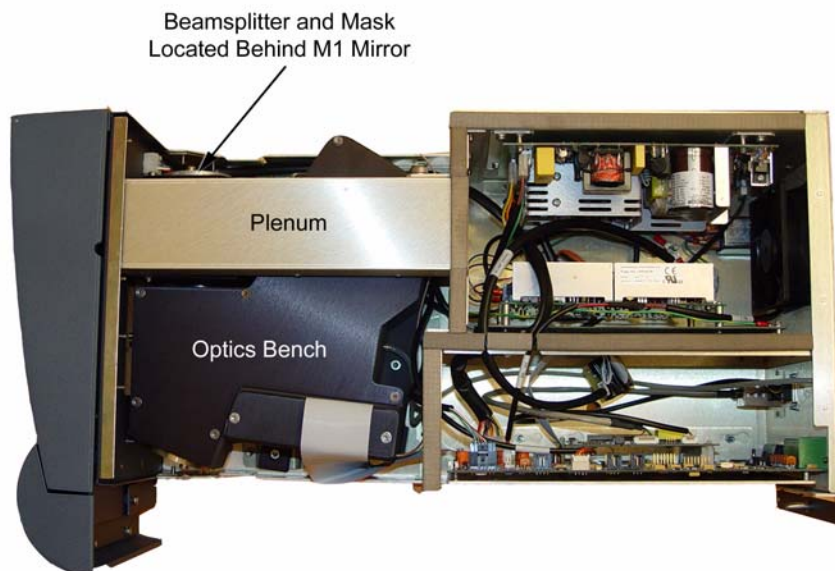


Figure 1 - Location of Beamsplitter and Mask

NOTE: Some of the illustrations show only one type of PDA detector. However, the physical differences between the PDA detector and PDA $e\lambda$ detector are insignificant for this procedure.

a. To be certain you have the latest version of this procedure, please visit the Waters Support Center at Waters.com.

Tools/Materials Required

- T20 Torx screwdriver
- 5/64-inch Allen wrench
- Latex gloves or finger cots
- *Replacing the Lamp* procedure
- *Replacing the Flow Cell* procedure

Removing the Beamsplitter and Mask

1. Power off the detector, and then unplug the power connector.
2. Remove the two T20 Torx screws that secure the filler panel bracket to the rear of the chassis. Then, slide the filler panel off the two pin guides at the front of the unit.
3. Remove the four T20 Torx screws (two on each side) securing the top cover, and then lift it off.
4. Remove the lamp following the *Replacing the Lamp* procedure.
5. Remove the flow cell following the *Replacing the Flow Cell* procedure.
6. Loosen the captive screw that secures the plenum to the chassis, and then remove the plenum from the detector (Figure 2).

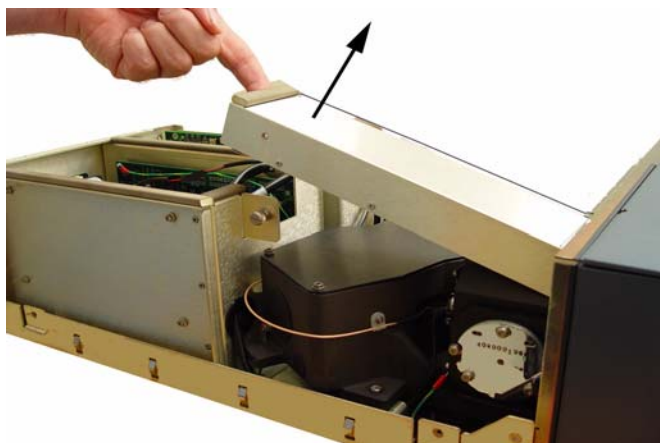


Figure 2 - Removing Plenum

7. Remove the four T20 Torx screws (two on each side) that secure the front panel/bezel assembly to the chassis (Figure 3).

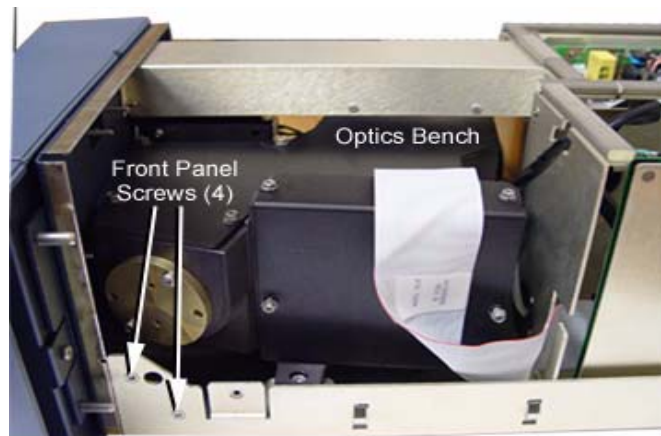


Figure 3 - Front Panel Screws

8. Carefully move the front panel/bezel assembly aside to gain access to the M1 mirror.

NOTE: Before removing the M1 mirror, note the orientation of the alignment pins to the mirror slots. This will make the alignment a little easier when reinstalling later.

9. Using a T20 Torx driver remove the three screws and flat washers that secure the M1 mirror to the lamp housing (Figure 4), and then pull the M1 mirror straight out.

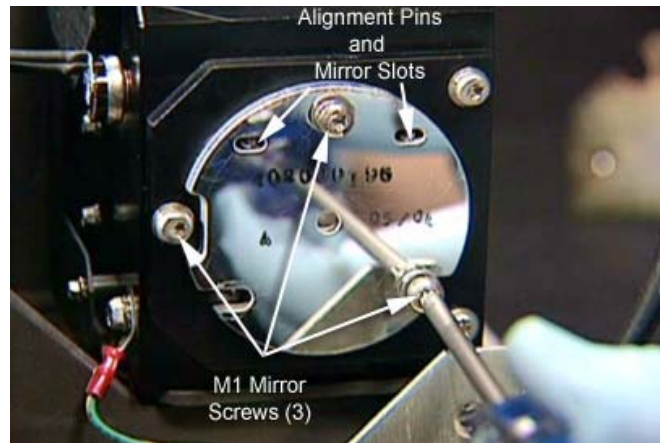


Figure 4 - M1 Mirror Screws and Alignment Pins

CAUTION: *USE CAUTION WHEN HANDLING THE M1 MIRROR, IT IS EXTREMELY SENSITIVE TO DIRT AND OILS. TO AVOID DAMAGING THE MIRROR, DO NOT TOUCH THE SURFACE.*

10. Use a 5/64-inch Allen wrench to remove the two shoulder screws that secure the mask and beamsplitter to the lamp housing (Figure 5).

NOTE: *You do not need to remove the Y-axis adjustment plate.*

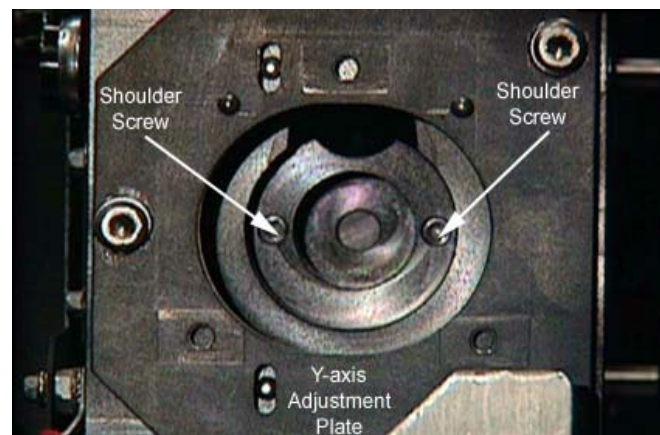


Figure 5 - Location of Beamsplitter Shoulder Screws

11. Using your finger, pull the mask and beamsplitter out.

Installing the New Beamsplitter

1. Place the mask onto the beamsplitter and set the shoulder screws in place (Figure 6).

CAUTION: *WHEN INSTALLING THE BEAMSPLITTER, ENSURE THAT THE APERTURE HOLE IS FACING THE REAR OF THE LAMP HOUSING.*

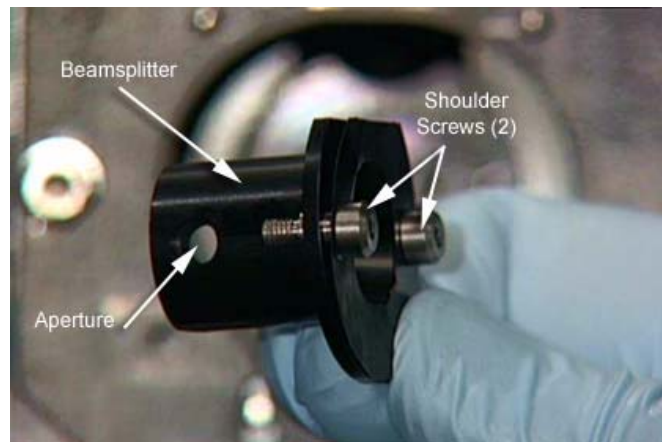


Figure 6 - Beamsplitter with Aperture

2. Insert the beamsplitter with mask into the lamp housing.
3. Using a 5/64-inch Allen wrench, tighten the two shoulder screws.
4. Insert the M1 mirror into the lamp housing centering the alignment pins in the mirror slots (Figure 7).

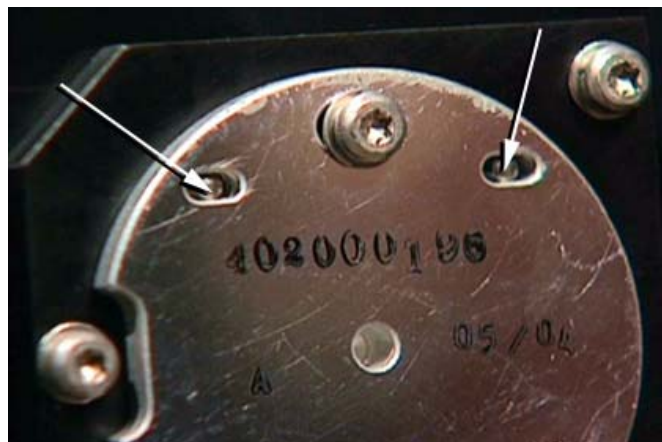


Figure 7 - Centering Alignment Pins in Mirror Slots

5. Replace the three T20 Torx screws and flat washers. Tighten them slightly while still allowing slight horizontal movement.
6. The M1 mirror must be properly aligned to maximize lamp energy for transmittance of light through the detector. To align the M1 mirror refer to the procedure *Aligning the M1 Mirror*.
7. After aligning the M1 mirror, turn off the detector.
8. Slide the front panel/bezel assembly into the chassis and secure it with four T20 Torx screws (two screws on each side).

9. Replace the plenum.
10. Replace the flow cell.
11. Replace the lamp.
12. Replace the top cover and secure it with the four T20 Torx screws (two screws on each side).
13. Replace the filler panel by sliding the panel over the two pin guides at the front of the chassis. Secure the filler panel bracket to the rear of the chassis using the two T20 Torx screws.
14. Plug in and then power on the detector.
15. Check the status of the LEDs. The power and lamp LEDs will show steady green indicating a successful power-up.
16. Verify calibration.