

SAM Shutter removal and Installation Procedure

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Abstract

The procedure for removal and installation of the SAM imager (SAMi) shutter is described

1. Requirements

- a. This is a one person job
- b. The control electronics must be off
- c. The Nasmyth rotator must be rotated in a way that access to the SAM shutter is convenient, as shown in Fig. 1
- d. A set of metric Allen wrenches

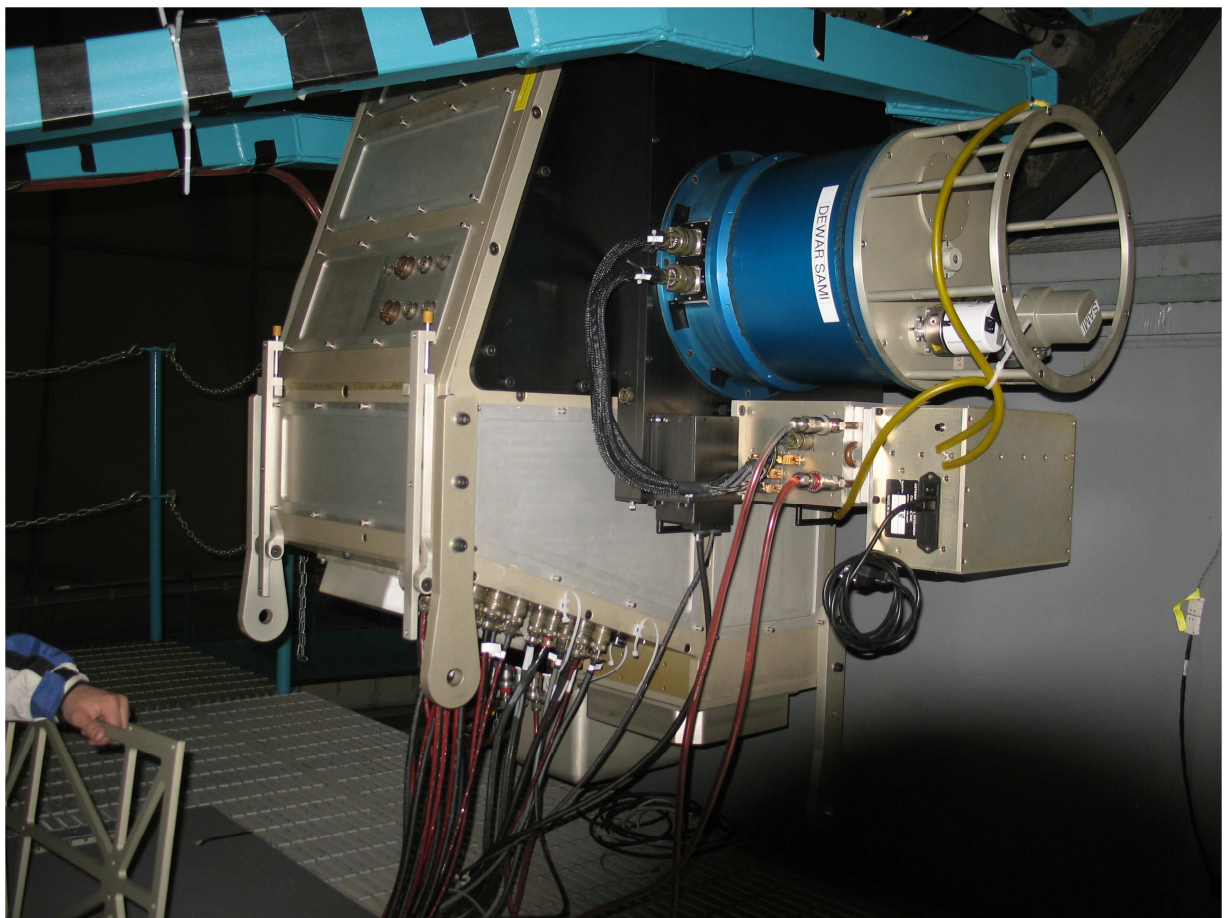


Figure 1. SAM in an accessible position

1. Shutter removal procedure.

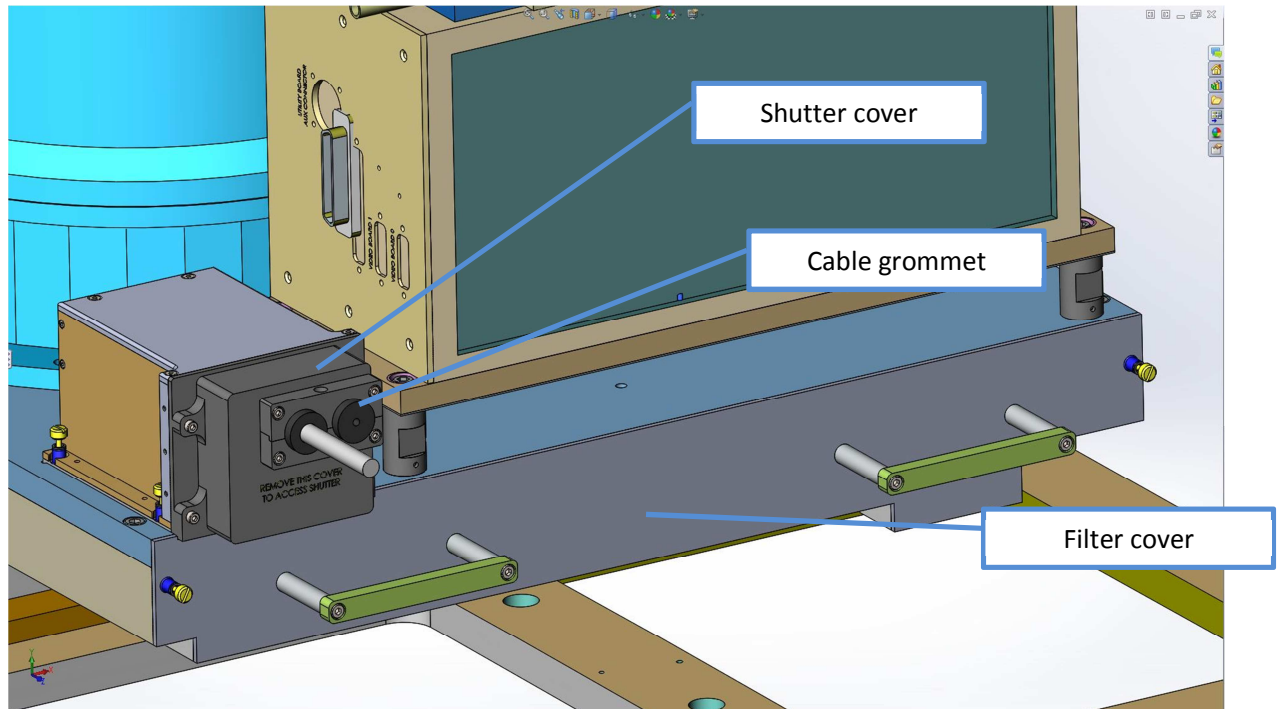


Figure 2. General view

1. Position the Optical Nasmyth rotator in order to have a good access to SAM, as shown in Figure 1. Check that the SAM motor control electronics are off
2. Loosen -do not remove- the four M3 screws (item 1 in Fig.3) that hold the rubber grommets (item 3 in Fig.3) that seal the shutter cables, shown in Figure 3. Then loosen -do not remove- the M3 screw on top of this assembly (item 2 in Fig.3). Make sure that the cables are not held tightly by the grommets. The idea is to loosen this light-seal to be able to slide the cover back without disconnecting the cables
3. Loosen the four captive M3 screws (item 4 in Fig.3) that hold the shutter cover in place
4. Slide back the shutter cover **CAREFULLY** to avoid straining the shutter connectors. If the cover is sticking to the cables, loosen the grommet clamp described in step 2. You should be able to see the shutter, as shown in Figure 4
5. Remove the filter cover by undoing the two thumbscrews shown in Figure 4
6. Disconnect the motor cable and the limit switch cable on the shutter. These are shown in Fig. 6
7. The shutter rides on two rails, shown in Figure 5
8. Turn the shutter lever arm as shown in Figure 6 to free the shutter.
9. **CAREFULLY** slide the shutter out by pulling it as shown in Figure 7. Check for possible interferences. **If the instrument is facing down, be careful not to drop the shutter**

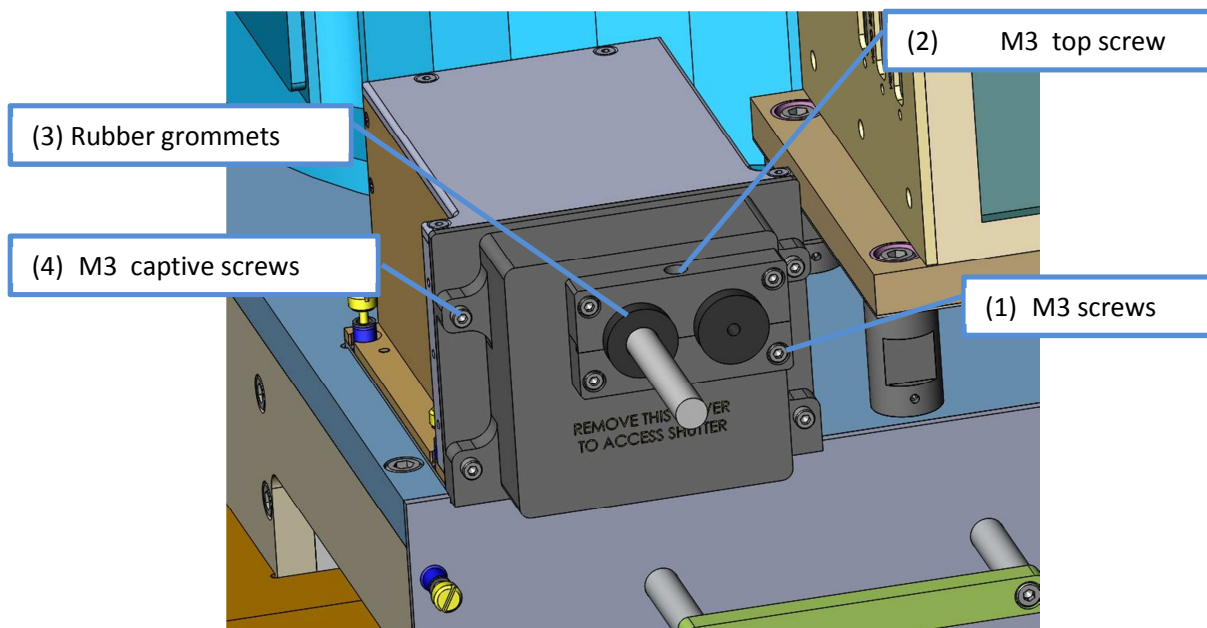


Figure 3. Detail of filter and shutter cover

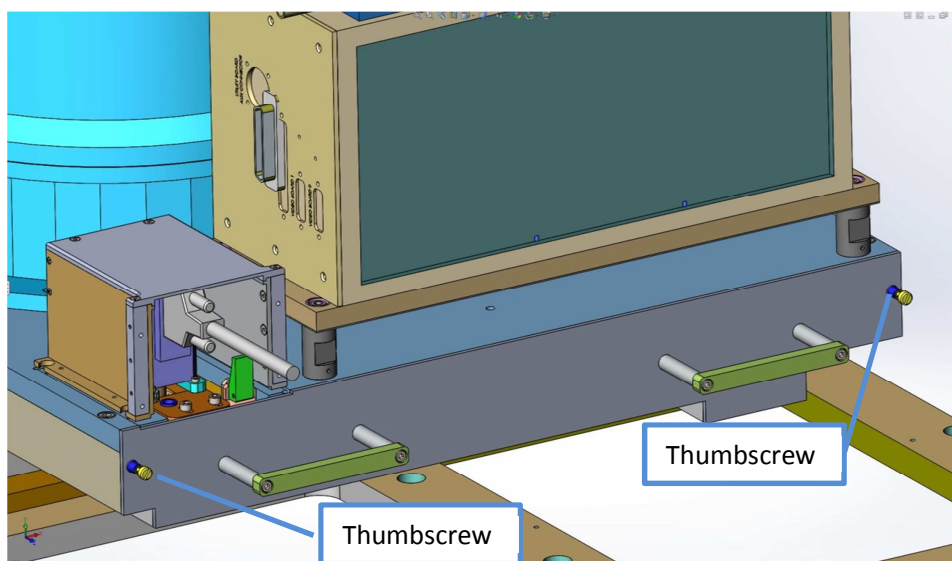


Figure 4. Shutter cover removed

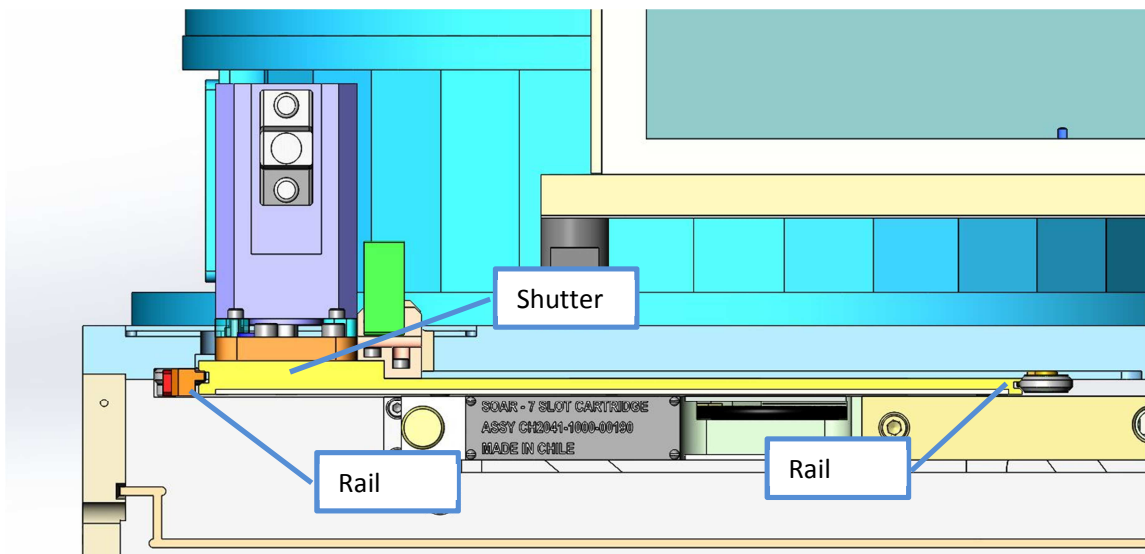


Figure 5

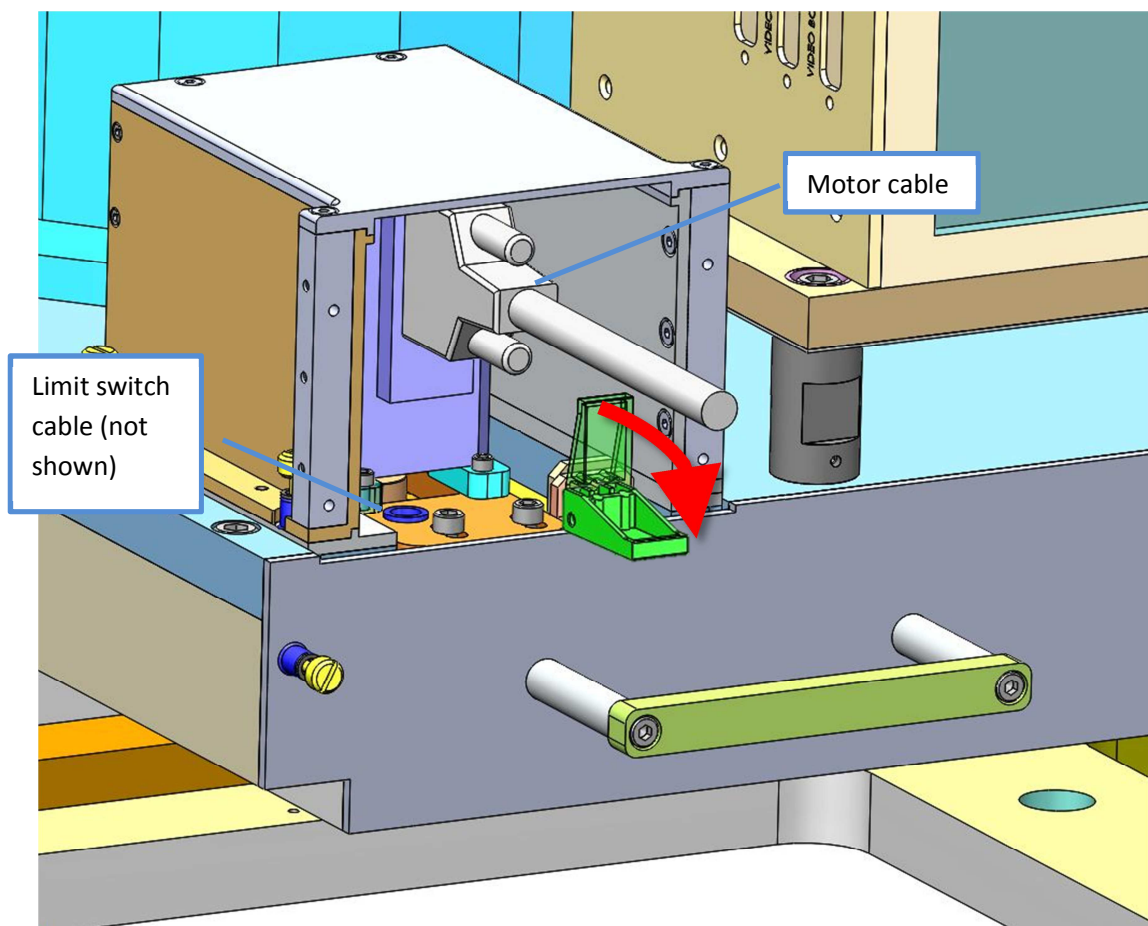


Figure 6

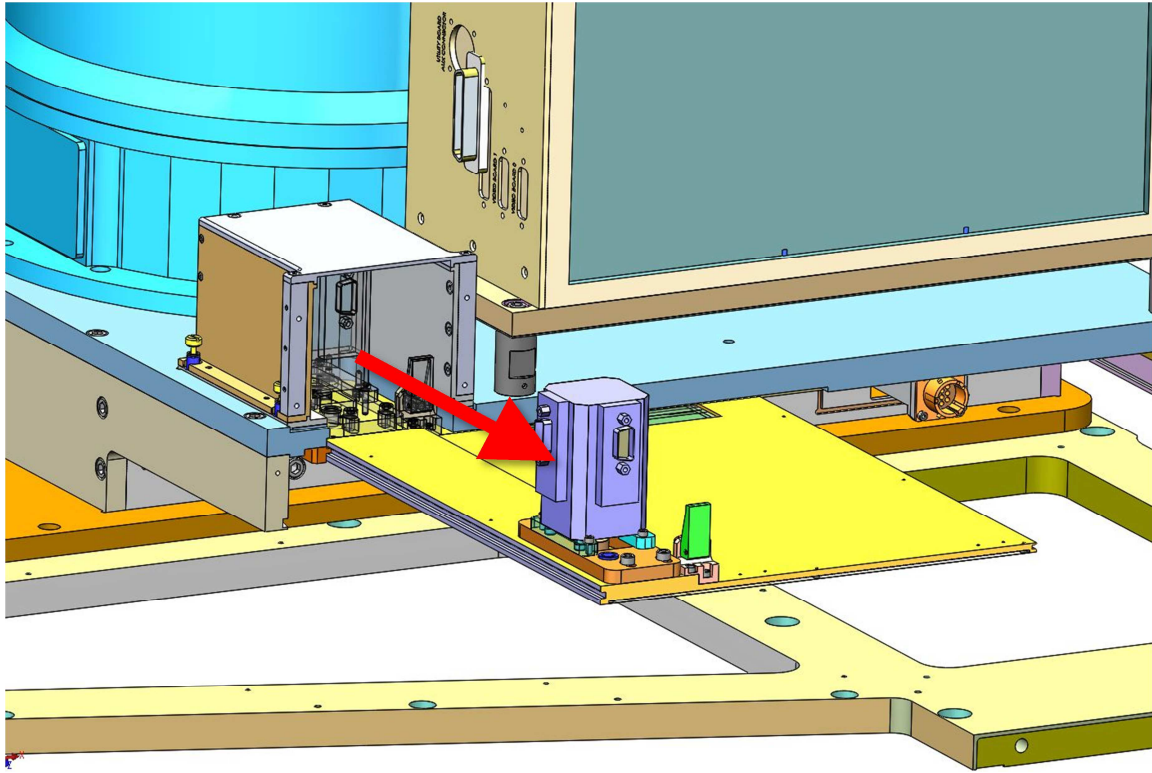


Figure 7. Removal procedure

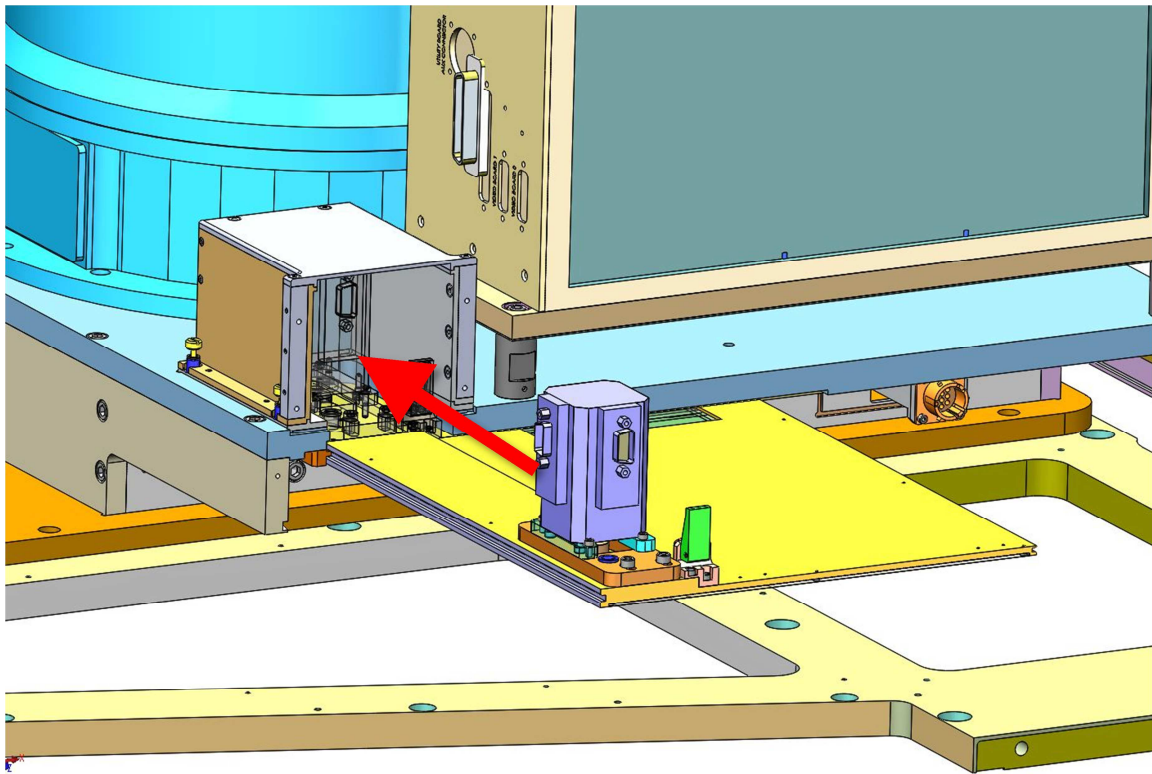


Figure 8. Insertion procedure

Shutter installation procedure.

This procedure assumes that the instrument has no shutter and a replacement is to be installed.

1. Position the Optical Nasmyth rotator in order to have a good access to SAM, as shown in Figure 1. Check that the SAM motor control electronics are off
2. Loosen the four captive M3 screws (item 4 in Fig.3) that hold the shutter cover in place
3. Remove the filter cover by undoing the two thumbscrews shown in Figure 4
4. **CAREFULLY** slide the shutter in by pushing it as shown in Figure 7. Check for possible interferences while sliding the shutter in. The lever arm should be parallel to the shutter for insertion
5. Turn the shutter lever arm as shown in Figure 9 to lock the shutter in position
6. Connect the motor cable and the limit switch cable on the shutter. These are shown in Fig. 6
7. Install the filter cover by tightening the two thumbscrews shown in Figure 4
8. Slide the shutter cover **CAREFULLY** to avoid straining the shutter connectors. If the cover is sticking to the cables, loosen the grommet clamp described in step 2 of the removal procedure
9. Tighten the four captive M3 screws (item 4 in Fig.3) that hold the shutter cover in place
10. Adjust the cable clamp position and then tighten the M3 screw on top of this assembly (item 2 in Fig.3). Tighten the four M3 screws (item 1 in Fig.3) that hold the rubber grommets (item 3 in Fig.3) that seal the shutter cables, shown in Figure 3. Make sure that the cables are not bent and stress free after this step has been done

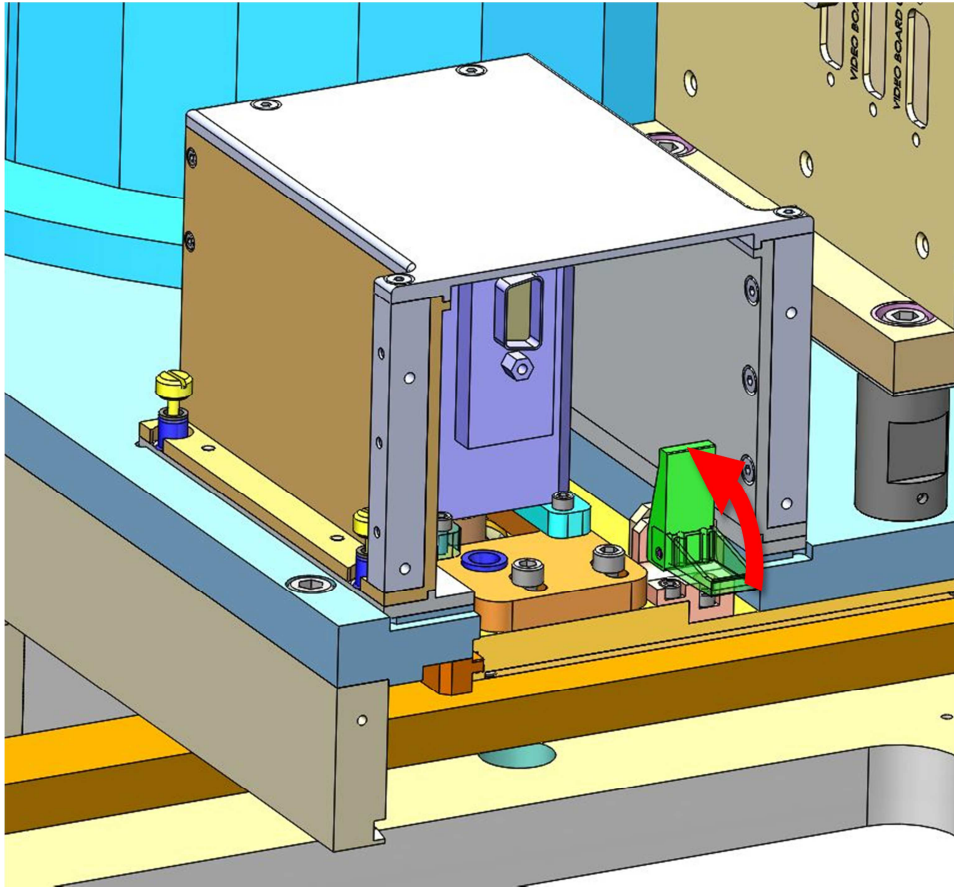


Figure 9