Recovery procedure for the stuck slicer motor

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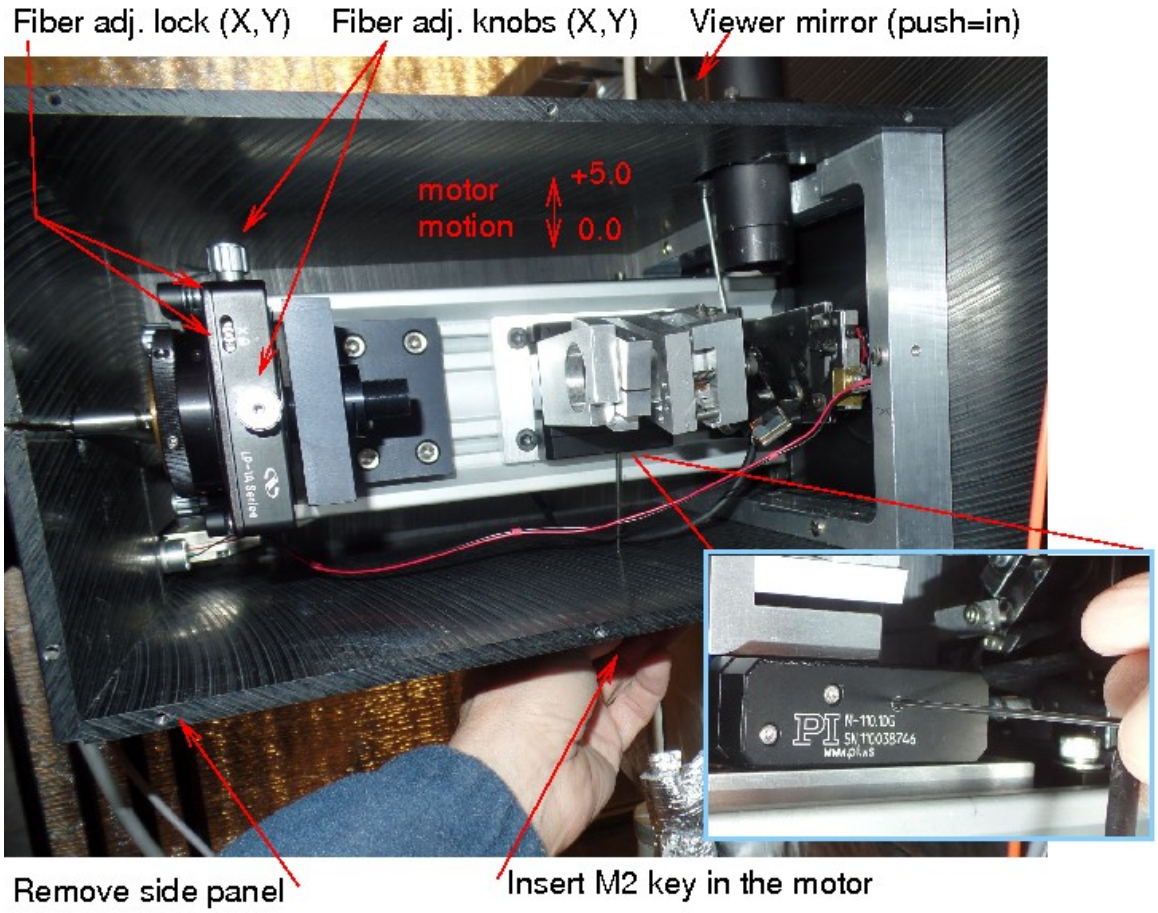
File: prj/bme/chiron/doc/Slicer-Motor-Recovery.doc

After prolonged power cuts, the motor that defines the slit mode (slicer, fiber, etc.) sometimes goes to the limit and is stuck there. The homing does not work. This memo describes the recovery procedure, in two parts: un-stuck the motor shaft and re-adjust the fiber position. Tools: metric Allen keys, flat screwdriver.

1. Releasing the motor



1. Switch off the motor driver box.

2. Remove the insulating foam panels surrounding the CHIRON entrance module, FOB. Then remove the plastic side panel (one M4 cap screw and several bronze screws).

3. Insert metric M2 key through the hole in the lower plastic panel into the hole in the PI stage (see the Figure; the key is slightly tilted because the two holes are

not exactly opposite to each other).

3. Turn the key clockwise to rotate the motor shaft, moving the slicer unit down (it is normally stuck in the upper position).

4. Switch on the motor driver. In the CHIRON software, open the slicer plug-in and home the motor. It is homed at position 0 (lowest).

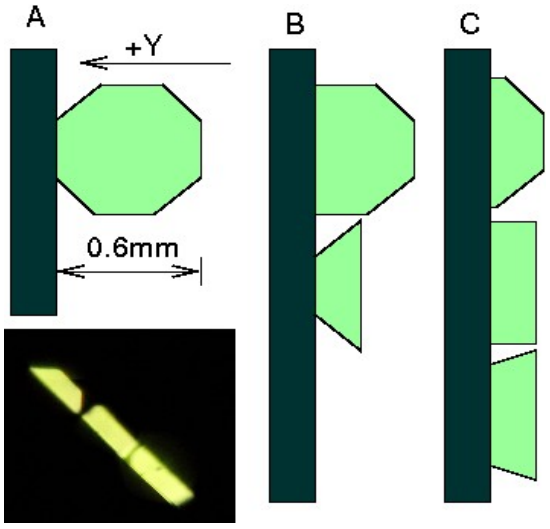
2. Re-adjusting the fiber position.

After motor recovery, the position of the decker changes. The fiber must be re-adjusted to get the correct image in the slicer mode.

1. Using the Lamps plug-in, switch on the quartz lamp to illuminate the fiber.

2. Push the mirror lever IN and see the fiber image in the eyepiece. In the FIBER motor position, the full octagonal fiber end is seen.

3. Unlock the fiber X,Y adjustments (use M2.5 Allen key).



The Figure explains how the fiber image is sliced when the motor moves to the slicer position (lower Y values). In the position A, the slicer just touches the fiber image.
As Y is decreased, the left side of the fiber is blocked by the slicer, and appears in the 2nd slice below (position B). Moving further down, we get the third slice (position C). The insert shows good sliced image as seen in the viewer. The gap between slices should be minimized by adjusting the X-coordinate.

4. By small motions of the fiber in X and Y, obtain correct image in the SLICER motor position. Lock the X,Y motion and check that the image is still good.

5. Close the FOB plastic side panel. Put back the foam panels.

6. Pull out the viewing mirror, cover the eyepiece.

7. Take 1 second Th-Ar exposure with 1x1 binning in the SLICER decker position and verify that the lines have the correct shape, as in the Figure. This is all.