

FSA disassembly and filter replacement procedure

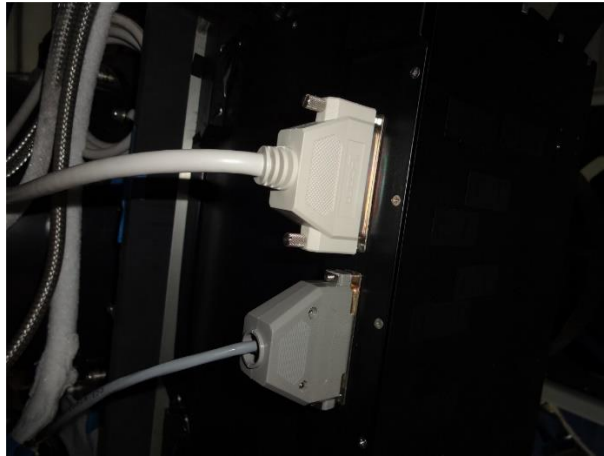
1. Move the telescope to the service position
2. Insert the stow pin to DEC hole
3. Turn off the power of motor and FSA
4. Install the jib crane
 - A. Jib crane must be connected on 110 V



5. Move the scissor lift to working area

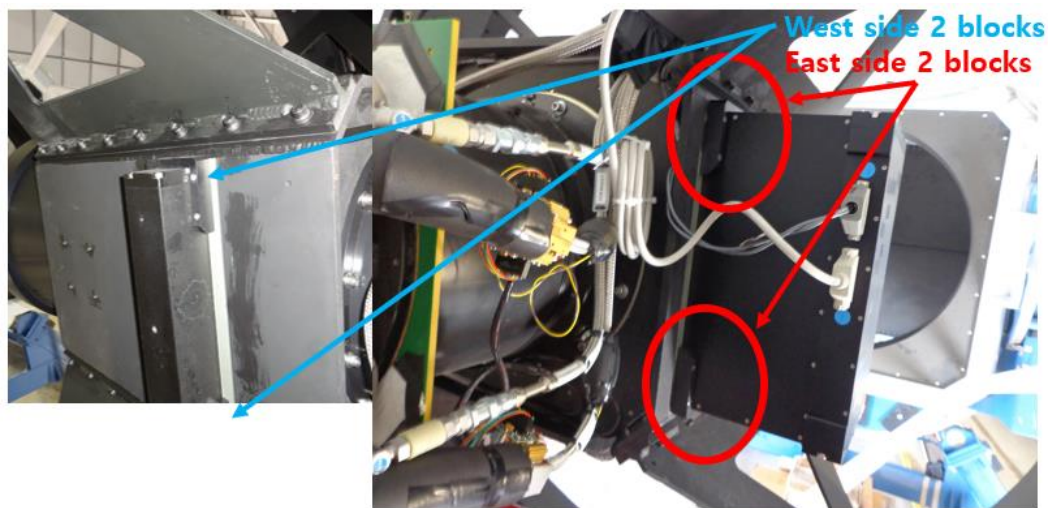


6. Remove two connectors from the FSA



7. Remove four □ shape blocks on the four corners

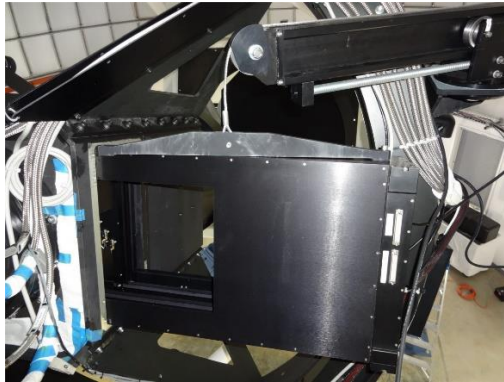
A. Be careful when loosening the flat head screws because the flat head screw head is easy to wear



8. Attach the lifting bar on the FSA

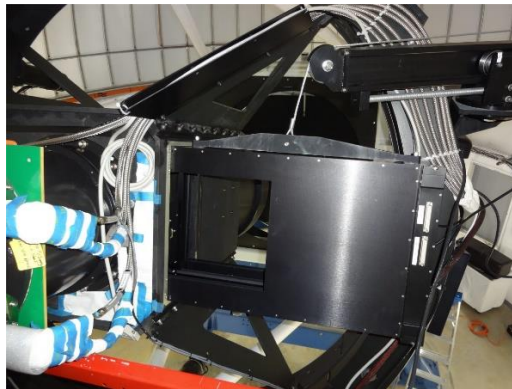


9. Slid out the FSA



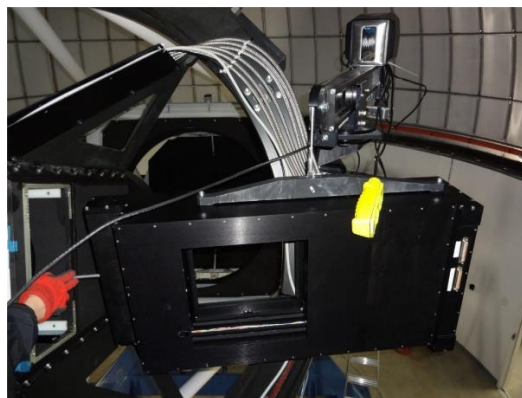
10. Insert and tighten the bolt on the lifting bar

- A. Once you see the tapped hole on the FSA then install the second bolt



11. Take the FSA out from the corrector box by jib crane

- A. As the lifting bar is attached on the FSA, then loose the wire and pull it out by hand. The lifting bar is located on the middle of the FSA body, so FSA is hung with the angle of 0 vertically. However, the telescope is parked at the service position, the entrance rectangular hole to the corrector box is tilted with 20 degrees. So, when you pull out the body entirely, you have to be sure that the body will be slightly rotated.



12. Put the FSA on the scissor lift

A. The winch uses self-braking disk, so the operation time is very limited as less than 2 minutes. While the height of the working place is almost 5 meter and winding speed is just 1 meter/minute. Therefore, please use the scissor lift to lower the FSA to the ground

B. Do not operate the winch for more than one minute because of overheating

13. Open the top plate of the FSA

A. Once you open the box, please check if the whole bolts are all tightened and check that any parts seize the I-filter path

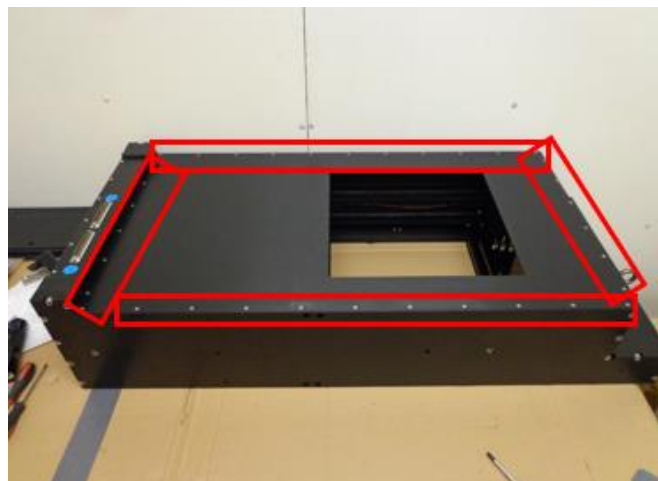
B. If the problem can be solved, please assemble the FSA to corrector box after solve the problem

14. Wear the mask – To protect the filter pollution

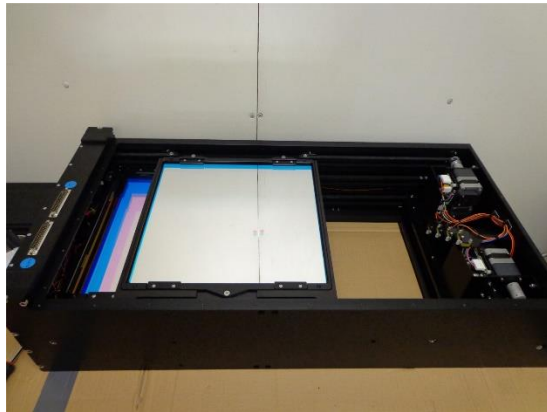
15. Take the solar FSA out where is in the wooden box next to the door



16. Loosen the screws on the top plate

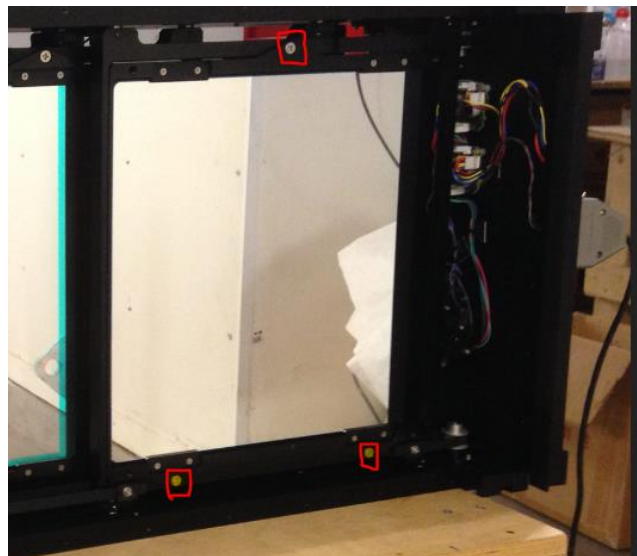


17. Open the top plate

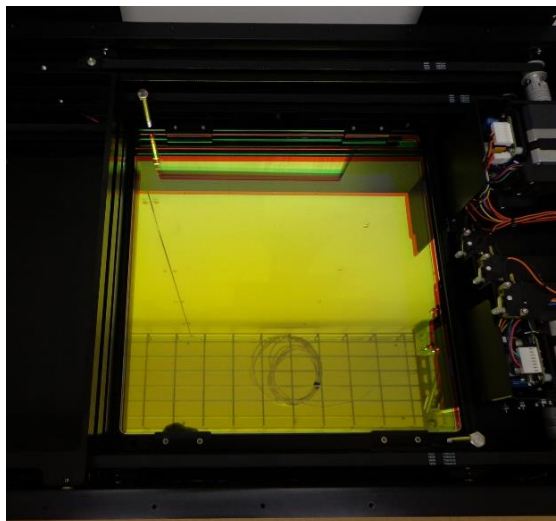


18. Remove the three bolts on the filter cassette

A. Do not loosen the screw which is held the filter



19. Insert the long bolt (UNC 1/4-20) to the filter cassette



20. Take the filter cassette out carefully from the FSA
 - A. The filter cassette cannot be pulled straight off, because it is caught on the timing belt, so you should move to zig-zag carefully the filter cassette between the timing belts.
21. Do not change the position of the filter
 - A. The filters installed B, V, R, I in order from bottom(shutter side) to top in FSA where is installed in the telescope and g, r, i, z in order from bottom to top in the sloan FSA.
22. Switch the filter cassette into solan FSA
 - A. The filter must insert in order of B, V, R, I filter in the solan FSA
23. Close the top plate and tighten the screw
24. Put the FSA on the scissor lift
25. Lift up the scissor lift to work area and connect the lifting bar
26. Insert the FSA to the corrector
27. Tighten the four corners block with bolts
28. Plug the connector
 - A. Since it uses same connector, please make sure the mark(camera and RS485) when you plug the connector to FSA.