

# Adding a shutter to a ASI Filter Wheel



Be sure the power is off and the Filter wheel is removed from the Microscope and its cables are disconnected. You will also need a Phillips screwdriver, and an [ASI cutoff shutter](#) with its installation kit that includes 4 small #2 Phillips screws, and lock washers and a cut-corner cover if the shutter was a Normally Closed shutter.

## Part 1: Adding a Normally Closed Shutter.

Step 1: On a clean work table lay out the filter wheel, tools and the shutter to be installed. Remove the nine flat head #4 screws from the outer edge of the motor side of the filter wheel. Remove the back cover from the filter wheel. The cover has tight clearance around the motor housing and must be removed as seen in figure 3.



Fig 1

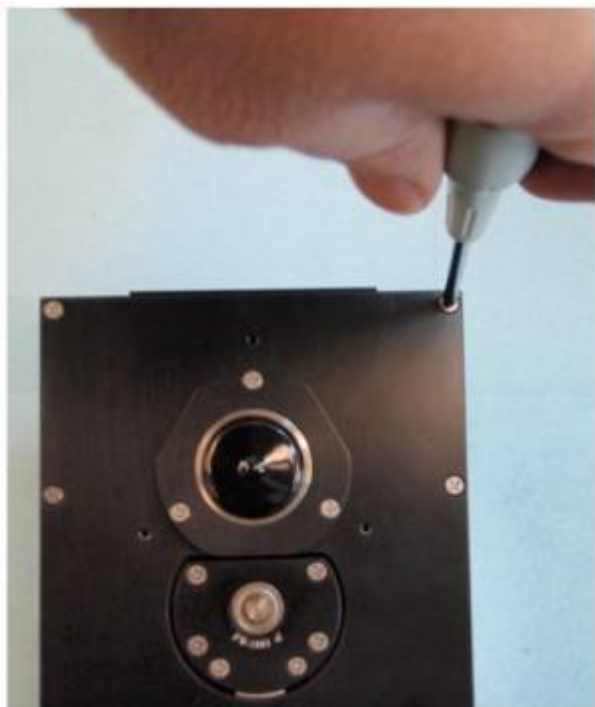


Fig 2

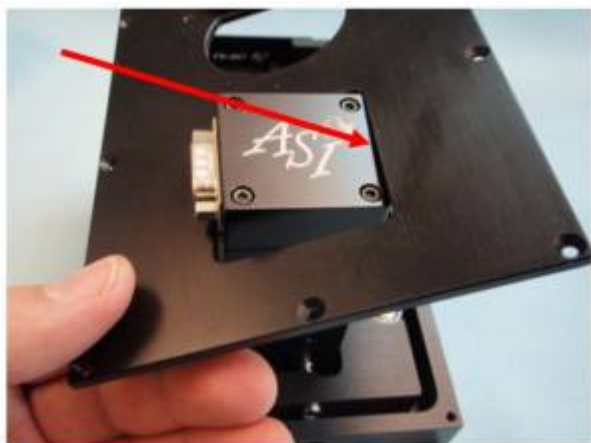


Fig 3

Step 2: Remove the two flat head screws from the top of the filter Wheel. You should now have 11 screws, a square cover, a square notched cover, a N.C. shutter, and four small screws and washers. The inside top of the filter wheel should be clean and clear.



Fig 4,5,6 and 7 ; click to enlarge

Step 3: Insert the shutter into the filter wheel body with the cable of the shutter placed in the cable notch in the top left of the filter wheel body, see figure 9. Screw the shutter in place with the four small screws and lock washers. Check that the cable does not obstruct the shutters moving parts, see figure 11.



Fig 8,9 and 10; click to enlarge



Fig 11

Step 4: Install the notched cover on to the top of the filter wheel. Avoid pinching the cable from the shutter. Replace the back cover with the nine #4 screws in reverse order of the steps from Step 1. You will have an extra cover when finished. Reconnect the cables and test the motion of the filter wheel to be sure that nothing is obstructing the motion of the wheel. If the wheel motion is okay reinstall the filter wheel onto to the microscope. If the wheel motion is sticky or halting contact ASI for further instructions.



Fig 12

## Part 2: Adding a Normally Open Shutter.

Step 1: On a clean work table lay out the filter wheel, tools and the shutter to be installed. Remove the nine flat head #4 screws from the outer edge of the motor side of the filter wheel. Remove the back cover from the filter wheel. The cover has tight clearance around the motor housing and must be removed as seen in figure 3.

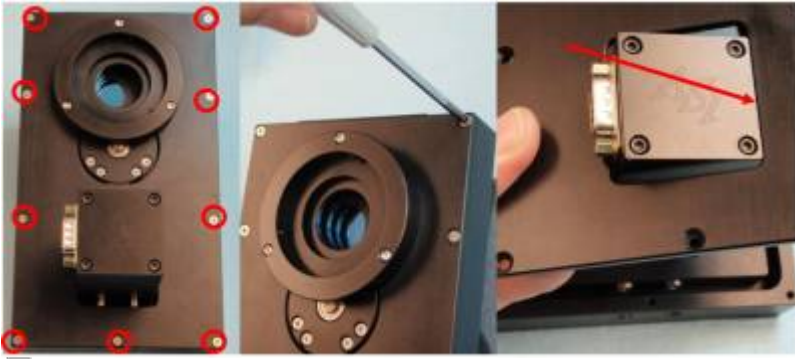


Fig 1,2 and 3; click to enlarge

Step 2: Remove the two flat head screws from the top of the filter Wheel. You should now have 11 screws, a square cover, a N.O. shutter, and four small screws and washers. The inside top of the filter wheel should be clean and clear.



Fig 4

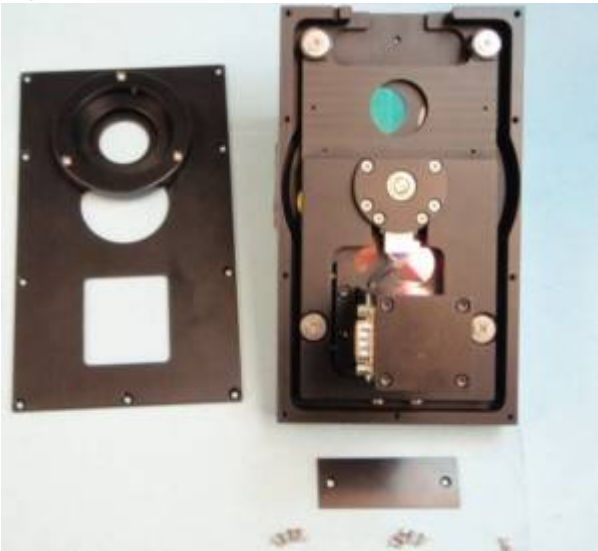


Fig 5

Step 3: Insert the shutter into the filter wheel body with the cable of the shutter placed in the cable notch in the top left of the filter wheel body, see figure 6. Screw the shutter in place with the four small screws and lock washers. Check that the cable does not obstruct the shutters moving parts, see figure 8.



Fig 6,7 and 8; click to enlarge

Step 4: Replace the back cover with the nine #4 screws in reverse order of the steps from Step 1. You will have an extra cover when finished, see figure 10. Reconnect the cables and test the motion of the filter wheel to be sure that nothing is obstructing the motion of the wheel. If the wheel motion is okay reinstall the filter wheel onto to the microscope. If the wheel motion is sticky or halting contact ASI for further instructions.



Fig 9



Fig 10

[fw1000](#), [shutter](#), [tech note](#)

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