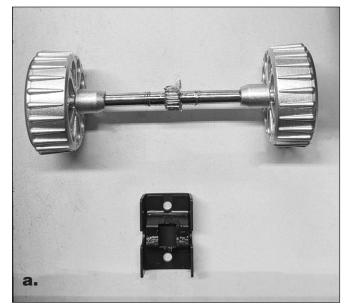
Orion StarBlast II 4.5" Focuser Shim Kit Installation Instructions # 63038



Figure 1. Remove the cover plate that holds the focus knob shaft assembly to the rack and pinion focuser by removing the two Phillips-head screws



Figure 2. Lift the drawtube assembly from the focuser housing by simply grasping it by the top ring and gently pulling it outward.



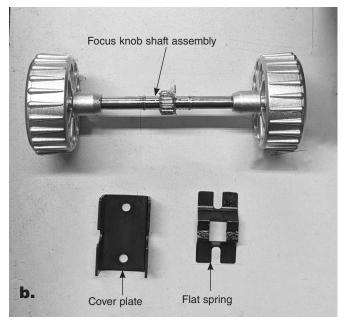


Figure 3. There is a small flat spring intended to maintain tension of the focus knob assembly shaft against the rack gear of the drawtube. Because this connection is greased you may find the flat spring stuck to the focuser housing as shown in **Figure 2** or in the cover as shown in **Figure 3a**. Carefully remove it and set it aside. It will help to take note of the orientation of the spring as you will need to set it back in the same position when reassembling.



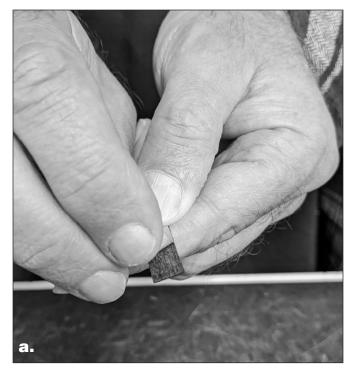
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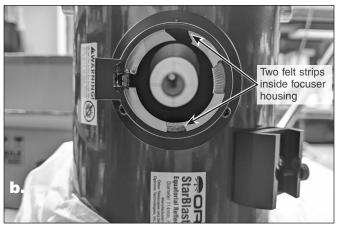


Figure 4a &4b. Next we will apply the two felt strips on the inside of the focuser housing. Peel back the felt to reveal the adhesive and press gently to adhere to the inside. You will want to place them on opposite sides. Placement of the strips does not have to be precise — as long as the two strips are roughly facing each other the tube will be stabilized in the housing.



Figure 5. Replace the drawtube by inserting it into the focuser housing until it is fully seated (as shown in **Figure 2**).

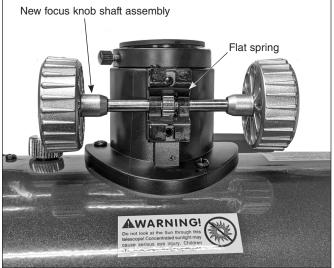


Figure 6. Take the new focus knob shaft assembly included in this kit and place it on the focuser. Be sure the rack and pinon gears are aligned. Next, place the flat spring over the shaft so that the curved portion bends inward as shown in the image above. If the flat spring is placed backwards you will not be able to re-install the cover plate as described in the next step. Reseat the cover plate and re-tighten the Phillips head screws in reverse of step one. It is recommended to alternate the screws you are tightening every couple of turns to ensure they are equally tightened.

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