Zeiss Axiostar Plus Installation Procedure

The procedure below outlines the steps necessary to install the ASI Microscope Focus Controller Drive onto the Zeiss Axiostar Plus microscope.

To perform the following steps you will need the following tools:

Hex Wrenches:

2 mm, 2.5 mm, 3 mm, .050”, 1/16”, 3/32”, 7/64”

Box Wrench:

14mm

The wrenches are provided by ASI.

The procedure has four parts:

1. Removing the right fine focus knob.
2. Installing the base plate.
3. Installing and aligning the motor drive assembly.
4. Installing the motor drive cover plate & fine focus knob.

Part 1 - Removing the right Fine Focus Knob

Remove the right focus knobs from the microscope as follows:

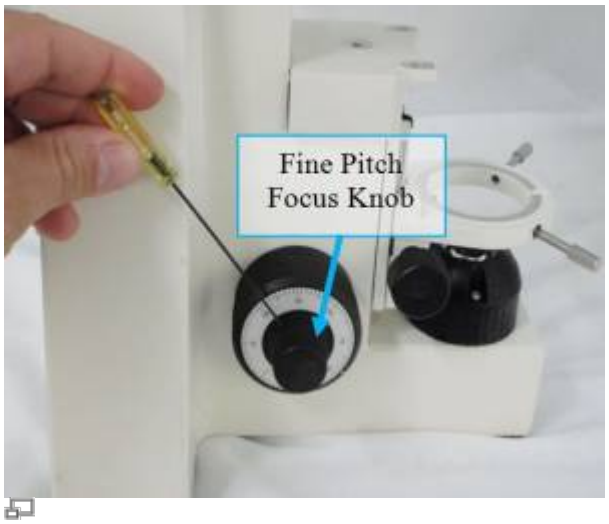
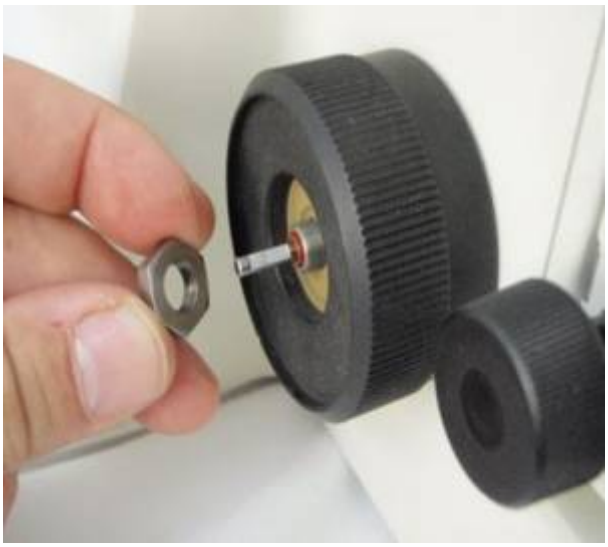


Figure 1a

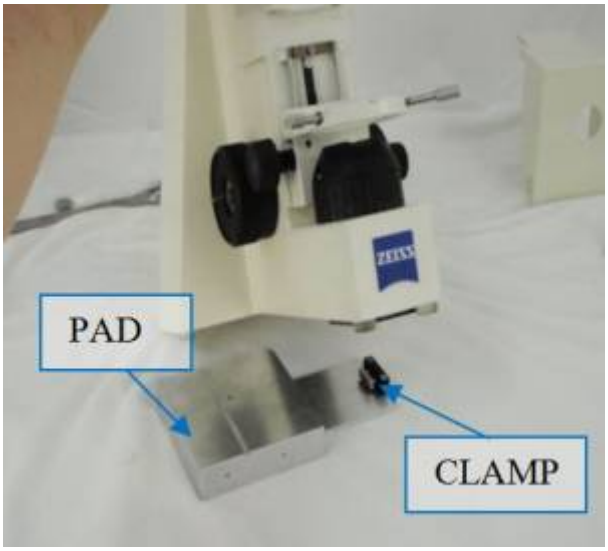
Figure 1b

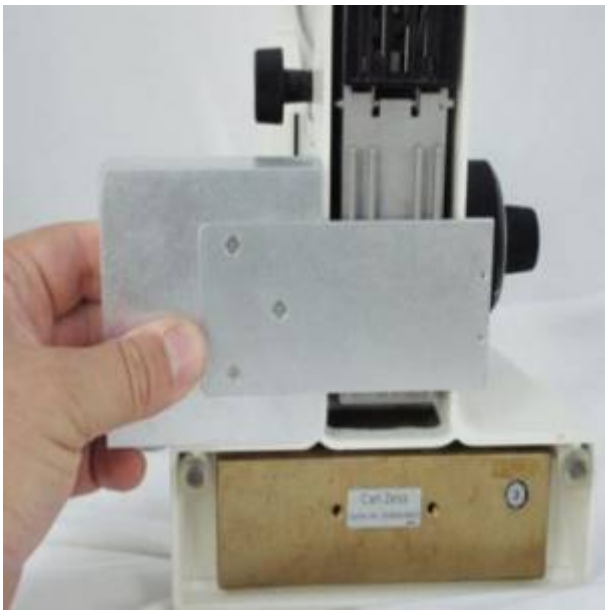
a) Remove the fine focus knob by using a .05 mm Hex wench to loosen set screw and pull the knob off to expose the Coarse Focus Knob Shaft Nut.

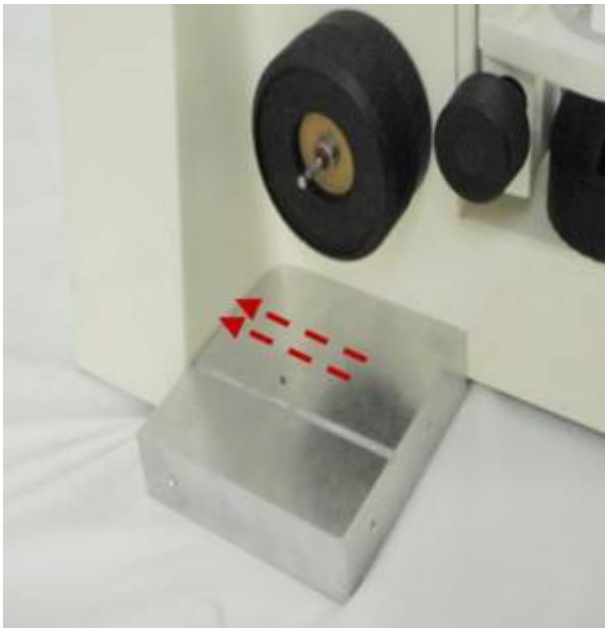


b) While holding the coarse knob on the right hand side, use a 14mm box wrench to unscrew the Course Knob Shaft Nut, then continuing to hold the right hand coarse knob - Unscrew and remove the left side Course Knob exposing the focus shaft threads.

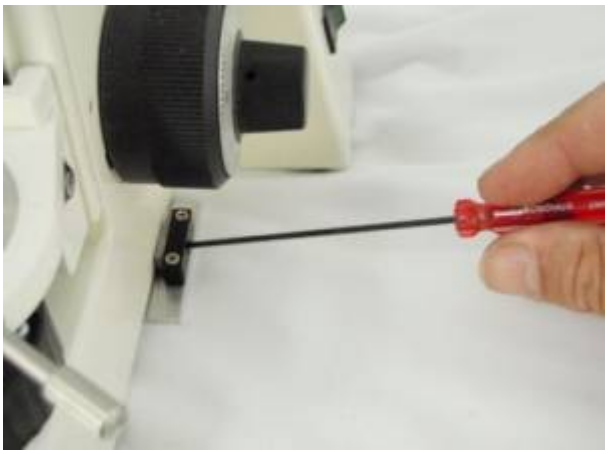
Part 2 - Installing the Baseplate







Take the base plate and slide it under the microscope so that the armature spans across under the microscope with the base pad on one side and the clamp on the other. The base pad must be firmly against the back T of the microscope. Use a 2mm Hex wrench to slightly tighten the clamp so that the base is secured to the microscope.

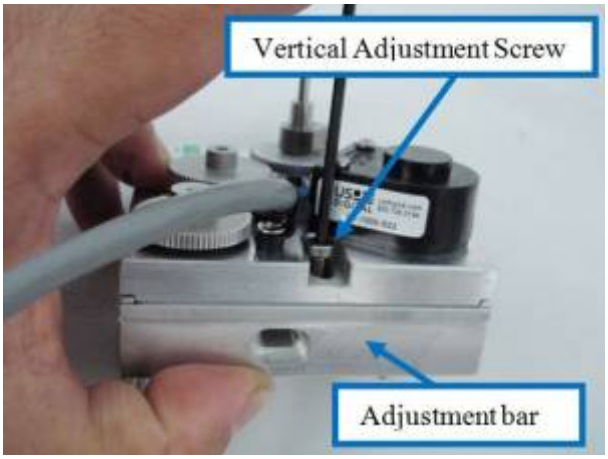


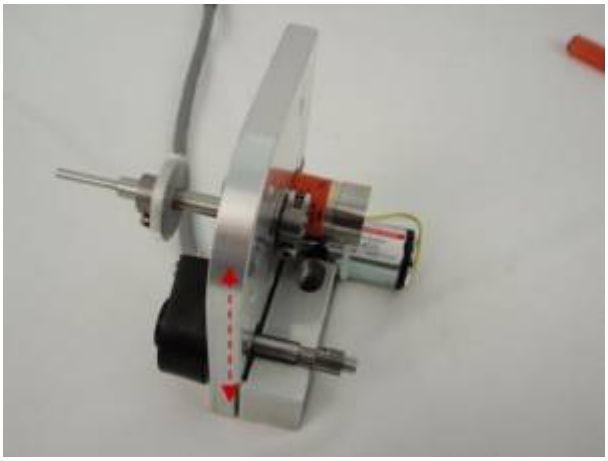
Note: You may need to loosen the clamp to slightly adjust

the plate in the following steps. This should only be done if you need to move further than what the adjustment screws, in the following steps, allow.

Part-3 Installing & Aligning the Motor Drive

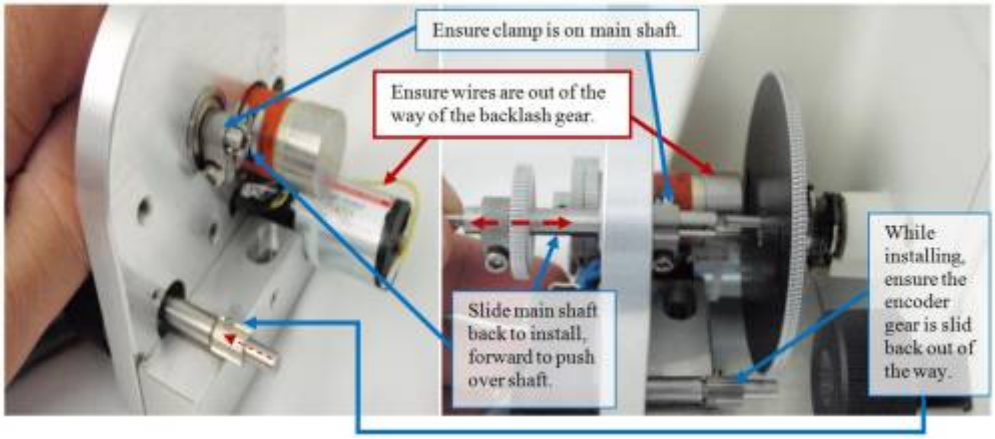
Locate the anti-backlash gear included with the ASI motor drive components. While holding the coarse focus knob on the right, carefully screw on the anti-backlash gear as shown above. Screw it onto the threaded bushing from which the coarse focus knob was removed. Orient it so that the protruding (shiny) part of the threaded bushing faces the microscope. Tighten it firmly by rotating it clockwise while gripping the right coarse focus knob.





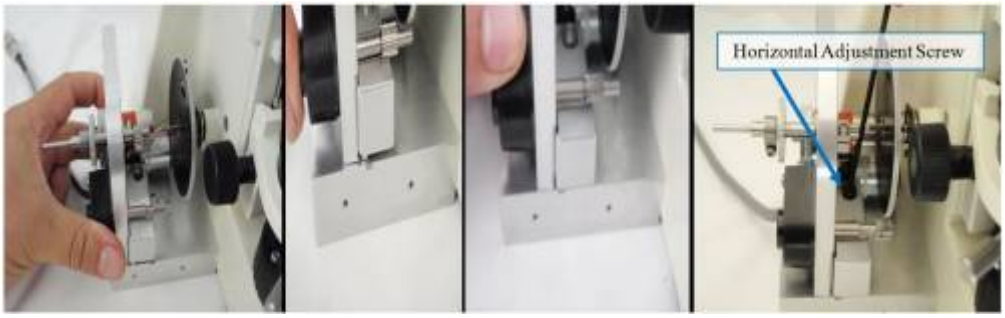
Next, Using the 2.5mm Hex Wrench, attach the z-drive to the adjustment bar with the M4x12mm Low

Head Cap vertical adjustment screw as shown above. Leave the screw loose enough that you can slide the z-drive up and down.



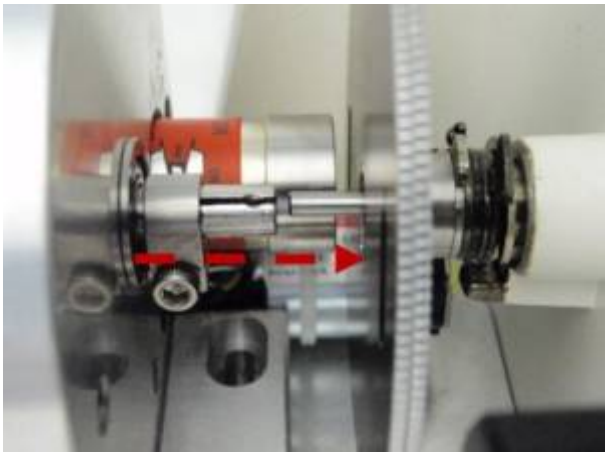
To allow easier installment: Ensure that the clamp is on the main shaft. Slide the main shaft out so that only a small portion of the shaft sticks out on the right (upper left photo). Loosen the encoder shaft gear and slide it back to where it will not engage the backlash gear while sliding on the Z Drive (.050 hex wrench). This will make it much easier to slide the Z- Drive into place over the adjustment bar on the baseplate.

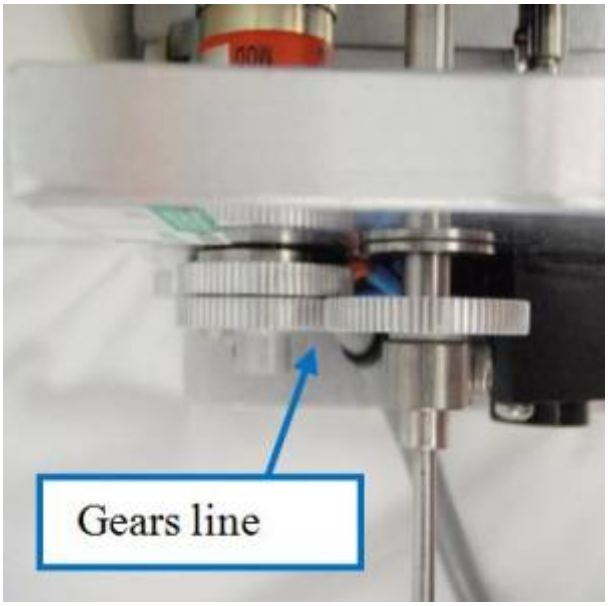
Warning: Ensure the motor wires are routed on the back side of the motor away from the backlash gear. If not routed properly the backlash gear can grind the wires causing them to eventually short out.



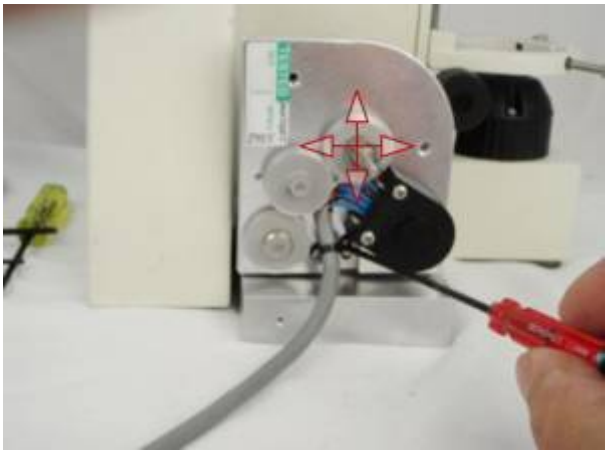
With the adjustment bar attached, carefully slide the z-drive into place. The tab on the bottom of the adjustment bar will drop into a notch in the baseplate pad.

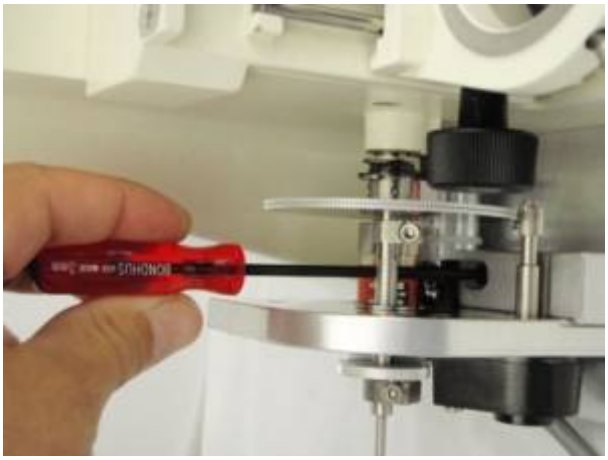
Next, using a 3mm Hex wrench, attach the adjustment bar to the baseplate pad using the M4x18mm Cap horizontal adjustment screw. At this point you should leave the screw loose so that the adjustment bar can slide back and forth.



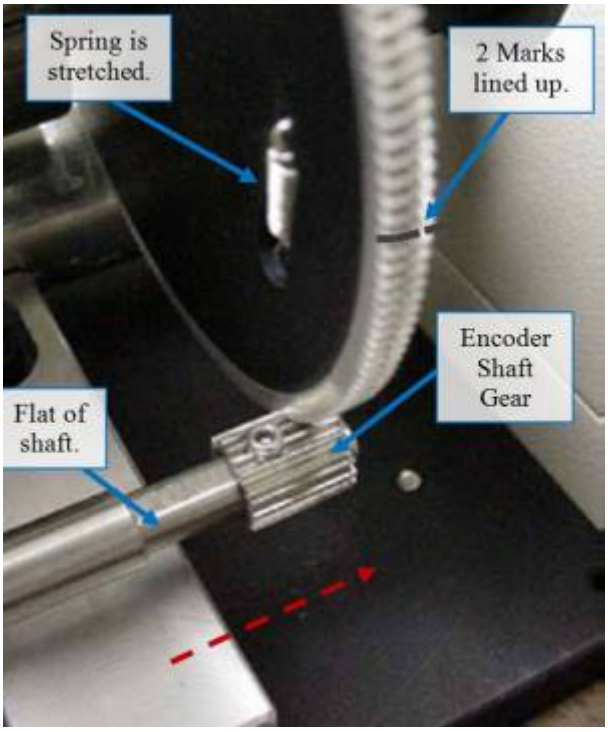


Next, while holding the drive in place, push the main shaft foreword so the hollow of the z-drive shaft slides over the fine focus shaft of the microscope. Be sure that the gears on the left side of the Z-Drive plate line up as shown in the photo above. Slide the shaft clamp forward towards the anti-backlash gear and tighten with a 7/64 Hex Wrench.



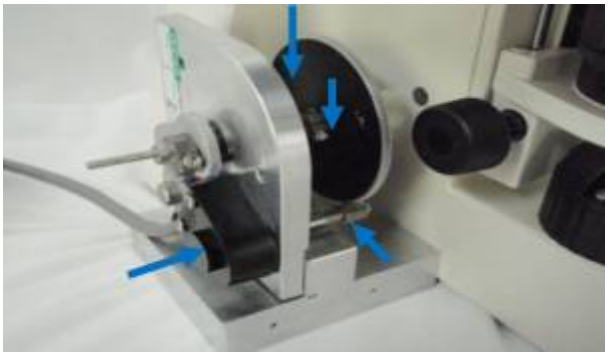


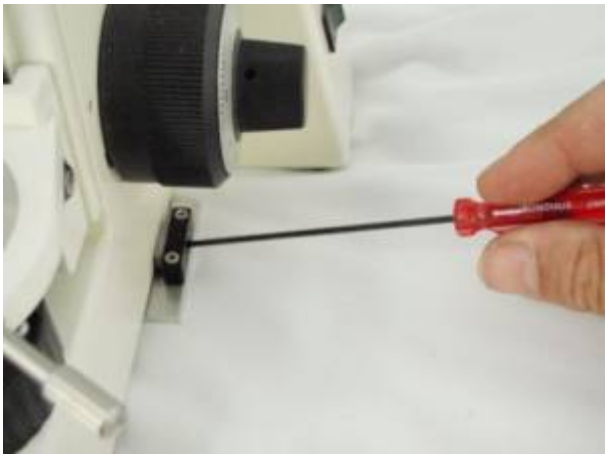
Turning the fine focus knob back and forth, adjust the horizontal and vertical position of the z-drive until the point of least resistance is found. Tighten the horizontal and vertical adjustment screws to hold the z-drive at this position.



Rotate the anti-backlash gear so that the two blackened teeth are visible. Now rotate the gear half that faces towards the microscope so that the two blackened teeth are aligned. Hold the gear halves in this position. Maneuver the encoder shaft gear until the gear approaches the anti-backlash gear. Continue to move in towards the microscope while rotating it slightly until the gears mesh and the two anti-backlash gears are fully engaged as shown above. Tension can now be released from the two halves of the anti-backlash gear. Check to see that the two blackened teeth are still aligned. If not, slide the gear back off and repeat the step. Ensure that the marks line up; that the two backlash gears and encoder gear engage; that set screw is over the flat of the encoder shaft, and that the backlash gears do not touch the encoder shaft gear's set screw. Tighten the encoder shaft gear into place by tightening the set screw with a .050" Hex wrench.

Turn the fine focus shaft – the knob should turn smoothly with the least amount of resistance. If the gears are binding – adjust the vertical and horizontal alignment screws. In rare cases you may need to loosen and retighten the main shaft clamp. If everything is running smooth, tighten down the vertical & horizontal adjustment screws, the clamp screw, gear set screw and the baseplate set screw.





Part 4-Installing the motor drive cover plate & fine focus knob.

Locate the motor drive cover. If attached to the baseplate pad, remove the 4/40 button head screws from the drive with the 1/16 “ Hex wrench. Be careful to route the z-drive cable so that it is not rubbing against the gear (see above left). Position the motor drive covert over the motor drive assembly so the cable goes out the cut out in the back, and the holes align on the front. Secure the cover in place using the 3 - 4/40 button head screws.

Slide the microscope fine focus knob over the shaft extension and secure in place using the .050” Hex wrench. Please note that the set screw in the knob should mate with the flat on the shaft.

This completes the procedure for installing the ASI motor drive on to the Zeiss Axiostar Plus Microscope.

If you need technical support, you can contact us at: 541-461-8181

zeiss, axiostarplus, zdrive