Zeiss Axioplan I, Axioskop I, Axioskop FS Installation Procedure

The procedure below outlines the steps necessary to install the ASI Microscope Focus Controller Drive onto the Zeiss Axioplan I/AxioskopFS /AxioskopFS microscope.

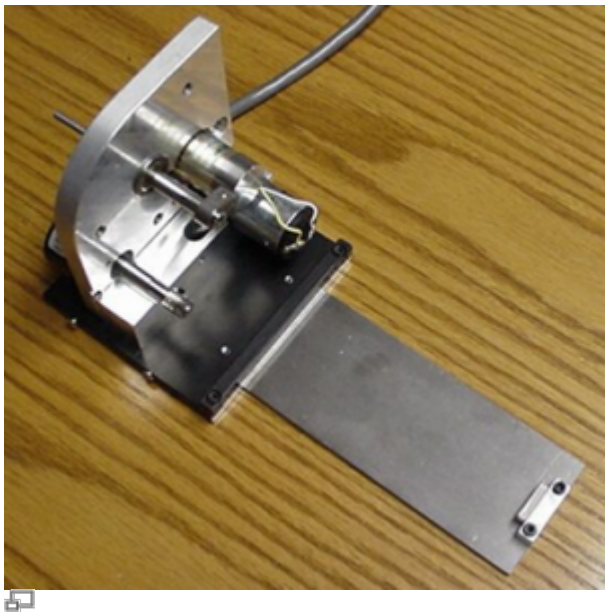
To perform these steps you will need the following tools: ASI provides the wrench and hex wrenches. .

medium Phillips screwdriver 14mm wrench 3mm, 5/64”,3/32” and 1/16” hex wrench

The procedure has four parts:

1. Installing the baseplate.
2. Installing the anti-backlash gear.
3. Installing and aligning the motor drive assembly.
4. Installing the motor drive cover plate & fine focus knob.

Part 1 - Installing the baseplate



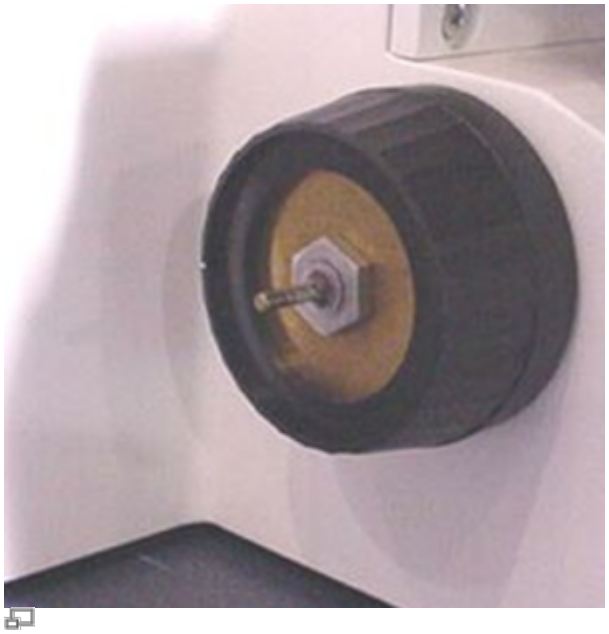
Uninstalled baseplate & drive

Removing the vertical adjustment screw

Installed baseplate

Locate the baseplate/drive assembly and remove the drive from the baseplate, if it is attached, (the drive may have been packaged separately) by removing the vertical adjustment screw as shown. Lift the front of the microscope up and slide the baseplate under the microscope so that the area where the shaft was is approximately centered under the left focus knob.

Part 2 - Installing the anti-backlash gear



Fine Focus Knob removed

Coarse & Fine Focus Knob removed

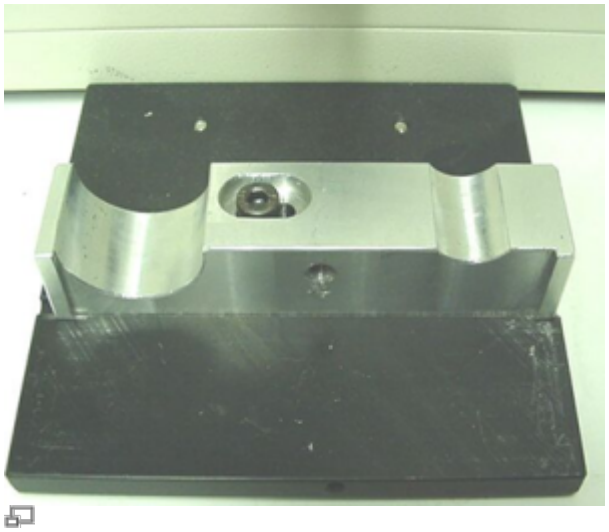
Installing Anti-Backlash gear

Remove the left fine focus knob from the microscope by loosening the setscrew, located in the side of the knob, using the 1.5mm hex wrench and then sliding the knob off the shaft.

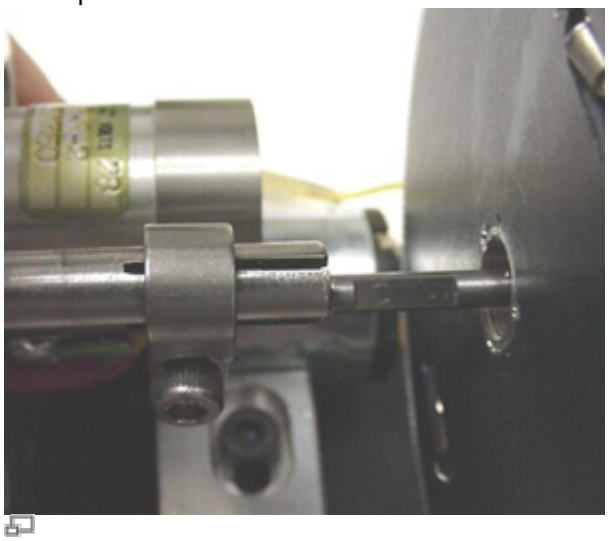
Remove the left coarse focus knob by first removing the nut, using the 14mm deep socket provided, and then unscrewing the coarse focus knob. The nut and knob turn counter-clockwise to unscrew. It will be necessary to grip the right coarse focus knob as the nut and left knob are loosened to prevent the coarse shaft from turning. If your Axioplan I/AxioskopFS s a model FS (fixed stage), be careful not to disturb the stop rings located under the left coarse knob.

Locate the anti-backlash gear. Screw it onto the coarse focus threaded bushing. Orient it so the protruding (shiny) part of the threaded bushing faces towards the microscope. Tighten this gear firmly in place by turning it clockwise while gripping the right coarse focus knob.

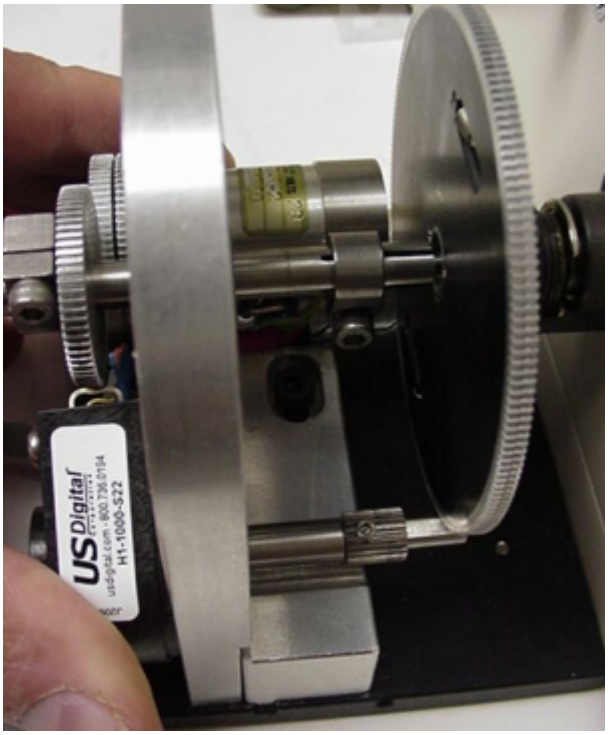
Part 3 - Installing and aligning the motor drive assembly



Base plate with Drive removed



Sliding drive shaft over fine focus shaft



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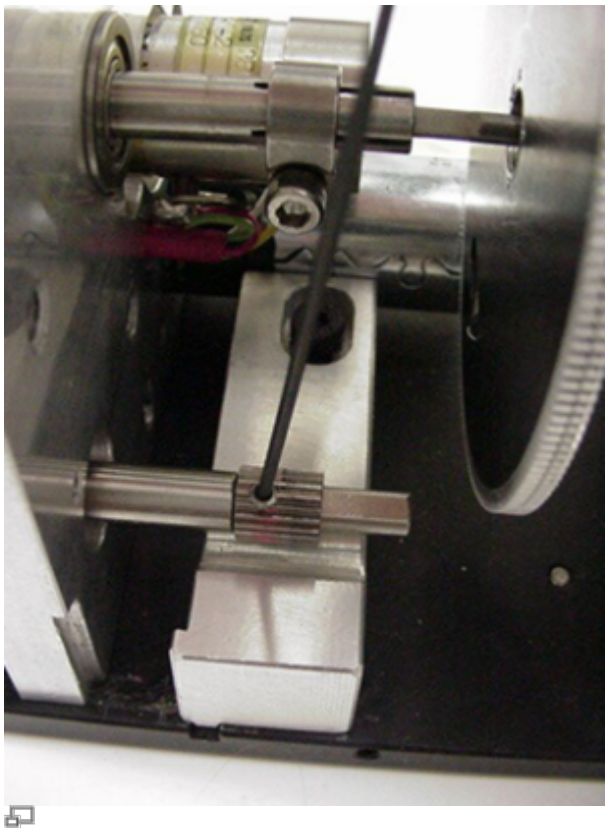
Loosen the horizontal adjustment screw just enough so that the adjustment bar can slide in the groove. The adjustment bar is attached to the baseplate near the left focus knob. The horizontal adjustment screw is in the top of the bar. Use the 3mm hex wrench.

Locate the motor drive assembly. Prepare it as follows:

Slide the drive shaft to the outside. The drive shaft is the shaft in the middle that goes through the pair of bearings in the driveplate. It has a gear clamped on one side and a slotted hole on the other. The side with the slotted hole has a loose hub clamp. Slide the shaft so that the loose hub clamp is next to the bearing.

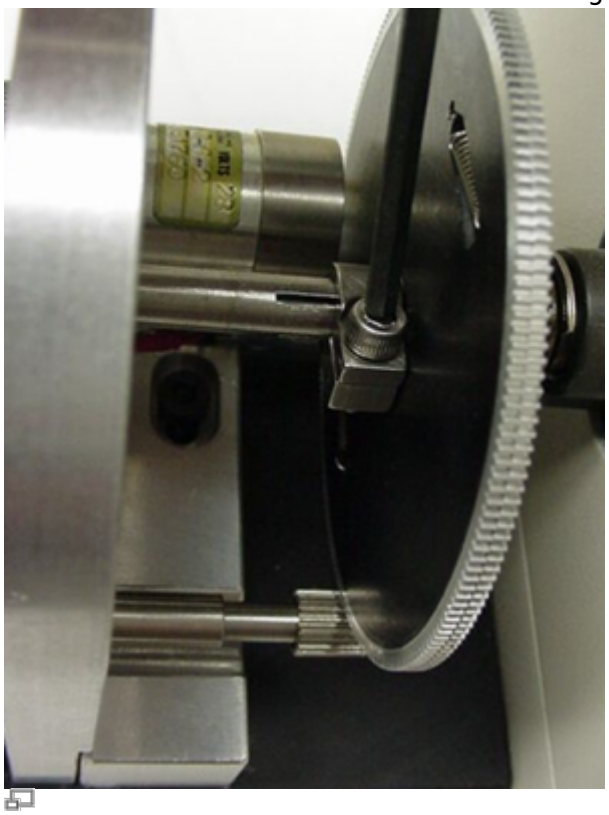
Orient the motor drive assembly with respect to the left side of the microscope so that the curved portion of the driveplate faces forward and up and the cable extends rearward.

Position the motor drive assembly onto the adjustment bar so that the notches in the edges of the driveplate align with the ridges in the edges of the adjustment bar. Thread in, but do not tighten, the vertical adjustment screw that was removed when taking the drive off of the baseplate

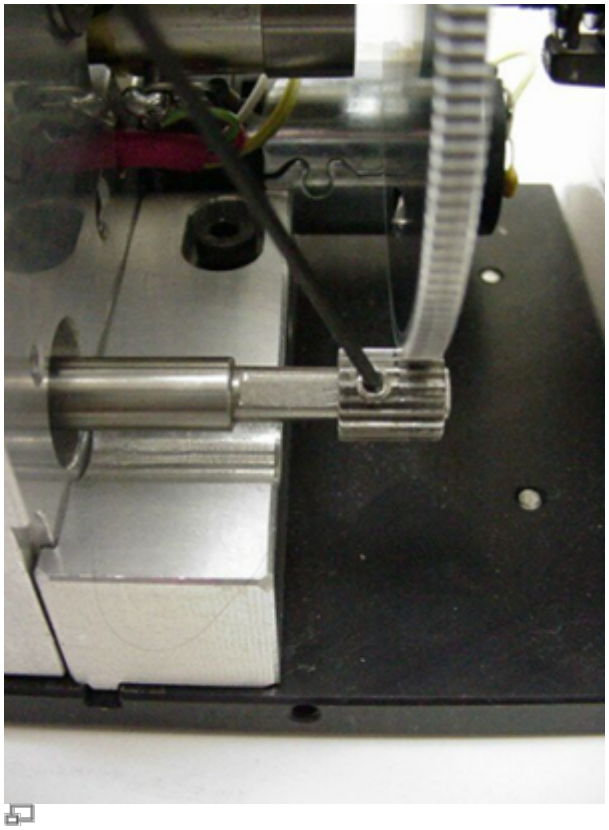


Loosen & slide encoder gear back

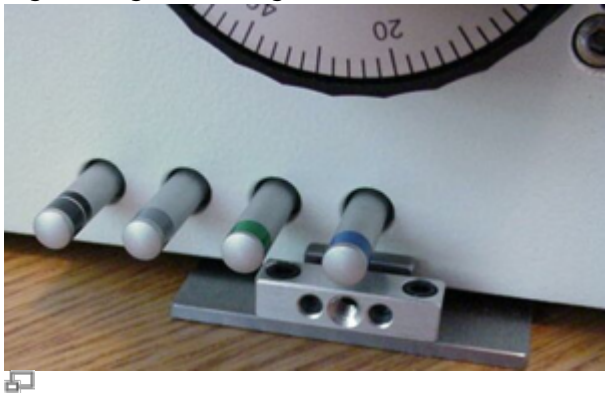
Gear on drive shaft should mesh with outer gear on clutch plate



Slide drive onto adjustment bar, slide clamp in until it touches anti-backlash gear, then Securely tighten clamp



Tightening encoder gear



After installing drive tighten baseplate clamp to secure drive to the microscope. After tightening clamp recheck alignment

While sliding in the drive shaft, maneuver the motor driveplate forward and backward, up and down, until the drive shaft is axially aligned with the fine focus shaft. Slide the drive shaft part way onto the fine focus shaft. Lightly tighten the horizontal and vertical adjustment screws to keep the drive shaft from binding due to tilting of the driveplate, then slide the drive shaft the rest of the way onto the fine focus shaft. When all the way on, the end of the drive shaft should go inside the anti-backlash gear. It will be necessary to rotate the drive shaft as it is being pushed in the last 3mm so that the teeth in the gear clamped to it mesh with the mating gear on the clutch.

Position the hub clamp midway over the slotted portion of the drive shaft (over the fine focus shaft) and tighten in place using the 7/64” hex wrench. After installing drive, tighten baseplate clamp to secure drive to the microscope.

To insure perfect axial alignment, loosen the horizontal and vertical adjustment screws, then re-tighten while rotating the right fine focus knob. There should be no noticeable increase in friction as the screws are tightened. If this is not the case repeat this step.

Check to make sure that the drive shaft clamp is securely tightened by holding the drive shaft gear,

the one that mates with the outer clutch gear, while turning the right fine focus knob. No slippage should occur. If it does, tighten the drive shaft clamp.

Using the .050” hex wrench, loosen the small setscrew in the small gear below and forward of the anti-backlash gear. Rotate the anti-backlash gear until the black marks in the gearteeth are visible. Rotate the two gear halves so the black marks are aligned. Slide the small gear forward until it meshes with both anti-backlash gear halves then extends beyond them slightly. It may be necessary to rotate the small gear slightly so the gears can mesh. Tighten the setscrew in the small gear.

Part 4 - Installing the Cover and Fine Focus Knob

Remove the three screws from the edge of the baseplate. Locate the motor drive cover and install it on the motor drive. The fine focus shaft extension should protrude from the hole in the cover and the cable should exit beneath the grommet in the back of the cover. Secure the cover in place with the three screws just removed.

Locate the original fine focus knob. Slide it onto the fine focus shaft extension until there is a small gap between it and the cover. Tighten it in place using the 1.5mm hex wrench.

zeiss, axioplan 1, axioskop fs, zdrive