

Zeiss AXIOVERT-35 Z Drive Installation Procedure

(left side drive)

The instruction steps below describe how to install the ASI motor drive on to the Zeiss Axiovert-35 Microscope.

The procedure has three parts:

1. Removing the plastic bottom cover from the underside of the microscope and installing in its place the motor drive base plate.
2. Installing the motor drive assembly on to the base plate and microscope.
3. Adjusting the motor drive.

The following tools will be required to perform this installation:

- 14mm deep socket wrench
- 7/64 inch hex wrench
- 1/16" hex wrench
- 3mm hex wrench
- .050 inch hex wrench
- medium slotted screw driver
- small slotted screw driver
- medium phillips screw driver

Part 1 - Installing the base plate

1. This step requires that the microscope be inverted. Before inverting the microscope, the eye pieces, illuminators, camera, camera tube, tower, and any other components that could be damaged or fall off, must be removed from the microscope. Once the microscope is prepared, it can be carefully lifted, turned over, then placed on its top on a clean soft surface.
2. Unscrew the six screws securing the plastic bottom cover. Remove the cover and set it aside as it will no longer be needed.
3. Locate the ASI base plate. Place it on the bottom of the microscope so it covers the back half of the base and so the extension is nearest the left focus knob. Position it so that the mounting holes are aligned with the threaded holes in the microscope base. Secure it in place with four of the six screws that held in place the plastic bottom cover.
4. Re-invert the microscope by carefully picking it up and turning it over.

Part 2 - Installing the drive assembly

1. Remove the left fine focus knob from the microscope by loosening the set screw in the side of the knob using the .050 inch hex wrench, then slide the knob off the shaft.
2. Remove the left coarse focus knob by first removing the nut using the 14mm deep socket provided, then unscrew the coarse focus knob. The nut and knob turn counter-clockwise to unscrew. It will be necessary to grip the right coarse focus knob for this procedure to prevent the coarse focus shaft from turning. Once the knob is removed, be careful not to disturb the exposed stop rings on the coarse focus shaft.
3. Locate the anti-backlash gear included with the ASI motor drive components. Screw it on to the threaded bushing from which the coarse focus knob was removed. Orient it so 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.
4. Loosen the screw in the rectangular block attached to the base plate so that the block can slide easily in the groove. Remove the vertical adjustment screw located in the side of the block. Locate the ASI motor drive assembly. During the next part of this procedure, the drive assembly will be positioned so that the drive shaft slips over the microscope fine focus shaft and the smallest gear of the drive assembly meshes with the large anti-backlash gear.
5. 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.
6. Now, position the drive assembly so that the drive shaft slips over the microscope fine focus shaft. Maneuver the drive assembly in towards the microscope until the smallest gear approaches the anti-backlash gear. Continue to move the drive assembly in towards the microscope while rotating it slightly about the axis of the fine focus shaft until the two gears mesh. 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, repeat step 5 and this step. If the smallest gear does not fully engage with the anti-backlash gear, loosen the set screw securing it to the shaft using the .050 hex wrench and slide it into a position that assures that the gears fully engage. If this adjustment is necessary, be sure that the two blackened teeth on the anti-backlash gear remain aligned.
7. Next, rotate the drive assembly slightly until the edge grooves at the bottom towards the microscope are aligned with the mating surfaces on rectangular block. Press the drive assembly onto the rectangular block.
8. Insert and thread in the vertical adjustment screw, but do not tighten it yet.

Part 3 - Aligning the drive assembly

1. Align the drive assembly to the microscope by carefully sliding it up and down, forwards and backwards slightly, while rotating the right fine focus knob. Alignment will be optimum when minimal friction is felt as the right fine focus knob is turned. Hold the drive assembly in this position. Tighten the horizontal and vertical adjustment screws. Recheck the alignment. Repeat this step if necessary.

2. Press in on the drive shaft to make sure it is fully over the microscope fine focus shaft. Center and tighten the clamp on the end of the drive shaft towards the microscope using the 7/64 inch hex wrench. Check the alignment of the drive shaft gear with the outer of the two gears on the clutch. If these gears do not mesh accurately, loosen the clamp on the drive shaft gear using the 7/64 inch hex wrench. Position the gears so they are in exact alignment. Tighten the gear clamp.

3. Remove the three painted screws located in the three edges of the base plate. Locate the ASI drive assembly cover. Position the cover over the fine focus extension shaft and motor drive assembly. Make sure the blue drive cable comes out under the grommet at the back. Secure the cover in place with the three screws just removed.

4. Slide the microscope fine focus knob over the shaft extension. Secure it in place by tightening the set screw in the side of the knob using the 0.50 inch hex wrench.

The eye pieces, illuminators, camera, camera tube, tower, and other components that were removed in Part 1 Step 1 can now be reinstalled on the microscope. This completes the procedure for installing the ASI motor drive assembly to the Zeiss Axiovert-35 microscope.

[zeiss](#), [axiovert 35](#), [av35](#), [zdrive](#)

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