

# Nikon Eclipse Ti2-A Z-Drive Installation Procedure

The procedure below outlines the steps necessary to install the ASI Microscope Focus Controller Drive onto the Nikon Eclipse Ti2-A microscope. Although not tested, the same Z-drive and instructions would work for Nikon Ti2-U as well. The procedure for installing Left or Right-hand Z-drive is identical. Only the pictures from the Left-hand Z-drive are shown below.

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

- Phillips head screwdriver
- 2.5 mm hex wrench
- 2 mm hex wrench
- 1.5 mm hex wrench
- 5/64" hex wrench
- narrow flat head screwdriver or a pick

The hex wrenches are provided by ASI.



Phillips head screwdriver and 2.5 mm, 2 mm, 1.5 mm, 5/64" hex drivers



Thin flat head screwdriver and a pick

The procedure has four parts:

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

## Removing the left or right fine focus knob

The left-hand Z-drive is installed on the left fine focus knob; the right-hand Z-drive is installed on the right fine focus knob.



Left knob



Right knob

First, remove the plastic cap located below the fine focus knob with a flat head screwdriver or a pick. (Otherwise, it will prevent the Z-drive from sitting flush against the microscope.)



Remove the plastic cap

Pull off the rubber boot covering the fine focus knob.



Remove the rubber cover

Use the Phillips screwdriver to remove the two small Phillip screws in the fine focus knob and then pull the knob straight off to expose the brass adapter plate. (Keep up with the knob and screws because we will use them later.)



Remove the knob



Left fine focus knob brass adapter plate



Right fine focus knob brass adapter plate

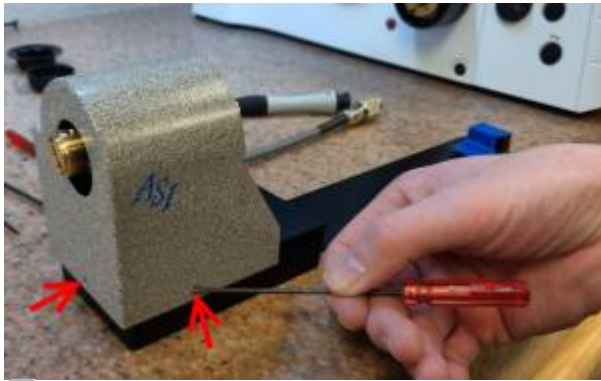
The brass adapter plate for the left and right focus knob look slightly different, but please note that when installing a left-hand side Z-drive, it is not necessary to remove the right-hand side fine focus knob and vice versa.

## Installing the baseplate

ASI ships the Z-drive partially assembled. The Z-drive and its cover come attached to the baseplate.

Use the 2 mm hex wrench to remove the Z-drive cover; it is held in place with two pan head screws<sup>1)</sup>.

On the left-hand Z-drive the two cover screws are located on the bottom, one on each side. On the right-hand Z-drive, the two cover screws are located on the same side.



Location of left-hand drive cover screws




Location of right-hand drive cover screws


Next, detach the Flex coupler and the brass shaft coupler from the rest of the Z-drive assembly with a 5/64" hex wrench.






 Detach the flex coupler and brass shaft coupler from Z-drive assembly




 Detach the flex coupler and brass shaft coupler from each other



 Screws in the brass shaft coupler attach to the microscope's brass adapter plate (the screws have been removed for illustrative purposes here)

Use the 1.5 mm hex wrench to attach the brass shaft coupler to the microscope's focus knob adapter plate.



 Attach the brass shaft coupler to the focus knob adapter plate

Remove the masking tape from the clamp on the baseplate.



Remove masking tape from the baseplate's clamp

Lift the front of the microscope up and slide the baseplate under the microscope so that the unit is centered under the focus knob.



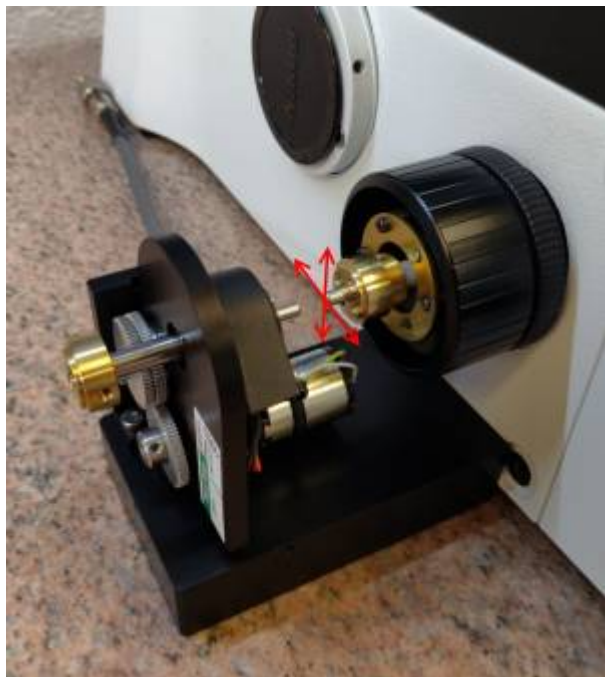
Lift the microscope and slide the baseplate into place

Roughly align the Z-drive shaft and brass shaft coupler. This doesn't have to be perfect; further adjustments can be made with the flex coupler and alignment screws later.



Align the Z-drive assembly to the fine focus knob





Roughly line up the Z-drive shaft to the brass shaft coupler both horizontally and vertically

When satisfied with the baseplate's position, lock it in place by engaging the clamp on the other side with a 1.5 mm hex wrench.



Secure the baseplate to the microscope

## Installing and aligning the motor drive assembly

Detach the Z-drive assembly from the baseplate by unscrewing the horizontal adjustment screw with a 2.5 mm hex wrench.



Detach the Z-drive assembly from the baseplate

This will give you clearance to place the flex coupler back on the brass shaft coupler. Do not tighten the screws on the flex coupler yet.



Place flex coupler onto the brass shaft coupler

Realign the Z-drive assembly on the baseplate with the shaft inserted into the flex coupler.



Realign the Z-drive assembly's shaft with the flex coupler



Remount the Z-drive assembly onto the baseplate

When the Z-Drive assembly and brass shaft coupler are well aligned, the flex coupler can slide back and forth easily.



The flex coupler is able to slide back and forth easily

If slight vertical adjustment is needed loosen the two hex head screws<sup>2)</sup> with the 2.5 mm hex wrench.



Vertical adjustment screws

If horizontal adjustment is needed loosen the one horizontal hex head screw<sup>3)</sup> with the 2.5 mm hex wrench.



Horizontal adjustment screws



Tighten the screws when done.

Then tighten the flex coupler screws with a 5/64" hex wrench. Leave ~1 mm gaps between the flex coupler and the Z-drive assembly and the brass shaft coupler.



Secure the flex coupler




~1 mm gap on either side of the flex coupler

## Installing the motor drive cover plate & fine focus knob

Install the cover onto the Z-drive assembly with the two pan head screws<sup>4)</sup> with the 2 mm hex wrench.






 Reinstall cover

Attach the fine focus knob onto the Z-drive's brass adapter plate with the two Phillips screws and screwdriver.



 Reinstall fine focus knob

Place the rubber boot back on the focus knob.



Installation complete

This completes the procedure for installing the ASI motorized Z-drive on to the Nikon Eclipse Ti2 Microscope.

[zdrive, nikon, ti2](#)

1)

M3 screws

2) 3)

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M4

4)

M3

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