

Z Encoder Installation Instructions

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INSTRUCTIONS FOR MOUNTING Z ENCODER PROBE BRACKET MODEL H394 TO LEICA DMIR INVERTED MICROSCOPE

1. Mount encoder reference bracket onto nosepiece as shown below. Note you will need to remove the glass contact plate from the rounded end of the assembly.



2. Mount the rod and probe clamp assembly onto the probe reference bracket as shown below. The rod and probe clamp assembly may be found loose in your kit of parts or it may already be installed onto the probe main bar.



3. Install Encoder probe into probe clamp and tighten clamp as shown below.



4. Mount stage onto microscope. Ensure that probe maintains contact with stage bottom throughout the required range of motion. The height of the encoder can be adjusted by moving it up or down within the probe clamp.



End of Instructions – JH 6/26/03

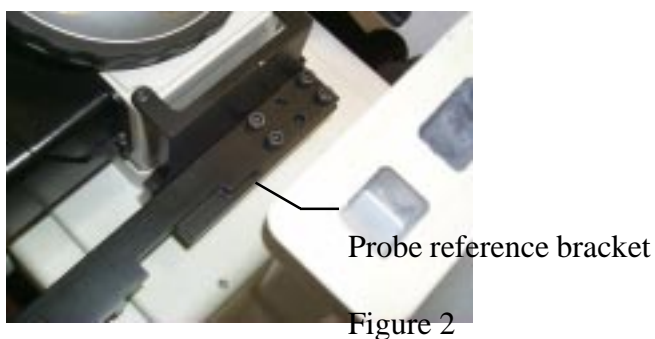
Z Encoder Probe Installation Instructions for the Nikon TE 200/300 series microscopes.

These instructions are specifically for mounting the Prior Scientific Z axis encoder probe and the Universal Mounting bracket to the Nikon TE 200/300 series microscopes.

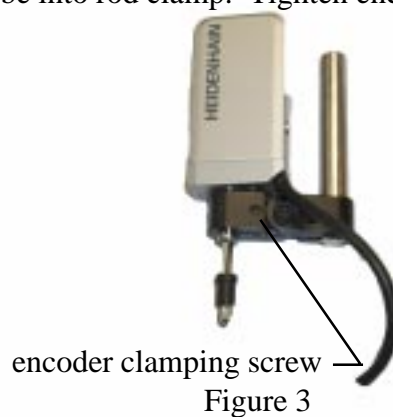
- (1) Remove existing manual or motorized stage.
- (2) Loosen set screw on the side of microscope nosepiece. Slide nosepiece towards rear of the microscope exposing the 2 threaded holes at the front. See figure 1



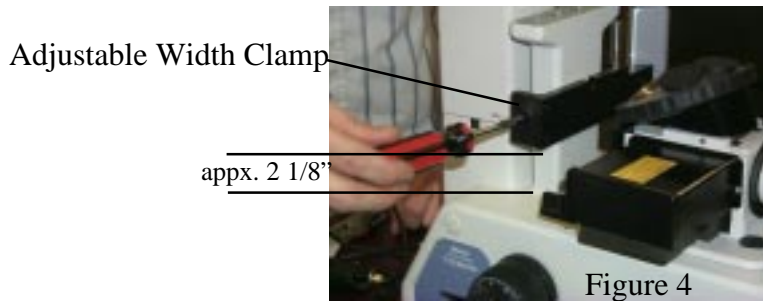
- (3) Mount probe reference bracket using 2 button head screws supplied. Tighten securely. See figure 2



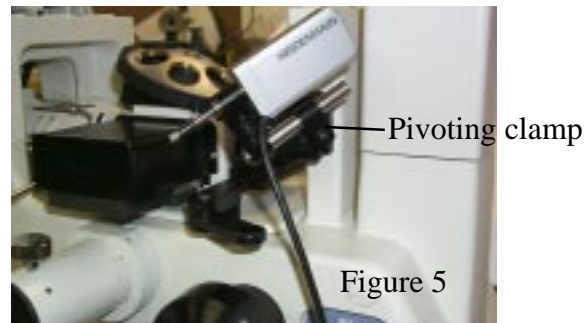
- (4) Completely insert Z encoder probe into rod clamp. Tighten encoder clamping screw securely. See figure 3



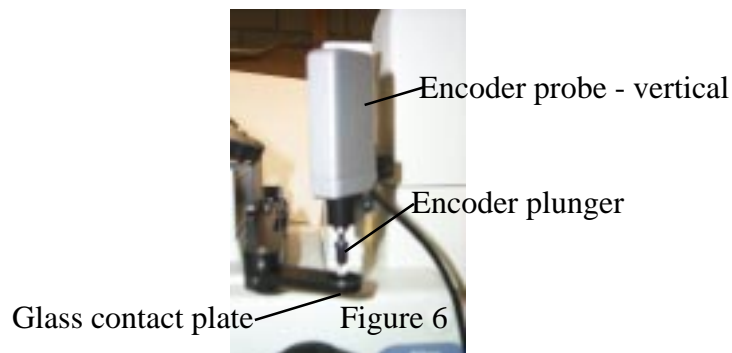
- (5) Using a slotted screwdriver, tighten the Adjustable Width Clamp onto the front stage pillar. The distance from the bottom of the clamp to the top of the microscope base should be approximately 2 1/8" (54mm). See figure 4



- (6) Insert the Heidenhain encoder and rod assembly into the pivoting clamp on the adjustable width clamp. Please note that the clamp must be at an angle to insert the rod. See figure 5



- (7) Rotate the pivoting clamp so as to align the Heidenhain encoder vertically. The encoder must be installed vertically to operate correctly. Compress the encoder plunger completely and move the glass contact plate underneath the plunger. Slowly release the plunger. The plunger should make contact with the contact plate in approximately the center of the plate. Tighten all screws securely. See figure 6



- (8) Move microscope nosepiece back into position and tighten set screw securely.
- (9) Confirm proper installation by turning the coarse focus up to the highest focus position. At this position the encoder plunger should be almost completely compressed. If the encoder is completely compressed, then the adjustable width bracket must be moved upward to allow full range of focus.
- (10) The bracket and Z encoder probe installation is complete. Plug encoder into either the DRO or controller provided and re-install stage. Note, if Heidenhain encoder comes into contact with the underside of the stage during installation, the adjustable width bracket must be moved downward.

Mounting Z Encoder Probe to Nikon TE2000

1. Remove the two M5 nosepiece mounting screws as shown in the photo below.



2. Place probe bracket on top of nosepiece and screw bracket through the top of the nosepiece and into the microscope using the two M5 x 40 captive fasteners supplied. The view below is through the opening of Prior model H117__TE motorized stage. Note the correct orientation of the bracket.



3. Mount the probe to the bracket as shown below. (The stage has been removed for clarity.) Insert the metal rod and tighten the set screw on each side of the bracket to secure the rod. Slide the appropriate end of the “knuckle” assembly onto the encoder probe and tighten only enough to hold it in place. Finally, slide the open end of the “knuckle” onto the rod (no need to tighten yet).



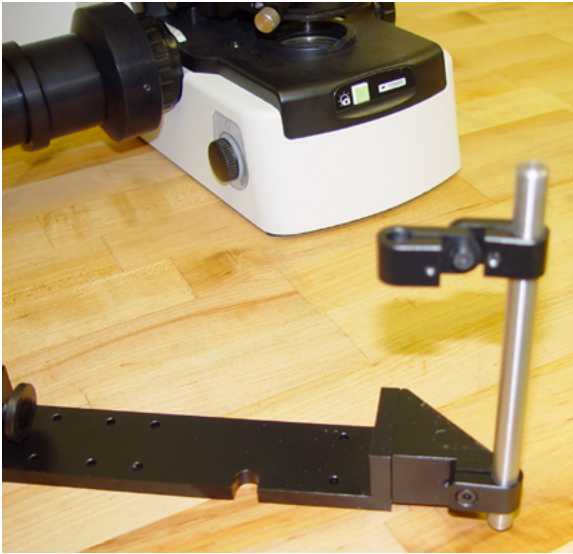
4. Install the stage, taking care that there is sufficient clearance between the probe assembly and the stage. Adjust the position of the encoder probe so that it makes contact perpendicular to a flat area of the bottom of the stage. Rotate the coarse focus knob and adjust the probe assembly accordingly to ensure contact with the bottom of the stage throughout the required range of travel. (Make sure that the probe does not impede the focus mechanism at the lower limit of travel.) When satisfied with the position of the probe, tighten the entire assembly to prevent slippage. The complete assembly should resemble the photo below.



Mounting Z encoder probe on Nikon 80i (H122EK80i)

Tools Needed: 3mm hex key
 Flat screwdriver

1. Rotate triangular block so that it is oriented as shown in Figure 1. Mount post clip onto triangular block as shown in Figure 1.



2. Place clamp plate under microscope just behind the microscope mounting feet and tighten clamp with flat head screwdriver as shown below.



3. Adjust the probe plunger so that it contacts the bottom of the stage making sure that it is clear of any tapped holes on the stage. Adjust the height of the probe so that it maintains contact with the baseplate over the required range of focus.

End of Instructions – JH 10/20/04

Z-Axis Encoder Probe Installation for IX50/70

Introduction

These instructions illustrate how to correctly mount and configure a Prior Z axis encoder probe and associated universal mounting bracket when used in conjunction with an Olympus IX50/70 inverted microscope.

Tools Required

- Flat and cross head screwdrivers
- 3mm Hexagon Key

Parts List

- Heidenheim Probe (1)
- Mounting Blocks (2)
- Probe Reference Bracket (3)
- Probe Clamp and Bar (4)
- Frame Bracket (5)
- M3 x 50 Screws and Washers (6)

See Figure 1



Figure 1

Installation Instructions

- 1) Remove existing stage, manual or motorised, from the microscope.
- 2) Remove the two cross-head screws located in the plastic focus block cover, immediately to the rear of the nosepiece (figure 2).



Figure 2

- 3) Position a mounting block over either hole.
- 4) Mount the probe reference bracket on top of the mounting blocks so that the encoder contact plate protrudes from the left hand side of the microscope.
- 5) Secure the probe reference bracket using the two M3 x 50 screws provided (these should pass through the bracket and mounting blocks into the microscope stand). It is important that the bracket is oriented such that the glass reference surface is facing downwards (figure 3).



Figure 3

- 6) Using a small flat-bladed screwdriver prise the circular plastic plug from the rear left of the microscope (figure 4)



Figure 4

- 7) Fit the Frame Bracket onto the rear left corner of the instrument, carefully aligning the clamping screw with the mounting hole. Tighten the clamping screw to secure the Frame Bracket (figure 5).



Figure 5

- 8) Install the Probe Clamp and support bar into the frame bracket. There should be a gap of approximately 32mm between the Frame Bracket and Probe Clamp, (figure 6).



Figure 6

- 9) Pass the encoder probe through the aperture in the Probe Clamp from below until it makes contact with the glass reference surface on the underside of the Probe Reference Bracket (figure 7). Tighten the clamp to hold the probe securely.

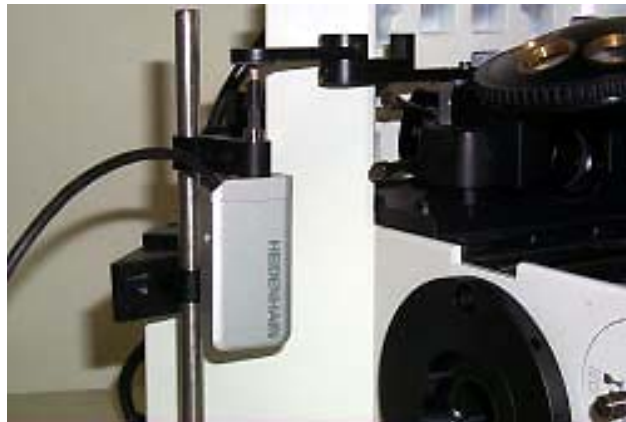


Figure 7

- 10) Ensure that the encoder probe makes contact with approximately the centre of the glass reference disc. If this is not the case depress the probe so that contact is lost and rotate the contact plate (after loosening the elbow joint) until the probe does make contact at the right point.
- 11) Installation of the Z Encoder probe is now complete. Confirm that the probe maintains contact with the reference surface throughout the desired focus range. The probe itself has a range of 12mm. If the probe loses contact at any point adjust its position by loosening the Probe Clamp and moving the unit up or down the circular bar as required.

Mounting Z Encoder Probe to Olympus IX51/71

1. You will probably need to remove the microscope stage before proceeding. Remove the rearmost silver screw at the back right of the IX nosepiece as shown in Figure 1.

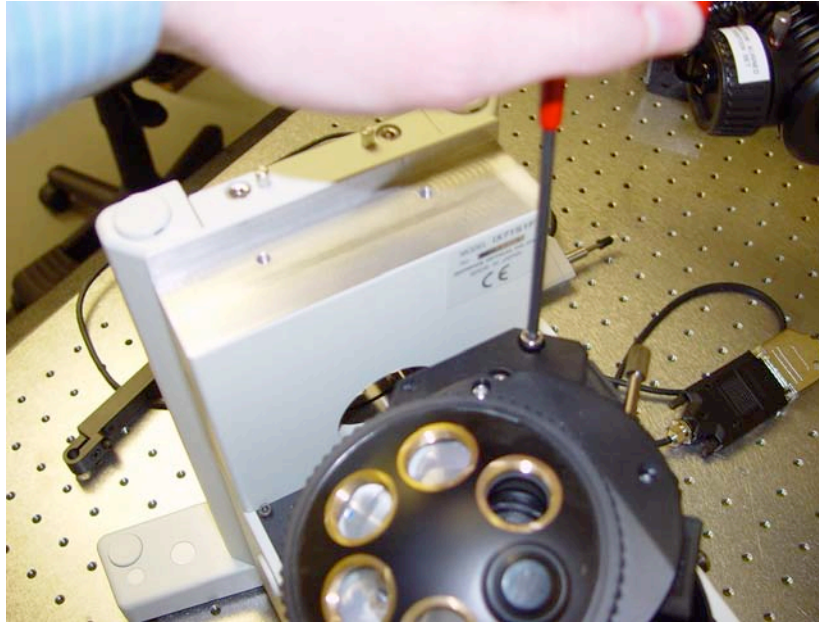


Figure 1

2. Lay the encoder mounting bracket across the rear of the nosepiece as shown in Figure 2. Note that the probe clamp should be situated at the left end of the bracket. Secure the bracket to the nosepiece using the M5 x 35 screw provided.

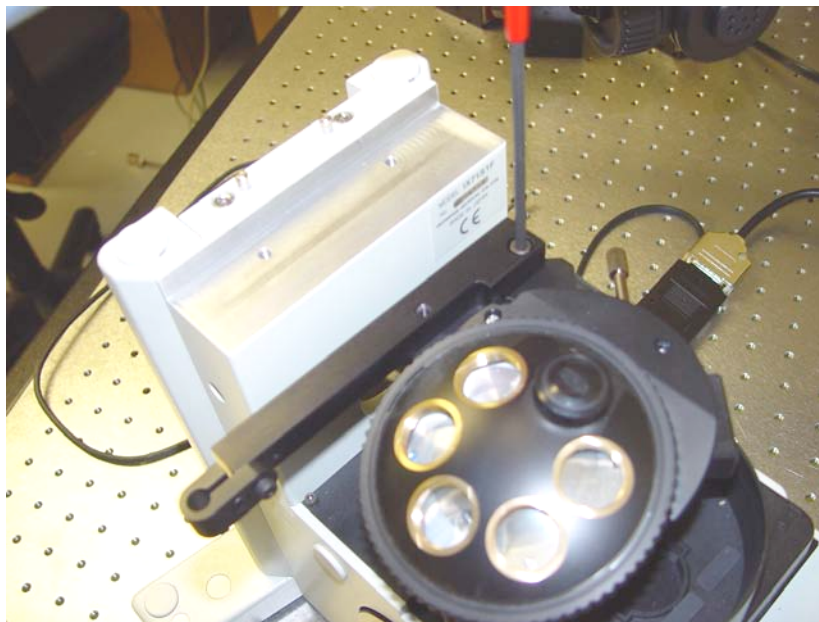


Figure 2

3. Screw up through the underside of the nosepiece assembly into the bracket using the M5 x 25 screw provided. The arrow in Figure 3 points out the location of the installed screw.



Figure 3

4. Figure 4 shows the complete assembly with the probe installed. To verify full focus travel, carefully attach the stage (you may want to attach the stage before clamping the probe in place). The probe should maintain contact with the underside of the stage throughout the full focus travel—slowly rack the coarse knob to the top and bottom of travel to confirm this, adjusting the probe if necessary.

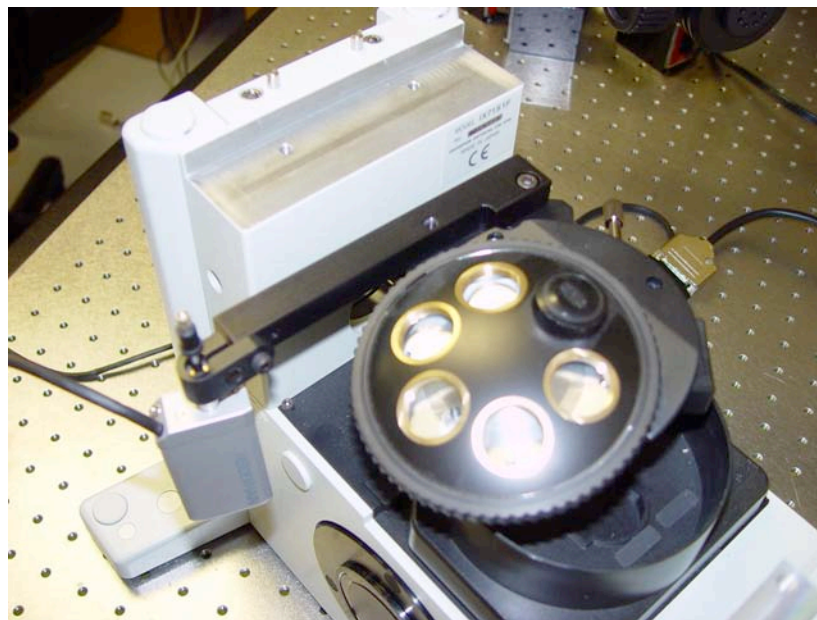


Figure 4

INSTRUCTIONS FOR MOUNTING Z ENCODER PROBE AND BRACKET ONTO ZEISS AXIOSKOP 2

1. Clamp the frame bracket onto the left hand side microscope leg as shown below. Adjust the top clamp so that the probe bar angles down and under the stage.



2. Install the Heidenhain probe so that it maintains contact with the stage bottom throughout the required focus movement as shown below.



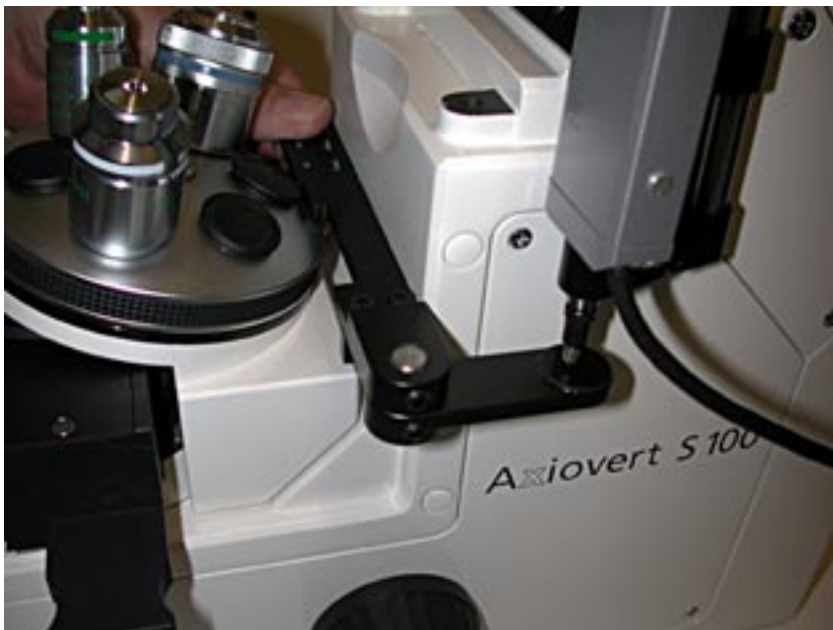
End of Instructions JH 5/14/03

INSTRUCTIONS FOR MOUNTING Z ENCODER PROBE ONTO ZEISS AXIOVERT/OBSERVER

1. Clamp frame bracket assembly onto stand as shown below with encoder probe facing down.



2. Clamp probe reference bracket onto nosepiece as shown below with glass contact plate facing upwards. Adjust the probe clamp and rod as required to ensure that probe maintains contact with glass contact plate over required range of focus.



End of Instructions – JH 5/8/03

Instructions for Mounting Z Encoder Probe H394

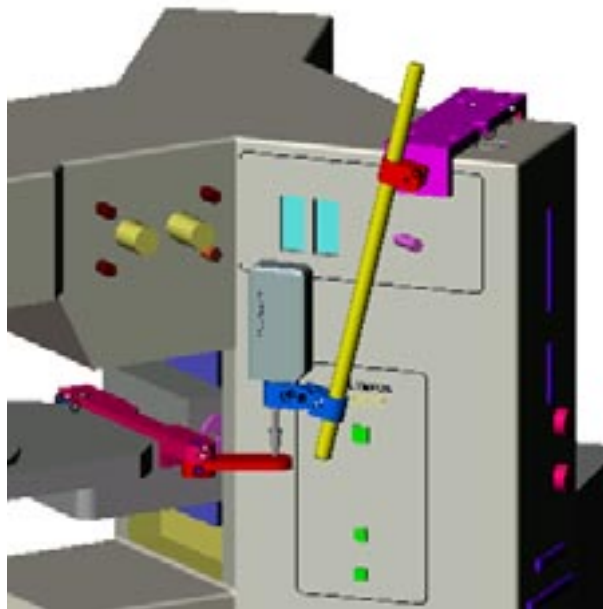
The H394, Z encoder mounting kit is used with the Heidenhain probe and cable (part number H393) and an OptiScan controller (part number ES9E) to measure focus movements with a resolution of 0.05 μ m.

The kit consists of three parts:

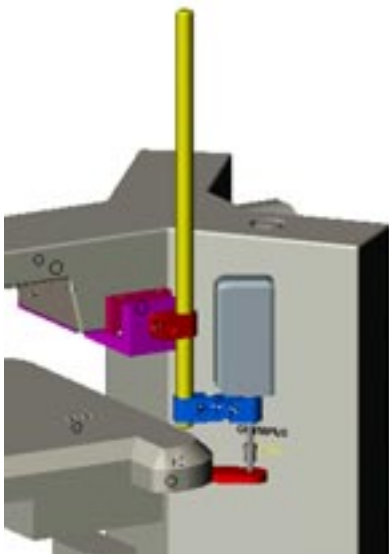
1. An adjustable width clamp for attachment to the microscope limb.
2. As above but for clamping onto the microscope stage bracket.
3. A rod with a clamp for attaching the Heidenhain probe assembly.

Due to the differences in the design of the microscopes, certain parts may not be needed to mount the probe. Examples of the methods of mounting for some popular microscopes are shown as follows:

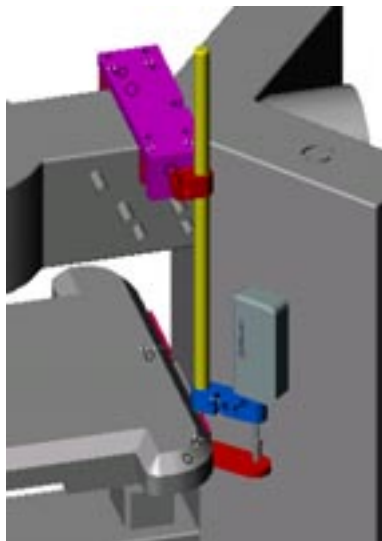
AX70



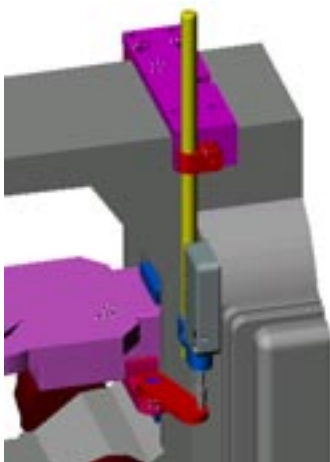
BX40



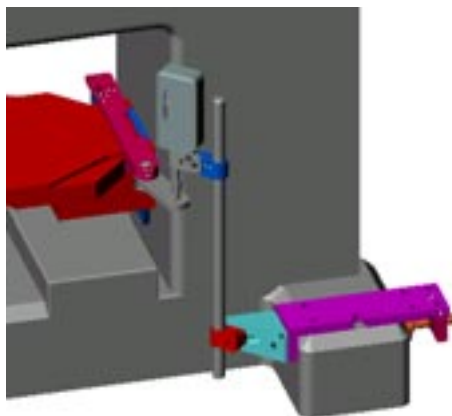
BX60



E400



E800



INSTRUCTIONS FOR MOUNTING PRIOR SCIENTIFIC, INC. MODEL H394, Z ENCODER BRACKET TO NIKON TE2000

Tools required:

Flat end screwdriver

Metric Allen Keys

1. Clamp probe reference bracket onto the rear of the microscope nosepiece by tightening the M6 grub screw and thrust pad assembly. The glass contact plate should be facing down. If this is not the case then you need to reverse the contact plate by loosening the set screw that holds the contact plate onto the bracket and turning the plate over. The contact plate should extend out to the left of the microscope and angle slightly towards the front of the microscope. See below.



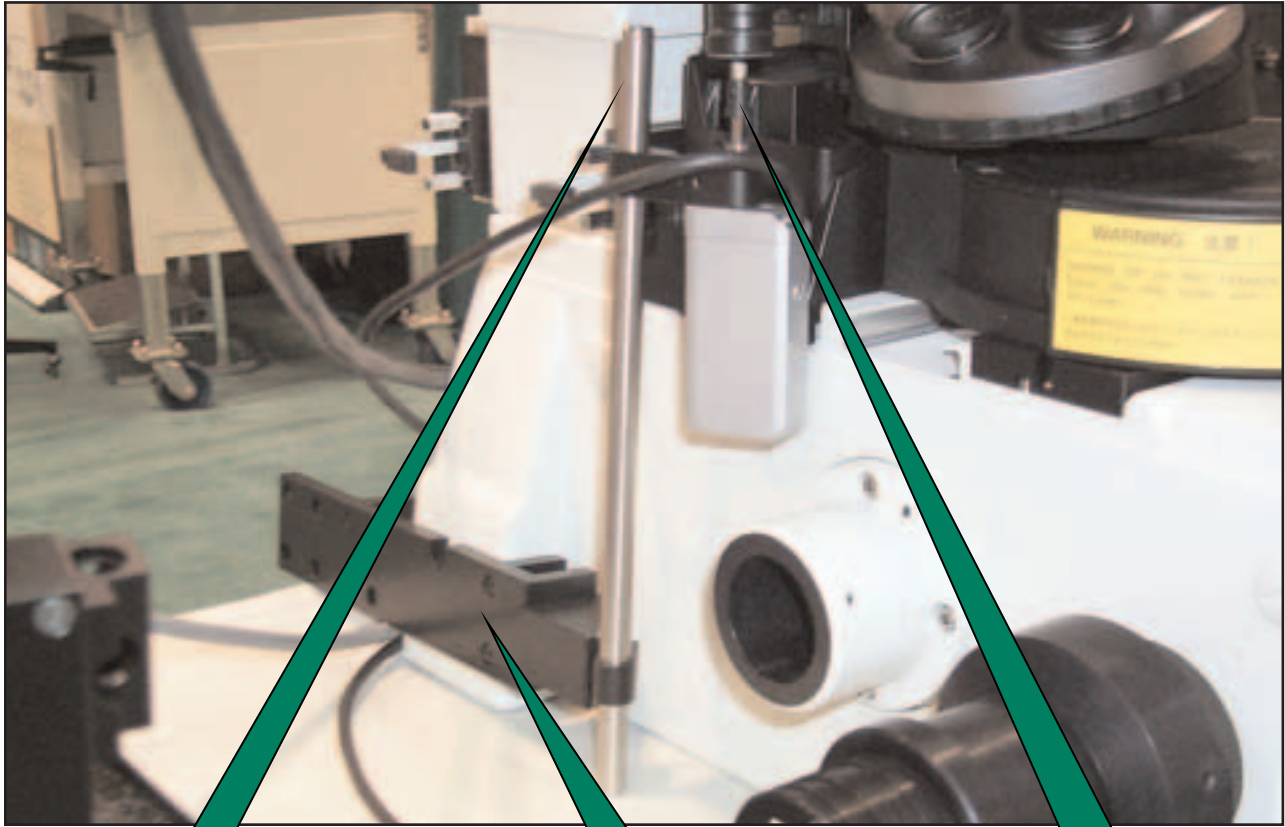
Probe reference bracket



Glass contact plate

INSTRUCTIONS FOR MOUNTING PRIOR SCIENTIFIC, INC. MODEL H394, Z ENCODER BRACKET TO NIKON TE2000

2. Clamp the frame bracket onto the left hand side leg of the microscope as shown below. The probe rod assembly can then be installed into the frame bracket with the encoder itself in the inverted position shown below. Adjust the encoder rod clamp so that the plunger of the encoder probe comes into contact with the glass contact plate at roughly the center. See below.



Probe rod assembly



Frame bracket



Encoder plunger

3. Check to see that the encoder probe maintains contact with the glass contact plate throughout the required focus travel. If the probe loses contact you will need to adjust the encoder rod clamp up or down.

4. Verify that the Prior controller has not been powered on, and plug the encoder probe into the location in the rear of the controller marked "Enc. Z". Installation is now complete. When you turn the controller on, it will run an auto-initialize routine to confirm that the encoder is plugged in and working properly.

Focus Drive Mounting Instructions for H122X200 Zeiss Axiovert 200

Tools required

2 mm Hex. Wrench
3 mm Hex. Wrench
Medium Flat Blade Screwdriver

Fitting Instructions

If a stage is fitted to the microscope it will be necessary to remove it before installation.

- 1) Firstly attach the probe reference bracket to the microscope objective holder mount with the two M3 x 10 screws provided (see fig.1).



Fig. 1

- 2) Using a flat blade screw driver attach the frame mounting bracket assembly as shown in fig.2



- 3) If necessary adjust the triangular end block by loosening it's mounting screw and rotating, so that the encoder mounting shaft will be as perpendicular as possible when fitted (fig. 3).



- 4) Fit encoder mounting shaft and encoder as shown in fig. 4 ensuring that the probe is positioned centrally on the glass reference disc (fig. 5)



Fig. 4

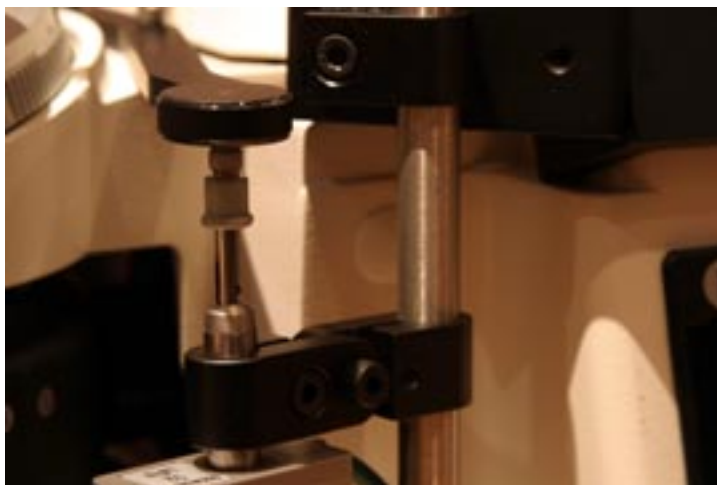


Fig.5

- 5) **It is most important that the focus motor assembly is fitted to the right hand side of the microscope only.** Before attaching the focus motor, the rubber cover which is normally fitted over the fine focus knob will need to be removed as shown in fig. 6



Fig. 6

- 6) Place the two halves of the focus adapter sleeve over the coarse control knob as shown in fig. 7

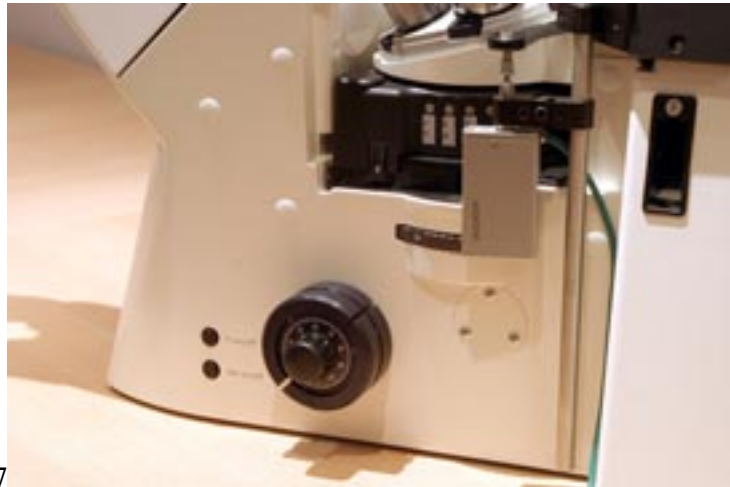


Fig. 7

- 7) While holding both halves of the focus adapter sleeve in place, slide the outer housing of the focus motor assembly over them as far as it will go. Tighten the three setscrews that are positioned around the periphery of the outer housing until secure, ensuring that they line up with the recess that runs around the outer surface of the sleeve. Care should be taken not to over tighten or position any of the screws over the gaps between the two halves of the adapter sleeve. Check that the unit has been tightened sufficiently by taking hold of it and turning it, if the adapter is correctly fitted it will stay attached.

- 8) Slide the focus motor into the outer housing as far as it will go and while applying gentle pressure to the motor tighten the clamp screw as shown in fig. 8. This will hold the motor in place. The rubber drive bush on the end of the motor spindle should now be pressing against the end surface of the fine focus knob. This can be confirmed by manually rotating the exposed fine knob on the opposite side of the microscope and feeling the resistance caused by the detent positions of the stepper motor as it rotates. This will not cause any damage to the focus motor.



Fig. 8

- 9) Confirm that the controller is switched off before connecting the digipot (if supplied), focus motor and encoder cables to the relevant sockets on the rear of the controller.
- 10) Re-fit stage.
- 11) Installation is now complete.

