

PS3H122R | Manual

Focus Motor
V 1.1



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The following instructions refer to the standard split-sleeve mounting. Additional installation instructions can be found on our website, www.prior.com, and navigate to 'Support', 'Downloads', and then 'Help Sheets and Installation Instructions', before scrolling down for instructions for your specific microscope. If your microscope is not listed, please contact Prior Scientific directly for advice and support.

Instructions

- 1) Loosen the clamp screw on the focus motor assembly and remove the focus motor from the sleeve (Figure 1).

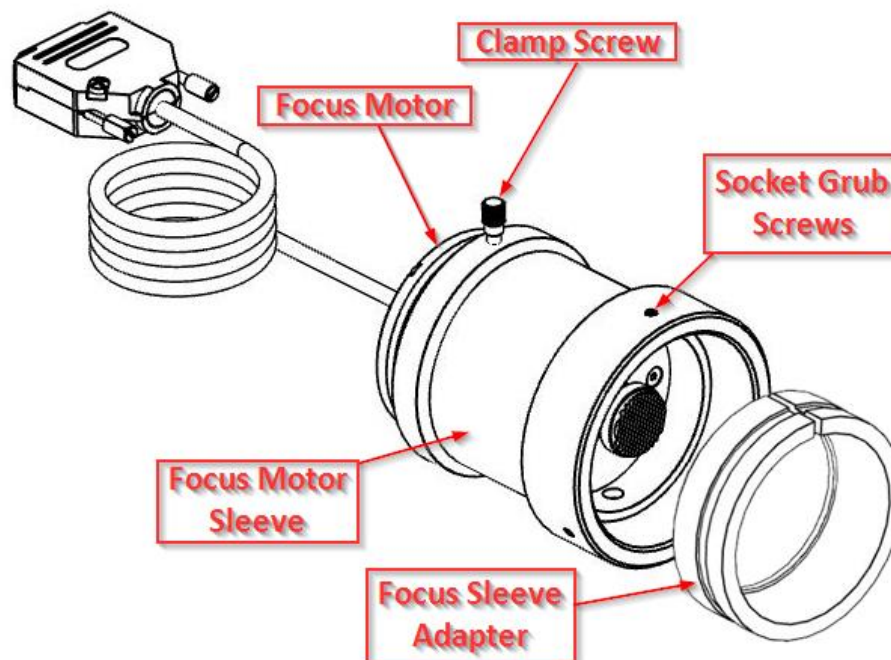
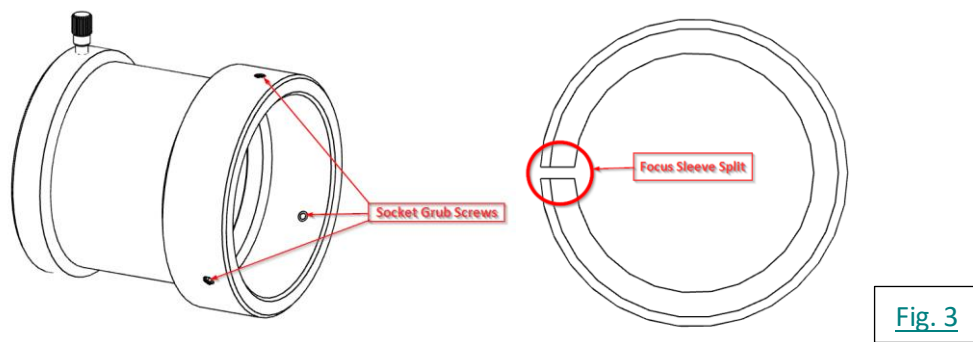
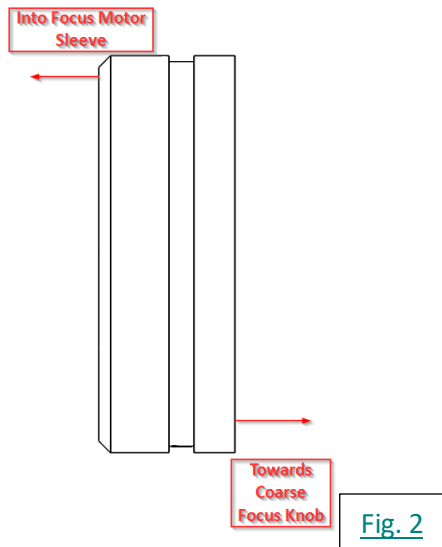


Fig. 1

- 2) Loosen the 3 socket grub screws around the outside of the focus motor sleeve with a 2mm Allen wrench until the focus sleeve adapter is able to fit inside the focus motor sleeve. **Note: It is important to insert the focus sleeve adapter in the correct orientation. There is an angled, chamfered, edge of the focus sleeve adapter that must be inserted first (Figure 2).** Please also note that there is a recess running around the circumference of the focus sleeve adapter. This recess must line up with the tips of the socket grub screws.



- 3) With the focus sleeve adapter in place, tighten the socket grub screws in sequence until they are flush with the outside of the sleeve. Ensure that the split in the focus sleeve adapter does not line up with any of the grub screw positions, see Figure 3. **It is important to not fully tighten up any grub screws at this stage.**
- 4) Push the complete focus adapter firmly onto the preferred right hand coarse knob of the microscope as far as it will go. The controller is factory configured to drive the focus motor in the correct direction when mounted to the right hand side of an upright microscope. If the right hand coarse knob is unsuitable, or cannot be accessed, the left knob can be used. Refer to Alternate Focus Motor Orientations for further instructions.
- 5) While holding the focus adapter in place, firmly tighten the grub screws in sequence to secure the unit onto the coarse focus knob. The focus knob will have to be rotated to gain access to all of the screws. An attached focus adapter is displayed in Figure 4.

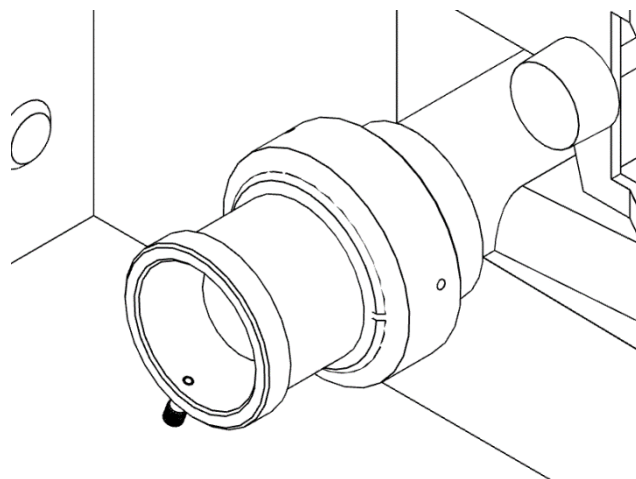


Fig. 4

- 6) 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 to the coarse knob.
- 7) Slide the focus motor into the adapter as far as it will go and, while applying gentle pressure to the motor, tighten clamp screw. 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 control knob. This can be confirmed by manually rotating the exposed fine focus knob on the opposite side of the microscope and feeling for the resistance caused by the detent positions of the stepper motor as it rotates. This will not cause any damage to the focus motor. The focus motor should appear like in Figure 5.

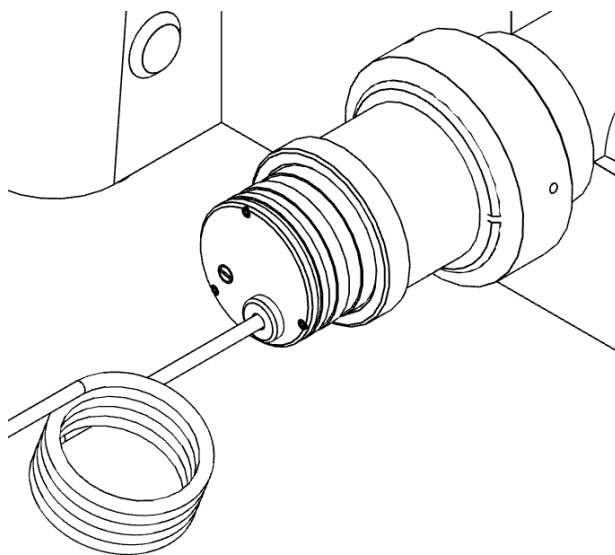


Fig. 5

- 8) Confirm that the controller is switched off before connecting the D-type plug on the focus motor lead to the socket on the rear of the controller. **If attempting to use a new focus motor with an old controller, or a new controller with an old focus motor, you may find the plugs do not match. Please contact your distributor or Prior Scientific for further support if this occurs.**

Alternate Focus Motor Orientations

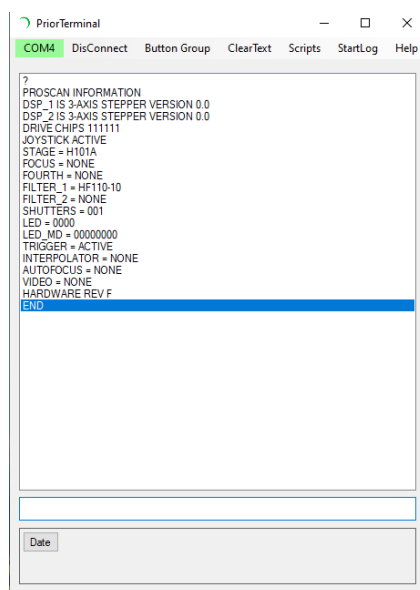
If the left hand coarse control knob is preferred by the user, or the focus drive is to be mounted on an inverted microscope, the motor direction can be reversed by using a PC with a terminal emulation program, e.g. Prior Terminal, and changing the settings using the ZD command via USB or RS232 communication. The command ZD -1 will reverse the default directions of the focus motor, allowing for left-handed or right-hand inverted usage.

Prior Terminal software is available here (<https://www.prior.com/download-category/software>) as “64/32 Bit Prior Scientific DLL SDK”. Please select the download that fits your operating system’s bit and install the software. **Ensure your controller is connected to your PC and turned on for this step.**

Open Device Manager and expand ‘Ports’ to verify the COM Port number of the USB Serial Port or Prior Communication Port associated with your controller. Once this number is identified, note it down and start Prior Terminal.

When Prior Terminal opens, select the correct COM port and click connect. The COM number should in green in the top left corner.

Enter ? , then hit return/enter, to present a series of information about your controller and its connected equipment. If this information does not appear, please try another COM port. If the correct COM port is selected, the controller is turned on, and the information does not appear, please contact Prior Scientific Technical Support for assistance.



If the information does appear, your controller is connected and you can proceed to change the direction of your focus motor.

Enter the command ZD -1 into the box near the bottom of the window and press Enter/Return. It will return with 0 if the command is accepted.

Z-axis joystick and PC commands will now be inverted until returned to default with the ZD 1 command.

Troubleshooting

My focus sleeve adapter will not fit into the focus motor sleeve properly.

- Please ensure you are putting the focus sleeve adapter in the correct way. The angular, chamfered edge should go into the focus motor sleeve while the flat edge should face the coarse focus knob of the microscope.
- Please ensure that the grub screws around the circumference of the focus motor sleeve are withdrawn fully to allow the focus adapter sleeve to be inserted.

My focus motor plug does not match my controller's focus plug.

- When our focus motor, H122, was replaced by the PS3H122R, the plug changed from a 9-pin D-connector to a 15-pin D-connector. This means that newer focus motors are not compatible with older controllers that have the 9-pin D-connector.
- The inverse is also true. When ProScan III replaced ProScan II, the focus port was changed to a 15-pin D-connector and is no longer compatible with the H122 focus motor. **Please contact your distributor or Prior Scientific for further support.**

The focus sleeve is not right for my microscope/application.

- For some microscopes, we offer a direct coupling and instructions for the installation that differ significantly from these generic instructions. **Please contact Prior Scientific or your distributor with your microscope model for support if direct coupling is available.**

My focus motor goes down when I tell it to go up, or vice versa.

- By default, our focus motor is designed to be positioned on the right hand coarse knob of an upright microscope. If using the focus motor with a right handed inverted microscope, or a left handed upright microscope, then opening Prior Terminal and using the ZD -1 command will invert the direction to work properly. The direction can be returned to default with the command ZD 1.

The adapter sleeve is not tight against the coarse focus knob.

- Ensure that a grub screw is not in line with the gap in the focus adapter sleeve. This will cause uneven pressure and the sleeve will not be tight against the focus knob.
- Please ensure that all three grub screws are tightened securely against the focus adapter sleeve.
- The focus adapter sleeve may be oriented the wrong way so the grub screws are not resting in the recess. Please ensure the angled, chamfered, side is facing inwards while the flat side is facing the coarse focus knob.