

# Operating Instructions

## Meade® Zero Image-Shift Microfuser

For use with LX85, LX200/600/850, & AutoStar II Telescopes

### Introduction

The Meade Zero Image-Shift Microfuser allows precise, vibration-free image focus during visual, CCD, and astrophotographic applications. It also allows you to achieve focus without causing a viewed object to move out of position in the field of view.

The microfuser maintains precise image centering on even the smallest CCD chips. The microfuser operates at four speeds: Fine to fast.

### To Attach the Microfuser to the Telescope

1. Remove the dust cap from the rear cell port of your telescope. Thread the microfuser adapter (B, Fig. 1) onto the rear cell port thread (A, Fig. 1). Slide the microfuser (C, Fig. 1) over the microfuser adapter and tighten the three set screws (K, Fig. 1) using the provided hex key.

2a. **1.25" Diagonal Prism Users:** Slide the 1.25" adapter (D, Fig. 1) into the microfuser. Line up the thumbscrew (H, Fig. 1) into the groove in the microfuser (Fig. 2a and 2b). Tighten the microfuser thumbscrews (I, Fig. 1) to a firm feel only. Slide the 1.25" diagonal prism into the adapter (D, Fig. 1). Tighten the accessory adapter thumbscrew to a firm feel only.

2b. **SC Optional Accessory Users:** If using any of the Meade Schmidt-Cassegrain optional accessories, slide the supplied SC accessory adapter (L, Fig. 1) into the microfuser. Line up the groove on the side of the adapter with either of the microfuser thumbscrews (Fig. 3a and 3b) and tighten the thumbscrew to a firm feel only. Attach the optional accessory on the accessory adapter.

2c. **2.0" Diagonal Mirror Users:** Slide the 2.0" diagonal mirror directly into the microfuser. The adapters are not required. Tighten the thumbscrews (I, Fig. 1) to a firm feel only.

3. Plug in the Microfuser: Plug the coiled cord attached to the microfuser into the Focus port located on the Computer Control Panel.

### Maintenance:

The microfuser is carefully adjusted at the factory. If it becomes necessary to adjust the microfuser ball bearings (see Fig. 5), it must be performed by factory trained technicians. If the microfuser is improperly adjusted, performance will degrade and damage will result. Damage due to improper adjustments not authorized by the factory will not be covered under warranty.

**Note:** If you wish to mount a camera directly to the microfuser, you need to attach an optional T-Adapter to the microfuser. For more information about Meade optional accessories, see the Meade website at [www.meade.com](http://www.meade.com) or contact your local Meade dealer.

### To Focus Using the Microfuser

1. Perform this part of the procedure during the daytime, without the eyepiece assembly (eyepiece, diagonal, etc.) attached to the microfuser. Press the AutoStar II Focus button and then the Up and Down Arrow keys. Observe the microfuser drawtube as it travels in and out. When the drawtube reaches the furthest extension of its travel, listen for a change in the pitch of the motor. Notice that the drawtube's maximum extension is about a half-inch out from the microfuser. Set the drawtube so that it extends about a quarter-inch (about halfway).

2. When you begin your viewing session, attach the eyepiece assembly.

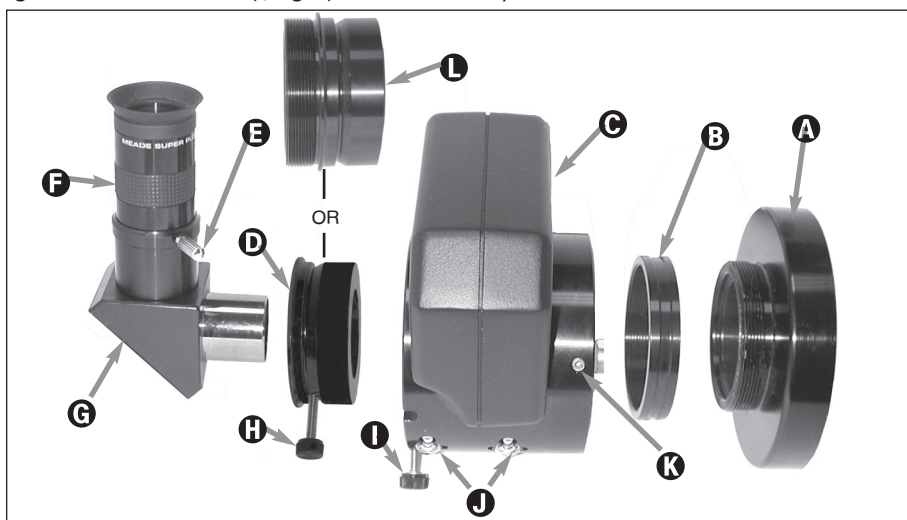


Fig. 1: Microfuser and eyepiece assembly. ( A ) Rear cell of telescope (shown separate from the telescope assembly for the sake of clarity); ( B ) Microfuser adapter; ( C ) Microfuser; ( D ) 1.25" accessory adapter. ( L ) SC accessory adapter may be used in this position instead if Schmidt-Cassegrain accessories are being used. Do not use either adapter if using a 2" diagonal diagonal mirror; ( E ) Diagonal Prism holder thumbscrew; ( F ) Eyepiece; ( G ) 1.25" Diagonal Prism. 2" diagonal mirror may also be used in this position (12" models); ( H ) Adapter thumbscrew; ( I ) Microfuser thumbscrews; ( J ) Microfuser bearings; ( K ) Set screws.

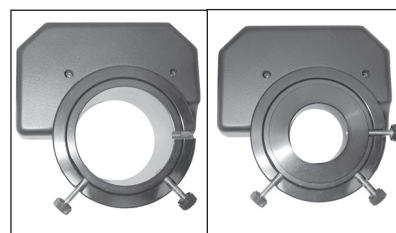


Fig. 2a: Microfuser groove.  
Fig. 2b: Microfuser 1.25" adapter thumbscrew in groove.

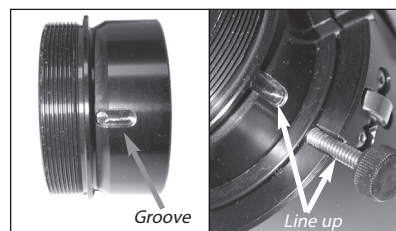


Fig. 3a: SC adapter groove.  
Fig. 3b: Line up SC adapter groove with microfuser thumbscrew groove.

3. Make sure that the microfocuser is plugged into the computer control panel focus port.
4. Point the telescope at a bright star.
5. Rotate the mirror lock knob towards the "unlock" position, until it feels loose. Use the coarse focus control to achieve a rough focus of the star (see Fig. 4.)
6. Rotate the mirror lock knob towards the "lock" position and adjust the tension to a firm feel; this action serves to lock in the coarse focus.

**Important Note:** Do not use or bump the coarse focus knob once you have set the coarse focus. If you do so, repeat steps 5 and 6 above to reset the coarse focus.

7. Press the Focus key (Number key "4"). "Focus Control: Speed: Fast" displays. Press the Up or Down Scroll keys to cycle through the four speed options. Press ENTER to select the desired speed. Or press one of the following Number keys after pressing the Focus key to change the speed:

Key #	Speed	Key #	Speed
1 or 2	Fine	6 or 7	Medium
3, 4, or 5	Slow	8 or 9	Fastest

8. Use the Arrow keys to bring the star into fine focus.
9. You may need to repeat this procedure when you change eyepieces.

#### Use with Meade De-Rotater

When using a Meade de-rotater, it is important to attach the microfocuser so that it is backed off slightly from the derotater. If the microfocuser is flush against the de-rotater, the assembly will not work properly. This is true also with other accessories that may attach flush against the de-rotater housing.

#### To Attach the Microfocuser to the De-rotater:

Refer to Fig. 1. Perform this assembly on a flat surface (such as a desk or a table) before you attach the de-rotater and microfocuser to the telescope.

1. With the de-rotater on a flat surface, thread on the adapter ring until it just touches the housing; then back off the adapter ring (i.e., turn it counter-clockwise) one full revolution as shown in Fig. 6.
2. Place the microfocuser over the ring with the "hump" of the microfocuser in the 12:00 position as shown in Fig. 7.
3. Using the provided hex key, tighten to a firm feel one of the three microfocuser set screws against the adapter ring as shown in Fig. 8. Take care not to tighten or loosen the adapter ring as you position and tighten the microfocuser in place.
4. Tighten to a firm feel the other two microfocuser set screws.
5. Attach the de-rotater to the rear cell of the telescope.

If you have a question concerning use of the Meade Zero Image-Shift Microfocuser, call the Meade Instruments Customer Service Department at (800) 626-3233. For warranty information, visit [meade.com](http://meade.com) or scan the QR code below.

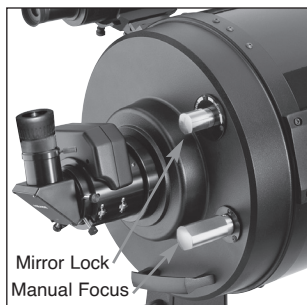


Fig. 4: Microfocuser and 1.25" diagonal prism with eyepiece completely assembled. Microfocuser shown attached to a Meade LX200 telescope.

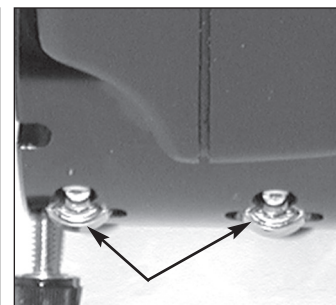


Fig. 5: Microfocuser ball bearings.



Fig. 6: Back off the adapter ring one full revolution.



Fig. 7: Place the microfocuser over the adapter ring. Notice the orientation of the microfocuser.



Fig. 8: Tighten the three microfocuser set screws to a firm feel.



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