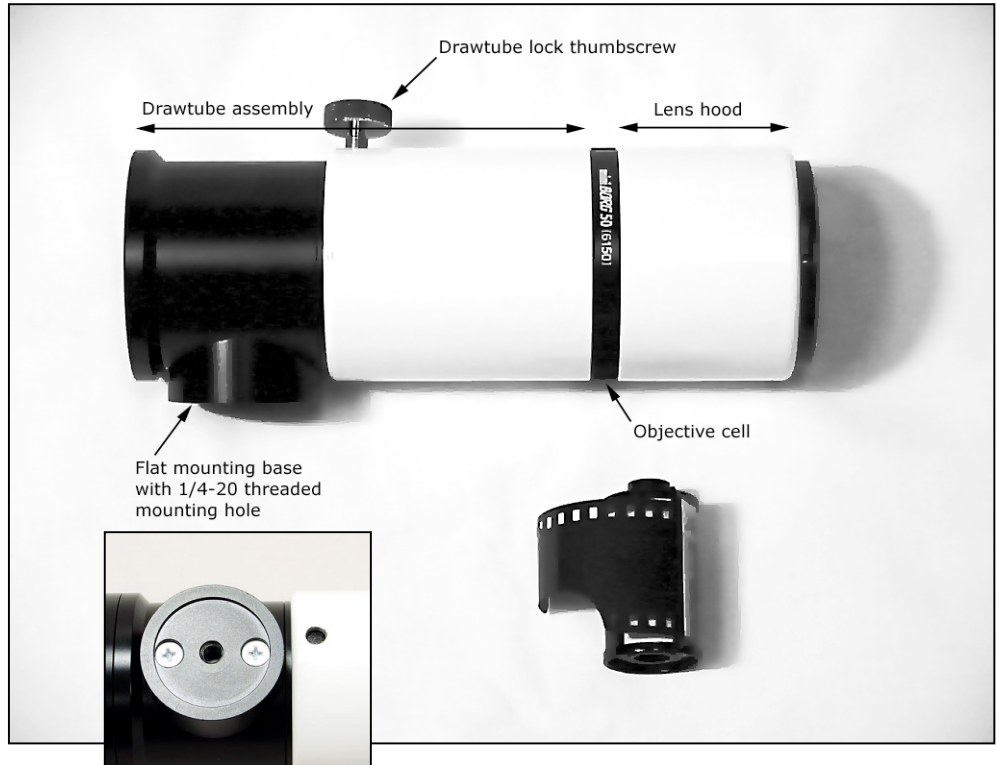


Mini Borg User Instructions

Introduction

This document describes the use of the Mini Borg series of compact telescopes. Included here are some suggestions for configuring this versatile scope.

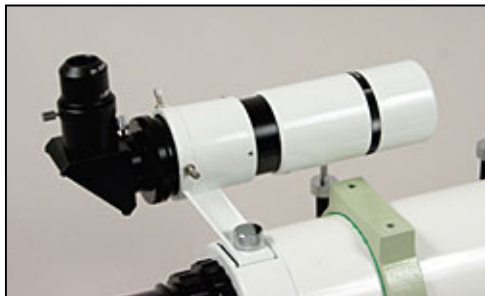
The Mini Borg 50 (250mm focal length) is shown at right. The Mini Borg 45ED is similar in physical arrangement, but with slightly different tube length to accommodate its 300mm focal length. The Mini Borg 60 and 60ED are distinguished by an enlarged objective and hood section to accommodate the larger diameter objective.



The basic sections of all of the scopes in this family are the lens hood, objective cell, and the drawtube assembly as pictured above.

Mounting Options

Attached to the Mini Borg drawtube is a standard 1/4-20 threaded flat base, allowing the scope to be directly attached to a camera tripod. For mounting in tube rings, the 1/4-20 mounting block may be detached by removing the two screws holding the base to the Mini Borg tube. The threaded mounting holes used for the 1/4-20 mounting block may also be used for direct attachment to custom mounting arrangements. The holes are spaced 24mm apart and are threaded for M4P0.7 metric screws.



For finder holder mounting (Borg part 7751), the 1/4-20 base must be removed as described above. In addition, the black drawtube section tube must also be unscrewed so that the narrowest portion of the draw tube can be passed through the finder holder and reattached.

Front Interfaces

At the front of the Mini Borg tube is a lens hood with built-in 52mm camera filter threads, allowing the use of many common camera lens accessories as well as astronomical accessories such as solar filters. The hood may also be detached if desired. The lens cell itself also includes 52mm filter threads, allowing direct attachment of camera accessories.

In the case of the Mini Borg 60 and 60ED, the lens hood includes 62mm threads to accommodate standard photographic filters. The lens cell is not threaded for filters.

Focus

Rough focus is achieved by loosening the drawtube thumbscrew (see photo above) and sliding the white tube (including the objective assembly) to the appropriate position. Rotating the tube while adjusting the focus position may make it easier to achieve the desired position. If the fit still seems to be too tight, detach the drawtube and remove some of the felt tape on the tube. If very fine adjustment of focus is desired for imaging or high power use, a Borg helical focuser may be added to the scope as explained below.

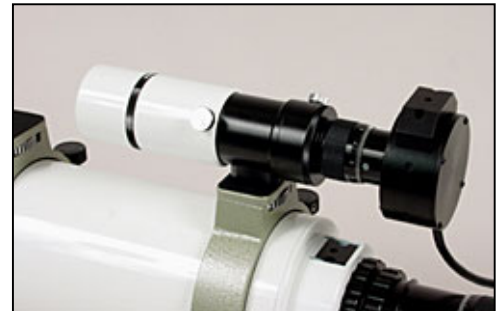
An additional drawtube thumbscrew may be optionally added, though for most applications, the single thumbscrew is adequate for the lightweight objective and more convenient to use. Contact Hutech to order a second thumbscrew if required. The hole for the second thumbscrew has been pre-drilled and threaded for this purpose.

Rear Interface

The rear of the Mini Borg tube is a Borg-standard M57 female thread, allowing the use of the wide variety of Borg accessories already available for the Series 80 scopes. Options to consider include extension tubes (e.g. parts 7601 or 7602), helical focusers (e.g. parts 7757 or 7857), or Borg camera adapters.

Note that in some cases, additional inward focus travel may be required for some accessories such as filter holders, requiring that the $\frac{1}{4}$ -20 mounting base be removed. If even more inward focus travel is required, the drawtube section may be eliminated completely as the objective's interface is also a Borg-standard M57 female thread.

The rear thread of the objective assembly is also an M57 thread, allowing the direct attachment of accessories for unmatched versatility. This allows for configurations such as placing a helical focuser up front, allowing for attachment of heavy accessories to the Mini Borg. This arrangement also can improve the overall balance of the combined OTA and attached accessory.



Caution

If the drawtube lockscrews are unscrewed from the tube completely, when reinserting them, make sure that the screws are carefully threaded into their holes. The threads on these screws are very fine and can be damaged if forced in. The screws should turn smoothly and with little force. If you encounter any resistance when threading the screws in, back them out and try gently reinserting them, taking care to keep them perpendicular to the tube as they are being threaded in.