

MGZ30-MOT - August 14, 2015

Item # MGZ30-MOT was discontinued on August 15, 2015. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

MICROSCOPES, FOCUS BLOCKS, AND ACCESSORIES

- Components to Build a Custom Microscope
- Compatible with Thorlabs' Lens Tube and Cage Systems

TSCOPE-MOT

Shown mounted on the MP1214 Focus Block Stand with the 1500M-CL Scientific CCD Camera, the MLS203-1 Fast XY Scanning Stage, and a Selection of Microscope Objectives (All Sold Separately)

Application Idea



[Hide Overview](#)

OVERVIEW

Features

- T-Scope Combines a Tube Lens, Focus Block, and Objective Turret
  - Tube Lens Designed for Parfocality
  - Focus Block with Coarse/Fine Adjustment Knobs
  - Objective Turret Holds Five Objectives at Once
  - Accepts Cameras or Other Detectors
- Vibrationally Damped Stand Enhances Image Quality
- Threaded Holes Compatible with Industry-Standard Optomechanics and Optics

This page features all the major mechanical components of a microscope.

For customers seeking an integrated solution, we offer our T-Scopes, which consist of a parfocal tube lens and a Post-Mountable Focus Block with a built-in five-objective turret. A T-Scope comprises a complete microscope body that is versatile, easily operated, and directly compatible with industry-standard objectives, cameras, or other detectors.

Item #	TSCOPE	MGZ30	TSCOPE-MOT	MGZ30-MOT
Description	Manual Microscope	Manual Focus Block	Motorized Microscope	Motorized Focus Block
Adjustment Type	Manual		Manual and Motorized	
Z-Axis Travel	30 mm			
Z-Axis Adjustment	Fine: 225 μm/rev Coarse: 40 mm/rev			
Minimum Step Size	500 nm		50 nm	
Resolution	2.25 μm		100 nm	
Vertical Load (Max)	10 lb (4.5 kg)			
Mount Compatibility*	Ø1.5" Posts			

\*Posts are not included. Thorlabs recommends the MP1214 Focus Block Stand, shown below.

For customers who wish to build their own system, Thorlabs' Post-Mountable Focus Blocks are also available separately, and are excellent units upon which to base home-built imaging systems. These provide 30 mm travel along the Z-axis of an optical system via fine and coarse adjustment knobs, include a built-in five-objective turret, and are provided in manual or motorized versions.

To stabilize images against vibrations, Thorlabs has developed a Focus Block Stand that consists of an extra-thick breadboard and a dynamically damped post that together reduce the amplitude and duration of vibrations applied to the stand.

When combined with Thorlabs' family of objectives, thread adapters, and cameras, the parts listed here represent a flexible, reliable, and easy-to-use imaging solution for the most demanding applications.

[Hide T-Scopes: Thorlabs Microscopes](#)

T-Scopes: Thorlabs Microscopes



Thorlabs' T-Scopes are microscope bodies that can be adapted for a variety of applications, such as wide-field or laser scanning microscopy.

The T-Scope consists of a parfocal tube lens system based upon the ITL200 Infinity-Corrected Tube Lens, and a Manual (MGZ30) or Motorized (MGZ30-MOT) Focus Block, detailed below, which provides fine and coarse adjustment over a 30 mm range along the imaging axis. The viewport is equipped with a non-rotating, fine-focus-adjustable zoom housing (SM1ZM) that allows fine adjustment through the image plane. The zoom housing can be removed to expose an internal SM1 (1.035"-40) thread, which allows for direct mounting of various imaging detectors to the microscope. An SM1 to C-mount adapter (SM1A10) is included for camera compatibility. If compatibility with other thread standards is desired, please refer to Thorlabs' collection of thread adapters.



Adjustment Knobs

Five-Objective Turret

The focus block includes a built-in five-objective turret with M26 x 36 TPI (M26 x 0.706) threading. In order to allow direct mounting of RMS-threaded objectives, the focus block ships with five RMSA7 adapters. A selection of adapters for the commonly used M25 x 0.75 and SM1 (1.035"-40) threads is shown below, but Thorlabs manufactures many other adapters as well.

T-Scopes are designed to be mounted on Ø1.5" posts, which are not included. Our MP1214 Focus Block Stand, available below, is specifically designed for microscopy applications.

Part Number	Description	Price	Availability
TSCOPE	Thorlabs Microscope with Manual Focusing	\$4,100.00	Lead Time
TSCOPE-MOT	Thorlabs Microscope with Motorized Focusing	\$6,100.00	3-5 Days

[Hide Post-Mountable Focus Blocks](#)

Post-Mountable Focus Blocks



- ▶ Coarse and Fine Adjustment with 30 mm of Travel
- ▶ Five-Objective Turret with M26 x 36 TPI (M26 x 0.706) Threads
- ▶ Includes Five Adapters that Accept RMS-Threaded Objectives
- ▶ Manual or Motorized Versions Available

The MGZ30 Post-Mountable Focus Block positions an objective along the Z-axis of a home-built imaging system. It features 30 mm of travel with fine and coarse adjustment knobs (pictured to the right), and is designed to be mounted on our series of Ø1.5" posts. Please note that posts and bases are not included with this package; one option is the MP1214 Focus Block Stand, shown below.

The MGZ30-MOT is the motorized version, which improves the resolution to 100 nm from the 2.25 µm resolution of the manual version. It has a USB connection for GUI (pictured to the right) control via a PC, and an encoder that responds to both automated and manual adjustment. A power supply is included.

The focus block includes a built-in five-objective turret with M26 x 36 TPI (M26 x 0.706) threading, pictured to the right. In order to allow direct mounting of RMS-threaded objectives, the focus block ships with five RMSA7 adapters. A selection of adapters for the commonly used M25 x 0.75 and SM1 (1.035"-40) threads is shown below, but Thorlabs manufactures many other adapters as well.

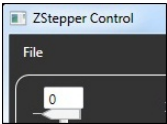
When purchased separately from the T-Scope, the MGZ30 and MGZ30-MOT packages include a dovetail adapter (pictured above) that is located above the lens turret and enables direct integration of 30 mm cage systems, SM1-threaded components, and SM2-



Five-Objective Turret



Adjustment Knobs



threaded (2.035"-40) components.



Part Number	Description	Price	Availability
MGZ30	Post-Mountable Manual Focus Block	\$2,275.00	3-5 Days
MGZ30-MOT	Post-Mountable Motorized Focus Block	\$4,275.00	Lead Time

[Hide Stand for T-Scopes and Focus Blocks](#)

Stand for T-Scopes and Focus Blocks



- ▶ 3/4" Thick, 12" x 14" Breadboard with Side Grips
- ▶ Damped Post Adds Stability by Reducing Vibrations
- ▶ 1/4"-20 Tapped Hole Pattern Designed for Thorlabs' Microscopy Stages

The MP1214 Focus Block Stand consists of a 3/4" thick breadboard and a Ø1.5" Dynamically Damped Post. The 12" x 14" breadboard is 50% thicker than our standard breadboards, includes side grips for portability, and has a 1/4"-20 tapped mounting hole pattern designed to accommodate Thorlabs' microscopy stages for positioning samples. This assembly provides stable mounting and reduces vibrations that degrade the image quality. An MGZ30 Focus Block can be mounted anywhere along the 14" long DP14A post.

The DP14A post is also available for purchase separately for users who already have breadboards.

Part Number	Description	Price	Availability
MP1214	12" x 14" Focus Block Stand with Included DP14A Post	\$600.00	3-5 Days
DP14A	Ø1.5" Dynamically Damped Post, 14" Long	\$199.00	Today

[Hide M26 x 36 TPI Adapters for Threaded Objectives](#)

M26 x 36 TPI Adapters for Threaded Objectives



These thread adapters convert the M26 x 36 TPI (M26 x 0.706) thread on the MGZ30 Post-Mountable Focus Blocks shown above to several common threads used in objective lenses. Thorlabs' complete selection of thread adapters allows interconversion between these threads and nearly every other standard.

Item #	External Threads	Internal Threads
RMSA7	M26 x 36 TPI	RMS (0.800"-36)
M25A1	M26 x 36 TPI	M25 x 0.75
SM1A28	M26 x 36 TPI	SM1 (1.035"-40)

Part Number	Description	Price	Availability
RMSA7	Adapter with External M26 x 0.706 Threads and Internal RMS Threads	\$19.95	Today
M25A1	Adapter with External M26 x 0.706 Threads and Internal M25 x 0.75 Threads	\$25.00	Today
SM1A28	Customer Inspired!Adapter with External M26 x 0.706 Threads and Internal SM1 Threads	\$19.25	Today

Visit the *Microscopes, Focus Blocks, and Accessories* page for pricing and availability information:  
[http://www.thorlabs.com/newgrouppage9.cfm?objectgroup\\_id=5835](http://www.thorlabs.com/newgrouppage9.cfm?objectgroup_id=5835)