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**THORLABS**

## KINEMATIC FLEXURE STAGE MOUNTS AND ACCESSORIES

► **Designed for Use with Our Family of Multi-Axis Stages**
► **Compact Design with Excellent Stability**
► **Precision Kinematic Control**



**HMM001**
Kinematic Ø1/2"
Optic Mount

**HMA001**
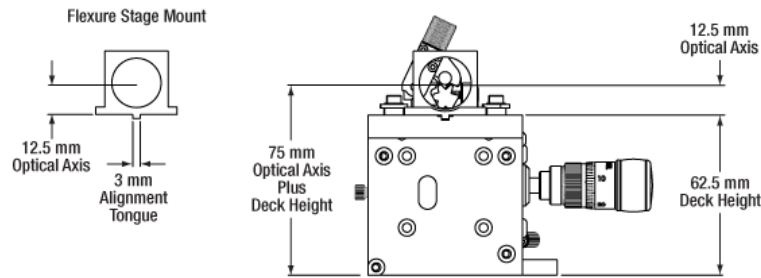RMS Adapter Plate
for HMM001

### OVERVIEW

Flexure stage mounts and accessories are products designed for use with our extensive line of multi-axis flexure stage systems. The central key-way that extends across the top mounting surface of the stage is designed to allow rapid system reconfiguration of flexure mounted optics and accessories, while maintaining system alignment.

Flexure stage mounts are shipped with two lock-down clamps. The innovative lock-down clamps have one edge milled flat. This makes it possible to insert or remove a flexure stage mount without removing the clamp. Simply loosen the clamp screw and rotate the flat side of the lock-down clamp inward to release the flexure stage mount.

| Multi-Axis Stage Accessories | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fiber Mounts | Fiber Rotators | Waveguide Mounts | Diode Mounts | Fixed Mounts | Kinematic Mounts | Top Plates | Extension Platforms | Fiber Chucks | Slide Holders | Kinematic Platforms | Adapter Plates |

## FLEXURE STAGE



**Deck Height** is the distance from the base of the mounting surface of an optical table or breadboard to the top mounting surface of the stage. There are two standard deck heights: 62.5mm for the MBT, RollerBlock, and Max300 Series Stages or 112.5mm deck height for the Max600 and NBM series stages. A wide range of riser blocks and plates are available to accommodate for variations when stacking stages on top of each other.

**Optical Axis** is the nominal height at which the beam should pass over the stage and through a given optical component or device. Most standard flexure system mounts use a 12.5mm optical axis.

The combination of the deck and optical axis height results in two standard beam heights above the optical table or breadboard: 75mm for the MBT, RollerBlock, and Max300 series stages or 125mm for the Max600 and NBM series stages.

## Kinematic Flexure Stage Mount and RMS Adapter

▶ Holds Ø1/2" Optics
▶ Holds RMS Threaded Microscope Objective or Accessories with the HMA001 Adapter Plate
▶ ±3° Angular Range
▶ Flexure Stage Mount with 12.5 mm Optical Axis Height
▶ Fabricated from Black Anodized Aluminum

This kinematic flexure mount allows for fine angular control of 1/2" diameter optics mounted on multi-axis flexure stages. A possible application for the HMM001 flexure stage mount would be to use it in the construction of a fiber based interferometer. The fine angular control of a mirror mounted in the HMM001 would allow the laser beam emerging from the fiber to be retro-reflected back into the fiber.

Externally RMS-threaded (0.800"-36) components can be mounted on the HMM001 by attaching the HMA001 adapter plate. With the HMA001 adapter plate, the kinematic flexure mount is ideal for use as a fiber coupling objective mount when fine angular control of the coupling objective is needed to maximize coupling efficiency.

RMS adapter rings make it possible to mount components with alternative thread types (see below).

| Part Number | Description | Price | Availability |
|---|---|---|---|
| HMM001 | Flexure Compatible 12.7 mm Diameter Kinematic Optic Holder | $138.68 | Today |
| HMA001 | RMS Threaded Adaptor Plate For HMM001 | $30.99 | Today |

## RMS Retaining Rings and Adapters

The RMSNT locking nut is used to lock RMS-threaded components into place using the external threads of the component. The knurled external surface provides improved grip for tightening into position.

The RMSNT will be retired without replacement when stock is depleted. If you require this part for line production, please contact our OEM Team.

Limited STOCK

Similar to the RMSNT, the RMSRR retaining ring serves the same purpose but uses an internal thread to retain the component.

The SM05RMS adapter allows any SM05-compatible products to be integrated into applications fitted with RMS threads. The adapter has an SM05 internal thread and an RMS external thread. To use the SM05RMS with the Kinematic Flexure Stage Mount and RMS Adapter, the RMSRR should first be inserted into the HMA001 to set the depth. Then, the SM05RMS can be tightened against it, followed by the RMSNT to lock the SM05RMS in place.

Click to view additional RMS adapters.

| Part Number | Description | Price | Availability |
|---|---|---|---|
| SM05RMS | Adapter with External RMS Threads and Internal SM05 Threads | $15.86 | Today |
| RMSRR | RMS Retaining Ring for RMS Lens Mounts | $11.35 | Today |
| RMSNT | RMS Locking Nut | $11.35 | Lead Time |

## Accessory Lockdown Clamps

Click for Details
Accessories mounted in close proximity using the AMA110 Mounting Block.

- Secures Components to NanoMax, MicroBlock, or RollerBlock Stages
- Cleats for Mounting Single Components
- Mounting Blocks and Clamps for Close Proximity Mounting of Multiple Components

To lock an accessory in place, rotate the AMA010 cleat so that the flat is facing the stage's groove. Place the accessory into the groove between the cleats, rotate the cleat so that the rounded edge covers the edge of the mount, and lock down the cap screw.

The AMA010(/M) Cleats have a flat milled along one side. To lock an accessory along the center alignment groove, rotate the cleat so that the flat is facing the groove. Place the accessory into the groove between the cleats, rotate the cleat so that the rounded edge covers the edge of the mount, and lock down the 6-32 (M3) locking screw and washer. The cleats can be rotated without needing to remove the

| Lockdown Clamps | | | | |
|---|---|---|---|---|
| **Item #** | **AMA010** | **AMA010/M** | **AMA110** | **AMA110/M** | **AMA111** |
| **Included Hardware** | 6-32 Cap Screw (x15) M3.5 Washer (x15) | M3 Cap Screw (x15) M3 Washer (x15) | 6-32 Nylon Tip Setscrew (x12) 6-32 Cap Screw (x4) | M3 Nylon Tip Setscrew (x12) M3 Cap Screw (x4) | 6-32 Cap Screw (x2) M3 Cap Screw (x2) M3.5 Washer (x2) M3 Washer (x2) 7/64" Hex Key 2.5 mm Hex Key |
| **Mechanical Diagram** (Click for Details) | 0.17" (4.2 mm) 0.06" (1.5 mm) 0.29" (7.4 mm) | | 4.00 mm (0.16") 7.00 mm (0.28") 33.0 mm (1.30") | | 6.2 mm (0.24") 3.2 mm (0.13") |

Click to Enlarge
Close proximity mounting using the AMA010 Cleat and AMA111 Clamp.

locking screws. See the animation to the right for details. The included screws are 5/16" (8 mm) long and are used with a 3/32" (2.5 mm) hex key.

For mounting multiple components in close proximity, we offer the AMA110 mounting blocks. These mounting blocks feature a line of nylon-tipped setscrews to secure components, and allow for easy repositioning and very close mounting. The blocks are secured via two holes and are supplied with either 6-32 or M3 cap screws.

The AMA111 Narrow Device Mounting Clamps offer an alternative solution when devices need to be mounted close together. They are secured using an M3.5 or M3 washer and a 6-32 or M3 cap screw, compatible with a 7/64" or 2.5 mm hex key, respectively.

| Part Number | Description | Price | Availability |
|---|---|---|---|
| AMA010/M | Cleats with M3 Locking Screws, Qty. 15 | $39.40 | Today |
| AMA110/M | Optic Mounting Block, Qty. 2, Metric | $44.39 | Today |
| AMA111 | Narrow Device Mounting Clamps, Qty. 2 | $27.84 | Today |
| AMA010 | Cleats with 6-32 Locking Screws, Qty. 15 | $39.40 | Today |
| AMA110 | Optic Mounting Block, Qty. 2 | $44.39 | Today |

Visit the *Kinematic Flexure Stage Mounts and Accessories* page for pricing and availability information:
https://www.thorlabs.com/newgrouppage9.cfm?objectgroup_id=2487