

About the Company

Thorlabs has been an active member of the Photonics community for over 20 years.

We strive to be the ultimate resource for the photonics community—a place to find the products you need to enable your experiments, as well as the information you need to get your application working.

Thorlabs designs, develops, and manufactures building blocks for the photonics industry including equipment for opto-mechanics, motion control, nano-positioning, alignment, optical components, laser diodes, tunable lasers and vibration isolation systems. In addition to core photonics building blocks, we now provide system level solutions including complete OCT and imaging systems.

Trademarks

THORLABS is a registered trademark of Thorlabs Inc.

Technical Support

Thorlabs provide a comprehensive after sales service. Contact us through your local representative, or at the address below:

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Product Warranty

All Thorlabs products are covered by a manufacturer's warranty against faulty workmanship and materials, valid for 12 months from the date of original purchase. All products returned under warranty must be returned in their original packaging.

Prior to installation, the equipment referred to in this handbook must be stored in a clean, dry environment, in accordance with any instructions given. Periodic checks must be made on the equipment's condition.

Customer Feedback

It is always helpful to have detailed and accurate information about any problems encountered by customers.

We welcome comments or suggestions about any aspect of the equipment and instruction handbooks.

THORLABS

DRV8

Precision Differential Micrometer



1.1 Introduction

The DRV8 differential drive has been designed for use with single-axis stages equipped with a $\text{Ø}1/2''$ ($\text{Ø}12.7$ mm) actuator mounting clamp. The large-diameter differential drive actuator provides fine, ultra-smooth control over motion. The fine adjuster delivers $50 \mu\text{m}$ of travel per revolution with $1.0 \mu\text{m}$ graduations.

The removable brass bushing allows this actuator to be used in any OEM application requiring 2" (50 mm) of overall travel.

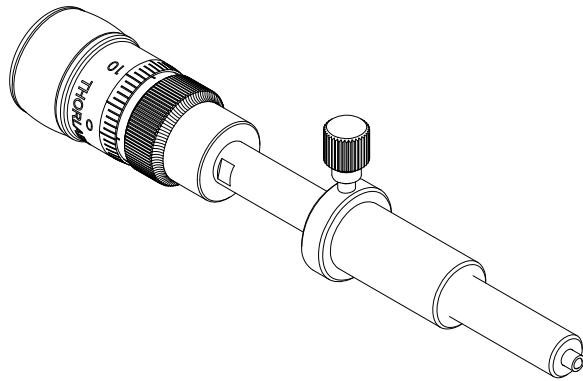


Fig. 1.1 DRV8 Differential Drive

1.2 Specification

Total Travel:	2.0" (50 mm)
Coarse Adjustment:	2.0" (50 mm) Total 500 μm per revolution
Coarse Adjustment Pitch:	0.5 mm
Fine Adjustment:	300 μm Total 50 μm per revolution
Fine Adjustment Pitch:	0.05 mm with 1 μm Graduations
Fine Resolution:	0.5 μm

1.3 Fitting and Removal of Drives

The method of fitting will depend on the particular stage. The following procedure details how to fit a drive to LNR50 series stage.

Referring to Fig. 1.2...

- 1) Rotate the coarse adjuster to set the DRV8 drive at its center point (25 mm) .
- 2) Loosen the drive mounting block pinch bolts and remove the existing drive (if fitted).
- 3) Hold the stage at its center position, then fit the DRV8 into the mounting block. Ensure that the mounting bush is located correctly in the mounting block and the drive rod is in contact with the push block.
- 4) Tighten the drive mounting block pinch bolts to secure the drive in place..

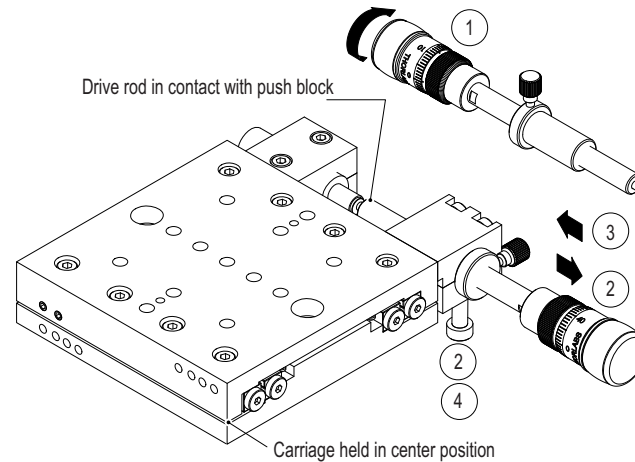


Fig. 1.2 Fitting the Actuator

Note. To avoid cross coupling between the coarse and fine adjustment mechanism, the coarse drive position should be fixed by tightening the locking screw, before the fine drive is adjusted.

1.4 Maintenance

After prolonged use, and particularly in applications where small movements are continually repeated, the grease on the drive shaft may build up in ridges. This may cause rough or noisy movement and vibration.

It is good practise to run the actuator periodically from one end of travel to the other several times in order to redistribute the grease.

1.5 Dimensions

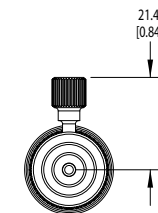
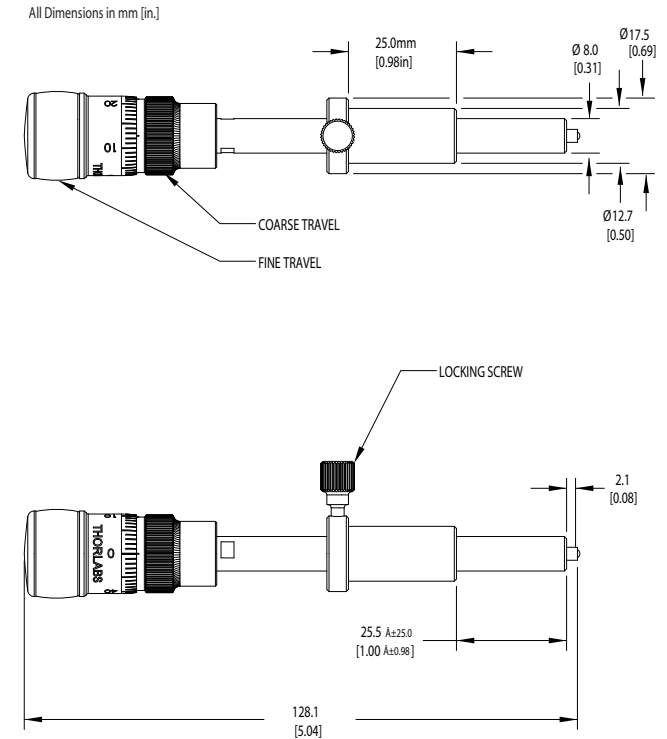


Fig. 1.3 Dimensions



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