LTS STAGE ADAPTER PLATES

Model Numbers LTSP1 (/M)
LTSP2 (/M)
LTSP3 (/M)

THORLABS

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.

Product Warranty

Opto-Electronics, Control Electronics, Optics, and Nano-Positioning Product Lines.

Thorlabs offers a two year warranty on the above mentioned product lines, provided normal use and maintenance of the products and when properly handled and correctly installed.

Thorlabs shall repair or replace any defective or nonconforming product as detailed above. We ask that buyer contact Thorlabs for a Return Material Authorization number (RMA #) from our Customer Service/Returns department in order to most efficiently process the return and/or repair.

Products returned for repair that are not covered under warranty, a Thorlabs standard repair charge shall be applicable in addition to all shipping expenses. This repair charge will be quoted to the customer before the work is performed.

Revision History

Issue	Date	Summary
1	021209	Initial Issue
2	080310	Max Velocity

Chapter 1

Installation

1.1 Mounting

1.1.1 General

The LTS series stages can be mounted in XY configurations using the LTSP1 spacer plate. The LTSP2 and LTSP3 angle brackets allow the LTS150 and LTS300 stages respectively to be mounted vertically in Z axis configurations.

Caution. When mounted in a vertical (Z-axis) orientation, the maximum load capacity is 5 kg and the maximum velocity is 3 mm/sec. For safety reasons, the Max Vel parameter in the software Settings panel should be set to 3 mm/sec - see the handbook supplied with the LTS stage for more details.

Notes.

- The plates have been designed such that the stages can be mounted in left hand or right hand configurations. Throughout these procedures, the examples show right handed configurations (i.e. the X-axis control panel is away from the user and the Y-axis control panel is on the right) and where applicable, the plates are shipped with the dowels fitted for RH configurations. If a left handed configuration is required, then the locating dowels should be fitted in the associated positions as identified in Section 1.2.
- The spacial dimensions of the stage configuration will depend on the orientation (LH or RH) of the X and Y stages, and, if fitted, the orientation of the Z-axis bracket. Please contact tech support for exact dimensions of a particular set up.
- When mounting stages close to other equipment, ensure that the travel of the moving platform is not obstructed. If equipment mounted on the moving platform is driven against a solid object, damage to the internal mechanism could occur.

1.1.2 Building an XY Configuration

Referring to Fig. 1.1, to Fig. 1.5, proceed as follows:

1) Remove and retain the four bolts securing the top platform to the moving carriage, then remove the top platform as shown below. Take care not to remove the locating dowels fitted in the stage mechanism.

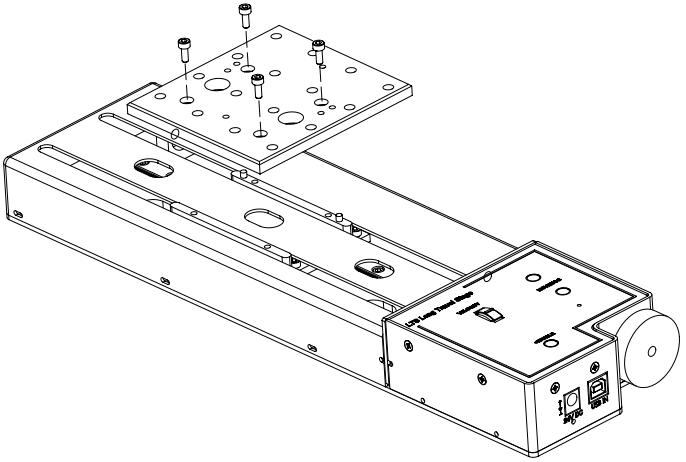


Fig. 1.1 Removing the Top Platform

2) Note the orientation of the spacer plate (LTSP1) in the drawing below, then fit the spacer plate to the moving carriage. Ensure that the dowels in the stage are correctly located in the holes on the underside of the plate.
   Note. The spacer plate can only be fitted in the orientation shown.
3) Using the four bolts retained at item (1), secure the plate to the moving carriage.

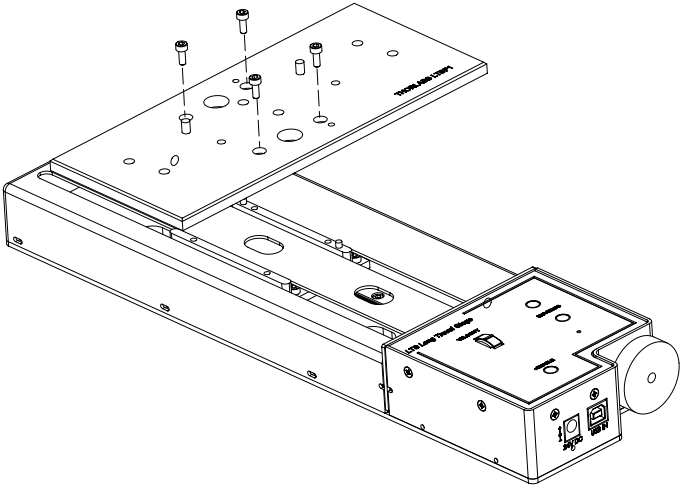


Fig. 1.2 Fitting the LTSP1 Spacer Plate

4) The spacer plate is shipped with locating dowels fitted in the correct positions for building a right hand XY configuration. If a LH configuration is required, remove the dowels and refit into the other locating holes - see Fig. 1.9 for more details.

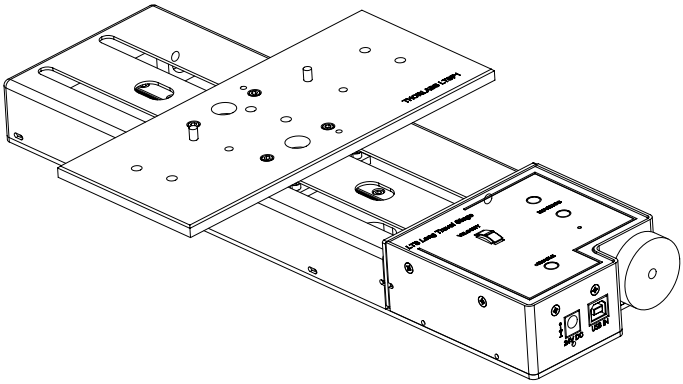


Fig. 1.3 Fitting the Y Axis Locating Dowels

5) Fit the Y-axis stage to the spacer plate, ensuring that the dowels at item (4) locate correctly in the holes in the under surface of the upper (Y axis) stage.

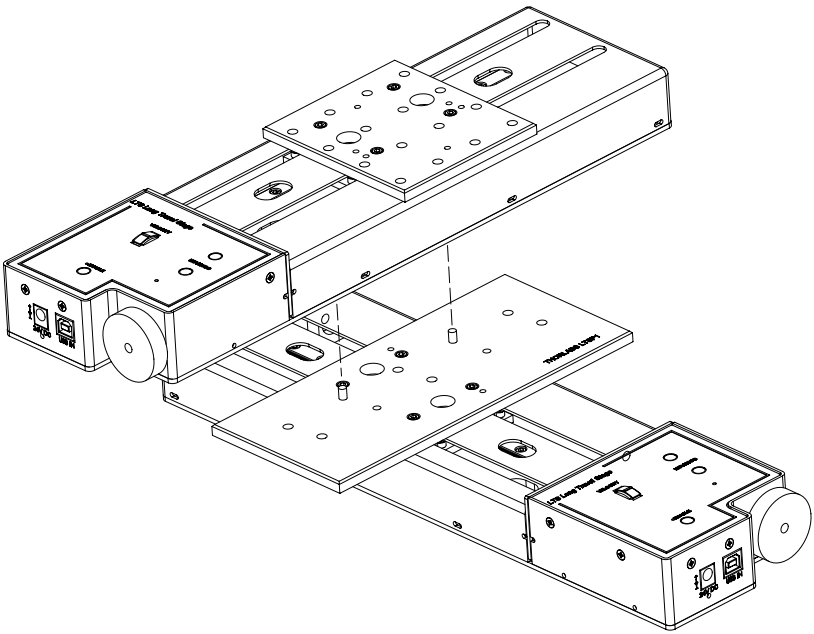


Fig. 1.4 Fitting the Y-axis Stage

6) Fit the bolts supplied (M6 or 1/4-20, 3 off LTS150, 4 off LTS300) through the holes in the upper stage as shown, and screw into the spacer plate. Turn the damper knob to reposition the top platform as necessary to gain access to the mounting holes.
Caution. Use only the bolts supplied. The screw length is critical and using screws which are too long will damage the stage below.

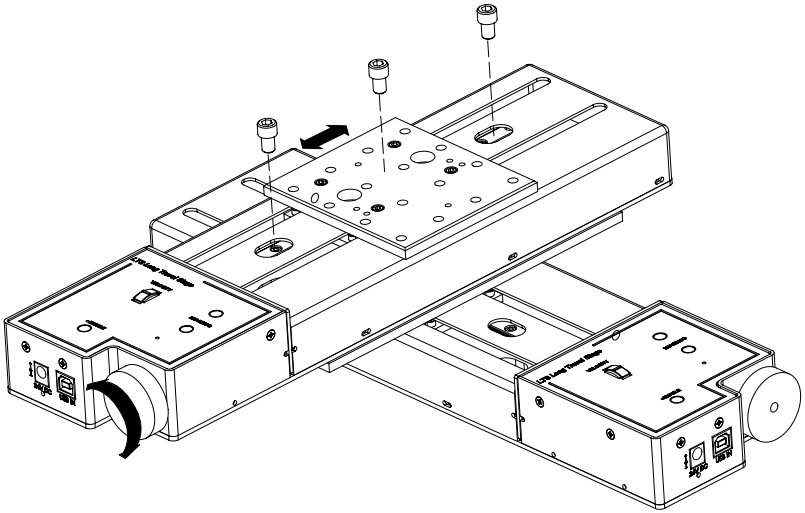


Fig. 1.5 Fitting the Y-axis Stage

7) Tighten the bolts to secure the stage in place.
8) Bolt the assembly to the worksurface as detailed in the handbook supplied with the stages.

1.1.3 Building an XYZ Configuration

Assemble an XY configuration as detailed in Section 1.1.2. then, referring to Fig. 1.6, proceed as follows:

1) Fit the two dowels supplied into the holes in the base of the angle bracket.
2) Fit the angle bracket (LTSP2 or LTSP3) onto the moving platform of the stage, ensuring that the dowels fitted at item (1) locate correctly in the holes in the top platform of the upper stage..

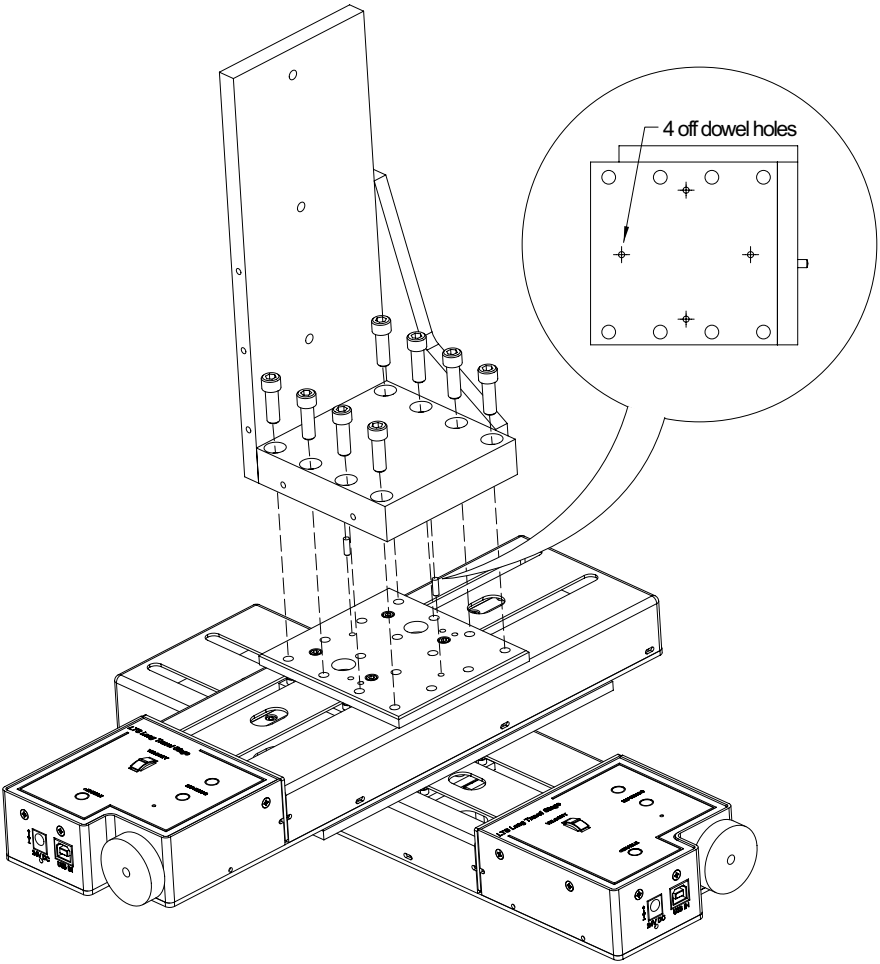


Fig. 1.6 Fitting the Angle Bracket

3) Fit the eight bolts (M6 x 20 or 1/4-20 x 3/4”), not supplied with through the holes in the base of the angle bracket, and tighten to secure the bracket to the XY assembly.

4) The angle bracket is shipped with dowels and screws separately. Fit the vertical-axis stage into place ensuring that the dowels in the angle bracket locate correctly into the holes in the back surface of the stage.

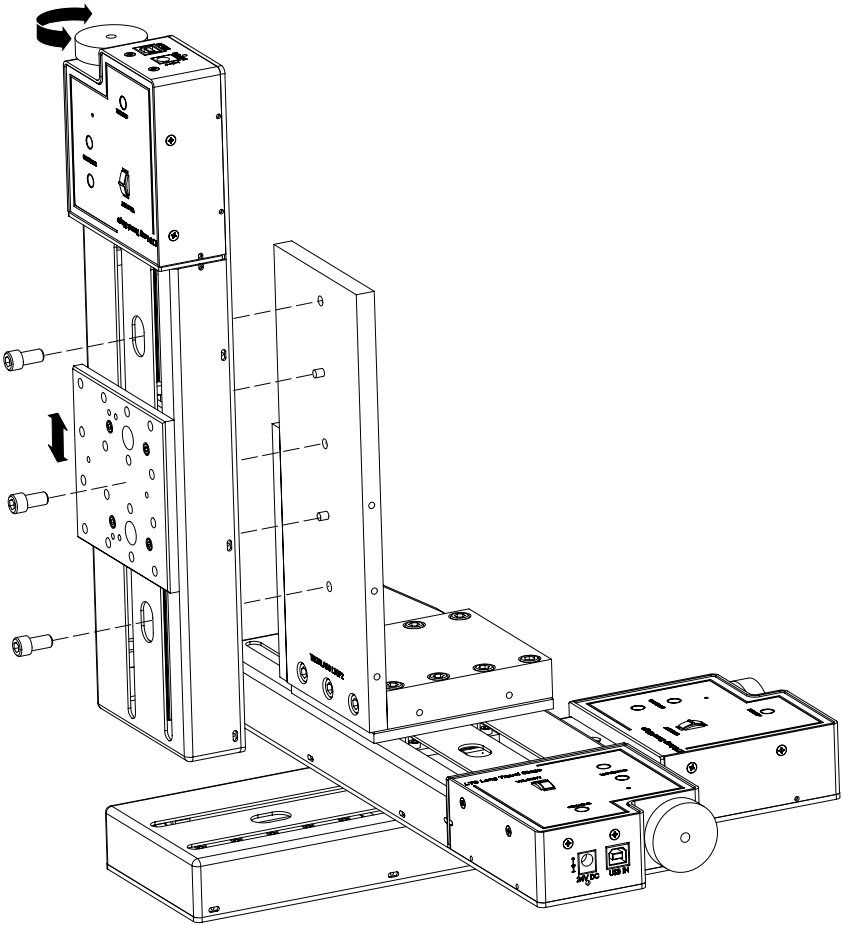


Fig. 1.7 Fitting the Z-axis Stage

5) Fit the bolts (M6 or 1/4-20, 3 off LTS150, 4 off LTS300) not supploed with the unit through the holes in the vertical stage as shown, and screw into the angle bracket. Turn the damper knob to reposition the top platform as necessary to gain access to the mounting holes.
6) Tighten the bolts to secure the stage in place.
7) Bolt the assembly to the worksurface as detailed in the handbook supplied with the stages.

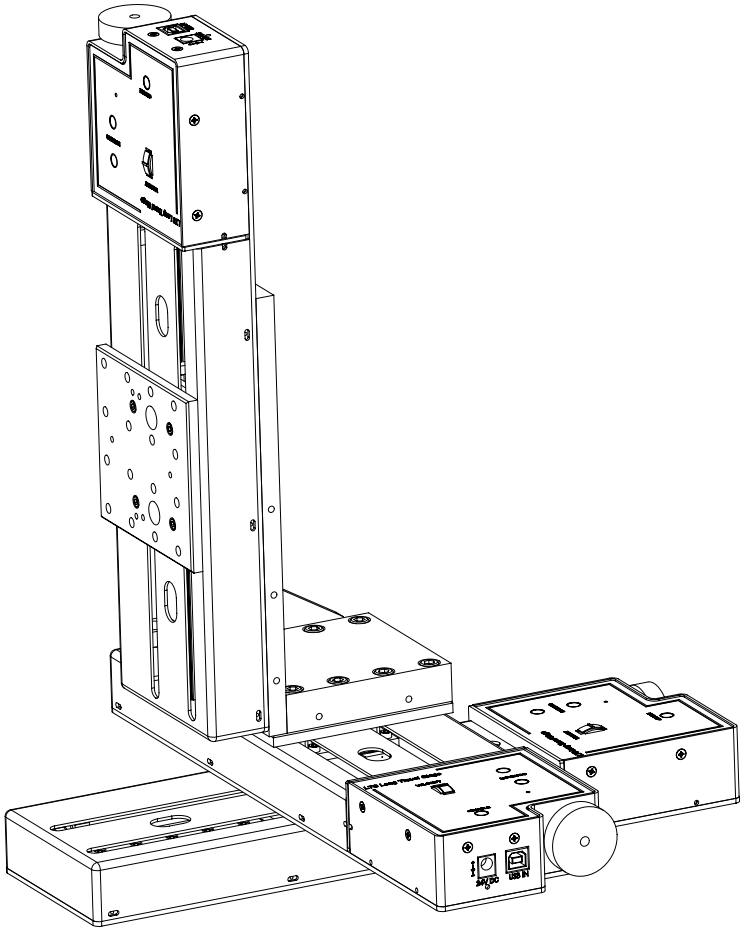
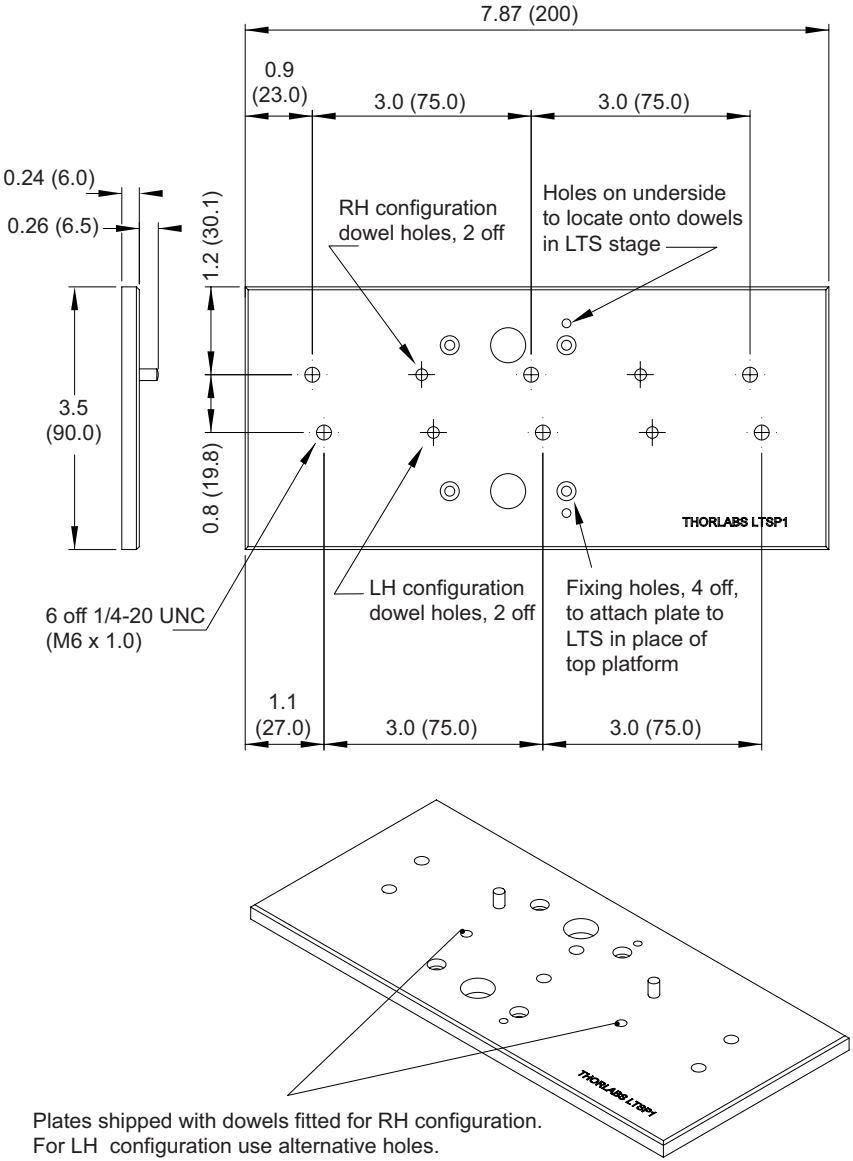


Fig. 1.8 Typical XYZ Configuration

1.2 Dimensions

1.2.1 LTSP1 Dimensions

all dimensions in inches (mm)



Plates shipped with dowels fitted for RH configuration.
For LH configuration use alternative holes.

Fig. 1.9 LTSP1 Dimensions

1.2.2 LTSP2 Dimensions

all dimensions in inches (mm)

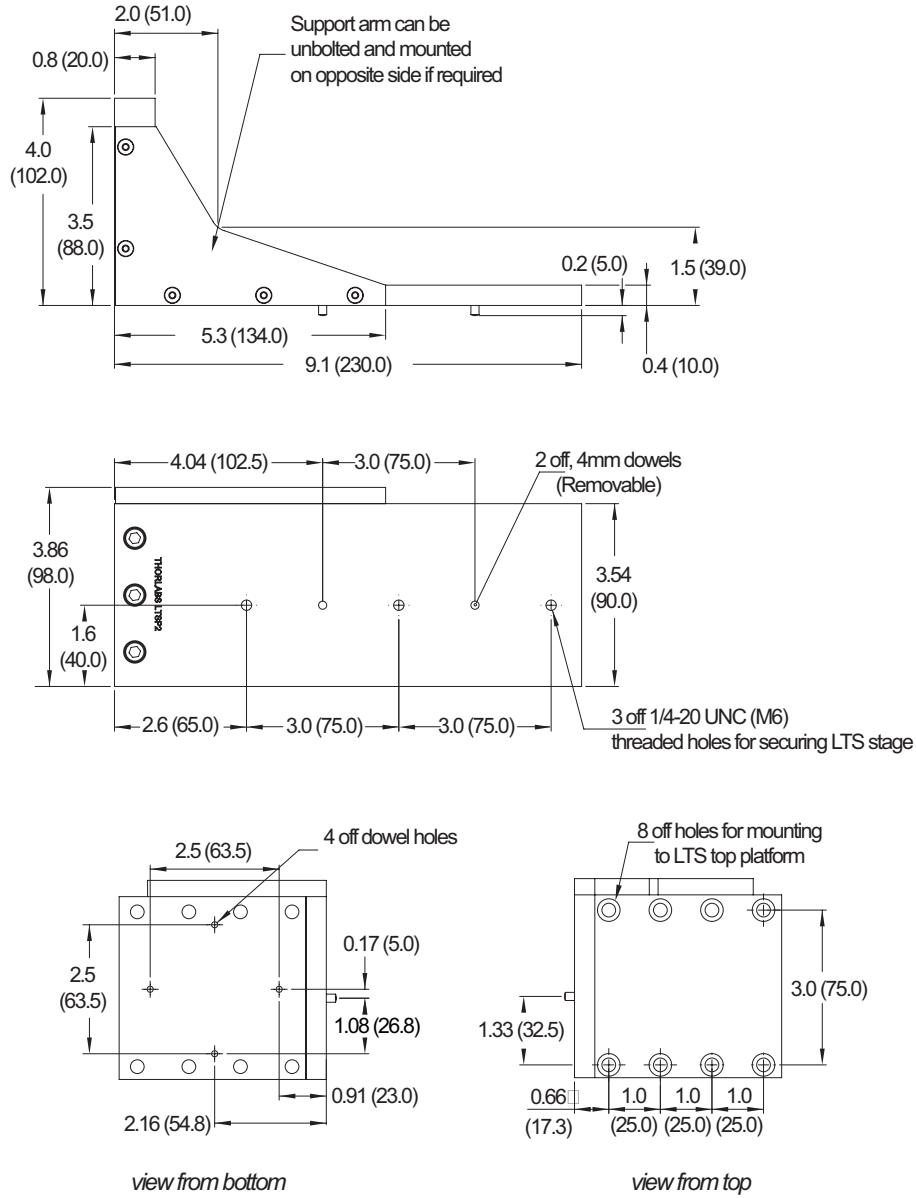


Fig. 1.10 LTSP2 Dimensions

1.2.3 LTSP3 Dimensions

all dimensions in inches (mm)

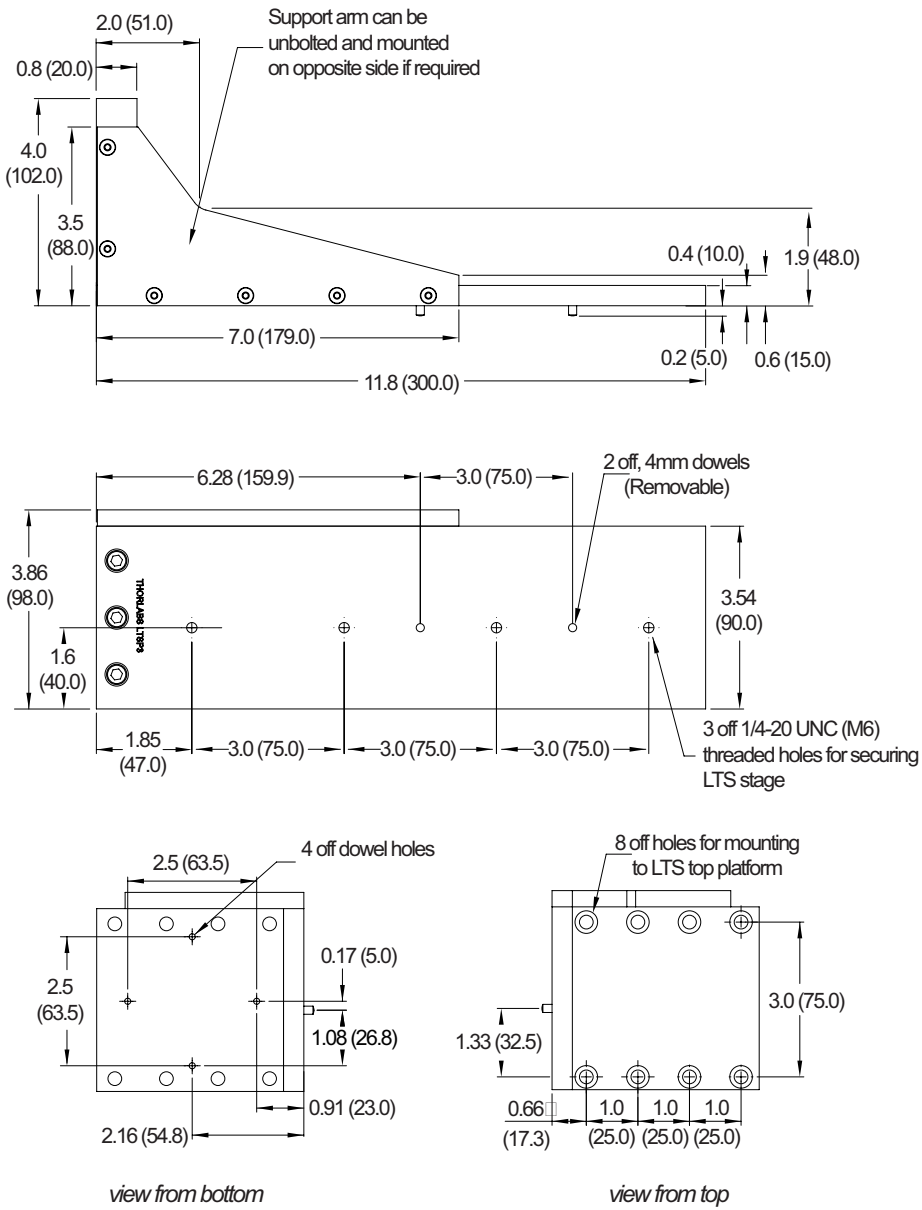


Fig. 1.11 LTSP3 Dimensions

Products and Customer Support

Optical and Opto-mechanical Components

Optical mounts and rails

Lenses, prisms and filters

Polarization-optics

Laser diodes

Standard and specialized optical fibers

Optics, laser & fiber accessories

Test- and Measurement Systems

High precision current and TEC controllers for laser diodes

Highly stable, tunable laser diodes with integrated electronics

Optical powermeters

Fabry-Perot interferometer and spectrum analyzers

Polarization analyzer and controller systems

Optical Tables and Vibration Control

Optical tables and protection systems

Vibration damping systems

Optical breadboards and vibration isolated workstations

Nanopositioning Systems

Manual, motor- and piezo-driven translators, stages and mounts

Electronic stepper motor and piezo controllers

Integrated multi-axis positioning systems at sub-micron to nanometer scale

Laser Systems

External cavity laser sources

Ultra broadband laser sources

Femtosecond laser sources

Optical amplifiers

HeNe lasers

Technical Support

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

Thorlabs Ltd

Saint Thomas Place

Ely

Cambridgeshire CB7 4EX, UK

Tel: +44 (0) 1353 654440

Fax: +44 (0) 1353 654444

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

© Thorlabs 2010

Printed in UK (0310)

Thorlabs Ltd.
Saint Thomas Place, Ely
Cambridgeshire CB7 4EX,
UK
Tel: +44 (0) 1353 654440
Fax: +44 (0) 1353 654444
www.thorlabs.com

Thorlabs Inc.
435 Route 206 North
Newton, NJ07860
USA
Tel: +1 973 579 7227
Fax: +1 973 300 3600
www.thorlabs.com

ha 0219T Issue 2