THORLABS PTP702 Passive Isolating Optical Table Supports User Guide

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THORLABS

PTP702, PTP703, PTH702, PTH703

Passive Isolating Optical Table Supports

User Guide

Original Instructions

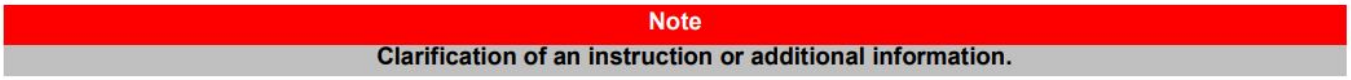
Contents

Chapter 1 Safety

1.1 Safety Information

For the continuing safety of the operators of this equipment, and the protection of the equipment itself, the operator should take note of the **Warnings, Cautions** and **Notes** throughout this handbook and, where visible, on the product itself.

The following safety symbols may be used throughout the handbook and on the equipment itself.



1.2 General Warnings

Do:

Ensure that the system is securely positioned prior to any work being undertaken.

If using the system with any electrical equipment, incorporate appropriate earthing and/or other safety circuitry as required by national standards to protect the operator.
When lifting or moving components, ensure that the proper posture is maintained. Do not lift loads in excess of nationally recognized safe working limits (25kg per operator in Europe). If in doubt use an appropriately designed lifting device.
Before lifting the table top, ensure it is unpopulated.
Exercise particular caution if moving the system on a sloping surface.
Ensure all fixings are secure prior to use.
Ensure that proper airflow is maintained to any electrical equipment installed on the system.

Do not:
Use the system outdoors. The system is designed for indoor use only.
Get into any position where you can be trapped between a wall, door frame or other immovable object and the system.
Go underneath the system when the unit is being moved.
Move the system when the table is floating on its supports.
Tow the system with any powered device.
Ride on the system.
Move the system over uneven ground.
Sit on the system.

Chapter 2 Operation

2.1 General Description

Thorlabs passive isolators are designed to remove floor vibrations in the critical 10Hz to 50Hz frequency range. The passive air mount design is ideal for most general optical table uses, providing low frequency isolation coupled with excellent stability in both horizontal and vertical directions. The thick wall construction assures maximum safety and overload protection with an economical design. The air mount continues to support and isolate even with no air pressure.
Two load capacities are available to match a particular application and a choice of height allows any of the standard Thorlabs table tops to be mounted at a nominal working height of 910mm (36 in.) above the floor.

2.2 Damping System

Each isolator consists of a cylindrical reinforced rubber air mount in the top of a cylindrical steel leg. The rubber mount is bolted to the top plate and the table top rests on an aluminum plate which is molded to the air mount. The height of the table top is adjusted by admitting or releasing air into the mount via a standard Schraeder valve, situated on the side of each isolator.

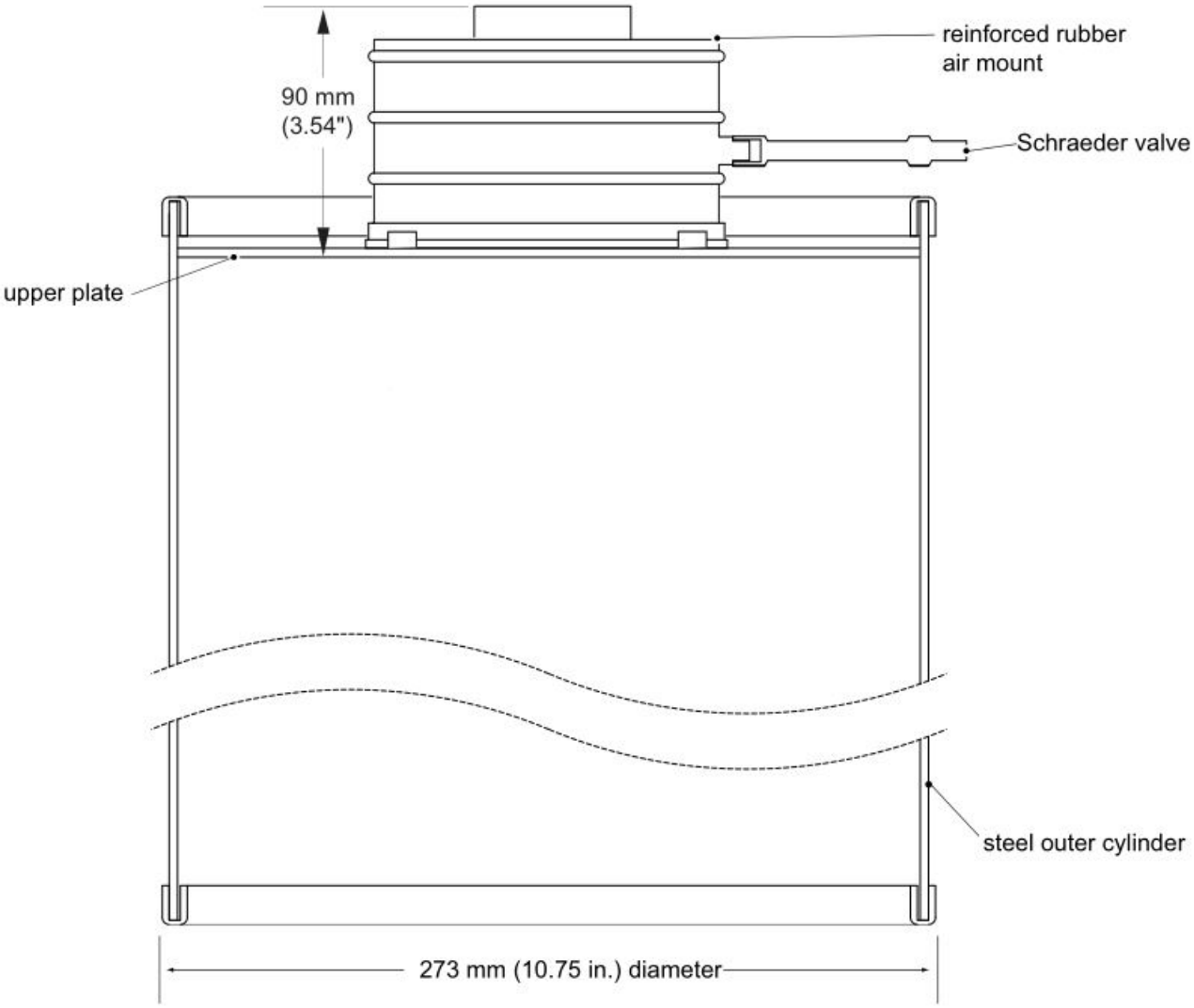


Fig. 2.1 Passive isolator section

Chapter 3 Installation

3.1 General

Height mm (in.)	Load Capacity kg (lb)	Part Number
600 (24)	275 to 1100 (600 to 2425)	PTP702
700 (28)	275 to 1100 (600 to 2425)	PTP703
600 (24)	550 to 2400 (1200 to 5280)	PTH702
700 (28)	550 to 2400 (1200 to 5280)	PTH703

3.2 Installation

3.2.1 Preparation

Ensure that the floor of the installation site is flat and horizontal to within 13 mm, (i.e. +/- 6.5 mm).

3.2.2 Positioning the Isolators

Note

During item 1, two people, one on each side, should be employed in positioning the supports.

1. Position the isolators in approximately the correct position for the table – see Fig. 3.1 for dimensions. Note the position of the Schraeder valves and orientate the isolators as shown.

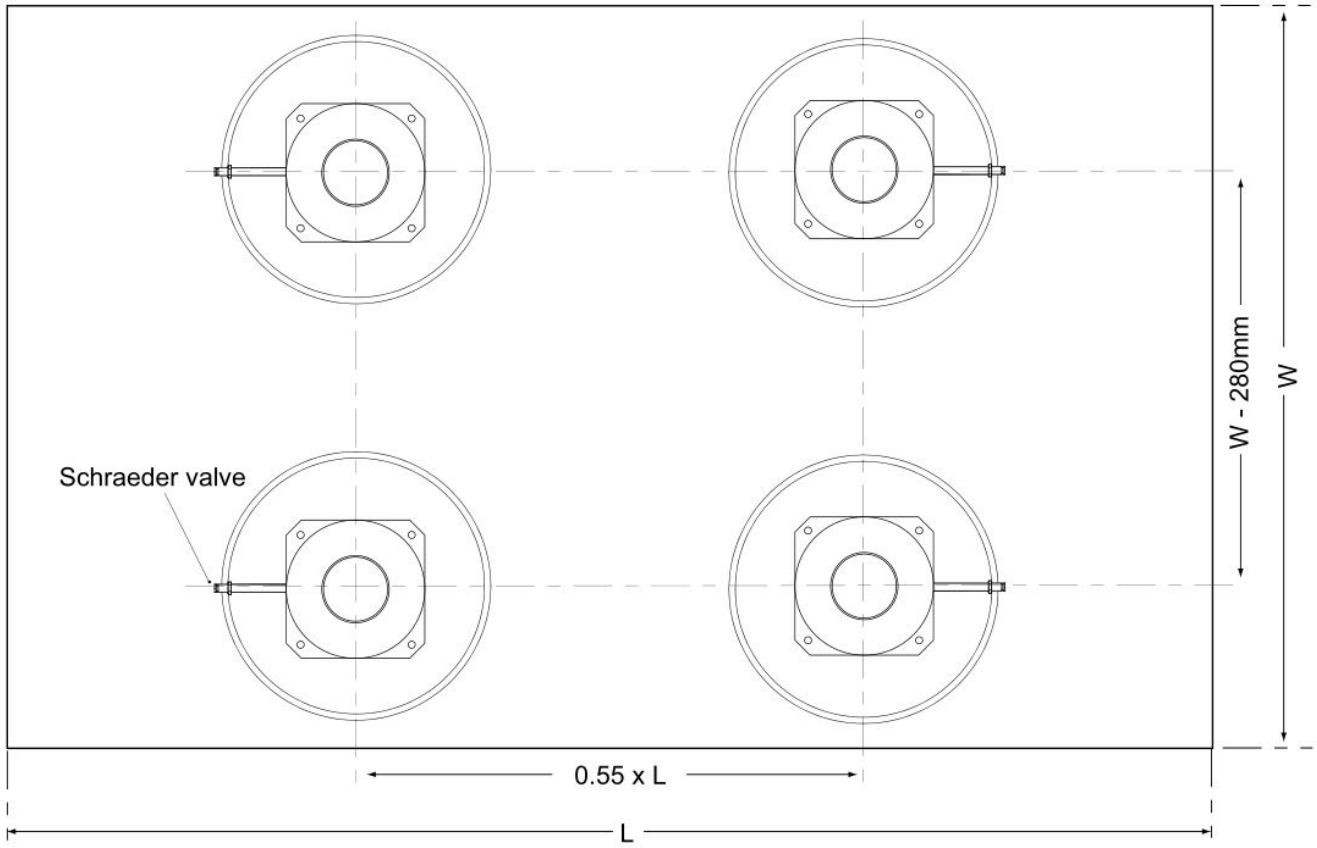


Fig. 3.1 Isolator positions

3.2.3 Mounting the Table on the Isolators

1) Raise the table on a fork-lift truck, ensuring that the fork distance is set such that the forks can pass between the isolators when the table is lowered into position – See Fig. 3.2.

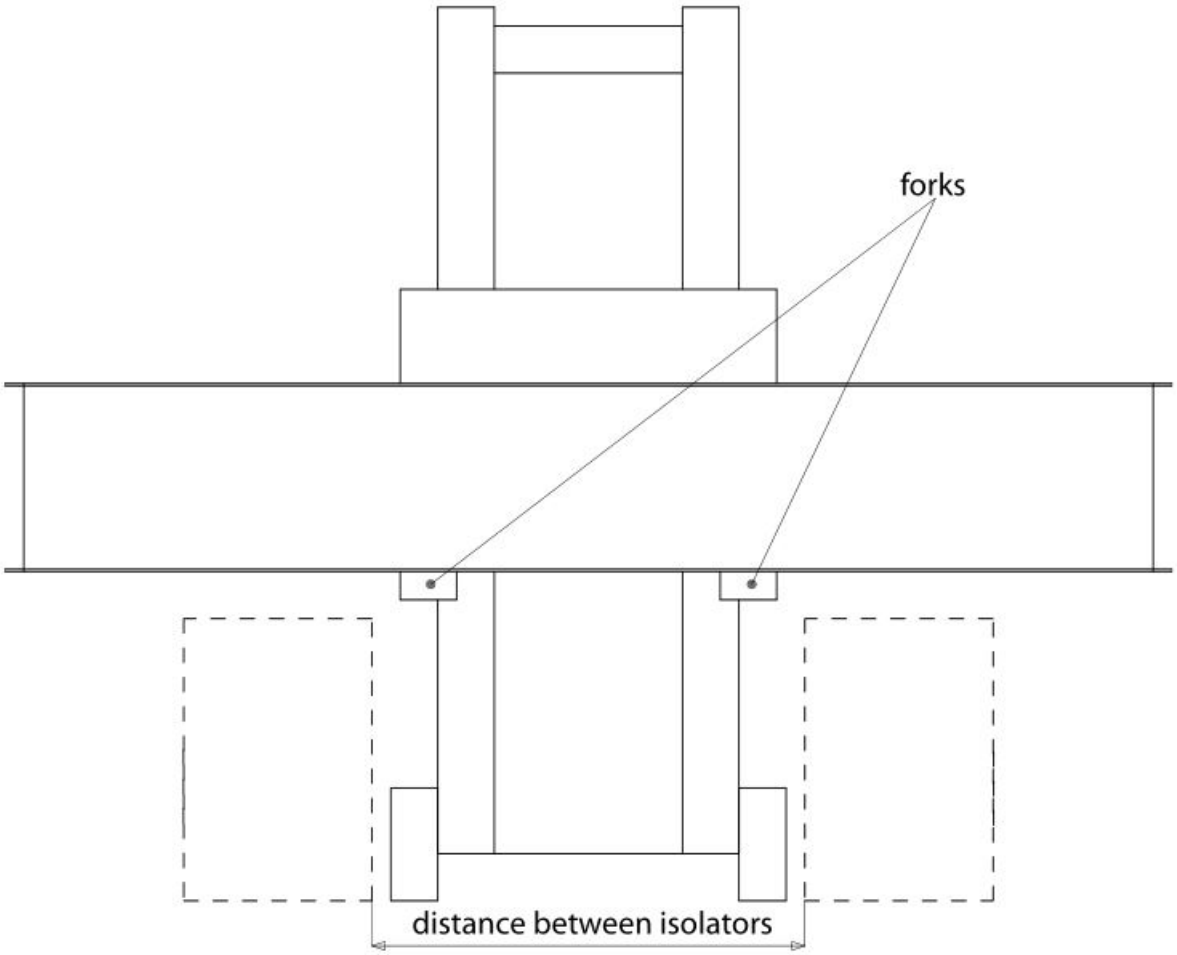


Fig. 3.2 Distance between forks

2) Manoeuvre the fork-lift truck until the table is over the isolators. Carefully lower the table until it is around 20mm above the isolators.
3) Lower the table onto the isolators.
4) When the table is supported on the isolators, remove the fork-lift truck.

3.3 Set-up

1. Remove the valve caps from each isolator.
2. Connect a footpump to the Schraeder valve of one of the isolators and inflate to about 40 p.s.i. – see Fig. 3.3
3. Repeat item 2) for the isolator diagonally opposite.
4. Repeat items (2) and (3) for the remaining two isolators.

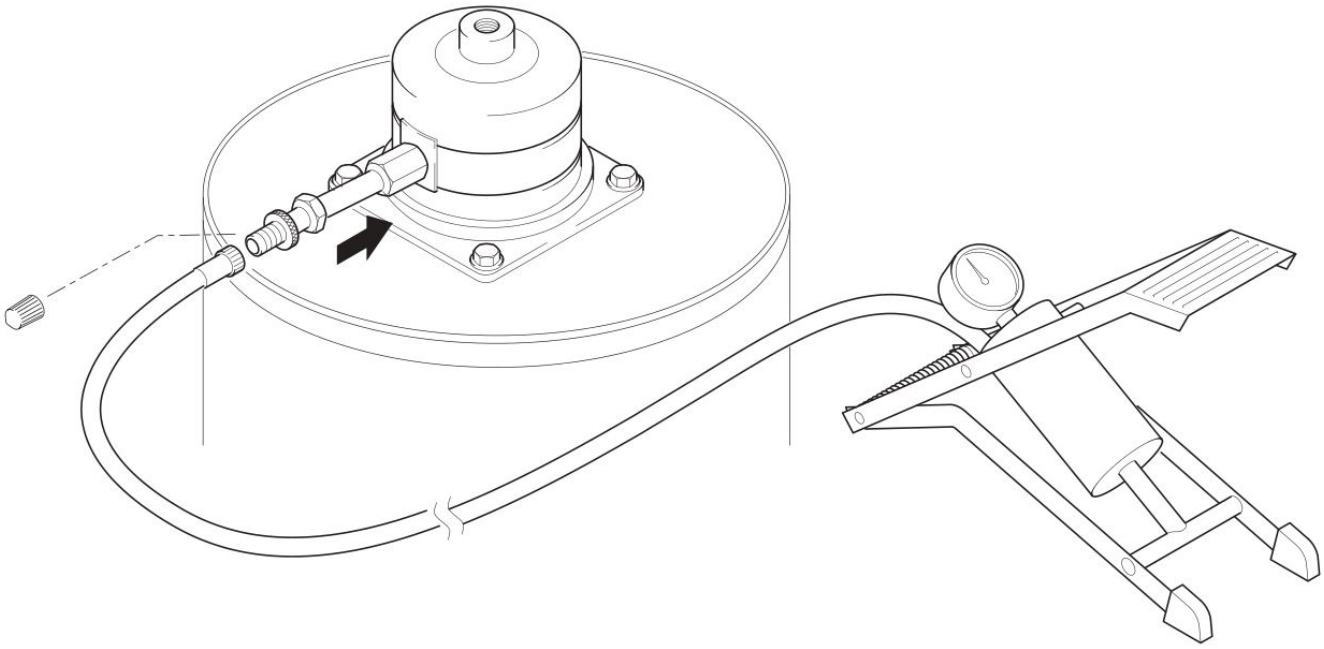


Fig. 3.3 Inflating passive isolator

5) Repeat items (2) to (4) until all four isolators have a gap of 63 mm (2.48”) between the top of the cylinder and the underside of the table – see Fig. 3.4.

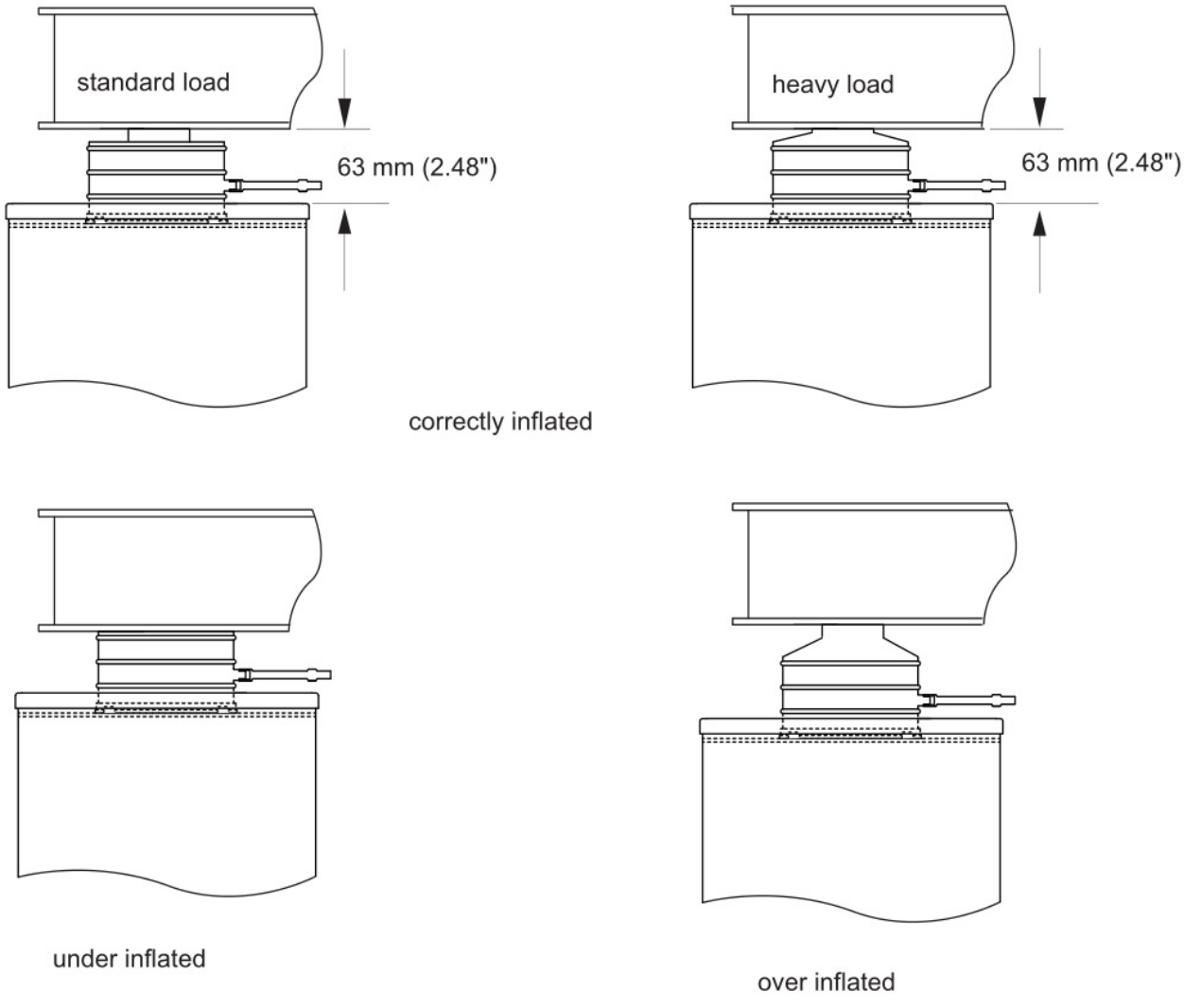


Fig. 3.4 Correct inflation of passive isolators

6) Check that the table top is level. If the floor is uneven, the gap between the table and each isolator may not be the same. If this is the case, identify the isolator with the smallest gap. Set this gap to 63 mm (2.48”) and then adjust the remaining isolators such that the table is level. Use a levelling device as necessary.

3.4 System Stability

The location and height of a load placed on a table top can dramatically affect the stability of the table system. To ensure optimum effectiveness of the isolators, it is important to avoid any instability due to the system centre of mass being misplaced.

In order to avoid dynamic instability and oscillation due to excessive rocking, the center of mass, including that of the table, should be within the pyramid defined by connecting the center point of each isolator with an apex point, whose vertical height is equal to 1/2 the shortest distance between isolators– see Fig. 3.5.

Since the table top tends to be the heaviest component, to ensure the system is within the stability zone the system center of mass should be near the center of the table or below the table top surface. It may be necessary to lower the center of mass by relocating equipment on the table or by using accessory shelves situated below the table surface.

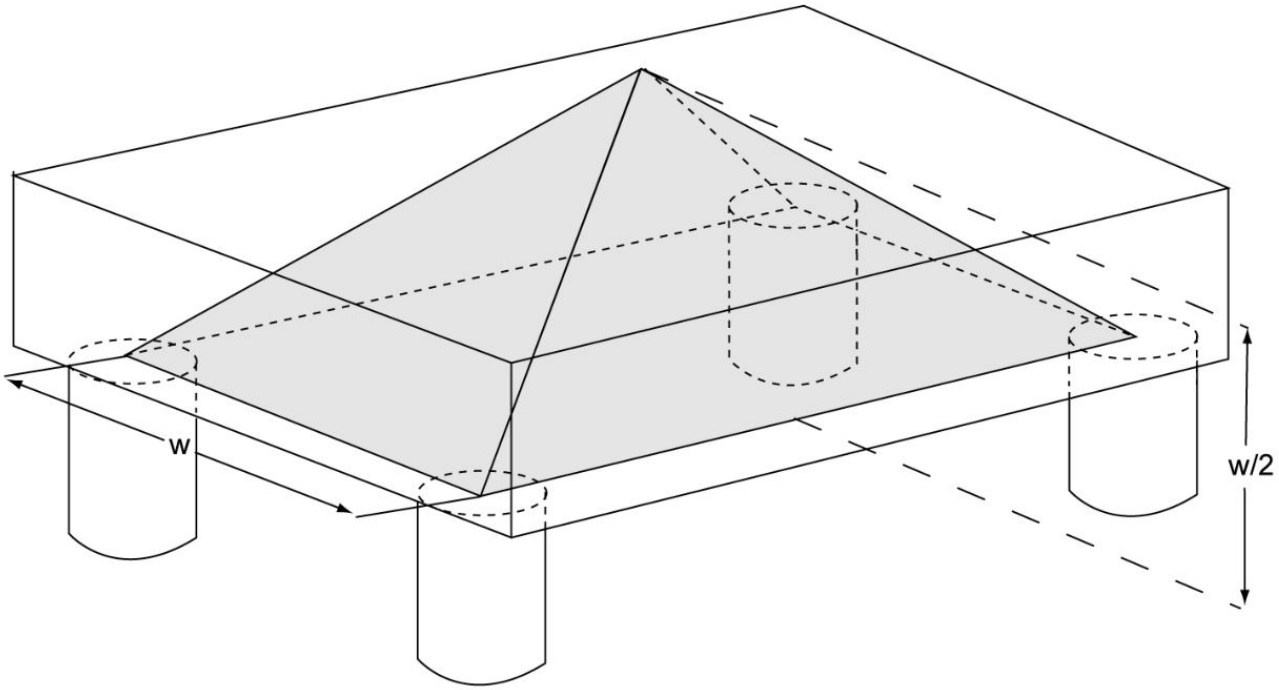


Fig. 3.5 System stability zone

Chapter 4 Joined Systems

The location and pneumatic connections for a joined system will depend on the configuration of the system. Some typical examples are shown below. Please contact your local tech support office for more details.

4.1 Smaller Systems

Although single tables require four isolators, smaller joined systems may require only six rather than eight isolators. The number of isolators required will depend upon the joiner configuration and the size of the tables. Contact tech support for detmore details of a specific system attangement.

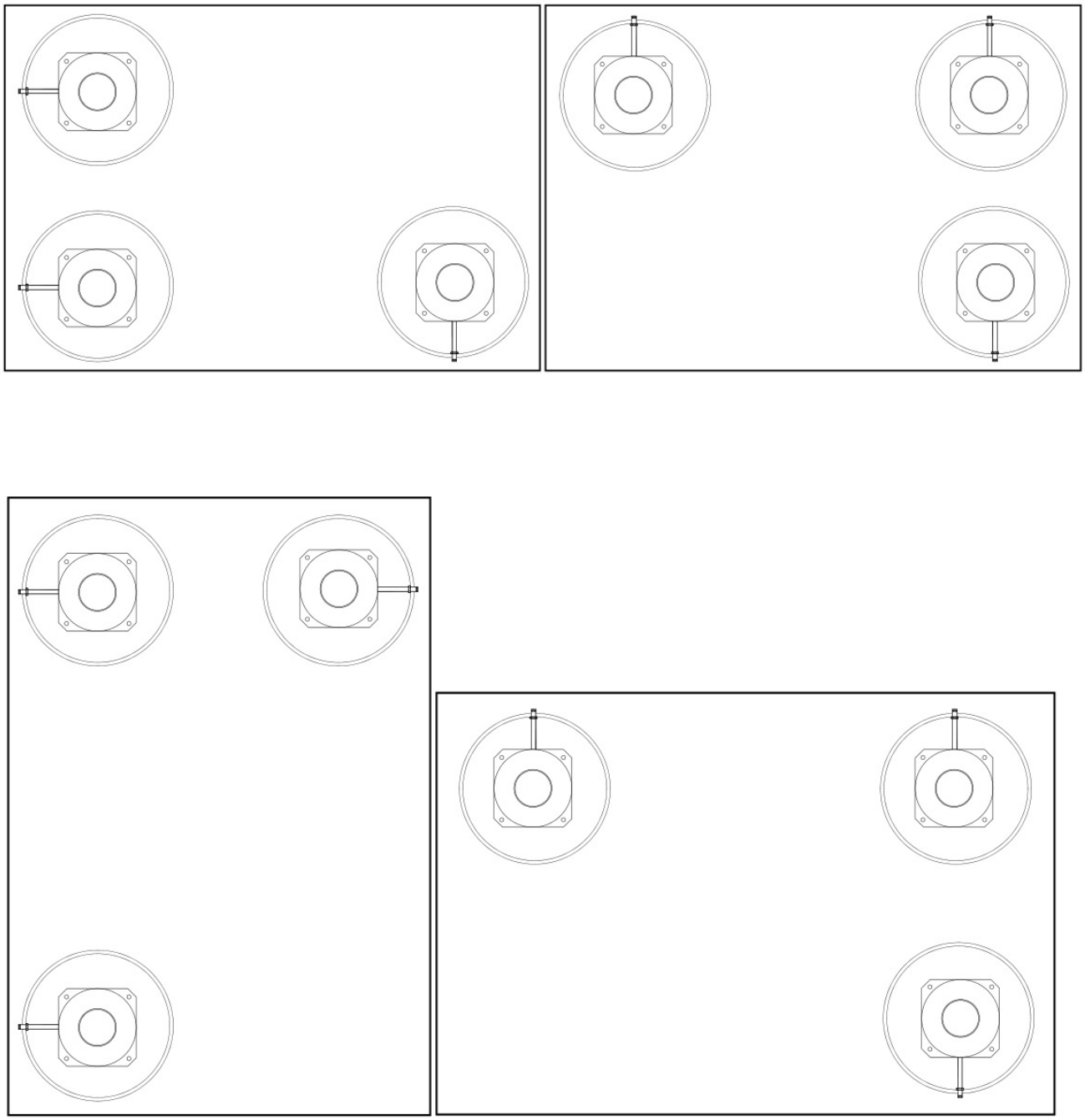


Fig. 4.1 Isolator posiitons and pneumatic connections – small systems

4.2 Larger Systems

Depending on the configuration of the joiner, larger systems may require eight or more isolators as shown below.

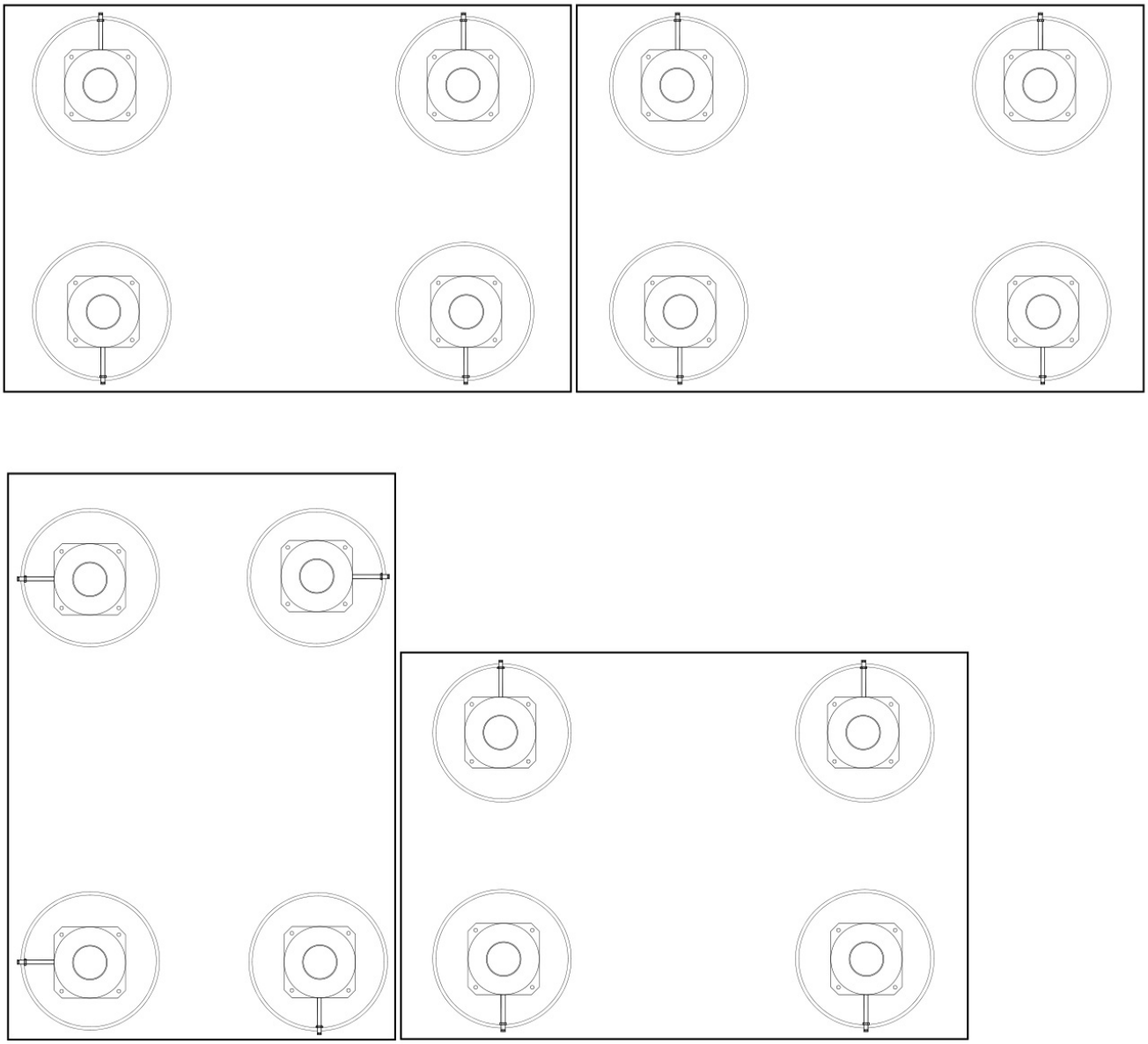


Fig. 4.2 Isolator posiitons and pneumatic connections – larger systems

Appendix E Thorlabs Worldwide Contacts

For technical support or sales inquiries, please visit us at **www.thorlabs.com/contact** for our most up-to-date contact information.

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Thorlabs, Inc.
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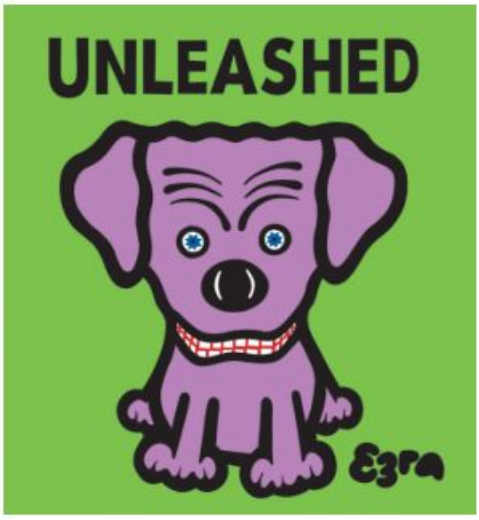

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Documents / Resources

	THORLABS PTP702 Passive Isolating Optical Table Supports [pdf] User Guide PTP702, PTP703, PTH702, PTH703, PTP702 Passive Isolating Optical Table Supports, Passive Isolating Optical Table Supports, Isolating Optical Table Supports, Optical Table Supports, Table Supports

References

- Thorlabs, Inc. - Your Source for Fiber Optics, Laser Diodes, Optical Instrumentation and Polarization Measurement & Control
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