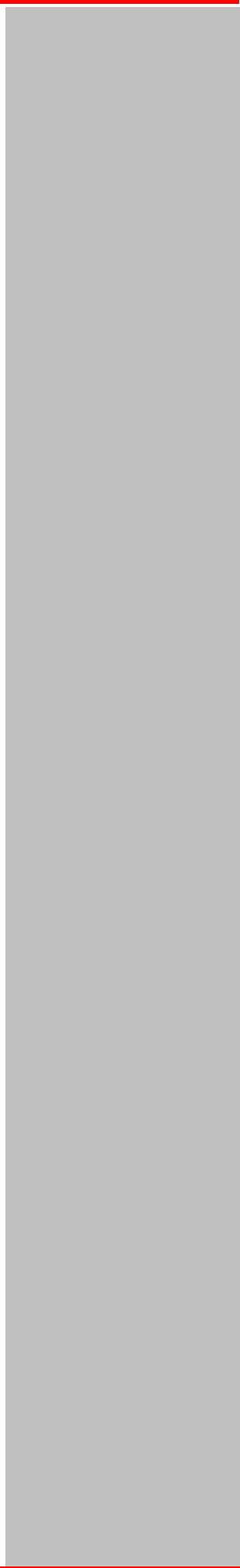


PWA076

**Passive Isolation Upgrade
Kit for Rigid Supports**

Installation Guide



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Note

Early versions of the PTL702 and PTL703 rigid supports may be difficult to upgrade.

For more details on upgrading legs with the following serial numbers please contact tech support:

PTL702

SN200018

SN200002

SN200003

SN200007

PTL703

SN200001

SN200004

SN200006

SN200008

SN200010

SN200011

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.



 **Shock Warning** 
Given when there is a risk of injury from electrical shock.

 **Warning** 
Given when there is a risk of injury to users.

 **Caution** 
Given when there is a risk of damage to the product.

Note
Clarification of an instruction or additional information.

1.2 General Warnings

 **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 Installation

2.1 General Description

The passive isolation mount kit allows a set of PTL70x or PTL80x rigid non-isolating supports to be upgraded to passive isolation. The mounts are easily fitted in place of the existing support pads and can be inflated using a standard foot pump (PTA127).

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.

The PWA076 has a maximum load capacity of 2425 lb (1100 kg) and is available from stock. A heavy duty variant with a load capacity of 1200 - 5280 lb (550 - 2400 kg) is available as a special order, contact tech support for more details.

2.2 Preparation

Remove all equipment from the optical table, then using suitable lifting equipment, remove the optical table from the supports.

2.3 Installation

- 1) Invert the support and use a suitable tool to remove the circlip as shown below.
- 2) Loosen the lock nut on the support pad stud, then unscrew and remove the existing support pad.

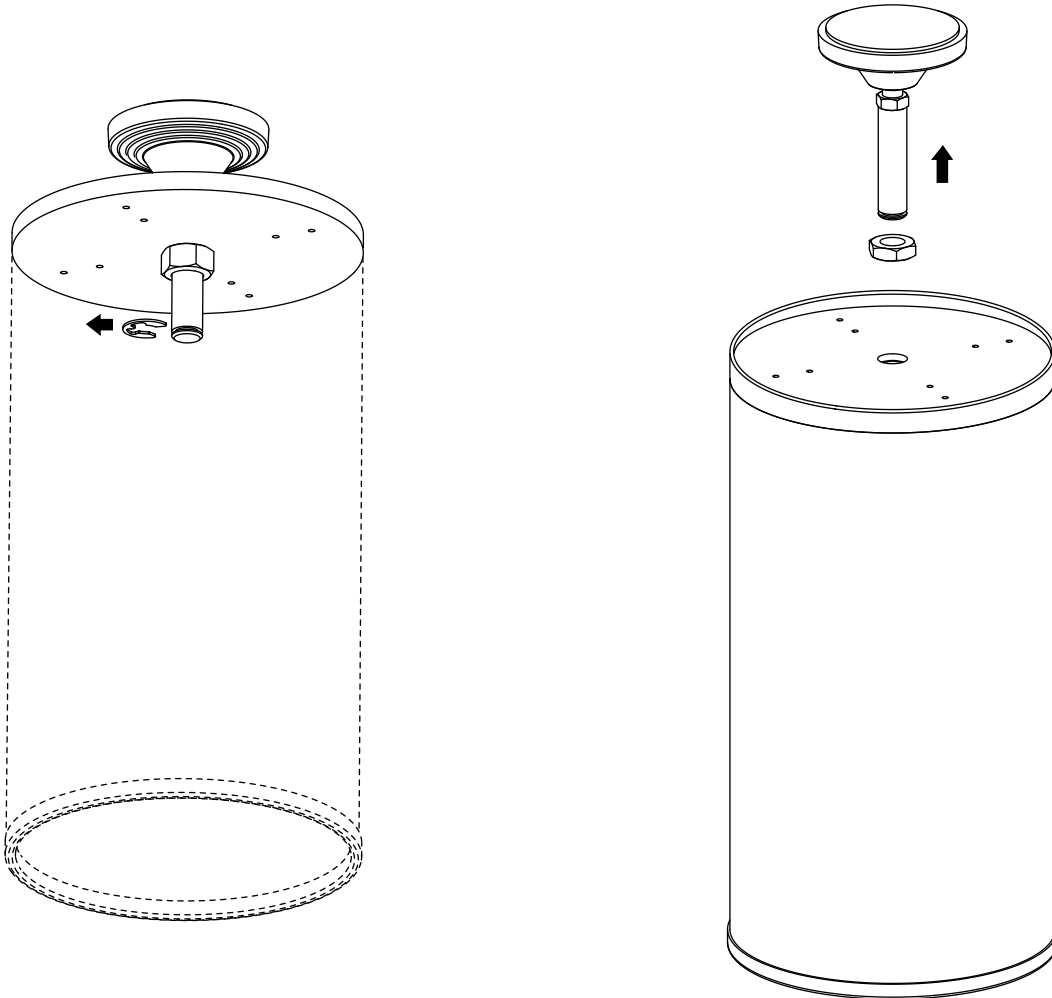


Fig. 2.1 Removing the circlip and support pad

- 3) Using the bolts supplied (four bolts for each mount) fit the passive mounts to the top plates as shown in Fig. 2.2.

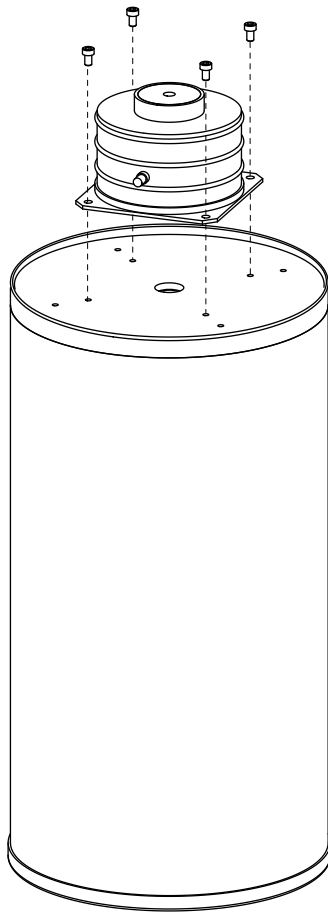


Fig. 2.2 Fitting the passive mounts

Note

During item 4, two people, one on each side, should be employed in positioning the supports.

- 4) Position the isolators in approximately the correct position for the table – see Fig. 2.3 for dimensions. Note the position of the Schraeder valves and orientate the isolators as shown. Remove the lifting handles.

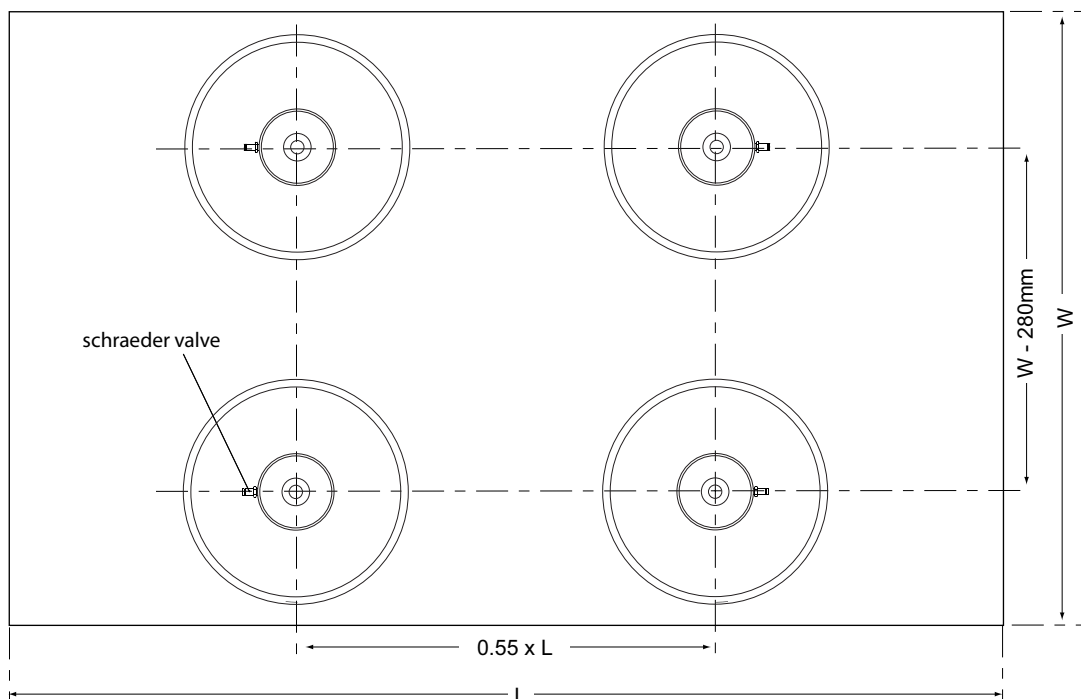


Fig. 2.3 Isolator positions

2.3.1 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. 2.4.

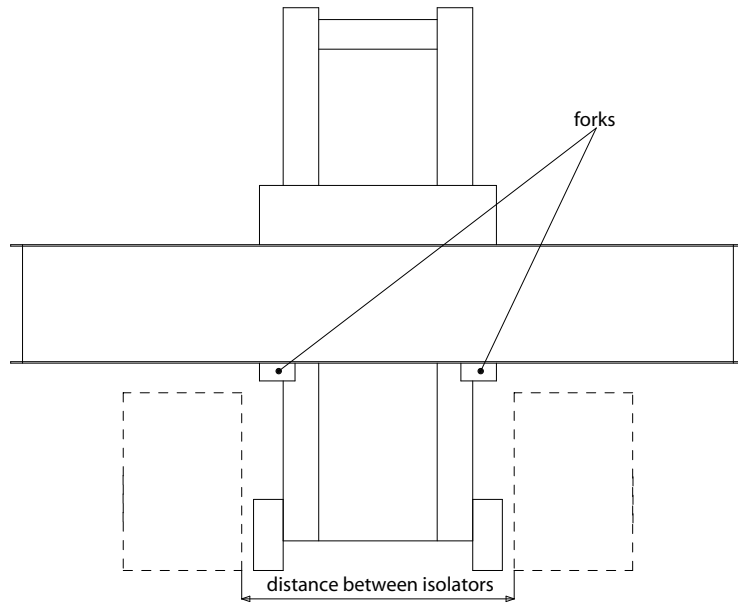


Fig. 2.4 Distance between forks

- 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) Ensure that the isolators are positioned correctly as identified by the location marks on the underside of the table – Fig. 2.3.
- 4) Lower the table onto the isolators.
- 5) When the table is supported on the isolators, remove the fork-lift truck.

2.4 Set-up

- 1) Connect a footpump to the Schraeder valve of one of the isolators and inflate to raise the table by around 5mm.
- 2) Repeat item 1) for the isolator diagonally opposite.
- 3) Repeat items (1) and (2) for the remaining two isolators.

- 4) Repeat items (1) to (3) until all four isolators have a gap between the outer cylinder and the underside of the table as shown below in Fig. 2.5.

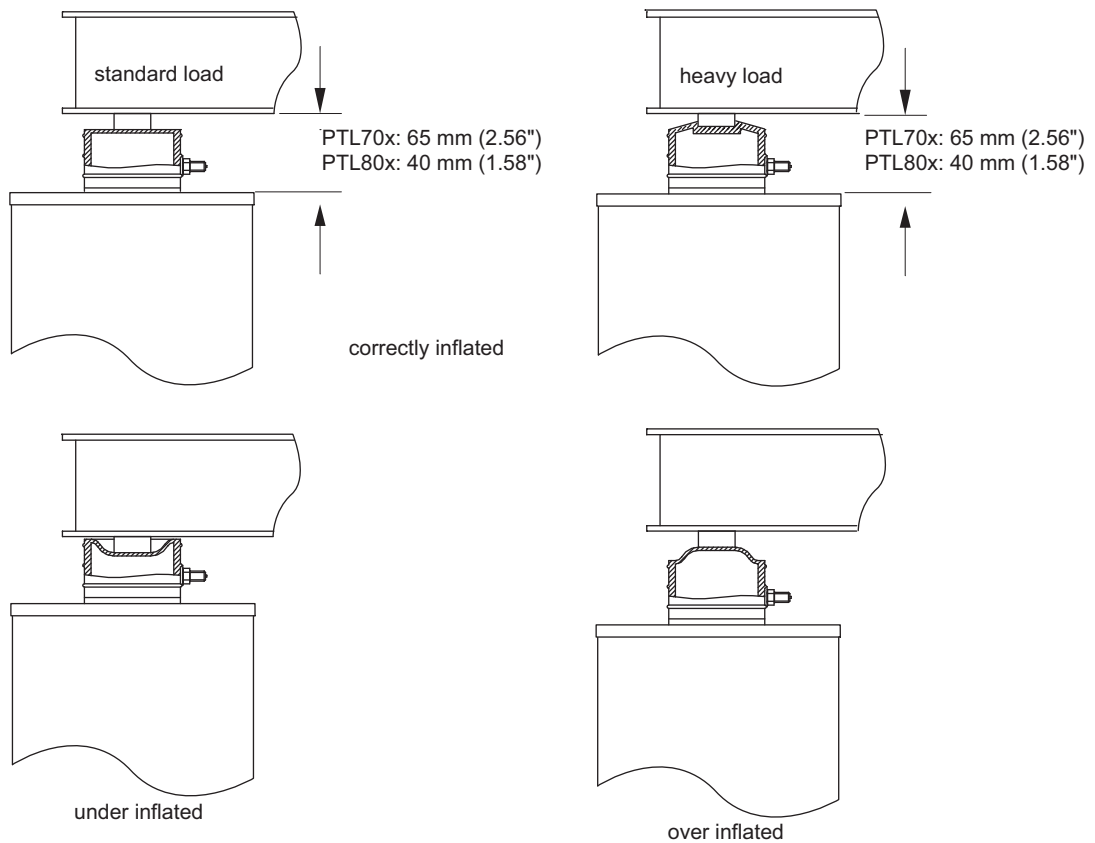


Fig. 2.5 Levelling the system

- 5) Check that the table top is level. Use a levelling device as necessary.

2.5 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. 2.6.

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.

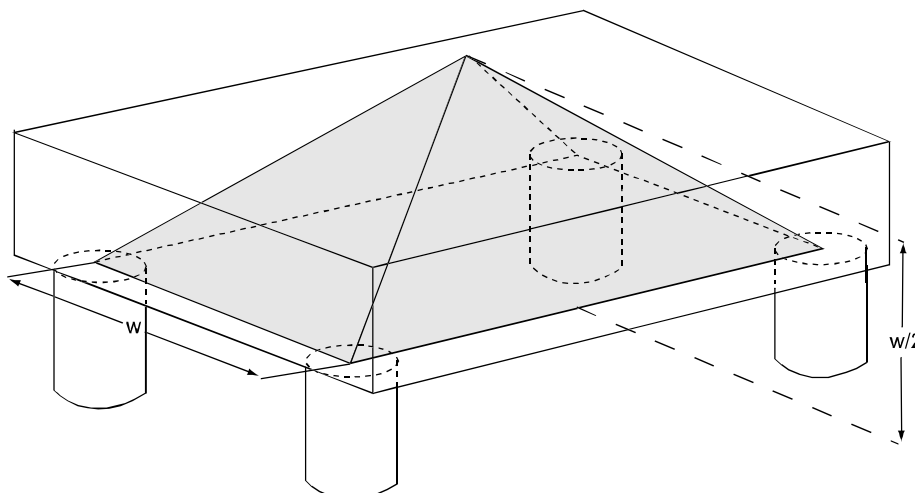
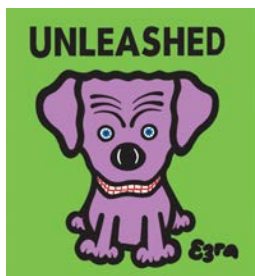


Fig. 2.6 System stability zone



THORLABS
www.thorlabs.com



Appendix C 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.



USA, Canada, and South America

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