

VIBe™

Vibration Isolation Platform



Newport
Experience | Solutions

Users Manual

Warranty

Newport Corporation warrants that this product will be free from defects in material and workmanship and will comply with Newport's published specifications at the time of sale for a period of one year from date of shipment. If found to be defective during the warranty period, the product will either be repaired or replaced at Newport's option.

To exercise this warranty, write or call your local Newport office or representative, or contact Newport headquarters in Irvine, California. You will be given prompt assistance and return instructions. Send the product, freight prepaid, to the indicated service facility. Repairs will be made and the instrument returned freight prepaid. Repaired products are warranted for the remainder of the original warranty period or 90 days, whichever first occurs.

Limitation of Warranty

The above warranties do not apply to products which have been repaired or modified without Newport's written approval, or products subjected to unusual physical, thermal or electrical stress, improper installation, misuse, abuse, accident or negligence in use, storage, transportation or handling. This warranty also does not apply to fuses, batteries, or damage from battery leakage.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE. NEWPORT CORPORATION SHALL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE PURCHASE OR USE OF ITS PRODUCTS.

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This manual has been provided for information only and product specifications are subject to change without notice. Any change will be reflected in future printings.

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Section 1 – General information

1.1 Introduction

The VIBe vibration isolation baseplate from is a compact, effective and easy-to-use platform that significantly reduces effect of disturbing environmental vibrations on sensitive instruments such as microscopes, inspection or analysis equipment. All VIBe units feature a black powder-coated steel plate and patented mechanical isolators that provide both vertical and horizontal vibration isolation, there are no air lines, compressors or other accessories needed to provide effective isolation performance.

The Vibe is available in four standard shapes, two rectangular and two triangular, that have been designed to satisfy the widest range of application needs. The two rectangular platforms come in 12"x18" and 18"x24" sizes and can be equipped with isolator bearings to support payloads from 5lbs to over 350lbs. The triangular models have been designed specifically to accommodate a large assortment of microscope footprints from all leading manufacturers.

At the heart of Newport's VIBe are the IB isolator bearings which are available in discrete payload ranges as identified by their part number. For very light instruments, model IB-1018 isolates total payloads from 10lbs to 18lbs per bearing and for heavy instruments IB-50100 isolates total payloads from 50lbs to 100lbs per bearing. In total, Newport offers six models of IB bearings that effectively cover a load range from 10lbs to 100 lbs. This allows users to configure the proper size platform and bearings in the required locations on the baseplate to support and isolate their instrument, even if the load is not uniform, as in the case of microscopes which are typically heavier in the rear by as much as 50%.

Each bearing is a self-contained unit that provides both vertical and horizontal isolation for that specified load range. The isolators feature a 6.7Hz vertical resonance frequency that begins isolating at 9Hz and a horizontal resonance of 6.2Hz with isolation beginning at 9Hz. This is sufficient performance to eliminate more than 85% of vibration noise seen

within typical laboratories. The IB bearings attach to the VIBe baseplate using specially designed brackets that feature a threaded aperture to allow leveling adjustment of the VIBe baseplate.

1.2 Getting Started

Please read this instruction manual thoroughly before assembling the isolation system. The individual components have been assembled at the factory and require only final system assembly and performance adjustment.


1.3 Unpacking and Inspection


The components of your VIBe are packed in individual, labeled boxes. Carefully inspect all components for shipping damage.

Report any shipping damage immediately to Newport and the shipping company.

1.4 Safety Considerations

The following terms are used in this manual that relate to your safety.

	<p style="text-align: center;">WARNING</p> <p>Warning is used to indicate dangers that could result in personal injury.</p>
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	<p style="text-align: center;">CAUTION</p> <p>Caution is used to indicate situations that may result in damage to components of your Newport Vibration Control System.</p>
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1.5 System Placement

To ensure optimal performance from your VIBe, it should be located on a level surface. Uneven mounting surfaces may cause difficulty if their irregularity is outside of the adjustment range of the IB isolator.

1.6 Warranty Information

Warranty information may be found on the page preceding the Table of Contents in this manual. Should it become necessary to exercise the warranty, contact your Newport representative to determine the proper course of action. Newport Corporation maintains offices throughout the United States and other locations worldwide. Refer to the back cover of this manual for the addresses and telephone numbers of these offices.

2 Section 2 – Unpacking and Assembly

2.1 Unpacking and Inspecting

Carefully unpack and remove the ViBe baseplate, brackets and isolators from their boxes. Inspect all of the parts for shipping damage. You will find a black powder coated VIB base plate, mounting brackets with two bolts per bracket and IB isolators with a rubber O-ring (see figure 1).



Figure 1 Vibe components. The shape of the baseplate and the number of isolators may differ depending on your system configuration.

2.2 Assembling and Installing the ViBe System

2.2.1 Assembling the ViBe System

1. Place the O-ring around the top of the VIB and secure it around the bearing just below the threaded portion of the IB isolator. (see figure 2).



Figure 2 IB isolator assembly

2. Bolt the mounting brackets to the base plate.



Figure 3 Mounting the VIB-BRKT to the base plate

3. Next, screw the IB bearings into the brackets completely and place the VIBe in the desired location.



Figure 4 Installing the IB isolator into the VIB-BRKT

4. Finally, place your instrument onto the base plate and adjust the IB bearing at the lowest corner if necessary to level the platform.



Figure 5 Instrument placed centered on the VIBe system

2.2.2 Aligning and Leveling the VIBe System

2.2.2.1 Check the VIBs for proper alignment.

	<p>WARNING</p> <p>Warning: Do not slide platform, or move platform once a load has been placed and the bearings are compressed. Damage may occur to the bearings.</p>
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The bottom portion of the bearing must be vertically aligned with the top portion. (The VIP can be displaced from side to side. When you push the VIP to the side with your hand, the top portion of each VIB will move relative to the bottom portion. When you remove the lateral force, the VIBs will re-center.) You may visually inspect the VIBs to see if the alignment is correct. Simply look at the sides of the VIBs and feel with your fingers to determine if they are aligned. If the alignment is not correct, move the bottom portion of the VIBs with your fingers to correct the alignment. (See Illustration No. 1)

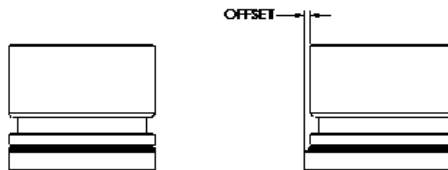


Figure 6 IB isolator alignment diagram

2.2.2.2 Leveling the Platform.

Various microscope configurations place more weight on one side or end of the platform than another, compressing one bearing more than another and thus causing the platform to sit un-level. In this case, determine which bearing is deflected more than the others and turn the top half of the bearing clockwise relative to the threads in the clip that is bolted to the plate. It may be necessary to lift upwards on the platform (though not lifting the VIB off the table) to reduce the pressure on the threads and make it easier to turn the threaded cap. This action will raise the plate relative to the tabletop and level the platform.



Figure 7 IB isolator height adjustment

2.2.2.3 Preloading the Isolators

The IB bearings are shipped with a special gap tool that is used to verify that the isolators are properly loaded. This gap tool measures 0.56" wide by 0.1" thick and is used to determine that the gap in the isolator is more than 0.1" but less than 0.56".

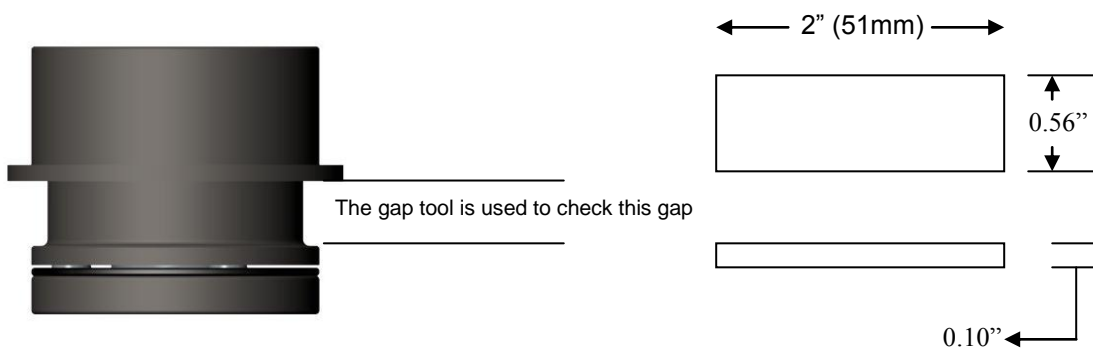


Figure 8 Gap tool dimension and measurement location

If the gap tool width fits into the gap as shown the isolator does not have sufficient loading and will not isolate properly.



Figure 9 Gap tool width measurement showing under loaded condition

If the tool thickness does not fit into the gap the isolator is overloaded.



Figure 10 Gap tool thickness measurement showing overloaded condition

In either case a different load range IB bearing is needed in that location. Please be sure to verify that the appropriate load range isolators are installed in the proper location on the VIBe base plate. In some applications this may be as easy as switching isolator locations or adjusting the instrument on the platform.



Figure 11 Gap tool thickness measurement showing correct preload.

2.3 Maintenance

Newport VIBe systems require little maintenance. No periodic maintenance is required.

2.3.1 Cleaning

Newport isolators are painted, powder coated, or zinc plated steel. This coated material is relatively corrosion resistant. It may be cleaned by applying non-abrasive liquid household cleaner to a rag and wiping the isolator. Avoid abrasive cleaners.

Section 5 – Factory Service

2.4 Obtaining Factory Service

To obtain information concerning factory service, contact Newport Corporation or your Newport representative. Please have the following information available.

1. Model number.
2. Purchase order number.
3. Complete description of the problem.

If components are to be returned to Newport Corporation, you will be given a Return Number, which you should reference in your shipping documents.

Please fill out the service form located on the next page, and have the information ready when contacting Newport Corporation. Include the completed service form with any parts or components that are returned.

3 Service Form

Vibration Control Products

Name

RETURN AUTHORIZATION #

Company

(Please obtain prior to return of item)

Address

Country

Date

P.O. Number

Phone Number

Item(s) Being Returned:

Model #

Serial # (or manufacturing date)

Description

Reason for return of goods (please list any specific problems)

Please Describe the Problem:

(Attach additional sheets as necessary)

Where is the Equipment Installed?

(factory, controlled laboratory, out-of-doors, etc.)

Any additional information. (If special modifications have been made by the user, please describe below).