

# Installation and Adjustment

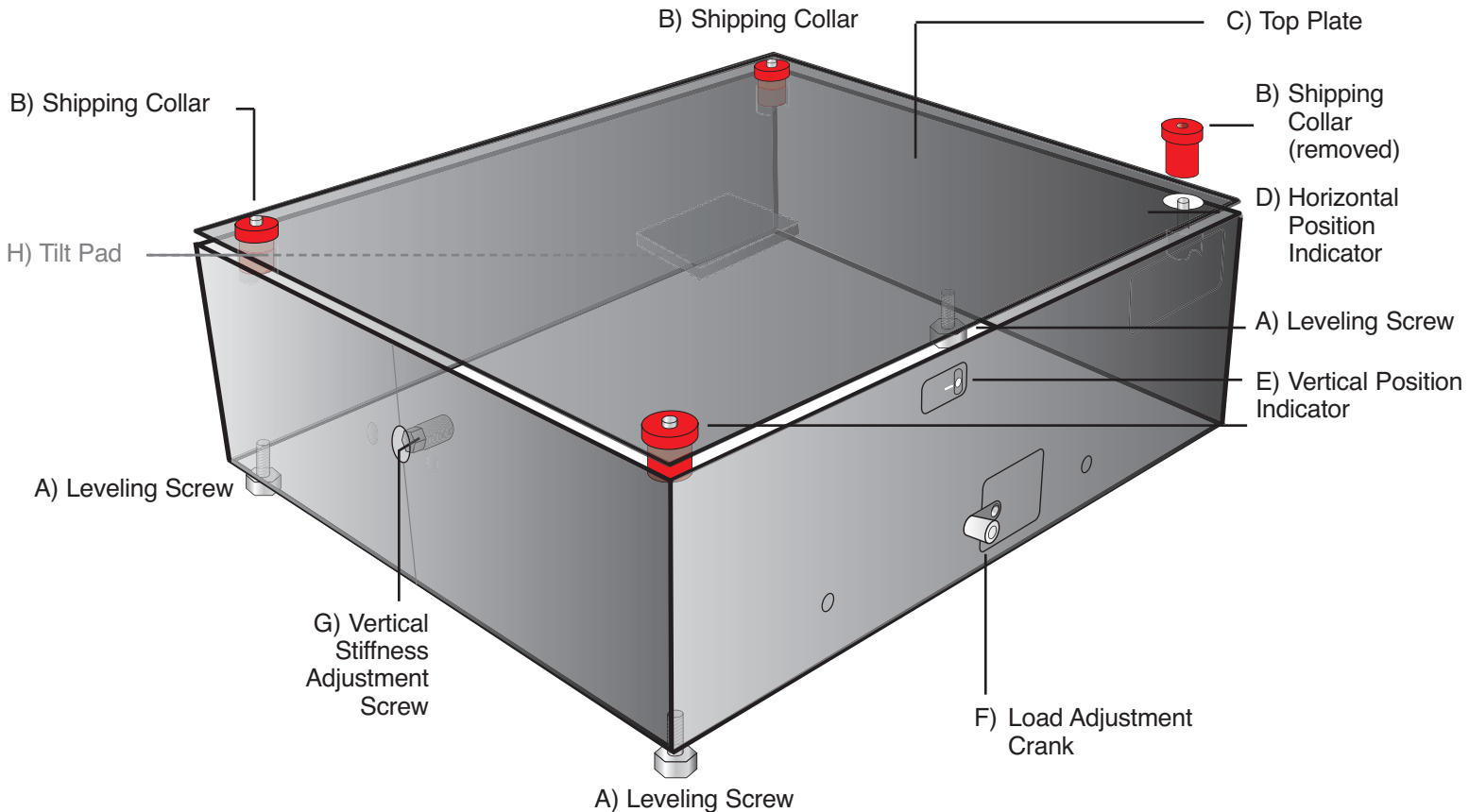
## BM-1 Bench Top Vibration Isolation Platform

Dimensions: 24" W x 22.5" D x 9" H (610mm W x 572mm D x 228.6mm H)	
Approximate payload weight range:	
Model	Payload Range
100BM-1	60 - 105 lb (27 - 48 kg)
150BM-1	90 - 155 lb (41 - 70 kg)
250BM-1	180 - 270 lb (82 - 123 kg)
350BM-1	290 - 370 lb (132 - 168 kg)
500BM-1	360 - 525 lb (164 - 239 kg)
650BM-1	500 - 680 lb (227 - 309 kg)

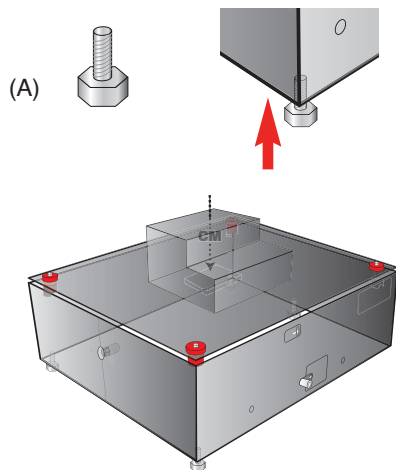
## BM-1 Bench Top Vibration Isolation Platform *Installation and Adjustment*

Required tools:

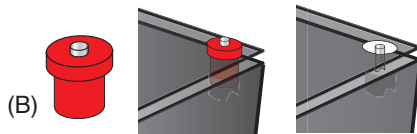
- 3/16 hex key
- 1/2 inch open-end wrench
- 1/2 inch socket wrench



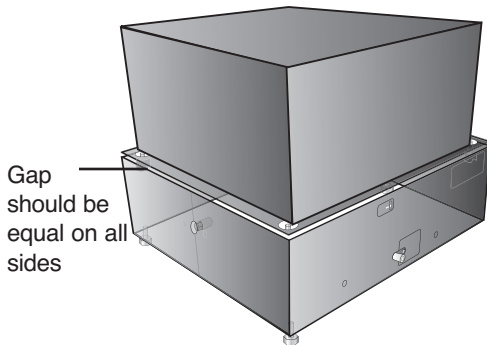
DO NOT REMOVE SHIPPING COLLARS UNTIL INSTRUCTIONS INDICATE. SHIPPING COLLARS MUST BE USED WHEN MOVING ISOLATOR.



1. Make sure you have the correct model for your payload. Payload weight **MUST** be within the recommended range.
2. Locate the four leveling screws (A). Insert the leveling screws about halfway into the bottom of the isolator and place on solid, level surface. Use supplied bubble level to make sure isolator is level once the three screws have been inserted.
3. Carefully position payload on top plate so its center-of-mass (CM) is close to center as possible.
4. Remove the four red shipping collars (B). **STORE SHIPPING COLLARS IN A SAFE PLACE AS THEY MUST BE USED WHENEVER MOVING ISOLATOR.** Replace the screws into the holes to serve as Horizontal Position Indicators.

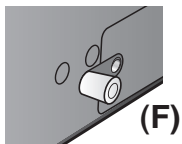


**CAUTION: If payload covers shipping collar holes, collars must be removed before placing payload. Take extra care when placing payload without shipping collars attached. Do not replace screws as they may interfere with payload.**



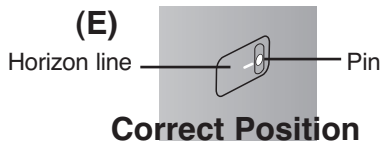
5. Check the level of the top plate. The gap between the top plate and the Isolator cover should be approximately equal on all sides.
6. If the top plate is not level reposition the payload as necessary. It is recommended that you re-install the red shipping collars if you need to re-position the payload (see Step 3). However, it is not necessary if you take extra care repositioning the payload.

**NOTE:** Cables, hoses, etc. connected to the payload can affect the horizontal and vertical position. If possible make the following adjustment without attaching the cables.



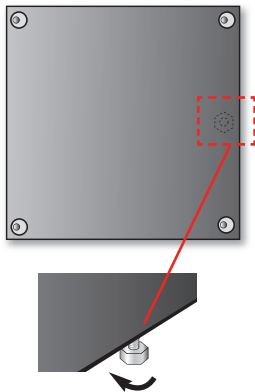
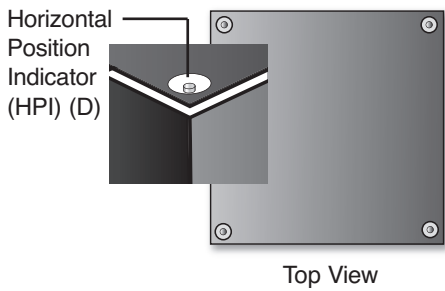
## Floating Isolator Vertically

The isolator has been adjusted to support the nominal weight, i.e., 100 lb for the 100BM-1, 150 lb for the 150BM-1, etc. Internal stops limit vertical motion. The isolator must be “floated” between the stops.

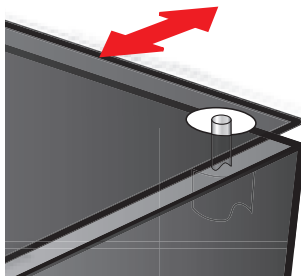


7. Check Vertical Position Indicator (E). The white pin should be approximately centered on the horizon line. Turn Load Adjustment Crank (F) to adjust. Turn only clockwise when white dot is below the line, and only counterclockwise when it is above the line. If payload weight is appreciably different from nominal weight it may take many turns (approximately 10 turns per payload pound).

**NOTE: To avoid damage never force the load-adjustment crank.**



1/2 Hz = 3 cycles in 6 secs.



## Floating Isolator Horizontally

8. Internal stops limit the horizontal motion. The Isolator must be “floated” horizontally between the stops by adjusting the leveling screws. Horizontal Position Indicator screws (D) should be approximately centered within holes.

Example: If screws are too far to the left of center, turn right leveling screw clockwise (as viewed from above).

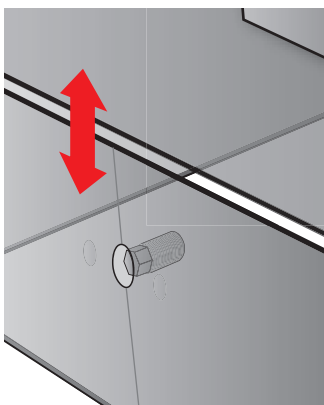
9. IF HPI SCREWS ARE NOT VISIBLE, check positioning by pushing the top plate gently front to back then side to side. If it does not float freely and independently front to back and side to side then adjust accordingly.

## HORIZONTAL NATURAL FREQUENCY

10. The horizontal natural frequency can be changed by varying the payload weight. 1/2 Hz is achieved when payload is near nominal weight (ie. 150 lb. for the 150BM-1). Increasing the weight lowers the frequency. Decreasing the weight raises it. Ballast weights can be used for fine adjustments to frequency.

Check the horizontal frequency by pushing horizontally on the edge of top plate to create small horizontal oscillations, then count cycles (one back and forth movement). For example, 3 cycles in 6 seconds is 1/2 Hz. Depending on the damping, the isolator may only cycle 2 or 3 times.

1/2 Hz = 3 cycles in 6 secs.



## VERTICAL NATURAL FREQUENCY

11. Check the vertical frequency by pushing down vertically on top plate to create small vertical oscillations, then count cycles (one up and down movement). 1/2 Hz is equal to one cycle in 2 seconds.

The vertical natural frequency can be changed using the vertical stiffness adjustment screw (G), although this adjustment is seldom necessary. This adjustment requires a 1/2 inch socket wrench. Turning the screw clockwise reduces the natural frequency, counterclockwise increases the frequency. **This is a sensitive adjustment. Turn only a few degrees each time then check the vertical position.**