

Installation and Adjustment

LC-4 Ultra Compact Low Frequency Vibration Isolator

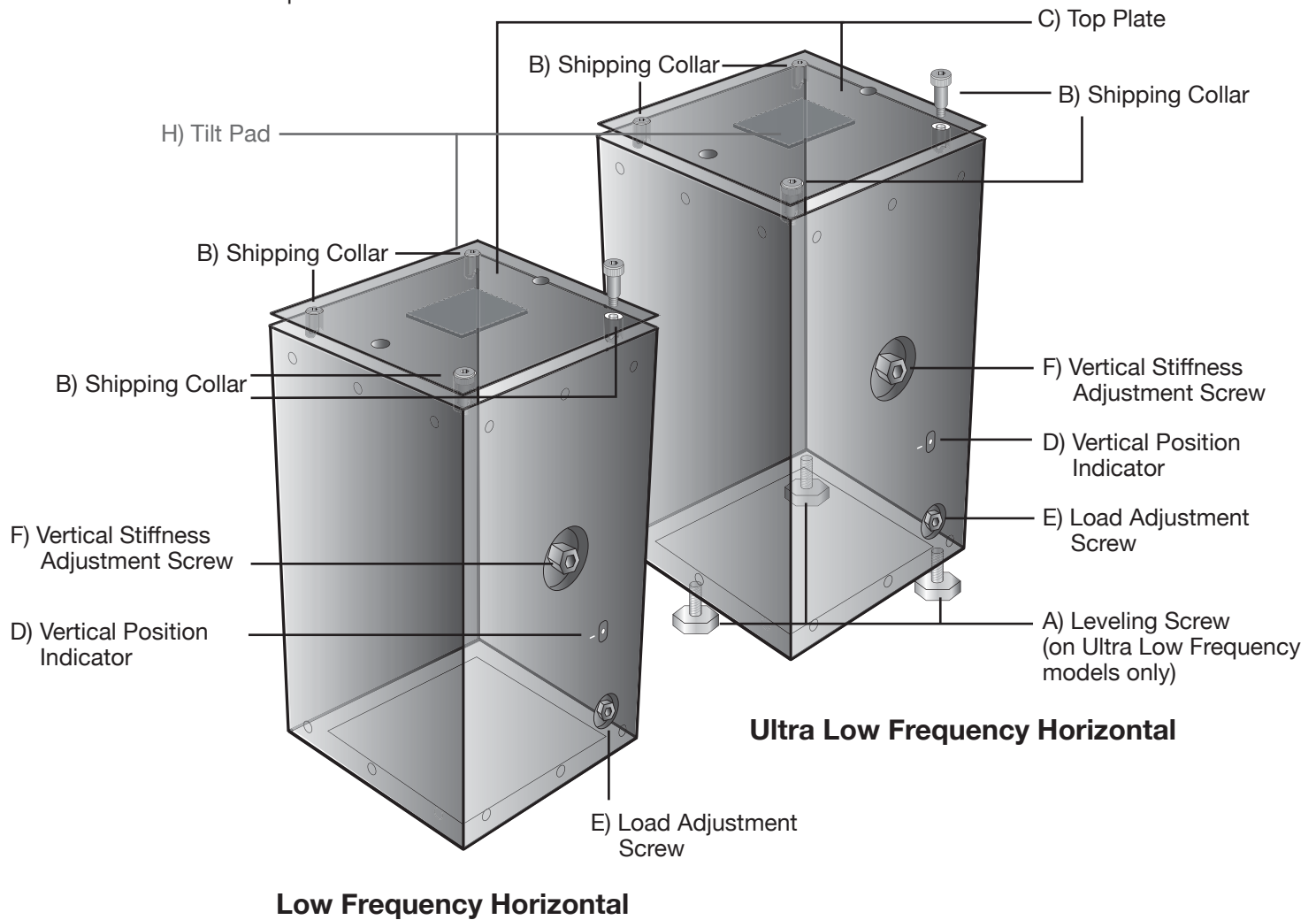
Dimensions: Low Frequency Horizontal 4.75" W x 4.75" D x 7" H (121mm W x 121mm D x 178mm H)		Ultra Low Frequency Horizontal 4.75" W x 4.75" D x 8" H (121mm W x 121mm D x 203mm H)
Weight: Approximately 7 lb (3.1 kg)		
Approximate weight range:		
Model	Payload Range	
25LC-4	10 - 28 lb (4.5 - 12.7 kg)	
35LC-4	29 - 40 lb (13.2 - 18.2 kg)	
50LC-4	38 - 65 lb (17.3 - 29.5 kg)	
70LC-4	48 - 75 lb (21.8 - 34 kg)	
100LC-4	75 - 100 lb (34 - 45.3 kg)	
125LC-4	95 - 130 lb (43 - 59 kg)	
150LC-4	125 - 158 lb (56.7 - 71.7 kg)	

LC-4 Ultra Compact Low Frequency Vibration Isolator

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Required tools:

- 1/8" hex wrench
- 3/16" hex wrench
- 1/2 inch open-end wrench



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

Illustration 1

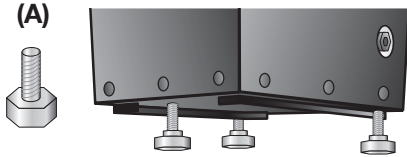


Illustration 2

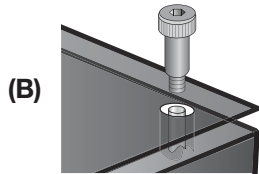
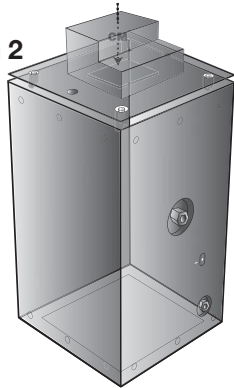


Illustration 3

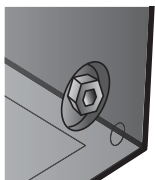
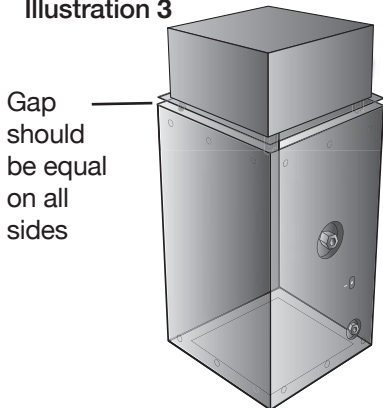
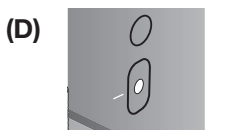


Illustration 4



Correct Position

CAUTION: Do not turn the vertical stiffness adjustment screw before reading instructions.

1. Make sure you have the correct model for your payload. Payload weight **MUST** be within the recommended range.

2. *For Ultra Low Frequency Isolator only* - locate the three (3) Leveling Screws (see Illustration 1 (A)). Insert the Leveling Screws into the bottom of the isolator, making sure all three (3) screws have about 1/2" of the thread engaged into the bottom of the isolator. Place on a solid, level surface. Place the bubble level on the top plate and use the leveling screws to level the isolator.

3. Remove the four (4) shipping collars (B) using 1/8" hex wrench. **STORE SHIPPING COLLARS IN A SAFE PLACE AS THEY MUST BE USED WHENEVER MOVING ISOLATOR.**

4. Carefully position payload on top plate so its center-of-mass (CM) is as close to center as possible (see Illustration 2).

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. Carefully reposition the payload, as necessary, to level the top plate (see Illustration 3). Dragging the payload across the top plate is not recommended.

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

Floating Isolator Vertically

The isolator comes from the factory adjusted to support the nominal weight, i.e., 30 lbs for the 35LC-4, 35 lbs for the 50LC-4, etc, Internal stops limit vertical motion. The isolator must be "floated" between the stops.

7. Check Horizontal Position Indicator (D) (see Illustration 4). The pin should be approximately centered on the horizon line. using the 3/16" hex wrench turn Load Adjustment Screw (E) only clockwise when the pin is below the line, and only counterclockwise when it is above the line. If the payload weight varies from nominal weight by a few pounds/kilograms it may take many turns (approximately 5 turns per payload pound/kilogram).

NOTE: To avoid damage never force the Load Adjustment Screw. If pin cannot be easily centered on line, turn Vertical Stiffness Adjustment Screw slightly counterclockwise and readjust vertical position. Repeat as necessary. This is a very sensitive adjustment. Turn the screw only a few degrees each time.

Floating Isolator Horizontally

8. Internal stops limit the horizontal motion. The isolator must be “floated” horizontally between the stops by adjusting the leveling screws.
9. Check positioning by pushing the top plate gently front to back then side to side. If it does not oscillate freely and independently front to back and side to side then adjust accordingly.

1/2 Hz = 3 cycles in 6 secs.

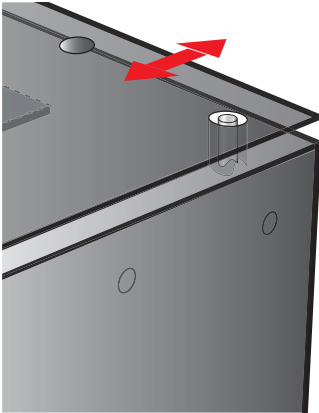


Illustration 5

HORIZONTAL NATURAL FREQUENCY

10. The horizontal natural frequency can only be changed by varying the payload weight. 1/2 Hz is achieved when payload weight is near nominal (i.e., 35 lbs for the 35LC-4). Increasing the weight lowers the frequency. Decreasing the weight raises the frequency. Ballast weights can be used for fine adjustments to frequency, though the total payload must be within the isolator’s payload range (found in the table on page 1). Note: Payload additions/subtractions will require vertical adjustments.

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, three (3) cycles in six (6) seconds is 1/2 Hz. Depending on the damping, the isolator may only cycle two (2) or three (3) times (see Illustration 5).

1/2 Hz = 3 cycles in 6 secs.

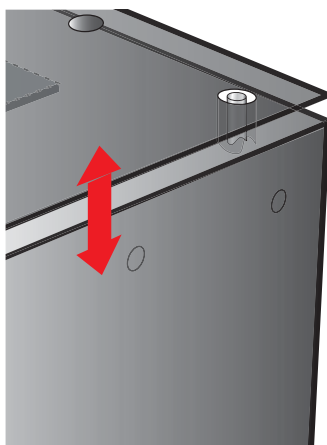


Illustration 6

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 three cycles in six (6) seconds (see Illustration 6).

The vertical natural frequency can be changed using the Vertical Stiffness Adjustment Screw (F), although this adjustment is seldom necessary. This adjustment requires a 3/16 Hex Key. 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 and frequency. Adjust further, if necessary.

Note: Run any cables to the instrument with plenty of slack. Do not tie cables together as this will make them stiffer. Stiff and taut cables can stop the isolator from providing vibration isolation.