Newport

BenchTop™ Installation Instructions

Congratulations on the purchase of your new BenchTop vibration isolation system. As an owner of the world's most compact, yet state-of-the-art vibration isolation system, we know you will have years of enhanced experiment performance with BenchTop.

Getting up and running with BenchTop is as easy as 1–2–3. Your system has been tuned at the factory to ensure precise performance. However, we have provided a troubleshooting section in the unlikely event you need to adjust your unit.

1.0 Check all parts

Inspect your unit to make sure there is no shipping damage. Also, ensure that you have the following parts* as shown in Figure 1.

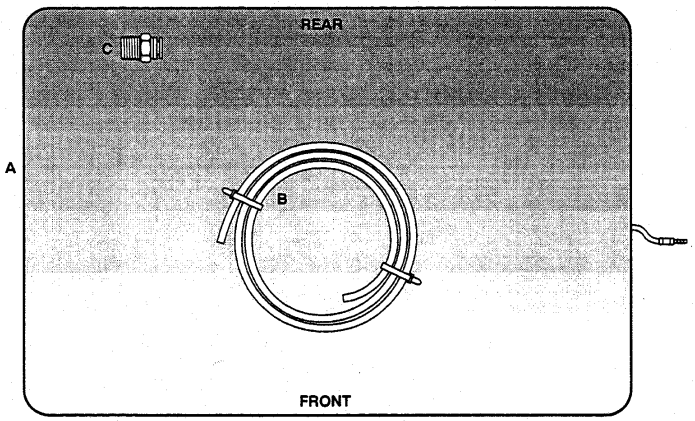

Figure 1

A. BenchTop Unit

B. ¼ in. Tubing

C. ¼ in. Tubing to ¼ in. NPT Connector

2.0 Connection to Air Supply

Set-up of the BenchTop unit is relatively easy. Connect the provided tubing and connector as shown in Figure 2. The air supply can be a compressed air system (such as Newport's Model ACMP Air Compressor) or gas such as air or nitrogen supplied from a standard cylinder. Do not use carbon dioxide as it may cause freezing in the modules. Put your payload (i.e. microscope, analytical balance, or other equipment) on the BenchTop unit and slowly increase supply air pressure until the unit begins to float (usually about 15 to 30 psi).

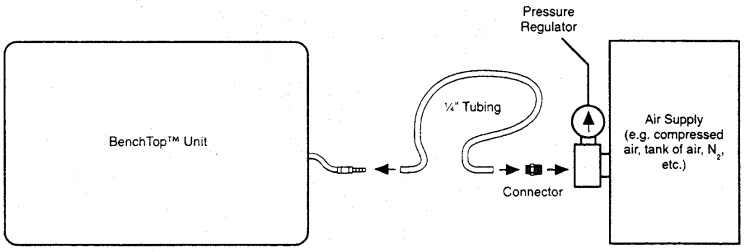

Figure 2

3.0 Air Pressure Optimization

In order to fully benefit from the high performance levels that BenchTop provides, it is necessary to optimize the air pressure in the isolators. The ideal pressure for your application (i.e. payload) occurs when the air supply pressure is about 5–10 psi higher than that required to just float the BenchTop.

After setting up the BenchTop and connecting the air supply, place your payload so that the center of gravity falls within the shaded area shown in Figure 4. Then slowly increase the pressure until the BenchTop begins to float (e.g. one of the edges rises). Note the pressure at which this occurs, then add 5-10 psi.

You may need to further adjust the pressure to optimize performance under the conditions described in Section 4.0.

4.0 System Adjustment

WARNING

Do not adjust needle valves or height adjustment screws until you read the following:

As previously mentioned, your BenchTop unit has been tuned at the factory. It is usually not necessary to adjust the needle valves or height adjusting screws. However, you may want to adjust the unit under the following conditions:

a. If the BenchTop oscillates quickly, reduce the supply air pressure. If it oscillates slowly the center of gravity of your payload may be too high. If changing these conditions does not stop the oscillation, close the valves all the way and then open the two front valves ⅛ turn counterclockwise and the "Both Rear" valve ¼ turn counterclockwise (Figure 3). If the system still oscillates, close the valves incrementally until the oscillation stops.

b. If the BenchTop will not float at all, confirm that your payload weighs no more than 175 lbs, is centered on the BenchTop or the payload is uniformly distributed, and that you have 40 psi air pressure available. If necessary open the needle valves in ⅛ turn increments until the BenchTop floats.

c. You can speed up the re-leveling of your BenchTop after it has been disturbed by opening the needle valves ⅛ turn at a time. Be careful, because if they are opened too far the system will oscillate.

d. There is a floating height adjustment screw in each of the three height control arms which are located in the isolator modules under the BenchTop. **These screws are set at the factory. We suggest they be adjusted only if you are sure there are no other solutions to floating height problems.** If the unit floats too high or too low so that vertical travel is impeded, these screws may be turned ⅛ turn at a time to adjust the floating height. Clockwise raises the unit, counter clockwise lowers it.

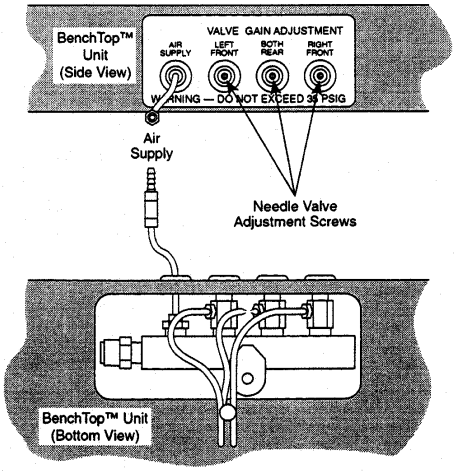

Figure 3

5.0 Troubleshooting

Observations	Recommendations
1. Unit does not float	a. Confirm load is less than 175 lbs b. Confirm air supply pressure and hose connections c. Increase air pressure to 40 psi max d. Review adjustments in Sections 3.0 and 4.0
2. After floating the BenchTop with air, the unit oscillates	a. Close (turn clockwise) all three needle valves slightly until oscillation stops. b. Reduce supply air pressure until system just floats and relevels quickly. c. Confirm that the payload center of gravity is no higher than is shown in the following table.

BenchTop Model	Max cg height
BT-1620	5.0 in.
BT-2024	8.0 in.
BT-2424	10.0 in.
BT-2430	10.5 in.
BT-2436	11.0 in.
BT-3030	13.5 in.
BT-3036	14.0 in.

3. Unit sags to one side	a. Confirm that the payload center of gravity is within the shaded area in Figure 4. b. Increase air pressure to 40 psi max. c. Adjust floating height adjustment screws per Section 4.0, paragraph "d".

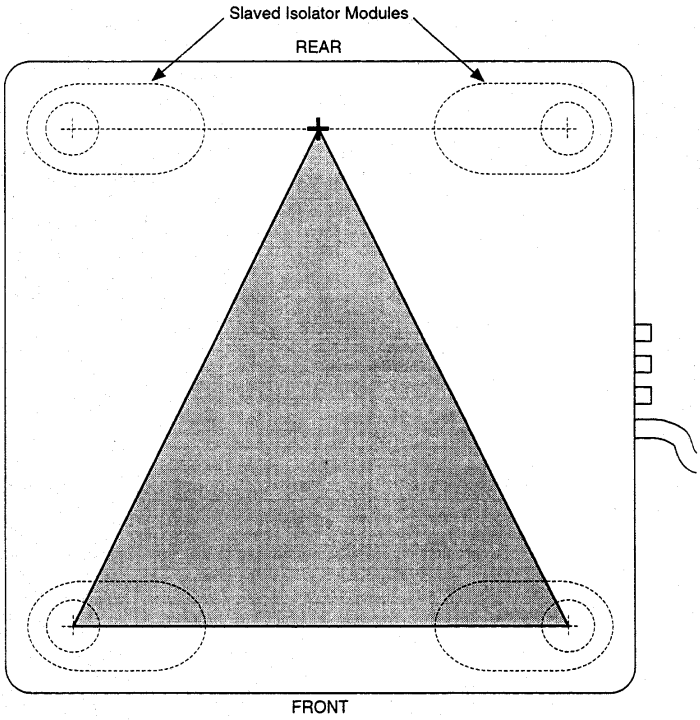

Figure 4

Payload center of gravity should be placed within the triangle.

Note: Isolator modules which are slaved together act as one larger module located at the center of force of the slaved modules.

Newport Corporation, Irvine, California, has been certified compliant with ISO 9002 by the British Standards Institution. Certificate No.: FM 27207.

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