TMC CleanBench® Laboratory Table

Cost-effective, quality & flexible solutions for vibration isolation

CleanBench™ is the next generation of our industry standard 63 series lab tables. TMC's vibration isolation lab tables lead the industry in performance and are ideal for a wide variety of applications including AFM, Confocal Microscopy, IVF, Patch-Clamping, Interferometry and Metrology. CleanBench™ incorporates TMC's unique Gimbal Piston Vibration Isolators and a tabletop with enhanced performance and features at a competitive price.

Unique new table-top design (patent pending) combines the best features of TMC's CleanTop™ steel honeycomb tops with our ultra-stiff, damped, layered platform design.

Greater stability, especially for small size tables. The low profile, high density tops lower the overall floating centre-

of-mass ensuring inherently stability, even for relatively top-heavy payloads.

Guided thread lead-ins to align screws with tapped holes. The "bevel" shape eases engagement of the first thread.

Ergonomics optimized for the seated user by minimizing the thickness of the table-top. Other designs either offer 100mm, 4" thick tops which awkwardly separate knees and elbows or sacrifice essential mass by offering a 50mm, 2" thick honeycomb top which does not have adequate mass for effective vibration isolation, especially for smaller table sizes.

Characterisation, Measurement & Analysis

Gimbal Piston Isolator Performance

- Vertical and horizontal vibration isolation starting at 2Hz
- Reduces vibration by more than 95% at 10Hz
- Virtually free of friction, avoiding rolling friction to static friction transitions
- Accommodates horizontal displacement by acting as a gimbal

The Gimbal Piston® Air Isolator provides outstanding isolation in all directions for even the lowest input levels. It is lightly damped and highly responsive to typical, low-amplitude ambient floor vibrations, yet achieves very high damping for gross transient disturbances, such as sudden load changes or bumping the top plate. The result is that Gimbal Piston Isolators provide superior isolation yet will virtually eliminate any gross disturbance within a few seconds. It can also stabilize isolated systems with relatively high centres of gravity without compromising isolation.

The greatest challenge in designing an effective isolator is to maintain good performance at the low vibration amplitude inputs typical of ambient building floor vibration. Isolator specifications are often based on measurements done with the isolator placed on a "shaker table" with very high amplitude input levels. Such testing, with input amplitudes on the order of millimetres, yields unrealistic performance expectations and is misleading as results will not reflect the actual performance in use.

The Gimbal Piston Isolator design is unique in its ability to maintain its stated resonant frequency and high level of attenuation in even the most quiet, real, floor environments. The performance is linear to such low amplitudes because the design is virtually free of friction and therefore able to avoid rolling friction to static friction transitions.

Every other system that we have tested at levels typical for floor vibration exhibits either a higher resonant frequency than claimed or a substantial increase in transmission through the isolator mount.

We stress the importance of performance specifications at low levels because we have repeatedly observed, in our own testing and in many as-used installations, that better performance is much easier to achieve at greater amplitudes and higher frequencies.

Characterisation, Measurement & Analysis
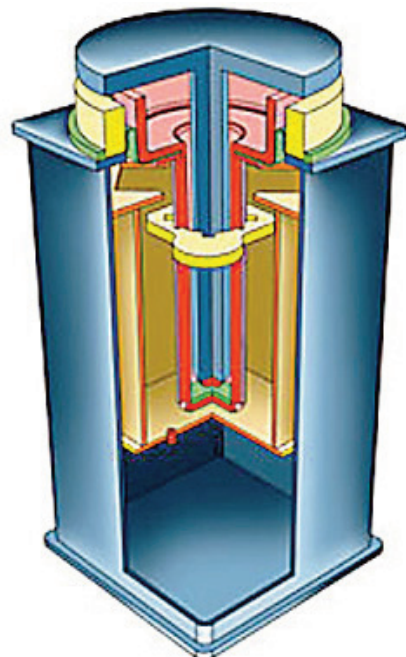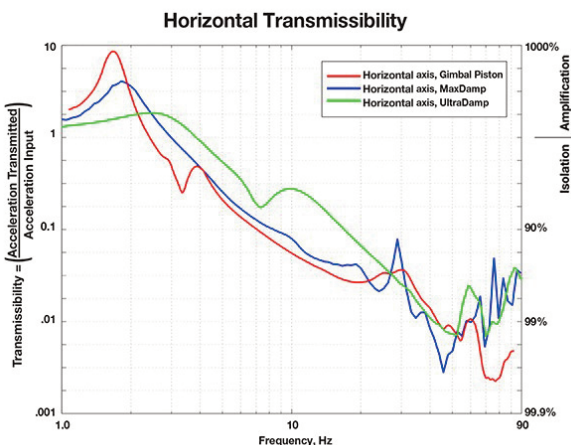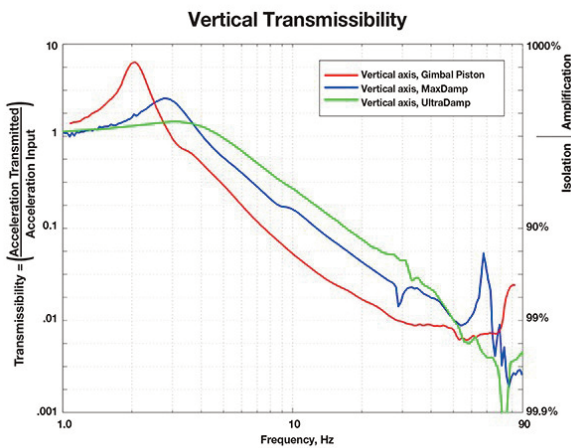
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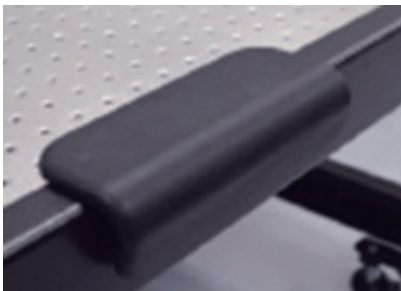
Adjustable Steel Support Bars

Front Support Bar mounts on the table's front legs. It has a slot in which the shelves mount and is normally ordered with the armrest pads. The bar may be cantered along the length of the table or cantilevered to either side, allowing for a wider sliding shelf to suit your application.

Rear Support Bar mounts on the rear table legs and supports the rear end of the sliding shelves. It may also be cantilevered to either side, allowing for a wider sliding shelf.

Both front and rear support bars can be retrofitted but cannot be used with the Full Perimeter Enclosure or Faraday Cage.

Retractable Casters

Have a total weight capacity of 1,000lb (450kg) and can be mounted to the base of the table legs. Casters are required when using the OnTrak™ feature.

Adjustable Armrest Pads

Fasten to the front support bar. TMC also offers an armrest pad that attaches to the Full Perimeter Enclosure.

Laminate Sliding Shelves

The shelves slide freely from side to side and are easily lifted off the support bars. Built-in stops prevent shelves from sliding out of slots. Sliding shelves require front and rear support bars. The sub shelf offers additional storage space. It can be mounted beneath the isolated table top and may be retrofitted.

Faraday Cages

The cages offer improved access and simplified assembly. Designed for shielding in electrophysiology type applications (60Hz and harmonics). The "window-shade" retracting front panel is easy to operate and causes less disturbance when adjusted. The front panel may be positioned anywhere between fully opened and closed and stays in position without a fastener. This cage incorporates a steel frame and bronze-mesh material and mounts to a required full-perimeter enclosure. Our 40" (1m) tall Faraday Cage includes a 2" (50mm) diameter hole in the base of the side and rear panels. This feature eases cable interface to the interior of the cage. A new version of our armrest pads are compatible with these cages. They are identical to the non-Faraday Cage pads but adhere with Velcro.

Characterisation, Measurement & Analysis