

# CleanBench<sup>TM</sup>

## With Gimbal Piston<sup>TM</sup> Vibration Isolation

New CleanBench<sup>TM</sup>  
50 mm, 2 in. spill-proof top

### The CleanBench<sup>TM</sup> Advantage



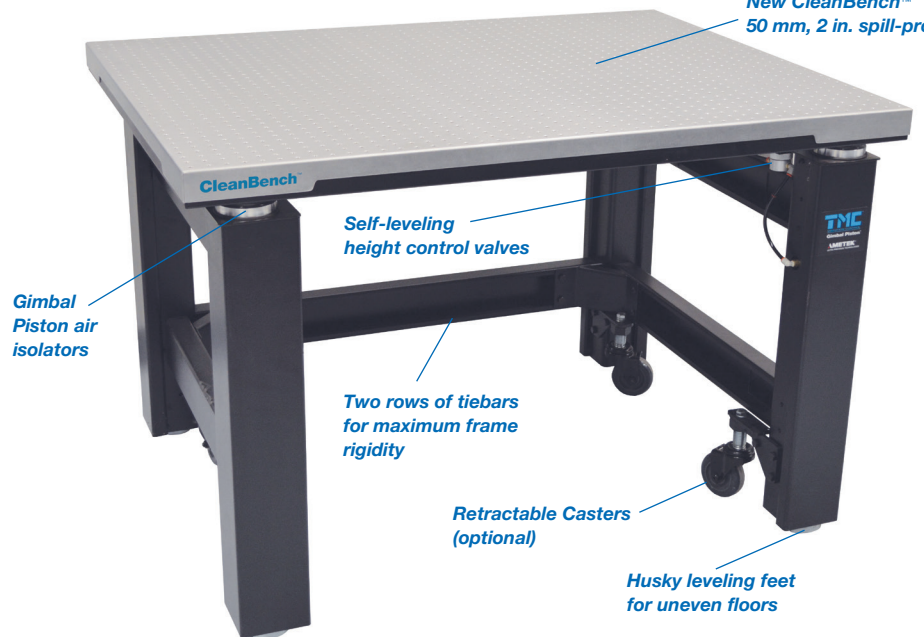
#### Unique new table-top design (patent pending)

combines the best features of TMC's CleanTop<sup>®</sup> 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 center-of-mass ensuring inherently stability, even for relatively top-heavy payloads.

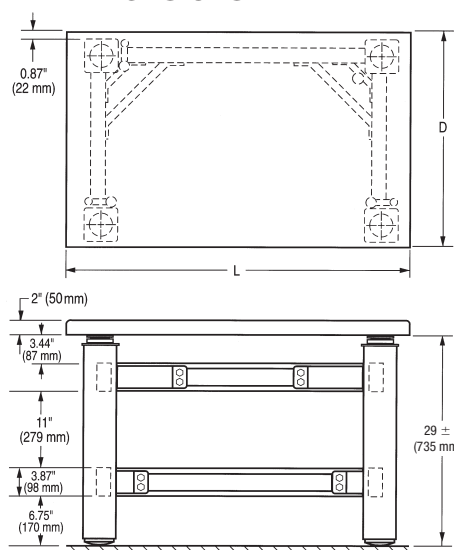
**Guided thread lead-ins** to align screws with tapped holes. The "bevel" shape eases engagement of the first thread.

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



TMC introduces CleanBench<sup>TM</sup>, the next generation of our industry standard 63 series vibration isolation lab tables. CleanBench combines the latest, patent pending, improvements to our table tops with our superior Gimbal Piston<sup>TM</sup> air vibration isolation system. CleanBench offers more stability, better ergonomics, guided thread lead-ins, and a more compact design. TMC's industry standard 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.

### Dimensions



### Specifications

#### Isolator natural frequency:

- High Input: Vertical = 1.2 Hz  
Horizontal = 1.0 Hz
- Low Input: Vertical = 1.5 - 2.0 Hz  
Horizontal = 1.2 - 1.7 Hz

#### Isolation efficiency @ 5 Hz:

- Vertical = 70 - 85%
- Horizontal = 75 - 90%

#### Isolation efficiency @ 10 Hz:

- Vertical = 90 - 97%
- Horizontal = 90 - 97%

#### Recommended load capacity:

350 lb (160 kg)

**Finish:** Medium texture black powder coat frame, stainless steel top

#### Facilities required:

80 psi (5.4 bar) nitrogen or air

#### Shipping weight:

Approximately 600 lb (272 kg)

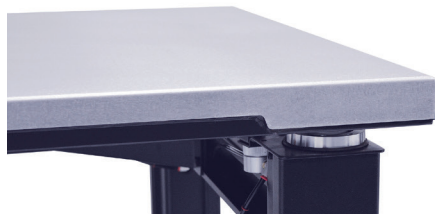
#### Height control valves:

- repeatability standard valve  
+/- 0.050 in. (1.3 mm)
- Precision valve: +/- 0.005in. (.13mm)

Note: All CleanBench tops are sized in metric dimensions including both imperial and metric hole pattern versions. Metric patterns have a 12.5 mm (0.5 inch) border from the top edge to the first row of holes. The border on tops with imperial patterns will, therefore, be slightly more than 0.5 inch (12.5 mm).

# CleanBench Top Selections

CleanBench™ smooth top



CleanBench™ with tapped holes



## 100 mm (4 in.) thick performance in a 50mm (2 in.) thick top

TMC's proprietary smooth "laminated top" construction has been the ideal table top for small, desk-style vibration isolation tables. These 50mm, 2 in. thick platforms which incorporate sandwiched layers of steel and core material rigid epoxy bonded into a seamless, stainless steel shell with rounded edges, are ideal for users who do not require a grid of tapped holes. Users desiring a grid of holes to bolt-down their payload or positioning equipment have had to settle for a "scaled-down" steel

honeycomb optical top construction. Though such tops provide a grid of holes, they are bulky, raise the center-of-mass of the payload reducing stability, and are less ergonomic for the seated user. The CleanBench breakthrough offers versions of TMC's laminated design whether or not a grid of tapped holes is desired with no sacrifice in performance. The new, low-profile top offers superior damping, stiffness and flatness in a easy to clean stainless steel shell. A unique core cross-section allows the design to be offered

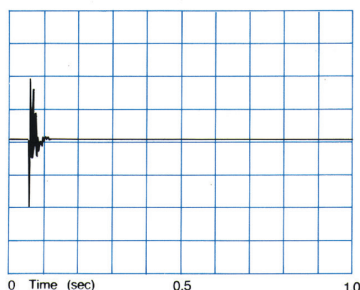
with a smooth surface or with a grid of imperial (1/4-20 on 1-inch) or metric (M6 on 25mm) tapped holes. TMC's proprietary method of forming the tapped holes results in beveled lead-ins, which eases thread engagement and allows for a full three threads. Designed specifically for desk-style workstations, these tops are the ideal surface for small vibration isolation tables.

## CleanBench Performance

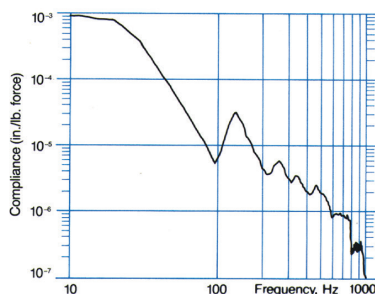
**Structural Damping** determines how quickly an excited resonance in a table top decays. The simplest way to measure damping is to hit the table top with a hammer and measure the decay with an accelerometer and oscilloscope or spectrum analyzer. The height of a resonance peak in the "compliance curve" also measures damping.

**Compliance** is a reciprocal measurement of the dynamic stiffness of a table top. The data are obtained by inputting a measured force to the table top with a calibrated hammer and measuring the resultant acceleration (or displacement) with an accelerometer. Compliance is the ratio of displacement to force expressed as a function of frequency.

### Damping



### Compliance



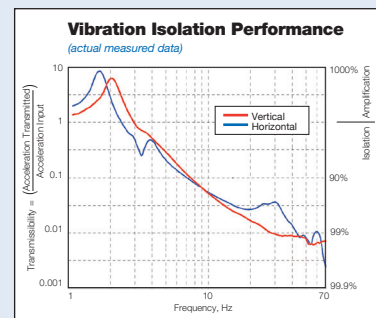
CleanBench™ Steel Top — 750 x 1200 x 50 mm, 30 x 48 x 2 in.

## The Gimbal Piston™ Advantage

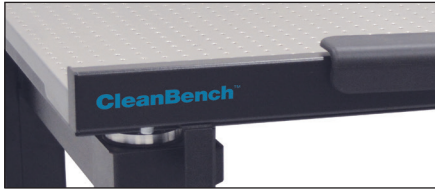
All CleanBench tables incorporate TMC's Gimbal Piston Air Isolators as a standard feature. The Gimbal Piston



has consistently shown to out-perform other air isolators in side-by-side testing. It offers outstanding low frequency vibration isolation in all axes and maintains its performance specifications even when subjected to extremely low input levels of excitation. Proprietary damping techniques allow the Gimbal Piston to stabilize relatively top-heavy payloads and quickly dissipate disturbances of the isolated table top.



## Accessories



### Adjustable Steel 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 centered along the length of the table or cantilevered to either side, allowing for a wider sliding shelf to suit your application.

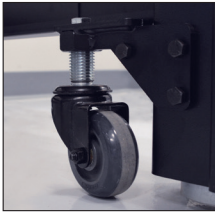
### Adjustable Steel Rear Support Bar

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.

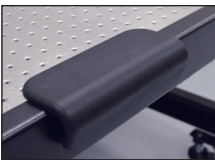
### Retractable Casters

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



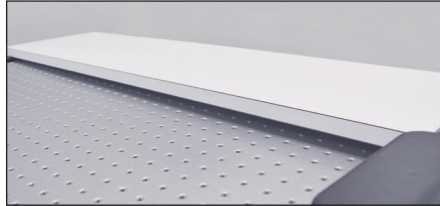
### Adjustable Armrest Pads

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



### White Laminate Sliding 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. When ordering sliding shelves, you must order front and rear support bars.



**A Subshelf** offers additional storage space. It can be mounted beneath the isolated table top and may be retrofitted.

### Fixed Full-Perimeter Enclosure

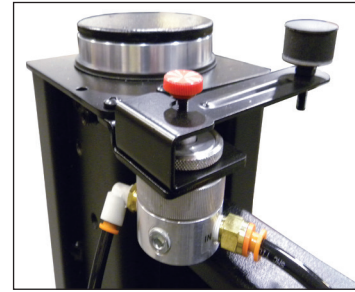
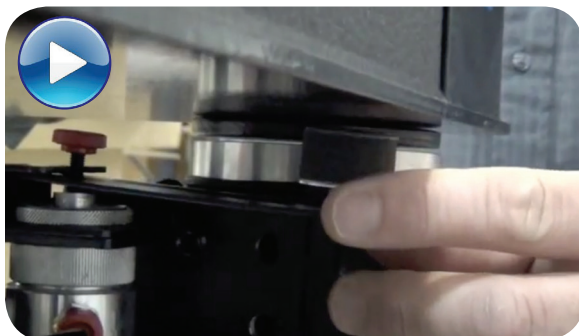
A welded-steel structure that completely surrounds the table top to provide non-isolated support for Faraday cages or other special fixtures. It cannot be used with sliding shelves or support bars. There is an 8 in. wide sliding shelf specifically for the Full Perimeter Enclosure and it is required for use with a Faraday Cage.

### TMC's Precision Height Control Valves

To minimize bottled air supply usage, standard TMC height control valves have a small "dead band," resulting in a height return accuracy of +/- 1.3 mm, +/- 0.05 in. Precision valves control height to within +/- 0.005 in. but exhaust continuously.

### Online Installation videos

available for setup assistance.



To specify precision height control valves with a table, add the letter "P" after the basic table model number. (ie.: 63P-733) Precision valves may also be retrofitted to installed tables.

### Faraday Cage

offers improved access and simplified assembly. It's designed for shielding in electro-physiology type applications (60 Hz 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 in. (1 m) tall Faraday Cage includes a 2 in. (50 mm) 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 our cages. They are identical to our non-Faraday Cage pads but adhere with Velcro.



## CleanBench™ and Accessories Ordering Chart

TABLE MODEL (D x L) Imperial dimensions for reference only	600 x 900 mm 23.6 x 35.4 in.	750 x 750 mm 29.5 x 29.5 in.	750 x 900 mm 29.5 x 35.4 in.	900 x 900 mm 35.4 x 35.4 in.	750 x 1200 mm 29.5 x 47.2 in.	750 x 1500 mm 29.5 x 59.0 in.	900 x 1200 mm 35.4 x 47.2 in.	900 x 1500 mm 35.4 x 59.0 in.
CleanBench smooth top	63-6090S	63-7575S	63-7590S	63-9090S	63-7512S	63-7515S	63-9012S	63-9015S
CleanBench with tapped holes, 1/4-20 on 1 in. spacing	63-6090E	63-7575E	63-7590E	63-9090E	63-7512E	63-7515E	63-9012E	63-9015E
CleanBench with tapped holes, M6 on 25 mm spacing	63-6090M	63-7575M	63-7590M	63-9090M	63-7512M	63-7515M	63-9012M	63-9015M
<b>ACCESSORIES</b>								
Front support bar	81-301-012	81-301-002	81-301-012	81-301-012	81-301-022	81-301-032	81-301-022	81-301-032
Rear support bar	81-302-012	81-302-002	81-302-012	81-302-012	81-302-022	81-302-032	81-302-022	81-302-032
Armrest pads (front support bar)	81-303-01 for all tables (order 2)							
Armrest pads (perimeter enclosure and Faraday Cage)	81-303-02 for all tables (order 2)							
Sliding shelf – 150 mm, 6 in. w	81-311-01	81-311-02	81-311-02	81-311-03	81-311-02	81-311-02	81-311-03	81-311-03
Sliding shelf – 250 mm, 10 in. w	81-312-01	81-312-02	81-312-02	81-312-03	81-312-02	81-312-02	81-312-03	81-312-03
Sliding shelf – 350 mm, 4 in. w	81-313-01	81-313-02	81-313-02	81-313-03	81-313-02	81-313-02	81-313-03	81-313-03
Sliding shelf – 500 mm, 20 in. w	81-314-01	81-314-02	81-314-02	81-314-03	81-314-02	81-314-02	81-314-03	81-314-03
Full perimeter enclosure	81-321-01	81-321-02	81-321-03		81-321-04		81-321-06	
Subshelf	81-325-01	81-325-02	81-325-03	81-325-03	81-325-04	81-325-04	81-325-04	
Perimeter enclosure sliding shelf	81-327-03	81-327-04			81-327-04		81-327-06	
Casters, set of 4	83-014-01 for all tables							

### Faraday Cage Ordering Chart

(requires table and perimeter enclosure, specified separately)

Faraday Cage	Description	D		L	
		mm	in.	mm	in.
81-333-03	Faraday Cage – 100 mm, 40 in.	750	29.5	900	35.4
81-333-04	Faraday Cage – 100 mm, 40 in.	750	29.5	1,200	47.2
81-333-06	Faraday Cage – 100 mm, 40 in.	900	35.4	1,200	47.2

### Faraday Cage Accessories Ordering Chart

Description	750 x 900 mm. 29.5 x 35.4 in.	750 x 1200 mm 29.5 x 47.2 in.	900 x 1200 mm 35.4 x 47.2 mm
Hanging shelf, "U"-shaped	81-335-03	81-335-04	81-335-04
Sliding side shelf, Faraday Cage, 203 mm, 8 in. w	81-332-04	81-332-04	81-332-06

## OnTrak™

An easy-to-use, roll-off option for CleanBench™ Lab Tables that dramatically simplifies table rigging and installation.



### How to Order

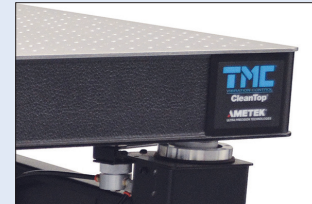
1. Specify the "OnTrak" part number from the chart below.
2. Contact TMC for pricing.
3. Be sure your table configuration includes caster set No. 83-014-01.

### Features & Benefits

- No heavy lifting required
- Table ships pre-installed on isolator frame
- Reduces set-up time
- Simply roll table off skid into final destination
- Casters required

### OnTrak Ordering Chart

Item Number	Nominal Table Size	
	mm	in.
90-6090	600 x 900 mm	23.6 x 35.4 in.
90-7590	750 x 750 mm	29.5 x 29.5 in.
	750 x 900 mm	29.5 x 35.4 in.
90-9090	900 x 900 mm	35.4 x 35.4 in.
90-7512	750 x 1200 mm	29.5 x 47.2 in.
90-7515	750 x 1500 mm	29.5 x 59.0 in.
90-9012	900 x 1200 mm	35.4 x 47.2 in.
90-9015	900 x 1500 mm	35.4 x 59.0 in.



To match an older, existing table height or appearance, some may wish to purchase CleanBench tables with the traditional style, 4 inch thick (100 mm) CleanTop steel honeycomb optical tops. CleanBench tables with these thicker tops are still offered. Contact [sales@techmfg.com](mailto:sales@techmfg.com) for ordering information.



Contact [sales@techmfg.com](mailto:sales@techmfg.com)  
to easily configure a custom system.