

# CleanBench™

## With Gimbal Piston™ Vibration Isolation

### The CleanBench™ Advantage



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

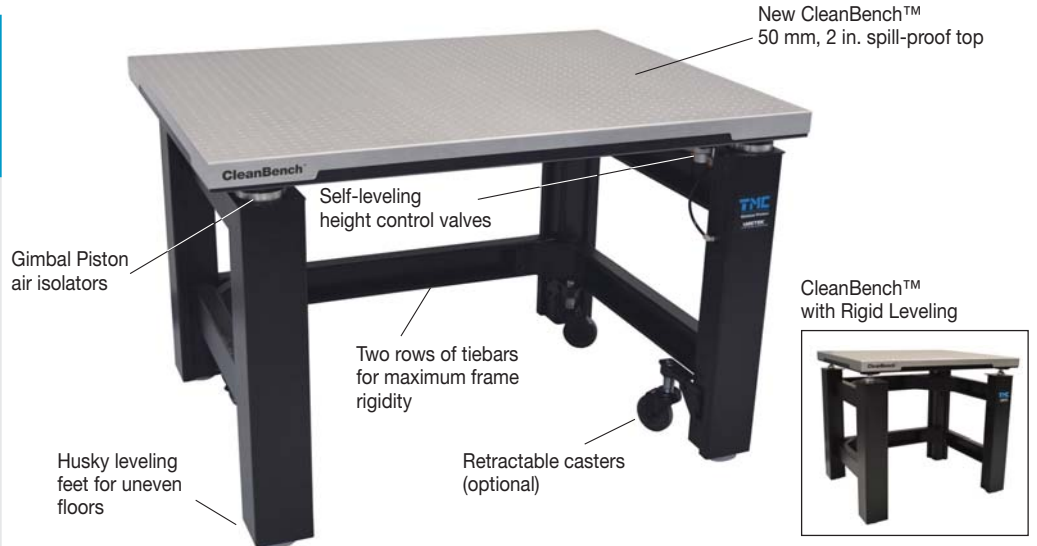
combines the best features of TMC's CleanTop® steel honeycomb tops with our ultra-stiff, damped, layered platform design.

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

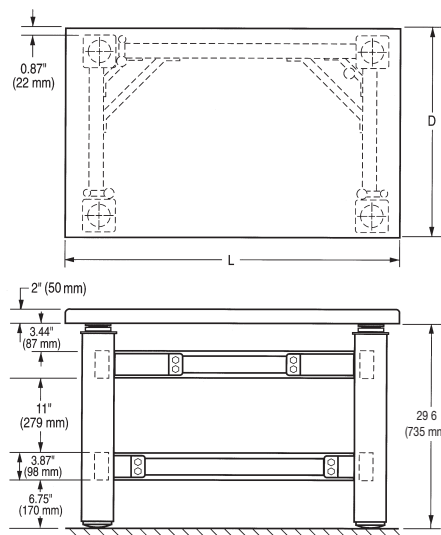
**Ergonomics optimized** for the seated user by minimizing the thickness of the table-top. Other designs either offer 100 mm, 4 in. thick tops which awkwardly separate knees and elbows or sacrifice essential mass by offering a 50 mm, 2 in. thick honeycomb top which does not have adequate mass for effective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

Distribution in the UK & Ireland



CleanBench™ is the next generation of our industry standard 63 series vibration isolation lab tables. CleanBench combines the latest improvements to our table tops with our superior Gimbal Piston™ air vibration isolation system. CleanBench offers more stability, better ergonomics, guided thread lead-ins, and a more compact design. 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.

### Dimensions



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 in.) 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 in. (12.5 mm).

### 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 performance @ 5 Hz:

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

#### Isolation performance @ 10 Hz:

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

**Recommended load capacity:**  
350 lbs (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 lbs (272 kg)

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

# Top Selection

# CleanBench™

CleanBench™ smooth top

CleanBench™ with tapped holes



100 mm (4 in.) thick performance in a 50 mm (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 50 mm, 2 in. thick platforms incorporate sandwiched layers of steel and core material rigid epoxy bonded into a seamless, stainless steel shell with rounded edges and are ideal for users who don't 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,

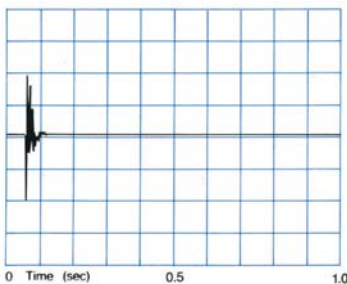
raise the center-of-mass of the payload reducing stability, and are less ergonomic for the seated user. The CleanBench breakthrough offers versions of TMC's laminated design whether or not a grid of tapped holes is desired with no sacrifice in performance. The new, low-profile top offers superior damping, 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

## Performance

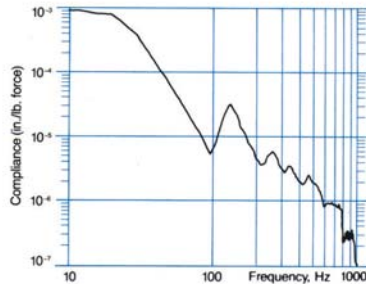
**Structural Damping** determines how quickly an excited resonance in a table top decays. The simplest way to measure damping is to hit the table top with a hammer and measure the decay with an accelerometer and oscilloscope or spectrum analyzer. The height of a resonance peak in the "compliance curve"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

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.

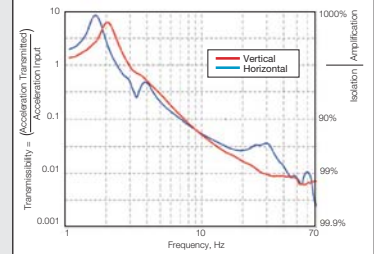
## The Gimbal Piston™ Advantage



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.

Vibration Isolation Performance

(actual measured data)





### 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. The 14 in. deep, full width shelf is mounted beneath the isolated table 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.



To specify precision height control valves with a table, add the letter "P" after the basic table model number. (i.e.: 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.

**OnTrak™** is an easy-to-use, roll-off option for CleanBench™ lab tables that dramatically simplifies table rigging and installation. It eliminates heavy lifting and reduces setup time. Another OnTrak™ advantage is that the table ships pre-installed on the isolator frame.



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

## CleanBench Ordering Chart

Gimbal Piston Supports	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.
Smooth top	63-6090S	63-7575S	63-7590S	63-9090S	63-7512S	63-7515S	63-9012S	63-9015S
1/4-20 on 1 in. centers tapped holes	63-6090E	63-7575E	63-7590E	63-9090E	63-7512E	63-7515E	63-9012E	63-9015E
M6 on 25 mm centers tapped holes	63-6090M	63-7575M	63-7590M	63-9090M	63-7512M	63-7515M	63-9012M	63-9015M
Rigid Supports								
Smooth top	1163-6090S	1163-7575S	1163-7590S	1163-9090S	1163-7512S	1163-7515S	1163-9012S	1163-9015S
1/4-20 on 1 in. centers tapped holes	1163-6090E	1163-7575E	1163-7590E	1163-9090E	1163-7512E	1163-7515E	1163-9012E	1163-9015E
M6 on 25 mm centers tapped holes	1163-6090M	1163-7575M	1163-7590M	1163-9090M	1163-7512M	1163-7515M	1163-9012M	1163-9015M

## CleanBench Accessories Ordering Chart

Description	Table Size	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.
Front support bar		81-301-90	81-301-75	81-301-90	81-301-90	81-301-12	81-301-15	81-301-12	81-301-15
Rear support bar		81-302-90	81-302-75	81-302-90	81-302-90	81-302-12	81-302-15	81-302-12	81-302-15
Armrest pad		81-303-01							
Armrest pad for Perimeter Enclosure and Faraday Cage		81-303-02							
Sliding shelf 150 mm (6 in.) wide		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.) wide		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 (14 in.) wide		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.) wide		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		81-6090	81-7575	81-7590	81-9090	81-7512	81-7515	81-9012	81-9015
Subshelf		81-325-01	81-325-02	81-325-03	81-325-03	81-325-04	81-325-04	81-325-04	81-325-04
Perimeter enclosure sliding shelf		81-327-03	81-327-04	81-327-04	-	81-327-04	-	91-327-06	-
Casters, set of 4		83-014-01							
OnTrak™ (requires casters)		90-6090	90-7590	90-7590	90-9090	90-7512	90-7515	90-9012	90-9015

## Faraday Cage Ordering Chart

Description	Dimensions (DxL)	Model Number
Faraday Cage 1060 mm   40 in. tall	750 x 900 mm   29.5 x 35.4 in.	81-333-03
	750 x 1200 mm   29.5 x 47.2 in.	81-333-04
	900 x 900 mm   35.4 x 35.4 in.	81-333-90
	900 x 1200 mm   35.4 x 47.2 in.	81-333-06

## Faraday Cage Accessories Ordering Chart

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

Distribution in the UK & Ireland



**Lambda Photometrics Limited**

Lambda House Batford Mill  
Harpenden Herts AL5 5BZ  
United Kingdom

E: [info@lambdaphoto.co.uk](mailto:info@lambdaphoto.co.uk)

W: [www.lambdaphoto.co.uk](http://www.lambdaphoto.co.uk)

T: +44 (0)1582 764334

F: +44 (0)1582 712084

CleanBench flyer 180122