CleanBench Laboratory Tables

CleanBench Laboratory Tables

CleanBench™ (63-500) Series High-Performance Lab Tables

Figure 1, CleanBench (*63-500) Series High-Performance Lab Table*

Introduction

The CleanBench (63-500) Series Laboratory Tables employ Gimbal Piston Isolators that require a continuous supply of compressed air or nitrogen to operate properly.   For a complete discussion of the air supply requirements, see *System Air Supply Requirements* in introduction section of this document.

Tools Required

- Leveling wrench (provided)
- 5/16 inch Allen wrench for accessories (provided)
- Utility Knife
- 3/4 inch wrench (for casters)

Air Supply Plumbing and Valve Setup Instructions

Air Supply Input Connection

Step 1   Plumb tubing between air supply and system's input air filter as appropriate.

Fittings   Tubing can be connected to a **1/4 or 1/8 inch NPT** female fitting as shown in figure below.
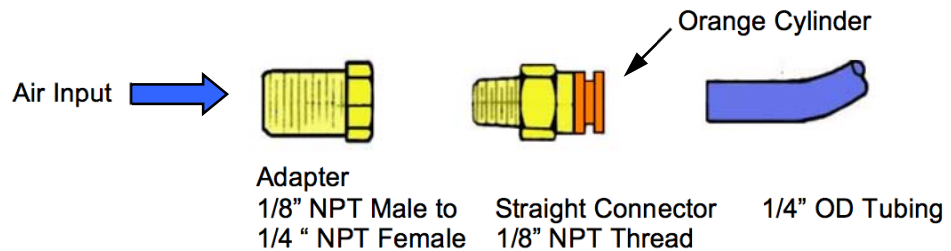

Figure 2,   *Air Supply Input Connection*

Connecting   Insert the air tube firmly into the self-sealing fitting.

Disconnecting   Push the *orange cylinder* with your thumb and forefinger toward the center of the fitting body while pulling the tube in the opposite direction.

Internal Air Supply Tubing

Systems are internally plumbed at the factory as shown in figure below.

M = Master Isolator with Height Control Valve (V)
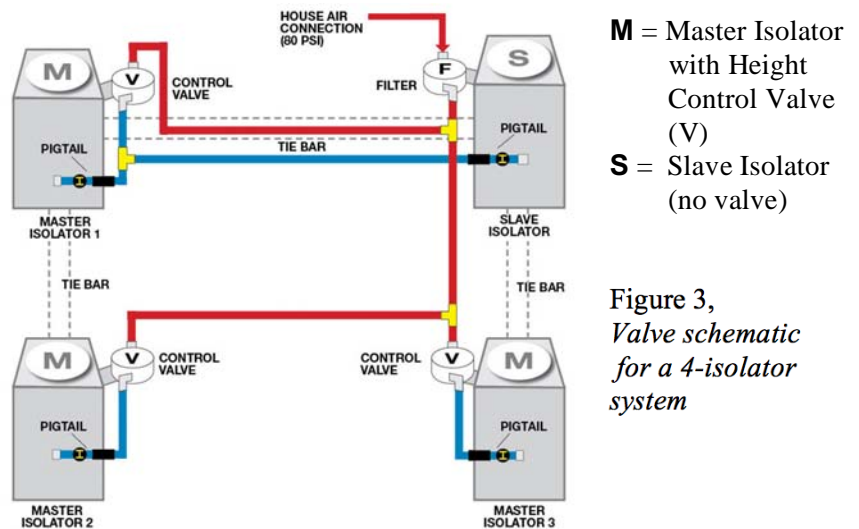
S = Slave Isolator (no valve)

Figure 3, *Valve schematic for a 4-isolator system*

☞

Note   Each post is shipped with a short section of tubing with a union coupler already attached to the input elbow. This "pigtail" segment should not be tampered with. Each pigtail contains a small, flow-restricting orifice to damp table motion and stabilizes the load.

Important   Do not remove or change the location of these orifices.   If lost or damaged, please contact TMC for replacement pigtails.

Installing and Leveling TableTop

Step 2   Ensure the main air supply is **Off.**

Step 3   Using the leveling wrench provided, adjust leveling feet as shown in figure below to ensure all four legs are in solid contact with floor.

Level frame by referencing the top surface of the horizontal tie-bars.
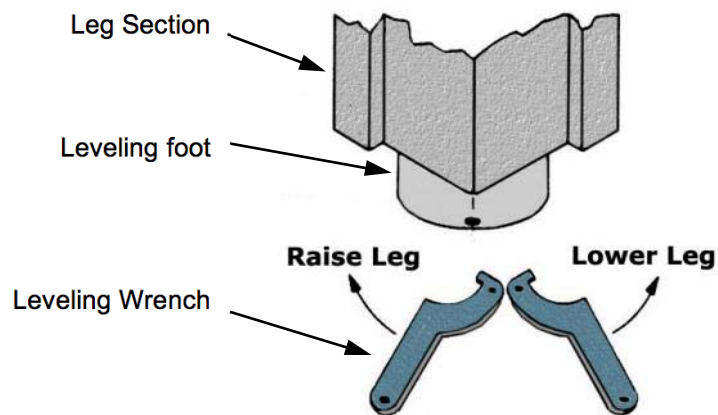
Carpenter accuracy leveling is more than adequate.

Figure 4, *Adjusting leveling feet*

👉 **Note**   Skipping the above step may compromise vibration isolation performance.

Step 4   Place tabletop slowly down symmetrically on deflated isolators to avoid any damage to isolators as shown in figure below.

The top should be symmetric over the isolator frame. If the floor is uneven, one of the 4 isolators may not contact the payload. This gap should be closed by further lowering the leveling foot on the corresponding post.

⚠️ **Caution**   The tabletops weigh approximately **275-300 pounds**. Take proper precautions.

Height Control Valve
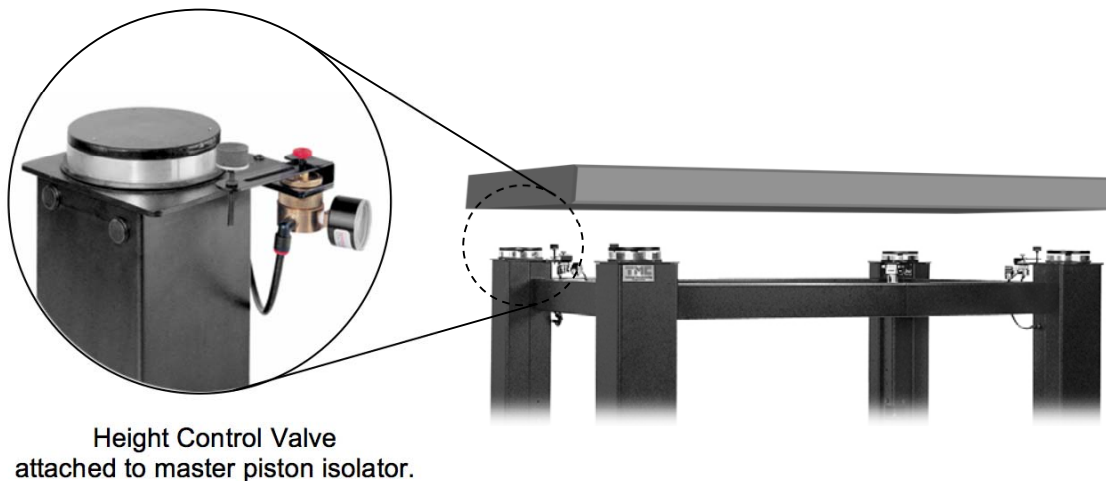attached to master piston isolator.

Figure 5, *Table top placed symmetrically over 4 legs*

Attach Horizontal Lever Arms

Step 5   Locate the three *height control valves* mounted on *isolators* as typically shown in figure above and referencing figures 3 earlier.

Step 6   Ensure the main air supply is **Off.**

Step 7   Adjust the **ISOLATOR HEIGHT ADJUST** screw CW (clockwise as viewed top down) to lower *foam pad* down to the lowest position close to the *horizontal lever arm* as referenced in figure below.   Retract *locking nut* as required.
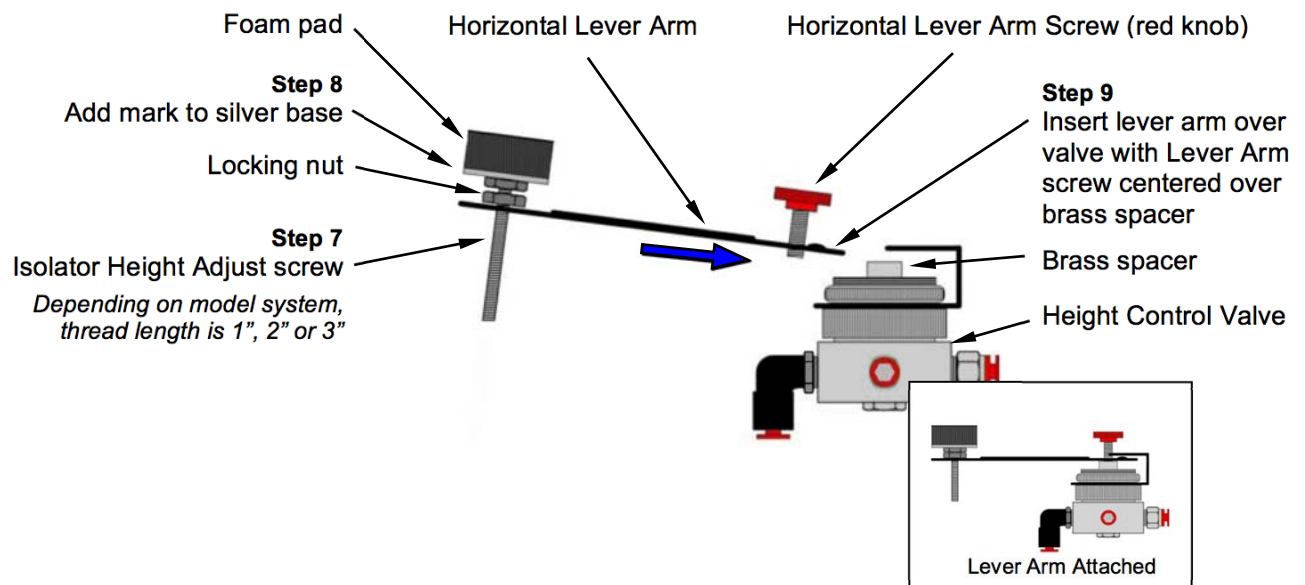
Foam pad   Horizontal Lever Arm   Horizontal Lever Arm Screw (red knob)

Step 8
Add mark to silver base

Locking nut

Step 9
Insert lever arm over valve with Lever Arm screw centered over brass spacer

Step 7
Isolator Height Adjust screw
Depending on model system, thread length is 1", 2" or 3"

Brass spacer

Height Control Valve

Lever Arm Attached

Figure 6, *Attaching Horizontal Lever Arm*

Step 8   Using a marking pen, mark a spot on the edge of the *foam pad*'s silver colored base to later use as a rotation indicator for **ISOLATOR HEIGHT ADJUST**.

Step 9   Insert *horizontal lever arm* onto *height control valve* ensuring the end of the **HORIZONTAL LEVER ARM SCREW** fits over the center of the *brass spacer* located on the top of the valve as shown in figure 6 above.

Step 10   Loosely fasten *horizontal lever arm* with **HORIZONTAL LEVER ARM SCREW** (red knob) and adjust to position arm approximately horizontal or the foam pad makes slight contact with the tabletop, whichever occurs first.

Step 11   Repeat above steps for attaching *horizontal lever arm* onto remaining two valves.

Isolator Height Adjustment

Step 12   Adjust the **ISOLATOR HEIGHT ADJUST** screw to raise *foam pad* until it is in slight contact with the tabletop unless achieved in Step 10 above.
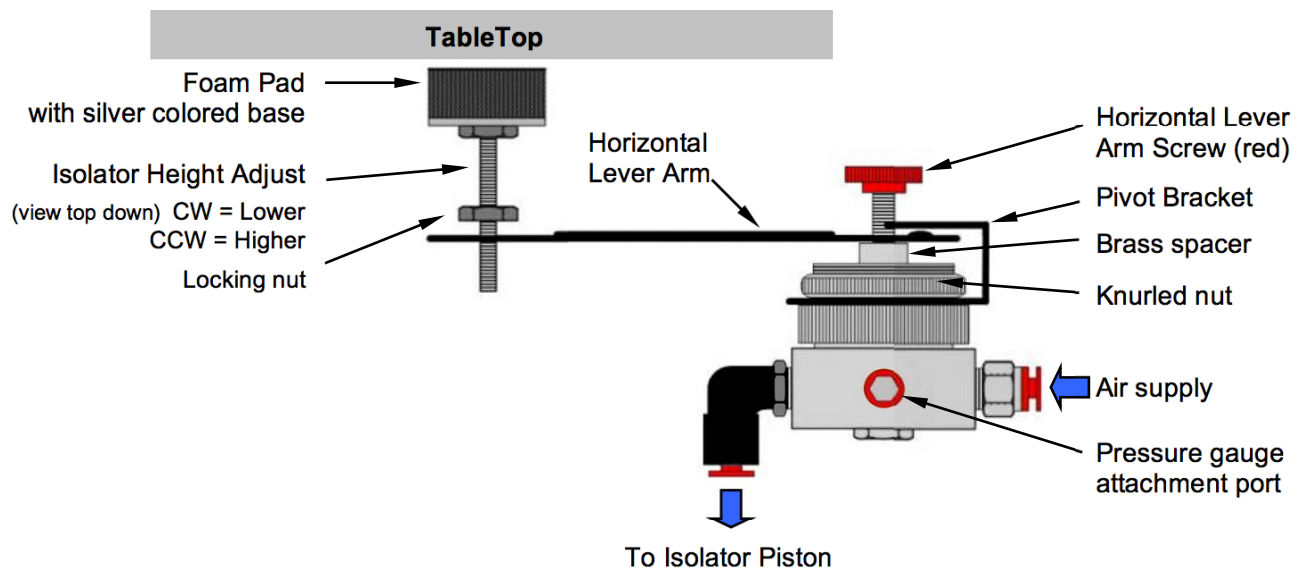

Figure 7, *Height Control Valve*

Step 13   While observing spot marked on the base of the *foam pad* earlier, continue to adjust **ISOLATOR HEIGHT ADJUST** screw another **5-10 turns CCW,** or more depending on model system being applied to**.**

The foam pad material will compress against tabletop.

Step 14   Repeat above steps for **ISOLATOR HEIGHT ADJUST** on remaining two isolators with a valve attached.

Gimbal Piston Adjustment

Step 15   Turn on the main air supply and set to **60-80 psi max.**

After a short delay, all the load disks should lift away from the clamp rings and the tabletop will then be floating.

Step 16   On systems with Gimbal Pistons, check to see that the top of the *piston* and the top surface of the *clamp ring* are parallel as shown in figure below.

Sliding or tapping *load disk* towards the low spot of the piston will correct a tilt of the Gimbal Piston.
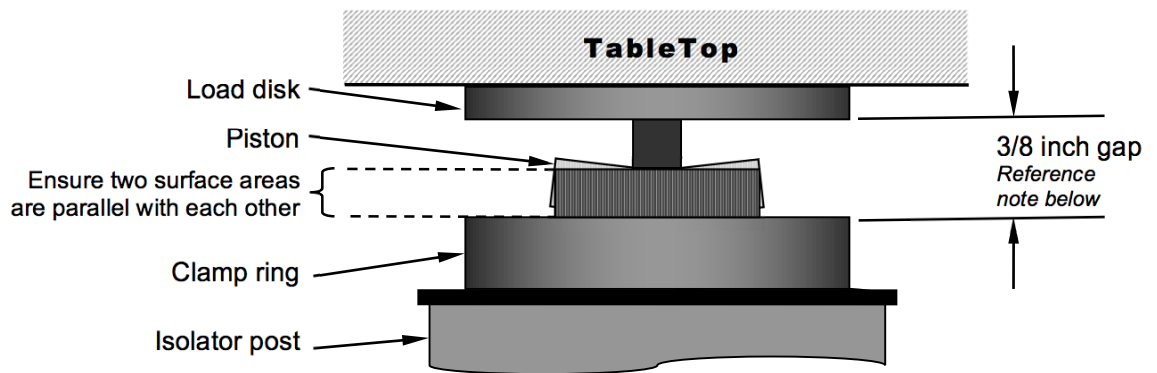

Figure 8,   *Gimbal Piston*

☞   **Note**   Centering the Gimbal Piston mechanism is important to achieve best horizontal isolation properties.

The mid-point of the vertical range should be determined by the gap between bottom surface of *load disk* and top surface of *clamp ring*.

Gap distance is as follows and referenced in figure above.

> **4 x 4 inch** cross section: **3/8 inch** gap
> **6 x 6** or **8 x 8 inch** cross section: **1/2 inch** gap.

Some deviation from these heights may be necessary for proper leveling.

The table top should be free to move both vertically and horizontally.   Any further leveling should only be done with the **ISOLATOR HEIGHT ADJUST** screw.

Step 17   Tighten *locking nut* on **ISOLATOR HEIGHT ADJUST** for all three valves as shown in figure 7 above, *Height Control Valve*.

☞ **Note**   There will be some slight settling and improvement in the valve's height sensitivity within the first few days of operation. Again adjust **ISOLATOR HEIGHT ADJUST** if required

Adjust Air Pressure

Step 18   Adjust the regulated air pressure down to **15–20 psi** above single gauge pressure reading. This will optimize damping control of coarse disturbances.

☞ **Note**   Reducing the supply pressure differential will minimize the prolonged disturbance effects of sudden payload forces.

The valves must maintain a positive supply differential or air will be exhausted and the system will deflate.

Air flow through the valves is buffered with controls built into the isolators.

Troubleshooting Tips

Table Not Floating Properly

If slave piston is too high or too low, adjust **HEIGHT ADJUSTMENT** screw for master valve controlling it to raise the piston.

Also, for piston diagonally opposite, slightly adjust the **HEIGHT ADJUSTMENT** screw in the opposite direction.

Instability

If table oscillates uncontrollably, turn off air supply and contact TMC. This problem is due to a combination of high mass and high center of gravity and can be corrected.

Poor Isolation

To optimize isolation, ensure that tabletop is free to move vertically and horizontally. Check section *Installing and Leveling TableTop* earlier in this procedure.

Pistons Completely Down

If isolators do not rise from the down position, then the leveling valves are not adjusted correctly or the air supply pressure is insufficient.

Pistons Completely Up

If an isolator cannot be lowered from the up position, the leveling valves are not adjusted correctly or the system is not plumbed correctly.

Reference the air supply diagram at beginning of this procedure, *Air Supply Plumbing and Valve Setup Instructions.*

Accessories

Faraday Cages

Introduction

The Faraday Cage is available in two types of configurations.

- **Type II Faraday Cage**

  Cage for mounting to a full perimeter enclosure
  on 63-500 series tables.

- **Bench Top Faraday Cage**

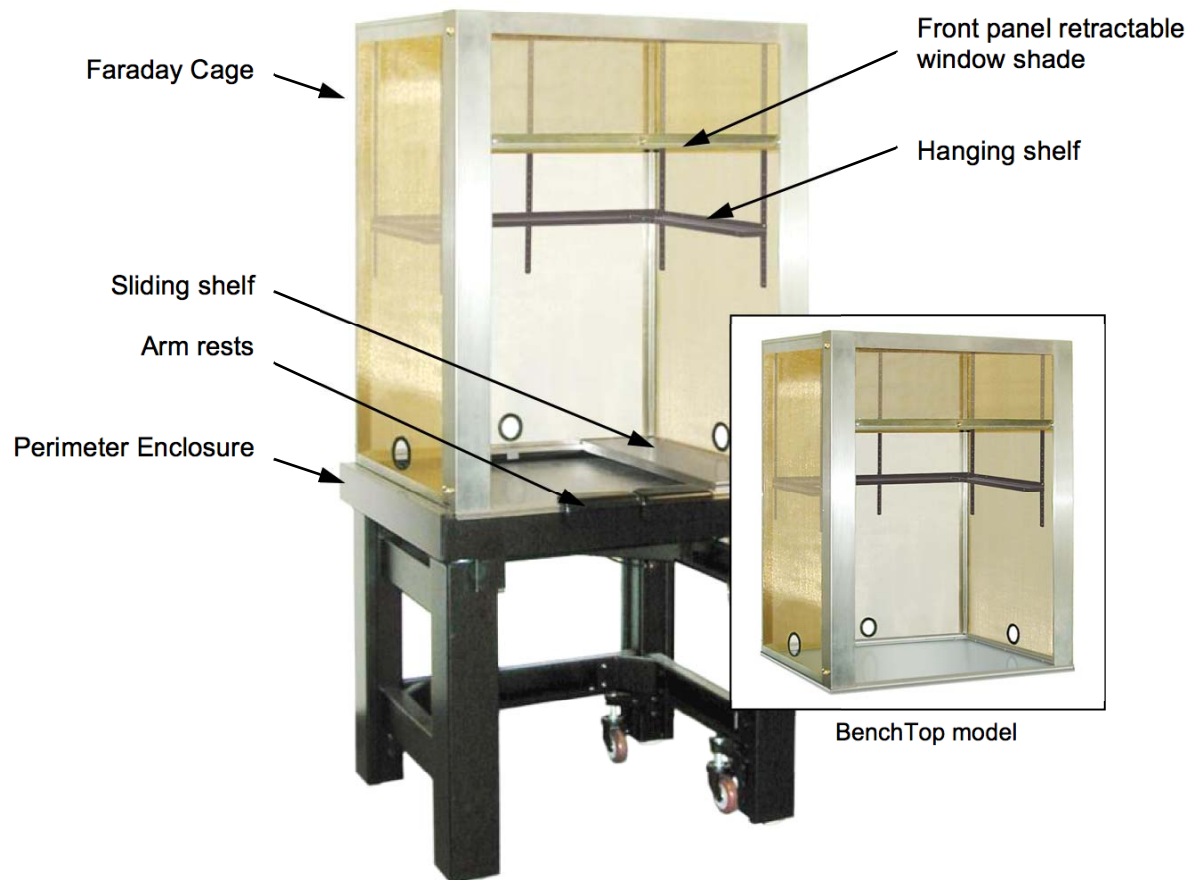 Cage with a base plate for use on a bench top.

Figure 1, *Type II Faraday Cage and Bench Top model (insert)*

Assembly Instructions

⚠️ **Caution**   Use gloves or take care when handling front panel aluminum edges to avoid cutting your hands.

Tools Required:

- Philips screw driver (provided)
- **3/8 inch** wrench

Hardware Provided

- Front panel (1)
- Side panels (2)
- Rear panel (1)
- Top panel (1)

- **10-32 x 1-1/4 inch** screws & hex nuts (6)
- **6 x 1 inch** self-drilling screws (15)
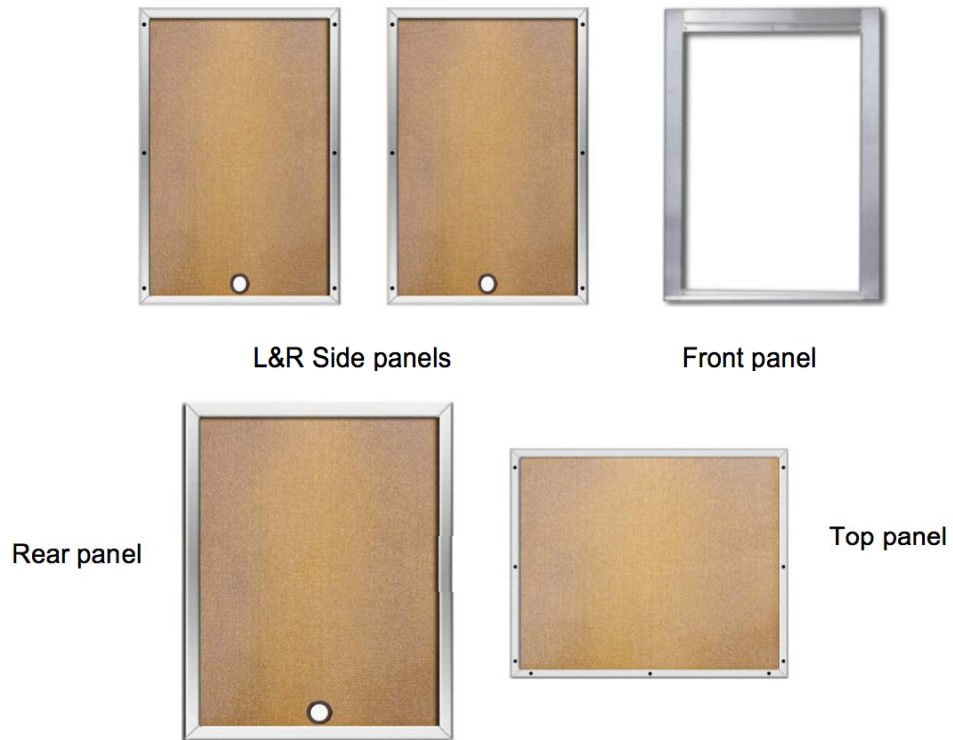- Holding clip, large (2)
- Holding clip, small (4)

Figure 2, *Faraday cage panels*

Step 1   Ensure front panel assembly window shade is in the open (retracted) position for ease in cage assembly.

Open shade as required by lifting brass shade release lever as shown below.
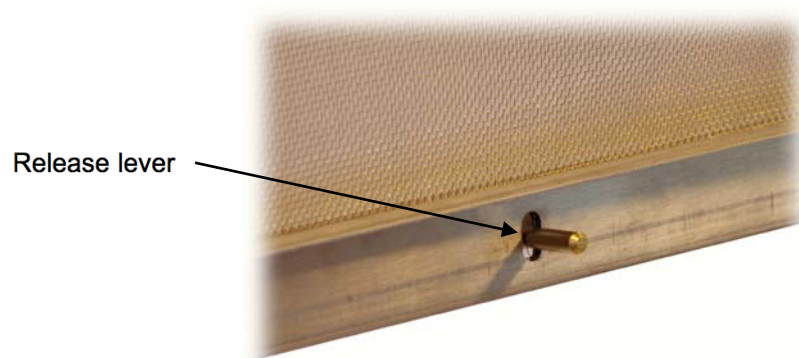

Figure 3,   *Front shade release lever*

Step 2   Place base of assembled front panel on rectangular perimeter enclosure frame's front surface or bench top base plate as appropriate.

Center base of front panel on enclosure frame and fit panel's bottom lip into open center area as shown in figure below.

Front panel assembly
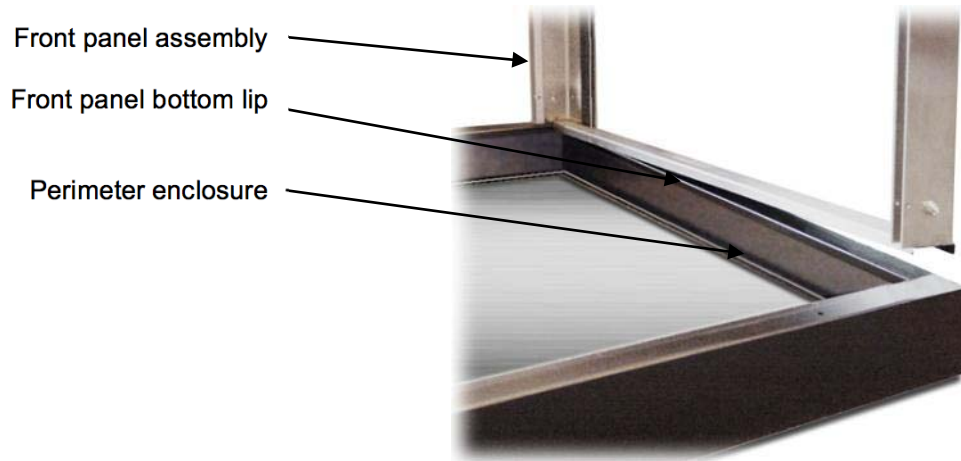
Front panel bottom lip

Perimeter enclosure

Figure 4,   *Mounting front panel to perimeter enclosure*

Step 3   Insert first side panel vertical edge into the front panel vertical side cavity as shown below.
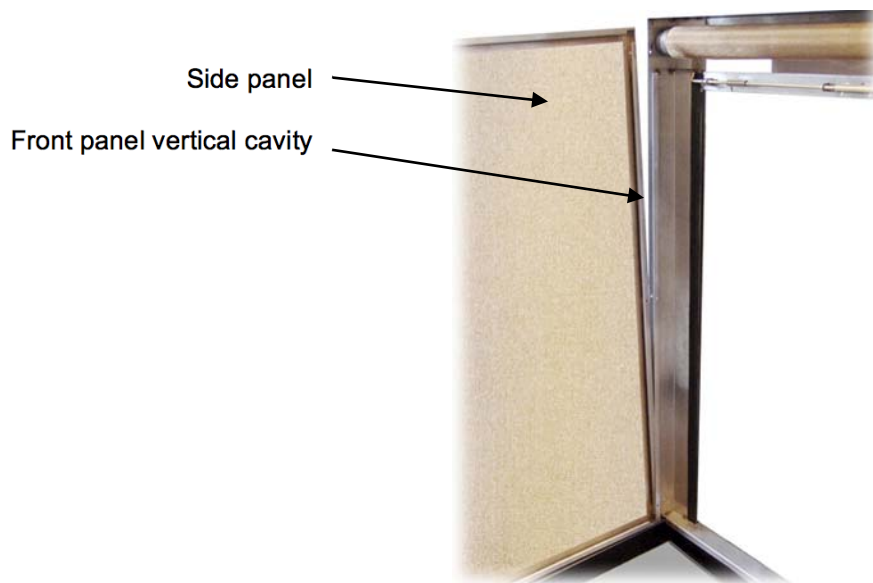

Side panel

Front panel vertical cavity

Figure 5, *Attach side panel to front panel*

Step 4 Press side panel against front panel vertical cavity and fasten using a **10-32 x 1 inch** Philips head screw and hex nut in side panel top hole location.

Loosely tighten screw using Philips head screw driver.

☞   **Note**   As panels are first assembled, loosely fasten with a single screw along each edge until all panels are attached and properly aligned together.

Step 5 Snap a hold-down clip between the lower edge of the side panel and perimeter enclosure frame.

Use a large clip if the perimeter enclosure frame is **5.75 inches** tall or a small clip if the enclosure is **3.75 inches** tall.

Small   Large

Figure 6, *Hold down clip*

Step 6 Attach second side panel in the same way as the first, hold panel in position and loosely fasten with a **10-32 x 1 inch** screw in side panel top hole location only.

Step 7   Snap a hold-down clip between the lower edge of the side panel and perimeter enclosure frame.

Use a large clip if the perimeter enclosure frame is **5.75 inches** tall or a small clip if the enclosure is **3.75 inches** tall.
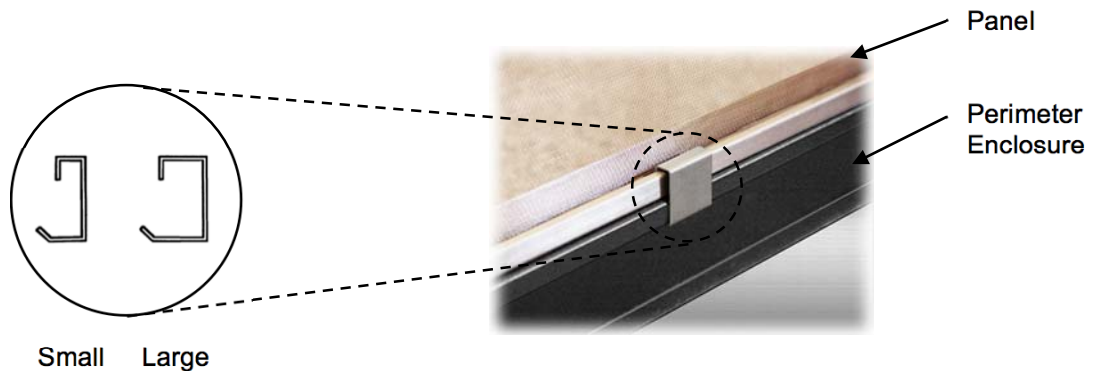
Step 8   Place the rear panel between the two side panels. Loosely fasten rear vertical edge of each side panel against rear panel with one **6 x 1 inch** screw.

Step 9   Snap two small size hold down clips evenly spaced along the bottom of rear panel the same as shown in figure 6 above for side panels.

In this step only the smaller clips are used regardless of the size of the perimeter enclosure.

Step 10   Place the top panel over the two side panels and slide panel into the top front panel cavity area and evenly align edges with side panels.
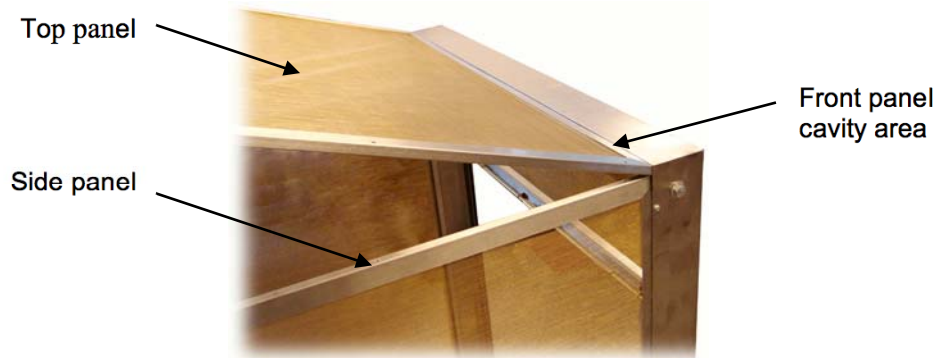

Figure 7, *Attach top panel*

Step 11   Fasten top panel to side and rear panels using one **6 x 1 inch** screw along each edge.

Step 12   Align side, rear, and top panels evenly together.

Step 13   Fasten (4) remaining **10-32 x 1-1/4 inch** screws and hex nuts along front edge of each side panel to front panel and tighten securely.

Step 14   Fasten remaining **6 x 1 inch** screws to side, rear and top panels and then tighten all screws securely.

Faraday Cage

Hanging Shelf Option

Tools Required: Philips screwdriver, 3/8 inch wrench

Hardware

- **10-32 x 1 inch** screws (4)
- **10-32** hex nuts (4)

Shelf Assembly Instructions

Step 1   Place three piece shelf face down on a flat surface and layout configuration as shown in figure below.
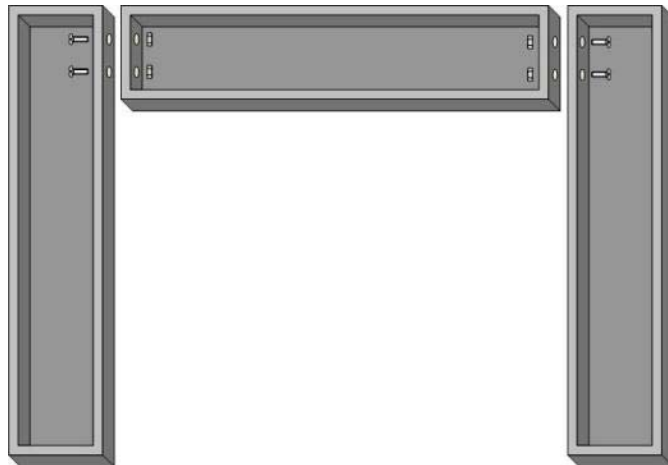

Figure 8, *Shelf assembly*

Step 2   Attach three shelf pieces together using (4) **10-32 x 1 inch** screws and matching hex nuts.

Attaching Shelf to Faraday Cage

Shelf may be installed with either finished side facing up or facing down providing a recessed shelf area for containing small items as shown below.

First attach suspension brackets around outside edge of assembled shelf. Insert completed assembly through front opening in cage and then hook top bracket ends around top panel frame inside cage as detailed in the follows.
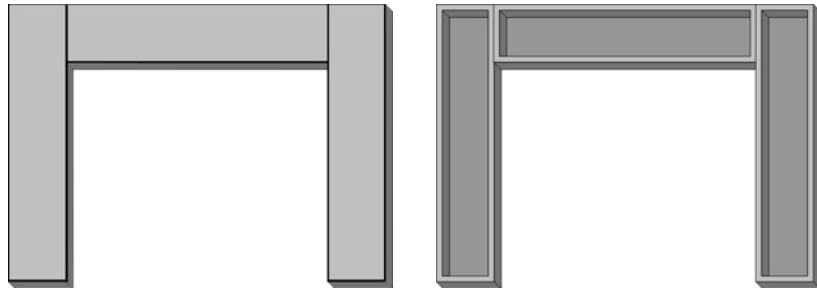

Figure 9, *Top surface shelf orientation*

Step 1   Place shelf, with top surface orientated in either direction as shown in figure above, on a surface that allows suspension brackets to hang to the side without interference while being attached (i.e. top surface of Faraday Cage as shown below).
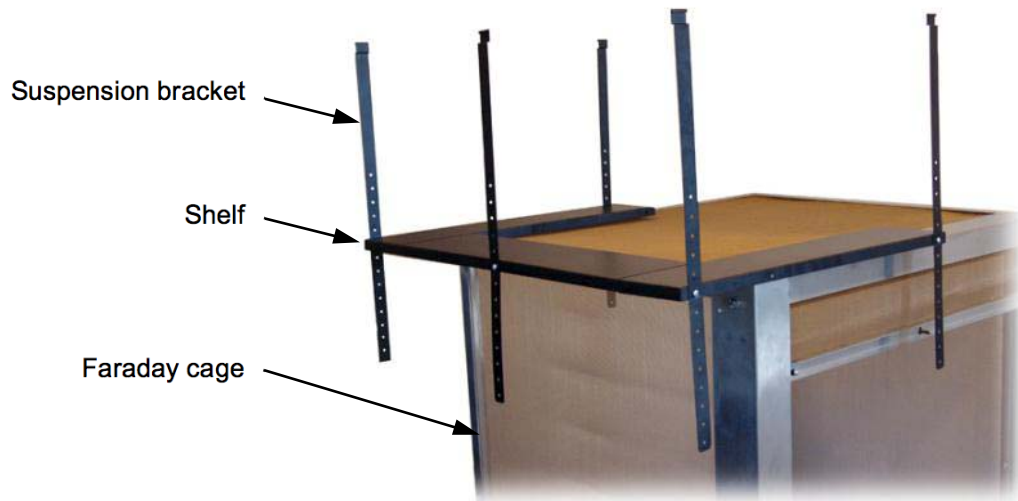

Figure 10, *Attaching suspension brackets*

Step 2   Determine location for suspending shelf and then identify appropriate mounting hole in brackets for attaching shelf.

Step 3   Attached all (5) suspension brackets with **10-32 x 1 inch** screws and matching hex nuts. Place screws with attaching hex nut facing outside of shelf toward panel screen area.

Step 4   Hold shelf assembly and rotate shelves **90 degrees** with attached brackets oriented horizontally and rear shelf facing the rear of cage.   Insert through cage front panel opening. taking care not to allow suspension brackets to puncture side panel screens.

Step 5   Inside cage, rotate shelf assembly back **90 degrees** so shelves are horizontal and bracket ends with attachment hooks are vertical, pointing up.

Step 6   Lifting shelf assembly up into position and hook the top of each suspension bracket around the inner edge of top panel as shown in panel cut-away illustration below.
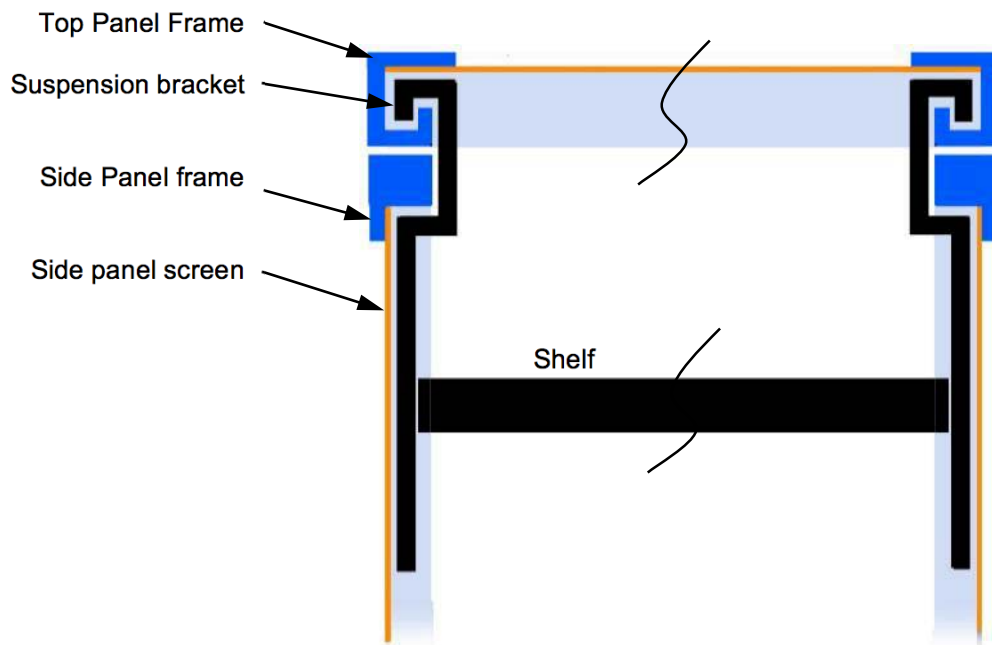

Figure 11, *Attaching suspension brackets*

Accessory
SpaceSaver™ Overhead Rack

Introduction

These assembly instructions provide directions for the installation of the SpaceSaver Overhead Rack System and Accessories on a TMC 63-500 Series Vibration Isolation Table.

The 63-500 table should be completely set up with the table properly aligned prior to installation. The isolator should be de-pressurized and air supply shut off prior to installation to avoid possibility of pinching during assembly.

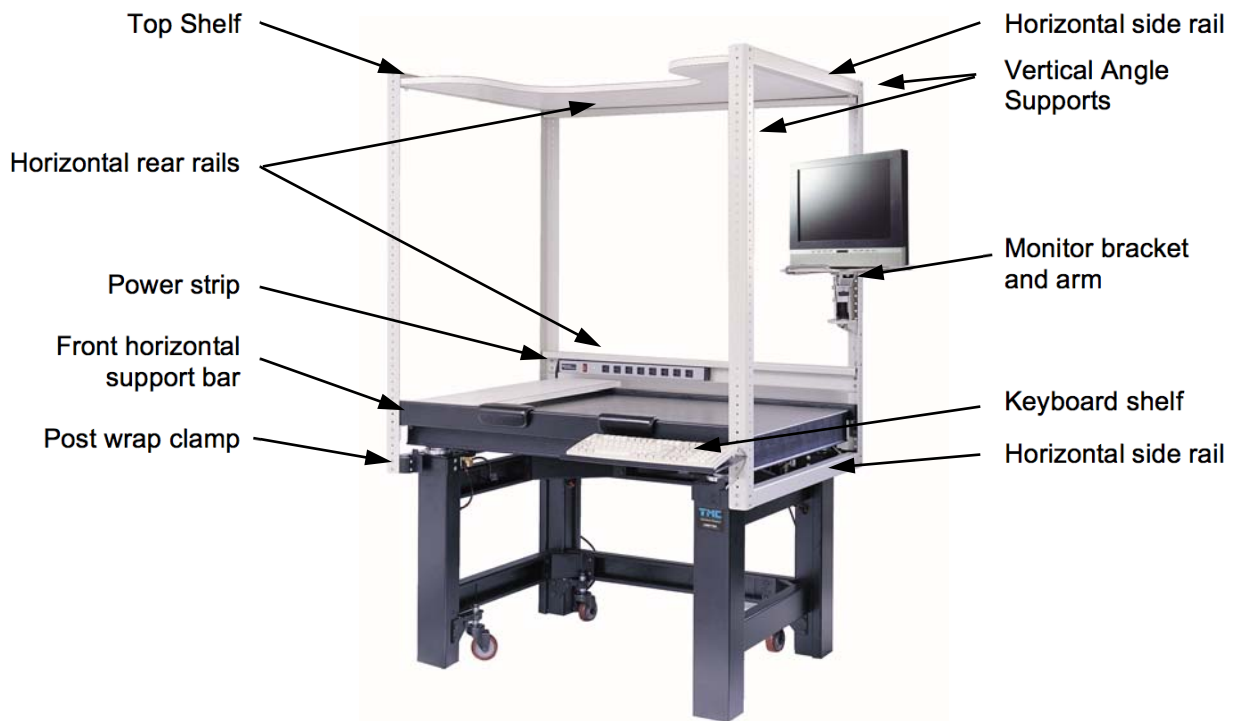It is recommended that the overhead rack system be installed by two people.

Figure 12, *SpaceSaver™ Overhead Rack System*

Assembly Instructions

Basic System

Step 1   Install one *Post Wrap Clamp-1* and one *Post Wrap Clamp-2* on each isolator leg using the following hardware.

- **3/8-16 x 1/2 inch** socket head cap screws (4)
- **1/4-20 x 7/8 inch** button head cap screws (2)
- **1/4-20** hex nuts (2)

Installation of the **1/4-20** screws will be easier if the **3/8-16** screws are left initially loose.   Then tightened after the **1/4-20** screws and nuts are tightened.

☞ **Note**   If the optional Perimeter Enclosure Kit (*Catalog No. 81-345-01*) is being installed, Perimeter Enclosure Clips should be installed using the same **1/4-20** screws and nuts described above at this time.

Each set of *Post Wrap Clamps* must be oriented such as to provide **4** attachment holes for the *upright angles* at the outboard corners of the table.

Reference figures 13 and 14 below for details of *Perimeter Enclosure Clip* and **1/4-20** screw installation.

Two Socket Head Cap Screws
(3/8-16 x 1/2 inch)

*two are shown and two
more are hidden from view*

Post Wrap Clamp

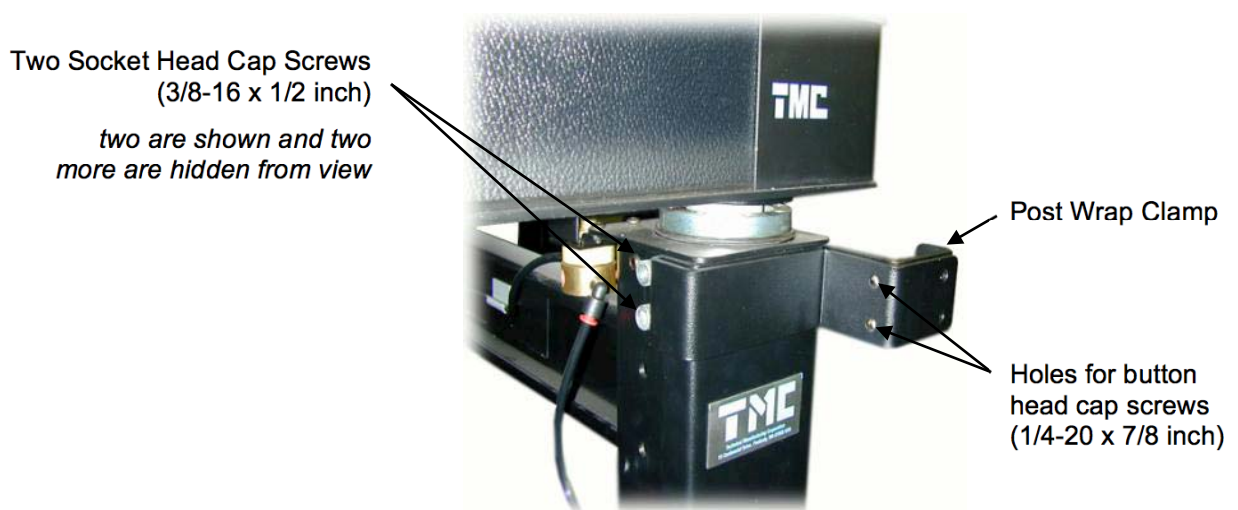Holes for button
head cap screws
(1/4-20 x 7/8 inch)

Figure 13, *Post wrap clamp installation (typical)*

Step 2   Install an *upright angle* and lower *horizontal side rail* at each leg using the following hardware.

- **1/4-20 x 7/8 inch** button head cap screws (4)
- **1/4-20** hex nuts (4)

☞   **Note**   The figure below shows the installation of the *upright angles* at their lowermost mounting holes.

The uniform hole pattern in these angles allows them to be installed at a range of heights. This adjustability may be useful if headroom is limited.

Figure 14, *Upright angle and horizontal side rail installation*

Step 3   Install an upper *horizontal side rail* spanning the front and rear *upright angles* of the table using the following hardware on each corner.

- **1/4-20 x 5/8 inch** button head cap screws (2)
- **1/4-20** hex nuts (2)

Screws should be inserted with their heads inboard, nuts on the outside of the frame to prevent subsequent interference with the top shelf.   Reference figure below.

Figure 15,   *Upper horizontal side rail*

Step 4   Install upper rear *horizontal rail* spanning the two rear *upright angles* using the following hardware on each corner.

- **1/4-20 x 5/8 inch** button head cap screws (3)
- **1/4-20** hex nuts (3)

Screws should be inserted with their heads inboard, nuts on the outside of the frame to prevent subsequent interference with the top shelf.
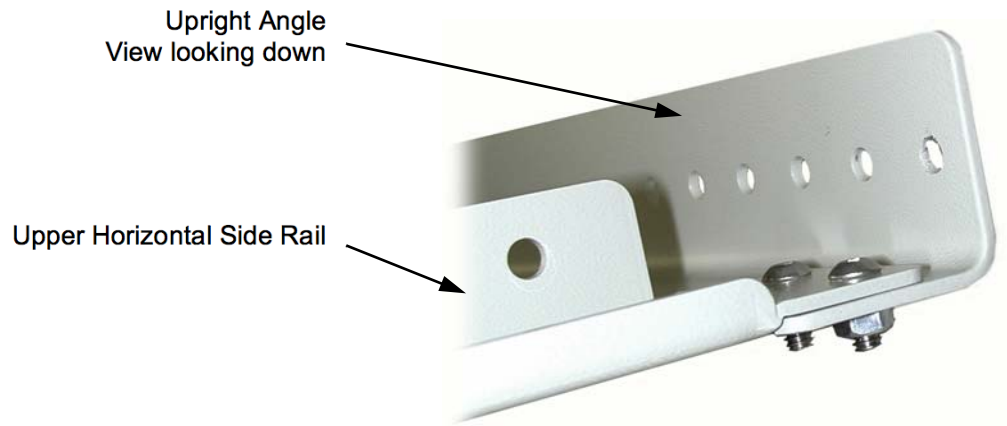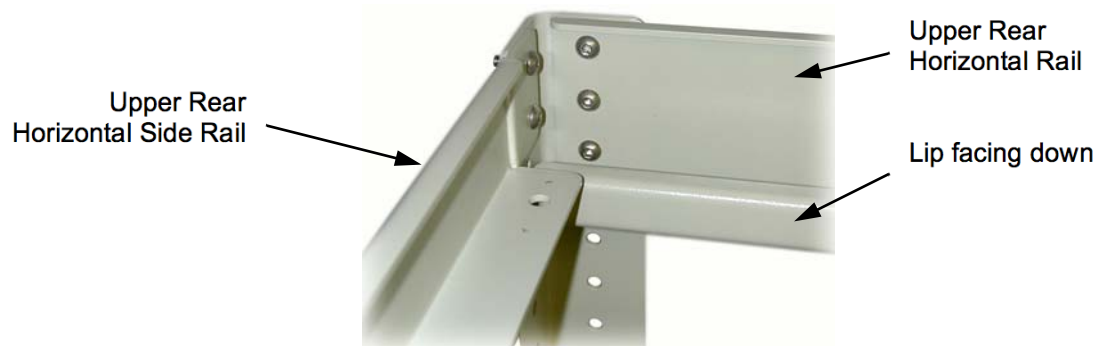

Figure 16,   *Upper rear horizontal rail*

Step 5   Install top shelf by sliding its rear edge into position from the front of the SpaceSaver frame, then lowering the front edges onto the support flanges of the upper side *horizontal rails* once they clear the front *upright angles*.

Line up the holes in the top shelf with the holes in the support flanges of the upper side *horizontal rails*.

Secure the top shelf using the following hardware.

- **1/4-20 x 1-1/4 inch** button head cap screws (4)
- **1/4-20** hex nuts (4)

.

Figure 17, *Top shelf installation*

⚠️ **Important**   If the optional Power Strip Kit (Catalog No. 81-344-01) is being installed. the Power Strip should be mounted on the lower rear *horizontal rail* prior to installation of the lower rear *horizontal rail* detailed in the following step.

Step 6   Install lower rear *horizontal rail* spanning the two rear *upright angles* using the following hardware at each corner.

- **1/4-20 x 5/8 inch** button head cap screws (3)
- **1/4-20** hex nuts (3)

Screws should be inserted with heads inside and nuts on the outside of the frame.   Reference figure below and note orientation of lower rear *horizontal rail* with lip up.

☞   **Note**   When determining the proper height of the lower rear *horizontal rail,* consideration should be given to the desired mounting height of optional accessories (Monitor Arm, Rear Support Bar, and Sliding Shelf) to avoid subsequent interference.
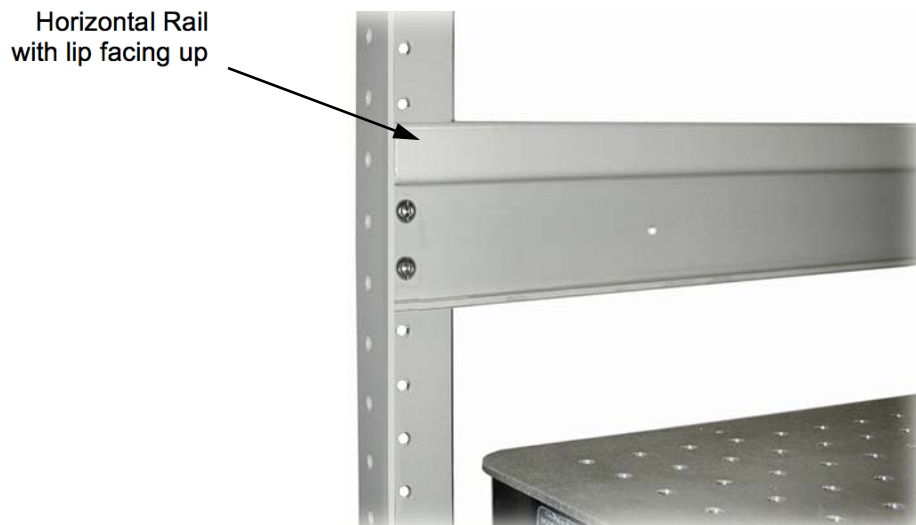
Horizontal Rail
with lip facing up

Figure 18, *Lower horizontal rail without power strip*

SpaceSaver Overhead Rack
Front Support Bar

Requires Support Bar Kit (Catalog No. 81-346-01)

Some parts included in the *Front Support Bar Kit* are not used with the SpaceSaver system. See the parts list located at the end of these instructions to identify unused items.

Step 1   Install a *support bar clip* on each of the front *upright angles* at the desired height using the following hardware on each front *upright angle*.

- **1/4-20 x 7/8 inch** button head cap screws (2)
- **1/4-20** hex nuts (2)

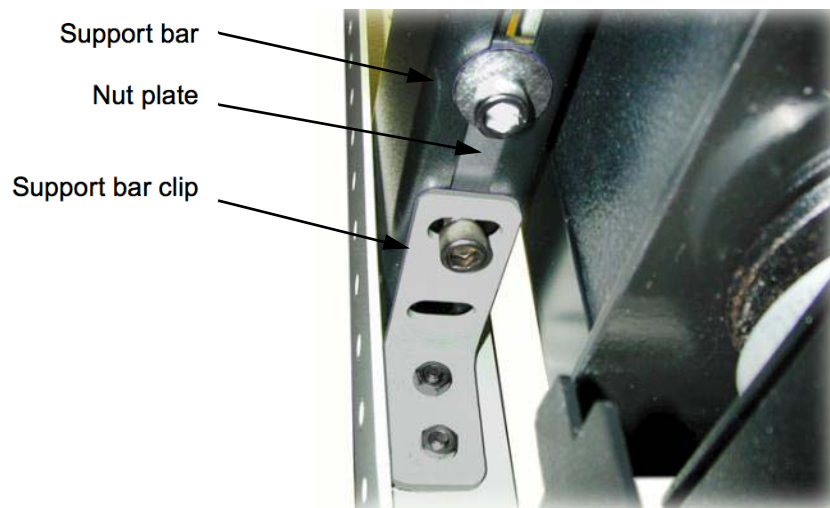Figure 19, *Front support bar installed on support bar clips (View from below.)*

Note   If the optional *Rear Support Bar Kit* will be installed, the rear *support bar clips* should be installed at the same height as the front *support bar clips*.

Step 2   Insert a *nut plate* through the slot on the underside of the *front support bar* and slide all the way to the end of the bar. Reference figure below.

Loosely secure the *nut plate* in position using the following hardware. Then repeat at the opposite end of the bar.

- **3/8-16 x 1/2 inch** socket head cap screw

- **3/8 inch** SAE flat washer threaded into the inboard tapped hole in the *nut plate*

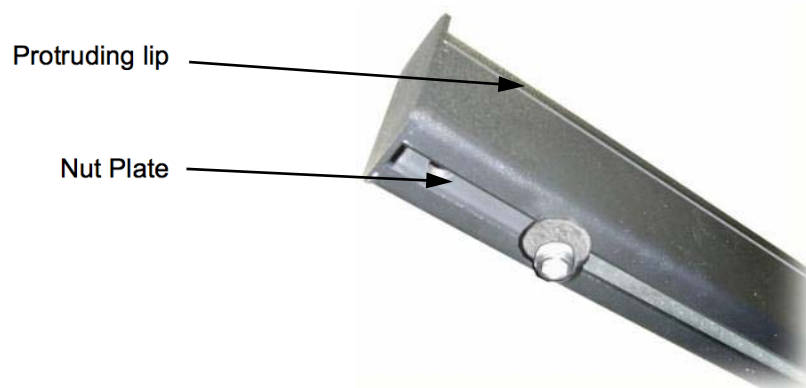Protruding lip ——

Nut Plate ——

Figure 20, *Nut plate in front support bar (View from below)*

Note   It is easiest to insert the *nut plates* into the slot in the bottom of the *front support bar* from underneath, with the *bar* resting in its normal orientation.

Systems with front support bar nut plates pre-installed

Loosen the **3/8–16 x 1/2 inch** cap screws and then slide the *nut plates* to the ends of the *front support bar*.

Step 3   Position the *front support bar* on the *support bar clips* installed in **Step 1**, with the protruding lip facing inboard, toward the rear of the table. Reference figure below.

Fasten using the following hardware.

- **3/8–16 x 1/2 inch** socket head cap screw threaded into the outboard tapped hole in the *nut plate*.

Step 4   Tighten the **3/8-16 x 1/2 inch** cap screws that were installed in **Step 2** above.

SpaceSaver Overhead Rack

Rear Support Bar

Requires Support Bar Kit (Catalog No. 81-346-01)

Some parts included in the *Rear Support Bar Kit* are not used with the SpaceSaver system. See the parts list located at the end of these instructions to identify unused items.

The rear *support bar clips* should be installed at the same height as the front *support bar clips*.

Assembly of the *rear support bar* is accomplished by following a procedure similar to that outlined above for the *front support bar*. Take note that the *rear support bar* does not possess a protruding lip.

SpaceSaver Overhead Rack

Keyboard Shelf   *(Requires Front Support Bar)*

Step 1   Insert (2) *nut plates* in the slot on the underside of the *front support bar*. Position the *nut plates* such that one tapped hole in each *nut plate* aligns with one hole in the *keyboard shelf*.

Step 2   Insert a **3/8-16 x 3/4 inch** socket head cap screw with **3/8 inch** SAE flat washer through each hole in the *keyboard shelf* and thread into the *nut plate* without tightening.

Step 3   Slide the *keyboard shelf* to the desired position on the *front support bar* and tighten the two **3/8-16 x 3/4 inch** socket head cap screws. Reference figure below.
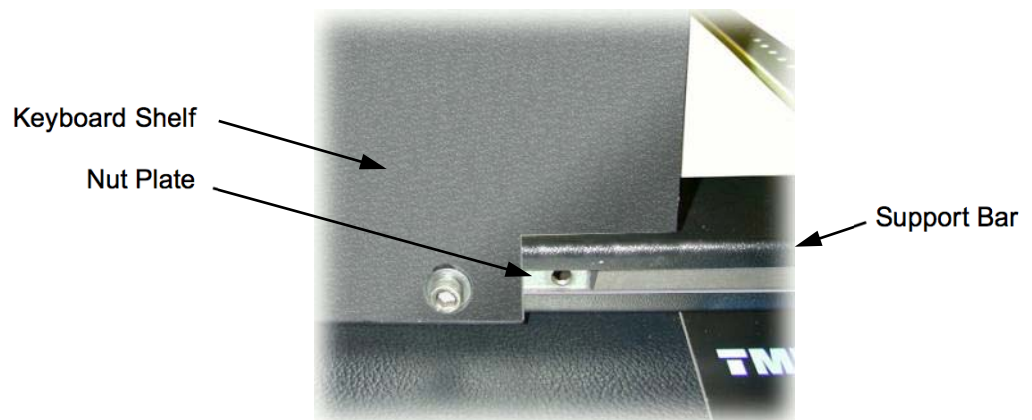

Figure 21, *Keyboard shelf installation (View from below)*

SpaceSaver Overhead Rack
Monitor Support Kit

Step 1   Open the *monitor arm* package, remove and discard the table top clamp assembly from the circular base plate.

Keep the self-locking nut, metal washer, plastic washer, and **3 inch** diameter plastic disk.

Step 2   Install the *monitor bracket* on the desired *upright angle*, at the desired height using the following hardware.

- **1/4-20 x 5/8 inch** button head cap screws (6)
- **1/4-20** hex nuts (6)

Step 3   Place the *monitor arm* circular base plate on the *monitor bracket*. with the **3 inch** plastic disk sandwiched between.

Step 4   Place the metal and plastic washers over the 3/**8-16 x 1 inch** cap screw.

Insert the screw through the hole in the center of the base plate and *monitor bracket*, and secure with the self-locking nut.

Step 5   Complete the assembly of the *monitor arm* by following the instructions included in its package. Reference figure below.
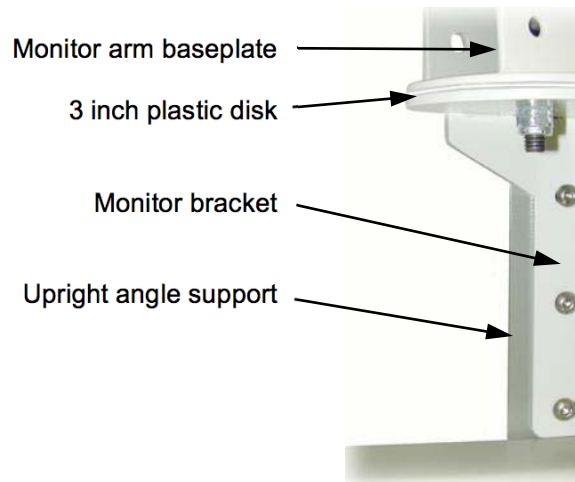

Figure 22,   *Monitor arm mounting*

SpaceSaver Overhead Rack

Power Strip Kit

The *power strip* should be mounted on the lower Rear Horizontal Rail prior to Rail installation.

Step 1   Insert **(1) 6-32 x 1/2** inch pan head screw through the hole in each of the two clips supplied with the *power strip*.

Step 2   Insert the screws with clips through the desired set of holes in the rear *horizontal rail* and fasten with **6-32** hex nuts.

Step 3   Align the *power strip* mounting slots on the end of the *power strip* opposite the power cord end with the clips installed in **Step 1**.

Step 4   Slide the *power strip* along until both clips are engaged with the slots on the *power strip* as shown in figure below.

Figure 23, *Power strip installation*

Step 5   Install lower rear *horizontal rail* spanning the two rear *upright angles* using the following hardware at each corner.

- **1/4-20 x 5/8 inch** button head cap screws (3)
- **1/4-20** hex nuts (3)

Screws should be inserted with their heads inboard. nuts on the outside of the frame. Reference figure below and note orientation of lower rear *horizontal rail* with lip up.

☞ **Note**   When determining the proper height of the lower rear *horizontal rail,* consideration should be given to the desired mounting height of optional accessories (Monitor Arm, Rear Support Bar, and Sliding Shelf) to avoid subsequent interference.

Figure 24, *Lower rear horizontal rail*

SpaceSaver Overhead Rack
Perimeter Enclosure Kit

This kit only includes the attachment hardware for the *Perimeter Enclosure*. The *Perimeter Enclosure* is sold separately.

For installation, the *Perimeter Enclosure* is installed as part of **Step 1** of the **Assembly Instructions** for the **Basic System**.

SpaceSaver Overhead Rack
Armrest Pad (Requires Front Support Bar)

The *armrest pad* is installed by clipping onto the top edge of the *front support bar* as shown in figure below.

Figure 25,   *Armrest pad*

Parts List

Description	Qty
Basic System (Cat. No. 81-340-03, 81-340-04, 81-340-06)	
Upright Angle	4
Horizontal Side Rail	2
Horizontal Rear Rail	2
Post Wrap Clamp-1	4
Post Wrap Clamp-2	4
Top Shelf With Cutout	1
Hardware Kit	
1/4-20 x 5/8 inch Button Head Cap Screws	20
1/4-20 x 7/8 inch Button Head Cap Screws	24
1/4-20 x 1-1/4 inch Button Head Cap Screws	4
3/8-16 x 1/2 inch Socket Head Cap Screws	16
1/4-20 Hex Nuts	48
Front Support Bar (Cat. No. 81-301-01, 81-301-02)*	
Front Support Bar	4
Support Bar Bracket Kit	
3/8-16 x 1/2 inch Socket Head Cap Screws	4
3/8 inch SAE Flat Washer	2
5/16 inch Hex Key	1
Left Bracket**	1
Right Bracket**	1
3/8-16 x 4 inch Socket Head Cap Screws**	2
* Requires Support Bar Kit (Cat. No. 81-346-01) when used with SpaceSaver™ Overhead Rack System ** These items not used with SpaceSaver™ Overhead Rack System	
Rear Support Bar (Cat. No. 81-302-01, 81-302-02)*	
Rear Support Bar	4
Support Bar Bracket Kit	
3/8-16 x 1/2 inch Socket Head Cap Screws	4
3/8 inch SAE Flat Washer	2
5/16 inch Hex Key	1
Left Bracket**	1
Right Bracket**	1
3/8 inch-16 x 4 inch Socket Head Cap Screws**	2
* Requires Support Bar Kit (Cat. No. 81-346-01) when used with SpaceSaver Overhead Rack System ** These items not used with SpaceSaver Overhead Rack System	

Support Bar Kit (Catalog # 81-346-01)*	
Support Bar Clip	2
3/8-16 x 1/2 inch Socket Head Cap Screws	2
1/4-20 x 7/8 inch Button Head Cap Screws	4
1/4-20 Hex Nuts	4
* A Support Bar Kit is required for each support bar (one for the front, one for the rear) when used with SpaceSaver Overhead Rack System	
Keyboard Shelf (Catalog # 81-343-01)*	
Keyboard Shelf	1
Hardware Kit	
3/8-16 x 3/4 inch Socket Head Cap Screws	2
3/8 inch SAE Flat Washer	2
Nut Plate	2
* Requires Front Support Bar (Cat. No. 81-301-01, 81-301-02)	
Monitor Support Kit (Catalog # 81-342-01)	
Monitor Arm	1
Monitor Bracket	1
Hardware Kit	
1/4-20 x 5/8 inch Button Head Cap Screws	4
1/4 -20 Hex Nuts	4
3/8-16 x 1-1/4 inch Socket Head Cap Screw	1
Power Strip Kit (Catalog # 81-344-01)	
Outlet Strip, 2 Foot	1
Hardware Kit	
6-32 x 1/2 inch Pan Head Screws	2
6-32 Hex Nuts	2
6-32 x 3/4 inch Pan Head Screws*	2
#6 Flat Washers*	6
* These parts may not be required. The power strip is factory installed on the rear horizontal rail if it is ordered with SpaceSaver™. When ordered separately, required mounting hardware is supplied.	
Perimeter Enclosure Kit (Catalog # 81-345-01)*	
Perimeter Enclosure Clip-1	2
Perimeter Enclosure Clip-2	2
1/4-20 x 5/8 inch Button Head Cap Screws	8
1/4-20 Hex Nuts	8
* Perimeter Enclosure sold separately	

Accessory
Support Bars

Attach support bar brackets loosely to the support bar as shown in figure below and also referenced in figure 12 earlier.

Attach the support bar brackets to the top inside face of the isolator posts and then tighten all bolts.
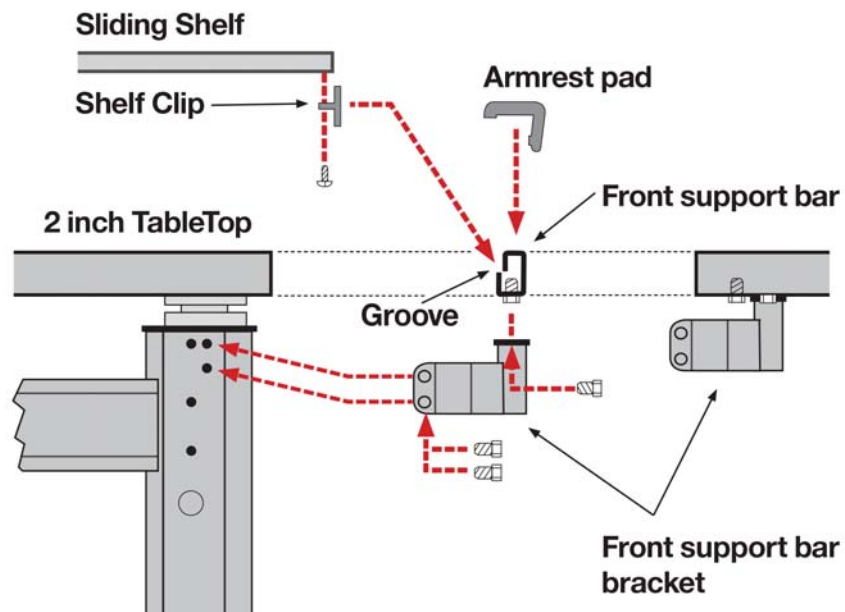

Figure 26,   *Support bars, sliding shelves, and arm rest pads*

Accessory
Sliding Shelves

Shelves are mounted by attaching shelf clip as shown in figure 26 above. The clip rests in a groove in the front bar. The rear end of the shelf rests on the rear support bar.

Accessory
Perimeter Enclosure

- Attach *perimeter enclosure* brackets to the top inside face of the isolator posts.

- Tighten all bolts as referenced in figure below.

- Lower *perimeter enclosure* over the table top onto the attached brackets.

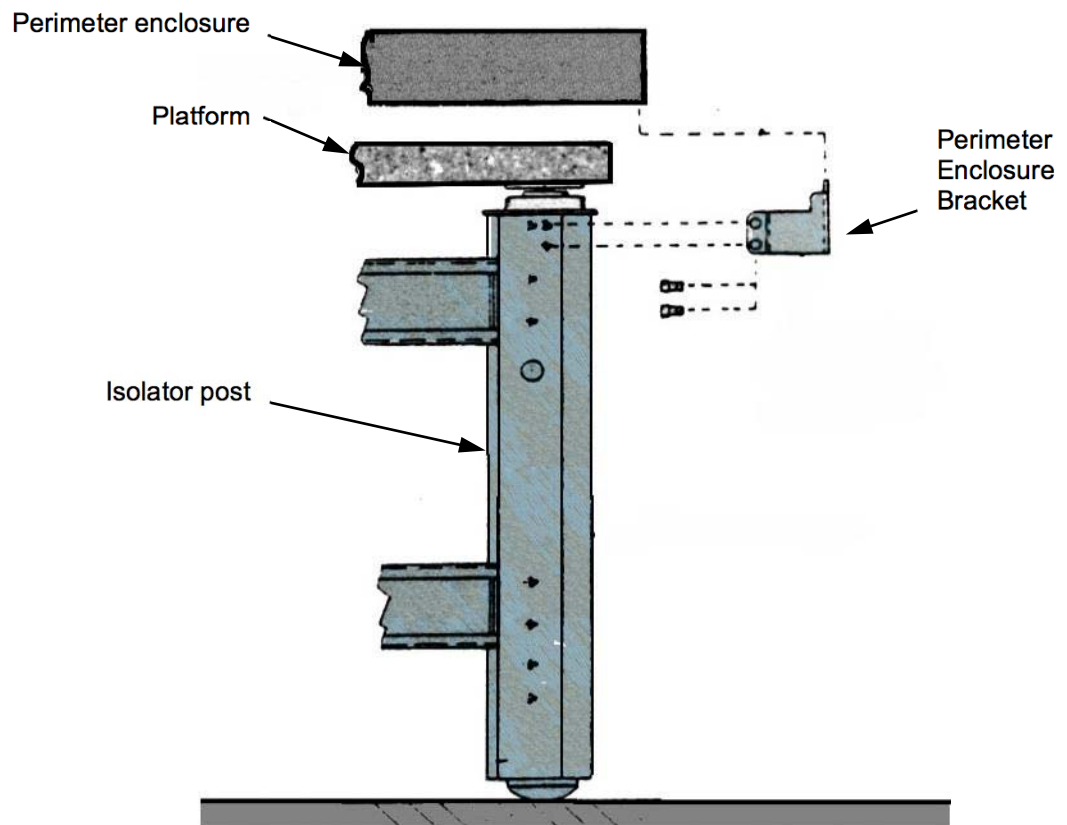- Bracket "tongues" should fit in "slots" on under-side of enclosure.

Figure 27,   *Perimeter enclosure*

Accessory
Casters

Casters are shipped attached to the base of the isolator legs.

To engage or disengage the *caster*, simply rotate the caster **HEIGHT ADJUST** screw with a **3/4 inch** wrench as referenced in figure below.

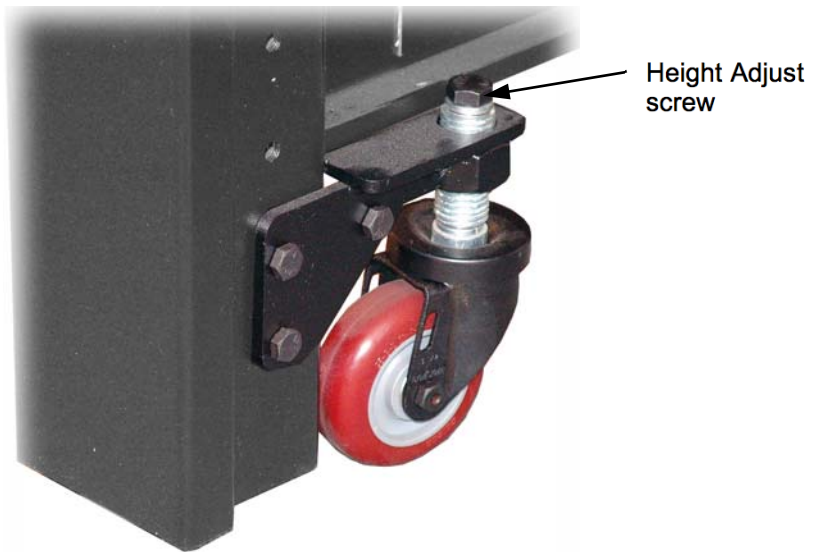When not in use, the *caster* should be retracted for optimum isolation performance.

Figure 28, *Caster attached to post*

CleanBench™ (63-600) Series ClassOne™ Tables

Introduction

The model 63-600 series table setup instructions are the same as the model 63-500 series except for the following points.

- Casters

- Height control valves have slight physical differences but operate and adjusted the same as valves in 63-500 series tables.

- Includes a standard front support bar that is different from 63-500 series table

- Includes an optional rear support bar and sliding shelf.

Figure 1, *CleanBench (63-600) Series Laboratory Table*

CleanBench™ (68-500) Series High-Capacity Lab Tables

Introduction

The 68-500 Series of laboratory table setup instructions are the same as the 63-500 series with the following exceptions.

- TableTop is much heavier.

- The legs have a larger cross section and support capacity.

- The casters are the same type used on System 1 posts (6 x 6 inch posts).

Figure 1, CleanBench *(68-500) Series Laboratory Table*

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