TERRA UNIVERSAL.COM
Critical Environment Solutions

Quick-Start Operating Guide **Document No. 1800-62**

Vibration-Free WorkStation

 Rev. 11/07

Your Comprehensive Equipment Source

Quick-Start Operating Guide

Vibration-Free WorkStation

Proprietary Notice

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Safety Notice

A thorough familiarity with all operating guidelines is essential to safe operation of the product. Failure to observe safety precautions could result in poor performance, damage to the system or other property, or serious bodily injury or death.

The following symbols are intended to call your attention to two levels of hazard involved in operation:

CAUTION

Cautions are used when failure to observe instructions could result in significant damage to equipment.

WARNING

Warnings are used when failure to observe instructions or precautions could result in injury or death.

The information presented here is subject to change without notice.

1.0 Introduction

This manual provides information on installing and operating your Terra Vibration-Free WorkStation.

By studying this document carefully, you can be assured of a long, efficient service life from your system.

Related Manuals – Available for download from www.TerraUniversal.com:
- Vibration-Free Platform
  (Doc. No. 1800-21)

2.0 Description

Terra Universal's Vibration-Free WorkStation isolates up to 90% of typical building vibrations in both the vertical and horizontal directions. It consists of a work surface attached to pneumatic dampers, a regulator and gauge for each damper, a safety regulator, a shock bumper, and a telescoping frame. Optional drawers are also available.

Each unit consists of three joined assemblies: a frame containing the vibration dampers and pressurization hardware, optional drawers, shock bumper and telescoping legs; a load-supporting undertop that sits atop of – and is attached to – the vibration dampers contained within the frame; and the work surface, which is attached to the undertop. The frame and undertop are made of tubular Grade 304 stainless steel for all models, while the work surface comes in the following materials: stainless steel; electro-polished stainless steel; standard textured laminate; and electrostatic-dissipative textured laminate.

To prevent unnecessary vibration resulting from accidental user contact with the work surface, this WorkStation features shock bumper guarding its front edge. This bumper can also doubles as an arm rest.

The unit's adjustable legs are made of heavy-gauge 1-3/4" square telescoping tubing, adjustable in height from 25" to 35". Legs are adjusted by means of set screws.

3.0 Installation

1. Uncrate your WorkStation, checking to make sure that it has no visible damage incurred during shipment. If damage is found, contact the freight company to file a damage claim immediately.
2. Install the unit on a flat and level surface, with the gauges and dials facing the user.
3. Extend the unit's telescoping legs to achieve your desired table height, ensuring that the top surface of the WorkStation is as level as possible. A carpenter's level (or similar device) can be used to assist you in leveling the table. Use the leg's set screws to secure the table's height.
4. Fully close the regulators on each damper by turning their knobs counter-clockwise.

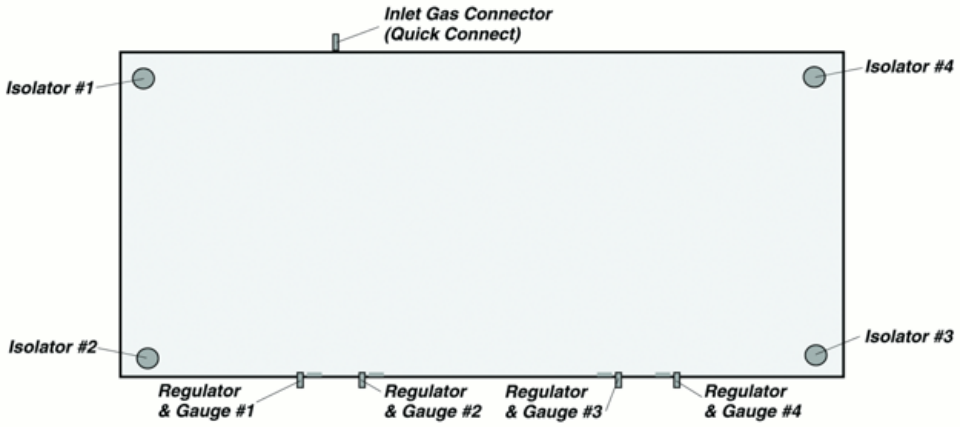
> CAUTION
>
> Make sure that each regulator is CLOSED prior to proceeding to Step 5 (connecting your in-house gas supply).

5. Connect your in-house air supply to the table's quick-connect inlet gas connector, located at the back of the table (*see Illustration 1*). To make this connection, simply remove the collar from the end of the quick-connect fitting, press it onto the gas line, and then screw it back onto the fitting. This fitting can then be pressed onto the connector on the station.

> NOTE
>
> This WorkStation is compatible with any of the following in-house air supply sources:
> - Dry Compressed Air
> - Bottled Air
> - Nitrogen, either compressed or bottled.

> CAUTION
>
> - TO PREVENT DAMAGE TO THE UNIT, your in-house air pressure *must be less than* 100PSI. If your in-house air pressure is greater than 100PSI, install a separate regulator (not supplied) on the line leading to the WorkStation to externally regulate the pressure to 100 PSI.
> - Each WorkStation features an internal master safety regulator, factory-set to 60PSI to ensure proper distribution of incoming air. *Do not alter the settings of the master regulator as damage to the unit could result.*

6. Ensure that the gauges for each damper read zero. If they do not, double-check that all regulator knobs are fully closed by turning them counter-clockwise.



(illust.1) Diagram showing location of Quick Connect Inlet, Vibration Dampers/Isolators, and Regulators in a standard-configuration WorkStation.

4.0 Operation

The pneumatic vibration dampers have a natural frequency of 3-5 hertz. This frequency can be lowered by increasing the load on the table, up to the maximum capacity possible (see the chart entitled "MAXIMUM LOAD CAPACITY" in the Specifications section for information on your model's net load-carrying capacity.) In the event that your equipment load is too light to provide adequate vibration damping, Terra Universal provides two (2) 39-lb adjustment weights to use with lighter equipment loads, if needed. When to use the weight(s) will be determined by the frequency of vibration that must be dampened and your allowable vibration levels. In most applications, one (1) adjustment weight will be necessary.

CAUTION

- DO NOT overload the WorkStation. Damage to the vibration-dampers will result! (See the chart entitled "Maximum Load Capacity" in the Specifications section for your model's net load-carrying capacity.)
- DO NOT add, remove or shift the WorkStation's load while it is in operation. Damage will result! Close each of the vibration damper's regulators by turning them counter-clockwise, allowing them to deflate and for the work surface to settle before altering its load.

1. Install adjustment weights (provided), if required, to the underside of the frame of the work surface. If one (1) weight is required, mount it to the center of the table using the two (2) center mounting screws provided. If two (2) weights are required, mount each side-by-side under the center of the table.
2. Load your equipment onto the WorkStation, taking care to center the load's center-of-gravity as much as possible.
3. Slowly open the regulators of each damper by turning their dials in a clockwise direction until the table elevates itself approx. 0.50" above the frame. This usually requires between 30-40 PSI of pressure. If the platform inflates completely with little pressure, your load may be too light and inadequate vibration damping may occur. Rectify this by closing the regulator valves and mounting an adjustment weight or two before re-opening the regulator valves.

CAUTION

If after you open the regulator valves and attain 30-40 PSI on the dampers' pressure gauges, the work surface fails to rise, the load on the WorkStation may be too heavy. Fully close the regulators and remove any adjustment weight(s) you may have installed before repeating Step 3.

If the work surface still fails to rise, the load on your WorkStation may still exceed its maximum net carrying capacity. Close the regulators and reconfigure the equipment constituting your WorkStation's load.

4. Level the table by adjusting each of the regulators to raise/lower the corner it supports. Each corner of the floating work surface can be adjusted in height for leveling +/- 0.25".
5. Once the table has been satisfactorily leveled, lock the regulator dials in place by pressing the knob into the unit.

CAUTION

Terra Universal recommends a continuous in-line air supply (i.e., keep the supply gas source connected to the table). Without a continuous in-line air supply, the vibration dampers may lose their effectiveness if they develop small leaks, a normal consequence of aging.

CAUTION

DO NOT add, remove or shift the WorkStation's load while it is in operation. Damage will result! Close each of the vibration damper's regulators by turning them counter-clockwise, allowing them to deflate and for the work surface to settle before altering its load.

5.0 Maintenance

Terra Universal's WorkStation is designed for low-maintenance needs for the entirety of the unit's operational lifetime. With no user-serviceable parts, the Terra WorkStation only requires periodic cleaning to preserve its like-new condition.

	Cleaning Instructions
DO NOT	- Use liquids containing abrasives and/or more than 5% bleach to clean the surfaces of the workstation. - Use wax or other coatings on Electro-Static Dissipative work surfaces, as they may modify the dissipative properties of the laminate. - Use hard brushes or intense scrubbing actions to clean the workstation surface.
DO	- Use water, ordinary soap and/or household ammoniated liquid detergent. - Use organic solvents such as alcohol, acetone, ketone (MEK), lacquer thinner or paint solvent to clean stubborn stains. NOTE: Prolonged exposure to these solvents may cause discoloration of the table surface. Always take appropriate measures to prevent personnel exposure. - Rinse your table with clear water if a cleaning agent is employed. - Use a damp cloth to apply the cleaning solution. If a stubborn stain presents itself, a soft-bristled brush may be used with extreme care.

6.0 Troubleshooting

The following table describes the most common performance issues, their causes, and recommended courses of action.

	Symptom	Possible Cause(s)	Solution
General	Pressure gauge shows no reading when regulator valves are opened.	- Insufficient in-house air supply.	- Inspect source of in-house air supply. If compressor-fed, ensure that compressor is on and operating correctly. If bottle-fed, ensure that there is sufficient pressure in bottle for this application.
		- Leak in air supply hosing. - Obstruction along air supply hosing.	- Inspect hosing from air supply to WorkStation. Inspect hosing for cracks, kinks, punctures or tears. Listen for any hissing or similar air discharge sounds. Correct as necessary. - If using an external regulator, check to ensure that it is functioning correctly and adjusted to no more than 100 PSI.
	Pressure gauge reads 30-40 PSI, yet the work surface does not lift.	- The unit's adjustment weights have caused the unit's net load capacity to be less than your equipment's weight.	- After closing the regulators, remove one or more of the unit's adjustment weights. Refer to Section 4.0 (Operation) for more information.
		- Your equipment is too heavy for the WorkStation.	- Higher-capacity WorkStations (including custom models) are available for you to order. Contact Terra Universal for assistance.
	Mounted equipment vibrates excessively.	- Your equipment is too light.	- After closing the regulators, add one or more of the unit's adjustment weights. Refer to Section 4.0 (Operation) for more information.
	The Work Surface fails to maintain level/drops in height over a period of time.	- One or more vibration dampers is slowly leaking air, a natural result of the unit aging.	- Keep your WorkStation connected to an in-house gas supply. This will counteract any air lost as the result leaks caused by damper aging.

7.0 Specifications

The following table lists the net load carrying capacity of each WorkStation model. Custom models may be ordered by contacting Terra Universal's Sales Department.

Maximum Load Carrying Capacity (lbs) For Vibration-Free WorkStations (without adjustment weights attached)					
Textured Laminate Work Surfaces			*Stainless Steel Work Surfaces*		
Terra P/N	Dim. (HxW)	Max Load (lb)	Terra P/N	Dim. (HxW)	Max Load (lb)
1570-00; -26	48 x 30	330	1570-52A; -80	48 x 30	360
1570-01; -27	60 x 30	310	1570-53; -81	60 x 30	350
1570-02; -28A	72 x 30	500	1570-54; -82	72 x 30	540
1570-03; -29	84 x 30	480	1570-55; -83	84 x 30	530
1570-04; -30	96 x 30	470	1570-56; -84	96 x 30	530
1570-07; -33	48 x 34	320	1570-59; -87	48 x 34	350
1570-08; -34	60 x 34	300	1570-60; -88	60 x 34	350
1570-09; -35	72 x 34	490	1570-61; -89	72 x 34	540
1570-10; -36	84 x 34	470	1570-62; -90	84 x 34	530
1570-11; -37	96 x 34	450	1570-63; -91	96 x 34	520

The following table lists the general specifications for the materials used in constructing the WorkStation. Contact Terra Universal's Customer Service department for a more detailed information.

	Work Surface			
Textured Non-Electrostatic Dissipative	Standards:	ANSI/NEMA LD 3; Fed Spec LP508H; Mil Spec P17171E; NSF-35		
	Impact Resistance:	48 inches	Stain Resistance:	NEMA 1-15
			Cleanability:	NEMA 7-10
	Immediate Temp Threshold	250°F	Sustained Temp Threshold	150°F
Textured Electro-Static Dissipative	Standards:	ANSI/NEMA LD 3		
	Impact Resistance:	48 inches	Stain Resistance:	NEMA 1-15
			Cleanability:	NEMA 7-10
	Immediate Temp Threshold:	350°F	Sustained Temp Threshold:	150°F

Specifications (cont'd)

The following table lists the general specifications for the materials used in constructing the WorkStation. Contact Terra Universal's Customer Service department for more detailed information.

	Frame & Dampers			
Stainless Steel	Grade:	304	Finish (for frame):	#4 Polish (work surface); Powder Coat, White (frame)
Vibration Dampers	Natural Frequency:	3-5 Hertz (10Hz. unpressurized)	Transmissibility at Resonance:	8:1

8.0 Warranty

Products Manufactured by Terra: Terra Universal, Inc., warrants products which it manufactures to be free from defects for a period of 90 days for parts and labor. Terra's sole responsibility is to repair or replace, at its option, any part of the product which proves defective or malfunctioning during this time limit. In some cases, components incorporated in Terra Universal products are covered by additional warranties from component manufacturers; obtain specific information from Terra sales representatives. This warranty is void if the equipment is abused or modified by the customer, is operated outside Terra's operating instructions or specifications, or is used in any application other than that for which it is specified. This warranty does not include routine maintenance or service procedures, breakage of quartz baths after 60 days, shipping damage, nor damage from misuse, intentional or unintentional abuse, neglect, natural disasters, or acts of God.

Products Manufactured by Others: Terra Universal, Inc., warrants that, to the best of its ability, Terra's representations of products which are manufactured by others reflect the manufacturer's representations, subject to change without notice. Sole warranty for these products is the original manufacturer's warranty which is passed forward to the purchaser and constitutes the customer's sole remedy for these products. Detailed warranties for distributed products are available through Terra sales representatives.

All Claims: Terra Universal expressly disclaims all other warranties, expressed or implied or implied by statute, including the warranties of merchantability or fitness for intended use. Terra Universal is not responsible for consequential or incidental damages arising out of the purchase or use of the products supplied by Terra Univesral. Terra Universal is not liable for damage to facilities, other equipment, products, property or personnel of others, or of their agents, suppliers, or affiliated parties which is caused or alleged to have been caused by products supplied by Terra Universal. In any event or series of events, Terra universal's total liability for any and all damages whatsoever is limited to the lesser of the actual damages or the original invoice cost of the items alleged to have caused the damage. The customer's sole and exclusive remedy for any cause of action whatsoever is repair or replacement of the non-conforming products or refund of the actual purchase price, at the sole option of Terra Universal. All claims must be made in writing within 30 days of receipt of the product or at the time the customer became aware or should have become aware of the failure. Any claims not made within this time limit shall be deemed waved by the customer. Terra Universal is not responsible for any additional costs of repair caused by poor packaging or in-shipment damage during return.

Warranty Returns: All warranty returns must be authorized in advance by Terra Universal and approved under an RMA. Unless approved in advance for good reason, all returns must be in original condition, including all manuals, and must be packaged in original packaging materials. All returned goods are to be shipped to Terra Universal, freight prepaid at customer's expense. See Terra's "Policy and Procedure for Returned Goods".

Thank you for ordering from
Terra Universal!

Related Products

Users of Terra Universal's Vibration-Free WorkStations may also be interested in:

Vibration-Free Platform — 1580-02; -03

Description: Incorporating many of the design features and functionality of its larger sibling, the Vibration-Free WorkStation, Terra's Vibration-Free Platform is ideal for users who possess a need for vibration damping but not the equipment size necessitating the larger stand-alone unit. Mountable on any work surface, the Vibration-Free Platform is highly portable and easy-to-install.

Applications: High Magnification Microscope/Video Inspection; Wire Bonding and Wire Bond Testing; Wafer Inspection and Probing... and more!

Price: Contact your Terra Universal sales representative or visit www.TerraUniversal.com

Wire Bond Strength Tester Inspection Station — 9101-17; -26

Description: Providing cost-effective, on-line destructive and non-destructive testing, Terra's Wire-Bond Strength Tester and Inspection Station features a stereo microscope for increased precision and reliability. Each inspection station can be configured with a variety of accessories (sold separately) to suit all of your testing needs. The "Complete Package" ships with user-specified 10x or 20x microscope magnification and all seven pull gauges. Packages with individual gauges are also available.

Applications: Wire Bond Testing

Price: Contact your Terra Universal sales representative or visit www.TerraUniversal.com