

IMPORTANT SAFETY INSTRUCTIONS READ AND SAVE THESE INSTRUCTIONS

<p>Proprietary Notice This manual pertains to proprietary devices manufactured by Terra Universal, Inc. Neither this document nor any portion of it may be reproduced in any way without prior written permission from Terra Universal.</p>	<p>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.</p>	
<p>Terra Universal makes no warranties applying to information contained in this manual or its suitability for any implied or inferred purpose. Terra Universal shall not be held liable for any errors this manual contains or for any damages that result from its use.</p>	 CAUTION	<p>Cautions are used when failure to observe instructions could result in significant damage to equipment.</p>
	 WARNING	<p>Warnings are used when failure to observe instructions or precautions could result in injury or death.</p>
<p>The information presented here is subject to change without notice.</p>		

1.0 Introduction

This manual provides information on installing and operating Terra Universal's Fan/Filter Unit. By studying this document carefully, you can be assured of a long, efficient service life from the unit.

The Fan/Filter unit provides a steady laminar flow stream of HEPA filtered air to the area below the mounted unit.

2.0 Operation

The unit consists of a ¼ HP, thermally protected, three speed capacitor-run motor driving a forward-curved centrifugal blower. Air is drawn into the unit through a pleated pre-filter and in turn to an insulated chamber where it is then directed to an exit HEPA filter with a built-in diffuser. The motor is controlled by a built-in three-position electrical switch. This switch can be set for high, medium and low flow rates.

3.0 Installation

The Fan/Filter unit is designed to fit on top of a Terra Laminar Flow Hood or standard clean room ceiling grid. It includes a threaded fixture at each corner to accommodate four eye-bolts (not provided) that can be used to assist in positioning the unit.



WARNING:
To reduce the risk of fire, electric shock, or injury to persons, do not use this fan with any solid-state speed control device, and observe the following:

- Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.
- Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
- Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified persons in order to avoid a hazard.
- When cutting or drilling into a wall or ceiling, do not damage electrical wiring and other hidden utilities.

4.0 Start up



WARNING:
Keep unit disconnected from power supply during inspection

Prior to providing power to the unit, check that no damage has occurred during shipping. This can be accomplished via a visual check to make sure there are no visible dents or penetrations. If the unit is intact, remove the pre-filter and manually rotate the fan wheel to

make sure it is not in contact with any stationary parts and that there are no visible loose screws or bolts obstructing the wheel's rotation. Once visual inspection is completed, connect the 4-pin power plug to the unit, set the speed switch to the desired position (units are shipped from the factory with the speed switch set to medium), and turn on the external power switch. With power applied, the fan will rotate, and filtered air will exit the HEPA filter.

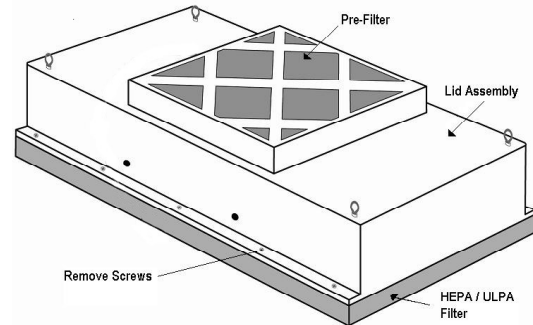
5.0 Cleaning and Maintenance



WARNING:
Disconnect from power supply before servicing unit. When servicing or replacing either filter, the new filter is to be installed in the same manner as the filter it replaces.

The scheduled maintenance of the unit depends on the installed location and consists of cleaning or changing the pre-filter and the HEPA filter. It is recommended that the pre-filter be inspected and cleaned every three months or sooner depending on the cleanliness of the external environment. The HEPA filter cannot be cleaned and must be replaced when the laminar flow rate falls below 70 feet/min.

Changing the HEPA filter requires removal of the unit from the ceiling grid. Place the unit on a flat work surface and remove the 10 sheet-metal screws that hold the HEPA filter to the case. Replace the filter with a new one, carefully handling edges only, and secure it to the case with the same screws before placing it back onto the ceiling grid.



6.0 Specifications

Dimensions:	23.625" x 47.625" x 12.6"H		
Housing:	White powder coated cold-rolled steel or 304 stainless steel		
HEPA Filter:	99.99% efficient on removal of particles 0.3 microns and larger.		
Pre-Filter:	20" x 20" x 1" - 30% efficient ASHRAE rated		
Blower:	Forward-curved centrifugal type factory balanced. Entire motor/blower assembly is removable from top of housing for service.		
Motor:	1/4 HP Direct drive, energy efficient. Permanent split capacitor type. Thermally protected with automatic overload reset.		
Electrical:	Motor wiring will be run to a 3-speed motor switch (low-medium-high) and separate on/off switch. Motor nameplate FLA is 4.2.		
Power Cord:	None supplied		
Face Grille:	Perforated anodized aluminum or 304 stainless steel		
Noise Level:	49 dBA (measured at 30" from filter face)		
Weight:	71 lbs. shipping weight		
Support:	Threaded screw receptacles provided for insertion of optional eyebolts		
Power Options:	¼ HP motor with voltage of 120/1/60Hz, 220/1/60Hz or 240/1/50Hz		

Power Specifications: for 2 ft. x 4 ft. HEPA, 120VAC (Model No. 6601-24H)

	High Speed	Medium Speed	Low Speed
Run Amps	4.3	3.5	3.3
Watts	512	416	393
Start Amps	9.1	6.3	4.9

Air Speed (6" below filter face)

Flow (CFM)	808	717	654
Velocity (fpm)	115	102	93

Specification Notes:

- All FFU data is based on a standalone unit using 1" prefilter and clean filters.
- Data will vary depending on filter media and configurations with other products/systems, such as ductwork or hoods.



7.0 Warranty

Products Manufactured by Terra: Terra Universal, Inc., warrants products that it manufactures to be free from defects for a period of 12 months for parts and 90 days for labor, commencing from the date of shipment. Terra's sole responsibility is to repair or replace, at its option, any part of the product that 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 that 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 that 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.

Freight Shortage or Damage: Upon receipt of any equipment from Terra Universal, Inc., customer shall immediately unpack and inspect for damage or shortage. The customer shall not accept a damaged package or a short shipment until the carrier makes a "damage or shortage" notation on both the carrier's and customer's copy of the freight bill or delivery receipt. Service title passes when the shipment is loaded, so customer is responsible for filing and collecting a freight claim. Any replacement products must be ordered and paid for separately. For Terra's "Policy and Procedures for Returning Goods," see Terra's Internet site: www.TerraUniversal.com.

Generally, customers can improve the chance of collecting on a freight claim by following these procedures: 1) formally requesting that the carrier inspect the shipment immediately upon suspecting damage or shortage to verify condition; 2) notifying the carrier upon discovery of concealed damage and requesting an inspection within 15 days of receipt, both in person or phone and following up via mail; 3) keeping the shipment as intact as possible, including retaining original packaging materials and keeping the product as close to the original receiving location as possible; 4) holding salvage for disposition by the carrier.

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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."

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