



**IMPORTANT SAFETY INSTRUCTIONS**  
**READ AND SAVE THESE INSTRUCTIONS**

<p><b>Proprietary Notice</b> 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><b>Safety Notice</b> 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>		

FFU Specifications	
Size Options	2'x4', 2'x3', 2'x2'
Housing	White powder-coated cold-rolled steel or 304 stainless steel
HEPA Filter	99.97% efficient on removal of particles 0.3 microns and larger
Pre-Filter	20" x 20" x 1" – 30% efficient ASHRAE rated
Impeller	Forward-curved centrifugal type factory balanced. Entire motor/blower assembly is removable from top of housing for service
Face Grille	304 stainless steel
Velocity	90 FPM or higher
Noise Level	50 dBA (measured at 30" from filter face)
Weight	76 lbs., 58 lbs., 49 lbs.
Power Options	1/3 HP motor; 120V/1/60Hz, 4.2 Amps 220V/1/60Hz or 240V/1/50Hz, 2.7 Amps

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.

**1. Installation**

The Fan/Filter Unit is designed to fit on top of a Terra standard 2' x 4' 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.

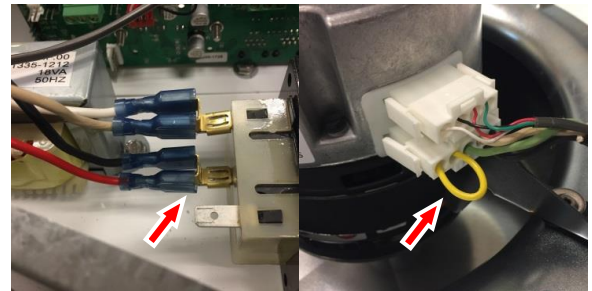
**WARNING: To reduce the risk of fire, electric shock, or injury to persons, observe the following:**

- Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.
- Before servicing or cleaning unit, or replacing a filter, switch power OFF at the service panel and lock the service disconnecting means to prevent power from being accidentally switched on. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
- When the removal/disconnection of either filter is required due to service or component replacement, the replacements are to be remounted as previously installed.
- Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction. All metal components must be properly grounded.
- When cutting or drilling into a wall or ceiling, do not damage electrical wiring and other hidden utilities.

**2. 120V vs. 220V Configuration**

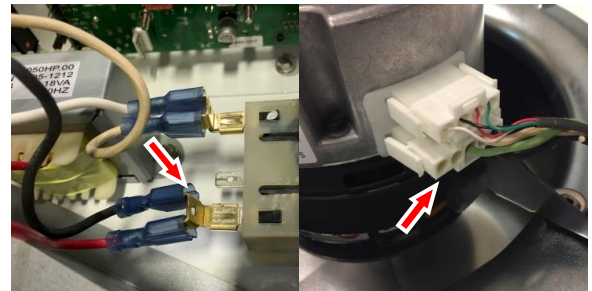


**CAUTION:** Double check your FFU is configured for the correct voltage. Connecting the motor to the wrong voltage can permanently damage and break the motor. The FFU is pre-configured for 120V. It can be easily reconfigured to 230V.



**120V Configuration**

- Black and Red wires are connected to the lower terminal.
- Yellow Jumper Cable is installed.



**220V Configuration**

- Black and Red wires connect to the upper terminal as shown.
- Yellow Jumper Cable is removed.

**3. Initial 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. Conduct a visual check to make sure there are no visible dents or penetrations. If the unit is intact, remove the pre-filter and fan guard screen.

To begin operation, 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. Plug unit into power receptacle to begin operation. The fan will rotate and filtered air will exit the HEPA filter.

**4. Operation**

The unit consists of a 1/3-HP electronically commutative motor driving a forward-curved centrifugal impeller. 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. Fan Filter Speed can be controlled by a control panel or manually on the FFU control card. To manually adjust speed on FFU control card, turn screw clockwise to increase speed and counter clockwise to decrease speed.





## 5. Cleaning and Maintenance

**WARNING:** Disconnect from power supply before servicing unit or replacing filters. 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 air velocity falls below 70 feet/min.

The Room-Side Replaceable FFU is designed so that the HEPA or ULPA filter can be replaced from inside the cleanroom without breaching the controlled environment. The filter assembly is separate from the fan module, which stays in place in the ceiling grid.

- A) Remove the stainless steel screen covering the filter that is held in place with friction catches. The screen protects the filter from damage and enhances air flow.
- B) Rotate the metal tabs that help hold the HEPA filter in place.
- C) Gently let the used filter drop down, and set aside. The filter assembly is surrounded by a channel containing gel seal.
- D) Wipe any residual gel from the knife-edge of the fan module still in the ceiling to prepare for the replacement filter.
- E) Position your new filter carefully before pushing into place; the knife-edge of the fan module should be centered in the channel (equal amounts of gel on both sides).
- F) Rotate the metal tabs so that they lock in the new HEPA filter.
- G) Reinstall the stainless steel screen by pushing up on the friction catches until the screen clicks into place.

To replace the pre-filter located at the top of the fan module, slide the old filter out of the two tracks holding it in place on top of the FFU and then slide in the new pre-filter.

The unit may be equipped with a 3/8"-diameter challenge port, which can be used to take differential pressure measurements to monitor filter performance or insert aerosols for leak-test certification. Port is capped when not in use.

For more details and operating instructions scan the QR code below for Terra's comprehensive FFU manual.



Thank you for ordering from  
Terra Universal!

## Limited 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. This limited warranty covers parts and labor, but not transportation and insurance charges. 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. Repairs may be completed by 3rd party service agents approved by Terra Universal. Terra Universal reserves the rights to limit this warranty based on a service agent's travel, working hours, the site's entry restrictions and unobstructed access to serviceable components of the product. 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, shipping damage, nor damage from misuse, intentional or unintentional abuse, neglect, natural disasters, or acts of God.

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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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