



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:

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

CAUTION!!!: Cautions are used when failure to observe instructions could result in significant damage to equipment

Equipment Description

This system incorporates filter/fan units (FFUs) with your choice of either a HEPA filter (rated 99.99% efficient at 0.3 micron particles) or ULPA filter (rated 99.999% efficient at 0.12 micron particles). The FFUs are located in the upper rear of the unit.

Each FFU provides an average airflow velocity of 90 FPS at high speed.

All interior surfaces, including the work surface and side panels, are stainless steel (or electropolished, if you select this Ultra-Clean finish option) for easy cleaning. The exterior is a chip-resistant powder-coated steel. (All powder-coated units are also available).

The Horizontal Laminar Flow Station also includes a recessed fluorescent lighting assembly that provides shadow-free illumination of the entire work area without disturbing the air flow.

CAUTION!!!: This work station is designed for particle-sensitive applications and does not protect operators against hazardous fumes, vapors, or aerosols. See Terra's exhaust purification systems for operations involving hazardous fumes.

Filter/Fan Unit Configuration

Station Width	FFUs
52"	one 48" x 24"
64"	one 24" x 24" plus one 36" x 24"
76"	two 36" x 24"



Set-Up and Operation

The control panel, including a magnahelic gauge, a light, HI/LOW switch and an ON/OFF integrated linear speed control, is mounted above the work area. Rotate the speed control clockwise to turn the blowers on (continue clockwise rotation reduces the blower speed). Pushing the upper portion of the light rocker switch yields HI level illumination and the lower portion yields LOW level illumination. Centering the switch turns the lights off.

Select the blower air speed you require for the operation you are performing. The adjustable multi-speed, direct drive blower(s) allows you to adjust the face velocity to meet your requirements. After this adjustment note the reading of the magnahelic gauge. As the filter loads this reading will increase, indicating the need for a filter change.

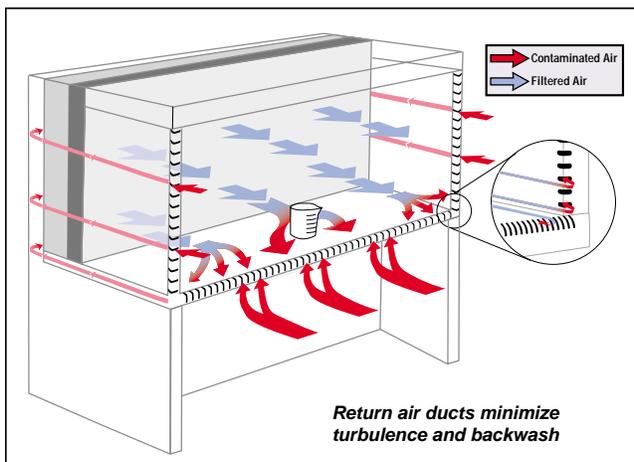
For enhanced air-stream control, this station features return air ducts along the front and side edges of the work area. These ducts enhance system efficiency by reducing backwash, the most common source of turbulence in a laminar flow system.

Maintenance

Maintenance on the Horizontal Laminar Flow Station consists of changing the HEPA or ULPA Filter/Fan Units and fluorescent bulbs when required and cleaning when necessary.

To change the main HEPA (or ULPA) Filter/Fan Unit (FFU):

- Remove the back panel in the following manner:
 - Observe the eight caps located on the upper back panel. These sealing caps cover the bolts that secure the panel.
 - Remove these caps by lightly tapping them inward, using a phillips-head screwdriver (or a similar tool) and a small hammer, so that they fall into the unit. The eight bolts that secure the upper back panel will then be exposed.
 - Using a 3/8" nutdriver or socket wrench, remove the back panel by removing the eight bolts securing it.
- Remove the HEPA (or ULPA) FFU, which is secured by four hinged metal clamps, in the following manner:
 - Loosen the knobs securing the four hinged metal clamps to the filter.
 - Pull back the four hinged metal clamps holding the filter.
 - The unit is now free to be removed and replaced.
- After installing a new HEPA (or ULPA) filter, (see ordering table on next page)



Air flow in the Horizontal Laminar Flow Station.



Horizontal Laminar Flow Station *Quick-Start, Continued*

push the four hinged metal clamps back in place, tighten the knobs to secure the filter, rebolt the back panel in place, and use new caps to seal the bolt-holes. (Replacement caps are shipped with each unit — call if you require additional caps.)

To change the fluorescent light bulbs:

1. Remove the plastic light diffusers from the bottom side of the lighting assembly by lifting them up and pulling them downward at an angle to clear the lighting assembly.
2. Remove and replace bulbs as necessary.

Cleaning the Horizontal Laminar Flow Station

Cleaning of the unit may be done with a non-contaminating cloth dampened in lukewarm water. Use a mild detergent or disinfectant, if necessary.

Specifications

Construction:	Fabricated from welded 16-gauge C.R. steel; includes adjustable levelers.
Work Surface:	Stainless steel
Finish:	Exterior surfaces feature a chip-resistant, white powder-coat finish.
Filters:	Choice of HEPA (rated 99.99% efficient @ 0.3µm particles) or ULPA (rated 99.999% efficient @ 0.12µm particles).
Lighting:	Fluorescent type, 1000/2000 foot-candles. Recessed to eliminate air flow disturbance. Accepts lens for yellow light, if necessary.
Blower Module:	Direct-drive, variable electric motor. Motor isolation provides low noise factor of 50db @ 90 FPM. Delivers up to 650 CFM flow under filter load (24" x 48" model).
Electrical:	115VAC, 60Hz, single phase. Meets the requirements of the National Electrical code and applicable local codes. All components UL listed. Requires 8 amps. Other voltages available.
Options:	Audible/visible filter alarm system (measures face velocity); ionizing system (including self-balancing power supply); petcocks for vacuum, DI water, or gas; electropolished stainless steel surfaces; special powder-coat color; special voltage and frequency.

Petcocks

Nitrogen/Clean Dry Air (CDA)	<small>Cat. #</small> 9620-07
Vacuum	9620-08
DI Water	9620-09

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.

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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 freight prepaid at customer's expense. See Terra's "Policy and Procedure for Returned Goods."

**Thank you for ordering from
Terra Universal!**