1.0 Introduction

This manual provides information on installing and operating Terra's Universal Hoods.

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

2.0 Description

Terra's Universal Hood offers three different configurations, four sizes and six different materials to provide the performance you require. Depending on the application, this equipment can be configured for laminar flow, product protection, or ductless exhaust for personnel protection.

All three configurations of the Universal Hood come with a pre-installed Vaneometer for measuring air flow. For negative pressure applications, the Vaneometer is mounted on the right side of the unit. For positive pressure applications, it is mounted on the left.

Mini-Laminar Flow Station

As a mini-laminar flow station it generates a low particle (to Class 10/ISO 4) environment anywhere it is placed by directing a stream of filtered air downward onto the work area. The filters you select will provide the environment you need (99.99% efficient HEPA or 99.999% ULPA) Unless otherwise specified the filters are shipped installed as shown in top figure above with the higher rated filter downstream in the filter housing.

Ductless Exhaust Fume Hood

As a Ductless Exhaust Fume Hood, the system vents and purifies fumes that are generated under the hood by soldering, screen printing, chemical mixing, etc. The activated charcoal purification filter removes a wide range of organic fumes. Terra also offers purification filters designed for specific toxins. All Terra charcoal filters feature...
bonded media to eliminate voids and dead zones and to contain charcoal dust. Refer to Terra's web site for more information on activated charcoal filters.

**WARNING:** The Ductless Fume Hood is not intended for use with biohazards or explosive materials

*Portable Exhaust Fume Hood*

As a Portable Exhaust Fume Hood, it can be connected directly to your in-house exhaust system by means of a flange adapter panel. It has a 3" high flange for connection of an exhaust duct either to the blower housing or the hood itself.

**CAUTION:** Terra recommends a thorough testing of filter performance in each application prior to exhaust release and assumes no responsibility for damage or injury that may result as a consequence of improper filter selection, use or testing portable exhaust fume hoods.

**WARNING:** The Exhaust Fume Blower System is not designed for flammable fumes and gases unless equipped with the Explosion-Proof Ventilator.

*Blower System*

The filter/blower is the part of the system that can be varied to allow the Universal Hood to perform in three different modes. As a Mini-Laminar Flow Hood: 740 or 1200CFM impeller depending on application. As a Ductless Exhaust Hood: 1200CFM impeller. As a Portable Exhaust Fume Hood: 1200CFM impeller.

Blower and filter housings are available in stainless steel or in polypropylene.
3.0 Installation

Carefully uncrate the Universal Hood and other system modules and visually inspect for damages. Any damages should be reported according to the procedures outlined in the shipping agreement.

The Universal Hood is normally delivered with all specified components as a complete turnkey system; you simply place the hood over the work area, plug the blower power cord into a grounded 115/230VAC 50/60 Hz* power source, and turn it on.

These set-up procedures apply to general problems you are likely to encounter.

*The blower must be ordered for the proper voltage supply.

Blower/Filter Module Installation

If you're using the Universal Hood to operate as either a Mini-Laminar Flow Station or a Ductless Exhaust Fume Hood, the Blower/Filter Module must be installed to the hood. The blower housing and filter housing are shipped as one unit with the blower and filters already installed in the module. To connect the blower/filter housing, use the eight screws supplied to attach it to the holes on the top of the Universal Hood.

If you're using the Universal Hood as a Portable Exhaust Fume Hood you will need one of our Flange Adapter Panels (see TerraUniversal.com) to connect to your negative pressure exhaust system. If you're using the Universal Hood with the Blower just connect the Blower Module to the eight holes on the top of the Universal Hood with the eight screws supplied.

Hood Frame and Bench

Place the Universal Hood onto the frame support. To introduce a power strip into the work area, simply remove the cap that covers the cabling port (located in the rear center of the bench). The 2” cap that covers the cabling port (located in the rear center of the bench) can be removed to allow power plugs to be passed into the work area; the 1/2” cut-out on this cap accommodates most power cords.

Adjust the leveling feet of the bench to ensure a level, stable work surface.

⚠️ CAUTION: The acrylic Universal Hood and filter housing are not designed for corrosive or flammable fumes. Make sure that the hood and housing you select is able to withstand whatever fumes they might be exposed to.

⚠️ WARNING: If your application involves hazardous fumes, you should regularly test the airflow under the hood to make sure that you are maintaining an adequate negative pressure.

4.0 Maintenance
CAUTION: Do not clean acrylic with alcohol or other solvent-based cleaning agents.

Terra’s Universal Hoods require minimal maintenance.

All materials may be cleaned with clean, lukewarm water with or without a mild, non-abrasive detergent and a dry, clean non-abrasive wipe. Use only light pressure when cleaning. If the outside surface is exceptionally dirty or gritty, lightly swab the surface with a saturated cloth and allow the surfactants to drain away. Avoid rubbing dirt or grit into the surface. Turn the cloth often and replace with a clean cloth frequently. Dry the surface by blotting gently with a clean, dry cloth.

Depending on the purity of ambient air, filters will eventually need to be replaced. As they become dirty, filters continue to function effectively but create additional back pressure; this back pressure in turn will cause the blower motor to operate more noisily—and call the problem to your attention.

CAUTION: Extended operation with a clogged filter could cause blower damage. Be sure to test the filter periodically with a suitable pressure gauge.

To change filters, caution must be observed to reinstall them properly or particles leaks can result from air bypassing the filters.

1. Remove the eight screws that hold the Blower/Filter Housing to the top of the hood, and remove the housing.
2. Place the filter housing in an upside-down-position. Loosen and remove the wingnuts from the support panel inside the housing. Lift the L-shaped support out.
3. Replace the filter(s). Make sure that the top filter fits snugly against the gasket on the plenum chamber.
4. After all the filters have been reinstalled in the housing, place the L-shaped brackets over the filters.
5. Apply full force on the L-shaped brackets and tighten the wingnuts a little at a time on each side, back and forth, so they will be tightened evenly on both sides.
6. Replace the Blower/Filter Housing to the top of the hood using the eight screws previously removed.

WARNING: For exhaust venting/purification applications:

• If your application involves flammable exhaust, you must use an Explosion-Proof Blower/Ventilator. Contact TUI for information.

• If your hood is configured as a Ductless Exhaust Purification System, you must ensure that all fumes have been effectively filtered out of the exhaust before releasing it back into the work environment. Terra recommends use of the Toxic Gas Detector Kit necessary to detect these fumes (See Section 7.0). In no circumstances should the hood be used with biohazards or explosive fumes

• If your system functions as an exhaust ventilator but does not incorporate the purification filter, the hood will pass exhaust from the ventilator outlet to your in-house exhaust system. You will need a Flange Adapter Panel for this (Section 7.0).
• Make sure that your hood and filter housing are compatible with the fumes involved in your application! Static-Dissipative PVC hoods and filter housings are safe with a wide range of chemicals that can damage acrylic.

### Laminar Flow Station

<table>
<thead>
<tr>
<th>Blower Module</th>
<th>Cat #</th>
<th>Filter Housing</th>
<th>Filters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stainless Steel</td>
<td>740 CFM 115VAC/ 60 Hz</td>
<td>1715-50</td>
<td>1715-52</td>
</tr>
<tr>
<td>Stainless Steel</td>
<td>740 CFM 230VAC/ 50 Hz</td>
<td>1715-50-220</td>
<td>1715-52</td>
</tr>
<tr>
<td>Stainless Steel</td>
<td>1200 CFM 115VAC/ 60Hz</td>
<td>1715-51</td>
<td>1715-52</td>
</tr>
<tr>
<td>Stainless Steel</td>
<td>1200 CFM 230VAC/ 50 Hz</td>
<td>1715-51-220</td>
<td>1715-52</td>
</tr>
</tbody>
</table>

### Ductless Exhaust Fume Hood

<table>
<thead>
<tr>
<th>Blower Module</th>
<th>Stainless Steel Cat#</th>
<th>Polypropylene Cat #</th>
<th>Filters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200 CFM 115VAC/ 60Hz</td>
<td>1715-53</td>
<td>1684-98</td>
<td>HEPA 1681-02, ULPA 1681-10, Charcoal 1716-00A</td>
</tr>
<tr>
<td>1200 CFM 230VAC/ 50 Hz</td>
<td>1715-53-220</td>
<td>1684-98-220</td>
<td>HEPA 1681-02, ULPA 1681-10, Charcoal 1716-00A</td>
</tr>
</tbody>
</table>

### Exhaust Fume Hood

<table>
<thead>
<tr>
<th>Blower Module</th>
<th>Stainless Steel Cat#</th>
<th>Polypropylene Cat #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200 CFM 115VAC/ 60Hz</td>
<td>1715-55</td>
<td>1684-98</td>
</tr>
<tr>
<td>1200 CFM 230VAC/ 50 Hz</td>
<td>1715-55-220</td>
<td>1684-98-220</td>
</tr>
</tbody>
</table>
5.0 Specifications

Hood
Construction: Acrylic, Static Dissipative PVC, Nondissipative PVC, Polypropylene (w/Nondissipative PVC shield), 304 Stainless Steel (w/Dissipative PVC shield), and Tempered Glass (w/Framework being 304 Stainless Steel 3/4” square.)

Dimensions:

<table>
<thead>
<tr>
<th>Type</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Single</td>
<td>16</td>
<td>24</td>
<td>4</td>
<td>32</td>
<td>36</td>
<td>17</td>
<td>23</td>
<td>8</td>
</tr>
<tr>
<td>Large Single</td>
<td>19</td>
<td>28</td>
<td>8.5</td>
<td>41</td>
<td>45</td>
<td>21</td>
<td>27</td>
<td>8</td>
</tr>
<tr>
<td>Small Twin</td>
<td>16</td>
<td>24</td>
<td>4</td>
<td>67</td>
<td>72</td>
<td>17</td>
<td>23</td>
<td>8</td>
</tr>
<tr>
<td>Large Twin</td>
<td>19</td>
<td>28</td>
<td>8.5</td>
<td>87</td>
<td>90</td>
<td>21</td>
<td>27</td>
<td>8</td>
</tr>
</tbody>
</table>

Blowers:

Construction: 304 Stainless Steel (For exhaust fume hood, Polypropylene is available)

Dimensions:

Filter Housing: 28.75”W x 13.75”D x 7.50”H
Blower Housing: 21.62”W x 13.50”D x 7.25”H

Blowers: 740 CFM, 1560-RPM variable speed impeller
1200 CFM, 1675-RPM variable speed impeller
6.0 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.

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 Universal. 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 90 days of the date the product was shipped. Any claims not made within this time limit shall be deemed waived 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
### 7.0 Related Products

Users of Terra Universal’s Universal Hoods may also be interested in:

#### Purification Filter (Activated Charcoal)

| Description | These activated charcoal filters, manufactured from coconut-shell based activated charcoal of 8-12 mesh size, are used to remove a broad range of organic compounds and solvents fumes. (Due to the variety of filters and their applications, the product shown at left is for display purposes only. Your product may differ.) |
| Applications | Remove a wide range of chemicals from airstream to allow ductless exhaust fume purification |
| Price | Contact your Terra Universal sales representative or visit www.TerraUniversal.com |
| See: | www.terrauniversal.com |

#### Particle Filters (HEPA and ULPA)

| Description | HEPA (High-Efficiency Particulate Air) Filters rated 99.99% efficient with particles 0.3 microns and larger in diameter  
ULPA (Ultra-Low Penetration Air) Filters rated 99.999% efficient with particles 0.12 microns in diameter  
(Due to the variety of filters and their applications, the product shown at left is for display purposes only. Your product may differ.) |
| Applications | These filters are specially designed for use in cleanrooms and precision assembly areas. |
| Price | Contact your Terra Universal sales representative or visit www.TerraUniversal.com |
| See: | www.terrauniversal.com |

#### Stands

| Description | Available in two designs: vibration-isolated and non-isolated. |
| Applications | Both designs feature raised lips to hold the hood securely in place. All frames (whether isolated or not) are made of rigid square tubing with a white epoxy finish, and include stainless steel scuff sleeves to prevent scuffing along the bottom leg support. The work surface stands 32° above the floor. Be sure to select the size (large or small, single or twin) to match your hood. (Due to the variety of stands and their applications, the product shown at left is for display purposes only. Your product may differ.) |
| Price | Contact your Terra Universal sales representative or visit www.TerraUniversal.com |
| See: | www.terrauniversal.com |
### Spill Trays for Universal Hoods

**Description:** These trays are ideal for containing spills. Available in stainless steel or polypropylene to meet various material compatibility requirements, each features a 0.5" lip (custom sizes available).  
(Due to the variety of spill trays and their applications, the product shown at left is for display purposes only. Your product may differ.)

**Applications:** Spill containment

**Price:** Contact your Terra Universal sales representative or visit [www.TerraUniversal.com](http://www.TerraUniversal.com)

### Ionizing Bar

**Description:** Designed for overhead chamber mounting, it generates a balanced stream of positive and negative ions to neutralize surface static charges, safeguarding ESD-sensitive materials. The replaceable, machined titanium emitter points are long-lasting and field-replaceable. Power: 120/240VAC specify desired 24VAC output transformer.  
(Door to the variety of ionizing bars and their applications, the product shown at left is for display purposes only. Your product may differ.)

**Applications:** Provides safe, effective static neutralization inside a hood or similar enclosure

**Price:** Contact your Terra Universal sales representative or visit [www.TerraUniversal.com](http://www.TerraUniversal.com)

### Flange Adapter Panel

**Description:** These Panels can be mounted to a filter housing, blower housing, or hood to allow easy connection of conduit duct in an exhaust fume venting or purification application.  
(Door to the variety of Flange Adapter Panels and their applications, the product shown at left is for display purposes only. Your product may differ.)

**Applications:** For exhaust fume applications involving your in–house ventilation systems.

**Price:** Contact your Terra Universal sales representative or visit [www.TerraUniversal.com](http://www.TerraUniversal.com)

### Toxic Gas Detector Kit

**Description:** This Toxic Gas Detector System is an ideal, easy-to-use method for day-to-day gas checking. It allows effective monitoring of exhaust purification filter efficiency. It also provides a valuable aid to QC in the lab, plant or office and spot testing for a wide variety of hazardous gases and vapors.

**Applications:** Detects and measures hazardous gases and vapors

**Price:** Contact your Terra Universal sales representative or visit [www.TerraUniversal.com](http://www.TerraUniversal.com)