



# AstroHood™ S-III

## Ducted HEPA Terminal Hoods

### **INSTALLATION, OPERATION, AND MAINTENANCE MANUAL**



AstroHood S-III

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## INTRODUCTION AND PRECAUTIONS

### Intended Use

AAF Flanders AstroHood™ S-III Ducted HEPA Module delivers cleanroom-quality air to critical process applications such as Pharmaceutical Manufacturing, Life Sciences, Biosafety, Healthcare, and all other applications where clean supply air is a requirement.

### User Responsibility

This document contains the information necessary to properly receive, assemble, install, operate, and maintain the AAF Flanders AstroHood S-III Ducted HEPA Terminal. The purchaser, installer, and operator of the filter system MUST read and comply with this document in its entirety. Failure to comply with the requirements of this manual may result in serious injury and void the product warranty.

These instructions are specific to the AAF Flanders AstoHood S-III unit and incorporated filters. All ancillary tasks including, but not limited to, electrical and mechanical work, equipment handling, and safety procedures must be performed in accordance with industry-accepted practice and all relevant local, state, and federal government codes, laws, and policies.

Before proceeding with installation, operation or maintenance, review this Installation, Operation, and Maintenance Manual in its entirety and all safety procedures with your company's safety personnel.

### Precautions

- Units must be properly transported and handled, since improper transport and/or handling can result in damage, blemishes, or other imperfections.
- Deliveries are to be immediately inspected in the presence of the freight carrier to ensure equipment is delivered in full and free from damage.
- The installation site must be suitable for unit installation.
- The supporting construction must be level, and the structure must have sufficient load strength to support all equipment supplied.
- Mounting must be carried out by qualified and trained personnel in accordance with all local, state, and national codes and regulations.

## EQUIPMENT OVERVIEW

The AstroHood™ S-III Ducted HEPA Module is a low-profile, lightweight, disposable, and ducted HEPA/ULPA supply terminal module with integral minipleat filter pack. Available with flat flange for gasket ceilings or integral knife edge for gel seal ceilings, each unit is factory-sealed and individually scan-tested to ensure leak-free performance. Units are built to customer-specified sizes to meet critical application specifications.

AstroHood S-III units offer maximum ducted terminal filter performance in the least expensive configuration. One-piece aluminum top with integral inlet collar is standard. The frame is clear anodized extruded aluminum and may have either a flat flange for gasket ceilings or an integral knife-edge for gel seal ceilings. Damper options include butterfly or telescoping disc. A center divider with port provides access for damper adjustment. A white painted expanded metal faceguard on the air-leaving side provides protection for the media pack. Filters are UL 900 classified.

### Unpacking

- Carefully remove the unit from the shipping carton and inspect for any damage that may have occurred during transportation. Two workers minimum are required to lift the unit from the container.
- Remove housing from shipping carton and inspect for concealed damage and any hardware that may have become loose in transit.

### Installation

Install and support housing as instructed in the following pages. Flexible duct connections should be made using stainless steel, worm-gear type draw bands for maximum reliability. Housing installation must be accomplished in a professional manner with flanges or trim properly sealed to prevent contaminant infiltration from the interstitial space.

**Mounting Options**

Unit can be suspended by wire via four (4) 1/8" holes, one (1) located in each corner.

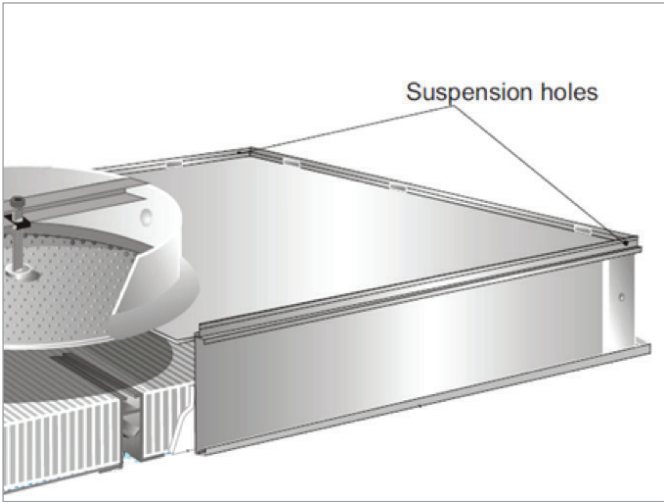


Fig 01: Wire – Suspension Holes

**Gasketed Grid/T-Bar Ceiling**

The AstroHood™ SIII unit is installed from the top side of the suspended ceiling grid/T-bar with the integral flange resting on the grid/T-bar. If no gasket is present in the ceiling grid, the AstroHood unit should be sealed to the grid using RTV (Dow Corning 732 or GE 102 is recommended).

- 1. Thoroughly clean the mating surfaces of the unit flange and ceiling grid to remove any debris or residue that may inhibit an adequate seal.
- 2. Apply a continuous, small bead (~ ¼” diameter) of RTV to the mating surface of the grid/T-bar.
- 3. Center and lower the AstroHood unit into the opening and seat the unit onto the grid/T-bar. Apply uniform pressure to ensure the flange is bonded to the grid/T-bar (see Fig. 02).
- 4. Remove excess RTV.

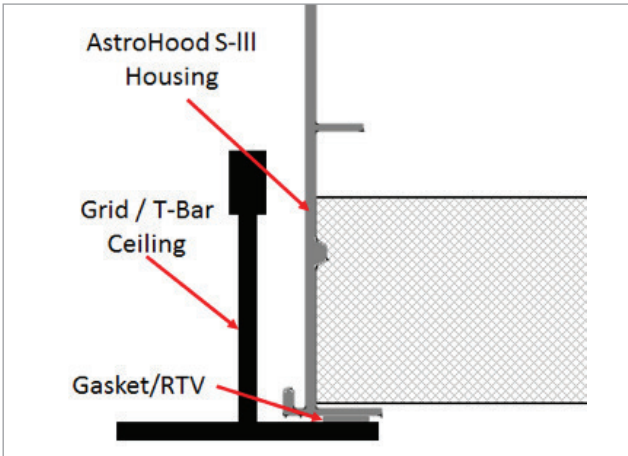


Fig 02: Mount for Gasket Grid / T-Bar Ceiling

## Gel Trough Ceiling Grid

The AstroHood™ unit is installed from the top side of the suspended grid with the integral knife-edge which rests into the grid gel trough.

1. Inspect the knife edge seal around the perimeter of the module for damage.
2. Set the module such that the knife-edge is centered in the grid gel seal trough. Check to ensure the knife edge of the module penetrates the gel around the entire perimeter of the unit. The weight of the module is enough to set the unit into the gel (see Fig. 03).
3. When connecting the flexible round duct to the module avoid excessive slack in the duct. Where practical, set the housing in place, then connect the round duct to the collar. Drawbands must be positioned below the dimples in the collar to prevent slippage or blow-off of the duct connection. Stainless steel, wormgear-type drawbands are recommended.

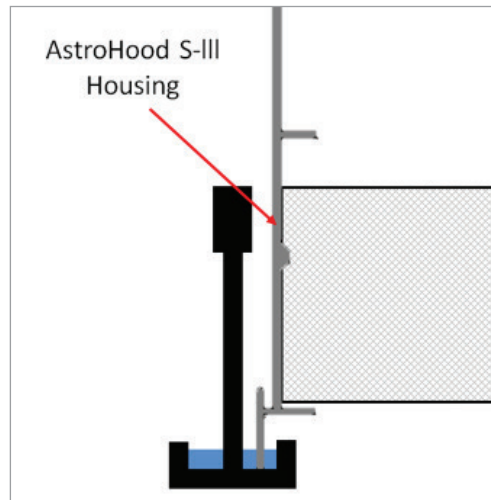


Fig. 03 Mount – Gel Trough Grid

## PermaFrame for Hard/Gypsum Ceilings

The PermaFrame provides a support structure and room-side finish trim in one piece. It is supplied with predrilled mounting holes located on the vertical flanges that are used to easily level and anchor the frame to customer-supplied studs above the ceiling structure. Manufactured of 18-gauge cold-rolled steel or stainless steel, the welding on all exposed corners guarantees a smooth, cleanable surface. White powder coat paint is supplied as standard finish. The PermaFrame is ordered separately from the AstroHood™ unit.

### Dimensional Data - Standard Size AstroHood (1½" T-Bar)

AstroHood	Model Number	Actual Dimensions (inches)				Weight (lbs)
		L	W	IL	IW	
2 x 2	HCFA 2424	26	26	24	24	4
2 x 4	HCFA 2448	50	26	48	24	5

#### Drawing Notes:

Construction - 18-ga. cold rolled steel or 304 stainless steel.

For SS finish use - SS suffix, unit supplied painted white standard

IL - Inside Length

IW - Inside Width

Fig. 04 PermaFrame Dimensions  
1½" T-Bar/Grid

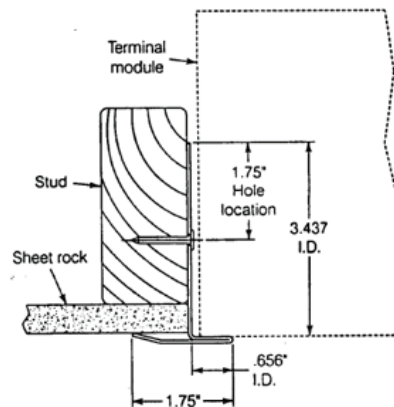
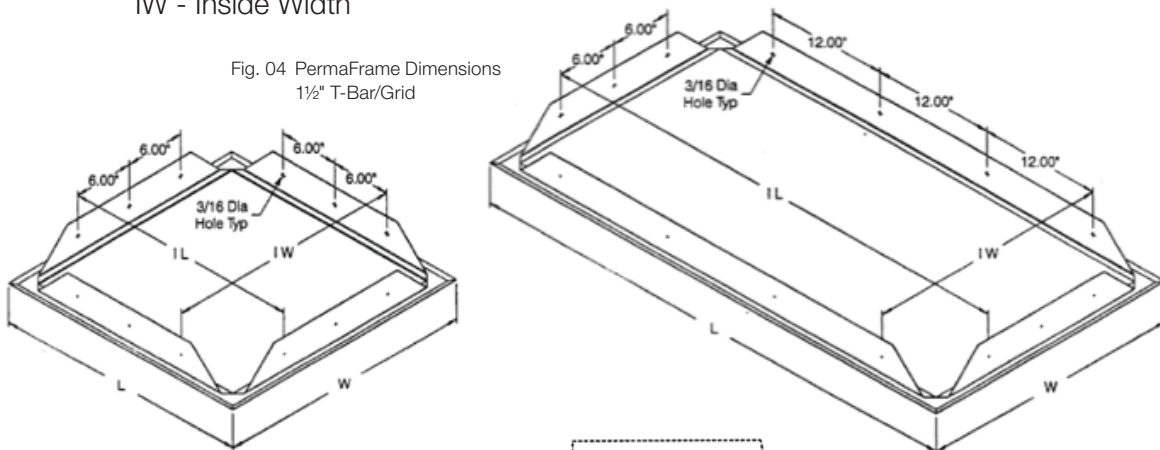


Fig. 05 PermaFrame Mounting

## Unit Unpacking, Installation, Storage, and Operation

### Unpacking

- Before removing the filter module from the carton carefully read the removal and handling instructions printed on the outside of the carton.
- AAF Flanders cleanroom filters may come packaged in suitcase-style cardboard sleeves. If so, simply reach into the box and grab the pre-punched handles within the insert.
- If the filter is in a cardboard liner, the filter must be oriented so that the open ends of the liner are facing outward (i.e., to your left and right rather than upward). Carefully cut the packing tape that holds the filter in the liner. Always check for torn or deflected liner edges. If any are found, straighten or flatten such edges prior to liner removal to prevent media damage.
- One person should carefully hold the plastic bag(s) while the other person carefully pulls the liner, sliding it away from the filter.
- Panel filters will be single- or double-bagged (depending on customer requirements) with snug-fitting cardboard liners. Ducted filters will be single- or double-bagged and packed in reinforced cartons.
- The filter should be handled with extreme care to avoid contact with the media and/or face screen.
- While the bag is still present, carry the filter by grabbing the bag. Be careful to keep the filter away from your body and any objects in your path.
  - If the bag is not present, always handle filter by the frame, avoiding contact with the media and/or face screen.
- Remove the bag carefully. Avoid bringing hands and fingers into contact with the filter media.

### Installation

- Carefully install the terminal as instructed above. Note: proper installation requires two (2) people.

### Storage

- Location: Storage should be indoors, (under roof and enclosed) and absolutely protected from moisture.
- It is strongly recommended that the storage space be climate-controlled.
  - Temperature Limits: Maximum temperatures of 250°F (121°C) intermittent, and 100°F (38°C) steady state. Minimum temperature is 32°F (0°C).



## Filter Unpacking, Installation, Storage, and Operation (cont'd)

### Operating Conditions

- Temperature: The maximum operating temperature is determined by the filter configuration.
  - Consult the filter submittal drawing for the specific maximum operating temperature.
- Humidity: 100% relative humidity is acceptable. However, condensation must be avoided to prevent degradation of performance and potential filter failure.
- Filters should not be operated in caustic or acidic environments.
- Filters should not be operated in excess of twice the rated performance for flow rate or pressure drop.

### Static Pressure/Upstream Aerosol Ports

Filter must be supplied with centerboard and port to sample upstream aerosol and to measure upstream static pressure. A filter with centerboard and port is also necessary to access damper adjustment.

### Dampers and Damper Operation

The AstroHood™ S-III is supplied with Split Butterfly, Telescoping Disc, or no damper at all.

The Split Butterfly and Telescoping Disc dampers are adjustable from the room side via Phillips head screwdriver. Please note that a filter with centerboard and access port must be supplied to access the damper adjustment.

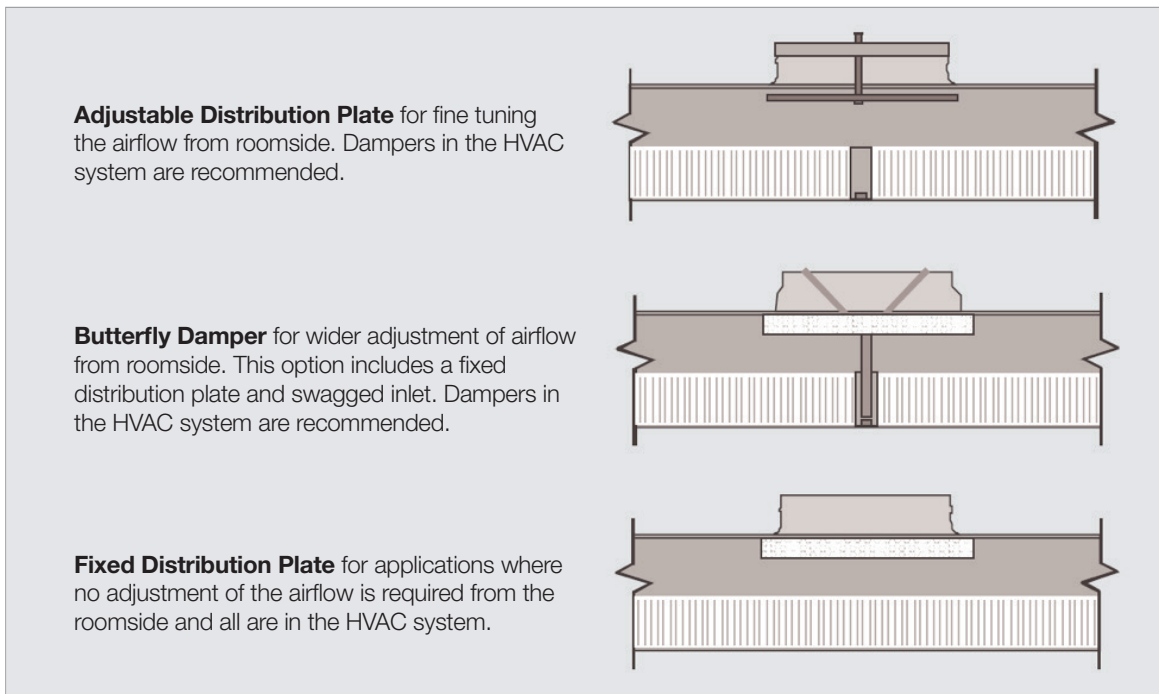


Fig: 06 Dampers and Operation

### Insulation Options

Insulation options are available to prevent heat loss, mitigate potential condensation, and/or provide sound attenuation. Determining the use of these options is the responsibility of the design engineer. The 2" foil-backed option is an aluminum foil-backed fiberglass (installed 6.0 R-value) attached to the housing using adhesive-mounted insulation anchors and caps.

## APPENDIX A – WARRANTY

### AAF INTERNATIONAL LIMITED WARRANTY

The Seller warrants that it will provide free replacement parts in the event any product manufactured by the Seller proves defective in material or workmanship for a period of twelve (12) months from initial startup or eighteen (18) months from date of shipment, whichever expires sooner. Product(s) not manufactured by the Seller but also sold under this agreement are warranted only to the extent that the manufacturer warranted them to the Seller or directly to Buyer.

The Seller's liability to Buyer shall not exceed the lesser of the cost of correcting defects in the product(s) sold or the original purchase price of the product(s) and the Seller shall in no event be liable to Buyer or third parties for any delays. The Seller's warranty does not apply to any product(s) or goods which: (1) have been opened, disassembled, repaired, or altered by anyone other than the Seller or its authorized service representative; or, (2) which have been subjected to misuse, misapplication, negligence, accidents, damage, abuse, improper storage, or abnormal use or service; or, (3) have been operated or installed in a manner contrary to Seller's printed instructions; or, (4), have been installed in an incorrect or improper application; or, (5) have become corroded or subjected to abrasion. The Seller is not obligated to pay any costs or expenses in connection with the removal and re-installation of such product(s) or goods, including but not limited to labor, service costs, and shipping charges. The same obligations and conditions shall extend to replacement parts furnished by the Seller hereunder. This parts warranty and any optional extended warranties are granted only to the original user. Seller's duty to perform under this or any warranty may be delayed, at Seller's sole option, until Seller has been paid in full for all products or goods purchased by Buyer. No such delay shall extend the warranty period.

To obtain assistance under this limited warranty please contact the selling agency. To obtain information or to gain factory assistance, contact AAF International Warranty Claims Department, 9920 Corporate Campus Drive, Suite 2200, P.O. Box 35690, Louisville, Kentucky 40223-5000; Telephone (502) 637-0011, FAX (888) 223-6500.

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No person (including any agent, salesman, dealer or distributor) has the authority to expand the Seller's obligation beyond the terms of this express warranty, or to state that the performance of the product(s) is other than published by the Seller.

**APPENDIX B – MANUAL REVISION HISTORY**

Revision Version	Revision Date	Description of Change	Approval

For Technical or Application Questions:

Phone: 1 (888) 223-2003

Email: [productsupport@aafintl.com](mailto:productsupport@aafintl.com)



## AAF International Plant Locations

AAF, the world's largest manufacturer of air filtration solutions, operates production, warehousing and distribution facilities in 22 countries across four continents. With its global headquarters in Louisville, Kentucky, AAF is committed to protecting people, processes and systems through the development and manufacturing of the highest quality air filters, filtration equipment, and associated housing and hardware available today.

Contact your local AAF Flanders representative for a complete list of AAF Flanders Air Filtration Product Solutions.

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9920 Corporate Campus Drive, Suite 2200, Louisville, KY 40223-5690  
888.223.2003 Fax 888.223.6500 | [aafintl.com](http://aafintl.com)

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