

**INSTALLATION OPERATION &
MAINTENANCE MANUAL
FOR
HEPA-VENT DS DIFFUSERS WITH
ROOM-SIDE REPLACEABLE
HEPA FILTERS**



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HEPA-Vent DS

HEPA Filtered Laminar Flow Diffuser

INSTALLATION, OPERATION & MAINTENANCE

Recommended Tools:

1. 8' Ladder
2. Slot Screwdriver
3. Battery Powered Impact Driver
4. 7/16" Deep Well Socket for Impact Driver

Before Installation

1. Verify ceiling openings for dimensions & square.

Preparation

1. Unpack & inspect diffuser for damage during shipment – if damaged, DO NOT INSTALL. Contact Precision Air Products for replacement.

NOTE: DO NOT unpack filters at this time. See *Care & Maintenance of HEPA Filters* below.

NOTE: DO NOT remove the blue protective film on the diffuser faceplate until installation is complete.

2. Locate bag of filter clips & hardware inside the diffuser and save for filter installation.
3. Ensure cone damper is fully open.

Diffuser Installation

1. Install plaster frame into ceiling opening per *framing installation instructions*.
2. Insert diffuser and lower onto gasketed opening.

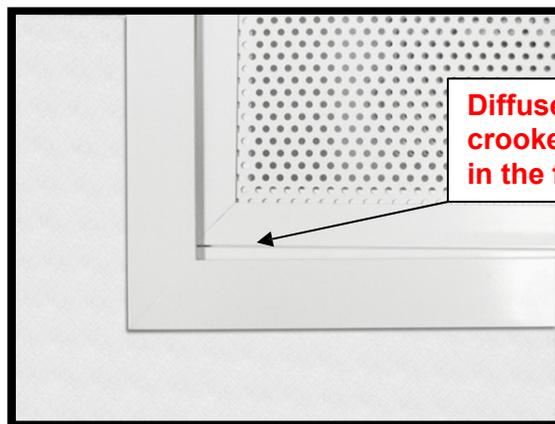
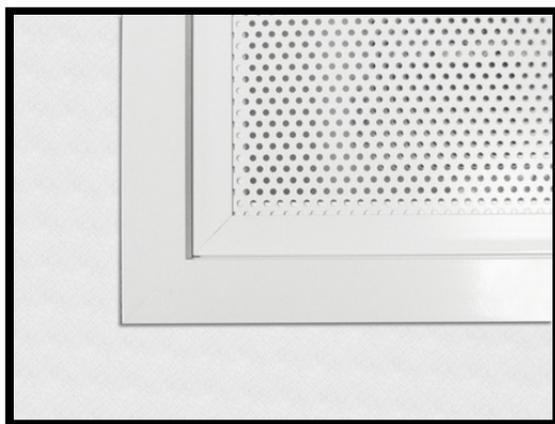
NOTE: If additional support is required, diffuser mounted hanging tabs may be utilized.

3. Connect the supply ductwork to the top inlet collar.

NOTE: It is imperative that the connection be fully sealed to avoid leaks in the interstitial space.

4. Position the diffuser in the frame with an even reveal to ensure proper gasket coverage and a consistent room-side appearance.

NOTE: The photos below depict PAP framing. Other framing may result in a different reveal.



Filter Installation

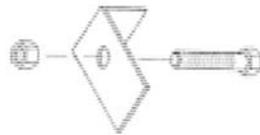
NOTE: Precision Air Products strongly recommends that a thorough construction cleaning be completed before attempting to install final HEPA filters.

NOTE: Air handler should remain on at all times during filter installation and it is strongly recommended that it remain on until the rooms are ready to be turned over to the owner. This will ensure that filters remain pressurized and the face (or room side) of the HEPA filter will be kept free of dust and other airborne particulates.

1. Run the air handler on high for several minutes to ensure that dirt and debris has been cleared from the building HVAC system.
2. Remove the perforated faceplates on diffusers by loosening all quarter-turn fasteners located on the perimeter of faceplate.

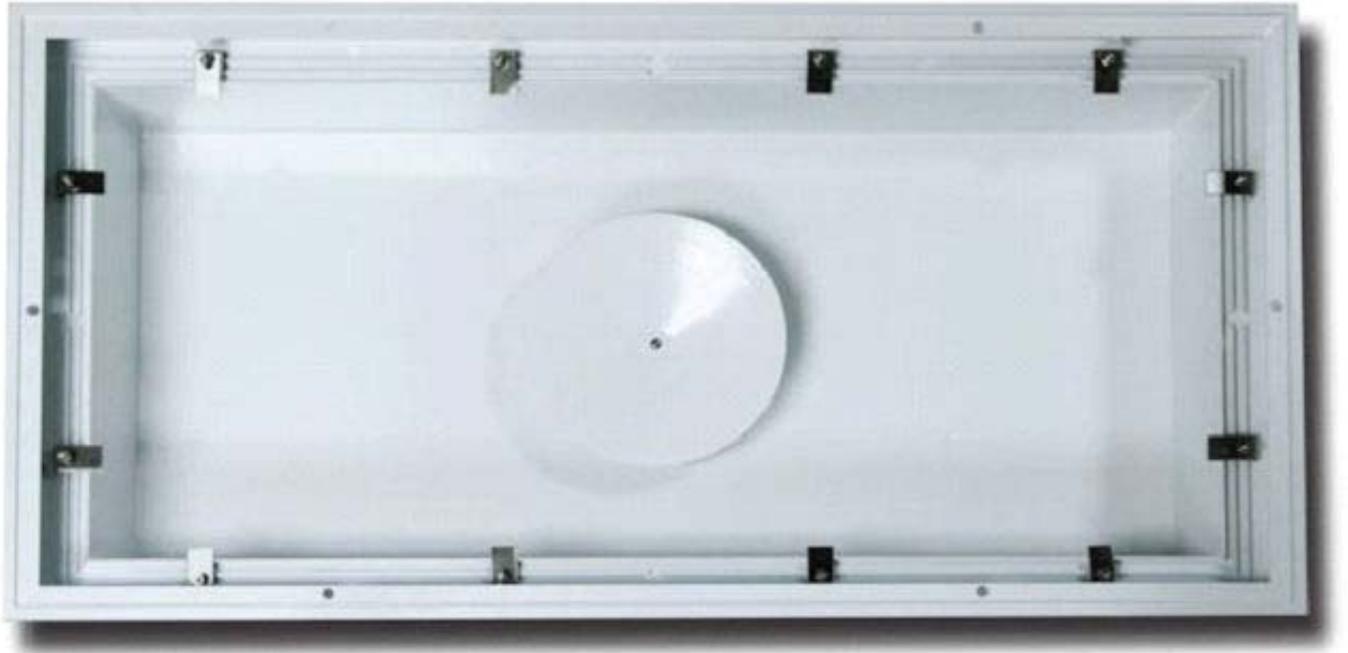
NOTE: Each diffuser has at least three safety cables that connect the faceplate to the plenum to prevent accidental dropping, two cables on one side and one on the opposite side. Simply disconnect the single cable and let faceplate hang from other two cables. Re-hook when completed.

3. Clean and dry the inside of each diffuser and both sides of perforated faceplate with a towel and a non-abrasive cleaner. Ensure that knife-edges are completely cleaned.
4. Assemble filter clips as shown:



5. Position filter clips within the extruded channel by placing the head of the bolt into the milled opening and slide clips into position as shown below.

NOTE: For a 2'x4' diffuser, two (2) clips will be located on the short sides and four (4) clips on each long side (1 per foot, evenly distributed, no more than 4" from the corner).



6. Turn clips to be parallel to diffuser frame to allow filter to be positioned without obstruction.



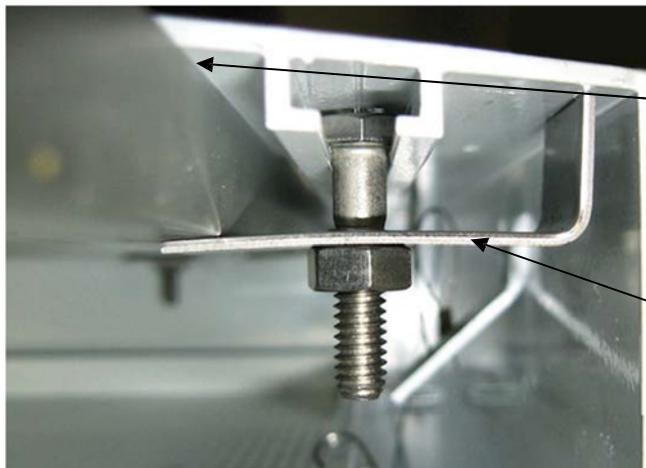
WARNING

FILTER MEDIA IS EXTREMELY DELICATE AND CAN BE EASILY DAMAGED DO NOT TOUCH FILTER MEDIA UNDER ANY CIRCUMSTANCES

NOTE: Installation of each HEPA filter is a two-person job due to the extreme care that needs to be taken in handling of the filters.

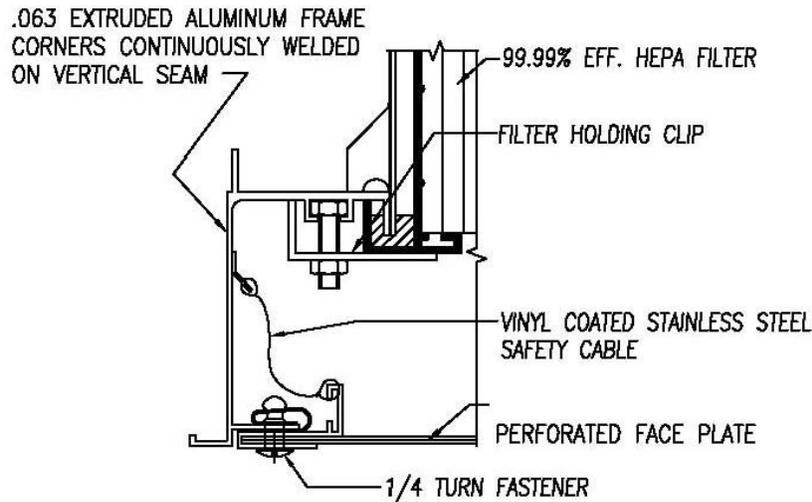
7. Visually inspect carton of filters for any shipping damage. Carefully remove filter from carton and slip out of protective cardboard sleeve. Next, remove filter from polybag packaging and visually inspect the filter for any type of media damage (small tears, fingernail scratches, any indication that crushing of the media has occurred).
8. Inspect the filter's gel channel. The gel must be continuous and fill the entire channel.
9. Carefully lift the filter up to the diffuser, taking caution to handle the filter by its flange and frame only. **DO NOT TOUCH THE FILTER MEDIA OR GEL SEAL.** Center the filter's gel seal over the diffuser's knife edge and seat the filter in place. Secure the filter by turning the filter clips perpendicular to the filter's flange to hold filter in place. Tighten filter clips using an adjustable clutch screw gun or impact driver and a $\frac{7}{16}$ " hex-head deep well socket to tighten the nuts on the retaining bolts. Ensure that the filter housing is fully seated on the extrusion and the clip is tightened such that the clip begins to deform slightly.

NOTE: If filter is supplied with centerboard with port or multiple ports, check that well nut(s) are tight and secure.



Filter housing is fully seated on the frame extrusion.

Slight deformation of the clip is preferred.



Section view of assembly with
filter installed and faceplate
secured

10. Precision Air Products recommends that the filters be in place for at least 12 hours prior to any type of clean room certification testing which may be required.

Balancing

NOTE: If specific air volumes for diffusers are indicated on mechanical drawings for the room, balance diffusers to specified air volumes.

1. Adjust the cone damper on the diffuser.
 - a. Insert an 8-10" standard screwdriver through the hole in the diffusion basket (and faceplate if optional plug button is provided) and turn the damper's adjustment screw to provide the required airflow.

NOTE: The diffuser's internal volume adjustment valve is meant for fine-tuning only. If rough balancing is required, please adjust by the valve located within the supply ductwork before attempting to adjust the internal balancing valve, otherwise noise problems could result from restricting the inlet and increasing air velocity.

2. Re-secure safety cable and reinstall the faceplate.

General Notes

1. Precision Air Products Co. does not warrant filters damaged during installation, unless installation is performed under factory supervision. For a quote for damaged filters call Precision Air Products Co. at 1-800-404-0931.
2. The life expectancy of a HEPA filter is dependent upon the working environment in which they are used (i.e. frequency of pre-filter replacement, general facility housekeeping procedures).
3. Replacement filters can be purchased from Precision Air Products Co. at 1-800-404-0931.

Care & Maintenance of HEPA Filters

The following handling procedures should be followed to maximize life of filter:

1. Store filters in an environmentally controlled room or warehouse. Avoid severe temperature conditions, below 0 degrees, or above 120 degrees F. The filters should not be exposed to ozone depleting sources.
NOTE: Do not allow units to get wet or be stored in damp area under any circumstances.
2. If these and the following parameters and the following storage requirements are maintained, the filter shelf life should be 3 years from manufacturing date for gel seal filters.
3. Store cartons on a level area according to "This Side Up" orientation in their original cartons in order to avoid exposure to ultraviolet rays and possible damage to the filter media.
4. HEPA filters should be oriented vertically with their pleats vertical, and be stacked no more than three cartons (slightly over 6 ft.) high unless intermediate bracing or flooring is provided to prevent the weight from the upper tier from bearing on the lower tier.
5. Unless there is obvious damage to the cartons, HEPA filters should not be opened prior to use or removed from shipping skids until immediately ready for installation.
6. Change pre-filters in return air grilles every 30-45 days or as recommended by hospital protocol in order to extend the life of the HEPA filters.