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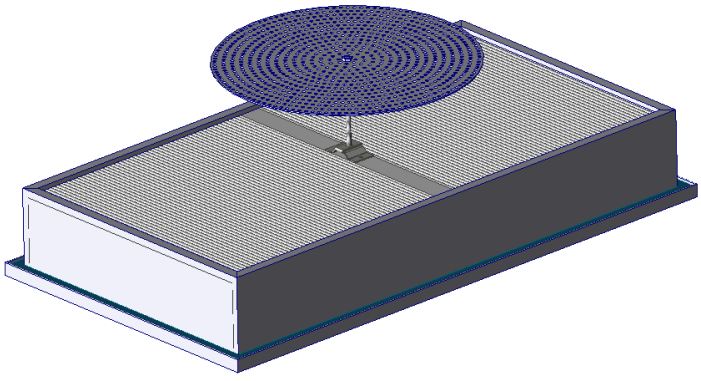
MULTI-VENT Laminar Flow Systems

Installation, Operation, & Maintenance



IOM–004
Effective
10/13/23
Rev B

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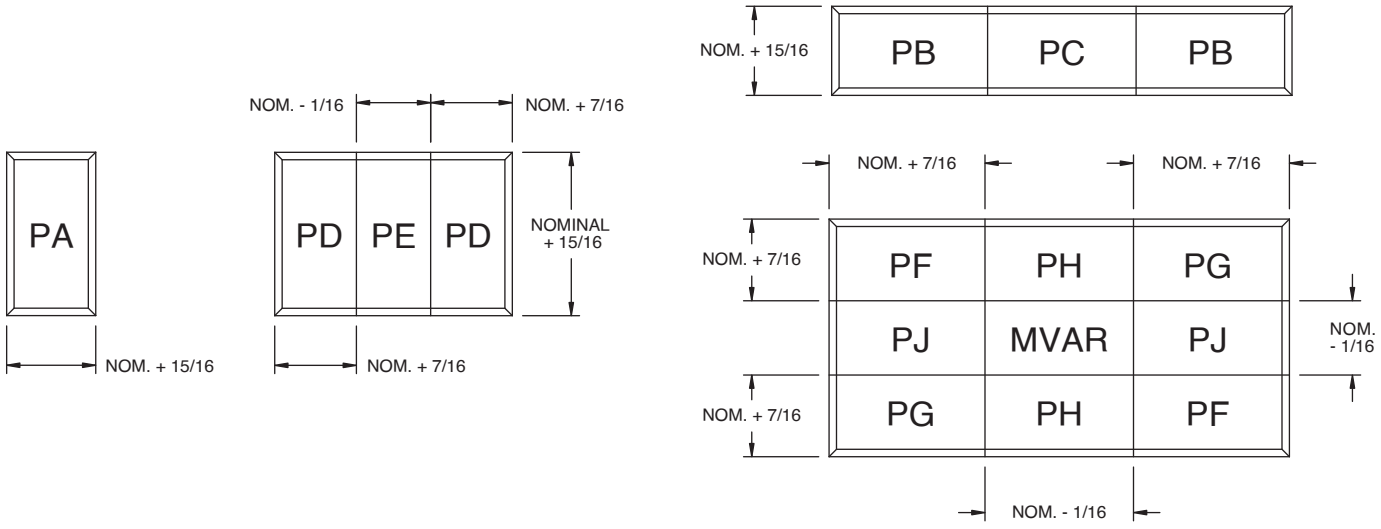
Batten Arrangements

Multi-Vent Laminar Flow Panels are available for surface mounting in plaster / gypsum ceiling construction. The Multi-Vent design permits flexibility in panel arrangement to properly integrate the air distribution into the ceiling.

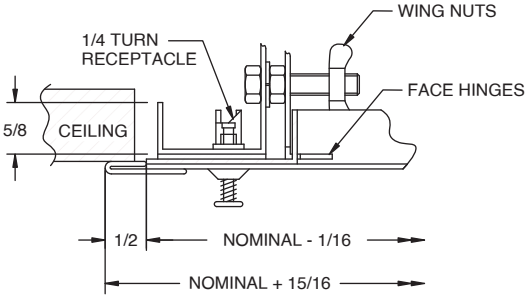
CONSTRUCTION

The Multi-Vent Design for surface mounting incorporates BATTENS. Battens are trim strips welded to the outer edges of the removable face of Surface Mounted Multi-Vent Panels. Battens provide a finished appearance and mask the ceiling opening edge. Multi-Vent Panels are ordered from the factory with preconfigured batten arrangements, and therefore, have specific locations within the building. The nomenclature for various batten arrangements are as shown in the plan view below:

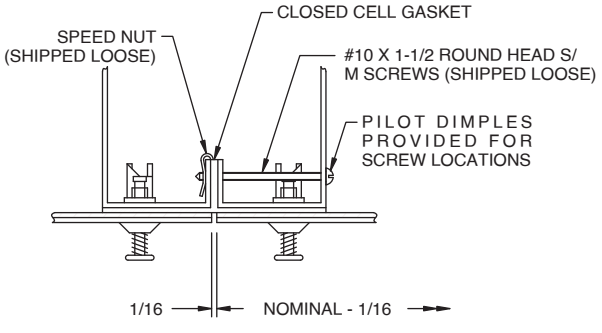


For example, Batten Arrangement PA consists of a singular panel, with battens on all four edges of the face, for stand-alone installation. Batten Arrangements PD in conjunction with PE, when installed within the ceiling, provide a neat installation, with perimeter trim battens around the entire built-up assembly.

The details for both batten edges and adjacent panels are shown below:



BATTEN EDGE DETAIL



TYPICAL BUTT JOINT (ADJACENT UNITS)

The joint detail between two adjacent Multi-Vent Panels shows sheet metal screws and speed nuts used to fasten the units together. The sheet metal screws are installed from below, with the face plate lowered. Pilot dimples are provided in each Multi-Vent Panel for locating the sheet metal screws. Gasketing is applied at the factory for a leak tight joint.

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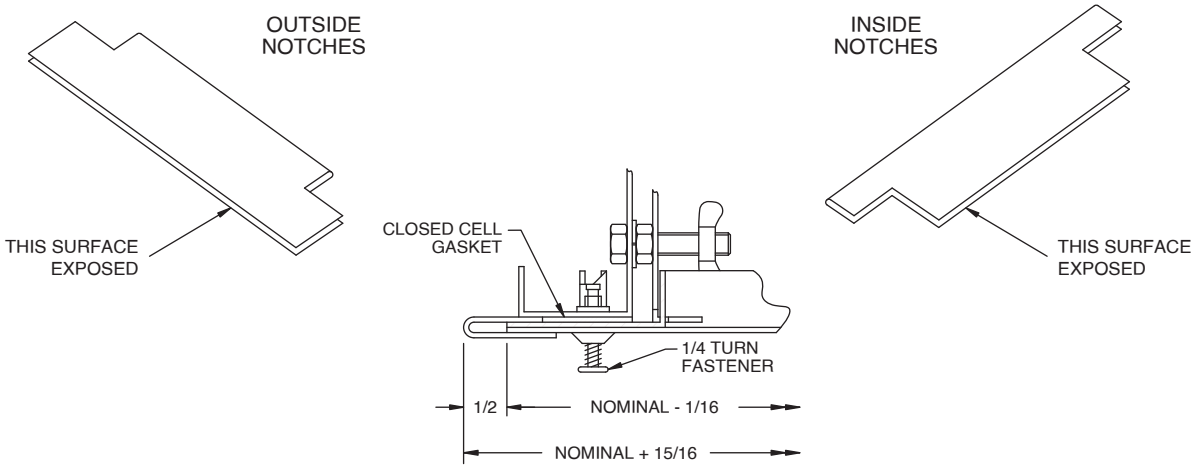
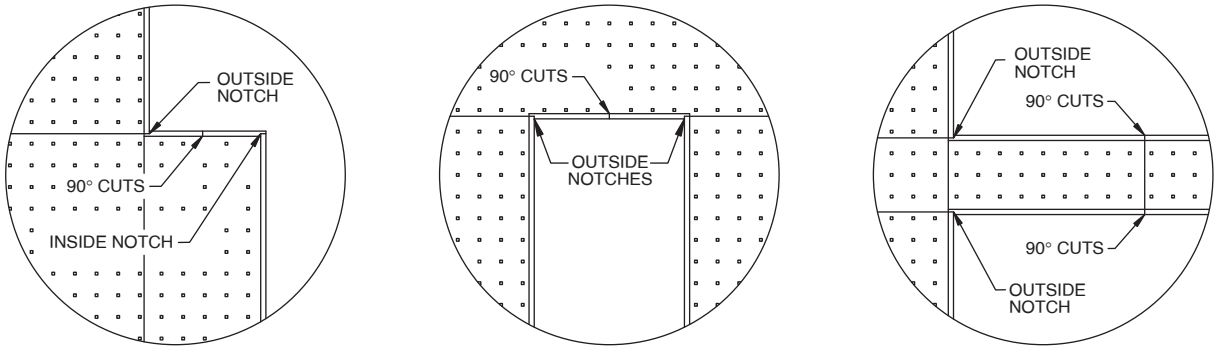
Slip-On Battens

For ceiling arrangements with inside corners, slip-on battens should be used and require custom field cutting after the entire ceiling assembly is installed. This method provides the best appearance, while allowing for installed dimensional tolerance. The Slip-On Batten Is shipped in lengths, requiring field cutting. Slip-on battens are provided with outside or inside notches as shown:



SLIP-ON BATTEN DETAIL

TYPICAL ARRANGEMENT REQUIRING SLIP-ON BATTENS



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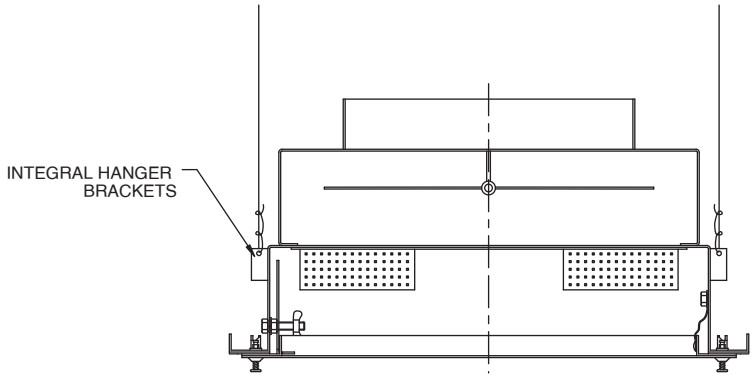
Ceiling Opening

The ceiling opening size is the nominal size of the Multi-Vent Laminar Flow Panel, or the sum of the nominal sizes for adjacent, butting units in a built-up assembly. For example, the ceiling opening for a single, 24" x 48" panel is 24" x 48". For (2) 24" x 48" panels arranged to form an overall assembly of 48" x 48", the ceiling opening required is 48" x 48".

Installation

Each Multi-Vent panel shall be individually supported by threaded rod, straps, or hanger wire. Hanger Wires are preferred, as both threaded rod and straps require field drilling of the frame body, and present obstacles which make routine cleaning more difficult. Methods and materials, gauge & size, # of supports, and spacing shall be in accordance with applicable codes and as specified in contract documents & drawings. Each Multi-Vent panel comes with integral hanger brackets that can be used with the hanger wire method of support. These “bend out” hanger brackets are located at the four corners of the frame body:



The sheet metal screws and speed nuts (shown in Butt Joint edge detail) are used to pull adjacent Multi-Vent panels together, in the horizontal plane. and are not designed to carry vertical loads.

With the proper ceiling opening and support straps, wires, or rods located and attached to the structure above, installation is easiest by hanging individual Multi-Vent Panels, one at a time. Access above the ceiling will be required, either through a formal access door, or through some other opening. The panel face may be removed from the unit at the floor level, for easier handling and to access the inside of the frame body to screw attach adjacent units together. As each unit is suspended & leveled within the ceiling opening, duct attachment can conveniently be made with minimal “reach”. Adjacent units are subsequently suspended, leveled, screw attached to other units, etc., until the assembly is completed. Sealant may be required between the Multi-Vent units and ceiling cut-out edge to prevent leakage between the ceiling plenum and space below.

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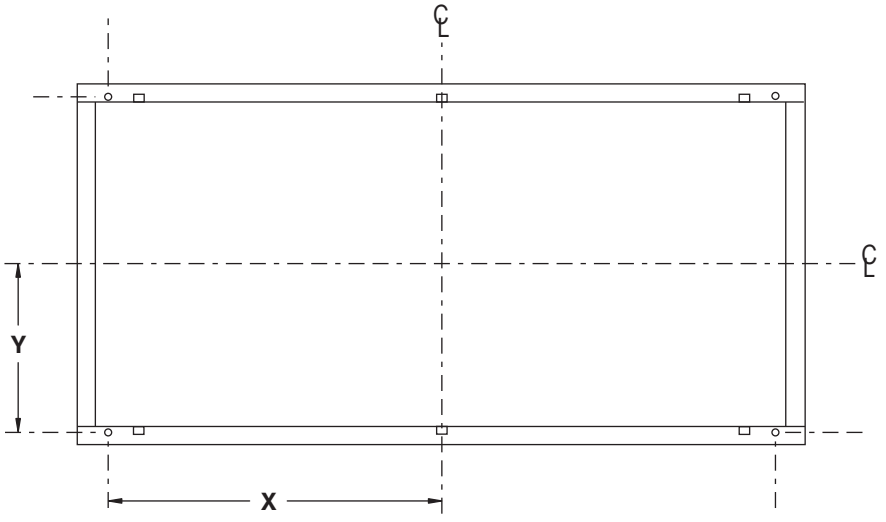
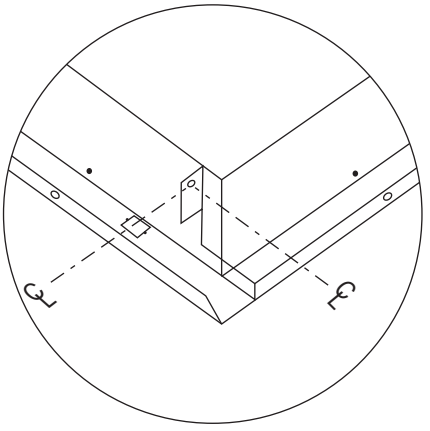
Hanger Bracket Hole Location

For the location of the integral hanger bracket holes on the Multi-Vent panels, see the table and drawing below.
The X & Y dimensions reference the distances from the center of the frame body (which is typically the center of the top supply air inlet collar) to the center of the hole on the hanger bracket, in the plan view.

MV Size	X	Y	MV Size	X	Y
12 x 48	21-15/16	5-1/16	24 x 60	27-15/16	11-1/16
12 x 60	27-15/16	5-1/16	24 x 72	33-15/16	11-1/16
12 x 72	33-15/16	5-1/16	36 x 36	15-15/16	17-1/16
24 x 24	9-15/16	11-1/16	36 x 48	21-15/16	17-1/16
24 x 36	15-15/16	11-1/16	36 x 60	27-15/16	17-1/16
24 x 48	21-15/16	11-1/16	36 x 72	33-15/16	17-1/16





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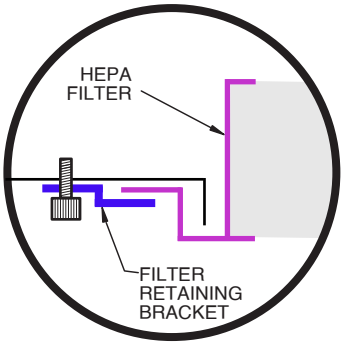
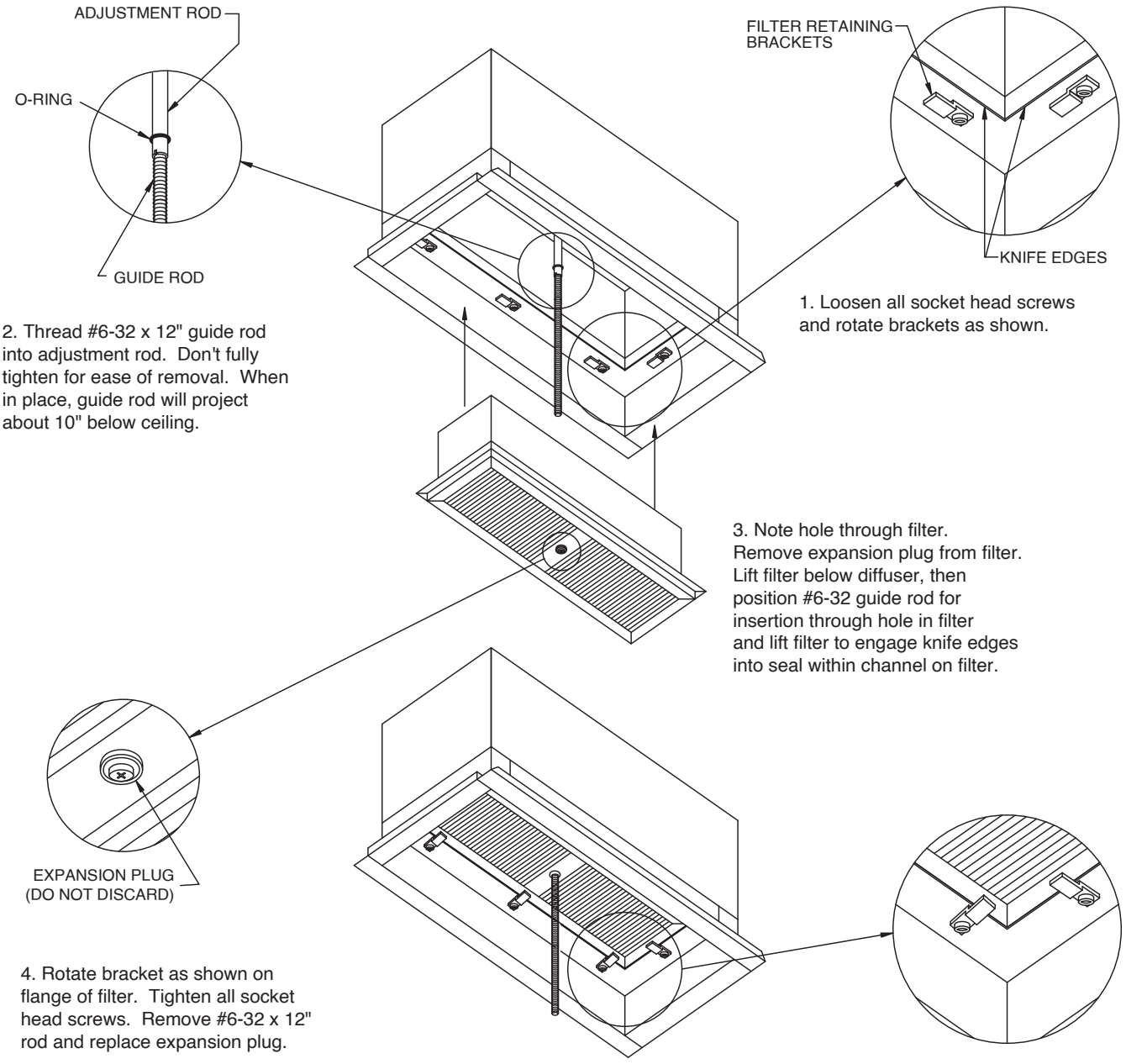
Model MV-HEP Diffusers

HEPA Filter Installation

- Applies to diffusers manufactured prior to 01/2023 using filter ***Models ANEM-HF/5 or ANEM-HF/2 and Filter Retaining Brackets (G0000A22-AL)***
- Typical for units with top inlet.
- Units with end inlets do not utilize center rod.





2. Thread #6-32 x 12" guide rod into adjustment rod. Don't fully tighten for ease of removal. When in place, guide rod will project about 10" below ceiling.

1. Loosen all socket head screws and rotate brackets as shown.

3. Note hole through filter. Remove expansion plug from filter. Lift filter below diffuser, then position #6-32 guide rod for insertion through hole in filter and lift filter to engage knife edges into seal within channel on filter.

4. Rotate bracket as shown on flange of filter. Tighten all socket head screws. Remove #6-32 x 12" rod and replace expansion plug.

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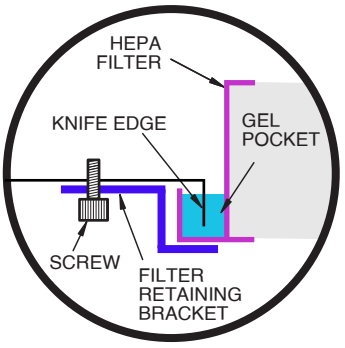
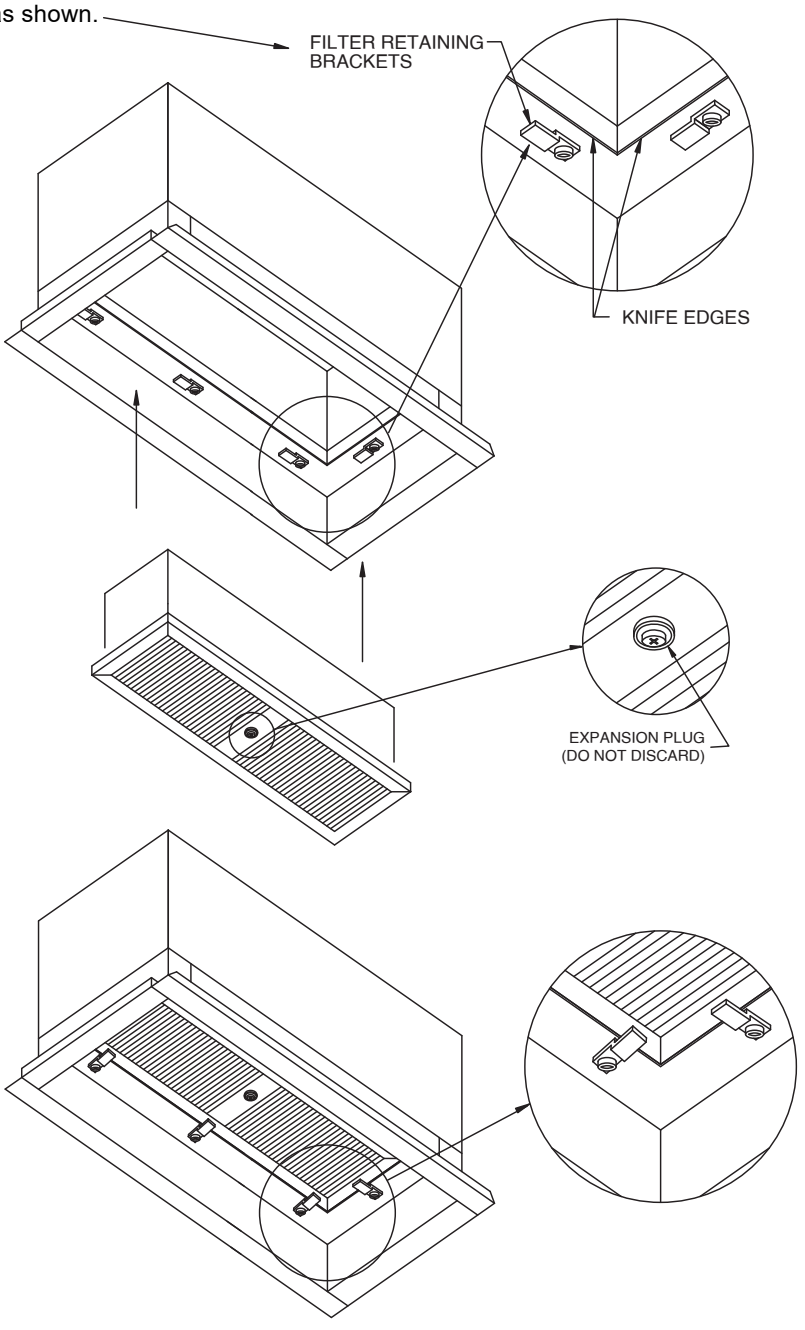
Model MV-HEP Diffusers

HEPA Filter Installation



- Applies to diffusers manufactured starting 01/2023 using filter ***Models ANEM-HF/100 or ANEM-HF/53 and Filter Retaining Brackets (CF-F-001-04)***
- Typical for units with top inlet. Disk damper field attached to filter.
- Units with end inlets do not utilize the filter disk damper.
- We recommend (2) people for installing the filter into the housing.

1. Hinge down or remove perforated face plate from diffuser.
2. Loosen all socket head screws and rotate brackets as shown.
3. Unpack the filter and attach the disk volume damper (shipped separate) to the top of the filter by inserting the damper 1/4-20 threaded rod into the nut on the top / center of the filter. The pair of jam nuts are located to limit the disk damper in the full down postion to allow the center plug to be installed.
4. Postion the damper to its full open (lowest position) in preparation for balancing.
5. Carefully lift filter up using the filter frame. Any minor or incidental contact with the filter media can cause particle leaks which will void the factory certification as to efficiency.
6. Position the filter so the housing knife edges are aligned with the center of the gel pocket and push the filter upward until the filter frame contacts the housing. Rotate (4) clips near the filter corners 90 degrees to support the filter. Rotate the other clips 90 degrees and lightly hand tighten all screws. Screws only need to be snug as they are only supporting the vertical weight of the filter. Use of power tools to snug the screws should be avoided.
7. Replace center plug in the middle of the filter if removed previously. Balancers can remove this plug and adjust air flow by rotating the disk damper (CW = DECREASE AIRFLOW) using a slotted screwdriver. Note: damper is a balancing damper and not a full shut-off damper.



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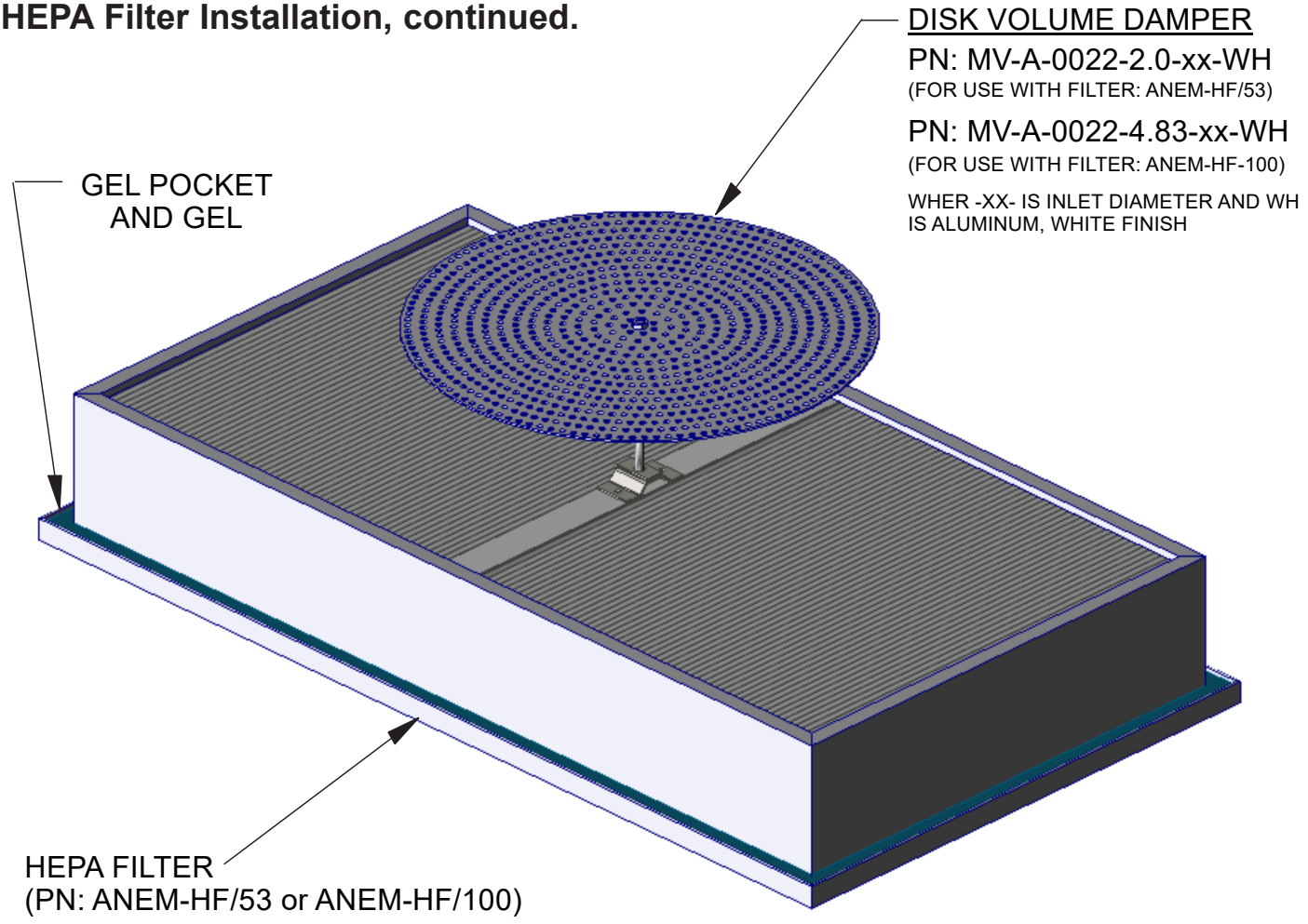
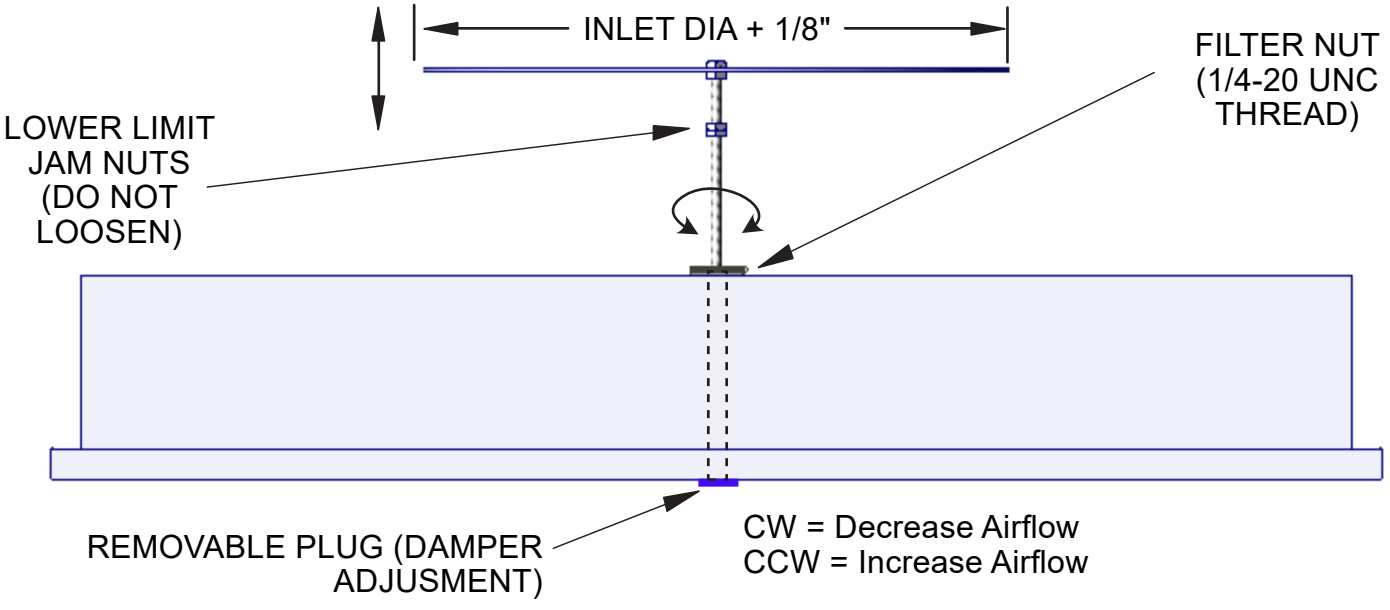
Model MV-HEP Diffusers

HEPA Filter Installation, continued.





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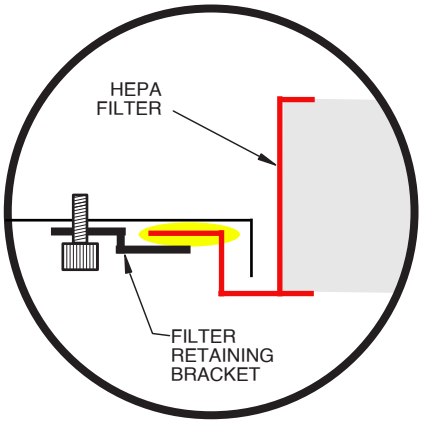
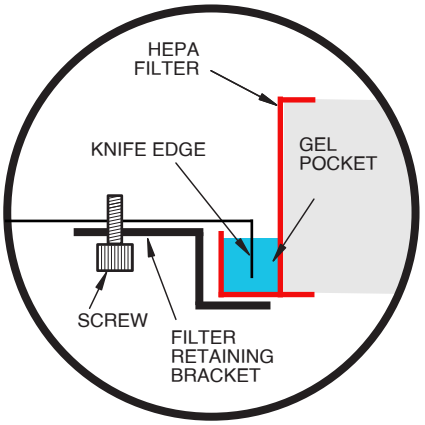
Model MV-HEP Diffusers

HEPA Filter Changeout / Replacement

- ***IMPORTANT!*** There are 2 versions of housings and filters which are dependent on the original installation date of the diffusers. When replacing existing HEPA filters, first determine the version of the HEPA Filter and Filter Housing that is installed.
- Find the ID label on the filter housing. Filters starting with Model #: ANEM-HF/2 or ANEM-HF/5 are obsolete.
- If the label is missing or not legible, see below details on how to identify what filter and housing exists.



OBSOLETE FILTER DESIGN (Before 01/23)
FILTER FRAME HORIZONTAL LIP SECURED BY FILTER RETAINING BRACKETS



CURRENT FILTER DESIGN (After 12/22)
FILTER FRAME SECURED BY FILTER RETAINING BRACKETS UNDER GEL POCKET

- HEPA Filter Model : ***ANEM-HF/2 is replaced by ANEM-HF/53***
  ANEM-HF/5 is replaced by ANEM-HF/100
- If you are replacing an installed filter that is already the current design, then follow installation instructions on Page 8. The disk volume damper is removed from the existing filter and re-used on the new one.
- If you determine that you have an obsolete filter installed, then to convert to the current design, you will need to order the following for each HEPA filter unit:
  - (1) HEPA filter with models that start with: ANEM-HF/53 (2") or ANEM-HF/100 (4")
  - (1) Disk Volume Damper - see part numbers on Page 9. The inlet diameter of the existing diffuser needs to be identied
  - Filter retaining brackets (PN:CF-F-001-04). Size: 2x2=(8), 2x3=(8), 2x4=(14)

CONVERTING AN OBSOLETE FILTER TO CURRENT DESIGN

1. Remove the perforated face or let swing down 90 degrees on the hinges.
2. Loosen the Filter Retaining Bracket screws and rotate the brackets 90 degrees to clear the filter while leaving 4 brackets (one near each corner) engaged. While supporting the filter, rotate the remaining brackets 90 degrees and remove the existing filter. Clean any remaining gel residue from the knife edges.
3. Remove the existing disk damper / rod assembly from the neck cross brace.
4. Remove the existing Filter Retaining Brackets (Aluminum) and replace with new stainless steel brackets (PN:CF-F-001-04) using the same screws that were removed.
5. From this point, follow the installation instructions on Page 8. Future filter replacement will then only require a new HEPA filter.