

# FILTRATION GROUP

## HEPA CRANK-SEAL HOUSING



- Housing available in several materials
- Optional 2", 4" or 6" pre-filter section available
- Designed for filters that use gasket or fluid seals
- One step seals all filters
- 2 doors for easy access
- No clips or extra gasketing necessary
- Flange for installation to ductwork
- Custom made available to meet end user requirements



### DESCRIPTION

The Aerostar HEPA Crank-Seal Housing is a multistage unit designed to hold HEPA filters in 95%, 99.97% and 99.99% efficiency at 0.3-micron size particles with either a gasket or fluid seal. An optional pre-filter section is available to accommodate 2", 4" or 6" pre-filters. Standard housing depth is 21.5" for HEPA filters only, 25" with 2" pre-filters, 27" with 4" pre-filters or 29" with 6" pre-filters. Other depth/configurations are available upon request. The Crank-Seal design provides a consistent compression over the perimeters of the filters, assuring a leak free seal between the gaskets or the gel seal on the filter. The housing is constructed with 14 gauge-galvanized steel and the crank mechanism is constructed with 12 gauge-galvanized steel. The housing components are permanently fastened for added strength. Hat sections are located on the top, bottom and back of the housing for structural support. For housings that are wider than 24", center stability bars have been added for extra rigidity.

### BENEFITS

The one-step Crank-Seal makes inserting and sealing the filters easy. For the safety of the operator the Crank-seal mechanism is on the downstream side of the HEPA filters,

protecting it from contaminants at filter change. To further hinder contaminations and air by-pass, the housing is fully seam welded with a broken channel for the filters instead of an aluminum extrusion. The strength and versatility of the HEPA Crank-Seal design make it ideal for all applications. Doors are mounted on both sides of the housing for ease of filter change-outs. Hand torqued door latches provide a positive seal between the housing and the gasketing on the door. A unique door hinge allows the door to either remain on its hinges or be completely removed. No clips or extra gasketing is necessary for the filter installation. The housing has a flange for easy installation and custom flanges are available.

### APPLICATIONS

Optimized for performance the Aerostar HEPA Crank-Seal housing can replace any existing HEPA housing. It is designed for HEPA filters with 95%, 99.97% and 99.99% efficiencies and could be combined with 2", 4" or 6" pre-filters. This housing can be used in any application where there is a need for higher efficiency air filtration such as office buildings, hospitals, semiconductor, food, pharmaceutical and biotechnology industries.



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PERFORMANCE DATA (STANDARD CAPACITY, HEPA)

FILTER HOUSING CAPACITY (CFM)*								
HEIGHT	WIDTH							
	.5	1	1.5	2	2.5	3	3.5	4
.5	—	500	—	1000	—	1500	—	2000
1	500	1000	1500	2000	2500	3000	3500	4000
1.5	—	1500	2000	3000	3500	4500	5000	6000
2	1000	2000	3000	4000	5000	6000	7000	8000
2.5	—	2500	3500	5000	6000	7500	8500	10000
3	1500	3000	4500	6000	7500	9000	10500	12000

\* Based on a 24 x 24 filter @ 1000 cfm

**TO DETERMINE HOUSING SIZE:** Find the cfm you are filtering and go to the left to the height column. Write down the number. Then go from the cfm down to the width row and write down that number. Example 6000 cfm = 3 x 2. Note there may be more than one size for most cfm; chose the one that will best fit your space.

**TO DETERMINE NUMBER OF FILTERS:** Example housing is 3 h x 2 w. First determine number of filters in a row (width). Example: Width = 2 is 2 - 24x24x2 HEPA filters. Second, multiply each size by the number of rows (height). Example: Height = 3. There are 6-24x24x11.5 HEPA filters in this configuration.

### ENGINEERING SPECIFICATIONS

**FILTER HOUSING** HEPA filter housing shall be Aerostar HEPA Crank-Seal Side Access Housing as manufactured by Filtration Group Inc. Housing shall be factory assembled and capable of accepting filters without the use of holding frames or clips. Housing shall be suitable for operation between +/- 10" w.g. To hinder contaminations and air by-pass the housing shall be fully seam welded with a broken channel for the filters instead of an aluminum extrusion.

**CONSTRUCTION** Housing shall be constructed in 14 gauge-galvanized steel. Panels and posts shall be permanently fastened to maintain tolerances. Hat sections shall be located on the top, bottom and back of the housing for structural support. For housings that are wider than 24", center stability bars shall be added for rigidity. There shall be a 1" flange around the air entering and leaving sides to accommodate connection to ductwork and air handling equipment. No holes shall be drilled or punched to assure leak-free fields installation.

**LOCKING MECHANISM** The locking mechanism (Crank-Seal) shall secure a leak free seal between filters and housing by an evenly distributed pressure of 1,400 lbs per square inch (600 foot pounds per filter). The Crank-Seal mechanism shall be on the downstream side of the HEPA filters, protected from contaminants. The Crank-Seal mechanism shall be constructed in 12 gauge-galvanized steel. For fluid seal filters the locking mechanism shall distribute an even pressure to guarantee a leak free seal between the knife-edge and the fluid seal.

**DOORS** shall be 14 gauge galvanized steel and mounted to both sides of the housing for ease of filter removal. Hand torqued door latches shall provide a positive seal between the housing and the gasketing on the door. A unique door hinge shall allow the door to either remain on its hinges or be completely removed.

### OPTIONS

- Weatherproofing, pitched roof with rain guard over the door
- 14 gauge aluminized steel
- 304L stainless steel
- 316L stainless steel
- Insulation
- Double wall insulation
- Vertical flow application
- Bottom access
- Custom flanged housing
- Static port(s)
- DOP port(s)
- Magnehelic gauge
- Photohelic gauge
- High temperature gasket
- Lifting lugs
- Transitions

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