

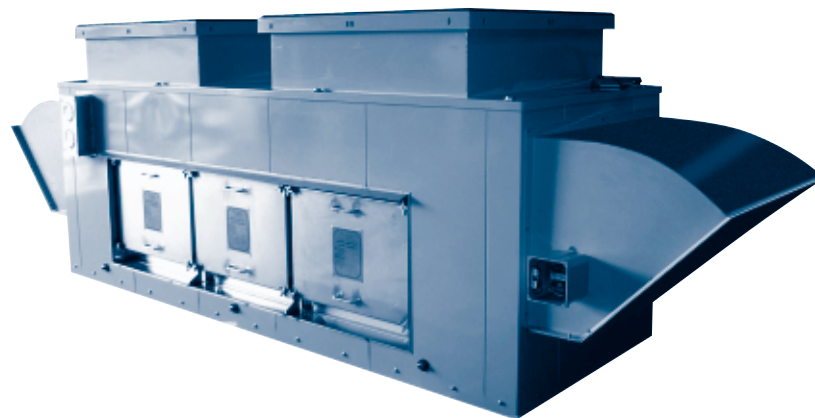


TECHNICAL APPLICATIONS BULLETIN

Bag-in/bag-out HEPA modules and filters for Tri-Stack® systems

Integral High Efficiency

Particulate Air filters remove up to 99.99% of 0.3 μm particulates, comply with applicable pollution abatement standards



STROBIC AIR'S HEPA MODULES AND FILTERS meet or exceed applicable ASME and ANSI/ANSE specifications and standards

To help meet growing worldwide demands for more stringent pollution control standards, integral bag-in/bag-out (BIBO) HEPA modules and filters are available for Tri-Stack mixed flow impeller fans and systems. The modules are offered with a variety of application-matched filter media, and may be specified for both new Tri-Stack fans or field-installed onto existing fans.

Strobic Air's HEPA filter modules are

designed for use in most closed-loop, controlled environment facilities where 100% conditioned makeup air is required. This application is typically found where toxic, noxious, or otherwise harmful substances are employed and their fumes are not permitted to be disbursed into the atmosphere. Because of their wide applications flexibility, the HEPA filter modules are ideal for use in pharmaceutical/biotech/biosafety level (BSL) laboratories, many of which employ substances at workstations or processing areas that are prohibited from being disbursed into the atmosphere.

HEPA filter modules mount on the inlet side of Tri-Stack fans and are available in individual or multiple sections for series configurations when required. They may be used with a variety of pre-filter, absorber, and/or HEPA filter sections. To optimize performance their design permits an unencumbered airflow through the upstream and downstream openings of the filter module. A variety of standard module sizes is available, along with appropriate filter media including either gasket-type or gel seal filters. The modules accommodate a variety of HEPA and ASHRAE filter efficiencies, with typical DOP* efficiencies of 95%, 99.97%, and 99.99% at 0.3 μm. Pre-filter sections are available in 2", 4", and/or 6" depths. Housing (module) construction is 14 gauge stainless steel with Type 304 stainless mesh face guards. The modules are also available in a wide variety of standard ASME configurations,

ranging from 24" x 24" x 11½" to 8" x 8" x 3 1/16", with other sizes on request. A ribbed inlet collar permits use of a PVC bag attachment which creates a barrier seal between service personnel and contaminated filters, eliminating direct contact with the filter and possible harmful particulates.

The filters for use with the HEPA filter modules are specially designed to meet rigid U.S. Army requirements and provide high dust holding capacity with long useful lives. Their outstanding performance capabilities help reduce operating and maintenance costs while enhancing operating efficiency. These filters are manufactured and tested under a quality assurance program to assure compliance with overall efficiency specifications. They are available in both standard and high capacity flow configurations depending upon requirements.

Filter modules are pressure decay tested in accordance with ANSI/ANSE-N510-1995 reaffirmed, *Testing of Air Cleaning Systems*. Pressure readings are recorded once a minute for five minutes, and maximum leak rate is 0.0005 CFM per cubic foot of housing volume at 10" W.G.

**An aerosol agent of Dioctyl-Phthalate (DOP) 0.3 μm particle size is an in-place method for evaluating HEPA filtration systems in the air stream at 10 duct diameters upstream from the filter face.*

HEPA filters/Tri-Stack

Principle of operation:

Tri-Stack standard and high capacity nuclear grade HEPA filters operate on the interception-diffusion principle to remove ultra-fine particles from ventilation and process air using a high ratio of media area to face area, limiting air velocity through the media to five feet per minute at rated airflow. This low flow per square foot of media provides an extremely high efficiency dust retention capacity and long filter life. The high density filtering media of sub-micron glass fibers is folded into a closely pleated pack with pleats evenly spaced by corrugated separators which support the media and allow air to flow through with minimum resistance. The media pack is sealed into the filter module sides with a polyurethane adhesive. Module sides incorporate rigid double box flanges of 14 gauge stainless steel for maximum resistance to rough handling and distortion free clamp sealing.

TECHNICAL SPECIFICATIONS

Filter modules	Type 304 stainless steel, 14 gauge
Separators	Minimum .0015"
Aluminum	
Vinyl coated aluminum	
Face guards	Type 304 stainless steel mesh
Media	Qualified to ASME AG-1, Section FC Each lot of media individually tested wet and dry tensile strength, DOP penetration, resistance, and thickness
Sizes	Standard for ASME AG-1 24" x 24" x 11 1/2" 24" x 24" x 5 7/8" 12" x 12" x 5 7/8" 8" x 8" x 5 7/8" 8" x 8" x 3 1/16" Other sizes available
Ratings	25, 50, 125, and 1500 CFM @ 1.3" W.G. 500, 1000, and 1250 CFM @ 1" W.G.
Filtration efficiency	95%, 99.97%, or 99.99% @ 0.3 μm

Strobic Air offers a wide variety of accessories and configuration options for Tri-Stack HEPA filter modules, some of which are listed here:

- Additional bag kits
- Vertical Flow
- Weather cover
- Double wall insulation
- Bottom access
- Static port(s)
- DOP port
- Magnehelic gauge
- Photohelic gauge
- High temperature gasketing
- Lifting lugs
- Isolation dampers
- Breather filter port
- Transitions
- Aluminized steel construction

HEPA BAG-IN/BAG-OUT HOUSING

UPSTREAM FLANGES

Housing Configuration (In.)	Height "H" (In.)	Width "W" (In.)
1 x 1	29-3/4"	27"
1 x 2		51"
1 x 3		75"
2 x 1	59-1/2"	27"
2 x 2		51"
2 x 3		75"
3 x 1	89-1/2"	27"
3 x 2		51"
3 x 3		75"
4 x 1	119"	27"
4 x 2		51"
4 x 3		75"

FRONT VIEW

BAG-IN/BAG-OUT CONTAMINATION HOUSING WEIGHT (LBS.)

	0.5W	1.0W	1.5W	2.0W	2.5W	3.0W
0.5H	160	190	215	240	263	285
1.0H	170	200	245	290	338	385
1.5H		302	368	435	507	578
2.0H		400	490	580	675	770
2.5H		503	617	730	847	963
3.0H		605	743	880	1,018	1,155
3.5H		703	862	1,020	1,184	1,348
4.0H		800	980	1,160	1,350	1,540

Housing Configuration (In.)	Height "H" (In.)	Width "W" (In.)
1 x 1/2	29 3/4"	15"

STANDARD ASME CONFIGURATIONS RANGE FROM 24" x 24" x 11 1/2" to 8" x 8" x 3 1/16", with special sizes on request



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