

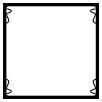


Nanoclass Safe
Change Housing
Systems

Nanoclass Safe Change

For contamination-free filter changes

Product Range



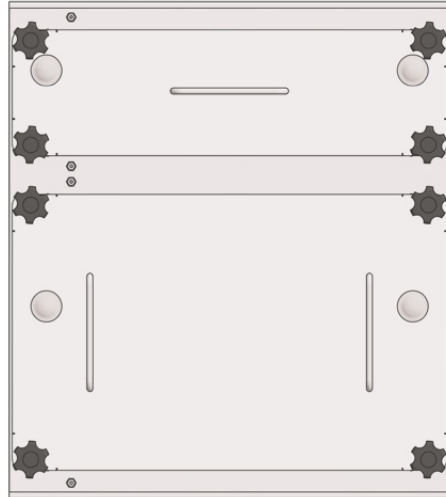
Features



Applications



Filter Class



KEY FACTS

- Protects maintenance staff and the surrounding environment from contamination during filters changes
- Particularly suited for extract systems handling contaminated air
- Modular design is flexible for different system configurations and air flow capacities
- Integrated filter sealing faces to ensure high degree of flatness
- All units pressure or vacuum tested upon request
- All connecting flanges pre-drilled ready for installation into ductwork systems
- Unique cam locking mechanism prevents access door(s) from being closed unless the filters are sealed
- Twin stainless steel cam bars accurately position filters and provide even gasket compression

APPLICATIONS

Designed for the installation of high efficiency (HEPA) air filters in intake and extract applications. Nanoclass Safe Change Housing Systems have been proven to meet the stringent air quality requirements for process areas in environmentally-critical applications. These include nuclear power generation, nuclear fuel re-processing, biotechnology and pharmaceutical manufacturing.

Nanoclass Safe Change Housing Systems Configuration and design

MODULAR DESIGNS FOR FULL FLEXIBILITY

Nanoclass Safe Change Housing Systems are modular assemblies that can be tailored to suit your requirements without the drawbacks of a fully custom solution. The modules are either prefilter or final filter housings that can be connected top and bottom with a common header to form a complete system.

The air flow capacity of a Nanoclass Safe Change Housing is determined by the number of filter sections which make up a complete assembly.

Normally each system consists of between one to six sections – though larger solutions can be supplied for higher air flow capacities, with two or more systems installed in parallel.

Each section consists of a pre-filter and final filter housing in series. However, systems can be supplied with or without prefilter housings, or with two or more final filter housings. Multiple final filter housings are usually used to accommodate either higher efficiency filters or activated carbon filters.

Nanoclass Safe Change Housing Systems can handle air volumes up to 4000 m³/h, depending on the filters installed.

FILTER CHANGE

Toxic or radioactive dust particles are a potential source of danger in a conventional filter change. The serviceability of the room in which the housing is situated can also be put at risk as a result of housing leakage. Nanoclass Safe Change Housing enables the contamination-free replacement of filters with the well-proven bag-in-bag-out method.

Nanoclass Safe Change Housings are fitted with a collar to which the change bag is sealed using rubber rings. Once the filter cam-bar mechanism has been released, the dirty filter is withdrawn into the change bag, out of the housing and then disposed of without risk. A new filter is then fitted and the system is ready for use again.

Nanoclass Safe Change Construction and materials

BUILT TO PROVIDE THE HIGHEST LEVELS OF SAFETY

Individual housings are manufactured from 2 mm steel with a durable paint finish suitable for decontamination. Alternatively, housings can be manufactured from stainless steel.

The housings are all-welded constructions and fabricated using CNC equipment. All filter sealing faces are formed as an integral part of the housing to provide a high degree of accuracy.

The filters are locked in position by two stainless steel cam bars. These cam bars accurately locate the filter in the housing and provide an even leak-free compression of the sealing gasket. The cam bar mechanism incorporates a positive-locking mechanism to prevent the access door from being closed unless the filter is both correctly positioned and sealed.

The housings are manufactured with a welded spigot for the attachment of safe-change bags as standard. This allows the filters to be changed without risking the contamination of maintenance staff or the surrounding external environment.

Nanoclass Safe Change Housings are fitted with tapping points on both the inlet and outlet for testing the differential pressure across the filter.

All header flanges are pre-drilled, ready for connection into duct-work systems.

To allow the filters to be changed while the unit is in operation, system dampers can be installed across the air inlet and outlet ducts to isolate the system. Alternatively, individual cell-isolating dampers can be fitted to isolate each filter housing.



PROBLEM SOLVING DESIGNS

Due to the modular flexibility of Nanoclass Safe Change Housing Systems and our considerable experience in the design of critical air handling installations, the system can be adapted to meet a wide range of application problems.

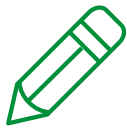
For example, we have previously developed a space-saving version for customers in the nuclear industry where space can be at a premium. Please contact us to discuss any problems you may be facing with your filtration system.

Nanoclass Safe Change Housing Systems

System selection

MAKING YOUR CHOICE

Each individual application is unique. So, here's a few parameters that you should consider when it comes to selecting your filter containment system.



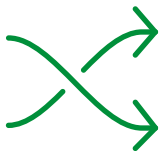
Filter housing design and type, including the number of sections required to handle the air volume



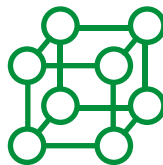
Arrangement of prefilter and final filter housings



Position of the air inlet and outlet flanges as viewed from the filter change side



Direction of the air flow through the system



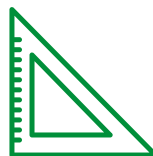
Material of manufacture



Type of filters and their filtration efficiency



Desired nominal system pressure drop



Overall dimensions of the system(s), allowing adequate space for the replacement of the filters

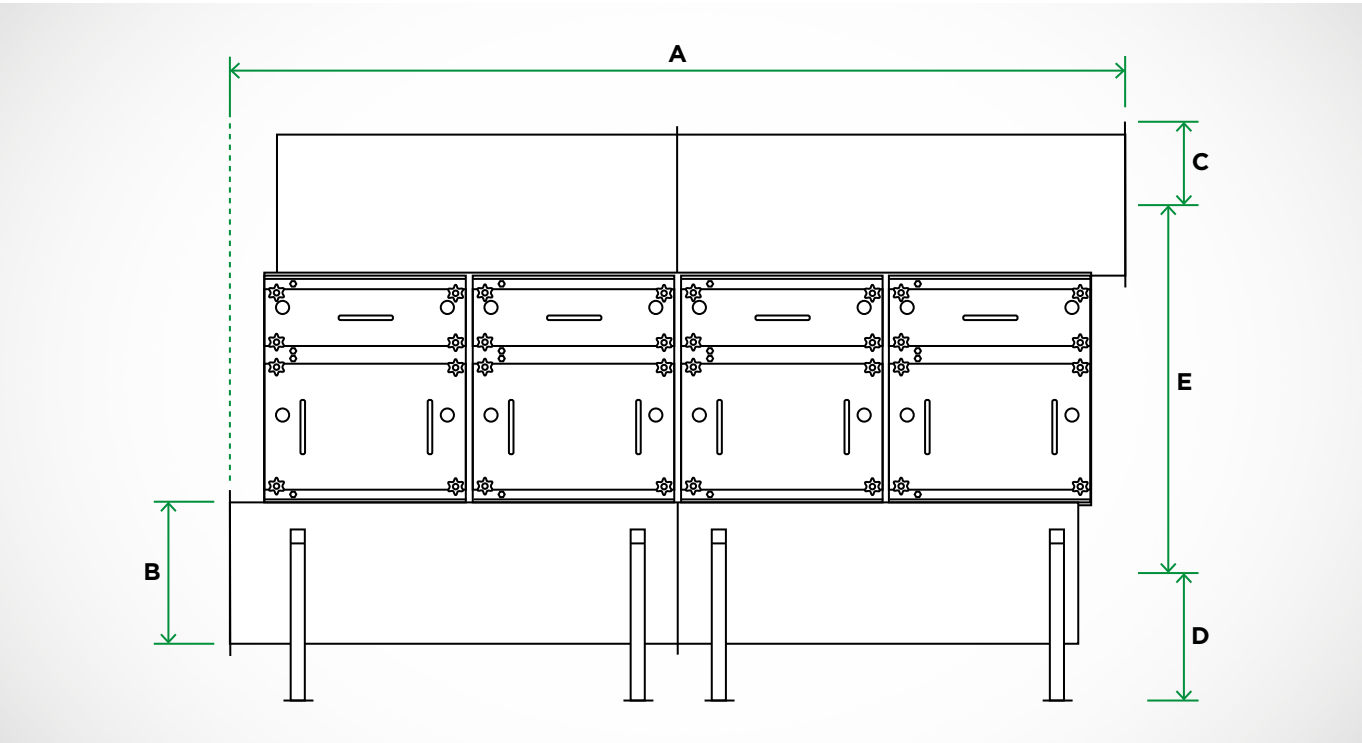


Other optional extras that may be required

Nanoclass Safe Change Housing Systems

Technical data

DIMENSIONS (mm)



No. of Housings	A	B	C	D	E		
					Final Filter Housing	Pre & Final Filter Housings	Pre & 2 Final Filter Housings
1	958	500	290	450	1035	1300	1835
2	1694	500	290	450	1035	1300	1835
3	2430	500	290	450	1035	1300	1835
4	3166	500	290	450	1035	1300	1835
5	3876	500	290	450	1035	1300	1835
6	4638	500	290	450	1035	1300	1835

Safechange systems are based on a modular design and alternatives are available on request
 All dimensions are in mm and are approximate

Nanoclass Safe Change Housing Systems

Technical data

VOLUME FLOW RATE

Each housing can handle up to 2,000 m³/h when fitted with standard capacity HEPA filters, or up to 4,000 m³/h with high capacity filters. Systems are normally manufactured with up to six sections, suitable for flow rates of up to 12,000 m³/h or 24,000 m³/h depending on the filters selected. Higher capacity systems can be supplied upon request.

SYSTEM PRESSURE DROP

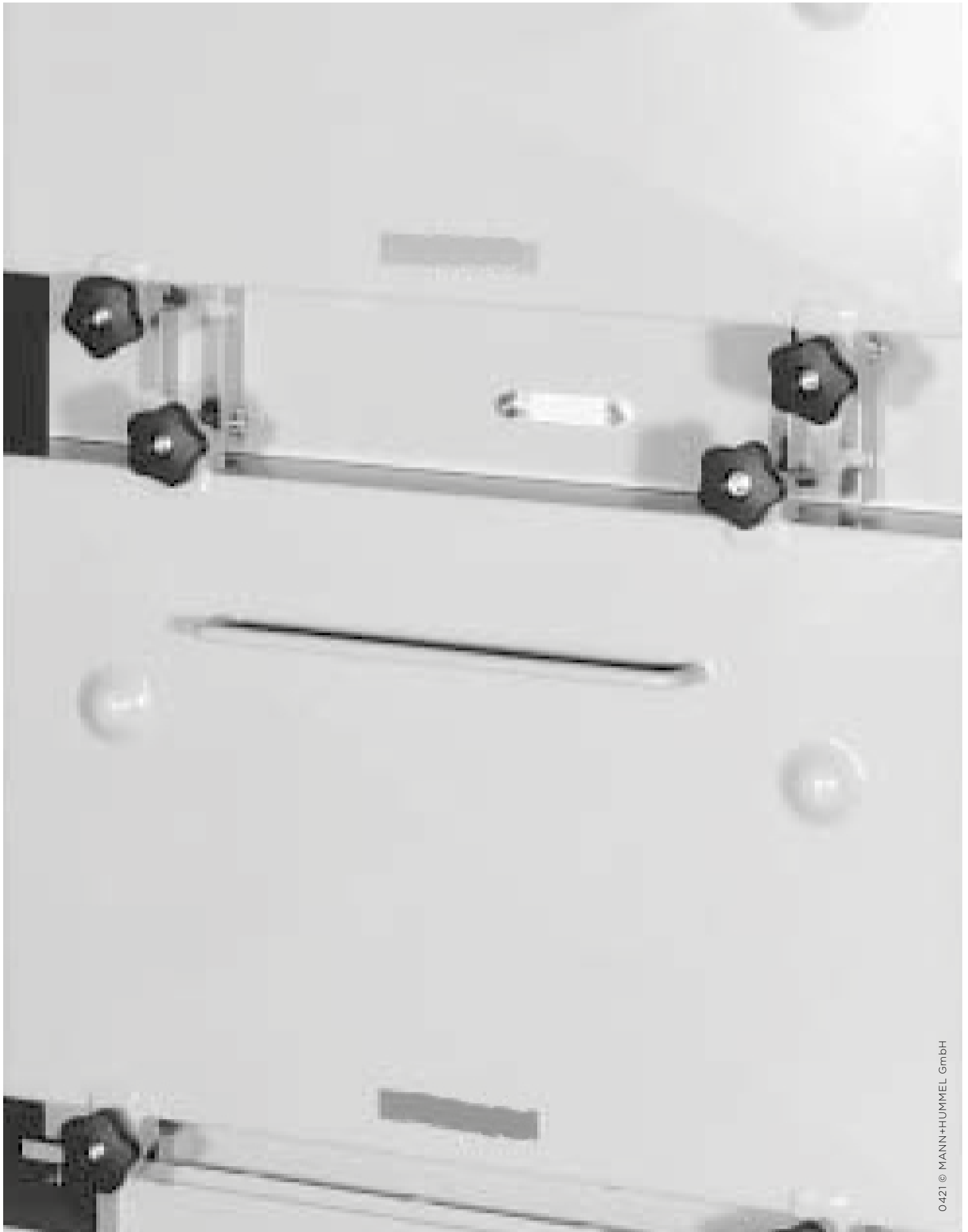
Typical initial differential pressure drops for Systems one to six sections in size including filters:

System Arrangement	H13		H14	
	Standard Filters 2,000 m ³ /h	High Capacity Filters 4,000 m ³ /h	Standard Filters 1,700 m ³ /h	High Capacity Filters 3,400 m ³ /h
Final Filter Housing Only	250 Pa	250 Pa	250 Pa	250 Pa
Pre and Final Filter Housings	280 Pa	360 Pa	280 Pa	360 Pa

Details above based on H13 and H14 efficiency.

Flow rate +/- 15%.

Other options available upon request – please contact sales.uk-by@mann-hummel.com



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