

## Medical Vacuum Filter Modules SPECIFICATION

### Compliant with NFPA, HTM and ISO Standards

Our Medical Vacuum (MV) Filter Modules are installed at the inlet of the vacuum pump to remove any liquid, solid or bacterial contamination which could damage the vacuum pump and release harmful exhaust into the downstream air. Our innovative, high efficiency medical vacuum filtration solutions fully comply to medical gas pipeline systems standards NFPA 99: 2018, HTM 02-01: 2006 and ISO 7396-1: 2016, providing you peace of mind that biological contaminants are not released into the atmosphere. The modules are built in duplex at a minimum. For NFPA 99: 2018 and ISO 7396-1: 2016, when one filter is in reserve (not in use) the rest of the filters in the modules will meet or exceed the design flow of the vacuum pumps at 100% peak calculated demand. 100% peak calculated demand is defined as having one pump in the system in reserve. For HTM 02-01: 2006, when half of the filters in the filter modules are in reserve, the other half of the filters in the module will meet or exceed the design flow of the vacuum pumps.

### Seismic Certification Comes Standard

Certified  $S_{DS}$  level  $\leq 2.5$ .

### Service Benefits

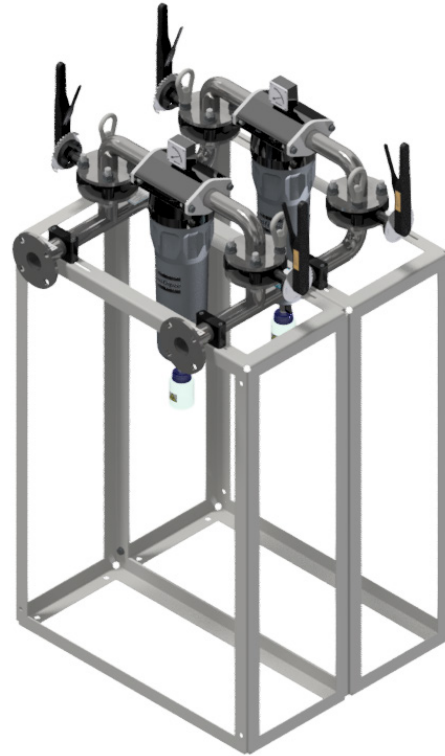
The height of the frames and design of the system allows for easy serviceability of the filters.

Manual butterfly valves before and after each filter allows a filter to be isolated during service without disrupting vacuum to the patient.

A differential pressure gauge is built into each filter housing and serves to help indicate a blockage across the filter.

### Safe Capturing of Biohazard Material

Drain flasks are connected to the bottom of each filter housing to collect liquid biohazard material. Flasks are manufactured from heavy duty reinforced glass and are suitable for sterilization up to a 273°F.



**Note:** MV80-2 shown for reference.



| Medical Vacuum Filter Module Selection Table |                        |  |  |  |
|--|------------------------|--|--|--|
| Model No.                                    | System Capacity (scfm) | Claw - Standard and O2 Assured   | Lubricated Rotary Vane   | Oil-Less Rotary Vane   |
| MV80-2                                       | 45                     | VHV02D; VHV03D; VHV04D; VHV05D;<br>VHS05D; VAS05D; VAV02D; VAV03D;<br>VAV04D; VAV05D         | VLT01D; VLT02D; VLS03D; VLT05D;<br>VLV01D; VLV02D; VLV03D; VLV05D;<br>VLS05D | VDV01S; VDV02S; VDV01D; VDV02D;<br>VDV03D; VDV05D; VDT01D; VDT02D;<br>VDT03D; VDT05T; VDS07D |
| MV160-2                                      | 90                     | VHS06D; VHS07D; VHS08D; VHS10D;<br>VHS05T; VAS05T; VAS06D; VAS07D                            | VLV07D; VLS07D; VLS10D; VLS05T   | VDS10D; VDS07T; VDS07Q   |
| MV160-3                                      | 180                    | VHS15D; VHS06T; VHS07T; VHS08T;<br>VHS10T; VHS05Q; VHS06Q; VAS05Q;<br>VAS06T; VAS06Q; VAS07T | VLS15D; VLS20D; VLS25D; VLS07T;<br>VLS10T; VLS05Q; VLS07Q                    | VDS10T; VDS10Q   |
| MV160-4                                      | 270                    | VHS15T; VHS07Q; VHS08Q; VHS10Q;<br>VAS07Q  | VLS15T; VLS10Q   |  |
| MV160-5                                      | 360                    |  | VLS20T; VLS25T; VLS15Q   |  |
| MV160-6                                      | 450                    | VHS15Q   | VLS20Q   |  |
| MV160-7                                      | 540                    | VHS15P   | VLS25Q   |  |
| MV160-8                                      | 630                    | VHS15H   |  |  |

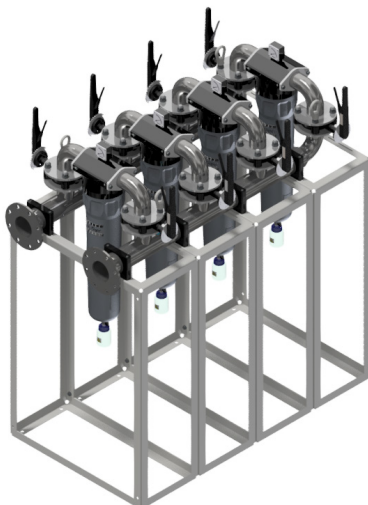
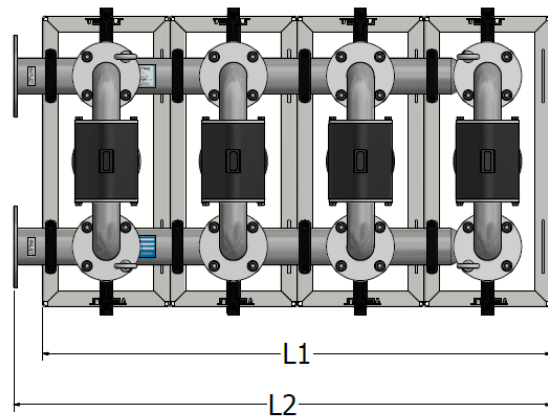
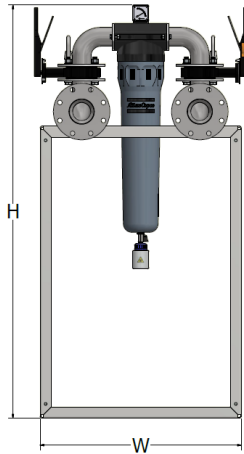
**Notes:**

1. All system capacities shown as NFPA system capacities (reserve vacuum pump on standby).
2. All vacuum filter capacities shown as a system with 1 filter isolated (not in use).
3. All vacuum filter capacities shown with filters efficient to 0.3µ and 99.97% HEPA or better. Filter capacity within +/- 10% tolerance of the vacuum pump capacity.
4. For "Expandable" vacuum systems, always size filter to the expansion capacity.
5. For vacuum systems, SPC and Modular configurations are the same capacity and require the same filter sizing.



**Medical Vacuum Filter Module Specifications**

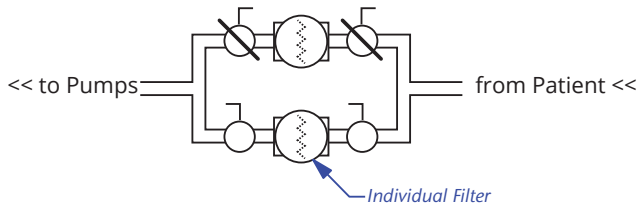
| Model No. | Description                                | Number of Filters | Height (in) | Length L1 (in) | Length L2 (in) | Width (in) | Weight (lbs) | Inlet Flange Connection (in) | Outlet Flange Connection (in) |
|-----------|--|-------------------|-------------|----------------|----------------|------------|--------------|------------------------------|-------------------------------|
| MV80-2    | VACUUM FILTER MV80-2 ASM 45 SCFM 2" CONN   | 2                 | 63.2        | 28.0           | 31.2           | 33.8       | 219          | 2                            | 2                             |
| MV160-2   | VACUUM FILTER MV160-2 ASM 90 SCFM 3" CONN  | 2                 | 65.2        | 28.0           | 31.2           | 33.8       | 273          | 3                            | 3                             |
| MV160-3   | VACUUM FILTER MV160-3 ASM 180 SCFM 3" CONN | 3                 | 65.2        | 42.0           | 45.2           | 33.8       | 402          | 3                            | 3                             |
| MV160-4   | VACUUM FILTER MV160-4 ASM 270 SCFM 4" CONN | 4                 | 65.7        | 56.0           | 59.2           | 33.8       | 536          | 4                            | 4                             |
| MV160-5   | VACUUM FILTER MV160-5 ASM 360 SCFM 4" CONN | 5                 | 65.7        | 70.0           | 73.2           | 33.8       | 670          | 4                            | 4                             |
| MV160-6   | VACUUM FILTER MV160-6 ASM 450 SCFM 4" CONN | 6                 | 65.7        | 84.0           | 87.2           | 33.8       | 787          | 4                            | 4                             |
| MV160-7   | VACUUM FILTER MV160-7 ASM 540 SCFM 4" CONN | 7                 | 65.7        | 98.0           | 101.2          | 33.8       | 957          | 4                            | 4                             |
| MV160-8   | VACUUM FILTER MV160-8 ASM 630 SCFM 4" CONN | 8                 | 65.7        | 112.0          | 115.2          | 33.8       | 1083         | 4                            | 4                             |



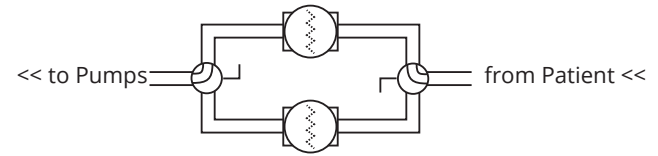
**Notes:** MV160-4 shown for reference.

**Typical Vacuum Filtration Arrangements**

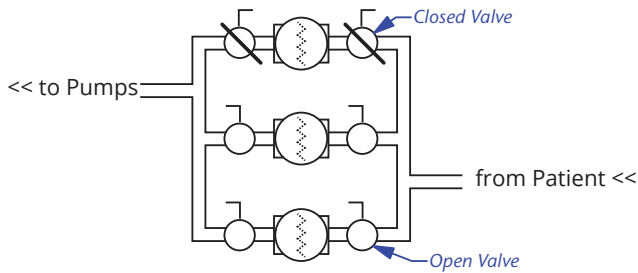
**Note:** Arrangements shown are illustrative. Other arrangements are possible.



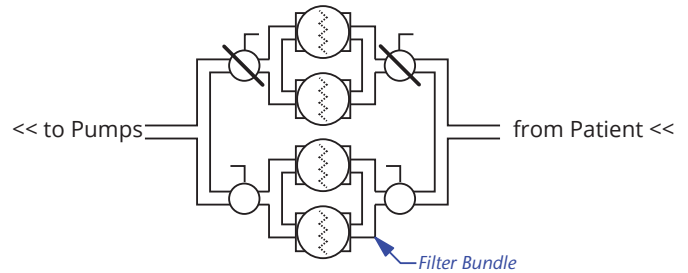
Vacuum filters in a duplex arrangement with four valves (1 filter = capacity)



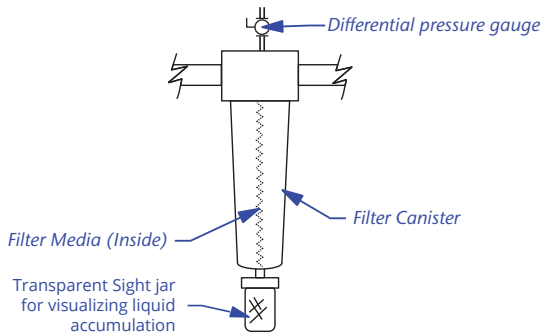
Vacuum filters in a duplex arrangement with two selector style valves



Vacuum filters in a triplex arrangement with six valves (2 filters = capacity)



Vacuum filter bundles in a duplex arrangement with four valves (1 filter bundle = capacity)



Vacuum filter, typical appearance

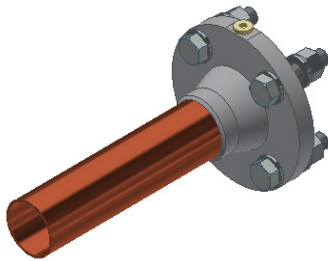
## INLET/OUTLET OPTIONS

### Flange X Metric Copper Stub Kit

| Item                          | Part number  |
|-------------------------------|--------------|
| 2" Flange X 54MM Copper Stub  | 0000 0621 76 |
| 3" Flange X 76MM Copper Stub  | 0000 0621 77 |
| 4" Flange X 108MM Copper Stub | 0000 0621 78 |

Each kit includes (2) flanged copper stubs, (2) gaskets and mounting hardware.

The flanged copper stub comes with a G ¼-19 (1/4 BSPP) threaded port to attach a pressure transducer. A threaded brass plug is included in this port. A Pressure transducer is not included.



**Note:** 0000 0621 76 shown for reference.

### Flange X Flex Hose Kit

| Item                           | Part number  |
|--------------------------------|--------------|
| 2" Flange X 2" Union Flex Hose | 0000 0621 82 |
| 3" Flange X 3" Union Flex Hose | 0000 0621 83 |
| 4" Flange X 4" Union Flex Hose | 0000 0621 84 |

Each kit includes (2) flanged flex hoses, (2) gaskets and mounting hardware.

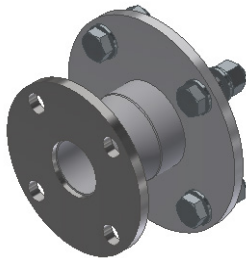


**Note:** 0000 0621 82 shown for reference.

### Flange X Flange Reducer Kit

| Item                          | Part number  |
|-------------------------------|--------------|
| 3" Flange X 2" Flange Reducer | 0000 0621 79 |
| 4" Flange X 3" Flange Reducer | 0000 0621 80 |

Each kit includes (2) flanged reducers, (2) gaskets and mounting hardware.

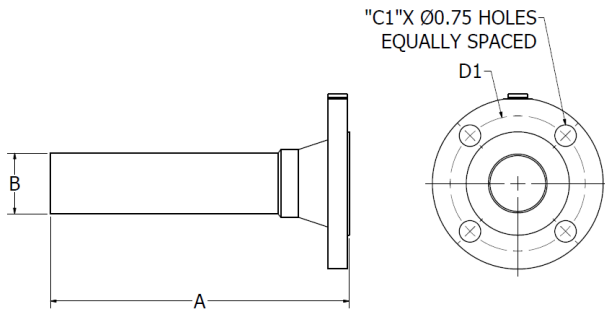


**Note:** 0000 0621 79 shown for reference

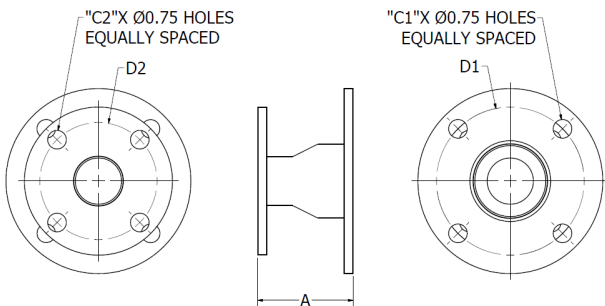
| Dimensions                     |              |        |        |    |    |         |         |
|--------------------------------|--------------|--------|--------|----|----|---------|---------|
| Item                           | Part Number  | A (in) | B (in) | C1 | C2 | D1 (in) | D2 (in) |
| 2" Flange X 54MM Copper Stub   | 0000 0621 76 | 10.50  | 54MM   | 4  | -  | 4.75    | -       |
| 3" Flange X 76MM Copper Stub   | 0000 0621 77 | 10.75  | 76MM   | 4  | -  | 6.00    | -       |
| 4" Flange X 108MM Copper Stub  | 0000 0621 78 | 10.95  | 108MM  | 8  | -  | 7.50    | -       |
| 3" Flange X 2" Flange Reducer  | 0000 0621 79 | 3.88   | -      | 4  | 4  | 6.00    | 4.75    |
| 4" Flange X 3" Flange Reducer  | 0000 0621 80 | 3.88   | -      | 8  | 4  | 7.50    | 6.00    |
| 2" Flange X 2" Union Flex Hose | 0000 0621 82 | 27.50  | 2      | 4  | -  | 4.75    | -       |
| 3" Flange X 3" Union Flex Hose | 0000 0621 83 | 24.00  | 3      | 4  | -  | 6.00    | -       |
| 4" Flange X 4" Union Flex Hose | 0000 0621 84 | 24.00  | 4      | 8  | -  | 7.50    | -       |

**Notes:** 1. Gaskets and hardware removed for clarity. Gasket thickness: 0.063".

### Flange X Metric Copper Stub Kit



### Flange X Flange Reducer Kit



### Flange X Flex Hose Kit

