

500 CFM - 32,000 CFM

SIDE ACCESS HOUSING (SAH) - Passive Cell System



MODEL NUMBER NOMENCLATURE

SAH12	Model	"SAH" Side Access Housing	
		12 = UB1224 cells	
		18 = UB1824 cells	
4000	CFM	4,000	
2	Stages	1, 2 or 3	
SS	Construction	SS	Stainless Steel, 304 ss, 14ga
XXX	Options (See List Below)		

OPTIONS

- + 316L SS, 14 ga
- + Other Material - Contact Unisorb;
- + INS (Insulated);
- + DW (Double Wall) ;
- + FD (Flanged Discharge Connection)

The model described above is a Passive Side Access Housing, 4,000 CFM, 2 stages UB1224 cells, stainless steel construction.

SYSTEM DESCRIPTION

The Unisorb Canada SAH System is a horizontal airflow filtration and purification cell system. It provides continuous medium efficiency air purification for contaminated air streams ranging in volume from 500 to 32,000 CFM.

The Unisorb Canada SAH System does not include a blower.

The standard SAH air purification system includes the following:

CONSTRUCTION

Standard casing construction is 14-gauge welded 304 stainless steel. An optional insulated or double walled casing is available.

PRE-FILTER SECTION

This section provides a pre-filter to protect the downstream system components. The 2" deep - 35% MERV 8 pre-filter is used for the retention of coarse particulates. This orientation allows the pre-filter to retain most of the large particulates protecting the higher efficiency down stream filter from being blinded by larger ambient particulates. The high efficiency inter filter removes fine particulate, protecting the chemical media bed section from being blinded by particulates.

A magnehelic differential pressure gauge is used to monitor the pressure drop across the particulate filter sections to determine when the changeout of filters is necessary. An optional photohelic differential pressure gauge/switch is used when a set of contacts is required to provide local monitoring and to send an alarm signal to a remote location to indicate when the filters need to be checked or changed. A side access door with quick release, snap acting type, positive pressure latches is used for quick, easy access to the filters.

CHEMICAL MEDIA SECTION

This section houses the Unisorb Canada chemical media(s) as selected to suit the specific contaminant control application. SAH units are designed for removable cell loading of chemical media. Door access is on the side of the unit through quick release, snap acting type, positive pressure latches for quick, easy access.

Multiple cell stages are provided when more than one type of chemical media is required to facilitate removal of all the different types of contaminants, which are present in any particular air space.

FINAL-FILTER SECTION

This section provides high efficiency particulate filtration to remove any fine dust, which may be released from the system during media changeout, or initial startup of the system. The high efficiency 6" deep - 95% MERV 14 final-filter is used for the retention of fine particulates to protect the downstream air space from such dust.

A magnehelic differential pressure gauge is used to locally monitor the pressure drop across the filter section so that it can be used to assist in determining when the changeout of filters are necessary. An optional photohelic differential pressure gauge/switch is used when a set of contacts is required to send an alarm signal to a remote location to indicate when the filters need to be checked or changed. A side access door with quick release, snap acting type, positive pressure latches are used for immediate access to the filters.

STANDARD CONSTRUCTION

- + 14-Gauge 304 Stainless Steel
- + 2" deep - 35% MERV 8 Pre-Filter
- + 6" - 95% MERV 14 Final-Filter
- + Stainless Steel Extrusion Filter Tracks
- + SS Plastic Constructed Cells
- + Side access doors with - ¼ Turn Twist Locks
- + Structural Steel Base (Epoxy Coated)
- + Doors Sealed With - Closed Cell Neoprene Gasketing
- + Magnehelic Gauges for Pre-Filter & Final-Filter Sections

OPTIONS

- 316L Stainless Steel Construction
- Other Materials - Contact Unisorb
- Double Walled Construction
- Media Cell Stages: 1, 2 or 3
- Photohelic Differential Pressure Gauges
- Other _____

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SAH12 SELECTION GUIDE

PFU Model No.	Air Flow Range (CFM)	Media Volume (FT3) *	Shipping Weight Empty (LBS)	Operating Weight (LBS)
SAH12-500-H-2	250-500	2	650	750
SAH12-1000-H-2	500-1000	4	670	870
SAH12-1500-H-2	750-1500	6	760	1060
SAH12-2000-H-2	1000-2000	8	850	1250
SAH12-3000-H-2	1500-3000	12	1030	1630
SAH12-4000-H-2	2000-4000	16	1305	2105
SAH12-5000-H-2	2500-5000	20	1450	2450
SAH12-6000-H-2	3000-6000	24	1525	2725
SAH12-8000-H-2	4000-8000	32	1910	3510
SAH12-12000-H-2	6000-12000	48	2350	4750
SAH12-16000-H-2	8000-16000	64	2820	6020

*Dimensions are approximate, based on 2 stage media cell selection

SAH18 SELECTION GUIDE

PFU Model No.	Air Flow Range (CFM)	Media Volume (FT3) *	Shipping Weight Empty (LBS)	Operating Weight (LBS)
SAH18-1000-H-2	500-1000	2	460	560
SAH18-2000-H-2	1000-2000	4	540	740
SAH18-3000-H-2	1500-3000	6	620	920
SAH18-4000-H-2	2000-4000	8	700	1100
SAH18-5000-H-2	2500-5000	10	780	1280
SAH18-6000-H-2	3000-6000	12	860	1460
SAH18-8000-H-2	4000-8000	16	1040	1840
SAH18-12000-H-2	6000-12000	24	1180	2380
SAH18-16000-H-2	8000-16000	32	1380	2980
SAH18-24000-H-2	12000-24000	48	1840	4240
SAH18-32000-H-2	16000-32000	64	2200	5400

*Dimensions are approximate, based on 2 stage media cell selection

SPECIFICATIONS

1.0 PURPOSE

- 1.1 A Unisorb Canada SAH air purification system is to be provided for this application. The system shall be a complete package designed for the removal of all organic and inorganic vapors or gases. The system shall ensure no bypass of contaminants and shall provide a medium removal efficiency of constituent contaminants.

2.0 DESIGN

- 2.1 The manufacturer shall have a minimum of 5 years of history in design, fabrication, and testing of similar air purification systems. The system shall provide a minimum airflow capacity as outlined in the specification parameters.
- 2.2 The air purification system shall have pre-filters, chemical media cells, and final-filters to suit the specific requirements.
- 2.3 The manufacturer shall guarantee a minimum life expectancy for the system according to the inlet and outlet contaminant levels for this application. Discharge contaminant levels shall not exceed defined parameters at any time before media expiry.
- 2.4 The manufacturer shall have the capability of providing in house laboratory analysis for testing media and air samples to assist in determining media bed consumption rates.
- 2.5 Where corrosion control is involved the equipment manufacturer shall provide corrosion monitoring assistance for the controlled space. In house support and analysis of corrosion coupons shall be provided by the equipment manufacturer.
- 2.6 The chemical media shall have the capability of being loaded and unloaded; this shall be accomplished through the removable cells.

3.0 CONSTRUCTION AND FABRICATION

- 3.1 The base frame shall be epoxy coated mild steel channel.
- 3.2 The unit casing shall be welded with similar metals. Any dissimilar metals shall be fastened together by mechanical fasteners.
- 3.3 To produce high quality low distortion welds, the GTAW (TIG) welding process shall be used.
- 3.4 All access doors and hatches shall use closed cell neoprene gasketing to prevent any air leakage.
- 3.5 All gasket material shall be ¼" thick by ¾" wide closed cell neoprene foam.
- 3.6 Service doors and all unit access shall be oriented to suit field conditions or requirements.
- 3.7 Hinges shall be of continuous piano type pin, and constructed of 300 series stainless steel. Doors shall be held closed with quick release, snap acting type, positive pressure latches.
- 3.8 Any preheating, cooling, or humidification to temper the incoming air stream shall be provided by the equipment manufacturer.

4.0 PRE-FILTER SECTION

- 4.1 The pre-filter section shall prevent particulates into the downstream sections of the air purification system.
- 4.2 The pre-filter section shall include a 35% MERV 8 roughing pre-filter, based on ASHRAE Standard 52.1, and shall carry Class 2 certification in accordance with UL Standard 900.
- 4.3 Filter face velocities and filter resistances shall not exceed the allowances for the project.
- 4.4 Any mist elimination and grease pre-filter systems shall be provided when required.
- 4.5 Extruded stainless steel filter tracks shall be used to allow easy changing of the filters, and to ensure air does not bypass the filters.
- 4.6 Access doors to the filters shall be with quick release, snap acting type, positive pressure latches.
- 4.7 The pre-filter section shall be monitored by a magnehelic differential pressure gauge or a photohelic pressure switch/gauge.

5.0 CHEMICAL MEDIA

- 5.1 The chemical media(s) shall be as selected for this application with minimum performance and physical characteristics as defined for the application. Media data sheets, current MSDS information and original samples are to be provided by the manufacturer.
- 5.2 The media cells, cell stages, and residence times shall meet or exceed the minimum requirements.
- 5.3 Media bed face velocities shall not exceed the specified rate for this application.
- 5.4 Media pressure losses shall not exceed the design limitations.

6.0 FINAL-FILTERS

- 6.1 The particulate final-filter section shall include a 6" - 95% MERV 14 high efficiency after filter based on ASHRAE Standard 52.1, and shall carry Class 2 certification in accordance with UL Standard 900.
- 6.2 Filter face velocities and filter resistances shall not exceed the allowances for the project.
- 6.3 Access doors to the filters shall use quick release; snap acting type, positive pressure latches.
- 6.4 The final-filter section shall monitor the pressure drop by a magnehelic differential pressure gauge or a photohelic pressure switch/gauge.

7.0 PACKAGING & HANDLING

- 7.1 The air purification system shall be capable of preventing any deflection during rigging, handling, transportation, operation, or servicing.
- 7.2 Lifting lugs and/or anchor bolt locations shall be provided for safe handling and operation of the system.

A INTRODUCTION

The Unisorb Canada cell type filter is a self-contained medium efficiency Air Purification Unit used to remove corrosive gaseous contaminants from controlled environments. This unit can be used upstream of the supply air to the MUA.

B SAFETY

1. Unisorb Canada media are non-toxic and non-flammable except for the activated carbons, which can be flammable under some conditions. These products are not harmful to the environment and usually require no special precautions when disposing of the reacted media.
2. Some dust may be generated during the cell loading operations; therefore, it is recommended that the service personnel wear dust mask, eye protection and gloves.
3. In case of dust contact with the eyes - flush thoroughly with water and seek treatment by a Physician.
4. Severe damage to the Unisorb Media will result from direct contact with water or precipitation.
5. Refer to the applicable "Safety Data Sheet" for additional information.

C INSTALLATION

1. Refer to the specifications of the unit for the type of chemical media used. If two different types of media are used, refer to the drawing for location.

D MAINTENANCE

1. The Unisorb Canada Media should be sampled and tested for the percent of media that has been reacted by the contaminants. Depending on the applications, it is recommended replacing the media when a level of 10 – 30% life remaining is reached.

E FILLING THE CELLS

1. Remove cells from the unit.
2. Remove cover plates.
3. Empty and dispose of reacted media.
4. If necessary, clean exterior surfaces of the cells. If steam or water is used, assure that the cells are dry before refilling.
5. Place media cell in a container to catch any excess media that may spill while filling the cell.
6. Remove the cell cover, place the loading hopper over the cell and overfill the media into the hopper.
7. Shake and bounce the cell for several minutes to ensure that the media settles fully into the cell.
8. Remove the loading hopper and level off excess media, to be flush to the top of the cell.
9. Replace the cell cover and install the cell into the system.
10. Ensure that all bypass protection gasketing is in place and in good condition.