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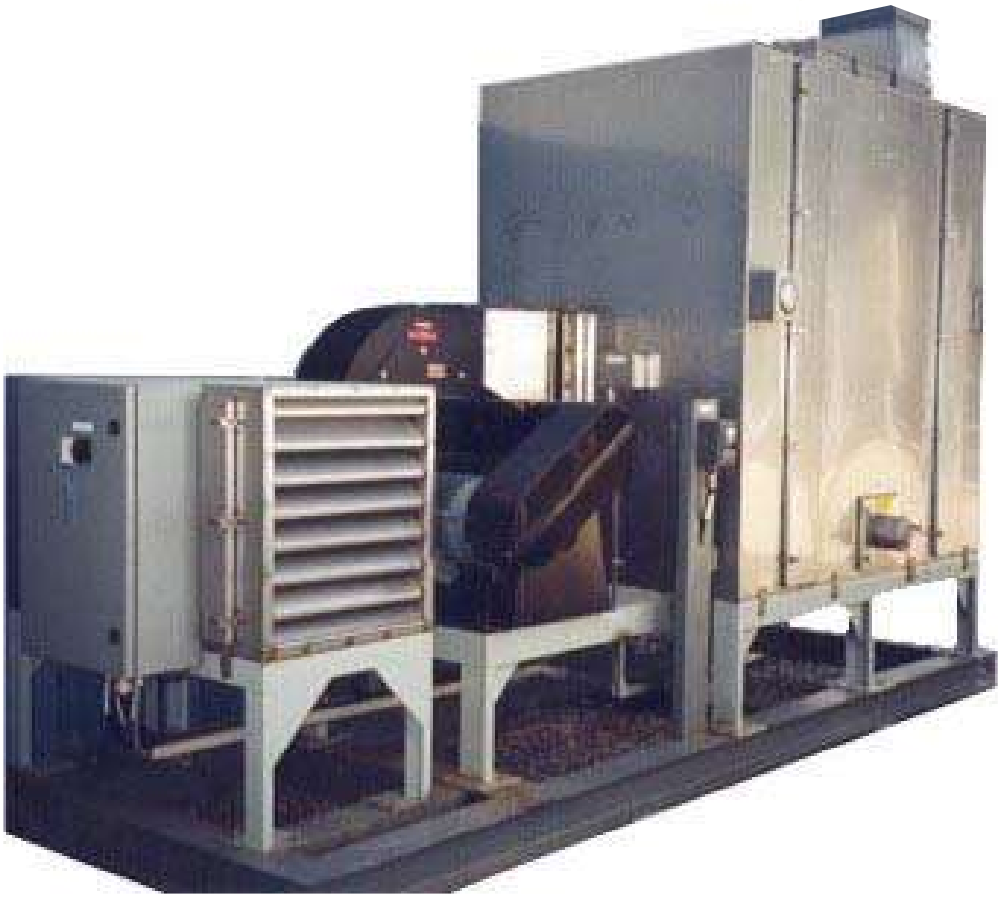
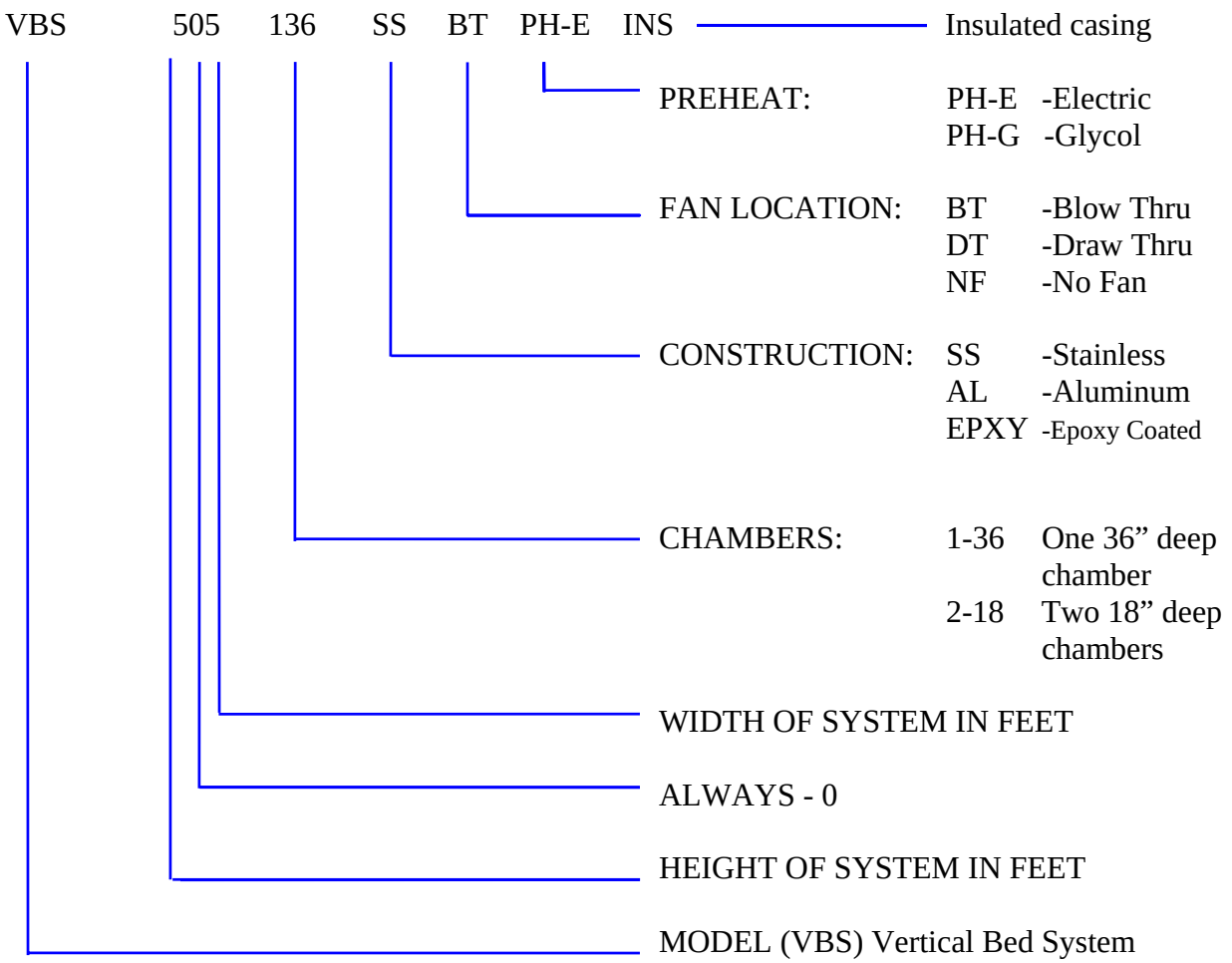
Packed Bed System (PBS)

- 200 - 8,000 CFM RANGE
- DEEP BED DESIGN
- HORIZONTAL CONFIGURATION
- MULTIPLE MEDIA BED OPTIONS
- CORROSION OR ODOR CONTROL
- BULK LOADING & UNLOADING
- ALL WELDED S.S. CONSTRUCTION



PureAir Filtration

MODEL NUMBER NOMENCLATURE



The model described above is a Vertical Bed System, 5’ high, 5’ wide, one 36” deep chamber, welded stainless steel construction, blow thru application, an electric preheat, with an insulated casing.

SYSTEM DESCRIPTION

The PureAir VBS SYSTEM is a complete self contained, vertical airflow package. This deep bed system provides continuous high efficiency air purification for contaminated air streams ranging in volume from 200 to 8,000 CFM.

The PureAir VBS SYSTEMS come in either BLOWTHRU or DRAWTHRU configurations. Blowthru configurations are generally used for corrosion control applications. Drawthru configurations are generally used for odor control or environmental emission applications.

The standard VBS air purification system includes the following:

CONSTRUCTION

Standard casing construction is 14 gauge welded stainless steel. 11 gauge aluminum FRP and epoxy coated mild steel options are available to suit specific requirements. An optional insulated casing is available when required for heat loss or condensation purposes.

PREFILTER SECTION

This section provides a prefilter to protect the downstream system components. The 2" - 40% prefilter is used for the retention of particulates, 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 also 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 quick, easy access to the filters.

CHEMICAL MEDIA SECTION

This section houses the PureAir chemical media as selected to suit the specific contaminant control application. VBS units are designed for bulk loading of chemical media. Hatch access is on the top of the unit through quick release, snap acting type, positive pressure latches for immediate access. Gravity unloading is normally accomplished through the media section door on the side of the unit. Vacuum unloader fittings are available for these doors to assist in fast efficient media removal without operator contact when required.

Media and/or air sample ports are provided on each system to assist in retrieving media or air samples for analysis.

Optional media bed monitors are installed in this section when required to assist in monitoring and tracking the rate of progression of H_2S contaminants through the chemical media bed. This option is useful for the prediction of H_2S contaminant breakthrough for such systems.

Gravity hopper unloading with a dump valve is available when required. In such cases the system is provided with it's own stand to allow access under the hopper.

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" - 95% final filter is used for the retention of fine particulates to protect the downstream air space.

Extruded aluminum filter tracks with positive air seals are used to prevent air from bypassing around the filters.

A magnehelic differential pressure gauge is used to monitor the pressure drop across the filter section 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 also 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 quick, easy access to the filters.

FINAL FILTER SECTION cont'd

A magnehelic differential pressure gauge is used to monitor the pressure drop across the filter section 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 also 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 quick, easy access to the filters.

BLOWER SECTION

This section contains the blower, motor, and belt drive components to move the appropriate quantity of air through the system. The blower system is designed to overcome the static pressure losses involved with the air purification systems, and the external loses. The components are selected to provide reliability for continuous 24 hour, 365 days per year operation in a contaminated environment.

Corrosion resistant pressure blowers are used for most applications. Radial or backward inclined bladed centrifugal blowers are selected for each unique application to ensure an operating point which will allow flexibility for field adjustments should the operating parameters change. Scroll drains, belt guards, and shaft guards are standard on all systems. The blower is typically isolated from the remainder of the system for vibration, and acoustic purposes.

Where spark proof or special corrosion resistant construction is required they will be provided.

Standard motors are TEFC. Special explosion proof construction features are available as required to suit field requirements.

The standard unit comes ready for field wiring connections to the electrical box on the motor. Starters, disconnects, controls, and panel lights are all available as required.

STANDARD CONSTRUCTION:

- 14 Gauge Welded Stainless Steel
- 2" - 40% Pre Filter, 6" - 95% Final Filter
- Aluminum Extrusion Filter Tracks
- Structural Steel Base (Epoxy Coated)
- Doors Sealed With - Closed Cell Neoprene Gasketing
- Snap Acting Positive Pressure Latches
- Blower - TEFC Motor
- Mild Steel Epoxy Coated
- Single Media Bed
- Media Sample Port
- Magnehelic Gauges For Pre Filter & Final Filter Sections

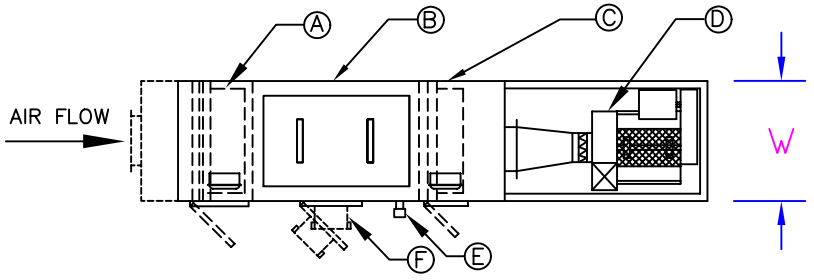
OPTIONS:

___ Draw Thru Design
___ Blow Thru Design
___ 11 Gauge Welded Aluminum Unit
___ 14 Gauge Welded Mildsteel Unit (Epoxy Coated)
___ FRP Construction
___ Insulated Casing
___ Intake Louver with Birdscreen
___ Intake Hood with Birdscreen
___ Mist Elimination
___ Grease Filter
___ Preheat Coil
___ Cooling
___ Humidification
___ Media Bed Vacuum Unloader
___ Media Bed Monitor
___ Gravity Hopper Unloader With DumpValve
___ Photohelic Differential Pressure Gauges
___ Control Panel, Starter, And Disconnect
___ Explosion Proof Motor
___ Spark Proof Blower Construction

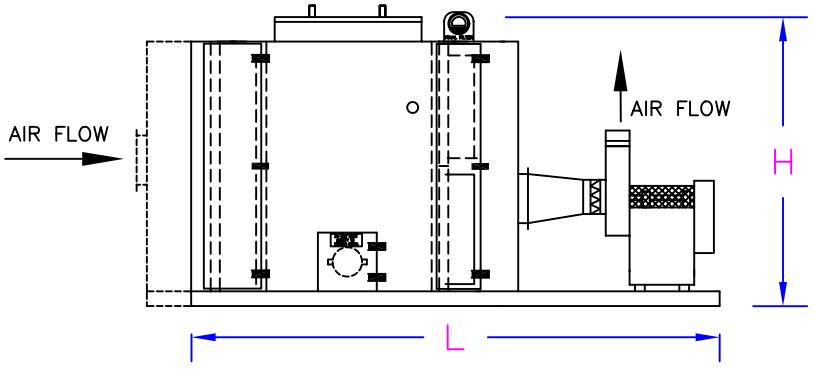
ALTERNATE CONFIGURATIONS AND OPTIONS AVAILABLE TO SUIT CLIENTS APPLICATION REQUIREMENTS.

						UNIT DIMENSIONS *				
SELECTION COLUMN	VBS MODEL NO.	AIR FLOW RANGE (CFM)	MOTOR RANGE (HP)	MEDIA VOLUME (FT3) *	EMPTY WEIGHT (LBS)	BLOW THRU L	DRAW THRU L	W	BLOW THRU H	DRAW THRU H
	202	180-400	1-1.5	12	585	53”	68”	24”	60”	74”
	302	260-600	1-1.5	18	655	65”	80”	24”	60”	74”
	402	340-800	1-1.5	24	730	78”	93”	24”	66”	80”
	403	510-1200	1.5-3	36	815	85”	101”	36”	66”	80”
	404	680-1600	2-5	48	905	87”	101”	48”	68”	82”
	504	840-2000	3-5	60	955	101”	119”	48”	74”	88”
	604	1000-2400	3-7.5	72	1080	115”	133”	48”	74”	88”
	605	1250-3000	5-7.5	90	1185	117”	135”	60”	74”	88”
	606	1500-3600	5-7.5	108	1295	111”	128”	72”	74”	88”
	608	2000-4800	5-10	144	1505	116”	135”	72”	80”	94”
	706	1700-4200	5-10	126	1395	128”	147”	72”	84”	98”
	708	2300-5600	7.5-15	168	1625	130”	148”	96”	84”	98”
	808	2700-6400	7.5-15	192	1760	146”	163”	96”	88”	102”

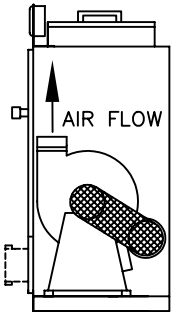
* DIMENSIONS ARE APPROXIMATE, BASED ON 3’ DEEP MEDIA BED SECTION



PLAN VIEW



ELEVATION VIEW



SIDE VIEW

PBS SCRUBBER STANDARD DRAW THRU CONFIGURATION

UNIT	UNISORB MODEL	CFM RANGE	L	W	H	UNIT	UNISORB MODEL	CFM RANGE	L	W	H
	PBS-202-136	180-400	110"	24"	40"		PBS-604-136	1000-2400	136"	48"	91"
	PBS-302-136	260-600	110"	24"	50"		PBS-605-136	1250-3000	138"	60"	91"
	PBS-402-136	340-800	114"	24"	64"		PBS-606-136	1500-3600	131"	72"	91"
	PBS-403-136	510-1200	125"	36"	64"		PBS-608-136	2000-4800	138"	96"	91"
	PBS-404-136	680-1600	129"	48"	64"		PBS-706-136	1700-4200	142"	72"	107"
	PBS-504-136	840-2000	134"	48"	79"		PBS-708-136	2300-5600	143"	96"	107"
							PBS-808-136	2700-6400	146"	96"	125"

NOTES

A: OPTIONAL PREFILTER SECTION: C/W 2"-40% & MAGNEHELIC GAUGE & SIDE ACCESS DOOR
B: MEDIA BED SECTION: C/W LOADING & UNLOADING DOORS
C: FINAL FILTER SECTION: C/W 6"-95% FILTER & MAGNEHELIC GUAGE & SIDE ACCESS DOOR
D: BLOWER SECTION: C/W INDUSTRIAL CENTRIFUGAL BLOWER, TEFC MOTOR & BELT DRIVE
E: MEDIA / AIR SAMPLE PORT
F: OPTIONAL VACUUM UNLOADER

STANDARD CONSTRUCTION

- 14 GA WELDED STAINLESS STEEL
- ALUMINUM EXTRUSION FILTER TRACKS
- STRUCTURAL STEEL EPOXY COATED BASE
- DOORS SEALED WITH CLOSED CELL NEOPRENE GASKETING -SNAP ACTING POSITIVE PRESSURE LATCHES
- LIFTING LUGS AND ANCHOR BOLTS AS REQUIRED

UNIT OPTIONS

- DRAW OR BLOW THRU DESIGN
- 11GA ALUM. OR 14GA MILDSTEEL EPOXY COATED CONST.
- INSULATED CASING
- MULTIPLE MEDIA CHAMBERS
- INTAKE LOUVER OR HOOD WITH BIRDSCREENS
- HEATING, COOLING, AND HUMIDIFICATION
- MEDIA BED VACUUM UNLOADER
- GRAVITY HOPPER UNLOADER WITH DUMP VALVE
- DISCHARGE PLENUMS
- PHOTOHELIC DIFFERENTIAL PRESSURE GUAGES
- CONTROL PANEL, STARTER, AND DISCONNECT
- EXPLOSION PROOF / SPARK PROOF CONSTRUCTION
- HOUSED BLOWER PLENUM ENCLOSURE

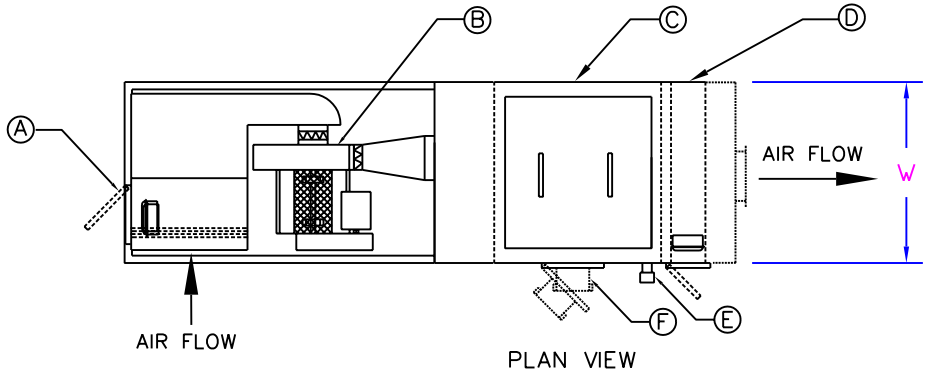
MISCELLANEOUS

- ALTERNATE CONFIGURATIONS AND OPTIONS AVAILABLE
- DIMENSIONS ARE APPROXIMATE

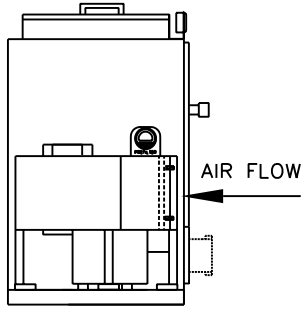
CLIENT:	XXXX
PROJECT:	XXXX
EQUIPMENT TAG:	PBS SCRUBBER STD. D.T. CONFIG.
AREA:	XXXX

Pure Air Filtration

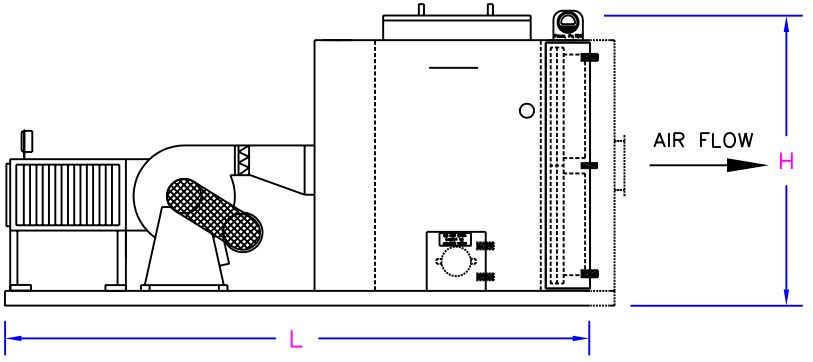
SCALE	N.T.S.	TITLE	PBS SCRUBBER STANDARD DRAWTHRU CONFIGURATION
DESIGNED BY	DDL	DATE	XXXX
DRAWN BY	DDL	DATE	XXXX
CUSTOMER	XXXX		
CHECKED BY	DRT	DATE	XXXX
SIZE	D	REFERENCE	X
DRAWING No.	1	REV	0
N.E. APPROVAL	NA	DATE	NA
Q.A. APPROVAL	NA	DATE	NA
EST WT	XX	1	SHTOF 1



PLAN VIEW



SIDE VIEW



ELEVATION VIEW

PBS SCRUBBER STANDARD BLOW THRU CONFIGURATION

UNIT	UNISORB MODEL	CFM RANGE	L	W	H	UNIT	UNISORB MODEL	CFM RANGE	L	W	H
	PBS-202-136	180-400	124"	24"	40"		PBS-604-136	1000-2400	146"	48"	91"
	PBS-302-136	260-600	124"	24"	50"		PBS-605-136	1250-3000	148"	60"	91"
	PBS-402-136	340-800	128"	24"	64"		PBS-606-136	1500-3600	142"	72"	91"
	PBS-403-136	510-1200	138"	36"	64"		PBS-608-136	2000-4800	147"	96"	91"
	PBS-404-136	680-1600	142"	48"	64"		PBS-706-136	1700-4200	151"	72"	107"
	PBS-504-136	840-2000	144"	48"	79"		PBS-708-136	2300-5600	153"	96"	107"
							PBS-808-136	2700-6400	157"	96"	125"

NOTES

A: OPTIONAL PREFILTER SECTION: C/W 2"-40% & MAGNEHELIC GAUGE & SIDE ACCESS DOOR
B: BLOWER SECTION: C/W INDUSTRIAL CENTRIFUGAL BLOWER, TEFC MOTOR & BELT DRIVE
C: MEDIA BED SECTION: C/W LOADING & UNLOADING DOORS
D: FINAL FILTER SECTION: C/W 6"-95% FILTER & MAGNEHELIC GUAGE & SIDE ACCESS DOOR
E: MEDIA / AIR SAMPLE PORT
F: OPTIONAL VACUUM UNLOADER

STANDARD CONSTRUCTION

- 14 GA WELDED STAINLESS STEEL
- ALUMINUM EXTRUSION FILTER TRACKS
- STRUCTURAL STEEL EPOXY COATED BASE
- DOORS SEALED WITH CLOSED CELL NEOPRENE GASKETING -SNAP ACTING POSITIVE PRESSURE LATCHES
- LIFTING LUGS AND ANCHOR BOLTS AS REQUIRED

UNIT OPTIONS

- DRAW OR BLOW THRU DESIGN
- 11GA ALUM. OR 14GA MILDSTEEL EPOXY COATED CONST.
- INSULATED CASING
- MULTIPLE MEDIA CHAMBERS
- INTAKE LOUVER OR HOOD WITH BIRDSCREEN
- HEATING, COOLING, AND HUMIDIFICATION
- MEDIA BED VACUUM UNLOADER
- GRAVITY HOPPER UNLOADER WITH DUMP VALVE
- DISCHARGE PLENUMS
- PHOTOHELIC DIFFERENTIAL PRESSURE GUAGES
- CONTROL PANEL, STARTER, AND DISCONNECT
- EXPLOSION PROOF / SPARK PROOF CONSTRUCTION
- HOUSED BLOWER PLENUM ENCLOSURE

MISCELLANEOUS

- ALTERNATE CONFIGURATIONS AND OPTIONS AVAILABLE
- DIMENSIONS ARE APPROXIMATE

CLIENT:	XXXX
PROJECT:	XXXX
EQUIPMENT TAG:	PBS SCRUBBER STD. B.T. CONFIG.
AREA:	XXXX

Pure Air Filtration

SCALE	N.T.S.	TITLE	PBS SCRUBBER STANDARD BLOWTHRU CONFIGURATION
DESIGNED BY	DDL	DATE	XXXX
DRAWN BY	DDL	DATE	XXXX
CUSTOMER	XXXX		
CHECKED BY	DRT	DATE	XXXX
SIZE	D	REFERENCE	X
P.E. APPROVAL	NA	DATE	NA
DRAWING No.	1	REV	0
Q.A. APPROVAL	NA	DATE	NA
CSY QT	XX	1	SHTOF 1

SPECIFICATIONS

1.0 PURPOSE

A PureAir VBS vertical deep bed 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 minimum 99.9% 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 prefilters, a chemical media bed, final filters, and a blower section to suit the specific requirements.

2.3 The system shall be configured either in a blow thru or draw thru configuration as suited to the application.

2.4 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.

2.5 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.

2.6 Where corrosion control is involved the equipment manufacturer shall provide corrosion monitoring assistance for the controlled space. In house production and analysis of corrosion coupons shall be provided by the equipment manufacturer.

2.7 The chemical media shall have the capability of being unloaded by gravity flow through a hinged unloading door or a vacuum unloader at the bottom side of the media section. Loading shall be accomplished through the removable hatch on top of the unit.

2.8 The media bed shall be designed to have a means of obtaining a media and air sample.

3.0 CONSTRUCTION AND FABRICATION

3.1 The base frame shall be structural steel epoxy coated 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 1/4” thick by 0.75” wide open 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.

4.0 INTAKE & PRE-FILTER SECTION

4.1 The intake section shall take into consideration any intake hoods, louvers, birdscreens, flanges, and prefilters to prevent the passage of rain, snow, or particulates into the downstream sections of the air purification system.

4.2 Any preheating, cooling, or humidification necessary to temper the incoming air stream shall be provided by the equipment manufacturer.

4.3 The prefilter section shall include a 40% roughing prefilter, based on ASHRAE Standard 52.1, and shall carry Class 2 certification in accordance with UL Standard 900.

4.4 Filter face velocities and filter resistances shall not exceed the allowances for the project.

4.5 Any mist elimination and grease prefilter systems shall be provided when required.

4.6 Extruded aluminum particulate filter tracks with positive air seals shall be used to allow easy changing of the filters, and to ensure air does not bypass the filters.

4.7 Access doors to the filters shall be with quick release, snap acting type, positive pressure latches.

4.8 The prefilter section shall be monitored by a magnehelic differential pressure guage or a photohelic pressure switch/guage.

5.0 CHEMICAL MEDIA

5.1 The chemical media shall be as selected for this application with minimum performance and physical characteristics as defined for this application. Media data sheets, current MSDS information and original samples are to be provided by the manufacturer.

5.2 The media bed depth, bed volume, and residence time shall meet or exceed the minimum requirements.

5.3 Media bed face velocity shall not exceed the specified rate for this application.

5.4 Media pressure losses shall not exceed the design limitations.

5.5 The chemical media shall have the capability of being unloaded by gravity flow through a hinged unloading door or a vacuum unloader at the bottom side of the media section. Loading shall be accomplished through the removable hatch on top of the unit.

5.6 The media bed shall be designed to have a means of obtaining a media and air sample.

6.0 FINAL FILTERS

6.1 The particulate final filter section shall include a 95% 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 Extruded aluminum particulate filter tracks with positive air seals shall be used to allow easy changing of the filters, and to ensure air does not bypass the filters.

6.4 Access doors to the filters shall use quick release, snap acting type, positive pressure latches.

6.5 The final filter section shall monitor the pressure drop by a magnehelic differential pressure guage or a photohelic pressure switch/guage.

7.0 BLOWER SECTION

7.1 Standard blower arrangement shall be configured for a draw thru or blow thru application. The blower shall be an industrial centrifugal type of suitable corrosion resistance construction. Bearings shall be based on L10 minimum life of 40,000 hours of average life of 200,000 hours. Adjustable motor base shall have a two point leveling and tension adjustment.

7.2 The blower assembly shall be installed utilizing isolation mounts for vibration purposes.

7.3 Sheaves shall be sized for a minimum of 150% of motor horsepower, fully machined, cast iron, keyed and securely attached to the shaft. The blower shall be driven using a heavy industrial adjustable V belt assembly which is oil and heat resistant and non-static conducting per RNA standards.

7.4 The blower section shall have accessibility for maintenance purposes, including balancing, grease nipples, tachometer (RPM) opening, and scroll drain.

7.5 Shaft and belt guards shall be provided for personnel safety.

7.6 Optional spark proof blower construction shall be provided for such rated environments.

7.7 The motor shall be totally enclosed fan cooled (T.E.F.C.) type rated for the intended duty cycle.

7.8 Optional explosion proof motor construction shall be provided for such rated environments.

7.9 Optional disconnect, starter, and controls shall be provided as required to suit the application.

7.10 Optional gravity hopper unloader with dump valve shall be provided upon request.

8.0 PACKAGING & HANDLING

8.1 The air purification system shall be capable of preventing any deflection during rigging, handling, transportation, operation, or servicing.

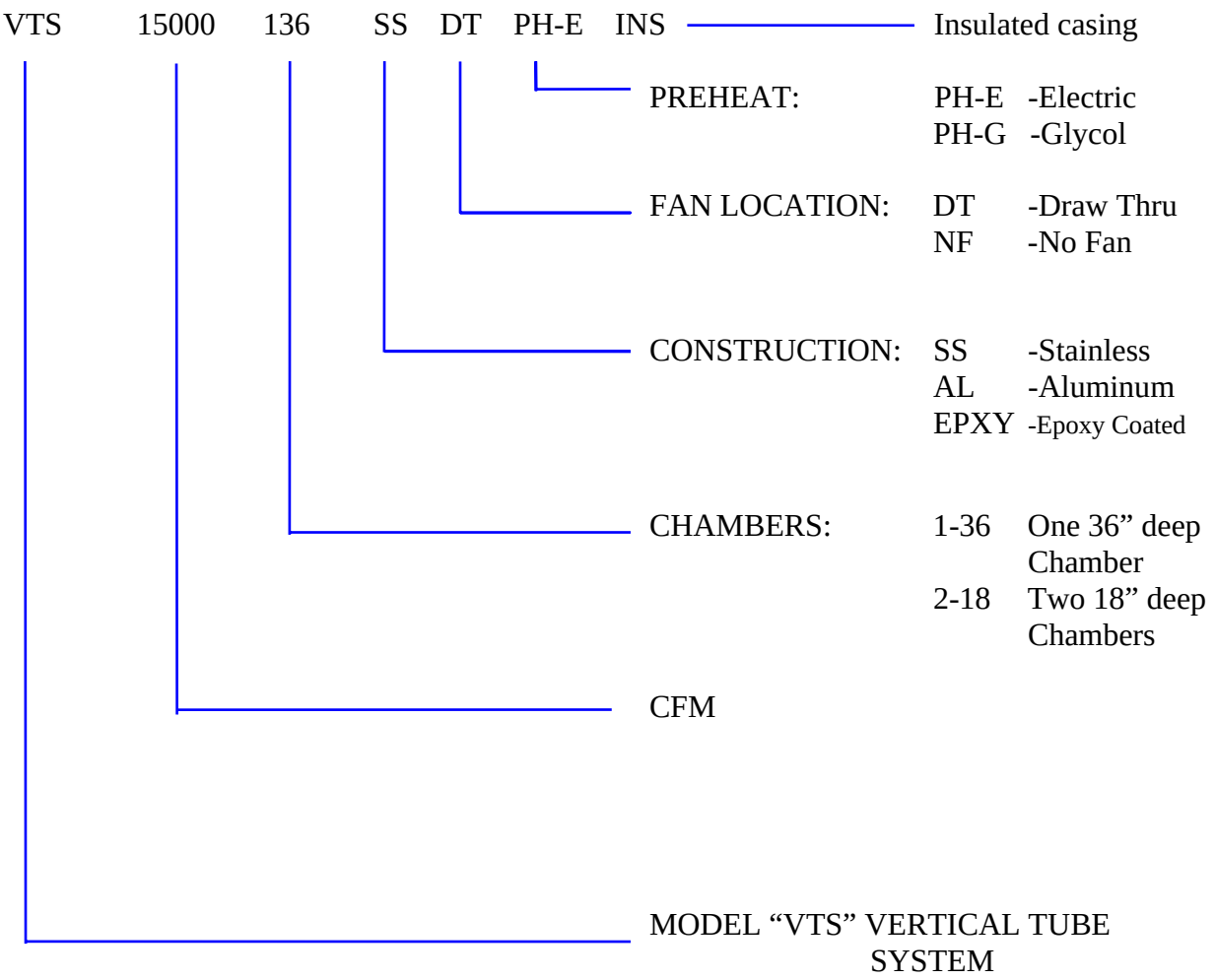
8.2 Lifting lugs and/or anchor bolt locations shall be provided for safe handling and operation of the system.

Vertical Tube System (VTS)

- 6,000 - 80,000 CFM RANGE
- COMPACT, DEEP BED DESIGN
- HORIZONTAL AIRFLOW
- MULTIPLE MEDIA BED OPTIONS
- CORROSION OR ODOR CONTROL
- BULK LOADING & UNLOADING
- ALL WELDED S.S. CONSTRUCTION

PureAir Filtration

MODEL NUMBER NOMENCLATURE



The model described above is a Vertical Tube System, 15,000 CFM, one 36” deep chamber, welded stainless steel construction, draw thru application, an electric preheat, with an insulated casing.

SYSTEM DESCRIPTION

The PureAir VTS SYSTEM is a complete self contained, horizontal airflow package. This vertical tube system provides continuous high efficiency air purification for contaminated air streams ranging in volume from 6,000 to 80,000 CFM.

The PureAir VTS SYSTEMS come in a DRAWTHRU configuration. Drawthru configurations are generally used for odor control or environmental emission applications.

The standard VTS air purification system includes the following:

CONSTRUCTION

Standard casing construction is 14 gauge welded stainless steel. 11 gauge aluminum and epoxy coated mild steel options are available to suit specific requirements.

PREFILTER SECTION

This section provides a prefilter to protect the downstream system components. The 2" - 40% prefilter is used for the retention of particulates, 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 also 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 quick, easy access to the filters.

CHEMICAL MEDIA SECTION

This section houses the PureAir chemical media(s) as selected to suit the specific contaminant control application. VTS units are designed for bulk loading of chemical media. Hatch(es) access is on the top of the unit through quick release, snap acting type, positive pressure latches for immediate access. Gravity unloading is normally accomplished through the media section door(s) on the side of the unit. Vacuum unloader fittings are available for these doors to assist in fast efficient media removal without operator contact when required.

Media and/or air sample ports are provided on each system to assist in retrieving media or air samples for analysis.

Multiple chambers 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.

Optional media bed monitors are installed in this section when required to assist in monitoring and tracking the rate of progression of H_2S contaminants through the chemical media bed. This option is useful for the prediction of H_2S contaminant breakthrough for such systems.

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" - 95% final filter is used for the retention of fine particulates to protect the downstream air space.

Extruded aluminum filter tracks with positive air seals are used to prevent air from bypassing around the filters.

A magnehelic differential pressure gauge is used to monitor the pressure drop across the filter section to determine when the changeout of filters are necessary. An optional photohelic differential pressure gauge/switch is used when a set of contacts is required to provide local monitoring and also 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 quick, easy access to the filters.

BLOWER SECTION

This section contains the blower, motor, and belt drive components to move the appropriate quantity of air through the system. The blower system is designed to overcome the static pressure losses involved with the air purification system and the external system loses. The components are selected to provide reliability for continuous 24 hour, 365 days per year operation in a contaminated environment.

Corrosion resistant pressure blowers are used for most applications. Radial or backward inclined bladed centrifugal blowers are selected for each unique application to ensure an operating point which will allow flexibility for field adjustments should the operating parameters change. Scroll drains, belt guards, and shaft guards are standard on all systems. The blower is typically isolated from the remainder of the system for vibration, and acoustic purposes.

Where spark proof or special corrosion resistant construction is required they will be provided.

Standard motors are TEFC. Special explosion proof construction features are available as required to suit field requirements.

The standard unit comes ready for field wiring connections to the electrical box on the motor. Starters, disconnects, controls, and panel lights are all available as required.

STANDARD CONSTRUCTION:

- 14 Gauge Welded Stainless Steel
- 2" - 40% Pre Filter, 6" - 95% Final Filter
- Aluminum Extrusion Filter Tracks
- Structural Steel Base (Epoxy Coated)
- Doors Sealed With - Closed Cell Neoprene Gasketing
- Snap Acting Positive Pressure Latches
- Blower - TEFC Motor
- Mild Steel Epoxy Coated
- Single Media Bed
- Media Sample Port
- Magnehelic Gauges For Pre Filter & Final Filter Sections
- Draw Thru Design

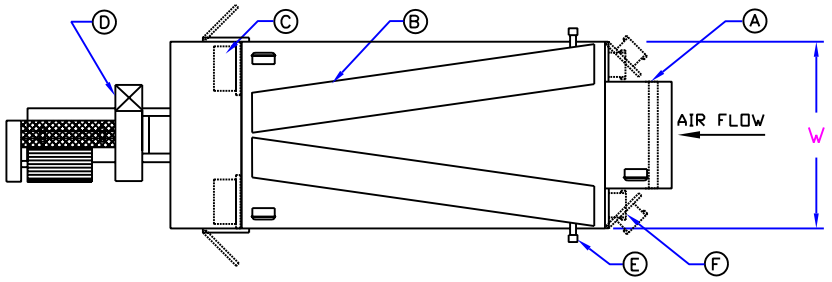
OPTIONS:

___ 11 Gauge Welded Aluminum Unit
___ Insulated Casing
___ Multiple Media Chambers
___ Intake Louver with Birdscreen
___ Intake Hood with Birdscreen
___ Mist Elimination
___ Grease Filter
___ Preheat Coil
___ Cooling
___ Humidification
___ Media Bed Monitor
___ Media Bed Vacuum Unloader
___ Gravity Hopper Unloader With Dump Valve
___ Photohelic Differential Pressure Gauges
___ Control Panel, Starter, And Disconnect
___ Explosion Proof Motor
___ Spark Proof Blower Construction

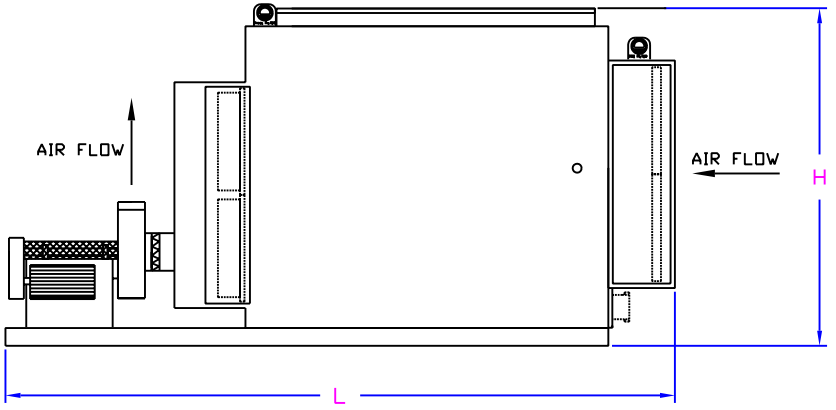
ALTERNATE CONFIGURATIONS AND OPTIONS AVAILABLE TO SUIT CLIENTS APPLICATION REQUIREMENTS.

						DIMENSIONS *		
SELECTION COLUMN	VTS MODEL NUMBER	AIR FLOW RANGE (CFM)	MOTOR RANGE (HP)	MEDIA VOLUME (FT3) *	EMPTY WEIGHT (LBS)	DRAW THRU L	W	H
	VTS-8000-136	6000-8000	15-20	375	3000	216”	72”	84”
	VTS-10000-136	8000-10000	20-30	500	3400	264”	78”	84”
	VTS-15000-136	10000-15000	25-40	625	4000	252”	96”	86”
	VTS-20000-136	15000-20000	40-50	950	5700	288”	84”	136”
	VTS-25000-136	20000-25000	50-60	1250	6400	360”	96”	136”
	VTS-50000-136	25000-50000	60-125	1500	9200	372”	156”	136”
	VTS-80000-136	50000-80000	125-200	2100	15700	456”	228”	136”

* DIMENSIONS ARE APPROXIMATE, BASED ON 36” DEEP MEDIA BED SECTION



PLAN VIEW



ELEVATION

VTS SCRUBBER STANDARD DRAW THRU CONFIGURATION

UNIT	UNISORB MODEL	CFM RANGE	L	W	H
	VTS-8000-136	6000-8000	216"	72"	84"
	VTS-10000-136	8000-10000	264"	78"	84"
	VTS-15000-136	10000-15000	252"	96"	86"

UNIT	UNISORB MODEL	CFM RANGE	L	W	H
	VTS-20000-136	15000-20000	288"	84"	136"
	VTS-25000-136	20000-25000	360"	96"	136"
	VTS-50000-136	25000-50000	372"	156"	136"
	VTS-80000-136	50000-80000	456"	228"	136"

NOTES

A: OPTIONAL PREFILTER SECTION: C/W 2"-40% & MAGNEHELIC GAUGE & SIDE ACCESS DOOR
B: MEDIA BED SECTION: C/W LOADING & UNLOADING DOORS
C: FINAL FILTER SECTION: C/W 6"-95% FILTER & MAGNEHELIC GUAGE & SIDE ACCESS DOOR
D: BLOWER SECTION: C/W INDUSTRIAL CENTRIFUGAL BLOWER, TEFC MOTOR & BELT DRIVE
E: MEDIA / AIR SAMPLE PORTS
F: OPTIONAL VACUUM UNLOADER

STANDARD CONSTRUCTION

- 14 GA WELDED STAINLESS STEEL
- ALUMINUM EXTRUSION FILTER TRACKS
- STRUCTURAL STEEL EPOXY COATED BASE
- DOORS SEALED WITH CLOSED CELL NEOPRENE GASKETING -SNAP ACTING POSITIVE PRESSURE LATCHES
- LIFTING LUGS AND ANCHOR BOLTS AS REQUIRED
- DRAW THRU DESIGN
- SINGLE MEDIA BED

UNIT OPTIONS

- 11GA ALUMINUM
- INSULATED CASING
- MULTIPLE MEDIA CHAMBERS
- INTAKE LOUVER OR HOOD WITH BIRDSCREENS
- HEATING, COOLING, AND HUMIDIFICATION
- MEDIA BED VACUUM UNLOADER
- GRAVITY HOPPER UNLOADER WITH DUMP VALVE
- PHOTOHELIC DIFFERENTIAL PRESSURE GUAGES
- CONTROL PANEL, STARTER, AND DISCONNECT
- EXPLOSION PROOF / SPARK PROOF CONSTRUCTION

MISCELLANEOUS

- ALTERNATE CONFIGURATIONS AND OPTIONS AVAILABLE
- DIMENSIONS ARE APPROXIMATE

CLIENT:	XXXX
PROJECT:	XXXX
EQUIPMENT TAG:	VTS SCRUBBER STD. D.T. CONFIG.
AREA:	XXXX

Pure Air Filtration

SCALE	N.T.S.	TITLE	VTS SCRUBBER STANDARD DRAW THRU CONFIGURATION
DESIGNED BY	DDL	DATE	XXXX
DRAWN BY	DDL	DATE	XXXX
CHECKED BY	DRT	DATE	XXXX
P.E. APPROVAL	NA	DATE	NA
Q.A. APPROVAL	NA	DATE	NA

CUSTOMER XXXX
SIZE D | REFERENCE X | DRAWING No. 1 | REV 0
EST WT XX | 1 | SHT OF 1

SPECIFICATIONS

1.0 PURPOSE

A PureAir VTS 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 minimum 99.9% 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 prefilters, chemical media bed(s), final filters, and a blower section to suit the specific requirements.

2.3 The system shall be configured in a draw thru configuration.

2.4 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.

2.5 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.

2.6 Where corrosion control is involved the equipment manufacturer shall provide corrosion monitoring assistance for the controlled space. In house production and analysis of corrosion coupons shall be provided by the equipment manufacturer.

2.7 The chemical media shall have the capability of being unloaded by gravity flow through a hinged unloading door or a vacuum unloader at the bottom side of each media section. Loading shall be accomplished through the removable hatch on top of the unit.

2.8 All media beds shall be designed to have a means of obtaining a media and air sample.

3.0 CONSTRUCTION AND FABRICATION

3.1 The base frame shall be structural steel epoxy coated 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 1/4” thick by 0.75” wide open 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.

4.0 INTAKE & PRE-FILTER SECTION

4.1 The intake section shall take into consideration any intake hoods, louvers, birdscreens, flanges, and prefilters to prevent the passage of rain, snow, or particulates into the downstream sections of the air purification system.

4.2 Any preheating, cooling, or humidification necessary to temper the incoming air stream shall be provided by the equipment manufacturer.

4.3 The two stage prefilter section shall include a 40% roughing prefilter, based on ASHRAE Standard 52.1, and shall carry Class 2 certification in accordance with UL Standard 900.

4.4 Filter face velocities and filter resistances shall not exceed the allowances for the project.

4.5 Any mist elimination and grease prefilter systems shall be provided when required.

4.6 Extruded aluminum particulate filter tracks with positive air seals shall be used to allow easy changing of the filters, and to ensure air does not bypass the filters.

4.7 Access doors to the filters shall be with quick release, snap acting type, positive pressure latches.

4.8 The prefilter 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 this application. Media data sheets, current MSDS information and original samples are to be provided by the manufacturer.

5.2 The media bed depth(s), bed volume(s), and residence time(s) 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.

5.5 The chemical media shall have the capability of being unloaded by gravity flow through a hinged unloading door or a vacuum unloader at the bottom side of each media section. Loading shall be accomplished through the removable hatch on top of the unit.

5.6 All media beds shall be designed to have a means of obtaining a media and air sample.

6.0 FINAL FILTERS

6.1 The particulate final filter section shall include a 95% 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 Extruded aluminum particulate filter tracks with positive air seals shall be used to allow easy changing of the filters, and to ensure air does not bypass the filters.

6.4 Access doors to the filters shall use quick release, snap acting type, positive pressure latches.

6.5 The final filter section shall monitor the pressure drop by a magnehelic differential pressure gauge or a photohelic pressure switch/gauge.

7.0 BLOWER SECTION

7.1 Standard blower arrangement shall be configured for a draw thru or blow thru application. The blower shall be an industrial centrifugal type of suitable corrosion resistance construction. Bearings shall be based on L10 minimum life of 40,000 hours of average life of 200,000 hours. Adjustable motor base shall have a two point leveling and tension adjustment.

7.2 The blower assembly shall be installed utilizing isolation mounts for vibration purposes.

7.3 Sheaves shall be sized for a minimum of 150% of motor horsepower, fully machined, cast iron, keyed and securely attached to the shaft. The blower shall be driven using a heavy industrial adjustable V belt assembly which is oil and heat resistant and non-static conducting per RNA standards.

7.4 The blower section shall have accessibility for maintenance purposes, including balancing, grease nipples, tachometer (RPM) opening, and scroll drain.

7.5 Shaft and belt guards shall be provided for safety.

7.6 Optional spark proof blower construction shall be provided for such rated environments.

7.7 The motor shall be totally enclosed fan cooled (T.E.F.C.) type rated for the intended duty cycle.

7.8 Optional explosion proof motor construction shall be provided for such rated environments.

7.9 Optional disconnect, starter, and controls shall be provided as required to suit the application.

8.0 PACKAGING & HANDLING

8.1 The air purification system shall be capable of preventing any deflection during rigging, handling, transportation, operation, or servicing.

8.2 Lifting lugs and/or anchor bolt locations shall be provided for safe handling and operation of the system.