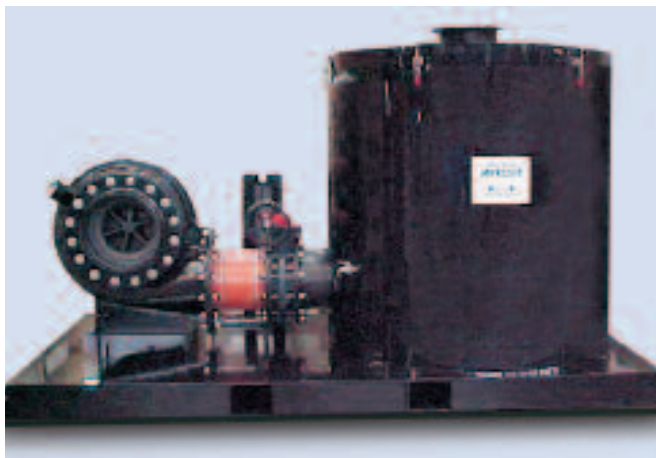


HIGH FLOW SERIES and VENTSORB® PE Odor Control Systems



CALGON CARBON CORPORATION



Skid-Mounted HF System

Description

Calgon Carbon Corporation's HIGH FLOW and VENTSORB® PE Series Odor Control Systems represent a perfect fit for odor control applications where space is at a premium and simplicity is a must. They have one of the smallest footprints of any odor control system, considerably smaller than most biofilter and wet scrubbing systems. Within this small footprint, Calgon Carbon Corporation can provide a total package complete with fan, controls, and all of the accessories required. All the owner needs to do is make a few utility connections and flip a switch.

Applications

Due to its relatively small size, the HIGH FLOW and VENTSORB® PE are ideally suited for municipal wastewater collection system facilities such as pump stations and lift stations, where space is usually at a premium. They are also well suited to point source applications within the wastewater treatment plant itself. When filled with Calgon Carbon Corporation's patented CENTAUR® HSV water regenerable catalytic activated carbon, the HIGH FLOW and VENTSORB® PE are highly effective against moderate levels (less than 15 ppm) of hydrogen sulfide (H₂S), as well as, odorous organic sulfur compounds such as methyl mercaptan and dimethyl disulfide. For the treatment of low H₂S and organic sulfur compounds, the HIGH FLOW or VENTSORB® PE can be filled with one of our other activated carbons, such as OVC coconut carbon. With higher levels of H₂S, please consider our MINI-PHOENIX® PLUS and PHOENIX® odor control systems, designed for the control of heavy hydrogen sulfide loadings.

For applications other than continuous operation at the design air flow rate, contact Calgon Carbon Corporation for review and recommendation.

Flexibility

Both the HIGH FLOW and VENTSORB® PE can be configured in a number of ways in order to solve an odor problem. There are three basic models to choose from:

- A simple, passive, stand-alone canister
- Skid-mounted system complete with fan and controls
- A top-mounted fan system



HF Top-Mounted Fan



Stand Alone HF Canister

Each model is available in the following sizes:

- 200 cfm (340 m³/hr)
- 400 cfm (680 m³/hr)
- 600 cfm (1,020 m³/hr)
- 1,000 cfm (1,700 m³/hr)
- 1,500 cfm (2,500 m³/hr) not available for the HF-T series
- 2,000 cfm (3,400 m³/hr) not available for the HF-T series
- 3,000 cfm (5,100 m³/hr) not available for the HF-T series

For air flows greater than 3,000 cfm, please contact your Technical Service Representative to discuss our Titan™ carbon adsorption system.

HF-C Stand Alone Canister

- HIGH FLOW canister, PPL/PE construction (with UV inhibitor)
- Stainless steel ground rod assembly
- Initial load of activated carbon
- Combined drain/water regeneration fitting with ball valve
- Water regeneration overflow fitting
- Lockable removable canister top or manway (HF2000/3000)
- Flanged inlet air nozzle (ANSI 150 flange, undrilled)
- Plain-end outlet air nozzle

HF-S Skid-Mounted System

- HIGH FLOW stand alone canister (with HF-C features above)
- Initial load of activated carbon
- FRP fan with 3 ph/230-460V/60 Hz TEFC motor
- Combination motor starter, NEMA 4X
- Transition duct, flex connector, and flow control water regeneration valve
- Pressure differential indicator
- Skid mount for all items above

HF-T Top-Mounted Fan System

- HIGH FLOW stand alone canister (with HF-C features above)
- Initial load of activated carbon
- Cast aluminum fan with 3 ph/230-460V/60 Hz TEFC motor
- Pressure differential indicator

HIGH FLOW SERIES and VENTSORB® PE Odor Control Systems

VENTSORB® PE-C Stand Alone Canister

- VENTSORB® PE canister, PE construction (with UV inhibitor)
- Stainless steel ground rod assembly
- Initial load of activated carbon
- Combined drain/water regeneration 3/4" FNPT fitting with plug
- Water regeneration overflow 3/4" FNPT fitting with plug
- Lockable removable canister top
- 4" FNPT Air Inlet/Outlet Connection

VENTSORB® PE-S Skid-Mounted System

- VENTSORB® PE stand alone canister (with VENTSORB® PE-C features above)
- Initial load of activated carbon
- Epoxy lined steel fan with 1 HP 1 ph/115-230V/60 Hz TEFC motor
- Transition duct, flex connector, and flow control/water regeneration valve
- Pressure differential indicator
- PE Skid mount for all items above.

VENTSORB® PE-T Top-Mounted Fan System

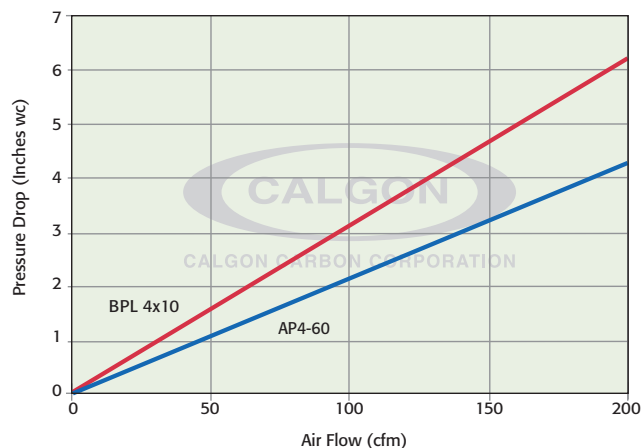
- VENTSORB® PE stand alone canister (with VENTSORB® PE-C features above)
- Initial load of activated carbon
- Cast aluminum fan with 1/2 HP 1 ph/115-230V/60 Hz TEFC motor
- Pressure differential indicator

Optional Features

Some of the optional features that can easily be added to the HIGH FLOW or VENTSORB® PE include:

- Explosion-proof electrical package for fan and controls
- Grease filter/mist eliminator
- Sound attenuation
- Rain cap with bird screen

VENTSORB® PE Pressure Drop



Pressure drop through a VENTSORB® PE unit is a function of the process air flow as shown in the graph. A VENTSORB® PE canister can handle up to 200 cfm at a pressure drop of less than 6 inches of water column. If a higher flow or lower pressure drop is needed, multiple canisters may be installed in parallel operation. The maximum canister pressure should not exceed 2 psig.



VENTSORB® PE Canister



CALGON CARBON CORPORATION

HIGH FLOW and VENTSORB® PE Design Data

Model	Air Flow Capacity Range cfm(m ³ /hr)	Carbon Capacity ft ³ (m ³)	Carbon Bed Depth feet (meters)	System Dimensions ¹ (LxWxH) feet (meters)	System Weight ² (Maximum) pounds (kg)	System Pressure Drop ³ inches WC (N/m ²)	Fan Horsepower ³ HP
HIGH FLOW Stand Alone Canisters							
HF-400 C	200-400 (340-680)	6.2 (0.17)	1.46 (0.44)	2.3 diameter x 4.25 (0.7 x 1.3)	1,200 (540)	9.0 (2,240)	n/a
HF-600 C	400-600 (680-1,020)	19.3 (0.54)	2.73 (0.83)	3.0 diameter x 5.5 (0.9 x 1.7)	2,700 (1,220)	12.0 (2,990)	n/a
HF-1000 C	600-1,000 (1,020-1,700)	32.2 (0.90)	2.56 (0.78)	4.0 diameter x 5.5 (1.3 x 1.7)	4,700 (2,130)	11.0 (2,740)	n/a
HF-1500 C	1,000-1,500 (1,700-2,550)	51.4 (1.43)	2.62 (0.79)	5.0 diameter x 5.5 (1.6 x 1.7)	7,400 (3,350)	10.0 (2,490)	n/a
HF-2000 C	1,500-2,000 (2,550-3,400)	64.7 (1.80)	2.29 (0.69)	6.0 diameter x 5.9 (1.8 x 1.8)	10,800 (4,900)	9.0 (2,240)	n/a
HF-3000 C	2,000-3,000 (3,400-5,100)	101.2 (2.82)	2.29 (0.69)	7.5 diameter x 5.5 (2.3 x 1.7)	16,800 (7,600)	11 (2,740)	n/a
HIGH FLOW Skid-Mounted Systems							
HF-400 S	200-400 (340-680)	6.2 (0.17)	1.46 (0.44)	6.0 x 4.0 x 5.7 (1.8 x 1.3 x 1.8)	2,300 (1,040)	10.0 (2,490)	2
HF-600 S	400-600 (680-1,020)	19.3 (0.54)	2.73 (0.83)	7.7 x 4.0 x 7.5 (2.4 x 1.3 x 2.3)	4,100 (1,860)	13.8 (3,440)	5
HF-1000 S	600-1,000 (1,020-1,700)	32.2 (0.90)	2.56 (0.78)	10.0 x 6.0 x 7.2 (3.1 x 1.9 x 2.2)	6,800 (3,080)	13 (3,240)	7.5
HF-1500 S	1,000-1,500 (1,700-2,550)	51.4 (1.43)	2.62 (0.79)	10.5 x 6.0 x 7.7 (3.3 x 1.9 x 2.4)	9,500 (4,300)	13 (3,240)	7.5
HF-2000 S	1,500-2,000 (2,550-3,400)	64.7 (1.80)	2.29 (0.69)	11.5 x 7.0 x 8.0 (3.5 x 2.1 x 2.4)	12,900 (5,860)	13 (3,240)	10
HF-3000 S	2,000-3,000 (3,400-5,100)	101.2 (2.82)	2.29 (0.69)	13.5 x 8.0 x 8.3 (4.2 x 2.5 x 2.6)	19,400 (8,820)	13 (3,240)	15
HIGH FLOW Top-Mounted Fan Systems							
HF-400 T	200-400 (340-680)	6.2 (0.17)	1.46 (0.44)	2.3 diameter x 5.75 (0.7 x 1.8)	1,320 (600)	11 (2,740)	1.5
HF-600 T	400-600 (680-1,020)	19.3 (0.54)	2.73 (0.83)	3.0 diameter x 7.4 (0.9 x 2.2)	2,860 (1,300)	13 (3,240)	3
HF-1000 T	600-1,000 (1,020-1,700)	32.2 (0.90)	2.56 (0.78)	4.0 diameter x 7.7 (1.3 x 2.4)	5,055 (2,300)	13 (3,240)	5
VENTSORB® PE							
VSPE-200-C	100-200 (170-340)	4.9 (0.14)	2.4 (0.73)	1.9 diameter x 3.0 (0.6 x 0.9)	950 (430)	6.0 (1,490)	n/a
VSPE-200-S	100-200 (170-340)	4.9 (0.14)	2.4 (0.73)	6.0 x 4.0 x 3.6 (1.8 x 1.3 x 1.1)	700 (320)	5.2 (1,300)	1
VSPE-200-T	100-200 (170-340)	4.9 (0.14)	2.4 (0.73)	1.9 diameter x 4.0 (0.6 x 1.2)	800 (360)	6.0 (1,490)	1/2

Notes:

¹ System dimensions are for standard systems and may vary based on options and fan selection. The diameter indicated for the top-mounted and stand-alone canisters is the vessel only and does not include the inlet flange and drain valves. The height for the stand-alone canister is to the top of the plain end outlet nozzle and to the top of the fan motor for the top-mounted fan systems.

² Maximum weight is canister filled with activated carbon and water during carbon water washing procedure.

³ System pressure drop includes pressure loss through vessel plus an additional 1-2" w.c. (250-500 N/m²) for customer external duct losses with a full load of dense pack 4x6 mesh activated carbon. The carbon bed pressure drop (and possibly fan motor horsepower) will vary based on the use of different size media. An additional 1" w.c. should be added with the use of a grease filter/mist eliminator.

HIGH FLOW SERIES and VENTSORB® PE Odor Control Systems



CALGON CARBON CORPORATION

Safety Considerations

Do not exceed the maximum air flow capacity of the system. Continuous process temperatures above 120° F are to be avoided.

High concentrations of Hydrogen Sulfide and VOC's could cause excessive heat build-up. Care must be exercised in the design of the treatment system for flammable gases or reactive vapors.

The use of a pressure safety relief, flame arrestor and/or backflow device is recommended for installations venting storage tanks.

HIGH FLOW and VENTSORB® PE units with Centaur® HSV carbon that are washed with water produce a dilute acid that must be handled appropriately.

Slight pressure may accumulate in a sealed VENTSORB® PE canister due to extreme changes in ambient temperature conditions. Use care when removing the plastic shipping plugs.

Activated carbon may cause an exothermic reaction in the presence of oxygen bearing compounds, such as peroxides, ketones, organic acids, aldehydes and also organic sulphur compounds. The introduction of flammable compounds into the unit while an exothermic reaction is occurring will ignite the gas stream causing fire and explosion. Flooding the unit with water will extinguish the flames but generate steam and pressure. USE CAUTION!

Heat of adsorption can lead to severe temperature excursions at high concentrations of Hydrogen Sulfide and organic compounds. Heating may be controlled by diluting the inlet air, by time weighting the inlet concentration to allow heat to dissipate, or by pre-wetting the carbon.

If you are unsure of the reaction of a compound on activated carbon or have other questions, please contact a Calgon Carbon Corporation Application Engineer or Sales Representative.

Safe Handling and Storage of Wet Carbon

Wet activated carbon preferentially removes oxygen from air. In closed or partially closed containers and vessels, oxygen depletion may reach hazardous levels. If workers are to enter a vessel containing carbon, appropriate sampling and work procedures for potentially low oxygen spaces should be followed, including all applicable Federal and State requirements.

Warranty

There are no expressed or implied warranties or any warranty of merchantability or fitness for a particular purpose associated with the sale of this product.



CALGON CARBON CORPORATION

Calgon Carbon Corporation
P.O. Box 717
Pittsburgh, PA USA 15230-0717
1-800-422-7266
Tel: 1-412-787-6700
Fx: 1-412-787-6713

Making Water and Air Safer and Cleaner

Chemviron Carbon
European Operations of
Calgon Carbon Corporation
Zoning Industriel C de Feluy
B-7181 Feluy, Belgium
Tel: + 32 (0) 64 51 18 11
Fx: + 32 (0) 64 54 15 91

Calgon Carbon Asia PTE LTD
9 Temasek Boulevard
#08-01A Suntec Tower Two
Singapore 038989
Tel: + 65 6 221 3500
Fx: + 65 6 221 3554

Your local representative