



100 cfm

PROTECT™ VW Range

1,000 cfm

## PROTECT™ VW

### Description

The PROTECT™ VW vapor phase carbon adsorber canisters are economical air or vapor treatment units that can be easily installed for service. PROTECT™ VW canisters contain all of the operating elements required for utilization of granular activated carbon in air or vapor treatment, including a flat carbon bed support across the entire bed cross sectional area and plenum area below this support for effective air introduction and distribution across the bed. The canisters are constructed of unlined carbon steel with a stainless steel screen and carbon steel bed support for use with activated carbon in air treatment.

PROTECT™ VW vapor phase carbon adsorber canisters are available in two convenient sizes that will contain 1,000 or 1,800 lbs. of granular activated carbon for treating air or vapor sources typically up to 1,000 cfm.

PROTECT™ VW vapor phase adsorbers can be provided with any of Calgon Carbon Corporation's wide variety of vapor phase activated carbon products that can be selected for a specific air or vapor treatment application.

### Features

PROTECT™ VW vapor phase carbon adsorber canisters offer several important features that make them an effective value driven option for many air or vapor phase treatment applications:

- Sturdy carbon steel construction.
- Capable of operating up to 3 psig, which will manage most vent or exhaust fan situations.
- Exterior painted with a durable urethane finish.
- Operating temperature up to 200° F.
- Top 16-inch diameter access port for activated carbon media fill and removal.
- Carbon bed support across the full canister cross sectional area, consisting of 20 mesh type 316 stainless steel screen placed on slotted steel plate for vapor distribution across the entire bed for maximum activated carbon utilization and low pressure drop.
- Top lifting lugs and bottom fork guides for portability.



### Carbon Exchange or Replacement

When the treated air or vapor exceeds the desired contaminant concentration, the granular activated carbon in the PROTECT™ VW canister should be replaced with fresh activated carbon. The canister is to be isolated from the process by either closing and locking the inlet and outlet valves, or physically disconnecting the canister from the inlet and outlet pipe or hose. The carbon exchange procedure can either take place where the canister is installed, or the disconnected canister can be moved to another location for this activity.

Contact Calgon Carbon Corporation for resupply of the carbon products for effective air or vapor treatment and for complete turnkey services, including removal and management of the spent carbon and refilling the canister with the fresh carbon.

**Specifications**

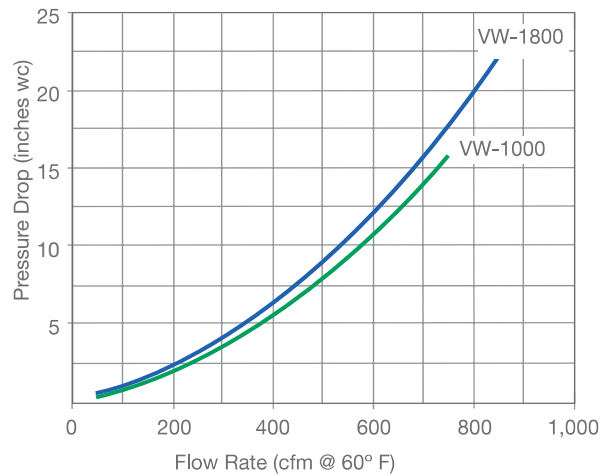
<b>Canister</b>	Sturdy 10-gauge carbon steel canister with 3/16"-thick steel flat bottom and top heads
<b>Pressure</b>	Recommended 3 psig maximum operating pressure (shop hydrotested in excess of recommended pressure)
<b>Vacuum</b>	Not rated for vacuum (not recommended to be operated under vacuum conditions)
<b>Temperature</b>	Recommended 200° F maximum
<b>Internal Coating</b>	None – unfinished steel
<b>External Coating</b>	Direct-to-Metal polyurethane
<b>Inlet (bottom side)</b>	4" FPT coupling (shipped with plug)
<b>Inlet Distributor</b>	Stainless steel screen bed support on slotted steel plate
<b>Vent/Sample Port</b>	3/4" FPT coupling
<b>Outlet (top head)</b>	4" FPT coupling (shipped with plug)
<b>Drain</b>	3/4" FPT coupling with 3/4" threaded plug
<b>Access Port</b>	16" diameter access port with threaded clamp ring and BUNA-N gasket
<b>Dimensions</b>	Refer to Model chart

**Pressure Drop Curve**

The approximate pressure drop through a PROTECT™ VW canister is a function of the process air flow as shown in the graph. If higher flows or lower pressure drop are needed, multiple canisters can be installed in parallel operation. The maximum pressure in the canister should not exceed 3 psig, regardless of the pressure drop across the unit.

**Pressure Drop Curve**

The PROTECT™ VW canister is designed for a variety of air or vapor applications at low-to-moderate air flows. Calgon Carbon Corporation offers a wide range of carbon adsorption systems and services for a range of air or vapor flow rates and carbon usages to meet specific applications.

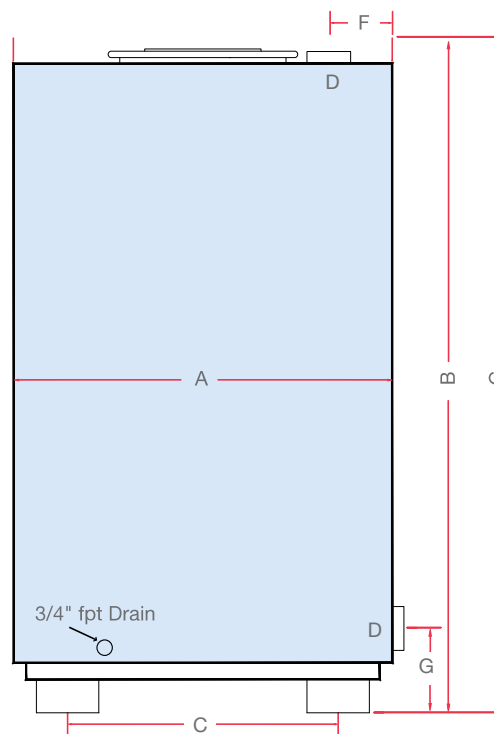


## Safety Considerations

While complying with the recommended installation instructions, plant operators should also be aware of these additional heat-related safety considerations:

- When in contact with activated carbon, some types of organic chemical compounds, such as those from the ketone and aldehyde families and some organic acids or organic sulfur compounds, may react on the carbon surface causing severe exotherms or temperature excursions. **If you are unaware or unsure of the reaction of an organic compound on activated carbon, appropriate tests should be performed before placing a PROTECT™ VW canister in service.**
- Heat of adsorption can lead to severe temperature excursions at high concentrations of organic compounds in the inlet air or vapor. Heating may be controlled by diluting the inlet air or adding water vapor as a heat sink, by time weighting the inlet concentration to allow heat to dissipate, or by pre-wetting the carbon.
- STI-X carbon can liberate heat by reacting chemically with oxygen. To prevent heat buildup within a canister, the carbon must not be confined without adequate airflow to

dissipate the heat. In situations where there is insufficient or disrupted air flow through the vessel, the chemical reaction can be prevented by sealing the inlet and outlet connections to the canister.



## Model Information

Model Number	VW 1000	VW 1800
GAC or media volume (cu ft)	33	60
GAC amount (lbs.)	1000	1800
Recommended maximum air rate (cfm)	750	850
Weight, empty (lbs.)	670	730
Approximate operating weight (lbs.)	1,670	2,530
Diameter (A) in.	45.5	48
Height to top outlet (B) in.	52.5	76.5
Overall height (C) to top of lifting legs (in.)	54.375	78.375
Inlet/Outlet (D) fpt; in.	4	4
Forklift guides (E) in.	36	38
Outlet to side wall (F) in.	7	7.75
Height to inlet (G) in.	6.375	6.375

**Safety Considerations**

For temperatures greater than 140° F, Calgon Carbon recommends that personnel protection be provided. The form of protection is determined per the end user’s specific plant practices and standards. Also note that at elevated temperatures, the paint may discolor.

**Safety Message**

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

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**Warranty Disclaimer**

Calgon Carbon Corporation warrants that the PROTECT™ VW will be free from defects in materials and workmanship for a period of 90 days following the date of purchase. In the event of a breach of this warranty, Calgon Carbon Corporation will, in its discretion, repair or replace any defective parts or the complete unit during the warranty period. This warranty does not apply to defects caused by (i) normal wear and tear, (ii) accident, disaster or event of force majeure, (iii) misuse, fault or negligence of or by Buyer, (iv) use of PROTECT™ VW in a manner for which it is not designed, (v) external causes such as, but not limited to, power failure or electrical power surges, or (vi) improper storage and handling of the PROTECT™ VW. EXCEPT AS EXPRESSLY PROVIDED IN THIS WARRANTY STATEMENT, CALGON CARBON CORPORATION DISCLAIMS ALL OTHER WARRANTIES, WHETHER STATUTORY, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. CALGON CARBON CORPORATION DOES NOT WARRANT THAT THE PROTECT™ VW ARE ERROR-FREE OR WILL ACCOMPLISH ANY PARTICULAR RESULT. ANY ADVICE OR ASSISTANCE FURNISHED BY CALGON CARBON CORPORATION IN RELATION TO THE PROTECT™ VW PROVIDED FOR HEREUNDER SHALL NOT GIVE RISE TO ANY WARRANTY OR GUARANTEE OF ANY KIND. THIS WARRANTY WILL TAKE PRECEDENCE OVER ANY AND ALL OTHER WARRANTIES UNLESS SPECIFICALLY DISCLAIMED AND REFERENCED BY CALGON CARBON CORPORATION.

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