

## CR MODULAR ADSORPTION SYSTEMS

### Granular Activated Carbon Adsorption Vessel



#### General Description

The CR Systems utilize CR2000 and CR5000 pressure vessels combined with PVC Pipe Racks to form a complete two vessel adsorption system. With a single connection to each the inlet and outlet, the pipe rack allows two CR vessels to operate in parallel or in series with either unit in the lead position. The piping allows one unit to be isolated for carbon exchange while maintaining operation through the other unit. When the carbon exchange is complete, the adsorber can be brought back online without interrupting service.

The pipe racks are available in two pipe sizes: 3" rack for use with two CR2000 vessels, and the 4" rack for use with two CR5000 vessels.

#### Features

**Ease of Installation:** The CR vessels are fitted with supports for ease of off loading using either a fork truck or crane. The CR Pipe Rack is shipped pre-assembled on a freestanding steel support frame. The entire system can be assembled in a few hours.

**Ready to Use:** The CR vessels are delivered pre-loaded with GAC to minimize start-up time and installation costs. The pipe rack is pre-assembled except for the influent pipe connection.

**High Operating Pressures:** The CR Systems can be operated up to 50 psig. Vessels are designed per ASME.

**Two Process Connections:** The CR System has two flanged process connections (process inlet and process outlet) that permits for the various operating modes without the need to switch piping.

#### Specifications

##### Carbon steel pressure vessel

Pressure rating 50 psig at 100°F (based on ASME design)

Manway on top head for internal access and carbon fill

Skid support / fork truck channels and lifting lugs

Internal epoxy lining

Splash plate inlet distributor

PVC pipe underdrain with PPL slotted water collection nozzles; nozzle count is one per square foot of cross sectional area

Exterior finish epoxy paint

Stainless steel carbon discharge piping fitted with a bronze ball valve

Typical carbon fill by weight per vessel:

- CR2000: 2,000 lbs.\*
- CR5000: 5,000 lbs.\*

Vessel Wetted Parts: Epoxy lining, GAC discharge pipe, PVC internal piping, PPL nozzles, and bronze, chrome-plated steel and TFE in the carbon discharge valve

##### Pipe Rack

Size

- CR2000: 3"
- CR5000: 4"

PVC schedule 40 pipe material

150 lbs. ANSI flanged inlet and outlet connections

PVC butterfly process valves

Pressure Indicators 2 1/2" face diameter – 0-60 psig

Graphite rupture disk, 50 psig

- CR2000: 1 1/2"
- CR5000: 2"

Pipe Rack Wetted Materials: PVC, viton, bronze, brass, Teflon, red rubber gaskets

\*Approximate weights. May be less depending on type and density of carbon.

**Pressure Relief:** The CR Pipe Racks are supplied with a rupture disk on the influent line to protect the vessels from over pressure.

**Pressure Indicators:** The CR Pipe Racks are supplied with pressure indicators to allow the operator to monitor the system pressure.

### Equipment and Systems

Visit our website at [www.calgoncarbon.com](http://www.calgoncarbon.com), or call 800-422-7266 to learn more about our complete range of products and services, and obtain local contact information.

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### Caution!

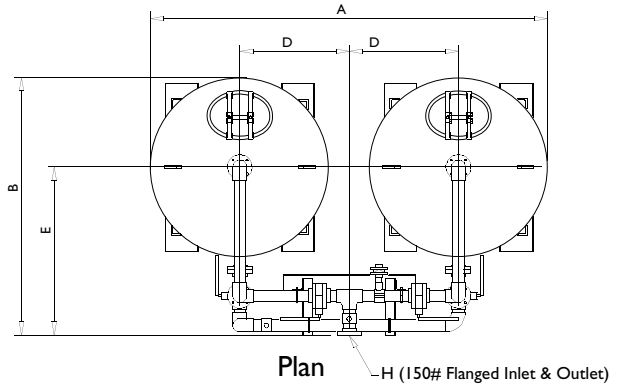
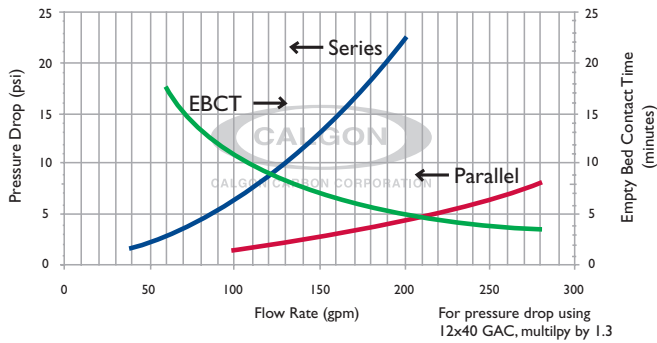
1. The pressure relief device must not be plugged or restricted in any manner.
2. Wet activated carbon removes oxygen from air. In closed or partially closed containers and vessels, oxygen depletion may reach hazardous levels. If workers are to enter a vessel containing activated carbon, appropriate sampling and work procedures for potentially low oxygen spaces should be followed including all applicable federal and state requirements.

### Site Services

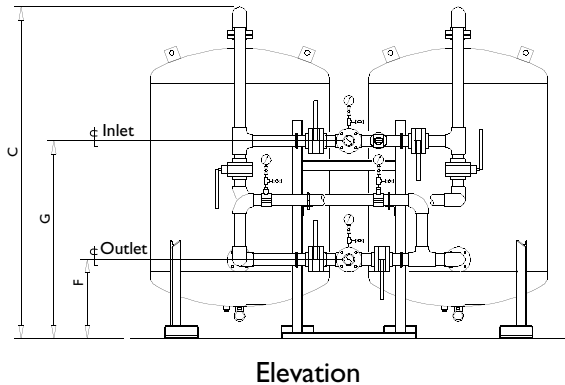
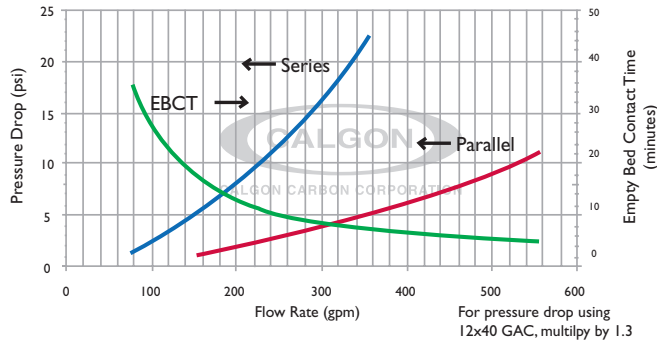
Calgon Carbon Corporation can provide a full range of services including:

- equipment selection
- assistance with vessel installation
- start-up assistance
- supply of virgin and reactivated carbon
- carbon exchange
- carbon disposal and reactivation

CR2000 System Pressure Drop  
8x30 GAC, 60°F, 3" Sch 40 PVC Pipe



CR5000 System Pressure Drop  
8x30 GAC, 60°F, 4" Sch 40 PVC Pipe



MODEL	DIMENSIONS (IN.)							SYSTEM WEIGHT (LB.)		
	A	B	C	D	E	F	G	H	SHIPPING*	OPERATING
CR2000	120	78	101	33	51	24	60	3	7,350	17,050
CR5000	168	107	105	45	68	23.5	65.5	4	14,600	35,075

\*VESSELS SHIPPED WITH GAC INSTALLED

Visit our website at [www.calgoncarbon.com](http://www.calgoncarbon.com)



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