

CYCLESORB® and CYCLESORB® HP Installation Instructions



Description

CYCLESORB® and CYCLESORB® HP are designed as down-flow adsorbers for flows up to 60 gpm, and contain up to 2,000 pounds of Granular Activated Carbon (GAC). The CYCLESORB® and CYCLESORB® HP are rated for 15 or 75 psig maximum pressure, respectively, and are protected against over-pressurization by a graphite rupture disk. All other wetted parts are type 316 stainless steel and EPDM gasket.

Installation Instructions

The CYCLESORB® and CYCLESORB® HP units can be moved via forklift, and are to be positioned on a flat level surface capable of supporting 7,400 lbs. to 8,365 lbs. operating weight, respectively.

Typical Preparation for Start-Up

Wetting & Deaerating Granular Activated Carbon (GAC)

1. Remove caps from the three 2" connections: process inlet (cap 1), process vent (cap 2), and process outlet (cap 3). Do not remove cap 4 or open valve 4 on GAC outlet exiting at the bottom of the cone.
2. Connect clean water source to process outlet (valve 2) and fill CYCLESORB® and CYCLESORB® HP from the bottom at a rate of up to 25 gpm until water overflows. This method prevents formation of air pockets and backflushes the unit to de-fine the carbon bed surface. Close process outlet (valve 2) and disconnect water hose. (If GAC has been pre-wetted, proceed to start-up). Continue water flow until the overflow becomes clear.
3. Allow system to soak for a minimum of 24 hours using water at ambient temperatures (up to 72 hours is preferred for complete wetting).
4. Drain through valve 2 and repeat step 2. CYCLESORB® and CYCLESORB® HP are now full of clean water and ready for start-up.

Typical Start-Up

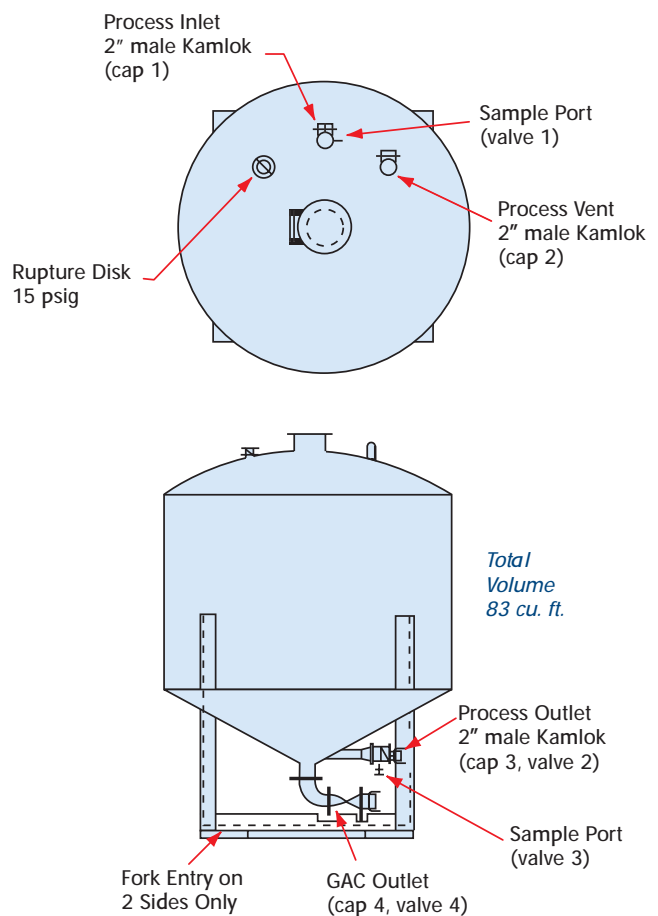
1. Connect process vent (cap 2) to a valved vent line and close valve or reattach cap to seal the vent.
2. Connect process inlet, in place of cap 1, and process outlet to valve 2.

Caution: If discharge line does not provide adequate backpressure, provide an anti-siphon loop, or throttle outlet valve. CYCLESORB® and CYCLESORB® HP **must remain full of water** for effective operation.

3. Initiate flow and open process outlet valve 2. Do not exceed 15 psig on the influent line for CYCLESORB® or 75 psig for CYCLESORB® HP or rupture disk may burst (recommended operating pressures are 85% of rupture disk ratings). Do not exceed temperature of 150°F. Do not use for vacuum service. Do not disable rupture disk.

Typical Operation

1. Periodically check influent pressure. Pressure build-up may indicate filtration of solids (pre-filter may be required). Low pressure may indicate drained bed.
2. Check process vent occasionally to ensure CYCLESORB® and CYCLESORB® HP are full of water and no gas is trapped in the unit. If process vent is capped, close outlet, interrupt source, and open influent sample port.
3. Sample ports are provided on inlet and outlet (valves 1 and 3).
4. If the unit is provided with a Carbon Acceptance Canister, follow instructions provided for use and spent carbon acceptability testing. A sample of representative spent carbon and completion of an Adsorbate Profile document is required to obtain Carbon Acceptance approval prior to the return of used carbon.



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Typical Shutdown

1. When the carbon is spent or treatment is complete (determined by effluent testing) stop influent, close outlet, open vent, and disconnect hoses.
2. Drain all water from CYCLESORB® and CYCLESORB® HP units using process outlet (valve 2). Do not open GAC outlet (valve 4). If the pH of the drained liquid is < 2 or > 12 , then rinsing or neutralization will be required prior to returning the spent carbon to Calgon Carbon. Contact your Technical Service Representative or Regional Applications Engineer to discuss the pre-treatment requirements.
3. After draining, close process outlet (valve 2) and replace caps on all outlets. The unit is now ready for shipment.

CAUTION: Pressure relief device must not be plugged-off or restricted due to potential for over-pressurization and catastrophic failure of the vessel.

Safety Message

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.



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