

Process Description

The all 316L 18 litre Mini-Cyclesorb is designed primarily to demonstrate the removal of compounds such as colour, taste, odour and pesticides from liquids. The vessel is ideally suited for pilot studies and low flow applications. A Chemviron Carbon technical brochure which describes pilot studies is available on request.

Fluid enters the Mini-Cyclesorb at the top and then flows downwards through the carbon. The fluid is then discharged from the vessel top via an internal dip pipe. Mini-Cyclesorbs can be used as mono units, in series or in parallel with other Mini-Cyclesorbs. Screwed connections allow a system to be configured to the arrangement required by operators.

Mini-Cyclesorbs can be delivered pre-filled with carbon so that they are ready for operation. When the carbon becomes saturated the unit is disconnected from the treatment stream and returned to Chemviron Carbon for emptying and refilling. If required sacks of carbon can be supplied to allow user filling and emptying of the units via a 5 inch top oval closure.

The return of spent carbon requires the Mini-Cyclesorb to be backflushed and drained of liquid.

Operating Conditions

The Mini-Cyclesorb has a specially designed underdrain that allows a theoretical maximum flow of up to 200 litres/h. However, operating flowrate is dictated by stream composition and treatment objective. Typical operating conditions are given below:

Application	Superficial Contact Time (min)	Typical Corresponding Flowrate(l/h)
Potable Water	6-20	180-50
Process Water	10-30	100-36
Industrial Purification	60-240	18-5

Prior to operation the Mini-Cyclesorb should be backflushed with treated water at about 100 l/h. Other operating parameters are:

Carbon Content (litres)	up to 18
Maximum Operating Pressure (barg)	5
Maximum Treatment Flowrate (l/h)	200
Maximum Temperature - (°C)	90

Typically the operating pressure drop over the vessel is <0.5 bar but is dependent on fluid flow, temperature, suspended solids build up, etc.

Mechanical Description

The drawing below shows the general arrangement of the Mini-Cyclesorb.

The vessel is 9 inch in diameter with a straight side of 16 inch and bottom and top dished heads. The vessel is certified to ASME Section VIII-95, Div. 1 at 75 psig and 100°C. Inside the vessel a stainless steel underdrain is located on the process outlet nozzle. All process contact materials are SF2 electropolished 316L stainless steel.

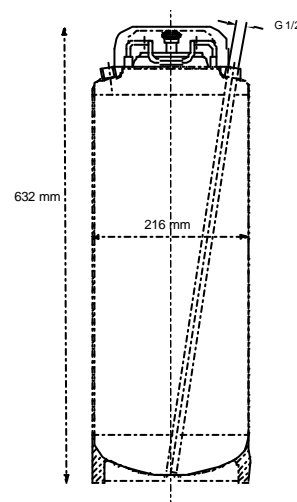
The vessel comes complete with a top 5 inch oval opening and 1/2 inch npt screwed process inlet and outlet connections. Two additional 1/4 inch connections are provided for instrumentation etc.

Site Requirements and Installation

The Mini-Cyclesorb can be moved by hand when empty or with a trolley when filled with carbon. The Mini-Cyclesorb overall dimensions and weights are given below.

Height (inch)	24
Footprint Size (inch)	9
Shipping Weight (empty) (kg)	5
Operating Weight (kg)	27
Vessel with drained Wet Carbon (kg)	21

Note that the drained weight assumes that the carbon has been fully drained and purged of free liquid.



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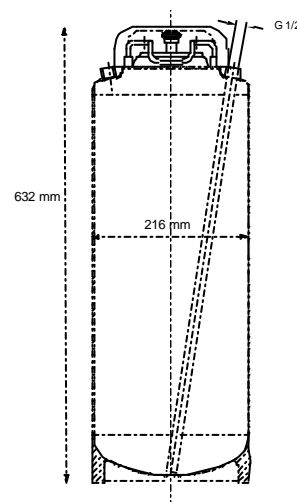
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