ROB-1 VAPOR PHASE ADSORBER

Applications

The ROB-1 mobile steel adsorber is engineered and pre-fabricated to remove contaminants and/or odor from air at flow rates up to 12,500 CFM (354 m^3/min) at minimal pressure drops and can house up to 13,000 lb (5897 kg) of carbon. It is internally lined with a high performance catalyzed epoxy resin and sample ports are provided to monitor carbon performance. The ROB-1 adsorber's design permits loading, transporting and placement by special truck without the use of a crane. Additionally, the adsorber is provided with lifting lugs so it can be lifted by crane when required. The ROB-1 adsorber can be utilized by industrial, municipal or commercial users in a variety of high flow air purification applications including but not limited to the following:

- Industrial and Municipal Odor Control
- Tank Air Vents
- Soil Air Vents
- Process Air

Installation, Startup and Operation

The ROB-1 vapor phase adsorber is delivered pre-filled with activated carbon and ready to install. It is self-supporting and should be placed in a level, accessible area. If it is desired not to use unloading equipment, the ROB-1 adsorber may be shipped via a special roll-off truck. Otherwise, it can be off loaded by crane. Installation merely requires hook-up of flexible hose to the adsorber's inlet and outlet plain end ducts.

During operation, contaminated air passes through the inlet ducts into the distribution chamber below the carbon bed, then up through the carbon and clean air exits through the outlet ducts at the top of the adsorber. Please consult the pressure drop chart in this bulletin to determine your operating parameters. Two or more adsorbers can be manifolded in parallel to handle higher flows.

Evoqua can provide a total service package that includes utilizing OSHA trained personnel providing on-site carbon changeouts, packaging and transportation of spent carbon for recycling at our reactivation facilities, where the contaminants are thermally destroyed. We provide instructions on sampling the spent carbon and completion of our spent carbon profile form. Spent carbon acceptance testing can be performed at our certified laboratory. When requested, a certificate of reactivation will be issued.

Benefits & Design Features

- Adaptable - Adsorber is charged with the carbon best suited for your application
- Dependable - Operates continuously with minimal maintenance
- Durable - Adsorber is heavy steel construction lined with a high performance epoxy resin for superior corrosion resistance and long life
- Efficient – Adsorber allows even air flow distribution and complete carbon bed use with minimal pressure drop
- Versatile - Easily configured as single or multiple unit systems to handle higher flows

SCHEDULE OF FITTINGS

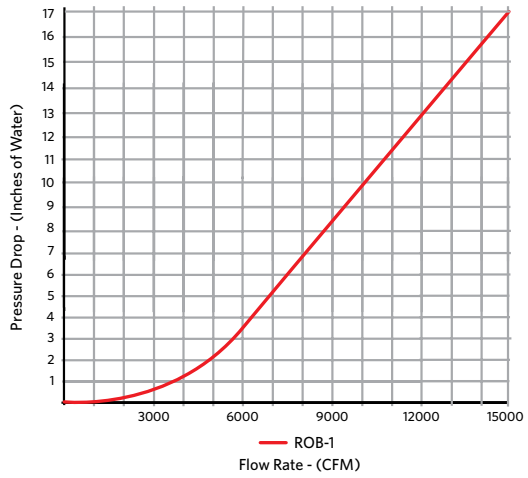
Symbol	Qty.	Size Inches (mm)	Type	Description
A	3	20 (508)	Hose End	Vapor Inlet
B	4	20 (508)	Hose End	Vapor Outlet
C	1	24 (610)	Flanged	Manway
D	3	¾ (19)	FNPT w/plug	Sample Ports
E	1	1 (25)	FNPT w/plug	Drain
F	1	½ (13)	Threaded Rod	Grounding Rod
G	4	-	-	Lifting Lugs

The pressure drop through a ROB-1 adsorber unit is a function of the air flow rate as shown on the below pressure drop chart. Additionally, the size of the adsorber inlet dictates the velocity pressure transmitted to the carbon bed. For this reason, the recommended maximum air flow rate through the ROB-1 adsorber is as follows:

- ROB-1: 12,500 CFM (21,240 ^{3}/hr)

If higher flows or lower pressure drops are required, multiple ROB-1 adsorbers may be installed in parallel operation.

ROB-1 SERIES PRESSURE DROP



MATERIALS OF CONSTRUCTION

Adsorber Vessel	Carbon steel
Internal Coating	Epoxy resin
External Coating	Industrial enamel
Carbon Bed Support Screen	Polypropylene

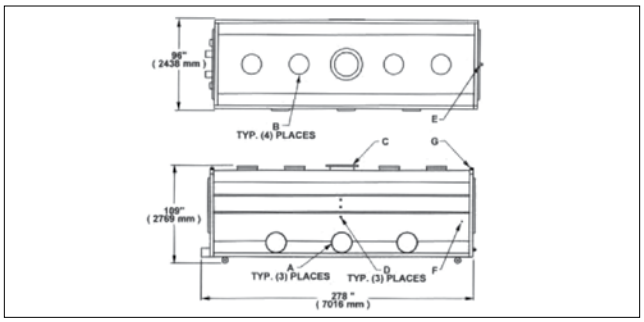
Options: 1. The standard ROB-1 adsorber is furnished with the fittings as shown, other optional fittings such as flanges, can be provided as required.

OPERATING CONDITIONS

Maximum Working Pressure	2 psig (14 kPa)
Temperature Limit	140°F (60°C)
Adsorber Weight	11,500 lb (5216 kg)
Max. Carbon Weight	13,000 lb (5897 kg)
Total Shipping Weight	24,500 lb (11113 kg)

Note: The dimensions, capacities and weights shown are approximate. Actual data will be provided at the time of purchase.

ROB-1 Adsorber Safety Considerations
If higher flows or lower pressure drops are required, multiple vapor phase adsorbers may be installed in parallel operation.



Warning

The adsorption of organic compounds onto activated carbon generates heat. In rare instances, adsorbed compounds may also react on the carbon surface to generate additional heat. If these heat sources are not properly dissipated, the carbon bed temperature may rise to the point where the carbon can ignite, leading to a fire or other hazardous condition. A description of industry-accepted engineering practices to assure the dissipation of heat and safe operation of the carbon bed can be provided upon request. In certain applications where the risk of ignition is significant, activated carbon may not be a recommended treatment technology. Please contact your Technical Sales Representative for more details.

Wet activated carbon readily adsorbs atmospheric oxygen. Dangerously low oxygen levels may exist in closed vessels or poorly ventilated storage areas. Workers should follow all applicable state and federal safety guidelines for entering oxygen depleted areas.

All information presented herein is believed reliable and in accordance with accepted engineering practices. Evoqua makes no warranties as to the completeness of this information. Users are responsible for evaluating individual product suitability for specific applications. Evoqua assumes no liability whatsoever for any special, indirect or consequential damages arising from the sale, resale or misuse of its products.

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