

### VAREC BIOGAS 233 Series CONDENSATE AND SEDIMENT TRAP

The 233 Series is designed to remove liquid and solids from wet, dirty waste gas, assisting in protecting downstream equipment from corrosion, clogging, or water hammer.

#### Introduction

The Varec Biogas 233 Series Condensate and Sediment Trap should be installed immediately downstream from each digester to remove the large volume of water which condenses when the gas cools as it exits the digester. In addition, sediment which is entrained in the gas will drop out and accumulate in the trap, protecting downstream equipment from damage caused by solids. Varec Biogas Model 233 Condensate and Sediment Traps may be installed at other locations in the gas system where large volumes of water must be removed.

These sediment traps are designed for working pressures up to 25 psig (172 kPa). NOTE: When a Varec Biogas Drip Trap is installed, the pressure rating of the drip trap determines the maximum allowable working pressure for the assembled unit.



#### Operation

Condensate and sediment are removed automatically from the waste gas as it flows through the Varec Biogas 233 Sediment Trap. Such removal is accomplished by the combination of centrifugal force and a sharp drop in velocity as the gas enters the trap.

The condensate/sediment trap features a large reservoir capacity with the inlet flange designed to swirl the gas and an internal baffle located at the base of the reservoir to provide efficient separation of entrained solids. Storage capacity is a minimum of six gallons sediment and six gallons condensate. Consult factory for larger capacities.

A removable top cover provides interior access and includes an integral 3/4-inch NPT inspection pipe for measurement of the condensate and sediment. A large, 2-inch blowout and drain connection allows accumulated sediment to be easily cleaned from the trap.

#### Design Features

- Large Reservoir Capacity
- Welded Steel Construction
- Galvanized Finish, Epoxy Coated Internals, Stainless Steel (Optional)
- Easily Cleaned
- 25 psi Working Pressure

#### Materials of Construction

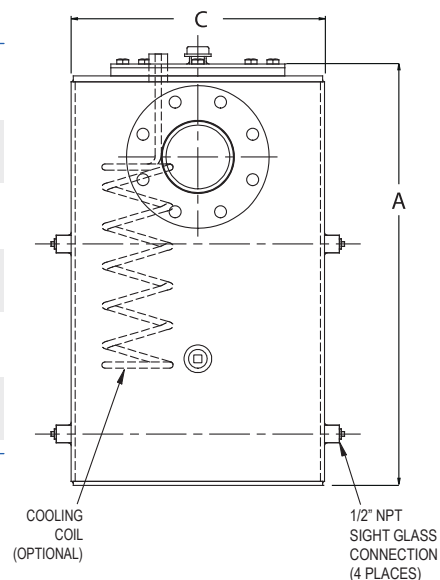
The Varec Biogas Model 233 Sediment Trap can be provided in the following materials:

- Carbon Steel Construction with External Rust Inhibitive Primer Finish
- Carbon Steel Construction with Epoxy Coated Internals and External Rust Inhibitive Primer Finish
- Hot Dipped Galvanized Carbon Steel
- All Stainless Steel

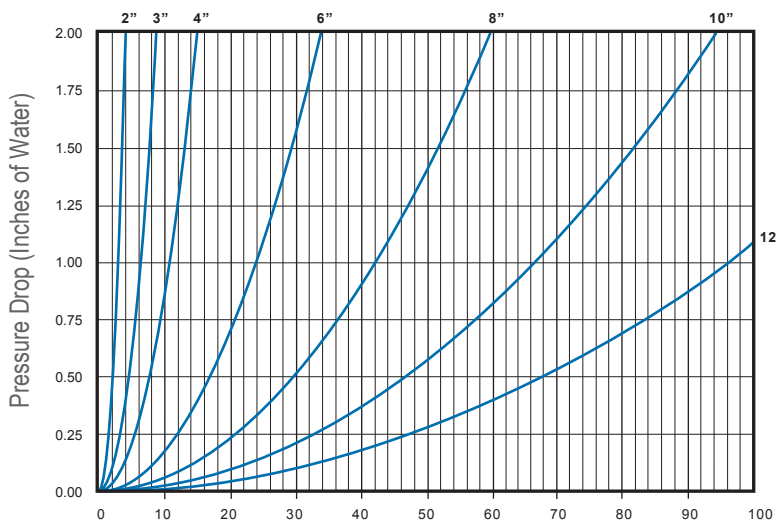
**Specifications**

**Dimensions and Weights, inches [mm] and lbs. (kg)**

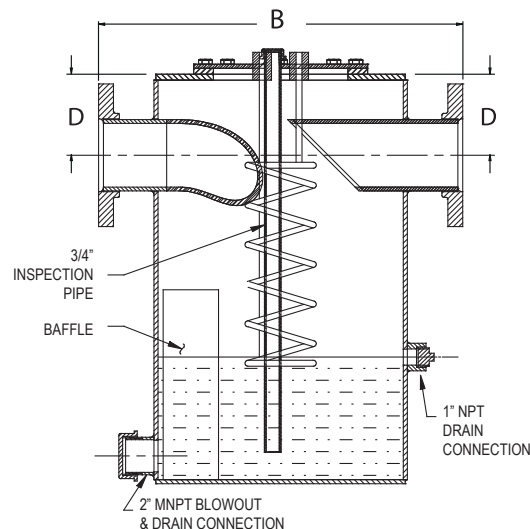
Size Code	02	03	04	06	08	10	12	14	16
Nominal Pipe Size	2	3	4	6	8	10	12	14	16
<b>A</b>	26 1/8 [664]	26 1/8 [664]	26 1/8 [664]	31 1/8 [791]	37 11/16 [957]	37 11/16 [957]	49 15/16 [1268]	68 1/2 [1740]	68 1/2 [1740]
<b>B</b>	22 1/2 [571]	23 [584]	23 [584]	27 [686]	39 [991]	39 [991]	48 [1219]	68 [1727]	68 [1727]
<b>C</b>	16 [406]	16 [406]	16 [406]	20 [508]	30 [762]	30 [762]	38 [965]	52 [1321]	52 [1321]
<b>D</b>	3 7/8 [98]	4 5/8 [117]	5 3/8 [137]	6 3/8 [162]	6 7/16 [164]	7 1/16 [179]	9 3/16 [233]	15 5/8 [397]	15 5/8 [397]
Shipping Weight	140 [73]	145 [77]	175 [84]	265 [125]	350 [345]	450 [381]	1150 [592]	2557 [1160]	2637 [1196]



**Flow Curves 233 SERIES**



Thousand Cubic Feet/Hour at 60°F and 14.7 psia, Air Flow (SCFH)  
NOTE: Consult factory for pressure loss on 14\" and 16\" sizes.



**Optional Accessories**

The following items must be ordered separately:

**Drip Trap**

For convenient & safe removal of the accumulated condensate, a Varec Biogas Model 246, 246AT, 247, or 247AT Drip Trap, should be specified for field installation on each sediment trap. See the product data sheets for 246 Series and 247 Series Drip Traps for information. Sediment Traps include the necessary 1\" NPT connection.

**Cooling Coil**

To allow for further condensation of the saturated digester gas, the unit can be fitted with a cooling coil that runs through the center of the vessel. This will allow for cooling water (supplied by others) to run continuously through the coil and assist in condensation of the digester gas for collection and removal. The Cooling Coil is 3/8\" 316 SS Tubing. Consult factory for additional information on the cooling coil option.

**Sight Glass**

For a quick external check of the condensate level, a Varec Biogas Model 218 Sight Glass should be specified for field installation. For ease of installation, two 1/2\" NPT connections are provided on each sediment trap. Varec Biogas Sight Glass assembly includes two bronze isolation valves and drain cock. The 5/8\" O.D. glass sight tube is protected on each side by a brass guard rod. The sight Glass can also be supplied with stainless steel isolation valves, drain cock and guard rods (PN: 2181)

**Ordering Information**

Model	Description	
233	Condensate and Sediment Trap	
	<b>Code</b>	<b>Size (Select One)</b>
	02	2"
	03	3"
	04	4"
	06	6"
	08	8"
	10	10"
	12	12"
	14	14"
	16	16"
	<b>Code</b>	<b>Connection (Select One)</b>
	F	ANSI 150FF Flange
	T	NPT Threaded (Available in 2" and 3" Sizes Only)
	<b>Code</b>	<b>Construction</b>
	P	Carbon Steel with External Rust Inhibitive Primer Finish
	E	Carbon Steel with Epoxy Coated Internals w/ External Rust Inhibitive Primer Finish
	G	Hot-Dipped Galvanized Carbon Steel
	S	Stainless Steel
	<b>Code</b>	<b>Cooling Coil Option</b>
	*	Leave Blank If Not Required
	C	Cooling Coil

233      10      F      G      \*      (Example)

Example: 233 Series Condensate and Sediment Trap, 10", Hot-Dipped Galvanized Carbon Steel Construction with ANSI 150 FF Connection, Cooling Coil Not Required

**218 Sight Glass (Optional Accessory - Must Be Ordered Separately)**

Model	Description	
218	Sight Glass	
	<b>Code</b>	<b>Size (Select One)</b>
	*	1/2" Sight Glass Assembly with Bronze Valves Brass Rods and Drain Cock
	1	1/2" Sight Glass Assembly with SS Valve, SS Guard Rods and Drain Cock

218      \*      (Example)

Example: 1/2" Sight Glass Assembly with Bronze Valves, Brass Guard Rods and Drain Cocks

**Dimensions, inches [mm]**

**Size**

**A** 12 [305], 24 [610], 36 [914]

**B<sub>1</sub>** 4 1/2 [114] Brass (Standard)

**B<sub>2</sub>** 5 1/8 [130] Stainless Steel (Option)



Installation, mounting arrangement and dimensions are preliminary general information not to be used for construction. Certified drawings are available. Consult factory for specifications.