

VAREC BIOGAS 450 Series FLAME TRAP ASSEMBLY

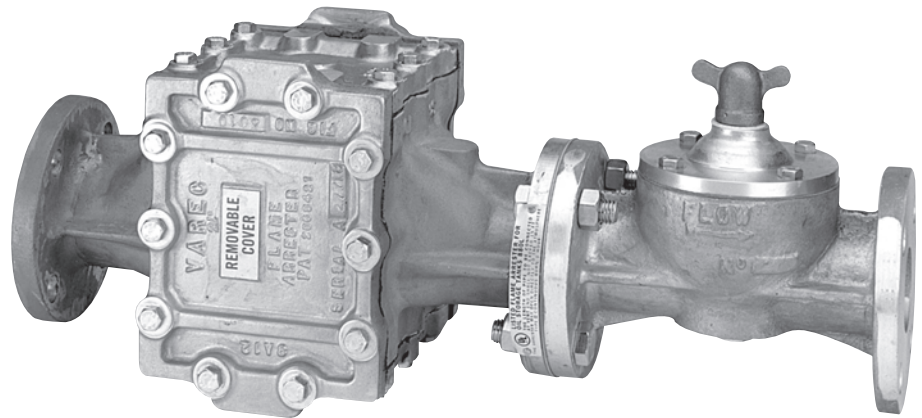
The 450 Series Flame Trap Assembly is designed for use on lines to flares and fired process units to safely prevent a flame flashback.

Introduction

The Varec Biogas 450 Series Flame Trap Assembly was designed for use on lines to flares and fired process units to safely prevent a flame flashback. The extensive range of sizes allows its use in many applications encountered in the typical tank farm, liquid storage facility, landfill or waste water treatment system.

The 450 Series has been designed for use on gases and should be installed no more than 15 feet from the end of the pipe nearest a possible source of ignition.

The Flame Arrester on the Varec Biogas 450 Series Flame Trap Assembly is uniquely designed with corrugated bank sheets contained within an extensible frame. The housing design allows for the removal of the entire bank assembly without the need for jack screws or other such methods which may cause stress on the piping system. The sheets can be easily inspected and cleaned.



Flow curves are provided to assist you in selecting the proper size unit for your application requirements. In addition, Varec Biogas's applications engineering staff and factory trained representatives are always available to assist you.

Operation

The 450 Series Flame Trap stops the propagation of a flame by absorbing and dissipating heat through the surface area of the bank assembly. Ignited vapor attempting to pass through the arrester is forced through small passages within the bank assembly. Heat is absorbed, lowering the temperature of the gas below its ignition point and quenching the flame.

Should the flame continue to burn, the thermal element, rated at 260°F, melts, causing the spring loaded pallet of the thermal shut-off valve to positively close which prevents ignited gas from traveling downstream.

The thermal element can be easily replaced without disassembling the valve so that the unit may be quickly returned to service after a flashback. The 450 Series was designed primarily for severe service applications where frequent cleaning is expected.

Design Features

- Low Pressure Drop Across Unit
- Unique Design Allows for Cleaning of Element
- Passive Device for Positive Flame Arrestment
- Extensive Range of Materials Available
- Spring Actuated Thermal Valve
- Available in Sizes 2" - 12" (50 - 300 mm)
- Removable / Replaceable Bank Assembly

Specifications

Materials

Valve Body
356 T6 Low Copper Aluminum

Valve Internals

Low Copper Aluminum
Stainless Steel

Thermal Element

260° F Metal Aluminum

Flame Arrester Bank

Low Copper Aluminum Extensible Frame
with Aluminum Bank Sheets

Low Copper Aluminum Extensible Frame
with 316 SS Bank Sheets

Pressure Rating

Leak Proof to 5 psi (kPa) Standard

Flanged Connections

125 lbs. ANSI FF Flange

Flame Arrester Configuration

NET FREE AREA
Three to Four Times the Corresponding Size
Standard Pipe

BANK ASSEMBLY

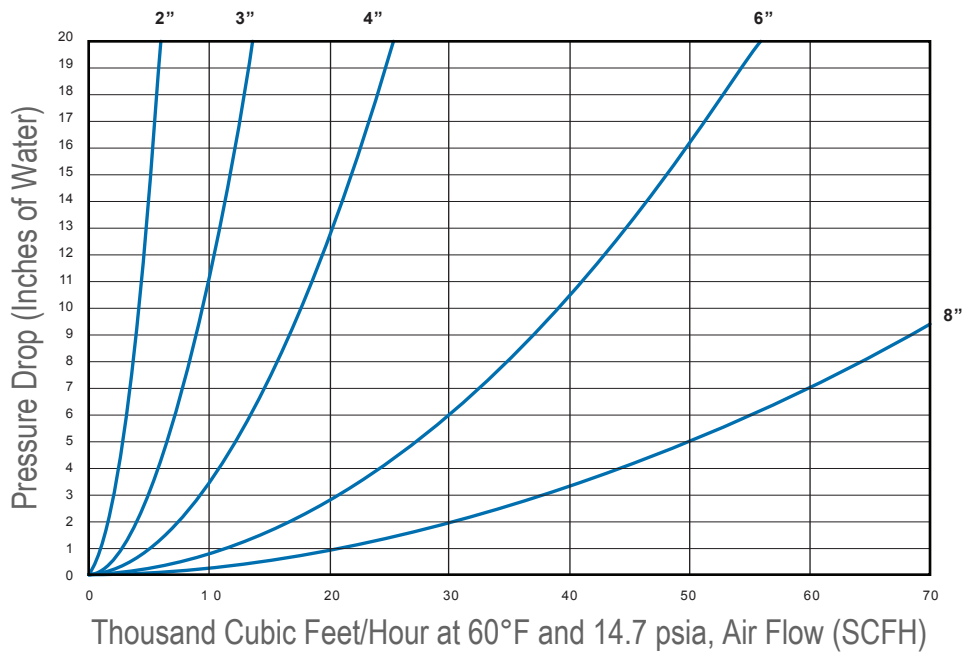
Extensible Bank Frame with Corrugated
Rectangular Shaped Bank Sheets

DRAIN CONNECTION (Horizontal)
1/2" NPT Connection

LOCATION

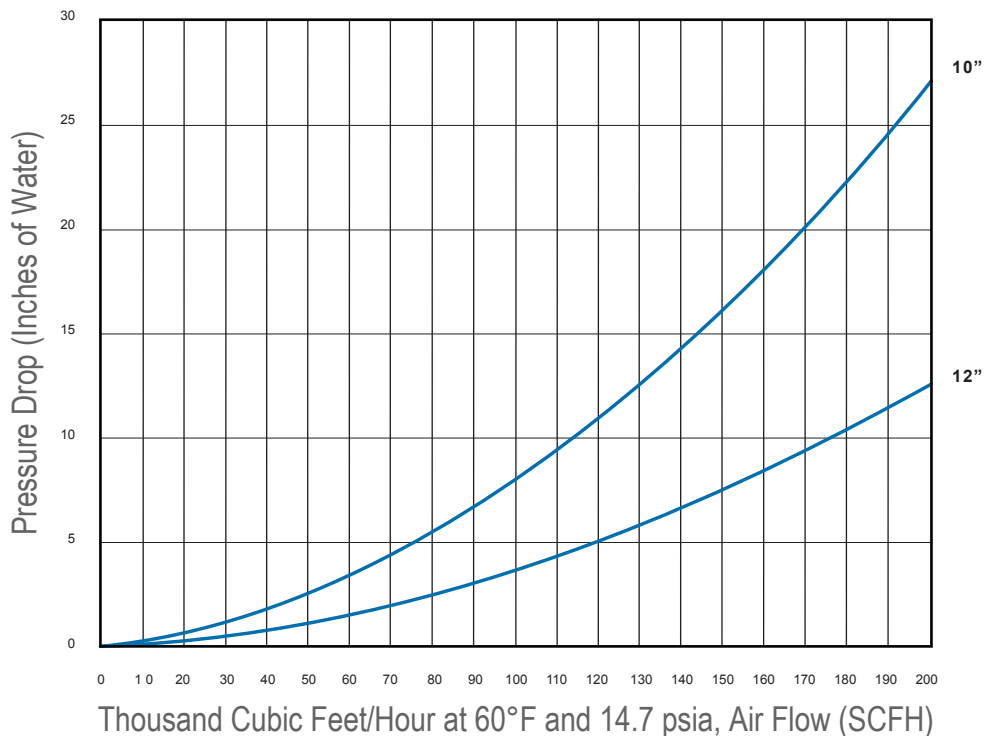
Within 15 Feet (4.6 m) of Flame Source

Flow Curves 450 SERIES (2" - 8" Sizes)



Thousand Cubic Feet/Hour at 60°F and 14.7 psia, Air Flow (SCFH)

Flow Curves 450 SERIES (10" - 12" Sizes)



Thousand Cubic Feet/Hour at 60°F and 14.7 psia, Air Flow (SCFH)

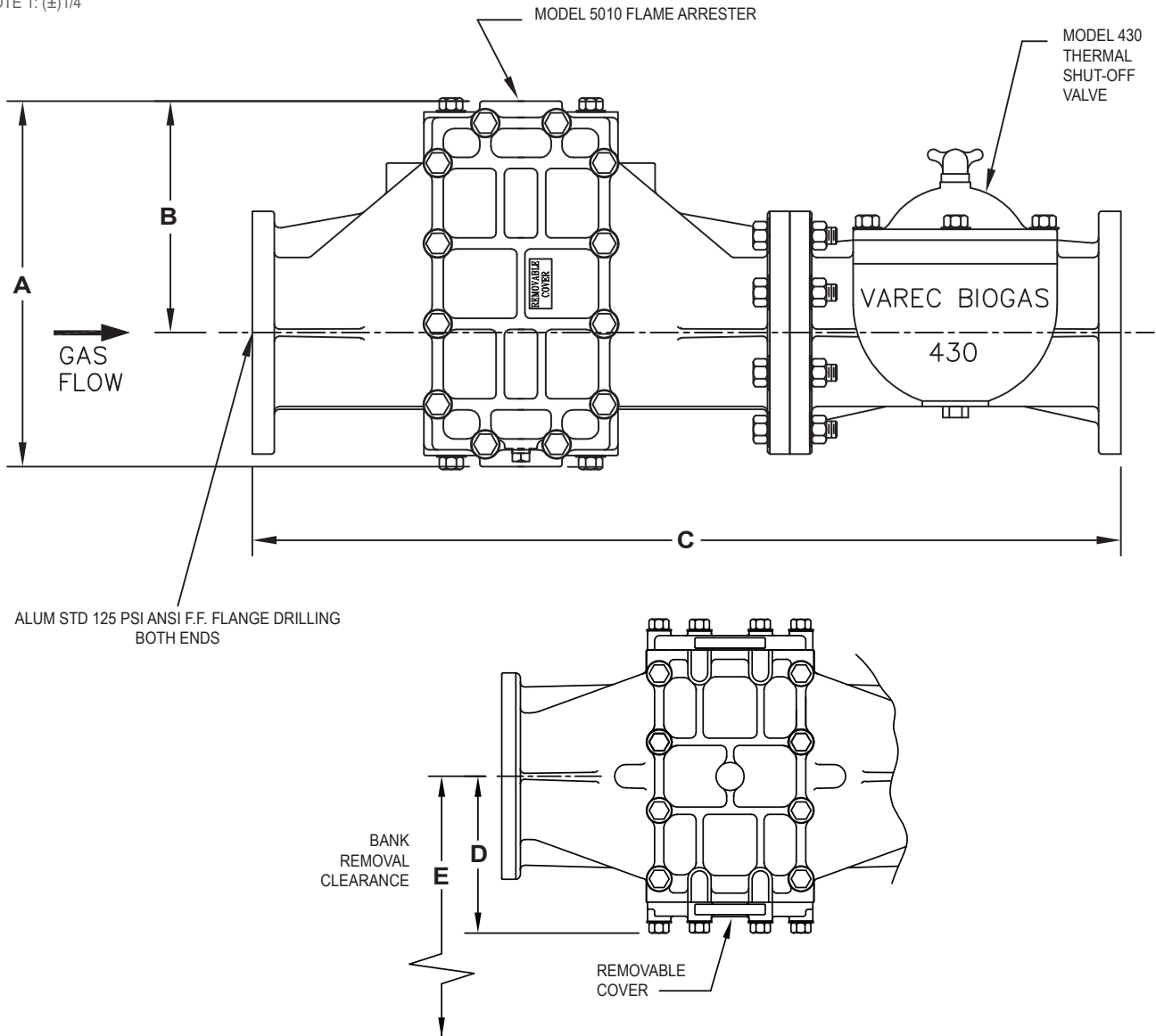
Specifications

Horizontal Installation

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

Size Code	02	03	04	06	08	10	12
Nominal Pipe Size	2 [50]	3 [75]	4 [100]	6 [150]	8 [200]	10 [254]	12 [300]
A	9 [229]	11 3/4 [298]	14 [356]	16 3/8 [416]	21 5/8 [549]	24 [610]	31 [787]
B	5 3/8 [137]	7 1/4 [184]	9 [229]	10 3/4 [273]	14 3/8 [365]	16 [406]	20 [508]
C¹	23 1/4 [591]	26 [660]	31 3/8 [797]	39 3/8 [1000]	54 3/8 [1381]	63 5/16 [1608]	67 3/8 [1711]
D	4 5/16 [110]	5 5/8 [143]	7 [178]	8 1/4 [210]	10 3/4 [273]	11 7/8 [302]	14 1/2 [368]
E	19 [476]	23 1/4 [591]	28 1/8 [715]	31 1/8 [790]	38 5/8 [981]	41 5/8 [1057]	50 [1270]
Shipping Weight	45 (20)	70 (32)	100 (45)	150 (68)	280 (128)	360 (164)	500 (227)

NOTE 1: (±)1/4"



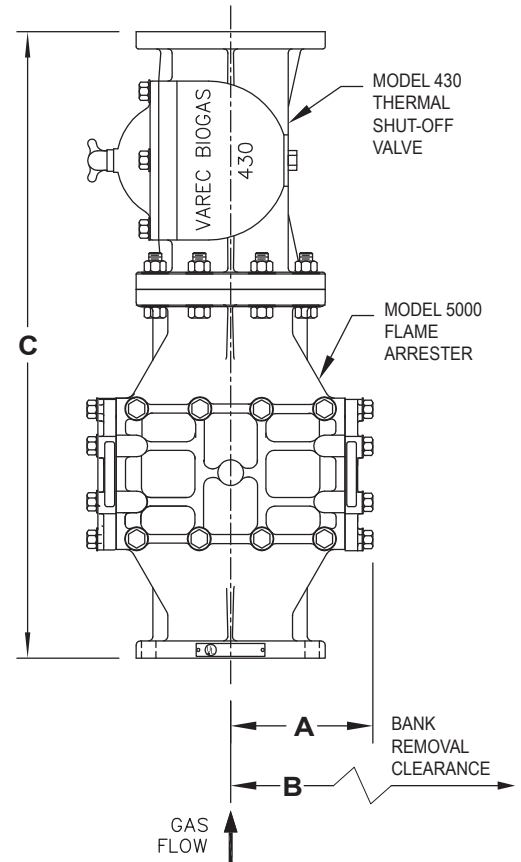
Specifications

Vertical Installation

Dimensions, inches [mm]

Size Code	02	03	04	06	08	10	12
Nominal Pipe Size	2	3	4	6	8	10	12
	[50]	[75]	[100]	[150]	[200]	[250]	[300]
A	4 ⁵ / ₁₆ [110]	5 ³ / ₄ [146]	7 ³ / ₈ [187]	8 ³ / ₈ [213]	10 ⁷ / ₈ [276]	11 ⁷ / ₈ [302]	14 ⁵ / ₈ [371]
B	19 [483]	23 ¹ / ₄ [591]	28 ¹ / ₈ [714]	31 ¹ / ₈ [791]	38 ⁵ / ₈ [981]	41 ⁵ / ₈ [1057]	50 [1270]
C¹	21 ³ / ₈ [543]	23 ⁷ / ₈ [606]	28 [711]	36 ¹ / ₂ [927]	49 ¹ / ₂ [1257]	56 ³ / ₁₆ [1427]	67 ³ / ₈ [1711]
Shipping Weight	40 (18)	65 (29)	95 (43)	135 (61)	260 (118)	330 (150)	475 (215)

NOTE 1: (±)1/4"



Ordering Information

Model	Description	Code	Size	Code	Flame Arrester Bank Sheet Material	Code	Mounting	Code	Hardware Material
450	Flame Trap Assembly	02	2"	1	Aluminum	1	Horizontal Installation	*	Zinc Plated Steel
		03	3"	2	Aluminum Frame, 316 SS Sheets	2	Vertical Installation	S	Stainless Steel
		04	4"						
		06	6"						
		08	8"						
		10	10"						
		12	12"						

450 06 1 1 * (Example)

Example: 450 Series Flame Trap Assembly, 6" Size, Aluminum Bank Sheets, Horizontal Installation, Zinc Plated Steel Hardware.