

Types C483-24 and C484-24 Jet Bleed Internal™ Valves



Introduction

Types C483-24 and C484-24 Jet Bleed Internal™ Valves are designed to provide rapid equalization of tank pressure and downstream line pressure, providing a fast valve response time for quick valve opening. These are frequently used on bobtail and transport truck tanks for liquid gas delivery, but they may also be used on large stationary storage tanks and on in-line installations in liquid or vapor gas fill applications. Underwriters Laboratories (UL®)-listed types are designed for use with Propane, Butane, or Anhydrous Ammonia services. Non UL® listed types are available with a variety of trim types and body styles and are can be used on other compressed gases, but the user should check with the factory to make sure the valves are suitable for the particular service. Actuation of the valve can be achieved manually, by cable, or with a pneumatic actuator.

Features

- **Patented rapid equalization bleed area**—Provides fast valve response for quick opening.
- **Unique Serviceability Features**—Stainless trim parts and poppet designed with integral wrench flat for easy maintenance.
- **Durable Design**—Stainless poppet and stem interface smoothly for a long wear life.
- **Excess Flow Closure**—Functions when flow exceeds the valves rated capacity or piping is sheared off at the valve.
- **Back Check Feature**—Allows reverse flow, fill with or without actuator device in valve open position.
- **Spring loaded Polytetrafluoroethylene (PTFE) stub shaft packing**



Figure 1. Types C483-24 and C484-24 Internal Valves

- **PTFE wear pads and Rulon® Bushings at critical wear points**
- **Manual, Cable or Air Open/Close Control**
- **Thermal Fusible links or plugs melt at 212 to 220°F / 100 to 104°C and allow valve closure in the event of a fire at the valve.**

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Bulletin LP-7:C483-24/C484-24

Specification

Available Configurations

Type C483-24—The Type C483-24 double flanged internal valve is intended for special bobtail truck applications where the pump must be lowered to clear the truck frame or other obstacles. A shear section in the lower body permits the valve to shear off in the event of an accident, leaving the shut-off parts within the tank.

Type C484-24—The single flanged Type C484-24 internal valve is widely used on bobtail trucks with direct connected pumps. It can also be used on in-line applications.

Body Size and End Connections

Inlet: 3-inch CL300 RF Modified Flange
(4.62-inch / 117 mm diameter bore)

Outlet: 3-inch CL300 RF Flange

Maximum Allowable Inlet Pressure⁽¹⁾

400 psig / 27.6 bar WOG

Excess Flow Springs

Type C483: 160, 265, or 400 GPM /
606, 1003, or 1514 l/min propane

Type C484: 160, 250, or 400 GPM /
606, 946, or 1514 l/min propane

Temperature Capabilities⁽¹⁾⁽²⁾

-20 to 150°F / -29 to 66°C

Closing Flow and Vapor Capacity

See Table 3

Construction Materials

Steel	Body and Operating Lever
Stainless steel	Stem Assembly, Excess Flow Spring, Spring Seat, Closing Spring, Disc Holder, Disc Retainer, Screw, O-ring Seat, O-ring Retainer, Cotter Pin, Spring, Shaft, Screen, Travel Stop, Screen Cap, Bolt, Gasket, and Lock Washer
Plated steel	Nut, Washer, Bonnet Nut, Guide Bracket, and Cap Screw
Polyurethane	Rod Wiper
PTFE	Bushing, Packing Adaptor, and Packing Ring
Nitrile (NBR) (Standard Construction)	Main Disc and Bleed Disc
Other Disc and O-ring Material Available from Factory	PTFE, Fluorocarbon (FKM), Neoprene (CR), Ethylene-Propylene (EPDM), and Kalrez®

Approximate Weights

Type C483-24: 32 pounds / 15 kg

Type C484-24: 18 pounds / 8 kg

1. The pressure/temperature limits in this Bulletin and any applicable standard or code limitation should not be exceeded.
 2. Product has passed Fisher® testing for leakage down to -40°F / -40°C.
- Kalrez® is a mark owned by E.I. du Pont de Nemours and Co.

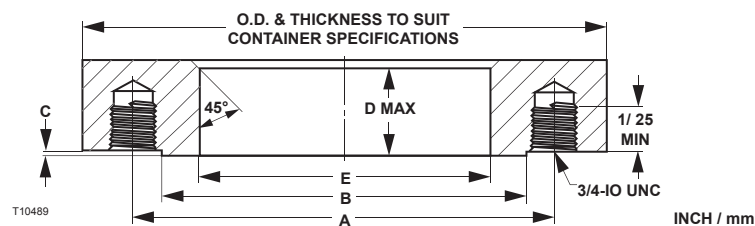


Figure 1. Tank Flange Dimensions

Table 1. Tank Flange Dimensions

FLANGE CL300 RF ASA	A-BOLTING				B RF	C RF		D		E		MATING FLANGE O.D.		
	DBC		NO.	SIZE										
3	6.62 Inches	168 mm	8	3/4	5.75 Inches	146 mm	0.06 Inches	1.5 mm	1.5 Inches	38 mm	4.62 Inches	117 mm	8.25 Inches	210 mm

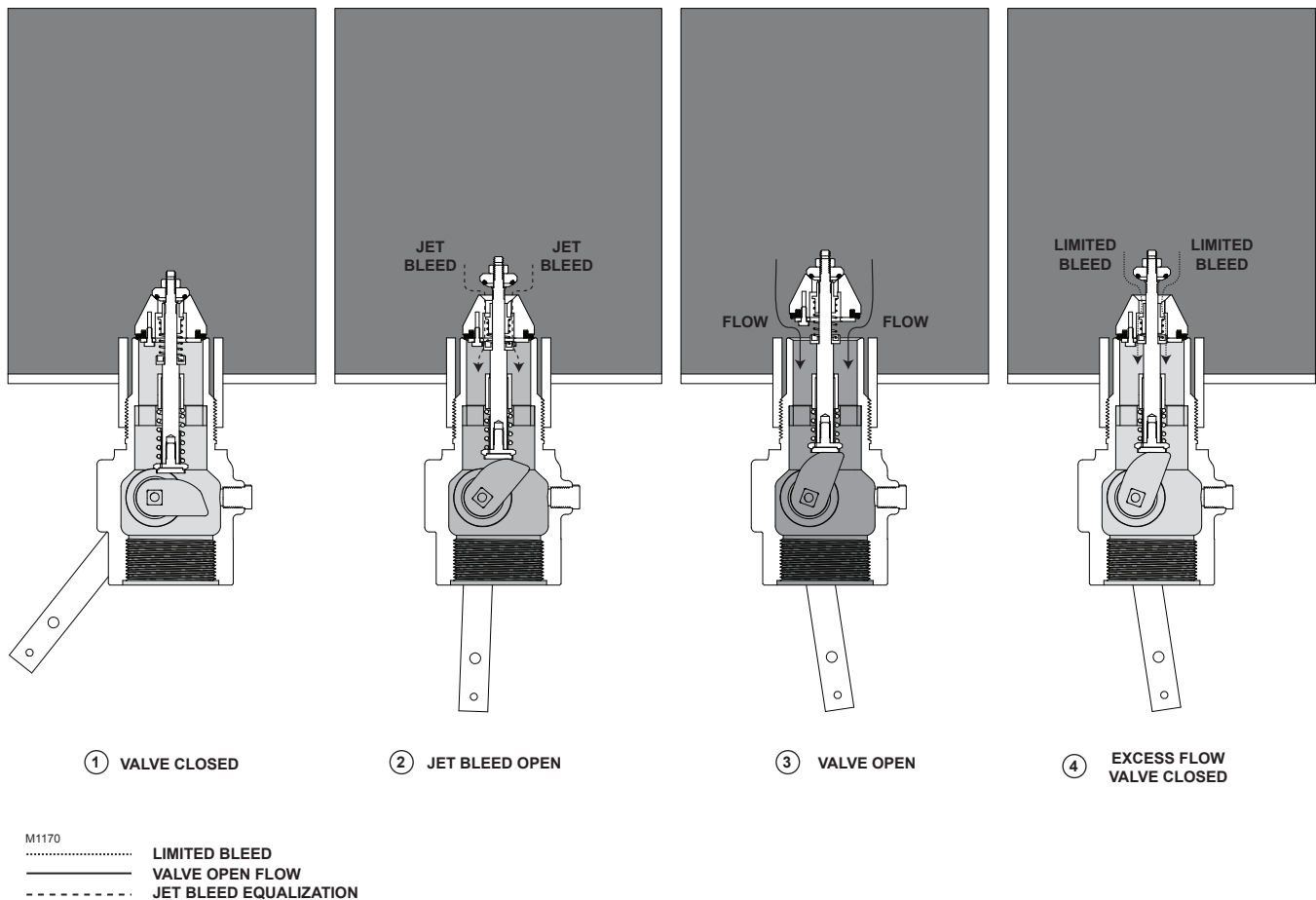


Figure 3. Typical Operational Schematic

Principle of Operation

The operational schematic above (Figure 3) depicts threaded valves, however flanged styles operate in the same manner. For detailed information, refer to the Instruction Manual provided with the valve. In **view #1**, the valve is held closed by both tank pressure and the valve's closing spring. There is no leakage past the resilient seats in the poppet to the valve outlet. The valve is opened by moving the operating lever to approximately midpoint in its 70° travel (**view #2**). This allows the cam to place the rapid equalization portion of the valve stem in the pilot opening, permitting a larger amount of product to bleed downstream than if the operating lever were moved to the full open position. When tank and downstream pressure are nearly equal after a few seconds, the excess flow spring pushes open the main poppet (**view #3**) and the operating lever can be moved to the full open position.

Note

If tank pressure is greater than the valve's outlet pressure, the main poppet will remain

in the closed position. If valve outlet piping is closed off by other valves, however, product bleeding through the pilot will increase until it nearly equals tank pressure and the main poppet opens. The main poppet will not open if valve outlet piping is not closed off so that the outlet pressure can approach tank pressure.

Once the main poppet opens, a flow greater than the valve's excess flow spring rating or a sufficient surge in flow forces the main poppet closed against the excess flow spring (**view #4**). The pilot valve allows a small amount of product to bleed, but much less than **view #2** where the rapid equalization portion of the stem is placed in the pilot opening. When the operating lever is moved to the closed position, the valve closes completely and seals tightly (**view #1**).

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		MODEL NUMBER					SIZE	SPRING RATE		
EXAMPLE:		C	4	8	3	N	-	24	-	26
Symbol Description		C	4	8	3	N	-	24	-	26
C	Product Family									
4	UL® Listed									
8	Non UL® Listed									
7	Ductile Iron Body									
8	Steel Body									
9	Stainless Body									
7	Straight Through Flow									
3	Double Flanged Body									
4	Single Flanged Body									
1	Tee Body (Flanged and NPT)									
	Nitrile (NBR) (Standard, Only Nitrile (NBR) has UL® Approval)									
V	Fluorocarbon (FKM) Trim									
T	PTFE Trim									
N	Neoprene (CR) Trim									
S	Stainless Steel Body/Gland*									
M	Manual Latch Factory Installed									
ST	Stainless Steel Gland Body and PTFE Trim									
10	1-1/4 Inch / DN 32									
16	2 Inch / DN 50									
24	3 Inch / DN 80									
32	4 Inch / DN 100									
10	105 GPM / 397 L/min									
15	150 GPM / 568 L/min									
16	160 GPM / 606 L/min									
22	220 GPM / 833 L/min									
25	250 GPM / 946 L/min									
26	265 GPM / 1003 L/min									
37	375 GPM / 1419 L/min									
46	460 GPM / 1741 L/min									

* The Type C891 has Stainless steel body as Standard. 'S' callout on a Type C891 stands for a Stainless Steel Gland.

For each product family, not all options are available. To check the availability of type numbers specified above, contact or visit your local LP-Gas Equipment distributor.

Figure 4. Fisher® Internal Valve Numbering System

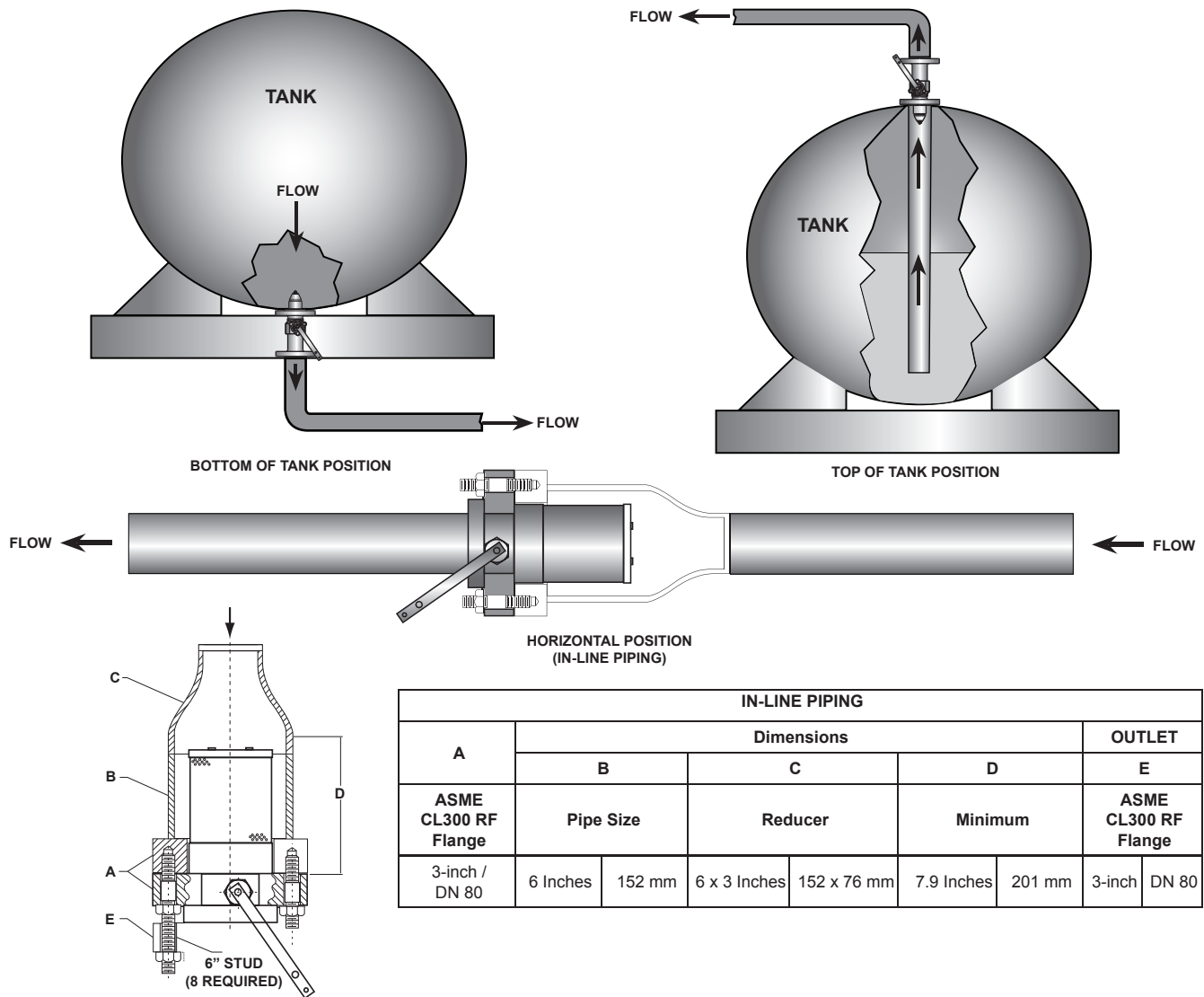


Figure 5. Internal Valve Flow Position

Table 2. Closing Flow - Propane and NH₃

SIZE	TYPE NUMBER		CLOSING FLOW PROPANE								CLOSING FLOW NH ₃			
	Single Flanged	Double Flanged	Single Flanged, Bottom of Tank Position*		Double Flanged, Bottom of Tank Position*		Single Flanged, Top of Tank Position*		Double Flanged, Top of Tank Position*		Single Flanged, Bottom of Tank Position*		Double Flanged, Bottom of Tank Position*	
			GPM	l/min	GPM	l/min	GPM	l/min	GPM	l/min	GPM	l/min	GPM	l/min
3-inch / DN 80	C484-24-16	C483-24-16	160	606	160	606	180	681	180	681	144	545	144	545
	C484-24-25	C483-24-26	250	946	265	1003	250	946	290	1098	239	905	226	855
	C484-24-40	C483-24-40	400	1514	400	1514	400	1514	400	1514	361	1366	361	1366

* See Internal Valve Flow Positions (Figure 5) for description of Bottom of Tank, Top of Tank, and Horizontal Flow Positions.

Table 3. Closing Flow and Vapor Capacity

SIZE	TYPE NUMBER		VAPOR CAPACITY PROPANE							
	Single Flanged	Double Flanged	100 psig / 6.9 bar Inlet, Single Flanged, Bottom of Tank Position**		100 psig / 6.9 bar Inlet, Double Flanged, Bottom of Tank Position**		100 psig / 6.9 bar Inlet, Single Flanged, Top of Tank Position*		100 psig / 6.9 bar Inlet, Double Flanged, Top of Tank Position*	
			SCFH	SCMH	SCFH	SCMH	SCFH	SCMH	SCFH	SCMH
3-inch / DN 80	C484-24-16	C483-24-16	71,000	2011	71,000	2011	96,000	2718	96,000	2718
	C484-24-25	C483-24-26	NOT LISTED		127,000	3568	NOT LISTED		148,000	4191
	C484-24-40	C483-24-40	181,000	5125	181,000	5125	190,000	5380	190,000	5380

* See Internal Valve Flow Positions (Figure 5) for description of Bottom of Tank, Top of Tank, and Horizontal Flow Positions.

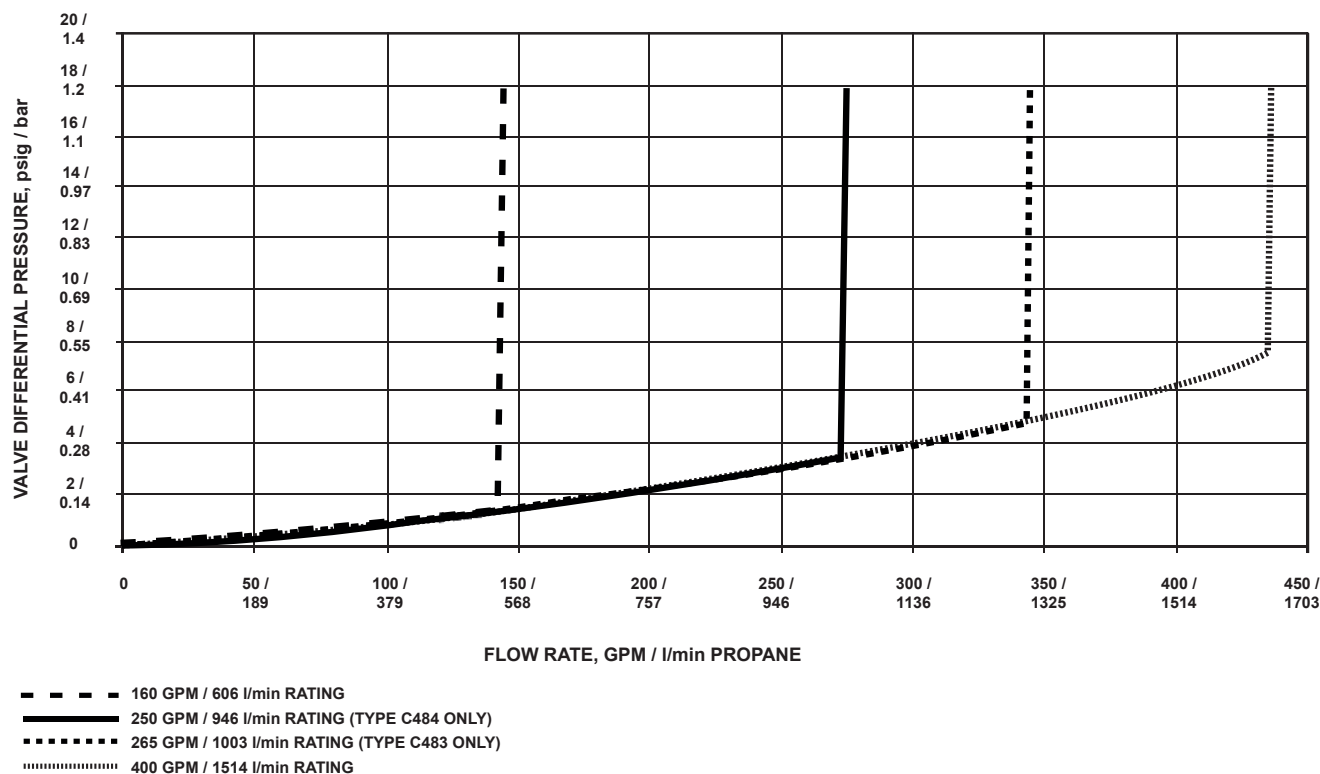


Figure 6. Types C483-24 and C484-24 Typical Closing Flow Curve, Bottom of Tank Position

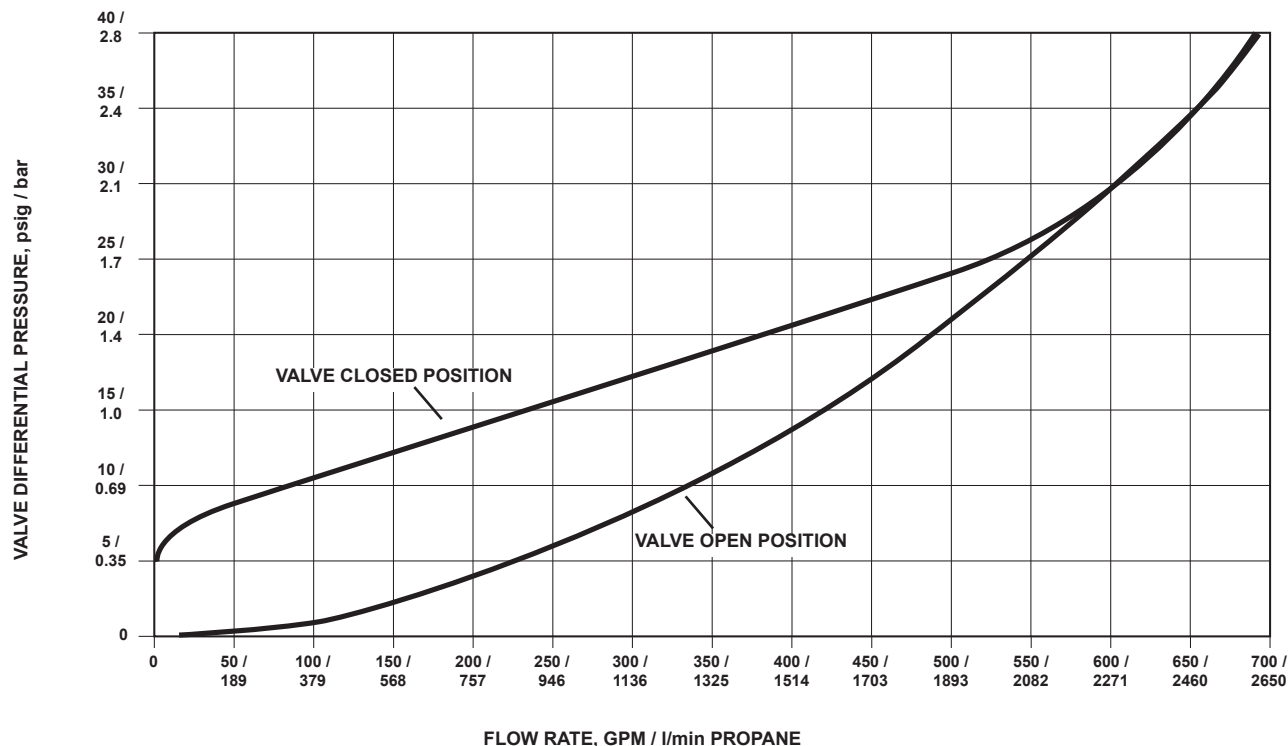


Figure 7. Types C483-24 and C484-24 Typical Reverse Flow Curve, Bottom of Tank Position

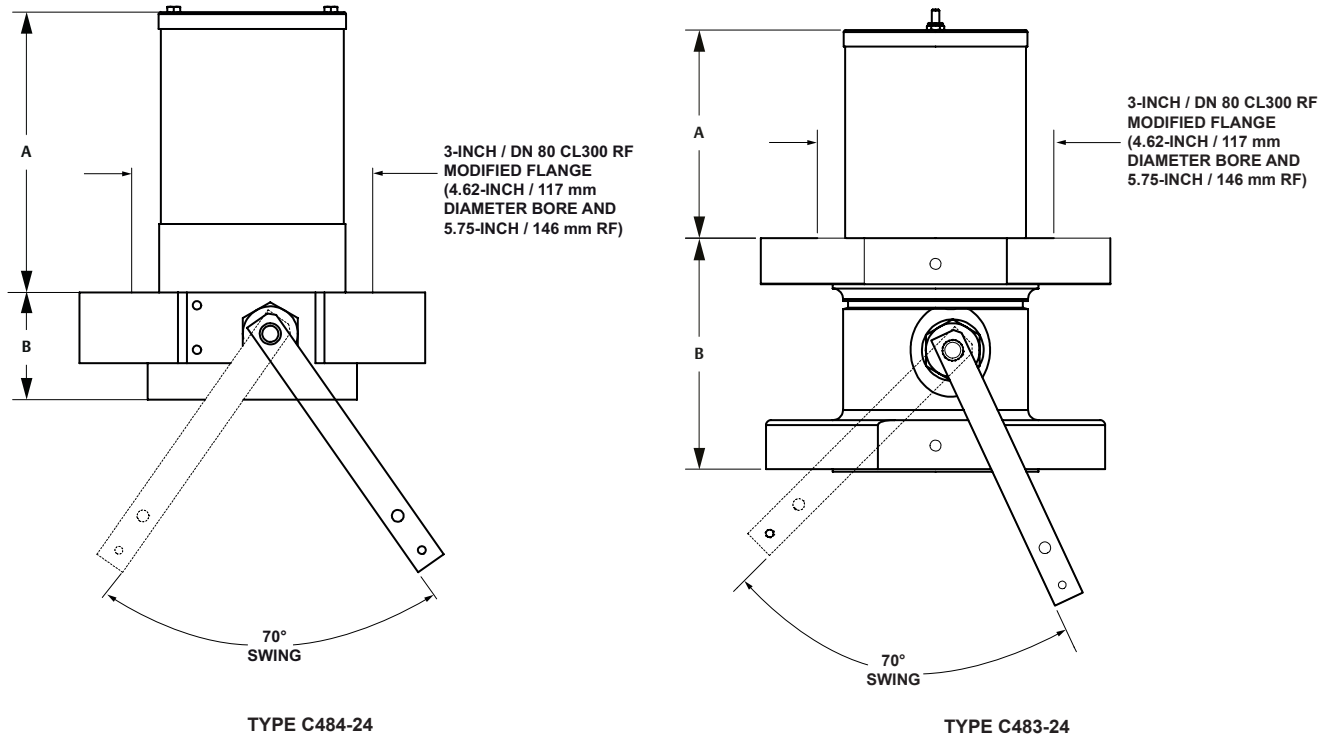


Figure 8. Dimensions

Table 4. Dimensions

FLANGED VALVES DIMENSIONS					
Type Number	Tank Connections, Inches	A		B	
		Inches	mm	Inches	mm
C484-24	3-inch / DN 80 CL300 RF Flange	6.75	171	2.56	65
C483-24	3-inch / DN 80 CL300 RF Flange	5.33	135	5.62	143

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Ordering Guide

To order, refer to the table below and specify the type number that satisfies your requirement. Then, contact or visit your local LP-Gas Equipment Distributor for availability.

SIZE	STYLE		FLANGE CONNECTION SIZE, INCHES		ACTUATION METHOD AND DEVICE	
	Single Flanged	Double Flanged	Inlet	Outlet	Air	Manual
3-inch / DN 80	C484-24-16	C483-24-16	3-inch / DN 80 CL300 RF Modified 4.62-inch / 117 mm diameter bore	3-inch / DN 80 CL300 RF	Type P613 (Single Flanged)/ Type P623 (Double Flanged)	As Supplied, May Be Hand or Cable Actuated
	C484-24-25	C483-24-26				
	C484-24-40	C483-24-40				
Please Contact Your Local LP-Gas Equipment Distributor for Availability of Non-Standard Options.						

LP-Gas Equipment

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