

# 085 PTFE Clamp Valve

## Tufline Plastic-Lined

**Clamp Valves** handle varieties of corrosives at temperatures from -20°F to 400°F (-28°C to 204°C) by combining the best properties of two different materials of construction.

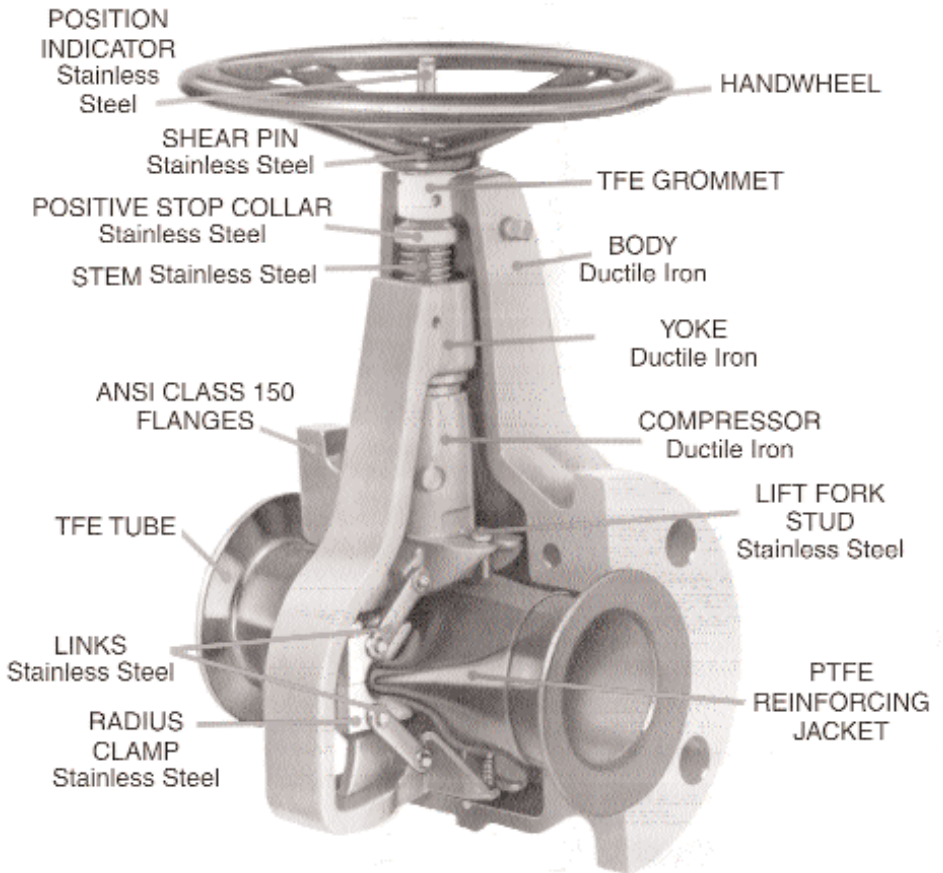
On the outside, a metal body provides strength, shock resistance, ease of installation, and a high pressure handling capability.

On the inside, the PTFE tube offers corrosion resistance that stainless steel and high alloy metal valves can't match.

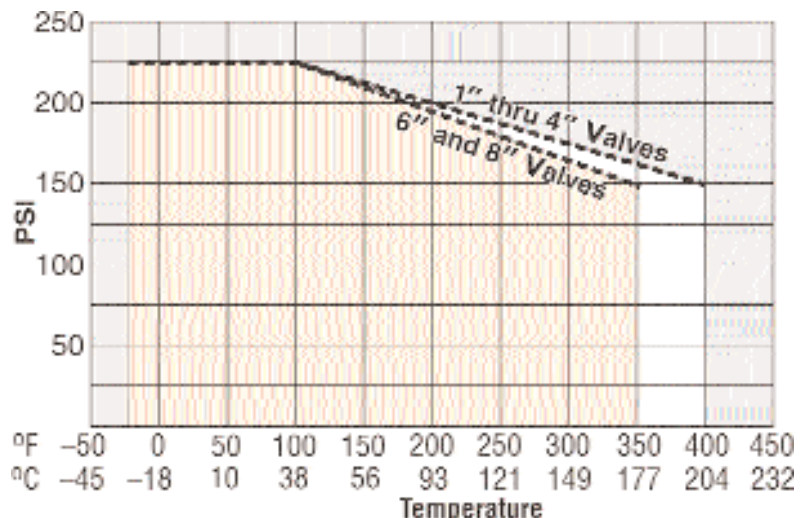
The Teflon® PTFE Clamp Valve with its full-flow, straight-through packless design, is capable of bubble-tight shutoff and fine throttling. These features coupled with minimum maintenance and unexcelled corrosion resistance, makes the PTFE clamp valve the most economical valve available for tough CPI applications.

The clamp valve consists of a flexible PTFE tube and a clamp. Unlike pinch valves, the tubing is never kinked, creased or pinched. PTFE Clamp Valves are available in sizes 1" through 8" in various configurations and with a number of optional accessories.

Because all wetted surfaces are PTFE, the clamp valves offer unsurpassed chemical resistance at temperatures up to 400°F (350°C) for 6" and 8" valves. The minimum burst pressure for sizes 1" through 8" at 70°F is 900 psi and at 400°F is 600 psi.

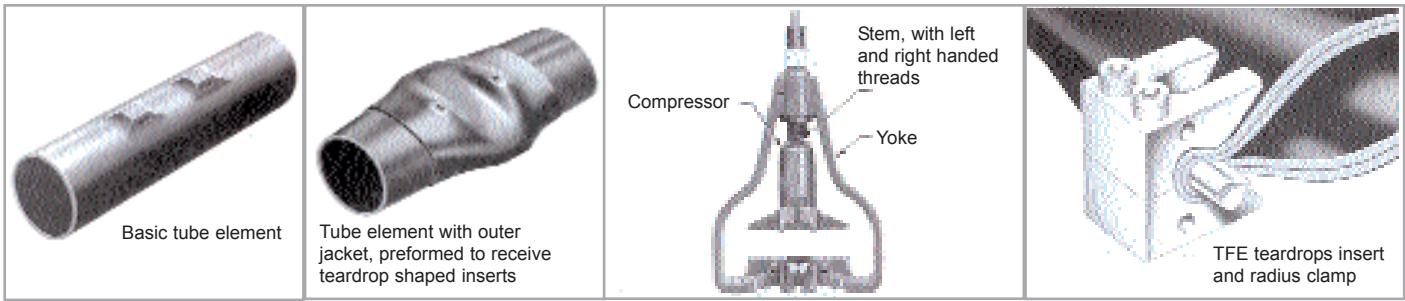


**Pressure / temperature ratings**



Note: Contact Xomox for applications beyond maximum nominal pressure and temperature ratings.

\*Teflon® is a registered trademark of DuPont.

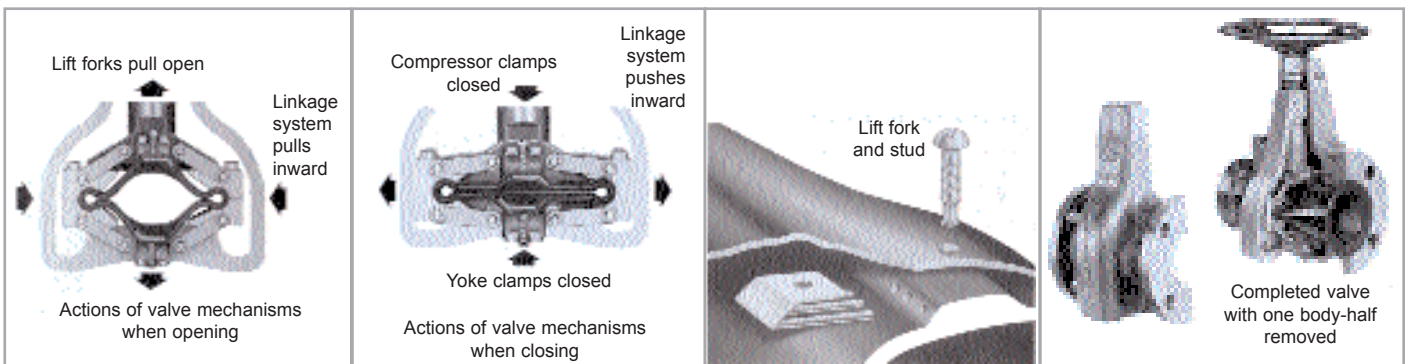


The Clamp valve is a flexible tube and a clamp. The tubing is made from Teflon PTFE.

A Teflon PTFE reinforcing jacket heat shrunk over the tube element increases strength without sacrificing flexibility.

The clamping mechanism consists of a compressor which travels down a stem with rotation of the hand-wheel or power operator, and a yoke which travels up the stem at the same time. Together these components clamp off flow bubble-tight.

Teflon inserts - teardrop shaped in cross section - on each side of the Teflon tube prevent the tube element from being overstressed. All flexing takes place on the center line of the valve between the teardrops, insuring long life for the valve.

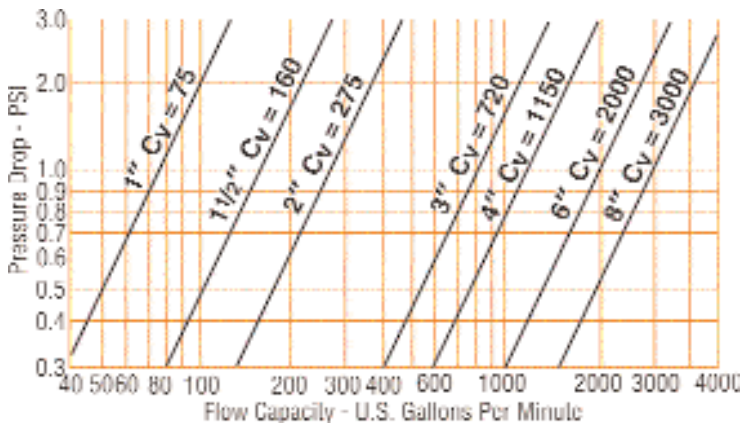


The radius clamps are connected to the yoke and to the compressor by means of links and link pins. These components, working together, provide a scissor-jack action which pushes the tube element inward during the opening cycle and pulls it outward during closing.

Four lift forks imbedded top and bottom in the tube element on each side of the clamp act as powerful fingers which work with the links and link pins to pull the sealing surfaces apart even under full vacuum conditions.

Operating parts are encased in a ductile iron body with Standard ANSI Class 150 flanges. Because the valve is symmetrical and completely bi-directional, either end can be placed upstream.

### Pressure drop vs. flow at full open position for rotary operated valves.



$C_v$  is a coefficient which relates the rate of fluid flow through a valve to the pressure drop across the valve. Valves with higher values of  $C_v$  will provide higher rates of flow for a given pressure drop.  $C_v$  values for PTFE Clamp Valves are dependent upon inlet pressure.  $C_v$  values shown above were determined with inlet pressure of 65 psi or higher.

### Valve sizing coefficient, $C_v$ and liquid pressure recovery factor, $F_L$ for linear valves.

Valve Size	$C_v$	$F_L$
1"	35	0.610
1 1/2"	112	0.420
2"	163	0.439
3"	396	0.330
4"	527	0.514

$F_L$  is a coefficient which permits calculation of valve flow capacity at low inlet pressures.

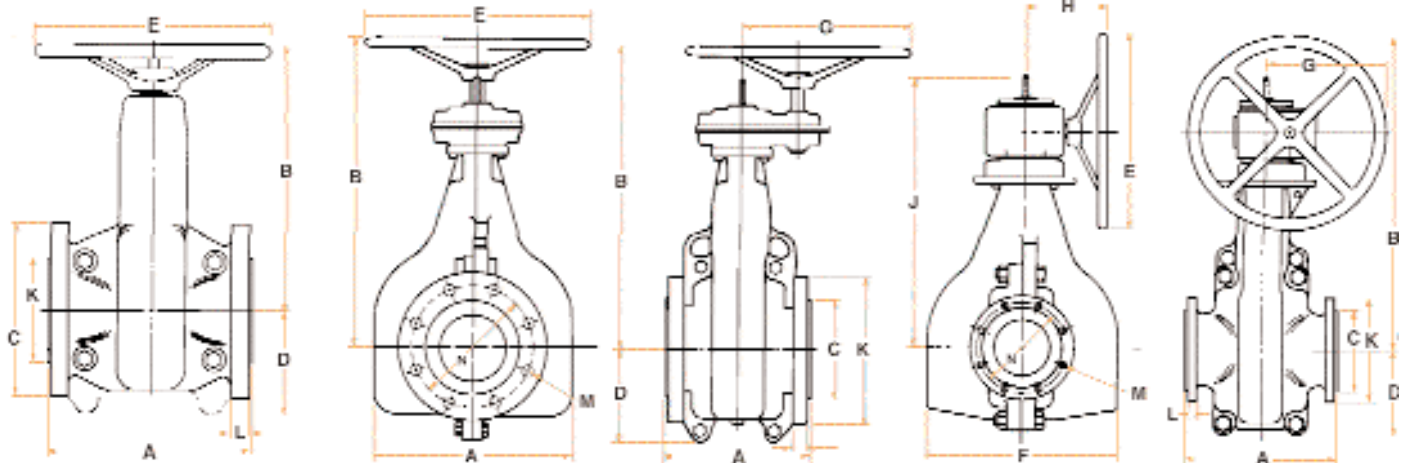
$$F_L = \frac{q_{max.}}{C_v \sqrt{P_1 - r_c P_v}}$$

$$C_v = \frac{q}{\sqrt{\Delta P/G}}$$

$C_v$  = Valve sizing coefficient  
 $q$  = Flow rate, gal/min  
 $\Delta P$  = Pressure drop, psi.  
 $G$  = Specific gravity of fluid

$F_L$  = Liquid pressure recovery factor  
 $q_{max.}$  = Maximum flow rate  
 $C_v$  = Valve sizing coefficient  
 $P_1$  = Valve inlet pressure, psi.  
 $P_v$  = Vapor pressure of fluid  
 $r_c$  = Critical pressure ratio

# 085 PTFE Clamp Valve Dimensions



1" through 4"  
Handwheel Operated

3" and 4"  
Gear Operated

6" and 8" Valves

Valve Size	Face To Face	To Top Of Hand-Wheel	Flare Dia.	To Bottom Of Valve	Hand-Wheel Dia.	Width Of Body	To Extreme Edge Of Hand-Wheel	To Outside Face Of Hand-Wheel	To Top Of Position Indicator	Nominal Torque To Seat Ft. Lbs.	Wt. Lbs.	Flange Dimensions, 150 lb., ANSI				
												Flange Dia.	Flange Thick-ness	No. Of Bolt Holes	Bolt Hole Dia.	Bolt Circle Dia.
	A	B	C	D	E	F	G	H	J**			K	L		M	N
1	5.00	6.63	2.00	2.50	4.25	5.06	-	-	-	20	15	4.25	.44	4	.63	3.13
1½	6.50	8.06	2.88	-	7.00	6.69	-	-	-	30	27	5.00	.56	4	.63	3.88
2	7.00	9.19	3.63	-	8.00	7.38	-	-	-	35	35	6.00	.63	4	.75	4.75
3	8.00	14.88	5.00	4.50	14.00	10.88	-	-	-	65	75	7.50	.75	4	.75	6.00
3*	8.00	17.81	5.00	4.50	14.00	10.88	6.44	-	-	35	78	7.50	.75	4	.75	6.00
4	9.00	15.50	6.19	5.63	14.00	12.13	-	-	-	70	107	9.00	.94	8	.75	7.50
4*	9.00	18.44	6.19	5.63	14.00	12.13	10.44	-	-	50	113	9.00	.94	8	.75	7.50
6†	16.00	35.75	8.50	9.00	24.00	20.25	15.00	9.31	29.75	90	400	11.00	1.00	8	.88	9.50
6‡	16.00	35.75	8.50	9.00	24.00	20.25	15.00	9.31	29.75	125	400	11.00	1.00	8	.88	9.50
8†	19.00	35.75	10.63	9.00	24.00	20.25	15.00	9.31	29.75	100	430	13.50	1.13	8	.88	11.75
8‡	19.00	35.75	10.63	9.00	24.00	20.25	15.00	9.31	29.75	130	430	13.50	1.20	8	.88	11.75

**Notes:**

All flange bolt holes straddle the center lines.

All valve flange dimensions conform to ANSI B16.42. The face-to-face dimensions in valve sizes through 4" conform to ANSI B163.10, Class 150.

\* Recommended in 3" size for line pressure over 150 psi and in 4" size for line pressure over 75 psi. An enclosed gear box is included.

\*\* J is less than B on handwheel operated valves.

† Recommended for use with line pressure up to 75 psi, these models are furnished with 3-to-1 gear reducers.

‡ Recommended for use with line pressure over 75 psi, these models are furnished with 5-to-1 gear reducers.