ECO Valve

...because we all live downstream

Back Pressure / Pressure Relief Valves



- *available in PVC, CPVC, PVDF, polypropylene, 316L Stainless Steel, Alloy 20, and Hastelloy*
- *long life <u>single</u> sealing diaphragm (laminated PTFE, Viton, EPDM or PVC)*
- *field adjustable pressure setting 7 - 150 PSIG (48 - 1034 kPa)*
- *CPVC bonnet for higher temperature and chemical resistance rating*

PRIMARY FLUID SYSTEMS INC.

Call Toll Free 1-866-324-6422
Tel (905) 333-8743 Fax (905) 333-8746

E-Mail: ecovalve@ecovalve.ca
www.ecovalve.ca

ECO Valve Back Pressure/Pressure Relief Valve

Description:

Back Pressure/Pressure Sustaining/Anti Syphon

ECO Valve is a diaphragm style two port back pressure/pressure sustaining valve designed to provide and control a continuous pressure on the discharge side of a positive discharge style pump, such as metering pumps. ECO Valve assists with the proper seating of the valve check assembly and accurate filling of the pump housing chamber for a more efficient and accurate running pump. (Factory set @ 50 psig /345kPa)

Pressure Relief

ECO Valve is also designed to be used as a 2 port off line pressure relief valve to help protect the discharge side of positive displacement pumps from system failure due to over pressure caused by a blockage or accidental valve closure on the downstream side of the pump. (Factory set @ 50 psig / 345kPa)



Flanged

Features

- **no moving parts in wetted chamber; superior choice for "dirty" fluid applications**
- **high flow capacity with lower pressure drop**
- **top comes standard in CPVC; also available in aluminum or 316S/S**
- **optional diaphragm materials**
- **colour coded caps indicate size**
- **sizes from 1/4" to 4" (DN 8 to DN 100)**
- **10 configurations: threaded, socket, union and flanged**
- **injection mould design with fewer moving parts**
- **high ambient temperature range**
- **gauge port available in either flow direction**



Union



NPT/BSPT



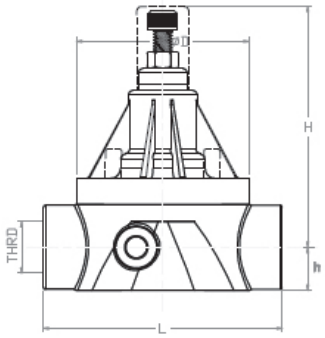
Socket

Ideal for metering pump/chemical dosing applications

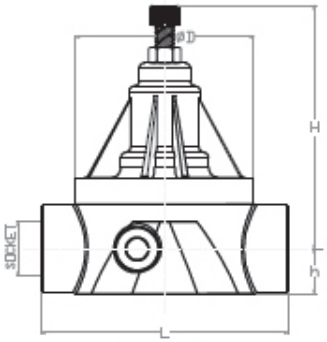
Designed for long life and ease of installation and maintenance

Exceptional 3 year warranty

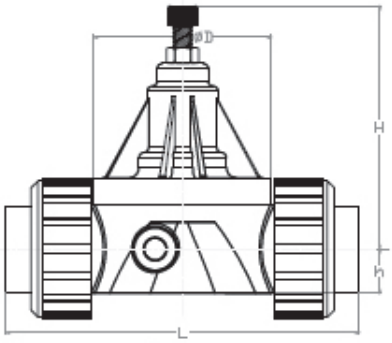
Body Configuration Models ECO-25, ECO-38, ECO-50



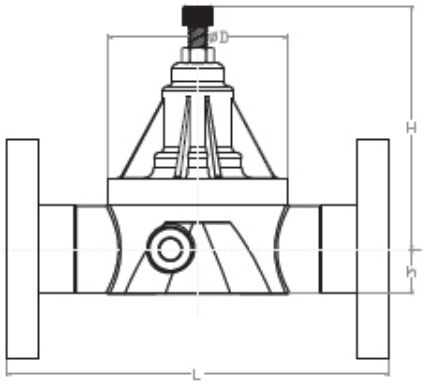
Threaded Female



Socket



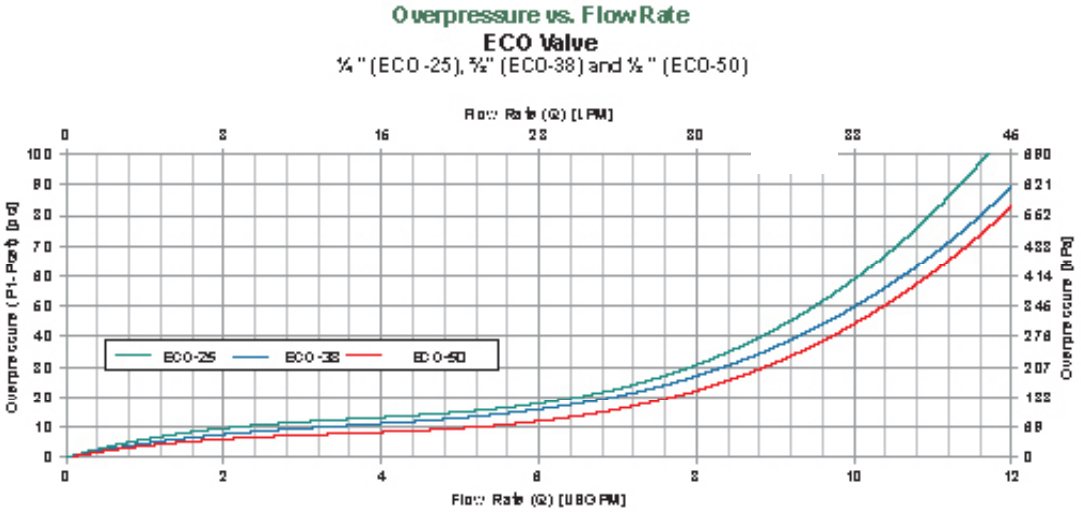
Union



Flanged

Nominal Size - PVC, CPVC, PP & PVDF								
NPS Inch	DN	ØD inch mm	h inch mm	H inch mm	L inch mm	L inch mm	L inch mm	L inch mm
Series A					Thread	Socket	Flange	Union
1/4"		2.50	0.66	4.48	3.40	3.40	N/A	6.00
	8	63.50	16.70	113.90	86.40	86.40		152.40
3/8"		2.50	0.66	4.48	3.40	3.40	N/A	6.00
	10	63.50	16.70	113.90	86.40	86.40		152.40
1/2"		2.50	0.66	4.48	3.40	3.40	5.40	6.00
	15	63.50	16.70	113.90	86.40	86.40	137.20	152.40

Nominal Size - 316S/S, Alloy 20, HastC							
NPS Inch	DN	ØD inch mm	h inch mm	H inch mm	L inch mm	L inch mm	L inch mm
Series A					Thread	Socket	Flange
1/4"		2.50	0.60	4.47	2.50	2.50	N/A
	8	63.50	15.20	113.50	63.50	63.50	
3/8"		2.50	0.49	4.58	2.50	2.50	N/A
	10	63.50	12.40	116.3	63.50	63.50	
1/2"		2.50	0.60	4.72	2.50	2.50	6.25
	15	63.50	15.20	199.9	63.50	63.50	158.8



The overpressure vs. flow rate curve is based on a valve spring pressure of 50 PSIG (345 kPa).

P1 = working pressure
P set = 50 PSIG (345 kPa)

Example:
ECO-25
100 PSIG - 50 PSIG = 50 PSIG = 9.5 USGPM

690 kPa - 345 kPa = 345 kPa = 36 LPM

Thermoplastics Temperature Correction Factors

F°	C°	PVC	CPVC	PP	PVDF
70-90	21-32	1.00	1.00	1.00	1.00
100	38	.90	1.00	1.00	1.00
110	43	.83	1.00	.91	1.00
115	46	.75	1.00	.87	1.00
120	49	.66	1.00	.83	1.00
125	52	.58	.97	.79	1.00
130	54	.50	.95	.75	1.00
140	60	.33	.90	.66	1.00
150	66	NR	.80	.60	.97
170	77	NR	.60	.43	.86
180	82	NR	.50	.33	.80

The maximum pressure rating for valves regardless of size is 150 PSIG (1034 kPa) at 73^{O} F (22^{O}C).

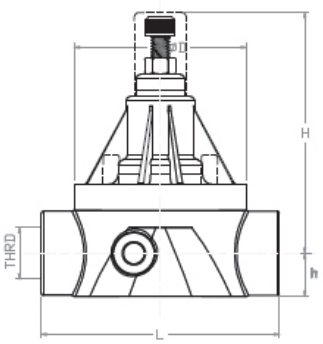
As ambient, collective surface and fluid temperature increases, the maximum valve pressure rating decreases. The decrease is dependent on the thermoplastic valve material.

Example: CPVC valve operating at 140°F (60°C)
Factor at 140°F (60°C) = .90
150 PSIG x .90 = 135 PSIG

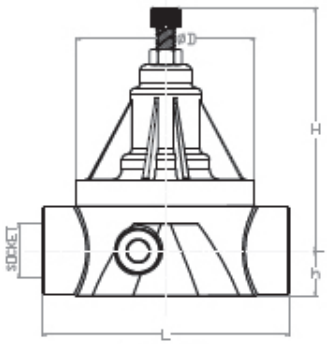
Valve is de-rated to 135 PSIG

NR = not recommended

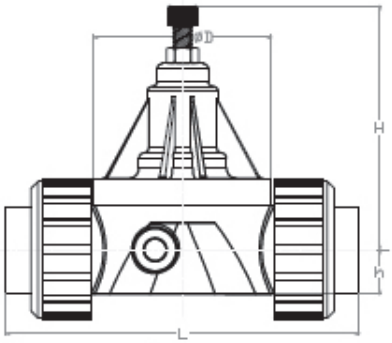
Body Configuration Models ECO-55, ECO-75, ECO-100



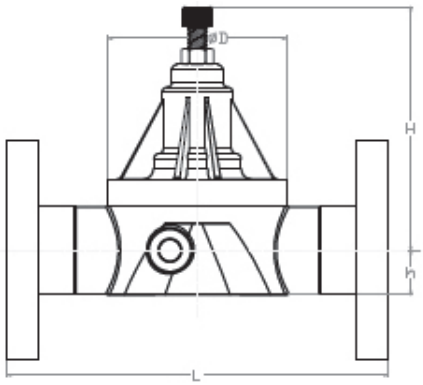
Threaded Female



Socket



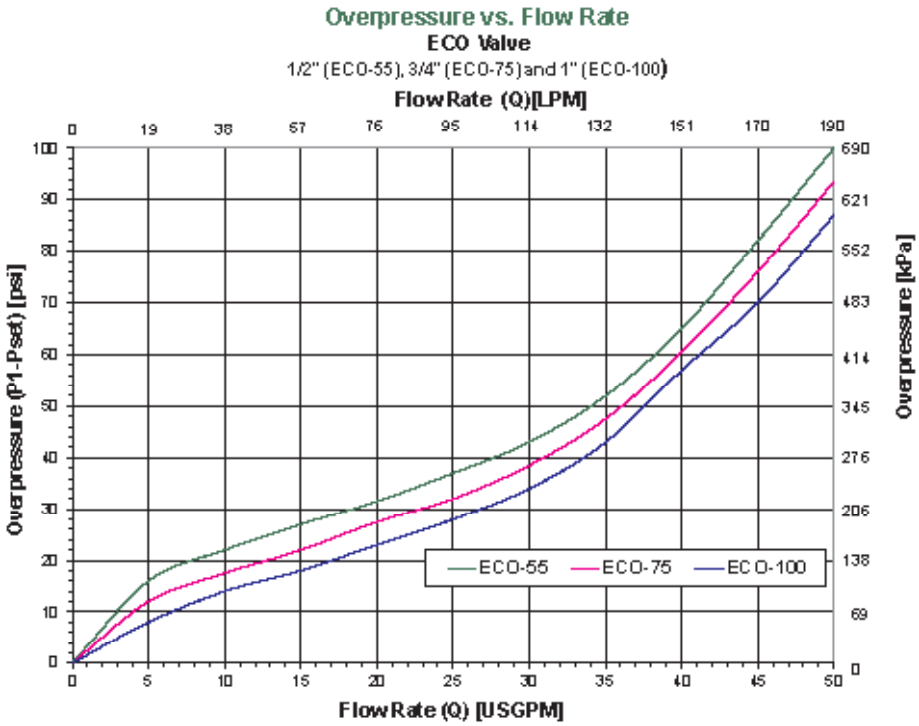
Union



Flanged

Nominal Size - PVC, CPVC, PP & PVDF								
NPS Inch	DN	ØD inch mm	h inch mm	H inch mm	L inch mm	L inch mm	L inch mm	L inch mm
Series B					Thread	Socket	Flange	Union
1/2"		3.50	0.88	4.80	4.85	4.85	6.93	6.96
High Flow	15	88.90	22.40	121.90	123.20	123.20	176.00	176.80
3/4"		3.50	0.88	4.80	4.85	4.85	7.37	6.96
	20	88.90	22.40	121.90	123.20	123.20	187.07	176.80
1"		3.50	0.88	4.80	4.85	4.85	7.48	6.96
	25	88.90	22.40	121.90	123.20	123.20	190.00	176.80

Nominal Size - 316S/S, Alloy 20, HastC							
NPS Inch	DN	ØD inch mm	h inch mm	H inch mm	L inch mm	L inch mm	L inch mm
Series B					Thread	Socket	Flange
1/2"		3.50	0.63	4.80	3.50	3.50	7.25
High Flow	15	88.90	16.00	121.90	88.90	88.90	180.72
3/4"		3.50	0.73	4.80	3.50	3.50	7.48
	20	88.90	18.50	121.90	88.90	88.90	190.09
1"		3.50	0.86	5.10	3.50	3.50	7.63
	25	88.90	21.80	129.50	88.90	88.90	193.95



The overpressure vs. flow rate curve is based on a valve spring pressure of 50 PSIG (345 kPa).

P1 = working pressure
P set = 50 PSIG (345 kPa)

Example:
ECO-55
100 PSIG - 50 PSIG = 50 PSIG = 34 USGPM
690 kPa - 345 kPa = 345 kPa = 128.4 LPM

Thermoplastics Temperature Correction Factors

F°	C°	PVC	CPVC	PP	PVDF
70-90	21-32	1.00	1.00	1.00	1.00
100	38	.90	1.00	1.00	1.00
110	43	.83	1.00	.91	1.00
115	46	.75	1.00	.87	1.00
120	49	.66	1.00	.83	1.00
125	52	.58	.97	.79	1.00
130	54	.50	.95	.75	1.00
140	60	.33	.90	.66	1.00
150	66	NR	.80	.60	.97
170	77	NR	.60	.43	.86
180	82	NR	.50	.33	.80

The maximum pressure rating for valves regardless of size is 150 PSIG (1034 kPa) at 73° F (22°C).

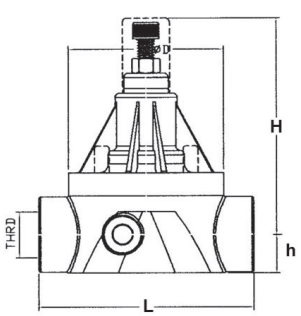
As ambient, collective surface and fluid temperature increases, the maximum valve pressure rating decreases. The decrease is dependent on the thermoplastic valve material.

Example: CPVC valve operating at 140°F (60°C)
Factor at 140°F (60°C) = .90
150 PSIG x .90 = 135 PSIG

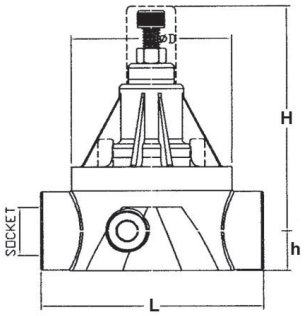
Valve is de-rated to 135 PSIG

NR = not recommended

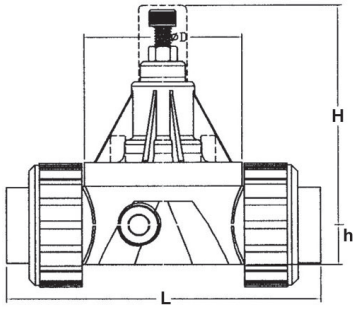
Body Configuration Models ECO-110, ECO-125, ECO-150 & ECO-200



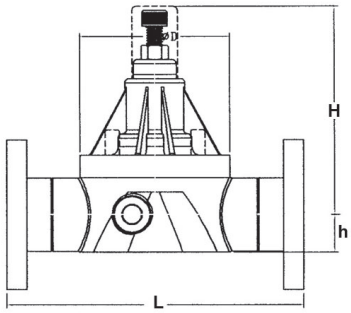
Threaded Female



Socket



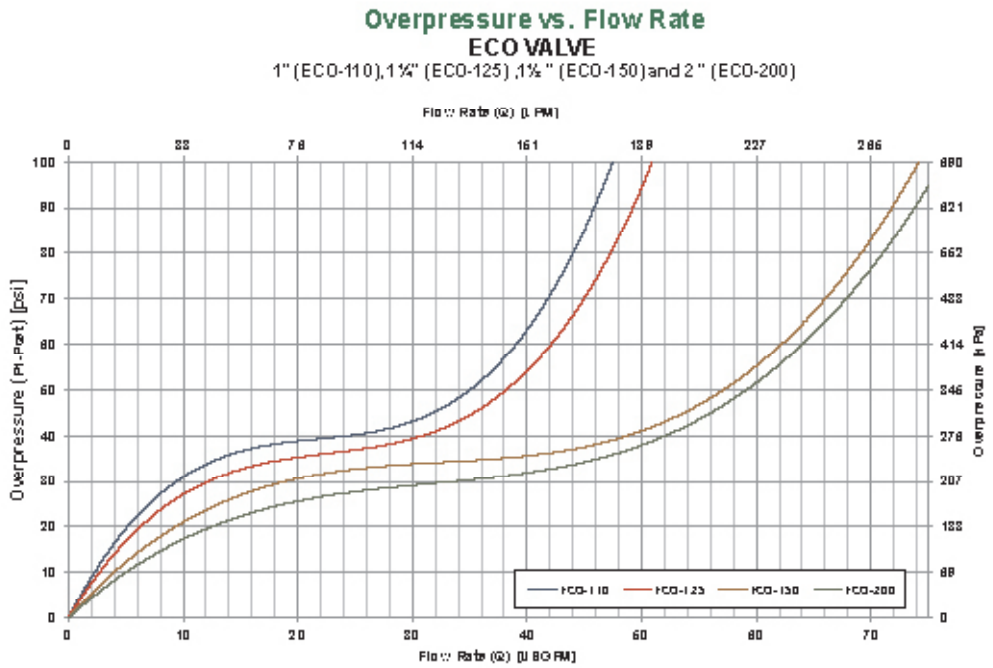
Union



Flanged

Nominal Size - PVC, CPVC, PP & PVDF								
NPS Inch	DN	ØD inch mm	h inch mm	H inch mm	L inch mm	L inch mm	L inch mm	L inch mm
Series C					Thread	Socket	Flange	Union
1”		4.00	1.47	5.75	4.90	4.90	7.59	9.96
	25	101.60	37.30	146.10	124.50	124.50	192.80	253.00
1 1/4”		4.00	1.47	5.75	4.90	4.90	7.83	9.96
	32	101.60	37.30	146.10	124.50	124.50	198.90	253.00
1 1/2”		4.00	1.47	5.75	6.10	6.10	9.27	9.96
	40	101.60	37.30	146.10	154.90	154.90	235.50	253.00
2”		4.00	1.47	5.75	6.10	6.10	9.61	9.96
	50	101.60	37.30	146.10	154.90	154.90	244.10	253.00

Nominal Size - 316S/S, Alloy 20, HastC							
NPS Inch	DN	ØD inch mm	h inch mm	H inch mm	L inch mm	L inch mm	L inch mm
Series C					Thread	Socket	Flange
1”		4.00	1.05	5.78	4.00	4.00	8.15
	25	101.60	26.70	146.60	101.60	101.60	207.00
1 1/4”		4.00	1.05	5.78	4.00	4.00	8.14
	32	101.60	26.70	146.60	101.60	101.60	206.70
1 1/2”		4.00	1.45	5.83	4.72	4.72	9.60
	40	101.60	36.80	148.10	119.90	119.90	243.60
2”		4.00	1.45	5.82	4.72	4.72	9.72
	50	101.60	36.80	147.80	119.80	119.90	246.90



The overpressure vs. flow rate curve is based on a valve spring pressure of 50 PSIG (345 kPa).

P1 = working pressure
P set = 50 PSIG (345 kPa)

Example:
ECO-110
100 PSIG - 50 PSIG = 50 PSIG = 35 USGPM

690 kPa - 345 kPa = 345 kPa = 136 LPM

Thermoplastics Temperature Correction Factors

F°	C°	PVC	CPVC	PP	PVDF
70-90	21-32	1.00	1.00	1.00	1.00
100	38	.90	1.00	1.00	1.00
110	43	.83	1.00	.91	1.00
115	46	.75	1.00	.87	1.00
120	49	.66	1.00	.83	1.00
125	52	.58	.97	.79	1.00
130	54	.50	.95	.75	1.00
140	60	.33	.90	.66	1.00
150	66	NR	.80	.60	.97
170	77	NR	.60	.43	.86
180	82	NR	.50	.33	.80

The maximum pressure rating for valves regardless of size is 150 PSIG (1034 kPa) at 73^{o} F (22^{o}C).

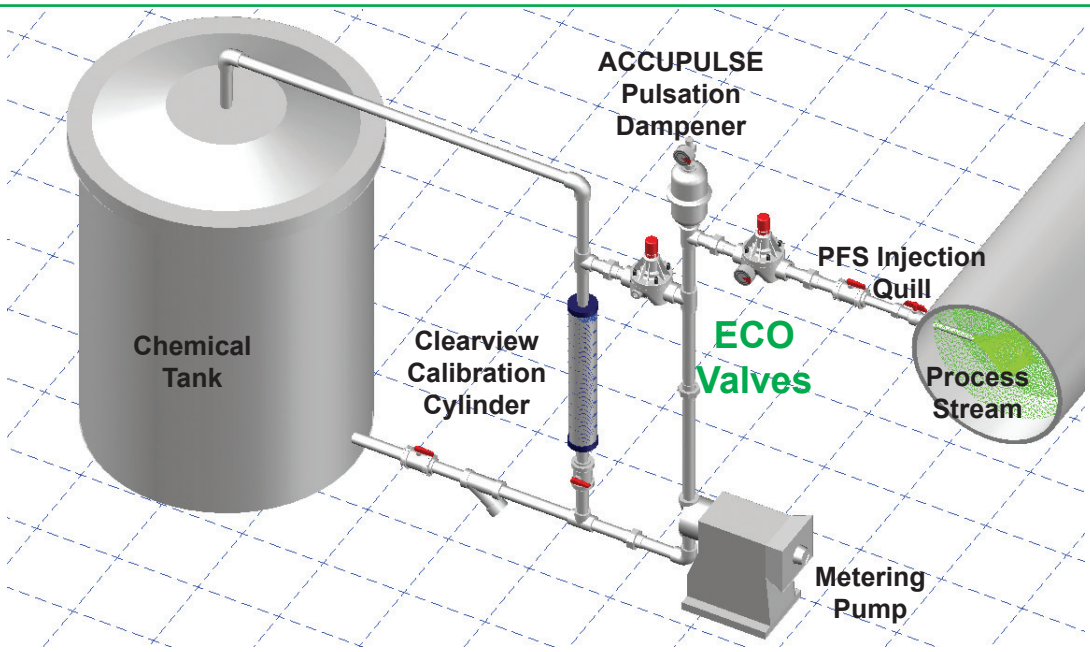
As ambient, collective surface and fluid temperature increases, the maximum valve pressure rating decreases. The decrease is dependent on the thermoplastic valve material.

Example: CPVC valve operating at 140°F (60°C)
Factor at 140°F (60°C) = .90
150 PSIG x .90 = 135 PSIG

Valve is de-rated to 135 PSIG

NR = not recommended

ECO Valve Back Pressure/Pressure Relief Valve



Typical Installation

Ordering Information

Example: Part # ECO - 50A - PVC - P - NL

Back Pressure/Pressure Relief Valve
2 Port Design

H = High Pressure
T = High Temperature
M = Mid-Range 20 - 230 psig range

Sizes Available:
25 = DN 8 = 1/4”
38 = DN 10 = 3/8”
50 = DN 15 = 1/2”
55 = DN 15 = 1/2” (High Flow)
75 = DN 20 = 3/4”
100 = DN 25 = 1”
110 = DN 25 = 1” (High Flow)
125 = DN 32 = 1 1/4”
150 = DN 40 = 1 1/2”
200 = DN 50 = 2”
220 = DN 50 = 2” (High Flow)
300 = DN 75 = 3”
400 = DN 100 = 4”

Connections Available:
A = NPT
B = BSPT
C = Socket (ANSI)
D = Socket (DIN)
E = Flanged (ANSI)
F = Flanged (DIN)
G = Union X NPT (plastic & S/S only)
H = Union X BSPT (plastic & S/S only)
I = Union X Socket (ANSI) (plastic only)
J = Union X Socket (DIN) (plastic only)

Options
NL = gauge port - NPT (left to right flow)
BL = gauge port - BSP (left to right flow)
NR = gauge port - NPT (right to left flow)
BR = gauge port - BSP (right to left flow)

Diaphragms
P = PVC (standard on all PVC valves)
T = PTFE backed EPDM (standard on all except PVC valves)
E = EPDM
V = Viton

Body Materials
PVC = polyvinylchloride
PP = polypropylene
PVDF = polyvinyldene fluoride
CPVC = chlorinated polyvinyl chloride (Corzan)
S/S = 316L Stainless Steel
ALL20 = Alloy 20
HASTC = Hastelloy

Note: Viton “O” ring seals are standard on all union style valves. EPDM and PTFE encapsulated rings are available for an additional charge. Please contact our sales order desk for pricing.

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