Needle Valves

Pipe Valves

P Series

Pressures to 15,000 psi (1034 bar)

Since 1945 Autoclave Engineers has designed and built premium quality valves, fittings and tubing. This commitment to engineering and manufacturing excellence has earned Autoclave a reputation for reliable efficient product performance. Autoclave Engineers has long been established as the world leader in high pressure fluid handling components for the chemical/petrochemical, research, and oil and gas industries.

Pipe Valve Features:

- P Series valve design provides in-line pipe connections for 1/4” to 1” pipe sizes.
- Rising stem/barstock body design.
- Non-rotating stem prevents stem/seat galling.
- Metal-to-metal seating achieves bubble-tight shut-off, longer stem/seat life in abrasive flow, greater durability for repeated on/off cycles and excellent corrosion resistance.
- PTFE (Teflon) encapsulated packing provides dependable stem and body sealing.
- Stem sleeve and packing gland materials have been selected to achieve extended thread cycle life and reduced handle torque.
- Choice of Vee or Regulating stem tips.
- Operating temperature range from 0°F (-17°C) to 400°F (204°C).

Autoclave valves are complemented by a complete line of fittings, tubing, check valves and line filters.

Autoclave Engineers
Fluid Components
Division of Snap-tite, Inc.
www.autoclave.com

Valve Series - P Series

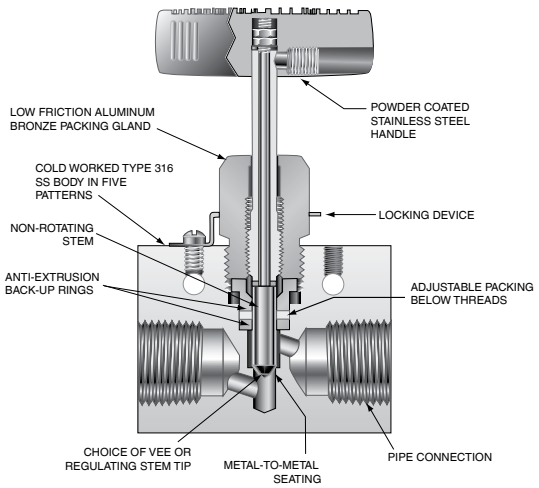
Pressures to 15,000 psi (1034 bar)

Tube Outside Diameter Size Inches	Connection Type	Orifice Size Inches (mm)	Rated C_V*	Pressure Rating psi (bar) @ Room Temperature**
1/4	Pipe	0.203 (5.16)	0.63	15,000 (1034)
3/8	Pipe	0.219 (5.56)	0.75	15,000 (1034)
1/2	Pipe	0.312 (7.92)	1.30	15,000 (1034)
3/4	Pipe	0.438 (11.13)	2.50	10,000 (690)
1	Pipe	0.562 (14.27)	4.40	10,000 (690)

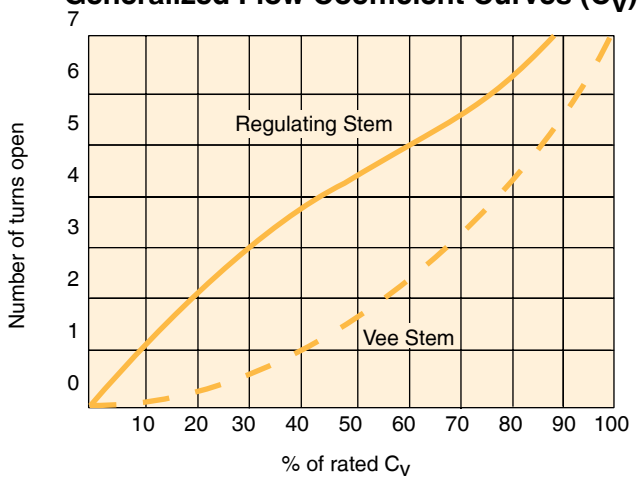
Notes:

* *C_V values shown are for 2-way straight valve pattern. For 2-way angle patterns, increase C_V value 50%. (Based on water)*

** *For complete temperature ratings see pressure/temperature rating guide in Technical Information section.*



Generalized Flow Coefficient Curves (C_V)



Ordering Procedure

For complete information on available stem types, optional connections and additional valve options, see Needle Valve Options section or contact your Sales Representative.

Typical catalog number: **15P4071**

15P — Valve Series
- **10P**-10,000 psi (690 bar)
- **15P**-15,000 psi (1034 bar)

4 — Nominal Pipe Size
- **4**-1/4"
- **6**-3/8"
- **8**-1/2"
- **12**-3/4"
- **16**-1"

07 — Stem/Seat Type
- **07** - non-rotating Vee stem (on-off service)
- **08** - non-rotating regulating stem (tapered tip for regulating and shutoff)

1 — Body Pattern
- **1** - two-way straight

XX — Options
- **TG** - Teflon Glass Packing
- **GY** - Graphite Packing

Note: 3/4" and 1" 10,000 psi (690 bar) max.

Valve Options

Extreme Temperatures
Standard Autoclave valves with Teflon packing may be operated to 450°F (232°C). High temperature packing and/or extended stuffing box is available for service from 0°F (-17.8°C) to 650°F (343°C) by adding the following suffixes to catalog order number.†
TG standard valve with Teflon glass packing to 600°F (316°C).
GY standard valve with graphite braided yarn packing to 650°F (343°C).
B standard valve with cryogenic trim material and Teflon packing to -100°F (-73°C).

†Autoclave Engineers recommends pipe connections be operated between 0°F (-17°C) and 400°F (204°C). For additional valve options, contact your Sales Representative.

Valve Maintenance

Repair Kits: add "R" to the front of valve catalog number for proper repair kit. (Example: **R15P4071 or R10P12071**)

Valve Bodies: Valve bodies are available. Order using the eight (8) digit part number found on the valve drawing or contact your Sales Representative for information.

Consult your Autoclave representative for pricing on repair kits and valve bodies. Refer to the Tools, Installation, Operation and Maintenance section for proper maintenance procedures.

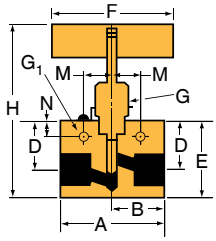
Catalog Number	Stem Type	Pipe Size	Orifice Diameter	Dimensions - inches (mm) A	B	C	D	D_1	E	F	G	G_1	H	M	N	Block Thick-ness	Valve Pattern
2-Way Straight																	
15P4071	**VEE**	1/4	0.203	2.00	1.00		1.41		2.00	3.00	0.75	0.22	4.63	0.62	0.38	0.75	**See Figure 1**
15P4081	**REG**	(6.35)	(5.16)	(50.80)	(25.40)		(35.81)		(50.80)	(76.20)	(19.05)	(5.59)	(117.60)	(15.75)	(9.65)	(19.05)	
15P6071	**VEE**	3/8	0.219	2.50	1.25		1.41		2.00	3.00	0.75	0.22	4.63	0.62	0.38	1.00	
15P6081	**REG**	(9.53)	(5.56)	(63.50)	(31.75)		(35.81)		(50.80)	(76.20)	(19.05)	(5.59)	(117.60)	(15.75)	(9.65)	(25.4)	
15P8071	**VEE**	1/2	0.312	3.00	1.50		2.06		2.88	4.00	1.00	0.34	5.93	0.69	0.50	1.38	
15P8081	**REG**	(12.70)	(7.92)	(76.20)	(38.10)		(52.32)		(73.15)	(101.60)	(25.40)	(8.64)	(150.62)	(17.53)	(12.70)	(35.05)	
10P12071	**VEE**	3/4	0.437	3.50	1.75		2.63		3.75	10.25	1.12	0.44	7.00	0.88	0.63	1.75	
10P12081	**REG**	(19.05)	(11.10)	(88.90)	(44.45)		(66.80)		(95.25)	(260.35)	(28.45)	(11.18)	(177.80)	(22.35)	(16.00)	(44.45)	
10P16071	**VEE**	1	0.562	4.12	2.06		3.31		4.62	10.25	1.62	0.56	9.00	1.25	1.13	1.75	
10P16081	**REG**	(25.40)	(14.27)	(104.65)	(52.32)		(84.07)		(117.35)	(260.35)	(41.15)	(14.22)	(228.60)	(31.75)	(28.70	(44.45)	
2-Way Angle																	
15P4072	**VEE**	1/4	0.203	2.00	1.00		1.41		2.44	3.00	0.75	0.22	4.81	0.62	0.38	0.75	**See Figure 2**
15P4082	**REG**	(6.35)	(5.16)	(50.80)	(25.40)		(35.81)		(61.98)	(76.20)	(19.05)	(5.59)	(122.17)	(15.75)	(9.65)	(19.05)	
15P6072	**VEE**	3/8	0.219	2.50	1.25		1.41		2.44	3.00	0.75	0.22	4.81	0.62	0.38	1.00	
15P6082	**REG**	(9.53)	(5.56)	(63.50)	(31.75)		(35.81)		(61.98)	(76.20)	(19.05)	(5.59)	(122.17)	(15.75)	(9.65)	(25.40)	
15P8072	**VEE**	1/2	0.312	3.00	1.50		2.06		3.38	4.00	1.00	0.34	6.43	0.69	0.50	1.38	
15P8082	**REG**	(12.70)	(7.92)	(76.20)	(38.10)		(52.32)		(85.85)	(101.60)	(25.40)	(8.64)	(163.32)	(17.53)	(12.70)	(35.05)	
10P12072	**VEE**	3/4	0.437	3.50	1.75		2.63		4.25	10.25	1.12	0.44	7.50	0.88	0.63	1.75	
10P12082	**REG**	(19.05)	(11.10)	(88.90)	(44.45)		(66.80)		(107.95)	(260.35)	(28.45)	(11.18)	(190.50)	(22.35)	(16.00)	(44.45)	
10P16072	**VEE**	1	0.562	4.12	2.06		3.31		5.12	10.25	1.62	0.56	9.00	1.25	1.13	1.75	
10P16082	**REG**	(25.40)	(14.27)	(104.65)	(52.32)		(84.07)		(130.05)	(260.35)	(41.15)	(14.22)	(228.60)	(31.75)	(28.70	(44.45)	
3-Way / 2 on Pressure																	
15P4073	**VEE**	1/4	0.203	2.00	1.00		1.41		2.62	3.00	0.75	0.22	5.00	0.62	0.38	0.75	**See Figure 3**
15P4083	**REG**	(6.35)	(5.16)	(50.80)	(25.40)		(35.71)		(66.55)	(76.20)	(19.05)	(5.59)	(127.00)	(15.75)	(9.65)	(19.05)	
15P6073	**VEE**	3/8	0.219	2.50	1.25		1.41		2.62	3.00	0.75	0.22	5.00	0.62	0.38	1.00	
15P6083	**REG**	(9.53)	(5.56)	(63.50)	(31.75)		(35.71)		(66.55)	(76.20)	(19.05)	(5.59)	(127.00)	(15.75)	(9.65)	(25.40)	
15P8073	**VEE**	1/2	0.312	3.00	1.50		2.06		3.62	4.00	1.00	0.34	6.52	0.69	0.50	1.38	
15P8083	**REG**	(12.70)	(7.92)	(76.20)	(38.10)		(52.40)		(91.95)	(101.60)	(25.40)	(8.64)	(165.61)	(17.53)	(12.70)	(35.05)	
10P12073	**VEE**	3/4	0.437	3.50	1.75		2.65		4.62	10.25	1.12	0.44	7.88	0.88	0.63	1.75	
10P12083	**REG**	(19.05)	(11.10)	(88.90)	(44.45)		(67.31)		(117.35)	(260.35)	(28.45)	(11.18)	(200.15)	(22.35)	(16.00)	(44.45)	
10P16073	**VEE**	1	0.562	4.12	2.06		3.31		5.88	10.25	1.62	0.56	9.75	1.25	1.13	1.75	
10P16083	**REG**	(25.40)	(14.27)	(104.65)	(52.32)		(84.12)		(149.35)	(260.35)	(41.15)	(14.22)	(247.65)	(31.75)	(28.70)	(44.45)	

G - Packing gland mounting hole drill size
G_1 - Bracket mounting hole size
Panel mounting drill size: 0.22" all valves.

** H Dimension is with stem in closed position.*

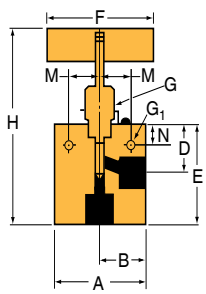
For prompt service, Autoclave stocks select products. Consult factory.
All dimensions for reference only and subject to change.

Figure 1



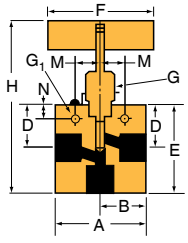
2-Way Straight

Figure 2



2-Way Angle

Figure 3



3-Way /2 on Pressure

Catalog Number	Stem Type	Outside Diameter Tube	Orifice Diameter	Dimensions - inches (mm) A	B	C	D	D_1	E	F	G	G_1	H*	M	N	Block Thickness	Valve Pattern
3-Way / 1 on Pressure																	
15P4074	VEE	1/4	.0203	2.00	1.00		1.41		2.44	3.00	0.75	0.227	4.81	0.62	0.38	0.75	See Figure 4
15P4084	REG	(6.35)	(5.16)	(50.80)	(25.40)		(35.71)		(61.98)	(76.20)	(19.05)	(5.59)	(122.17)	(15.75)	(9.65)	(19.05)	
15P6074	VEE	3/8	0.219	2.50	1.25		1.41		2.44	3.00	0.75	0.22	4.81	0.62	0.38	1.00	
15P6084	REG	(9.53)	(5.56)	(63.50)	(31.75)		(35.71)		(61.98)	(76.20)	(19.05)	(5.59)	(122.17)	(15.75)	(9.65)	(25.40)	
15P8074	VEE	1/2	0.312	3.00	1.50		2.06		3.38	4.00	1.00	0.34	6.31	0.69	0.50	1.38	
15P8084	REG	(12.70)	(7.92)	(76.20)	(38.10)		(52.40)		(85.85)	(101.60)	(25.40)	(8.64)	(160.27)	(17.53)	(12.70)	(35.05)	
10P12074	VEE	3/4	0.437	3.50	1.75		2.65		4.25	10.25	1.12	0.44	7.50	0.88	0.63	1.75	
10P12084	REG	(19.05)	(11.10)	(88.90)	(44.45)		(67.31)		(107.95)	(260.35)	(28.45)	(11.18)	(190.50)	(22.35)	(16.00)	(44.45)	
10P16074	VEE	1	0.562	4.12	2.06		3.31		5.12	10.25	1.62	0.56	9.09	1.25	1.13	1.75	
10P16084	REG	(25.40)	(14.27)	(104.65)	(52.32)		(84.07)		(130.05)	(260.35)	(41.15)	(14.22)	(230.89)	(31.75)	(28.70)	(44.45)	
3-Way/2-Stem Manifold																	
15P4075	VEE	1/4	0.203	2.00	1.00		1.69	1.19	3.38	3.00	0.75	0.22	8.13	0.62	0.38	0.75	See Figure 5
15P4085	REG	(6.35)	(5.16)	(50.80)	(25.40)		(42.88)	(30.18)	(85.85)	(76.20)	(19.05)	(5.59)	(206.50)	(15375)	(9.65)	(19.05)	
15P6075	VEE	3/8	0.219	2.50	1.25		1.69	1.19	3.38	3.00	0.75	0.22	8.13	0.62	0.38	1.00	
15P6085	REG	(9.53)	(5.56)	(63.50)	(31.75)		(42.88)	(30.18)	(85.85)	(76.20)	(19.05)	(5.59)	(206.50)	(15.75)	(9.65)	(25.40)	
15P8075	VEE	1/2	0.312	3.00	1.50		2.56	1.75	5.12	4.00	1.00	0.34	11.31	0.69	0.50	1.38	
15P8085	REG	(12.70)	(7.92)	(76.20)	(38.10)		(65.07)	(44.45)	(130.05)	(101.60)	(25.40)	(8.64)	(287.27)	(17.53)	(12.70)	(35.05)	
10P12075	VEE	3/4	0.437	3.50	1.75		3.25	2.25	6.50	10.25	1.12	0.44	13.00	0.88	0.63	1.75	
10P12085	REG	(19.05)	(11.10)	(88.90)	(44.45)		(82.55)	(57.15)	(165.10)	(260.35)	(28.45)	(11.18)	(330.20)	(22.35)	(16.00)	(44.45)	
10P16075	VEE	1	0.562	4.12	2.06		3.75	2.81	7.50	10.25	1.62	0.56	15.44	1.25	1.13	1.75	
10P16085	REG	(25.40)	(14.27)	(104.65)	(52.32)		(95.25)	(71.42)	(190.50)	(260.35)	(41.15)	(14.22)	(392.18)	(31.75)	(28.70)	(44.45)	

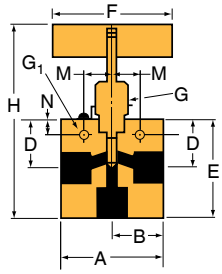
G - Packing gland mounting hole drill size
G_1 - Bracket mounting hole size
Panel mounting drill size: 0.22" all valves.

**H Dimension is with stem in closed position.*
All dimensions for reference only and subject to change.

For prompt service, Autoclave stocks select products. Consult factory.

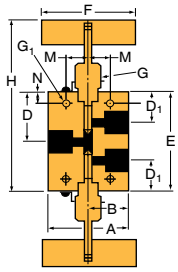
NOTE: NPT (Pipe) Connections:
- NPT threads must be sealed using a high quality PTFE tape and/or paste product. Refer to thread sealant manufacturer's instructions on how to apply thread sealant.
- Sealing performance may vary based on many factors such as pressure, temperature, media, thread quality, thread material, proper thread engagement and proper use of thread sealant.
- Customer should limit the number of times an NPT fitting is assembled and disassembled because thread deformation during assembly will result in deteriorating seal quality over time. When using only PTFE tape, consider using thread lubrication to prevent galling of mating parts.

Figure 4



3-Way/1 on Pressure

Figure 5



3-Way/2-Stem Manifold

ISO-9001 Certified

02-1251SE-1008

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