

# P Series Needle Valve: Pressures to 15,000 psi (1034 bar)

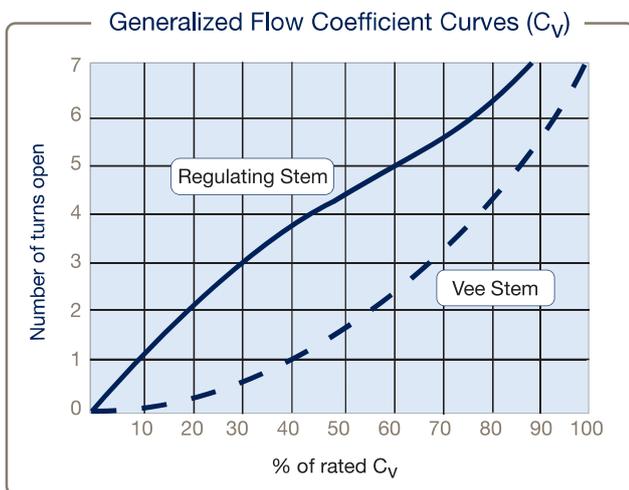


Tube Outside Diameter Size (inches)	Connection Type	Orifice Size Inches (mm)	Rated $C_v^*$	Pressure Rating psi (bar) @Room Temperature**
1/4	NPT	0.203 (5.16)	0.63	15,000 (1034)
3/8	NPT	0.219 (5.56)	0.75	15,000 (1034)
1/2	NPT	0.312 (7.92)	1.30	15,000 (1034)
3/4	NPT	0.438 (11.13)	2.50	10,000 (689)
1	NPT	0.562 (14.27)	4.40	10,000 (689)

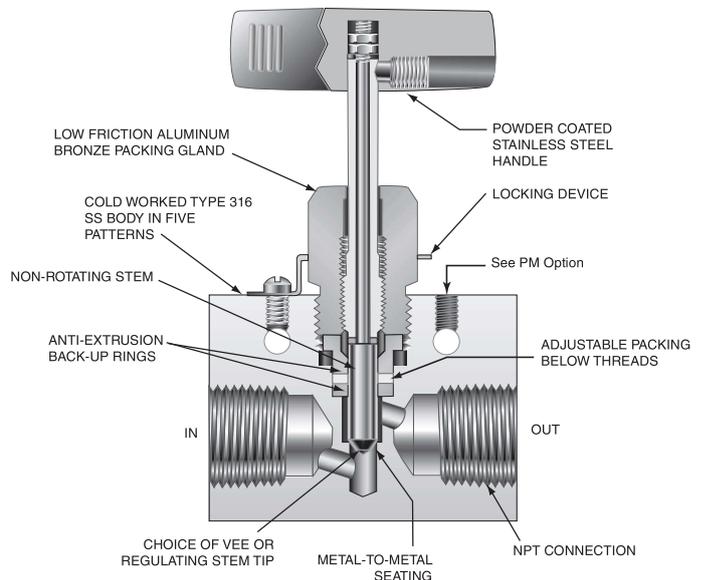
### Notes

\*  $C_v$  values shown are for 2-way straight valve pattern. For 2-way angle patterns, increase  $C_v$  value 50%. (Based on water). Formula for converting  $C_v$  to volumetric flow can be found in Technical Information section.

\*\* Maximum Allowable Working Pressures decrease as temperatures increase - see pressure/temperature rating guide in Technical Information section.



P Series Flow Curves for Vee and Regulating Style Stems



## Valve Packing Options:

Standard Parker Autoclave Engineers valves with PTFE packing may be operated from 0°F (-18°C) to 450°F (232°C). High and Cryogenic temperature packing and /or extended stuffing box are available for service from -423°F (-252°C) to 800°F (427°C) by adding the following suffixes to catalog order number:

- B** Cryogenic trim materials and PTFE packing required when below 0°F (-18°C) to -100°F (-73°C)
- LT** Extended stuffing box valve with PTFE packing and Cryogenic trim materials to -423°F (-252°C)
- TG** Standard valve with PTFE-Glass packing -100°F (-73°C) to 600°F (316°C) (See also -B option above when below 0°F (-18°C))
- GY** Standard valve with Graphite Braided Yarn packing 32°F (0°C) to 800°F (427°C).

† Parker Autoclave Engineers recommends pipe connections be operated between -423°F (-252°C) and 400°F (204°C) (Temperature limit of PTFE sealant tape). For additional valve options, contact your Sales Representative.

(See "Technical Brochure" for Pressure/Temperature effect on temperatures above ambient.)

## Ordering Guide:

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

Building a Part Number: <i>Example: 15P4071</i>					
Example Part Number:	15P	4	07	1	XX
Ordering Parameters/Options:	Valve Series	Outside Diameter Tube Size	Stem/Seat Type	Body Pattern	Options
Table Reference: (see below)	A	B	C	D	E

A - Valve Series	
10P	10,000 psi P Series (Pipe Valve) Needle Valve (use with 3/4" and 1")
15P	15,000 psi P Series (Pipe Valve) Needle Valve

B - Pipe Connection Size	
4	1/4" Female NPT
6	3/8" Female NPT
8	1/2" Female NPT
12	3/4" Female NPT
16	1" Female NPT

C - Stem/Seal Type (see page 8 for optional stem type description)	
07	Non-Rotating Vee Stem (on-off service)
08	Non-Rotating Regulating Stem (tapered tip for regulating and shutoff)

**Notes:** Valve Manuals can be found on our website at [www.Autoclave.com](http://www.Autoclave.com). Connection, Running and Seating Torques can be found in the product manual or in our Tools and Installation Catalog Section. Valves that have not been cycled for a substantial period of time may require higher initial actuation torque.

(See "Technical Brochure" for Pressure/Temperature effect on temperatures above ambient.)

D - Body Pattern	
1	Two-Way Straight
2	Two-Way Angle
3	Three-Way, Two on Pressure
4	Three-Way, One on Pressure
5	Three-Way, Two Stem Manifold Valve

E - Options (select as many as necessary)	
For additional valve options see pages 8 & 9	
PM	Panel Mount, additional screw is supplied
B	Low temperature service below 0°F (-18°C) (included in LT code)
LT	Extended packing option with PTFE packing & cryogenic materials
TG	PTFE Glass (25%) Packing (to 600°F)
GY	High Temperature Graphite Yarn Packing to 800°F
*SOG	NACE Material, Hardness Verification/Certificate
***2507	UNS 32750 2507 Super Duplex Wetted Materials
***IN625	UNS N06625 Inconel 625 Wetted Materials

Pneumatic and Electric Actuator Options - see individual brochures for Suffix Codes  
Other materials available on request See Technical Brochure for common options and MAWP ratings

**Notes:** 316 SS valve bodies are cold worked and not suitable for use in NACE (ISO 15156) applications. If required, contact factory for options.

\* SOG suffix also changes CW 316 SS Body material to Annealed 316 SS suitable for NACE service, Pressure reduction to 10,000 psi is typical.

\*\*\* Special Materials often have reduced MAWP ratings, see Technical brochure for assistance and for additional material options

## Basic Repair Kits for 316 SS Material:

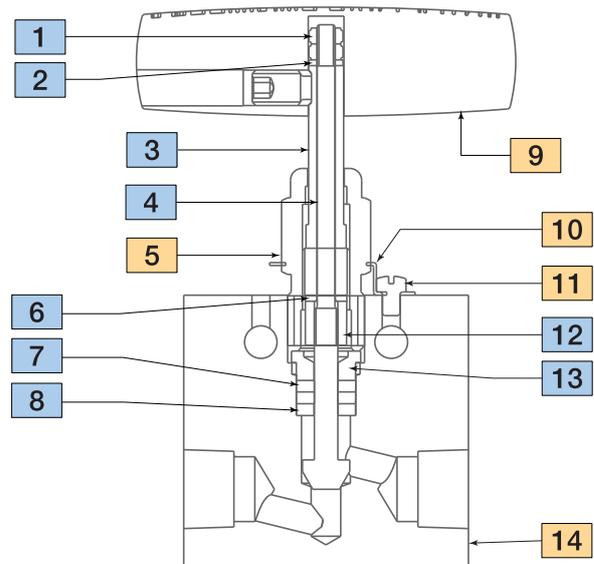
Basic Repair Kit for 316 SS Material						
Stem Type		Pipe Size:				
		1/4"	3/8"	1/2"	3/4"	1"
2 Way Straight 2 Way Angle	VEE	R15P407	R15P607	R15P807	R10P1207	R10P1607
	REG	R15P408	R15P608	R15P808	R10P1208	R10P1608
3 Way, Two On 3 Way, One On	VEE	R15P4075	R15P6075	R15P8075	R10P12075	R10P16075
	REG	R15P4085	R15P6085	R15P8085	R10P12085	R10P16085
3 Way, 2 Stem Manifold	VEE	R15P4075	R15P6075	R15P8075	R10P12075	R10P16075
	REG	R15P4085	R15P6085	R15P8085	R10P12085	R10P16085

When ordering for valves bought with additional suffix options, please include those exact suffix codes when ordering repair kit. (Example: the stem for a manual valve and pneumatically actuated valve are different and the repair kit must include the exact actuator suffix codes).  
Valve Manuals can be found on our website at [www.Autoclave.com](http://www.Autoclave.com).  
Running and Seating Torques can be found in the product manual or in our Tools and Installation Catalog Section

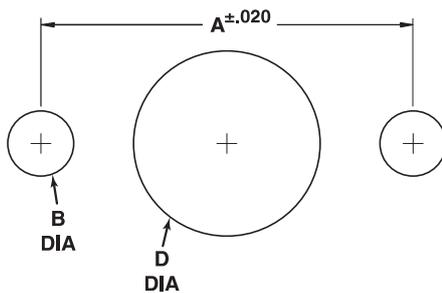
## Material of Construction:

Item #	Description	Material
1	Hex Nut	300 Series SS
2	Thrust Washer	17-4 PH
3	Stem Sleeve	304 SS
4	Vee Stem (1/2" 15P shown)	316 SS
5	Packing Gland	AMPCO 18
6	Thrust Washer	17-4 PH
7	Packing Washer	PTFE
8	Bottom Washer	316 SS
9	Handle Assembly	316 SS
10	Locking Device	302 SS
11	Fill HD Screw, #10-24	18-8 SS
12	Stem Collar, (not used in 1/4" and 3/8" series)	PTFE
13	Packing Washer	AMPCO 18
14	Valve Body, (1/2" 15P shown)	316 SS

Typical spare parts found in Repair Kits



## Panel Hole Size:

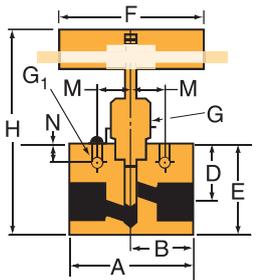


Needle Valve Panel Mount

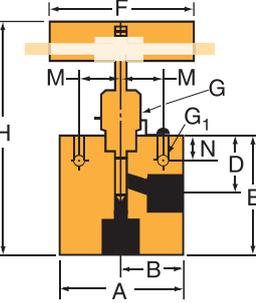
Valve Size	Inches			
	A	B	Screw Size	D
1/4" & 3/8"	1.25	.22	10 - 24	.75
1/2"	1.375	.22	10 - 24	1.00
3/4"	1.75	.22	10 - 24	1.12
1"	2.50	.22	10 - 24	1.62

Use suffix **-PM** for extra mounting hardware

## P Series Needle Valve Dimensions:

2 Way Straight								
Stem Type	VEE REG	15P4071 15P4081	15P6071 15P6081	15P8071 15P8081	10P12071 10P12081	10P16071 10P16081		
Pipe Size		<b>1/4</b> <b>(6.35)</b>	<b>3/8</b> <b>(9.53)</b>	<b>1/2</b> <b>(12.70)</b>	<b>3/4</b> <b>(19.05)</b>	<b>1</b> <b>(25.40)</b>		
Orifice Diameter		0.203 (5.16)	0.219 (5.56)	0.312 (7.92)	0.437 (11.10)	0.562 (14.27)		
Dimensions: inches (mm)		<b>A</b> 2.00 (50.80)	<b>A</b> 2.50 (63.50)	<b>A</b> 3.00 (76.20)	<b>A</b> 3.50 (88.90)	<b>A</b> 4.12 (104.65)		
		<b>B</b> 1.00 (25.40)	<b>B</b> 1.25 (31.75)	<b>B</b> 1.50 (38.10)	<b>B</b> 1.75 (44.45)	<b>B</b> 2.06 (52.32)		
		<b>C</b> -	<b>C</b> -	<b>C</b> -	<b>C</b> -	<b>C</b> -		
		<b>D</b> 1.41 (35.81)	<b>D</b> 1.41 (35.81)	<b>D</b> 2.06 (52.32)	<b>D</b> 2.63 (66.80)	<b>D</b> 3.31 (84.07)		
		<b>D1</b> -	<b>D1</b> -	<b>D1</b> -	<b>D1</b> -	<b>D1</b> -		
		<b>E</b> 2.00 (50.80)	<b>E</b> 2.00 (50.80)	<b>E</b> 2.88 (73.15)	<b>E</b> 3.75 (95.25)	<b>E</b> 4.62 (117.35)		
		<b>F</b> 3.00 (76.20)	<b>F</b> 3.00 (76.20)	<b>F</b> 4.00 (101.60)	<b>F</b> 10.25 (260.35)	<b>F</b> 10.25 (260.35)		
		<b>G</b> 0.75 (19.05)	<b>G</b> 0.75 (19.05)	<b>G</b> 1.00 (25.40)	<b>G</b> 1.12 (28.45)	<b>G</b> 1.62 (41.15)		
		<b>G1</b> 0.22 (5.59)	<b>G1</b> 0.22 (5.59)	<b>G1</b> 0.34 (8.64)	<b>G1</b> 0.44 (11.18)	<b>G1</b> 0.56 (14.22)		
		<b>H</b> 4.63 (117.60)	<b>H</b> 4.63 (117.60)	<b>H</b> 5.93 (150.62)	<b>H</b> 7.00 (177.80)	<b>H</b> 9.00 (228.60)		
		<b>M</b> 0.62 (15.75)	<b>M</b> 0.62 (15.75)	<b>M</b> 0.69 (17.53)	<b>M</b> 0.88 (22.35)	<b>M</b> 1.25 (31.75)		
		<b>N</b> 0.38 (9.65)	<b>N</b> 0.38 (9.65)	<b>N</b> 0.50 (12.70)	<b>N</b> 0.63 (16.00)	<b>N</b> 1.13 (28.70)		
		Block Thickness		0.75 (19.05)	1.00 (25.4)	1.38 (35.05)	1.75 (44.45)	1.75 (44.45)

Bar Handle used on 3/4" and 1" Valves

2 Way Angle								
Stem Type	VEE REG	15P4072 15P4082	15P6072 15P6082	15P8072 15P8082	10P12072 10P12082	10P16072 10P16082		
Pipe Size		<b>1/4</b> <b>(6.35)</b>	<b>3/8</b> <b>(9.53)</b>	<b>1/2</b> <b>(12.70)</b>	<b>3/4</b> <b>(19.05)</b>	<b>1</b> <b>(25.40)</b>		
Orifice Diameter		0.203 (5.16)	0.219 (5.56)	0.312 (7.92)	0.437 (11.10)	0.562 (14.27)		
Dimensions: inches (mm)		<b>A</b> 2.00 (50.80)	<b>A</b> 2.50 (63.50)	<b>A</b> 3.00 (76.20)	<b>A</b> 3.50 (88.90)	<b>A</b> 4.12 (104.65)		
		<b>B</b> 1.00 (25.40)	<b>B</b> 1.25 (31.75)	<b>B</b> 1.50 (38.10)	<b>B</b> 1.75 (44.45)	<b>B</b> 2.06 (52.32)		
		<b>C</b> -	<b>C</b> -	<b>C</b> -	<b>C</b> -	<b>C</b> -		
		<b>D</b> 1.41 (35.81)	<b>D</b> 1.41 (35.81)	<b>D</b> 2.06 (52.32)	<b>D</b> 2.63 (66.80)	<b>D</b> 3.31 (84.07)		
		<b>D1</b> -	<b>D1</b> -	<b>D1</b> -	<b>D1</b> -	<b>D1</b> -		
		<b>E</b> 2.44 (61.98)	<b>E</b> 2.44 (61.98)	<b>E</b> 3.38 (85.85)	<b>E</b> 4.25 (107.95)	<b>E</b> 5.12 (130.05)		
		<b>F</b> 3.00 (76.20)	<b>F</b> 3.00 (76.20)	<b>F</b> 4.00 (101.60)	<b>F</b> 10.25 (260.35)	<b>F</b> 10.25 (260.35)		
		<b>G</b> 0.75 (19.05)	<b>G</b> 0.75 (19.05)	<b>G</b> 1.00 (25.40)	<b>G</b> 1.12 (28.45)	<b>G</b> 1.62 (41.15)		
		<b>G1</b> 0.22 (5.59)	<b>G1</b> 0.22 (5.59)	<b>G1</b> 0.34 (8.64)	<b>G1</b> 0.44 (11.18)	<b>G1</b> 0.56 (14.22)		
		<b>H</b> 4.81 (122.17)	<b>H</b> 4.81 (122.17)	<b>H</b> 6.43 (163.32)	<b>H</b> 7.50 (190.50)	<b>H</b> 9.00 (228.60)		
		<b>M</b> 0.62 (15.75)	<b>M</b> 0.62 (15.75)	<b>M</b> 0.69 (17.53)	<b>M</b> 0.88 (22.35)	<b>M</b> 1.25 (31.75)		
		<b>N</b> 0.38 (9.65)	<b>N</b> 0.38 (9.65)	<b>N</b> 0.50 (12.70)	<b>N</b> 0.63 (16.00)	<b>N</b> 1.13 (28.70)		
		Block Thickness		0.75 (19.05)	1.00 (25.4)	1.38 (35.05)	1.75 (44.45)	1.75 (44.45)

Bar Handle used on 3/4" and 1" Valves

G - Packing Gland mounting hole drill size • G1 - Bracket mounting hole size • H\* - Dimension is with stem in closed position  
All dimensions for reference only and subject to change • For prompt service, Parker Autoclave stocks select products. Consult factory.

## P Series Needle Valve Dimensions:

3 Way, 2 on Pressure						
Stem Type	VEE REG	15P4073 15P4083	15P6073 15P6083	15P8073 15P8083	10P12073 10P12083	10P16073 10P16083
Pipe Size		<b>1/4</b> <b>(6.35)</b>	<b>3/8</b> <b>(9.53)</b>	<b>1/2</b> <b>(12.70)</b>	<b>3/4</b> <b>(19.05)</b>	<b>1</b> <b>(25.40)</b>
Orifice Diameter		0.203 (5.16)	0.219 (5.56)	0.312 (7.92)	0.437 (11.10)	0.562 (14.27)
Dimensions: inches (mm)		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>D1</b>
		2.00 (50.80)	2.50 (63.50)	3.00 (76.20)	3.50 (88.90)	4.12 (104.65)
		1.00 (25.40)	1.25 (31.75)	1.50 (38.10)	1.75 (44.45)	2.06 (52.32)
		-	-	-	-	-
		1.41 (35.81)	1.41 (35.81)	2.06 (52.32)	2.65 (67.31)	3.31 (84.07)
		-	-	-	-	-
		2.62 (66.55)	2.62 (66.55)	3.62 (91.95)	4.62 (117.35)	5.88 (149.35)
		3.00 (76.20)	3.00 (76.20)	4.00 (101.60)	10.25 (260.35)	10.25 (260.35)
		0.75 (19.05)	0.75 (19.05)	1.00 (25.40)	1.12 (28.45)	1.62 (41.15)
		0.22 (5.59)	0.22 (5.59)	0.34 (8.64)	0.44 (11.18)	0.56 (14.22)
		5.00 (127.00)	5.00 (127.00)	6.52 (165.61)	7.88 (200.15)	9.75 (247.65)
		0.62 (15.75)	0.62 (15.75)	0.69 (17.53)	0.88 (22.35)	1.25 (31.75)
		0.38 (9.65)	0.38 (9.65)	0.50 (12.70)	0.63 (16.00)	1.13 (28.70)
		Block Thickness		0.75 (19.05)	1.00 (25.4)	1.38 (35.05)

3 Way, 1 on Pressure						
Stem Type	VEE REG	15P4074 15P4084	15P6074 15P6084	15P8074 15P8084	10P12074 10P12084	10P16074 10P16084
Pipe Size		<b>1/4</b> <b>(6.35)</b>	<b>3/8</b> <b>(9.53)</b>	<b>1/2</b> <b>(12.70)</b>	<b>3/4</b> <b>(19.05)</b>	<b>1</b> <b>(25.40)</b>
Orifice Diameter		0.203 (5.16)	0.219 (5.56)	0.312 (7.92)	0.437 (11.10)	0.562 (14.27)
Dimensions: inches (mm)		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>D1</b>
		2.00 (50.80)	2.50 (63.50)	3.00 (76.20)	3.50 (88.90)	4.12 (104.65)
		1.00 (25.40)	1.25 (31.75)	1.50 (38.10)	1.75 (44.45)	2.06 (52.32)
		-	-	-	-	-
		1.41 (35.81)	1.41 (35.81)	2.06 (52.32)	2.65 (67.31)	3.31 (84.07)
		-	-	-	-	-
		2.44 (61.98)	2.44 (61.98)	3.38 (85.85)	4.25 (107.95)	5.12 (130.05)
		3.00 (76.20)	3.00 (76.20)	4.00 (101.60)	10.25 (260.35)	10.25 (260.35)
		0.75 (19.05)	0.75 (19.05)	1.00 (25.40)	1.12 (28.45)	1.62 (41.15)
		0.22 (5.59)	0.22 (5.59)	0.34 (8.64)	0.44 (11.18)	0.56 (14.22)
		4.81 (122.17)	4.81 (122.17)	6.31 (160.27)	7.50 (190.50)	9.09 (230.89)
		0.62 (15.75)	0.62 (15.75)	0.69 (17.53)	0.88 (22.35)	1.25 (31.75)
		0.38 (9.65)	0.38 (9.65)	0.50 (12.70)	0.63 (16.00)	1.13 (28.70)
		Block Thickness		0.75 (19.05)	1.00 (25.4)	1.38 (35.05)

G - Packing Gland mounting hole drill size • G1 - Bracket mounting hole size • H\* - Dimension is with stem in closed position  
All dimensions for reference only and subject to change • For prompt service, Parker Autoclave stocks select products. Consult factory.