Needle Valves

Low Pressure

10V & SW Series

Pressures to 15,000 psi (1034 bar)

Since 1945 Parker Autoclave Engineers has designed and built premium quality valves, fittings and tubing. This commitment to engineering and manufacturing excellence has earned Parker Autoclave a reputation for reliable efficient product performance. Parker 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.

Low Pressure Valve Features:

- 10V Series valve design provides in-line tube connections for 1/4” to 1/2” tube sizes.
- SW Series valve design provides increased flow capabilities.
- Tubing sizes from 1/8” to 1/2”.
- 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 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.
- Available in five body patterns.

Parker Autoclave Engineers valves are complemented by a complete line of low pressure fittings, tubing, check valves and line filters. The 10V and SW series use Parker Autoclave Engineers' SpeedBite connection. This single-ferrule compression sleeve connection delivers fast, easy make-up and reliable bubble-tight performance in liquid or gas service.



Parker

Autoclave Engineers

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Needle Valves - 10V & SW Series

Low Pressure

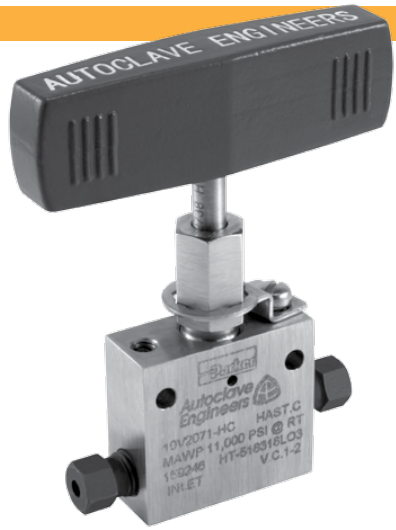
Valve Series - 10V Series

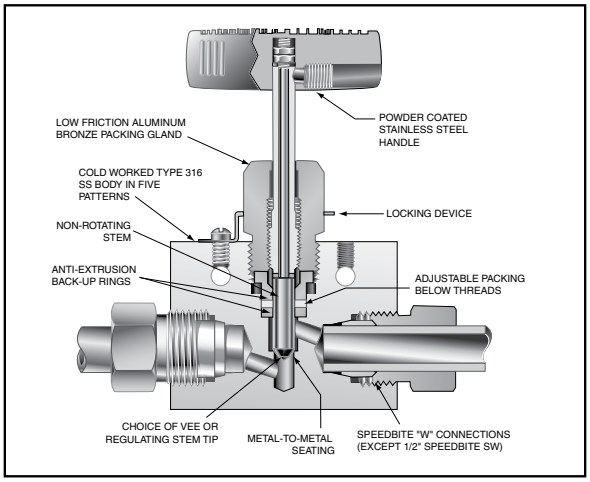
Pressures to 15,000 psi (1034 bar)

Tube Outside Diameter Size Inches	Connection Type	Orifice Size Inches (mm)	Rated C_V*	Pressure Rating psi (bar) @ Room Temperature**
1/8	W125	0.094 (2.39)	0.12	15,000 (1034)
1/4	W250	0.125 (3.18)	0.20	15,000 (1034)
3/8	W375	0.125 (3.18)	0.20	15,000 (1034)
1/2	SW500	0.250 (6.35)	0.86	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)*

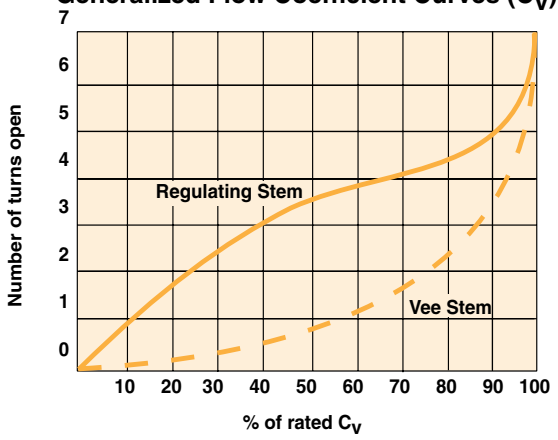
*** For complete temperature ratings see pressure/temperature rating guide in Technical Information section.*





To ensure proper fit use Autoclave tubing

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. 10V Series valves are furnished complete with connection components, unless otherwise specified.

Typical catalog number: **10V4071**

10V — Valve Series

4 — Outside Diameter Tube Size
- **2**-1/8"
- **4**-1/4"
- **6**-3/8"
- **8**-1/2"

Note: Contact Sales for 1/16"tube size or see MVE Series.

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

1 — 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

XX — Options

For extreme temperature and other options, see Valve Options.

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Valve Options

Extreme Temperatures
Standard Parker Autoclave valves with PTFE packing may be operated to 450°F (232°C). High temperature packing and/or extended stuffing box is available for service from -100°F (-73°C) to 650°F (343°C) by adding the following suffixes to catalog order number.†
TG standard valve with PTFE 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 materials and Telfon packing to -100°F (-73°C).

†*Parker Autoclave Engineers does not recommend compression sleeve connections below -100°F (-73°C) or above 650°F (343°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: **R10V4071**)

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

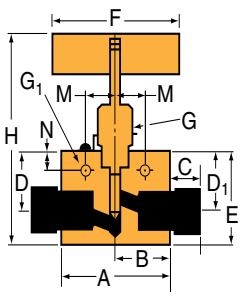
Catalog Number	Stem Type	Outside Diameter Tube	Orifice Diameter	Dimensions - inches (mm) A	B	C	D	D_1	E	F	G	G_1	H*	M	N	Block Thickness	Valve Pattern
2-Way Straight																	
10V2071	**VEE**	1/8**	0.094	1.50	0.75	0.31	1.06	0.81	1.38	3.00	0.62	0.17	3.75	0.56	0.31	0.62	**See Figure 1**
10V2081	**REG**	(3.18)	(2.39)	(38.10)	(19.05)	(7.87)	(26.92)	(20.57)	(35.05)	(76.20)	(15.75)	(4.32)	(95.25)	(14.22)	(7.87)	(15.75)	
10V4071	**VEE**	1/4	0.125	2.00	1.00	0.56	1.19		1.69	3.00	0.97	0.22	4.44	0.69	0.38	1.00	
10V4081	**REG**	(6.35)	(3.18)	(50.80)	(25.40)	(14.22)	(30.23)		(42.93)	(76.20)	(24.64)	(5.59)	(112.78)	(17.53)	(9.65)	(25.40)	
10V6071	**VEE**	3/8	0.125	2.00	1.00	0.62	1.19		1.69	3.00	0.97	0.22	4.31	0.69	0.38	1.00	
10V6081	**REG**	(9.53)	(3.18)	(50.80)	(25.40)	(15.75)	(30.23)		(42.93)	(76.20)	(24.64)	(5.59)	(109.47)	(17.53)	(9.65)	(25.40)	
10V8071	**VEE**	1/2	0.250	2.50	1.25	0.53	1.25		1.81	3.00	0.97	0.22	4.44	0.69	0.38	1.00	
10V8081	**REG**	(12.70)	(6.35)	(63.50)	(31.75)	(13.46)	(31.75)		(45.97)	(76.20)	(24.64)	(5.59)	(112.78)	(17.53)	(9.65)	(25.40)	
2-Way Angle																	
10V2072	**VEE**	1/8	0.094	1.50	0.75	0.31	0.81		1.56	3.00	0.62	0.17	3.94	0.56	0.31	0.62	**See Figure 2**
10V2082	**REG**	(3.18)	(2.39)	(38.1)	(19.05)	(7.87)	(20.57)		(39.62)	(76.20)	(15.75)	(4.32)	(100.08)	(12.70)	(7.87)	(15.75)	
10V4072	**VEE**	1/4	0.125	2.00	1.00	0.56	1.19		2.19	3.00	0.97	0.22	4.81	0.69	0.31	1.00	
10V4082	**REG**	(6.35)	(3.18)	(50.80)	(25.40)	(14.2)	(30.23)		(55.63)	(76.20)	(24.64)	(5.59)	(122.17)	(17.53)	(7.87)	(25.40)	
10V6072	**VEE**	3/8	0.125	2.00	1.00	0.62	1.19		2.19	3.00	0.97	0.22	4.81	0.69	0.31	1.00	
10V6082	**REG**	(9.53)	(3.18)	(50.80)	(25.40)	(15.7)	(30.23)		(55.63)	(76.20)	(24.64)	(5.59)	(122.17)	(17.53)	(7.87)	(25.40)	
10V8072	**VEE**	1/2	0.250	2.50	1.25	0.53	1.25		2.50	3.00	0.97	0.22	5.06	0.69	0.38	1.00	
10V8082	**REG**	(12.70)	(6.35)	(63.50)	(31.75)	(13.5)	(31.75)		(63.50)	(76.20)	(24.64)	(5.59)	(128.52)	(17.53)	(9.65)	(25.40)	
3-Way / 2 on Pressure																	
10V2073	**VEE**	1/8**	0.094	1.50	0.75	0.31	1.06	0.81	1.69	3.00	0.62	0.17	4.06	0.56	0.31	0.62	**See Figure 3**
10V2083	**REG**	(3.18)	(2.39)	(38.10)	(19.05)	(7.87)	(26.92)	20.57	(42.93)	(76.20)	(15.75)	(4.32)	(103.12)	(12.70)	(7.87)	(15.75)	
10V4073	**VEE**	1/4	0.125	2.00	1.00	0.56	1.19		2.19	3.00	0.97	0.22	4.81	0.69	0.38	1.00	
10V4083	**REG**	(6.35)	(3.18)	(50.80)	(25.40)	(14.22)	(30.23)		(55.63)	(76.20)	(24.64)	(5.59)	(122.17)	(17.53)	(9.65)	(25.40)	
10V6073	**VEE**	3/8	0.125	2.00	1.00	0.62	1.19		2.19	3.00	0.97	0.22	4.81	0.69	0.38	1.00	
10V6083	**REG**	(9.53)	(3.18)	(50.80)	(25.40)	(15.75)	(30.23)		(55.63)	(76.20)	(24.64)	(5.59)	(122.17)	(17.53)	(9.65)	(25.40)	
10V8073	**VEE**	1/2	0.250	2.50	1.25	0.53	1.19		2.44	3.00	0.97	0.22	5.06	0.69	0.38	1.00	
10V8083	**REG**	(12.70)	(6.35)	(63.50)	(31.75)	(13.46)	(30.23)		(61.98)	(76.20)	(24.64)	(5.59)	(128.52)	(17.53)	(9.65)	(25.40)	

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.*
*** 1/8" straight and 3-Way/2 on pressure valves have offset tube connections.*

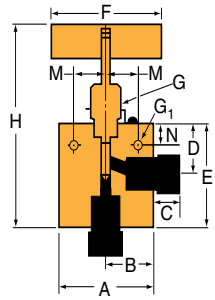
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All dimensions for reference only and subject to change.

Figure 1



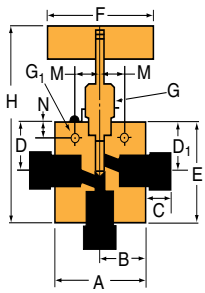
2-Way Straight

Figure 2



2-Way Angle

Figure 3



3-Way / 2 on Pressure

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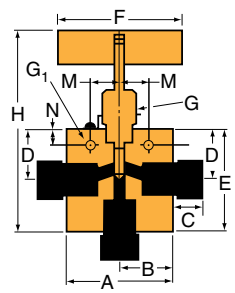
Catalog Number	Stem Type	Outside Diameter Tube	Orifice Diameter	Dimensions - inches (mm)												Block Thick-ness	Valve Pattern
				A	B	C	D	D_1	E	F	G	G_1	H*	M	N		
3-Way / 1 on Pressure																	
10V2074	**VEE**	1/8	0.094	1.50	0.75	0.31	0.81		1.56	3.00	0.62	0.17	3.94	0.56	0.31	0.62	**See Figure 4**
10V2084	**REG**	(3.18)	(2.39)	(38.1)	(19.05)	(7.87)	(20.57)		(39.62)	(76.20)	(15.75)	(4.32)	(100.08)	(12.70)	(7.87)	(15.7)	
10V4074	**VEE**	1/4	0.125	2.00	1.00	0.56	1.19		2.19	3.00	0.97	0.22	4.81	0.69	0.38	1.00	
10V4084	**REG**	(6.35)	(3.18)	(50.8)	(25.40)	(14.22)	(30.23)		(55.63)	(76.20)	(24.64)	(5.59)	(122.17)	(17.53)	(9.65)	(25.40)	
10V6074	**VEE**	3/8	0.125	2.00	1.00	0.62	1.19		2.19	3.00	0.97	0.22	4.81	0.69	0.38	1.00	
10V6084	**REG**	(9.53)	(3.18)	(50.8)	(25.40)	(15.75)	(30.23)		(55.63)	(76.20)	(24.64)	(5.59)	(122.17)	(17.53)	(9.65)	(25.40)	
10V8074	**VEE**	1/2	0.250	2.50	1.25	0.53	1.19		2.44	3.00	0.97	0.22	5.06	0.69	0.38	1.00	
10V8084	**REG**	(12.70)	(6.35)	(63.5)	(31.75)	(13.46)	(30.23)		(61.98)	(76.20)	(24.64)	(5.59)	(128.52)	(17.53)	(9.65)	(25.40)	
2-Way Angle / Replaceable Seat																	
10V2872	**VEE**	1/8	0.094	1.50	0.75	0.31	0.81	1.28	1.56	3.00	0.62	0.17	4.50	0.56	0.31	0.62	**See Figure 5**
10V2882	**REG**	(3.18)	(2.39)	(38.10)	(19.05)	(7.87)	(20.57)	(32.51)	(39.62)	(76.20)	(15.75)	(4.32)	(114.30)	(12.70)	(7.87)	(15.75)	
10V4872	**VEE**	1/4	0.125	2.00	1.00	0.56	1.12	2.13	2.25	3.00	0.97	0.22	6.00	0.69	0.38	1.00	
10V4882	**REG**	(6.35)	(3.18)	(50.80)	(25.40)	(14.22)	(28.45)	(54.10)	(57.15)	(76.20)	(24.64)	(5.59)	(152.40)	(17.53)	(9.65)	(25.40)	
10V6872	**VEE**	3/8	0.125	2.00	1.00	0.62	1.12	2.28	2.25	3.00	0.97	0.22	6.00	0.69	0.38	1.00	
10V6882	**REG**	(9.53)	(3.18)	(50.80)	(25.40)	(15.75)	(28.45)	(57.91)	(57.15)	(76.20)	(24.64)	(5.59)	(152.40)	(17.53)	(9.65)	(25.40)	
10V8872	**VEE**	1/2	0.250	2.50	1.25	0.53	1.00	2.50	2.38	3.00	0.97	0.28	6.06	0.69	0.38	1.00	
10V8882	**REG**	(12.70)	(6.35)	(63.50)	(31.75)	(13.46)	(25.45)	(63.50)	(60.45)	(76.20)	(24.64)	(7.11)	(153.92)	(17.53)	(9.65)	(25.40)	
3-Way / 2-Stem Manifold																	
10V2075	**VEE**	1/8	0.094	1.50	0.75	0.31	1.12	0.81	2.25	3.00	0.62	0.17	4.63	0.56	0.31	0.62	**See Figure 6**
10V2085	**REG**	(3.18)	(2.39)	(38.10)	(19.05)	(7.87)	(28.45)	(20.57)	(57.15)	(76.20)	(15.75)	(4.32)	(117.60)	(12.70)	(7.87)	(15.7)	
10V4075	**VEE**	1/4	0.125	2.00	1.00	0.56	1.69	1.09	3.38	3.00	0.97	0.22	5.82	0.69	0.38	1.00	
10V4085	**REG**	(6.35)	(3.18)	(50.80)	(25.40)	(14.22)	(42.93)	(27.69)	(85.85)	(76.20)	(24.64)	(5.59)	(147.83)	(17.53)	(9.65)	(25.40)	
10V6075	**VEE**	3/8	0.125	2.00	1.00	0.62	1.69	1.09	3.38	3.00	0.97	0.22	5.82	0.69	0.38	1.00	
10V6085	**REG**	(9.53)	(3.18)	(50.80)	(25.40)	(15.75)	(42.93)	(27.69)	(85.85)	(76.20)	(24.64)	(5.59)	(147.83)	(17.53)	(9.65)	(25.40)	
10V8075	**VEE**	1/2	0.250	2.50	1.25	0.53	1.69	1.03	3.38	3.00	0.97	0.22	5.82	0.69	0.38	1.00	
10V8085	**REG**	(12.70)	(6.35)	(63.50)	(31.75)	(13.46)	(42.93)	(26.16)	(85.85)	(76.20)	(24.64)	(5.59)	(147.83)	(17.53)	(9.65)	(25.40)	

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.

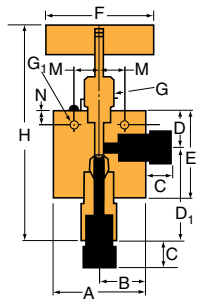
For prompt service, Autoclave stocks select products. Consult factory.

Figure 4



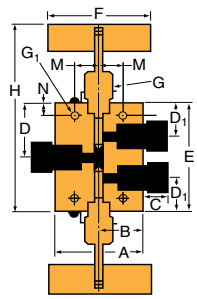
3-Way / 1 on Pressure

Figure 5



2-Way Angle / Replaceable Seat

Figure 6



3-Way / 2-Stem Manifold

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