

60VM Series: Pressures to 60,000 psi (4137 bar) Temperatures from -423°F to 1200°F (-253°C to 650°C)

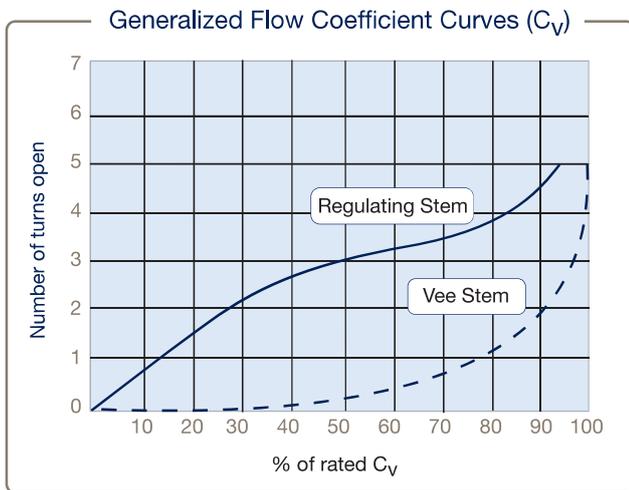


Tube Outside Diameter Size (inches)	Connection Type	Orifice Size Inches (mm)	Rated C_v^*	Pressure Rating psi (bar) @Room Temperature**
1/4	F250C	0.062 (1.57)	0.08	60,000 (4137)
3/8	F375C	0.062 (1.57)	0.09	60,000 (4137)
9/16	F562C	0.0789 (1.98)	0.14	60,000 (4137)

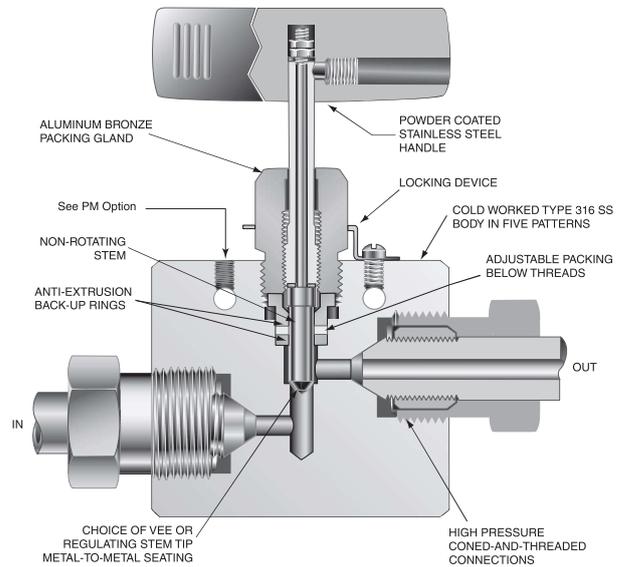
Notes

* 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.



60VM Series Flow Curve for Vee and Regulating Stem Valves



To ensure proper fit use Parker Autoclave tubing

Valve Packing Options:

Standard Parker Autoclave Engineers valves with nylon/leather/nylon packing may be operated from 40°F (4.4°C) to 230°F (110°C). Extended temperature packing is available for service from -423°F (-252°C) to 1200°F (650°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 Yarn packing 32°F (0°C) to 800°F (427°C). Used when selecting HT option.
- HT** Extended stuffing box valve with Graphite Yarn packing to 1200°F (650°C)

Note: 40VM and *60VM TG packing options supplied with PEEK/PTFE Glass/PEEK

(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 pages 26-27 or contact your Sales Representative. 60VM Series valves are furnished complete with connection components, unless otherwise specified. See High Pressure Fittings and Tubing brochure for compatible products.

Building a Part Number: Example: 60VM4071

Example Part Number:	60VM	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

60VM	High Pressure Needle Valve
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B - Outside Diameter Tube Size

4	1/4"
6	3/8"
9	9/16"

C - 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 (angle valve only)
88	Regulating Stem with Replaceable Seat (angle valve only)

Notes: Valve Manuals can be found on our website at 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.

*Replaceable seat option is sold with two (2) seat surfaces 180° apart.

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

K	Antivibration Gland (replaces standard gland)
B	All 316 SS Materials required when below 0°F (-18°C) (included in LT)
LT	Low Temperature Extension (to -423°F) (includes PTFE packing)
TG	PTFE Glass (25%) Packing (to 600°F)
GY	Graphite Yarn Packing (to 800°F)
HT	High Temperature Extension (to 1200°F) (includes GY packing)
SOG	NACE MR0175 Material, Hardness Verification/Certificate
HYG	Hydrogen/Helium Upgrade/Seat Testing

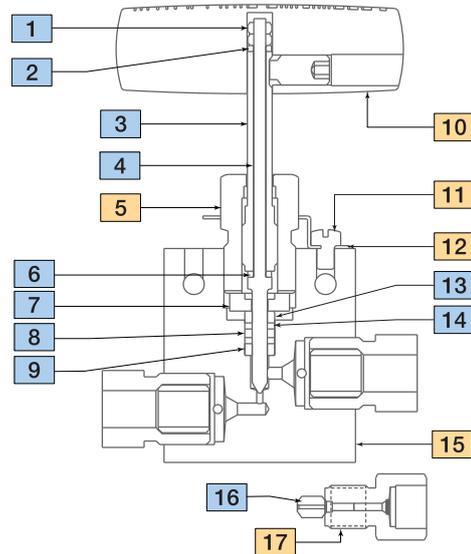
Actuator Options - see individual brochures for Suffix Codes

Other materials available upon request. See Technical Brochure for list of common options. See "Technical Brochure" for Pressure/Temperature effect on temperatures above ambient.

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	316 SS
5	Packing Gland	AMPCO 45
6	Thrust Washer	17-4 PH
7	Backup Washer	17-4 PH
8	Packing	Leather
9	Packing Washer	17-4 PH
10	Handle	316 SS
11	Screw, #10	18-8 SS
12	Locking Device	302 SS
13	Packing Washer	17-4 PH
14	Packing	Nylon
15	Body, (3/8" 60VM shown)	316 SS
16	Replaceable Seat	17-4 PH
17	Seat Retainer	316 SS

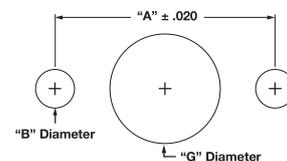
Typical spare parts found in Repair Kits



Panel Hole Sizes:

Valve Size	Inches			
	A	B	Screw Size	G
4 and 6	1.38	.22	#10-24	1.00
9	1.38	.22	#10-24	1.00

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



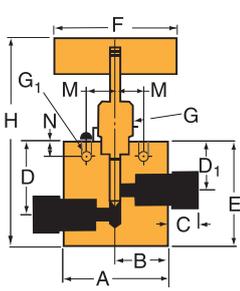
Needle Valve Panel Mount

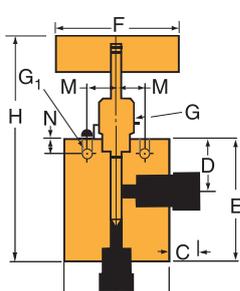
Basic Repair Kits for 316 SS Material:

Stem Type		Basic Repair Kit for 316 SS Material	
		Outside Diameter Tube:	
		1/4", 3/8", 9/16"	
2 Way Straight, 2 Way Angle 3 Way 2 On-Pressure, 3 Way 1 On-Pressure	VEE	R60VM7	
	REG	R60VM8	
2 Way, Replaceable Seat and Stem	VEE	R60VM872	
	REG	R60VM882	
3 Way, 2 Stem Manifold	VEE	R60VM075	
	REG	R60VM085	

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 is manufactured differently for a pneumatically actuated valve and the repair kit must include the exact actuator suffix codes).
Valve Manuals can be found on our website at www.Autoclave.com,
Connection, Running and Seating Torques can be found in the product manual or in our Tools and Installation Catalog Section.

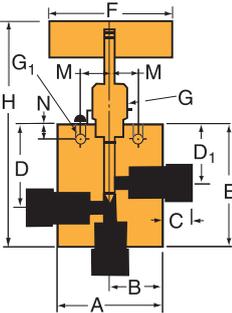
60VM Series Dimensions:

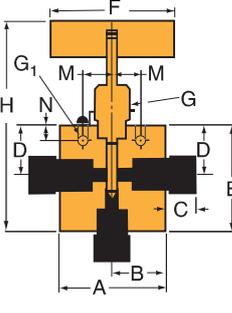
2 Way Straight						
		Catalog Number				
Stem Type	VEE REG	60VM4071 60VM4081	60VM6071 60VM6081	60VM9071 60VM9081		
Outside Diameter Tube		1/4 (6.35)	3/8 (9.53)	9/16 (14.29)		
Orifice Diameter		0.94 (2.39)	0.125 (3.18)	0.125 (3.18)		
Dimensions: inches (mm)						
	A	2.00 (50.80)	2.00 (50.80)	2.62 (66.55)		
	B	1.00 (25.40)	1.00 (25.40)	1.31 (33.27)		
	C	0.50 (12.70)	0.53 (13.46)	0.72 (18.29)		
	D	1.69 (42.93)	1.69 (42.93)	1.75 (45.45)		
	D1	1.31 (33.27)	1.31 (33.27)	1.31 (33.27)		
	E	2.12 (53.85)	2.25 (57.15)	2.50 (63.50)		
	F	3.00 (76.20)	3.00 (76.20)	3.00 (76.20)		
	G	1.00 (25.40)	1.00 (25.40)	1.00 (25.40)		
	G1	0.22 (5.59)	0.22 (5.59)	0.28 (7.11)		
	H*	4.75 (120.65)	4.75 (120.65)	5.13 (130.30)		
	M	0.69 (17.53)	0.69 (17.53)	0.69 (17.53)		
	N	0.38 (9.65)	0.38 (9.65)	0.38 (9.65)		
	Block Thickness		1.00 (25.40)	1.00 (25.40)	1.50 (38.10)	

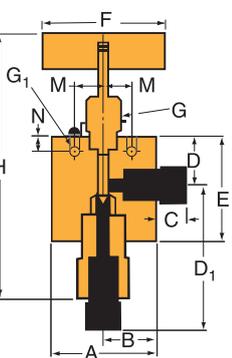
2 Way Angle						
		Catalog Number				
Stem Type	VEE REG	60VM4072 60VM4082	60VM6072 60VM6082	60VM9072 60VM9082		
Outside Diameter Tube		1/4 (6.35)	3/8 (9.53)	9/16 (14.29)		
Orifice Diameter		0.94 (2.39)	0.125 (3.18)	0.125 (3.18)		
Dimensions: inches (mm)						
	A	2.00 (50.80)	2.00 (50.80)	2.62 (66.55)		
	B	1.00 (25.40)	1.00 (25.40)	1.31 (33.27)		
	C	0.50 (12.70)	0.53 (13.46)	0.72 (18.29)		
	D	1.31 (33.27)	1.31 (33.27)	1.31 (33.27)		
	D1	-	-	-		
	E	2.38 (60.45)	2.62 (66.55)	2.81 (71.37)		
	F	3.00 (76.20)	3.00 (76.20)	3.00 (76.20)		
	G	1.00 (25.40)	1.00 (25.40)	1.00 (25.40)		
	G1	0.22 (5.59)	0.22 (5.59)	0.28 (7.11)		
	H*	5.00 (127.00)	5.25 (133.35)	5.44 (138.14)		
	M	0.69 (17.53)	0.69 (17.53)	0.69 (17.53)		
	N	0.38 (9.65)	0.38 (9.65)	0.38 (9.65)		
	Block Thickness		1.00 (25.40)	1.00 (25.40)	1.50 (38.10)	

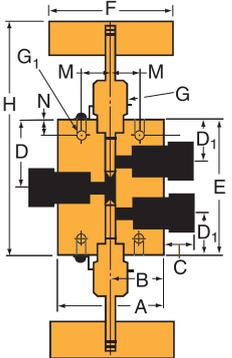
G - Packing Gland mounting hole drill size • G1 - Bracket mounting hole size • H* - Dimension is with stem in closed position
All dimensions for reference only and subject to change • For prompt service, Parker Autoclave stocks select products. Consult factory.

60VM Series Dimensions:

3 Way, 2 On Pressure					
		Catalog Number			
Stem Type	VEE REG	60VM4073 60VM4083	60VM6073 60VM6083	60VM9073 60VM9083	
Outside Diameter Tube		1/4 (6.35)	3/8 (9.53)	9/16 (14.29)	
Orifice Diameter		0.94 (2.39)	0.125 (3.18)	0.125 (3.18)	
Dimensions: inches (mm)					
		A	2.00 (50.80)	2.00 (50.80)	2.62 (66.55)
		B	1.00 (25.40)	1.00 (25.40)	1.31 (33.27)
		C	0.50 (12.70)	0.53 (13.46)	0.72 (18.29)
		D	1.69 (42.93)	1.69 (42.93)	1.75 (45.45)
		D1	1.31 (33.27)	1.31 (33.27)	1.31 (33.27)
		E	2.38 (60.45)	2.75 (68.86)	3.03 (76.96)
		F	3.00 (76.20)	3.00 (76.20)	3.00 (76.20)
		G	1.00 (25.40)	1.00 (25.40)	1.00 (25.40)
		G1	0.22 (5.59)	0.22 (5.59)	0.28 (7.11)
		H*	4.75 (120.65)	4.87 (123.70)	5.13 (130.30)
		M	0.69 (17.53)	0.69 (17.53)	0.69 (17.53)
		N	0.38 (9.65)	0.38 (9.65)	0.38 (9.65)
Block Thickness		1.00 (25.40)	1.00 (25.40)	1.50 (38.10)	

3 Way, 1 On Pressure					
		Catalog Number			
Stem Type	VEE REG	60VM4074 60VM4084	60VM6074 60VM6084	60VM9074 60VM9084	
Outside Diameter Tube		1/4 (6.35)	3/8 (9.53)	9/16 (14.29)	
Orifice Diameter		0.94 (2.39)	0.125 (3.18)	0.125 (3.18)	
Dimensions: inches (mm)					
		A	2.00 (50.80)	2.00 (50.80)	2.62 (66.55)
		B	1.00 (25.40)	1.00 (25.40)	1.31 (33.27)
		C	0.50 (12.70)	0.53 (13.46)	0.72 (18.29)
		D	1.31 (33.27)	1.31 (33.27)	1.31 (33.27)
		D1	-	-	-
		E	2.38 (60.45)	2.62 (66.55)	2.81 (71.37)
		F	3.00 (76.20)	3.00 (76.20)	3.00 (76.20)
		G	1.00 (25.40)	1.00 (25.40)	1.00 (25.40)
		G1	0.22 (5.59)	0.22 (5.59)	0.28 (7.11)
		H*	5.00 (127.00)	5.25 (133.35)	5.44 (138.18)
		M	0.69 (17.53)	0.69 (17.53)	0.69 (17.53)
		N	0.38 (9.65)	0.38 (9.65)	0.38 (9.65)
Block Thickness		1.00 (25.40)	1.00 (25.40)	1.50 (38.10)	

2 Way Angle Replaceable Seat					
		Catalog Number			
Stem Type	VEE REG	60VM4872 60VM4882	60VM6872 60VM6882	60VM9872 60VM9882	
Outside Diameter Tube		1/4 (6.35)	3/8 (9.53)	9/16 (14.29)	
Orifice Diameter		0.94 (2.39)	0.125 (3.18)	0.125 (3.18)	
Dimensions: inches (mm)					
		A	2.00 (50.80)	2.00 (50.80)	2.62 (66.55)
		B	1.00 (25.40)	1.00 (25.40)	1.31 (33.27)
		C	0.50 (12.70)	0.53 (13.46)	0.72 (18.29)
		D	1.31 (33.27)	1.31 (33.27)	1.31 (33.27)
		D1	2.12 (53.85)	2.36 (59.94)	2.68 (68.07)
		E	2.62 (66.55)	2.62 (66.55)	2.62 (66.55)
		F	3.00 (76.20)	3.00 (76.20)	3.00 (76.20)
		G	1.00 (25.40)	1.00 (25.40)	1.00 (25.40)
		G1	0.22 (5.59)	0.22 (5.59)	0.28 (7.11)
		H*	6.28 (159.51)	6.52 (164.60)	6.90 (175.26)
		M	0.69 (17.53)	0.69 (17.53)	0.69 (17.53)
		N	0.38 (9.65)	0.38 (9.65)	0.38 (9.65)
Block Thickness		1.00 (25.40)	1.00 (25.40)	1.50 (38.10)	

3 Way, 2 Stem Manifold					
		Catalog Number			
Stem Type	VEE REG	60VM4075 60VM4085	60VM6075 60VM6085	60VM9075 60VM9085	
Outside Diameter Tube		1/4 (6.35)	3/8 (9.53)	9/16 (14.29)	
Orifice Diameter		0.94 (2.39)	0.125 (3.18)	0.125 (3.18)	
Dimensions: inches (mm)					
		A	2.00 (50.80)	2.00 (50.80)	2.62 (66.55)
		B	1.00 (25.40)	1.00 (25.40)	1.31 (33.27)
		C	0.50 (12.70)	0.53 (13.46)	0.72 (18.29)
		D	1.72 (43.69)	1.88 (47.75)	2.06 (52.32)
		D1	1.31 (33.27)	1.31 (33.27)	1.31 (33.27)
		E	3.44 (87.38)	3.75 (95.25)	4.12 (104.65)
		F	3.00 (76.20)	3.00 (76.20)	3.00 (76.20)
		G	1.00 (25.40)	1.00 (25.40)	1.00 (25.40)
		G1	0.22 (5.59)	0.22 (5.59)	0.28 (7.11)
		H*	6.07 (154.18)	6.37 (161.80)	6.37 (161.80)
		M	0.69 (17.53)	0.69 (17.53)	0.69 (17.53)
		N	0.38 (9.65)	0.38 (9.65)	0.38 (9.65)
Block Thickness		1.00 (25.40)	1.00 (25.40)	1.50 (38.10)	

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.