

Needle Valve

QS Series

Medium Pressure to 15,000 psi (1024 bar)



Principle of Operation:

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 Engineers 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, waterblast, research, and oil and gas industries.

Medium Pressure Valve Features:

- Tubing sizes available from 1/4" to 1"
- Working Temperature: -100°F (-73°C) to 6,000°F (316°C)
- Single compression sleeve connection to 15,000 psi (1034 bar)
- Rising stem/barstock body design
- Non-rotating stem prevents stem/seat galling PTFE encapsulated packing provides dependable stem and body sealing
- Anti-galling molybdenum disulfide coated gland nuts
- Connection weep holes for safety and leak detections
- 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
- Choice of Vee or Regulating stem tip
- Available in five body patterns
- 1" valve bodies are 2507™ Super Duplex standard

Parker Autoclave Engineers valves are complemented by a complete line of fittings, tubing, check valves and line filters. The QS Series uses Parker Autoclave Engineers' Quick Set compression sleeve design, providing fast easy make-up and reliable bubble-tight performance in liquid or gas service.

All Parker Autoclave Engineers products are designed in accordance with ASME B31.3 Chapter IX High Pressure Piping standards.



ENGINEERING YOUR SUCCESS.

QS Series: Pressures to 15,000 psi (1034 bar)

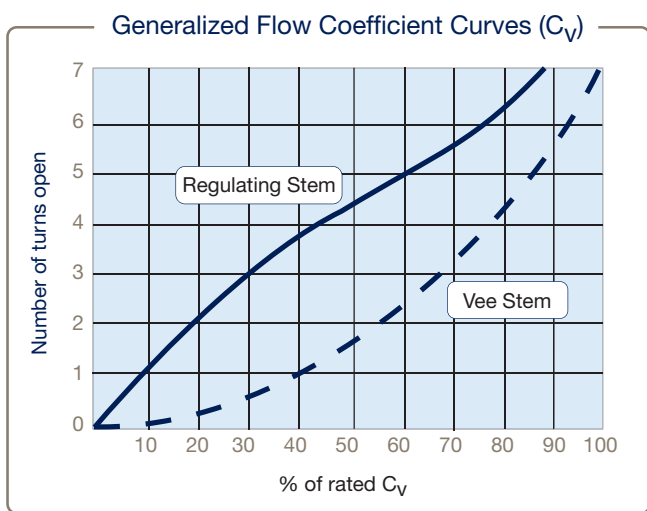


Tube Outside Diameter Size (inches)	Connection Type	Orifice Size Inches (mm)	Rated C_v^*	Pressure Rating psi (bar) @Room Temperature**
1/4	QSF250X	0.125 (3.18)	0.31	15,000 (1034)
3/8	QSF375X	0.219 (5.56)	0.75	15,000 (1034)
9/16	QSF562X	0.359 (9.12)	2.80	15,000 (1034)
3/4	QSF750X	0.516 (13.10)	5.20	15,000 (1034)
1	QSF1000X	0.688 (17.48)	5.20	15,000 (1034)

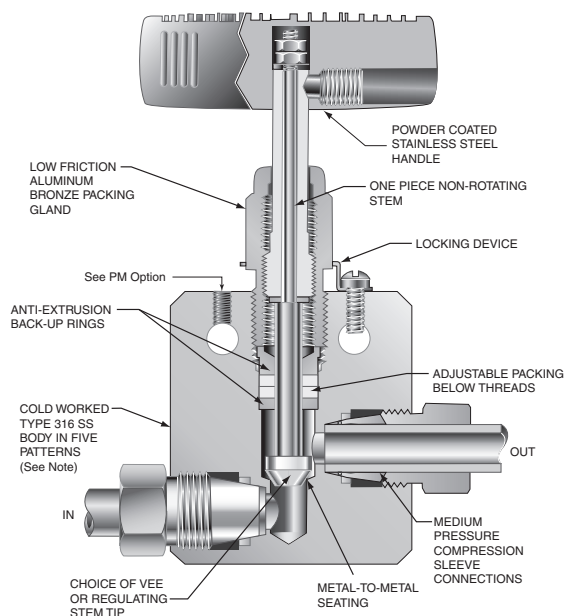
Notes

* 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.



QS Series Flow Curve



To ensure proper fit use Parker Autoclave tubing

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 600°F (316°C) by adding the following suffixes to catalog order number:†

TG Standard valve with PTFE glass packing to 600°F (316°C).

B Standard valve with cryogenic trim materials and PTFE packing to -100°F (-73°C).

† Parker Autoclave Engineers does not recommend compression sleeve connections below -100°F (-73°C) or above 600°F (316°C). For additional valve options, contact your Sales Representative.

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

Building a Part Number: *Example: 15QS4071*

Example Part Number:	15QS	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

15QS	Medium Pressure QS Needle Valve
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B - Outside Diameter Tube Size

4	1/4"
6	3/8"
9	9/16"
12	3/4"
16	1"

C - Stem/Seal 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

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

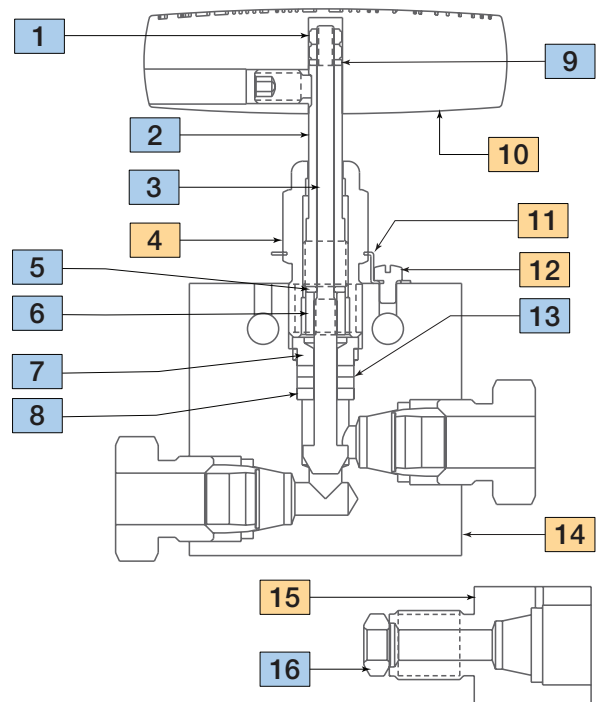
For extreme temperatures and other options, see Valve Options.

PM	Panel Mount, additional screw is supplied
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Material of Construction:

Item #	Description	Material
1	Hex Nut	316 SS
2	Stem Sleeve	316 SS
3	Vee Stem (9/16" QS shown)	316 SS
4	Packing Gland	AMPCO 18
5	Thrust Washer	17-4 PH
6	Stem Collar	316 SS
7	Packing Washer	AMPCO 45
8	Packing Washer	316 SS
9	Thrust Washer	17-4 PH
10	Handle Assembly	316 SS
11	Locking Device	302 SS
12	Fill HD Screw, #10-24	18-8 SS
13	Packing	PTFE
14	Valve Body, (9/16" QS shown)	316 SS
15	Seat Retainer	316 SS
16	Replaceable Seat	17-4 PH

Typical spare parts found in Repair Kits



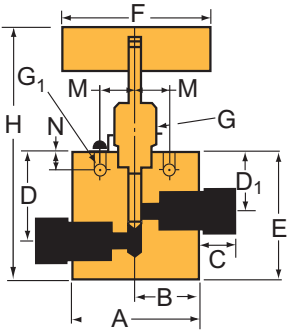
Basic Repair Kits for 316 SS Material:

Basic Repair Kit for 316 SS Material

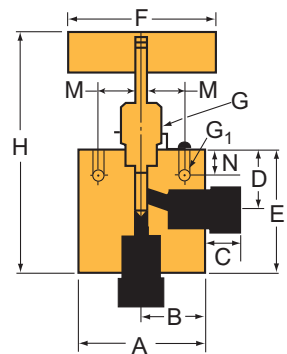
Stem Type		Outside Diameter Tube:				
		1/4"	3/8"	9/16"	3/4"	1"
15QS	VEE	R15QS407	R15QS607	R15QS907	R15QS1207	R15QS1607
	REG	R15QS408	R15QS608	R15QS908	R15QS1208	R15QS1608
2 Way, Replaceable Seat and Stem	VEE	R15QS4872	R15QS6872	R15QS9872	R15QS12872	R15QS16872
	REG	R15QS4882	R15QS6882	R15QS9882	R15QS12882	R15QS16882
3 Way, 2 Stem Manifold	VEE	R15QS4075	R15QS6075	R15QS9075	R15QS12075	R15QS16075
	REG	R15QS4085	R15QS6085	R15QS9085	R15QS12085	R15QS16085

Consult your Parker Autoclave Engineers representative for other kit numbers, body part numbers, and pricing.
Visit www.autoclave.com for product Operation manuals.

QS Series Dimensions:

2 Way Straight							
		Catalog Number					
Stem Type	VEE REG	15QS4071 15QS4081	15QS6071 15QS6081	15QS9071 15QS9081	15QS12071 15QS12081	15QS16071 15QS16081	
Outside Diameter Tube		1/4 (6.35)	3/8 (9.53)	9/16 (14.29)	3/4 (19.05)	1 (25.40)	
Orifice Diameter		0.125 (3.18)	0.219 (5.56)	0.359 (9.12)	0.516 (13.11)	0.688 (17.48)	
	Dimensions: inches (mm)	A	2.00 (50.80)	2.00 (50.80)	3.00 (76.20)	4.12 (104.65)	4.75 (120.65)
	B	1.00 (25.40)	1.00 (25.40)	1.50 (38.10)	2.06 (52.32)	2.38 (60.33)	
	C	0.38 (9.53)	0.47 (11.94)	0.53 (13.46)	0.62 (15.75)	1.19 (30.18)	
	D	1.62 (41.15)	1.62 (41.15)	2.38 (60.45)	3.00 (76.20)	3.75 (95.25)	
	D1	1.19 (30.23)	1.19 (30.23)	1.75 (44.45)	2.25 (57.15)	2.63 (66.68)	
	E	2.00 (50.80)	2.00 (50.80)	3.00 (76.20)	3.88 (98.43)	4.75 (120.65)	
	F	3.00 (76.20)	3.00 (76.20)	4.00 (101.60)	10.25 (260.35)	10.25 (260.35)	
	G	0.75 (19.05)	0.75 (19.05)	1.00 (25.40)	1.12 (28.45)	1.12 (28.45)	
	G1	0.22 (5.59)	0.22 (5.59)	0.34 (8.64)	0.44 (11.18)	0.44 (11.18)	
	H*	4.69 (119.13)	4.63 (117.60)	6.05 (153.67)	7.13 (180.98)	8.00 (203.20)	
	M	0.62 (15.75)	0.62 (15.75)	0.69 (17.53)	0.88 (22.35)	0.88 (22.35)	
	N	0.38 (9.65)	0.38 (9.65)	0.50 (12.70)	0.63 (16.00)	0.63 (16.00)	
	Block Thickness		0.75 (19.05)	0.81 (20.57)	1.25 (31.75)	1.50 (38.10)	2.00 (50.80)

Note:
1" valve bodies are 2507™ Super Duplex

2 Way Angle							
		Catalog Number					
Stem Type	VEE REG	15QS4072 15QS4082	15QS6072 15QS6082	15QS9072 15QS9082	15QS12072 15QS12082	15QS16072 15QS16082	
Outside Diameter Tube		1/4 (6.35)	3/8 (9.53)	9/16 (14.29)	3/4 (19.05)	1 (25.40)	
Orifice Diameter		0.125 (3.18)	0.219 (5.56)	0.359 (9.12)	0.516 (13.11)	0.688 (17.48)	
	Dimensions: inches (mm)	A	2.00 (50.80)	2.00 (50.80)	3.00 (76.20)	4.12 (104.65)	4.75 (120.65)
	B	1.00 (25.40)	1.00 (25.40)	1.50 (38.10)	2.06 (52.32)	2.38 (60.33)	
	C	0.38 (9.53)	0.47 (11.94)	0.53 (13.46)	0.62 (15.75)	1.19 (30.18)	
	D	1.19 (30.23)	1.20 (30.48)	1.69 (42.88)	2.19 (55.58)	3.75 (95.25)	
	D1	-	-	-	-	-	
	E	2.44 (61.98)	2.56 (65.02)	3.50 (88.90)	4.63 (117.48)	5.38 (136.53)	
	F	3.00 (76.20)	3.00 (76.20)	4.00 (101.60)	10.25 (260.35)	10.25 (260.35)	
	G	0.75 (19.05)	0.75 (19.05)	1.00 (25.40)	1.12 (28.45)	1.12 (28.45)	
	G1	0.22 (5.59)	0.22 (5.59)	0.36 (9.14)	0.44 (11.18)	0.44 (11.18)	
	H*	4.81 (122.17)	4.93 (125.22)	6.55 (166.37)	7.88 (200.15)	8.63 (219.25)	
	M	0.62 (15.75)	0.62 (15.75)	0.69 (17.53)	0.88 (22.35)	0.88 (22.35)	
	N	0.38 (9.65)	0.38 (9.65)	0.50 (12.70)	0.63 (16.00)	0.63 (16.00)	
	Block Thickness		0.75 (19.05)	0.81 (20.57)	1.25 (31.75)	1.50 (38.10)	2.00 (50.80)

G - Packing Gland mounting hole drill size • G1 - Bracket mounting hole size • H* - Dimension is with stem in closed position • **1/8" straight and 3-Way/2 on pressure valves have offset tube connection
Panel mounting drill size: 0.22" all valves • All dimensions for reference only and subject to change • For prompt service, Parker Autoclave stocks select products. Consult factory.

Valve Options: (For Actuator Options please reference specific Actuator brochure)



Pneumatic Valve Actuators:

The need to control process and vent valves from a remote location makes air operated valves a vital component to many processing operations. All Parker Autoclave Engineers' valves are available with piston type actuators. Five sizes of air actuators (light, mini-light, medium, heavy duty or extra heavy, single and double stage) are offered to meet the service requirements of Parker Autoclave Engineers' Low, Medium and High Pressure needle valves. Both air-to-open (normally closed) and air-to-close (normally open) designs are included in the product line. Optional air to open AND close actuators available upon request. Please see our Pneumatic Valve Actuator Brochure to help size the proper actuator for your application.



Electric Valve Actuators:

Remotely controlling process flow at high pressure enhances safety and lowers labor costs. Parker Autoclave Engineers developed a flow control valve available in several models including weatherproof and explosionproof options.

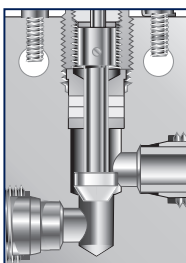
The Electrically Actuated Shut-off/Flow Regulating Actuator (FRC Series) is available for most of our Needle Valves through 9/16" tubing size and up to 60,000 psi maximum pressure. They are available in all body patterns except 3-Way / 2-Stem Manifold, and can withstand wide process temperature ranges.

Please consult the appropriate needle valve brochure for information on valve options, ratings, flow coefficient, body dimensions, and other specifications.

Stem Options:

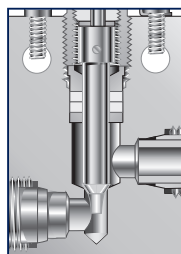
Most Parker Autoclave Engineers' valves are available with either Vee (on-off) or Regulating (Flow Control) Stems in our standard valve body seat or with our optional replaceable seat as shown below:

VEE Stem



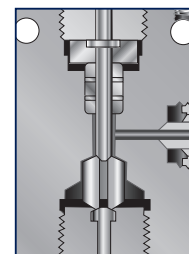
The Vee stem is used for direct on-off, metal-to-metal shut-off with quick-opening flow characteristics.

Regulating Stem



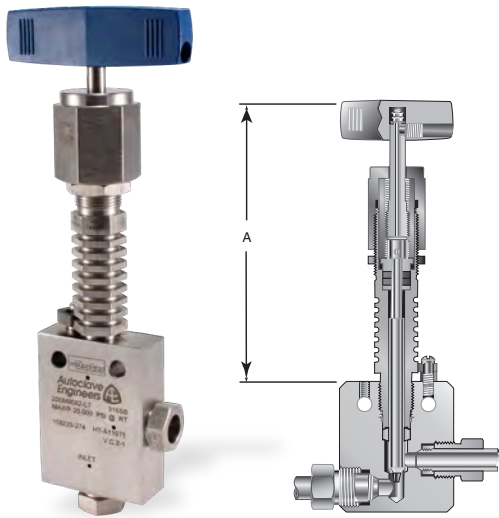
In some applications, more precise flow control is required than is possible with a Vee stem. For these cases, Autoclave offers a non-rotating, two-piece regulating stem which can be used for both control and shut-off. While it is not as precise as the control associated with the MicroMetering stem, especially with smaller flows, it does offer substantially better control than the Vee stem.

Replaceable Seat (with Vee Stem)



Replaceable seat option is only available with Right-Angle Style body. Replaceable seat is supplied as standard with an additional seat - rotate to use second side. Can be used with either stem type. Options include Stellite material or N-Dura coating to increase service life.

Valve Options: (For Actuator Options please reference specific Actuator brochure)



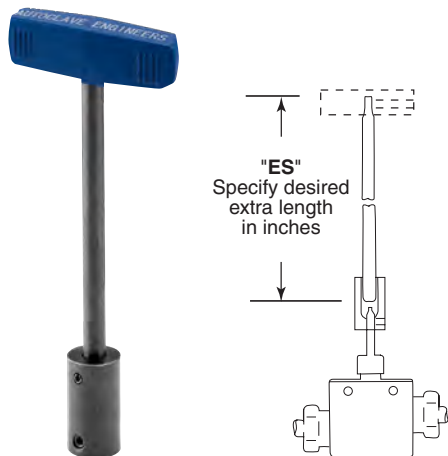
High/Low Temperature Extension:

Not typically needed for 10V/SW Series valves as temperature range does not exceed the barriers below, but option is shown for consideration.

- HT High Temperature (over 800°F (427°C))
- LT Low Temperature (under -100°F (-73°C))

Valve Series	Outside Diameter Tube Size (inches)	Dimensions "A" inches (mm)
10V & SW (this option not typically needed)	1/8"	5.38 (137)
	1/4"	5.50 (140)
	3/8"	5.50 (140)
	9/16"	6.31 (160)

HT option code includes Graphite (-GY) packing
 LT option code includes 316 SS Trim material and PTFE packing



ES Stem Extender:

Stem extenders are offered for High and Low temperature operation or to extend through panel or barricade.

To order valve with Stem Extender, add "ES-" and length (6", 12", 18", 24") to beginning of valve part number e.g. ES12-20SM6071. Other lengths to special order.

To order Stem Extender only, provide valve model prefix e.g. ES12-20SM6. Handle not included – use same provided with original valve.



Needle Valve Clam Shell Handle Lockout:

(order separately using part numbers shown below, padlock not included)

Clam Shell Handle locks are provided to lockout valves in open or closed position preventing unauthorized personnel from actuating valve during shutdown or emergency situations. This clamshell design is available in four (4) sizes dependent on handle length:

- P/N AE004855 – 1" to 2.5" handle length
- P/N 90088 – 2.5" to 5.0" handle length
- P/N 90194 – 6.5" to 10" handle length
- P/N AE004350 – 8" to 13" handle length

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! CAUTION !

Do not mix or interchange component parts or tubing with those of other manufacturers. Doing so is unsafe and will void warranty.

Parker Autoclave Engineers Valves, Fittings, and Tools are not designed to interface with common commercial instrument tubing and are designed to only connect with tubing manufactured to Parker Autoclave Engineers AES specifications. Failure to do so is unsafe and will void warranty.

WARNING

FAILURE, IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met. The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

Offer of Sale

The items described in this document are available for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. Any sale contract entered by Parker will be governed by the provisions stated in Parker's standard terms and conditions of sale (copy available upon request).



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