

Needle Valves

Catalog 4110-NV

June 2019

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



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Introduction

Parker VQ Series Toggle Valves are the right combination of performance and value for manual or pneumatic on-off control in moderate pressure and temperature applications. The manual version employs a toggle handle for quick action at pressures up to 300 psig (21 bar). Compact double acting, normally closed, and normally open pneumatically actuated versions of this valve are ideal for automatic control at pressures up to 600 psig (41 bar).

Toggle Valve Features

- ▶ Quick acting
- ▶ Inline and angle patterns
- ▶ CPI™, A-LOK®, male and female NPT connections
- ▶ Panel mountable
- ▶ Color-coded handles
- ▶ 316 stainless steel and brass body construction
- ▶ Optional Stem seal materials - See HTO
- ▶ Optional handle positioners and anti-lock handles
- ▶ Available in normally open, normally closed, and double acting models
- ▶ Mounting bracket standard
- ▶ 100% factory tested

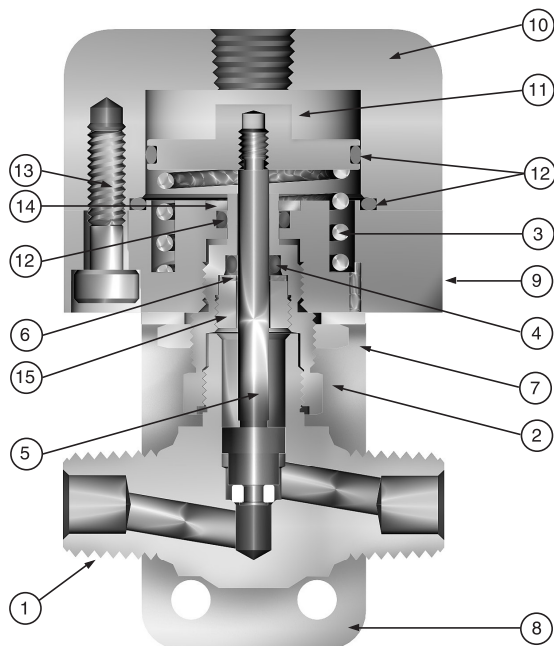
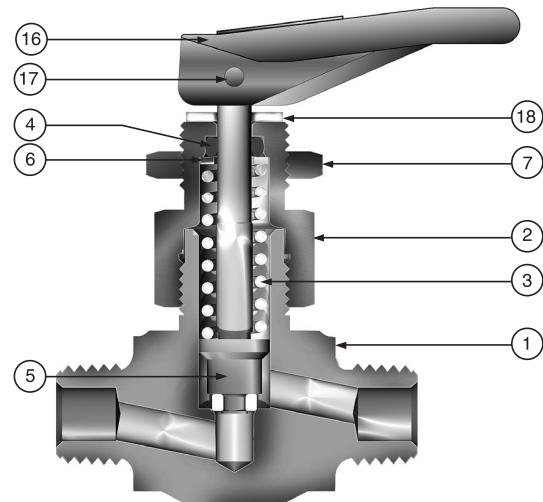
Toggle Valve Specifications

Pressure Rating at All Temperatures:

Manual	300 psig (21 bar) CWP
Actuated N.C. V4Q	600 psig (41 bar) CWP
Actuated N.C. V6Q	500 psig (35 bar) CWP
Actuated N.O. & D.A.	450 psig (31 bar) CWP

Temperature Ratings:

PTFE Stem Tip:	-20°F to 200°F (-29°C to 93°C)
PCTFE Stem Tip:	-65°F to 200°F (-54°C to 93°C)



Materials of Construction

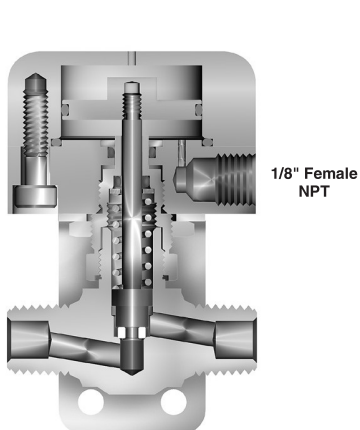
Item #	Description	Stainless Steel	Brass
1	Body	ASTM A 182 Type F316	ASTM B 283 Alloy C37700
2	Cap	ASTM A 479 Type 316	ASTM B 453 Alloy C34000
3	Spring*	Stainless Steel	Stainless Steel
4	Stem Seal**	Fluorocarbon Rubber	Fluorocarbon Rubber
5	Stem	ASTM A 276 Type 316	ASTM A 276 Type 316
6	Stem Washer	Stainless Steel	Stainless Steel
7	Panel/Lock Nut	316 Stainless Steel	316 Stainless Steel
8	Mounting Bracket	Aluminum	Aluminum
9	Actuator Base	Aluminum	Aluminum
10	Actuator Cap	Aluminum	Aluminum
11	Piston	Aluminum	Aluminum
12	Actuator Seals	Fluorocarbon Rubber	Fluorocarbon Rubber
13	Screws	Stainless Steel	Stainless Steel
14	Actuator Bushing	Aluminum	Aluminum
15	Stem Bushing***	ASTM A 479 Type 316	ASTM A 479 Type 316
16	Handle	Nylon 6/6	Nylon 6/6
17	Handle Pin	Stainless Steel	Stainless Steel
18	Handle Washer	Acetal	Acetal

* Spring not used on Double Acting (11AD) models

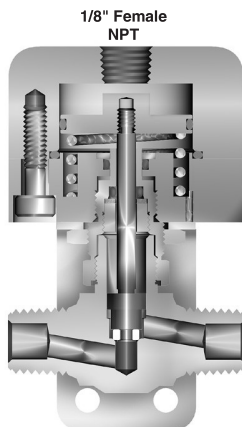
** Optional stem seal materials available - See How to Order

*** Stem Bushing not used on Normally Closed (11AC) models
Lubrication: Perfluorinated polyether

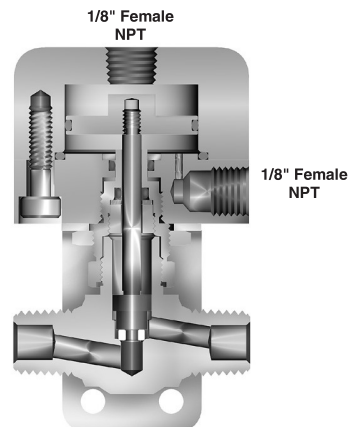
Pneumatically Actuated Valves



Normally Closed (11AC)



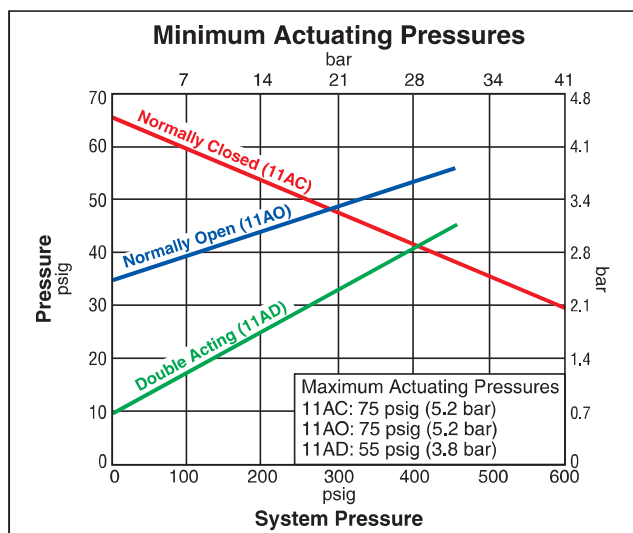
Normally Open (11AO)



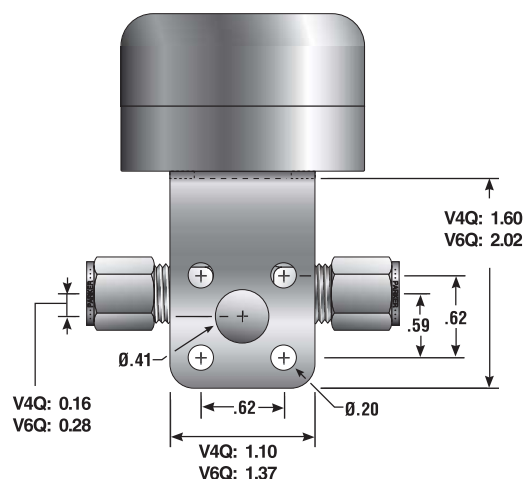
Double Acting (11AD)

VQ

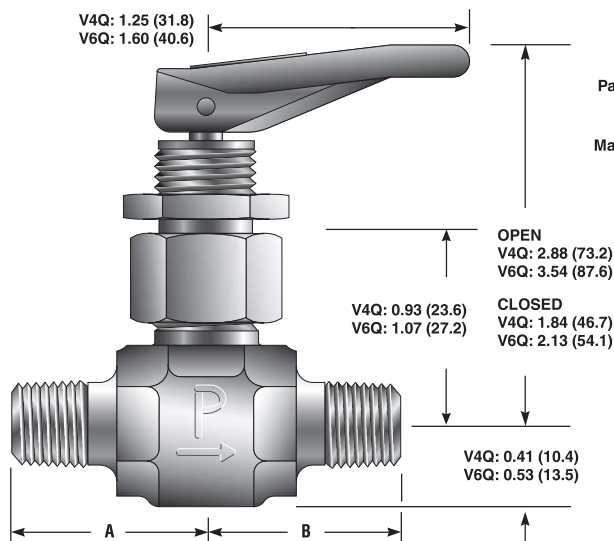
Minimum Actuating Pressures



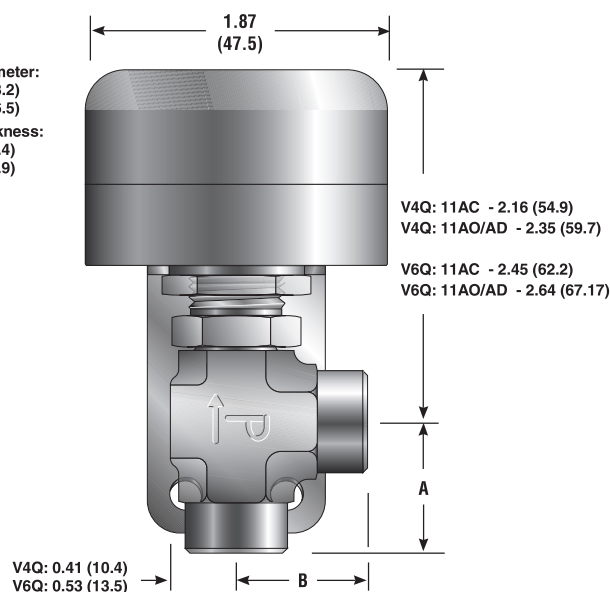
Toggle Valve Mounting Bracket



Dimensions / Flow Data



Model Shown: 4M-V4LQ-SSP



Model Shown: 4F-V6AQ-11AO-B

() Denotes dimensions in millimeters

Dimensions / Flow Data

Basic Part Number	End Connections		Flow Data				Dimensions	Additional Options			
	Inlet (Port 1)	Outlet (Port 2)	Orifice		C_v	X_T^*	A† and B†	Stem Tip	Stem Seal	Actuation	Body Material
			Inch	mm			Inch (mm)				
2A-V4LQ-SSP	1/8" Compression A-LOK®		0.078	2.0	0.14	0.52	1.10	K = PCTFE	BN = Nitrile Rubber	11AC = Normally Closed	BP = Brass with Panel Nut
2A-V4AQ-SSP					0.15	0.50	(27.9)				
2F-V4LQ-SSP	1/8" Female NPT	0.176	4.5	0.36	0.71	0.8					
2F-V4AQ-SSP				0.49	0.64	(20.6)					
2M-V4LQ-SSP	1/8" Male NPT	0.125	3.2	0.30	0.50	0.81					
2M-V4AQ-SSP				0.35	0.55	(20.6)					
2Z-V4LQ-SSP	1/8" Compression CPI™	0.078	2.0	0.14	0.52	1.10					
2Z-V4AQ-SSP				0.15	0.50	(27.9)					
4A-V4LQ-SSP	1/4" Compression A-LOK®	0.176	4.5	0.36	0.71	1.15					
4A-V4AQ-SSP				0.49	0.64	(29.2)					
4M-V4LQ-SSP	1/4" Male NPT	0.176	4.5	0.36	0.71	0.94					
4M-V4AQ-SSP				0.49	0.64	(23.9)					
4Z-V4LQ-SSP	1/4" Compression CPI™	0.176	4.5	0.36	0.71	1.15					
4Z-V4AQ-SSP				0.49	0.64	(29.2)					
M6A-V4LQ-SSP	6mm Compression A-LOK®	0.176	4.5	0.36	0.71	1.13					
M6A-V4AQ-SSP				0.49	0.64	(28.7)					
M6Z-V4LQ-SSP	6mm Compression CPI™	0.176	4.5	0.36	0.71	1.13					
M6Z-V4AQ-SSP				0.49	0.64	(28.7)					
M8A-V4LQ-SSP	8mm Compression A-LOK®	0.176	4.5	0.36	0.71	1.13					
M8A-V4AQ-SSP				0.49	0.64	(28.7)					
M8Z-V4LQ-SSP	8mm Compression CPI™	0.176	4.5	0.36	0.71	1.13					
M8Z-V4AQ-SSP				0.49	0.64	(28.7)					

* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = X_T$.

† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

Dimensions in inches/millimeters are for reference only, subject to change.

Dimensions / Flow Data

Basic Part Number	End Connections		Flow Data				Dimensions	Additional Options			
	Inlet (Port 1)	Outlet (Port 2)	Orifice		C_v	X_T^{*}	A† and B†	Stem Tip	Stem Seal	Actuation	Body Material
			Inch	mm			Inch (mm)				
4F-V6LQ-SSP	1/4" Female NPT		0.250	6.4	0.83	0.70	1.00	K = PCTFE	BN = Nitrile Rubber	11AC = Normally Closed	BP = Brass with Panel Nut
4F-V6AQ-SSP					0.92	0.68	(25.4)				
6A-V6LQ-SSP	3/8" Compression A-LOK®	0.250	6.4	0.83	0.70	1.29					
6A-V6AQ-SSP				0.92	0.68	(32.8)					
6Z-V6LQ-SSP	3/8" Compression CPI™	0.250	6.4	0.83	0.70	1.29					
6Z-V6AQ-SSP				0.92	0.68	(32.8)					
8A-V6LQ-SSP	1/2" Compression A-LOK®	0.250	6.4	0.83	0.70	1.37					
8A-V6AQ-SSP				0.92	0.68	(34.8)					
8Z-V6LQ-SSP	1/2" Compression CPI™	0.250	6.4	0.83	0.70	1.37					
8Z-V6AQ-SSP				0.92	0.68	(34.8)					
M10A-V6LQ-SSP	10mm Compression A-LOK®	0.250	6.4	0.83	0.70	1.30	KZ = Highly Fluorinated Fluocarbon Rubber		11AD = Double Acting		
M10A-V6AQ-SSP				0.92	0.68	(33.0)					
M10Z-V6LQ-SSP	10mm Compression CPI™	0.250	6.4	0.83	0.70	1.30					
M10Z-V6AQ-SSP				0.92	0.68	(33.0)					

* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = X_T$.

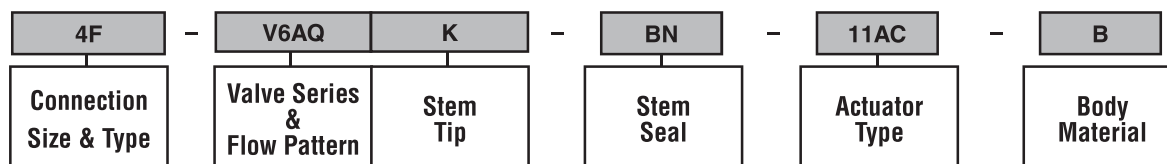
† For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

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How to Order Toggle Valves

The part number sequence identifies product characteristics as shown in the example below.

Example : 4F-V6AQK-BN-11AC-B describes a V6Q Series pneumatically actuated (normally closed) angle pattern valve equipped with 1/4" Female NPT inlet and outlet ports, PCTFE Stem Tip, Nitrile Stem Seal, Brass construction with a mounting bracket.



Oxygen Cleaning – Add the suffix **-C3** to the end of the part number to receive valves cleaned in accordance with ASTM G93 level C, class 500. This ASTM details cleaning methods and cleanliness levels for materials and equipment used in oxygen-enriched environments. **Example:** 4A-V4AQ-EPR-SSP-C3

How to Order Maintenance Kits

Colored Nylon Handles with Handle Pin – Options are BLUE, GREEN or RED. **Example:** V4Q-HANDLE-BLUE

Handle Positioners – Prevents handle from rotating. **Examples:** Q6-HANDLE-POSITIONER

Anti Locking Handle – **Example:** V4Q-HANDLE-BLACK-ALH

Rubber Seal and Stem Kits – **Example:** KIT-V6Q-BN

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