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Pneumatic/Electric Actuators

Catalog 4123
August 2004



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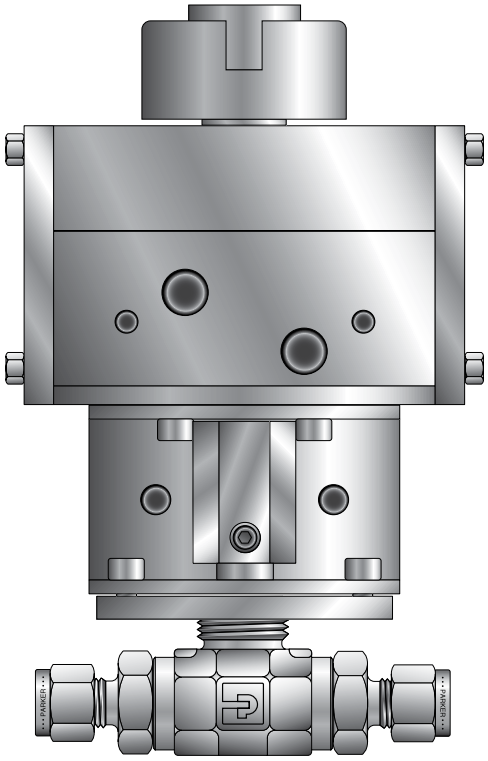
Introduction

Parker 60 Series spring return (AC/AO) or double acting (AD) rack and pinion actuators are compact, simply designed devices that are quality engineered to provide high torque outputs and a high cycle, trouble-free life.

A compact, dual opposed rack and pinion design and guide band suspension combine to produce a symmetrically balanced, center mount actuator. In addition, the actuator has a short powerful stroke, rapid response, and fully concentric operating load capability which ensures optimum performance.

Features

- Three point suspension system uses carbon filled PTFE guide bands for piston alignment and rack support
- Dual opposed piston design uses air pressure on two pistons to deliver a balanced force to the pinion gear
- Patented balanced piston design results in even distribution of bearing loads and eliminates piston tilting
- Multiple spring concept permits actuator use at 40 to 120 psig (2.8 to 8.3 bar) air supply requirements
- Suitable for use with dry or lubricated air, non-corrosive gas, or light hydraulic oil
- Aluminum alloy body construction with two component polyurethane coating
- Manual override



Model Shown: 4Z-B6LJ-V-SS-61AD

Specifications

Operating Pressure

90° Models:
40 to 120 psig (2.8 to 8.3 bar) maximum
AC – Normally Closed Spring Return
AD – Double Acting
AO – Normally Open Spring Return
180° Models:
80 psig (5.5 bar) maximum
ACX – Spring Return
ADX – Double Acting

Temperature Range

-4°F to 175°F (-20°C to 79°C)
Optional high and low temperature ranges available

Options

- Solenoid valve
- Rotary limit switch with valve position indicator
- Breather block
- Dual mount actuator

61S Option

- Compact single piston design
- Available for MB, HB, B2, and B6 Series Valves

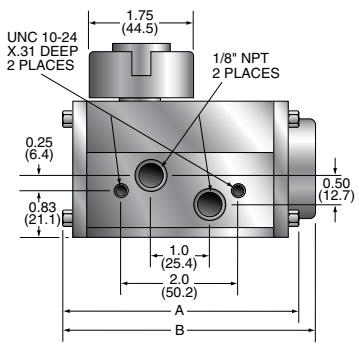
Operation

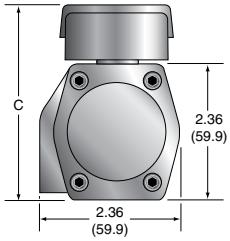
Actuators are manufactured with an integral air manifold and internal porting. The air manifold is designed for direct mounting of solenoid valves. This eliminates the need for external tubing and simplifies installation. For applications not requiring a solenoid valve, the air manifold inlet ports are marked “A” and “B”. Air inlet port “A” will rotate the actuator counterclockwise. Spring return actuators fail clockwise.

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Jacksonville, Alabama

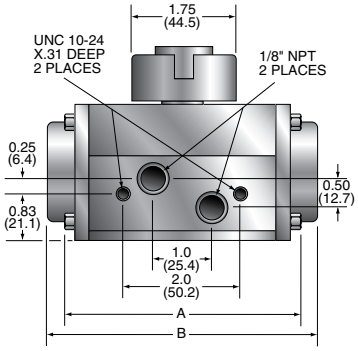
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Dimensional Data for 61 and 61S Models





61S Actuator



61 Actuator

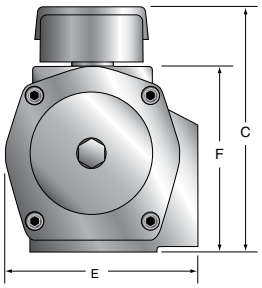
( ) Denotes dimensions in millimeters

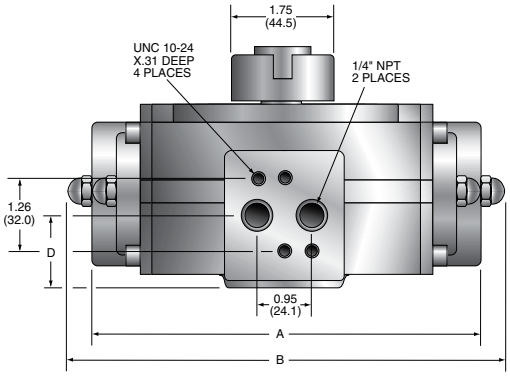
Dim	61SAD		61SAC/O		61SADX		61SACX	
	Inch	mm	Inch	mm	Inch	mm	Inch	mm
A	3.37	85.6	-	-	4.63	117.6	-	-
B	-	-	3.66	93.0	-	-	5.83	148.1
C	3.38	85.9	3.38	85.9	3.38	85.9	3.38	85.9

Dim	61AD		61AC/O		61ADX		61ACX	
	Inch	mm	Inch	mm	Inch	mm	Inch	mm
A	4.06	103.1	-	-	6.10	154.9	-	-
B	-	-	4.65	118.1	-	-	8.50	215.9
C1	3.38	85.9	3.38	85.9	3.38	85.9	3.38	85.9
C2	2.36	59.9	2.36	59.9	2.36	59.9	2.36	59.9

C1 – Single Mount C2 – Dual Mount

Dimensional Data for 62, 63, 64, 65, 66, 68 and 69 Models

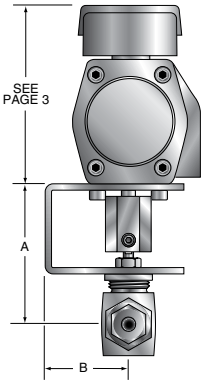


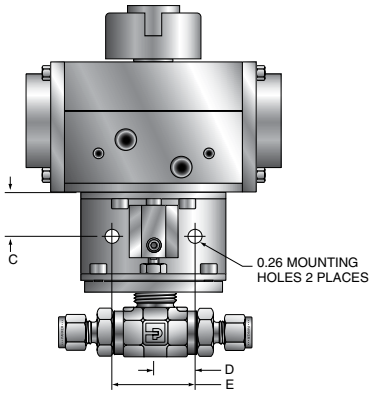


Model	A		B		C				D		E		F	
					Single Mount		Dual Mount							
	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
62AD	6.26	159.0	-	-	4.17	105.9	3.15	80.0	1.26	32.0	2.91	73.9	3.15	80.0
62AC/O	-	-	6.77	172.0	4.17	105.9	3.15	80.0	1.26	32.0	2.91	73.9	3.15	80.0
63AD	7.09	180.1	-	-	4.68	118.9	3.86	98.0	1.32	33.5	3.39	86.1	3.66	93.0
63AC/O	-	-	8.03	204.0	4.68	118.9	3.86	98.0	1.32	33.5	3.39	86.1	3.66	93.0
ADX64	6.34	161.0	-	-	5.00	127.0	3.98	101.1	1.69	42.9	4.27	108.5	3.98	101.1
ACX64	-	-	7.17	182.1	5.00	127.0	3.98	101.1	1.69	42.9	4.27	108.5	3.98	101.1
65AD	7.83	198.9	-	-	5.15	130.8	4.13	104.9	1.54	39.1	3.86	98.0	4.13	104.9
65AC/O	-	-	9.8	248.9	5.15	130.8	4.13	104.9	1.54	39.1	3.86	98.0	4.13	104.9
66AD	8.7	221.0	-	-	5.67	144.0	4.65	118.1	1.59	40.4	4.25	108.0	4.65	118.1
66AC/O	-	-	10.51	267.0	5.67	144.0	4.65	118.1	1.59	40.4	4.25	108.0	4.65	118.1
69AD	11.14	283.0	-	-	6.65	168.9	5.63	143.0	1.99	50.5	5.04	128.0	5.63	143.0
69AC/O	-	-	14.17	359.9	6.65	168.9	5.63	143.0	1.99	50.5	5.04	128.0	5.63	143.0

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Valve Dimensional Data

Model Shown: 4Z-B6LJ-V-SS-61AC-2

Valve Series	A		B		C		D		E	
	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
B2	2.23	56.6	1.61	40.9	0.80	20.3	0.75	19.1	1.50	38.1
B6	2.49	63.2								
B8	2.91	73.9								
MB2	2.33	59.2								
MB4	2.33	59.2								
MB6	2.48	63.0								
HB4	2.70	68.6								
SWB4	2.57	65.2								
SWB8	2.79	70.9								
SWB12	2.95	74.9								
SWB16	3.14	79.7								

Recommended Actuators for B, MB, and HB Series Ball Valves*

Valve Series	Double Acting AD	Spring Return AO	Spring Return AC
B2LJ	61AD or 61SAD	61AO-2 or 61SAO	61AC-2 or 61SAC
B2LJ2	61AD or 61SAD	61AO-2 or 61SAO	61AC-2 or R 61SAC
B2XJ	61ADX or 61SADX	61ACX-2 or 61SACX	61ACX-2 or 61SACX
B2XJ2	61ADX or 61SADX	61ACX-2 or 61SACX	61ACX-2 or 61SACX
B6LJ	61AD or 61SAD	61AO-2 or 61SAO	61AC-2 or 61SAC
B6LJ2	61AD or 61SAD	61AO-2 or 61SAO	61AC-2 or 61SAC
B6LS2	61AD or 61SAD	61AO-2 or 61SAO	61AC-2 or 61SAC
B6LPKR	61AD or 61SAD	61AO-2 or 61SAO	61AC-2 or 61SAC
B6LSPKR	61AD or 61SAD	61AO-2 or 61SAO	61AC-2 or 61SAC
B6XJ	61ADX or 61SADX	61ACX-2 or 61SACX	61ACX-2 or 61SACX
B6XJ2	61ADX or 61SADX	61ACX-2 or 61SACX	61ACX-2 or 61SACX
B6XS2	61ADX or 61SADX	61ACX-2 or 61SACX	61ACX-2 or 61SACX
B6XPKR	61ADX or 61SADX	61ACX-2 or 61SACX	61ACX-2 or 61SACX
B6XSPKR	61ADX or 61SADX	61ACX-2 or 61SACX	61ACX-2 or 61SACX
B8LJ	61AD	61AO-2	61AC-2
B8LJ2	61AD	62AO-3	62AC-3
B8LS2	61AD	62AO-3	62AC-3
B8LPKR	61AD	62AO-3	62AC-3
B8XJ	61ADX	61ACX-2	61ACX-2
B8XJ2	61ADX	ACX64-3	ACX64-3
B8XS2	61ADX	ACX64-3	ACX64-3
B8XPKR	61ADX	ACX64-3	ACX64-3
HB4LPKR	61AD	62AO-3	62AC-3
HB4LK	61AD	61AO-2	61AC-2
HB4XPKR	61ADX	ACX62-3	ACX62-3
HB4XK	61ADX	61ACX-2	61ACX-2
MB2A	61AD or 61SAD	61AO-2 or 61SAO	61AC-2 or 61SAC
MB2L	61AD or 61SAD	61AO-2 or 61SAO	61AC-2 or 61SAC
MB2X	61ADX or 61SADX	61ACX-2 or 61SACX	61ACX-2 or 61SACX
MB4A	61AD or 61SAD	61AO-2 or 61SAO	61AC-2 or 61SAC
MB4L	61AD or 61SAD	61AO-2 or 61SAO	61AC-2 or 61SAC
MB4X	61ADX or 61SADX	61ACX-2 or 61SACX	61ACX-2 or 61SACX
MB6A	61AD or 61SAD	61AO-2 or 61SAO	61AC-2 or 61SAC
MB6L	61AD or 61SAD	61AO-2 or 61SAO	61AC-2 or 61SAC
MB6X	61ADX or 61SADX	61ACX-2 or 61SACX	61ACX-2 or 61SACX
SWB4	61AD	61AO-2	61AC-2
SWB8	61AD	62AO-3	62AC-3
SWB12	61AD	62AO-3	62AC-3
SWB16	62AD	63AO-3	63AC-3

*With 60 psig (4.1 bar) actuation pressure

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90° Models (AC, AO, and AD)

Performance Characteristics

Series	Bore		Stroke		Weight				Operating Time	Air Consumption in³		Air Consumption cc	
					AD		AC/AO						
	Inch	mm	Inch	mm	lb	kg	lb	kg	sec	Port "A"	Port "B"+	Port "A"	Port "B"+
61	1.8	45.7	0.5	12.7	1.3	0.6	1.5	0.7	0.4	3.1	3.7	50.8	60.7
61S	1.8	45.7	0.5	12.7	1.2	0.5	1.2	0.6	0.4	2.4	1.2	39.3	19.7
62	2.2	55.9	0.6	15.2	2.9	1.3	3.7	1.7	0.5	6.1	6.7	100.0	109.8
63	2.8	71.1	0.7	17.8	4.0	1.8	5.3	2.4	0.7	9.8	13.4	160.7	219.7
65	3.1	78.7	0.9	22.1	5.3	2.4	7.9	3.6	1.1	20.1	22.0	329.5	360.7
66	3.6	91.4	1.0	25.4	6.8	3.1	10.1	4.6	1.2	21.4	29.9	350.8	490.2

+Double acting only

AD Torques

Series	40 psig (2.8 bar)		60 psig (4.1 bar)		80 psig (5.5 bar)		100 psig (6.9 bar)	
	in-lb	Nm	in-lb	Nm	in-lb	Nm	in-lb	Nm
61	59	6.7	89	10.1	119	13.4	149	16.8
61S	-	-	45	5.1	59	6.7	75	8.5
62	109	12.3	165	18.6	220	24.9	276	31.2
63	205	23.2	309	34.9	413	46.7	518	58.5
65	312	35.2	471	53.2	630	71.2	789	89.1
66	461	52.1	696	78.6	930	105.1	1165	131.6

AC and AO Torques

Series	Spring Set	Air Torque								Spring Torque	
		40 psig (2.8 bar)		60 psig (4.1 bar)		80 psig (5.5 bar)		100 psig (6.9 bar)			
		in-lb	Nm	in-lb	Nm	in-lb	Nm	in-lb	Nm	in-lb	Nm
61	2	-	-	23	2.6	55	6.2	87	9.8	41	4.6
61S	-	-	-	16	1.8	21	2.4	26	2.9	21	2.4
62	2	44	5.0	103	11.6	162	18.3	220	24.9	39	4.4
	3	8	0.9	66	7.5	126	14.2	185	20.9	58	6.6
	4	-	-	31	3.5	90	10.2	149	16.8	78	8.8
	5	-	-	-	-	54	6.1	113	12.8	98	11.1
	6	-	-	-	-	18	2.0	77	8.7	117	13.2
63	2	82	9.3	193	21.8	304	34.3	413	46.7	74	8.4
	3	15	1.7	126	14.2	236	26.7	346	39.1	110	12.4
	4	-	-	58	6.6	169	19.1	279	31.5	146	16.5
	5	-	-	-	-	101	11.4	212	24.0	183	20.7
	6	-	-	-	-	34	3.8	144	16.3	220	24.9
65	2	117	13.2	285	32.2	453	51.2	622	70.3	117	13.2
	3	10	1.1	178	20.1	347	39.2	515	58.2	175	19.8
	4	-	-	72	8.1	240	27.1	408	46.1	234	26.4
	5	-	-	-	-	133	15.0	301	34.0	292	33.0
	6	-	-	-	-	26	2.9	195	22.0	351	39.7
66	2	192	21.7	441	49.8	690	78.0	939	106.1	161	18.2
	3	43	4.9	293	33.1	542	61.2	790	89.3	242	27.3
	4	-	-	143	16.2	392	44.3	641	72.4	323	36.5
	5	-	-	-	-	244	27.6	492	55.6	403	45.5
	6	-	-	-	-	95	10.7	344	38.9	484	54.7

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180° Models (ACX AND ADX)

Performance Characteristics

Series	Bore		Stroke		Weight				Operating Time	Air Consumption		Air Consumption	
					AD		AC			in^3		cc	
	Inch	mm	Inch	mm	lb	kg	lb	kg	sec	Port "A"	Port "B"+	Port "A"	Port "B"+
61	1.8	45.7	1.0	25.4	1.9	0.9	2.4	1.1	0.8	4.5	5.7	73.8	93.4
61S	1.8	45.7	1.0	25.4	1.4	0.7	1.7	0.8	0.8	6.1	3.1	100.0	50.0

+Double acting only

ADX Torques

Series	40 psig (2.8 bar)		60 psig (4.1 bar)		80 psig (5.5 bar)	
	in-lb	Nm	in-lb	Nm	in-lb	Nm
61	59	6.7	89	10.1	119	13.4
61S	-	-	45	5.1	59	6.7

ACX Torques

Series	Spring Set	Air Torque						Spring Torque	
		40 psig (2.8 bar)		60 psig (4.1 bar)		80 psig (5.5 bar)			
		in-lb	Nm	in-lb	Nm	in-lb	Nm	in-lb	Nm
61	2	-	-	25	2.8	57	6.4	39	4.4
61S	-	-	-	16	1.8	21	2.4	21	2.4

How to Order Actuators

Factory Assembled

Add the actuator model designation as a suffix to the ball valve part number.
Example: **4Z-B6LJ2-SS-61AC-2.** Describes a B6 ball valve with a normally closed actuator.

For Field Assembly

Simply specify the actuator. Example: **65AC-3**. Mounting bracket kits are required when mounting actuators to valves.

With Mounting Brackets

Specify the ball valve series and seat material followed by the actuator. Examples: **B6LJ-61AO-2, MB6XPFA-61ACX, SWB12LRT-62AC-3-.**

Options

High Temperature Seals – Extends the high temperature from 175°F (79°C) to 250°F (121°C) and to 400°F (204°C) on special Series 62 and 63 90° models.
Low Temperature Seals – Extends the low temperature from –4°F (-20°C) to –40°F (-40°C).
Solenoid Valve (Single coil) – Mounts directly to the actuator inlet manifold. NEMA 4 or 7 housings with voltages of 24 VDC, 120 VAC, and 240 VAC. A manual override is standard.
Limit Switch – Rugged, fully enclosed unit contains two SPDT snap-acting switches operated by two independently adjustable cams on a rotating shaft coupled directly to the actuator auxiliary drive. Features a visual valve position indicator. Meets NEMA 4, 7, and 9 classifications for weather-resistant and hazardous locations.
Breather Block – A direct mount diverter module redirects instrument quality air to the spring chamber during the spring stroke (fail stroke) of AC and AO actuators. Ideal for corrosive, wet, or dusty environments. Also improves spring stroke speed and allows the solenoid valve to be mounted to it.
Dual Mount Actuator – Two valves may be actuated with a single actuator. Available with both valves open, both closed, or one open and one closed.

NOTE: Parker pneumatically actuated B Series Ball Valves should be ordered with elastometric stem packing and seals or the optional live-loaded PTFE packing. This reduces the need for any further packing adjustment after receipt from the factory.

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How to Order Options

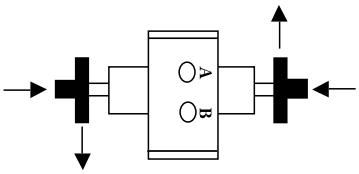
High Temperature Seals – Add the suffix **–HT** to the end of the part number for service up to 250°F (121°C). Add the suffix **–HT4** to the end of the part number for service up to 400°F (204°C). **NOTE:** The **–HT4** option is only available on series 62 and 63 90° models. Example: 2F-HB4LK-BN-SS-61AD-**HT.**

Low Temperature Seals – Add the suffix **–LT** to the end of the part number. Example: 4A-MB4LPFA-SS-61SAC-**LT.**

Accessories – Add one of the following suffixes to the end of the part number. Example: 16F-SWB16L-RT-T-SS-63AC-3-**2D.**

Suffix	Accessory
Single Option	
-1A	Breather Block
-1B	Solenoid Valve, (NEMA 4, 120 VAC)
-1C	Solenoid Valve, (NEMA 7, 120 VAC)
-1D	Solenoid Valve, (NEMA 4, 24 VDC)
-1E	Solenoid Valve, (NEMA 7, 24 VDC)
-1F	Solenoid Valve, (NEMA 4, 240 VAC)
-1G	Solenoid Valve, (NEMA 7, 240 VAC)
-1H	Limit Switch – Two SPDT switches with mounting kit
Double Option	
-2A	Breather Block, Solenoid Valve, (NEMA 4, 120 VAC)
-2B	Breather Block, Solenoid Valve, (NEMA 7, 120 VAC)
-2C	Breather Block, Solenoid Valve, (NEMA 4, 24 VDC)
-2D	Breather Block, Solenoid Valve, (NEMA 7, 24 VDC)
-2E	Breather Block, Solenoid Valve, (NEMA 4, 240 VAC)
-2F	Breather Block, Solenoid Valve, (NEMA 7, 240 VAC)
-2G	Limit Switch, Solenoid Valve, (NEMA 4, 120 VAC)
-2H	Limit Switch, Solenoid Valve, (NEMA 7, 120 VAC)
-2J	Limit Switch, Solenoid Valve, (NEMA 4, 24 VDC)
-2K	Limit Switch, Solenoid Valve, (NEMA 7, 24 VDC)
-2L	Limit Switch, Solenoid Valve, (NEMA 4, 240 VAC)
-2M	Limit Switch, Solenoid Valve, (NEMA 7, 240 VAC)
Triple Option	
-3A	Breather Block, Limit Switch, Solenoid Valve, (NEMA 4, 120 VAC)
-3B	Breather Block, Limit Switch, Solenoid Valve, (NEMA 7, 120 VAC)
-3C	Breather Block, Limit Switch, Solenoid Valve, (NEMA 4, 24 VDC)
-3D	Breather Block, Limit Switch, Solenoid Valve, (NEMA 7, 24 VDC)
-3E	Breather Block, Limit Switch, Solenoid Valve, (NEMA 4, 240 VAC)
-3F	Breather Block, Limit Switch, Solenoid Valve, (NEMA 7, 240 VAC)

Dual Mount Actuator – Add **–DVM** as a suffix to the end of the part number. Example: 6F-B6LPKC-SS-61AC-2-**DVM.** With **DVM** dual mount valve options, the following are standard arrangements: Two-way valves are provided in their failed position (in their closed position with AD actuators). Three-way valves are provided as shown below. Contact the factory for details on other available options.



How to Order Mounting Bracket Kits

Add the valve series and actuator model designation as a suffix to **MK-.** Example: MK-**MB4L-61S.** Describes a mounting kit for a MB Series ball valve with a 61S Series actuator.

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Introduction

Parker 70 and 80 Series Electric Actuators are designed for electric actuation of Parker's B Series, MB Series, HB Series, and SWB Series Ball Valves. They provide reliable, cost effective, remote valve actuation. The simplicity of design provides accessible and easy wiring installation. The convenience and accuracy of advanced modular electronics gives the user the ability to wire in accessories without all the hard wiring hassles. The master PC ("mother") board accepts plug-in modular ("daughter") boards to allow for a variety of accessory functions. Other than connecting a power source, there is no internal wiring to tangle with, ever. With a variety of accessories as well as superior actuator design, Parker's Ball Valves with the 70 or 80 Series actuators are the obvious choice.

70 SERIES

Specifications

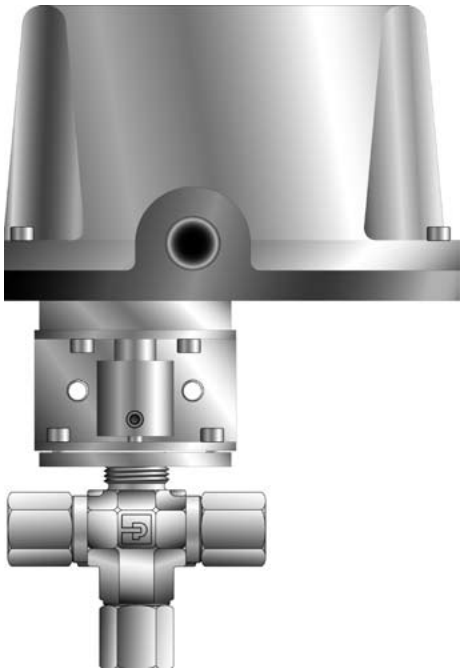
- Voltage: 24, 115 or 230 VAC (50/60 Hz); 12 or 24 VDC
- Torque: 150, 300, 600 in lb (17, 34, 68 N m)
- Enclosure: PVC composite
- Duty cycle: 25%; 100% (VDC models)
- Actuator bolt pattern: ISO standard (5211)
- Conduit connection: 1/2" NPT
- Output shaft: Male, zinc plated steel
- Temperature limits (all models): 32°F to 150°F (0°C to 66°C); (-40°F [-40°C] minimum with heater and thermostat)

Features

- Single direction actuation
- PVC cover resists damage/UV radiation
- NEMA 4 (weatherproof), 4X (weatherproof with corrosion resistance)
- Hardened steel spur gear drive train provides consistent, long life performance
- Permanently lubricated gear train and bearings
- Low profile design/direct drive male output permit limited space installation
- Available for the B Series, MB Series, HB Series and SWB Series ball valves
- Available for 2-way (90°) and 3-way (180°) configurations
- Approximate weight: 6 lb (2.7 kg)
- CSA certified (Standard)
- Two Limit Switches: Single pole, double throw, rated for 1/3 HP, 10 amps @ 125/230 VAC, CSA certified

Options

- Additional limit switches and cams (specify up to 2)
- Heater and thermostat (For operation to -40°F [-40°C])
- CE (European Conformity) marking available



Model Shown: 4F-B6XJ-SS-71XA

70R Series

Specifications

- Same as 70 series

Features

- Bi-directional (reversing) actuation
- Declutchable manual override (output shaft extends out of the cover)

Options

- Same as 70 Series

Additional Options

- Additional limit switches and cams (specify up to 2)
- Position indicator
- Valve position indication

Materials of Construction

Part	Material
Cover	Composite, PVC
Base	Diecast zinc alloy
Gear Train	Hardened steel
Output Shaft	Zinc plated steel
Finish	Powder coated epoxy

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80 SERIES

Specifications

- Voltage: 24, 115 or 230 VAC (50/60 Hz); 12 or 24 VDC
- Torque: 150, 300, 600, 1000 in lb (17, 34, 68, 113 N m)
- Enclosure: Epoxy coated cast aluminum
- Duty cycle: 75%; 100% (VDC models)
- Actuator bolt pattern: ISO standard (5211)
- Conduit connection: 1/2" NPT (2 places)
- Output drive: ISO compatible female drive output
- Temperature limits (all models): 32°F to 150°F (0°C to 66°C); (-40 °F [-40 °C] minimum with heater and thermostat)

Features

- Bi-directional actuation
- Mother/daughter board, modular electronics technology
- Circuit board readily accepts plug-in connectors
- Variety of plug-in accessory boards are available
- Easy installation, no hard-wiring required
- NEMA 4 (weatherproof), 4X (weatherproof with corrosion resistance), NEMA 7 (explosion proof, gases) & 9 (explosion proof, dust) - Class I, Div. I, Group C&D; Class II, Div. I, Group E, F, and G; Class III
- Highly efficient spur gear power train
- Lubrication: Permanently lubricated gear train and bearings
- Manual override
- Visual position indicator
- Available for the B Series, MB Series, HB Series and SWB Series ball valves
- Available for 2-way (90°) and 3-way (180°) configurations
- Approximate weight: 17 lb (7.7 kg)
- CSA certified (Option)
- Two Limit Switches: Single pole, double throw, rated for 1/3 HP, 10 amps @ 125/230 VAC, CSA certified



Model Shown: 8W-SWB8L-RT-V-SS-81CS2

Standard Options

- Additional limit switches and cams (specify up to 2)
- Heater and thermostat (For operation to -40°F [-40°C])
- Modulating control package with position re-transmit (4-20mA, 0-10 VDC, includes potentiometer)
- CE (European Conformity) marking available
- CSA Certified

Additional 80 Series Options **(consult the factory)**

- Timer
- Cycle rate regulator (CRR)
- Center off
- Mechanical brake
- Potentiometer
- Relay board
- Dual relay board
- Declutchable handwheel
- Fail-safe Options: battery or capacitance type; without manual override

Part	Material
Cover	Diecast aluminum alloy
Base	Diecast aluminum alloy
Gear Train	Hardened steel
Output Shaft	N/A
Finish	Powder coated epoxy

TESTING

Actuator

All 70 and 80 Series Electric Actuators are factory tested for accurate cycle times and correct output signals at all applicable positions.

Valve

All valves are factory tested for internal and external leakage as described in their respective catalogs.

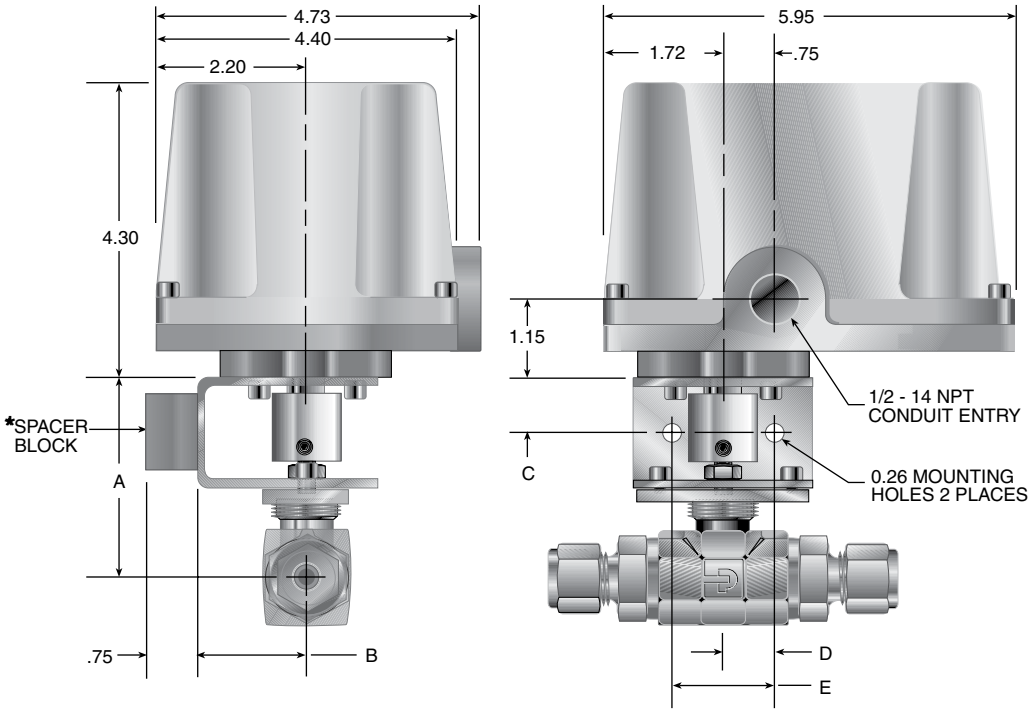
Valve / Actuator Assemblies

All valve/actuator assemblies are factory tested for proper valve actuation.

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70 SERIES



Dimensional Data

Valve Type	A		B		C		D		E	
	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
B2	2.23	56.6	1.61	40.9	0.80	20.3	0.75	19.1	1.50	38.1
B6	2.49	63.2								
B8	2.91	73.9								
MB2	2.33	59.2								
MB4	2.33	59.2								
MB6	2.48	63.0								
HB4	2.70	68.6								
SWB4	2.57	64.3	1.25	31.7	.82	20.8				
SWB8	2.79	70.9								
SWB12	2.95	74.9								
SWB16	3.14	79.8								

*Spacer block ordered separately, see page 12

Actuator Model	Breakaway Torque in lb (N m)	Voltage	Duty Cycle	Cycle Time (sec)	Amps at stall (Nominal)			Approx. Weight lb (kg)
					24 VAC	115 VAC	230 VAC	
71	150 (17.0)	24 VAC, 115 VAC or 230 VAC	25%	5	5.2	1.3	0.7	6 (2.7)
72	300 (34.0)			9	7.2	1.8	0.9	
73	600 (67.8)			16	7.2	1.3	0.7	

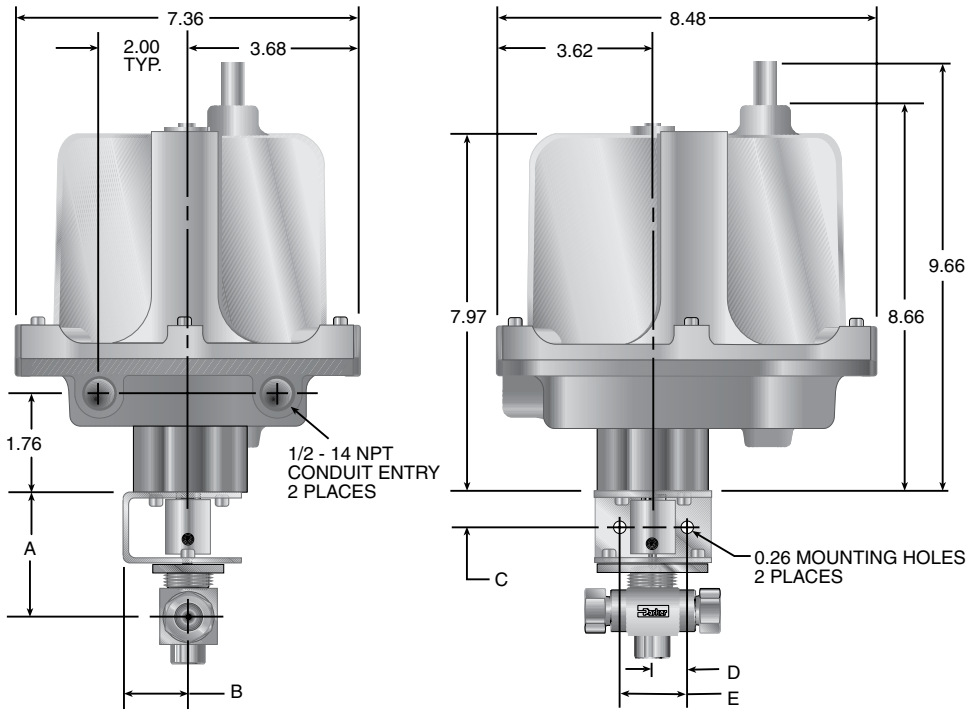
Actuator Model	Breakaway Torque in lb (N m)	Voltage	Duty Cycle	Cycle Time (sec)		Amps at Running Torque (Nominal)		Approx. Weight lb (kg)
				12 VDC	24 VDC	12 VDC	24 VDC	
72	300 (34.0)	24 VDC	100%	**	9	**	0.5	6 (2.7)
73	**600 (67.8)**	**12 VDC or 24 VDC**		**16**	**16**	**1.3**	**0.5**	

NOTE: Cycle times reflect 90° rotation. For 180° rotation, double the cycle time.
**12 VDC not available with this model.

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80 SERIES



Dimensional Data

Valve Type	A		B		C		D		E	
	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
B2 B6 B8 MB2 MB4 MB6 HB4	2.23 2.49 2.91 2.33 2.33 2.48 2.70	56.6 63.2 73.9 59.2 59.2 63.0 68.6	1.61	40.9	0.80	20.3	0.75	19.1	1.50	38.1
SWB4 SWB8 SWB12 SWB16	2.57 2.79 2.95 3.14	64.3 70.9 74.9 79.8	1.25	31.7	0.82	20.8				

Actuator Model	Breakaway Torque in lb (N m)	AC				DC			
		Cycle Time (sec)	Voltage	Duty Cycle	Amp** Draw (@115 VAC)	Cycle Time (sec)	Voltage	Duty Cycle	Amp** Draw (@12 VDC)
81	150 (17.0)	10	115	75%	0.3	5	12 VDC or 24 VDC†	100%	1.1
82	300 (34.0)	15	230		0.3	10			1.1
83	600 (67.8)	30	OR		0.3	15			**1.1**
84‡	1000 (113.0)	25‡	24 VAC		0.5	15‡			2.6

NOTE: Cycle times reflect 90° rotation. For 180° rotation, double the cycle time.
**Amps rated at full running torque. Amp draws shown are for 115 VAC and 12VDC only. For other voltages, consult the factory.
†24 VDC cycle time and amp draw are half of 12 VDC.
‡Large 80 Series enclosure must be ordered (consult factory).

Duty Cycle: The percentage of time an electric actuator may operate in relation to the time it must rest. It equals “on time” divided by total elapsed time, multiplied by 100. For example, an actuator with a duty cycle of 25% and a cycle time of five seconds must rest for 15 seconds before operating again.

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Actuator Selection Tables

Suggested Actuator								
			70 Series					80 Series
Valve Series	Flow Pattern	Seat Material	115 VAC	230 VAC	24 VAC	12 VDC	24 VDC	All Voltages
B Series	2-Way	All	71	71	71	73	72	81
B Series	3-Way	All	71X	71X	71X	73X	72X	81X
MB Series	2-Way	All	71	71	71	73	72	81
MB Series	3-Way	All	71X	71X	71X	73X	72X	81X
HB Series	2-Way	All	71	71	71	73	72	81
HB Series	3-Way	All	71X	71X	71X	73X	72X	81X
SWB4	2-Way	All	71	71	71	73	72	81
SWB8	2-Way	RT	71	71	71	73	72	81
SWB12	2-Way	RT	71	71	71	73	72	81
SWB16	2-Way	RT	71	71	71	73	72	81

How To Order Mounting Bracket Kits

Valve Series	Mounting Bracket Kit Part Numbers	
	70 Series	80 Series
B2L **B2X**	**MK-B2L-70** **MK-B2X-70**	**MK-B2L-80** **MK-B2X-80**
B6L **B6X**	**MK-B6L-70** **MK-B6X-70**	**MK-B6L-80** **MK-B6X-80**
B8L **B8X**	**MK-B8L-70** **MK-B8X-70**	**MK-B8L-80** **MK-B8X-80**
MB2L MB2A MB2X	**MK-MB4L-70** **MK-MB4L-70** **MK-MB4X-70**	**MK-MB4L-80** **MK-MB4L-80** **MK-MB4X-80**
MB4L MB4A **MB4X**	**MK-MB4L-70** **MK-MB4L-70** **MK-MB4X-70**	**MK-MB4L-80** **MK-MB4L-80** **MK-MB4X-80**
MB6L MB6A **MB6X**	**MK-MB6L-70** **MK-MB6L-70** **MK-MB6X-70**	**MK-MB6L-80** **MK-MB6L-80** **MK-MB6X-80**
HB4L **HB4X**	**MK-HB4-70** **MK-HB4-70**	**MK-HB4-80** **MK-HB4-80**
SWB4L	**MK-SWB4-70**	**MK-SWB4-80**
SWB8L	**MK-SWB8-70**	**MK-SWB8-80**
SWB12L	**MK-SWB12-70**	**MK-SWB12-80**
SWB16L	**MK-SWB16-70**	**MK-SWB16-80**

NOTE: Mounting bracket kits include one mounting bracket, one nut plate, one coupling, six socket head cap screws, and two set screws.

If the bracket spacer block is required, order separately using the following nomenclature: **SPACER-ACT-.75**

How To Order Actuators With Mounting Brackets: Specify the ball valve series and seat material followed by the actuator. Example: B6LJ-71C, MB6XPFA-71RX, SWB12LRT-73CS1.

NOTE: For the SWB Series, actuators can be down sized to fit the application. The actuator selection tables utilize valve combinations at full operating pressures.

How To Order Kits For Field Assembly

Kit Description	70 Series Part Number	80 Series Part Number
Limit Switch (Two-Way Valve)	KIT-LSW-70-2WAY	KIT-LSW-80-2WAY
Limit Switch (Three-Way Valve)	KIT-LSW-70-3WAY	KIT-LSW-80-3WAY
Heater & Thermostat (115 VAC)*	KIT-HTR-70-115AC	KIT-HTR-80-115AC
Heater & Thermostat (230 VAC)*	KIT-HTR-70-230AC	KIT-HTR-80-230AC
Heater & Thermostat (24 VAC)*	**KIT-HTR-70-24AC**	**KIT-HTR-80-24AC**
Positioner (4-20mA, 115 VAC)	**Not Available**	**KIT-POSITIONER-420-115AC**
Positioner (0-10 VDC, 115 VAC)	**Not Available**	**KIT-POSITIONER-010-115AC**

*Heater and thermostat for DC voltages are factory installed only.

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How to Order:
Electric Actuators for Field Assembly

The correct part number is easily derived by following the circled number sequence.

Example: 71 (1) (2) (3) - T (4)

Describes a Model 71, 2-Way electric actuator unit with a NEMA 4 and 4X rating, a 115 VAC motor with optional heater and thermostat.

① Actuator Model	② Flow Pattern	③ Voltage	④ Options
71 72 73 71R 72R 73R 81 82 83 84	Blank - 2-Way X - 3-Way	Blank - 115 VAC A - 230 VAC B - 24 VAC C - 12 VDC D - 24 VDC	T - Heater and Thermostat S# - Additional Limit Switch; # = number of limit switches required C - Modulating Control Package with position re-transmit (4-20mA, 0-10 VDC includes potentiometer)‡ F - Position Indicator (70R Series only) CE - European Conformity Marking *CSA - Canadian Standard

NOTE: Mounting bracket kits are required when ordering actuators for field assembly.
*CSA - Standard on 70 Series (optional on 80 Series)

Electric Actuators Factory Assembled

The correct part number is easily derived by following the circled number sequence.

Example: 4Z-MB6XPFA-SS (1) - 81 (2) _ X (3) A (4) - ___ (5)

Describes a Model 81, 3-Way electric actuator unit with a NEMA 4, 4X, 7 and 9 rating, a 230 VAC motor and no options, mounted on a MB Series ball valve.

① Valve Part Number	② Actuator Model	③ Flow Pattern	④ Voltage	⑤ Options
See the "How to Order" section in the applicable catalog for the desired valve series	71 72 81 73 82 71R 83 72R 84 73R	Blank - 2-Way X - 3-Way	**Blank - 115 VAC** **A - 230 VAC** B - 24 VAC C - 12 VDC D - 24 VDC	T - Heater and Thermostat S# - Additional Limit Switch; # = number of limit switches required C - Modulating Control Package with position re-transmit (4-20mA, 0-10 VDC includes potentiometer)‡ F - Position Indicator (70R Series only) CE - European Conformity Marking

NOTE: Parker electrically actuated, B Series Ball Valves should be ordered with elastometric stem packing and seals or the optional live-loaded PTFE packing. This reduces the need for any further packing adjustment after receipt from the factory.

‡For 80 Series electric actuators only.

⚠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.

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Parker Hannifin Corporation
Instrumentation Products Division
2651 Alabama Highway 21 North
Jacksonville, AL 36265-9681
USA
Phone: (256) 435-2130
Fax: (256) 435-7718
www.parker.com/ipdus

Parker Hannifin plc
Instrumentation Products Division
Riverside Road
Pottington Business Park
Barnstaple, Devon EX31 1NP
England
Phone: +44 (0) 1271 313131
Fax: +44 (0) 1271 373636
Email: ipd@parker.com
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