



Ball and Plug Valves

Catalog 4121-BV

January 2019

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



ENGINEERING YOUR SUCCESS.

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.

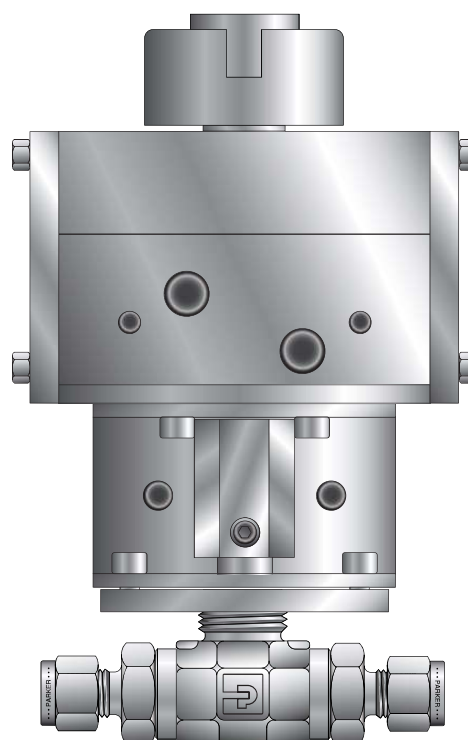
A compact, dual opposed rack and pinion design and guide band suspension combine to produce a symmetrically balanced, center mount actuator. In addition, the actuator has a short powerful stroke, rapid response, and fully concentric operating load capability which ensures optimum performance.

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

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 counter-clockwise. Spring return actuators fail clockwise.



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)

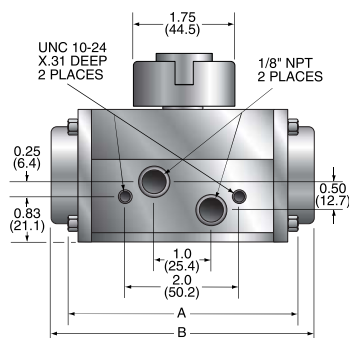
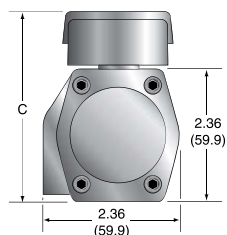
Optional high and low temperature ranges available

Options

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

Pneu
Act

Dimensional Data for 61 Model



61 Actuator

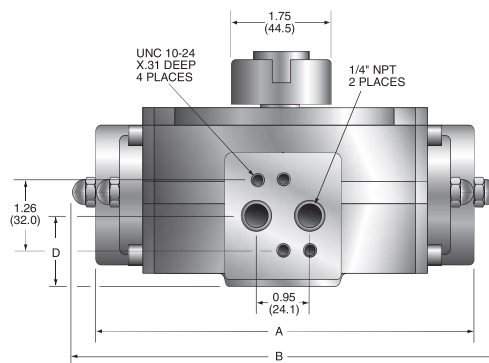
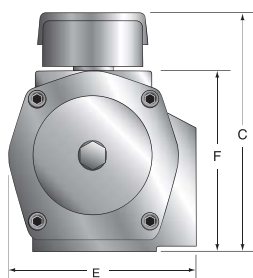
() Denotes dimensions in millimeters

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

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

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



Model	A		B		C				D		E		F	
	Inch	mm	Inch	mm	Single Mount		Dual Mount		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

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

Valve Dimensional Data

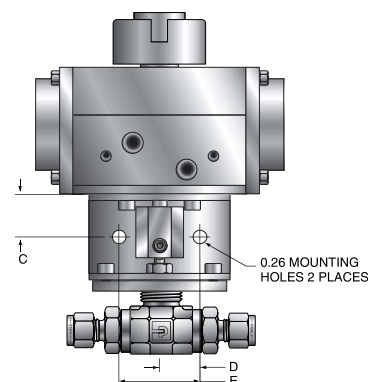
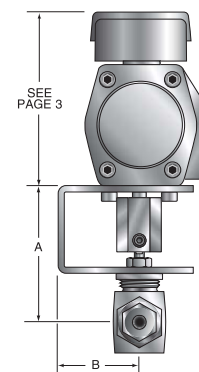
Valve Series	A		B		C		D		E	
	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
B2	2.23	56.6								
B6	2.49	63.2								
B8	2.91	73.9								
MB2	2.33	59.2	1.61	40.9	0.80	20.3				
MB4	2.33	59.2								
MB6	2.48	63.0					0.75	19.1	1.50	38.1
HB4	2.70	68.6								
SWB4	2.57	65.2								
SWB8	2.79	70.9	1.25	31.7	0.82	20.08				
SWB12	2.95	74.9								
SWB16	3.14	79.7								

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

Recommended Actuators*

Valve Series	Double Acting AD	Spring Return AO	Spring Return AC
B2LJ	61AD	61AO-2	61AC-2
B2LJ2	61AD	61AO-2	61AC-2
B2XJ	61ADX	61ACX-2	61ACX-2
B2XJ2	61ADX	61ACX-2	61ACX-2
B6LJ	61AD	61AO-2	61AC-2
B6LJ2	61AD	61AO-2	61AC-2
B6LS2	61AD	61AO-2	61AC-2
B6LPKR	61AD	61AO-2	61AC-2
B6LSPKR	61AD	61AO-2	61AC-2
B6XJ	61ADX	61ACX-2	61ACX-2
B6XJ2	61ADX	61ACX-2	61ACX-2
B6XS2	61ADX	61ACX-2	61ACX-2
B6XPKR	61ADX	61ACX-2	61ACX-2
B6XSPKR	61ADX	61ACX-2	61ACX-2
B8LJ	61AD	61AO-2	61AC-2
B8LJ2	61AD	62AO-3	62AC-3
B8LS2	61AD	62AO-3	62AC-3
B8LPKR	61AD	62AO-3	62AC-3
B8LSPKR	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
B8XSPKR	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	61AO-2	61AC-2
MB2L	61AD	61AO-2	61AC-2
MB2X	61ADX	61ACX-2	61ACX-2
MB4A	61AD	61AO-2	61AC-2
MB4L	61AD	61AO-2	61AC-2
MB4X	61ADX	61ACX-2	61ACX-2
MB6A	61AD	61AO-2	61AC-2
MB6L	61AD	61AO-2	61AC-2
MB6X	61ADX	61ACX-2	61ACX-2
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.



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

Pneu
Act

90° Models (AC, AO, and AD)

Performance Characteristics

Series	Bore		Stroke		Weight				Operating Time	Air Consumption		Air Consumption	
					AD		AC/AO			in³		cc	
	Inch	mm	Inch	mm	lb	kg	lb	kg		sec	Port A	Port B*	Port A
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
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

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

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
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
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

Pneu
Act

180° Models (ACX and ADX)

Performance Characteristics

Series	Bore		Stroke		Weight				Operating Time	Air Consumption		Air Consumption	
					AD		AC			in³		cc	
	Inch	mm	Inch	mm	lb	kg	lb	kg		sec	Port A	Port B*	Port A
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

*Double acting only

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

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

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

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 1A-125VAC/1A-24VDC proximity 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, 4X, 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.

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-61AC-2-LT

Accessories – Add one of the following suffixes to the end of the part number.

Example: 16F-SWB16L-RT-T-SS-63AC-3-2D

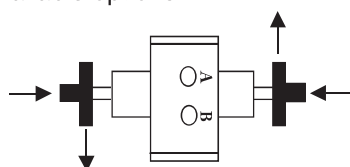
Suffix	Accessory
Single Option	
-1A	Breather Block
-1B	Solenoid Valve (NEMA 4, 120 VAC)
-1C	Solenoid Valve (NEMA 7, 120 VAC)
-1D	Solenoid Valve (NEMA 4, 24 VDC)
-1E	Solenoid Valve (NEMA 7, 24 VDC)
-1F	Solenoid Valve (NEMA 4, 240 VAC)
-1G	Solenoid Valve (NEMA 7, 240 VAC)
-4H	Limit Switch – Two SPDT switches 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)
-5G	Limit Switch, Solenoid Valve (NEMA 4, 120 VAC)
-5H	Limit Switch, Solenoid Valve (NEMA 7, 120 VAC)
-5J	Limit Switch, Solenoid Valve (NEMA 4, 24 VDC)
-5K	Limit Switch, Solenoid Valve (NEMA 7, 24 VDC)
-5L	Limit Switch, Solenoid Valve (NEMA 4, 240 VAC)
-5M	Limit Switch, Solenoid Valve (NEMA 7, 240 VAC)
Triple Option	
-6A	Breather Block, Limit Switch, Solenoid Valve (NEMA 4, 120 VAC)
-6B	Breather Block, Limit Switch, Solenoid Valve (NEMA 7, 120 VAC)
-6C	Breather Block, Limit Switch, Solenoid Valve (NEMA 4, 24 VDC)
-6D	Breather Block, Limit Switch, Solenoid Valve (NEMA 7, 24 VDC)
-6E	Breather Block, Limit Switch, Solenoid Valve (NEMA 4, 240 VAC)
-6F	Breather Block, Limit Switch, Solenoid Valve (NEMA 7, 240 VAC)

Note: NEMA and voltage ratings apply only to Solenoid Valves.

Dual Mount Actuator – Add **–DVM** as a suffix to the end of the part number.

Example: 6A-B6LPKR-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-61

Describes a mounting kit for a MB Series ball valve with a 61 Series actuator.

Parker Worldwide

Europe, Middle East, Africa

AE – United Arab Emirates, Dubai

Tel: +971 4 8127100
parker.me@parker.com

AT – Austria, Wiener Neustadt

Tel: +43 (0)2622 23501-0
parker.austria@parker.com

AT – Eastern Europe, Wiener Neustadt

Tel: +43 (0)2622 23501 900
parker.easteurope@parker.com

AZ – Azerbaijan, Baku

Tel: +994 50 2233 458
parker.azerbaijan@parker.com

BE/LU – Belgium, Nivelles

Tel: +32 (0)67 280 900
parker.belgium@parker.com

BG – Bulgaria, Sofia

Tel: +359 2 980 1344
parker.bulgaria@parker.com

BY – Belarus, Minsk

Tel: +375 17 209 9399
parker.belarus@parker.com

CH – Switzerland, Etoy

Tel: +41 (0)21 821 87 00
parker.switzerland@parker.com

CZ – Czech Republic, Klecany

Tel: +420 284 083 111
parker.czechrepublic@parker.com

DE – Germany, Kaarst

Tel: +49 (0)2131 4016 0
parker.germany@parker.com

DK – Denmark, Ballerup

Tel: +45 43 56 04 00
parker.denmark@parker.com

ES – Spain, Madrid

Tel: +34 902 330 001
parker.spain@parker.com

FI – Finland, Vantaa

Tel: +358 (0)20 753 2500
parker.finland@parker.com

FR – France, Contamine s/Arve

Tel: +33 (0)4 50 25 80 25
parker.france@parker.com

GR – Greece, Athens

Tel: +30 210 933 6450
parker.greece@parker.com

HU – Hungary, Budaörs

Tel: +36 23 885 470
parker.hungary@parker.com

IE – Ireland, Dublin

Tel: +353 (0)1 466 6370
parker.ireland@parker.com

IT – Italy, Corsico (MI)

Tel: +39 02 45 19 21
parker.italy@parker.com

KZ – Kazakhstan, Almaty

Tel: +7 7273 561 000
parker.easteurope@parker.com

NL – The Netherlands, Oldenzaal

Tel: +31 (0)541 585 000
parker.nl@parker.com

NO – Norway, Asker

Tel: +47 66 75 34 00
parker.norway@parker.com

PL – Poland, Warsaw

Tel: +48 (0)22 573 24 00
parker.poland@parker.com

PT – Portugal, Leca da Palmeira

Tel: +351 22 999 7360
parker.portugal@parker.com

RO – Romania, Bucharest

Tel: +40 21 252 1382
parker.romania@parker.com

RU – Russia, Moscow

Tel: +7 495 645-2156
parker.russia@parker.com

SE – Sweden, Spånga

Tel: +46 (0)8 59 79 50 00
parker.sweden@parker.com

SK – Slovakia, Banská Bystrica

Tel: +421 484 162 252
parker.slovakia@parker.com

SL – Slovenia, Novo Mesto

Tel: +386 7 337 6650
parker.slovenia@parker.com

TR – Turkey, Istanbul

Tel: +90 216 4997081
parker.turkey@parker.com

UA – Ukraine, Kiev

Tel: +380 44 494 2731
parker.ukraine@parker.com

UK – United Kingdom, Warwick

Tel: +44 (0)1926 317 878
parker.uk@parker.com

ZA – South Africa, Kempton Park

Tel: +27 (0)11 961 0700
parker.southafrica@parker.com

North America

CA – Canada, Milton, Ontario

Tel: +1 905 693 3000

US – USA, Cleveland

Tel: +1 216 896 3000

Asia Pacific

AU – Australia, Castle Hill

Tel: +61 (0)2-9634 7777

CN – China, Shanghai

Tel: +86 21 2899 5000

HK – Hong Kong

Tel: +852 2428 8008

IN – India, Mumbai

Tel: +91 22 6513 7081-85

JP – Japan, Tokyo

Tel: +81 (0)3 6408 3901

KR – South Korea, Seoul

Tel: +82 2 559 0400

MY – Malaysia, Shah Alam

Tel: +60 3 7849 0800

NZ – New Zealand, Mt Wellington

Tel: +64 9 574 1744

SG – Singapore

Tel: +65 6887 6300

TH – Thailand, Bangkok

Tel: +662 186 7000-99

TW – Taiwan, Taipei

Tel: +886 2 2298 8987

South America

AR – Argentina, Buenos Aires

Tel: +54 3327 44 4129

BR – Brazil, Sao Jose dos Campos

Tel: +55 800 727 5374

CL – Chile, Santiago

Tel: +56 2 623 1216

MX – Mexico, Toluca

Tel: +52 72 2275 4200

