

# spirax sarco

TI-P372-23  
CH Issue 7

## BVA300 Series Pneumatic Actuators for use with Spirax Sarco Ball Valves

### Description

The BVA300 series are pneumatic rotary actuators which automate Spirax Sarco ball valves in a wide range of industrial applications. BVA300 actuators are provided with bi-directional travel stops that allow a rotation of 90°±5°. Linkage is made with the new BVL\_X kits with extended stem.

### Pneumatic actuated ball valve range:

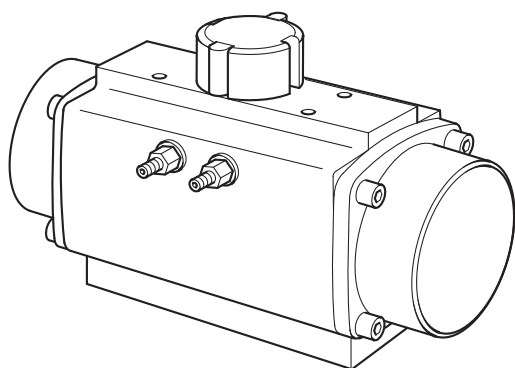
Actuators combined with	<b>three-piece ball valves:</b> M10Vi ISO, M10Si ISO, M10Ti ISO, M10Hi ISO, M10HTi ISO, M10HPi ISO, M10Pi ISO, M10F ISO, M70i ISO, M80i ISO and M15 ISO
	<b>two-piece ball valves:</b> M33V ISO, M33S ISO, M33F ISO, M31V ISO and M31S ISO
	<b>one-piece ball valves:</b> M21S ISO, M20S, M20H*, M40V ISO, M40S ISO, M40F ISO, M40H ISO* and M45 ISO

\* **BVA300 note:** For use with these valves, contact Spirax Sarco.

### BVA300 pneumatic actuator range:

For optimum actuator performance use the selection tables on pages 4 to 11.

<b>Double acting:</b>	310D, 315D, 320D, 325D, 330D, 335D, 340D, 345D, 350D, 355D, 360D, 365D.
<b>Single acting (spring return):</b>	310S, 315S, 320S, 325S, 330S, 335S, 340S, 345S, 350S, 355S, 360S, 365S.



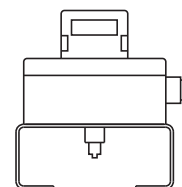
### Technical data

Maximum pressure	8 bar g
Minimal pressure	3 bar g
Operating pressure range (standard)	3, 4, 5 or 6 bar g
Operating temperature range	-30°C to 100°C
<b>Note:</b> Other operating temperature ranges available on request.	
Operating media	Compressed air (clean and dry)
	Non corrosive gas
	Light hydraulic oil (must be compatible with 'O' rings)
Rotation 90 ±5°	Anticlockwise with port 'A' pressurised

### Optional extras:

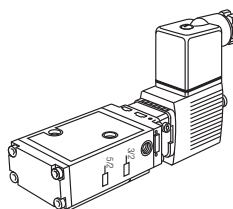
**Limit switch box:** a range of limit switch boxes are available to indicate ball valve position. They allow switching points to be adjustable over the full range of actuators. Boxes have IP67 protection rating as standard and are available as follows:

<b>LSB31</b>	Contact switches (2 x SPDT)
<b>LSB71</b>	Contact switches (2 x SPDT) Explosion proof Exd IIC T6
<b>LSB32</b>	10 - 30 Vdc 3-wire proximity sensors (2 x Autonics PS17-5DNU, NPN)
<b>LSB72</b>	10 - 30 Vdc 3-wire proximity sensors (2 x Autonics PS17-5DNU, NPN) Explosion proof Exd IIC T6
<b>LSB33</b>	8 Vdc 2-wire proximity sensors (2 x P&F NJ2-V3-N; intrinsically safe)
<b>LSB73</b>	8 Vdc 2-wire proximity sensors (2 x P&F NJ2-V3-N; intrinsically safe) Explosion proof Exd IIC T6
<b>LSB34</b>	5 - 60 Vdc 2-wire proximity sensors (2 x P&F NBB3-V3-Z4)
<b>LSB74</b>	5 - 60 Vdc 2-wire proximity sensors (2 x P&F NBB3-V3-Z4) Explosion proof Exd IIC T6



**Solenoid valve:** a range of Namur electrical valves with an encapsulation rating to IP65 is available for use with BVA actuators. These can be used to drive actuators with compressed air or non-corrosive gas.

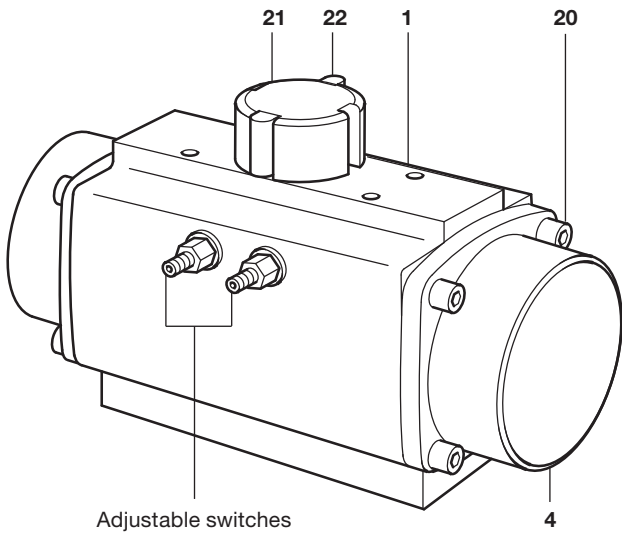
**Note:** Explosion proof solenoid valves are available on request.



Solenoid	Coil voltage
<b>3/2 NAMUR for BVA3</b>	220 Vac
	110 Vac
	24 Vac/dc
<b>5/2 NAMUR for BVAD</b>	220 Vac
	110 Vac
	24 Vac/dc

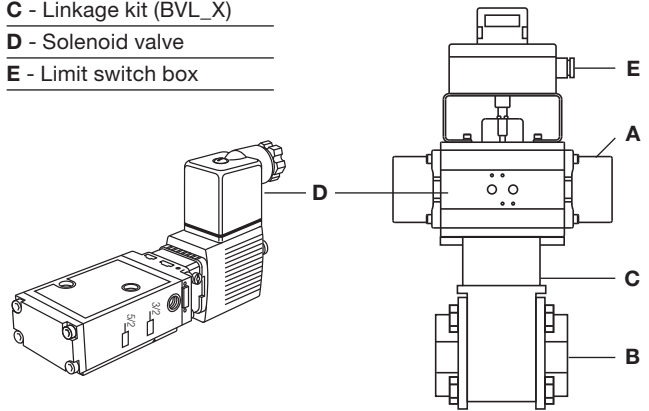
**Materials**

No	Part	Material
1	Body	Aluminium hard anodized
3	Pinion (shown clearly in the spares drawing on page 3)	Nickel plated carbon steel
4	End caps	Aluminium epoxy coated
20	Bolt	Stainless steel
21	Indicator cap	Polyamide
22	Coloured indicator	Polyamide



**Typical assembly**

- A - BVA300 series actuator
- B - Spirax Sarco ball valve
- C - Linkage kit (BVL\_X)
- D - Solenoid valve
- E - Limit switch box



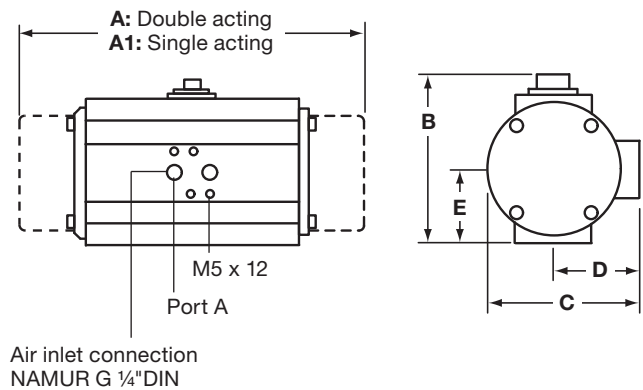
**BVL\_X linkage kit components and materials**

Frame	Stainless steel AISI 304
Stem adapter	Stainless steel AISI 304
Frame-to-actuator screws	Stainless steel Gr. 5
Washers	Stainless steel
Frame-to-valve screws	Stainless steel Gr. 5
Stem nut	Stainless steel

**Please note** That the BVL\_X for the M20 is made in zinc plated carbon steel.

**Dimensions / weights (approximate) in mm and kg**

Type	A1	A	B	C	D	E	Weights	
							Single	Double
BVA310	163	145	96	76	48	34	1.6	1.4
BVA315	195	158	115	91	56	45	2.3	2.1
BVA320	217	177	137	111	66	55	3.7	3.0
BVA325	258	196	147	122	71	60	4.8	3.8
BVA330	299	225	165	136	78	70	7.3	5.6
BVA335	349	273	182	153	86	80	10.8	8.5
BVA340	397	304	199	173	96	85	15.4	11.2
BVA345	473	372	221	192	106	98	22.2	16.9
BVA350	560	439	249	213	116	114	34.3	25.8
BVA355	601	461	280	243	131	130	46.0	32.5
BVA360	738	518	383	356	178	177	99.9	69.6
BVA365	940	630	434	415	213	201	183.0	129.4



### How to order

**Note:** You will need to refer to the selection tables (pages 4 to 12) before placing an order.

**How to order example:**

- 1 - Spirax Sarco BVA320S/8 actuator
- 1 - 3/2 NAMUR solenoid 24 Vac
- 1 - BVL337X linkage kit
- 1 - LSB72 limit switch box

**Note:** Actuated ball valves may be supplied completely assembled to suit the application.

**Spare parts** The spare parts available are detailed below. No other parts are supplied as spares.

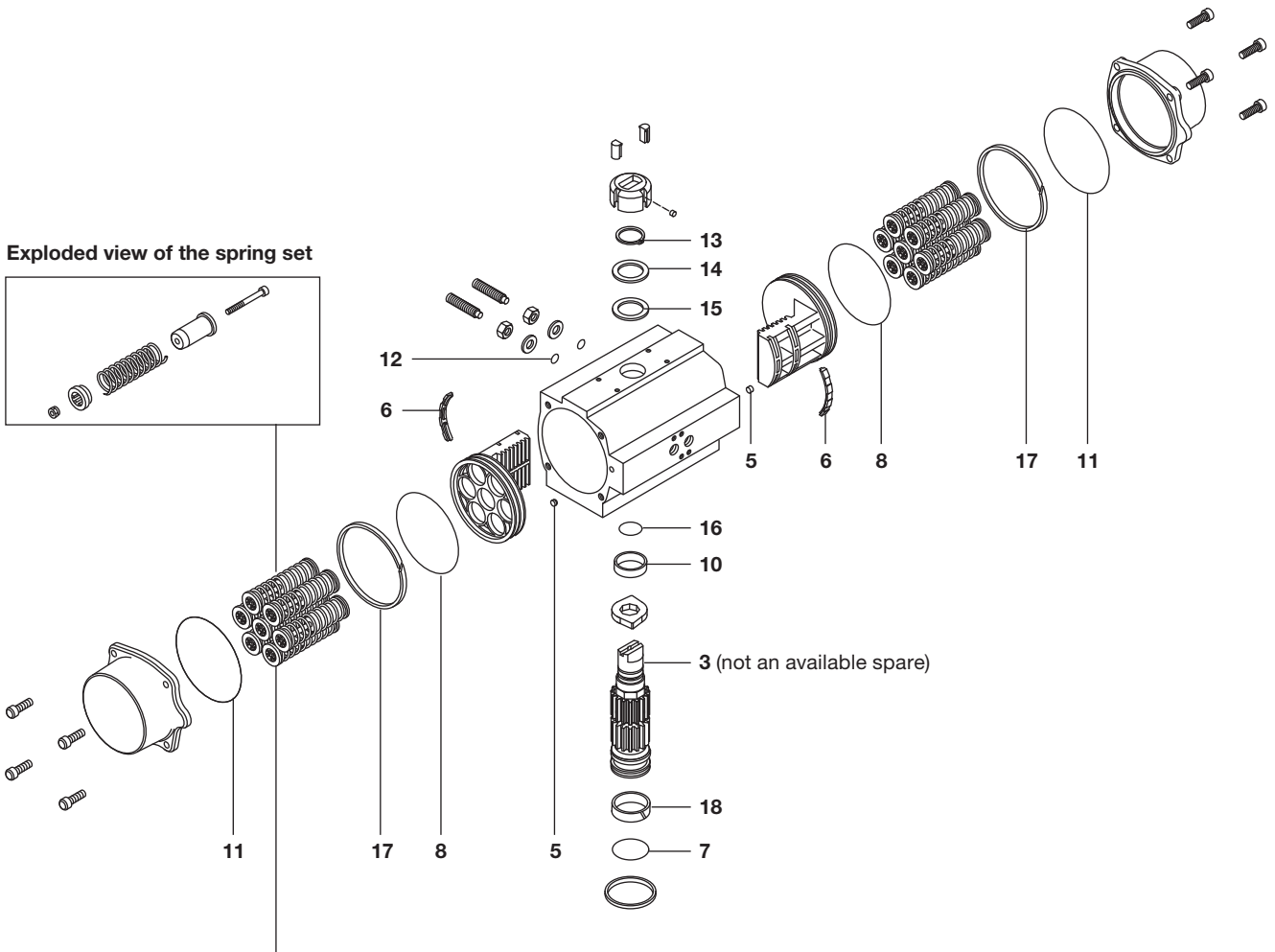
**Available spares**

	'O' rings set (available either in NBR, Viton or Silicon)	<b>7, 8, 11, 12, 16</b>
BVA300 series maintenance kit	Pinion washers	<b>13, 14, 15</b>
	Others	<b>5, 6, 10, 17, 18</b>

**How to order spares**

Always order spares by using the description given in the column headed 'Available spares' and state the nomenclature of the pneumatic actuator that they are intended for. **Note:** all the spares mentioned above are sold together in one spare part kit.

**Example:** 1 - BVA300 series maintenance kit with 'O' rings in NBR for a Spirax Sarco BVA320S/08 pneumatic actuator.



**Spring quantity selection**

According to the available air pressure, the BVA has different spring configurations. For more details, see the Installation and Maintenance Instructions IM-P372-24.



BVA	Springs					
	S/4	S/6	S/8	S/10	S/12	S/14
310	•	•	•			
315 - 365			•	•	•	•

**Example:** BVA325S/10 has 10 springs.

**Selection tables**

Pages 4 to 12 contain all necessary information to select the correct actuator for relevant Spirax Sarco ball valves. For valves not appearing in these tables please contact Spirax Sarco for advice.

**Pneumatic actuator selection tables for three-piece ball valves**

**M10Vi ISO, M10Si ISO and M10Ti ISO ball valves**

Actuator operating pressure 3 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
1/4" RB - 3/8" RB	310D	300X	310S/4	300X
1/2" RB - 3/8" FB	310D	300X	310S/4	300X
3/4" RB - 1/2" FB	310D	300X	315S/8	300X
1" RB - 3/4" FB	315D	302X	320S/8	303X
1 1/4" RB - 1" FB	320D	311X	325S/8	311X
1 1/2" RB - 1 1/4" FB	330D	305X	340S/8	316X
2" RB - 1 1/2" FB	330D	306X	340S/8	307X
2 1/2" RB - 2" FB	335D	309X	340S/8	309X

Actuator operating pressure 4 bar g

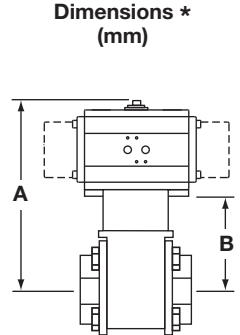
DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
1/4" RB - 3/8" RB	310D	300X	310S/6	300X
1/2" RB - 3/8" FB	310D	300X	310S/6	300X
3/4" RB - 1/2" FB	310D	300X	315S/10	300X
1" RB - 3/4" FB	315D	302X	320S/10	303X
1 1/4" RB - 1" FB	315D	310X	320S/10	311X
1 1/2" RB - 1 1/4" FB	325D	305X	335S/10	316X
2" RB - 1 1/2" FB	325D	306X	335S/10	307X
2 1/2" RB - 2" FB	330D	308X	340S/10	309X

Actuator operating pressure 5 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
1/4" RB - 3/8" RB	310D	300X	310S/6	300X
1/2" RB - 3/8" FB	310D	300X	310S/6	300X
3/4" RB - 1/2" FB	310D	300X	310S/6	300X
1" RB - 3/4" FB	315D	302X	320S/12	303X
1 1/4" RB - 1" FB	315D	310X	320S/12	311X
1 1/2" RB - 1 1/4" FB	320D	305X	330S/12	305X
2" RB - 1 1/2" FB	325D	306X	335S/12	307X
2 1/2" RB - 2" FB	325D	308X	335S/12	309X

Actuator operating pressure 6 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
1/4" RB - 3/8" RB	310D	300X	310S/8	300X
1/2" RB - 3/8" FB	310D	300X	310S/8	300X
3/4" RB - 1/2" FB	310D	300X	310S/8	300X
1" RB - 3/4" FB	310D	302X	315S/14	302X
1 1/4" RB - 1" FB	315D	310X	320S/14	311X
1 1/2" RB - 1 1/4" FB	320D	305X	330S/14	305X
2" RB - 1 1/2" FB	320D	306X	330S/14	306X
2 1/2" RB - 2" FB	325D	308X	335S/14	309X



DN	A	B
1/4"	218	122
3/8"	218	122
1/2"	237	122
3/4"	261	124
1"	276	129
1 1/4"	333	134
1 1/2"	336	137
2"	342	143
2 1/2"	356	157

\*Note: The dimensions A and B represents the maximum size (mm) for the biggest recommended actuator according to each valve.

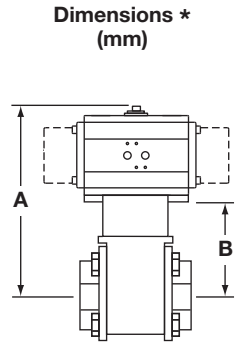
**M10Hi ISO and M10HTi ball valves**

Actuator operating pressure 3 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
1/4" RB - 3/8" RB	315D	490X	320S/8	491X
1/2" RB - 3/8" FB	315D	490X	320S/8	491X
3/4" RB - 1/2" FB	315D	490X	325S/8	491X
1" RB - 3/4" FB	320D	493X	330S/8	493X
1 1/4" RB - 1" FB	325D	494X	340S/8	495X
1 1/2" RB - 1 1/4" FB	330D	496X	340S/8	497X
2" RB - 1 1/2" FB	330D	498X	340S/8	499X
2 1/2" RB - 2" FB	335D	502X	345S/8	503X

Actuator operating pressure 4 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
1/4" RB - 3/8" RB	310D	490X	320S/10	491X
1/2" RB - 3/8" FB	310D	490X	320S/10	491X
3/4" RB - 1/2" FB	315D	490X	320S/10	491X
1" RB - 3/4" FB	320D	493X	325S/10	493X
1 1/4" RB - 1" FB	325D	494X	335S/10	495X
1 1/2" RB - 1 1/4" FB	325D	496X	335S/10	497X
2" RB - 1 1/2" FB	330D	498X	340S/10	499X
2 1/2" RB - 2" FB	335D	502X	340S/10	502X



DN	A	B
1/4"	259	122
3/8"	259	122
1/2"	259	122
3/4"	271	124
1"	294	129
1 1/4"	333	134
1 1/2"	336	137
2"	342	143
2 1/2"	356	157

\*Note: The dimensions A and B represents the maximum size (mm) for the biggest recommended actuator according to each valve.

**Selection tables**

Pages 4 to 12 contain all necessary information to select the correct actuator for relevant Spirax Sarco ball valves. For valves not appearing in these tables please contact Spirax Sarco for advice.

**Pneumatic actuator selection tables for three-piece ball valves**

**M10HPi ISO ball valves**

Actuator operating pressure 3 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
¼" RB - ⅜" RB	315D	490X	320S/8	491X
½" RB - ⅝" FB	315D	490X	320S/8	491X
¾" RB - 1½" FB	315D	490X	325S/8	491X
1" RB - ¾" FB	320D	493X	330S/8	493X
1¼" RB - 1" FB	325D	494X	340S/8	495X
1½" RB - 1¼" FB	330D	496X	340S/8	497X
2" RB - 1½" FB	335D	499X	345S/8	500X

Actuator operating pressure 4 bar g

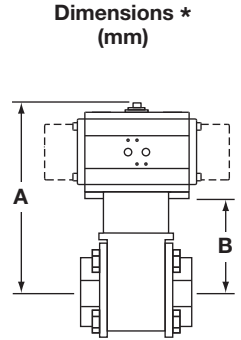
DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
¼" RB - ⅜" RB	310D	490X	320S/10	491X
½" RB - ⅝" FB	310D	490X	320S/10	491X
¾" RB - 1½" FB	315D	490X	320S/10	491X
1" RB - ¾" FB	320D	493X	325S/10	493X
1¼" RB - 1" FB	325D	494X	335S/10	495X
1½" RB - 1¼" FB	325D	496X	335S/10	497X
2" RB - 1½" FB	335D	499X	340S/10	499X

Actuator operating pressure 5 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
¼" RB - ⅜" RB	310D	490X	315S/12	490X
½" RB - ⅝" FB	310D	490X	315S/12	490X
¾" RB - 1½" FB	315D	490X	320S/12	491X
1" RB - ¾" FB	315D	492X	325S/12	493X
1¼" RB - 1" FB	320D	494X	330S/12	494X
1½" RB - 1¼" FB	325D	496X	335S/12	497X
2" RB - 1½" FB	330D	498X	340S/12	499X

Actuator operating pressure 6 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
¼" RB - ⅜" RB	310D	490X	315S/14	490X
½" RB - ⅝" FB	310D	490X	315S/14	490X
¾" RB - 1½" FB	310D	490X	320S/14	491X
1" RB - ¾" FB	315D	492X	320S/14	493X
1¼" RB - 1" FB	320D	494X	330S/14	494X
1½" RB - 1¼" FB	320D	496X	330S/14	496X
2" RB - 1½" FB	330D	498X	340S/14	499X



DN	A	B
¼"	259	122
⅜"	259	122
½"	259	122
¾"	271	124
1"	294	129
1¼"	333	134
1½"	336	137
2"	364	143

\*Note: The dimensions A and B represents the maximum size (mm) for the biggest recommended actuator according to each valve.

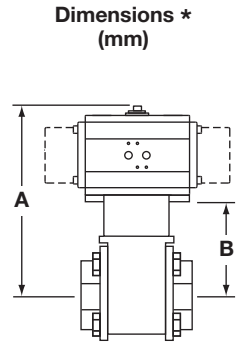
**M10Pi ISO ball valves**

Actuator operating pressure 3 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
¼" RB - ⅜" RB	310D	490X	310S/4	490X
½" RB - ⅝" FB	310D	490X	310S/4	490X
¾" RB - 1½" FB	310D	490X	315S/8	490X
1" RB - ¾" FB	315D	492X	320S/8	493X
1¼" RB - 1" FB	320D	494X	325S/8	494X
1½" RB - 1¼" FB	330D	496X	340S/8	497X
2" RB - 1½" FB	330D	498X	340S/8	499X
2½" RB - 2" FB	330D	505X	340S/8	502X

Actuator operating pressure 4 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
¼" RB - ⅜" RB	310D	490X	310S/6	490X
½" RB - ⅝" FB	310D	490X	310S/6	490X
¾" RB - 1½" FB	310D	490X	315S/10	490X
1" RB - ¾" FB	315D	492X	320S/10	493X
1¼" RB - 1" FB	315D	504X	320S/10	494X
1½" RB - 1¼" FB	325D	496X	335S/10	497X
2" RB - 1½" FB	325D	498X	335S/10	499X
2½" RB - 2" FB	330D	505X	340S/10	502X



DN	A	B
¼"	218	122
⅜"	218	122
½"	237	122
¾"	261	124
1"	276	129
1¼"	333	134
1½"	336	137
2"	342	143
2½"	356	157

\*Note: The dimensions A and B represents the maximum size (mm) for the biggest recommended actuator according to each valve.

**Selection tables**

Pages 4 to 12 contain all necessary information to select the correct actuator for relevant Spirax Sarco ball valves. For valves not appearing in these tables please contact Spirax Sarco for advice.

**Pneumatic actuator selection tables for three-piece ball valves**

**M10F ISO ball valves**

**Actuator operating pressure 3 bar g**

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
1/4" RB - 3/8" RB	310D	440X	310S/4	440X
1/2" RB - 3/8" FB	310D	441X	310S/4	441X
3/4" RB - 1/2" FB	310D	442X	315S/8	442X
1" RB - 3/4" FB	315D	443X	320S/8	444X
1 1/4" RB - 1" FB	320D	446X	325S/8	446X
1 1/2" RB - 1 1/4" FB	330D	447X	340S/8	448X
2" RB - 1 1/2" FB	330D	449X	340S/8	450X
2 1/2" RB - 2" FB	335D	452X	340S/8	452X

**Actuator operating pressure 4 bar g**

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
1/4" RB - 3/8" RB	310D	440X	310S/6	440X
1/2" RB - 3/8" FB	310D	441X	310S/6	441X
3/4" RB - 1/2" FB	310D	442X	315S/10	442X
1" RB - 3/4" FB	315D	443X	320S/10	444X
1 1/4" RB - 1" FB	315D	445X	320S/10	446X
1 1/2" RB - 1 1/4" FB	325D	447X	335S/10	448X
2" RB - 1 1/2" FB	325D	449X	335S/10	450X
2 1/2" RB - 2" FB	330D	451X	340S/10	452X

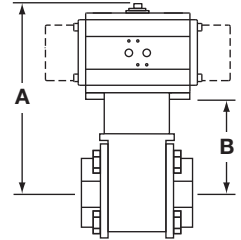
**Actuator operating pressure 5 bar g**

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
1/4" RB - 3/8" RB	310D	440X	310S/6	440X
1/2" RB - 3/8" FB	310D	441X	310S/6	441X
3/4" RB - 1/2" FB	310D	442X	310S/6	442X
1" RB - 3/4" FB	315D	443X	320S/12	444X
1 1/4" RB - 1" FB	315D	445X	320S/12	446X
1 1/2" RB - 1 1/4" FB	320D	447X	330S/12	447X
2" RB - 1 1/2" FB	325D	449X	335S/12	450X
2 1/2" RB - 2" FB	325D	451X	335S/12	452X

**Actuator operating pressure 6 bar g**

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
1/4" RB - 3/8" RB	310D	440X	310S/8	440X
1/2" RB - 3/8" FB	310D	441X	310S/8	441X
3/4" RB - 1/2" FB	310D	442X	310S/8	442X
1" RB - 3/4" FB	310D	443X	315S/14	443X
1 1/4" RB - 1" FB	315D	445X	320S/14	446X
1 1/2" RB - 1 1/4" FB	320D	447X	330S/14	447X
2" RB - 1 1/2" FB	320D	449X	330S/14	449X
2 1/2" RB - 2" FB	325D	451X	335S/14	452X

**Dimensions \* (mm)**



DN	A	B
1/4"	213	117
3/8"	213	117
1/2"	235	120
3/4"	260	123
1"	275	128
1 1/4"	334	135
1 1/2"	336	137
2"	345	146
2 1/2"	358	159

\*Note: The dimensions **A** and **B** represents the maximum size (mm) for the biggest recommended actuator according to each valve.

**Selection tables**

Pages 4 to 12 contain all necessary information to select the correct actuator for relevant Spirax Sarco ball valves. For valves not appearing in these tables please contact Spirax Sarco for advice.

**Pneumatic actuator selection tables for three-piece ball valves**

**M70i ISO ball valve**

Actuator operating pressure 3 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
½"	315D	300X	320S/8	301X
¾"	315D	300X	325S/8	301X
1"	320D	303X	325S/8	303X
1½"	330D	306X	340S/8	307X
2"	335D	309X	345S/8	318X

Actuator operating pressure 4 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
½"	315D	300X	320S/10	301X
¾"	315D	300X	320S/10	301X
1"	315D	302X	325S/10	303X
1½"	330D	306X	340S/10	307X
2"	335D	309X	340S/10	309X

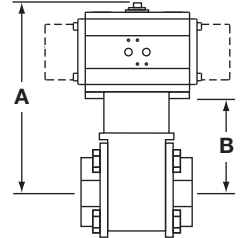
Actuator operating pressure 5 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
½"	310D	300X	320S/12	301X
¾"	315D	300X	320S/12	301X
1"	315D	302X	320S/12	303X
1½"	325D	306X	335S/12	307X
2"	330D	308X	340S/12	309X

Actuator operating pressure 6 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
½"	310D	300X	315S/14	300X
¾"	310D	300X	320S/14	301X
1"	315D	302X	320S/14	303X
1½"	325D	306X	335S/14	307X
2"	330D	308X	335S/14	309X

Dimensions \* (mm)



DN	A	B
½"	259	122
¾"	271	124
1"	276	129
1½"	342	143
2"	378	157

\*Note: The dimensions A and B represents the maximum size (mm) for the biggest recommended actuator according to each valve.

**M80i ISO ball valve**

Actuator operating pressure 3 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
2½"	335D	481X	345S/8	482X
3"	340D	481X	345S/8	482X
4"	340D	484X	350S/8	486X

Actuator operating pressure 4 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
2½"	335D	481X	340S/10	481X
3"	335D	481X	345S/10	482X
4"	335D	484X	345S/10	485X

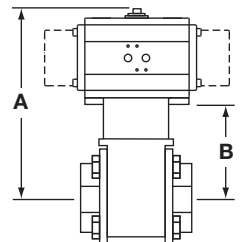
Actuator operating pressure 5 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
2½"	330D	480X	340S/12	481X
3"	335D	481X	340S/12	481X
4"	335D	484X	345S/12	485X

Actuator operating pressure 6 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
2½"	330D	480X	340S/14	481X
3"	330D	480X	340S/14	481X
4"	335D	484X	340S/14	484X

Dimensions \* (mm)



DN	A	B
2½"	407	186
3"	434	213
4"	499	250

\*Note: The dimensions A and B represents the maximum size (mm) for the biggest recommended actuator according to each valve.



## Selection tables

Pages 4 to 12 contain all necessary information to select the correct actuator for relevant Spirax Sarco ball valves. For valves not appearing in these tables please contact Spirax Sarco for advice.

### Pneumatic actuator selection tables for three-piece ball valves

#### M15 ISO ball valves

##### Actuator operating pressure 3 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
1/4" RB - 3/8" RB	310D	335X	315S/8	335X
1/2" RB - 3/8" FB	310D	335X	315S/8	335X
3/4" RB - 1/2" FB	310D	336X	320S/8	337X
1" RB - 3/4" FB	320D	339X	325S/8	339X
1 1/4" RB - 1" FB	320D	341X	330S/8	341X
1 1/2" RB - 1 1/4" FB	330D	342X	340S/8	343X
2" RB - 1 1/2" FB	330D	344X	340S/8	345X
2 1/2" RB - 2" FB	335D	347X	345S/8	348X

##### Actuator operating pressure 4 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
310D	335X	315S/10	335X	
310D	335X	315S/10	335X	
310D	336X	315S/10	336X	
320D	339X	325S/10	339X	
320D	341X	330S/10	341X	
325D	342X	335S/10	343X	
325D	344X	335S/10	345X	
330D	346X	340S/10	347X	

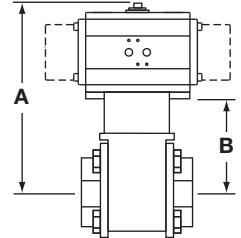
##### Actuator operating pressure 5 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
1/4" RB - 3/8" RB	310D	335X	310S/6	335X
1/2" RB - 3/8" FB	310D	335X	310S/6	335X
3/4" RB - 1/2" FB	310D	336X	315S/12	336X
1" RB - 3/4" FB	315D	338X	320S/12	339X
1 1/4" RB - 1" FB	320D	341X	325S/12	341X
1 1/2" RB - 1 1/4" FB	320D	342X	330S/12	342X
2" RB - 1 1/2" FB	325D	344X	335S/12	345X
2 1/2" RB - 2" FB	325D	346X	335S/12	347X

##### Actuator operating pressure 6 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
310D	335X	310S/8	335X	
310D	335X	310S/8	335X	
310D	336X	315S/14	336X	
315D	338X	320S/14	339X	
315D	340X	325S/14	341X	
320D	342X	330S/14	342X	
320D	344X	330S/14	344X	
325D	346X	335S/14	347X	

Dimensions \* (mm)



DN	A	B
1/4"	235	120
3/8"	235	120
1/2"	257	120
3/4"	270	123
1"	293	128
1 1/4"	334	135
1 1/2"	336	137
2"	367	146
2 1/2"	380	159

\*Note: The dimensions A and B represents the maximum size (mm) for the biggest recommended actuator according to each valve.



**Selection tables**

Pages 4 to 12 contain all necessary information to select the correct actuator for relevant Spirax Sarco ball valves. For valves not appearing in these tables please contact Spirax Sarco for advice.

**Pneumatic actuator selection tables for two-piece ball valves**

**M31V ISO and M31S ISO ball valves**

Actuator operating pressure 3 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
2"	325D	400X	335S / 8	401X
2½"	330D	402X	340S / 8	403X
3"	330D	402X	345S / 8	404X
4"	345D	406X	355S / 8	407X
6"	355D	409X	365S / 8	414X
8"	360D	413X	-	-

Actuator operating pressure 4 bar g

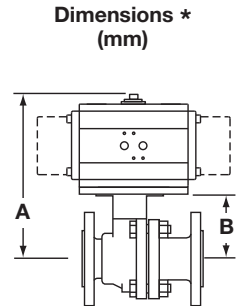
DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
2"	320D	400X	330S / 10	400X
2½"	325D	402X	335S / 10	403X
3"	330D	402X	340S / 10	403X
4"	340D	405X	350S / 10	407X
6"	355D	409X	360S / 10	410X
8"	355D	412X	360S / 12	413X

Actuator operating pressure 5 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
2"	320D	400X	330S / 12	400X
2½"	320D	402X	330S / 12	402X
3"	325D	402X	335S / 12	403X
4"	335D	405X	350S / 12	407X
6"	350D	409X	360S / 12	410X
8"	355D	412X	360S / 12	413X

Actuator operating pressure 6 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
2"	320D	400X	330S / 14	400X
2½"	320D	402X	330S / 14	402X
3"	325D	402X	335S / 14	403X
4"	335D	405X	345S / 14	406X
6"	350D	409X	360S / 14	410X
8"	350D	412X	360S / 14	413X



DN	A	B
2"	340	158
2½"	371	172
3"	400	179
4"	488	208
6"	747	313
8"	731	348

\*Note: The dimensions A and B represents the maximum size (mm) for the biggest recommended actuator according to each valve.

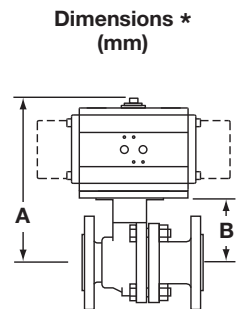
**M33V ISO, M33S ISO and M33F ISO ball valves**

Actuator operating pressure 3 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
2"	330D	510X	340S/8	511X
2½"	335D	513X	345S/8	514X
3"	340D	513X	350S/8	526X
4"	350D	517X	360S/8	527X
6"	360D	520X	365S/8	521X
8"	365D	525X	-	-

Actuator operating pressure 4 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
2"	330D	510X	335S/10	511X
2½"	335D	513X	340S/10	513X
3"	335D	513X	345S/10	514X
4"	345D	516X	355S/10	517X
6"	355D	519X	360S/10	520X
8"	360D	524X	365S/10	525X



DN	A	B
2"	356	157
2½"	390	169
3"	426	177
4"	647	264
6"	750	316
8"	785	351

\*Note: The dimensions A and B represents the maximum size (mm) for the biggest recommended actuator according to each valve.

## Selection tables

Pages 4 to 12 contain all necessary information to select the correct actuator for relevant Spirax Sarco ball valves. For valves not appearing in these tables please contact Spirax Sarco for advice.

### Pneumatic actuator selection tables for one-piece ball valves

#### M20S ball valve

Actuator operating pressure 3 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
1"	320D	461X	325S/8	461X
1¼"	320D	461X	325S/8	461X
1½"	320D	463X	330S/8	463X
2"	320D	463X	330S/8	463X
2½"	330D	464X	340S/8	465X
3"	335D	467X	345S/8	468X
4"	335D	467X	345S/8	468X
6"	355D	471X	365S/8	473X

Actuator operating pressure 4 bar g

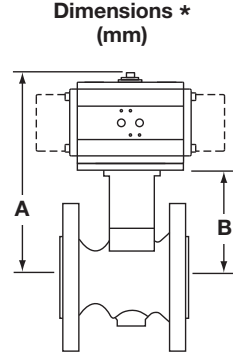
DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
1"	315D	460X	320S/10	461X
1¼"	315D	460X	320S/10	461X
1½"	320D	463X	325S/10	463X
2"	320D	463X	330S/10	463X
2½"	325D	464X	335S/10	465X
3"	330D	466X	340S/10	467X
4"	335D	467X	340S/10	467X
6"	355D	471X	360S/10	472X

Actuator operating pressure 5 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
1"	315D	460X	320S/12	461X
1¼"	315D	460X	320S/12	461X
1½"	315D	462X	325S/12	463X
2"	320D	463X	325S/12	463X
2½"	325D	464X	335S/12	465X
3"	330D	466X	340S/12	467X
4"	330D	466X	340S/12	467X
6"	350D	471X	360S/12	472X

Actuator operating pressure 6 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
1"	315D	460X	320S/14	461X
1¼"	315D	460X	320S/14	461X
1½"	315D	462X	325S/14	463X
2"	315D	462X	325S/14	463X
2½"	320D	464X	330S/14	464X
3"	325D	466X	335S/14	467X
4"	330D	466X	340S/14	467X
6"	345D	470X	360S/14	472X



DN	A	B
1"	276	129
1¼"	279	132
1½"	308	143
2"	316	151
2½"	355	156
3"	389	168
4"	401	180
6"	649	215

\*Note: The dimensions A and B represents the maximum size (mm) for the biggest recommended actuator according to each valve.

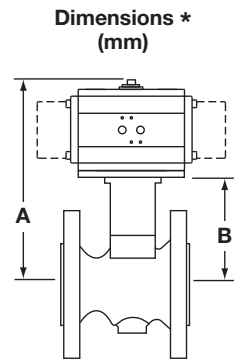
#### M21S ISO ball valve

Actuator operating pressure 3 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
½"	310D	350X	320S/8	351X
¾"	315D	352X	320S/8	353X
1"	315D	354X	320S/8	355X
1¼"	320D	355X	325S/8	355X
1½"	320D	357X	330S/8	357X
2"	320D	357X	330S/8	357X
2½"	330D	358X	340S/8	359X
3"	335D	361X	345S/8	362X
4"	340D	361X	350S/8	363X

Actuator operating pressure 4 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
½"	310D	350X	315S/10	350X
¾"	310D	352X	320S/10	353X
1"	315D	354X	320S/10	355X
1¼"	315D	354X	325S/10	355X
1½"	320D	357X	325S/10	357X
2"	320D	357X	325S/10	357X
2½"	325D	358X	335S/10	359X
3"	335D	361X	340S/10	361X
4"	340D	361X	350S/10	363X



DN	A	B
½"	257	120
¾"	260	123
1"	259	122
1¼"	274	127
1½"	301	136
2"	307	142
2½"	353	154
3"	379	158
4"	426	177

\*Note: The dimensions A and B represents the maximum size (mm) for the biggest recommended actuator according to each valve.

## Selection tables

Pages 4 to 12 contain all necessary information to select the correct actuator for relevant Spirax Sarco ball valves. For valves not appearing in these tables please contact Spirax Sarco for advice.

### Pneumatic actuator selection tables for one-piece ball valves

#### M21Vi ISO, M21Si ISO and M21Fi ISO ball valve

#### M40Vi ISO, M40Si ISO and M40Fi ISO ball valve

##### Actuator operating pressure 3 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
½"	310D	300X	320S / 8	301X
¾"	310D	300X	320S / 8	301X
1"	315D	302X	320S / 8	303X
1¼"	320D	494X	325S / 8	494X
1½"	320D	306X	330S / 8	306X
2"	320D	306X	330S / 8	306X
2½"	330D	510X	340S / 8	511X
3"	335D	513X	345S / 8	514X
4"	340D	513X	350S / 8	526X
6"	345D	516X	350S / 8	517X

##### Actuator operating pressure 4 bar g

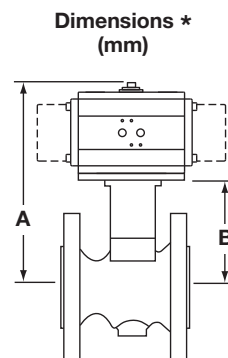
Double acting		Single acting	
BVA	BVL	BVA	BVL
310D	300X	315S / 10	300X
310D	300X	315S / 10	300X
315D	302X	320S / 10	303X
315D	504X	320S / 10	494X
320D	306X	325S / 10	306X
320D	306X	330S / 10	306X
325D	510X	335S / 10	511X
335D	513X	340S / 10	513X
335D	513X	345S / 10	514X
340D	515X	350S / 10	517X

##### Actuator operating pressure 5 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
½"	310D	300X	315S / 12	300X
¾"	310D	300X	315S / 12	300X
1"	315D	302X	320S / 12	303X
1¼"	315D	504X	320S / 12	494X
1½"	315D	506X	325S / 12	306X
2"	320D	306X	325S / 12	306X
2½"	325D	510X	335S / 12	511X
3"	330D	512X	340S / 12	513X
4"	335D	513X	340S / 12	513X
6"	340D	515X	345S / 12	516X

##### Actuator operating pressure 6 bar g

Double acting		Single acting	
BVA	BVL	BVA	BVL
310D	300X	315S / 14	300X
310D	300X	315S / 14	300X
310D	302X	315S / 14	302X
315D	504X	320S / 14	494X
315D	506X	325S / 14	306X
315D	506X	325S / 14	306X
320D	510X	330S / 14	510X
330D	512X	335S / 14	513X
335D	513X	340S / 14	513X
335D	515X	345S / 14	516X



DN	A	B
½"	261	124
¾"	261	124
1"	266	129
1¼"	281	134
1½"	303	138
2"	308	143
2½"	356	157
3"	383	162
4"	426	177
6"	513	264

\*Note: The dimensions **A** and **B** represents the maximum size (mm) for the biggest recommended actuator according to each valve.

**Selection tables**

Pages 4 to 12 contain all necessary information to select the correct actuator for relevant Spirax Sarco ball valves. For valves not appearing in these tables please contact Spirax Sarco for advice.

**Pneumatic actuator selection tables for one-piece ball valves**

**M40V ISO, M40S ISO and M40F ISO ball valve**

Actuator operating pressure 3 bar g

DN	Double acting		Single acting		
	BVA	BVL	BVA	BVL	
1"	315D	370X	320S/08	371X	
1½"	320D	371X	325S/08	371X	
2"	320D	373X	330S/08	373X	
2½"	325D	374X	335S/08	375X	
3"	ASME 150	330D	376X	340S/08	377X
	ASME 300	330D	378X	340S/08	379X
4"	330D	380X	340S/08	381X	
6"	345D	384X	350S/08	385X	

Actuator operating pressure 4 bar g

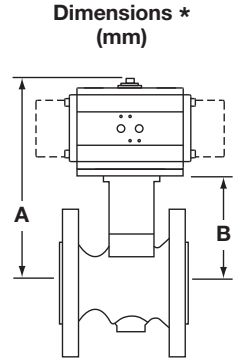
DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
1"	315D	370X	320S/10	371X
1½"	315D	370X	320S/10	371X
2"	320D	373X	325S/10	373X
2½"	320D	374X	330S/10	374X
3"	325D	376X	335S/10	377X
3"	325D	378X	335S/10	379X
4"	330D	380X	340S/10	381X
6"	340D	383X	350S/10	385X

Actuator operating pressure 5 bar g

DN	Double acting		Single acting		
	BVA	BVL	BVA	BVL	
1"	310D	370X	320S/12	371X	
1½"	315D	370X	320S/12	371X	
2"	315D	372X	325S/12	373X	
2½"	320D	374X	330S/12	374X	
3"	ASME 150	325D	376X	330S/12	376X
	ASME 300	325D	378X	330S/12	378X
4"	325D	380X	335S/12	381X	
6"	335D	383X	345S/12	384X	

Actuator operating pressure 6 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
1"	310D	370X	315S/14	370X
1½"	310D	370X	320S/14	371X
2"	315D	372X	320S/14	373X
2½"	320D	374X	330S/14	374X
3"	320D	376X	330S/14	376X
3"	320D	378X	330S/14	378X
4"	325D	380X	335S/14	381X
6"	335D	383X	345S/14	384X



DN	A	B	
1"	261	124	
1½"	286	139	
2"	307	142	
2½"	337	155	
3"	ASME 150	353	154
	ASME 300	362	163
4"	371	172	
6"	445	196	

\*Note: The dimensions A and B represents the maximum size (mm) for the biggest recommended actuator according to each valve.

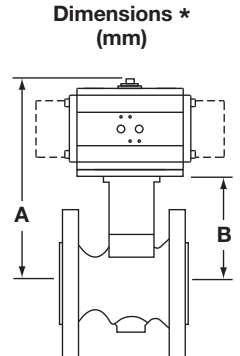
**M45 ISO ball valve**

Actuator operating pressure 3 bar g

DN	Double acting		Single acting		
	BVA	BVL	BVA	BVL	
1"	315D	420X	320S/8	421X	
1½"	320D	421X	325S/8	421X	
2"	320D	424X	330S/8	424X	
2½"	330D	425X	340S/8	426X	
3"	ASME 150	335D	428X	345S/8	429X
	ASME 300	335D	431X	345S/8	432X
4"	345D	434X	355S/8	435X	
6"	350D	437X	360S/8	438X	

Actuator operating pressure 4 bar g

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
1"	315D	420X	320S/10	421X
1½"	315D	420X	325S/10	421X
2"	320D	424X	325S/10	424X
2½"	325D	425X	335S/10	426X
3"	330D	427X	340S/10	428X
3"	330D	430X	340S/10	431X
4"	340D	433X	350S/10	435X
6"	350D	437X	360S/10	438X



DN	A	B	
1"	239	124	
1½"	276	139	
2"	279	142	
2½"	320	155	
3"	ASME 150	336	154
	ASME 300	345	163
4"	393	172	
6"	476	196	

\*Note: The dimensions A and B represents the maximum size (mm) for the biggest recommended actuator according to each valve.