



# 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 (not available for M10MVi and M10MSi models. For more details, see page 7).

## Pneumatic actuated ball valve range:

		Page
<b>Three-piece ball valves:</b>	M10Vi; M10Si; M10Ti; M10ECFi4; M10Hi; M10HTi	5
	M10HPi; M10Pi	6
	M10MVi; M10MSi	7
	M70i; M80i	8
<b>Actuators combined with:</b>	<b>Two-piece ball valves:</b> M31V ISO; M31S ISO; M33V ISO; M33S ISO; M33F ISO; M33T ISO	9
	M33H ISO; M33HT ISO	10
<b>One-piece ball valves:</b>	M21Hi; M21HTi; M40Hi; M40HTi	11
	M45i	12
	M21Ti; M21Vi; M21Si; M21Fi; M40Ti; M40Vi; M40Si; M40Fi	13
	M21ViJ; M21SiJ; M40ViJ; M40SiJ	14
	M21ECFi4; M40ECFi4	15

## BVA300 pneumatic actuator range:

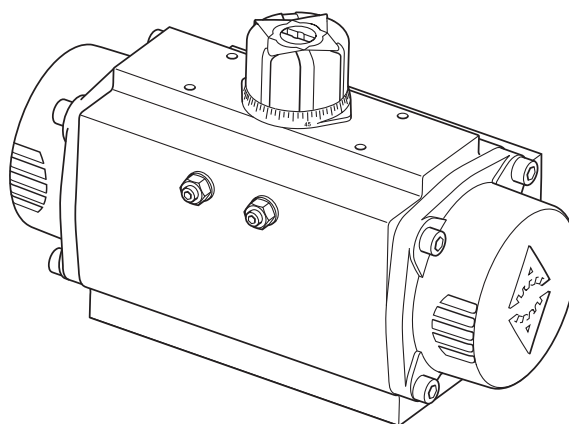
For optimum actuator performance use the selection tables on pages 5 to 15.

**Double acting:** 310D, 315D, 320D, 325D, 330D, 335D, 340D, 345D, 350D, 355D, 357D, 360D, 365D.

**Single acting (spring return):** 310S, 315S, 320S, 325S, 330S, 335S, 340S, 345S, 350S, 355S, 357S, 360S, 365S.

## Technical data

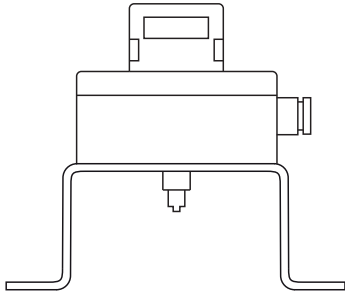
Maximum pressure	8 bar g
Minimal pressure	3 bar g
Operating temperature range	-30 °C to 100 °C
<b>Note:</b> Other operating temperature ranges available on request.	
Operating media	Compressed air (clean and dry) Non corrosive gas Light hydraulic oil (must be compatible with 'O' rings)
Rotation 90 ±5°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



## Optional extras:

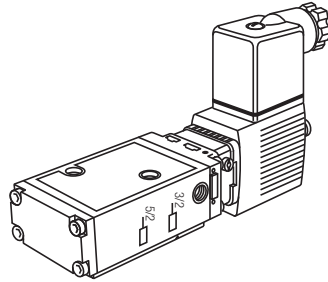
### Limit switch box:

For more details, see TI-P372-26



**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.

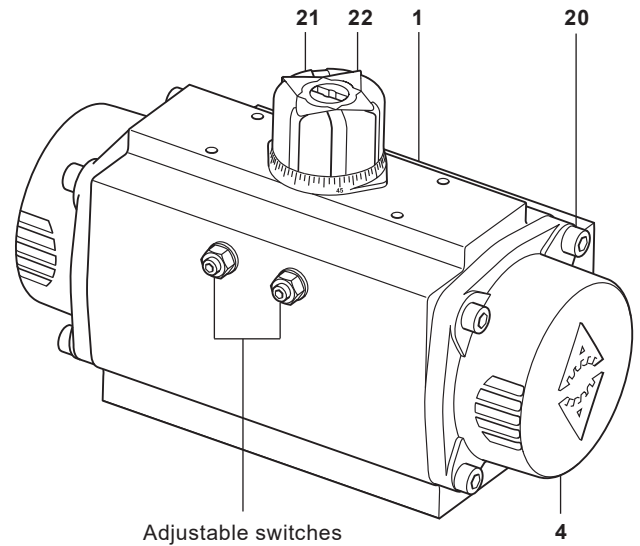


Solenoid	Coil voltage
	220 Vac
3/2 NAMUR for BVAS	110 Vac
	24 Vac/dc
5/2 NAMUR for BVAD	220 Vac
	110 Vac
	24 Vac/dc

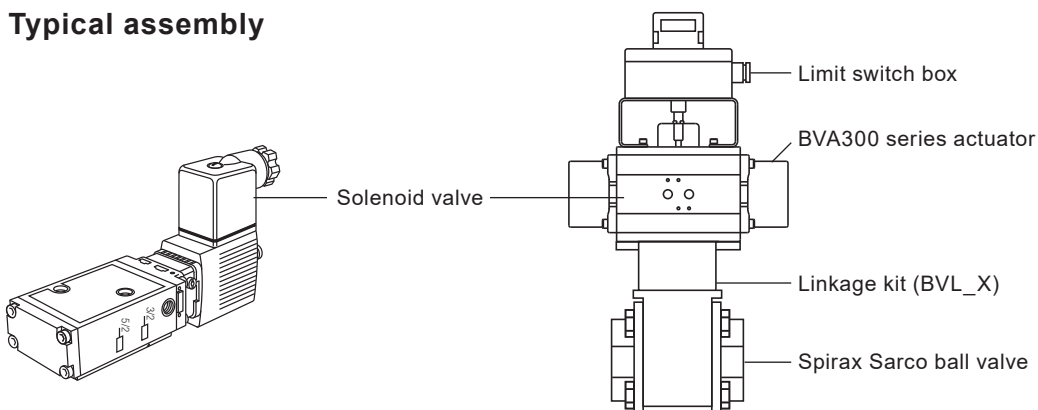
## Materials

No	Part	Material
1	Body	Aluminium hard anodized
3	Pinion*	Nickel plated carbon steel
4	End caps	Aluminium epoxy coated
20	Bolt	Stainless steel
21	Indicator cap	Polyamide
22	Coloured indicator	Polyamide

\*shown clearly in the spares drawing on page 4



## Typical assembly

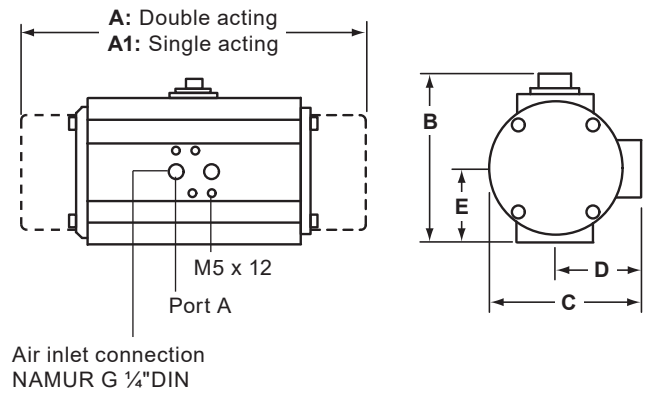


## BVL\_X linkage kit components and materials

Frame	Stainless steel AISI 304/Carbon steel CF8M and Stainless steel WCB (only for M10MVi and M10MSi)
Stem adapter	
Frame-to-actuator screws	Stainless steel
Washers	Stainless steel
Frame-to-valve screws	Stainless steel
Stem nut	Stainless steel

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

Type	A1	A	B	C	D	E	Weights	
							Single	Double
<b>BVA310</b>	163	145	96	76	48	34	1.6	1.4
<b>BVA315</b>	195	158	115	91	56	45	2.3	2.1
<b>BVA320</b>	217	177	137	111	66	55	3.7	3.0
<b>BVA325</b>	258	196	147	122	71	60	4.8	3.8
<b>BVA330</b>	299	225	165	136	78	70	7.3	5.6
<b>BVA335</b>	349	273	182	153	86	80	10.8	8.5
<b>BVA340</b>	397	304	199	173	96	85	15.4	11.2
<b>BVA345</b>	473	372	221	192	106	98	22.2	16.9
<b>BVA350</b>	560	439	249	213	116	114	34.3	25.8
<b>BVA355</b>	601	461	280	243	131	130	46.0	32.5
<b>BVA357</b>	698	504	313	276	148	147	66.0	49.1
<b>BVA360</b>	738	518	383	356	178	177	99.9	69.6
<b>BVA365</b>	940	630	434	415	213	201	183.0	129.4



### How to order

**Note:** You will need to refer to the selection tables (pages 5 to 14) before placing an order.

#### How to order example:

- 1 - Spirax Sarco BVA320S/8 actuator
- 1 - 3/2 NAMUR solenoid 24 Vac
- 1 - 303X 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**

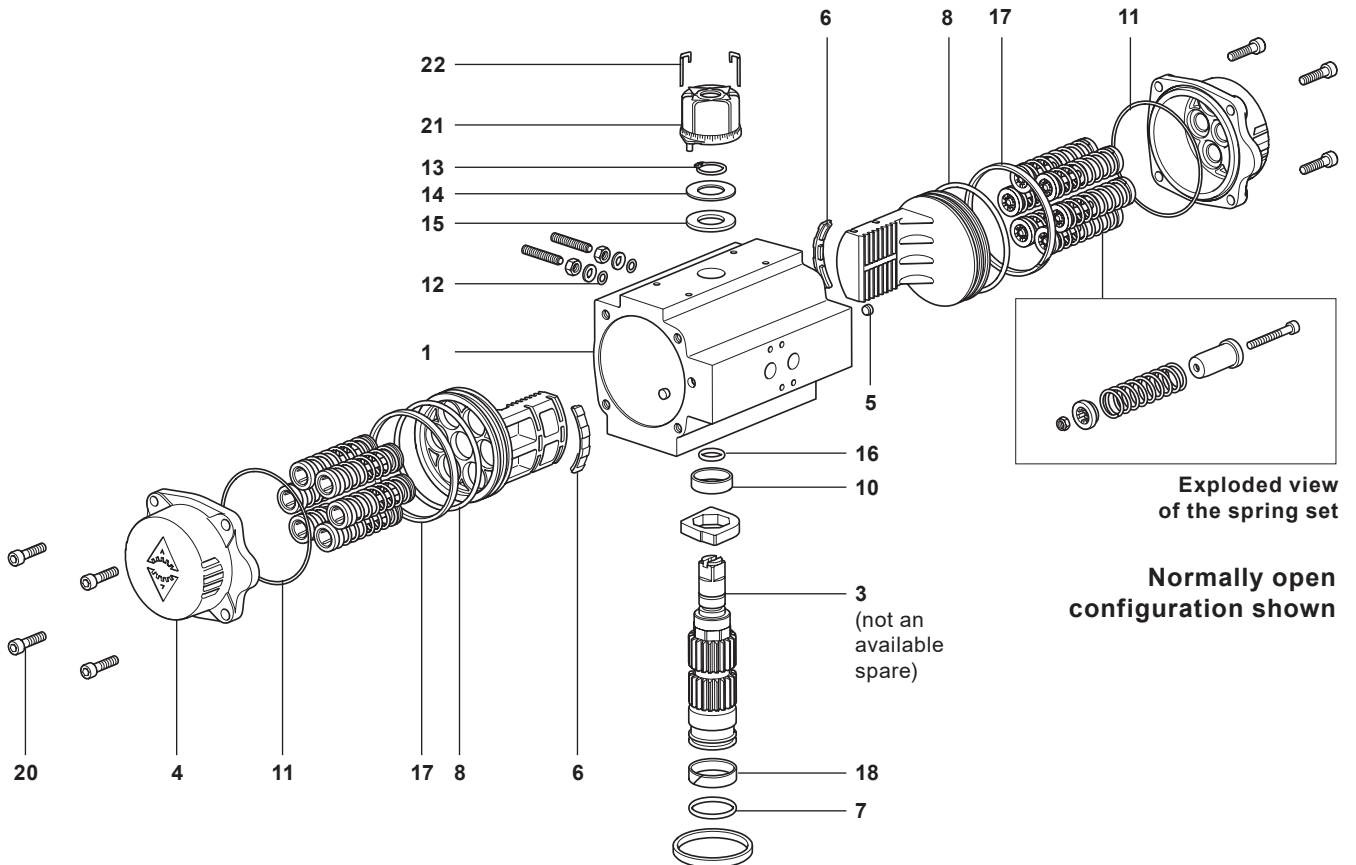
	'O' rings set (available either in NBR, Viton or Silicon)	7, 8, 11, 12, 16
BVA300 series maintenance kit	Pinion washers	13, 14, 15
	Others	5, 6, 10, 17, 18

**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 5 to 15 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

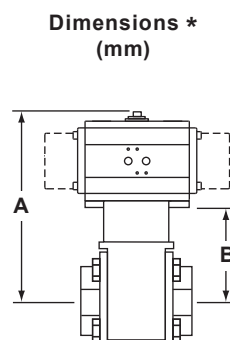
#### M10Vi; M10Si; M10Ti and M10ECFi4 ball valves

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
<b>Actuator operating pressure 3 bar g</b>				
¼" RB - ⅜" RB	310D	300X	310S/4	300X
½" RB - ⅜" FB	310D	300X	310S/4	300X
¾" RB - ½" FB	310D	300X	315S/8	300X
1" RB - ¾" FB	315D	302X	320S/8	303X
1¼" RB - 1" FB	320D	311X	325S/8	311X
1½" RB - 1¼" FB	330D	305X	340S/8	316X
2" RB - 1½" FB	330D	306X	340S/8	307X
2½" RB - 2" FB	335D	309X	340S/8	309X
<b>Actuator operating pressure 4 bar g</b>				
¼" RB - ⅜" RB	310D	300X	310S/6	300X
½" RB - ⅜" FB	310D	300X	310S/6	300X
¾" RB - ½" FB	310D	300X	315S/10	300X
1" RB - ¾" FB	315D	302X	320S/10	303X
1¼" RB - 1" FB	315D	310X	320S/10	311X
1½" RB - 1¼" FB	325D	305X	335S/10	316X
2" RB - 1½" FB	325D	306X	335S/10	307X
2½" RB - 2" FB	330D	308X	340S/10	309X
<b>Actuator operating pressure 5 bar g</b>				
¼" RB - ⅜" RB	310D	300X	310S/6	300X
½" RB - ⅜" FB	310D	300X	310S/6	300X
¾" RB - ½" FB	310D	300X	310S/6	300X
1" RB - ¾" FB	315D	302X	320S/12	303X
1¼" RB - 1" FB	315D	310X	320S/12	311X
1½" RB - 1¼" FB	320D	305X	330S/12	305X
2" RB - 1½" FB	325D	306X	335S/12	307X
2½" RB - 2" FB	325D	308X	335S/12	309X
<b>Actuator operating pressure 6 bar g</b>				
¼" RB - ⅜" RB	310D	300X	310S/8	300X
½" RB - ⅜" FB	310D	300X	310S/8	300X
¾" RB - ½" FB	310D	300X	310S/8	300X
1" RB - ¾" FB	310D	302X	315S/14	302X
1¼" RB - 1" FB	315D	310X	320S/14	311X
1½" RB - 1¼" FB	320D	305X	330S/14	305X
2" RB - 1½" FB	320D	306X	330S/14	306X
2½" RB - 2" FB	325D	308X	335S/14	309X

#### M10Hi and M10HTi ball valves

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
<b>Actuator operating pressure 3 bar g</b>				
¼" RB - ⅜" RB	315D	490X	320S/8	491X
½" RB - ⅜" FB	315D	490X	320S/8	491X
¾" RB - ½" 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	330D	498X	340S/8	499X
2½" RB - 2" FB	335D	502X	345S/8	503X
<b>Actuator operating pressure 4 bar g</b>				
¼" RB - ⅜" RB	310D	490X	320S/10	491X
½" RB - ⅜" FB	310D	490X	320S/10	491X
¾" RB - ½" 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	330D	498X	340S/10	499X
2½" RB - 2" FB	335D	502X	340S/10	502X
<b>Actuator operating pressure 5 bar g</b>				
¼" RB - ⅜" RB	310D	490X	315S/12	490X
½" RB - ⅜" FB	310D	490X	315S/12	490X
¾" RB - ½" 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	325D	498X	335S/12	499X
2½" RB - 2" FB	330D	505X	335S/12	502X
<b>Actuator operating pressure 6 bar g</b>				
¼" RB - ⅜" RB	310D	490X	315S/14	490X
½" RB - ⅜" FB	310D	490X	315S/14	490X
¾" RB - ½" 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	325D	498X	335S/14	499X
2½" RB - 2" FB	325D	505X	335S/14	502X

DN	A	B
¼"	218	122
⅜"	218	122
½"	218	122
¾"	239	124
1"	266	129
1¼"	281	134
1½"	336	137
2"	342	143
2½"	356	157



DN	A	B
¼"	259	122
⅜"	259	122
½"	259	122
¾"	271	124
1"	294	129
1¼"	347	134
1½"	336	137
2"	342	143
2½"	378	157

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

## Selection tables

Pages 5 to 15 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 ball valves

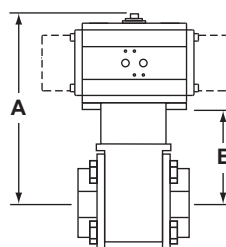
DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
<b>Actuator operating pressure 3 bar g</b>				
1/4" RB - 3/8" RB	315D	490X	320S/8	491X
1/2" RB - 3/8" FB	315D	490X	320S/8	491X
3/4" RB - 1/2" FB	315D	490X	325S/8	491X
1" RB - 3/4" FB	320D	493X	330S/8	493X
1 1/4" RB - 1" FB	325D	494X	340S/8	495X
1 1/2" RB - 1 1/4" FB	330D	496X	340S/8	497X
2" RB - 1 1/2" FB	335D	499X	345S/8	500X
<b>Actuator operating pressure 4 bar g</b>				
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	335D	499X	340S/10	499X
<b>Actuator operating pressure 5 bar g</b>				
1/4" RB - 3/8" RB	310D	490X	315S/12	490X
1/2" RB - 3/8" FB	310D	490X	315S/12	490X
3/4" RB - 1/2" FB	315D	490X	320S/12	491X
1" RB - 3/4" FB	315D	492X	325S/12	493X
1 1/4" RB - 1" FB	320D	494X	330S/12	494X
1 1/2" RB - 1 1/4" FB	325D	496X	335S/12	497X
2" RB - 1 1/2" FB	330D	498X	340S/12	499X
<b>Actuator operating pressure 6 bar g</b>				
1/4" RB - 3/8" RB	310D	490X	315S/14	490X
1/2" RB - 3/8" FB	310D	490X	315S/14	490X
3/4" RB - 1/2" FB	310D	490X	320S/14	491X
1" RB - 3/4" FB	315D	492X	320S/14	493X
1 1/4" RB - 1" FB	320D	494X	330S/14	494X
1 1/2" RB - 1 1/4" FB	320D	496X	330S/14	496X
2" RB - 1 1/2" FB	330D	498X	340S/14	499X

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"	347	134
1 1/2"	336	137
2"	381	143

#### M10Pi ball valves

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
<b>Actuator operating pressure 3 bar g</b>				
1/4" RB - 3/8" RB	310D	490X	310S/4	490X
1/2" RB - 3/8" FB	310D	490X	310S/4	490X
3/4" RB - 1/2" FB	310D	490X	315S/8	490X
1" RB - 3/4" FB	315D	492X	320S/8	493X
1 1/4" RB - 1" FB	320D	494X	325S/8	494X
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	330D	505X	340S/8	502X
<b>Actuator operating pressure 4 bar g</b>				
1/4" RB - 3/8" RB	310D	490X	310S/6	490X
1/2" RB - 3/8" FB	310D	490X	310S/6	490X
3/4" RB - 1/2" FB	310D	490X	315S/10	490X
1" RB - 3/4" FB	315D	492X	320S/10	493X
1 1/4" RB - 1" FB	315D	504X	320S/10	494X
1 1/2" RB - 1 1/4" FB	325D	496X	335S/10	497X
2" RB - 1 1/2" FB	325D	498X	335S/10	499X
2 1/2" RB - 2" FB	330D	505X	340S/10	502X
<b>Actuator operating pressure 5 bar g</b>				
1/4" RB - 3/8" RB	310D	490X	310S/6	490X
1/2" RB - 3/8" FB	310D	490X	310S/6	490X
3/4" RB - 1/2" FB	310D	490X	310S/6	490X
1" RB - 3/4" FB	315D	492X	320S/12	493X
1 1/4" RB - 1" FB	315D	504X	320S/12	494X
1 1/2" RB - 1 1/4" FB	320D	496X	330S/12	496X
2" RB - 1 1/2" FB	325D	498X	335S/12	499X
2 1/2" RB - 2" FB	325D	505X	335S/12	502X
<b>Actuator operating pressure 6 bar g</b>				
1/4" RB - 3/8" RB	310D	490X	310S/8	490X
1/2" RB - 3/8" FB	310D	490X	310S/8	490X
3/4" RB - 1/2" FB	310D	490X	310S/8	490X
1" RB - 3/4" FB	310D	492X	315S/14	492X
1 1/4" RB - 1" FB	315D	504X	320S/14	494X
1 1/2" RB - 1 1/4" FB	320D	496X	330S/14	496X
2" RB - 1 1/2" FB	320D	498X	330S/14	498X
2 1/2" RB - 2" FB	325D	505X	335S/14	502X

Dimensions \*  
(mm)



DN	A	B
1/4"	218	122
3/8"	218	122
1/2"	218	122
3/4"	239	124
1"	266	129
1 1/4"	281	134
1 1/2"	336	137
2"	342	143
2 1/2"	356	157

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

## Selection tables

Pages 5 to 15 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

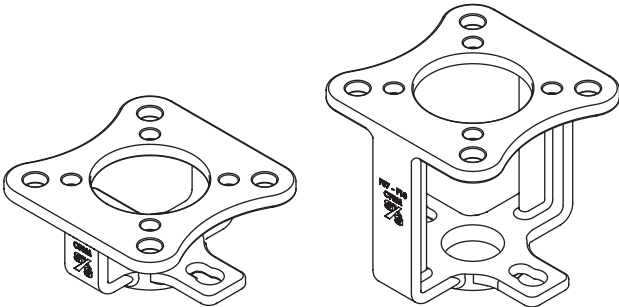
#### M10MVi and M10MSi ball valves

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
<b>Actuator operating pressure 3 bar g</b>				
1/4" RB - 3/8" RB	310D	560	310S/4	560
1/2" RB - 3/8" FB	310D	560	310S/4	560
3/4" RB - 1/2" FB	310D	560	315S/8	560
1" RB - 3/4" FB	315D	562	320S/8	563
1 1/4" RB - 1" FB	320D	564	325S/8	564
1 1/2" RB - 1 1/4" FB	330D	564	340S/8	565
2" RB - 1 1/2" FB	330D	566	340S/8	567
<b>Actuator operating pressure 4 bar g</b>				
1/4" RB - 3/8" RB	310D	560	310S/6	560
1/2" RB - 3/8" FB	310D	560	310S/6	560
3/4" RB - 1/2" FB	310D	560	315S/10	560
1" RB - 3/4" FB	315D	562	320S/10	563
1 1/4" RB - 1" FB	320D	564	320S/10	564
1 1/2" RB - 1 1/4" FB	325D	564	335S/10	565
2" RB - 1 1/2" FB	325D	566	335S/10	567

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
<b>Actuator operating pressure 5 bar g</b>				
1/4" RB - 3/8" RB	310D	560	310S/6	560
1/2" RB - 3/8" FB	310D	560	310S/6	560
3/4" RB - 1/2" FB	310D	560	310S/6	560
1" RB - 3/4" FB	315D	562	320S/12	563
1 1/4" RB - 1" FB	320D	564	320S/12	564
1 1/2" RB - 1 1/4" FB	320D	564	330S/12	564
2" RB - 1 1/2" FB	325D	566	335S/12	567
<b>Actuator operating pressure 6 bar g</b>				
1/4" RB - 3/8" RB	310D	560	310S/8	560
1/2" RB - 3/8" FB	310D	560	310S/8	560
3/4" RB - 1/2" FB	310D	560	310S/8	560
1" RB - 3/4" FB	310D	562	315S/14	562
1 1/4" RB - 1" FB	320D	564	320S/14	564
1 1/2" RB - 1 1/4" FB	320D	564	330S/14	564
2" RB - 1 1/2" FB	320D	566	330S/14	566

## Automation

Spirax Sarco offers two height options, on the one hand low bracket (40 mm) for applications below 100 °C (212 °F). For higher temperature applications the use of high temperature bracket of about 90 mm height is recommended.



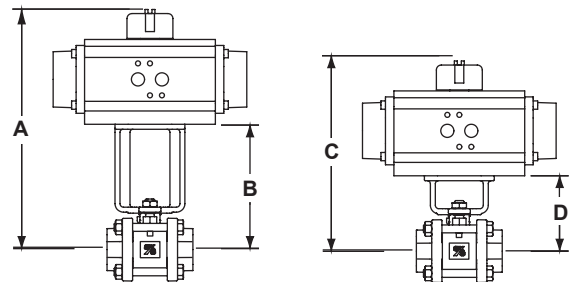
## Kit BVA for M10M selection guide:

Bracket height	Blank = Short bracket (40mm)	X
	X = Tall bracket (90mm)	
Kit material	Blank Stainless steel	C
	C Carbon steel	

Example: 1 off Spirax Sarco Kit BVL 560 - CX.

## Dimensions (mm)

DN	A	B	C	D
1/4"	214	118	164	68
3/8"	214	118	164	68
1/2"	214	118	164	68
3/4"	235	120	185	70
1"	265.5	125.5	212.5	75.5
1 1/4"	278	131	228	81
1 1/2"	333.5	134.5	283.5	84.5
2"	341	142	291	92



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

## Selection tables

Pages 5 to 15 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 ball valves

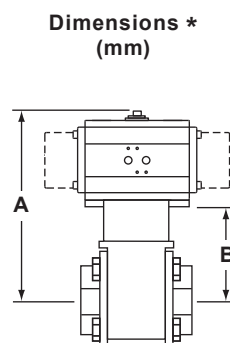
DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
<b>Actuator operating pressure 3 bar g</b>				
½"	315D	300X	320S/8	301X
¾"	315D	300X	325S/8	301X
1"	320D	303X	325S/8	303X
1½"	330D	306X	340S/8	307X
2"	335D	309X	345S/8	318X
<b>Actuator operating pressure 4 bar g</b>				
½"	315D	300X	320S/10	301X
¾"	315D	300X	320S/10	301X
1"	315D	302X	325S/10	303X
1½"	330D	306X	340S/10	307X
2"	335D	309X	340S/10	309X
<b>Actuator operating pressure 5 bar g</b>				
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
<b>Actuator operating pressure 6 bar g</b>				
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

#### M80i ball valves

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
<b>Actuator operating pressure 3 bar g</b>				
2½"	335D	481X	345S/8	482X
3"	340D	481X	345S/8	482X
4"	340D	484X	350S/8	486X
<b>Actuator operating pressure 4 bar g</b>				
2½"	335D	481X	340S/10	481X
3"	335D	481X	345S/10	482X
4"	335D	484X	345S/10	485X
<b>Actuator operating pressure 5 bar g</b>				
2½"	330D	480X	340S/12	481X
3"	335D	481X	340S/12	481X
4"	335D	484X	345S/12	485X
<b>Actuator operating pressure 6 bar g</b>				
2½"	330D	480X	340S/14	481X
3"	330D	480X	340S/14	481X
4"	335D	484X	340S/14	484X

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

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



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



## Selection tables

Pages 5 to 15 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

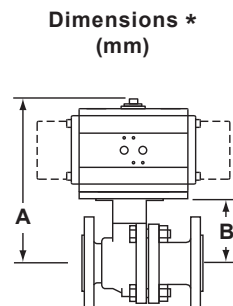
#### M31V ISO and M31S ISO ball valves

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
<b>Actuator operating pressure 3 bar g</b>				
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	-	-
<b>Actuator operating pressure 4 bar g</b>				
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
<b>Actuator operating pressure 5 bar g</b>				
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
<b>Actuator operating pressure 6 bar g</b>				
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

#### M33V ISO, M33S ISO, M33F and M33T ISO ball valves

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
<b>Actuator operating pressure 3 bar g</b>				
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	-	-
<b>Actuator operating pressure 4 bar g</b>				
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
<b>Actuator operating pressure 5 bar g</b>				
2"	325D	510X	335S/12	511X
2½"	330D	512X	340S/12	513X
3"	335D	513X	340S/12	513X
4"	345D	516X	355S/12	517X
6"	350D	519X	360S/12	520X
8"	360D	524X	365S/12	525X
<b>Actuator operating pressure 6 bar g</b>				
2"	325D	510X	335S/14	511X
2½"	330D	512X	335S/14	513X
3"	335D	513X	340S/14	513X
4"	345D	516X	350S/14	517X
6"	350D	519X	360S/14	520X
8"	360D	524X	365S/14	525X

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



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 represent the maximum size (mm) for the biggest recommended actuator according to each valve.

## Selection tables

Pages 5 to 15 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.

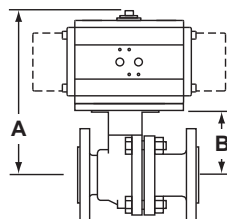
### Pneumatic actuator selection tables for two-piece ball valves

#### M33H ISO and M33HT ISO ball valves

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
<b>Actuator operating pressure 3 bar g</b>				
2"	335D	511X	345S/8	528X
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	-	-
<b>Actuator operating pressure 4 bar g</b>				
2"	330D	510X	340S/10	511X
2½"	335D	513X	340S/10	513X
3"	335D	513X	345S/10	514X
4"	345D	516X	355S/10	517X
6"	357D	520X	360S/10	520X
8"	360D	524X	365S/10	525X
<b>Actuator operating pressure 5 bar g</b>				
2"	330D	510X	340S/12	511X
2½"	330D	512X	340S/12	513X
3"	335D	513X	345S/12	514X
4"	345D	516X	355S/12	517X
6"	355D	519X	360S/12	520X
8"	360D	524X	365S/12	525X
<b>Actuator operating pressure 6 bar g</b>				
2"	325D	510X	335S/14	511X
2½"	325D	512X	340S/14	513X
3"	335D	513X	340S/14	513X
4"	345D	516X	350S/14	517X
6"	350D	519X	360S/14	520X
8"	360D	524X	365S/14	525X

DN	A	B
2"	395	174
2½"	390	169
3"	426	177
4"	647	264
6"	750	316
8"	785	351

Dimensions \*  
(mm)



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

## Selection tables

Pages 5 to 15 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

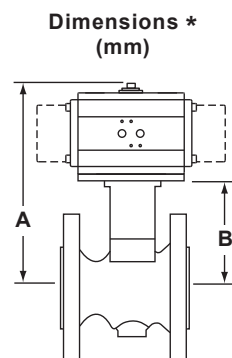
#### M21Hi and M21HTi ball valves

#### M40Hi and M40HTi ball valves

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
<b>Actuator operating pressure 3 bar g</b>				
½" **	315D	300X	325S/8	301X
¾" **	315D	300X	325S/8	301X
1"	320D	303X	325S/8	303X
1¼"	320D	494X	330S/8	494X
1½"	325D	306X	340S/8	307X
2"	330D	306X	340S/8	307X
2½"	335D	511X	345S/8	528X
3"	335D	513X	345S/8	514X
4"	340D	513X	350S/8	526X
6"	350D	517X	360S/8	527X
<b>Actuator operating pressure 4 bar g</b>				
½" **	315D	300X	320S/10	301X
¾" **	315D	300X	320S/10	301X
1"	315D	302X	325S/10	303X
1¼"	320D	494X	325S/10	494X
1½"	325D	306X	335S/10	307X
2"	325D	306X	335S/10	307X
2½"	335D	511X	345S/10	528X
3"	335D	513X	345S/10	514X
4"	340D	513X	350S/10	526X
6"	350D	517X	357S/10	527X

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
<b>Actuator operating pressure 5 bar g</b>				
½" **	315D	300X	320S/12	301X
¾" **	315D	300X	320S/12	301X
1"	315D	302X	320S/12	303X
1¼"	315D	504X	325S/12	494X
1½"	320D	306X	330S/12	306X
2"	325D	306X	335S/12	307X
2½"	330D	510X	340S/12	511X
3"	330D	512X	345S/12	514X
4"	335D	513X	345S/12	514X
6"	345D	516X	357S/12	527X
<b>Actuator operating pressure 6 bar g</b>				
½" **	310D	300X	320S/14	301X
¾" **	310D	300X	320S/14	301X
1"	315D	302X	320S/14	303X
1¼"	315D	504X	325S/14	494X
1½"	320D	306X	330S/14	306X
2"	320D	306X	330S/14	306X
2½"	330D	510X	340S/14	511X
3"	330D	512X	340S/14	513X
4"	335D	513X	345S/14	514X
6"	345D	516X	355S/14	517X

DN	A	B
½" **	271	124
¾" **	271	124
1"	276	129
1¼"	299	134
1½"	337	138
2"	342	143
2½"	395	174
3"	383	162
4"	426	177
6"	647	264



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

\*\* **Note:** ½" and ¾" just for M21i

## Selection tables

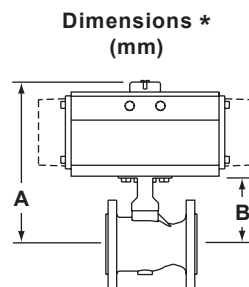
Pages 5 to 15 contain all necessary information to select the correct actuator for relevant Spirax Sarco ball valves. For valves not appearing in these tables please contact Spirax Sarco for advice.

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

#### M45i ball valves

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
<b>Actuator operating pressure 3 bar g</b>				
1"	320D	303X	325S/8	303X
1¼"	320D	494X	330S/8	494X
1½"	325D	306X	340S/8	307X
2"	330D	306X	340S/8	307X
2½"	335D	511X	345S/8	528X
3"	340D	513X	345S/8	514X
4"	345D	514X	355S/8	526X
6"	345D	516X	360S/8	527X
<b>Actuator operating pressure 4 bar g</b>				
1"	315D	302X	325S/10	303X
1¼"	320D	494X	330S/10	494X
1½"	325D	306X	330S/10	306X
2"	325D	306X	335S/10	307X
2½"	330D	510X	340S/10	511X
3"	335D	513X	345S/10	514X
4"	340D	513X	350S/10	526X
6"	345D	516X	355S/10	517X
<b>Actuator operating pressure 5 bar g</b>				
1"	315D	302X	320S/12	303X
1¼"	320D	494X	325S/12	494X
1½"	320D	306X	330S/12	306X
2"	325D	306X	335S/12	307X
2½"	330D	510X	340S/12	511X
3"	335D	513X	340S/12	513X
4"	335D	513X	345S/12	514X
6"	340D	515X	355S/12	517X
<b>Actuator operating pressure 6 bar g</b>				
1"	315D	302X	320S/14	303X
1¼"	315D	504X	325S/14	494X
1½"	320D	306X	330S/14	306X
2"	320D	306X	330S/14	306X
2½"	325D	510X	335S/14	511X
3"	330D	512X	340S/14	513X
4"	335D	513X	345S/14	514X
6"	340D	515X	350S/14	517X

DN	A	B
1"	276	129
1¼"	299	134
1½"	337	138
2"	342	143
2½"	378	157
3"	383	162
4"	457	177
6"	650	264



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

## Selection tables

Pages 5 to 15 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

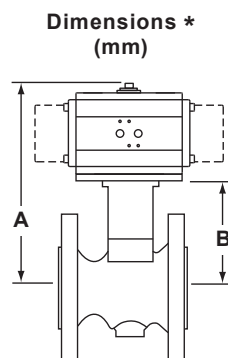
#### M21Ti, M21Vi, M21Si and M21Fi ball valves

#### M40Ti, M40Vi, M40Si and M40Fi ball valves

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
<b>Actuator operating pressure 3 bar g</b>				
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"	340D	515X	350S/8	517X
8" ***	360D	520X	365S/8	521X
<b>Actuator operating pressure 4 bar g</b>				
½" **	310D	300X	315S/10	300X
¾"***	310D	300X	315S/10	300X
1"	315D	302X	320S/10	303X
1¼"	315D	504X	320S/10	494X
1½"	320D	306X	325S/10	306X
2"	320D	306X	330S/10	306X
2½"	325D	510X	335S/10	511X
3"	335D	513X	340S/10	513X
4"	335D	513X	345S/10	514X
6"	335D	515X	345S/10	516X
8" ***	355D	519X	360S/10	520X

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
<b>Actuator operating pressure 5 bar g</b>				
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"	335D	515X	345S/12	516X
8" ***	350D	519X	360S/12	520X
<b>Actuator operating pressure 6 bar g</b>				
½" **	310D	300X	315S/14	300X
¾"***	310D	300X	315S/14	300X
1"	310D	302X	315S/14	302X
1¼"	315D	504X	320S/14	494X
1½"	315D	506X	325S/14	306X
2"	315D	506X	325S/14	306X
2½"	320D	510X	330S/14	510X
3"	330D	512X	335S/14	513X
4"	330D	512X	340S/14	513X
6"	335D	515X	345S/14	516X
8" ***	350D	519X	360S/14	520 X

DN	A	B
½"	271	124
¾"	271	124
1"	276	129
1¼"	299	134
1½"	337	138
2"	342	143
2½"	356	157
3"	383	162
4"	398	177
6"	513	264
8"	750	316



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

\*\* **Note:** ½" and ¾" just for M21i

\*\*\* **Note:** 8" just for M40i

## Selection tables

Pages 5 to 15 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.

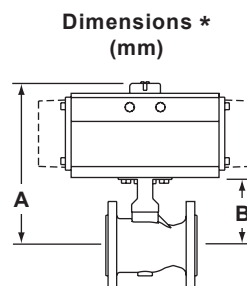
### Pneumatic actuator selection tables for one-piece ball valves

#### M21ViJ and M21SiJ ball valves

#### M40ViJ and M40SiJ ball valves

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
<b>Actuator operating pressure 3 bar g</b>				
1½"	320D	306X	330S/8	306X
2"	325D	306X	330S/8	306X
2½"	330D	510X	340S/8	511X
3"	335D	513X	345S/8	514X
4"	340D	513X	350S/8	526X
<b>Actuator operating pressure 4 bar g</b>				
1½"	320D	306X	325S/10	306X
2"	320D	306X	330S/10	306X
2½"	330D	510X	335S/10	511X
3"	335D	513X	345S/10	514X
4"	340D	513X	345S/10	514X
<b>Actuator operating pressure 5 bar g</b>				
1½"	320D	306X	325S/12	306X
2"	320D	306X	325S/12	306X
2½"	325D	510X	335S/12	511X
3"	335D	513X	340S/12	513X
4"	335D	513X	345S/12	514X
<b>Actuator operating pressure 6 bar g</b>				
1½"	320D	306X	325S/14	306X
2"	320D	306X	325S/14	306X
2½"	325D	510X	335S/14	511X
3"	330D	512X	340S/14	513X
4"	335D	513X	340S/14	513X

DN	A	B
1½"	303	138
2"	308	143
2½"	373	174
3"	383	162
4"	426	177



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

## Selection tables

Pages 5 to 15 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

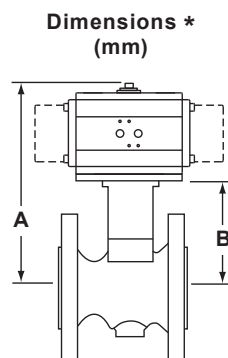
#### M21ECFi4 ball valves

#### M40ECFi4 ball valves

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
<b>Actuator operating pressure 3 bar g</b>				
½" **	315D	300X	320S/8	301X
¾" ***	315D	300X	320S/8	301X
1"	315D	302X	320S/8	303X
1¼"	320D	494X	325S/8	494X
1½"	320D	306X	330S/8	306X
2"	325D	306X	330S/8	306X
2½"	330D	510X	335S/8	511X
3"	335D	513X	340S/8	513X
4"	340D	513X	345S/8	514X
<b>Actuator operating pressure 4 bar g</b>				
½" **	310D	300X	315S/10	300X
¾" ***	310D	300X	315S/10	300X
1"	315D	302X	320S/10	303X
1¼"	315D	504X	320S/10	494X
1½"	320D	306X	325S/10	306X
2"	320D	306X	330S/10	306X
2½"	325D	510X	330S/10	510X
3"	330D	512X	340S/10	513X
4"	335D	513X	340S/10	513X

DN	Double acting		Single acting	
	BVA	BVL	BVA	BVL
<b>Actuator operating pressure 5 bar g</b>				
½" **	310D	300X	315S/10	300X
¾" ***	310D	300X	315S/10	300X
1"	315D	302X	320S/12	303X
1¼"	315D	504X	320S/12	494X
1½"	320D	306X	325S/12	306X
2"	320D	306X	325S/12	306X
2½"	320D	510X	330S/12	510X
3"	330D	512X	335S/12	513X
4"	335D	513X	340S/12	513X
<b>Actuator operating pressure 6 bar g</b>				
½" **	310D	300X	315S/14	300X
¾" ***	310D	300X	315S/14	300X
1"	310D	302X	315S/14	302X
1¼"	315D	504X	320S/14	494X
1½"	315D	506X	320S/14	306X
2"	320D	506X	325S/14	306X
2½"	320D	510X	330S/14	510X
3"	325D	512X	335S/14	513X
4"	330D	512X	340S/14	513X

DN	A	B
½"	255	118
¾"	255	118
1"	266	129
1¼"	281	134
1½"	307	138
2"	308	143
2½"	339	157
3"	365	162
4"	403	177



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

\*\* **Note:** ½" and ¾" just for M21ECFi4

