



# M10Si ISO Automation Ball Valve

## 1/4" to 2-1/2"

### (Medium Pressure Applications)

#### Description

The M10Si ISO Automation three piece body ball valve has ISO mounting as standard. It is designed for use as an automated isolating valve, not a control valve, on applications that use steam and other industrial fluids for services ranging from vacuum to the higher temperatures and pressures.

The M10Si ISO Automation ball valve is specifically designed for pneumatic or electric actuation and not manual operation and can be serviced without removing the valve from the pipeline (screwed and welded versions only).

#### ISO mounting

The integral ISO body mounting allows the valve to be automated without losing seal integrity, as the body does not require disassembly. Manual to remote control may therefore be easily accomplished by the ISO range of Spirax Sarco ball valves.

#### Standards

This product fully complies with the requirements of the European Pressure Equipment Directive 97/23/EC and carries the CE mark when so required.

#### Certification

This product is available with certification to EN 10204 3.1.

**Note:** All certification / inspection requirements must be stated at the time of order placement.

#### Available types

**M10Si2 ISO Automation** Zinc plated carbon steel body, PDR 0.8 seats.

**M10Si4 ISO Automation** Complete stainless steel, PDR 0.8 seats.

**Note:** The nomenclature will be followed with either **FB** (full bore) or **RB** (reduced bore).

#### Options

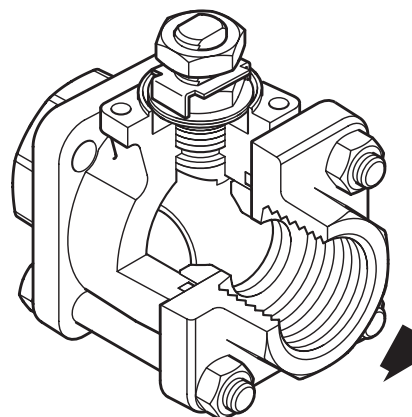
- Self-venting ball.
- Operation by pneumatic actuator URPA series.

#### Technical data

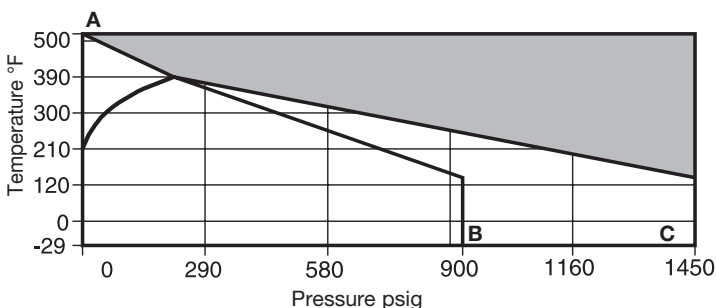
Flow characteristic	Modified linear
Port	Full and reduced bore versions
Leakage	Test procedure to ISO 5208 (rate A)
Antistatic	Complies with ISO 7121 and BS 5351

#### Sizes and pipe connections

1/4", 3/8", 1/2", 3/4", 1", 1-1/4", 1-1/2", 2", (2-1/2" only available with reduced bore). Screwed NPT, BW, SW full bore and reduced bore. The 1/4" to 2" (2 1/2" only available with reduced bore) flanged ASME 150 and ASME 300 full bore and reduced bore.



#### Pressure / temperature limits



**■** The product must not be used in this region.

**A - B** 2" FB and 2-1/2" RB only

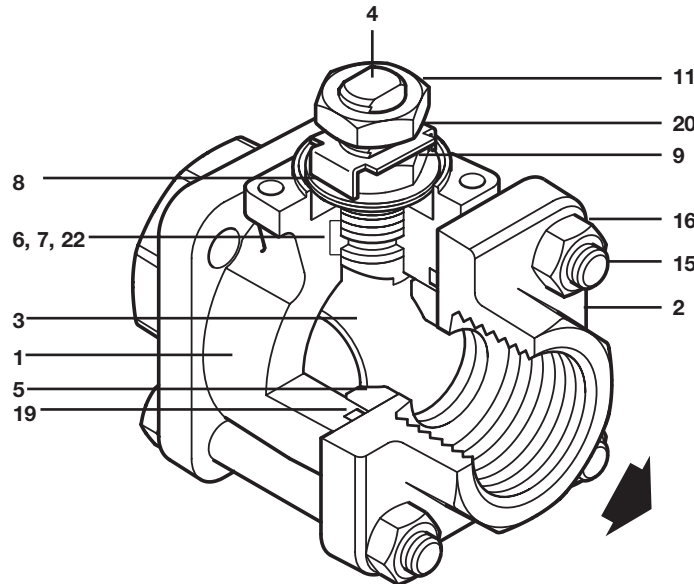
**A - C** 1/4" - 1-1/2" FB, RB and 2" RB

**Note:** The flange standard may restrict the maximum operating pressure. Please check with Spirax Sarco.

PMA	Maximum allowable pressure	1450 psig @ 140°F
TMA	Maximum allowable temperature	500°F @ 0 psig
Minimum allowable temperature		-21°F
PMO	Maximum operating pressure for saturated steam service	254 psig
TMO	Maximum operating temperature	500°F (260°C) @ 0 psig
Minimum operating temperature		-21°F
<b>Note:</b> For lower operating temperatures consult Spirax Sarco		
ΔPMX Maximum differential pressure is limited to the PMO		
Designed for a maximum cold hydraulic test pressure of		2175 psig

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## 1/4" to 2-1/2"



### Materials

No.	Part	Material	
1	Body	<b>M10Si2 ISO automation</b>	Zinc plated carbon steel ASTM A105
		<b>M10Si4 ISO automation</b>	Stainless steel ASTM A 182 F 316L
2	Cap	<b>M10Si2 ISO automation</b>	Zinc plated carbon steel ASTM A105
		<b>M10Si4 ISO automation</b>	Stainless steel ASTM A 182 F 316L
3	Ball	Stainless steel	AISI 316
4	Stem	Stainless steel	AISI 316
*5	Seat	Carbon / graphite reinforced PTFE	PDR 0.8
*6	Stem seal	Reinforced PTFE antistatic	
7	Separator	<b>M10Si2 ISO automation</b>	Zinc plated carbon steel SAE 1010
		<b>M10Si4 ISO automation</b>	Stainless steel AISI 316
8	Belleville washer	Stainless steel	AISI 301
9	Nut	<b>M10Si2 ISO automation</b>	Zinc plated carbon steel SAE 1010
		<b>M10Si4 ISO automation</b>	Stainless steel AISI 304
10	Name-plate - DN (Not shown)	Stainless steel	AISI 430
11	Stem nut	<b>M10Si2 ISO automation</b>	Zinc plated carbon steel SAE 1010
		<b>M10Si4 ISO automation</b>	Stainless steel AISI 304
13	Name-plate (Not shown)	Stainless steel	AISI 430
15	Bolts	<b>M10Si2 ISO automation</b>	Zinc plated carbon steel Grade 5
		<b>M10Si4 ISO automation</b>	Stainless steel AISI 304
16	Nuts	<b>M10Si2 ISO automation</b>	Zinc plated carbon steel SAE 1010
		<b>M10Si4 ISO automation</b>	Stainless steel AISI 304
17	Studs	<b>M10Si4 ISO automation</b>	Stainless steel AISI 316
<b>Note:</b> Item 17 can not be shown as it is only applicable to welded versions			
*19	Body / cap gasket - 'O' ring	EPDM geothermal	
20	Nut locker	Stainless steel	AIS 316
*22	Stem seal	PEEK	

\*Note: Available spare parts sold as a kit.

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## 1/4" to 2-1/2"

### Dimensions (approximate) in inches

#### Reduced bore

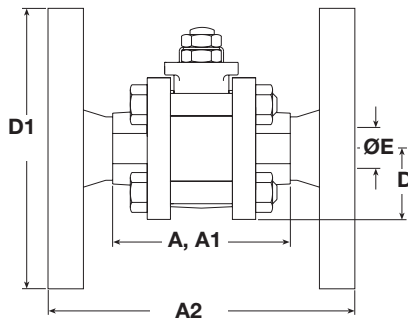
Size	A	A1	A2	D	D1	E
1/4"	2.21	2.05	-	.87	-	.32
3/8"	2.21	2.05	-	.87	-	.32
1/2"	2.48	2.05	4.26	.95	3.51	.43
3/4"	2.68	2.36	4.61	1.02	3.86	.55
1"	3.39	3.31	5.00	1.22	4.26	.83
1-1/4"	3.90	3.70	5.52	1.46	4.65	.99
1-1/2"	4.26	4.02	6.50	1.62	5.00	1.22
2"	4.89	4.65	7.01	1.89	5.99	1.50
2-1/2"	5.99	5.99	-	2.25	-	2.01

#### Full bore

Size	A	A1	A2	D	D1	E
1/4"	2.21	2.29	-	.87	-	.32
3/8"	2.48	2.36	-	.95	-	.43
1/2"	2.68	2.52	-	1.02	-	.55
3/4"	3.39	3.31	-	1.22	-	.83
1"	3.90	3.86	-	1.46	-	.99
1-1/4"	4.26	4.18	-	1.62	-	1.22
1-1/2"	4.89	4.89	-	1.89	-	1.50
2"	5.99	5.99	-	2.25	-	2.01

### Weights (approximate) in lbs

Size	Reduced bore		Full bore
	Scrd /BW/SW	ASME 150	Scrd /BW/SW
1/4"	1.4	-	1.4
3/8"	1.4	-	1.6
1/2"	1.6	3.9	2.1
3/4"	2.1	5.2	3.5
1"	3.5	7.7	4.5
1-1/4"	4.5	9.9	6.1
1-1/2"	6.1	13.2	9.4
2"	9.4	20.2	16.6
2-1/2"	16.6	-	-



- A : Scrd and BW
- A1: SW
- A2: Flanged ASME 150
- D : Scrd, BW, SW
- D1: Flanged ASME 150
- E : All versions

### Cv values

Size	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"
Reduced bore	2.9	2.9	6.9	11.6	31	57	81	119	194
Full bore	2.9	7.9	20	42	67	103	177	237	-

### Operating torque (Inch - lbs)

Size	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"
Reduced bore	18	18	18	31	115	185	265	355	398
Full bore	18	18	31	115	185	265	355	398	-

The indicated torque values are for valves frequently operated, that are submitted to a maximum differential pressure of 88 psi (40 bar). Valves that are subject to long static periods may require up to 75% greater break-out torque.

### Safety Information, Installation and Maintenance

Installation and Maintenance Instructions, IM-P133-61.

### How to order example:

1 off Spirax Sarco 1/2" screwed NPT M10Si2FB ISO automation ball valve.

### Spare parts

The spare parts available are shown in solid outline. Parts drawn in broken line are not supplied as spares.

### Available spare

Seat, seals and body gasket set

5, 6, 19, 22

### How to order spares

Always order spares by using the description given in the column headed 'Available spare' and state the size and type of ball valve.

**Example:** 1 - Seat, seals and body gasket set for a Spirax Sarco 1/2" M10Si2FB ISO automation ball valve.

