



Cert. No. LRQ 110478

ISO 9001

# spirax sarco

TI-P133-12  
ST Issue 5

## M10S ISO Ball Valve DN $\frac{1}{4}$ " to DN $2\frac{1}{2}$ "

### Description

M10S ISO is a three piece body ball valve designed for steam and other industrial fluids for services ranging from vacuum to the higher temperatures and pressures. M10S ISO 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.

### Available types

<b>M10S2RB ISO</b>	Zinc plated carbon steel body, PDR 0.8 seats, reduced bore, ISO mounting.
<b>M10S2FB ISO</b>	Zinc plated carbon steel body, PDR 0.8 seats, full bore, ISO mounting.
<b>M10S3RB ISO</b>	Stainless steel body, PDR 0.8 seats, reduced bore, ISO mounting.
<b>M10S3FB ISO</b>	Stainless steel body, PDR 0.8 seats, full bore, ISO mounting.
<b>M10S4RB ISO</b>	A complete stainless steel construction, PDR 0.8 seats, reduced bore, ISO mounting.
<b>M10S4FB ISO</b>	A complete stainless steel body, PDR 0.8 seats, full bore, ISO mounting.

### Options

- Self-venting ball.
- Extended stems 50 mm (2") and 100 mm (4") to allow full insulation.
- Lockable handle
- Oval handle for confined spaces. Ideal for trap modules.

### Sizes and pipe connections

$\frac{1}{4}$ ",  $\frac{3}{8}$ ",  $\frac{1}{2}$ ",  $\frac{3}{4}$ ", 1",  $1\frac{1}{2}$ ",  $1\frac{1}{2}$ ", 2", (2 $\frac{1}{2}$ " only available with reduced bore). Screwed BSP, BSPT, API/NPT, BW, SW full bore and reduced bore. DN15 - DN50 Flanged PN40, ANSI 150 and ANSI 300 full bore and reduced bore.

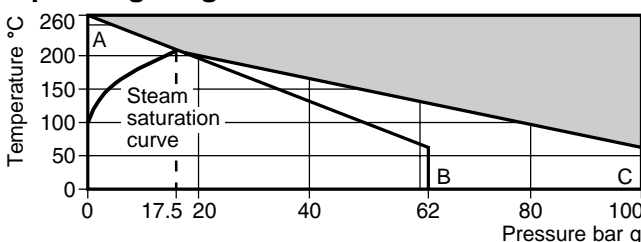
### Technical data

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

### Limiting conditions

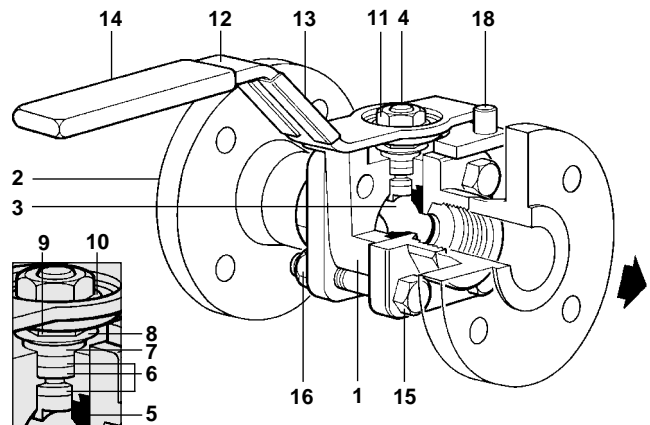
Maximum operating temperature	260°C @ 0 bar g
Maximum operating pressure	100 bar g @ 60°C
Maximum saturation steam pressure	17.5 bar g
Designed for a maximum cold hydraulic test pressure of 150 bar g	

### Operating range



The product must not be used in this region.

A - B 2" FB and 2 $\frac{1}{2}$ " RB only  
A - C  $\frac{1}{4}$ " - 1 $\frac{1}{2}$ " FB, RB and 2" RB



### Materials

No. Part	Material
1 Body	M10S2 ISO Zinc plated carbon steel ASTM A105 M10S3 ISO Stainless steel ASTM A 182 F 316L M10S4 ISO Stainless steel ASTM A 182 F 316L
2 Cap	M10S2 ISO Zinc plated carbon steel ASTM A105 M10S3 ISO Stainless steel ASTM A 182 F 316L M10S4 ISO 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	M10S2 ISO Zinc plated carbon steel SAE 1010 M10S3 ISO Stainless steel AISI 316 M10S4 ISO Stainless steel AISI 301
8 Belleville washer	Stainless steel AISI 301
9 Nut	M10S2 ISO Zinc plated carbon steel SAE 1010 M10S3 ISO Stainless steel AISI 304 M10S4 ISO Stainless steel AISI 304
10 Name-plate (DN)	Stainless steel AISI 430
11 Stem nut	M10S2 ISO Zinc plated carbon steel SAE 1010 M10S3 ISO Stainless steel AISI 304 M10S4 ISO Stainless steel AISI 316
12 Lever	M10S2 ISO Zinc plated carbon steel SAE 1010 M10S3 ISO Stainless steel AISI 316 M10S4 ISO Stainless steel AISI 316
13 Name-plate	Stainless steel AISI 430
14 Grip	Vinyl
15 Bolts	M10S2 ISO Zinc plated carbon steel Grade 5 M10S3 ISO Stainless steel AISI 304
16 Nuts	M10S2 ISO Zinc plated carbon steel Grade 5 M10S3 ISO Stainless steel AISI 304 M10S4 ISO Stainless steel AISI 304
† 17 Studs	M10S4 ISO Stainless steel AISI 316
18 Stop screw	M10S2 ISO Zinc plated carbon steel SAE 12L14 M10S3 ISO Stainless steel AISI 304 M10S4 ISO Stainless steel AISI 304

† Note: Item 17 not shown

Local regulations may restrict the use of this product to below the conditions quoted. In the interests of development and improvement of the product, we reserve the right to change the specification.

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## Dimensions (approximate) in mm

### Reduced bore

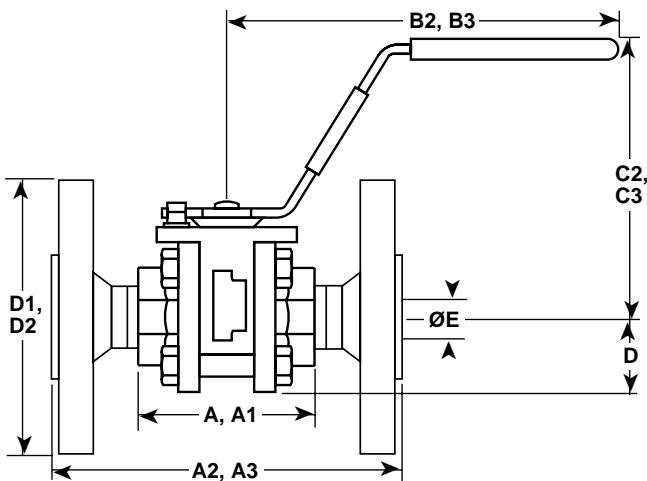
Size	A	A1	A2	A3	B2	B3	C2	C3	D	D1	D2	E
¼"	56	52	-	-	130	-	63	-	22	-	-	8
⅜"	56	52	-	-	130	-	63	-	22	-	-	8
½"	63	52	108	130	130	145	66	81	24	89	95	11
¾"	68	60	117	150	130	145	69	84	26	98	105	14
1"	86	84	127	160	162	162	100	100	31	108	115	21
1¼"	99	94	140	180	162	162	104	104	37	118	140	25
1½"	108	102	165	200	185	185	112	112	41	127	150	31
2"	124	118	178	230	185	185	120	120	48	152	165	38
2½"	152	152	-	-	250	-	140	-	57	-	-	51

### Full bore

Size	A	A1	A2	A3	B2	B3	C2	C3	D	D1	D2	E
¼"	56	58	-	-	130	-	63	-	22	-	-	8
⅜"	63	60	-	-	130	-	66	-	24	-	-	11
½"	68	64	-	130	130	145	69	84	26	-	95	14
¾"	86	84	-	150	162	162	100	100	31	-	105	21
1"	99	98	-	160	162	162	104	104	37	-	115	25
1¼"	108	106	-	180	185	185	112	112	41	-	140	31
1½"	124	124	-	200	185	185	120	120	48	-	150	38
2"	152	152	-	230	250	250	140	140	57	-	165	51

## Weights (approximate) in kg

Size	Reduced bore			Full bore	
	Scrd/BW/SW	PN40	ANSI 150	Scrd/BW/SW	PN40
¼"	0.65	-	-	0.65	-
⅜"	0.65	-	-	0.72	-
½"	0.72	2.30	1.77	0.95	2.60
¾"	0.95	3.20	2.35	1.60	3.80
1"	1.60	4.20	3.47	2.05	4.70
1¼"	2.05	5.70	4.47	2.75	6.40
1½"	2.75	6.80	5.96	4.25	8.30
2"	4.25	9.50	9.16	7.50	12.80
2½"	7.50	-	-	-	-



- A: Scrd and BW
- A1: SW
- A2: Flanged ANSI 150
- A3: Flanged PN40
- B2: Scrd, BW and SW
- B3: Flanged PN40 and ANSI 150
- C2: Scrd, BW and SW
- C3: Flanged PN40 and ANSI 150
- D: Scrd, BW and SW
- D1: Flanged ANSI 150
- D2: Flanged PN40
- E: All versions

## K<sub>V</sub> values

Size	¼"	⅜"	½"	¾"	1"	1¼"	1½"	2"	2½"
Reduced bore	2.5	2.5	6	10	27	49	70	103	168
Full bore	2.5	6.8	17	36	58	89	153	205	-

For conversion  $C_V(\text{UK}) = K_V \times 0.97$   $C_V(\text{US}) = K_V \times 1.17$

## Operating torque (N m)

Size	¼"	⅜"	½"	¾"	1"	1¼"	1½"	2"	2½"
Reduced bore	2	2	2	3.5	13	21	30	40	45
Full bore	2	2	3.5	13	21	30	40	45	-

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

## Maintenance

Before commencing any dismantling work ensure that no flow is taking place in the pipeline and the line is isolated. Any fluid remaining in the line should be drained off.

The new parts can be fitted without removing the complete ball valve from the pipeline, (screwed, SW and BW versions only).

Remove the two upper bolts and nuts and loosen the lower two. The complete assembly can then be removed and the new parts fitted.

M10S ISO flanged ball valves must be removed from the pipeline to facilitate the fitting of new parts.

## How to order

**Example:** 1 off Spirax Sarco ½" screwed BSP M10S2FB ISO ball valve.

## Spare parts

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

### Available spare

Seat and stem seal set 5, 6

### 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 and stem seal set for ½" M10S2FB ISO ball valve.

