

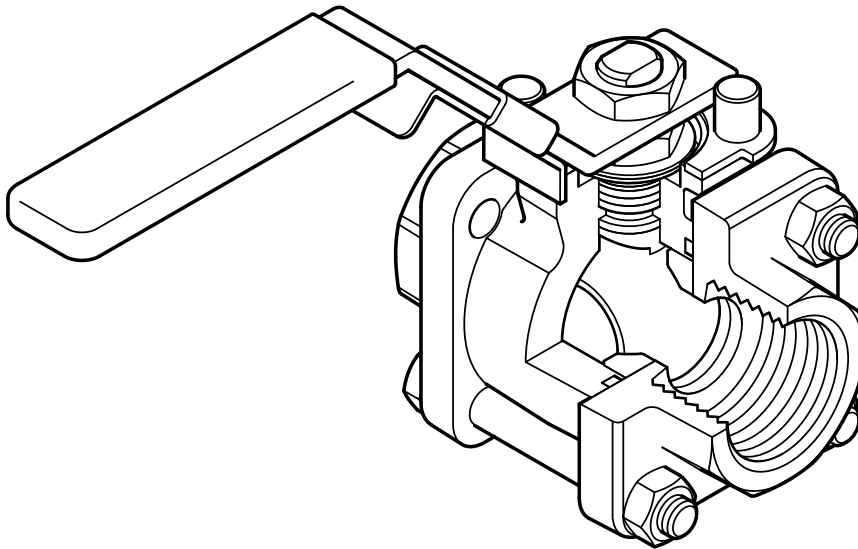


Cert. No. LRQ 0963008

ISO 9001

spirax sarco

M10Ti ISO Ball Valve DN $\frac{1}{4}$ " to DN2 $\frac{1}{2}$ "

TI-P133-68
ST Issue 2


Description

The M10Ti ISO three-piece body ball valve has been designed for use as an isolating valve, not a control valve, has a lockable handle as standard and can be serviced without removal from the pipeline (screwed and welded versions only). It has been specially designed for applications that cannot use Teflon, for example the tobacco industry. The seat and seals are of UHMWPE (Ultra High Molecular Weight Polyethylene).

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

M10Ti2 ISO	Zinc plated carbon steel body and caps.
M10Ti3 ISO	Stainless steel body and caps.
M10Ti4 ISO	Complete stainless steel construction.

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

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.

Options

- Self-venting ball.
- Extended stem 100 mm (4") to allow full insulation.

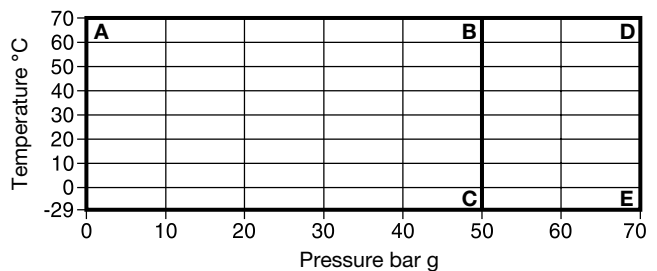
Technical data

Flow characteristic	Modified linear
Port	Full and reduced bore versions
Leakage test procedure to ISO 5208 (Rate A)/EN 12266-1 (Rate A)	
Antistatic device (optional)	Complies with ISO 7121 and BS 5351

Sizes and pipe connections

Full bore $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{3}{4}$ ", 1", 1 $\frac{1}{4}$ ", 1 $\frac{1}{2}$ " and 2" Screwed BSP, BSPT, NPT, BW, SW	Flanged DN15 to DN50 ASME (ANSI) Class 150, ASME (ANSI) Class 300 and EN 1092 PN40
Reduced bore $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{3}{4}$ ", 1", 1 $\frac{1}{4}$ ", 1 $\frac{1}{2}$ ", 2" and 2 $\frac{1}{2}$ " Screwed BSP, BSPT, NPT, BW, SW	Flanged DN15 to DN65 ASME (ANSI) Class 150, ASME (ANSI) Class 300 and EN 1092 PN40.

Pressure / temperature limits



A-D-E: $\frac{1}{4}$ " to 1 $\frac{1}{2}$ " FB and RB, and 2" RB

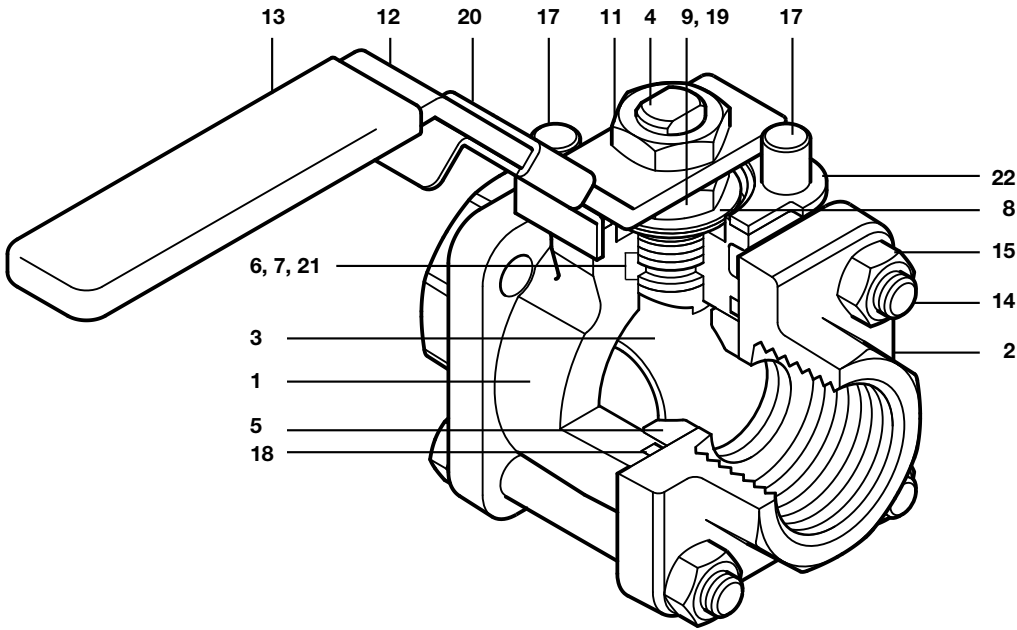
A-B-C: 2" FB and 2 $\frac{1}{2}$ " RB

PMA	Maximum allowable pressure	70 bar g @ 70°C
TMA	Maximum allowable temperature	70°C @ 70 bar g
Minimum allowable temperature		-29°C
PMO	Maximum operating pressure	70 bar g
TMO	Maximum operating temperature	70°C @ 70 bar g
Minimum operating temperature		-29°C
Note: For lower operating temperatures consult Spirax Sarco		
Δ PMX	Maximum differential pressure	70 bar
Designed for a maximum cold hydraulic test pressure of 105 bar g		

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 without notice.

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Materials

No. Part		Material	
1	Body	M10Ti2 ISO	Zinc plated carbon steel
		M10Ti3 ISO	Stainless steel
		M10Ti4 ISO	Stainless steel
2	Cap	M10Ti2 ISO	Zinc plated carbon steel
		M10Ti3 ISO	Stainless steel
		M10Ti4 ISO	Stainless steel
3	Ball	Stainless steel	AISI 316
4	Stem	Stainless steel	AISI 316
5	Seat	UHMWPE	
6	Stem seal	UHMWPE	
7	Separator	M10Ti2 ISO	Zinc plated carbon steel
		M10Ti3 ISO	Stainless steel
		M10Ti4 ISO	Stainless steel
8	Belleville washer	Stainless steel	AISI 301
9	Lower stem nut	M10Ti2 ISO	Zinc plated carbon steel
		M10Ti3 ISO	Stainless steel
		M10Ti4 ISO	Stainless steel
10	Name-plate - DN (Not shown)	Stainless steel	AISI 430
11	Upper stem nut	M10Ti2 ISO	Zinc plated carbon steel
		M10Ti3 ISO	Stainless steel
		M10Ti4 ISO	Stainless steel
12	Lever	M10Ti2 ISO	Zinc plated carbon steel
		M10Ti3 ISO	Stainless steel
		M10Ti4 ISO	Stainless steel
13	Grip	Vinyl light blue	
14	Bolts	M10Ti2 ISO	Zinc plated carbon steel
		M10Ti3 ISO	Stainless steel
		M10Ti4 ISO	Stainless steel
15	Nuts	M10Ti2 ISO	Zinc plated carbon steel
		M10Ti3 ISO	Stainless steel
		M10Ti4 ISO	Stainless steel
16	Studs	M10Ti4 ISO	Stainless steel
		Note: Item 16 can not be shown as it is only applicable to welded versions	
17	Stop screw	M10Ti2 ISO	Zinc plated carbon steel
		M10Ti3 ISO	Stainless steel
		M10Ti4 ISO	Stainless steel
18	Body/cap 'O' ring	Geothermal	
19	Nut locker	Stainless steel	AISI 316
20	Lockable handle	Stainless steel	AISI 316
21	Stem seal	Stainless steel	
22	Lock-plate	Stainless steel	AISI 316

Dimensions (approximate) in mm

Reduced bore

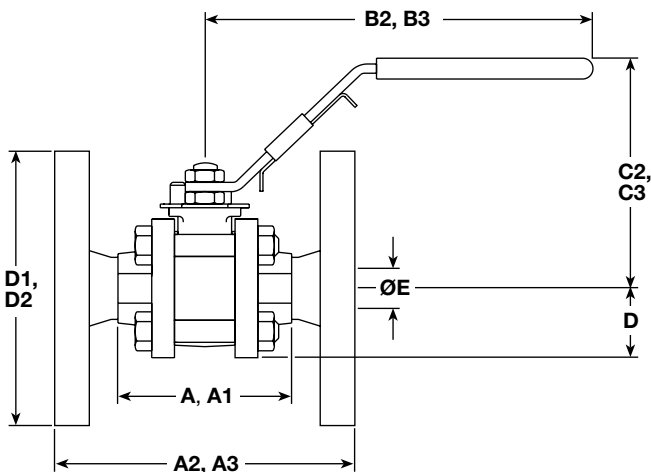
Size	A	A1	A2	A3	B2	B3	C2	C3	D	D1	D2	E
1/4"	66	66	-	-	162	-	93	-	24	-	-	11
3/8"	66	66	-	-	162	-	93	-	24	-	-	11
1/2"	66	66	108	130	162	162	93	93	24	89	95	11
3/4"	72	72	117	150	162	162	95	95	26	98	105	14
1"	87	87	127	160	162	162	101	101	31	108	115	21
1 1/4"	104	104	140	180	162	162	106	106	37	118	140	25
1 1/2"	111	111	165	200	186	186	118	118	41	127	150	31
2"	125	119	178	230	186	186	123	123	48	152	165	38
2 1/2"	153	153	-	-	251	251	140	140	57	-	-	50

Full bore

Size	A	A1	A2	A3	B2	B3	C2	C3	D	D1	D2	E
1/4"	66	66	-	-	162	-	93	-	24	-	-	11
3/8"	66	66	-	-	162	-	93	-	24	-	-	11
1/2"	72	72	-	130	162	162	95	95	26	-	95	14
3/4"	87	87	-	150	162	162	101	101	31	-	105	21
1"	104	104	-	160	162	162	106	106	37	-	115	25
1 1/4"	111	111	-	180	186	186	118	118	41	-	140	31
1 1/2"	125	125	-	200	186	186	123	123	48	-	150	38
2"	153	153	-	230	251	251	140	140	57	-	165	50

Weights (approximate) in kg

Size	Reduced bore			Full bore	
	Scrd /BW/SW	PN40	ASME 150	Scrd /BW/SW	PN40
1/4"	0.86	-	-	0.86	-
3/8"	0.84	-	-	0.84	-
1/2"	0.81	2.35	1.70	1.02	2.59
3/4"	1.02	3.20	2.25	1.56	3.76
1"	1.56	4.30	2.92	2.35	5.02
1 1/4"	2.35	6.40	4.15	3.08	6.92
1 1/2"	3.08	7.20	6.40	4.41	9.09
2"	4.41	10.72	8.35	9.05	13.96
2 1/2"	8.17	-	-	-	-



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

K_v values

Size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"
Reduced bore	5	6.8	6	10	27	49	70	103	168
Full bore	5	6.8	17	36	58	89	153	205	-

For conversion $C_v (UK) = K_v \times 0.963$ $C_v (US) = K_v \times 1.156$

Operating torque (N m)

Size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"
Reduced bore	3.25	3.25	3.25	5.50	13.25	20	50	60	75
Full bore	3.25	3.25	5.50	13.25	20	50	60	75	-

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 greater break-out torque.

Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions supplied with the product.

How to order example:

1 off Spirax Sarco 1/2" screwed BSP M10Ti2FB ISO 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, 18, 21

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" M10Ti2FB ISO ball valve.

