



## M10F ISO Ball Valve DN1/4" to DN2 1/2"

### Description

The M10F ISO three-piece body ball valve has been designed for use as an isolating valve, not a control valve, and can be serviced without removal from the pipeline. It is antistatic, firesafe and has ISO mounting as standard. The M10F can be used on applications that use steam and other industrial fluids for services ranging from vacuum to the higher temperatures and pressures.

### Firesafe design

In normal working conditions, the ball rests against R-PTFE seals ensuring total closure. **Note:** R-PTFE is PTFE reinforced with carbon and graphite.

When the valve is submitted to temperature above the limits R-PTFE can withstand, the seat becomes deformed and renders the R-PTFE to extrusion. When the R-PTFE has been totally destroyed, the ball will come to rest firmly against the metal seat in the cap, producing a metal-metal closing. This secondary seat in the valve cap ensures the valve will operate to international API Spec 6 FA and BS 6755 part 2 standards.

### 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 safely and 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

<b>M10F2RB ISO</b>	Zinc plated carbon steel body, reduced bore.
<b>M10F2FB ISO</b>	Zinc plated carbon steel body, full bore.

**Note:** Stainless steel versions are available on request.

### Options

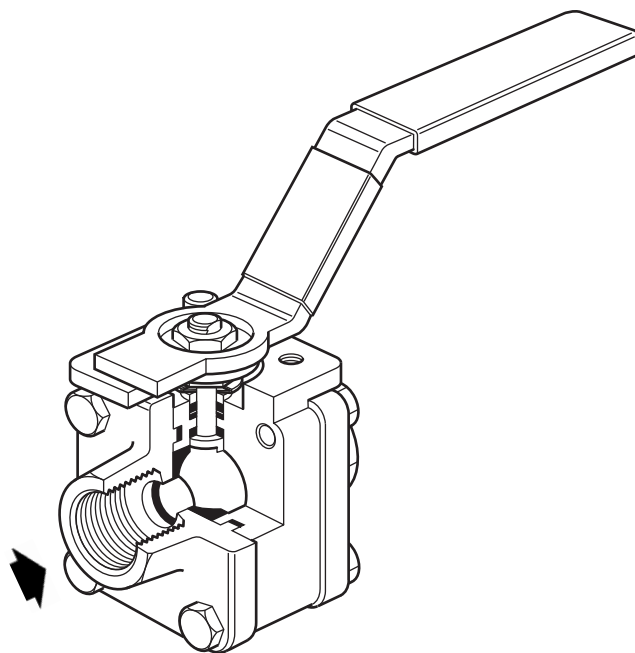
- Self-venting ball.

### Technical data

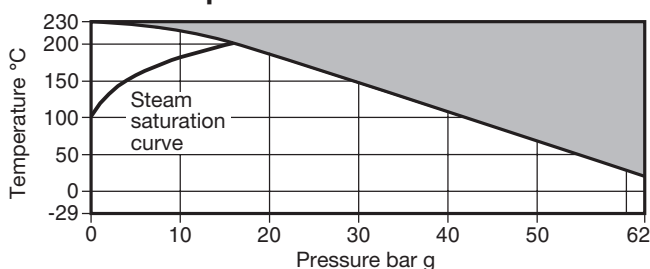
Flow characteristic	Modified linear
Port	Full and reduced bore versions
Leakage test procedure to ISO 5208 (Rate A) / EN 12266-1 (Rate A)	
Antistatic device	Complies with ISO 7121 and BS 5351
Firesafe	Designed to BS 6755 Part 2 and API Spec 6FA standards

### Sizes and pipe connections

1/4", 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2", (2 1/2" M10F2RB ISO only). Screwed BSP, BSPT, NPT, SW, BW full bore and reduced bore. **Note:** Flanged connections ANSI class 150, ANSI Class 300 and EN 1092 PN40 are available on request.

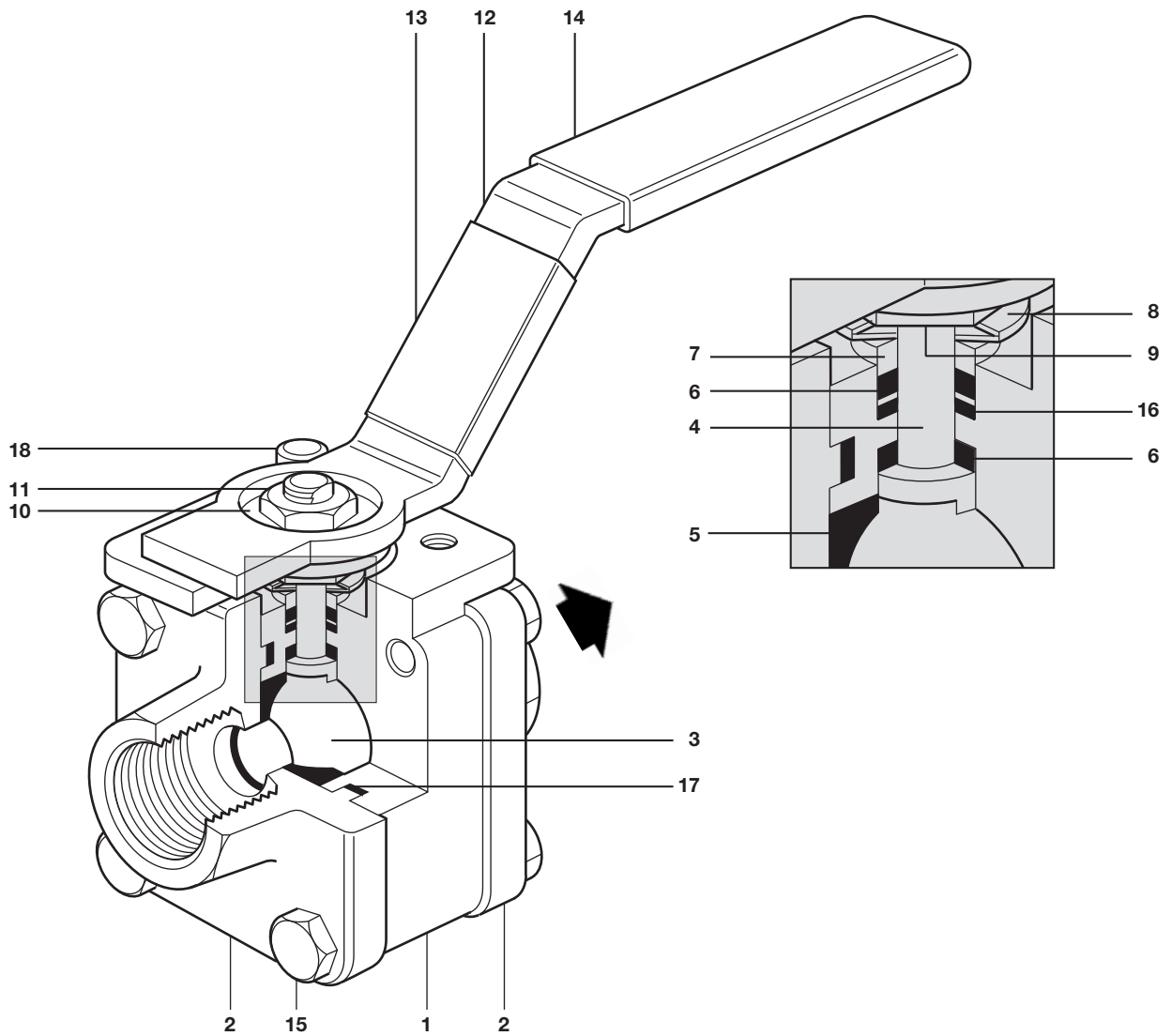


### Pressure/temperature limits



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

PMA	Maximum allowable pressure	62 bar g @ 25°C
TMA	Maximum allowable temperature	230°C @ 0 bar g
Minimum allowable temperature		-29°C
PMO	Maximum operating pressure for saturated steam service	15 bar g
TMO	Maximum operating temperature	230°C @ 0 bar g
Minimum operating temperature		-29°C
<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 93 bar g		



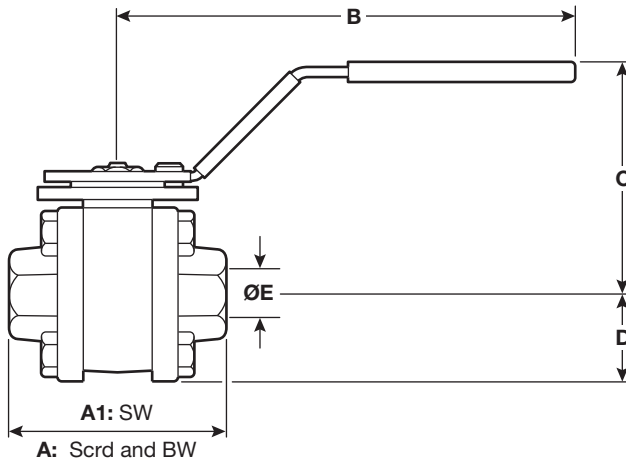
## Materials

No.	Part	Material	
1	Body	Zinc plated carbon steel	ASTM A105
2	Cap	Zinc plated carbon steel	ASTM A105
3	Ball	Stainless steel	AISI 316L
4	Stem	Stainless steel	AISI 316L
5	Seat	Carbon reinforced PTFE	
6	Stem seal	Antistatic R-PTFE	
7	Separator	Zinc plated carbon steel	SAE 12L14
8	Belleville washer	Stainless steel	AISI 301
9	Nut	Zinc plated carbon steel	SAE 12L14
10	Name-plate (DN)	Stainless steel	AISI 430
11	Stem nut	Zinc plated carbon steel	SAE 12L14
12	Lever	Zinc plated carbon steel	SAE 1010
13	Name-plate	Stainless steel	AISI 430
14	Grip	Vinyl	
15	Bolts	Zinc plated carbon steel	ASTM A193 B7
16	Stem seal	Graphite	
17	Body gasket	Graphite	
18	Stop screw	Zinc plated carbon steel	SAE 12L14

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

### Reduced bore

Size	A	A1	B	C	D	E	Weight
1/4"	60	58	130	66	26	11	0.92
3/8"	60	58	130	66	26	11	0.92
1/2"	60	49	130	66	26	11	0.92
3/4"	66	56	130	69	29	14	0.95
1"	80	78	162	100	33	21	1.65
1 1/4"	96	91	162	104	37	25	2.30
1 1/2"	102	98	185	112	41	31	3.05
2"	118	112	185	120	48	38	4.60
2 1/2"	146	145	250	140	57	51	7.95



### Full bore

Size	A	A1	B	C	D	E	Weight
1/4"	60	58	130	66	26	11	0.92
3/8"	60	58	130	66	26	11	0.92
1/2"	66	61	130	69	29	14	0.95
3/4"	80	78	162	100	33	21	1.65
1"	96	95	162	104	37	25	2.30
1 1/4"	102	102	185	112	41	31	3.05
1 1/2"	118	118	185	120	48	38	4.60
2"	146	145	250	140	57	51	8.75

## K<sub>v</sub> values

Size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"
Reduced bore	3	6.8	6	10	27	49	70	103	168
Full bore	3	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 torques (N m)

Size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"
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 62 bar. Valves that are subject to a long static period, 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 NPT M10F2RB 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 spares

Seat, stem seal set and body gaskets	<b>5, 6, 16, 17</b>
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### How to order spares

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

**Example:** 1 - Seat, stem seal set and body gasket set for a Spirax Sarco 1/2" M10F2FB ISO ball valve.

