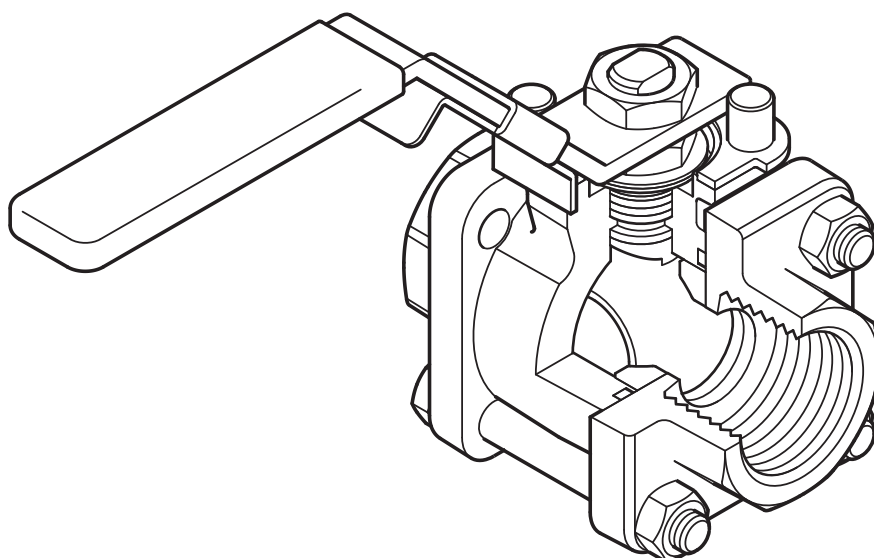




## M10Pi ISO Ball Valve DN1/4" to DN2 1/2"



### Description

The M10Pi 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 can be used with process fluids for services ranging from vacuum to the higher temperatures and pressures.

### 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>M10Pi2 ISO</b>	Zinc plated carbon steel body and caps.
<b>M10Pi3 ISO</b>	Stainless steel body and caps.
<b>M10Pi4 ISO</b>	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.
- Oval handle for confined spaces. Ideal for trap modules.

### 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

### Sizes and pipe connections

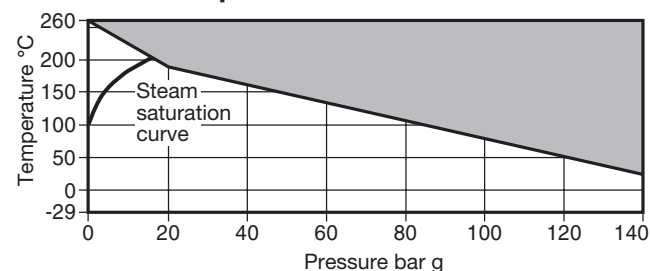
#### Full bore

1/4", 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2" and 2"  
Screwed BSP, BSPT, NPT, BW, SW

#### Reduced bore

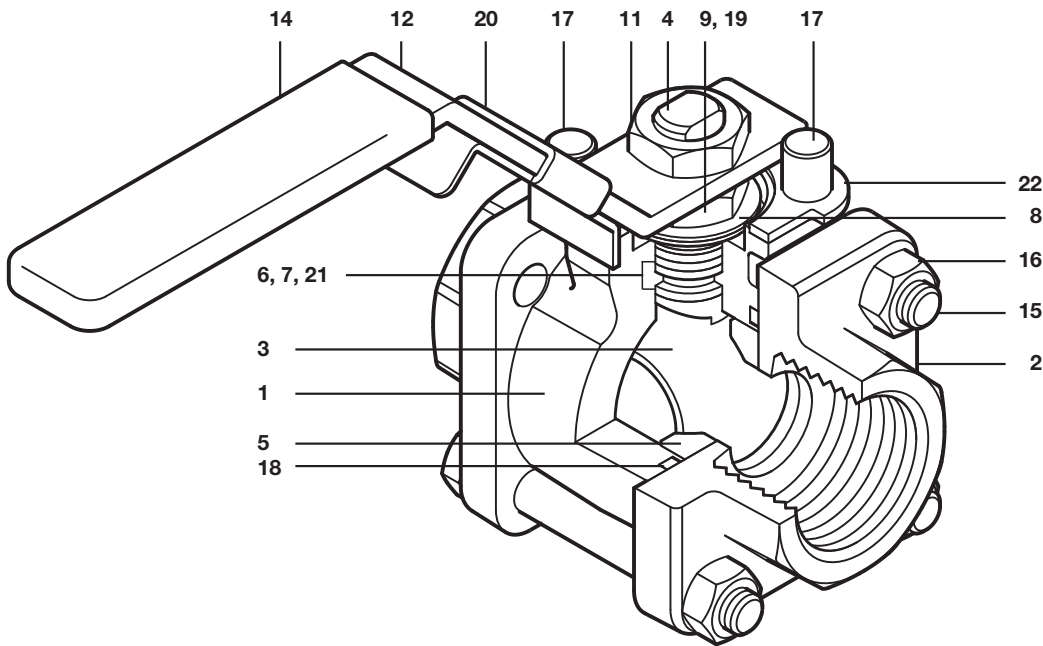
1/4", 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2" and 2 1/2"  
Screwed BSP, BSPT, NPT, BW, SW

### Pressure / temperature limits



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

PMA	Maximum allowable pressure	140 bar g @ 32°C
TMA	Maximum allowable temperature	260°C @ 0 bar g
Minimum allowable temperature		-29°C
PMO	Maximum operating pressure for saturated steam service	17.5 bar g
TMO	Maximum operating temperature	260°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 210 bar g		



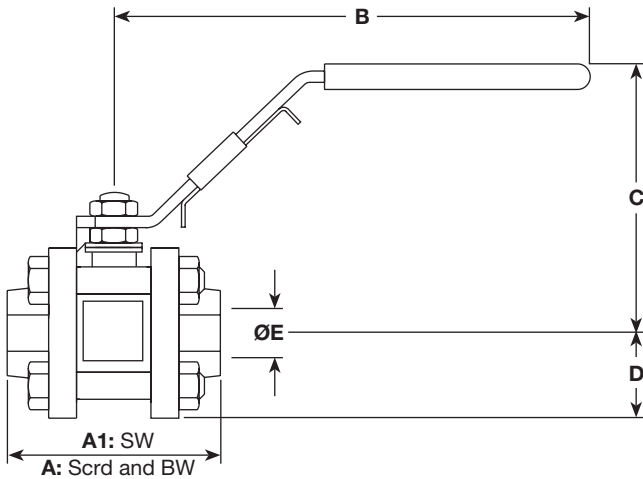
## Materials

No. Part		Material		
1	Body	M10Pi2 ISO	Zinc plated carbon steel	ASTM A105
		M10Pi3 ISO	Stainless steel	ASTM A 182 F 316L
		M10Pi4 ISO		
2	Cap	M10Pi2 ISO	Zinc plated carbon steel	ASTM A105
		M10Pi3 ISO	Stainless steel	ASTM A 182 F 316L
		M10Pi4 ISO		
3	Ball	Stainless steel	AISI 316	
4	Stem	Stainless steel	AISI 316	
5	Seat	Reinforced PTFE		
6	Stem seal	Reinforced PTFE antistatic		
7	Separator	M10Pi2 ISO	Zinc plated carbon steel	SAE 1010
		M10Pi3 ISO		
		M10Pi4 ISO	Stainless steel	AISI 316
8	Belleville washer	Stainless steel	AISI 301	
9	Lower stem nut	M10Pi2 ISO	Zinc plated carbon steel	SAE 1010
		M10Pi3 ISO		
		M10Pi4 ISO	Stainless steel	AISI 304
10	Name-plate - DN (Not shown)	Stainless steel	AISI 430	
11	Upper stem nut	M10Pi2 ISO	Zinc plated carbon steel	SAE 1010
		M10Pi3 ISO		
		M10Pi4 ISO	Stainless steel	AISI 304
12	Lever	M10Pi2 ISO	Zinc plated carbon steel	SAE 1010
		M10Pi3 ISO		
		M10Pi4 ISO	Stainless steel	AISI 316
13	Name-plate (Not shown)	Stainless steel	AISI 430	
14	Grip	Vinyl black		
15	Studs	M10Pi2 ISO	Zinc plated carbon steel	B7
		M10Pi3 ISO		
		M10Pi4 ISO	Stainless steel	
16	Nuts	M10Pi2 ISO	Zinc plated carbon steel	2H
		M10Pi3 ISO		
		M10Pi4 ISO	Stainless steel	
17	Stop screw	M10Pi2 ISO	Zinc plated carbon steel	SAE 12L 14
		M10Pi3 ISO		
		M10Pi4 ISO	Stainless steel	AISI 304
18	Body/cap 'O' ring	Geothermal		
19	Nut locker	Stainless steel	AISI 304	
20	Lockable handle	Stainless steel	AISI 304L	
21	Stem seal	Stainless steel	AISI 316	
22	Lock-plate	Stainless steel	AISI 304L	

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

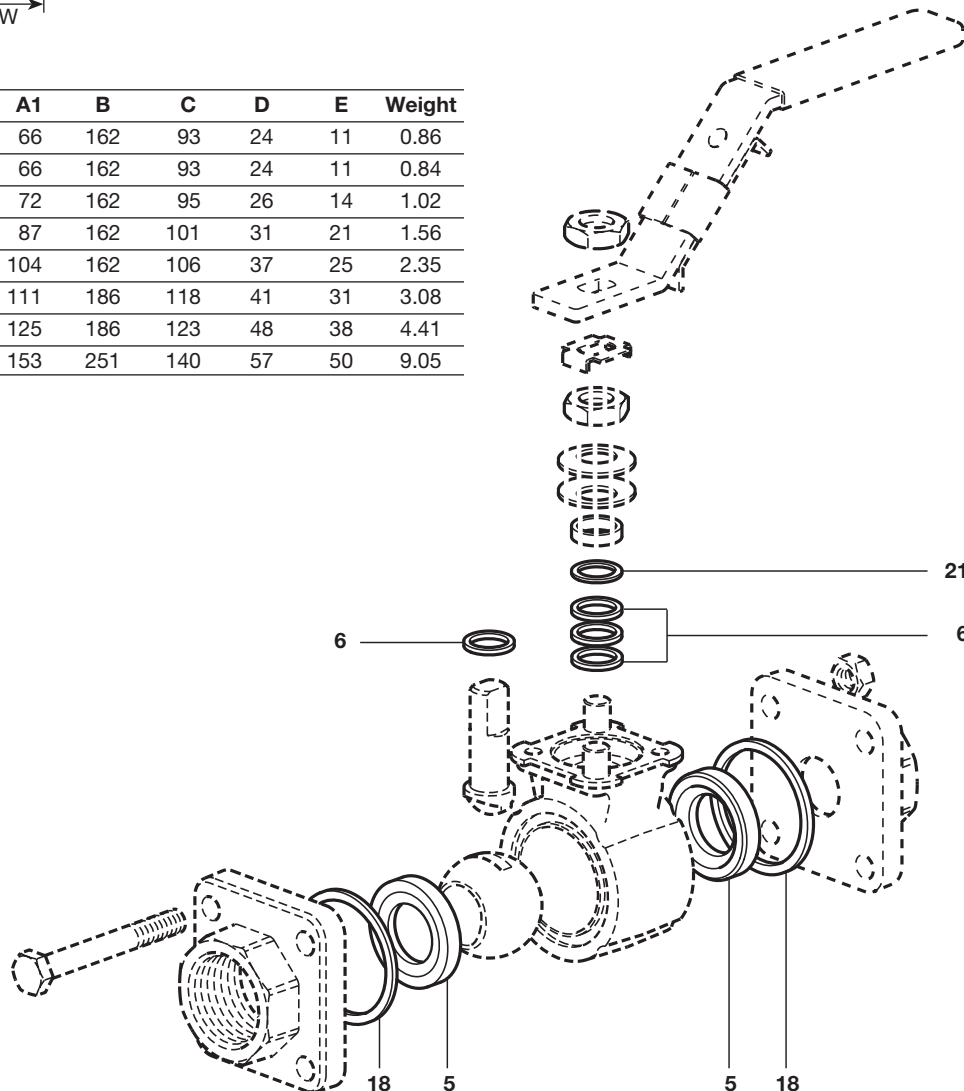
### Reduced bore

Size	A	A1	B	C	D	E	Weight
1/4"	66	66	162	93	24	11	0.86
3/8"	66	66	162	93	24	11	0.84
1/2"	66	66	162	93	24	11	0.81
3/4"	72	72	162	95	26	14	1.02
1"	87	87	162	101	31	21	1.56
1 1/4"	104	104	162	106	37	25	2.35
1 1/2"	111	111	186	118	41	31	3.08
2"	125	119	186	123	48	38	4.41
2 1/2"	153	153	251	140	57	50	8.17



### Full bore

Size	A	A1	B	C	D	E	Weight
1/4"	66	66	162	93	24	11	0.86
3/8"	66	66	162	93	24	11	0.84
1/2"	72	72	162	95	26	14	1.02
3/4"	87	87	162	101	31	21	1.56
1"	104	104	162	106	37	25	2.35
1 1/4"	111	111	186	118	41	31	3.08
1 1/2"	125	125	186	123	48	38	4.41
2"	153	153	251	140	57	50	9.05



## 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	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	3.5	3.5	3.5	6	14	21	50	60	75
Full bore	3.5	3.5	6	14	21	50	60	75	-

The indicated torque values are for valves frequently operated, that are submitted to a maximum differential pressure of 140 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 M10Pi2FB 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	<b>5, 6, 18, 21</b>
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### 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" M10Pi2FB ISO ball valve.