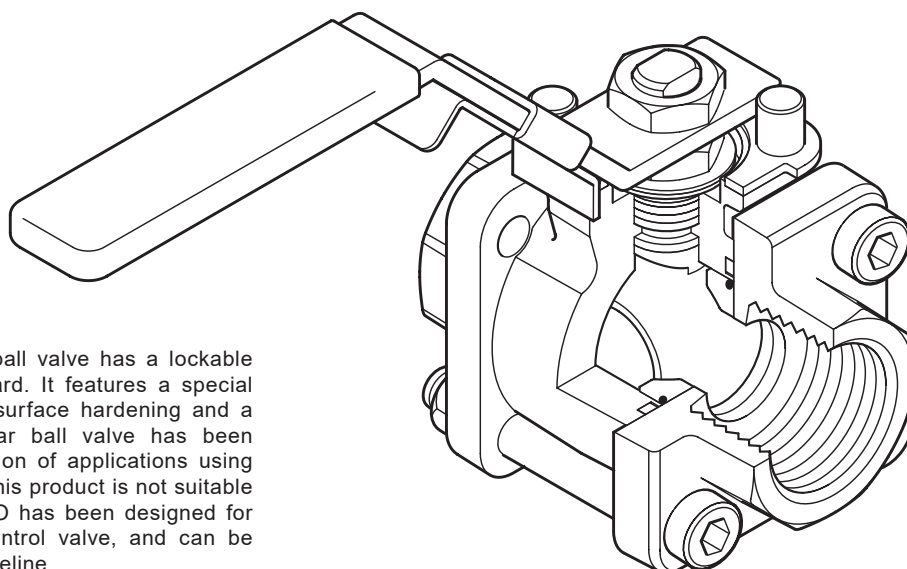




TI-P133-71  
CMGT Issue 6

## M10HPi ISO Ball Valve DN $\frac{1}{4}$ " to DN2"



### Description

The M10HPi ISO three-piece body ball valve has a lockable handle and ISO mounting as standard. It features a special floating ball, which has received a surface hardening and a blow-out proof stem. This particular ball valve has been specially designed for manual isolation of applications using high-pressure gas (please note that this product is not suitable for oxygen service). The M10HPi ISO has been designed for use as an isolating valve, not a control valve, and can be serviced without removal from the pipeline.

### 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

**M10HPi2 ISO** Zinc plated carbon steel body and caps.

**M10HPi3 ISO** Stainless steel body and caps.

**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 EU Pressure Equipment Directive/UK Pressure Equipment (Safety) Regulations and carries the  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.
- Fully degreased under request.

### 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

$\frac{1}{4}$ ",  $\frac{3}{8}$ ",  $\frac{1}{2}$ ",  $\frac{3}{4}$ ", 1",  $1\frac{1}{4}$ " and  $1\frac{1}{2}$ "

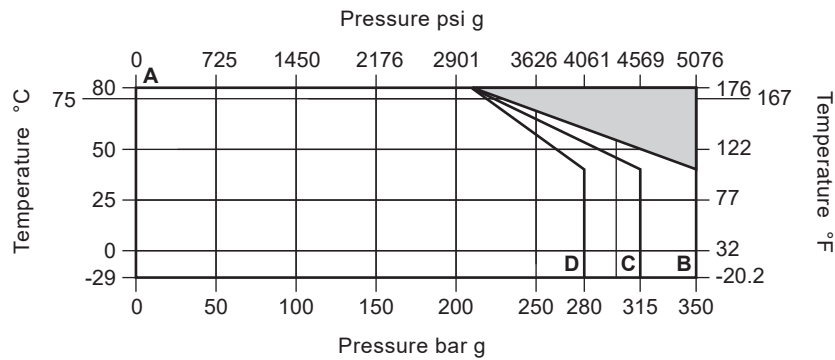
**Screwed** BSP, BSPT, NPT, BW, SW

#### Reduced 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

Pressure/temperature limits

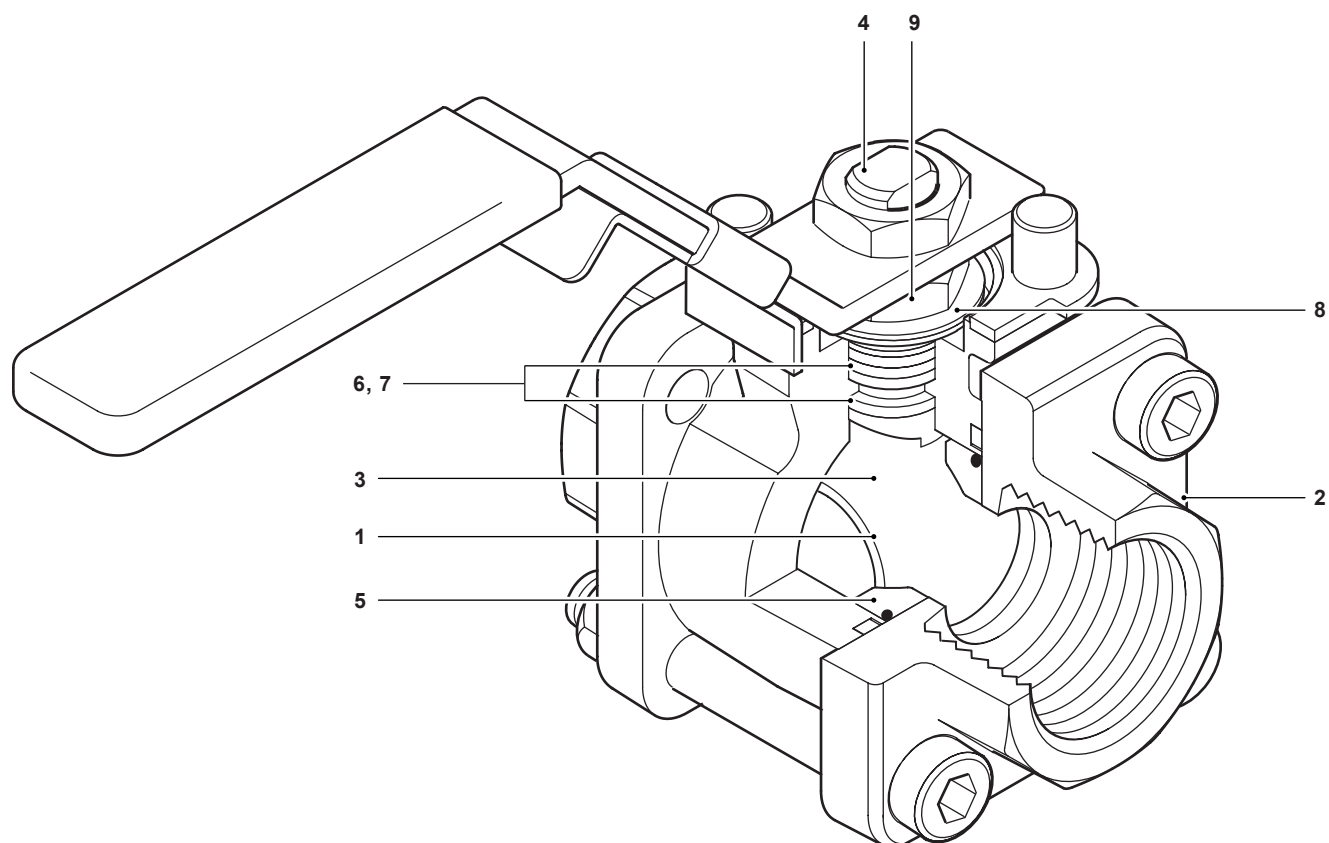


The product **must not** be used in this region.

- A - B 1/4, 3/8" and 1/2" RB
- A - C 1/2" FB; 3/4" and 1" RB
- A - D 1" FB; 1 1/4", 1 1/2" and 2" RB

PMA	Maximum allowable pressure	1/4", 3/8" and 1/2" RB	350 bar	5076 psi
		1/2" FB; 3/4" and 1" RB	315 bar	4569 psi
		1" FB; 1 1/4", 1 1/2" and 2" RB	280 bar	4061 psi
TMA	Maximum allowable temperature		80 °C	176 °F
	Minimum allowable temperature		-29 °C	-20.2 °F
TMO	Maximum operating temperature		80°C @ 210 bar g	176 °F @ 3046 psi g
	Minimum operating temperature		-29 °C	-20.2 °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 1.5 x PMO				

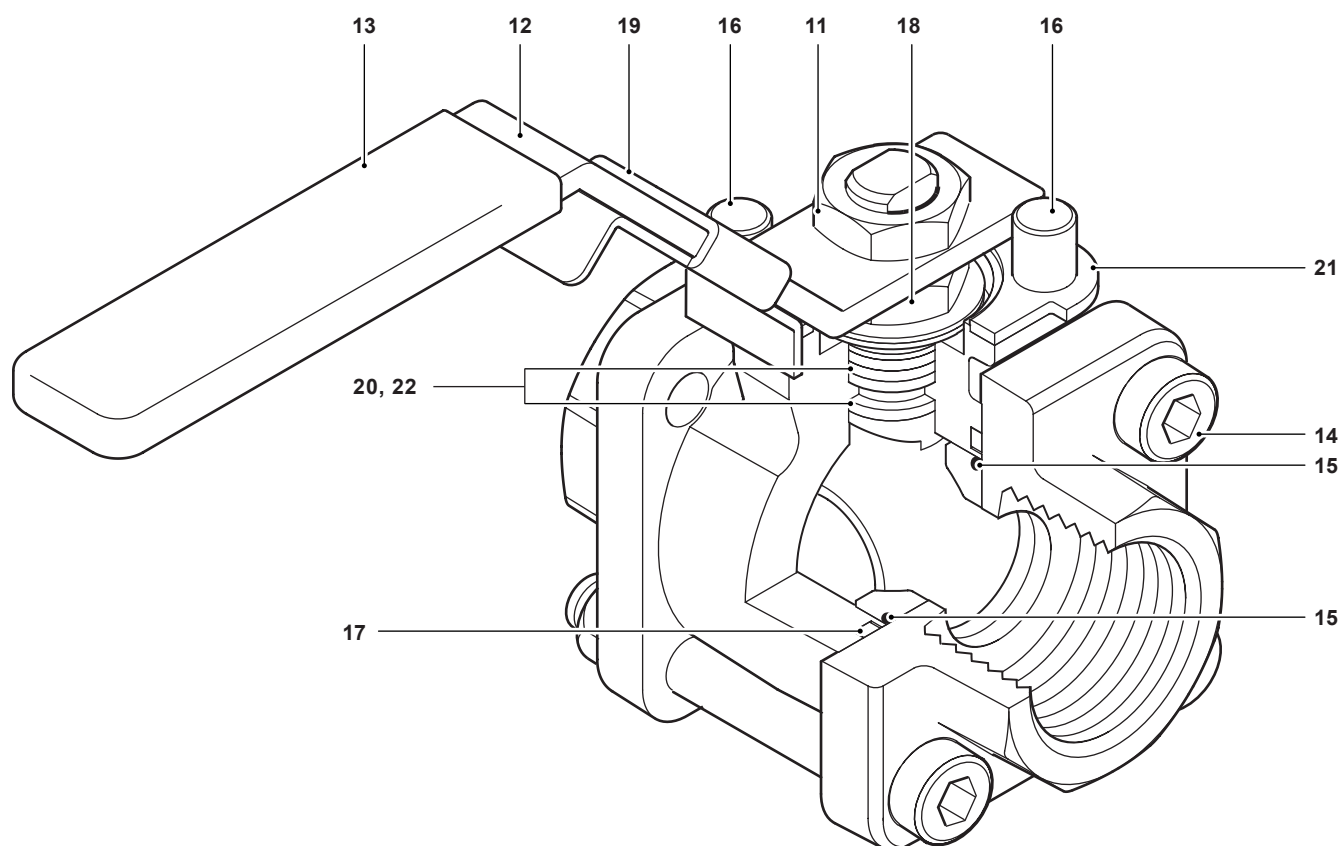
## Materials



No.	Part	Material		
1	Body	<b>M10HPi2 ISO</b>	Zinc plated carbon steel	ASTM A105
		<b>M10HPi3 ISO</b>	Stainless steel	ASTM A 182 F 316L
2	Cap	<b>M10HPi2 ISO</b>	Zinc plated carbon steel	SAE 1040
		<b>M10HPi3 ISO</b>	Stainless steel	AISI 316
3	Ball		Stainless steel (hardened)	AISI 316
4	Stem		Stainless steel	AISI 316
5	Seat		Acetal	
6	Stem seal		Reinforced PEEK	
7	Separator		Zinc plated carbon steel	SAE 1010
8	Belleville washer		Stainless steel	AISI 301
9	Stem nut		Zinc plated carbon steel	SAE 1010

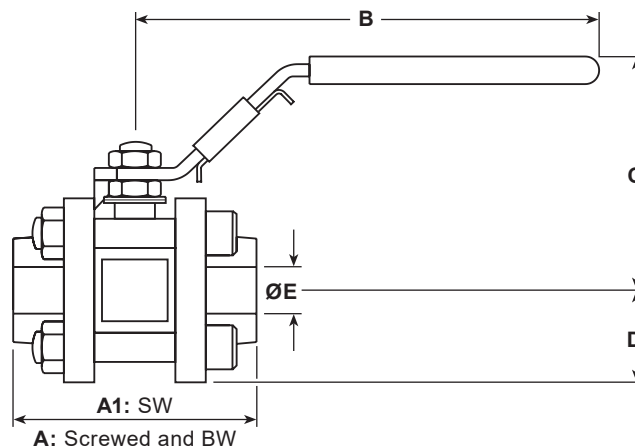
Materials continued on next page

## Materials (continued)



No.	Part	Material	
10	Name-plate (Not shown)	Stainless steel	AISI 430
11	Upper stem nut	Zinc plated carbon steel	SAE 1010
12	Lever	Zinc plated carbon steel	SAE 1010
13	Grip	Vinyl green	
14	Socket head cap screw	Carbon steel	ASTM A 574
15	Seat 'O' ring (2" RB and 1½" FB only)	Viton	
16	Stop screw	Zinc plated carbon steel	SAE 12L 14
17	Body/cap 'O' ring	Viton	
18	Nut locker	Stainless steel	AISI 316
19	Lockable handle	Stainless steel	AISI 316
20	Stem seal	Reinforced PTFE	
21	Lock-plate	Stainless steel	AISI 304L
22	Stem seal	Stainless steel	AISI 316

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



### Reduced bore

Size	A A1	B	C	D	E	Weight
1/4"	82 (3.23)	162 (6.38)	93 (3.66)	28 (1.10)	11 (0.43)	1.46 (3.22)
3/8"	84 (3.31)					1.49 (3.28)
1/2"						1.46 (3.22)
3/4"	92 (3.62)		95 (3.74)	29 (1.14)	14 (0.55)	1.71 (3.77)
1"	114 (4.49)		101 (3.98)	34 (1.39)	21 (0.83)	2.54 (5.60)
1 1/4"	132 (5.20)	182 (7.17)	106 (4.17)	40 (1.57)	25 (0.98)	3.92 (8.64)
1 1/2"	146 (5.75)	186 (7.32)	116 (4.57)	46 (1.81)	31 (1.22)	5.56 (12.3)
2"	154 (6.06)		123 (4.84)	51 (2.01)	38 (1.50)	6.95 (15.3)

### Full bore

Size	A A1	B	C	D	E	Weight
1/4"	82 (3.23)	162 (6.38)	93 (3.66)	28 (1.10)	11 (0.43)	1.46 (3.22)
3/8"	84 (3.31)					1.49 (3.28)
1/2"	92 (3.62)					1.71 (3.77)
3/4"	114 (4.49)					2.54 (5.60)
1"	132 (5.20)	182 (7.17)	106 (4.17)	40 (1.57)	25 (0.98)	3.92 (8.64)
1 1/4"	146 (5.75)	186 (7.32)	116 (4.57)	46 (1.81)	31 (1.22)	5.56 (12.3)
1 1/2"	154 (6.06)		123 (4.84)	51 (2.01)	38 (1.50)	6.95 (15.3)

### Kv values

Size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	For conversion Cv (UK) = Kv x 0.963 Cv (US) = Kv x 1.156
Reduced bore	5	6.8	6	10	27	49	70	103	
Full bore	5	6.8	17	36	58	89	153	-	

### Operating torque

Size		1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Reduced bore	Nm (lbf ft)	10 (7.4)	10 (7.4)	10 (7.4)	15 (11.1)	25 (18.4)	40 (29.5)	55 (40.6)	100 (73.8)
Full bore	Nm (lbf ft)	10 (7.4)	10 (7.4)	15 (11.1)	25 (18.4)	40 (29.5)	55 (40.6)	100 (73.8)	

The indicated torque values are for valves frequently operated, that are submitted to a maximum differential pressure. 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 ½" screwed BSP M10HPi2FB ISO ball valve.

### Spare parts

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

#### Available spares

Seat, seals, body/cap 'O' ring and seat 'O' ring set

5, 6, 15, 17, 20, 22

#### 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, seals, body/cap 'O' ring and seat 'O' ring set for a Spirax Sarco ½" M10HPi2FB ISO ball valve.

