

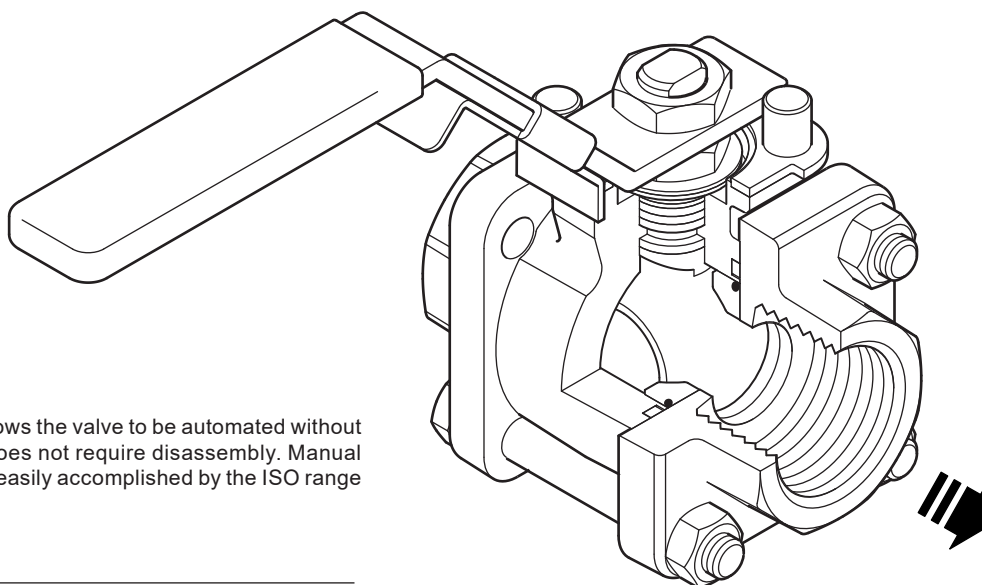


TI-P133-67
CMGT Issue 7

M10HTi ISO Tobacco Ball Valve DN1¼" to DN2½"

Description

The M10HTi ISO three-piece body ball valve has a lockable handle and ISO mounting as standard and features a special ball, which has received a surface hardening. This particular ball valve has been specially designed for applications that cannot use Teflon at high temperatures, for example the tobacco industry. The M10HTi 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

M10HTi2 ISO	Zinc plated carbon steel body and caps.
M10HTi3 ISO	Stainless steel body and caps.
M10HTi4 ISO	Complete stainless steel construction.

Note: The nomenclature will be followed with either **FB** (full bore) or **RB** (reduced bore) and needs to be stated when placing an order.

Standards

This product fully complies with the requirements of the Pressure Equipment Directive (PED) 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.
- Fully degreased under request (i.e: Oxygen application).

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)	

Sizes and pipe connections

Full bore

¼", ⅜", ½", ¾", 1", 1¼", 1½" and 2"
Screwed BSP, BSPT, NPT, BW, SW

Flanged

DN15 to DN50
ASME Class 150, 300 and EN 1092 PN40

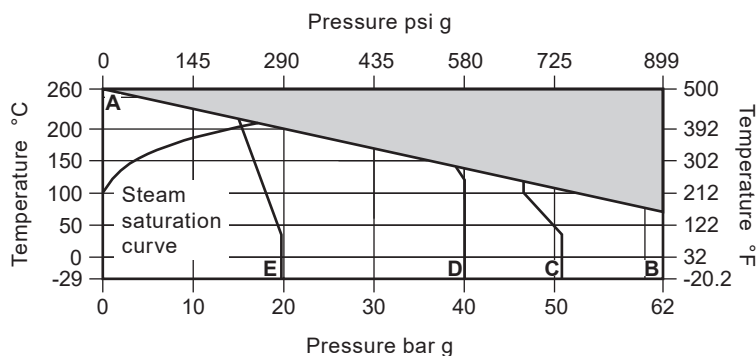
Reduced bore

¼", ⅜", ½", ¾", 1", 1¼", 1½", 2" and 2½"
Screwed BSP, BSPT, NPT, BW, SW

Flanged

DN15 to DN65
ASME Class 150, 300 and EN 1092 PN40

Pressure/temperature limits



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

A - B Screwed, socket weld and but weld.

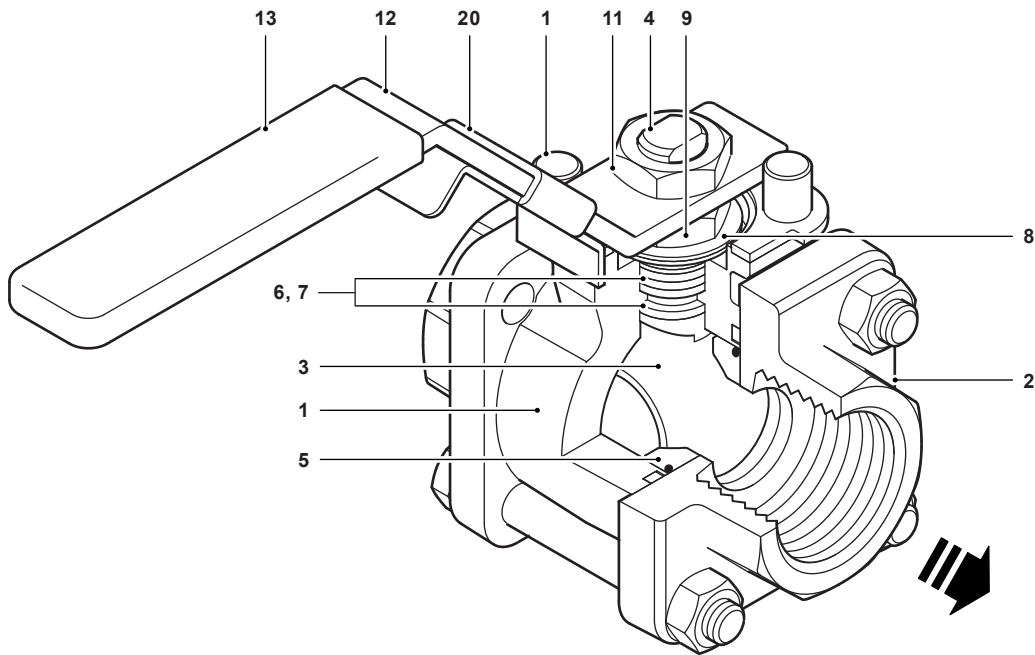
A - C Flanged ASME 300.

A - D Flanged EN 1092 PN40.

A - E Flanged ASME 150.

Body design conditions		PN63	
PMA	Maximum allowable pressure	62 bar g @ 60 °C	899 psi g @ 140 °F
TMA	Maximum allowable temperature	260 °C @ 0 bar g	500 °F @ 0 bar g
Minimum allowable temperature		-29 °C	-20.2 °F
PMO	Maximum operating pressure for saturated steam service	17.5 bar g	254 psi g
TMO	Maximum operating temperature	260 °C @ 0 bar g	500 °F @ 0 bar g
Minimum operating temperature		-29 °C	-20.2 °F
Note: 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	1349 psi g

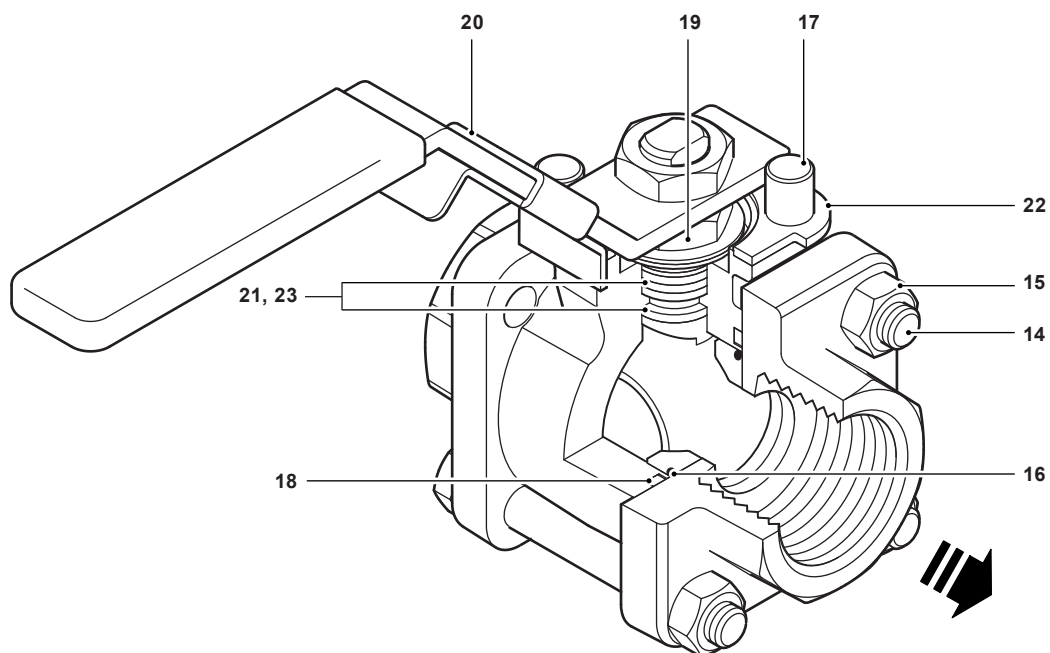
Materials



No.	Part	Material		
1	Body	M10HTi2 ISO	Zinc plated carbon steel	ASTM A105
		M10HTi3 ISO	Stainless steel	ASTM A 182 F 316L
		M10HTi4 ISO		
2	Cap	M10HTi2 ISO	Zinc plated carbon steel	ASTM A105
		M10HTi3 ISO	Stainless steel	ASTM A 182 F 316L
		M10HTi4 ISO		
3	Ball		Stainless steel (hardened)	AISI 316
4	Stem		Stainless steel	AISI 316
5	Seat		Virgin PEEK	
6	Lower stem seal		Virgin PEEK	
7	Separator	M10HTi2 ISO	Zinc plated carbon steel	SAE 1010
		M10HTi3 ISO		
		M10HTi4 ISO	Stainless steel	AISI 316
8	Belleville washer		Stainless steel	AISI 301
9	Lower stem nut	M10HTi2 ISO	Zinc plated carbon steel	SAE 1010
		M10HTi3 ISO		
		M10HTi4 ISO	Stainless steel	AISI 304
10	Name-plate (Not shown)		Stainless steel	AISI 430
11	Upper stem nut	M10HTi2 ISO	Zinc plated carbon steel	SAE 1010
		M10HTi3 ISO		
		M10HTi4 ISO	Stainless steel	AISI 304
12	Lever	M10HTi2 ISO	Zinc plated carbon steel	SAE 1010
		M10HTi3 ISO		
		M10HTi4 ISO	Stainless steel	AISI 316
13	Grip		Vinyl yellow	

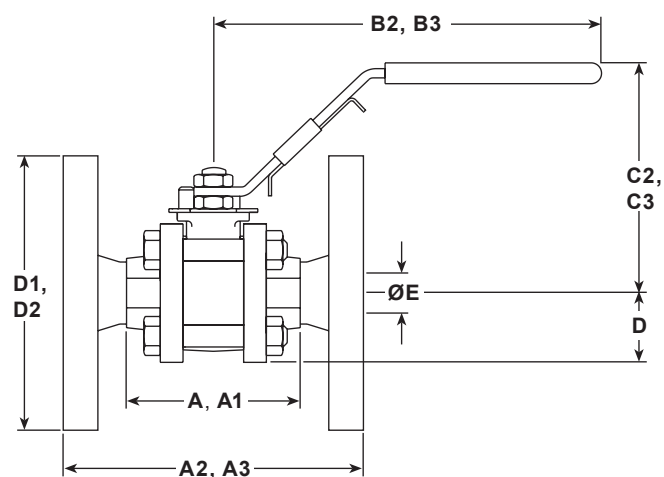
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Materials (continued)



No.	Part	Material
14	Studs	M10HTi2 ISO M10HTi3 ISO Zinc plated carbon steel A193 B7
		M10HTi4 ISO Stainless steel AISI 316
15	Nuts	M10HTi2 ISO M10HTi3 ISO Zinc plated carbon steel A194 2H
		M10HTi4 ISO Stainless steel AISI 304
16	Seat 'O' ring	Geothermal
17	Stop screw	M10HTi2 ISO M10HTi3 ISO Zinc plated carbon steel SAE 12L 14
		M10HTi4 ISO Stainless steel AISI 304
18	Body/cap 'O' ring	Geothermal
19	Nut locker	Stainless steel AISI 316
20	Lockable handle	Stainless steel
21	Stem seal	Graphite
22	Lock-plate	Stainless steel AISI 316
23	Stem seal	Stainless steel

Dimensions (approximate) in mm (inches)



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

Reduced bore

Size	A	A1	A2	A3	B2	B3	C2	C3	D	D1	D2	E
1/4"	66 (2.60)	66 (2.60)			162 (6.38)	162 (6.38)	93 (3.66)		24 (0.94)			11 (0.43)
3/8"												
1/2"			108 (4.25)	130 (5.12)								
3/4"	72 (2.83)	72 (2.83)	117 (4.61)	150 (5.91)	162 (6.38)	162 (6.38)	95 (3.74)	95 (3.74)	26 (1.02)	98 (3.86)	105 (4.13)	14 (0.55)
1"	87 (3.43)	87 (3.43)	127 (5.00)	160 (6.30)			101 (3.98)	101 (3.98)	31 (1.22)	108 (4.25)	115 (4.53)	21 (0.83)
1 1/4"	104 (4.09)	104 (4.09)	140 (5.51)	180 (7.09)			106 (4.17)	106 (4.17)	37 (1.46)	118 (4.65)	140 (5.51)	25 (0.98)
1 1/2"	111 (4.37)	111 (4.37)	165 (6.50)	200 (7.87)	186 (7.32)	186 (7.32)	118 (4.65)	118 (4.65)	41 (1.61)	127 (5.00)	150 (5.91)	31 (1.22)
2"	125 (4.92)	119 (4.69)	178 (7.01)	230 (9.06)			123 (4.84)	123 (4.84)	48 (1.89)	152 (5.98)	165 (6.50)	38 (1.50)
2 1/2"	153 (6.02)	153 (6.02)			251 (9.88)	251 (9.88)	140 (5.51)	140 (5.51)	57 (2.24)			50 (1.97)

Full bore

Size	A	A1	A2	A3	B2	B3	C2	C3	D	D1	D2	E
1/4"	66 (2.60)	66 (2.60)			162 (6.38)	162 (6.38)	93 (3.66)		24 (0.94)			11 (0.43)
3/8"												
1/2"	72 (2.83)	72 (2.83)		130 (5.12)			95 (3.74)	95 (3.74)	26 (1.02)			14 (0.55)
3/4"	87 (3.43)	87 (3.43)		150 (5.91)	162 (6.38)	162 (6.38)	101 (3.98)	101 (3.98)	31 (1.22)			21 (0.83)
1"	104 (4.09)	104 (4.09)		160 (6.30)			106 (4.17)	106 (4.17)	37 (1.46)			25 (0.98)
1 1/4"	111 (4.37)	111 (4.37)		180 (7.09)	186 (7.32)	186 (7.32)	118 (4.65)	118 (4.65)	41 (1.61)			31 (1.22)
1 1/2"	125 (4.92)	119 (4.69)		200 (7.87)			123 (4.84)	123 (4.84)	48 (1.89)			38 (1.50)
2"	153 (6.02)	153 (6.02)		230 (9.06)	251 (9.88)	251 (9.88)	140 (5.51)	140 (5.51)	57 (2.24)			50 (1.97)

Weights (approximate) in kg (lbs)

Size	Reduced bore			Full bore	
	Scrd /BW/SW	PN40	ASME 150	Scrd /BW/SW	PN40
1/4"	0.86 (1.90)			0.86 (1.90)	
3/8"	0.84 (1.85)			0.84 (1.85)	
1/2"	0.81 (1.79)	2.35 (5.18)	1.70 (3.75)	1.02 (2.25)	2.59 (5.71)
3/4"	1.02 (2.25)	3.20 (7.05)	2.25 (4.96)	1.56 (3.44)	3.76 (8.29)
1"	1.56 (3.44)	4.30 (9.48)	2.92 (6.44)	2.35 (5.18)	5.02 (11.1)
1 1/4"	2.35 (5.18)	6.40 (14.1)	4.15 (9.15)	3.08 (6.79)	6.92 (15.3)
1 1/2"	3.08 (6.79)	7.20 (15.9)	6.40 (14.1)	4.41 (9.72)	9.09 (20.0)
2"	4.41 (9.72)	10.72 (23.6)	8.35 (18.4)	9.05 (20.0)	13.96 (30.8)
2 1/2"	8.17 (18.0)				

Kv 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

Cv (UK) = Kv x 0.963

Cv (US) = Kv x 1.156

Operating torque (N m)

Size		1/4"	2"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"
Reduced bore	Nm (lbf ft)	3.25 (2)	3.25 (2)	3.25 (2)	5.50 (4)	13.25 (10)	20 (15)	50 (37)	60 (44)	75 (55)
Full bore	Nm (lbf ft)	3.25 (2)	3.25 (2)	5.50 (4)	13.25 (10)	20 (15)	50 (37)	60 (44)	75 (55)	

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 ½" screwed BSP M10HTi2FB 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, 16, 18, 21, 23

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" M10HTi2FB ISO ball valve.

