



TI-P133-67  
CMGT Issue 5

M10HTi ISO Tobacco

Ball Valve

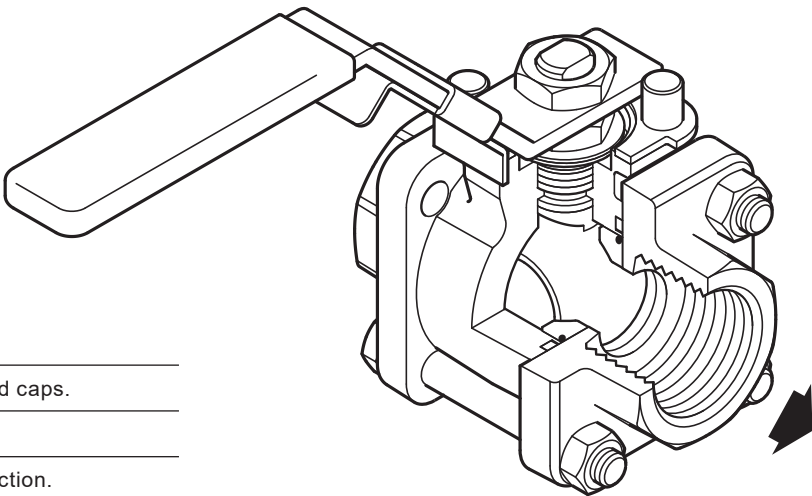
DN1¼" to DN2½"

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  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

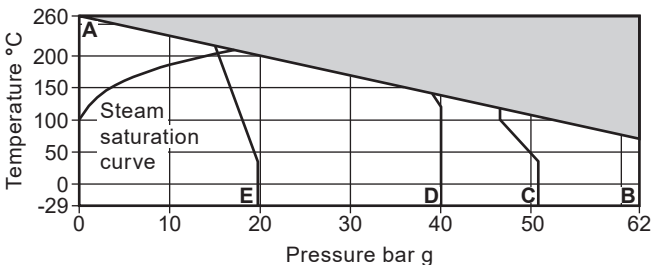
Flow characteristic	Modified linear
Port	Full and reduced bore versions
Leakage test procedure to ISO 5208 (Rate A)/EN 12266-1 (Rate A)	

Pipeline ancillaries  
Ball valves

Sizes and pipe connections

<b>Full bore</b> ¼", ⅜", ½", ¾", 1", 1¼", 1½" and 2" <b>Screwed</b> BSP, BSPT, NPT, BW, SW	<b>Flanged</b> DN15 to DN50 ASME Class 150, 300 and EN 1092 PN40
<b>Reduced bore</b> ¼", ⅜", ½", ¾", 1", 1¼", 1½", 2" and 2½" <b>Screwed</b> BSP, BSPT, NPT, BW, SW	<b>Flanged</b> DN15 to DN65 ASME Class 150, 300 and EN 1092 PN40

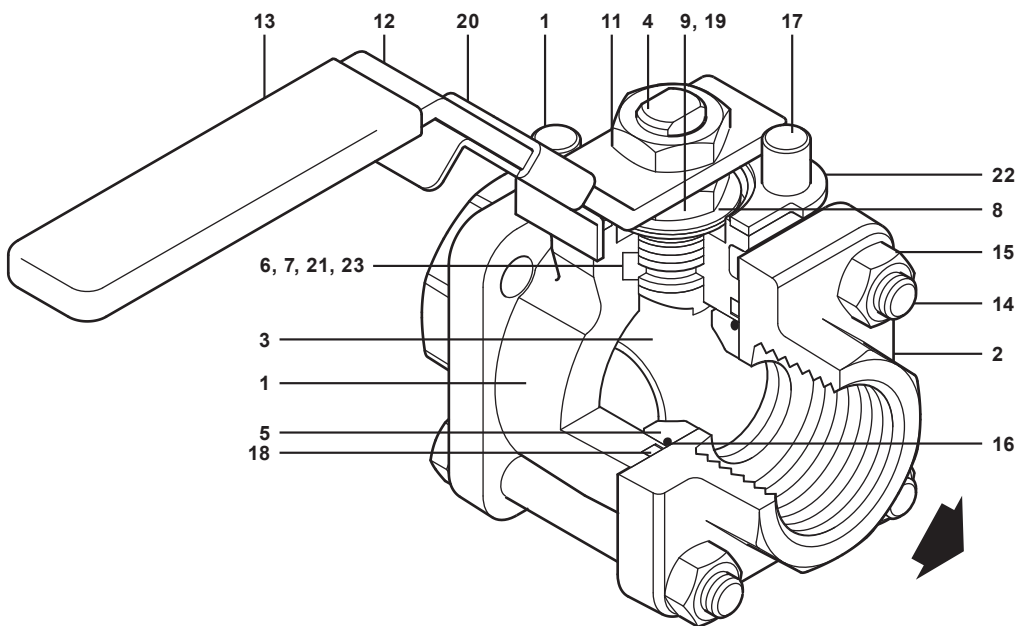
Pressure/temperature limits



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.

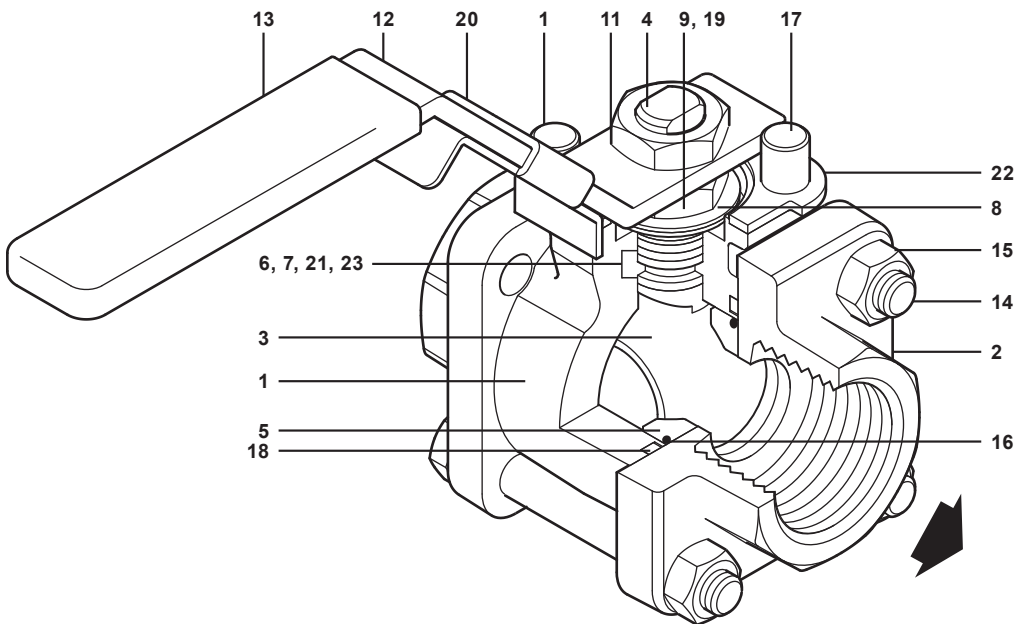
Body design conditions	PN63
PMA Maximum allowable pressure	62 bar g @ 60 °C
TMA Maximum allowable temperature	260 °C @ 0 bar g
Minimum allowable temperature	-29 °C
PMO Maximum operating pressure for saturated steam service	17.5 bar g
TMO Maximum operating temperature	260 °C @ 0 bar g
Minimum operating 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:	93 bar 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

For parts 13 to 23 see page 4



Materials (continued)

13	Grip		Vinyl yellow
14	Studs	M10HTi2 ISO	Zinc plated carbon steel
		M10HTi3 ISO	A193 B7
		M10HTi4 ISO	Stainless steel
15	Nuts	M10HTi2 ISO	Zinc plated carbon steel
		M10HTi3 ISO	A194 2H
		M10HTi4 ISO	Stainless steel
16	Seat 'O' ring		Geothermal
17	Stop screw	M10HTi2 ISO	Zinc plated carbon steel
		M10HTi3 ISO	SAE 12L 14
		M10HTi4 ISO	Stainless steel
18	Body/cap 'O' ring		Geothermal
19	Nut locker		Stainless steel
20	Lockable handle		Stainless steel
21	Stem seal		Graphite
22	Lock-plate		Stainless steel
23	Stem seal		Stainless steel

For parts 1 to 12 see page 3

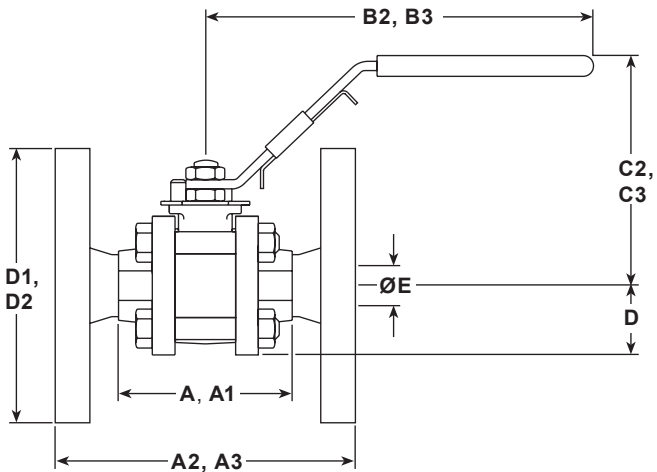
Dimensions (approximate) in mm

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



- 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

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Pipeline ancillaries  
Ball valves

Weights (approximate) in kg

Size	Reduced bore			Full bore	
	Scrd/BW/SW	PN40	ASME 150	Scrd/BW/SW	PN40
¼"	0.86	-	-	0.86	-
⅜"	0.84	-	-	0.84	-
½"	0.81	2.35	1.70	1.02	2.59
¾"	1.02	3.20	2.25	1.56	3.76
1"	1.56	4.30	2.92	2.35	5.02
1¼"	2.35	6.40	4.15	3.08	6.92
1½"	3.08	7.20	6.40	4.41	9.09
2"	4.41	10.72	8.35	9.05	13.96
2½"	8.17	-	-	-	-

K<sub>v</sub> values

Size	¼"	⅜"	½"	¾"	1"	1¼"	1½"	2"	2½"
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<sub>v</sub> (UK) = K<sub>v</sub> x 0.963  
C<sub>v</sub> (US) = K<sub>v</sub> x 1.156

Operating torque (N m)

Size	¼"	⅜"	½"	¾"	1"	1¼"	1½"	2"	2½"
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 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
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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, seals, body/cap 'O' ring and seat 'O' ring set for a Spirax Sarco 1/2" M10HTi2FB ISO ball valve.

