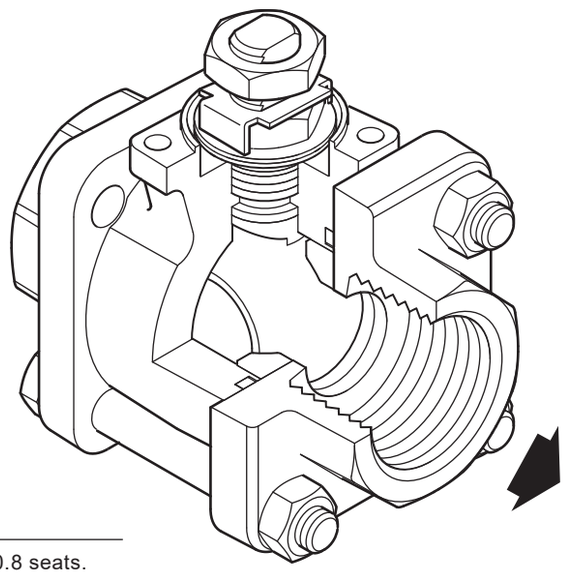
TI-P133-59
CMGT Issue 6

M10Si ISO Automation Ball Valve DN¼" to DN2½"

Description

The M10Si ISO Automation three-piece body ball valve has ISO mounting as standard. It is designed for use as an automated isolating valve, not a control valve, on applications that use steam and other industrial fluids for services ranging from vacuum to the higher temperatures and pressures.

The M10Si ISO Automation ball valve is specifically designed for pneumatic or electric actuation and not manual operation and can be serviced without removing the valve from the pipeline (screwed and welded versions only).



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

M10Si2_ _ ISO Automation	Zinc plated carbon steel body, PDR 0.8 seats.
M10Si3_ _ ISO Automation	Stainless steel body, PDR 0.8 seats.
M10Si4_ _ ISO Automation	Complete stainless steel, PDR 0.8 seats.

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 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.

Sizes and pipe connections

¼", ⅜", ½", ¾", 1", 1¼", 1½", 2", (2½" only available with reduced bore) screwed BSP, BSPT, NPT, BW, SW full bore and reduced bore.
DN15 to DN50 (DN65 only available with reduced bore) flanged EN 1092 PN40, ASME 150 and ASME 300 full bore and reduced bore.

Options

- Self-venting ball.
- Extended stems 50 mm (2") and 100 mm (4") to allow full insulation.
- Oval handle for confined spaces. Ideal for trap modules.

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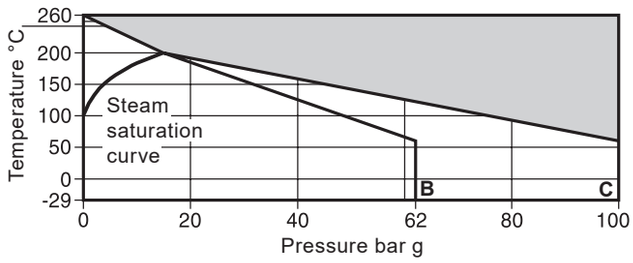
Pressure/temperature limits



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

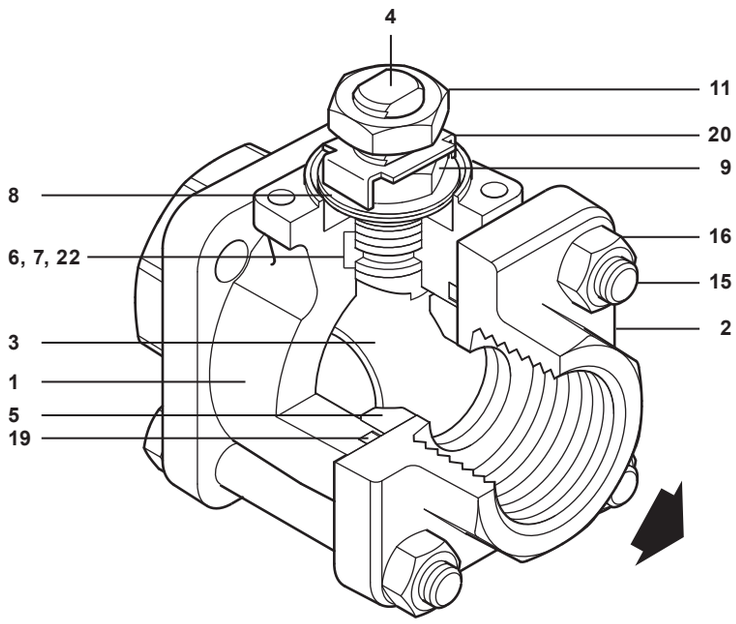
A - B 2" FB and 2½" RB only

A - C ¼" - 1½" FB, RB and 2" RB

Note: The flange standard may restrict the maximum operating pressure. Please check with Spirax Sarco.

Body design conditions		PN100
PMA	Maximum allowable pressure	100 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
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		150 bar g

Materials



No.	Part		Material	
1	Body	**M10Si2 ISO Automation**	Zinc plated carbon steel	ASTM A105
		M10Si3 ISO Automation **M10Si4 ISO Automation**	Stainless steel	ASTM A 182 F 316L
2	Cap	**M10Si2 ISO Automation**	Zinc plated carbon steel	ASTM A105
		M10Si3 ISO Automation **M10Si4 ISO Automation**	Stainless steel	ASTM A 182 F 316L
3	Ball		Stainless steel	AISI 316
4	Stem		Stainless steel	AISI 316
5	Seat		Carbon/graphite reinforced PTFE	PDR 0.8
6	Stem seal		Reinforced PTFE antistatic	
7	Separator	**M10Si2 ISO Automation** **M10Si3 ISO Automation**	Zinc plated carbon steel	SAE 1010
		M10Si4 ISO Automation	Stainless steel	AISI 316
8	Belleville washer		Stainless steel	AISI 301
9	Nut	**M10Si2 ISO Automation** **M10Si3 ISO Automation**	Zinc plated carbon steel	SAE 1010
		M10Si4 ISO Automation	Stainless steel	AISI 304
10	Name-plate - DN (Not shown)		Stainless steel	AISI 430
11	Stem nut	**M10Si2 ISO Automation** **M10Si3 ISO Automation**	Zinc plated carbon steel	SAE 1010
		M10Si4 ISO Automation	Stainless steel	AISI 304

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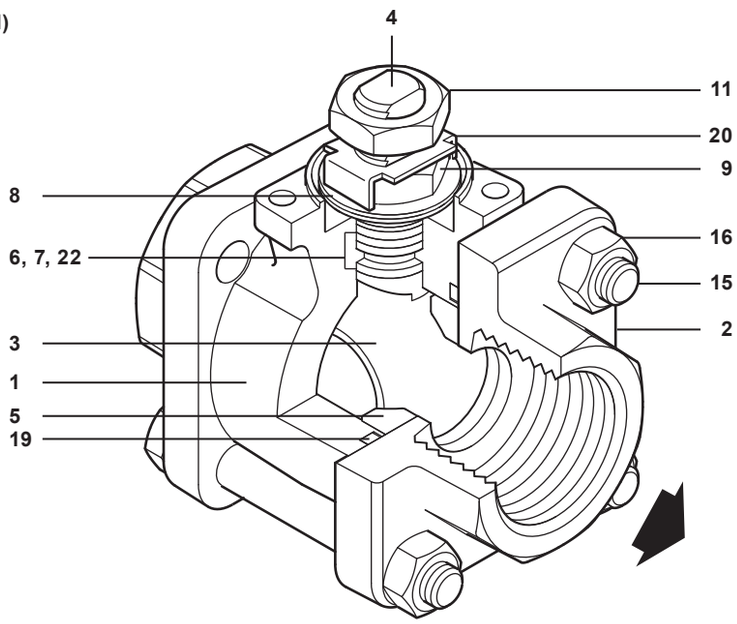
Materials continued on next page

Materials (continued)



No.	Part		Material	
13	Name-plate (Not shown)		Stainless steel	AISI 430
15	Bolts	**M10Si2 ISO Automation** **M10Si3 ISO Automation**	Zinc plated carbon steel	Grade 5
		M10Si4 ISO Automation	Stainless steel	AISI 304
16	Nuts	**M10Si2 ISO Automation** **M10Si3 ISO Automation**	Zinc plated carbon steel	SAE 1010
		M10Si4 ISO Automation	Stainless steel	AISI 304
17	Studs	**M10Si4 ISO Automation**	Stainless steel	AISI 316
	Note: Item **17** can not be shown as it is only applicable to welded versions			
19	Body/cap gasket - 'O' ring		EPDM geothermal	
20	Nut locker		Stainless steel	AIS 316
22	Stem seal		PEEK	

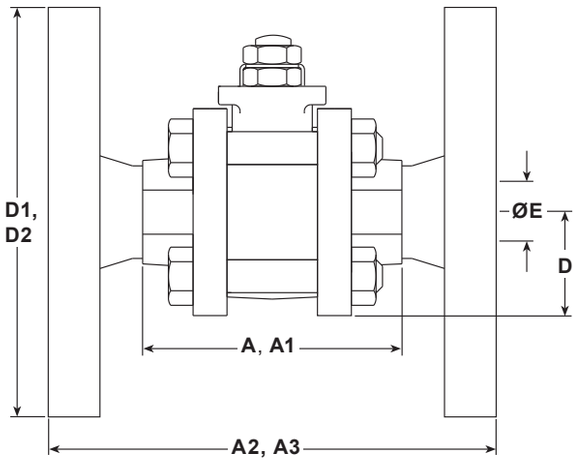
Dimensions (approximate) in mm

Reduced bore

Size	A	A1	A2	A3	D	D1	D2	E
¼"	56	52	-	-	22	-	-	8
⅜"	56	52	-	-	22	-	-	8
½"	63	52	108	130	24	89	95	11
¾"	68	60	117	150	26	98	105	14
1"	86	84	127	160	31	108	115	21
1¼"	99	94	140	180	37	118	140	25
1½"	108	102	165	200	41	127	150	31
2"	124	118	178	230	48	152	165	38
2½"	152	152	-	-	57	-	-	51

Full bore

Size	A	A1	A2	A3	D	D1	D2	E
¼"	56	58	-	-	22	-	-	8
⅜"	63	60	-	-	24	-	-	11
½"	68	64	-	130	26	-	95	14
¾"	86	84	-	150	31	-	105	21
1"	99	98	-	160	37	-	115	25
1¼"	108	106	-	180	41	-	140	31
1½"	124	124	-	200	48	-	150	38
2"	152	152	-	230	57	-	165	51



A: Scrd and BW

A1: SW

A2: Flanged ASME 150

A3: Flanged PN40

D: Scrd, BW, SW

D1: Flanged ASME 150

D2: Flanged PN40

E: All versions

Weights (approximate) in kg

Size	Reduced bore			Full bore	
	Scrd/BW/SW	PN40	ASME 150	Scrd/BW/SW	PN40
¼"	0.65	-	-	0.65	-
⅜"	0.65	-	-	0.72	-
½"	0.72	2.30	1.77	0.95	2.60
¾"	0.95	3.20	2.35	1.60	3.80
1"	1.60	4.20	3.47	2.05	4.70
1¼"	2.05	5.70	4.47	2.75	6.40
1½"	2.75	6.80	5.96	4.25	8.30
2"	4.25	9.50	9.16	7.50	12.80
2½"	7.50	-	-	-	-

K_v values

Size	¼"	⅜"	½"	¾"	1"	1¼"	1½"	2"	2½"
Reduced bore	2.5	6.8	6	10	27	49	70	103	168
Full bore	2.5	6.8	17	36	58	89	153	205	-

For conversion:
C_v (UK) = K_v x 0.963
C_v (US) = K_v x 1.156

Pipeline ancillaries
Ball valves

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 ½" screwed BSP M10Si2FB ISO Automation 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 spare	
Seat, seals and body gasket set	**5, 6, 19, 22**

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 ½" M10Si2FB ISO Automation ball valve.