



Cert. No. LRQ 0963008

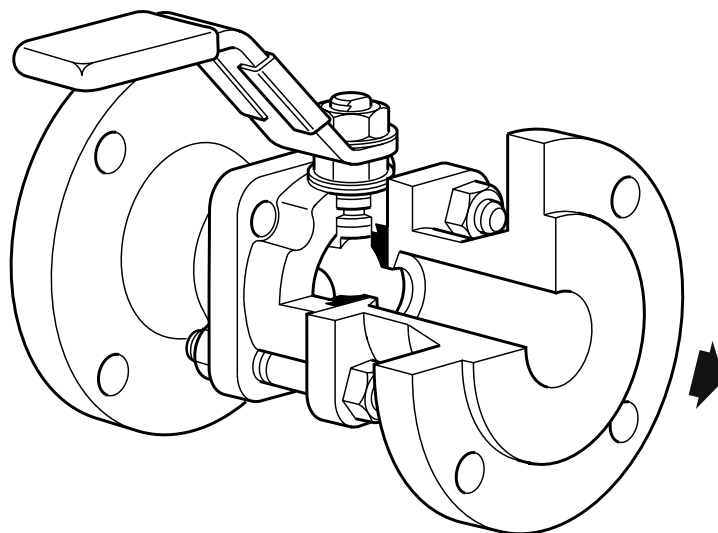
ISO 9001

# spirax/sarco

## M10S

### Ball Valve

### DN1¼" to DN2½"

**TI-P133-06**  
 ST Issue 17


#### Description

The M10S three-piece body ball valve has been designed for use as an isolating valve, not a control valve, and can be serviced without removal from the pipeline (screwed and welded versions only). It can be used with the majority of industrial fluids for services ranging from vacuum to the higher temperatures and pressures.

#### Available types

**M10S2**\_ \_ Zinc plated carbon steel body, PDR 0.8 seats.

**M10S3**\_ \_ Stainless steel body, PDR 0.8 seats.

**M10S4**\_ \_ 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 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.

#### Sizes and pipe connections

##### Full bore

¼", ⅜", ½", ¾", 1", 1¼", 1½" and 2"

##### Screwed and welded

BSP, BSPT, API/NPT, BW, SW

##### Flanged

DN15 to DN50

ASME (ANSI) Class 150, ASME (ANSI) Class 300, and EN 1092 PN40.

##### Reduced bore

¼", ⅜", ½", ¾", 1", 1¼", 1½", 2" and 2½"

##### Screwed and welded

BSP, BSPT, API/NPT, BW, SW

##### Flanged

DN15 to DN65

ASME (ANSI) Class 150, ASME (ANSI) Class 300, and EN 1092 PN40.

#### Technical data

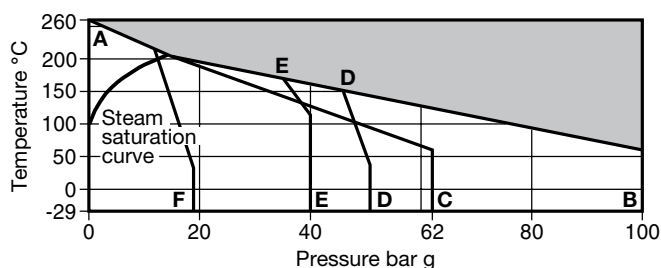
Flow characteristic Modified linear

Port Full and reduced port versions

Leakage test procedure to ISO 5208 (Rate A) / EN 12266-1 (Rate A)

Antistatic device Complies with ISO 7121 and BS 5351

#### Pressure/temperature limits



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

**A - B** Screwed, SW and BW ¼" - 1½" FB, RB and 2" RB.

**A - C** Screwed, SW and BW 2" FB and 2½" RB only.

**A - D** Flanged ASME (ANSI) 300.

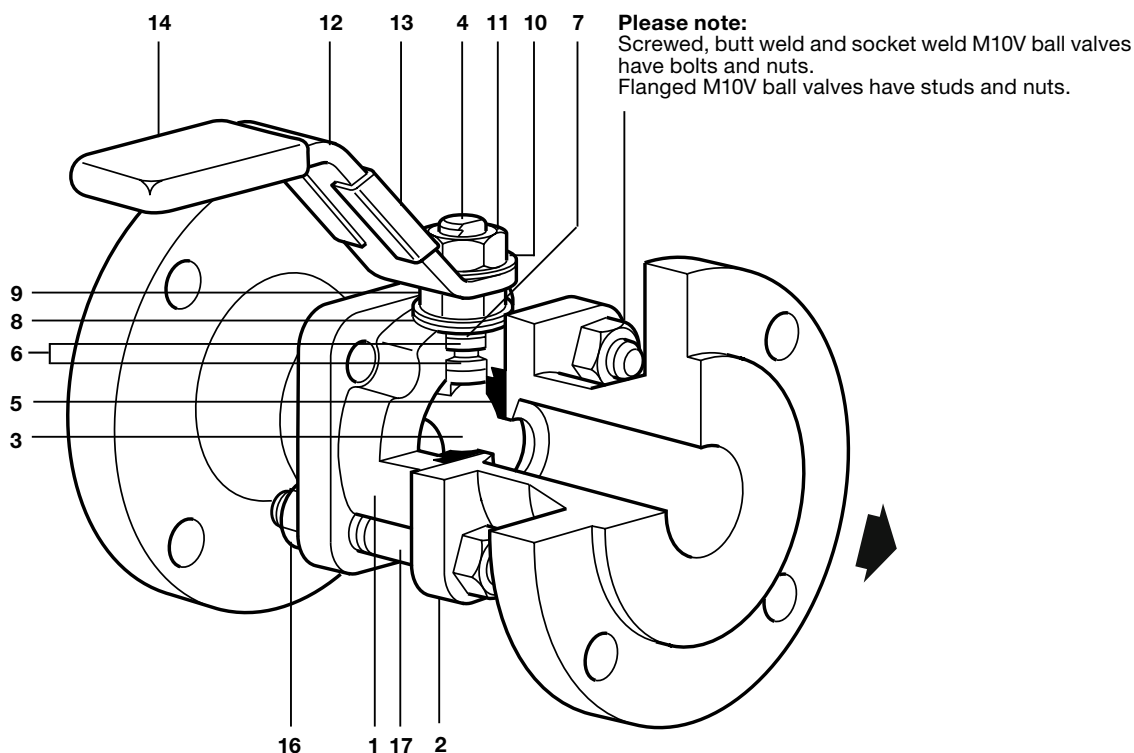
**A - E** Flanged EN 1092 PN40.

**A - F** Flanged ASME (ANSI) 150.

**Note 1:** On the 2" FB and 2½" RB a PTFE gasket is fitted between the body and cap.

**Note 2:** 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
<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 150 bar g		



## Materials

No. Part		Material	
1 Body	M10S2	Zinc plated carbon steel	ASTM A105
	M10S3	Stainless steel	ASTM A 182 F 316L
	M10S4		
2 Cap	M10S2	Zinc plated carbon steel	ASTM A105
	M10S3	Stainless steel	ASTM A 182 F 316L
	M10S4		
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	M10S2	Zinc plated carbon steel	SAE 1010
	M10S3		
	M10S4	Stainless steel	AISI 316
8 Spring washers		Stainless steel	AISI 301
9 Nut	M10S2	Zinc plated carbon steel	SAE 12L14
	M10S3		
	M10S4	Stainless steel	AISI 304
10 Name-plate (DN)		Stainless steel	AISI 430
11 Stem nut	M10S2	Zinc plated carbon steel	SAE 12L14
	M10S3		
	M10S4	Stainless steel	AISI 304
12 Lever	M10S2	Zinc plated carbon steel	SAE 1010
	M10S3		
	M10S4	Stainless steel	AISI 316
13 Name-plate		Stainless steel	AISI 430
14 Grip		Vinyl	
* 15 Bolts	M10S2	Zinc plated carbon steel	A 193 B7
	M10S3		
	M10S4	Stainless steel	AISI 304
16 Nuts	M10S2	Zinc plated carbon steel	SAE 1010
	M10S3		
	M10S4	Stainless steel	AISI 304
17 Studs	M10S2	Zinc plated carbon steel	Grade 5
	M10S3		
	M10S4	Stainless steel	AISI 304

\*Note: Item 15 not shown - Screwed, butt weld and socket weld versions only.

**Dimensions (approximate) in mm****Reduced bore**

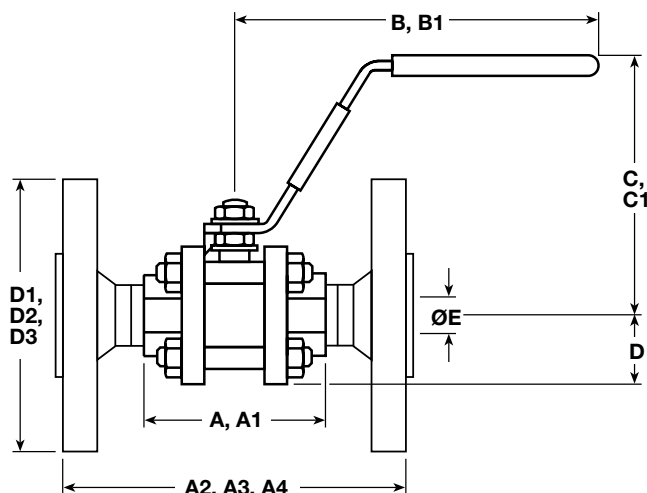
Size	A	A1	A2	A3	A4	B	B1	C	C1	D	D1	D2	D3	E
¼"	63	60	-	-	-	120	-	61	-	24	-	-	-	11
⅜"	63	63	-	-	-	120	-	61	-	24	-	-	-	11
½"	63	51	108	130	140	120	120	61	87	24	89	95	95	11
¾"	68	59	117	150	152	120	120	63	89	26	98	105	117	14
1"	86	84	127	160	165	157	157	91	91	31	108	115	124	21
1¼"	97	93	140	180	178	157	157	95	95	37	118	140	133	25
1½"	106	102	165	200	190	180	180	109	109	41	127	150	156	31
2"	124	118	178	230	216	180	180	115	115	48	152	165	165	38
2½"	152	152	191	-	241	245	-	132	132	57	-	-	190	51

**Full bore**

Size	A	A1	A2	A3	A4	B	B1	C	C1	D	D1	D2	D3	E
¼"	63	60	-	-	-	120	-	61	-	24	-	-	-	11
⅜"	63	63	-	-	-	120	-	61	-	24	-	-	-	11
½"	68	68	-	130	140	120	120	63	89	26	-	95	95	14
¾"	86	86	-	150	152	157	157	91	91	31	-	105	117	21
1"	97	97	-	160	165	157	157	95	95	37	-	115	124	25
1¼"	106	106	-	180	178	180	180	109	109	41	-	140	133	31
1½"	124	124	-	200	190	180	180	115	115	48	-	150	156	38
2"	152	152	-	230	216	245	245	132	132	57	-	165	165	51

**Weights (approximate) in kg**

Size	Scrd / BW / SW	Reduced bore			Scrd / BW / SW	Full bore	
		PN40	ASME 150	ASME 300		PN40	ASME 300
¼"	0.61	-	-	-	0.61	-	-
⅜"	0.61	-	-	-	0.61	-	-
½"	0.61	2.2	1.65	2.2	0.70	2.3	2.5
¾"	0.70	2.9	2.20	2.9	1.27	3.5	4.2
1"	1.27	3.9	3.38	4.5	1.77	4.4	5.1
1¼"	1.77	5.4	4.44	7.0	2.50	6.2	7.5
1½"	2.50	6.5	5.84	8.36	3.50	7.5	10.0
2"	3.50	8.8	8.99	11.2	6.90	12.2	13.4
2½"	6.90	-	-	17.5	-	-	-



- A** : Screwed and Butt weld  
**A1** : Socket weld  
**A2** : Flanged ASME (ANSI) 150  
**A3** : Flanged PN40  
**A4** : Flanged ASME (ANSI) 300  
**B** : Screwed, Butt weld and Socket weld  
**B1** : Flanged ASME (ANSI) 150, PN40  
**C** : Screwed, Butt weld and Socket weld  
**C1** : Flanged ASME (ANSI) 150, Flanged PN40  
**D** : Screwed, Butt weld and Socket weld  
**D1** : Flanged ASME (ANSI) 150  
**D2** : Flanged PN40  
**D3** : Flanged ASME (ANSI) 300

**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	3	6.8	6	10	27	49	70	103	168
Full bore	3	6.8	17	36	58	89	153	205	-

For conversion:  $C_v \text{ (UK)} = K_v \times 0.963$        $C_v \text{ (US)} = K_v \times 1.156$

**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	2	2	2	3.5	13	21	30	40	45
Full bore	2	2	3.5	13	21	30	40	45	-

The indicated torque values are for valves frequently operated, that are submitted to a maximum differential pressure of 100 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 M10S2FB ball valve.

**Optional extras:**

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

**Spare parts**

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

**Available spares**

Seat and stem seal set	<b>5, 6</b>
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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 and stem seal set for a 1/2" M10S2FB ball valve.

