



Cert. No. LRQ 0963008

ISO 9001

# spirax/sarco

**TI-P133-02**  
 ST Issue 12

## M20S and M20H

### Ball Valves DN25 to DN150

### ANSI Class 150, ANSI Class 300 and PN40

#### Description

M20 is a reduced bore ball valve, with a single piece body. It has been designed for use as an isolating valve, not a control valve which can be used with the majority of industrial fluids. The M20 is antistatic and firesafe as standard.

#### Available types

<b>M20S2</b>	Zinc plated carbon steel body and PDR 0.8 seats.
<b>M20S3</b>	Stainless steel body and PDR 0.8 seats.
<b>M20H2</b>	Zinc plated carbon steel body and PEEK seats.
<b>M20H3</b>	Stainless steel body and PEEK seats.

#### 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.

#### Options

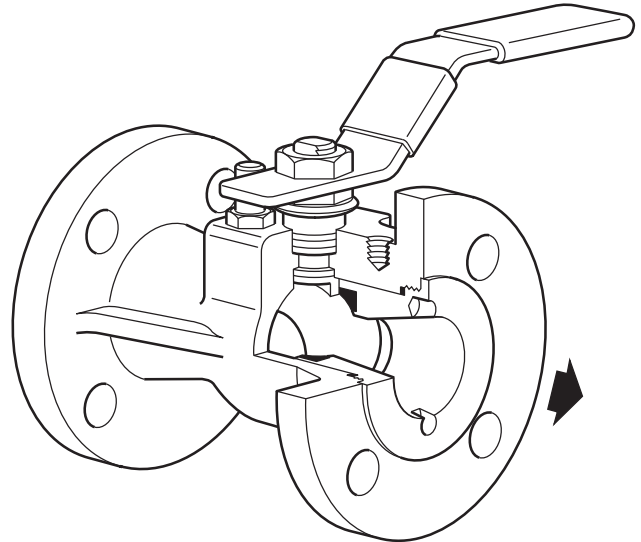
- Self-venting ball.
- Extended stems 50 mm (2") and 100 mm (4") to allow full insulation.
- PTFE seats for M20 PN40 valves.

#### Sizes and pipe connections

DN25, DN32, DN40, DN50, DN65, DN80, DN100 and DN150.  
 Standard flange EN 1092 PN40, ANSI Class 150 and ANSI Class 300.  
**Note:** The M20S3 and M20H3 are only available with PN40 flanges.

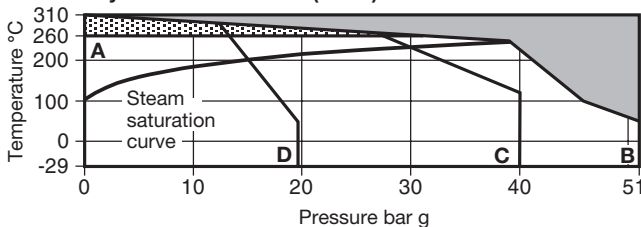
#### Technical data

Flow characteristic	Modified linear
Port	Reduced bore
Leakage test procedure to ISO 5208 (Rate A) / EN 12266-1 (Rate A)	
Antistatic (optional over DN50) complies with ISO 7121 and BS 5351	
Firesafe	Designed to API 6FA-1985

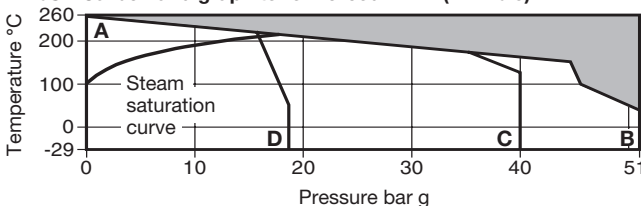


#### Pressure/temperature limits

##### M20H - Poly Ether Ether Ketone (PEEK)



##### M20S - Carbon and graphite reinforced PTFE (PDR 0.8)

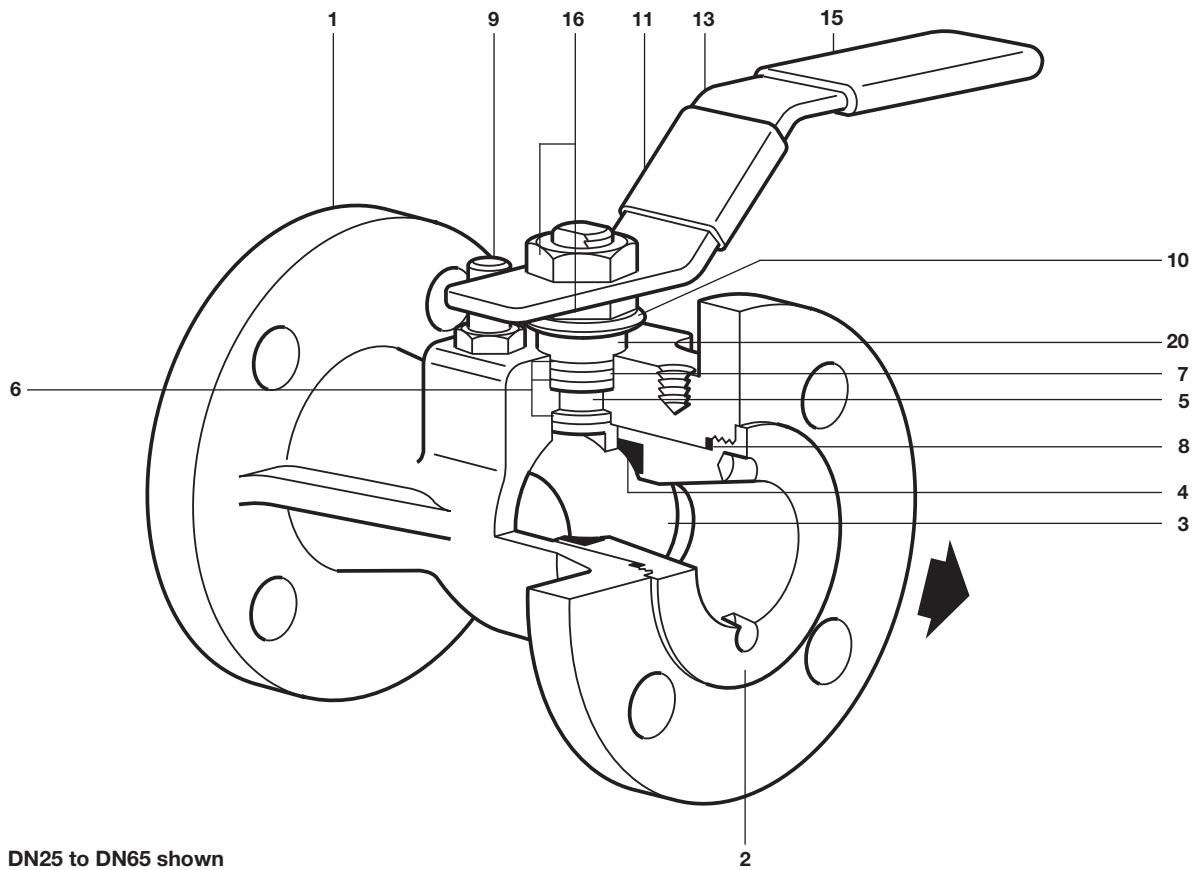


The product **must not** be used in this region.

The product must only be used in this area for short time periods.

**A - B** Flanged ANSI 300      **A - C** Flanged EN 1092 PN40  
**A - D** Flanged ANSI 150

Body design conditions		ANSI 300
PMA	Maximum allowable pressure	51 bar g @ 45°C
TMA	Maximum allowable temperature	M20S 260°C @ 0 bar g
		M20H 310°C @ 0 bar g
Minimum allowable temperature		-29°C
PMO	Maximum operating pressure for saturated steam service	M20S 17.5 bar g
		M20H 39 bar g
TMO	Maximum operating temperature	M20S 260°C @ 0 bar g
		M20H *310°C @ 0 bar g
*310°C for short periods only. For continuous operation, the maximum operating temperature is 260°C		
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:		Carbon steel body 78 bar g
		Stainless steel body 75 bar g



DN25 to DN65 shown

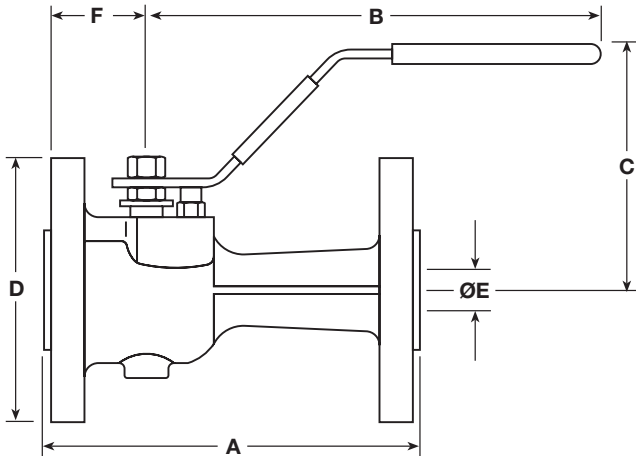
**Materials**

No.	Part	Material	
1	Body	<b>M20_2</b>	Zinc plated carbon steel ASTM A216 WCB
		<b>M20_3</b>	Stainless steel ASTM A351 CF8M
2	Insert	<b>M20_2</b>	Zinc plated carbon steel SAE 1040
		<b>M20_3</b>	Stainless steel AISI 316
3	Ball	<b>M20S</b>	Stainless steel AISI 316
		<b>M20H</b>	Stainless steel AISI 316 + Ion nitriding treatment
4	Seat	<b>M20S</b>	R-PTFE (carbon and graphite) PDR 0.8
		<b>M20H</b>	Poly Ether Ether Ketone PEEK
5	Stem	Stainless steel	AISI 316
6	Stem seals	<b>M20S</b>	Antistatic PTFE
		<b>M20H</b>	Poly Ether Ether Ketone PEEK
7	Stem seal	Graphite	
8	Insert 'O' ring	<b>M20S only</b>	Viton
9	Stop screw	Zinc plated carbon steel	SAE 12L14
10	Belleville washer	Stainless steel	AISI 301
11	Name-plate	Stainless steel	AISI 430
12	Cap screw	Zinc plated carbon steel	Grade 5
13	Lever	Zinc plated carbon steel	SAE 1010
14	Pipe handle	Zinc plated carbon steel	
15	Grip	Vinyl	
16	Gland nuts	Zinc plated carbon steel	SAE 12L14
17	Stem adaptor	Zinc plated cast iron	
18	Support washer	Zinc plated carbon steel	
19	Stop plate	Zinc plated carbon steel	Grade 5
20	Separator	Zinc plated carbon steel	

**Dimensions / weights (approximate) in mm and kg**

**Flanged EN 1092 PN40**

Size	A	B	C	D	E	F	Weight
DN25	165	205	106	115	21	50	5.0
DN32	178	205	109	140	23	52	6.4
DN40	190	213	126	150	30	64	8.8
DN50	216	213	134	165	37	70	11.0
DN65	241	258	146	185	51	74	17.0
DN80	283	410	168	200	63	94	25.0
DN100	305	510	180	235	76	100	30.0
DN150	403	700	246	300	111	137	63.0



**Flanged ANSI 150**

Size	A	B	C	D	E	F	Weight
DN25	127	205	106	108	21	50	3.3
DN32	140	205	111	117	23	52	4.0
DN40	165	213	126	127	30	63	5.8
DN50	178	213	134	152	37	69	8.6
DN65	191	258	146	178	51	72	13.2
DN80	203	410	168	190	63	92	18.7
DN100	229	510	180	229	76	98	27.8
DN150	267	700	246	279	111	137	44.0

**Flanged ANSI 300**

Size	A	B	C	D	E	F	Weight
DN25	165	205	106	124	21	50	5.0
DN32	178	205	110	133	23	52	6.0
DN40	190	213	126	156	30	63	8.8
DN50	216	213	134	165	37	69	11.0
DN65	241	258	146	190	51	72	17.0
DN80	283	410	168	210	63	92	25.0
DN100	305	510	180	254	76	98	40.0
DN150	403	700	246	318	111	137	63.0

**K<sub>v</sub> values**

DN	25	32	40	50	65	80	100	150
K <sub>v</sub>	30	40	81	103	205	300	598	940

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)**

**Note:** These torque values apply to the M20S valve only. For the M20H torques, please contact Spirax Sarco.

DN	25	32	40	50	65	80	100	150
N m	18	18	25	30	55	85	105	600

The torque figures shown are for a valve at maximum operating pressure that is operated frequently. 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**

Specify:	Size	Seats	Material
		S = PDR 0.8	
		H = PEEK	
		2 = Carbon steel	
		3 = Stainless steel	

**Example:** 1 off Spirax Sarco DN50, M20S3 ball valve having flanged EN 1092 PN40 connections.

**Spare parts**

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

**Available spare**

Seat, stem seals and gasket set	<b>4, 6, 7, 8</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, stem seals and gasket set for a Spirax Sarco DN50 M20S3 ball valve.

