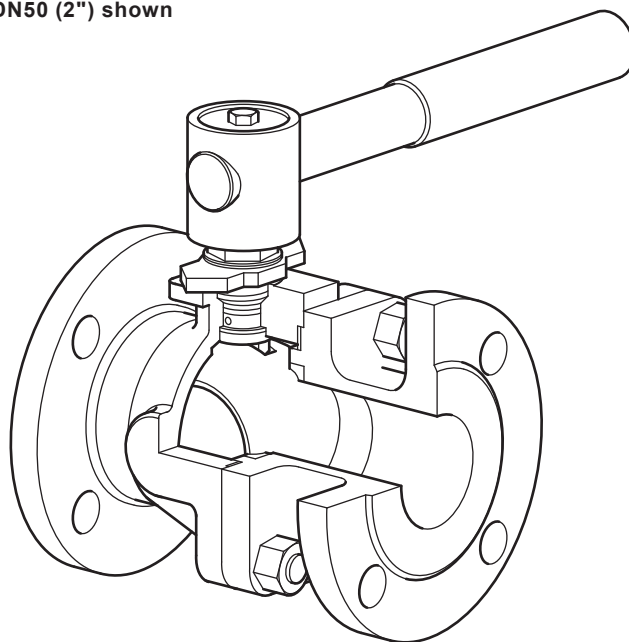




M33S ISO

Full Bore Ball Valve API 6D DN50 (2") to DN200 (8") Flanged ASME 150 and ASME 300

DN50 (2") shown




Description

Produced in accordance with API 6D the M33S ISO full bore two-piece body ball valve with floating ball, has been designed for use as an isolating valve, not a control valve. It can be used with the majority of industrial fluids on applications, which include steam, condensate, water, oil, and other fluids within its operating range. It is not recommended for gases applications. The M33S ISO ANSI has as standard an ISO mounting pad in accordance with ISO 5211.

Available types

M33S2 ISO	Zinc plated carbon steel body, PDR 0.8 seats (for high temperatures) and ISO mounting.
M33S3 ISO	Stainless steel body, PDR 0.8 seats (for high temperatures) and ISO mounting.

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

- Hollow ball for DN150 and DN200 sizes - Not API 6D rated.
- Self-venting ball.
- Ring joint flanges.
- Extended stems to allow full insulation.
- Operation by pneumatic actuator BVA300 series for all sizes.
- Operation by pneumatic actuator BVA300 series and declutchable gearbox.
- Operation by gearbox
- Lockable handle.
- Relief valve.
- Drain plug.

Sizes and pipe connections

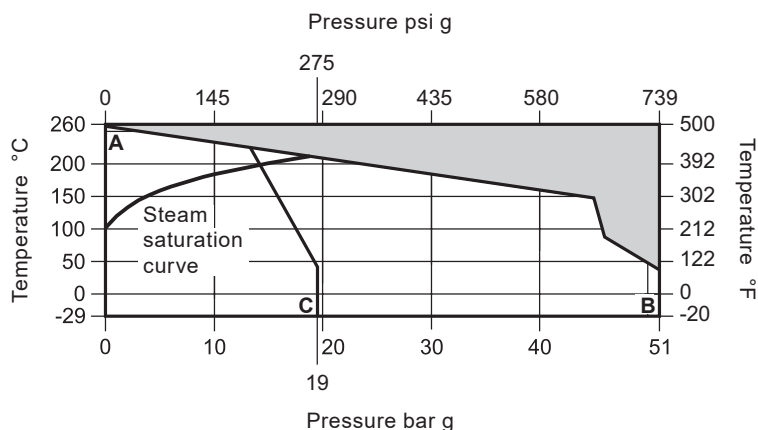
DN50, DN65, DN80, DN100, DN150, DN200 (2", 2½", 3", 4", 6" and 8").

Standard flange ASME B 16.5 Class 150 and 300 with face-to-face dimensions according to ASME B 16.10.

Technical data

Flow characteristic	Modified linear
Port	Full bore
Leakage test procedure to ISO 5208 (Rate A)/EN 12266-1 (Rate A) and BS 5351	
Antistatic device	Complies with ISO 7121 and BS 5351

Pressure/temperature limits



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

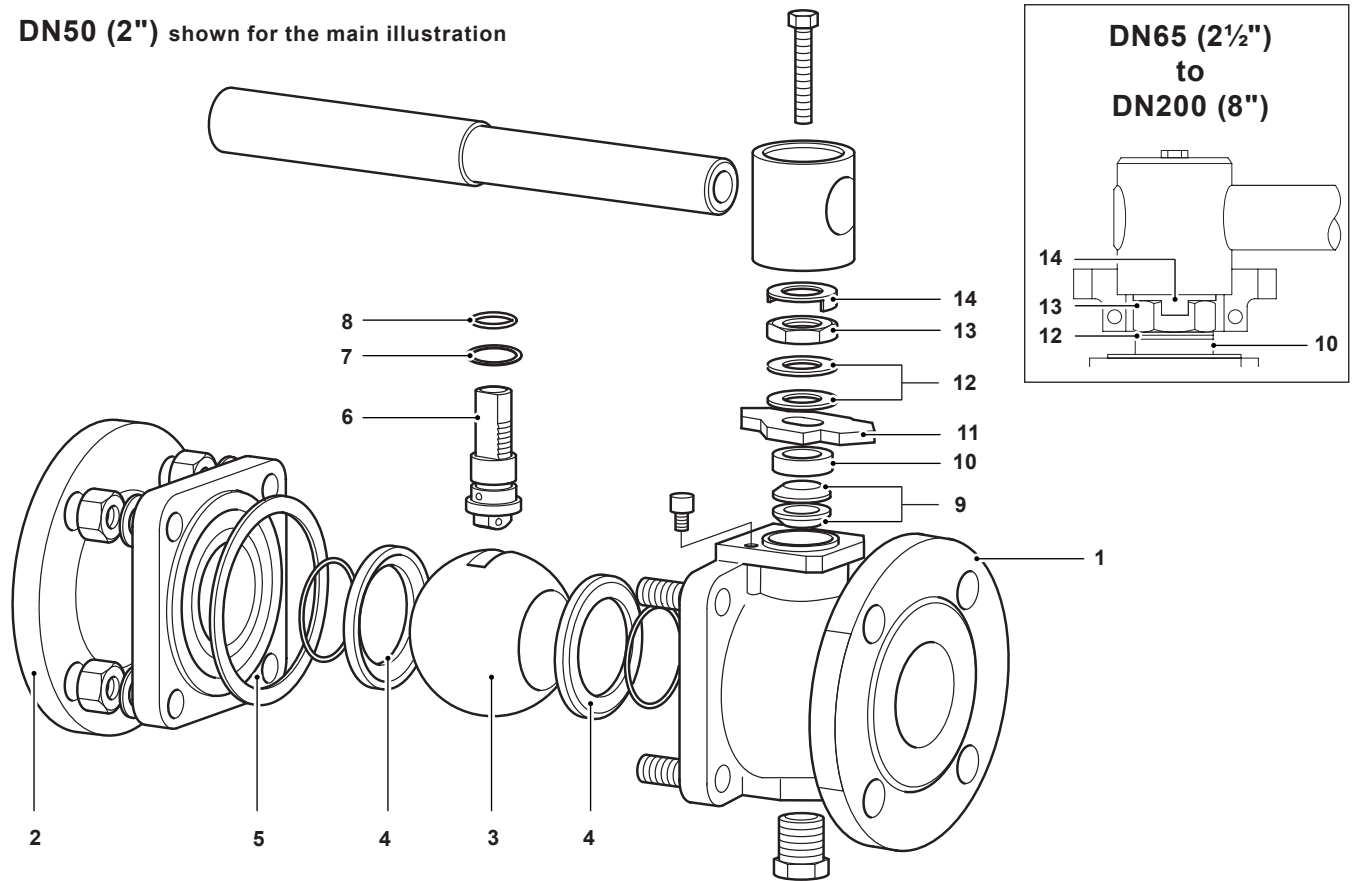
A - B Flanged ANSI 300.

A - C Flanged ANSI 150.

Body design conditions			ANSI B 16.34	
PMA	Maximum allowable pressure	ANSI 150	19 bar g @ 38 °C	276 psi g @ 100 °F
		ANSI 300	51 bar g @ 38 °C	739 psi g @ 100 °F
TMA	Maximum allowable temperature		260 °C @ 0 bar g	500 °F @ 0 psi g
Minimum allowable temperature			-29 °C	-20 °F
PMO	Maximum operating pressure for saturated steam service		17.5 bar g	253 psi g
TMO	Maximum operating temperature		260 °C @ 0 bar g	500 °F @ 0 psi g
Minimum operating temperature			-29 °C	-20 °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:		ASME 150	28.5 bar g	413 psi g
		ASME 300	76.5 bar g	1109 psi g

Materials

DN50 (2") shown for the main illustration

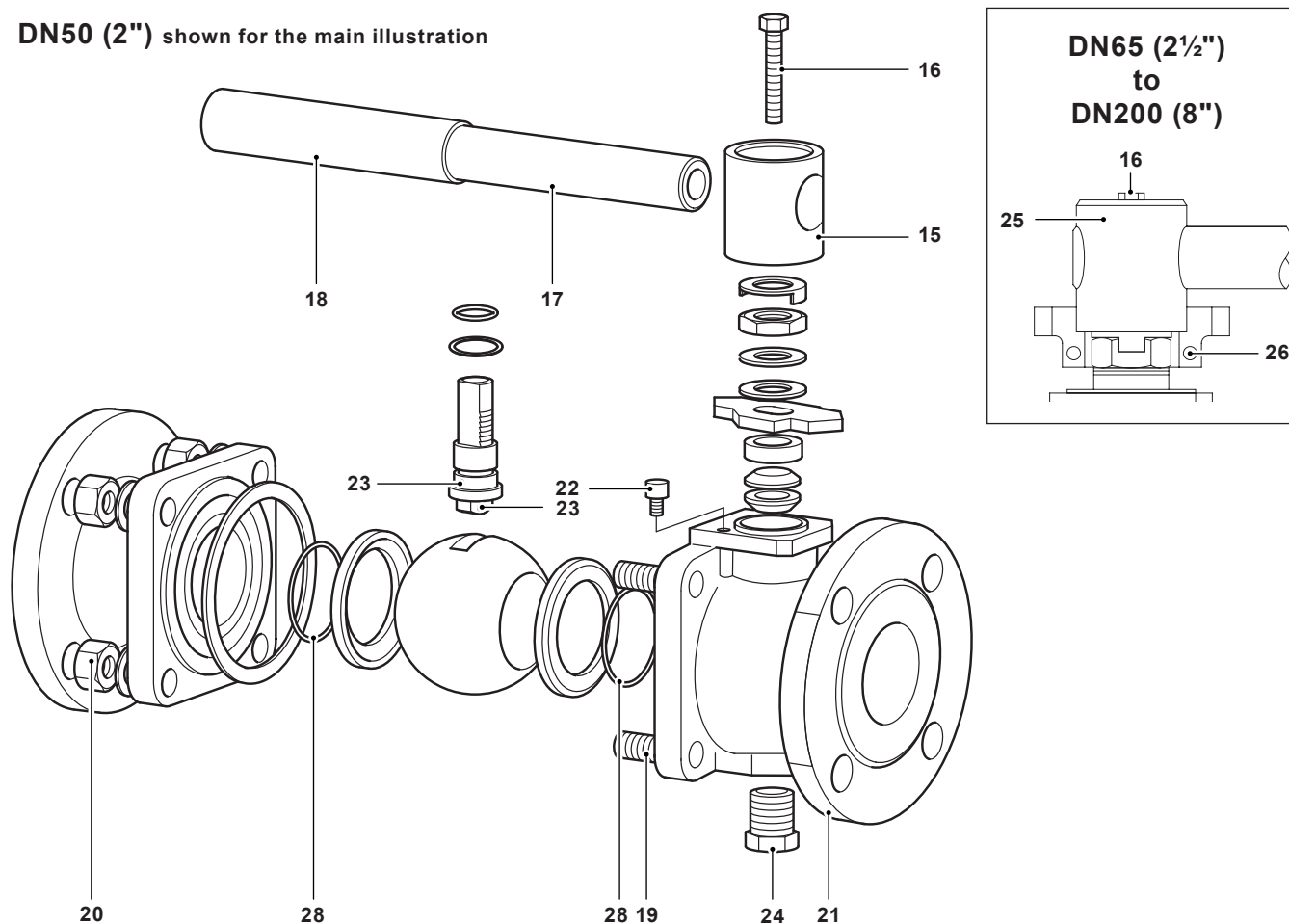


No.	Part	Material		
1	Body	M33S2 ISO	Zinc plated carbon steel	ASTM A 216 WCB
		M33S3 ISO	Stainless steel	ASTM A 351 CF8M
2	Insert	M33S2 ISO	Zinc plated carbon steel	ASTM A 21 6 WCB
		M33S3 ISO	Stainless steel	ASTM A 351 CF8M
3	Solid ball		Stainless steel	AISI 316
4	Seats		Carbon and graphite R-PTFE	PDR 0.8
5	Body gasket		Graphoil with metal insert	
6	Stem		Stainless steel	AISI 316/AISI 420
7	Lower stem seal		Carbon and graphite R-PTFE	
8	'O' ring		Viton	
9	Upper stem packing		PTFE	
10	Separator		Zinc plated carbon steel	SAE 1010
11	Stop plate with indicator for DN50		Zinc plated carbon steel	SAE 1010
12	Belleville stem washer		Carbon steel/stainless steel	
13	Gland nut		Carbon steel	SAE 12L14
14	Locking plate		Stainless steel	AISI 304

Materials continued on page 4

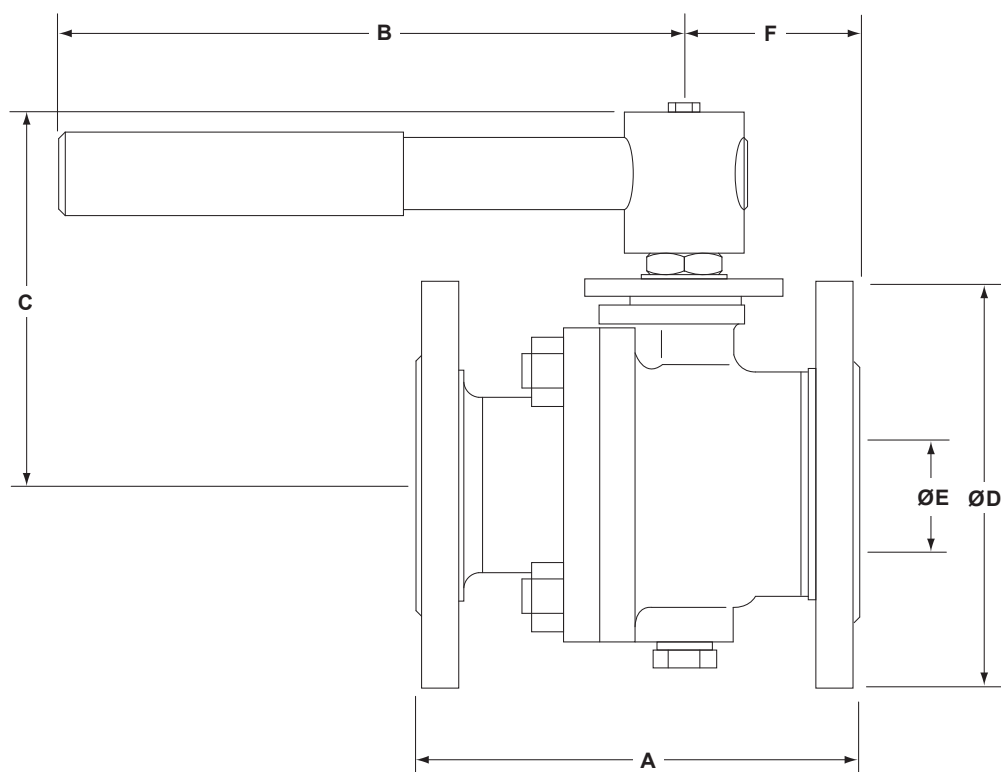
Materials (continued from page 3)

DN50 (2") shown for the main illustration



No.	Part	Material
15	Adaptor DN50	Zinc plated SG iron
16	Screw	Carbon steel
17	Handle	Zinc plated carbon steel
18	Grip	Vinyl
19	Stud	Zinc plated alloy
20	Nut	Zinc plated carbon steel
21	Nameplate	Stainless steel
22	Stop screw	Zinc plated carbon steel
23	Antistatic device ball	Stainless steel
24	Plug	M33S2 ISO
		M33S3 ISO
25	Adaptor with indicator for DN65 to DN200	Zinc plated SG iron
26	Stop screw for DN65 to DN200	Carbon steel
27	Lifting eye (DN200 only) - not shown	Zinc plated carbon steel
28	'O' ring	EPDM

Dimensions/weights (approximate) in mm (inches) and kg (lbs)



Flanged ANSI 150

Size	A	B	C	D	E	F	Weight
DN50 (2")	178 (7.0)	275 (10.8)	140 (5.5)	152 (6.0)	50 (2.0)	70 (2.8)	10.8 (24)
DN65 (2½")	190 (7.5)	415 (16.3)	160 (6.3)	178 (7.0)	63 (2.5)	82.5 (3.2)	16.2 (36)
DN80 (3")	203 (8.0)	515 (20.3)	168 (6.6)	191 (7.5)	74 (2.9)	87 (3.4)	20.0 (44)
DN100 (4")	229 (9.0)	700 (27.5)	202 (8.0)	229 (9.0)	100 (3.9)	106 (4.2)	35.3 (78)
DN150 (6")	394 (15.5)	850 (33.5)	283 (11.1)	279 (10.9)	150 (5.9)	197 (7.8)	80.2 (177)
DN200 (8")	457 (18.0)	950 (37.4)	317 (12.5)	343 (13.5)	201 (7.9)	228 (9.0)	140.0 (309)

Flanged ANSI 300

Size	A	B	C	D	E	F	Weight
DN50 (2")	216 (8.5)	275 (10.8)	140 (5.5)	165 (6.5)	50 (2.0)	85.5 (3.4)	14.8 (33)
DN65 (2½")	241 (9.5)	415 (16.3)	160 (6.3)	191 (7.5)	63 (2.5)	90.5 (3.6)	22.8 (50)
DN80 (3")	283 (11.1)	515 (20.3)	168 (6.6)	210 (8.3)	74 (2.9)	99 (3.9)	30.0 (66)
DN100 (4")	305 (12.0)	700 (27.5)	202 (8.0)	254 (10.0)	100 (3.9)	122 (4.8)	50.0 (110)
DN150 (6")	403 (15.8)	850 (33.5)	283 (11.1)	318 (12.5)	150 (5.9)	179 (7.0)	111.2 (245)
DN200 (8")	502 (19.7)	950 (37.4)	317 (12.5)	381 (15.0)	201 (7.9)	213 (8.4)	185.3 (409)

Kv values

DN	50	65	80	100	150	200
Kv	300	430	750	1030	2410	4800

For conversion:

$C_v \text{ (UK)} = K_v \times 0.963$

$C_v \text{ (US)} = K_v \times 1.156$

Operating torque

DN	50 (2")	65 (2½")	80 (3")	100 (4")	150 (5")	200 (6")
N m	75	120	190	250	720	1150
ft lbf	55	89	140	184	531	848

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.

Welding: Only the models that have connections designed for welding (SW, BW, Imperial Tube connections) should be welded. Carbon steel valves with flanged connections must not be welded to avoid damages to the valve and/or injury to personnel.

How to order

Specify:	Size	DN50, DN65, DN80, DN100, DN150, DN200 (2", 2½", 3", 4", 6" and 8").
	Model	M33S_ISO
	Body material	2 = Carbon steel 3 = Stainless steel
	Flanges	ANSI 150 or ANSI 300

Example: 1 off Spirax Sarco DN50 flanged ANSI 150 M33S2 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

Seats, body gasket, stem seals, stem 'O' ring and seat 'O' ring set

4, 5, 7, 8, 9, 28

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 - Seats, body gasket, stems seals and stem 'O' ring set for a Spirax Sarco DN80 flanged ANSI M33S2 ISO ball valve

