

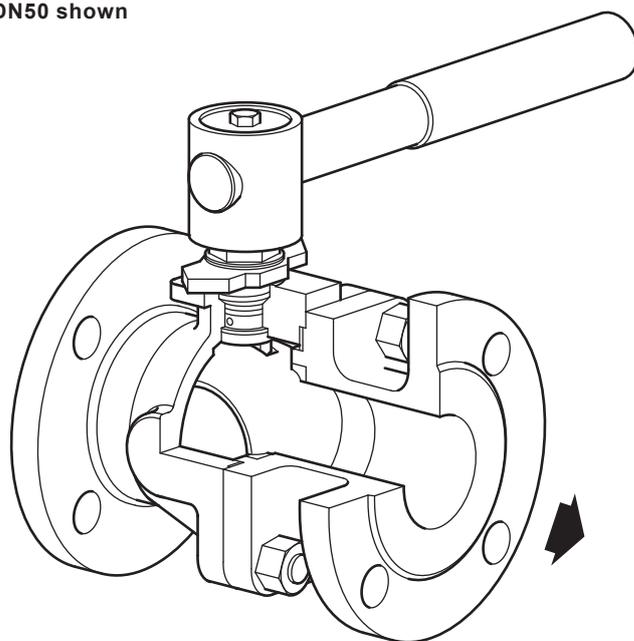


M33S ISO

Full Bore Ball Valve API 6D

DN50 to DN200 Flanged ASME 150 and ASME 300

DN50 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 **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

- 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

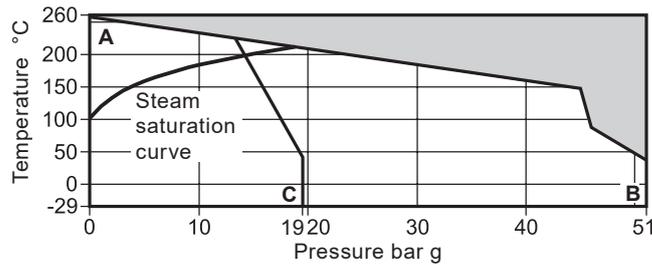
DN50, DN65, DN80, DN100, DN150 and DN200.

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.

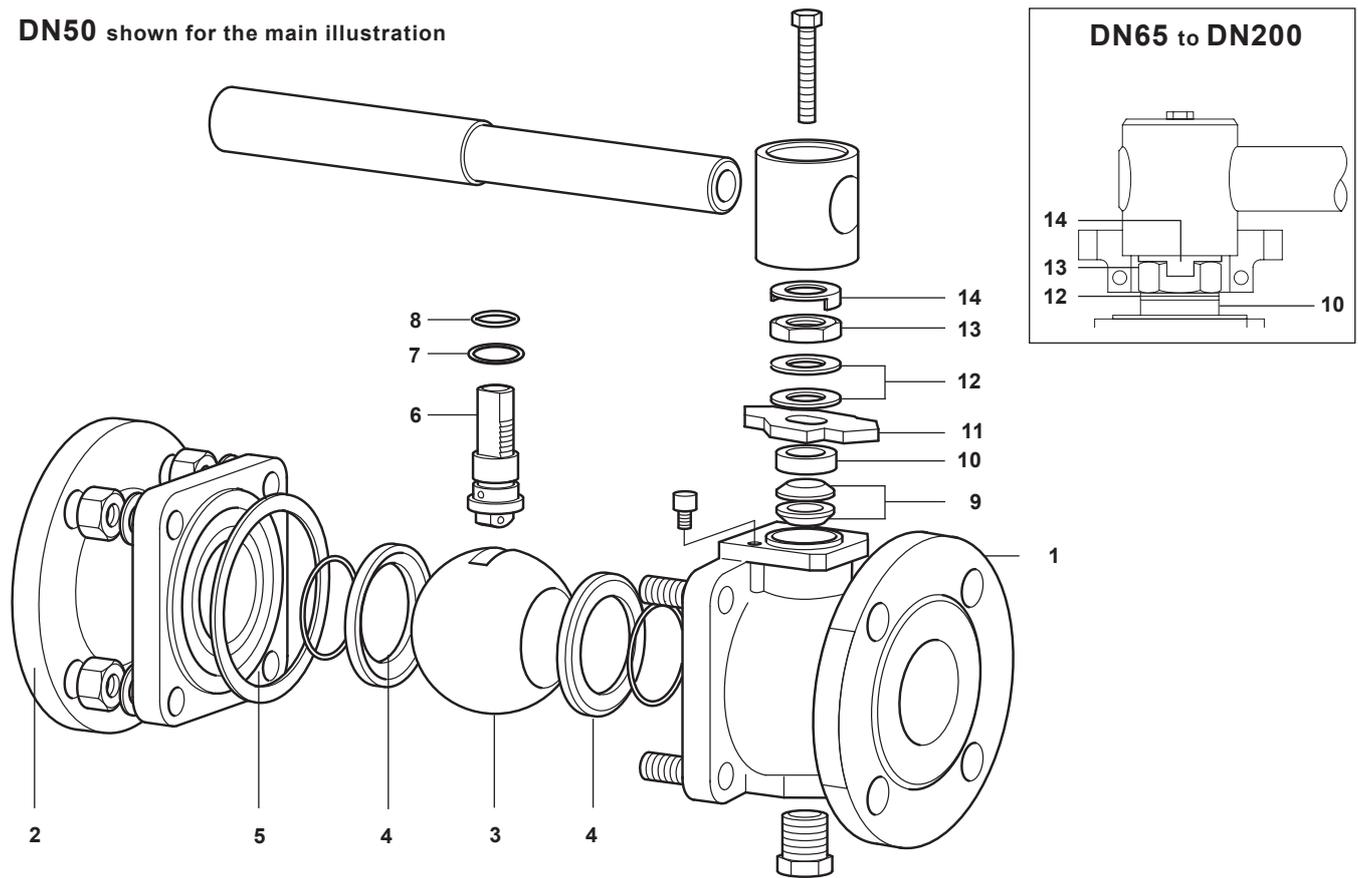
A - B Flanged ANSI 300.

A - C Flanged ANSI 150.

Body design conditions	ANSI B 16.34	
PMA Maximum allowable pressure	ANSI 150	19 bar g @ 38 °C
	ANSI 300	51 bar g @ 38 °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:	ASME 150	28.5 bar g
	ASME 300	76.5 bar g

Materials

DN50 shown for the main illustration

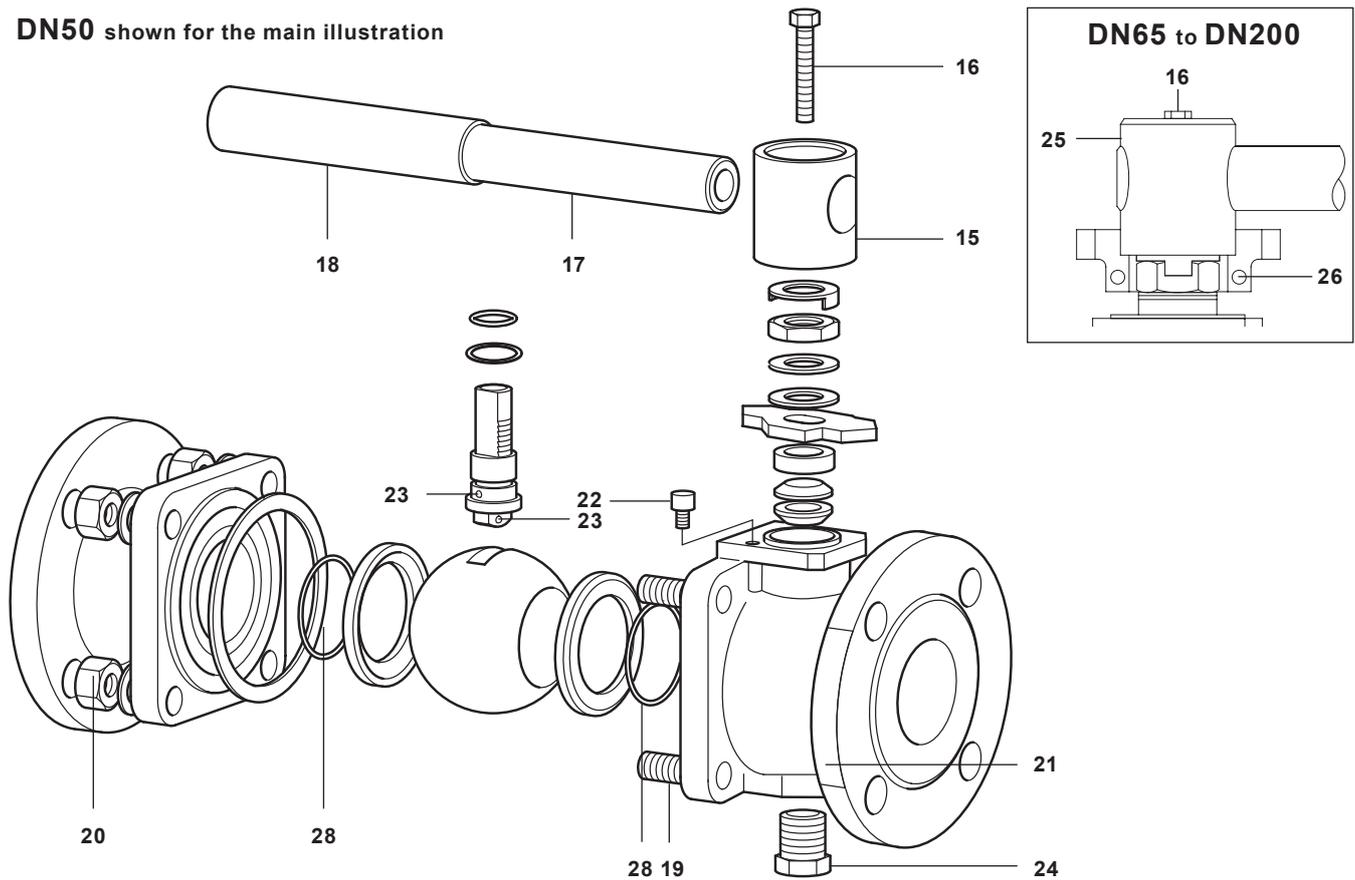


No.	Part		Material	
1	Body	M33S2 ISO	Zinc plated carbon steel	ASTM A 216 WCB
		M33S3 ISO	Stainless steel	ASTM A 351 CF8M
2	Insert	M33S2 ISO	Zinc plated carbon steel	ASTM A 21 6 WCB
		M33S3 ISO	Stainless steel	ASTM A 351 CF8M
3	Solid ball		Stainless steel	AISI 316
4	Seats		Carbon and graphite R-PTFE	PDR 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 shown for the main illustration



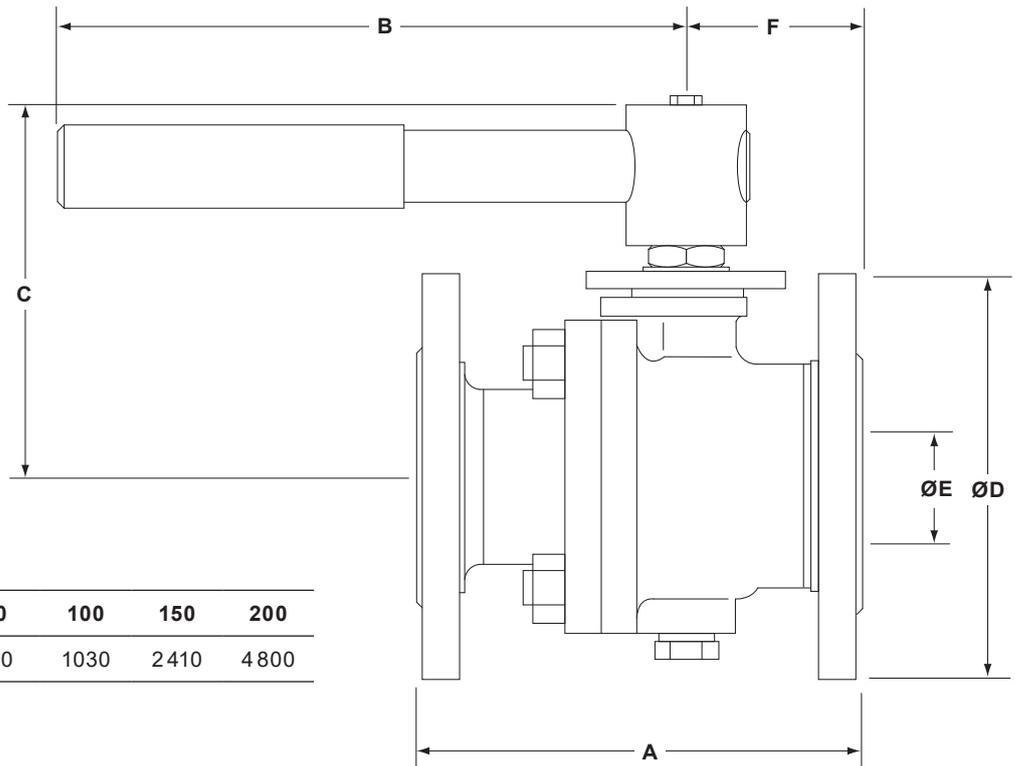
No.	Part	Material	
15	Adaptor DN50	Zinc plated SG iron	
16	Screw	Carbon steel	Grade 5
17	Handle	Zinc plated carbon steel	SAE 1010
18	Grip	Vinyl	Blue
19	Stud	Zinc plated alloy	A193-B7
20	Nut	Zinc plated carbon steel	A194-2H
21	Nameplate	Stainless steel	AISI 430
22	Stop screw	Zinc plated carbon steel	SAE 12L14
23	Antistatic device ball	Stainless steel	AISI 302
24	Plug	M33S2 ISO	Carbon steel
		M33S3 ISO	Stainless steel
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	SAE 1010
28	'O' ring	EPDM	

Dimensions/weights (approximate) in mm and kg
Flanged ANSI 150

Size	A	B	C	D	E	F	Weight
DN50	178	275	140	152	50	70	10.8
DN65	190	415	160	178	63	82.5	16.2
DN80	203	515	168	191	74	87	20.0
DN100	229	700	202	229	100	106	35.3
DN150	394	850	283	279	150	197	80.2
DN200	457	950	317	343	201	228	140.0

Flanged ANSI 300

Size	A	B	C	D	E	F	Weight
DN50	216	275	140	165	50	85.5	14.8
DN65	241	415	160	191	63	90.5	22.8
DN80	283	515	168	210	74	99	30.0
DN100	305	700	202	254	100	122	50.0
DN150	403	850	283	318	150	179	111.2
DN200	502	950	317	381	201	213	185.3



K_v values

DN	50	65	80	100	150	200
K _v	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 (N m)

DN	50	65	80	100	150	200
N m	75	120	190	250	720	1150

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

	Size	DN50, DN65, DN80, DN100, DN150, DN200
	Model	M33S_ISO
Specify:	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

