



TI-P133-62
CMGT Issue 6

M33V ISO

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

Description


Produced in accordance with API 6D the M33V 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 M33V ISO ANSI has as standard an ISO mounting pad in accordance with ISO 5211.

Available types

M33V2 ISO	Zinc plated carbon steel body, PTFE seats and ISO mounting.
M33V3 ISO	Stainless steel body, PTFE seats 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.

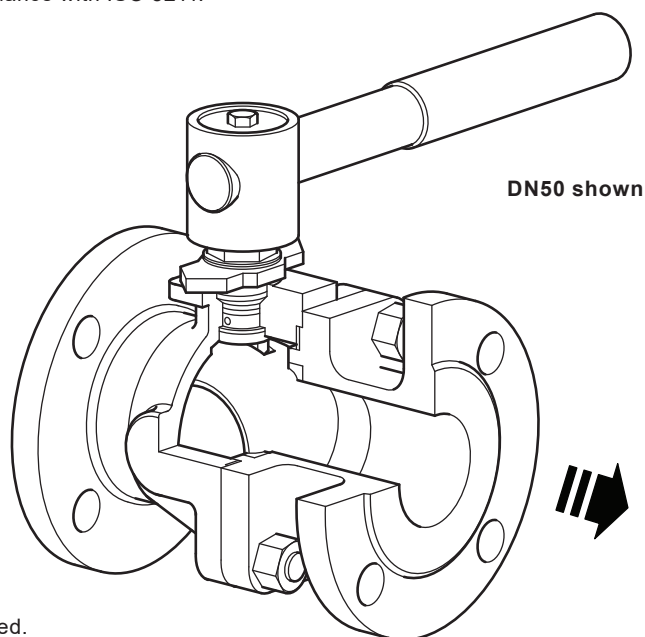
Options

- Hollow ball for DN150 (6") and DN200 (8") sizes - Not API 6D rated.
- Self-venting ball.
- Ring joint flanges.
- Extended stems to allow full insulation.
- Operation by mechanical or pneumatic actuator BVA300 series for all sizes.
- Operation by pneumatic actuator BVA300 series and mechanical declutchable actuator.
- Lockable handle.
- Materials according to NACE MR 0175.
- Surge valve.
- Drain plug.

Sizes and pipe connections

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

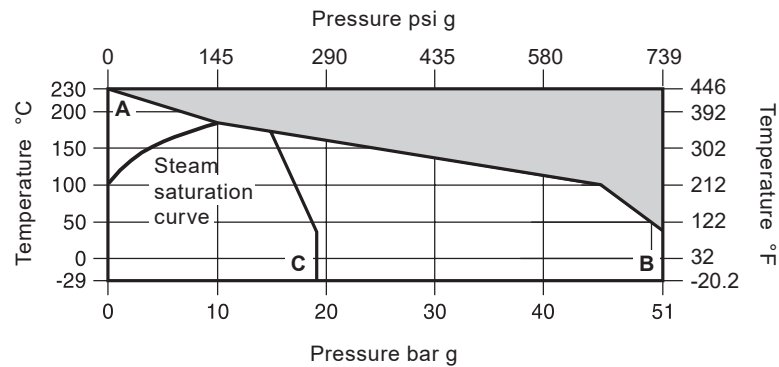
Standard flange ASME (ANSI) B 16.5 Class 150 and 300 with face-to-face dimensions according to B 16.10.



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.

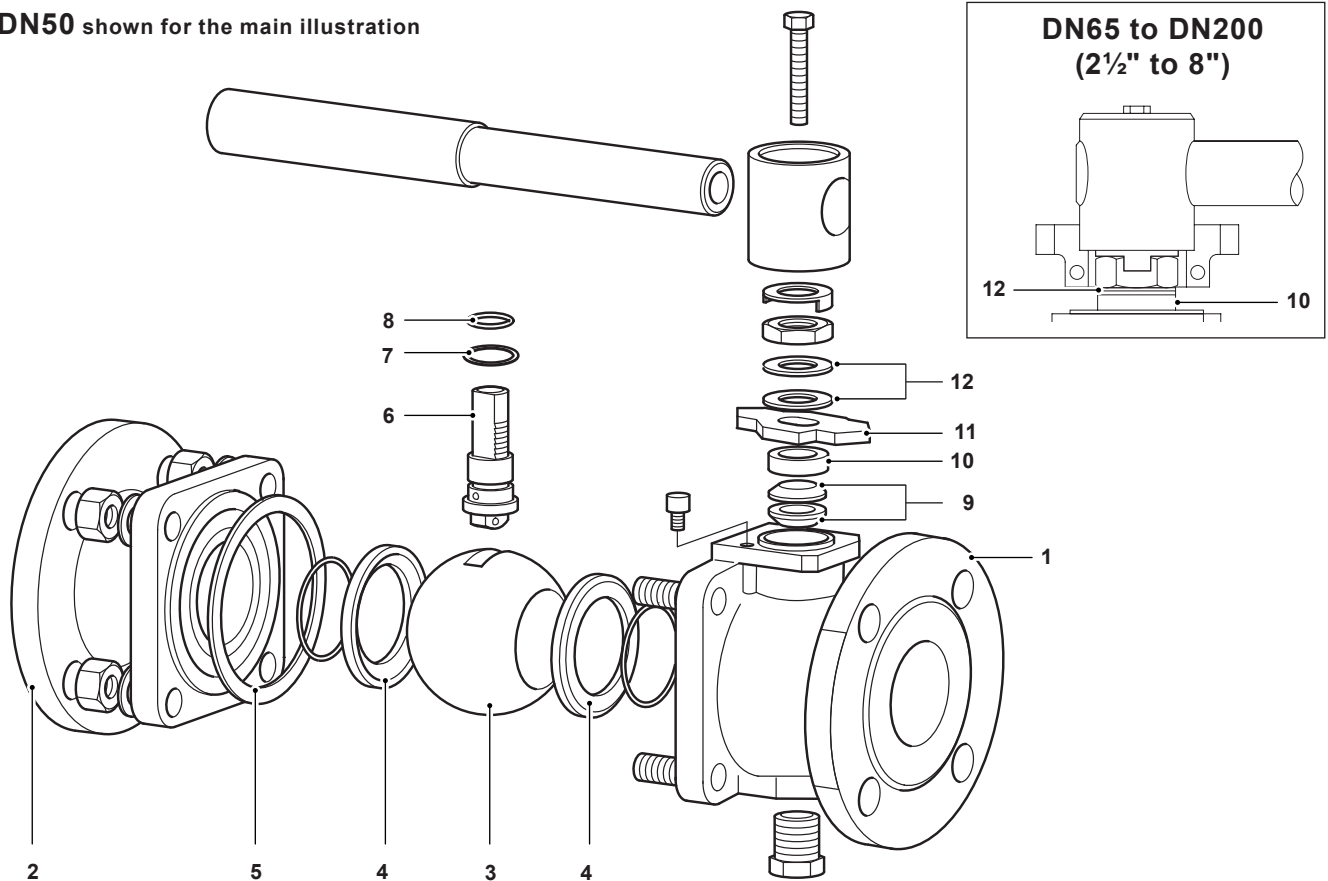
A - B Flanged ASME (ANSI) 300.

A - C Flanged EN 1092 PN40.

Body design conditions			ASME B 16.34
PMA	Maximum allowable pressure	ASME 150	19 bar g @ 38 °C 276 psi g @ 100 °F
		ASME 300	51 bar g @ 38 °C 740 psi g @ 100 °F
TMA	Maximum allowable temperature		230 °C @ 0 bar g 446 °F @ 0 psi g
	Minimum allowable temperature		-29 °C -20.2 °F
PMO	Maximum operating pressure for saturated steam service		10 bar g 145 psi g
TMO	Maximum operating temperature		230 °C @ 0 bar g 446 °F @ 0 psi g
	Minimum operating temperature		-29 °C -20.2 °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 1110 psi g

Materials

DN50 shown for the main illustration

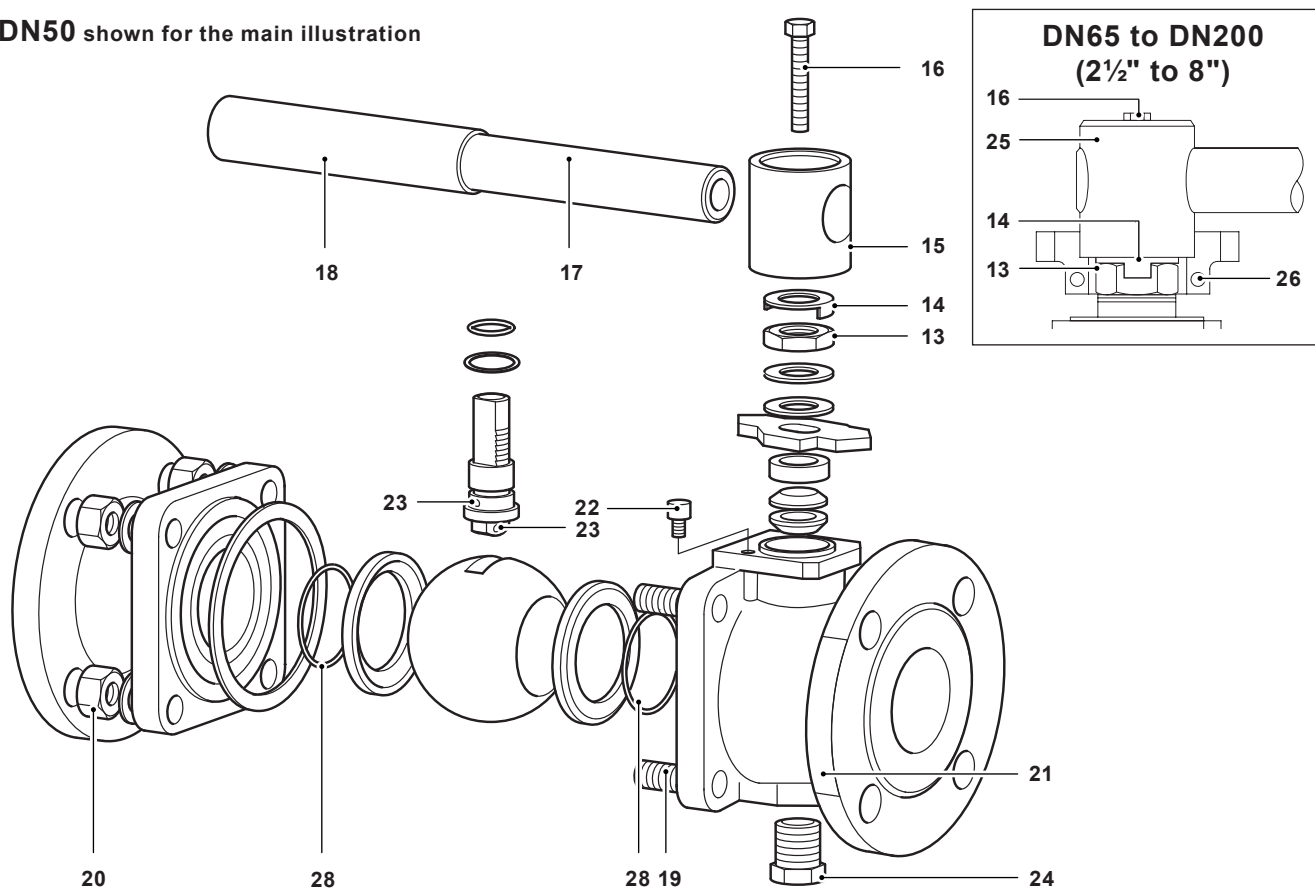


No.	Part	Material		
1	Body	M33V2 ISO	Zinc plated carbon steel	ASTM A 216 WCB
		M33V3 ISO	Stainless steel	ASTM A 351 CF8M
2	Insert	M33V2 ISO	Zinc plated carbon steel	ASTM A 216 WCB
		M33V3 ISO	Stainless steel	ASTM A 351 CF8M
3	Solid ball		Stainless steel	AISI 316
4	Seats		PTFE	
5	Body gasket		Grafoil 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	

For parts 13 to 28, go to page 4

Materials

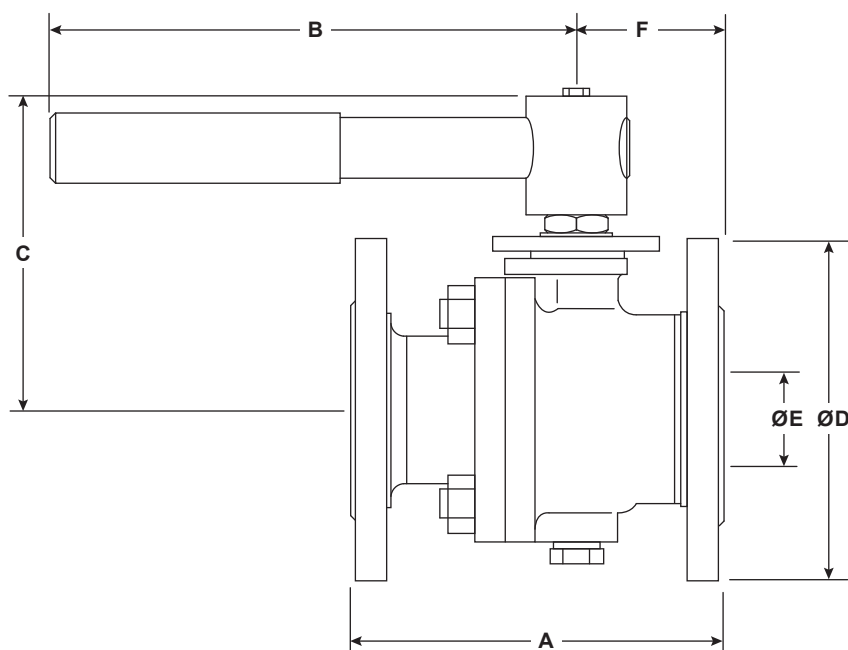
DN50 shown for the main illustration



No.	Part	Material	
13	Gland nut	Carbon steel	SAE 12L14
14	Locking plate	Stainless steel	AISI 304
15	Adaptor DN50	Zinc plated SG iron	
16	Screw	Carbon steel	Grade 5
17	Handle	Zinc plated carbon steel	SAE 1010
18	Grip	Vinyl (Orange)	
19	Stud	Carbon steel	A193-B7
20	Nut	Zinc plated carbon steel	A194-2H
21	Photochemical name-plate	Stainless steel	AISI 304
22	Stop screw	Zinc plated carbon steel	SAE 12L14
23	Antistatic device ball	Stainless steel	AISI 304
24	Drain plug (optional)	Carbon 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	Viton	

For parts 1 to 12, go to page 3

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



Flanged ASME (ANSI) 150							
Size	A	B	C	D	E	F	Weight
DN50 (2")	178 (7)	275 (10.8)	140 (5.5)	152 (6)	50 (2)	70 (2.8)	10.8 (24)
DN65 (2½")	190 (7.5)	415 (16.3)	160 (6.3)	178 (7)	63 (2.5)	82.5 (3.2)	16.2 (36)
DN80 (3")	203 (8)	515 (20.3)	168 (6.6)	191 (7.5)	74 (2.9)	87 (3.4)	20 (44)
DN100 (4")	229 (9)	700 (27.5)	202 (8)	229 (9)	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)	950 (37.4)	317 (12.5)	343 (13.5)	201 (7.9)	228 (9)	140 (309)
Flanged ASME (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)	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 (66)
DN100 (4")	305 (12)	700 (27.5)	202 (8)	254 (10)	100 (3.9)	122 (4.8)	50 (110)
DN150 (6")	403 (15.8)	850 (33.5)	283 (11.1)	318 (12.5)	150 (5.9)	179 (7)	111.2 (245)
DN200 (8")	502 (19.7)	950 (37.4)	317 (12.5)	381 (15)	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:
 $C_v (UK) = K_v \times 0.963$
 $C_v (US) = K_v \times 1.156$

Operating torque

DN	50	65	80	100	150	200	
Nm	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.
(lbf ft)	(55)	(89)	(140)	(184)	(531)	(848)	

Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions supplied with the product.

How to order

Specify:	Size	DN50, DN65, DN80, DN100, DN150, DN200
	Model	M33V_ISO
	Body material	2 = Carbon steel 3 = Stainless steel
	Flanges	ASME 150 or ASME 300

Example: 1 off Spirax Sarco DN50 flanged ASME 150 M33V2 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, steam seals, stem 'O' ring and seat 'O' ring set	4, 5, 7, 8, 9, 28
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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 - Seats, body gasket, stems seals and stem 'O' ring set for a Spirax Sarco DN80 flanged ASME M33V2 ISO ball valve.

