



M33F ISO Full Bore Ball Valve API 6D Firesafe API 607 2" to 8" ASME 150 and 300

Description

Produced in accordance with API 6D the M33F ISO full bore two-piece body ball valve with floating ball, has an API 607 firesafe proof design. It is designed for use as an isolating valve, not a control valve and can be used with the majority of industrial fluids on applications, which include steam, condensate, water, oil, gases, and other fluids within its operating range.

The M33F ISO ASME has as standard an ISO mounting pad in accordance with ISO 5211.

Firesafe design

In normal working conditions, the ball rests against two TAT seats ensuring total closure. When the valve is submitted to temperature above the limits the seats can withstand, the seat becomes deformed and renders to extrusion. When the seats have been totally destroyed, the ball will come to rest firmly against the metal seat in the cap, producing a metal-to-metal closing. This secondary seat in the valve cap ensures the valve will operate to international API 607 standards.

Available types

M33F2 ISO	Zinc plated carbon steel body, TAT seats (for high temperatures) and ISO mounting.
M33F3 ISO	Stainless steel body, TAT 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. This product has been specifically designed for use on steam, compressed air, water, and other industrial fluids which are in group two of the above mentioned PED.

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 6" and 8" sizes - Not API 6D rated.
- Self-venting ball.
- Ring joint flanges.
- Extended stems to allow full insulation for 3" and 4" sites.*
- Operation by pneumatic actuator URPA series and mechanical declutchable actuator.
- Operation by mechanical or pneumatic actuator URPA series for all sizes.
- Lockable handle.*
- Materials according to NACE MR 0175.
- Surge valve.
- Drain plug.

*manual operation only

Sizes and pipe connections

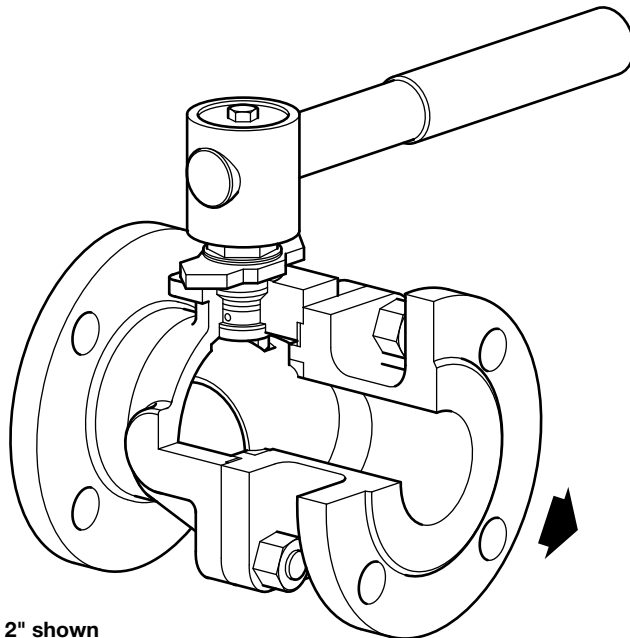
2", 2½", 3", 4", 6", and 8"

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

Technical data

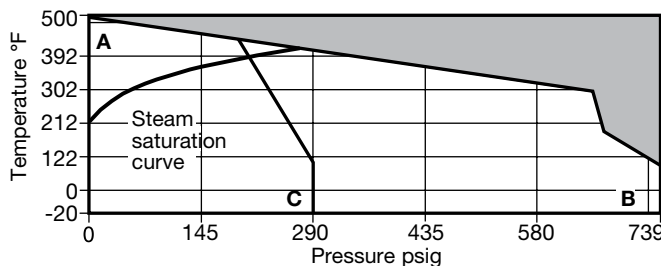
Flow characteristic	Modified linear
Port	Full bore
Leakage test procedure to ISO 5208 (Rate A) / EN 12266-1 (Rate A) and BS 5351	
Antistatic device	Complies with ISO 7121 and BS 5351

Local regulation may restrict the use of this product below the conditions quoted. Limiting conditions refer to standard connections only. In the interests of development and improvement of the product, we reserve the right to change the specification.



2" shown

Pressure/temperature limits



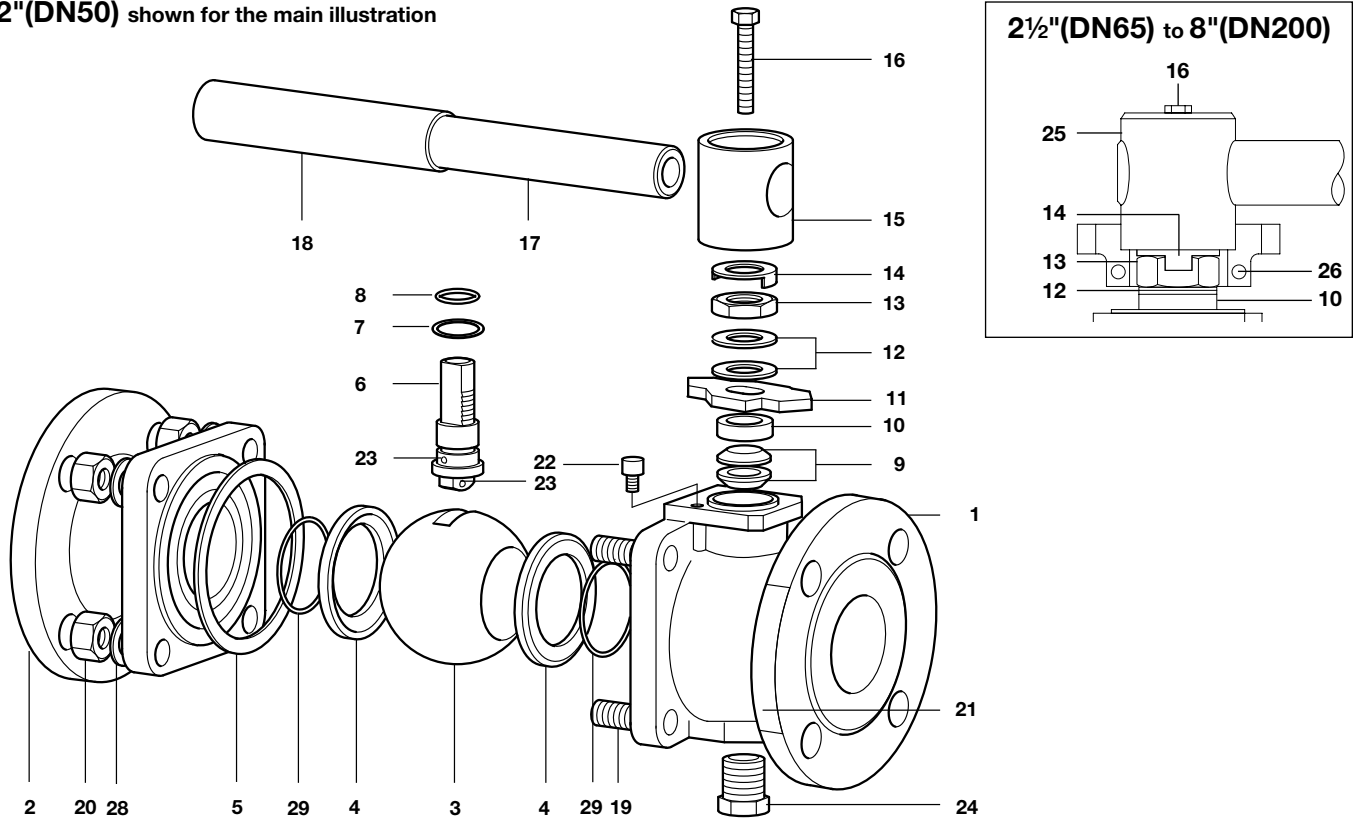
■ The product **must not** be used in this region.

A - B Flanged ASME 300.

A - C Flanged ASME 150.

PMA	Maximum allowable ASME 150 pressure	290psig@100°F
	ASME 300	739psig@100°F
TMA	Maximum allowable temperature	500°F@0psig
	Minimum allowable temperature	-20°F
PMO	Maximum operating pressure for saturated steam service	253 psig
TMO	Maximum operating temperature	500°F@0psig
	Minimum operating temperature	-20°F
Note: For lower operating temperatures consult Spirax Sarco		
ΔPMX Maximum differential pressure is limited to the PMO		
	Designed for a maximum ASME 150	413 psig
	cold hydraulic test pressure of: ASME 300	1109.3 psig

2" (DN50) shown for the main illustration



Materials

No.	Part	Material	
1	Body	M33F2 ISO	Zinc plated carbon steel ASTM A 216 WCB
		M33F3 ISO	Stainless steel ASTM A 351 CF8M
2	Insert	M33F2 ISO	Zinc plated carbon steel ASTM A 21 6 WCB
		M33F3 ISO	Stainless steel ASTM A 351 CF8M
3	Solid ball	Stainless steel	AISI 316
*4	Seats	TAT reinforced teflon	
*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	Graphoil	
10	Separator	Zinc plated carbon steel	SAE 1010
11	Stop plate with indicator for (DN50) 2"	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
15	Adaptor (DN50) 2"	Zinc plated SG iron	
16	Screw	Carbon steel	Grade 5
17	Handle	Zinc plated carbon steel	SAE 1010
18	Grip	Vinyl (Red)	
19	Stud	Stainless steel	A193-B8
20	Nut	Stainless steel	A194-8MA
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) 2 1/2" to 8"	Zinc plated SG iron	
26	Stop screw for (DN65 to DN200) 2 1/2" to 8"	Carbon steel	
27	Lifting eye (DN200 only) 8" - not shown	Zinc plated carbon steel	SAE 1010
28	Belleville stud washer	Stainless steel	
*29	'O' ring	EPDM	

*Note: Available spare parts sold as a kit.

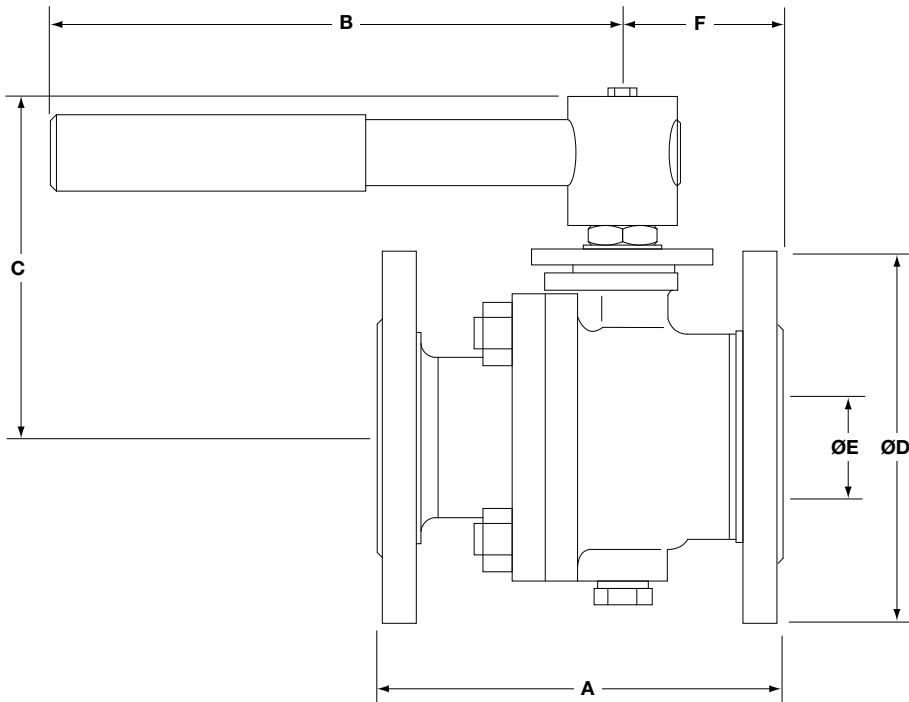
Dimensions/weights (approximate) in inches and lbs

Flanged ANSI 150

Size	A	B	C	D	E	F	Weight
2"(DN50)	7.0	10.8	5.5	6.0	2.0	2.8	24
2½"(DN65)	7.5	16.3	6.3	7.0	2.5	3.2	36
3"(DN80)	8.0	20.3	6.6	7.5	2.9	3.4	44
4"(DN100)	9.0	27.5	8.0	9.0	3.9	4.2	78
6"(DN150)	15.5	33.5	11.1	10.9	5.9	7.8	177
8"(DN200)	18.0	37.4	12.5	13.5	7.9	9.0	309

Flanged ANSI 300

Size	A	B	C	D	E	F	Weight
2"(DN50)	8.5	10.8	5.5	6.5	2.0	3.4	33
2½"(DN65)	9.5	16.3	6.3	7.5	2.5	3.6	50
3"(DN80)	11.1	20.3	6.6	8.3	2.9	3.9	66
4"(DN100)	12.0	27.5	8.0	10.0	3.9	4.8	110
6"(DN150)	15.8	33.5	11.1	12.5	5.9	7.0	245
8"(DN200)	19.7	37.4	12.5	15.0	7.9	8.4	409



C_v values

Inches	2"	2½"	3"	4"	6"	8"
C _v	346	497	867	1191	2786	5549

Operating torque lb/ft (N m)

Inches	2"	2½"	3"	4"	6"	8"
lb/ft	44	59	73	147	442	553

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

Installation and Maintenance Instructions, IM-P133-65.

How to order

	Size	2", 2½", 3", 4", 6", 8"
	Model	M33F_ISO
Specify:	Body material	2 = Carbon steel 3 = Stainless steel
	Flanges	ASME 150 or ASME 300

Example: 1 off Spirax Sarco 2" flanged ANSI 150 M33F2 ISO ball valve.

Spare parts

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

Available spares

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

4, 5, 7, 8, 9, 29

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 and seat 'O' ring set for a Spirax Sarco 3" flanged ASME M33F2 ISO ball valve

