

TI-P133-98

CMGT Issue 2

spirax

sarco

M140Fa

Firesafe Design Ball Valve

DN1¼" to DN2½" Class 800

Description

The M140Fa two-piece body ball valve has been designed for use as an isolating valve (not a control valve) in OPC and Chemical Industry applications, and is suitable for severe service conditions. It is antistatic, firesafe and has mounting pad for automation. The M140Fa can be used on steam and other industrial fluids for services ranging from vacuum to the higher temperatures and pressures. It is a 800 class rating valve (PMA 140 bar g; 2000 psi g). The range is available with screwed and extended weld end connections and it is fully compatible with BVA 300 pneumatic actuators range.

Firesafe:

This product is designed under firesafe concept. In normal working conditions, the ball rests against R-PTFE seats ensuring total closure. **Note:** R-PTFE is PTFE reinforced with carbon and graphite. When the valve is submitted to temperature above the limits R-PTFE can withstand, the seat becomes deformed and renders the R-PTFE to extrusion. When the R-PTFE has been totally destroyed, the ball will come to rest firmly against the metal seat in the cap, producing a metal-metal closure.

Standards:

This product complies with ASME B16.34

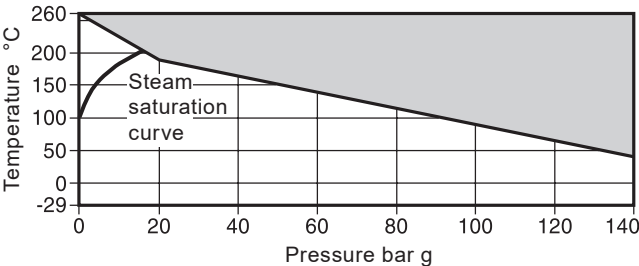
Certification:

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

Available types

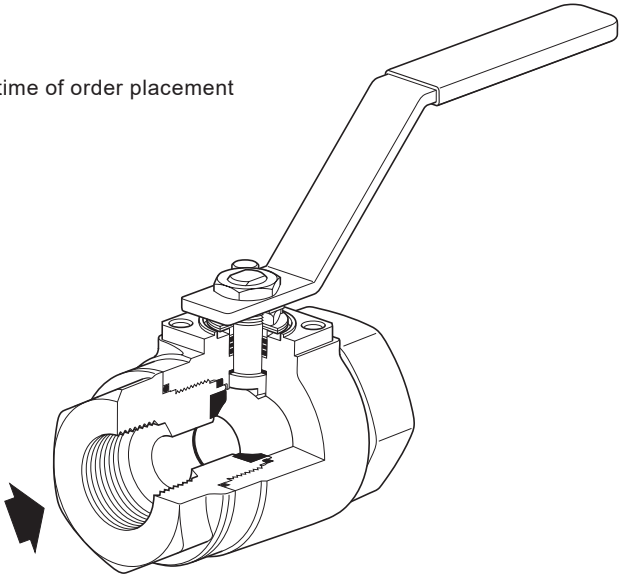
M140Fa2	Zinc plated carbon steel body and insert
M140Fa4	Complete stainless steel

Pressure / temperature limits



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

Body design conditions		ASME class 800
PMA	Maximum allowable pressure	140 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
<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 210 bar g		



Technical data

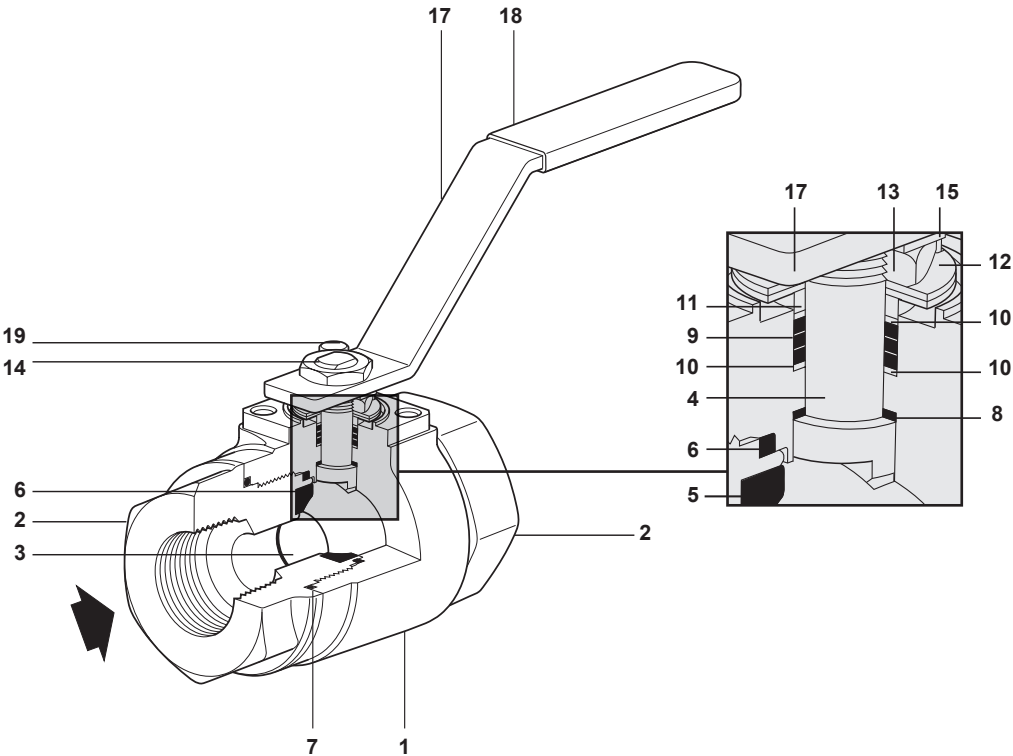
Flow characteristic	Modified linear
Port	Full and reduced bore versions
Leakage test procedure to ISO 5208 (Rate A) / EN 12266-1 (Rate A)	

Options

- Self-venting ball.

Sizes and pipe connections

<b>Full bore</b> ¼", ⅜", ½", ¾", 1", 1¼", 1½" and 2"	
<b>Screwed:</b> BSP, BSPT and API / NPT,	
<b>Welded:</b> Extended butt weld and Extended socket weld	
<b>Reduced bore</b> ¼", ⅜", ½", ¾", 1", 1¼", 1½", 2" and 2½"	
<b>Screwed:</b> BSP, BSPT and API / NPT,	
<b>Welded:</b> Extended butt weld and Extended socket weld	



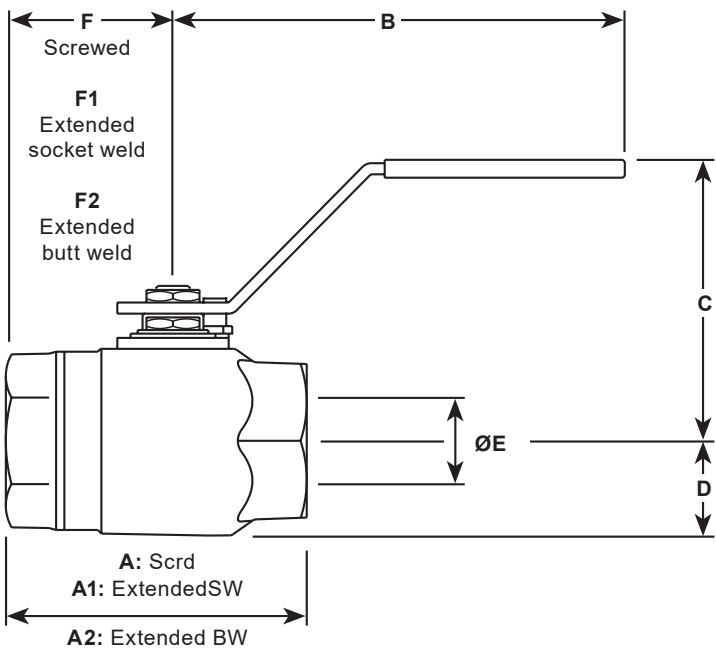
No.	Part	Material		
1	Body	M140 Fa2 ISO	Zinc plated carbon steel	ASTM A105 *
		M140 Fa4 ISO	Stainless steel	ASTM A182 F316L *
2	Insert	M140 Fa2 ISO	Zinc plated carbon steel	ASTM A105 *
		M140 Fa4 ISO	Stainless steel	ASTM A182 F316L *
3	Ball		Stainless steel	AISI 316
4	Stem		Duplex Stainless steel	AISI 318 LN
5	Seat		Carbon / graphite reinforced PTFE	
6	Insert gasket		Graphite	
7	Insert 'O' ring		Viton	
8	Stem seal		PEEK	Reinforced
9	Stem seal		Graphite	
10	Stem seal		Stainless steel	AISI 304
11	Separator	M140 Fa2 ISO	Zinc plated carbon steel	SAE 1010
		M140 Fa4 ISO	Stainless steel	AISI 316
12	Belleville washer		Stainless steel	AISI 301
13	Gland nut	M140 Fa2 ISO	Zinc plated carbon steel	SAE1010 / SAE 12L14
		M140 Fa4 ISO	Stainless steel	AISI 304
14	Upper stem nut	M140 Fa2 ISO	Zinc plated carbon steel	SAE1010 / SAE 12L14
		M140 Fa4 ISO	Stainless steel	AISI 304
15	Locking plate		Stainless steel	AISI 304
16	Nameplate (not shown)		Stainless steel	AISI 430
17	Lever	M140 Fa2 ISO	Zinc plated carbon steel	SAE 1010
		M140 Fa4 ISO	Stainless steel	AISI 316
18	Grip		Vinyl	Red
19	Stop screw	M140 Fa2 ISO	Zinc plated carbon steel	SAE 12L14
		M140 Fa4 ISO	Stainless steel	AISI 304

\* For screwed version only. For welded version, please contact Spirax Sarco.

Dimensions / weights (approximate) in mm and kg

Reduced bore

Size	A	B	C	D	E	F	Weight
1/4"	87	162	95	29	11.0	47	1.66
3/8"	87	162	95	29	13.0	47	1.66
1/2"	87	162	95	29	13.0	47	1.66
3/4"	87	162	95	29	13.0	47	1.60
1"	108	162	101	34	17.5	60	2.50
1 1/4"	126	162	106	41	25.0	69	4.00
1 1/2"	134	186	118	46	31.0	72	5.42
2"	152	186	123	57	38.0	80	9.07
2 1/2"	188	251	140	70	50.0	103	14.22



Full bore

Size	A	B	C	D	E	F	Weight
1/4"	87	162	95	29	11.0	47	1.66
3/8"	87	162	95	29	13.0	47	1.66
1/2"	87	162	95	29	13.0	47	1.60
3/4"	108	162	101	34	17.5	60	2.50
1"	126	162	106	41	25.0	69	4.00
1 1/4"	134	186	118	46	31.0	72	5.42
1 1/2"	152	186	123	57	38.0	80	9.07
2"	188	251	140	70	50.0	103	14.98

Kv values

Size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"
Reduced bore	3.5	8	8.5	7.3	13	27	44	59	121
Full bore	3.5	8	8.5	15	28	48	76	144	-

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

Pipeline ancillaries  
Ball valves

Operating torques (Nm)

Size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"
Reduced bore	10	10	10	10	25	35	50	80	-
Full bore	10	10	10	25	35	50	80	-	-

The indicated torque values are for valves frequently operated, that are submitted to a maximum differential pressure of 140 bar. Valves that are subject to a long static period, 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 example

1 off Spirax Sarco 1" screwed NPT M140Fa2RB 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, stem seals, insert 'O' ring and insert gasket	5, 6, 7, 8, 9 and 10
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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, stem seals, insert 'O' ring and insert gasket set for a Spirax Sarco 1" M140Fa2RB ball valve.

