

Ball valves

for steam



spirax
sarco

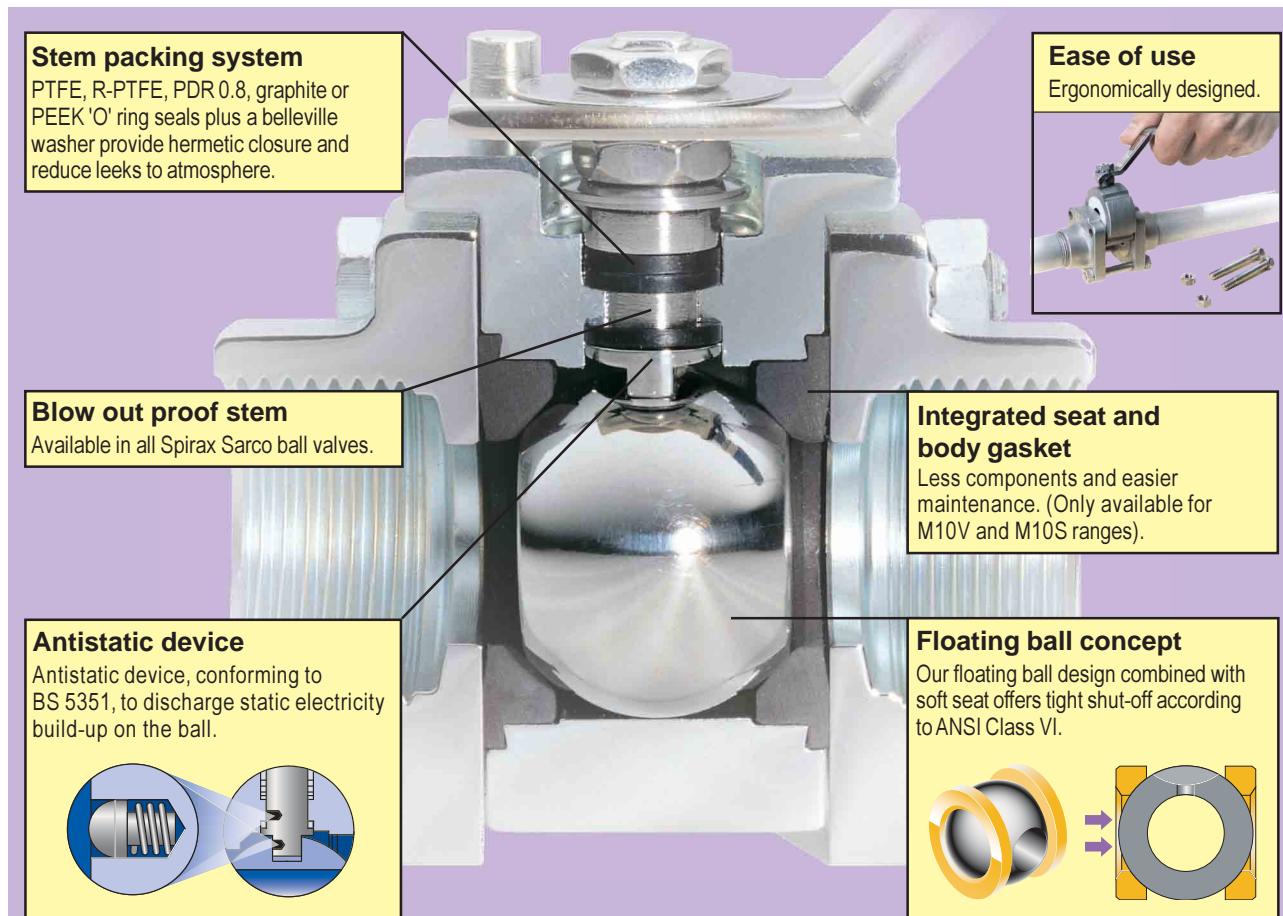
Ball valves for steam applications

Steam systems which perform well have been designed with care using products of the highest quality

Spirax Sarco has 80 years of experience and knowledge of steam systems and the equipment associated with them. Occasionally it is essential to isolate sections of pipeline or plant, either by hand or remote control. Spirax Sarco ball valves do this safely, predictably, and reliably because they are designed and manufactured specifically for steam.

The severity of steam does not allow compromise, it requires the best in design. All Spirax Sarco ball valves meet these requirements, resulting from many years of dedicated research and development, manufacturing investment and crucial applications' experience.

Features of good design



User benefits

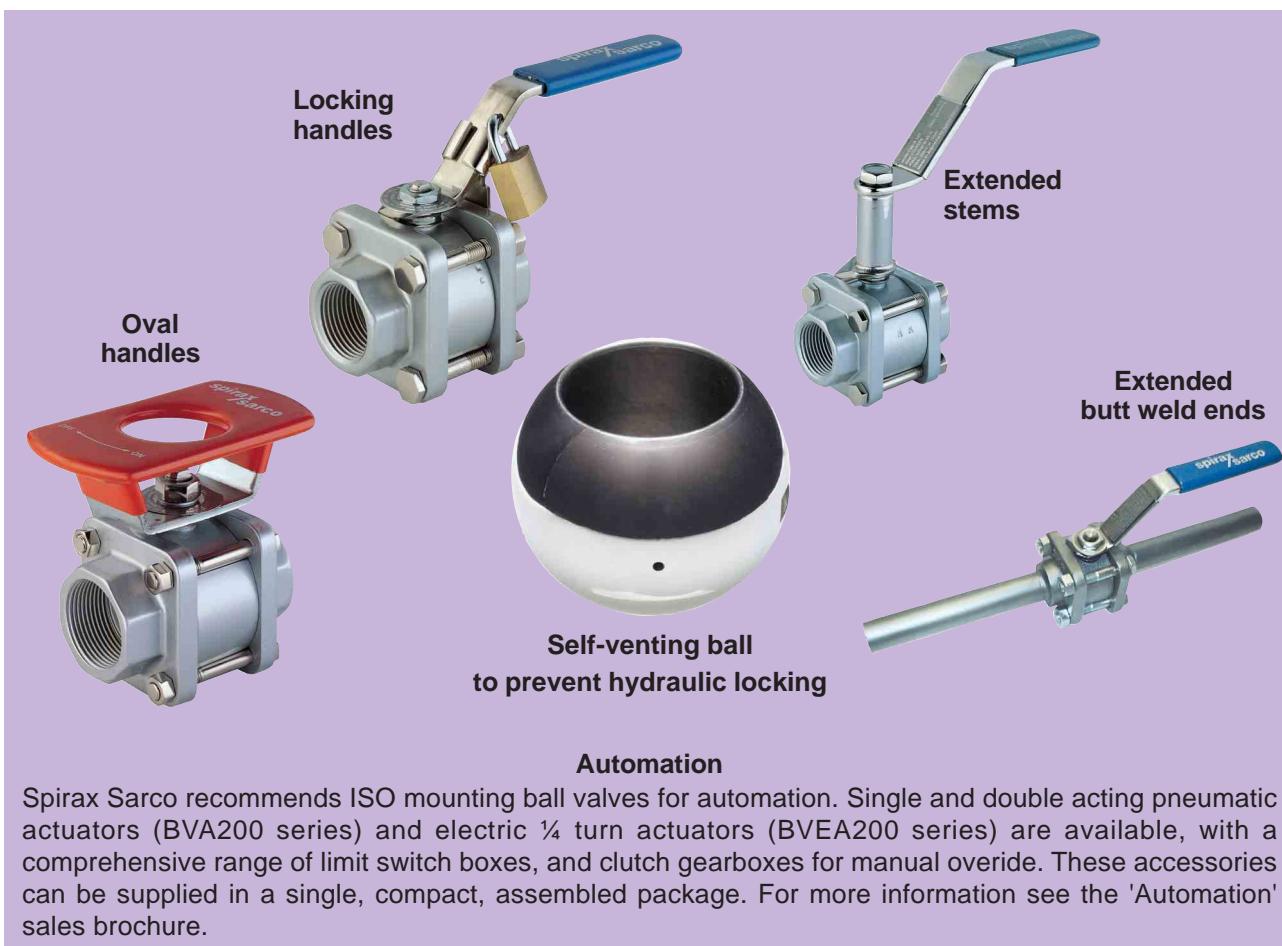
- All Spirax Sarco products comply with the European Pressure Equipment Directive 97/23/EC.
- No leaks from the valve - single seat/seal arrangement.
- High capacity, low pressure drop, low energy loss.
- No sticking or erratic movement even at high pressures - low operating torque.
- Automatic recovery of seal wear - Belleville washers.
- Easily automated - ISO mountings as standard on certain models.
- Seat and seal materials to suit the conditions; PTFE, R-PTFE, PEEK, PDR 0.8.
- ISO 9001/2000 - traceability of materials and relevant certification.
- **Spirax Sarco's guarantee of worldwide knowledge, service and technical support.**

Seat types and materials

A flexible seat provides tight shut-off at high and low pressures, and reduces wear and valve torque. Single seat/body gasket arrangement is available for certain models. Cavity filler seats are also available. The complete valve is specially designed for steam applications.

PTFE	PTFE is the material of choice where low friction, high durability, excellent thermal resistance or chemical inertness are required. Recommended for saturated steam up to 10 bar g.
PDR 0.8	The steam seat for excellence. Specially developed by Du-pont for Spirax Sarco it allows elevated temperatures (260°C); and a low coefficient of friction. Recommended for saturated steam up to 17.5 bar g.
PEEK	Polyetheretherketone is a tough, high temperature, thermoplastic with high tensile and shear strength, excellent creep, fatigue and chemical resistance. Recommended for saturated steam up to 39 bar g.
Glass filled PTFE (R-PTFE)	The superior compression and heat resistance of glass filled PTFE (25% of glass filler) reduces wear at high loads. Specially recommended for clean steam applications.

Options for the ball valve range



Ball valve range for steam applications

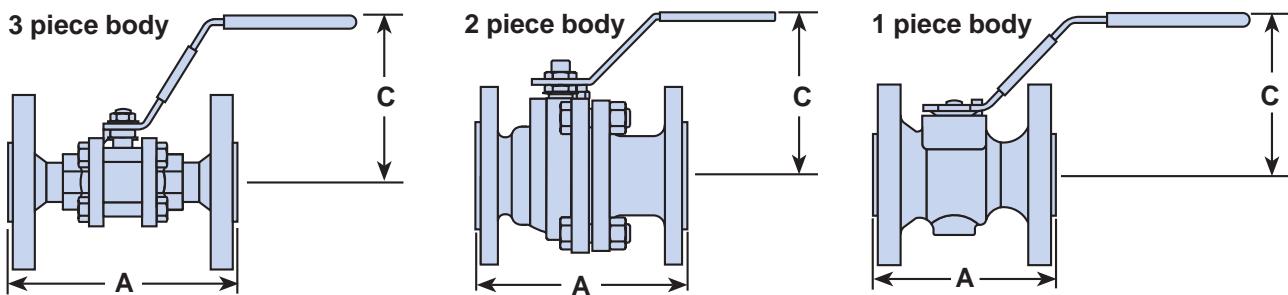
Low pressure steam, condensate and process water	M10V, M31V ISO and M40V ISO
Medium pressure steam, condensate and process water	M10S, M10S ISO, M20S, M21S ISO M31S ISO and M40S ISO
High pressure steam	M10H ISO, M20H and M31H ISO
Clean steam	M60G and M60V
Boiler blowdown	ABV20 and KBV20

Operating range

Low pressure steam, condensate and process water	<p>M10V, M31V ISO and M40V ISO</p> <p>The product must not be used in this region.</p> <p>A - B - C M10V: Scrd, SW, BW, ANSI 150, ANSI 300 and PN40.</p> <p>M31V ISO: PN16, ANSI 150 and ANSI 300.</p> <p>M40V ISO: ANSI 150 and ANSI 300.</p>
Medium pressure steam, condensate and process water	<p>M10S, M10S ISO and M31S ISO</p> <p>The product must not be used in this region.</p> <p>A-D-B-C M10S, M10S ISO and M31S ISO: ANSI 150.</p> <p>A - D - E M31S ISO: PN16.</p> <p>A - F - C M10S and M10S ISO: Scrd, SW, BW, PN40 and ANSI 300.</p> <p>M31S ISO: ANSI 300.</p>
Medium pressure steam, condensate and process water	<p>M20S, M21S ISO, M40S ISO ABV20 and KBV20</p> <p>The product must not be used in this region.</p> <p>A - B - C M20S, M40S ISO, ABV20 and KBV20 : ANSI 150.</p> <p>A - D - C M20S, M21S ISO, ABV20 and KBV20: PN40.</p> <p>M20S, M40S ISO, ABV20 and KBV20: ANSI 300.</p>
High pressure steam	<p>M10H ISO, M20H and M31H ISO</p> <p>The product must not be used in this region.</p> <p>A - C - D M10H ISO: Scrd, SW and BW. M10H ISO, M20H and M31H ISO: ANSI 300.</p> <p>A - B - D M10H ISO and M20H: PN40.</p> <p>A - G - E M10H ISO, M20H and M31H ISO: ANSI 150.</p> <p>A - F - H M31H ISO: PN16.</p> <p>The product can only be used for short periods in this region.</p>
Clean steam	<p>M60G and M60V</p> <p>The product must not be used in this region.</p> <p>A - B M60G: Glass reinforced PTFE seats.</p> <p>A - C M60V: Virgin PTFE seats.</p>

Dimensions (approximate) in mm

For full details of dimensions and weights please refer to the relevant Technical Information Sheet, available on our website.



M10V / M10S (3 piece body)

Size DN	RB FB	Scrd, BW		RB FB	A	ANSI 150	ANSI 300 (M10S only)	PN40	C	
		Scrd,	BW						Flanged PN40 & ANSI 150	
6		56		56	-	-	-	-	57	-
10	6	56		51	56	-	-	-	57	-
15	10	63		51	63	108	140	130	61	87
20	15	68		59	68	117	152	150	63	89
25	20	86		84	86	127	165	160	91	91
32	25	97		93	97	140	178	180	95	95
40	32	106		102	106	165	190	200	109	109
50	40	124		118	124	178	216	230	115	115
65	50	152		152	152	191	241	290	132	132

M10S ISO / M10H ISO (3 piece body)

Size DN	RB FB	Scrd, BW		RB FB	A	ANSI 150	ANSI 300	PN40	C	
		Scrd,	BW						Flanged PN40 & ANSI 150	
6		56		56	-	-	-	-	63	-
10	6	56		56	56	-	-	-	63	-
15	10	63		56	63	108	140	130	66	81
20	15	68		59	68	117	152	150	69	84
25	20	86		84	86	127	165	160	100	100
32	25	97		93	97	140	178	180	104	104
40	32	106		102	106	165	190	200	112	112
50	40	124		118	124	178	216	230	120	120
65	50	152		152	152	191	241	290	140	140

M31V ISO / M31S ISO / M31H ISO (2 piece body)

Size DN	A		C				
	ANSI 150	ANSI 300	PN16 F1	PN16 F4/F5	ANSI 150	ANSI 300	PN16 F1 & F4/F5
50	178	216	230	150	140	140	140
65	190	241	290	170	166	168	166
80	203	283	310	180	180	182	180
100	229	305	350	190	218	218	218
150	394	+403	480	350	266	266	266
200	457	502	600	400	311	315	311

M21S ISO M20S / M20H/ABV20/KBV20 (1 piece body) (1 piece body)

Size DN	A PN40	C All	A ANSI 150	C ANSI 150	A ANSI 300 & PN40	C ANSI 300	A ANSI 150	C ANSI 300
15	115	81			127	165	106	106
20	120	84			140	178	111	110
25	125	99			165	190	126	126
32	130	102			178	216	134	134
40	140	124			191	241	146	146
50	150	130			203	283	168	168
65	170	142			229	305	180	180
80	180	156			229	305	180	180
100	190	175			267	403	246	246

M40V ISO / M40S ISO (1 piece body)

Size DN	A ANSI 150	C ANSI 150	A ANSI 300	C ANSI 300
25	127	165	100	100
32	165	190	115	115
50	178	216	129	129
65	190	241	142	142
80	203	283	144	162
100	229	305	172	178
150	267	403	206	220

M60G / M60V (3 piece body)*

Size DN	A Tri-clamp	C Tube	C All
15	89	100	57
20	102	102	63
25	114	124	91
40	140	138	109
50	159	150	115
80	240	240	158
100	280	280	168

*Note: The M60 is also available in other sizes upon request: DN10, DN32 and DN65.

Selection table

Applications	Model	Sizes	Body	Saturated steam		Connections	Bore	Body material	
				Maximum pressure bar g	Maximum temperature °C			RB = Reduced bore	2 = Zinc plated carbon steel body
								FB = Full bore	3 = Stainless steel body
Low pressure steam, condensate and process water	M10V	DN6 to DN50	3 Piece	10	184	BSP, BSPT, NPT, SW, BW, ANSI 150	RB and FB	Forged	2 ASTM A105
		DN65	3 Piece	10	184	ANSI 150	RB		3 ASTM A182
	M31V ISO	DN50 to DN200	2 Piece	10	184	ANSI 150 ANSI 300 PN16 F1 & F4 / F5	FB	Cast	2 ASTM A216 or DIN 1724
	M40V ISO	DN25 to DN150	1 Piece	10	184	ANSI 150 ANSI 300	RB	Cast	3 ASTM A351 or DIN 1724
Medium pressure steam, condensate and process water	M10S M10S ISO	DN6 to DN50	3 Piece	17.5	208	BSP, BSPT, NPT, SW, BW, PN40 ANSI 150 ANSI 300	RB and FB	Forged	2 ASTM A105
		DN65					RB		3 ASTM A182
	M31S ISO	DN50 to DN200	2 Piece	11.6	190	PN16	FB	Cast	4 F316L
				17.5	208	ANSI 150 ANSI 300			2 DIN 1724
	M20S	DN25 to DN150	1 Piece	17.5	208	ANSI 150 ANSI 300 PN40	RB	Cast	3 ASTM A351 (PN40 flanges only)
	M21S ISO	DN15 to DN100	1 Piece	17.5	208	PN40	RB	Cast	2 DIN 17245 3 ASTM A351
High pressure steam	M10H ISO	DN6 to DN40	3 Piece	39	250	BSP, BSPT, NPT, SW, BW, PN40	RB and FB	Forged	2 ASTM A105
		DN50					RB		(stainless steel available on request)
	M20H	DN25 to DN150	1 Piece	39	250	PN40 ANSI 150 ANSI 300	RB	Cast	2 ASTM A216
	M31H	DN50 to DN200	2 Piece	39	250	PN16 ANSI 150 ANSI 300	FB	Cast	3 ASTM A351 (PN40 flanges only)
Clean steam	M60V	DN15 to DN100	3 Piece	7	170	Tri-clamp Tube imperial, ISO and DIN	RB*	Forged	2 ASTM A182F 316L
	M60G	DN15 to DN100	3 Piece	8.5	177	Tri-clamp Tube imperial, ISO and DIN	RB*	Forged	3 ASTM A351 or DIN 1724
Boiler blowdown	KBV20 ABV20	DN25 to DN65	1 Piece	17.5	208	ANSI 150 ANSI 300 PN40	RB	Cast	4 ASTM A182F 316L

*Note: The M60 is also available in FB version upon request.

How to order

To select and order your valves use the information shown opposite and the following short codes, as shown in the example below.

Example chosen:

A ball valve is required for a medium pressure steam application, where pressure will not exceed 17.5 bar g. The pipeline size will be 50 mm. The ball valve body material is to be zinc plated forged carbon steel having full bore capability and a self-venting ball.

Ball valve selection example:

Valve size:

DN6 to DN200.

DN50	<input type="checkbox"/>					
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Valve model:

M10S, M20S, M21S, M31S, M40S.

DN50	M10S	<input type="checkbox"/>				
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Body material:

C/S = 2, S/S = 3, All S/S = 4.

DN50	M10S	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Port:

(required for M10 only)

Reduced bore = RB, Full bore = FB.

DN50	M10S	2	FB	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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ISO version:

DN50	M10S	2	FB	ISO	<input type="checkbox"/>	<input type="checkbox"/>
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Options:

Oval handle = O, Lockable handle = L,

Extended stem = E, Self-venting = X

DN50	M10S	2	FB	ISO	X	<input type="checkbox"/>
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Valve connections:

BSP, BSPT, NPT, SW, BW, PN40, ANSI 150, ANSI 300.

Note: For clean steam valves consult Spirax Sarco.

DN50	M10S	2	FB	ISO	X	PN40
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How to order example:

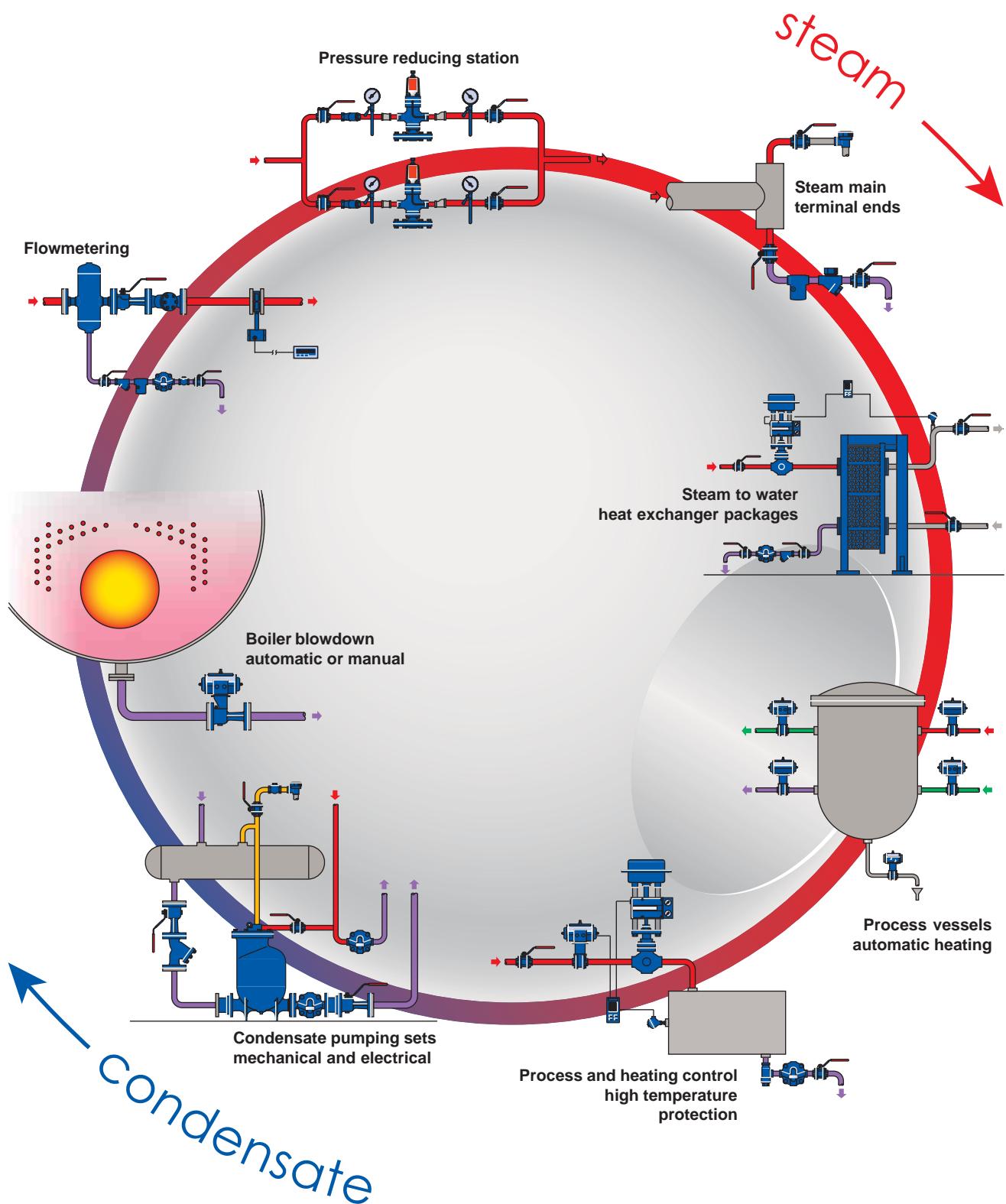
DN50	M10S	2	FB	ISO	X	PN40
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1 off Spirax Sarco DN50 M10S2FB ISO X ball valve having zinc plated forged carbon steel body material, a full bore port and a self-venting ball. Connections are to be flanged PN40.

For further details please refer to the Technical Information Sheets.

Ball and stem	Internals			Options				Actuation	
	Seats	Stem seals	Lever nuts and bolts	O Oval handle	L Lockable handle	E Extended stem	X Self-venting	Manual	Automatic
AISI 316L	Virgin PTFE	Antistatic R-PTFE	Zinc plated carbon steel or Stainless steel	O	L	E	X	•	
AISI 316 AISI 304 AISI 316 AISI 420	Virgin PTFE	Virgin PTFE	Zinc plated carbon steel				X	•	•
AISI 316	PDR 0.8	Carbon R-PTFE Graphite	Zinc plated carbon steel			E	X	•	•
AISI 316	PDR 0.8	Antistatic R-PTFE	Zinc plated carbon steel or Stainless steel	O	L	E	X	•	•
AISI 316 AISI 304 AISI 316 AISI 420	PDR 0.8	Carbon R-PTFE Graphite	Zinc plated carbon steel				X	•	•
AISI 316	PDR 0.8	Antistatic PTFE and graphite	Zinc plated carbon steel			E	X	•	•
AISI 316	PDR 0.8	Antistatic R-PTFE	Zinc plated carbon steel				X	•	•
AISI 316	PDR 0.8	Carbon R-PTFE Graphite	Zinc plated carbon steel			E	X	•	•
AISI 316L (Hardness)	PEEK	PEEK	Zinc plated carbon steel or Stainless steel	O	L	E	X	•	•
AISI 316 (Hardness)	PEEK	PEEK	Zinc plated carbon steel			E	X	•	•
AISI 316 (Hardness)	PEEK	PEEK	Zinc plated carbon steel			E	X	•	•
AISI 316L (Hardness)	Virgin PTFE (Cavity filler on request)	Carbon R-PTFE Graphite	Stainless steel AISI 316					•	•
AISI 316L	Glass fibre R-PTFE (Cavity filler on request)	Carbon R-PTFE Graphite	Stainless steel AISI 316					•	•
AISI 316 (Hardness)	PDR 0.8	Antistatic PTFE and Graphite	Zinc plated carbon steel				X	•	•

Typical applications with ball valves in the steam and condensate loop



Some of the products may not be available in certain markets.

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