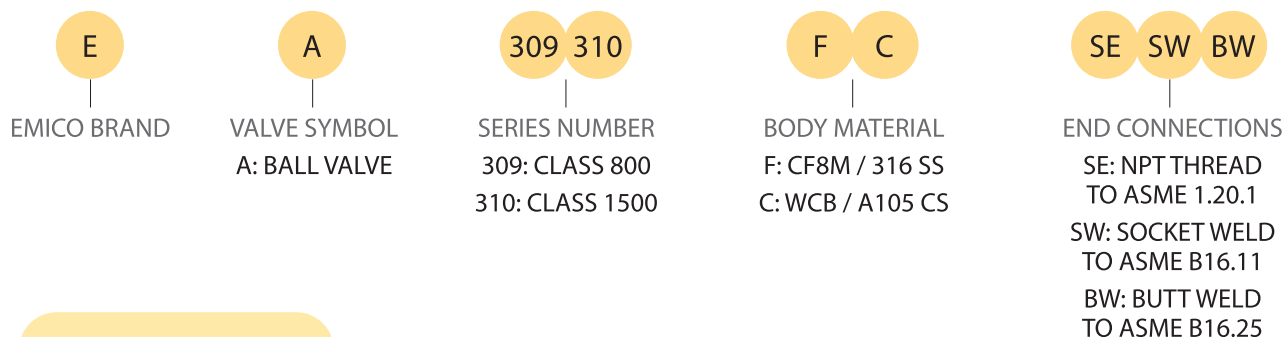


EMICO

3-PIECE CLASS 800 & 1500 FIRE-SAFE BALL VALVES





A BRIEF HISTORY

1984 EMICO (Eayuan Metal Industrial Co. Ltd.) was incorporated at Lugang, Changhua (Taiwan) and began establishing itself as a professional ball valve manufacturer for the oil, petrochemical, natural gas, on-shore plants and water & processing markets.

2000 EMICO opened a second facility in Lugang to meet demands of the company's growth and increase its manufacturing capacity.

2002 EMICO set up its third manufacturing facility in Shanghai for the production of gate, globe & check valves in collaboration with Hitachi, Japan.

2005 EMICO started a joint venture with Huzhou Heyuanfeng Cast Steel Co. to produce castings in China.

2007 EMICO combined both its manufacturing facilities in Changbin Industrial Park in Lugang and invested in state-of-the-art machining centres to further expand its production capacity in order to meet growing demands of its international clientele.

2008 EMICO added a new production facility in Shanghai to service the needs of its China market.



PRODUCTION RANGE

- EMICO ball valves are made by investment casting (lost wax process) from size 1/4" up to 4" and sand shell casting or stack shell casting from 4" to 12". High pressure classes are supplied in forged construction.
- Ball valves are supplied in various configurations: 1-piece, 2-piece & 3-piece with threaded, socket weld, butt weld and flanged ends.
- Standard materials offered are 316 stainless steel and carbon steel in WCB or A105 to applicable ASTM standards. Other materials introduced to the supply range are Alloy 20/CN7M, Hastelloy C, Duplex and Super Duplex.
- EMICO also supplies full port PFA lined ball valves for corrosive applications.
- EMICO's product range includes Oil Field valves and Sanitary valves.
- Class ratings: Class 150, Class 300, Class 800, Class 1500 and Class 2500.

QUALITY ASSURANCE & CERTIFICATION

- EMICO was the first ball valve manufacturer in Taiwan to implement the ISO 9002 Quality Assurance System. In 2000, it further obtained ISO 9001 Certification, cross-approved with TUV DIN EN ISO 9001.
- EMICO is an authorised licensee to use API 6D and certified to PED, CE, ATEX, TU-Luft and is UL listed.
- EMICO is certified to Australian Gas Association (AGA) AG-214 for its range of EA-305 3-piece fire safe ball valves.
- Fire safe designs include: 1-pc EA-108, 2-pc EA-25A, 3-pc EA-305, EA-309, EA-310 & P-135. These valves are fire safe to API 607 4th & 5th edition fire test requirements and tested and certified by Southwest Research Institute (SwRI) in Texas, USA and TU-Luft.
- EMICO has an established Engineering Department of engineers, technicians and an R&D centre with many years experience in the manufacture of quality ball valves.
- All valves are fully traceable and certified to EN 10204-2004 3.1 (chemical, mechanical, hydrostatic & pneumatic pressure tests) and can be supplied with NDE performed to ASME B16.34 international standards. Valves are tested and certified to API 598.

TECHNICAL FEATURES

EMICO 3-piece bolted body ball valves in Carbon Steel and Stainless Steel - Classes 800 & 1500, NPT & SW ends

CAST & FORGED BODY & ENDS	Full compliance with EN 12516 & ASME/ANSI B16.34 for Class 800 and ASME/ANSI B16.34 for Class 1500 with PEEK seats
REPAIR KITS	Comprising seats, body seals, O-ring, gland packing and thrust washer
FIRE SAFE	Certified to API 607 Ed. 4 (Class 800) and Ed. 5 (Class 1500)
ENCLOSED BOLTING	Maximum resistance to fire conditions. Improved appearance and maximum body compression
NACE MR-01-75	Suitable for sour service
BODY CLOSURE / STEM SEAL	Perfect sealing is guaranteed by a double barrier between body/closure and stem seal for Class 1500 and stem seal only for Class 800
FULL PORT FOR CLASS 800	No pressure drop
ANTI-STATIC PLUNGER	Positive earthing of ball and stem to valve body prevents static electricity build-up in ball
BLOWOUT-PROOF STEM	Internally fitted back-seated stem provides anti-blowout function under pressure
BELLEVILLE WASHERS ON STEM	Live loaded gland packing for long cycle life
END CONNECTION OPTIONS	NPT, socket weld or pup extensions
HEAT NUMBERED	Fully certified and traceable
SIZE RANGE	15mm through 50mm
PRESSURE RELIEF	Internal pressure equalising vent (ball drilled with upstream pressure relief vent hole) can be supplied for certain applications (ammonia, chlorine, etc.) Heating of trapped media in body cavity can cause pressure rise, permanently distorting seats or ball
LOCKING MECHANISM	Lock open / Lock closed positions
ACTUATION OPTIONS	Spring-close and double-acting actuated valves on request

DESIGN & INSPECTION STANDARDS

- Pressure /Temperature Ratings:
Body – ASME B16.34 (Class 800 & 1500)
Seat – As per EMICO charts
- General Valve Design: EN 12516 / ASME B16.34
- Shell Wall Thickness: ASME B16.34
- Construction: Cast & Forged 3-Piece
- Face to Face Dimensions: Manufacturer's Standard, per EMICO Drawings
- End Connections: NPT to ASME B1.20.1,
SW to ASME B16.11
- Pressure Test: API 598 (Sealing – Bubble Tight Bi-Directional)
- Fire Safe Test: API 607 Ed. 4 / API 607 Ed. 5
- Materials & Test Certification: EN 10204-2004 3.1

MATERIALS SELECTION

BODY:

Carbon Steel, Low Temperature Carbon Steel, Special Alloy, Duplex and Super Duplex, Monel, Inconel, Hastelloy, Titanium, etc.

BALL:

Stainless Steel, Special Alloy, Duplex and Super Duplex, Monel, Inconel, Hastelloy, Titanium, etc.

EXTERNAL COATING

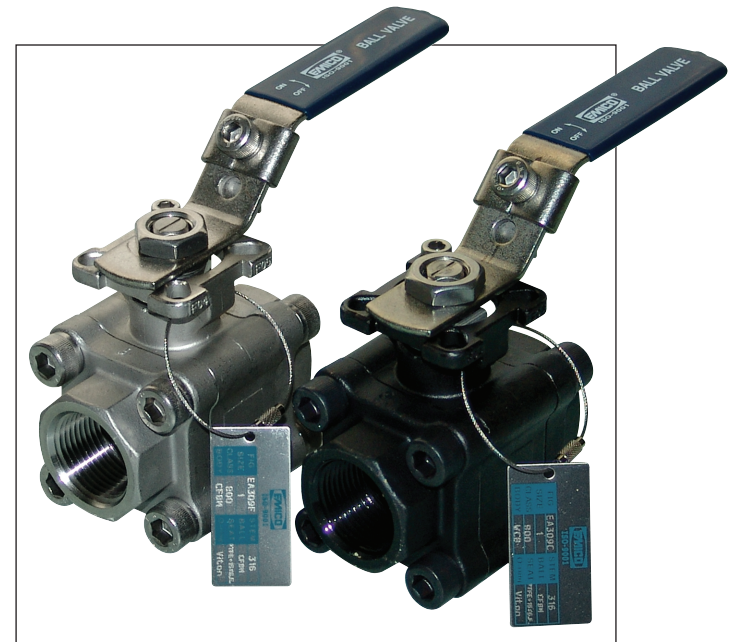
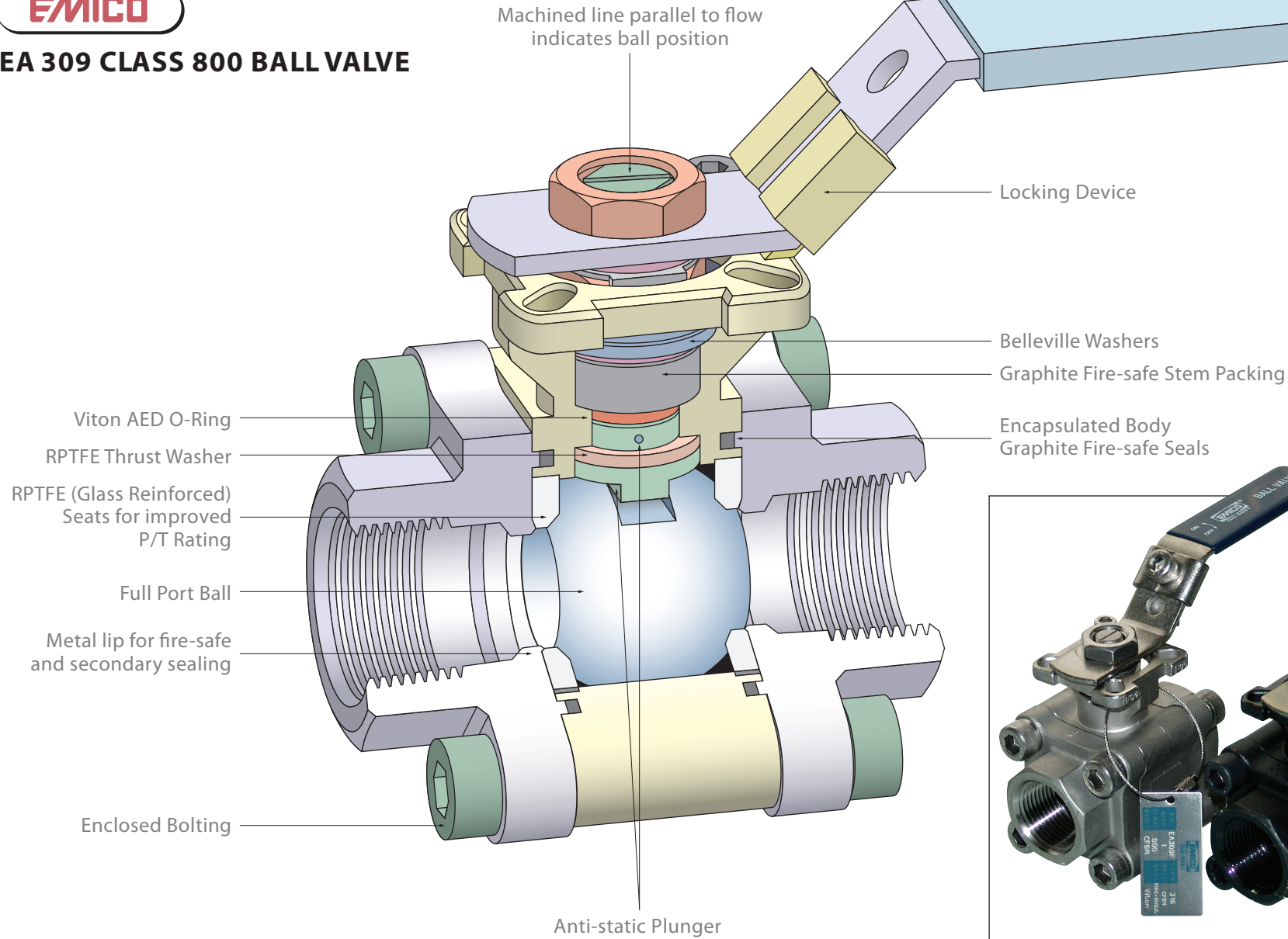
Carbon Steel valves are usually protected with manufacturer's standard paint finish or phosphating. Valves can also be supplied with special paint finish.

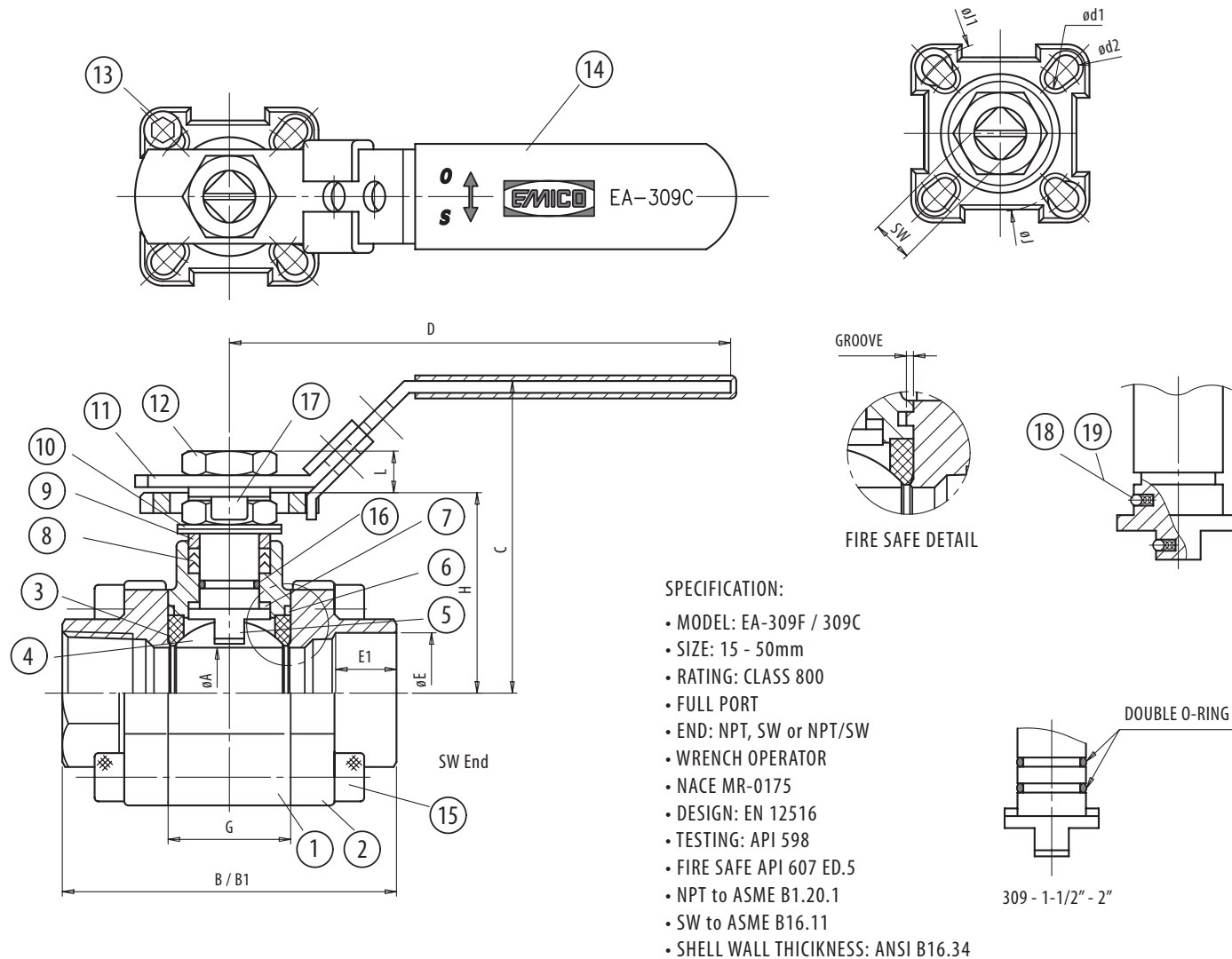
ACCESSORIES

BW, pup and/or transition pieces etc. on request.

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EA 309 CLASS 800 BALL VALVE





ITEM	PART NAME	MATERIAL		QTY
		EA309F	EA309C	
19	SPRING	SUS316		2
18	STATIC DEVICE	SUS316		2
17	LOCKING TAB	SUS304		1
16	O RING	VITON AED		1/2
15	BOLTS	ISO 3506 A2-70	ISO 898 12.9	8/12
14	PLASTIC COATING	VINYL		1
13	STOP SCREW	SUS 304		1
12	LEVER NUT	SUS 304		1
11	HANDLE	SUS 304		1
10	BELLEVILLE SPRING WASHER	SUS 301		2
9	GLAND RING	SUS 304		2
8	GLAND PACKING	GRAPHITE		1
7	THRUST WASHER	PTFE+15%G.F.		1
6	BODY SEAL	GRAPHITE		2
5	STEM	SUS 316		1
4	BALL	CF8M		1
3	SEATS	PTFE+15%G.F.		2
2	END CAPS	CF8M	WCB	2
1	BODY	CF8M	WCB	1

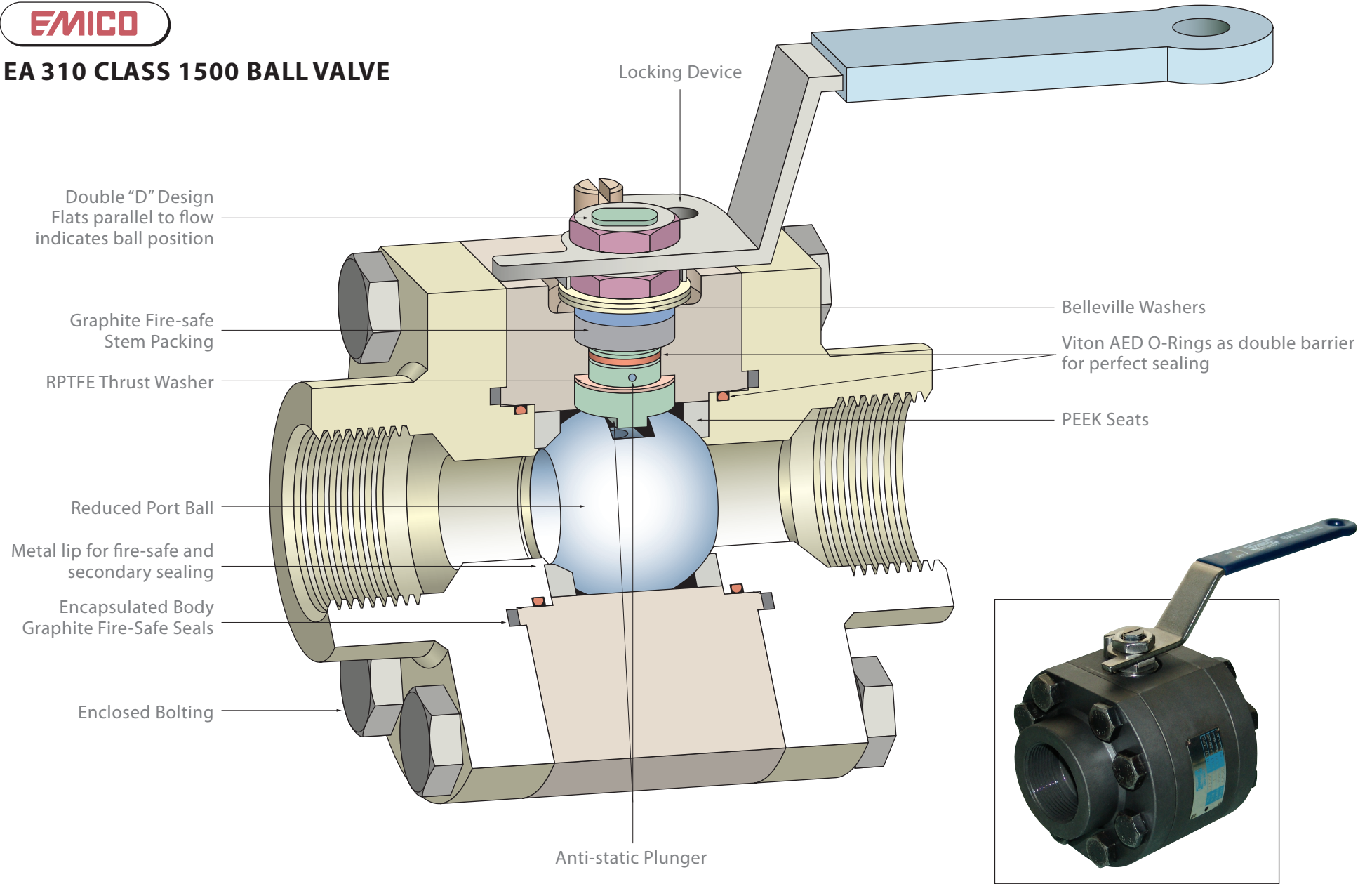
DN	SIZE	A	B	B1	C	D	E	E1	F	F1	G	J	J1	SW	d1	d2	H	L
15	1/2"	16	75	75	70.9	110	21.8	11.2	17	21.3	25.2	36	42	9	6	6	42.3	8
20	3/4"	20	80	90	73.4	110	27.2	14.3	22	26.9	27.7	36	42	9	6	6	44.8	8
25	1"	24.5	90	100	84.1	135	33.9	15.8	28	33.7	33	42	50	11	6	7	54	10
32	1-1/4"	32	110	110	89.3	135	42.7	17.5	37	42.4	41.2	42	50	11	6	7	59.2	10
40	1-1/2"	38	120	125	109.5	165	48.8	19.1	43	48.3	49.3	50	70	14	7	9	73.5	14.8
50	2"	50	140	150	118.9	165	61.2	21.3	54	60.3	63.6	50	70	14	7	9	82.9	14.8

EMICO FIG EA309 CLASS 800 FIRE-SAFE BALL VALVE

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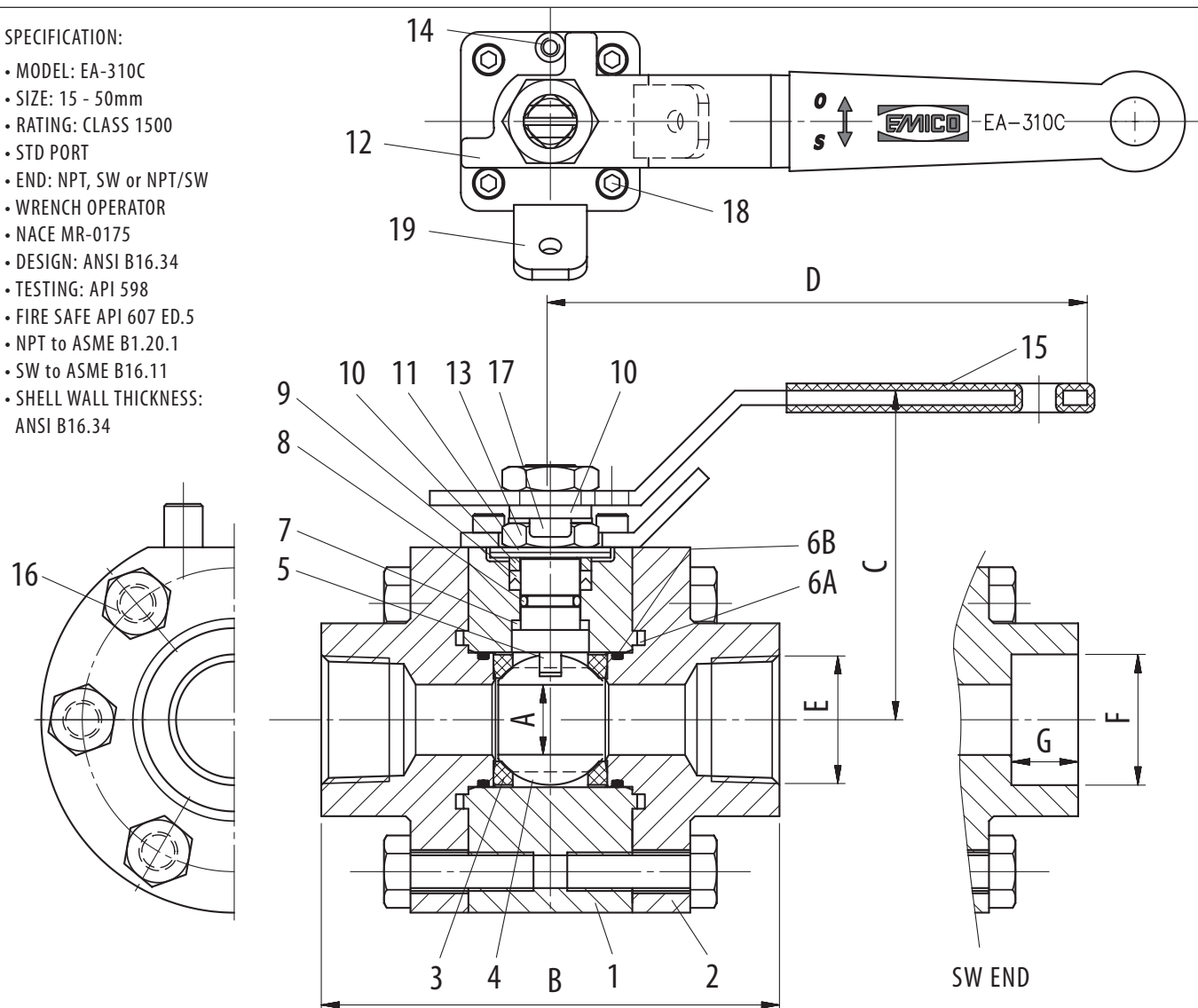
EMICO

EA 310 CLASS 1500 BALL VALVE



SPECIFICATION:

- MODEL: EA-310C
- SIZE: 15 - 50mm
- RATING: CLASS 1500
- STD PORT
- END: NPT, SW or NPT/SW
- WRENCH OPERATOR
- NACE MR-0175
- DESIGN: ANSI B16.34
- TESTING: API 598
- FIRE SAFE API 607 ED.5
- NPT to ASME B1.20.1
- SW to ASME B16.11
- SHELL WALL THICKNESS: ANSI B16.34



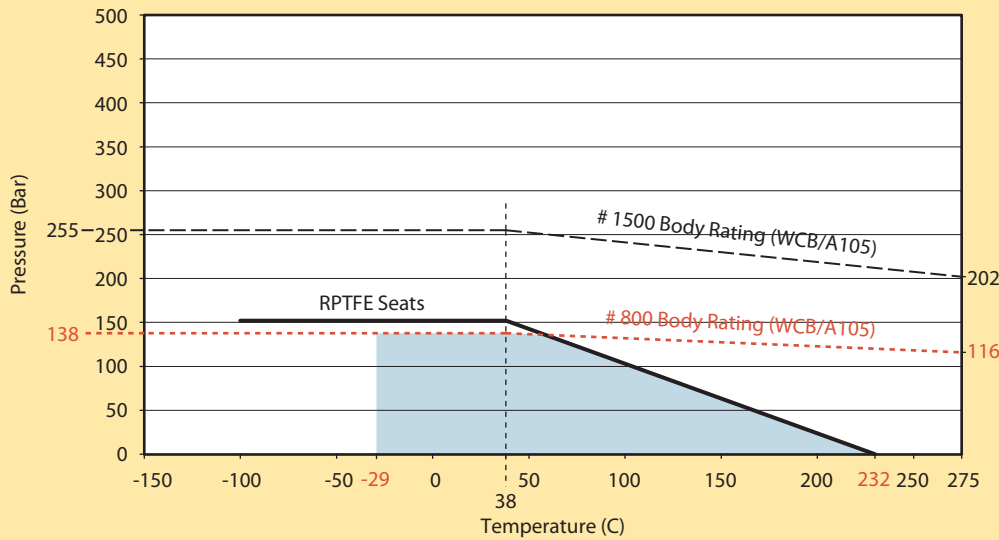
ITEM	PART NAME	MATERIAL		QTY
		EA-310A	EA-310C	
19	LOCKING PLATE	SUS304		1
18	SCREW	SUS304		4
17	LOCKING TAB	SUS304		1
16	BOLTS	ISO 3506 A2-70	ISO 898 8.8	12/16
15	PLASTIC COATING	PVC		1
14	STOP SCREW	SUS 304		1
13	LEVER NUT	SUS 304		2
12	HANDLE	SUS 304		1
11	BELLEVILLE SPRING WASHER	SUS 301		2
10	GLAND RING	SUS 304		1
9	GLAND PACKING	GRAPHITE		1
8	STEM O-RING	VITON AED		1
7	THRUST WASHER	GRAPHITE		1
6B	BODY O-RING	VITON AED		2
6A	BODY SEAL	GRAPHITE		2
5	STEM	17-4PH		1
4	BALL	17-4PH+ENP		1
3	SEATS	PEEK		2
2	END CAPS	SUS316	A105N	2
1	BODY	SUS316	A105N	1

EMICO FIG **EA310 CLASS 1500** FIRE-SAFE BALL VALVE

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PRESSURE TEMPERATURE CHARTS

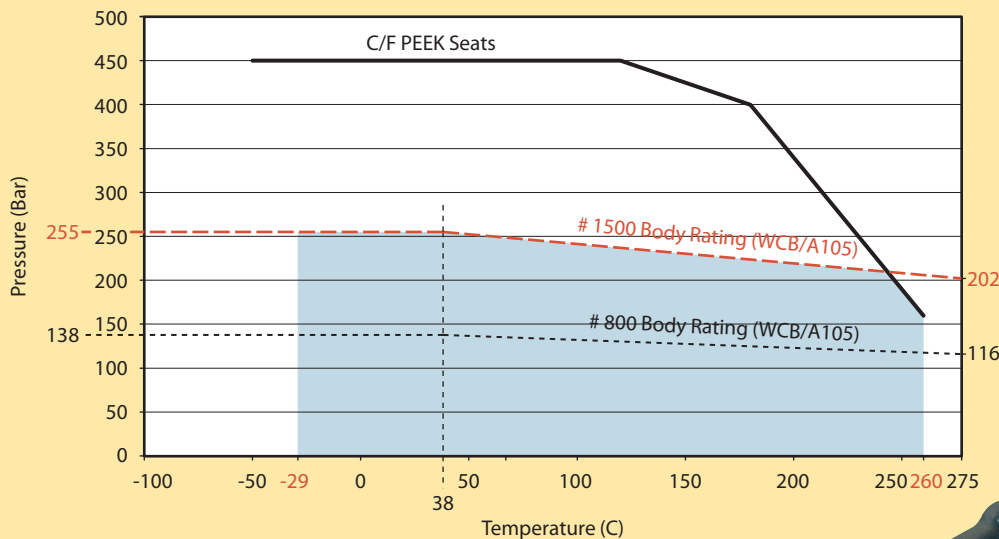
GLASS REINFORCED PTFE



Notes:

1. Shaded area for Carbon Steel WCB/A105 valves. For F316 Stainless Steel valves suitable for lower temperatures – refer EMICO
2. CF8M/316 Stainless Steel body valves have P/T rating lower than WCB/A105 at temperature below 400 °C. Refer ASME/ANSI B16.34 Table 2.2.2 (Ratings for Group 2.2 materials)
3. Class 800 and 1500 body ratings from ASME/ANSI B16.34, Group 1.1 materials (Carbon Steel WCB/A105)

CARBON FILLED PEEK



ALSO AVAILABLE:

EMICO Fig P134 (Reduced Port) & Fig P135 (Full Port) Ball Valves Class 800, Class 1500 & Class 2500

Construction: Forged in all Materials
 Sizes: 15mm to 50mm

Available with NPT, SW or
 Pup/Transition Ends

Reasonable care has been taken to ensure accuracy of the material in this brochure. EMICO recommends that you verify any information with your independent expert and rely solely on that expert's advice. EMICO expressly disclaims any and all liability whatsoever.



EMICO

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