KTM SERIES EB1

SPLIT BODY FLOATING BALL VALVES

A versatile ball valve available in low-e, pocketless, cavity relieving, cryogenic, high pressure and high temperature soft and metal seat designs for a wide range of applications from -196˚C (-320˚F) to 500˚C (932˚F).

GENERAL APPLICATIONS

Chemical, petrochemical, pulp and paper, reactive monomers, oil and gas production, steam, hot gases, toxic and lethal, fire-safe and flammables

Option

- Stem extension
- For cryogenic, oxygen and vacuum services
- Special painting
- Non-destructive testing options
  - X-ray (RT)
  - Liquid penetrant (PT)
  - Positive Material Identification (PMI)

TECHNICAL DATA

Model/sizes:	Full bore DN 15 to DN 200 (NPS ½ to NPS 8) Reduced bore DN 150 to DN 250 (NPS 6 to NPS 10)
Pressure rating:	ASME Class 150, 300, 600, 900, 1500 JIS 10K, 20K (JPI also available)
Temperature:	-29°C to 270°C (-20°F to 518°F) (Depending on options -196°C to 500°C (-320°F to 932°F) is available)
Seat leakage:	Zero leakage (E-seat) to ISO 5208 Rate A and API 598

FEATURES

- Designed to ASME B16.34, API 608, API 6D and ISO 17292
- Bidirectional shut-off for soft seat valves
- Superior valve design at a competitive price
- Valve fugitive emissions third party certified to ISO 15848-1 Rate B and API 641
- Machined ISO 5211 actuator mounting pad
- Pure white E-seat (PTFE/PFA copolymer) seal relieves concern over product contamination
- Positive alignment of split body
- Fire test certified to API 607 6th edition and ISO 10497 3rd edition
- PTFE bearing and packing rings reduce torque and wear
- Lower operating torque for ease of operation and reduced actuator cost
- Positive position indication
- Blowout-proof stem
- Material complies to NACE MR0175 / ISO 15156 or MR0103, traceability available upon request
- Locking device is available
- Static electricity grounding device
- Manufactured under ISO 9001 certified quality system
- CE marking PED 2014/68/EU available upon request
- Various seat types are available in addition to the standard E-Seat. Each seat option meets a wide range of performance criteria to suit a variety of applications.
  - PTFE/PFA copolymer E-seat as standard*
  - PEEK seat (option)
  - Gratite® seat (option)
  - Metaltite® seat (option)
  - NoFill® Pocketless (option)

  * Please refer to the Pressure/Temperature rating

KTM SERIES EB1 SPLIT BODY FLOATING BALL VALVES

DESIGN FEATURES

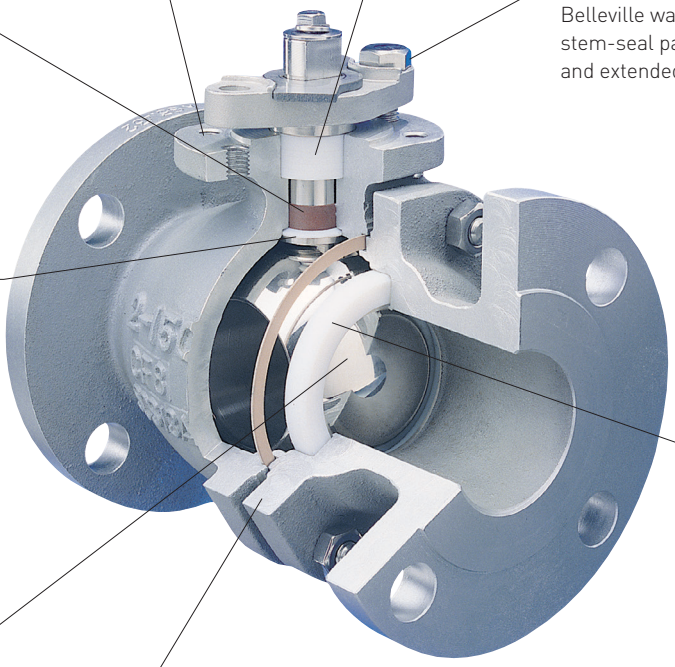
ISO 5211 ACTUATOR MOUNTING PAD:
Machined 'automation pad' allows precise mounting of actuator; mounting bolts independent from stem-packing gland bolts. Exact alignment reduces torque requirements and prevents out-of-line wear.

RADIAL BEARINGS:
Radial loading absorbed and friction from axial stem loading reduced. Dual bearings support shaft for extended cycle life and superior thermal characteristics.

BLOW-OUT PROOF STEM AND THRUST BEARING:
Stem shoulder is integral part of stem, retained internally to prevent stem blowout from pressure in body cavity. Thrust bearing reduces wear, also serves as a component to lower the operating torque.

PRECISE, SMOOTH BALL:
Ball sphericity and surface finish are key factors in attaining long valve life, low operating torque and superb pressure-holding capacity. Vented ball optional.

RIGID SPLIT BODY:
Designed with extra bolts to assure positive alignment and maximum protection against bending stresses in the piping and forces produced by thermal distortion; designed with secondary metal to metal seal in the event of fire.



FUGITIVE EMISSIONS CONTROL:
All valves certified to ISO 15848-1 Class BH CO3 200°C (392°F), as standard. Multiple layers of adjustable PTFE chevron packing rings for standard models; while graphite braided / die-formed seals are used for models tested to API 607 5th edition.

LIVE LOADED SPRING:
Belleville washer keeps constant force on stem-seal packing, ensuring seal integrity and extended valve life.

CAVITY RELIEVING SEATS:
As standard in the closed position, with E-seat, soft seat as standard.

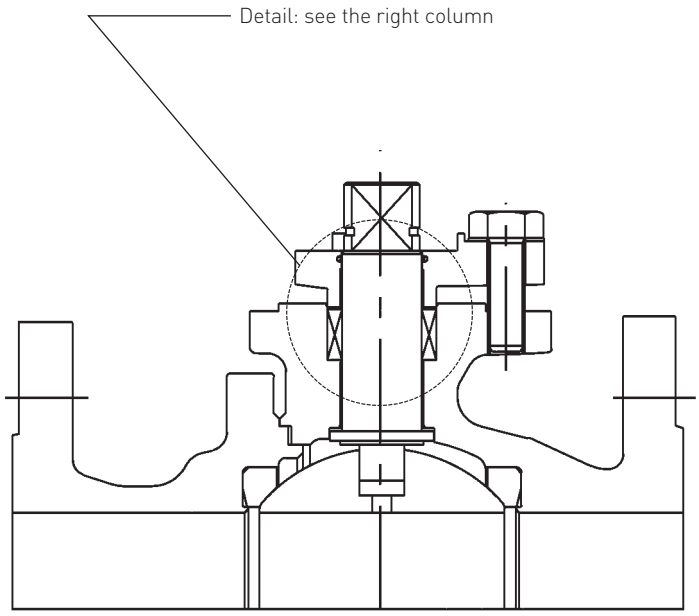
CAST BLEED-PORT BOSS:
Provision can be made for drain bleed port when required. (Not shown)

ANTI-STATIC GROUNDING:
Special retaining spring provides positive ground for use with volatile or flammable liquids is standard. (Not shown)

LOCKING DEVICE
Include as an option for API 608 compliance for manually-operated valves.

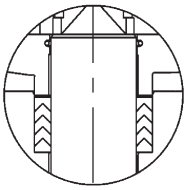
SEAT TEMPERATURE RANGE
Temperature: -196°C (-320°F) to 500°C (932°F)

STANDARD PRIMARY CONTAINMENT SEALS FOR FUGITIVE EMISSION CONTROL

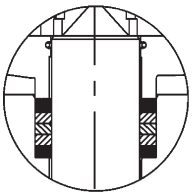


STANDARD BONNET

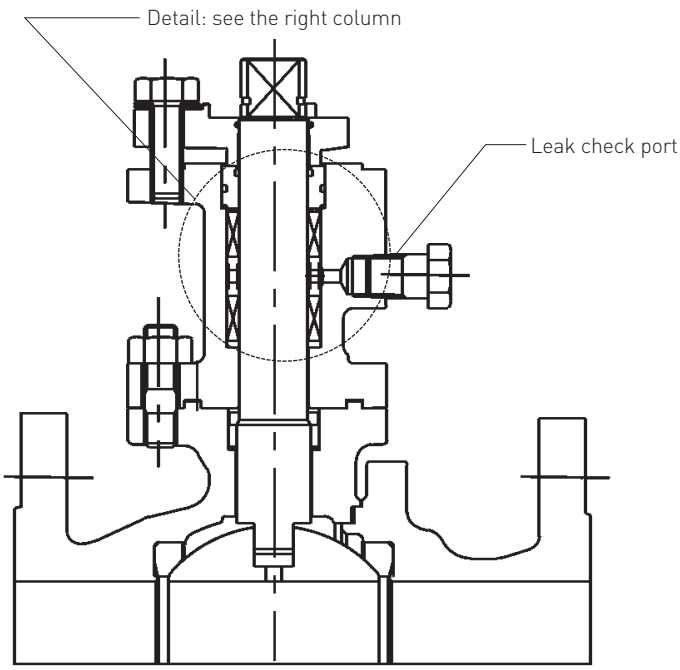
STANDARD SEALS
Superior quality multi-layered, adjustable chevron packing rings as stem seals.Certified to ISO 15848-1 Class BH - C03 and API 641 as standard.



FIRE TESTED (OPTION)
Die-formed carbon fiber seals, sandwiched by braided graphite rings. Fire safe in design, minimizing leakage in the event of fire. Fire tested to API 607 6th edition.

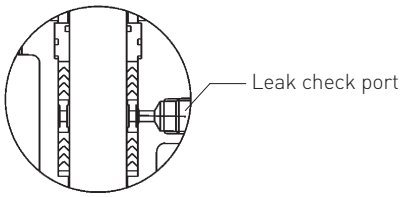


OPTIONAL SECONDARY CONTAINMENT SEALS FOR FUGITIVE EMISSION CONTROL / TOXIC AND LETHAL APPLICATIONS

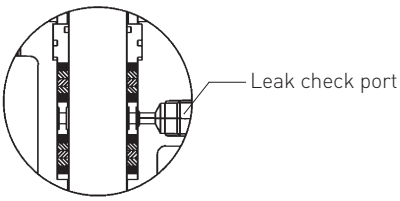


EXTENDED BONNET

CHEVRON PTFE PACKING (OPTION)
Double packing gland elastomer seal with a lantern ring. If media leaks through primary seal, it can be detected and stopped by pressure injection. ISO 15848-1 Class A equivalent performance optional with extension.



FLAMMABLE SERVICES (OPTION)
Double packing gland graphite seal and lantern ring.



The Series EB1 is available in three basic types of seats: soft, Gratite® and Metaltite®. Each offering a range of performance suitable for many applications.

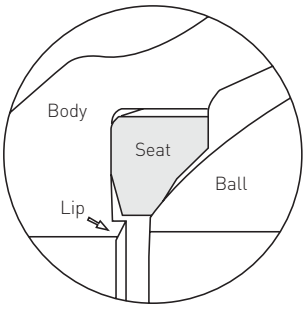
SUPERIOR SOFT SEAT PERFORMANCE

Choose from two soft seat materials: the standard E-seat PTFE/PFA copolymer or PEEK. Either type of seat is retained in the same manner and valve body is machined with a protective lip, designed to eliminate seat deformation and creep flow. This lip also acts as a secondary back-up seal, which forms a metal to metal contact in the event the primary soft seal is burnt in a fire (see details, right).

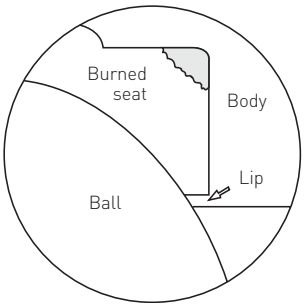
The E-seat offers high purity and excellent properties of strength, toughness, permeability resistance and resiliency. It is composed of a unique molecularly enhanced copolymer of PTFE and PFA. It offers a full range of properties formerly requiring two separate materials. The E-seat provides pressure and temperature capabilities previously available only with glass or carbon fiber-reinforced PTFE. In high-temperature operations, the seat remains white, eliminating the problem of color contamination associated with seats made from darker reinforced materials. The E-seat is excellent on a wide variety of applications but is particularly recommended for use on styrene and butadiene, where good permeability resistance is a required performance factor; and on low-pressure steam, where flaking of virgin PTFE is a problem. It is also recommended for use on food and beverage, pharmaceutical and biotech, paper, clean gas and any other applications where product purity and the lack of foreign fillers are critical to process media integrity.

The Popcorn Factor: the photo (A) shows a virgin PTFE seat after the attack by a reactive monomer (in this case, styrene). The material's molecular matrix was penetrated by the vapor pressure of the uninhibited monomers, resulting in a polymeric reaction, commonly known as 'popcorn polymerization'. This reaction can totally destroy the seat material.

The photo (B) shows the results of the E-seat copolymer tested by Emerson. Using butadiene, generally considered the worst-case scenario due to its small molecular size, the test ran for two years at 0.84 MPa (122 psi) and 82°C (180°F). The seats experienced minimum distortion and, after the two-year period, did not leak in service. Pressure tests after removal, at 1.1 times of design pressure, also showed no leakage. The photo shows two of the tested seats and a new seat in the middle for comparison.



ANTI CREEP FLOW FEATURE



SECONDARY BACK UP SEAL


PHOTO (A)

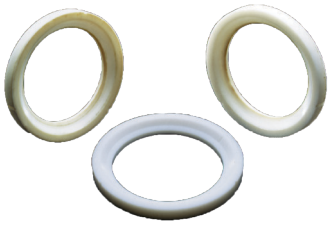


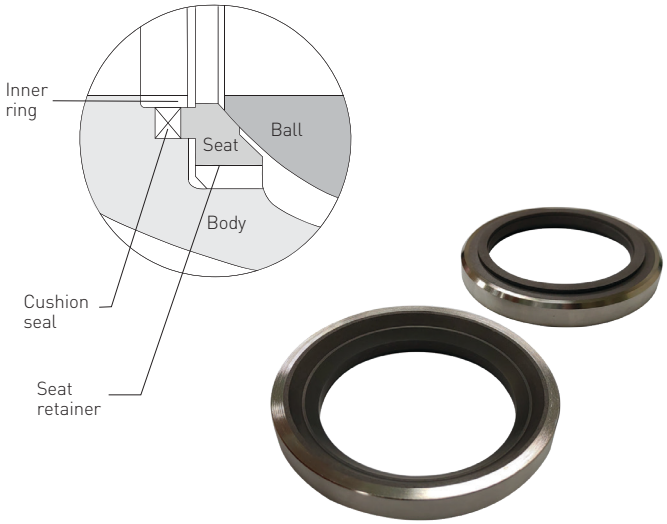
PHOTO (B)

GRATITE® SEAT

A proprietary product for high-temperature, high-pressure, flammable and corrosive critical-process applications, the Gratite® seat offers superior performance and reliability. Gratite® is a bonded composite of hard graphite material. The cushion seal provides resiliency during thermal expansion-contraction. The result is a seat with physical properties that are far superior to conventional ball valve seats of carbon graphite construction.

- More economical than Stellite
- High resistance to thermal shock
- Strongly recommended in Steam and Thermal Fluids

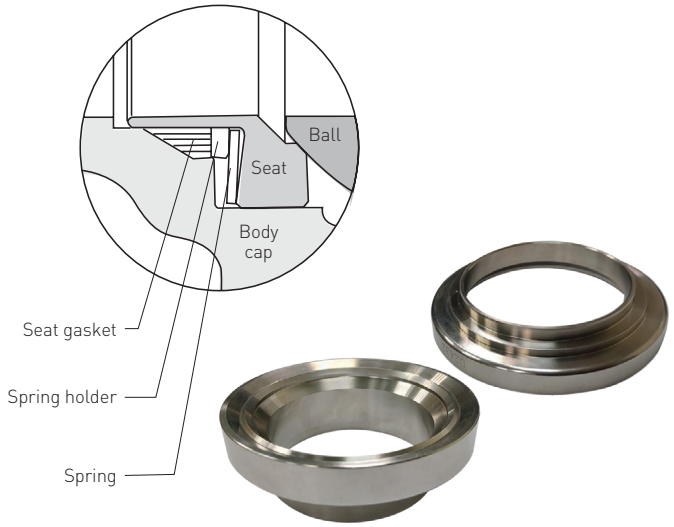
Gratite® is a registered trademark of Emerson Japan Co., LTD.
For more information, refer to technical data sheet VCTDS-02582.



METALTITE® SEAT

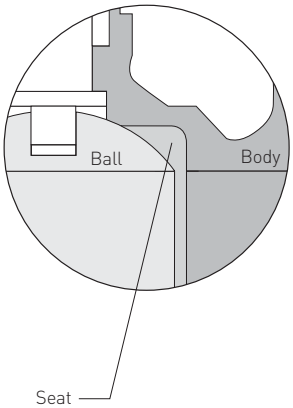
Emerson utilizes proprietary processes with special lapping technologies to provide a higher-quality product with a superior level of performance. Suitable for temperature range up to 500°C (932°F), the Metaltite® metal seat provides high performance solutions to many difficult and bidirectional applications. Precision lapping of the ball-to-seat fit results in superior interfacing and a tight shut-off conforming to FCI 70-2 Class V and Class VI (option). Available with two different ball coatings: Hard chrome or nickel alloy overlay. Durable stellited stainless seats are highly corrosion and erosion resistant. PTFE or soft carbon shaft seals are available.

Metaltite® is a registered trademark of Emerson Japan Co., LTD.
For more information, refer to technical data sheet VCTDS-02565.



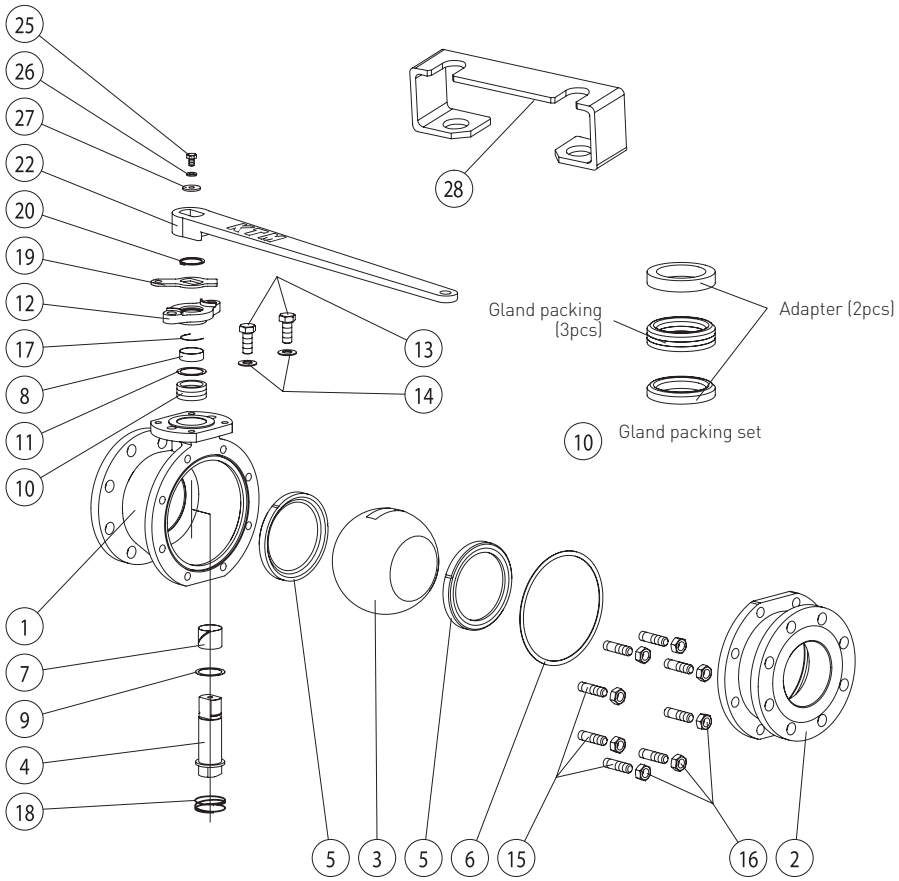
NOFILL™ POCKETLESS "CAVITY-FREE" SEAT

Valve servicing reactive monomers, close to the reactors in applications such as styrene and butadiene to starches and slurries frequently see the build up within the "cavities" or open spaces inside the process valves, causing polymerization or fermentation, resulting in shutdowns and product contamination. Until now, the response to this problem has been to fill the cavities with PFA, FEP or other "foreign" material. Another option is the NoFill Pocketless Valve. Dimensionally equivalent to the Series EB1 standard soft seat design, the valve has internal seat dimensions optimized for cavity free operation and a more rugged stainless steel body design with mirror-finish polished internal bore and body cavity - on all wetted parts. The valve is still bi-directional with the standard floating ball, yet boasts strict "micro-space" ball clearance tolerances: 0.5 mm for bore sized DN 15-50 (NPS 1/2 to 2) and 1.0 mm for bore sized DN 65-200 (NPS 2-1/2 to 8). World class spherically-shaped E-Seats ensure positive 360° sealing. Maximum C_v values provide minimal pressure drop, especially useful for media with potential to build up in the valve.



KTM SERIES EB1 SPLIT BODY FLOATING BALL VALVES

STANDARD PRESSURE - ASME CLASS 150-300 | SOFT E-SEAT™



STANDARDS

Design:	ASME B16.34
Face to face:	ASME B16.10, JIS B2002
End connection:	ASME B16.5, JIS B2220
Testing:	ASME B16.34, API 598, API 6D
Fire test:	API 607 6th edition
Quality assurance:	ISO 9001

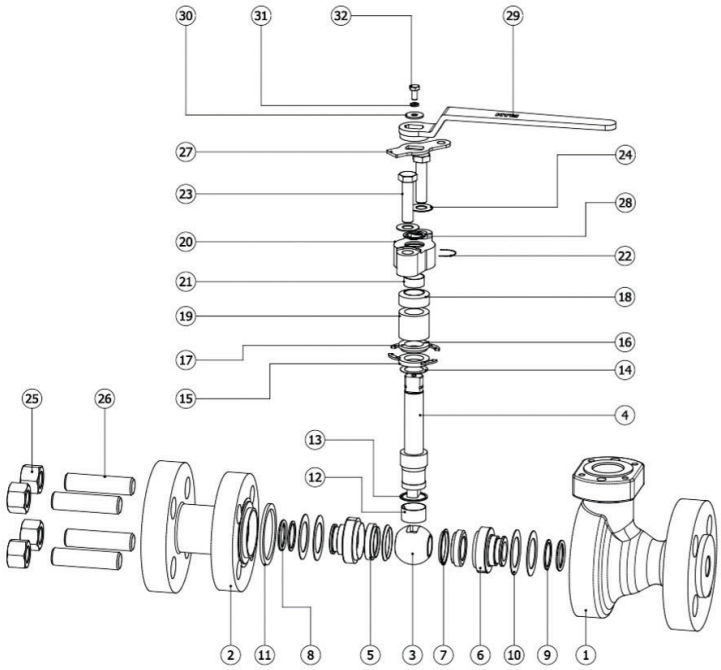
PARTS LIST AND MATERIALS OF CONSTRUCTION MATERIALS

		Materials			
No.	**Parts name**	**Carbon steel**	**304 Stainless steel**	**316 Stainless steel**	**Qty**
1	Body	A216 (G) WCB	A351 (G) CF8	A351 (G) CF8M	1
2	Body cap	A216 (G) WCB	A351 (G) CF8	A351 (G) CF8M	1
3	Ball	A276 (TP) 316 or A182 (G) F316 or A351 (G) CF8M	A276 (TP) 304 or A182 (G) F304 or A351 (G) CF8	A276 (TP) 316 or A182 (G) F316 or A351 (G) CF8M	1
4	Stem	A276 (TP) 316	A276 (TP) 304	A276 (TP) 316	1
5	Seat	PTFE / PFA copolymer	PTFE / PFA copolymer	PTFE / PFA copolymer	2
6	Gasket	R-PTFE	R-PTFE	R-PTFE	1
7	Shaft bearing	R-PTFE	R-PTFE	R-PTFE	1
8	Shaft bearing	PTFE	PTFE	PTFE	1
9	Thrust bearing	PTFE	PTFE	PTFE	1
10	Gland packing set	PTFE	PTFE	PTFE	1 set
11	Packing washer	316SS	316SS	316SS	1
12	Gland flange	CF8	CF8	CF8	1
13	Gland bolt	A193 (G) B8	A193 (G) B8	A193 (G) B8	2
14	Live loading spring	304SS, Inconel® (option)	304SS, Inconel® (option)	304SS, Inconel® (option)	2
15	Stud	A193 (G) B7	A193 (G) B8	A193 (G) B8	4-12
16	Nut	A194 (G) 2H	A194 (G) 8	A194 (G) 8	4-12
17	Spring	316SS	316SS	316SS	1
18	Spring (DN 65 and larger)	316SS	316SS	316SS	1
19	Stopper	304SS	304SS	304SS	1
20	Snap ring (C-type)	304SS	304SS	304SS	1
22	Handle	Carbon steel Zn-plating / Painting	Carbon steel Zn-plating / Painting	Carbon steel Zn-plating / Painting	1
25	Hexagon bolt	304SS	304SS	304SS	1
26	Spring washer	304SS	304SS	304SS	1
27	Plate washer	304SS	304SS	304SS	1
28	Locking device (optional)				

The material parts vary slightly depending on the valve size, but the basic structures are identical.
Other materials are also available. Please consult for the details.

KTM SERIES EB1 SPLIT BODY FLOATING BALL VALVES

HIGH PRESSURE - ASME CLASS 600-1500 | SOFT SEAT



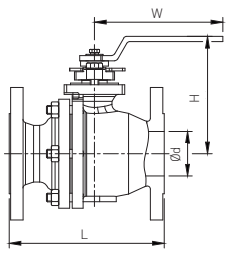
PARTS LIST AND MATERIALS OF CONSTRUCTION MATERIALS

		Materials			
No.	**Parts name**	**Carbon steel**	**304 Stainless steel**	**316 Stainless steel**	**Qty**
1	Body	A216 (G) WCB	A351 (G) CF8	A351 (G) CF8M	1
2	Body cap	A216 (G) WCB	A351 (G) CF8	A351 (G) CF8M	1
3	Ball	A276 (TP) 316 or A182 (G) F316	A276 (TP) 316 or A182 (G) F316	A276 (TP) 316 or A182 (G) F316	1
4	Stem	A276 (TP) 316	A276 (TP) 316	A276 (TP) 316	1
5	Seat	R-PTFE (H)	R-PTFE (H)	R-PTFE (H)	1
6	Seat retainer	316SS	316SS	316SS	2
7	Seat washer (DN 25 Class 900, 1500)	316SS	316SS	316SS	2
8	O-ring	FKM	FKM	FKM	2
9	Back-up ring (Class 900, 1500)	PTFE	PTFE	PTFE	2
10	Spring	Inconel® X-750	Inconel® X-750	Inconel® X-750	2-4
11	Gasket	PTFE / 316SS (Spiral wound)	PTFE / 316SS (Spiral wound)	PTFE / 316SS (Spiral wound)	1
12	Stem bearing	R-PTFE	R-PTFE	R-PTFE	1
13	Thrust bearing	PTFE	PTFE	PTFE	1
14	Thrust bearing (Class 900, 1500)	Metal backed PTFE	Metal backed PTFE	Metal backed PTFE	1
15	Thrust washer	316SS	316SS	316SS	1
16	Packing retainer (Class 900, 1500)	316SS	316SS	316SS	1
17	Blowout-proof ring	316SS HCr plating	316SS HCr plating	316SS HCr plating	1
18	Gland	304SS or 316SS	304SS or 316SS	304SS or 316SS	1
19	Gland packing	R-PTFE (H)	R-PTFE (H)	R-PTFE (H)	1 set
20	Gland flange	CF8	CF8	CF8	1
21	Stem bearing	PTFE	PTFE	PTFE	1
22	Spring	316SS	316SS	316SS	1
23	Gland bolt	A193 (G) B7 Zn-Plating or B8	A193 (G) B7 Zn-Plating or B8	A193 (G) B7 Zn-Plating or B8	2
24	Live-loading spring	304SS Inconel® (option)	304SS Inconel® (option)	304SS Inconel® (option)	2
25	Nut	A194 (G) 2H	A194 (G) 2H Zn-Plating	A194 (G) 2H Zn-Plating	4
26	Stud	A193 (G) B7	A193 (G) B7 Zn-Plating	A193 (G) B7 Zn-Plating	4
27	Stopper	304SS	304SS	304SS	1
28	Snap ring	304SS	304SS	304SS	1
29	Handle	Carbon steel Zn-Plating	Carbon steel Zn-Plating	Carbon steel Zn-Plating	1
30	Plate washer	304SS	304SS	304SS	1
31	Spring washer	304SS	304SS	304SS	1
32	Hexagon bolt	304SS	304SS	304SS	1

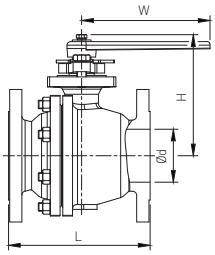
The material parts vary slightly depending on the valve size, but basic structures are identical.
Other materials are also available. Please contact for the details.

KTM SERIES EB1 SPLIT BODY FLOATING BALL VALVES

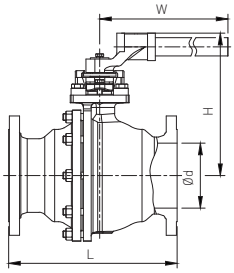
STANDARD PRESSURE - ASME CLASS 150



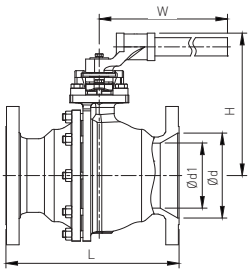
FULL BORE
SIZES DN 15 - 50
(NPS ½ - 2)



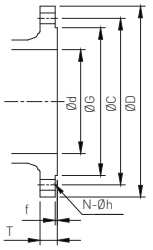
FULL BORE
SIZES DN 65, 80
(NPS 2½, 3)



FULL BORE
SIZES DN 100 - 200
(NPS 4 - 8)



REDUCED BORE
SIZES DN 150 - 250
(NPS 6 - 10)



RF FLANGE END

D: Outside diameter
C: Bolt circle diameter
G: Raised face diameter
T: Flange thickness
f: Raised face height
N: Number of bolts
h: Bolt hole diameter
d: Bore diameter

ASME CLASS 150 / JIS 10K DIMENSIONS (mm)

Valve size	Full bore						Reduced bore						ASME Class 150 RF Flange dimensions							JIS 10K RF Flange dimensions						
	Bore				Weight	K_v	Ball bore				Weight	K_v														
(DN)	(d)	L	H	W	(kg)	values	(d_1)	L	H	W	(kg)	values	D	C	G	T	f	N	h	D	C	G	T	f	N	h
15	13	108	81	130	2	22.5	-	-	-	-	-	-	89	60.5	35	11.2	1.6	4	16	95	70	51	12	1	4	15
20	19	117	85	130	2.5	43.3	-	-	-	-	-	-	98	70.0	43	11.2	1.6	4	16	100	75	56	14	1	4	15
25	25	127	98	160	4.6	81.3	-	-	-	-	-	-	108	79.5	51	11.2	1.6	4	16	125	90	67	14	1	4	19
40	38	165	124	230	6.6	224.9	-	-	-	-	-	-	127	98.5	73	14.3	1.6	4	16	140	105	81	16	2	4	19
50	51	178	135	230	11	415.2	-	-	-	-	-	-	152	120.5	92	15.9	1.6	4	19	155	120	96	16	2	4	19
65	64	190	165	400	18	648.8	-	-	-	-	-	-	178	139.5	105	17.5	1.6	4	19	175	140	116	18	2	4	19
80	76	203	174	400	22	1124.6	-	-	-	-	-	-	190	152.5	127	19.1	1.6	4	19	185	150	126	18	2	8	19
100	102	229	240	715	39	1989.6	-	-	-	-	-	-	229	190.5	157	23.9	1.6	8	19	210	175	151	18	2	8	19
125	127	356	310	1140	70	3287.2	-	-	-	-	-	-	254	216.0	186	23.9	1.6	8	22	250	210	182	20	2	8	23
150	152	394	330	1140	91	4671.3	127	267	310	1140	67	1557.1	279	241.5	216	25.4	1.6	8	22	280	240	212	22	2	8	23
200	203	457	405	1510	181	8650.5	152	292	330	1140	99	2162.6	343	298.5	270	28.6	1.6	8	22	330	290	262	22	2	12	23
250	-	-	-	-	-	-	203	330	405	1510	183	3892.7	406	362.0	324	30.2	1.6	12	25	400	355	324	24	2	12	25

ASME CLASS 150 / JIS 10K DIMENSIONS (inch)

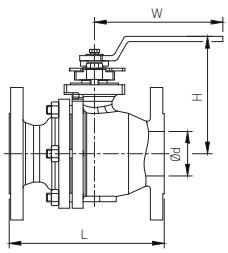
Valve size	Full bore						Reduced bore						ASME Class 150 RF Flange dimensions							JIS 10K RF Flange dimensions						
	Bore				Weight	C_v	Ball bore				Weight	C_v														
(NPS)	(d)	L	H	W	(lbs)	values	(d_1)	L	H	W	(lbs)	values	D	C	G	T	f	N	h	D	C	G	T	f	N	h
½	0.50	4.3	3.2	5.1	4.4	26	-	-	-	-	-	-	3.5	2.4	1.4	0.4	0.1	4	0.6	3.7	2.8	2.0	0.5	0.04	4	0.6
¾	0.75	4.6	3.3	5.1	5.5	50	-	-	-	-	-	-	3.9	2.8	1.7	0.4	0.1	4	0.6	3.9	3.0	2.2	0.6	0.04	4	0.6
1	1.00	5.0	3.9	6.3	10.1	94	-	-	-	-	-	-	4.3	3.1	2.0	0.4	0.1	4	0.6	4.9	3.5	2.6	0.6	0.04	4	0.7
1½	1.50	6.5	4.9	9.1	14.6	260	-	-	-	-	-	-	5.0	3.9	2.9	0.6	0.1	4	0.6	5.5	4.1	3.2	0.6	0.08	4	0.7
2	2.00	7.0	5.3	9.1	24.3	480	-	-	-	-	-	-	6.0	4.7	3.6	0.6	0.1	4	0.7	6.1	4.7	3.8	0.6	0.08	4	0.7
2½	2.50	7.5	6.5	15.7	39.7	750	-	-	-	-	-	-	7.0	5.5	4.1	0.7	0.1	4	0.7	6.9	5.5	4.6	0.7	0.08	4	0.7
3	3.00	8.0	6.9	15.7	48.5	1300	-	-	-	-	-	-	7.5	6.0	5.0	0.8	0.1	4	0.7	7.3	5.9	5.0	0.7	0.08	8	0.7
4	4.00	9.0	9.4	28.1	86.0	2300	-	-	-	-	-	-	9.0	7.5	6.2	0.9	0.1	8	0.7	8.3	6.9	5.9	0.7	0.08	8	0.7
5	5.00	14.0	12.2	44.9	154.4	3800	-	-	-	-	-	-	10.0	8.5	7.3	0.9	0.1	8	0.9	9.8	8.3	7.2	0.8	0.08	8	0.9
6	6.00	15.5	13.0	44.9	200.7	5400	5.00	10.5	12.2	44.9	147.7	1800	11.0	9.5	8.5	1.0	0.1	8	0.9	11.0	9.4	8.3	0.9	0.08	8	0.9
8	8.00	18.0	15.9	59.4	399.1	10000	6.00	11.5	13.0	44.9	218.3	2500	13.5	11.8	10.6	1.1	0.1	8	0.9	13.0	11.4	10.3	0.9	0.08	12	0.9
10	-	-	-	-	-	-	8.00	15.9	15.9	59.4	403.4	4500	16.0	14.3	12.8	1.2	0.1	12	1.0	15.7	14.0	12.8	0.9	0.08	12	1.0

NOTE

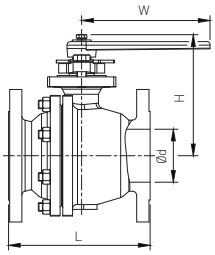
- Face-to-face dimensions for EB1 Class 150 reduced bore valves with size DN 150 - 250 (NPS 6 - 10) are complied with ASME B16.10 short pattern.

KTM SERIES EB1 SPLIT BODY FLOATING BALL VALVES

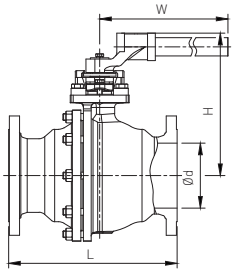
STANDARD PRESSURE - ASME CLASS 300



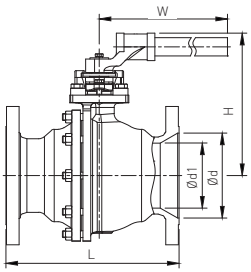
FULL BORE
SIZES DN 15 - 50
(NPS ½ - 2)



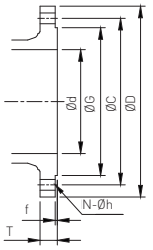
FULL BORE
SIZES DN 65, 80
(NPS 2½, 3)



FULL BORE
SIZES DN 100 - 200
(NPS 4 - 8)



REDUCED BORE
SIZES DN 150 - 250
(NPS 6 - 10)



RF FLANGE END

D: Outside diameter
C: Bolt circle diameter
G: Raised face diameter
T: Flange thickness
f: Raised face height
N: Number of bolts
h: Bolt hole diameter
d: Bore diameter

ASME CLASS 300 / JIS 20K DIMENSIONS (mm)

Valve size (DN)	Full bore						Reduced bore						ASME Class 300 RF Flange dimensions							JIS 20K RF Flange dimensions						
	Bore (d)	L	H	W	Weight (kg)	K_v values	Ball bore (d_1)	L	H	W	Weight (kg)	K_v values	D	C	G	T	f	N	h	D	C	G	T	f	N	h
15	13	140	81	130	2.5	22.5	-	-	-	-	-	-	95	66.5	35	14.3	1.6	4	16	95	70	51	14	1	4	15
20	19	152	85	130	3.7	43.3	-	-	-	-	-	-	117	82.5	43	15.9	1.6	4	19	100	75	56	16	1	4	15
25	25	165	98	160	5.3	81.3	-	-	-	-	-	-	124	89.0	51	17.5	1.6	4	19	125	90	67	16	1	4	19
40	38	190	124	230	11	224.9	-	-	-	-	-	-	156	114.5	73	20.7	1.6	4	22	140	105	81	18	2	4	19
50	51	216	135	230	14	415.2	-	-	-	-	-	-	165	127.0	92	22.3	1.6	8	19	155	120	96	18	2	8	19
65	64	241	165	400	23	648.8	-	-	-	-	-	-	190	149.0	105	25.4	1.6	8	22	175	140	116	20	2	8	19
80	76	283	174	400	32	1124.6	-	-	-	-	-	-	210	168.0	127	28.6	1.6	8	22	200	160	132	22	2	8	23
100	102	305	240	715	53	1989.6	-	-	-	-	-	-	254	200.0	157	31.8	1.6	8	22	225	185	160	24	2	8	23
125	127	381	310	1140	90	3287.2	-	-	-	-	-	-	279	235.0	186	35.0	1.6	8	22	270	225	195	26	2	8	25
150	152	403	330	1140	114	4671.3	127	403	310	1140	87	1557.1	318	270.0	216	36.6	1.6	12	22	305	260	230	28	2	12	25
200	203	502	405	1510	232	8650.5	152	419	330	1140	104	2162.6	381	330.0	270	41.3	1.6	12	25	350	305	275	30	2	12	25
250	-	-	-	-	-	-	203	457	405	1510	206	3892.7	444	387.5	324	47.7	1.6	16	29	430	380	345	34	2	12	27

ASME CLASS 300 / JIS 20K DIMENSIONS (inch)

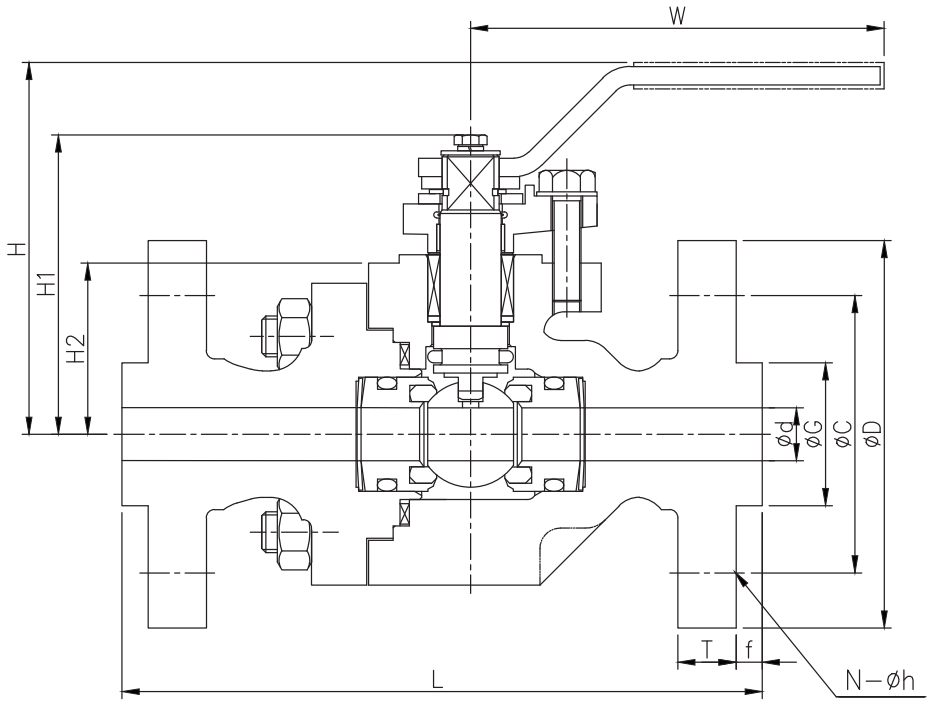
Valve size (NPS)	Full bore						Reduced bore						ASME Class 300 RF Flange dimensions							JIS 20K RF Flange dimensions						
	Bore (d)	L	H	W	Weight (lbs)	C_v values	Ball bore (d_1)	L	H	W	Weight (lbs)	C_v values	D	C	G	T	f	N	h	D	C	G	T	f	N	h
½	0.50	5.5	3.2	5.1	5.5	26	-	-	-	-	-	-	3.7	2.6	1.4	0.6	0.1	4	0.6	3.7	2.8	2.0	0.6	0.04	4	0.6
¾	0.75	6.0	3.3	5.1	8.2	50	-	-	-	-	-	-	4.6	3.2	1.7	0.6	0.1	4	0.7	3.9	3.0	2.2	0.6	0.04	4	0.6
1	1.00	6.5	3.9	6.3	11.7	94	-	-	-	-	-	-	4.9	3.5	2.0	0.7	0.1	4	0.7	4.9	3.5	2.6	0.6	0.04	4	0.7
1½	1.50	7.5	4.9	9.1	24.3	260	-	-	-	-	-	-	6.1	4.5	2.9	0.8	0.1	4	0.9	5.5	4.1	3.2	0.7	0.08	4	0.7
2	2.00	8.5	5.3	9.1	30.9	480	-	-	-	-	-	-	6.5	5.0	3.6	0.9	0.1	8	0.7	6.1	4.7	3.8	0.7	0.08	8	0.7
2½	2.50	9.5	6.5	15.7	50.7	750	-	-	-	-	-	-	7.5	5.9	4.1	1.0	0.1	8	0.9	6.9	5.5	4.6	0.8	0.08	8	0.7
3	3.00	11.1	6.9	15.7	70.6	1300	-	-	-	-	-	-	8.3	6.6	5.0	1.1	0.1	8	0.9	7.9	6.3	5.2	0.9	0.08	8	0.9
4	4.00	12.0	9.4	28.1	116.9	2300	-	-	-	-	-	-	10.0	7.9	6.2	1.3	0.1	8	0.9	8.9	7.3	6.3	0.9	0.08	8	0.9
5	5.00	15.0	12.2	44.9	198.5	3800	-	-	-	-	-	-	11.0	9.3	7.3	1.4	0.1	8	0.9	10.6	8.9	7.7	1.0	0.08	8	1.0
6	6.00	15.9	13.0	44.9	251.4	5400	5.00	15.9	12.2	44.9	191.8	1800	12.5	10.6	8.5	1.4	0.1	12	0.9	12.0	10.2	9.1	1.1	0.08	12	1.0
8	8.00	19.8	15.9	59.4	511.6	10000	6.00	16.5	13.0	44.9	229.3	2500	15.0	13.0	10.6	1.6	0.1	12	1.0	13.8	12.0	10.8	1.2	0.08	12	1.0
10	-	-	-	-	-	-	8.00	18.0	15.9	59.4	454.2	4500	17.5	15.3	12.8	1.9	0.1	16	1.1	16.9	15.0	13.6	1.3	0.08	12	1.1

NOTE

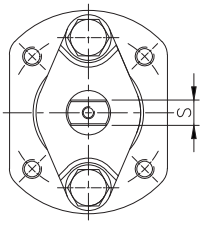
- Face-to-face dimensions for EB1 Class 300 reduced bore valves with size DN 200 - 250 (NPS 8 - 10) are complied with ASME B16.10 short pattern.

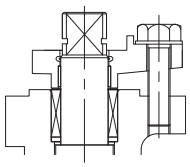
KTM SERIES EB1 SPLIT BODY FLOATING BALL VALVES

HIGH PRESSURE - ASME CLASS 600 | SOFT SEAT

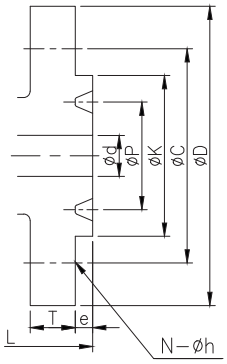


RF FLANGE END





In case of bare stem



RTJ FLANGE END

D: Outside diameter
C: Bolt circle diameter
G: Raised face diameter
K: Raised portion diameter
P: Pitch diameter
T: Flange thickness
f: Raised face height
e: Raised portion height
N: Number of bolts
h: Bolt hole diameter
d: Bore diameter

ASME CLASS 600 DIMENSIONS (mm)

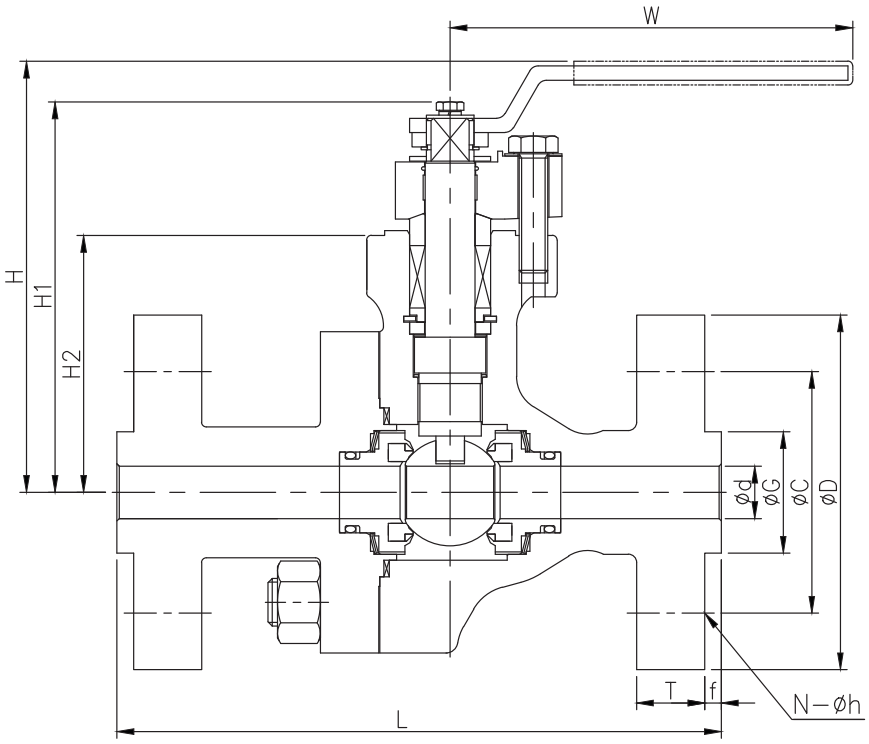
Valve size	Full bore										ASME Class 600 flange dimensions									
	Bore								Weight	K_v										
(DN)	(d)	L-RF	L - RTJ	H	H1	H2	S	W	(kg)	values	D	C	G - RF	K - RTJ	P - RTJ	T	f	e	N	h
15	13	165	163	92	75	42	8	160	4.0	22.5	95	66.5	35	50.8	34.1	14.3	6.4	5.6	4	16
20	19	190	190	99	82	49	8	160	7.0	43.3	117	82.5	43	63.5	42.9	15.9	6.4	6.4	4	19
25	25	216	216	119	103	62	12	230	9.3	81.3	124	89.0	51	69.8	50.8	17.5	6.4	6.4	4	19
40	38	241	241	129	113	72	12	230	16.0	224.9	156	114.5	73	90.5	68.3	22.3	6.4	6.4	4	22

ASME CLASS 600 DIMENSIONS (inch)

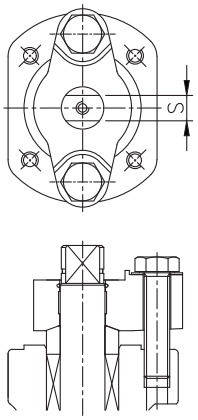
Valve size	Full bore										ASME Class 600 flange dimensions									
	Bore								Weight	C_v										
(NPS)	(d)	L-RF	L - RTJ	H	H1	H2	S	W	(lbs)	values	D	C	G - RF	K - RTJ	P - RTJ	T	f	e	N	h
½	0.50	6.5	6.4	3.6	3.0	1.7	0.31	6.3	8.8	26	3.7	2.6	1.4	2.0	1.3	0.6	0.25	0.22	4	0.6
¾	0.75	7.5	7.5	3.9	3.2	1.9	0.31	6.3	15.4	50	4.6	3.2	1.7	2.5	1.7	0.6	0.25	0.25	4	0.7
1	1.00	8.5	8.5	4.7	4.1	2.4	0.47	9.1	20.5	94	4.9	3.5	2.0	2.7	2.0	0.7	0.25	0.25	4	0.7
1½	1.50	9.5	9.5	5.1	4.4	2.8	0.47	9.1	35.3	260	6.1	4.5	2.9	3.6	2.7	0.9	0.25	0.25	4	0.9

KTM SERIES EB1 SPLIT BODY FLOATING BALL VALVES

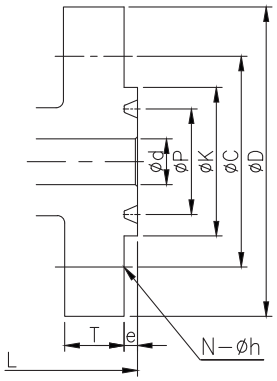
HIGH PRESSURE - ASME CLASS 900 AND 1500 | SOFT SEAT



RF FLANGE END



In case of bare stem



RTJ FLANGE END

D: Outside diameter
C: Bolt circle diameter
G: Raised face diameter
K: Raised portion diameter
P: Pitch diameter
T: Flange thickness
f: Raised face height
e: Raised portion height
N: Number of bolts
h: Bolt hole diameter
d: Bore diameter

ASME CLASS 900 / 1500 DIMENSIONS (mm)

Valve size	Full bore										ASME Class 900 / 1500 flange dimensions									
	Bore								Weight	K_v										
(DN)	(d)	L-RF	L - RTJ	H	H1	H2	S	W	(kg)	values	D	C	G - RF	K - RTJ	P - RTJ	T	f	e	N	h
15	13	216	216	167.5	151.5	105	8	160	12.6	22.5	121	82.5	35	60.3	39.7	22.3	6.4	6.4	4	22
20	17	229	229	177.5	162.5	106	12	230	14.2	43.3	130	89.0	43	66.7	44.5	25.4	6.4	6.4	4	22
25	22	254	254	179.5	164.5	108	12	230	18.8	81.3	149	101.5	51	71.5	50.8	28.6	6.4	6.4	4	25

ASME CLASS 900 / 1500 DIMENSIONS (inch)

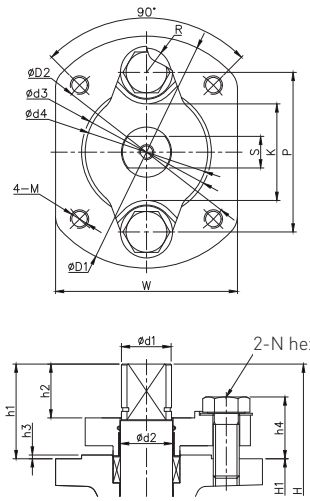
Valve size	Full bore										ASME Class 900 / 1500 flange dimensions									
	Bore								Weight	C_v										
(NPS)	(d)	L-RF	L - RTJ	H	H1	H2	S	W	(lbs)	values	D	C	G - RF	K - RTJ	P - RTJ	T	f	e	N	h
½	0.50	8.5	8.5	6.6	6.0	4.1	0.31	6.3	27.8	26	4.8	3.2	1.4	2.4	1.6	0.9	0.25	0.25	4	0.9
¾	0.67	9.0	9.0	7.0	6.4	4.2	0.47	9.1	31.3	50	5.1	3.5	1.7	2.6	1.8	1.0	0.25	0.25	4	0.9
1	0.87	10.0	10.0	7.1	6.5	4.3	0.47	9.1	41.4	94	5.9	4.0	2.0	2.8	2.0	1.1	0.25	0.25	4	1.0

NOTE

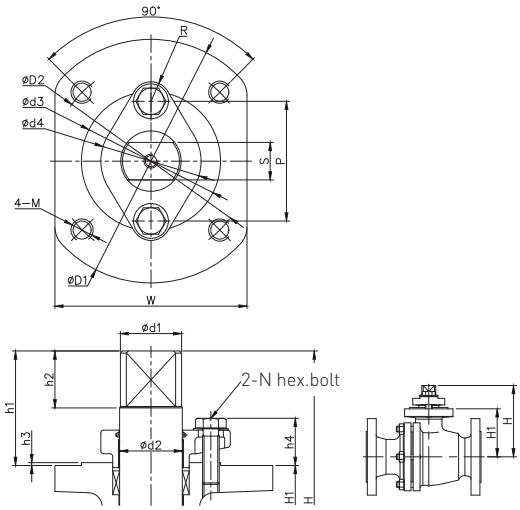
- Dimensions of EB1 Class 900 and EB1 Class 1500 are totally the same.

KTM SERIES EB1 SPLIT BODY FLOATING BALL VALVES

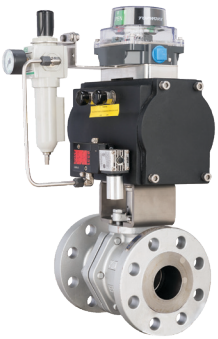
STANDARD PRESSURE - ASME CLASS 150-300 | SOFT E-SEAT™



SIZES DN 15 - 100
(NPS ½ - 4)



SIZES DN 125 -250
(NPS 5 - 10)



SERIES EB1 WITH
F89U ACTUATOR

TOP PLATE AND GLAND DIMENSIONS (mm)

Valve size (DN)		d_1		d_2		d_3														S			
Full bore	Reduced bore	Max.	Min.	Max.	Min.	Max.	Min.	d4	D_1	D_2	h_1	h_2	h_3	h_4	H	H_1	M	N	P	R	Max.	Min.	W	K
15	-	9.95	9.85	11.00	10.96	30.00	29.90	28	55	42	22.0	10.5	2	19	59.0	37	M6	M6	40	6	6.93	6.88	42.7	23
20	-	9.95	9.85	11.00	10.96	30.00	29.90	28	55	42	22.0	10.5	2	19	63.0	41	M6	M6	40	6	6.93	6.88	42.7	23
25	-	13.95	13.85	15.00	14.96	35.00	34.91	33	65	50	26.5	13.5	2	22	75.5	49	M6	M8	48	8	7.92	7.86	50.4	28
40	-	19.95	19.85	21.00	20.95	55.00	54.90	46	90	70	33.5	17.5	2	25	102.5	69	M8	M10	66	10	11.91	11.84	70.0	40
50	-	19.95	19.85	21.00	20.95	55.00	54.90	46	90	70	33.5	17.5	2	25	112.5	79	M8	M10	66	10	11.91	11.84	70.0	40
65	-	26.95	26.85	28.00	27.95	70.00	69.88	66	125	102	50.5	30.5	2	32	154.5	104	M10	M14	86	13	16.91	16.84	100.0	52
80	-	26.95	26.85	28.00	27.95	70.00	69.88	66	125	102	50.5	30.5	2	32	163.5	113	M10	M14	86	13	16.91	16.84	100.0	52
100	-	33.95	33.85	35.00	34.94	70.00	69.88	66	125	102	50.5	30.5	2	32	189.0	138	M10	M14	86	13	21.90	21.81	100.0	52
125	150	43.95	43.85	45.00	44.94	100.00	99.86	72	175	140	84.5	40.0	2	36	252.5	168	M16	M12	86	14	26.90	26.81	138.0	-
150	200	43.95	43.85	45.00	44.94	100.00	99.86	72	175	140	84.5	40.0	2	36	272.5	188	M16	M12	86	14	26.90	26.81	138.0	-
200	250	52.95	52.85	54.00	53.93	130.00	129.84	90	210	165	107.0	53.0	2	43	355.0	248	M20	M14	104	16	35.88	35.78	170.0	-

TOP PLATE AND GLAND DIMENSIONS (inch)

Valve size (NPS)		d_1		d_2		d_3														S			
Full bore	Reduced bore	Max.	Min.	Max.	Min.	Max.	Min.	d4	D_1	D_2	h_1	h_2	h_3	h_4	H	H_1	M	N	P	R	Max.	Min.	W	K
½	-	0.392	0.388	0.433	0.431	1.181	1.177	1.102	2.165	1.654	0.866	0.413	0.079	0.748	2.323	1.457	M6	M6	1.575	0.236	0.273	0.271	1.68	0.91
¾	-	0.392	0.388	0.433	0.431	1.181	1.177	1.102	2.165	1.654	0.866	0.413	0.079	0.748	2.480	1.614	M6	M6	1.575	0.236	0.273	0.271	1.68	0.91
1	-	0.549	0.545	0.591	0.589	1.378	1.374	1.299	2.559	1.969	1.043	0.531	0.079	0.866	2.972	1.929	M6	M8	1.890	0.315	0.312	0.309	1.98	1.10
1½	-	0.785	0.781	0.827	0.825	2.165	2.161	1.811	3.543	2.756	1.319	0.689	0.079	0.984	4.035	2.717	M8	M10	2.598	0.394	0.469	0.466	2.76	1.57
2	-	0.785	0.781	0.827	0.825	2.165	2.161	1.811	3.543	2.756	1.319	0.689	0.079	0.984	4.429	3.110	M8	M10	2.598	0.394	0.469	0.466	2.76	1.57
2½	-	1.061	1.057	1.102	1.100	2.756	2.751	2.598	4.921	4.016	1.988	1.201	0.079	1.260	6.083	4.094	M10	M14	3.386	0.512	0.666	0.663	3.94	2.05
3	-	1.061	1.057	1.102	1.100	2.756	2.751	2.598	4.921	4.016	1.988	1.201	0.079	1.260	6.437	4.449	M10	M14	3.386	0.512	0.666	0.663	3.94	2.05
4	-	1.337	1.333	1.378	1.376	2.756	2.751	2.598	4.921	4.016	1.988	1.201	0.079	1.260	7.441	5.433	M10	M14	3.386	0.512	0.862	0.859	3.94	2.05
5	6	1.730	1.726	1.772	1.769	3.937	3.931	2.835	6.890	5.512	3.327	1.575	0.079	1.417	9.941	6.614	M16	M12	3.386	0.551	1.059	1.056	5.43	-
6	8	1.730	1.726	1.772	1.769	3.937	3.931	2.835	6.890	5.512	3.327	1.575	0.079	1.417	10.728	7.402	M16	M12	3.386	0.551	1.059	1.056	5.43	-
8	10	2.085	2.081	2.126	2.123	5.118	5.112	3.543	8.268	6.496	4.213	2.087	0.079	1.693	13.976	9.764	M20	M14	4.094	0.630	1.413	1.409	6.69	-

KTM SERIES EB1 SPLIT BODY FLOATING BALL VALVES

TORQUE VALUES - E SEATS (CODE E) WITH PTFE GLAND PACKING (NON-FIRESAFE)

TORQUE (Nm) - EB1 ASME Class 150 - 300: E Seats (Code E) with PTFE Gland Packing (Non-Firesafe)

Valve Size (DN)		Line pressure (kPa)							MAST	Shear torque
Full bore	Reduced bore (mm)	0	1000	2000	3000	3600	4000	5000	SS316	SS316
15	-	5.5	5.5	5.5	5.6	5.7	5.8	6.6	36.0	56.0
20	-	7.0	7.0	7.1	7.2	7.4	7.6	8.5	36.0	56.0
25	-	9.0	9.0	9.4	10.0	10.3	10.5	12.0	72.0	111.0
40	-	15.5	16.0	17.0	17.5	19.0	20.0	25.0	227.0	350.0
50	-	22.0	22.5	24.0	27.0	30.0	32.0	40.0	227.0	350.0
65	-	40.0	41.0	45.0	51.0	56.7	60.5	70.0	604.0	930.0
80	-	60.0	69.0	78.0	89.0	95.6	100.0	115.0	604.0	930.0
100	-	110.0	125.0	145.0	160.0	175.0	185.0	210.0	1259.0	1938.0
125	150	200.0	230.0	265.0	310.0	335.0	-	-	2511.0	3864.0
150	200	310.0	380.0	450.0	540.0	565.0	-	-	2511.0	3864.0
200	250	500.0	720.0	960.0	1220.0	-	-	-	5141.0	7910.0

TORQUE (ft-lbs) - EB1 ASME Class 150 - 300: E Seats (Code E) with PTFE Gland Packing (Non - Firesafe)

Valve Size (NPS)		Line pressure (Bar)							MAST	Shear torque
Full bore	Reduced bore (in)	0	10	20	30	36	40	50	SS316	SS316
½	-	4.1	4.1	4.1	4.1	4.2	4.3	4.9	26.6	41.3
¾	-	5.2	5.2	5.2	5.3	5.5	5.6	6.3	26.6	41.3
1	-	6.6	6.6	6.9	7.4	7.6	7.7	8.9	53.1	81.9
1½	-	11.4	11.8	12.5	12.9	14.0	14.8	18.5	167.5	258.3
2	-	16.2	16.6	17.7	19.9	22.1	23.6	29.5	167.5	258.3
2½	-	29.5	30.3	33.2	37.6	41.8	44.7	51.7	445.8	686.4
3	-	44.3	50.9	57.6	65.7	70.6	73.8	84.9	445.8	686.4
4	-	81.2	92.3	107.0	118.1	129.2	136.5	155.0	929.2	1430.4
5	6	147.6	169.8	195.6	228.8	247.3	-	-	1853.3	2851.9
6	8	228.8	280.5	332.1	398.6	417.0	-	-	1853.3	2851.9
8	10	369.0	531.4	708.5	900.4	-	-	-	3794.4	5838.1

TORQUE FACTORS

Frequency:

More than once per day	0 %
More than once per 6 months*	30 %
Less than once per 6 months	55 %
ESD	100 %

Temperature:

-46°C (-50.8°F) to -20°C (-4°F)	40 %
-20°C (-4 °F) to -10°C (14°F)	10 %
-10°C (14 °F) to 150°C (302°F)	0 %

Media:

Water or Lubricated service*	0 %
Dry service (Gas)	30 %
Light slurry, semi solids	60 %
Heavy slurry, some solids	100 %

Operational:

As per Customer Specification	__ %
Minimum Operational Factor*	30 %

* If unknown, recommended factor

NOTES

- These figures represent tested breakaway
- Torques for EB1 ASME Class 150 - 300 ball valves in the following conditions:
  - Clean liquid
  - Nil hours standing
  - Ambient temperature
  - M.A.S.T. = Maximum Allowable Stem Torque, based on yield strength of stem material
  - ESD = Emergency Shut Down

KTM SERIES EB1 SPLIT BODY FLOATING BALL VALVES

TORQUE VALUES - E SEATS (CODE E) WITH GRAPHITE GLAND PACKING (FIRESAFE)

TORQUE (Nm) - EB1 ASME Class 150 - 300: E Seats (Code E) with Graphite Gland Packing (Firesafe)

Valve Size (DN)		Line pressure (kPa)							MAST	Shear torque
Full bore	Reduced bore (mm)	0	1000	2000	3000	3600	4000	5000	SS316	SS316
15	-	9.0	9.0	9.0	9.1	9.2	9.3	10.1	36.0	56.0
20	-	10.5	10.5	10.6	10.7	10.9	11.1	12.0	36.0	56.0
25	-	14.0	14.0	14.4	15.0	15.3	15.5	17.0	72.0	111.0
40	-	28.5	29.0	30.0	30.5	32.0	33.0	38.0	227.0	350.0
50	-	35.0	35.5	37.0	40.0	43.0	45.0	53.0	227.0	350.0
65	-	65.0	66.0	70.0	76.0	81.7	85.5	95.0	604.0	930.0
80	-	85.0	94.0	103.0	114.0	120.6	125.0	140.0	604.0	930.0
100	-	150.0	165.0	185.0	200.0	215.0	225.0	250.0	1259.0	1938.0
125	150	265.0	295.0	330.0	375.0	400.0	-	-	2511.0	3864.0
150	200	375.0	445.0	515.0	605.0	630.0	-	-	2511.0	3864.0
200	250	600.0	820.0	1060.0	1320.0	-	-	-	5141.0	7910.0

TORQUE (ft-lbs) - EB1 ASME Class 150 - 300: E Seats (Code E) with Graphite Gland Packing (Firesafe)

Valve Size (NPS)		Line pressure (Bar)							MAST	Shear torque
Full bore	Reduced bore (in)	0	10	20	30	36	40	50	SS316	SS316
½	-	6.6	6.6	6.6	6.7	6.8	6.9	7.5	26.6	41.3
¾	-	7.7	7.7	7.8	7.9	8.0	8.2	8.9	26.6	41.3
1	-	10.3	10.3	10.6	11.1	11.3	11.4	12.5	53.1	81.9
1½	-	21.0	21.4	22.1	22.5	23.6	24.4	28.0	167.5	258.3
2	-	25.8	26.2	27.3	29.5	31.7	33.2	39.1	167.5	258.3
2½	-	48.0	48.7	51.7	56.1	60.3	63.1	70.1	445.8	686.4
3	-	62.7	69.4	76.0	84.1	89.0	92.3	103.3	445.8	686.4
4	-	110.7	121.8	136.5	147.6	158.7	166.1	184.5	929.2	1430.4
5	6	195.6	217.7	243.6	276.8	295.2	-	-	1853.3	2851.9
6	8	276.8	328.4	380.1	446.5	465.0	-	-	1853.3	2851.9
8	10	442.8	605.2	782.3	974.2	-	-	-	3794.4	5838.1

TORQUE FACTORS

Frequency:

More than once per day	0 %
More than once per 6 months*	30 %
Less than once per 6 months	55 %
ESD	100 %

Temperature:

-46°C (-50.8°F) to -20°C (-4°F)	40 %
-20°C (-4°F) to -10°C (14°F)	10 %
-10°C (14°F) to 150°C (302°F)	0 %

Media:

Water or Lubricated service*	0 %
Dry service (Gas)	30 %
Light slurry, semi solids	60 %
Heavy slurry, some solids	100 %

Operational:

As per Customer Specification	__ %
Minimum Operational Factor*	30 %

* If unknown, recommended factor

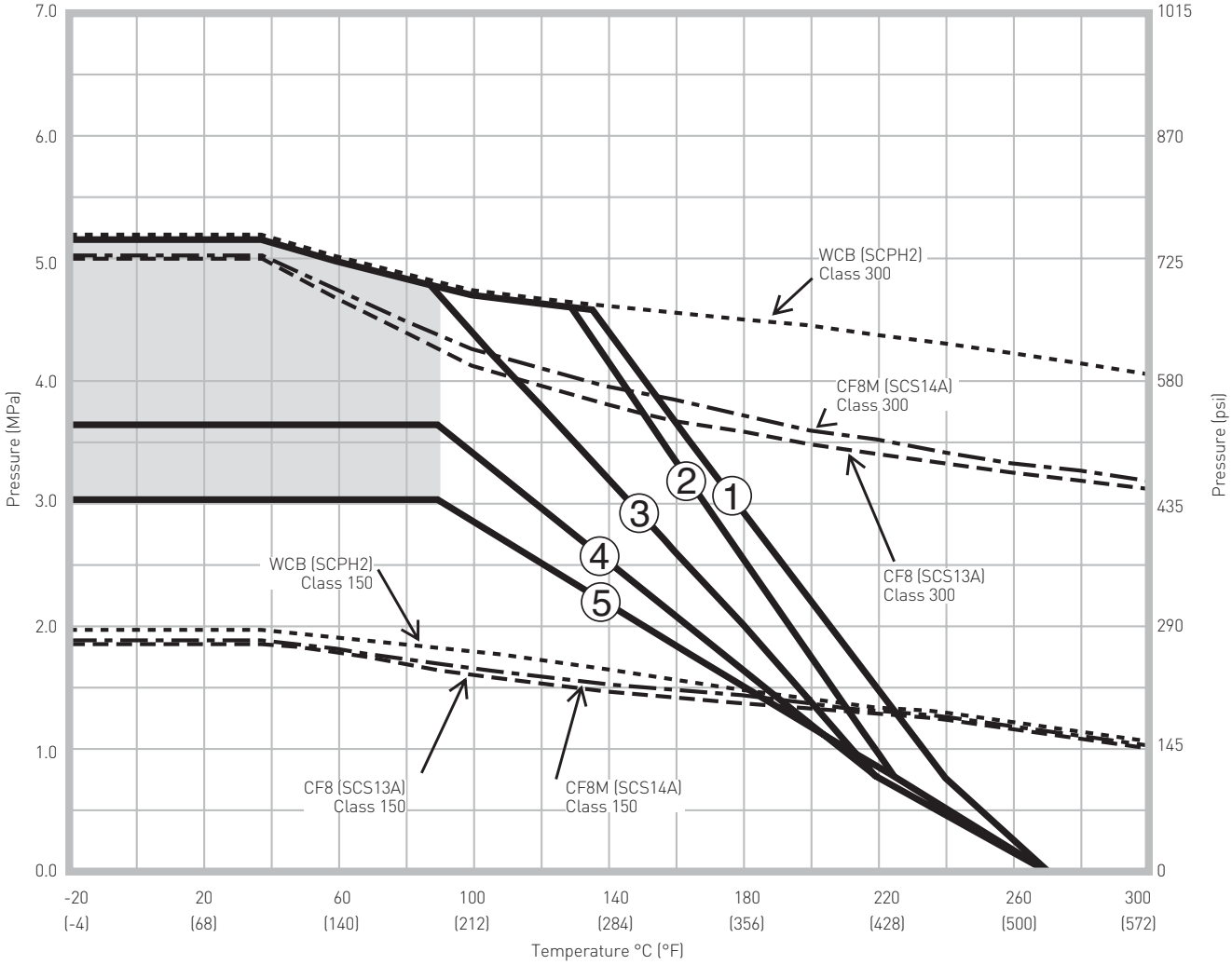
NOTES

- These figures represent tested breakaway
- Torques for EB1 ASME Class 150 - 300 ball valves in the following conditions:
  - Clean liquid
  - Nil hours standing
  - Ambient temperature
  - M.A.S.T. = Maximum Allowable Stem Torque, based on yield strength of stem material
  - ESD = Emergency Shut Down

PRESSURE/TEMPERATURE RATING

KTM seat ratings: The pressure and temperature limits of various KTM seat materials are available upon request. Below is an example of E-seat (PTFE/PFA copolymer) used for valve sizes from DN 15 - 250 (NPS ½ - 10). Seat ratings for high-temperature valves with Gratite® seats are identical to ASME body ratings.

SOFT E-SEAT FOR ASME CLASS 150 AND 300

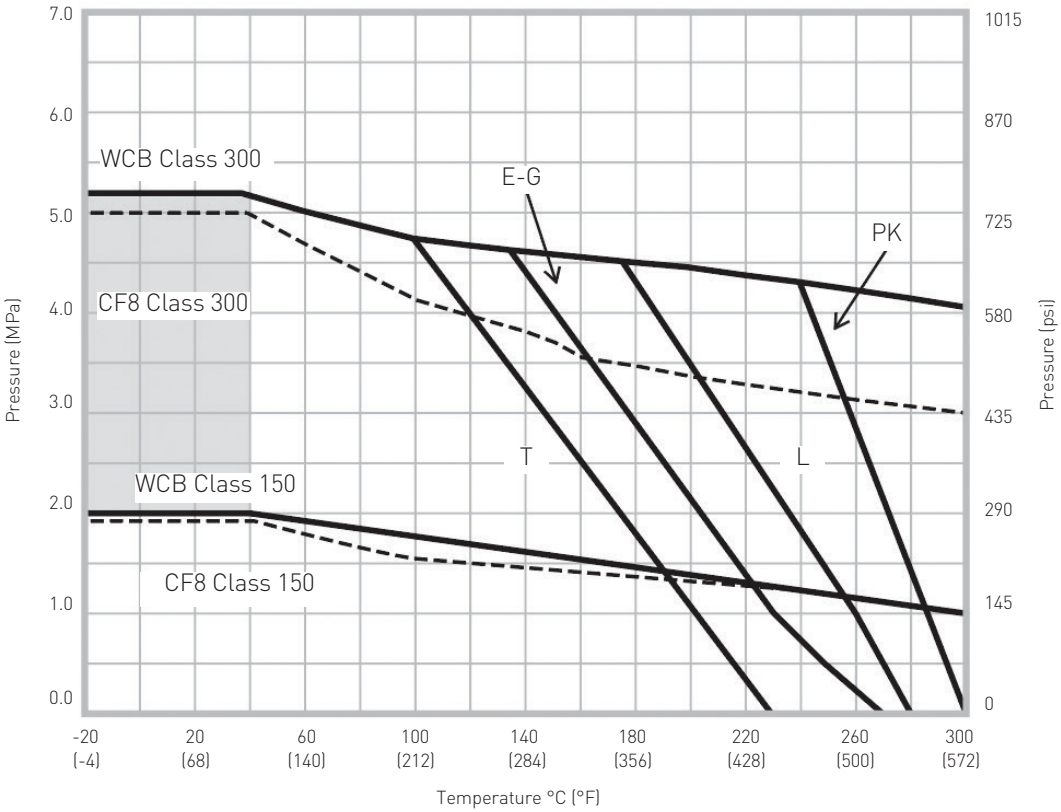


① Full bore (DN 15, DN 20 (NPS ½, NPS ¾))
② Full bore (DN 25, DN 65 (NPS 1, NPS 2½))
③ Full bore (DN 80, DN 100 (NPS 3, NPS 4))
④ Full bore (DN 125, DN 150 (NPS 5, NPS 6)),
Reduced bore (DN 150, DN 200 (NPS 6, NPS 8))
⑤ Full bore (DN 200 (NPS 8)),
Reduced bore (DN 250 (NPS 10))

- Solid line ——— indicate trim rating.
- Dashed lines indicate body ratings.
  - - - - - - WCB
  - - - - CF8
  - · — · - CF8M
- Materials in parentheses indicate equivalent JIS material

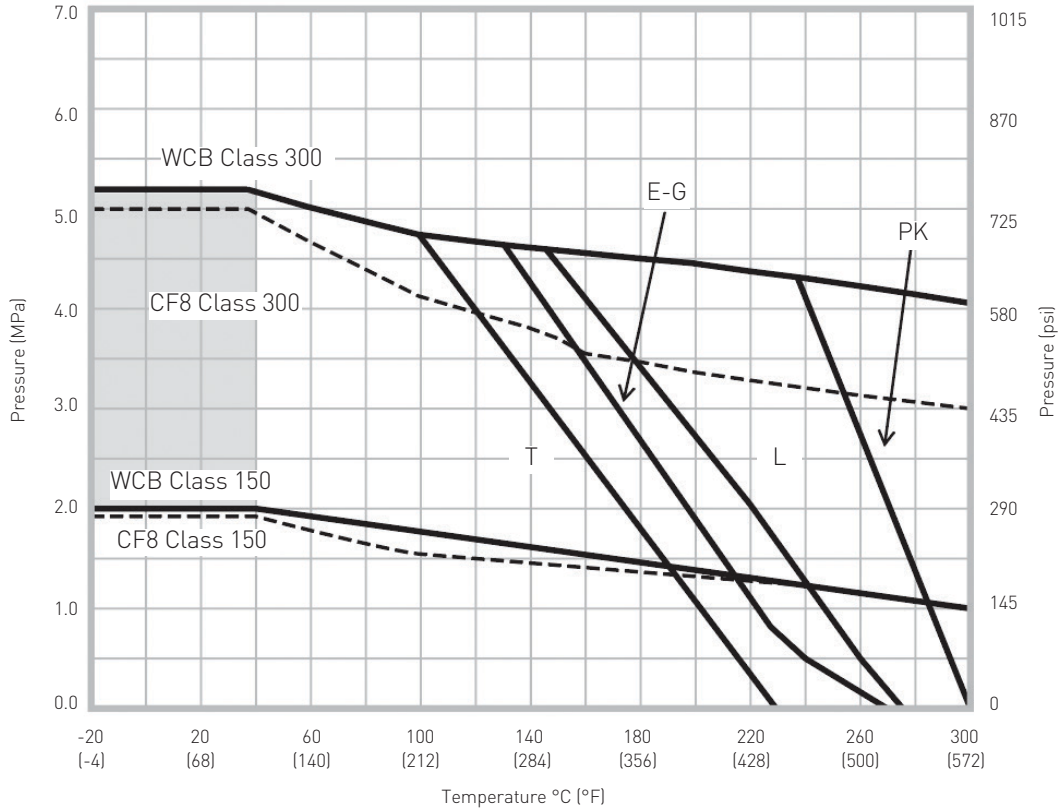
- If continuous service condition is in shaded area for DN 125 - 200 (NPS 5 - 8), trunnion type KTM Ball valve is recommended.
- Maximum allowable pressure for JIS flanges
  JIS 10K: 1.4 MPa / 120°C (203 psi / 248°F)
  JIS 20K: 3.4 MPa / 120°C (493 psi / 248°F)
- E-gasket (PTFE/PFA copolymer) is used for the body gasket in Class 150.
  Y-gasket (ceramic filled PTFE) is used for the body gasket in Class 300.
  For temperatures exceeding 230°C (446°F), the Y-gasket in graphite construction must be used for both Class 150 and 300.

MORE SOFT SEATS FOR ASME CLASS 150 AND 300 (DN 15-20)



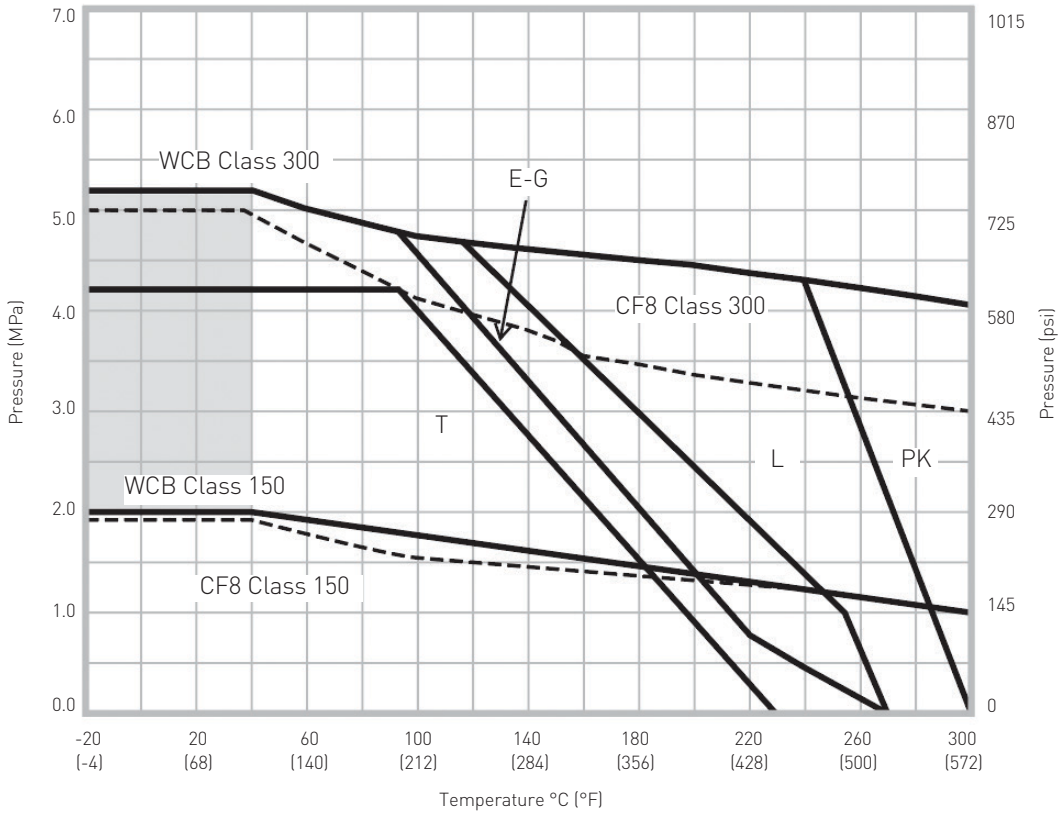
T = Pure Teflon
E = E-Seat
G = Reinforced Teflon
L = Special Reinforced Teflon
P = PEEK

MORE SOFT SEATS FOR ASME CLASS 150 AND 300 (DN 25-65)



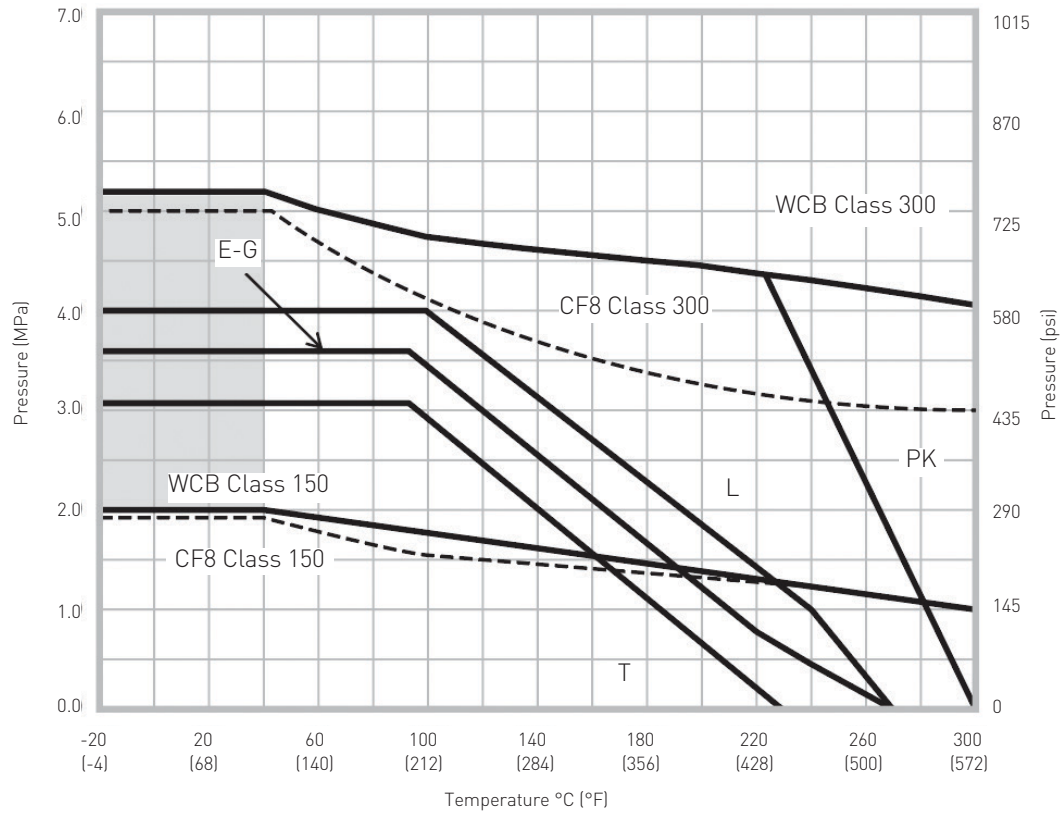
T = Pure Teflon
E = E-Seat
G = Reinforced Teflon
L = Special Reinforced Teflon
P = PEEK

MORE SOFT SEATS FOR ASME CLASS 150 AND 300 (DN 80, 100)



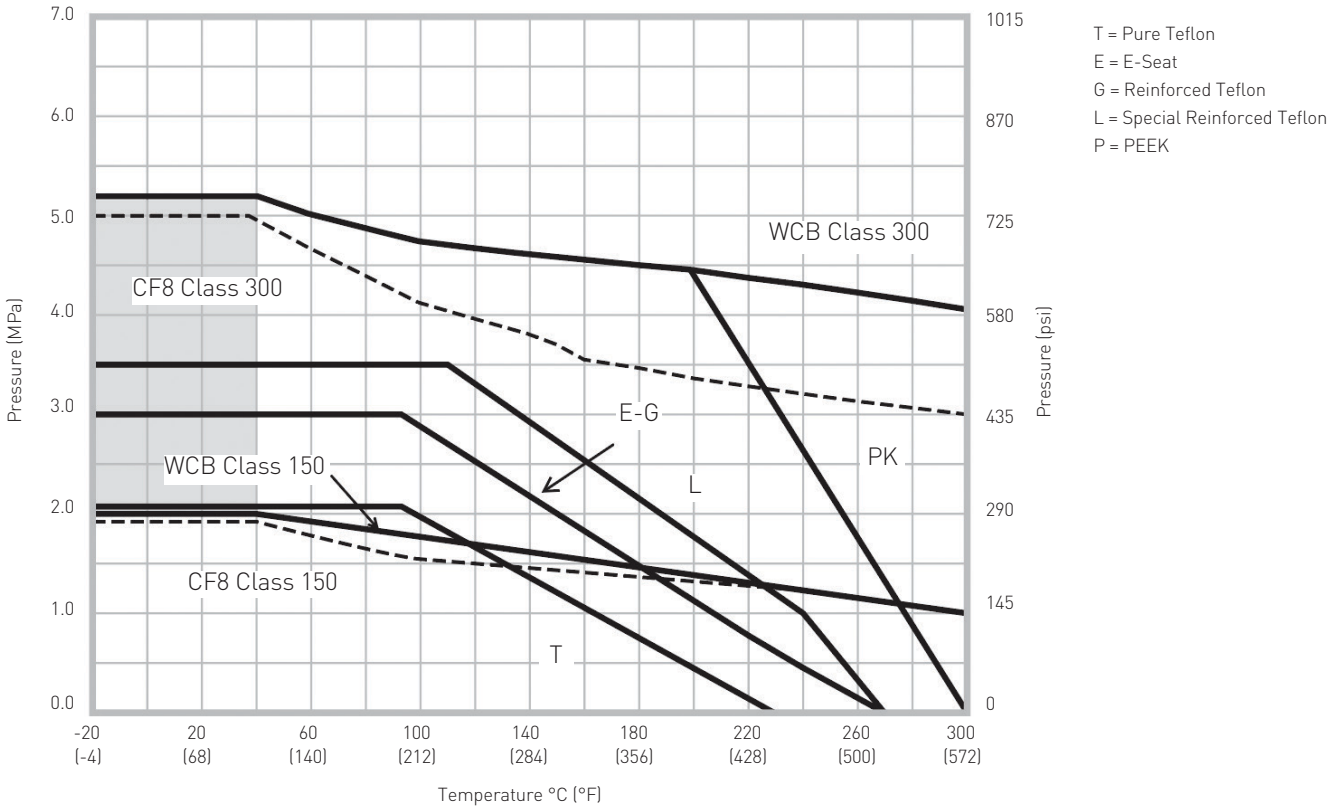
T = Pure Teflon
E = E-Seat
G = Reinforced Teflon
L = Special Reinforced Teflon
P = PEEK

MORE SOFT SEATS FOR ASME CLASS 150 AND 300 (DN 125, 150)

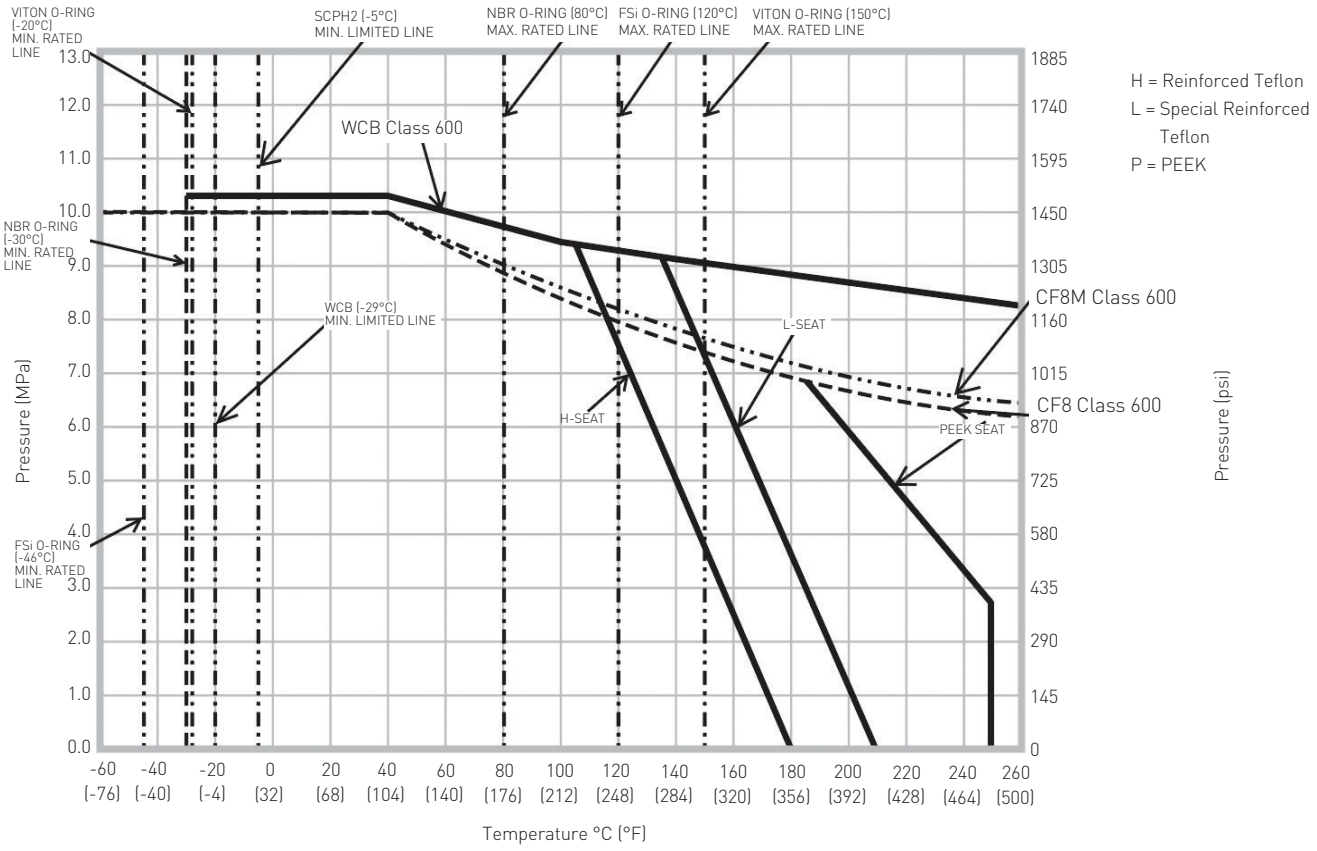


T = Pure Teflon
E = E-Seat
G = Reinforced Teflon
L = Special Reinforced Teflon
P = PEEK

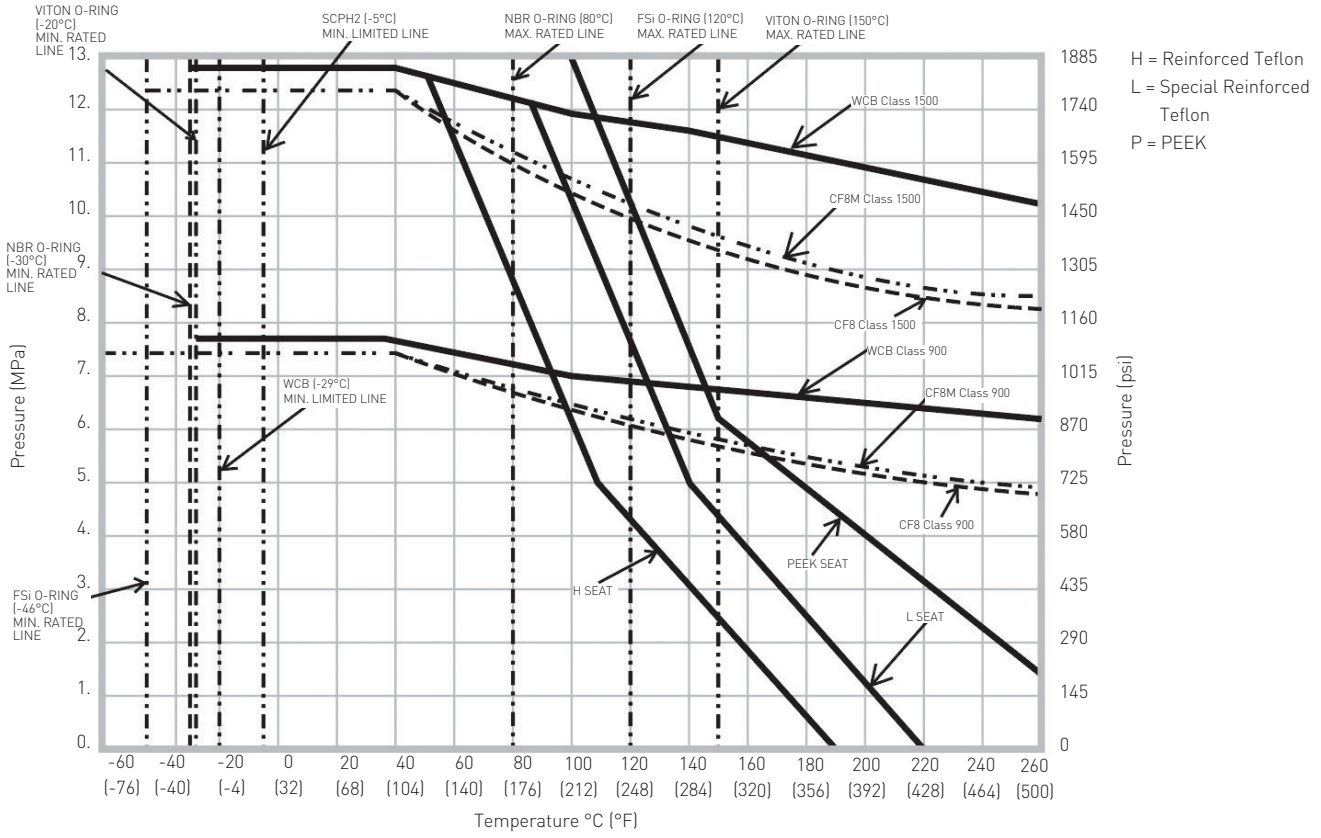
MORE SOFT SEATS FOR ASME CLASS 150 AND 300 (DN 200)



MORE SOFT SEATS FOR ASME CLASS 600



MORE SOFT SEATS FOR ASME CLASS 900 AND 1500



BODY STYLES

EB1 Split body floating ball valves						
Global model code	**Legacy KTM model code**	**Ball style**	**Bore**	**Connection**	**Pressure class**	**Sizes**
EB1SF	**E0108**	Floating type	Full bore	Raised face or ring joint face	ASME 600	DN 15 - 40 (NPS ½ - 1 ½)
EB1SF	**E0109**	Floating type	Full bore	Raised face or ring joint face	ASME 900	DN 15 - 25 (NPS ½ - 1)
EB1SF	**E0110**	Floating type	Full bore	Raised face or ring joint face	ASME 1500	DN 15 - 25 (NPS ½ - 1)
EB1SF	**EB11**	Floating type	Full bore	Raised face or flat face	ASME 150, JIS 10K	DN 15 - 200 (NPS ½ - 8)
EB1SF	**EB12**	Floating type	Full bore	Raised face or flat face	ASME 300, JIS 20K	DN 15 - 200 (NPS ½ - 8)
EB1SR	**EB21**	Floating type	Reduced bore	Raised face or flat face	ASME 150, JIS 10K	DN 150 - 250 (NPS 6 - 10)
EB1SR	**EB22**	Floating type	Reduced bore	Raised face or flat face	ASME 300, JIS 20K	DN 150 - 250 (NPS 6 - 10)