



KTM Steam-Jacketed ball valve is fully jacketed from flange to flange designed to meet larger size flange dimensions.

When viscous materials are handled, KTM Steam-Jacketed ball valves are recommended to prevent solidification.

Features

- Positive position indicator
- Full jacketed type
- Jacket maintains the temperature of the media.
- Max. steam jacket pressure 1.0 MPa
- Max. jacket temperature 350°C
- Oversized flange
- Jacket nozzle flanges (option)
- Blow-out proof stem (100mm and larger)
- Stem seals positioned at the lowest to avoid fluid from sticking, excess torque and stem torsion.
- Seats available:
 - PTFE (T-Seat)
 - PTFE/PFA Copolymer (E-Seat)
 - Gratite (option)
 - Metal (option)
 - Peek (option)

Standards

Design : ASME B16.34
End Connection : ASME B16.5

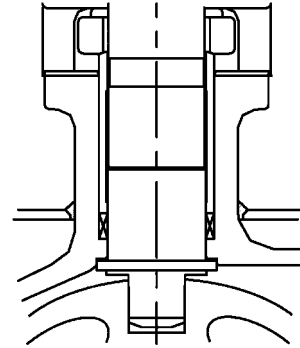


General application

- High viscosity fluids

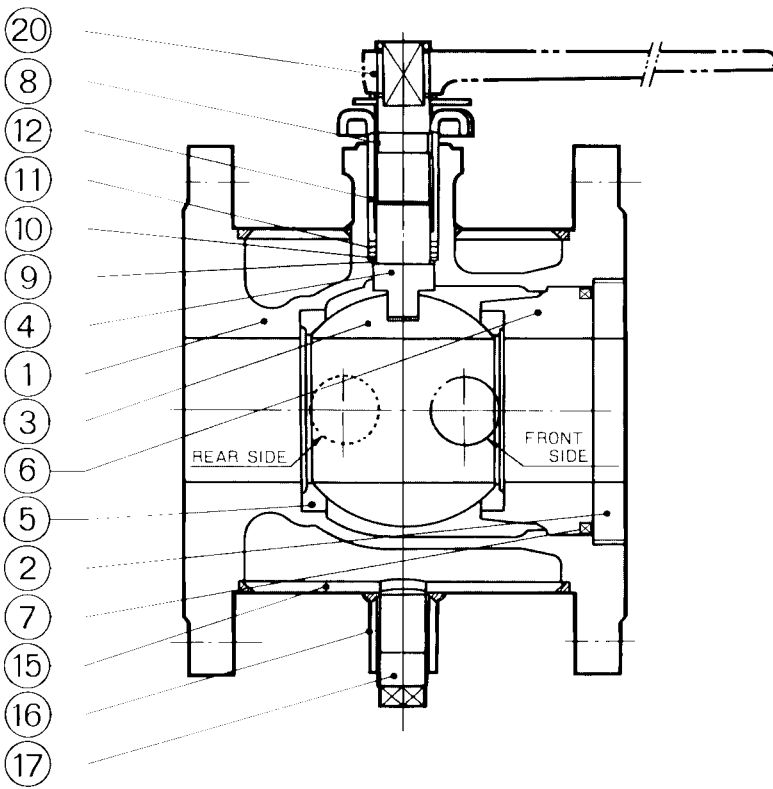
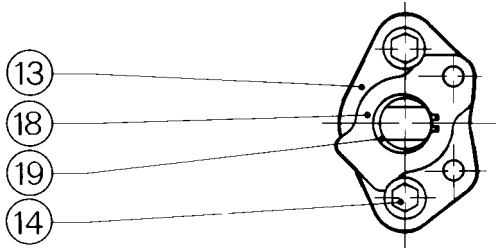
Technical data

Models/Sizes : E7100 Full bore (20mm to 200mm)
: E7200 Reduced bore (80mm to 250mm)
Pressure rating : ASME Class 150, 300
Temperature : -20°C to 270°C (soft seat)
Pressure test : ASME B16.34 Jacket 1.5 MPa



Blow-out Proof Stem

Applicable size:
 100mm (Full bore) & larger or
 150mm (Reduced bore) & larger



Part List

No.	Parts Name
1	Body
2	Body Cap
3	Ball
4	Stem
5	Seat
6	Seat Holder
7	Body Seal
8	Stem Bearing
9	Thrust Bearing
10	Thrust Washer*
11	Gland Packing
12	Gland
13	Gland Flange
14	Gland Bolt
15	Jacket
16	Socket
17	Plug
18	Stopper
19	Snap Ring
20	Handle

* Use for size 15mm to 80mm

The Steam-jacketed is available in three basic style of seats, soft, hard and metal. Each offering a range of performance suitable to many applications.

Soft Seat



(A)

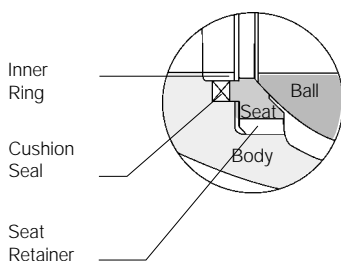


(B)

The E-Seat offers process purity, strength, integrity, low permeability and high 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 risk 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 low permeability is a 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 success.

The Popcorn Factor: The top photo (A) to the left shows a virgin PTFE seat after attack by a reactive monomer (in this case, styrene). The material's molecular matrix has been penetrated due to vapor pressure by uninhibited monomers, allowing a polymeric reaction to take place. Commonly called "popcorn polymerization," this reaction can totally destroy seat material.

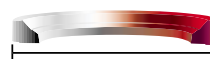
In the second photograph (B), you can see the results of a test of the E-seat copolymer by KTM. Using butadiene, generally considered the worst-case scenario due to its small molecular size, the test ran for two years at 0.84 MPa and 82°C. The seats experienced minimum distortion and, after the two-year period, did not leak in service. Pressure tests after removal, at 1.1 times design, also showed no leakage. The photo shows two of the seats tested and for comparison, a new seat is shown in the foreground.



Gratite™ Seat

A proprietary product for high-temperature, high-pressure, flammable and corrosive critical-process applications, the KTM Gratite seat offers superior performance and reliability. Patented (U.S. Patent 4,269,391) it is designed to operate within a temperature range from -29°C to +500°C. 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



-29°C to +500°C
Wide Temperature Range

Gratite is a registered trade name of Tyco Valves and Controls.

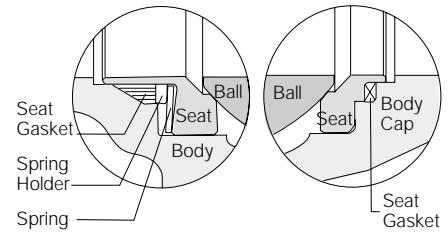
KTM Steam-Jacketed Ball Valves

Metaltite® Metal Seat

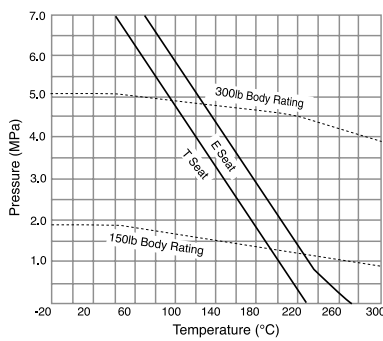
KTM utilizes proprietary processes with special lapping technologies, enabling us to provide a higher-quality product with a superior level of performance. Suitable for a temperature range up to 500°C, the Metaltite metal seat is bidirectional and provides a high performance solution to many difficult applications. Precision lapping of the ball-to-seat result in superior interfacing and a tight shut-off conforming to FCI 70-2 Class V and Class VI. Available with two different ball coatings: Hard chrome or Nickel alloy overlay. Durable stellite stainless seats are highly corrosion and erosion resistant. RTFE or soft carbon stem seals are available.

Pressure - Temperature Rating

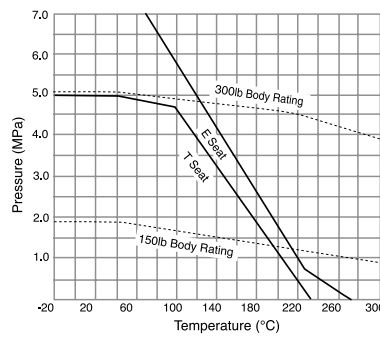
KTM Seat Ratings: The pressure and temperature limits of various KTM seat materials are shown below for valve sizes from 20mm to 200mm. Seat ratings for high-temperature valves with 'Gratite' seats are identical to ASME body ratings.



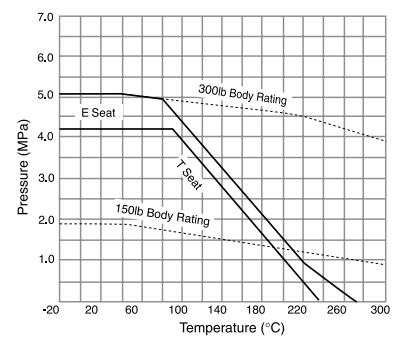
Full Bore 20mm



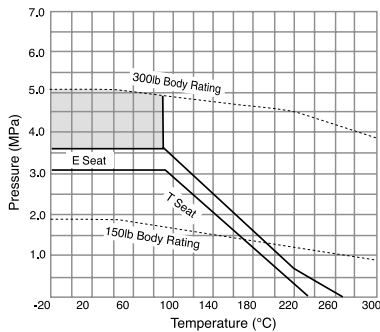
**Full Bore 25mm to 65mm
Reduced Bore 80mm**



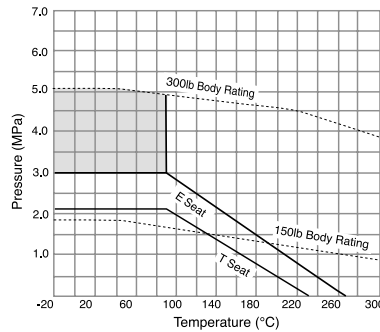
**Full Bore 80mm to 100mm
Reduced Bore 100mm to 125mm**



**Full Bore 125mm to 150mm
Reduced Bore 150mm to 200mm**

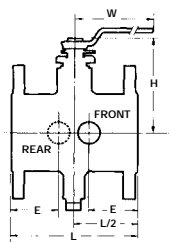


**Full Bore 200mm
Reduced Bore 250mm**

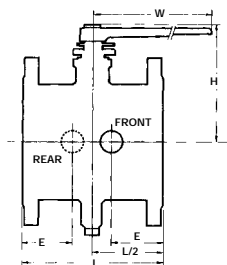


**E Seat : PTFE/PFA Copolymer
T Seat : PTFE**

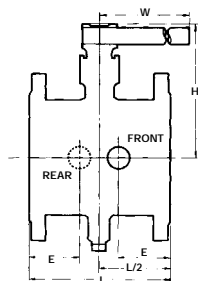
- Note :
1. If continuous service condition is in shaded area for 150mm and 200mm, please consult KTM for seat selection.
 2. Body rating shown in the charts conform to carbon steel (ASME B16.5 group 1.1 materials)



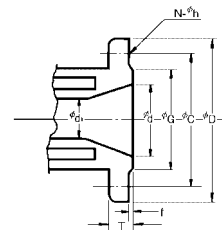
Size 20mm to 50mm



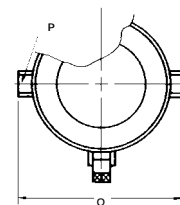
Size 80mm



Size 100mm to 200mm



Flange Ends



Jacket

ASME Class 150 Dimensions (mm)

E7101 Full Bore											E7201 Reduced Bore											Flange Dimensions							
Valve Size (mm)	Flange Size (mm)	d	L	H	W	E	Q	P	weight (kg)		Valve Size (mm)	Flange Size (mm)	d	d ₁	L	H	W	E	Q	P	weight (kg)		D	C	G	T	f	N	h
20	40	19	117	101	160	58.5	147	3/4	6	-	-	-	19	-	-	-	-	-	-	-	-	-	127	98.5	73	14.3	1.6	4	16
25	50	25	127	106	160	63.5	156	3/4	8	-	-	-	25	-	-	-	-	-	-	-	-	-	152	121.0	92	15.9	1.6	4	19
40	65	38	165	125	230	62.5	181	3/4	13	-	-	-	38	-	-	-	-	-	-	-	-	-	178	140.0	105	17.5	1.6	4	19
50	80	51	178	135	230	68.0	218	3/4	16	-	-	-	51	-	-	-	-	-	-	-	-	-	190	153.0	127	19.1	1.6	4	19
80	150	76	229	193	400	82.0	275	3/4	30	80	100	76	64	229	184	400	71.5	275	3/4	23	279	242.0	216	25.4	1.6	8	22		
100	200	102	254	265	650	83.0	300	3/4	53	100	150	102	76	254	193	400	82.0	300	3/4	41	343	299.0	270	28.6	1.6	8	22		
150	250	152	292	355	1,053	95.0	403	1	120	150	200	152	127	292	335	1,053	83.0	403	1	71	406	362.0	324	30.2	1.6	12	25		
200	350	203	330	410	1,414	100.0	492	1	190	200	250	203	152	330	355	1,053	95.0	492	1	108	533	476.0	413	35.0	1.6	12	29		

ASME Class 300 Dimensions (mm)

E7102 Full Bore											E7202 Reduced Bore											Flange Dimensions							
Valve Size (mm)	Flange Size (mm)	d	L	H	W	E	Q	P	weight (kg)		Valve Size (mm)	Flange Size (mm)	d	d ₁	L	H	W	E	Q	P	weight (kg)		D	C	G	T	f	N	h
20	40	19	117	101	160	58.5	147	3/4	10	-	-	-	19	-	-	-	-	-	-	-	-	-	156	115	73	20.7	1.6	4	22
25	50	25	127	106	160	63.5	156	3/4	11	-	-	-	25	-	-	-	-	-	-	-	-	-	165	127	92	22.3	1.6	8	19
40	65	38	165	125	230	62.5	181	3/4	16	-	-	-	38	-	-	-	-	-	-	-	-	-	190	149	105	25.4	1.6	8	22
50	80	51	178	135	230	68.0	218	3/4	22	-	-	-	51	-	-	-	-	-	-	-	-	-	210	168	127	28.6	1.6	8	22
80	150	76	229	193	400	82.0	275	3/4	45	80	100	76	64	229	184	400	71.5	275	3/4	35	318	270	216	36.6	1.6	12	22		
100	200	102	254	265	650	83.0	300	3/4	72	100	150	102	76	254	193	400	82.0	300	3/4	61	381	330	270	41.3	1.6	12	25		
150	250	152	292	355	1,053	95.0	403	1	160	150	200	152	127	292	335	1,053	83.0	403	1	107	444	388	324	47.7	1.6	16	29		
200	350	203	457	410	1,414	100.0	492	1	260	200	250	203	152	457	355	1,053	95.0	492	1	150	584	515	413	54.0	1.6	20	32		

Cv Values

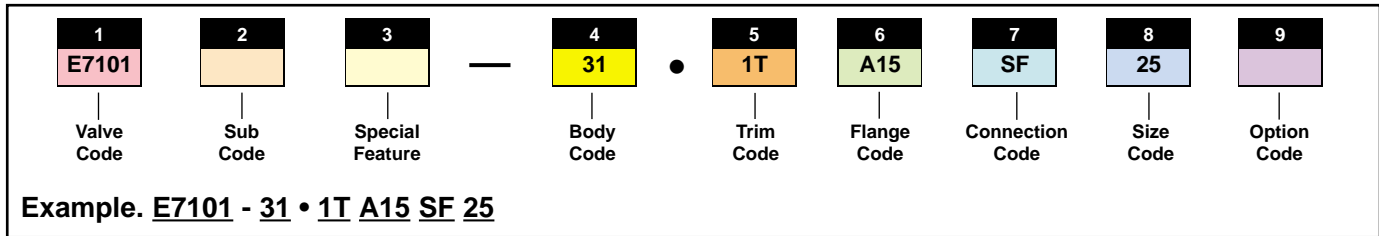
Valve Size (mm)	Full Bore	Reduced Bore
15	26	-
20	50	-
25	94	-
40	260	-
50	480	-
80	1,300	420
100	2,300	770
150	5,400	1,800
200	10,000	2,500

Materials of Construction

Body	: Carbon Steel (WCB) 304SS (CF8), 316SS (CF8M)
Ball	: 304SS (CF8), 316SS (CF8M)
Stem	: 304SS, 316SS
Seat	: PTFE (T-Seat), PTFE/PFA Copolymer (E-Seat)
Packing	: PTFE, Graphite
Jacket Material	: Fabricated Steel (carbon steel, 304SS)

KTM Steam-Jacketed Ball Valves

New KTM Model Coding System



1 Valve Code	Class	Description	
	<u>JIS</u>	<u>ASME</u>	
E7101	10K	150	Jacket valve, Full bore 15mm to 200mm
E7102	20K	300	Jacket valve, Full bore 15mm to 200mm
E7201	10K	150	Jacket valve, Reduce bore 80mm to 250mm
E7202	20K	300	Jacket valve, Reduce bore 80mm to 250mm

6 Flange Code	Description
<u>JIS</u>	
J10	JIS 10K
J20	JIS 20K
<u>ASME</u>	
A15	ASME Class 150
A30	ASME Class 300

2 Sub Code	Description
Blank	Soft Seat
M	Metal seat body
G	Gratite seat body

7 Connection Code	Description
Blank	Raised Face
SF	Smooth Finish 125 to 250 AARH

3 Special Features	Description
Blank	No Special Feature

8 Size Code	mm	inch
15	15	1/2
20	20	3/4
25	25	1
32	32	1 1/4
40	40	1 1/2
50	50	2
65	65	2 1/2
80	80	3
100	100	4
125	125	5
150	150	6
200	200	8
250	250	10

4 Body Code	Material
	<u>JIS</u> <u>ASTM</u>
31	SCS13A (304) CF8 (304)
32	SCS14A (316) CF8M (316)
62	SCPH2 WCB

9 Option Code	Description
Blank	No Special Feature
GG	Packing/Gasket-Graphite

5 Trim Code	Ball JIS	ASTM	Seat	Packing/Seal Stem
Soft Seated Valves				
1T	SCS13A ¹ or SCS14A ²	CF8 ¹ or CF8M ²	PTFE	PTFE/Viton Oring
1E	SCS13A ¹ or SCS14A ²	CF8 ¹ or CF8M ²	PTFE/PFA Copolymer	or
1G	SCS13A ¹ or SCS14A ²	CF8 ¹ or CF8M ²	R-PTFE	R-PTFE/R-PTFE
5T ¹	SCS14A	CF8M	PTFE	(Series Temp. 160° and smaller)
5E ¹	SCS14A	CF8M	PTFE/PFA Copolymer	
5G ¹	SCS14A	CF8M	R-PTFE	
PEEK Seated Valves				
KR	SCS13A ¹ or SCS14A ²	CF8 ¹ or CF8MPEEK	R-PTFE	329J1 SS
KC	SCS13A ¹ or SCS14A ²	CF8 ¹ or CF8M ²	PEEK	Graphite
Metal Seated Valves				
AY	SCS13A/HCr or SCS14A/HCr	CF8/HCr or CF8M/HCr	316 Stellite	R-PTFE
BY	SCS13A/SFNI or SCS14A/SFNI	CF8/SFNI or CF8M/SFNI	316 Stellite	R-PTFE
AG	SCS13A/HCr or SCS14A/HCr	CF8/HCr or CF8M/HCr	316 Stellite	Graphite
BG	SCS13A/SFNI or SCS14A/SFNI	CF8/SFNI or CF8M/SFNI	316 Stellite	Graphite
BX	SCS13A/SFNI or SCS14A/SFNI	CF8/SFNI or CF8M/SFNI	316 Stellite	Graphite
Gratite Seated Valves (Hard Graphite/Graphite)				
CC	SCS13A ¹ or SCS14A ²	CF8 or CF8M	Hard Graphite	Graphite

¹ For Body Code 31 and 62
² For Body Code 32 only
HCr: Hard chromium plating
SFNI: Nickel alloy overlay