KTM Unibody End-Entry Floating Ball Valve
Reduced Bore

tyco

One-piece, end-entry ball valve with fugitive emissions control and ISO mounting pad standard.

KTM

Features
- Fugitive emissions control for flammable and non-flammable applications.
- Machined ISO actuator mounting pad.
- ZERO leakage with standard E-Seat.
- Pure white E-Seat relieves concern over product contamination.
- Fire-safe design tested to API 607 Fourth Edition.
- Secondary fire-safe metal-to-metal seat is standard.
- Blow out-proof stem.
- Static electricity grounding device
- Sphericity tolerance of the balls, ± 0.0008", and a 4 RMS surface finish are unsurpassed.
- Reinforced PTFE bearing and packing rings reduce friction.
- Lower operating torque for ease of operation and reduced actuator cost.
- Positive position indication.
- Meets NACE MR0175 for sulfide cracking resistance.
- Locking device capable.

Special Options
- Stem extension
- Special body coatings
- Can be outfitted for chlorine, oxygen and vacuum services

General applications
- Pulp and Paper
- Reactive Monomers
- Oil and Gas Production
- Steam
- Hot Gases
- Fire-safe and Flammables

Special tests
- Liquid penetrant
- Magnetic-particle
- Ultra-sonic
- X-ray

Technical data
Size range : EB800R Reduced bore ½" through 8"

Standards : API 6D and 598

: ANSI B16.5, B16.10 and B16.34

: Fire-safe approved; API 607, Fourth Edition, EXES 3-14-1-2A

Total Flow Control Solutions

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Features

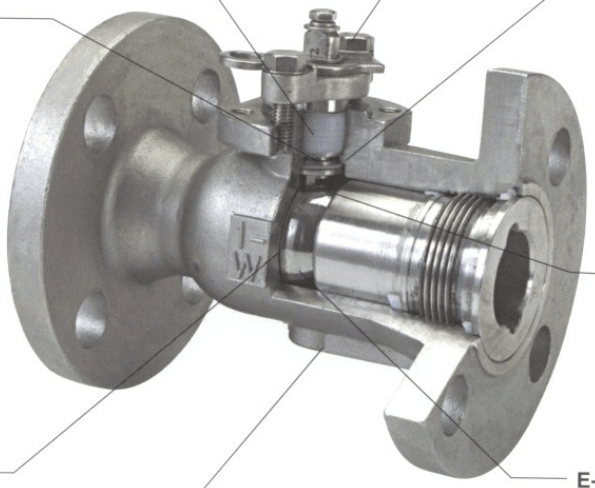
ISO5211 Actuator Mounting
Machined "automation pad" allows precise mounting of actuator; mounting bolts independent from stem-packing gland bolts. Exact alignment reduces torque requirements and prevents out-of-line wear.

Live Loaded Seals
Belleville washer keeps constant force on stem-seal packing for seal integrity and extended valve life.

Fugitive Emissions Control
Multiple layers of adjustable PTFE Chevron packing rings for non-flammable service, and soft carbon braided and die-formed for flammable service.

Radial Thrust Bearings
Radial loading absorbed, and friction from axial stem loading reduced. Dual thrust bearings support stem for extended cycle life and superior thermal characteristics.

Blowout-proof Stem and Primary Stem Seal
Stem shoulder is integral part of stem, retained internally to prevent stem blowout from pressure in body cavity. Primary stem seal prevents leakage to atmosphere, also serves as low-torque bearing.



Anti-static Grounding
Retained wire-ring provides positive ground for use with volatile or flammable liquids.

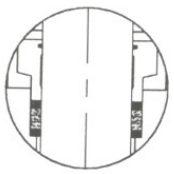
Precise, Smooth Ball
Ball sphericity and surface finish are key factors in valve life, pressure-holding capability, and operating torque. KTM ball specifications are unmatched: Sphericity : to ± 0.0008" and Surface finish 4 microinches RMS.

Cast Bleed-port Boss
Provisions for drain bleed port if desired.

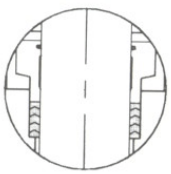
E-Seat PTFE/PFA copolymer
retained by a machined protective lip designed to eliminate seat deformation and cold flow. This same lip acts as a secondary back-up seal, which forms a metal-to-metal contact in the event the primary soft seal is destroyed in a fire.

Fugitive Emissions

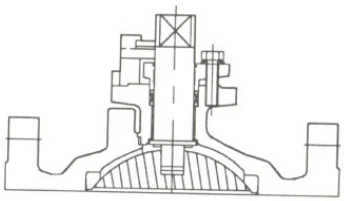
Standard Primary Containment Seals for Fugitive Emission Control



For flammable services
Fire-safe tested per API 607 4th edition/EXES 3-14-1-2A. Braided soft carbon for upper and lower rows, die-formed soft carbon for middle seal.

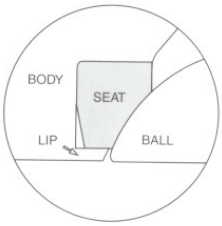


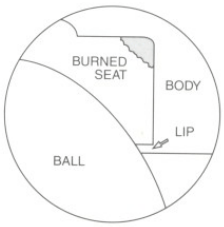
For non-flammable services:
Fire-safe design with multi-layered, adjustable Chevron packing rings.



Standard bonnet

E-Seat Design and Features

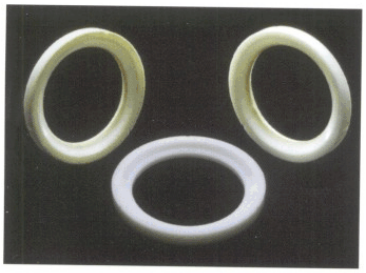




The standard E-Seat PTFE/PFA copolymer is retained in the body by a machined protective lip designed to eliminate seat deformation and cold flow. This same lip acts as a secondary back-up seal, which forms a metal-to-metal contact in the event the primary soft seal is destroyed in a fire.

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 the success.

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



In the second photograph, you can see the results of a field 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 120 psi and 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 design, also showed no seat leakage. The photo shows two of the seats tested and for comparison, a new seat is shown in the foreground.

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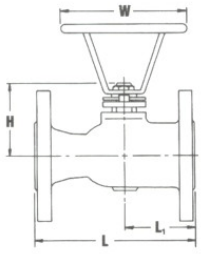
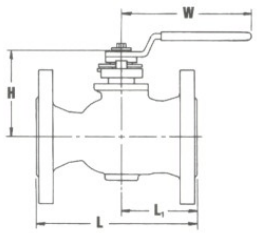
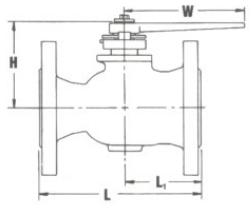
Dimensions and Weights



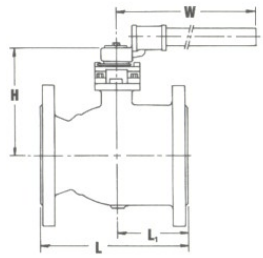
1/2" thru 1"



1 1/2" thru 2"



3" thru 4"



6" thru 8"

Flange

EB800R 150 lb. Class Dimensions

Valve Size(d)	(d_1) Bore	L	L_1	H	W	150 Lb. Flange D	C	G	T	(N) h	Wt./Lb
1/2"	0.39	4.25	2.13	3.50	3.58	3.50	2.38	1.38	0.38	(4) 5/8	4.2
3/4"	0.50	4.63	2.32	4.00	3.58	3.88	2.75	1.64	0.41	(4) 5/8	5.5
1"	0.75	5.00	2.44	4.00	3.58	4.25	3.13	2.00	0.44	(4) 5/8	6.6
1 1/2"	1.18	6.50	2.95	4.00	6.30	5.00	3.88	2.88	0.56	(4) 5/8	12.5
2"	1.50	7.00	3.46	4.92	9.06	6.00	4.75	3.63	0.63	(4) 3/4	18.0
3"	2.32	8.00	4.25	6.37	15.75	7.50	6.00	5.00	0.75	(4) 3/4	32.6
4"	3.00	9.00	4.44	6.80	15.75	9.00	7.50	6.19	0.94	(8) 3/4	54.6
6"	4.53	10.50	5.31	11.80	44.88	11.00	9.50	8.50	1.00	(8) 7/8	95.5
8"	5.67	11.50	5.74	12.83	44.88	13.50	11.75	10.63	1.13	(8) 7/8	140.4

Weights for 6" and 8" are lever-operated valves. For gear operated, add 30 lbs. for 6" and 8".

C_V Values, 150 lb. Class

Valve Size	
1/2"	8
3/4"	14
1"	33
1 1/2"	85
2"	150
3"	400
4"	680
6"	1550
8"	2200

EB800R 300 lb. Class Dimensions

Valve Size(d)	(d_1) Bore	L	L_1	H	W	300 Lb. Flange D	C	G	T	(N) h	Wt./Lb
1/2"	0.39	5.50	2.12	3.50	3.58	3.75	2.63	1.39	0.56	(4) 5/8	5.1
3/4"	0.50	6.00	2.32	4.00	3.58	4.63	3.25	1.64	0.63	(4) 3/4	6.4
1"	0.75	6.50	2.44	4.00	3.58	4.88	3.50	2.00	0.69	(4) 3/4	7.9
1 1/2"	1.18	7.50	2.95	4.00	6.30	6.13	4.50	2.88	0.81	(4) 7/8	15.4
2"	1.50	8.50	3.46	4.92	9.06	6.50	5.00	3.63	0.88	(8) 3/4	24.9
3"	2.32	11.13	4.25	6.37	15.75	8.25	6.63	5.00	1.13	(8) 7/8	49.7
4"	3.00	12.00	4.44	6.80	15.75	10.00	7.88	6.19	1.25	(8) 7/8	98.3
6"	4.53	15.88	5.31	11.80	44.80	12.50	10.63	8.50	1.44	(12) 7/8	137.7
8"	6.00	16.50	5.74	13.03	44.80	15.00	13.00	10.63	1.63	(12) 1	206.8

Weights for 6" and 8" are lever-operated valves. For gear operated, add 30 lbs. for 6" and 55 lbs. for 8".

C_V Values, 300 lb. Class

Valve Size	
1/2"	8
3/4"	14
1"	33
1 1/2"	85
2"	150
3"	400
4"	680
6"	1550
8"	2480

Standard Specifications

Model EB800R

Bore: Reduced Bore

Ball: Floating Ball sizes from 1/2" to 8"

Valve Class: ANSI 150 and 300

Test Pressure: Hydrostatic tested to API standard 598

Face-to-Face Dimensions: Per API 6D Standard and ANSI B16.10 (refer to dimension tables)

End Connection: Flanged, conforming to ANSI B16.5

KTM ball valves comply with one or more of the following standard specifications as to pressure, temperature ratings or dimensions:

ANSI B1.20.1 Pipe Threads

ANSI B16.5 Steel Pipe Flanges

ANSI B16.10 Face-to-Face Dimensions

ANSI B16.34

Standard Materials Specifications

Body:	Carbon Steel (A216 WCB)
	316 SS (CF8M)
Ball:	316 SS (CF8M)
Stem:	316 SS
Seat:	PTFE/PFA Copolymer E-Seat
Packing:	PTFE, Soft Carbon

Lever Handle: For sizes up to 8" due to low operating torque. Gear operators are available at user's option.

Notes

1. Model EB800R 6" and 8" face-to-face dimensions are based on API 6D Standard, short pattern.
2. API 6D Standard stipulates face-to-face dimensions for sizes 2" and over.

Facility Phone: 713-744-4532

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