KTM JACKETED BALL VALVES
FULL BORE AND REDUCED BORE

KTM jacketed ball valve, designed with full flange to flange welded jacket, to effectively maintain the temperature of the media.

FEATURES
• Enhanced design with proven OM-II internal design features for maximum safety, sealing integrity and reliability
• Full jacketed design effectively maintains the temperature of the media
• High-pressure resistant jacket for supply of steam or cooling media up to 1.0 MPa (145 psi)
• Reinforced PTFE bearing and packing rings for superior performance
• Split construction of cap and seat holder simplifies maintenance
• Compact and light-weight design
• Machined ISO 5211 top mounting flange
• Positive position indicator
• Blow-out proof shaft (DN 100/ NPS 4 and larger)
• Shaft seals positioned low on the shaft to avoid fluid from sticking, minimizing excessive torque and shaft torsion
• In addition to standard E-seat, various seats are available. Each seat option will allow a wide range of performance, suitable for many applications
  - PTFE / PFA copolymer: E-seat (standard)
  - PEEK seat (option)
  - Gratite® seat (option)
  - Metaltite® seat (option)

GENERAL APPLICATIONS
Temperature-dependent viscosity fluid: heavy oil, asphalt, coal tar

Option
• Jacket nozzle flanges

TECHNICAL DATA
Models/sizes: Full bore JB11/JB12
 DN 15 to DN 200 (NPS ½-8)
 Reduced bore JB21/JB22
 DN 80 to DN 250 (NPS 3-10)
Pressure rating: JIS 10K, 20K
 ASME Class 150, 300
 (JPI available)
End connection: JIS B2220, ASME B16.5 RF
Face to face: KTM standard
Temperature: Soft seat -29°C to 270°C
 (-20°F to 518°F)
 (Depending on options up to 500°C (932°F) is available)
Open-close position
Open or closed position of the valve is shown by the lever position and shaft top.
- Open: parallel to the piping line
- Close: right-angled in the piping line

A locking device at the open and shut positions to prevent unauthorized or incorrect operation.

Reinforced PTFE bearing
Reinforced PTFE bearing and packing rings provide smooth operation and reduce wear.

ISO 5211 top flange
ISO pad allows precise mounting of actuator, mounting bolts independent from stem packing gland bolts, exact alignment reduces the torque requirement and prevent out-of-line wear.

Gland packing
Multiple layers of adjustable PTFE chevron packing rings, set at lower position of the gland ensure superior sealing of the gland area and prevent media invasion and eventual malfunction of the valve (applicable to standard model).

Blow-out proof shaft
A flange at the lower part of the shaft prevents blow out in case of abnormal pressure rise.
Applicable size:
- Full bore DN 100 (NPS 4) and larger
- Reduced bore DN 150 (NPS 6) and larger

Seat material
Various seat materials are available depending on the application.
- PTFE / PFA copolymer: E-seat [standard]
- PEEK seat [option]
- Gratite® seat [option]
- Metaltite® seat [option]

Oversized flange
KTM jacketed valve is designed with oversized flanges, i.e. the flange size exceeds the bore size. The end flange gaskets for piping must be selected accordingly.

Jacket piping
Depending on the valve size two jacket connection are available: Rp ½ and Rp 1 [Details as per size table page 5]. Flange type jacket nozzle available on request.

The fire lip
Designed to eliminate seat deformation and cold flow, the lip acts as a secondary back-up seat, forming a metal to metal contact to in the event the primary soft seat is burned in a fire.
Applicable size:
- Full bore DN 40 [NPS1½] and larger
- Reduced bore DN 80 [NPS 3] and larger
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2. PARTS MATERIALS
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PARTS LIST

<table>
<thead>
<tr>
<th>No.</th>
<th>Parts name</th>
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<tbody>
<tr>
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<td>Body</td>
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<td>Bolt</td>
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<td>Spring washer</td>
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</table>

PARTS MATERIALS

- **Body**: WCB [SCPH2], CF8 [SCS13A], CF8M [SCS14A]
- **Ball**: CF8 [SCS13A], CF8M [SCS14A]
- **Shaft**: 304SS, 316SS
- **Seat**: PTFE / PFA copolymer (E-seat)
- **Packing**: PTFE, R-PTFE
- **Jacket**: Carbon steel

PIPING

When piping the jacketed ball valves, check that no foreign objects will block the inlet, outlet or draining port. Proper piping enables the steam to flow more effectively to warm the jacketed area.
KTM JACKETED BALL VALVES
FULL BORE AND REDUCED BORE - METRIC

PRESSURE-TEMPERATURE RATING

KTM seat ratings: The pressure and temperature limits of KTM E-seat are shown below for valve sizes from DN 15 to DN 250. Seat ratings for high-temperature valves with Grapite® seats are identical to ASME body ratings.

E-SEAT: PTFE / PFA COPOLYMER

Jacket part
Max. pressure: 1.0 MPa
Max. temperature*: 350°C [Carbon steel]

* Jacket must be used under the temperature range of the using seat temperature rating.
KTM JACKETED BALL VALVES
FULL BORE AND REDUCED BORE - IMPERIAL

PRESSURE-TEMPERATURE RATING

KTM seat ratings: The pressure and temperature limits of KTM E-seat are shown below for valve sizes from NPS ½ to NPS 10. Seat ratings for high-temperature valves with Gratite® seats are identical to ASME body ratings.

E-SEAT: PTFE / PFA COPOLYMER

Jacket part
Max. pressure: 145 psi
Max. temperature*: 662°F [Carbon steel]

* Jacket must be used under the temperature range of the using seat temperature rating.
### ASME Class 150 / JIS 10K Dimensions (mm)

<table>
<thead>
<tr>
<th>Valve Size (DN)</th>
<th>Flange Size (DN)</th>
<th>JB11 Full Bore</th>
<th>JB21 Reduced Bore</th>
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<td>51 178 164 230 350</td>
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### ASME Class 300 / JIS 20K Dimensions (mm)

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<td>Weight (kg)</td>
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**NOTES**

* W applied for soft seat valves.
* W1 applied for metal or Gratite® seat valves.
* Valve weight indication can be a reference originated from measurement and calculation, actual weight might be different by seat type and etc.
**KTM JACKETED BALL VALVES**

**FULL BORE AND REDUCED BORE - IMPERIAL**

### ASME CLASS 150 / JIS 10K DIMENSIONS (inches)

<table>
<thead>
<tr>
<th>Valve size (NPS)</th>
<th>Flange size (NPS)</th>
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<th>JB22 Reduced bore</th>
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<tr>
<td></td>
<td>d</td>
<td>L</td>
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### ASME CLASS 300 / JIS 20K DIMENSIONS (inches)

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<td>H</td>
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<tr>
<td>½ 1½</td>
<td>0.51</td>
<td>4.61</td>
<td>4.96</td>
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<tr>
<td>¾ 1½</td>
<td>0.75</td>
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<tr>
<td>1 2</td>
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<tr>
<td>1½ 2½</td>
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**NOTES**

* W applied for soft seat valves.

* W1 applied for metal or Graphite® seat valves.

♢ Valve weight indication can be a reference originated from measurement and calculation, actual weight might be different by seat type and etc.
### FLANGE DIMENSIONS (mm)

<table>
<thead>
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### FLANGE DIMENSIONS (inches)

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### C, VALUES

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</tr>
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<td>50 (2)</td>
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</tr>
<tr>
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KTM JACKETED BALL VALVES
FULL BORE AND REDUCED BORE
# KTM JACKETED BALL VALVES
## FULL BORE AND REDUCED BORE

### NEW KTM MODEL CODING SYSTEM

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<th>Class</th>
<th>Description</th>
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<tr>
<td>JB12</td>
<td>300</td>
<td>20K Full bore, Floating type DN 15 - 200</td>
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<tr>
<td>JB21</td>
<td>150</td>
<td>10K Reduced bore, Floating type DN 80 - 250</td>
</tr>
<tr>
<td>JB22</td>
<td>300</td>
<td>20K Reduced bore, Floating type DN 80 - 250</td>
</tr>
</tbody>
</table>

### Trim code

See trim code table

### Flange code

<table>
<thead>
<tr>
<th>Flange code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASME</td>
<td>JIS</td>
</tr>
<tr>
<td>A15</td>
<td>J10</td>
</tr>
<tr>
<td>A30</td>
<td>J20</td>
</tr>
</tbody>
</table>

### Connection code

<table>
<thead>
<tr>
<th>Connection code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF</td>
<td>Raised face (125 to 250 AARH)</td>
</tr>
<tr>
<td>FF</td>
<td>Flat face</td>
</tr>
</tbody>
</table>

### Size code

<table>
<thead>
<tr>
<th>Size code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN</td>
<td>15 20 25 40 50 65 125 150 200 250</td>
</tr>
<tr>
<td>NPS</td>
<td>½ ¾ 1 1½ 2 2½ 5 6 8 10</td>
</tr>
</tbody>
</table>

### Option code

<table>
<thead>
<tr>
<th>Option code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank</td>
<td>No additional option</td>
</tr>
<tr>
<td>GG</td>
<td>Packing / Gasket-graphite</td>
</tr>
<tr>
<td>JI</td>
<td>Flange type jacket nozzle</td>
</tr>
</tbody>
</table>

### Trim code

<table>
<thead>
<tr>
<th>Code</th>
<th>Ball</th>
<th>Seat</th>
<th>Packing</th>
<th>Shaft</th>
</tr>
</thead>
<tbody>
<tr>
<td>JIS</td>
<td>ASTM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1E</td>
<td>SCS13A or SCS14A</td>
<td>CFB[1] or CF8M [1]</td>
<td>PTFE or PFA Copolymer</td>
<td>304 [1] or 316 [1]</td>
</tr>
<tr>
<td>5E</td>
<td>SCS14A</td>
<td>CF8M</td>
<td>PTFE or PFA Copolymer</td>
<td>304 [1] or 316 [1]</td>
</tr>
<tr>
<td>5G</td>
<td>SCS14A</td>
<td>CF8M</td>
<td>R-PTFE</td>
<td>304 [1] or 316 [1]</td>
</tr>
<tr>
<td>KC</td>
<td>SCS13A or SCS14A</td>
<td>CFB[1] or CF8M [1]</td>
<td>PEEK</td>
<td>329J1 SS</td>
</tr>
<tr>
<td>CC</td>
<td>SCS13A or SCS14A</td>
<td>CFB[1] or CF8M [1]</td>
<td>Hard graphite</td>
<td>329J1 SS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Graphite</td>
<td></td>
</tr>
</tbody>
</table>

1. Body code 31 and 62
2. For body code 32 only

HCr: Hard chromium plating
SFNi: Nickel alloy overlay