KEYSTONE KNIFE GATE VALVES

FIGURE 952

Lugged style, uni-directional knife gate valves

FEATURES

- Compact design.
- Self-aligning gland box.
- 316 S/S valve body construction for superior corrosion resistance.
- One piece integral cast body, chest and lugs.
- Integral cast in gate wedges minimize flow obstructions.
- High quality gate finish for optimum sealing.
- High flow rates with low pressure drops.
- Integral RTFE gate scraper.
- Gate guides to support gate.
- A range of seat options available.
- Complies with MSS SP-81 face-to-face dimensions.
- All valves are pressure tested to MSS SP-81.
- Maintenance friendly.

GENERAL APPLICATIONS

The Keystone K-Nife is designed for a wide range of applications such as:
- Pulp and paper
- Mining
- Effluent handling plants
- Chemical plants
- Food and beverage
- Fly ash handling plants
- Bulk conveying
- Corrosive environments

TECHNICAL DATA

| Size range: | DN 50 - 600 (NPS 2 - 24) |
| Temperature rating: | 150°C (300°F) RTFE seated |
| | 150°C (300°F) FKM seated |
| | 230°C (445°F) 316 S/S seated |
| Pressure rating: | 1000 kPa/10 bar (150 psi) at cold working pressure (non-shock) |
KEYSTONE KNIFE GATE VALVES

FIGURE 952

OPTIONS

• F738 Pneumatic actuators
• Electric actuators
• Bevel gear operators
• Chainwheels
• F459 Quick acting lever (DN 50 - 200 / NPS 2 - 8)
• F791 Solenoid valves
• Limit switches
• F793 Positioners
• F493 Pneumatic failsafe
• Deflection cones
  - Chrome iron
  - Polyurethane (DN 50 - 300 / NPS 2 - 12)
• Safety guards and shrouds

NOTES

# Gate is PTFE coated when used with FKM seat.
• Other packing materials available on request.

PARTS LIST

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>316 S/S</td>
</tr>
<tr>
<td>2</td>
<td>Gate #</td>
<td>316 S/S, SAF 2205 or SAF2507</td>
</tr>
<tr>
<td>3</td>
<td>Gland box</td>
<td>304 S/S</td>
</tr>
<tr>
<td>4</td>
<td>Seal</td>
<td>RTFE, Metal or FKM</td>
</tr>
<tr>
<td>5</td>
<td>Spindle</td>
<td>304 S/S</td>
</tr>
<tr>
<td>6</td>
<td>Gland packing</td>
<td>K-LDN•</td>
</tr>
<tr>
<td>7</td>
<td>Bridge [DN 50 - 200 / NPS 2 - 8]</td>
<td>304 S/S</td>
</tr>
<tr>
<td></td>
<td>Upstand [DN 250 - 600 / NPS 10 - 24]</td>
<td>Painted mild steel</td>
</tr>
<tr>
<td>8</td>
<td>Pillar</td>
<td>304 S/S or painted mild steel</td>
</tr>
<tr>
<td>9</td>
<td>Glandbox washer</td>
<td>Nylon</td>
</tr>
<tr>
<td>10</td>
<td>Gate guide</td>
<td>5/5 RTFE tipped</td>
</tr>
<tr>
<td>11</td>
<td>Gate scraper</td>
<td>RTFE</td>
</tr>
<tr>
<td>12</td>
<td>Handwheel nut</td>
<td>Lead metal gunmetal</td>
</tr>
<tr>
<td>13</td>
<td>Thrust washer</td>
<td>Nylon</td>
</tr>
<tr>
<td>14</td>
<td>Handwheel</td>
<td>5/5 Iron (non-rising) or S.G Iron [rising]</td>
</tr>
<tr>
<td>15</td>
<td>Clevis pin</td>
<td>304 S/S</td>
</tr>
<tr>
<td>16</td>
<td>Split pin</td>
<td>304 S/S</td>
</tr>
<tr>
<td>17</td>
<td>All fasteners</td>
<td>304 S/S</td>
</tr>
</tbody>
</table>

NOTES

# Gate is PTFE coated when used with FKM seat.
• Other packing materials available on request.
### KEYSTONE KNIFE GATE VALVES

**FIGURE 952**

**DIMENSIONS mm (inches)**

<table>
<thead>
<tr>
<th>Valve size (DN)</th>
<th>Bore (downstream)</th>
<th>Rising spindle</th>
<th>Non-rising</th>
<th>Nom. mass manual kg (lbs)</th>
<th>Kv* (Cv❖) at full open</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 (2)</td>
<td>50 (1.97)</td>
<td>244 (10.39)</td>
<td>-</td>
<td>69 (27.0)</td>
<td>223 (258)</td>
</tr>
<tr>
<td>65 (2½)</td>
<td>65 (2.60)</td>
<td>284 (11.18)</td>
<td>-</td>
<td>69 (27.0)</td>
<td>368 (425)</td>
</tr>
<tr>
<td>80 (3)</td>
<td>80 (3.15)</td>
<td>324 (12.76)</td>
<td>-</td>
<td>69 (27.0)</td>
<td>557 (643)</td>
</tr>
<tr>
<td>100 (4)</td>
<td>100 (3.94)</td>
<td>358 (14.10)</td>
<td>-</td>
<td>69 (27.0)</td>
<td>909 (1050)</td>
</tr>
<tr>
<td>125 (5)</td>
<td>125 (4.92)</td>
<td>450 (17.72)</td>
<td>-</td>
<td>69 (27.0)</td>
<td>1416 (1635)</td>
</tr>
<tr>
<td>150 (6)</td>
<td>150 (5.91)</td>
<td>487 (19.17)</td>
<td>-</td>
<td>69 (27.0)</td>
<td>2112 (2439)</td>
</tr>
<tr>
<td>200 (8)</td>
<td>200 (7.87)</td>
<td>602 (23.70)</td>
<td>71 (2.75)</td>
<td>69 (27.0)</td>
<td>4065 (4695)</td>
</tr>
<tr>
<td>250 (10)</td>
<td>250 (9.84)</td>
<td>726 (28.60)</td>
<td>71 (2.75)</td>
<td>71 (2.80)</td>
<td>6850 (7912)</td>
</tr>
<tr>
<td>300 (12)</td>
<td>300 (11.81)</td>
<td>825 (32.50)</td>
<td>76 (3.00)</td>
<td>76 (3.00)</td>
<td>9863 (11392)</td>
</tr>
<tr>
<td>350 (14)</td>
<td>350 (13.00)</td>
<td>881 (34.70)</td>
<td>76 (3.00)</td>
<td>76 (3.00)</td>
<td>11898 (13694)</td>
</tr>
<tr>
<td>400 (16)</td>
<td>400 (14.88)</td>
<td>935 (36.81)</td>
<td>76 (3.00)</td>
<td>76 (3.00)</td>
<td>15990 (18006)</td>
</tr>
<tr>
<td>450 (18)</td>
<td>450 (16.73)</td>
<td>1084 (42.68)</td>
<td>89 (3.50)</td>
<td>89 (3.50)</td>
<td>20165 (23291)</td>
</tr>
<tr>
<td>500 (20)</td>
<td>500 (18.70)</td>
<td>1181 (46.50)</td>
<td>114 (4.50)</td>
<td>114 (4.50)</td>
<td>25117 (29010)</td>
</tr>
<tr>
<td>600 (24)</td>
<td>600 (22.48)</td>
<td>1400 (55.12)</td>
<td>114 (4.50)</td>
<td>114 (4.50)</td>
<td>36896 (42615)</td>
</tr>
</tbody>
</table>

**NOTES**
- D = The face to face dimension
- E = The maximum valve or upstand clearance dimension for installation
- Kv* = The flow rate of water in m³/hr that will pass through a valve with a differential pressure of 1 bar [100 kPa] at 20°C
- Cv❖ = The volume of water in US gpm that will pass through a valve with a differential pressure of 1 psi at 60°F
- CV = 1.155 Kv
- Dimensions are nominal.
- Larger sizes are available upon request.

**Notes:**
- DN 50 - 200 (NPS 2 - 8) valve illustrated.
- Number of lugs is dependent upon flange drilling.
- DN 250 - 600 (NPS 10 - 24) valve illustrated.
- Number of lugs is dependent upon flange drilling.
### PRESSURE/TEMPERATURE RATINGS

#### RTFE seated
- 1000 kPa/10 bar (150 psi) at 20°C (68°F)
- 770 kPa/7.7 bar (110 psi) at 150°C (300°F)

#### Metal seated
- 1000 kPa/10 bar (150 psi) at 20°C (68°F)
- 700 kPa/7 bar (100 psi) at 230°C (445°F)

#### FKM seated
- 1000 kPa/10 bar (150 psi) at 20°C (68°F)
- 770 kPa/7.7 bar (110 psi) at 150°C (300°F)

### NOTES
1. RTFE seated valve trim code number is 176.
2. FKM seated valve trim code number is 180.
3. Metal - 316 S/S seated valve trim code number is 170.
4. Metal - 304 S/S seated valve trim code number is 185.

### SELECTION GUIDE

**Example:**
- **Valve size:** DN 50 - 600 (NPS 2 - 24)
- **Figure number:** F952
- **Trim:** See table
- **End connections (to suit):**
  - AS 2129: Table C, D, E metric threads
  - ASME B16.5: Class 125 and 150 UNC threads
  - BS 4504: PN 10 and 16
  - JIS B2210: Table 5, 10
  - DIN 2501: Table 10, 16
  - ASME B16.5: Class 125 and 150 metric threads (for N.Z.)

### PRESSURE/TEMPERATURE GRAPH

#### STANDARD SEAT DETAIL

- RTFE seat
- Metal seat
- FKM seat

#### PRESSURE/TEMPERATURE RATINGS

<table>
<thead>
<tr>
<th>Seat Type</th>
<th>Pressure kPa/bar</th>
<th>Temperature °C</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTFE</td>
<td>1000/10</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Metal</td>
<td>1000/10</td>
<td>230</td>
<td></td>
</tr>
<tr>
<td>FKM</td>
<td>1000/10</td>
<td>150</td>
<td></td>
</tr>
</tbody>
</table>

#### NOTES
1. RTFE seated valve trim code number is 176.
2. FKM seated valve trim code number is 180.
3. Metal - 316 S/S seated valve trim code number is 170.
4. Metal - 304 S/S seated valve trim code number is 185.

### SELECTION GUIDE

**Example:** 250 F952 170 AS 2129 E

- **Valve size:** DN 50 - 600 (NPS 2 - 24)
- **Figure number:** F952
- **Trim:** See table
- **End connections (to suit):**
  - AS 2129: Table C, D, E metric threads
  - ASME B16.5: Class 125 and 150 UNC threads
  - BS 4504: PN 10 and 16
  - JIS B2210: Table 5, 10
  - DIN 2501: Table 10, 16
  - ASME B16.5: Class 125 and 150 metric threads (for N.Z.)

### NOTES
- * Gates are 316 S/S, coated with PTFE.
- Non-rising spindle design available upon request.

### STANDARD SEAT DETAIL

- RTFE seat
- Metal seat
- FKM seat

### PRESSURE/TEMPERATURE RATINGS

<table>
<thead>
<tr>
<th>Seat Type</th>
<th>Pressure kPa/bar</th>
<th>Temperature °C</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTFE</td>
<td>1000/10</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Metal</td>
<td>1000/10</td>
<td>230</td>
<td></td>
</tr>
<tr>
<td>FKM</td>
<td>1000/10</td>
<td>150</td>
<td></td>
</tr>
</tbody>
</table>

Note: To minimize risk to personnel, Emerson recommend the use of purpose built guards and shrouds. Refer to the Emerson data sheet or consult factory for details.