Rotary Valves

INFORMATION

Shick Esteve’s durable rotary valves are designed to meter a wide variety of dry, powdered, granulated or similar material into vacuum or pressurized pneumatic convey lines, as well as gravity applications. Shick Esteve’s rotary valves are typically used at the discharge of bulk storage silos, bins, hand dumps, dust collectors or scaling hoppers. They are available in two configurations: airlocks (drop through) and feeders (blow through).

Each product line comes in various materials of construction and is designed for a wide variety of applications. The airlocks and feeders are designed to handle a maximum pressure of 14.7 psig and maximum vacuum of 29 Hg. Close tolerances exceed NFPA standards for use as an isolation valve.

STANDARD FEATURES

**Housing:** Cast iron or stainless steel valve bodies

**Rotors:** Custom machined to fit a housing with 8-vane standard or beveled tip (options available)

**Motor/Drive Assembly:** Variable speed drives* Explosion-proof motors available; Gear motor unit that is right-angle mounted to the valve body with sprockets and chain drive, protected by a completely enclosed OSHA chain guard

**Seals:** Internal lip seals, external Teflon packing with air purge or Q3 seals with air purge available

**Flange:** Round and square inlet and discharge available, depending on the application and valve size

OPTIONS

**Abrasion-Resistant Design and Construction:** Inclusive of hard chrome plating, air purge and external abrasive duty seals options

**Rotors:** Replaceable tips, reinforcement rods and pocket fillers available

**Floor Stand:** Provides support for airlock or feeder

**Blow-Thru Adapter:** Connects airlock directly to customer-specified tube or pipe conveying line

**Cast Pellet Inlet:** Minimizes material sheer points at the inlet of an airlock

**External Finish:** White enamel or bead blast; other paint finishes may be available

**Internal Finish:** Machined cast iron, hard chrome plated cast iron, 304 S/S or 316 S/S

*Euro-drive or other custom drives available
**Dimensions - Airlock / Feeder**

<table>
<thead>
<tr>
<th>Housing Style</th>
<th>075A</th>
<th>175A</th>
<th>420A</th>
<th>700A</th>
<th>1250A</th>
<th>2000A</th>
<th>420F</th>
<th>685F</th>
<th>700F</th>
<th>1250F</th>
<th>2000F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cu. Ft. per Rev.</td>
<td>0.075</td>
<td>0.163</td>
<td>0.42</td>
<td>0.737</td>
<td>1.1628</td>
<td>1.7441</td>
<td>0.42</td>
<td>0.6777</td>
<td>0.737</td>
<td>1.2929</td>
<td>1.747</td>
</tr>
<tr>
<td>Vanes</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Air Leakage PSI</td>
<td>2.6</td>
<td>3.33</td>
<td>4.57</td>
<td>5.53</td>
<td>6.32</td>
<td>7.56</td>
<td>4.57</td>
<td>5.21</td>
<td>5.53</td>
<td>6.32</td>
<td>7.56</td>
</tr>
<tr>
<td>Shaft Diameter</td>
<td>1.1875/30</td>
<td>1.1875/30</td>
<td>1.25/32</td>
<td>1.5/38</td>
<td>2/51</td>
<td>2/51</td>
<td>1.25/32</td>
<td>1.25/32</td>
<td>1.5/38</td>
<td>1.5/38</td>
<td>2/51</td>
</tr>
<tr>
<td>D (inch/mm)</td>
<td>27/686</td>
<td>27.125/696</td>
<td>29.625/752</td>
<td>33.5/851</td>
<td>35/889</td>
<td>35.75/908</td>
<td>29.625/752</td>
<td>28.625/727</td>
<td>33.5/851</td>
<td>32/813</td>
<td>35.75/908</td>
</tr>
<tr>
<td>E (inch/mm)</td>
<td>31.5/800</td>
<td>31.625/803</td>
<td>35.75/908</td>
<td>40.75/1035</td>
<td>44/1118</td>
<td>44.5/1130</td>
<td>35.75/908</td>
<td>36.125/918</td>
<td>40.75/1035</td>
<td>39/991</td>
<td>44.5/1130</td>
</tr>
<tr>
<td>F (inch/mm)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*All dimensions shown in inches/millimeters. **Weight does not include the drive.*

**Schematics: Airlock**

![Airlock Diagram](image1)

**Schematics: Feeder**

![Feeder Diagram](image2)

**Dimensions: Airlock/Feeder**

![Dimensions Diagram](image3)

A: Model 075A  
B: Model 175A  
C: Model 420A  
D: Model 700A  
E: Model 1250A  
F: Model 2000A  
G: Model 420F  
H: Model 685F  
I: Model 700F

Shown as standard arrangement, special assemblies not shown. Valves with round/square flange shapes inverted upon request with the exception of cast pellet inlet valves.
<table>
<thead>
<tr>
<th>Housing Style</th>
<th>075A</th>
<th>175A</th>
<th>420A</th>
<th>700A</th>
<th>1250A</th>
<th>2000A</th>
<th>420F</th>
<th>685F</th>
<th>700F</th>
<th>1250F</th>
<th>2000F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mount Holes (Top Flange/Bottom Flange)</td>
<td>8/8</td>
<td>6/8</td>
<td>6/8</td>
<td>12/12</td>
<td>12/12</td>
<td>6/12</td>
<td>6</td>
<td>18</td>
<td>12</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>G (OD Round: inch/mm)</td>
<td>-</td>
<td>9/229</td>
<td>11/279</td>
<td>-</td>
<td>-</td>
<td>17/432</td>
<td>11/279</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>17/432</td>
</tr>
<tr>
<td>H (ID Round: inch/mm)</td>
<td>-</td>
<td>6/152</td>
<td>8/202</td>
<td>-</td>
<td>-</td>
<td>13/330</td>
<td>8/203</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>13/330</td>
</tr>
<tr>
<td>I bolt circle (inch/mm)</td>
<td>-</td>
<td>8/203</td>
<td>9.75/248</td>
<td>-</td>
<td>-</td>
<td>15.5/394</td>
<td>9.75/248</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>15.5/394</td>
</tr>
<tr>
<td>J (inch/mm)</td>
<td>8/203</td>
<td>8.125/206</td>
<td>10.75/273</td>
<td>14.5/368</td>
<td>14.5/368</td>
<td>16/406</td>
<td>-</td>
<td>15/381</td>
<td>14.5/368</td>
<td>14/356</td>
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<tr>
<td>K (inch/mm)</td>
<td>5/127</td>
<td>5.125/130</td>
<td>7.75/197</td>
<td>10.5/267</td>
<td>10.5/267</td>
<td>12/305</td>
<td>-</td>
<td>9/229</td>
<td>10.5/267</td>
<td>9/229</td>
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<tr>
<td>L (inch/mm)</td>
<td>7/178</td>
<td>9/229</td>
<td>11.125/283</td>
<td>14.5/368</td>
<td>14.5/368</td>
<td>16/406</td>
<td>-</td>
<td>17/432</td>
<td>14.5/368</td>
<td>21/533</td>
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<tr>
<td>M (inch/mm)</td>
<td>4/102</td>
<td>6/225</td>
<td>8.125/206</td>
<td>10.5/267</td>
<td>10.5/267</td>
<td>12/305</td>
<td>-</td>
<td>12/305</td>
<td>10.5/267</td>
<td>16/406</td>
<td>-</td>
</tr>
<tr>
<td>N (inch/mm)</td>
<td>3/76</td>
<td>4/102</td>
<td>5.1875/132</td>
<td>4.125/105</td>
<td>4.125/105</td>
<td>4.875/124</td>
<td>-</td>
<td>2.5/64</td>
<td>4.125/105</td>
<td>4.75/121</td>
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<tr>
<td>P (inch/mm)</td>
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<td>0</td>
<td>0</td>
<td>2.0625</td>
<td>2.0625</td>
<td>2.4375</td>
<td>-</td>
<td>0</td>
<td>2.0625</td>
<td>1.5</td>
<td>-</td>
</tr>
<tr>
<td>R (inch/mm)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2.0625</td>
<td>2.0625</td>
<td>2.4375</td>
<td>-</td>
<td>3</td>
<td>2.0625</td>
<td>2.375</td>
<td>-</td>
</tr>
</tbody>
</table>

*The value of zero in the P and/or R dimensions indicates that the holes are on centerline.*

**Flanges: Airlock/Feeder**
Exploded View: Airlock

A: Endplate  
B: Air purge fitting  
C: Air purge ring  
D: Flat washer  
E: Shoulder bolt  
F: Packing retainer  
G: White lon packing  
H: Endplate

I: Air purge fitting  
J: Quad rings  
K: Clamp collar  
L: Teflon sleeve  
M: Rotor  
N: Housing  
O: Endplate bolt  
P: Bearing  
Q: Endplate bolt  
R: Lip seal

Exploded View: Feeder

A: Endplate  
B: Air purge ring  
C: White lon packing  
D: Flat washer  
E: Shoulder bolt  
F: Packing retainer  
G: Air purge fitting  
H: Endplate

I: Air purge fitting  
J: Teflon seal  
K: Clamp collar  
L: Quad ring  
M: Rotor  
N: Housing  
O: Endplate  
P: Endplate bolt  
Q: Bearing  
R: Lock washer  
S: Port flange bolt  
T: Port Flange  
U: O-ring  
V: Lip seal

Note: All parts shown not necessarily replaceable