The Axial Flow Valve is a flexible element valve designed to control natural gas, air, nitrogen, carbon dioxide, propane vapor, other non-corrosive gases, or water over a wide range of flow rates.

**Options**
Reduced capacity cages for 2” Axial Flow Valves Only
- 2*R10 reduces capacity to 10%
- 2*R25 reduces capacity to 25%
- 2*R50 reduces capacity to 50%

**Rated working pressures**
- ANSI Class 300 Low Differential Pressure – 60 PSIG [SL Sleeve only]
- ANSI Class 300 – 740 PSIG. Available in 2”R10, 2”R25, 2”R50, 2”, 3”, 4”, 6”, 8”, and 12”
- ANSI Class 600 – 1480 PSIG. Available in 2”R10, 2”R25, 2”R50, 2”, 4”, 6”, and 8”

**Lifting Plate**
Provides a 1" x 1-1/2" aperture for engagement by hook, chain, or cable for lifting the Axial Flow Valve. The lifting plate attaches to the valve gallery utilizing the same two 5/16" x 2" bolts required for the manifold block.

**Sleeve Material**
- Hydrin — Standard sleeve material for 300 Series Axial Flow Valves. Operating temperature range: -20°F to 150°F. Available in Durometer 50 – Low Delta Pressure (H-5L), Durometer 50 (H-5), Durometer 70 (H-7).
- Buna N — Good chemical resistance. Operating temperature range: 0°F to 150°F. Available in Durometer 50 – Low Delta Pressure (B-5L), Durometer 50 (B-5), Durometer 70 (B-7). Standard in 600 Series high pressure Axial Flow Valves.
- Viton — Excellent chemical resistance. Operating temperature range: 30°F to 180°F. Available in Durometer 70 (V-7).
- Natural Rubber — Use in water applications only. Available in Durometer 70 (N-7).
- Fluorosilicone Rubber — Good chemical resistance. Operating temperature range: -20°F to 180°F. Available in Durometer 50 (F-5). Limited to 125 PSIG inlet pressure.
- HNBR — Maximum toughness for Buna applications. Operating temperature range: 0°F to 150°F. Available in Durometer 65 (HB-65).

**Control Block Assemblies**
Determines the differential pressure needed to operate the axial flow valve.

<table>
<thead>
<tr>
<th>AFV Series</th>
<th>Sleeve Number</th>
<th>Composite Block Operating Parameters</th>
<th>Inspirator Block Manifold Operating Parameters</th>
<th>Maximum Operating Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Cracking</td>
<td>Full Open</td>
<td>Cracking</td>
</tr>
<tr>
<td>300</td>
<td>5L</td>
<td>1.5 PSID</td>
<td>5 PSID</td>
<td>0.5 PSID</td>
</tr>
<tr>
<td>300</td>
<td>5</td>
<td>3.5 PSID</td>
<td>15 PSID</td>
<td>1.5 PSID</td>
</tr>
<tr>
<td>300</td>
<td>7</td>
<td>2.0 PSID</td>
<td>10 PSID</td>
<td>N/A</td>
</tr>
<tr>
<td>300</td>
<td>7</td>
<td>14 PSID</td>
<td>30 PSID</td>
<td>6 PSID</td>
</tr>
<tr>
<td>600*</td>
<td>7</td>
<td>30 PSID</td>
<td>60 PSID</td>
<td>12 PSID</td>
</tr>
</tbody>
</table>

* Series 600 available in 2", 4", 6" and 8" only
** Intermittent is defined as total time in service < 30 days operating at this pressure differential
Options – Continued

Pilots

**Series Z Pilots**

Z – Low pressure, (1 - 325 PSIG) pressure reducing
Z-138 – High pressure, (150 - 600 PSIG) pressure reducing
ZSC-100 – Low pressure, (1 - 325 PSIG) pressure reducing, secondary sense port

<table>
<thead>
<tr>
<th>Pilot Type</th>
<th>Outlet Pressure</th>
<th>Spring Color Code</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type Z, Type ZSC-100, Type ZCS-150</td>
<td>1 to 5 PSIG</td>
<td>Green</td>
<td>71411P010</td>
</tr>
<tr>
<td></td>
<td>2 to 10 PSIG</td>
<td>Brown/Blue</td>
<td>71411P043</td>
</tr>
<tr>
<td></td>
<td>3 to 30 PSIG</td>
<td>Yellow</td>
<td>71411P011</td>
</tr>
<tr>
<td></td>
<td>10 to 75 PSIG</td>
<td>Red</td>
<td>71411P012</td>
</tr>
<tr>
<td></td>
<td>25 to 150 PSIG</td>
<td>Blue</td>
<td>71411P014</td>
</tr>
<tr>
<td></td>
<td>100 to 225 PSIG</td>
<td>White</td>
<td>71411P009</td>
</tr>
<tr>
<td></td>
<td>200 to 325 PSIG</td>
<td>White/Red</td>
<td>71411P046</td>
</tr>
<tr>
<td>Type Z-138, Type ZSC-320-100, Type ZSC-320-150</td>
<td>150 to 600 PSIG</td>
<td>Gold</td>
<td>71421P008</td>
</tr>
</tbody>
</table>

**60 Series Pilots**

60L-PR – Low pressure (3 – 325 PSIG) pressure reducing
60L-RV – Low pressure (3 – 325 PSIG) relief service

<table>
<thead>
<tr>
<th>Pilot Type</th>
<th>Outlet Pressure</th>
<th>Spring Color Code</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 60L-PR, Model 60L-RV</td>
<td>3 to 30 PSIG</td>
<td>Red</td>
<td>71411P055</td>
</tr>
<tr>
<td></td>
<td>10 to 75 PSIG</td>
<td>Blue</td>
<td>71411P060</td>
</tr>
<tr>
<td></td>
<td>25 to 150 PSIG</td>
<td>Black</td>
<td>71411P061</td>
</tr>
<tr>
<td></td>
<td>100 to 325 PSIG</td>
<td>Green</td>
<td>71411P062</td>
</tr>
<tr>
<td>Model 60H-PR, Model 60H-RV</td>
<td>250 to 450 PSIG</td>
<td>Brown</td>
<td>71411P063</td>
</tr>
<tr>
<td></td>
<td>400 to 900 PSIG</td>
<td>White</td>
<td>71411P064</td>
</tr>
</tbody>
</table>

**1203 Pilots**

1203 – Low pressure, (6” W.C. – 5 PSIG) pressure reducing

<table>
<thead>
<tr>
<th>Pilot Type</th>
<th>Outlet Pressure</th>
<th>Spring Color Code</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1203, 125 PSIG Maximum Inlet Pressure</td>
<td>6” W.C. to 12” W.C.</td>
<td>Green</td>
<td>70017P001</td>
</tr>
<tr>
<td></td>
<td>11” W.C. to 17” W.C.</td>
<td>Black/Orange</td>
<td>70017P002</td>
</tr>
<tr>
<td></td>
<td>8” W.C. to 14” W.C.</td>
<td>Orange</td>
<td>70017P003</td>
</tr>
<tr>
<td></td>
<td>14” W.C. to 2 PSIG</td>
<td>Black/Black</td>
<td>70017P073</td>
</tr>
<tr>
<td></td>
<td>2 PSIG to 6 PSIG</td>
<td>Orange/Yellow</td>
<td>70017P078</td>
</tr>
</tbody>
</table>
Options – Continued

Capacity Limiter Kit:
Capacity Limiter Kits are available for 2", 3", 4" and 6" standard trim Axial Flow Valves. Capacity Limiters reduce the full-open capacity to a predetermined percentage of its rated capacity. Each kit consists of a bolt, spacer, and limiter. The flat faces of the limiter are stamped with a number that reads valve size, class rating, and percentage. For example, 2-300-75 is for a 2" valve, Class 300, and a reduction down to 75% of the full-open capacity. Capacity Limiters should not be used with 2" reduced capacity cages.

AFV Capacity Limiters

<table>
<thead>
<tr>
<th>Valve Size</th>
<th>Percent of Full-Open Capacity</th>
<th>Class 300 Part Number</th>
<th>Class 600 Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot;</td>
<td>50%</td>
<td>74075G036</td>
<td>74075G036</td>
</tr>
<tr>
<td>2&quot;</td>
<td>75%</td>
<td>74075G041</td>
<td>74075G041</td>
</tr>
<tr>
<td>3&quot;</td>
<td>50%</td>
<td>74075G055</td>
<td>N/A</td>
</tr>
<tr>
<td>3&quot;</td>
<td>75%</td>
<td>74075G060</td>
<td>N/A</td>
</tr>
<tr>
<td>4&quot;</td>
<td>50%</td>
<td>74075G074</td>
<td>74075G093</td>
</tr>
<tr>
<td>4&quot;</td>
<td>75%</td>
<td>74075G079</td>
<td>74075G098</td>
</tr>
<tr>
<td>6&quot;</td>
<td>50%</td>
<td>74075G112</td>
<td>N/A</td>
</tr>
<tr>
<td>6&quot;</td>
<td>75%</td>
<td>74075G117</td>
<td>74075G124</td>
</tr>
</tbody>
</table>

Centering Tubes
Aligns the Axial Flow Valve to the pipe line centers during installation.

<table>
<thead>
<tr>
<th>Valve Size</th>
<th>Quantity</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot;</td>
<td>2</td>
<td>73552P001</td>
</tr>
<tr>
<td>3&quot;</td>
<td>2</td>
<td>73552P002</td>
</tr>
<tr>
<td>4&quot;</td>
<td>2</td>
<td>73552P003</td>
</tr>
<tr>
<td>6&quot;</td>
<td>2</td>
<td>73552P004</td>
</tr>
<tr>
<td>8&quot;</td>
<td>2</td>
<td>73552P005</td>
</tr>
<tr>
<td>12&quot;</td>
<td>2</td>
<td>73552P007</td>
</tr>
</tbody>
</table>

Flange Separator (300 Series Only):
Used to jack the flanges apart and relieve pipe strain to facilitate removal and replacement. (Two required)

<table>
<thead>
<tr>
<th>Valve Size</th>
<th>Quantity</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot;, 3&quot; and 4&quot;</td>
<td>2</td>
<td>73593G001</td>
</tr>
<tr>
<td>6&quot; and 8&quot;</td>
<td>2</td>
<td>73593G002</td>
</tr>
<tr>
<td>12&quot;</td>
<td>2</td>
<td>73593G003</td>
</tr>
</tbody>
</table>
Material Specifications

1. Valve Cage Closure - 17-4 Stainless Steel.
3. Sleeve - Expandable material: Hydrin (H), Buna N (B), Viton (V), Natural Rubber (N), Fluorosilicone Rubber (F), NHBR (HB).
4a. Control Block - Composite, with integral restrictor and filter assembly. Low restrictor setting causes Axial Flow Valve to open quickly and close slower. Higher setting causes Axial Flow Valve to open slowly and close quickly.
4b. Control Block - Inspirator, with integral restrictor and filter assembly. Special nozzle reduces the differential pressure necessary to fully open the Axial Flow Valve.
5a. Pilot Regulator - 60 Series
   - Inlet pressures up to 1480 PSIG.
   - Outlet pressures up to 900 PSIG.
5b. Pilot Regulator - Series Z
   - Inlet pressures up to 1480 PSIG.
   - Outlet pressures up to 600 PSIG.
5c. Pilot Regulator - 1203
   - Inlet pressures up to 125 PSIG.
   - Outlet pressures from 6” W.C. up to 5 PSIG.
### Axial Flow Valve Capacity Performance

#### 300 Series

Set Point 10 PSIG (0.69 bar)

MSCFH (m³/h) 0.60 specific gravity gas at 60°F and 14.7 PSIA (20°C and 1.02 bar)

<table>
<thead>
<tr>
<th>Inlet PSIg (bar)</th>
<th>2” R10</th>
<th>2” R25</th>
<th>2” R50</th>
<th>2”</th>
<th>3”</th>
<th>4”</th>
<th>6”</th>
<th>8”</th>
<th>12”</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 (3)</td>
<td>17.4</td>
<td>40.1</td>
<td>78.9</td>
<td>164</td>
<td>303</td>
<td>513</td>
<td>732</td>
<td>1203</td>
<td>2805</td>
</tr>
<tr>
<td>100 (7)</td>
<td>30.9</td>
<td>71.3</td>
<td>140</td>
<td>290</td>
<td>537</td>
<td>909</td>
<td>1298</td>
<td>2133</td>
<td>4972</td>
</tr>
<tr>
<td>200 (14)</td>
<td>57.8</td>
<td>133</td>
<td>262</td>
<td>543</td>
<td>1004</td>
<td>1701</td>
<td>2430</td>
<td>3992</td>
<td>9305</td>
</tr>
<tr>
<td>300 (21)</td>
<td>84.7</td>
<td>195</td>
<td>383</td>
<td>796</td>
<td>1472</td>
<td>2493</td>
<td>3561</td>
<td>5851</td>
<td>13,639</td>
</tr>
<tr>
<td>400 (28)</td>
<td>112</td>
<td>258</td>
<td>505</td>
<td>1048</td>
<td>1940</td>
<td>3285</td>
<td>4693</td>
<td>7710</td>
<td>17,973</td>
</tr>
<tr>
<td>500 (34)</td>
<td>139</td>
<td>320</td>
<td>627</td>
<td>1301</td>
<td>2407</td>
<td>4077</td>
<td>5825</td>
<td>9569</td>
<td>22,306</td>
</tr>
<tr>
<td>600 (41)</td>
<td>165</td>
<td>382</td>
<td>749</td>
<td>1554</td>
<td>2875</td>
<td>4869</td>
<td>6956</td>
<td>11,428</td>
<td>26,640</td>
</tr>
<tr>
<td>740 (51)</td>
<td>203</td>
<td>469</td>
<td>919</td>
<td>1908</td>
<td>3530</td>
<td>5978</td>
<td>8540</td>
<td>14,031</td>
<td>32,707</td>
</tr>
</tbody>
</table>

#### 300 Series

Set Point 50 PSIG (3.45 bar)

MSCFH (m³/h) 0.60 specific gravity gas at 60°F and 14.7 PSIA (20°C and 1.02 bar)

<table>
<thead>
<tr>
<th>Inlet PSIg (bar)</th>
<th>2” R10</th>
<th>2” R25</th>
<th>2” R50</th>
<th>2”</th>
<th>3”</th>
<th>4”</th>
<th>6”</th>
<th>8”</th>
<th>12”</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 (7)</td>
<td>29.4</td>
<td>67.9</td>
<td>135</td>
<td>285</td>
<td>536</td>
<td>908</td>
<td>1296</td>
<td>2133</td>
<td>4913</td>
</tr>
<tr>
<td>200 (14)</td>
<td>57.8</td>
<td>133</td>
<td>262</td>
<td>543</td>
<td>1004</td>
<td>1701</td>
<td>2430</td>
<td>3992</td>
<td>9305</td>
</tr>
<tr>
<td>300 (21)</td>
<td>84.7</td>
<td>195</td>
<td>383</td>
<td>796</td>
<td>1472</td>
<td>2493</td>
<td>3561</td>
<td>5851</td>
<td>13,639</td>
</tr>
<tr>
<td>400 (28)</td>
<td>112</td>
<td>258</td>
<td>505</td>
<td>1048</td>
<td>1940</td>
<td>3285</td>
<td>4693</td>
<td>7710</td>
<td>17,973</td>
</tr>
<tr>
<td>500 (34)</td>
<td>139</td>
<td>320</td>
<td>627</td>
<td>1301</td>
<td>2407</td>
<td>4077</td>
<td>5825</td>
<td>9569</td>
<td>22,306</td>
</tr>
<tr>
<td>600 (41)</td>
<td>165</td>
<td>382</td>
<td>749</td>
<td>1554</td>
<td>2875</td>
<td>4869</td>
<td>6956</td>
<td>11,428</td>
<td>26,640</td>
</tr>
<tr>
<td>740 (51)</td>
<td>203</td>
<td>469</td>
<td>919</td>
<td>1908</td>
<td>3530</td>
<td>5978</td>
<td>8540</td>
<td>14,031</td>
<td>32,707</td>
</tr>
</tbody>
</table>
## Axial Flow Valve Capacity Performance

### 300 Series

**Set Point 100 PSIG (6.89 bar)**  
MCFH (m³/h) 0.60 specific gravity gas at 60°F and 14.7 PSIA (20°C and 1.02 bar)

<table>
<thead>
<tr>
<th>Inlet PSIG (bar)</th>
<th>2&quot; R10</th>
<th>2&quot; R25</th>
<th>2&quot; R50</th>
<th>2&quot;</th>
<th>3&quot;</th>
<th>4&quot;</th>
<th>6&quot;</th>
<th>8&quot;</th>
<th>12&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 (14)</td>
<td>55.8</td>
<td>129</td>
<td>256</td>
<td>538</td>
<td>1004</td>
<td>1701</td>
<td>2430</td>
<td>3992</td>
<td>9255</td>
</tr>
<tr>
<td>300 (21)</td>
<td>84.6</td>
<td>195</td>
<td>383</td>
<td>796</td>
<td>1472</td>
<td>2493</td>
<td>3561</td>
<td>5851</td>
<td>13,639</td>
</tr>
<tr>
<td>400 (28)</td>
<td>112</td>
<td>258</td>
<td>505</td>
<td>1048</td>
<td>1940</td>
<td>3285</td>
<td>4693</td>
<td>7710</td>
<td>17,973</td>
</tr>
<tr>
<td>500 (34)</td>
<td>139</td>
<td>320</td>
<td>627</td>
<td>1301</td>
<td>2407</td>
<td>4077</td>
<td>5825</td>
<td>9569</td>
<td>22,306</td>
</tr>
<tr>
<td>600 (41)</td>
<td>165</td>
<td>382</td>
<td>749</td>
<td>1554</td>
<td>2875</td>
<td>4869</td>
<td>6956</td>
<td>11,428</td>
<td>26,640</td>
</tr>
<tr>
<td>740 (51)</td>
<td>203</td>
<td>469</td>
<td>919</td>
<td>1908</td>
<td>3530</td>
<td>5978</td>
<td>8540</td>
<td>14,031</td>
<td>32,707</td>
</tr>
</tbody>
</table>

### 300 Series

**Set Point 200 PSIG (13.79 bar)**  
MCFH (m³/h) 0.60 specific gravity gas at 60°F and 14.7 PSIA (20°C and 1.02 bar)

<table>
<thead>
<tr>
<th>Inlet PSIG (bar)</th>
<th>2&quot; R10</th>
<th>2&quot; R25</th>
<th>2&quot; R50</th>
<th>2&quot;</th>
<th>3&quot;</th>
<th>4&quot;</th>
<th>6&quot;</th>
<th>8&quot;</th>
<th>12&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>300 (21)</td>
<td>74.3</td>
<td>172</td>
<td>345</td>
<td>733</td>
<td>1415</td>
<td>2406</td>
<td>3416</td>
<td>5710</td>
<td>12,701</td>
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<tr>
<td>400 (28)</td>
<td>108</td>
<td>250</td>
<td>497</td>
<td>1042</td>
<td>1940</td>
<td>3285</td>
<td>4693</td>
<td>7710</td>
<td>17,918</td>
</tr>
<tr>
<td>500 (34)</td>
<td>138</td>
<td>318</td>
<td>627</td>
<td>1301</td>
<td>2407</td>
<td>4077</td>
<td>5825</td>
<td>9569</td>
<td>22,306</td>
</tr>
<tr>
<td>600 (41)</td>
<td>165</td>
<td>382</td>
<td>749</td>
<td>1554</td>
<td>2875</td>
<td>4869</td>
<td>6956</td>
<td>11,428</td>
<td>26,640</td>
</tr>
<tr>
<td>740 (51)</td>
<td>203</td>
<td>469</td>
<td>919</td>
<td>1908</td>
<td>3530</td>
<td>5978</td>
<td>8540</td>
<td>14,031</td>
<td>32,707</td>
</tr>
</tbody>
</table>

### 300 Series

**Set Point 300 PSIG (20.68 bar)**  
MCFH (m³/h) 0.60 specific gravity gas at 60°F and 14.7 PSIA (20°C and 1.02 bar)

<table>
<thead>
<tr>
<th>Inlet PSIG (bar)</th>
<th>2&quot; R10</th>
<th>2&quot; R25</th>
<th>2&quot; R50</th>
<th>2&quot;</th>
<th>3&quot;</th>
<th>4&quot;</th>
<th>6&quot;</th>
<th>8&quot;</th>
<th>12&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>400 (28)</td>
<td>89.3</td>
<td>206</td>
<td>417</td>
<td>890</td>
<td>1743</td>
<td>2969</td>
<td>4205</td>
<td>7092</td>
<td>15,469</td>
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<tr>
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<td>5978</td>
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**07 Elster American Meter**
## Axial Flow Valve Capacity Performance

### 300 Series
Set Point 400 PSIG (27.58 bar)

MSCFH (m³/h) 0.60 specific gravity gas at 60°F and 14.7 PSIA (20°C and 1.02 bar)

<table>
<thead>
<tr>
<th>Inlet PSIG (bar)</th>
<th>2&quot; R10</th>
<th>2&quot; R25</th>
<th>2&quot; R50</th>
<th>2&quot; R75</th>
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<td>(57,285)</td>
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<td>(189,836)</td>
<td>(317,007)</td>
<td>(706,505)</td>
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### 300 Series
Set Point 500 PSIG (34.47 bar)

MSCFH (m³/h) 0.60 specific gravity gas at 60°F and 14.7 PSIA (20°C and 1.02 bar)

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<th>2&quot; R75</th>
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### 600 Series
Set Point 50 PSIG (3.45 bar)

MSCFH (m³/h) 0.60 specific gravity gas at 60°F and 14.7 PSIA (20°C and 1.02 bar)

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### Axial Flow Valve Capacity Performance

**600 Series**

**Set Point 100 PSIG (6.89 bar)**

MSCFH (m³/h) 0.60 specific gravity gas at 60°F and 14.7 PSIA (20°C and 1.02 bar)

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<th>2&quot;R25</th>
<th>2&quot;R50</th>
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<td>2967</td>
<td>5567</td>
<td>8201</td>
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<tr>
<td>400 (28)</td>
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<td>562</td>
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<td>3910</td>
<td>7336</td>
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<td>698</td>
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<td>4852</td>
<td>9104</td>
<td>13413</td>
</tr>
<tr>
<td>600 (41)</td>
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<td>834</td>
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<td>5795</td>
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<td>29407</td>
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<td>817</td>
<td>1833</td>
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<td>12394</td>
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**600 Series**

**Set Point 200 PSIG (13.79 bar)**

MSCFH (m³/h) 0.60 specific gravity gas at 60°F and 14.7 PSIA (20°C and 1.02 bar)

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<th>2&quot;R10</th>
<th>2&quot;R25</th>
<th>2&quot;R50</th>
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<td>4852</td>
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<td>13413</td>
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### Axial Flow Valve Capacity Performance

**600 Series**

**Set Point 300 PSIG (20.68 bar)**

MSCFH (m³/h) 0.60 specific gravity gas at 60°F and 14.7 PSIA (20°C and 1.02 bar)

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<th>2&quot; R50</th>
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<td>18,411</td>
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**Set Point 400 PSIG (27.58 bar)**

MSCFH (m³/h) 0.60 specific gravity gas at 60°F and 14.7 PSIA (20°C and 1.02 bar)

<table>
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<th>Inlet PSIG (bar)</th>
<th>2&quot; R10</th>
<th>2&quot; R25</th>
<th>2&quot; R50</th>
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<th>4&quot;</th>
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<th>8&quot;</th>
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</thead>
<tbody>
<tr>
<td>500 (28)</td>
<td>119</td>
<td>292</td>
<td>666</td>
<td>1275</td>
<td>4678</td>
<td>8980</td>
<td>13,092</td>
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<tr>
<td>600 (34)</td>
<td>149</td>
<td>367</td>
<td>826</td>
<td>1837</td>
<td>6738</td>
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<td>18,624</td>
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<tr>
<td>700 (41)</td>
<td>176</td>
<td>437</td>
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<td>2351</td>
<td>8623</td>
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<td>23,836</td>
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<tr>
<td>800 (48)</td>
<td>202</td>
<td>503</td>
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<td>18,411</td>
<td>26,441</td>
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<tr>
<td>900 (53)</td>
<td>227</td>
<td>567</td>
<td>1240</td>
<td>3121</td>
<td>11,451</td>
<td>19,717</td>
<td>29,047</td>
</tr>
<tr>
<td>1000 (57)</td>
<td>252</td>
<td>630</td>
<td>1376</td>
<td>3378</td>
<td>12,394</td>
<td>20,846</td>
<td>31,653</td>
</tr>
<tr>
<td>1100 (62)</td>
<td>277</td>
<td>693</td>
<td>1512</td>
<td>3579</td>
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<td>22,226</td>
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<tr>
<td>1200 (67)</td>
<td>302</td>
<td>755</td>
<td>1647</td>
<td>3821</td>
<td>14,651</td>
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<td>35,259</td>
</tr>
<tr>
<td>1300 (72)</td>
<td>327</td>
<td>817</td>
<td>1783</td>
<td>4071</td>
<td>15,804</td>
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<td>37,509</td>
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Axial Flow Valve Capacity Performance

600 Series
Set Point 500 PSIG (34.47 bar)
MSCFH (m³/h) 0.60 specific gravity gas at 60°F and 14.7 PSIA (20°C and 1.02 bar)

<table>
<thead>
<tr>
<th>Inlet PSIG (bar)</th>
<th>2 1/2R10</th>
<th>2 1/2R25</th>
<th>2 1/2R50</th>
<th>2&quot;</th>
<th>4&quot;</th>
<th>6&quot;</th>
<th>8&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>600 (41)</td>
<td>105</td>
<td>255</td>
<td>602</td>
<td>1163</td>
<td>4266</td>
<td>8454</td>
<td>12,115</td>
</tr>
<tr>
<td>700 (48)</td>
<td>150</td>
<td>366</td>
<td>849</td>
<td>1633</td>
<td>5990</td>
<td>11,694</td>
<td>16,894</td>
</tr>
<tr>
<td>800 (55)</td>
<td>185</td>
<td>455</td>
<td>1042</td>
<td>1997</td>
<td>7325</td>
<td>14,109</td>
<td>20,531</td>
</tr>
<tr>
<td>900 (62)</td>
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<td>534</td>
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<td>2311</td>
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<td>16,133</td>
<td>23,629</td>
</tr>
<tr>
<td>1000 (69)</td>
<td>246</td>
<td>608</td>
<td>1364</td>
<td>2596</td>
<td>9523</td>
<td>17,948</td>
<td>26,416</td>
</tr>
<tr>
<td>1100 (76)</td>
<td>274</td>
<td>678</td>
<td>1508</td>
<td>2863</td>
<td>10,502</td>
<td>19,717</td>
<td>29,047</td>
</tr>
<tr>
<td>1200 (83)</td>
<td>300</td>
<td>746</td>
<td>1647</td>
<td>3121</td>
<td>11,451</td>
<td>21,466</td>
<td>31,653</td>
</tr>
<tr>
<td>1300 (90)</td>
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<td>1783</td>
<td>3378</td>
<td>12,394</td>
<td>23,255</td>
<td>34,259</td>
</tr>
</tbody>
</table>

600 Series
Set Point 600 PSIG (41.37 bar)
MSCFH (m³/h) 0.60 specific gravity gas at 60°F and 14.7 PSIA (20°C and 1.02 bar)

<table>
<thead>
<tr>
<th>Inlet PSIG (bar)</th>
<th>2 1/2R10</th>
<th>2 1/2R25</th>
<th>2 1/2R50</th>
<th>2&quot;</th>
<th>4&quot;</th>
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<td>8007</td>
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<tr>
<td>1000 (69)</td>
<td>235</td>
<td>577</td>
<td>1317</td>
<td>2521</td>
<td>9247</td>
<td>17,735</td>
<td>25,867</td>
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<tr>
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<td>266</td>
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<td>1481</td>
<td>2825</td>
<td>10,365</td>
<td>19,685</td>
<td>28,864</td>
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<tr>
<td>1200 (83)</td>
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<td>728</td>
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<td>3108</td>
<td>11,403</td>
<td>21,466</td>
<td>31,624</td>
</tr>
<tr>
<td>1300 (90)</td>
<td>322</td>
<td>798</td>
<td>1778</td>
<td>3376</td>
<td>12,384</td>
<td>23,255</td>
<td>34,259</td>
</tr>
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</table>

600 Series
Set Point 700 PSIG (48.26 bar)
MSCFH (m³/h) 0.60 specific gravity gas at 60°F and 14.7 PSIA (20°C and 1.02 bar)

<table>
<thead>
<tr>
<th>Inlet PSIG (bar)</th>
<th>2 1/2R10</th>
<th>2 1/2R25</th>
<th>2 1/2R50</th>
<th>2&quot;</th>
<th>4&quot;</th>
<th>6&quot;</th>
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</thead>
<tbody>
<tr>
<td>800 (53)</td>
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<td>300</td>
<td>710</td>
<td>1375</td>
<td>5043</td>
<td>10,041</td>
<td>14,354</td>
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<tr>
<td>900 (62)</td>
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<td>428</td>
<td>1001</td>
<td>1930</td>
<td>7081</td>
<td>13,937</td>
<td>20,045</td>
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<tr>
<td>1000 (69)</td>
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<td>529</td>
<td>1225</td>
<td>2355</td>
<td>8640</td>
<td>16,829</td>
<td>24,342</td>
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<tr>
<td>1100 (76)</td>
<td>252</td>
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<td>1417</td>
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<td>9667</td>
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<td>27,954</td>
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<td>3040</td>
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<tr>
<td>1300 (90)</td>
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<td>3339</td>
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<td>23,230</td>
<td>34,091</td>
</tr>
</tbody>
</table>

Axial Flow Valve Capacity MSCF (m³/h)

Inlet PSIG (bar) | 2 1/2R10 | 2 1/2R25 | 2 1/2R50 | 2" | 4" | 6" | 8" |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>600 (41)</td>
<td>105</td>
<td>255</td>
<td>602</td>
<td>1163</td>
<td>4266</td>
<td>8454</td>
<td>12,115</td>
</tr>
<tr>
<td>700 (48)</td>
<td>150</td>
<td>366</td>
<td>849</td>
<td>1633</td>
<td>5990</td>
<td>11,694</td>
<td>16,894</td>
</tr>
<tr>
<td>800 (55)</td>
<td>185</td>
<td>455</td>
<td>1042</td>
<td>1997</td>
<td>7325</td>
<td>14,109</td>
<td>20,531</td>
</tr>
<tr>
<td>900 (62)</td>
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<td>2311</td>
<td>8477</td>
<td>16,133</td>
<td>23,629</td>
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<tr>
<td>1000 (69)</td>
<td>246</td>
<td>608</td>
<td>1364</td>
<td>2596</td>
<td>9523</td>
<td>17,948</td>
<td>26,416</td>
</tr>
<tr>
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<td>274</td>
<td>678</td>
<td>1508</td>
<td>2863</td>
<td>10,502</td>
<td>19,717</td>
<td>29,047</td>
</tr>
<tr>
<td>1200 (83)</td>
<td>300</td>
<td>746</td>
<td>1647</td>
<td>3121</td>
<td>11,451</td>
<td>21,466</td>
<td>31,653</td>
</tr>
<tr>
<td>1300 (90)</td>
<td>326</td>
<td>812</td>
<td>1783</td>
<td>3378</td>
<td>12,394</td>
<td>23,255</td>
<td>34,259</td>
</tr>
</tbody>
</table>
## Axial Flow Valve Dimensions

### 300 Series

<table>
<thead>
<tr>
<th>Valve Size (inches)</th>
<th>Dimensions</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>2R10, 2R25, 2R50, 2&quot;</td>
<td>3-1/32&quot; 104.8mm 2-3/4&quot; 69.9mm</td>
<td>5-3/4 lb 2.6 kg</td>
</tr>
<tr>
<td>3&quot;</td>
<td>3-23/32&quot; 94.5mm 5-3/8&quot; 136.5mm 3-5/16&quot; 84.1mm</td>
<td>9 lb 4 kg</td>
</tr>
<tr>
<td>4&quot;</td>
<td>4-1/2&quot; 114.3mm 6-7/8&quot; 174.6mm 4-1/8&quot; 104.8mm</td>
<td>19 lb 8.6 kg</td>
</tr>
<tr>
<td>6&quot;</td>
<td>5-1/2&quot; 139.7mm 8-3/4&quot; 222.3mm 5-1/16&quot; 128.6mm</td>
<td>38 lb 17.2 kg</td>
</tr>
<tr>
<td>8&quot;</td>
<td>6-23/32&quot; 170.6mm 11&quot; 279.4mm 6-3/16&quot; 157.2mm</td>
<td>80 lb 36.3 kg</td>
</tr>
<tr>
<td>12&quot;</td>
<td>9-7/16&quot; 239.7mm 16-1/8&quot; 409.6mm 8-3/4&quot; 222.3mm</td>
<td>177 lb 80.3 kg</td>
</tr>
</tbody>
</table>

### 600 Series

<table>
<thead>
<tr>
<th>Valve Size (inches)</th>
<th>Dimensions</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>2R10, 2R25, 2R50, 2&quot;</td>
<td>3-13/32&quot; 86.6mm 4-3/8&quot; 111.1mm 2-7/8&quot; 73.0mm</td>
<td>7-1/2 lb 3.4 kg</td>
</tr>
<tr>
<td>4&quot;</td>
<td>5-1/4&quot; 133.4mm 7-5/8&quot; 193.2mm 4-1/2&quot; 114.3mm</td>
<td>31-1/2 lb 14.3 kg</td>
</tr>
<tr>
<td>6&quot;</td>
<td>6-7/8&quot; 174.6mm 10-1/2&quot; 266.7mm 5-7/8&quot; 149.2mm</td>
<td>73-1/2 lb 33.3 kg</td>
</tr>
<tr>
<td>8&quot;</td>
<td>8-5/64&quot; 205.2mm 12-5/8&quot; 320.7mm 7&quot; 177.8mm</td>
<td>122 lb 55.3 kg</td>
</tr>
</tbody>
</table>
Axial Flow Valve Dimensions

Control Loop Dimensions

<table>
<thead>
<tr>
<th>Pilot Type</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Weight</th>
</tr>
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<tbody>
<tr>
<td>ZSC-100</td>
<td>8-7/8&quot; 225.4 mm</td>
<td>5-3/16&quot; 131.8 mm</td>
<td>4-1/16&quot; 103.2 mm</td>
<td>7-1/4&quot; 184.2 mm</td>
<td>13-3/4 lb 6.2 kg</td>
</tr>
<tr>
<td>ZSC-320-100</td>
<td>8-7/8&quot; 225.4 mm</td>
<td>10-1/16&quot; 255.6 mm</td>
<td>4-1/16&quot; 103.2 mm</td>
<td>7-1/4&quot; 184.2 mm</td>
<td>16-1/4 lb 7.4 kg</td>
</tr>
<tr>
<td>ZSC-150</td>
<td>8-7/8&quot; 225.4 mm</td>
<td>6-1/4&quot; 158.8 mm</td>
<td>4-1/16&quot; 103.2 mm</td>
<td>7-1/4&quot; 184.2 mm</td>
<td>13-3/4 lb 6.2 kg</td>
</tr>
<tr>
<td>ZSC-320-150</td>
<td>8-7/8&quot; 225.4 mm</td>
<td>10-13/16&quot; 274.6 mm</td>
<td>4-1/16&quot; 103.2 mm</td>
<td>7-1/4&quot; 184.2 mm</td>
<td>16-1/4 lb 7.4 kg</td>
</tr>
<tr>
<td>1203-180</td>
<td>9-1/8&quot; 231.8 mm</td>
<td>6-5/16&quot; 160.3 mm</td>
<td>10-1/4&quot; 260.4 mm</td>
<td>—</td>
<td>7-3/4 lb 3.5 kg</td>
</tr>
<tr>
<td>60 Series - 60L</td>
<td>8-1/16&quot; 204.8 mm</td>
<td>8-1/8&quot; 209.6 mm</td>
<td>4-1/4&quot; 108.0 mm</td>
<td>7&quot;  177.8 mm</td>
<td>11-1/4 lb 5.1 kg</td>
</tr>
<tr>
<td>60 Series - 60H</td>
<td>8-1/16&quot; 204.8 mm</td>
<td>8-1/8&quot; 209.6 mm</td>
<td>4-1/4&quot; 108.0 mm</td>
<td>7&quot;  177.8 mm</td>
<td>11-1/2 lb 5.3 kg</td>
</tr>
</tbody>
</table>
Assembly Positions

**Pressure Reduction**
When outlet pressure decreases, the pilot opens further. This results in a higher flow through the downstream bleed thereby reducing the control pressure on the outside of the sleeve. Inlet pressure is now much greater than the control pressure and the Axial Flow Valve opens wider to restore downstream pressure.

**Pressure Relief**
The pilot remains closed until the line pressure becomes higher than the set pressure of the pilot. The pilot opens and allows flow through the downstream bleed reducing the control pressure on the outside of the sleeve. Line pressure is now greater than the control pressure resulting in the Axial Flow Valve opening and releasing the excess line pressure to atmosphere.

**Two Stage Pressure Reduction**
Any application requiring a pressure drop greater than the maximum differential rating across a single Axial Flow Valve can be accomplished through a two stage pressure reduction. The first stage reduces the outlet pressure to an acceptable intermediate pressure. Then the second stage reduces to the final desired outlet pressure. This allows both Axial Flow Valves to be sized within their maximum differential ratings. The outlet pressure can even be reduced to inches W.C. if necessary.

---

1. Pilot Regulator
2. Control Pressure
3. Downstream Bleed
4. Inlet Pressure
5. Sense Line
6. Axial Flow Valve
7. Relief Vent
8. Needle Valve
9. Inlet Supply
10. Plug
11. Pilot Regulator (Override)
Assembly Positions

Underpressure Shutoff

Protecting a system from an upstream disruption may require the use of an underpressure shutoff. As long as the downstream pressure is above the set pressure, the pilot remains open. This results in flow through the downstream bleed reducing the control pressure on the outside of the sleeve. Since the Inlet pressure is greater than the control pressure, the Axial Flow Valve remains fully open. If the downstream pressure decreases below the set pressure, the pilot closes, and the inlet and control pressure equalize and close the Axial Flow Valve. The needle valve is used to reset the system. Opening the needle valve allows flow through downstream bleed (pilot bypass) reducing the control pressure on the outside of the sleeve. Inlet pressure is now much greater than the control pressure and the Axial Flow Valve fully opens. Once the downstream is pressurized, close the needle valve.

Worker/Monitor

During normal operation, a single Axial Flow Valve (the worker) is responsible for the pressure reduction. Another Axial Flow Valve (the monitor) is installed in series either upstream or downstream of the “worker”. The monitor is set at a pressure slightly higher than the worker and is always fully open. If a malfunction occurs with the worker, the outlet pressure will increase to the monitor’s set pressure and the monitor will assume control. The roles of the worker and monitor can be reversed by simply resetting their pilot’s set pressure.

Two Stage Pressure Reduction with Monitor Override

Two Axial Flow Valves are used to perform the pressure reduction. However, the Axial Flow Valves need to be sized so that either one can handle the entire pressure drop. If a malfunction occurs in the first stage, the second stage will be able to handle the entire pressure drop. If the second stage malfunctions, downstream pressure will increase until it becomes higher than the set pressure of the override pilot. The override pilot assumes control of the first stage and is able to handle the entire pressure drop.
About Elster Group

A world leader in advanced metering infrastructure, integrated metering, and utilization solutions to the gas, electricity and water industries. Elster’s systems and solutions reflect over 170 years of knowledge and experience in measuring precious resources and energy.

Elster provides solutions and advanced technologies to help utilities more easily, efficiently and reliably obtain and use advanced metering intelligence to improve customer service, enhance operational efficiency, and increase revenues. Elster’s AMI solutions enable utilities to cost-effectively generate, deliver, manage, and conserve the life-essential resources of gas, electricity, and water.

Elster has over 7,500 staff and operations in 38 countries in North and South America, Europe, and Asia.