1599 valves are normally closed safety shutoff valves which are controlled by an electro-hydraulic actuator. 1599’s can be ordered as single shutoff valves or double shutoff valves for use in industrial and thermal process applications.

**FEATURES**

- FM, CSA, UL Approvals
- Stainless Steel mesh inlet filter
- Pressure taps on inlet and outlet, ¼” NPT
- Slow opening, fast closing
- Proof of closure switch (POC) optional
- Optional AUX switch
- Visual indication (VI) standard
- Power indication light
- Quick connect wiring terminals
- Rotatable actuator allows for easy install and field wiring
- Replacement actuators can be mounted while the valve is in line and under pressure
- Low power consumption, 13.5VA
- NEMA 4

**SPECIFICATIONS**

- **Body Material**: Aluminum/Cast Iron
  
  See Table 1

- **Internals**: Buna N seat, SST stem

- **Max. inlet pressure**: See Table 1

- **Max. back pressure** (differential)

- **Acceptable media**: Natural gas, propane, butane, air, other non-corrosive gases

- **Gas temp range**: 5F to 140F (-15C to 60C)

- **Operating temp range**: 5F to 140F (-15C to 60C)

- **-20F (-29C) with optional heater**: 110-120 Vac +10% to -15%

- **220-240 Vac +10% to -15%**

- **Voltage**: 50 to 60 Hz +/-6%

- **Power consumption**: 13.5 VA

- **Conduit connection**: 1/2” NPSM thread knock-outs (two per actuator)

- **Electrical connection**: Spring loaded terminals for 14AWG wires

- **Closing force**: 100 lb. (450N)

- **Max. opening time**: 14 sec.

- **Closing time**: <0.8 sec.

- **Switch type**: SPDT

- **Switch rating**: 6A/250 Vac resistive 3A/120 Vac pilot duty

- **Cycle life @ 7.25 psi (500 mbar)**
  
  3 million for ½” - 1”

  2 million for 1½” - 2”

  1 million for 2½” - 6”
### Table 1. Valve Size Specifications

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>Size</th>
<th>Max. Oper. Pressure psi (mbar)</th>
<th>Close-off Pressure psi (mbar)</th>
<th>Max. Diff. Back Pressure psi (mbar)</th>
<th>Number of Test Points</th>
<th>Body Materials</th>
<th>Cv</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>½” NPT</td>
<td>20 (1379)</td>
<td>75 (5171)</td>
<td>2.5 (172)</td>
<td>2</td>
<td>Aluminum</td>
<td>6.5</td>
</tr>
<tr>
<td></td>
<td>¾” NPT</td>
<td>20 (1379)</td>
<td>75 (5171)</td>
<td>2.5 (172)</td>
<td>2</td>
<td>Aluminum</td>
<td>11.7</td>
</tr>
<tr>
<td></td>
<td>1” NPT</td>
<td>20 (1379)</td>
<td>75 (5171)</td>
<td>2.5 (172)</td>
<td>2</td>
<td>Aluminum</td>
<td>17.0</td>
</tr>
<tr>
<td></td>
<td>1½” NPT</td>
<td>20 (1379)</td>
<td>75 (5171)</td>
<td>2.5 (172)</td>
<td>2</td>
<td>Aluminum</td>
<td>40.5</td>
</tr>
<tr>
<td></td>
<td>2” NPT</td>
<td>15 (1034)</td>
<td>75 (5171)</td>
<td>2.5 (172)</td>
<td>2</td>
<td>Aluminum</td>
<td>60.7</td>
</tr>
<tr>
<td></td>
<td>2½” NPT</td>
<td>10 (689)</td>
<td>25 (1724)</td>
<td>2.5 (172)</td>
<td>1</td>
<td>Cast Iron</td>
<td>89</td>
</tr>
<tr>
<td></td>
<td>3” NPT</td>
<td>10 (689)</td>
<td>25 (1724)</td>
<td>2.5 (172)</td>
<td>1</td>
<td>Cast Iron</td>
<td>113.3</td>
</tr>
<tr>
<td>Double</td>
<td>1½” NPT</td>
<td>20 (1379)</td>
<td>30 (2068)</td>
<td>2.5 (172)</td>
<td>2</td>
<td>Aluminum</td>
<td>33.2</td>
</tr>
<tr>
<td></td>
<td>2” NPT</td>
<td>15 (1034)</td>
<td>30 (2068)</td>
<td>2.5 (172)</td>
<td>2</td>
<td>Aluminum</td>
<td>40.5</td>
</tr>
<tr>
<td></td>
<td>2½” NPT &amp; Flanged</td>
<td>10 (689)</td>
<td>75 (5171)</td>
<td>4 (276)</td>
<td>One inlet, one outlet and one between valves</td>
<td>Aluminum</td>
<td>73.2</td>
</tr>
<tr>
<td></td>
<td>3” NPT &amp; Flanged</td>
<td>10 (689)</td>
<td>75 (5171)</td>
<td>4 (276)</td>
<td>One inlet, one outlet and one between valves</td>
<td>Aluminum</td>
<td>110.5</td>
</tr>
<tr>
<td></td>
<td>4” Flanged</td>
<td>10 (689)</td>
<td>30 (2068)</td>
<td>4 (276)</td>
<td>2</td>
<td>Aluminum</td>
<td>171.6</td>
</tr>
<tr>
<td></td>
<td>6” Flanged</td>
<td>10 (689)</td>
<td>30 (2068)</td>
<td>4 (276)</td>
<td>2</td>
<td>Aluminum</td>
<td>324.9</td>
</tr>
</tbody>
</table>

**Notes:**
1. The close-off pressure is the maximum pressure the valve can close against. This pressure will need to be relieved below the maximum operating pressure for the valve to open.
2. The maximum operating pressure is the maximum inlet pressure the valve can open against.
3. The maximum differential back pressure is the maximum allowable downstream pressure increase above the inlet pressure.

*Example:* For a 1”, if the inlet pressure is 10 psi the outlet pressure can’t be higher than 12.5 psi.

### WIRING

- **POC + AUX SWITCH**
- **POC ONLY**
- **NO POC or AUX SWITCH**

**Notes:**
- Installations are to be completed by qualified personnel only.
- Wiring must meet all relevant electrical codes.
- Flexible conduit must be used when conduit routing is connected.
- The GND terminal must be connected to electrical ground. This is located above the wiring terminals.
VALVE SIZING

Figure 1. Single Valve Body NPT

Figure 2. Double Valve Body NPT
Figure 3. Double Valve Body Flanged
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>½ (12.7)</td>
<td>1.25</td>
<td>3.13</td>
<td>11.78</td>
<td>3.15</td>
<td>1.13</td>
<td>1.22</td>
<td>3.20</td>
<td>2.19</td>
<td>4.38</td>
<td>4.05</td>
</tr>
<tr>
<td>¾ (19.05)</td>
<td>1.25</td>
<td>3.13</td>
<td>11.78</td>
<td>3.15</td>
<td>1.13</td>
<td>1.22</td>
<td>3.20</td>
<td>2.19</td>
<td>4.38</td>
<td>4.05</td>
</tr>
<tr>
<td>1 (25.4)</td>
<td>1.25</td>
<td>3.13</td>
<td>11.78</td>
<td>3.15</td>
<td>1.13</td>
<td>1.22</td>
<td>3.20</td>
<td>2.19</td>
<td>4.38</td>
<td>3.9</td>
</tr>
<tr>
<td>1½ (38.1)</td>
<td>1.63</td>
<td>4</td>
<td>13.03</td>
<td>3.15</td>
<td>1.31</td>
<td>1.31</td>
<td>3.20</td>
<td>3</td>
<td>5.94</td>
<td>5.7</td>
</tr>
<tr>
<td>2 (50.8)</td>
<td>2</td>
<td>4.25</td>
<td>13.65</td>
<td>3.15</td>
<td>1.31</td>
<td>1.31</td>
<td>3.20</td>
<td>3.38</td>
<td>6.75</td>
<td>8.4</td>
</tr>
<tr>
<td>2½ (63.5)</td>
<td>3.63</td>
<td>6.44</td>
<td>17.46</td>
<td>3.15</td>
<td>—</td>
<td>2.48</td>
<td>3.20</td>
<td>5.69</td>
<td>11.48</td>
<td>34.9</td>
</tr>
<tr>
<td>3 (76.2)</td>
<td>3.94</td>
<td>6.44</td>
<td>17.78</td>
<td>3.15</td>
<td>—</td>
<td>2.48</td>
<td>3.20</td>
<td>6.06</td>
<td>12.19</td>
<td>36.4</td>
</tr>
</tbody>
</table>

**Figure 4. Single Valve Body NPT**

<table>
<thead>
<tr>
<th>Pipe Size D (inch)</th>
<th>C (inch)</th>
<th>G (inch)</th>
<th>H (inch)</th>
<th>L (inch)</th>
<th>Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1½ (353)</td>
<td>13.9</td>
<td>3.20</td>
<td>3.15</td>
<td>12.19</td>
<td>9.4</td>
</tr>
<tr>
<td>2 (353)</td>
<td>13.9</td>
<td>3.20</td>
<td>3.15</td>
<td>12.63</td>
<td>6.4</td>
</tr>
</tbody>
</table>

**Figure 5. Double Valve Body NPT**
Figure 6. Double Valve Body Flanged

<table>
<thead>
<tr>
<th>Pipe Size inch (mm)</th>
<th>A inch (mm)</th>
<th>B inch (mm)</th>
<th>C inch (mm)</th>
<th>D inch (mm)</th>
<th>E inch (mm)</th>
<th>F inch (mm)</th>
<th>G inch (mm)</th>
<th>H inch (mm)</th>
<th>L inch (mm)</th>
<th>M inch (mm)</th>
<th>S inch (mm)</th>
<th>T inch (mm)</th>
<th>Weight lbs (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2½ (63.5)</td>
<td>11.42 (260)</td>
<td>8.54 (217)</td>
<td>3.25 (82.5)</td>
<td>4.63 (117.5)</td>
<td>2.09 (53.1)</td>
<td>1.46 (37)</td>
<td>4.02 (102)</td>
<td>7.01 (178)</td>
<td>5.5 (139.7)</td>
<td>0.75 (19)</td>
<td>1.77 (45)</td>
<td>3.64 (92.5)</td>
<td>20.9 (9.48)</td>
</tr>
<tr>
<td>3 (76.2)</td>
<td>12.20 (310)</td>
<td>9.39 (238.5)</td>
<td>3.64 (92.5)</td>
<td>5.18 (131.5)</td>
<td>2.09 (53.1)</td>
<td>0.79 (20)</td>
<td>4.21 (107)</td>
<td>7.56 (192)</td>
<td>6 (152.4)</td>
<td>0.75 (19)</td>
<td>3.54 (90)</td>
<td>3.94 (100)</td>
<td>23.4 (10.61)</td>
</tr>
<tr>
<td>4 (101.6)</td>
<td>13.78 (350)</td>
<td>10.52 (267.3)</td>
<td>4.33 (110)</td>
<td>5.70 (144.8)</td>
<td>1.93 (49)</td>
<td>1.95 (49.5)</td>
<td>5.16 (131)</td>
<td>8.74 (222)</td>
<td>7.5 (190.5)</td>
<td>0.75 (19)</td>
<td>2.34 (60)</td>
<td>4.55 (115.5)</td>
<td>31.4 (14.24)</td>
</tr>
<tr>
<td>6 (152.4)</td>
<td>18.90 (480)</td>
<td>13.29 (337.5)</td>
<td>5.71 (145)</td>
<td>7.40 (188)</td>
<td>2.09 (53.1)</td>
<td>2.30 (58.5)</td>
<td>6.61 (168)</td>
<td>10.63 (270)</td>
<td>9.5 (241)</td>
<td>0.91 (23)</td>
<td>2.34 (60)</td>
<td>5.61 (142.5)</td>
<td>55.4 (25.13)</td>
</tr>
</tbody>
</table>
ORDERING INFORMATION

Valve Size
- 01 = ½” NPT**
- 0 = ¾” NPT**
- 1 = 1” NPT **
- 3 = 1½” NPT
- 4 = 2” NPT
- 5 = 2½” NPT**
- 5F = 2½” ANSI
- 6 = 3” NPT**
- 6F = 3” ANSI***
- 7F = 4” ANSI***
- 8F = 6” ANSI***

Upstream Valve
- 1 = 115V VI ONLY
- 2 = 115V VI W/POC and AUX Switches
- 3 = 220V VI ONLY
- 4 = 220V VI W/POC and AUX Switches

Downstream Valve
- 0 = NO downstream valve
- 1 = 115V VI ONLY
- 2 = 115V VI W/POC and AUX Switches
- 3 = 220V VI ONLY
- 4 = 220V VI W/POC and AUX Switches

Orientation*
- L = Flow right to left
- R = Flow left to right

* Orientation when viewing the valve from the visual indication (VI) side.
** Available in single valve only.
*** Available in double valve only.

Example:

1599-3-12-R
1½” NPT double automatic reset gas shutoff valve, upstream valve with VI, downstream valve with VI POC and AUX switches, 115Vac, Nema4, UL, FM, CSA, flow left to right.

1599-4-20-L
2” NPT single automatic gas shutoff valve, VI POC and AUX switches, 115Vac, Nema4, UL, FM, CSA, flow right to left.

ACCESSORIES/SPARE PARTS

If operating temperatures lower than 5F (-15C) are expected the use of an actuator heater can improve the minimum allowable temperature to -20F (-29C).

Acutator Heater: R950-11260
Actuator W/POC: R950-11200
Actuator W/POC + AUX switch: R950-11209

WARNING: Situations dangerous to personnel and property may exist with the operation and maintenance of any combustion equipment. The presence of fuels, oxidants, hot and cold combustion products, hot surfaces, electrical power in control and ignition circuits, etc., are inherent with any combustion application. Parts of this product may exceed 160F in operation and present a contact hazard. Fives North American Combustion, Inc. urges compliance with National Safety Standards and Insurance Underwriters’ recommendations, and care in operation.