**Valves conform to ANSI B16.18 and ANSI B16.22**

<table>
<thead>
<tr>
<th>Valve No.</th>
<th>Size</th>
<th>A</th>
<th>B</th>
<th>Weight (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF-CSM-61S-M1</td>
<td>1 3/8</td>
<td>3/4</td>
<td>1.87</td>
<td></td>
</tr>
<tr>
<td>IS-CSM-61M1-S</td>
<td>1</td>
<td>336</td>
<td>1910821</td>
<td></td>
</tr>
</tbody>
</table>

Note: (T) = Threaded, (S) = Solder

---

**Flow Measurement/Balancing Valves**

**Sizes:** 1/2", 3/4", 1"

**WARNING**

Read this Manual BEFORE using this equipment. Failure to read and follow all safety and use information can result in death, serious personal injury, property damage, or damage to the equipment. Keep this Manual for future reference.

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**Installation Instructions**

Watts Flow Measurement/Balancing Valves are available in the straightway pattern with threaded or solder end connections. All tapered pipe threads conform to FEDERAL SPECS H28. Valves conform to ANSI B16.18 and ANSI B16.22. Maximum Pressure/Temperature Ratings: 300 psi (20.7 bar) - 250°F (121°C).

1. Install valve on return line of equipment to be balanced or as shown on the plans.
2. For maximum accuracy, the flow measurement valve should be located in an unrestricted straight pipe run so that no fittings (elbow, valve, tee, etc.) is closer to the measurement valve than 5 pipe diameters upstream and 2 pipe diameter downstream. If a balancing valve is located downstream from a circulation pump, allow a distance of ten (10) diameters between the pump and balancing valves.
3. Series CSM-61M1 and LF-CSM-61M1 flow measurement valves are bi-directional and should be installed to ensure ease of hooking up meter, adjusting setting, and enabling memory device. A 1/4" (3mm) NPT plugged port is installed on each measurement valve 1/2" - 1" (15-25mm) and can be used as a drain port if needed.

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**Flow Measurement Instruction**

1. Loosen memory screw.
2. Turn indicator knob to open position on indicator plate.
3. Loosen memory screw. Refer to Figures 1 and 2. The unit or system has now been balanced towards closed side of indicator plate until memory stop ring hits indicator plate. Tighten memory screw. Refer to Figures 1 and 2. The unit or system has now been balanced and the memory set.
4. After initial pressure differential reading is taken, refer to flow rate charts to obtain flow rate based on pressure differential and valve setting. If flow rate is in excess of that specified, turn indicator knob towards closed position, noting pressure drop and valve setting and determining new flow rates from flow rate chart. Once correct flow rate settings have been established, slide memory screw counter-clockwise towards closed side of indicator plate until memory stop ring hits indicator plate. Do not force beyond this point. Tighten memory screw. Refer to Figures 1 and 2. The unit or system has now been balanced and the memory set.
5. After memory is set, disconnect differential gauge.

---

**WARNING**

Use caution when soldering. Protect yourself and others. FUMES AND GASES can be hazardous to your health. HEAT RAYS (INFRARED RADIATION) from flame or hot metal can injure eyes.

---

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**ISO 9001-2008 CERTIFIED**

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Canada: (905) 332-4090 • Fax: (905) 332-7068 • www.wattsca

For more information: www.watts.com/prop65
Dimensions (Inches)

<table>
<thead>
<tr>
<th>Valve No.</th>
<th>Size</th>
<th>A</th>
<th>B</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSM-61T-M1</td>
<td>3/4</td>
<td>2%</td>
<td>1%</td>
<td>1.25</td>
</tr>
<tr>
<td>LF-CSM-61S-M1</td>
<td>3/4</td>
<td>3%</td>
<td>1%</td>
<td>1.25</td>
</tr>
</tbody>
</table>

Note: (T) = Threaded, (S) = Solder

Valves conform to ANSI B16.18 and ANSI B16.22

1/2" Flow Chart

Dial Setting

<table>
<thead>
<tr>
<th>Feet (Water)*</th>
<th>80.0</th>
<th>60</th>
<th>50</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure Differential</td>
<td>2.4</td>
<td>1.2</td>
<td>0.6</td>
<td>0.3</td>
</tr>
<tr>
<td>Inches bar (Water)</td>
<td>960</td>
<td>480</td>
<td>240</td>
<td>120</td>
</tr>
</tbody>
</table>

FLOW

* To convert to kg/m2 multiply feet of water by 304.8
* To convert to psi multiply feet of water by .4335

Cv Rating

All Sizes

<table>
<thead>
<tr>
<th>Size</th>
<th>Cv</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>1.8</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>4.3</td>
</tr>
<tr>
<td>1&quot;</td>
<td>7.9</td>
</tr>
</tbody>
</table>

Pressure Drop Curve (1/2", 3/4", 1")

In Open Position, Equal to Zero Setting

FLOW