The Bell & Gossett Automatic Flow Limiting Valves (AFLV) are designed to automatically control the flow in piping system to selected preset limit. As pressure differential increases, a cartridge inside the valve body reduces the flow area to accurately maintain the pre-selected flow rate.

**Operational Limits**
- Maximum Operating Temperature: 250°F (121°C)*
- Maximum Operating Pressure: 300 psig (2069 kPa)*
- Differential Pressure Flow Control
  - 2 to 60 psig (14 to 414 kPa) nominal

**INSTALLATION INSTRUCTIONS**

1. **For installing NPT Connections:**
   a) Install the AFLV in the piping system/circuit where it is desired to maintain the flow at a preselected value. Apply pipe joint compound sparingly to the male pipe threads only.
   b) Install the unit so that the flow arrow on the body housing points in the direction of flow.
   c) Supports both sides of the unit with wrenches during installation to prevent putting stress on the joint joining the two sections.

2. **For installing Sweat Connections:**
   a) Clean tube ends and valve connections thoroughly according to good piping practices with a fine grade emery cloth or fine grit sandpaper.

* Refer to chart A for solder joints for limitations.
** Teflon is a registered trademark of E.I. DuPont de Nemours and Company.
OPERATING INSTRUCTIONS

Operation of the Automatic Flow-Limiting Valve is fully automatic and does not require any adjustment. It automatically maintains the selected flow over the designed differential pressure range.

CAUTION: Hot uninsulated surfaces can cause burns to the skin. Do not touch hot surfaces. Failure to follow these instructions could result in moderate personal injury.

Before the system start up, remove cartridge from the valve. Flush the hydronic system and then reassemble cartridge into the valve and make sure cap is tightened properly. Start the system and check for the AFLV leak.

CAUTION: Hot uninsulated surfaces can cause burns to the skin. Do not touch hot surfaces. Failure to follow these instructions could result in moderate personal injury.

HOW TO USE AUTOMATIC FLOW-LIMITING VALVE PRESSURE TAPS TO DETERMINE PROPER FUNCTIONING OF VALVE.


WARNING: Hot water leakage can occur from readout valve during probe insertion and during hookup of readout kit. Follow the instruction manual supplied with readout probes and readout kits for safe use. Failure to follow this instruction could result in serious personal injury and/or property damage.

2. Read the differential pressure across the Automatic Flow-Limiting Valve. This can be compared to system pump head to determine valve function, and system flow blockage.

SERVICE INSTRUCTIONS

Should the Automatic Flow-Limiting Valve require cleaning or changing the orifice, follow the following instructions.

WARNING: System fluid under pressure and/or at high temperature can be very hazardous. Before servicing, reduce system pressure to zero or isolate the pressure reducing from the system. Leave drain valve open. Allow system to cool below 100ºF (38ºC). Failure to follow these instructions could result in serious personal injury or death and property damage.

1. Loosen and remove the bonnet (cap) from the valve body.
2. Pull the cartridge assembly from the valve body for cleaning or change the new flow cartridge. Check the readout valves on the Automatic Flow-Limiting Valve. This can be compared to system pump head to determine valve function, and system flow blockage.
3. If you design to changing the orifice washer (for more or less flow rate). With a screwdriver, remove the clip ring from inside the cartridge housing. Pull the orifice washer out and replace with the new orifice that you have preferred.
4. Reinstall, or replace the clip ring in the cartridge housing groove and reassemble the bonnet with the O-ring.

WARNING: Corrosion or leakages are indications that the Automatic Flow Control Valve may be about to cause serious damage from leakage or rupture. It must be periodically inspected and if noted, it must be replaced. Failure to follow these instructions could result in serious personal injury or death and property damage.

Chart A

(SOLDER TYPE LIMITS PER ASTM STD. B16.22-1989)

<table>
<thead>
<tr>
<th>TYPE OF SOLDER</th>
<th>MAXIMUM LIMITATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PRESSURE PSIG</td>
</tr>
<tr>
<td>95-5</td>
<td>300</td>
</tr>
<tr>
<td>TIN-</td>
<td>250</td>
</tr>
<tr>
<td>ANTIMONY</td>
<td>175</td>
</tr>
</tbody>
</table>

CAUTION: Use of improper procedures to sweat valve model with union connection into system can damage valve. Before installing sweat union connection to valve, remove the union nut and O-ring from the valve body, the union tailpiece with nut must be sweated (soldered) into place. Failure to follow this instruction could result in property damage and/or moderate personal injury.

WARNING: Use of improper procedures to sweat valve model with union connection into system can damage valve. Before installing sweat union connection to valve, remove the union nut and O-ring from the valve body, the union tailpiece with nut must be sweated (soldered) into place. Failure to follow this instruction could result in property damage and/or moderate personal injury.

b) For soldering, use 95-5 (Tin-Antimony) solder and a good grade of flux.

c) Use a torch with a sharp pointed flame.

d) When sweating the joints, first adjusting the Automatic Flow-Limiting Valve in the full open position, then wrap the valve with a cool wet rag and then direct the flame with care to avoid subjecting AFLV to excessive heat. Allow the valve to cool before touching or operating.

e) Check the soldered connection for leaks.

CAUTION: Heat associated with the use of silver solder may damage an Automatic Flow-Limiting valve and void the product warranty. Do not use silver solder. Failure to follow these instructions could result in property damage and/or moderate personal injury.