

ITV

INDUSTRIAL TEMPERING VALVE

BENEFITS

- Compliant with drain temperature limitations of plumbing codes
- Prevents damage to PVC piping due to over-temperature conditions
- Self-operating, no power or signal required
- Minimizes water waste
- Easy to install
- Adaptable to almost any drain size

DESIGN FEATURES

- Exclusive **Thermoloid®** thermal actuator
- Rugged, clog resistant valve design
- Install using standard pipe fittings and tools
- Operates in any orientation
- Modulates to conserve cooling water
- Effluent tempering capacity limited only by cold water flow rate through ITV

APPLICATIONS

The ITV is ideal for tempering high-temperature discharge flow such as water, condensate or leachate with cold water before it enters a drain or sewer system.

Common applications include:

- Autoclave discharge
- Boiler blowdown drain lines
- Humidifier discharge

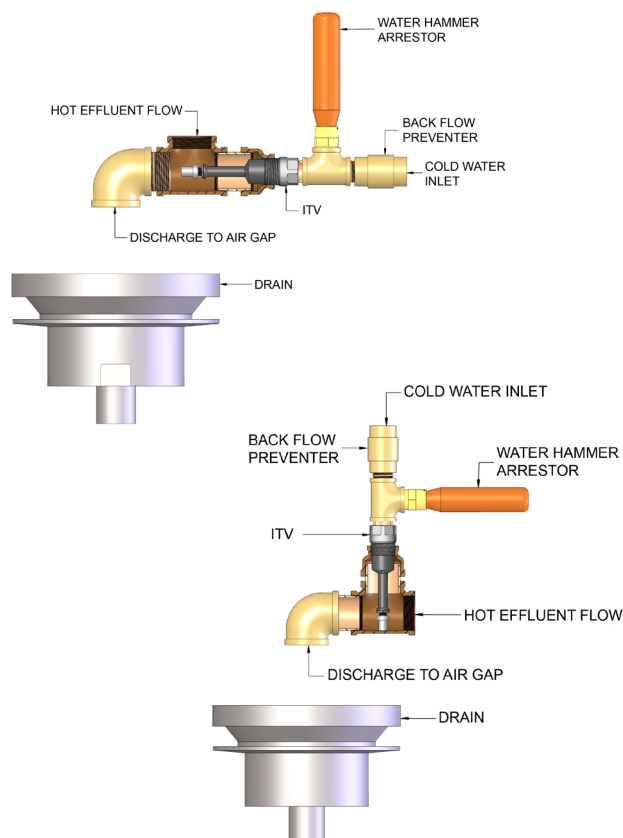
OPERATION

The **ITV** is installed into the drain line such that the hot effluent passes over the thermal actuator of the **ITV** and this thermal actuator controls the cold water inlet port. If the hot effluent is above the specified set-point, the **ITV** opens to allow injection of cold water. As the hot effluent cools, the **ITV** automatically modulates to reduce the cold water inlet flow. At 10°F below the full open temperature, the cold water inlet is fully closed to conserve water.

Since the **ITV** is open only when the effluent exceeds the specified set-point temperature, it conserves water by automatically turning off cold water when not needed.



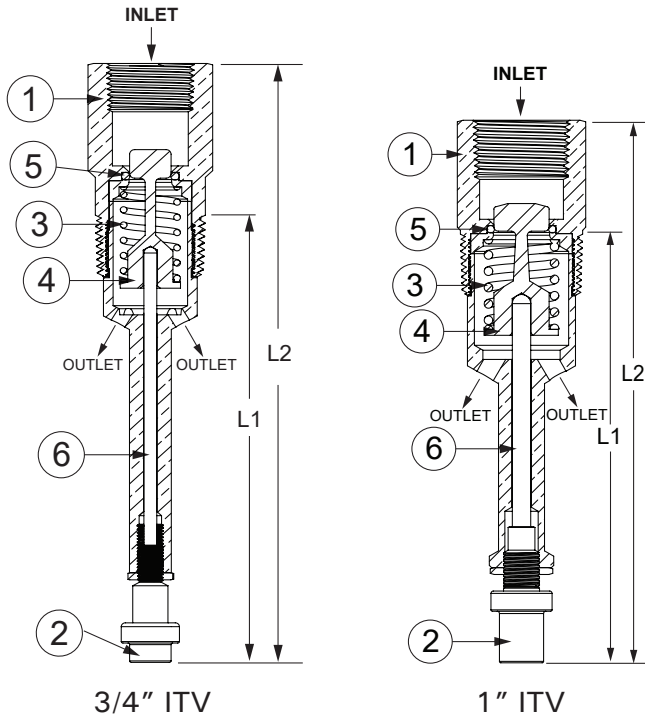
TYPICAL INSTALLATIONS



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PARTS & MATERIALS



| ITEM | DESCRIPTION | MATERIAL |
|------|------------------|---------------|
| 1 | VALVE BODY | 300 Series SS |
| 2 | THERMAL ACTUATOR | 300 Series SS |
| 3 | OPERATING SPRING | 300 Series SS |
| 4 | RAM-TYPE PLUG | 300 Series SS |
| 5 | SEAT SEAL | PTFE |
| 6 | PISTON | 300 Series SS |

SAMPLE CALCULATION

How much effluent can be tempered with a 1" ITV valve?

1) Flow capacity through cold water port of 1" ITV with $C_v = 4.0$:

$$CW \text{ gpm} = C_v \times \sqrt{\text{pressure drop}}$$

Assume 50 psig cold water pressure, drain pressure = 0 psig

$$CW \text{ gpm} = 4 \times \sqrt{50} = 28.3 \text{ gpm}$$

Assume for this example:

cold water temp = 60°F (CT)

hot effluent temp = 212°F (HT)

max. allowable drain temp = 140°F (MT)

2) Maximum effluent flow (gpm) that can be tempered:

$$CW \times (MT - CT) / (HT - MT)$$

$$MT - CT = 80$$

$$HT - MT = 72$$

$$\text{Maximum effluent flow rate} = 28.3 \times 80 / 72 = 31.4 \text{ gpm}$$

DIMENSIONS & CAPACITIES

| SIZE (NPT) | | L1 | | L2 | | Weight | | C_v | Maximum Inlet Water Pressure | Maximum Temperature |
|------------------|------------------|-----|-----|-----|-----|--------|-----|-------|------------------------------|---------------------|
| Cold Water Inlet | Drain Connection | in | mm | in | mm | Lb | Kg | | | |
| 3/4" | 1" | 5.9 | 149 | 7.9 | 200 | 1.2 | 0.5 | 2.0 | 125 PSIG (8.6 BAR) | 250°F (121°C) |
| 1" | 1-1/4" | 5.8 | 148 | 7.4 | 187 | 1.5 | 0.7 | 4.0 | | |

ORDERING

| Part Number ¹ | Description |
|--------------------------|----------------|
| 1055-100000000-XXX | 3/4" ITV Valve |
| 1055-200000000-XXX | 1" ITV Valve |

NOTES

- Full open temperatures "XXX" available: 120°F, 125°F, 130°F, and 140°F (48.9°C, 51.7°C, 54.4°C, and 60°C).
 - Other temperatures are available, consult our engineers for more information.
 - Closing temperature is typically 10°F below opening temperature.
- Warranty information disclosed at www.thermomegatech.com/terms-conditions/



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Because of continuous improvements, ThermOmegaTech®, Inc. reserves the right to change the design and specifications without notice