

DTV

DRAIN TEMPERING VALVE



BENEFITS

- Compliant with drain temperature limitations of plumbing codes
- Prevents damage to PVC piping due to over-temperature conditions
- Minimizes water waste
- Easy to install
- Adaptable to almost any drain size

DESIGN FEATURES

- 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 DTV

TYPICAL USES

- Humidifier discharge to sewer/drain
- Commercial dishwashers/warewashers
- Boiler blowdown drain lines
- Autoclave discharge
- Any excessively hot effluent flow to sewer/drain

OPERATION

The **DTV** can be used in applications where a high temperature discharge flow to a drain/sewer must be tempered with cold water. The **DTV** is installed into the drain line such that the hot effluent passes over the thermal actuator of the **DTV** and this thermal actuator controls the cold water inlet port. If the hot effluent is above the specified set point, the **DTV** opens to allow injection of cold water. As the hot effluent cools, the **DTV** automatically modulates to reduce the cold water inlet flow. At about 10°F below the full open temperature, the cold water inlet is fully closed to conserve water.

The **DTV** provides a convenient, economical, and easy to use method of tempering hot effluent flows. Since the **DTV** is open only when the effluent exceeds the specified set point temperature, it also conserves water by automatically turning off cold water when not needed.

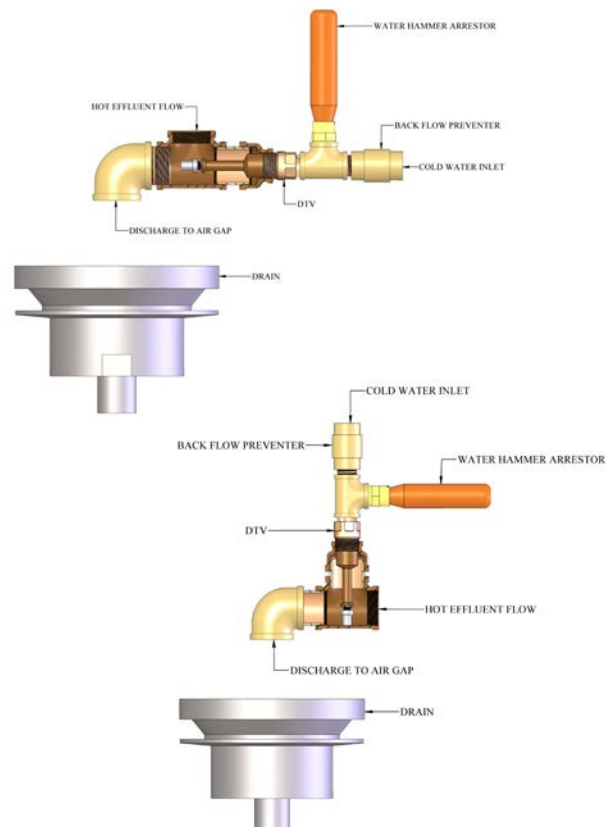


1" DTV

3/4" DTV

1/2" DTV

TYPICAL INSTALLATIONS

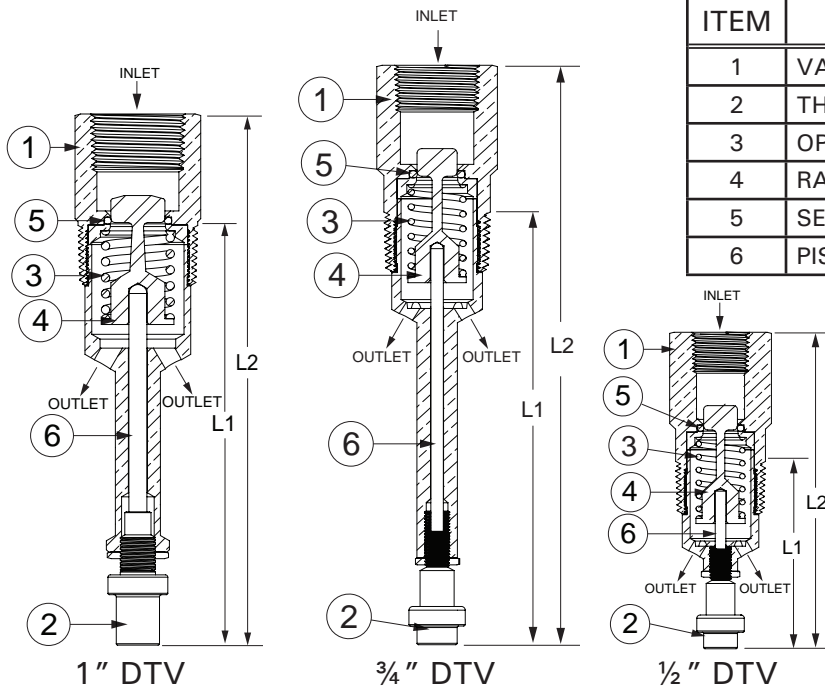


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PARTS & MATERIALS



| ITEM | DESCRIPTION | MATERIAL |
|------|------------------|------------------------|
| 1 | VALVE BODY | Brass or 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 |

DIMENSIONS & CAPACITIES

| SIZE (NPT) | | L1 | | L2 | | Weight | | C _v | Maximum Inlet Water Pressure | Maximum Temperature |
|-------------|------------------|-----|-----|-----|-----|--------|-----|----------------|------------------------------|---------------------|
| Water Inlet | Drain Connection | in | mm | in | mm | Lb | Kg | | | |
| 1/2" | 1" | 2.9 | 73 | 4.9 | 124 | 1.1 | 0.5 | 2.0 | 125 PSIG (8.6 BAR) | 250°F (121°C) |
| 3/4" | 1" | 5.9 | 149 | 7.9 | 200 | 1.2 | 0.5 | 2.0 | | |
| 1" | 1-1/4" | 5.8 | 148 | 7.4 | 187 | 1.5 | 0.7 | 4.0 | | |

ORDERING

| Part Number ¹ | Description |
|--------------------------|----------------------------------|
| 325-000000-XXX | 1/2" DTV Valve |
| 325-100000-XXX | 1/2" DTV Valve (Stainless Steel) |
| 326-000000-XXX | 3/4" DTV Valve |
| 326-100000-XXX | 3/4" DTV Valve (Stainless Steel) |
| 327-000000-XXX | 1" DTV Valve |
| 327-100000-XXX | 1" DTV Valve (Stainless Steel) |

SAMPLE CALCULATION

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

1) Flow capacity through cold water port of 1" DTV 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:

$$CW \times \frac{(MT-CT)}{(HT-MT)}$$

$$MT-CT = 80$$

$$HT-MT = 72$$

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

NOTES

- Full open temperatures "XXX" available: 120°, 125°, 130°, 140°.
 - Other temperatures are available, consult our engineers for more information.
 - Note: Closing temperature is typically 10°F below opening temperature.**
- If any type of check valve or backflow preventer is used a water hammer arrestor must be installed between the DTV water inlet and the check valve/backflow preventer. Failure to do so may cause permanent damage to the valve and void the warranty.
- 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