Cool Drain Flow, Inc.

10823 Montgomery Road Cincinnati, Ohio 45242 Phone: 800-733-7392 Fax: 513-530-0789

DTV20 DRAIN TEMPERING KIT

DESIGN FEATURES

- Rugged, clog resistant valve design
- Easily installed using the included standard pipe fittings
- Operates in any orientation
- Minimizes waste water
- Modulates over operating temperature range to conserve cooling water
- Effluent tempering capacity limited only by cold water flow rate through DTV

TYPICAL USES

- Boiler blow-down drain lines
- Condensate return headers
- Heat exchanger backup cooling
- Humidifier discharge to sewer / drain

APPLICATIONS

The DTV valve can be used in applications where a discharge flow to a drain or sewer must be tempered with cold water to reduce temperature. In some areas, plumbing codes dictate a maximum allowable sewer discharge temperature. 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.

OPERATION

The hot effluent to be tempered is connected to the drain/sewer line using the included tee fitting and piping. See sample calculation below and typical installation drawing on next page. The hot effluent passes over the thermal actuator of the DTV valve and this actuator controls the cold water inlet port. If the hot effluent is above the specified set-point, the DTV opens the cold water inlet port to allow injection of cold water. As the hot effluent cools, the DTV valve 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.

SAMPLE CALCULATION

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

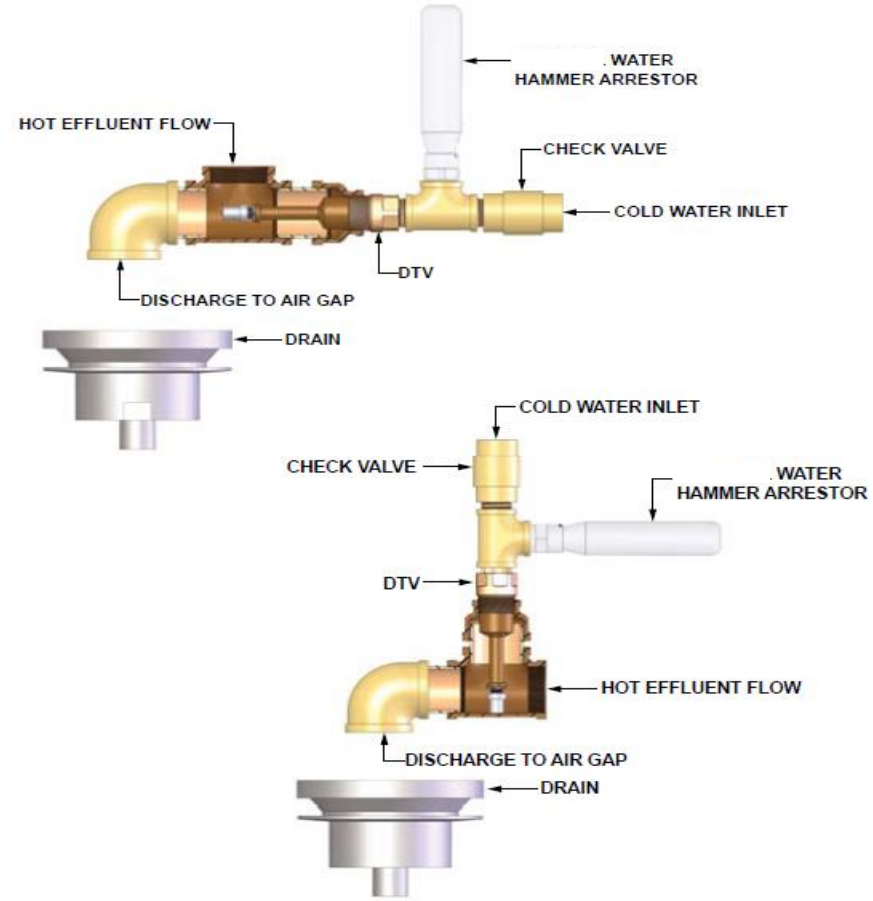
1) Flow capacity through cold water port of 1" DTV with Cv=4.0
   CW gpm = Cv x sqrt pressure drop
   Assume 50 psig cold water pressure, drain pressure – psig
   CW gpm = 4 x sqrt (50) = 28.3 gpm
   Assume for this example:
   Cold water temp = 60°F (CT)
   Hot effluent temp = 212°F (HT)
   Max. allowable drain temp = 140°F

2) Maximum effluent flow (gpm) that can be tempered:
   CW x (MT-CT)/(HT-MT)
   MT-CT=80
   HT-MT=72
   Maximum effluent flow rate = 28.3 x 80/72 – 31.4 gpm

Cool Drain Flow, Inc.

10823 Montgomery Road Cincinnati, Ohio 45242 Phone: 800-733-7392 Fax: 513-530-0789

Parts and typical installation:



DTV20 Drain Tempering kit includes the following parts:

- 2” brass tee.
- Custom brass bushing.
- Drain tempering valve with ¾” inlet.
- ¾” brass tee, ¾”x ½” bushing, ½” water hammer arrester.
- ¾” brass double check valve (two ¾” x close nipples included)

To order any of these kits, or custom kits, please call Cool Drain Flow, Inc.

800-733-7392

Rev. 6/2019

Made in the USA