

DRAIN TEMPERING VALVE KIT 3/4" INLET

Project _____
 Item _____
 Quantity _____
 FCSI Section 11400 _____
 Approved _____
 Date _____

Models

- **DTV15CLV** (1 1/2" tee, 3/4" cold water line.)
- **DTV20CLV** (2" tee, 3/4" cold water line.)



Applications

The DTV kit 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.

Typical Uses:

- DVT15CLV for all countertop and floor model steamers (boiler, generator and boilerless units) except 24CGA10.2ES
- Kettles with SF3 or SF4 swing drain funnel accessory
- Kettles or skillets mounted on an ST28 or ST55 equipment stands that have the drain drawer
- DVT20CLV for 24CGA10.2ES model

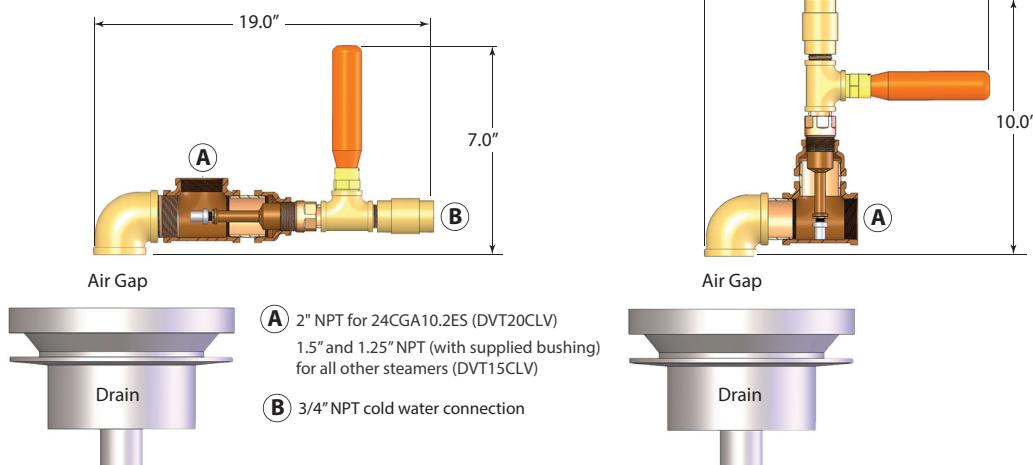
Standard Features

- The drain tempering kit operates without electricity which makes new projects & retro-fits easy to install
- The kit modulates over the temperature range letting in only the amount of cold water needed to cool hot drain water to below 140 degrees
- The tempering kit comes unassembled, complete with tempering valve, plumbing connections, and a 1" check valve
- Rugged, clog resistant design
- Easily installed using the included standard pipe fittings
- Operates in any orientation
- Modulates over operating temperature range to conserve cooling water
- Effluent tempering capacity limited only by cold water flow rate through DTV
- Minimizes waste water
- Capable of cooling up to 25 GPM

Includes:

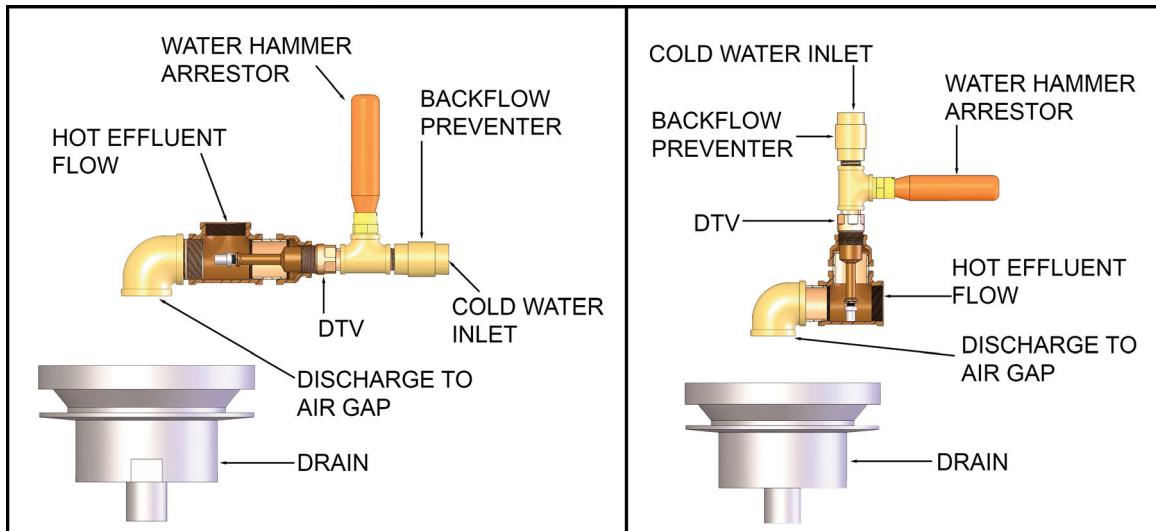
- A brass tee / Custom brass bushing / Drain tempering valve / A double check valve / Brass nipple / smaller tee / water hammer arrester / brass nipple

Dimensions



KE004046-DVT

TYPICAL INSTALLATIONS



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. 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

Flow capacity through cold water port of 1" DTV with $Cv=4.0$
 $CW \text{ gpm} = Cv \times \text{sqrt pressure drop}$
 Assume 50 psig cold water pressure, drain pressure – psig
 $CW \text{ gpm} = 4 \times \text{sqrt } (50) = 28.3 \text{ gpm}$
 Assume for this example:
 $\text{Maximum effluent flow rate} = 28.3 \times 80/72 - 31.4 \text{ gpm}$
 Cold water temp = 60°F (CT)
 Hot effluent temp = 212°F (HT)
 Max. allowable drain temp = 140°F

Maximum effluent flow (gpm) that can be tempered:
 $CW \times (MT-CT)/(HT-MT)$
 $MT-CT=80$
 $HT-MT=72$
 $\text{Maximum effluent flow rate} = 28.3 \times 80/72 - 31.4 \text{ gpm}$

NOTES:

Cleveland Range reserves right of design improvement or modification, as warranted.
 Many regional, state and local codes exist and it is the responsibility of the owner and installer to comply with the codes.

Installation of backflow preventers, vacuum breakers and other specific code requirements is the responsibility of the owner and installer.
 Cleveland Range equipment is built to comply with applicable standards for manufacturers. Included among those approval agencies are U.L., A.G.A., NSF, ASME/N.B.I., CSA, CGA, ETL and others.

(NOT TO SCALE)