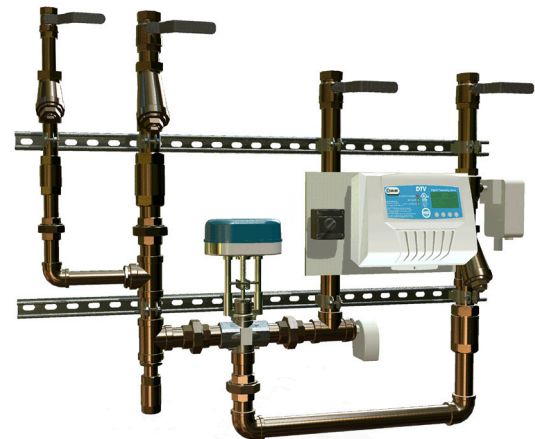


# DTV Series



## Digital Tempering Valve Domestic Hot Water Temperature Control with Safeguard.



### Conforms to:

- **A.S.S.E. 1017,**
- **California Lead Free Plumbing Law**
- **C.S.A. B 125 (NSF/A.N.S.I. 61 Section 8)**
- **UL Listed**

The Cemline® Digital Tempering Valve (DTV) is designed to provide consistent tempered water to institutional and commercial facilities. The digital controller wired to the stainless-steel control

valve can accurately maintain set point within +/-2°F from 0.5 gpm to full flow. The DTV series can be used for domestic hot water, or heating/cooling for industrial applications. The controller can

remotely communicate with the building management system with options of BACnet (IP or MSTP), Modbus, or Internet.

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[www.cemline.com](http://www.cemline.com)

# Cemline® Digital Tempering Valve

Providing safe tempered water is important to any facility. Facilities need consistent tempered to mitigate waterborne pathogens such as Legionella while avoiding scaling hazards.

## Legionella

Water-borne bacteria such as Legionella can be reduced and/or prevented through proper selection and control of water temperature in domestic water storage and delivery systems.

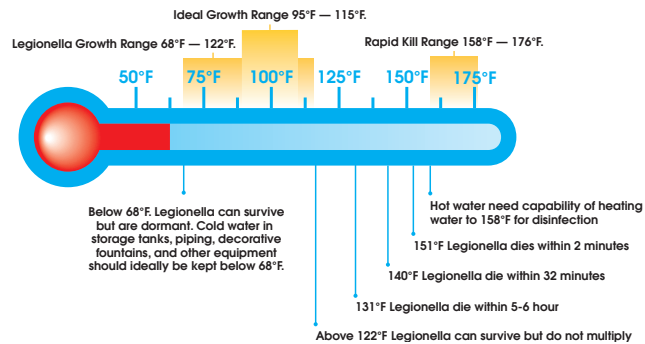
## Scald Hazard

Scald hazards can be created in domestic water systems when not properly controlled or monitored.

## Fluctuations

Water temperature fluctuations such as rapid and uncomfortable temperature changes experienced at the faucet or shower by an end-user can be reduced through properly controlling and monitoring domestic water storage and delivery systems through the addition of a digital tempering valve.

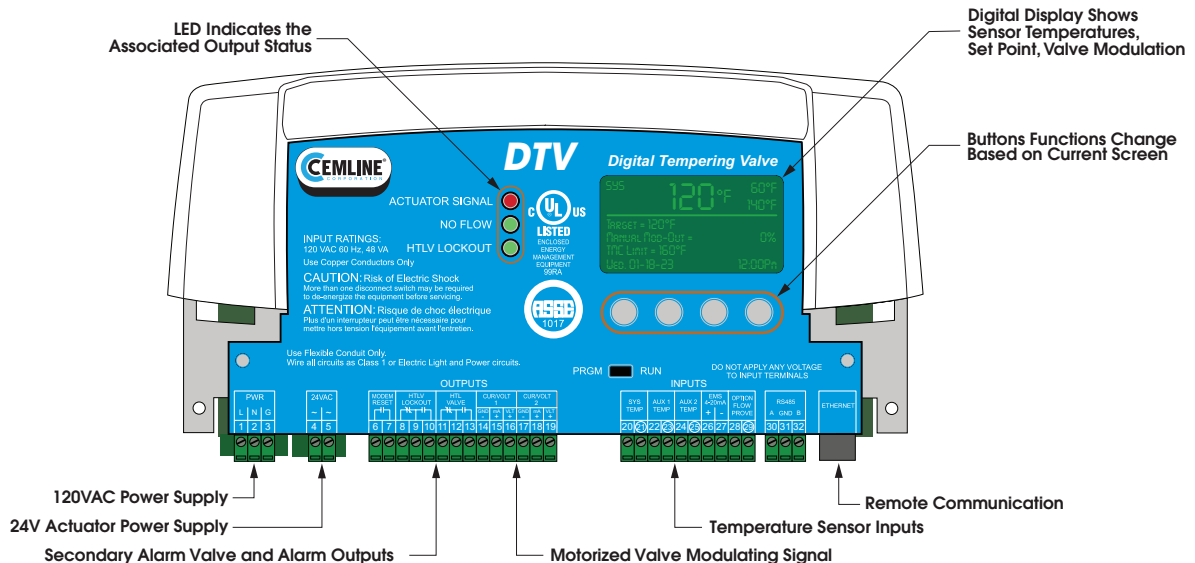
## Legionella Growth Chart



## Scald Hazard

| WATER TEMPERATURE (°F) | TIME TO 3RD DEGREE BURN*     |
|------------------------|------------------------------|
| 155°F                  | 1 second                     |
| 148°F                  | 2 seconds                    |
| 140°F                  | 5 seconds                    |
| 133°F                  | 15 seconds                   |
| 127°F                  | 1 minute                     |
| 124°F                  | 3 minutes                    |
| 120°F                  | 5 minutes                    |
| 100°F                  | Safe Temperature for Bathing |

\*As per [www.asse-plumbing.org](http://www.asse-plumbing.org) and [www.osha.gov](http://www.osha.gov)



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# Cemline® Digital Tempering Valve

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## Advantages

## Features

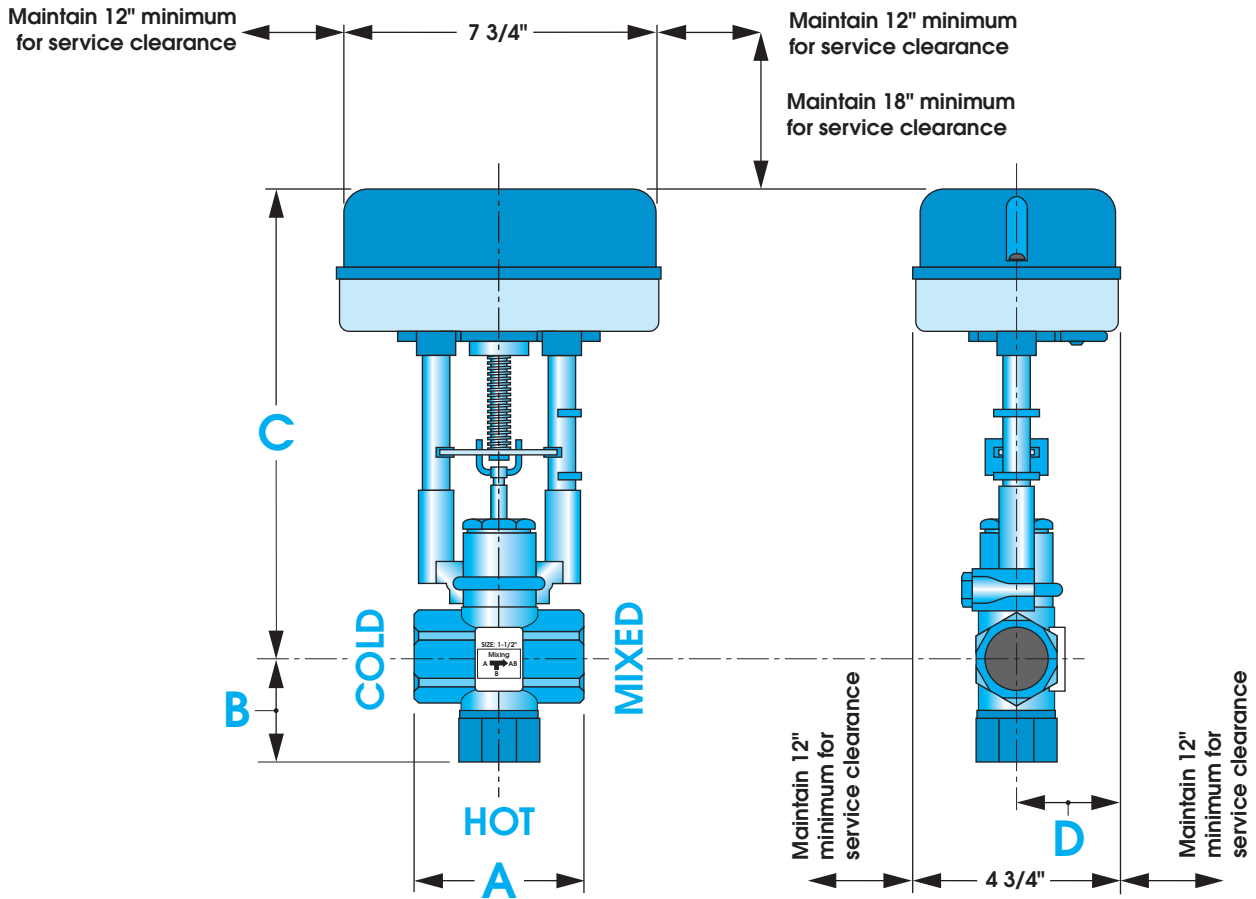
- Digital Temperature Control** ..... The setpoint is maintained from 0.5 gpm domestic draw to full flow per A.S.S.E. 1017.
- Quick Start Up** ..... Only a single set point value required. No balancing or multiple valve settings required.
- Multiple Valve Sizes** ..... Valve sizes ½" through 2-1/2" available for accurate valve selection of desired flow rates.
- Easy Care** ..... The stainless-steel valve body reduces scale build up. The externally mounted actuator allows for easy maintenance along with no water concerns with the motor. No gaskets required reducing a maintenance item.
- Field Adjustable Settings** ..... Easily change the settings locally on the controller.
- Flexibility of Installation** ..... Hot and cold connections are interchangeable.
- Multiple Valves with a Single Controller** ..... Control module can control multiple valves for high flow applications.
- Scheduling Features** ..... Controller equipped with 7-day schedule with 4 daily setbacks.
- BMS Communications Options** ..... BACnet (IP or MSTP), Modbus, or Internet
- Optional Alarm Valve** ..... In the event of a high temperature alarm a secondary alarm valve closes to prevent hot water from entering the valve.

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## Applications

- Schools – Universities – Dorms
- Office Buildings
- Hospitals and Nursing Facilities
- Military Installations – Barracks
- Correctional – Prisons
- Industrial Processes
- Hotels
- Multi Family Buildings
- Office Buildings

# Dimensional Data



| MODEL   | SIZE   | FACE TO FACE | B      | C        | D      | E      |
|---------|--------|--------------|--------|----------|--------|--------|
| DTV-50  | 1/2"   | 3-1/8"       | 2"     | 10-1/2"  | 2-3/8" | 7-3/4" |
| DTV-75  | 3/4"   | 3-1/8"       | 2"     | 10-5/8"  | 2-3/8" | 7-3/4" |
| DTV-100 | 1"     | 3-1/8"       | 2-1/8" | 10-3/4"  | 2-3/8" | 7-3/4" |
| DTV-125 | 1-1/4" | 4"           | 2-1/2" | 11"      | 2-3/8" | 7-3/4" |
| DTV-150 | 1-1/2" | 4-4/5"       | 2-4/5" | 11-3/16" | 2-3/8" | 7-3/4" |
| DTV-200 | 2"     | 5-1/2"       | 3-3/8" | 11-3/8"  | 2-3/8" | 7-3/4" |
| DTV-250 | 2-1/2" | 6-5/16"      | 4"     | 11-3/4"  | 2-3/8" | 7-3/4" |

# Sizing Data

*Cemline recommends sizing the stainless steel valve with a design flow as close as possible to 5 PSI pressure drop. Match the secondary alarm valve to DTV hot port size.*

|                      | VALVE SIZE         |      |    |        |        |        |        |
|----------------------|--------------------|------|----|--------|--------|--------|--------|
| PRESSURE DROP        | 1/2"               | 3/4" | 1" | 1-1/4" | 1-1/2" | 2"     | 2-1/2" |
| <b>Cv</b>            | 5                  | 7    | 12 | 18     | 29     | 46     | 73     |
| <b>3</b>             | 8                  | 12   | 20 | 328    | 50     | 80     | 126    |
| <b>4</b>             | 9                  | 15   | 23 | 37     | 58     | 93     | 145    |
| <b>5</b>             | 10                 | 16   | 26 | 41     | 64     | 103    | 162    |
| <b>6</b>             | 12                 | 18   | 28 | 45     | 71     | 113    | 178    |
| <b>7</b>             | 13                 | 20   | 31 | 50     | 78     | 125    | 192    |
| <b>8</b>             | 14                 | 21   | 33 | 53     | 83     | 132    | 205    |
| <b>9</b>             | 15                 | 22   | 35 | 56     | 88     | 140    | 218    |
| <b>10</b>            | 16                 | 23   | 36 | 58     | 91     | 145    | 230    |
| <b>11</b>            | 17                 | 24   | 38 | 62     | 97     | 154    | 241    |
| <b>12</b>            | 18                 | 25   | 40 | 64     | 100    | 160    | 252    |
| BUILDING RECIRCULATE | GALLONS PER MINUTE |      |    |        |        |        |        |
|                      | 5 GPM              |      |    | 10 GPM |        | 15 GPM |        |

The minimum building recirculation flow rate shown is based on valve sized and a flow velocity of 4 ft/sec.

## Specifications

### Actuator

Voltage Input: 24 VAC 60 Hz  
 Power consumption: 18 VA max  
 Input Signal: 0-10 VDC

### Valve Body

Body & Trim: 304 Stainless Steel  
 Maximum Operating Temperature: 300°F  
 Maximum Working Pressure: 225 PSI  
 Stem Material: 640 Stainless Steel

### Control Module

Voltage Input: 120 VAC, 60 Hz  
 Maximum Input Rating: 48 VA Max  
 Display: Graphic  
 Display/Temp Units: °F and °C  
 Modes of Operation:

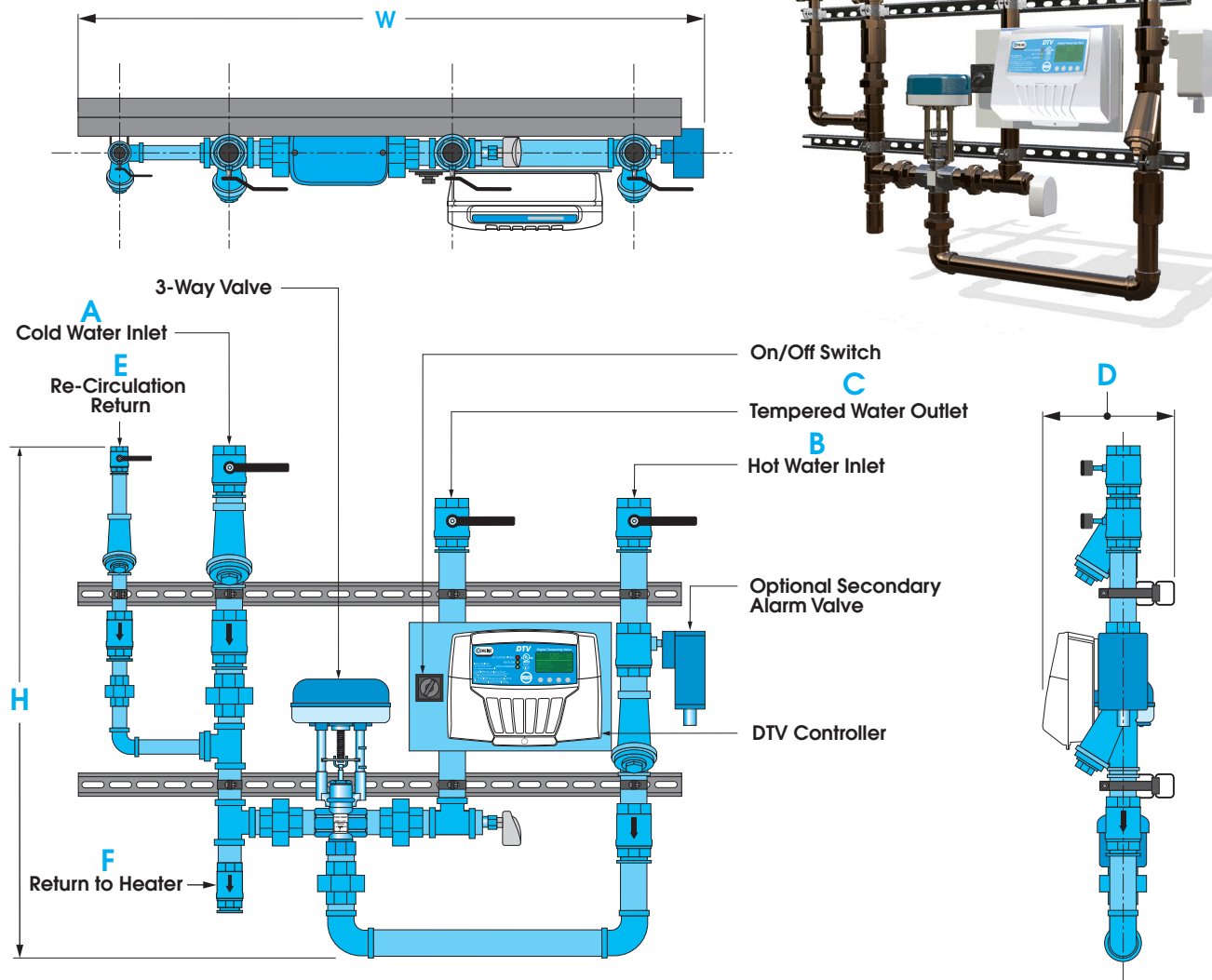
- Temperature Control,
- Alarm Condition Safeguard,
- Temperature Control with Alarm Condition Safeguard

Set Point: 40 – 200°F  
 Alarm Set Point: 40 – 200°F  
 Modulation Output Signal: 0-10 V, 2-10V, 0-5V, 1-5V, 4-20mA  
 LED Indicators: 3  
 Inputs: Sensors (Hot, Cold, Mixed)  
 Dimensions: 11" W x 9" H x 3-3/4" D  
 Weight: 2.5 lbs

# Digital Mixing Station

Cemline can provide the Digital Tempering Valve in a pre-piped mixing station. The unit is pre-piped on wall mounted supports with ball valves, check valves, unions, and an on/off switch for easy installation and service. The mixing station can be supplied with an optional secondary alarm valve. All the customer needs to connect is cold water inlet, hot water inlet, tempered water outlet, re-circulation return, return to header and 120 VAC power.

## Manifold Dimensions

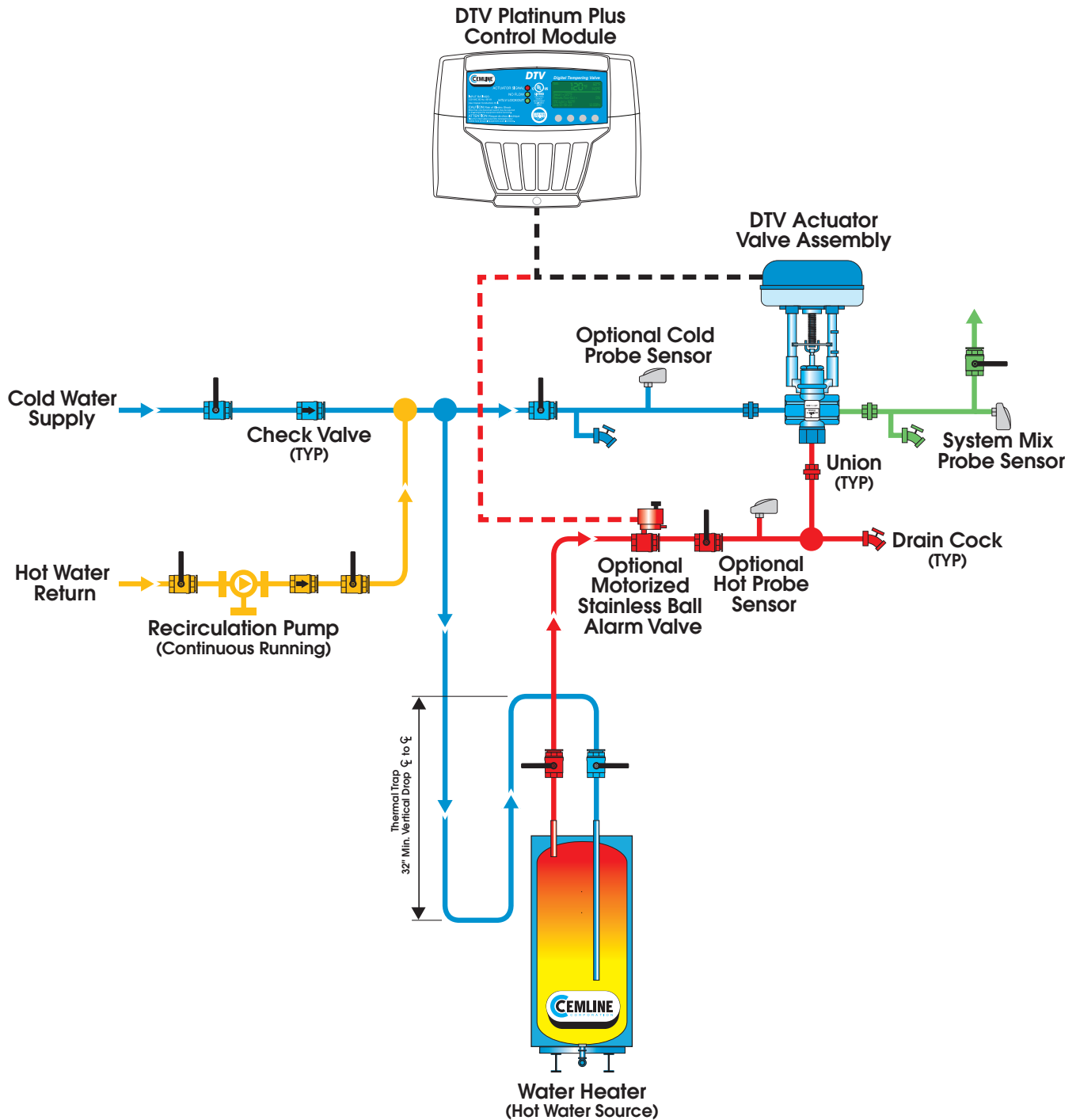


| MODEL       | VALVE SIZE | H HEIGHT | W WIDTH | D DEPTH | A COLD WATER INLET | B HOT WATER INLET | C TEMPERED WATER OUTLET | E RECIRCULATION WATER INLET | F RETURN TO HEADER |
|-------------|------------|----------|---------|---------|--------------------|-------------------|-------------------------|-----------------------------|--------------------|
| DTV-100-Mix | 1"         | 29-3/4"  | 48"     | 9-1/2"  | 1"                 | 1"                | 1"                      | 1"                          | 1"                 |
| DTV-125-Mix | 1-1/4"     | 39"      | 49-1/2" | 9-3/4"  | 1-1/4"             | 1-1/4"            | 1-1/4"                  | 1"                          | 1"                 |
| DTV-150-Mix | 1-1/2"     | 40-3/4"  | 50-1/2" | 10"     | 1-1/2"             | 1-1/2"            | 1-1/2"                  | 1"                          | 1"                 |
| DTV-200-Mix | 2"         | 44-3/4"  | 51-3/4" | 11"     | 2"                 | 2"                | 2"                      | 1-1/2"                      | 1"                 |
| DTV-250-Mix | 2-1/2"     | 54-1/2"  | 63"     | 11"     | 2-1/2"             | 2-1/2"            | 2-1/2"                  | 2"                          | 1"                 |

# DTV Piping Diagram

The diagram below shows the recommended piping for the DTV Tempering Valve.

## Piping Flow Diagram



## Sales Offices



### Other Sales Offices:

- Alaska
- Hawaii
- Puerto Rico
- Saudi Arabia
- Taiwan
- U.A.E.

## Available Cemline Brochures



- [www.cemline.com](http://www.cemline.com)
- Product Sizing Programs
  - Brochures
  - I.O.M. Manuals
  - Drawings & Specifications
  - Agent Locator
  - Plant Tour

- STONESTEEL®
  - Water Storage Tanks
  - Jacketed Storage Tanks
  - Commercial Electric and Packaged Copper Coil Water Heaters
- Submerged Heating Coils
- Replacement Tube Bundles
- Steel Tanks
- Chilled Water Buffer Tanks
- System Efficiency Buffer Tanks
- Electric Boilers
- Stainless Compact Packaged Copper Coil Water Heaters - Semi-instantaneous, Instantaneous
- Unfired Steam Generators
- Condensed Catalog

*Cemline is represented in all major cities.  
Please contact your local representative or call Cemline Corporation.*

