CircuitSolver®

A ThermOmegaTech® brand

CircuitSolver® Union Cold Water Balancing Valves For Cold Water Recirculation Systems

Dynamically & automatically balance cold water recirculation systems using the CircuitSolver® Union Cold Water thermostatic balancing valve.

Legionella in Non-Recirculated Cold Water Systems

Stagnant, warm water in a plumbing system increases the risk of Legionella bacteria growth. In cold water systems, adequate flow through high fixture usage and low water temperatures discourage the growth of Legionella and other biofilms. However, in the event flow throughout the system or part of the system is insufficient, standing water can drastically increase the likelihood of bacteria colonization.

When cold water flow is minimal or stopped completely, as seen during recent COVID-19 lock downs that left buildings unoccupied for long periods of time, disinfectant levels evaporate and temperatures gradually rise to Legionella's growth range (77–113°F, 25–42°C), leading to bacteria colonization and uneven free chlorine distribution throughout the system.

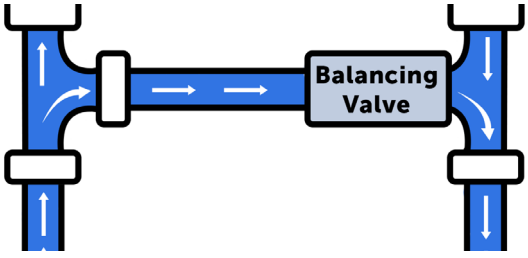
To address Legionella mitigation in cold water systems where VA patients, residents, visitors or employees sleep and stay, the **Veterans Health Administration (VHA)** took a proactive approach to planning for "periods of low flow or non-use" by implementing cold water recirculation systems. The **VHA 1061(1) directive** states, "The use of piping system insulation, automatic drain devices, and recirculation to limit the rate and duration of an increase in cold water temperature in combination with appropriate biocide levels can be effective at preventing Legionella growth."

Why Cold Water Recirculation?

- Keeps cold water moving and maintains water quality to reduce the impact of stagnation
- Ensures "residual chlorine" is distributed throughout the cold water system
- Keeps water temperature in branches/risers evenly distributed, minimizing heat gain

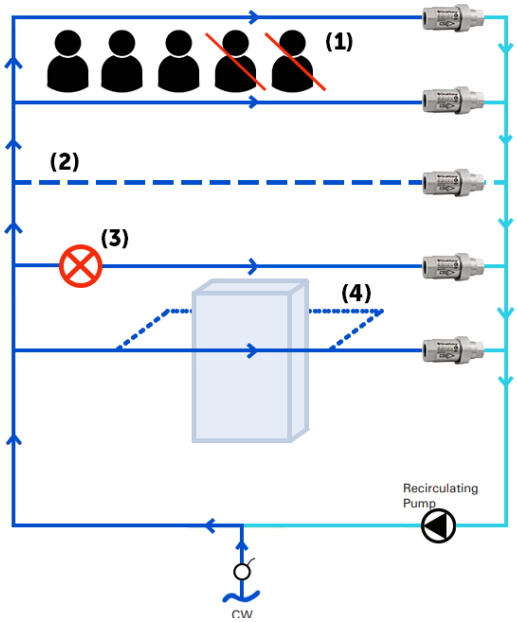
Before Recirculation

After Recirculation



Need For Dynamic Balancing

To discourage Legionella bacteria growth, cold water systems must be recirculated and properly balanced to establish continuous flow and keep the water temperature in branches or risers evenly distributed. Ideally, you want the temperature in the lines below 68°F (20°C) - the point at which Legionella begins to colonize.



Many variables impact the balance of a domestic water system:

(1) Changes in building occupancy; closing off floors
(2) Building expansion after initial construction
(3) Reduction in building utilization overall
(4) Actual construction different than design (material, pipe installs/runs, installation)

In order to achieve stability, system balancing must be dynamic - continually addressing the ever-changing conditions. Thermostatic balancing valves adjust dynamically, providing the best opportunity for sustainability and Legionella mitigation.

Traditional manual balancing valves could provide a solution to cold water balancing, but their static operation inherently does not factor in nor adapt to the realities of everyday system operation & changes, which may render the balancing obsolete over time.

CircuitSolver® Union Cold Water Balancing Valve

A CircuitSolver® Union Cold Water thermostatic balancing valve should be installed at the end of each branch or riser in a cold water recirculation system. The valve automatically monitors and modulates flow based on current water temperatures to maintain a set temperature in the system to mitigate Legionella growth.

The CircuitSolver® Union Cold Water (CSU-CW) valve uses the same reliable and precise thermal actuator technology as the traditional CircuitSolver® for hot water balancing.

The CSU-CW is offered in sizes ranging from 1/2" to 1" and in a range of configurations to suit individual system needs, such as with an integrated check valve, ball valves, a strainer, a thermometer, or with ProPress or ProPEX ends.

The compact-profile CSU is now offered with M/F isolation ball valves located on either side of the CircuitSolver Union to minimize leak points. The CSUA arrives fully assembled and leak-tested with all the components commonly specified with balancing valves.

Benefits

- Automatically and continuously adjusts to balance cold water recirculation systems
- Reliable, long lasting thermal actuator
- Long service life and 3 year warranty
- NSF/ANSI 61 certified

Design Features

- Never fully closes, small bypass of flow
- Lead free for use in potable water systems
- Stainless steel, corrosion-resistant construction