MULTI-THERM THERMOSTATIC BALANCING VALVE

// Thermal balancing of hot water return systems
// Adjustable temperature setting
// Integrated stop valve
// Available port for temperature gauge
// Automatic high temperature disinfection bypass
// Optional custom molded insulation shell

KEMPER
WATER CONTROL SYSTEMS

MULTI-THERM

Technical Specification

The MULTI-THERM thermostatic balancing valve is designed for use in hot-water return systems to help maintain branch water temperatures at their desired settings. The specified temperature setting of the MULTI-THERM valve can be adjusted or changed at any time before, during or after installation.

Hot water return systems with MULTI-THERM valves reduce time-to-tap delays, minimize water consumption, increase disinfectant residuals, and help maintain design temperatures throughout the entire hot water installation. The high costs associated with balancing traditional static valves is eliminated.

When the water system requires high temperature thermal disinfection, the MULTI-THERM valve senses an increasing circulation temperature and reacts automatically to allow the high temperature water to pass through the valve.

Adjustable control range	Fig 154 02: 122 °F - 149 °F (50 °C - 65 °C) Fig 154 04: 111 °F - 129 °F (44 °C - 54 °C)
Factory pre-set temperature	Fig 154 02: 136 °F (58 °C) Fig 154 04: 120 °F (49 °C)
Temperature range for thermal disinfection	158 °F (> 70 °C)
Max. permissible operating temperature	194 °F (90 °C)
Control accuracy	±2K
Nominal pressure	PN16
Nominal sizes **1/2“** **3/4“** **1“**	kv-ranges in m^3/h at $\Delta p = 100$ kPa 0.1 - 1.3 0.2 - 1.6 1.2 - 3.2
Valve type	Fig 154 02 female thread Fig 154 04 female thread
Accessories	// Temperature gauge // Insulation shell

MULTI-THERM vales are NSF 62, NSF 372, and IGC 302 certified and comply with all relevant US potable water plumbing installation codes and regulations. The valves are manufactured with Kemper’s proprietary dezincification resistant low lead brass and designed to meet the highest technical standards available within the industry.

The incorporation of a full stop isolating valve is a standard configuration of both MULTI-THERM valves allowing for convenient in-line maintenance and servicing.

Other available options include a temperature gauge and a custom molded insulation shell.

MULTI-THERM valves are available with female NPT connections allowing for a multitude of options such as check valves, strainers, stop valves, union connections, etc.

Correct Sizing

Balancing valves require correct sizing to ensure optimal performance. The performance curves of a MULTI-THERM correlate the required hot water recirculation flow rate to the pressure drop of the valve.

The required hot water recirculation flow rate is a function of the heat loss through the pipe section in question. The required pressure drop is identified as being the difference of the pressure drop between the pipe section in question and the pressure drop of the index run (the index run is the hot water circulation flow path with the highest pressure drop in the system).

Multi-Therm with temperature-sensor, Figure 154 02

Flow Characteristics

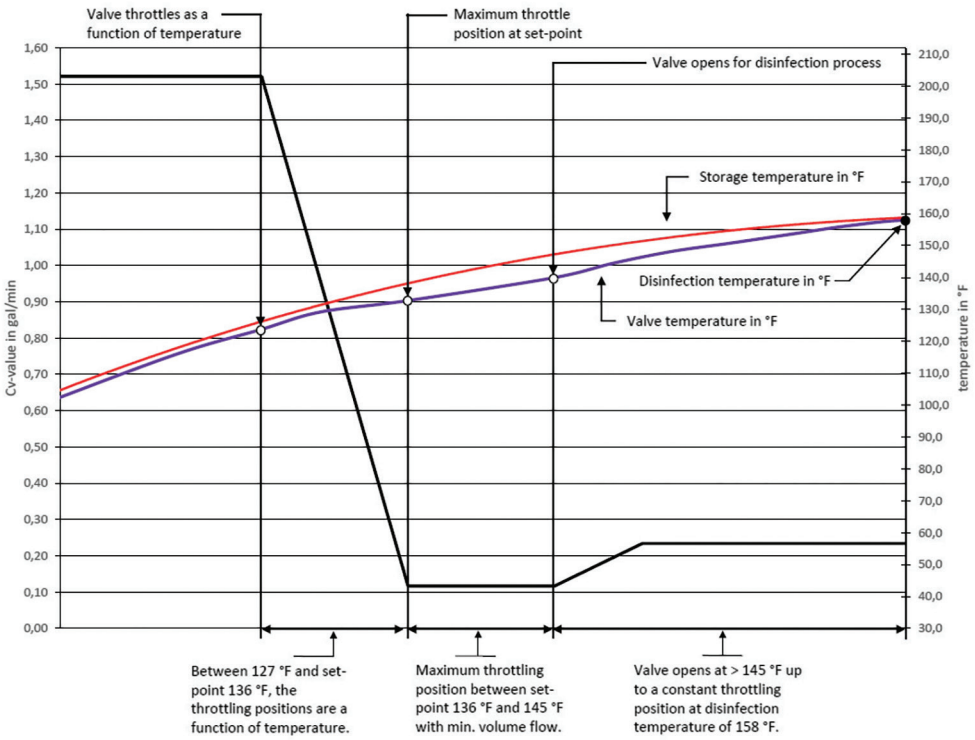


Table only applies to Figure 154 02

Branch Plan

Extract from a major project

Multi-Therm with
temperature-sensor
Figure 154 02/04

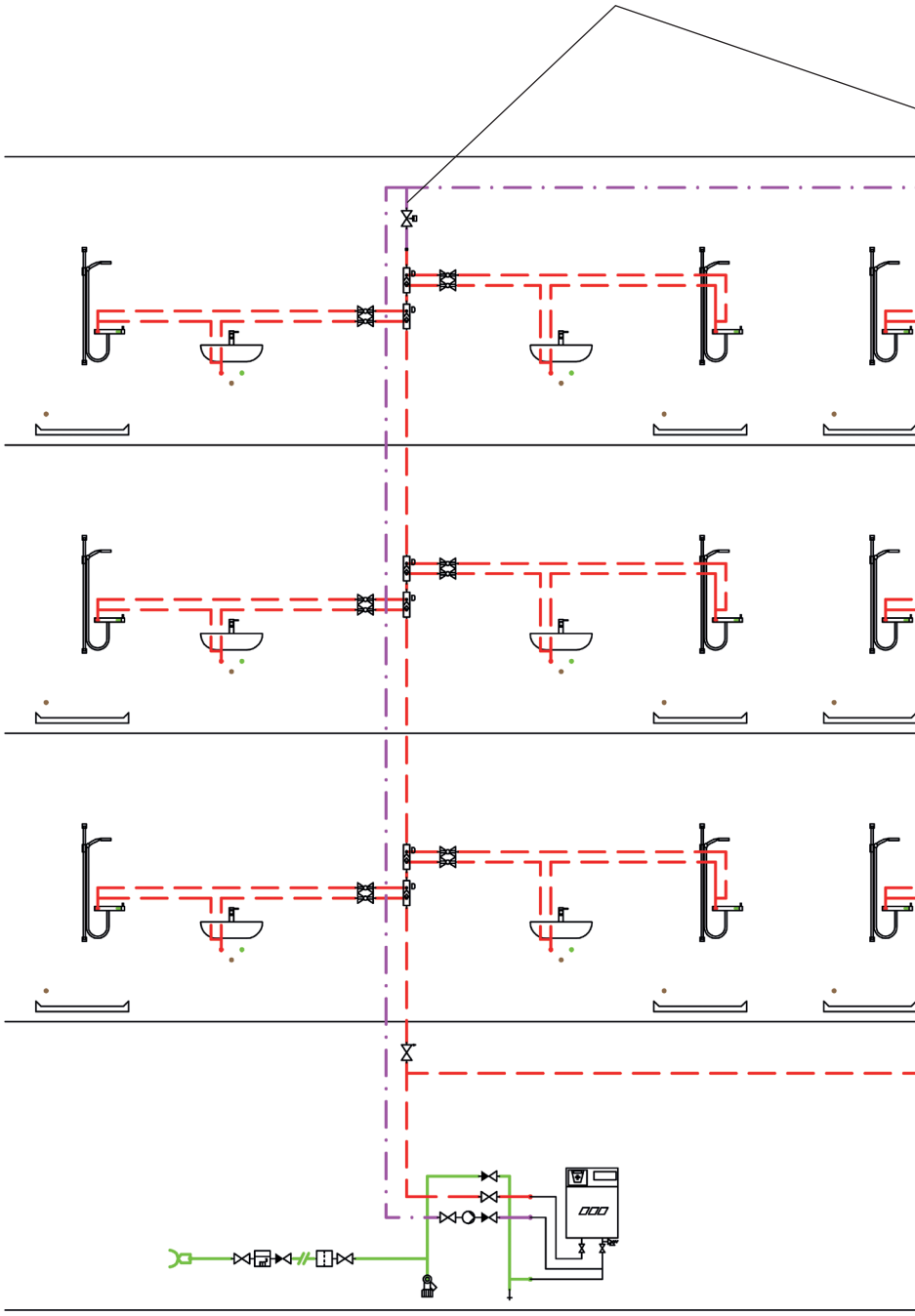
MULTI-THERM thermal balancing valves are used to balance hot water return temperatures between multiple distribution branches.

The designed return temperature is set at the valve and automatically maintained without the need for constant call-backs and readjustments.

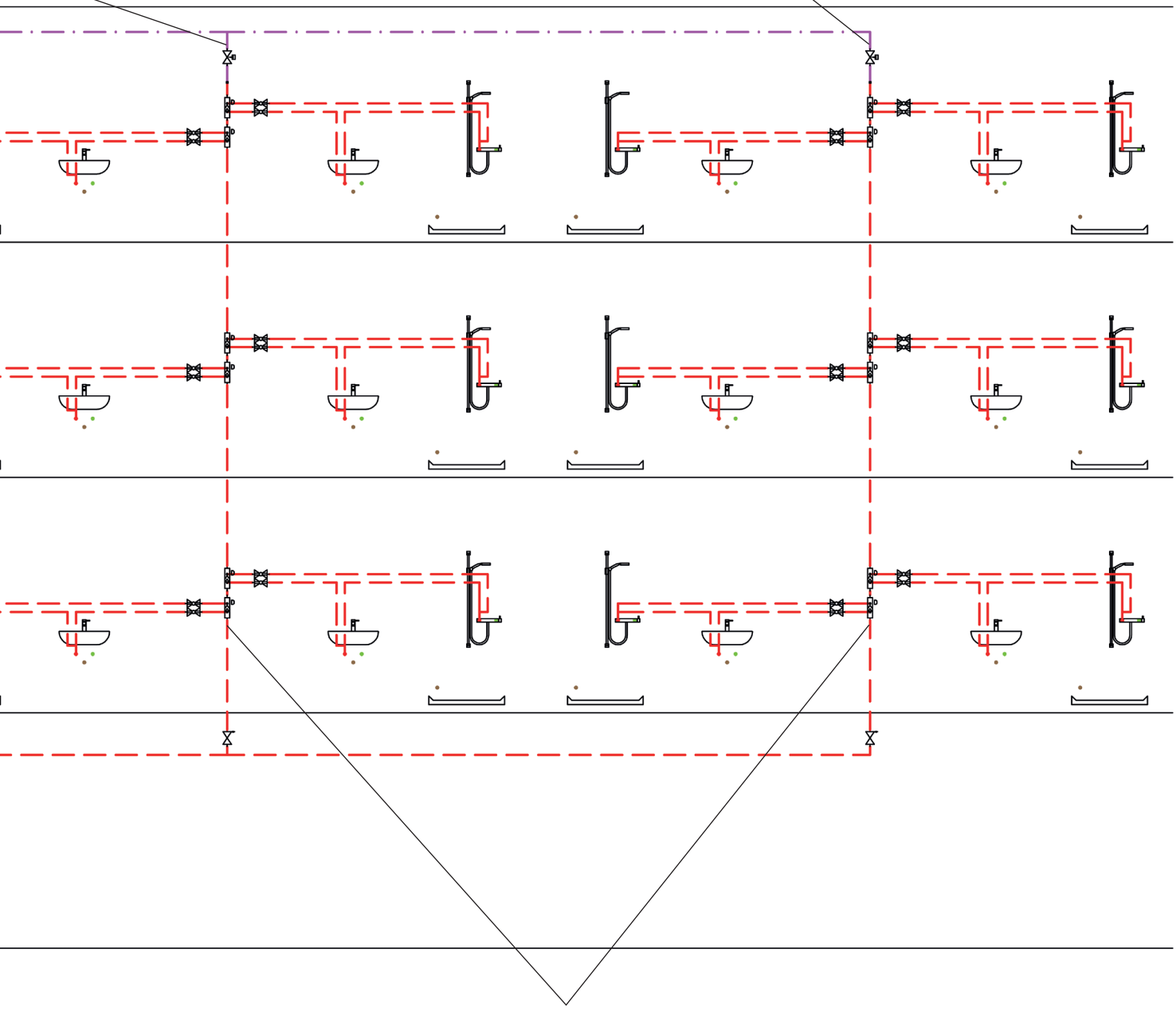
The thermostatic "engine" inside the valve constantly throttles to automatically control and balance the temperature and flow of water through each branch, or riser.

See typical riser distribution layout (to the right) showing the use of the MULTI-THERM valves positioned at the end of each distribution branch.

Note: the use of Kemper Flow-Splitters on the supply line to provide in-room circulation.



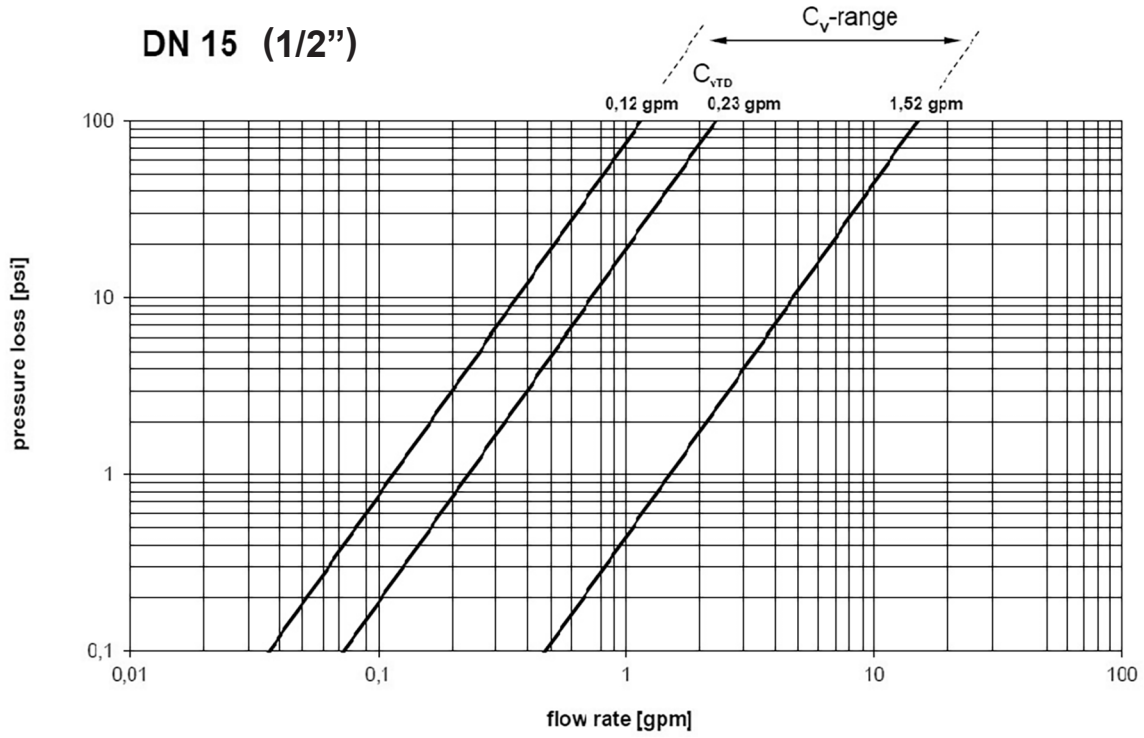
Multi-Fix Plus with
union connections
Figure 155 6G

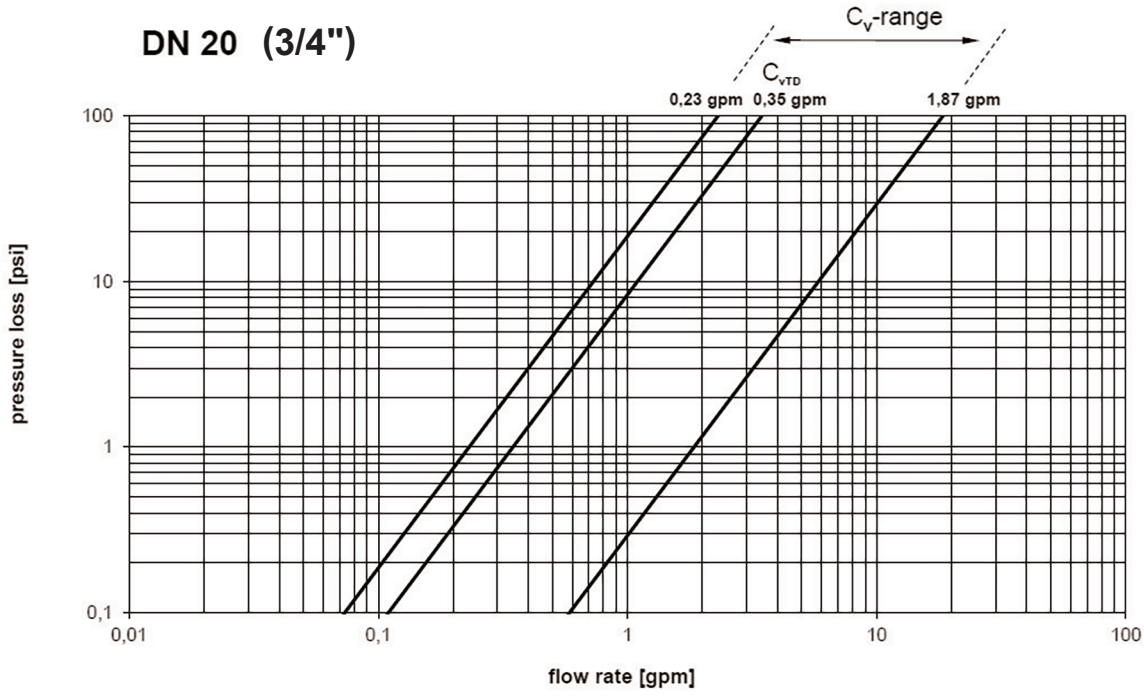


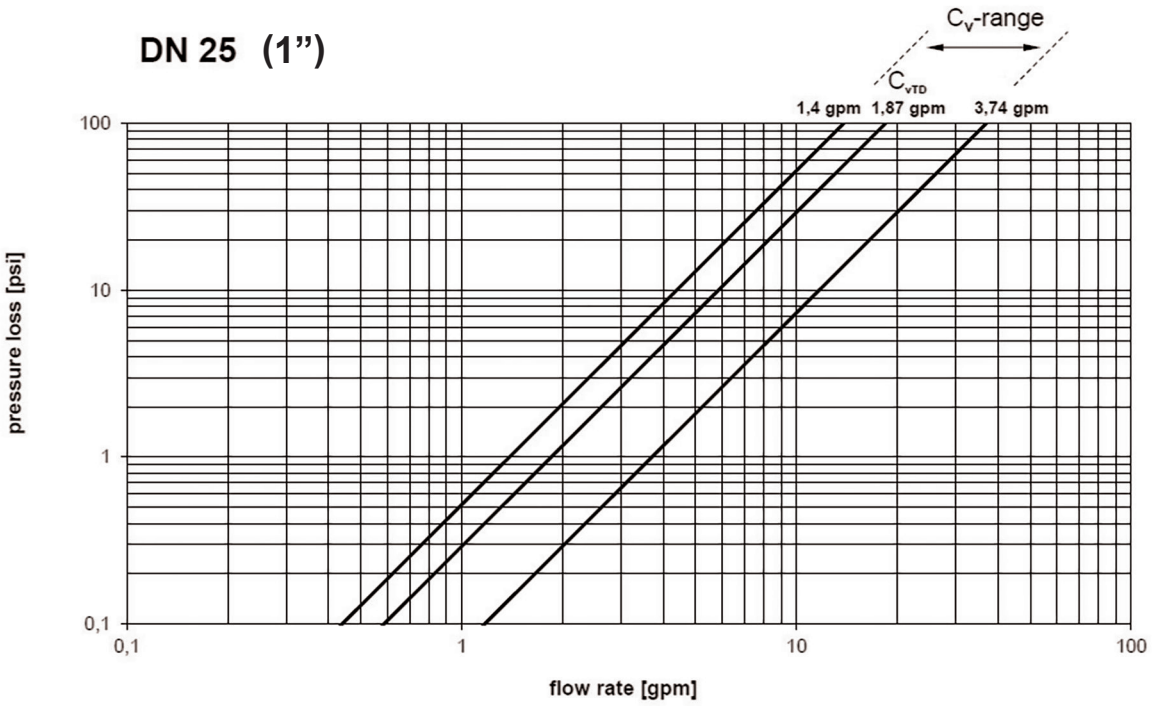
Flow-Splitter Unit
Figure 651 06

MULTI-THERM

Flow Charts







MULTI-THERM products

Figure 154 02 with female thread
Temperature range 122-149 °F

Figure 154 04 with female thread
Temperature range 111-129 °F

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WATER CONTROL SYSTEMS

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