



# For Point of Use or Zoned/Group Control, for Central Recirculation Systems or Emergency Equipment, Armstrong Presents...

Control handle allows for a wide range of temperature adjustment. (Rada 40/R and 50/R have a removable key.)

Over 70 years of thermostatic mixing valve manufacturing applications know-how.

Dual high-tech temperature-sensing elements (thermostats) constantly monitor outlet temperature and instantly react to correct changes caused by inlet pressure or temperature fluctuations. Dual thermostats provide redundancy in case of individual thermostat failure.

Unique internal hub design can be set to restrict control handle movement with single-temperature lock-out or maximum-temperature stop feature. (Rada 40/R and 50/R have a removable key.)

Internal actuator/bellows assembly transfers thermostat expansion instantly to proportioning mechanism.

High-flow mixing valves designed specifically to maintain outlet temperatures  $\pm 2^\circ\text{F}$  at very low flow rates.

Water Heating and Mixing

If hot water supply fails, valve will completely shut off prior to a  $5^\circ\text{F}$  temperature fall from outlet set point (215, 320/R and 425/R). ("Failure mode" constant cold water flow feature is available on Rada Z358 Series.)

Powerful internal hydraulic action breaks away scale deposits to ensure long service life.

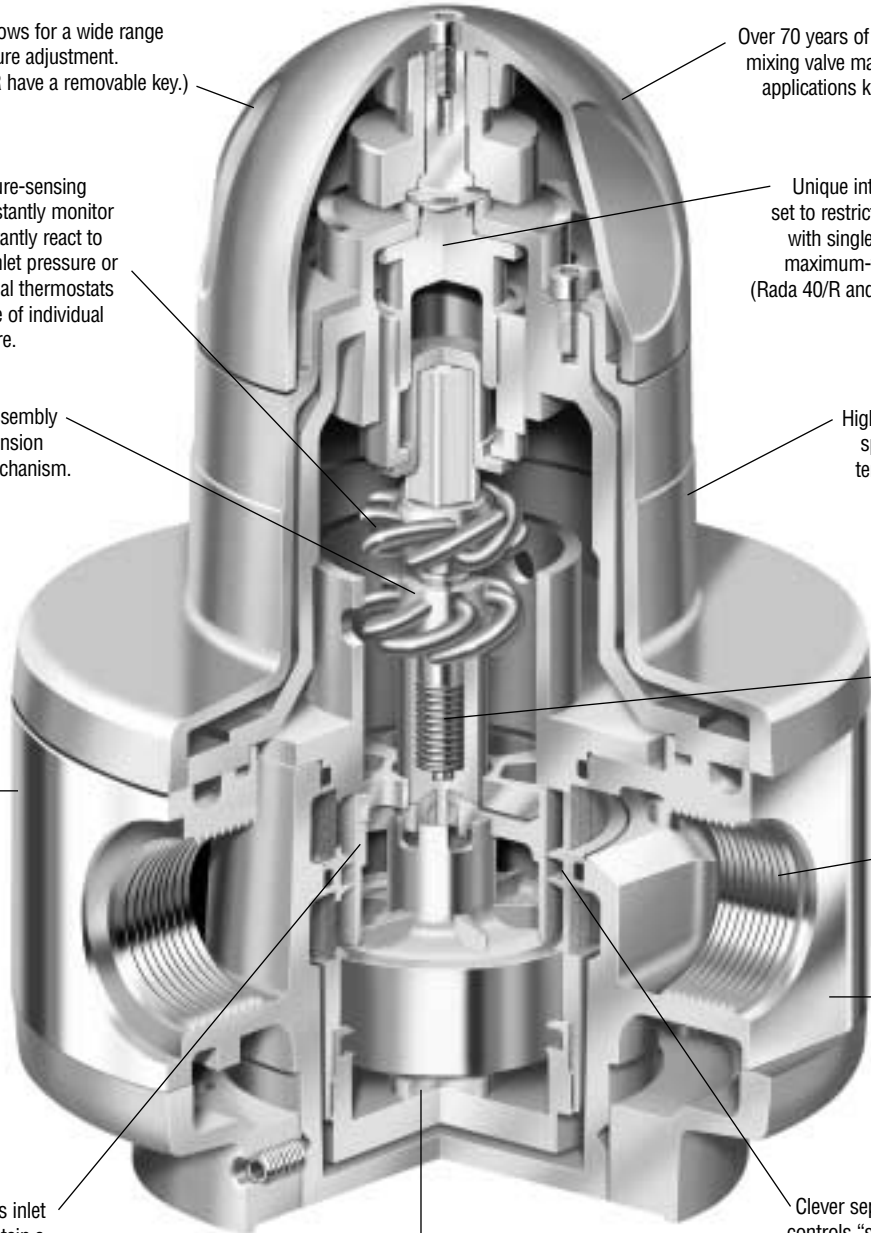
Integral inlet check valves supplied with all models but not shown.

If cold water supply fails, valve will completely shut off prior to a  $5^\circ\text{F}$  outlet temperature rise from outlet set point (215, 320/R and 425/R).

Shuttle mechanism corrects inlet supply proportions to maintain a constant outlet temperature.

Clever separator seal design controls "seepage" and allows the valve to mix to within  $5^\circ\text{F}$  of either inlet supply temperature. (215, 320/R and 425/R).

High-tension return spring ensures swift shuttle correction.



What do these technical benefits mean in field application terms?

How about a full range of Thermostatic Mixing Valves that can also be manifolded to produce a series of Flexi-Flo™ preplumbed assemblies that will allow you to:

- be less concerned about high mineral content water because of the powerful internal action and the use of high-tech polymers and coatings
- specify or use fewer valves per building, because even our large valves have remarkable minimum flow requirements
- use combinations of large valves for high flow demand buildings without the need to tie in a small mixing valve to handle the low circulating pump-only flow rate

- specify or use group controllers and point-of-use valves as secondary mixers even when the central mixing valve is delivering low temperature ( $120^\circ\text{F}/49^\circ\text{C}$  or below as legislated) recirculated hot water (most mixing valves require a significant differential between hot and blend)
- rest assured that many of our field representatives are either "degreed" engineers or engineered product specialists
- deliver ANSI recommended "tepid" water with "failure mode" constant cold water flow to emergency fixtures
- specify and install mixing valves that meet ASSE 1016, ASSE 1017 and CSA B125 where applicable

# Rada®, the World's Most Advanced Technology in Mixed Water Temperature Control.



When it comes to mixed water temperature control, there's a word for the ultimate in safety and accuracy—Rada. Hot and cold water mixing valves have a simple but critically important function in life—to provide a consistent means of regulating water temperature at or before a point of use. Sounds simple enough, right? But mixing valves that depend on wax or spirit-filled capsules or old-fashioned bimetal coils as their thermostats have been anything but simple. Usually they leave you to choose between two necessary benefits:

- 1) a powerful force to resist mineral deposition and control the proportioning device or
- 2) a fast reaction time.

Rada thinks you deserve both. And we deliver both with the Rada principle.

## Why the World Needs Rada Mixing Valves

The *thermostatic mixing valve* has long been regarded as an essential means of ensuring that premixed hot water for general hygiene use is maintained at a safe, comfortable temperature. In addition, the multitude of process applications, along with an ever-present requirement for industrial safety, have increased the demand for accurately controlled hot water at specific temperatures.

Clearly, the perfect thermostatic mixing valve would combine maximum sensitivity with the ability to generate a force powerful enough to resist mineral deposit and transmit the reaction quickly. In other words, the ideal mixing valve would deliver *sensitivity* and *accuracy* plus a *forceful* and *superfast* reaction time.

## Enter the Rada Principle

The Rada unit contains a corrosion-resistant flexible metal bellows connected to a coiled copper tube, providing a large surface area in contact with the blended water. The tube is filled with a polyeutectic compound highly sensitive to temperature change, which almost immediately extends or contracts the bellows when a temperature change occurs.

The powerful axial force drives a proportioning mechanism to control hot and cold water mixing more precisely than ever before, thus maintaining a virtually constant outlet temperature.

The Rada method of mixed water temperature control ends forever the argument over which principle—bimetal or filled capsule—is superior. Now it's clear: Both are outdated by Rada mixing valves from Armstrong.

## The Next Frontier

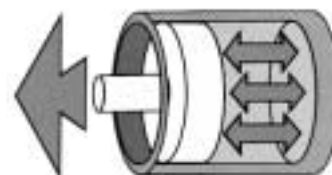
Thermostatic water-mixing technology in various forms has been around since the early 1900s, with Rada firmly planted on the developmental leading edge. We believe that water mixing is ready for an evolutionary quantum leap and that the next frontier must feature advanced, low-voltage electronics.

The first in a family of Electronic Mixing Centers (EMC) is featured on pages WHM-49 through WHM-52. Through electronic mixing we have been able to achieve pinpoint control and accuracy at a level that is, in reality, impossible with a thermostatic mixing valve.

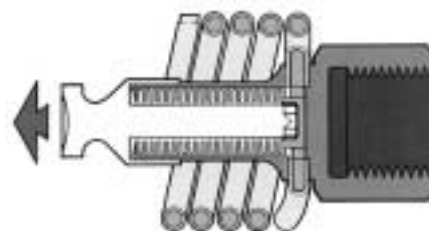
With PC and building management system interface capability, and programming, data logging, alarm, and self-diagnostic features, Rada EMCs offer design options and system solutions unavailable from any other resource.



**Bimetal principle has very little power**



**Wax/spirit-filled capsule principle has a slow reaction time**



**Rada principle**

Water Heating and Mixing