

**Hydroguard T/P Series e420 Tempering Valves**

**NEW!**

**HydroGuard T/P™**

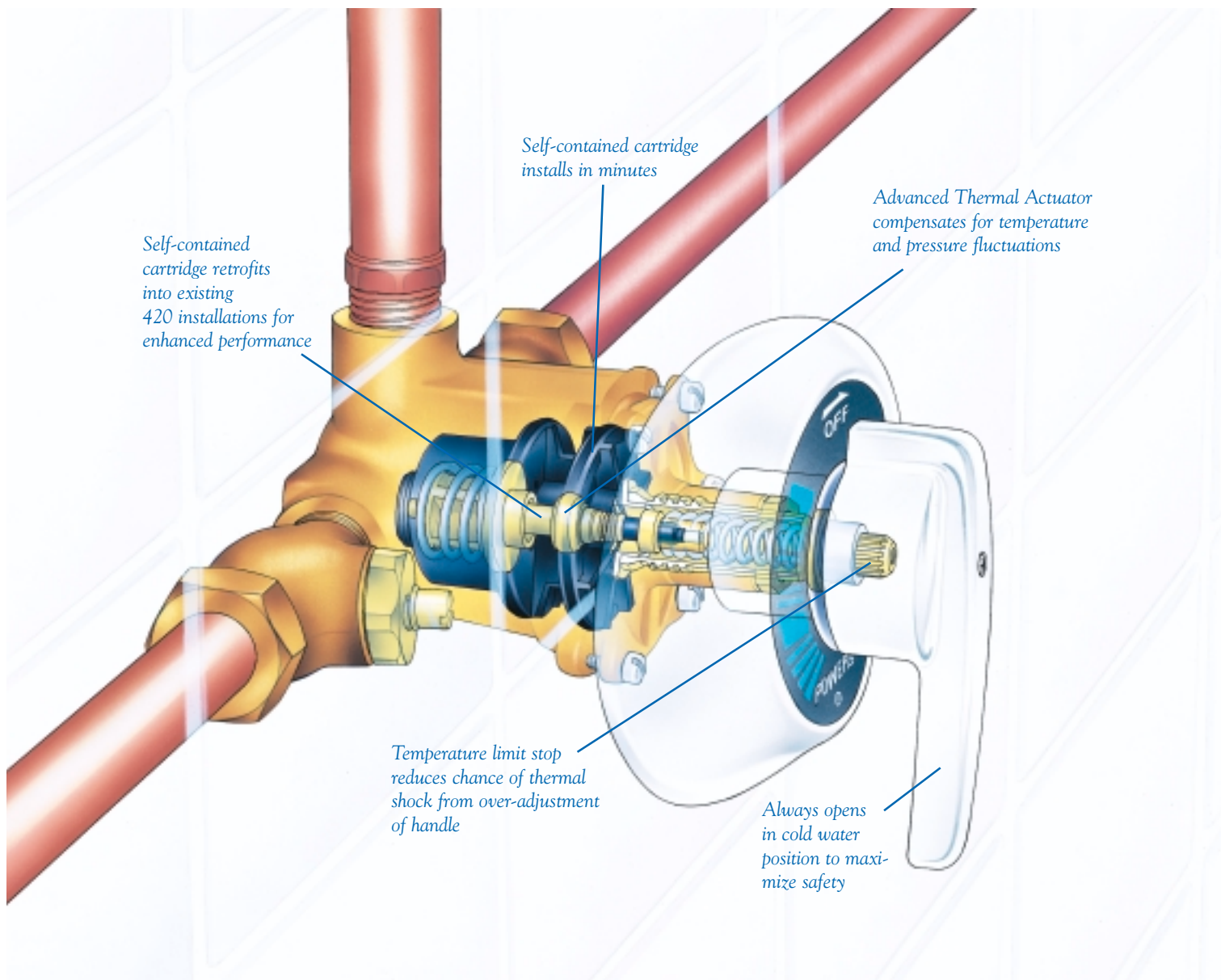


**Tempering Water For Healthcare Institutional Facilities**

**POWERS**

A WATTS INDUSTRIES CO.

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



### Hydroguard T/P e420 Series Tempering Valves

- Advanced Thermal Actuation dramatically improves performance, providing greater safety and lower risk of liability for facility owner.
- Certified to the performance requirements of ASSE 1016 Type T, Type P, and Type T/P.
- CSA B125, Type T Certified
- Provides the thermal protection of a thermostatic valve not found with common pressure balancing valves, while also responding almost instantaneously to dramatic pressure fluctuations-- **even when they exceed 50%!**
- Capable of providing mixed outlet temperature within 5° F (2.8°C) of hot water supply temperature for applications where low hot water supply temperatures exist.
- Innovative self-contained cartridge **simplifies maintenance and repair**. Installs in just 5 minutes...quickly and easily retrofits into Powers 420 valves dating back to the 1960's.

**Now, more than ever, it's Powers for Showers.**

## e420 Series Family of Products

### The e420 Series Family of Products

Valves are available with three ports for shower only applications and with four ports for tub/shower applications. Standard capacity U.S. over 5.25 gpm (20.8 lpm) except where noted.



**Type E421- 3 Ports**  
**Type E422- 4 Ports**  
**Lucite Handle**



**Type E423-3 Ports**  
**Shower Only**  
**Exposed Body**  
**Lever Handle**



**Type E425- 3 Ports**  
**Type E426- 4 Ports**  
**Lever Handle**

### Powers New e420 -- The "e" stands for "Extraordinary" enhancements to tempering technology

Traditional valve designs for tempering water have been divided into two categories — pressure balancing devices — where a diaphragm and poppet design reacts to pressure changes — and thermostatic technology, where a thermostatic element responds to incoming temperature fluctuations and minimal pressure fluctuations.

#### The Powers e420 offers the best of both worlds.

The advanced thermal actuator provides an unparalleled response time to quickly compensate for both pressure and temperature changes. The valve enhancements meet the stringent performance requirements of ASSE 1016 Type T, Type P and the most demanding Type T/P. The result is a precisely tempered water flow which helps protect users from both pressure and temperature fluctuations.

### Powers New Advanced Thermal Actuator allows the e420 to compensate for supply pressure fluctuations of over 50% while quickly compensating for supply temperature changes.

#### e420 Upgrade Kit No. 420-451



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## Safe and Reliable Water Tempering and Shower Systems



*Fluctuating water temperatures are not only unpleasant — they can be a real liability for health care and institutional facilities.*

Scalding from showers and immersion burns due to hot water are an ever-present danger at any facility where supply temperatures can be higher than 120°F and users may be immobilized in showers, hydrotherapy baths or when wheelchair bound. The solution is a Powers Hydroguard mixing valve.

Another healthcare concern is bacteria. Because bacteria can grow and spread in plumbing systems with circulation temperatures less than 120°F, ASPE and other organizations recommend storing water at 140°F or higher, and circulating it so that the temperature is no less than 120°F at the return point.

The high maximum inlet temperature, and fast reaction time of the new Hydroguard T/P make it the ideal choice when designing a plumbing system that is resistant to the growth of bacteria such as legionellae.

Wherever you need safe, tempered water, we can provide the right product for your application.

Whether you are building a new facility, upgrading an existing one or just want the highest quality, most reliable mixing valves on the market.

*Now, more than ever  
it's Powers for showers!*



# HydroGuard T/P™

## Need a Pressure Balancing Valve? Thermostatic? A Combination of Both? HydroGuard T/P can do it all...

The governing body for plumbing system safety requirements is the American Society of Sanitary Engineers (ASSE). Through the years they have developed and refined a standard for shower systems commonly known as ASSE 1016.

ASSE 1016 recognizes three (3) types of valves as acceptable for shower systems, particularly in health and safety environments where patient/user's well-being is at issue. These include:

**ASSE 1016 Type P Valves** — Otherwise known as Pressure Balancing Valves, Type P valves compensate for fluctuations in supply pressure up to 50%. It is important to note that Type P Valves DO NOT compensate for fluctuations in supply temperature -- they ONLY respond to changes in water pressure.

**ASSE 1016 Type T Valves** — Commonly referred to as Thermostatic Valves, Type T valves offer greater bather protection, as they compensate for fluctuations in the temperature of the hot water supply. Thermostatic valves also provide limited protection against supply pressure fluctuations -- up to 20%. However, more dramatic pressure fluctuations can result in patient discomfort or injury.

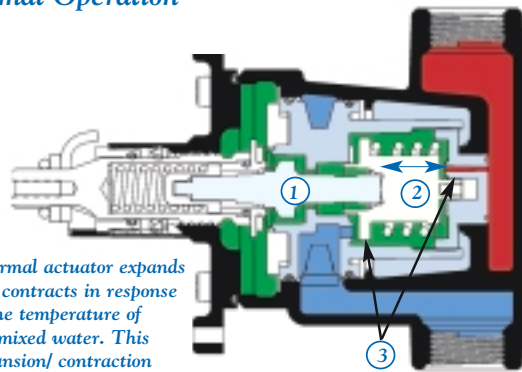
**ASSE 1016 Type T/P Valves** — Or "Combination" Valves, offer the widest possible bather protection. They compensate for fluctuations in supply pressure up to 50% as well as changes in hot water temperature.

### Powers e420 meets the performance requirements of ASSE 1016, Type T, Type P and Type T/P!

Valve Type	Holds ±3°F			
	ASSE 1016 Valve Designation	Supply Pressure Fluctuations ≥ 20%	Supply Pressure Fluctuations ≥ 50%	Hot Water Temperature Fluctuations
Pressure Balancing	Type P	yes	yes	NO
Thermostatic	Type T	yes	NO	yes
Combination	Type T/P	yes	yes	YES
POWERS e420		YES	YES	YES

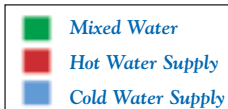
## Advanced Thermal Actuation:

### Normal Operation

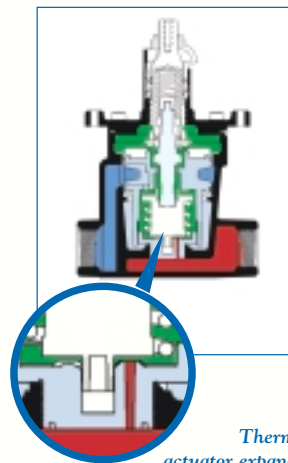


1. Thermal actuator expands and contracts in response to the temperature of the mixed water. This expansion/ contraction moves the shuttle.
2. As shuttle is moved back and forth by the thermal actuator...
3. ...hot & cold water flow are increased/decreased proportionally to maintain temperature set point.

CONTROL POINTS

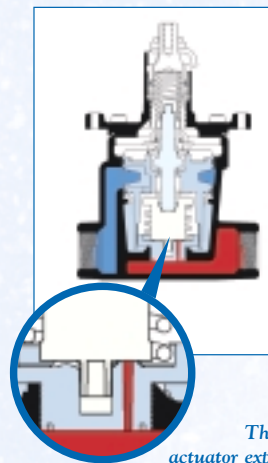


When Hot Water Supply Temperature or Pressure Increases or Cold Water Pressure Decreases:



Thermal actuator expands, compensating for temperature and pressure increases by reducing hot water flow while increasing cold water flow.

When Cold Water Supply Fails:



Thermal actuator expands compensating for temperature increase by substantially reducing the flow of hot water.

## Valve Selection Chart

		<b>E</b> □ □ □ - □ - □ - □ - □ - □ - □
<b>Valves</b>		
Concealed Valve, 3-Port, Lucite Knob Handle	<b>421</b>	
Concealed Valve, 4-Port, Lucite Knob Handle	<b>422</b>	
Exposed Valve, Polished Lever Handle	<b>423</b>	
Concealed Valve, 3-Port, Metal Level Handle	<b>425</b>	
Concealed Valve, 4-Port, Metal Level Handle	<b>426</b>	
<b>Checkstops (Sold in Pairs)</b>		
Concealed Straight, 1/2" IPS	<b>A</b>	
Straight, 1/2" Sweat	<b>C</b>	
Angled, 1/2" Sweat	<b>D</b>	
Angled, with Strainer, 1/2" IPS	<b>E</b>	
Exposed Straight, 1/2" IPS, Polished Chrome	<b>B</b>	
Angled, with Strainer, 1/2" IPS, Polished Chrome	<b>F</b>	
Factory installation of checkstops (Add suffix "X" to checkstop code) Min. order 10	<b>X</b>	
<b>Showerheads</b>		
Economizer, Chrome-Plated ABS	<b>J</b>	
Standard, Chrome-Plated Brass	<b>K</b>	
Deluxe, Chrome-Plated Brass	<b>M</b>	
Rainbeau, Chrome-Plated, Brass	<b>N</b>	
<b>Arm and Flange Kits</b>		
Standard Arm and Flange	<b>1</b>	
Deluxe Arm and Flange	<b>2</b>	
<b>Tub Spouts</b>		
Diverter, Chrome-Plated Brass, 3/4" IPS	<b>Q</b>	
Non-Diverter, Chrome-Plated, 1/2" IPS	<b>R</b>	
Diverter, Chrome-Plated, 1/2" IPS	<b>S</b>	
Diverter, Chrome-Plated Brass, 1/2" IPS	<b>T</b>	
Diverter, Chrome-Plated, 1/2" Slipfit	<b>U</b>	
<b>Hand Shower Systems</b>		
Standard, Metal Hose, Two Wall Hooks	<b>5</b>	
Deluxe, Metal Hose, 24" Slide Bar	<b>6</b>	
Deluxe, Metal Hose, 30" Slide Bar	<b>3</b>	
Professional, Vinyl Hose, 24" Slide Bar	<b>7</b>	
Professional, Vinyl Hose, 30" Slide Bar	<b>4</b>	
Standard Plus, Metal Hose, 24" Slide Bar	<b>8</b>	
European, Metal Hose, 23" Slide Bar	<b>9</b>	
<b>Diverter</b>		
Exposed Diverter, Shower Arm-Type, Chrome-Plated	<b>Z</b>	
Concealed Diverting Valve, 1/2" IPS	<b>Y</b>	
<b>Vacuum Breakers</b>		
Vacuum Breaker, In-Line	<b>W</b>	
Vacuum Breaker, Elevated, Chrome-Plated	<b>V</b>	

## e420 Typical Specification

Valve shall meet the performance requirements of ASSE 1016 - Type T/P, compensating for 50% fluctuations in supply line pressure, and compensate for increases in hot water supply temperature. Valve shall be capable of supplying mixed water temperature within 5°F (2.8°C) of hot water supply temperature. Valve shall contain a powerful, thermal actuator and feature a self-contained cartridge design for ease of repair and maintenance.

Water tempering valve shall not be subject to failure due to lime build-up or dirt particles. Construction shall be conducive to long lasting, trouble-free life, and shall not have close fitting, sliding parts, which, through wear or binding, may impair operation.

Valve shall have an all cast bronze housing and a capacity of 5.25 gpm (20.8 lpm) at a 45 psig. Valve shall include an adjustable limit stop, factory set at 110°F (43°C). Valve shall always open through cold water to maximize bather safety.

Valves shall be Powers No. e42X. Any alternates must have written approval prior to bidding.

## Specifications:

Construction	Cast Bronze
Capacity	5.25 gpm (20.8 lpm) (±0.25 gpm/1.9 lpm)*
Maximum Hot Water Supply Temperature	190°F (88°C)
Minimum Hot Water Supply Temperature	5°F (2.8°C) above set point (not applicable to low temperature hot water valve)
Maximum Operating Pressure	125 psig (862 kPa)
Temperature Ranges	
Type T/P, Type P	90° -110°F (32°-43°C)
Type T	65° -115°F (18°-46°C)
Maximum Static Pressure	125 psig (862 kPa)
Minimum Flow (for ±3°F performance)	1 gpm (3.78 lpm)
Shipping Wt.	5 lbs. (2.3 kg)

\* 45psi ΔP 50/50 mix.

**POWERS**  
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