Over a century ago, smarter, better, and safer water tempering ideas began to flow...

During Chicago’s World Columbian Exposition in 1893, the first Powers gradual acting, vapor disk thermostat was unveiled, along with such life-changing inventions as long-distance phone lines, the first adding machine, and the first gas-powered motorcar in America.

Founded in 1891 by William Penn Powers, the Powers Regulator Company began its history of innovation and leadership in water temperature control. Twenty years earlier in 1874, Joseph Watts, an inventor and entrepreneur, set up shop in Lawrence, Massachusetts. A skillful machinist and brass finisher, Mr. Watts amassed 18 patents and pioneered the first pressure reducing valves, used to regulate water, steam and air in textile mills. In the decades that followed, Watts became the most recognized and respected name in plumbing; and Powers went on to establish major milestones in water tempering innovation. Always mindful of each other’s contribution to the industry, the two companies expanded the possibilities of water management throughout the 20th century.

Today, after a combined 250 years of innovation, Watts and Powers are united as one company. As the one and only leader in water tempering technology, we have begun our second century together with a renewal of our long-time commitment to you: Smarter, better and safer water tempering ideas are flowing your way.

POWERS, a Tradition of Innovation and Excellence

Yesterday...

- 1891: Powers Regulator established
- 1899: William Penn Powers invents vapor disc thermostat
- 1919: First high-capacity master mixing valve “Type C” mixer
- 1939: Powers “System A” supply fixture with recorder
- 1946: “Type H” thermostatic shower mixer
- 1960: 420 bath and shower valve
- 1980: HydroGuard® 420 bath and shower valve
- 2000: Powers introduces paraffin actuation
- 2001: Watts acquires Powers Single valve Hi-Lo
- 430/1430: e420 first T/P shower valve with single actuation technology
- 490 multi-unit lavatory mixer
- 480 first lavatory mixer to control to 0.5 gpm
- 480 first lavatory mixer with single actuation technology
- 2001: Powers pioneers paraffin in large valves, introduces patented “expandable restrictor” for low flow ES Series for emergency fixtures with patented dual internal by-pass
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Better water tempering installations
start with better T/P valve technology...

HydroGuard® T/P
paraffin-based valve actuation technology is the force behind today’s smarter, safer, lower-cost valve installations.

Only Powers can offer you an affordable combination shower valve that meets the highest T/P requirements set by ASSE 1016 – because only Powers offers you single-valve, high-speed, paraffin-based valve actuation technology.

Advanced Activation Technology
How it works

At the core of our T/P shower valves is a paraffin sensor that operates on the principle of converting heat energy into mechanical energy, using the expansion of paraffin from a solid to a liquid state. As shown in the illustration below, when the temperature of the water enveloping the sensor increases, the expansion of the paraffin actuates the valve piston. As the water cools, the paraffin contracts into a solid, and the valve piston returns to its starting position.

Better for your business

By perfecting single valve, paraffin actuation technology, Powers is able to produce smaller valves that provide greater user protection by way of combined temperature/pressure regulation. At the same time, the technology has enabled us to produce larger T/P valves that feature unparalleled low flow control. Most important, the benefit to you and your customers is a wide range of safer, better performing, and more cost-effective valve solutions.

HydroGuard paraffin actuation technology is simple, reliable, field-proven, tested to one million cycles – and the valve meets the stringent T/P requirements of ASSE 1016.
Simple, efficient, proven reliability

Powers’ innovation brings you the right combination of safety, performance and value. Whether your tempering applications require large valves or small, all of our HydroGuard® T/P solutions feature single-valve, paraffin-based, thermal actuation. This assures you of many advantages, including the following:

- Valve actuates near instantaneously to temperature changes
- Provides superior temperature control at low flows, down to 0.5 gpm
- Reduces overall valve size for easier installation in shallow wall depths
- Economically achieves total ASSE 1016 T/P protection of users
- Won’t stick or seize due to harsh water conditions

---

**Price/Performance Continuum**

**Bather Protection Level – Increasing**

HydroGuard® T/P valves offer your customer a safer and more cost-effective installation, compared to traditional pressure balancing valves.

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PowersControls.com
**Bath & Shower Standards**  
**ASSE 1016**

Cost, performance and risk prevention are three important factors to consider when evaluating valve technology options. Proper assessment is guided by the standards published by the American Society of Sanitary Engineers (ASSE). The latest ASSE 1016 standard defines a hierarchy of shower valve types that correspond to a range of options around cost, performance and risk.

---

**Type P:**  
**Lowest Protection / Lowest Cost**

While pressure-balancing valves will compensate for pressure fluctuations within a plumbing system, these types of valves cannot make adjustments for sudden or gradual changes in supply temperature. If hot water supply line temperature unexpectedly increases to a dangerous level while inlet water pressure remains constant, the pressure balancing valve will continue to pass water but at a dramatically increased temperature.

- Pressure-balancing valves react to water pressure changes only. They are not designed to sense temperature changes and so do not provide true temperature regulation.
- Pressure-balancing valves can provide some level of protection against scalding — when limit stops are adjusted seasonally.
- Pressure-balancing valves do not provide complete protection when coupled with upstream thermostatic valves (master mixers) in the event of a master mixer valve failure.

---

**Type T:**  
**Higher Protection / Higher Cost**

Thermostatic valves manage both temperature and minimal pressure changes unlike pressure balancing valves which manage only pressure. Key features and limitations are listed below.

- Delivers blended water at a constant selected temperature
- Adjustable limit stop to prevent excessive handle rotation
- Temperature sensing is key advantage over Type P valves
- No need to adjust limit stop season to season
- Manages only 20% pressure fluctuations, not 50%
- Three to four times more cost than Type P valves

---

**Type T/P:**  
**Highest Protection / Highest Cost — Until Now**

Also known as combination valves, Type T/P valves are required to meet ASSE 1016’s most stringent performance requirements for both temperature and pressure changes. However, widespread specification of Type T/P valves has been impeded by their relatively higher cost — until now.

Powers Type T/P valves provide the highest protection, at a lower cost. In fact, Powers HydroGuard® T/P valves are hundreds of dollars less than traditional Type T/P valves and very close to the cost of basic Type P valves. Better technology has enabled us to reduce the cost of safety to an easy-to-specify level.

- Allows water to be held in the system at higher temperatures
- Delivers water at safe temperatures to the bather
- Minimizes the risk of scalding
- Minimizes the risk of Legionella growth in the system
- No seasonal adjustment of the limit stop is required
- Saves potentially thousands of dollars in maintenance costs over the life of a system
**Powers HydroGuard®**
Type T/P shower valves meet the most stringent requirements of ASSE 1016 — at a cost that makes them easy to specify over basic Type P valves.

### ASSE 1016 Hierarchy of Protection

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>Description</th>
<th>Protection Against Supply Temperature Changes</th>
<th>Protection Against Supply Pressure Fluctuations Up to 50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type T/P</td>
<td>Both temperature and pressure regulation</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Type T</td>
<td>Thermostatic for temperature and some pressure regulation</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Type P</td>
<td>Pressure balancing for pressure regulation</td>
<td>NO</td>
<td>YES</td>
</tr>
</tbody>
</table>

### Scalding
At a water temperature of 130°F, only 20 seconds of exposure can produce a first-degree burn. To control against scalding, facilities need to control the water temperature in their systems at the point of use. Powers Type T/P valves respond near instantaneously to temperature fluctuations and to supply fluctuations up to 50%.

### Infection
Legionella, which can be contracted by inhaling airborne water droplets containing the bacterium, thrive within a narrow water temperature range of 68 –122°F. To control the disease, facilities need to control the temperature of the water in their storage and delivery systems. Type T/P combination valves enable this by addressing the risk of exposing users to scalding.

### Cost and Value
For total protection, specify HydroGuard® total control. Of the three types of bath and shower valves recognized by ASSE 1016, only Powers HydroGuard® Type T/P shower valves meet the most stringent requirements of ASSE 1016 — and they do so at a per-unit cost that is comparable to basic Type P valves.
## Solutions by Application

Every Powers valve is engineered to solve real-world application needs

### Commercial Water Distribution

<table>
<thead>
<tr>
<th>Application</th>
<th>Valve Type</th>
<th>Description</th>
<th>Standards Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>High and Low Capacity Water</td>
<td>Lead Free® HydroGuard® XP LFMM430 Series</td>
<td>Water tempering in 5 sizes to 208 gpm</td>
<td>ASSE 1017, CSA B125</td>
</tr>
<tr>
<td></td>
<td>Lead Free® HydroGuard® XP LFSH1430 Series</td>
<td>Low to high flow valve from 1 to 200 gpm</td>
<td>ASSE 1017, CSA B125</td>
</tr>
<tr>
<td></td>
<td>IntelliStation™ NEW!</td>
<td>Digital Water mixing and recirculation with a high-speed actuator that provides temperature stabilization within ±2°F</td>
<td>ASSE1017</td>
</tr>
<tr>
<td></td>
<td>Lead Free® PowerStation™</td>
<td>Water tempering with built-in recirculation line, pump, aquastat and balancing valve</td>
<td>ASSE 1017, CSA B125</td>
</tr>
<tr>
<td></td>
<td>Lead Free® HydroGuard® Multiple Valve Hi/Lo</td>
<td>Low to high flow for demand up to 700 gpm</td>
<td>ASSE 1017, CSA B125</td>
</tr>
<tr>
<td></td>
<td>Lead Free® HydroGuard® LFLM490 Series, LFMM430 Series, LFSH1430 Series</td>
<td>Multiple configuration tempering for specific</td>
<td>ASSE 1017, CSA B125</td>
</tr>
<tr>
<td>Hot Water Heating Tempering</td>
<td>Lead Free® HydroGuard® Thermostatic Valves LFLM490 Series</td>
<td>From 0.5 gpm to 23 gpm</td>
<td>ASSE 1017, CSA B125</td>
</tr>
<tr>
<td>High Temperature Alarm</td>
<td>Lead Free® AquaSentry 2® LF460</td>
<td>Used in conjunction with master tempering valves to monitor temperature</td>
<td>UL†, CSA</td>
</tr>
</tbody>
</table>

### Industrial Process

<table>
<thead>
<tr>
<th>Application</th>
<th>Valve Type</th>
<th>Description</th>
<th>Standards Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Operating Regulators</td>
<td>#11- 595 Series</td>
<td>Bronze valves for heating, cooling, mixing and by-pass</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Heavy-Duty Globe Control with Pneumatic</td>
<td>Flowrite II® 593/596/597 Series</td>
<td>Bronze (1/2” – 2”) and iron (2-1/2”– 6”) for steam and water modulating mixing and by-pass</td>
<td>ASME/ANSI B16.1</td>
</tr>
<tr>
<td>Rigid and Remote Bulb Blind Controllers</td>
<td>Accritem® 744 Series</td>
<td>Non-indicating, air and water operated</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

* Individual Valves
† Transformer

* The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.
## Commercial Point-of-Use

<table>
<thead>
<tr>
<th>Application</th>
<th>Valve Type</th>
<th>Description</th>
<th>Standards Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bath and Shower Tempering</td>
<td>HydroGuard® T/P e420 Series Combination</td>
<td>High end T/P protection ideal for healthcare facilities with elderly users</td>
<td>ASSE 1016 Type T/P, CSA B125</td>
</tr>
<tr>
<td></td>
<td>HydroGuard® e427/428 Series Thermostatic</td>
<td>High-capacity thermostatic for therapy tubs, sitz baths, multiple showers</td>
<td>ASSE 1016 Type T, CSA B125</td>
</tr>
<tr>
<td></td>
<td>HydroGuard® T/P e700 Series Combination</td>
<td>Affordable T/P technology brings maximum safety to all budgets and facility types</td>
<td>ASSE 1016 Type T/P, CSA B125</td>
</tr>
<tr>
<td></td>
<td>VisuGuard LCD F727 Series Combination</td>
<td>T/P technology with digital temperature indication</td>
<td>CSAB125.1, ASSE1016 T/P, ASME A112.18.1</td>
</tr>
<tr>
<td></td>
<td>Biltmore P900 Series Pressure Balancing</td>
<td>Pressure protection for multi-family housing, hotels and motels</td>
<td>ASSE 1016 Type P, CSA B125</td>
</tr>
<tr>
<td></td>
<td>HydroGuard® P410 Series Pressure Balancing</td>
<td>Pressure protection for heavy use areas, such as health clubs, locker rooms, correctional facilities</td>
<td>ASSE 1016 Type P, CSA B125</td>
</tr>
<tr>
<td>Shower Shut Down Device</td>
<td>HydroGuard® HT115</td>
<td>High temperature shutoff device can be installed on any shower arm</td>
<td>ASSE 1062, CSA B125</td>
</tr>
<tr>
<td>Lavatory Tempering</td>
<td>Lead Free* HydroGuard® LFe480 Series</td>
<td>Single or multiple low-flow lavatory</td>
<td>CSA B125, ASSE 1070</td>
</tr>
<tr>
<td></td>
<td>Lead Free* HydroGuard® LFLM495 Series Thermostatic</td>
<td>Single or multiple lavatory tempering</td>
<td>ASSE 1069, ASSE 1017, CSA B125</td>
</tr>
<tr>
<td>Emergency Fixture Tempering</td>
<td>Lead Free* TempTAP™ Thermostatic Faucets</td>
<td>Integrated temperature protection with single-lever operation</td>
<td>ASSE 1070, cUPC, IAPMO WaterSense, NSF Annex G</td>
</tr>
<tr>
<td></td>
<td>HydroGuard® XP ES150 Series</td>
<td>Eye wash and eye/face wash with by-pass</td>
<td>ASSE 1071</td>
</tr>
<tr>
<td></td>
<td>HydroGuard® XP ETV200 Series</td>
<td>Drench shower or multiple eye/face wash with by-pass</td>
<td>ASSE 1071</td>
</tr>
<tr>
<td></td>
<td>HydroGuard® XP ETV400 Series</td>
<td>Multiple drench shower or combination units with by-pass</td>
<td>ASSE 1071</td>
</tr>
<tr>
<td></td>
<td>HydroGuard® XP ETV600 Series</td>
<td>Multiple drench shower or combination units with by-pass</td>
<td>ASSE 1071</td>
</tr>
<tr>
<td>Surface Mounted Shower Systems</td>
<td>HydroPanel II™ 450 Series</td>
<td>Stainless steel paneled showers for buildings with no in-wall piping</td>
<td>ASSE 1016 Types T/P, P, and CSA B125</td>
</tr>
</tbody>
</table>

* The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.
## ASSE Standards

A Comparison of ASSE 1062, 1069, 1070 and 1071 with revised 1016 and 1017 standards.

<table>
<thead>
<tr>
<th>Standard</th>
<th>ASSE 1016 - 2017</th>
<th>ASSE 1017 - 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>Current</td>
<td>Current</td>
</tr>
<tr>
<td>Title</td>
<td>Automatic Compensating valves for individual showers and tub-shower combinations</td>
<td>Temperature-Activated Mixing Valves for hot water distribution systems</td>
</tr>
<tr>
<td>Category</td>
<td>Point-of-use, bather or bather attendant interface</td>
<td>Tempered water distribution</td>
</tr>
<tr>
<td>Application</td>
<td>Shower or tub-shower combination only</td>
<td>Hot water source/boiler</td>
</tr>
<tr>
<td>Types</td>
<td>Type P - Pressure Balancing, Type T - Thermostatic, Type T/P - Combination</td>
<td>Thermostatic only</td>
</tr>
<tr>
<td>Valve Temp Range</td>
<td>Full cold to 105°F minimum, 120°F maximum</td>
<td>Minimum adjustable range 105°F - 120°F</td>
</tr>
</tbody>
</table>
| Temperature Tolerance | T/P and P = ±3.6°F  
T = +5.4°F, -9.0°F                        | ±3°F to ±7°F (depending on valve size/capacity)                                 |
| Pressure Change Test | P = 50% up/down  
T = 20% up/down  
T/P = 50% up/down          | No pressure change test                                                        |
| Temperature Change Test (Hot) | P = Does not test for temperature change  
T = 25°F hot water increase  
T/P = 25°F hot water increase | 25°F hot water increase                                                        |
| Flow Test         | Minimum 2.25 gpm or manufacture rated minimum                                  | Not applicable                                                                 |
| Minimum Tested Flow to Provide Control | 2.5 gpm                              | 50% of flow at a 10psid                                                        |
| Cold Water Failure Allowance | P, T, T/P < 0.5 gpm within 5 seconds before 120°F | Not applicable                                                                 |
| Life Cycle        | 100,000 cycles – all                                                           | Not applicable                                                                 |
| Applicable Powers Products | e700 Type T/P - bath & shower  
e420 Type T/P - bath & shower  
e427 Type T - high capacity bath & shower  
e428 Type T - high capacity bath & shower  
900 Type P - bath & shower  
410 Type P - bath & shower | Intellistation™ - Digital Water Mixing Valves  
Lead Free* MM430 Series - Master Mixing Valves  
Lead Free* LM490 Series for multiple lavatories  
Lead Free* SH1430 Single Valve Hi/Los  
Lead Free* Powerstation\
Lead Free* Supply Fixtures\
Lead Free* Hi/Los-Multi-valve\

* The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current</strong></td>
<td>Current</td>
<td>Current</td>
<td>Current</td>
</tr>
<tr>
<td>Temperature-Actuated,</td>
<td>Automatic</td>
<td>Water</td>
<td>Temperature-Activated Mixing valves for plumbed emergency equipment</td>
</tr>
<tr>
<td>Flow Reduction valves for</td>
<td>Temperature</td>
<td>Temperature</td>
<td></td>
</tr>
<tr>
<td>individual fixture</td>
<td>Control Mixing</td>
<td>- Actuated</td>
<td></td>
</tr>
<tr>
<td>fittings (TAFR)</td>
<td>Mixing Valves</td>
<td>Mixing Valves</td>
<td></td>
</tr>
<tr>
<td>In-line high temperature</td>
<td>Point-of-use</td>
<td>Point-of-use</td>
<td></td>
</tr>
<tr>
<td>limit devices</td>
<td>distribution</td>
<td>or distribution</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adjustment by</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>installer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faucets, shower heads,</td>
<td>Gang showers,</td>
<td>Sinks, lavatories, baths</td>
<td>Eye washers, eye/face washes, drench showers and combination units</td>
</tr>
<tr>
<td>tub spouts dramatically</td>
<td>sitz baths, spas, gang lavatories</td>
<td></td>
<td></td>
</tr>
<tr>
<td>reduce flow when</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>temperature exceeds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>actuation point</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermostatic only</td>
<td>Thermostatic</td>
<td>Thermostatic</td>
<td>Thermostatic</td>
</tr>
<tr>
<td></td>
<td>only</td>
<td>only</td>
<td>only</td>
</tr>
<tr>
<td>Not applicable</td>
<td>100°F - 115°F</td>
<td>105°F - 110°F</td>
<td>65°F - 95°F</td>
</tr>
<tr>
<td>Maximum actuation</td>
<td>+ 5°F lasting</td>
<td>Maximum actuation</td>
<td>Varies depending</td>
</tr>
<tr>
<td>temperature 120°F or less</td>
<td>more than 1.5</td>
<td>temperature</td>
<td>on capacity.</td>
</tr>
<tr>
<td></td>
<td>seconds within</td>
<td>120°F or less</td>
<td>Also, hot water control</td>
</tr>
<tr>
<td></td>
<td>first 5 seconds</td>
<td></td>
<td>has a tighter tolerance</td>
</tr>
<tr>
<td></td>
<td>- 9°F lasting</td>
<td></td>
<td>than cold water control.</td>
</tr>
<tr>
<td></td>
<td>more than 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>second within</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>first five</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td>20% up and down</td>
<td>20% up and down</td>
<td>Not applicable</td>
</tr>
<tr>
<td>cold &amp; hot supply</td>
<td>for cold &amp; hot</td>
<td>for</td>
<td></td>
</tr>
<tr>
<td></td>
<td>supply</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td>25°F hot water</td>
<td>25°F hot water</td>
<td>25°F hot water</td>
</tr>
<tr>
<td></td>
<td>increase</td>
<td>increase</td>
<td>increase</td>
</tr>
<tr>
<td>0.25 gpm within five</td>
<td>Must be 90% of</td>
<td>Must be 90% of</td>
<td>HW Failure, CW flow =</td>
</tr>
<tr>
<td>seconds when temp. exceeds</td>
<td>manufacturer’s</td>
<td>manufacturer’s</td>
<td>manufacturer’s rated</td>
</tr>
<tr>
<td>120°F and one second</td>
<td>published flow</td>
<td>published flow</td>
<td>by-pass flow @ 30psid</td>
</tr>
<tr>
<td>once actuation temperature</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>exceeds 129°F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td>2.5 gpm or</td>
<td>Manufacturer’s</td>
<td>3.0 gpm or</td>
</tr>
<tr>
<td></td>
<td>minimum specified</td>
<td>minimum</td>
<td>manufacturer’s</td>
</tr>
<tr>
<td></td>
<td>stated flow</td>
<td>stated minimum</td>
<td>stated minimum</td>
</tr>
<tr>
<td>Not applicable</td>
<td>0.5 gpm for 1/2”</td>
<td>0.2 gpm or 20%</td>
<td>CW failure, HW flow gpm</td>
</tr>
<tr>
<td>1.0 gpm for 1” devices</td>
<td>and 3/4” devices</td>
<td>of not to exceed 0.5</td>
<td>&lt;7.0 gmp max flow 0.5 gmp</td>
</tr>
<tr>
<td>and larger</td>
<td>minimum flow, whichever</td>
<td>is greater before 120°F</td>
<td>1 gmp for all others</td>
</tr>
<tr>
<td>125,000 cycles</td>
<td>100,000 cycles</td>
<td>100,000 cycles</td>
<td>Not applicable</td>
</tr>
<tr>
<td>HT115</td>
<td>Lead Free* LFLM495 Series</td>
<td>TempTAP™ Thermostatic Faucets</td>
<td>ES150 - Eye/face washes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lead Free* LFe480 Series</td>
<td>ETV200 - Drench showers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lead Free* LFLM495 Series</td>
<td>ETV400 - Combination units</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ETV500 - Combination units</td>
</tr>
</tbody>
</table>

*individual Valves*
**Distribution Valves and Systems**

**Digital Water Mixing Valves – ASSE 1017**

Smart mixing & recirculation system for domestic hot water in commercial and institutional facilities

**IntelliStation™ Digital Water Mixing Valves**

- High-speed actuator for temperature stabilization within +/- 2°F in accordance with ASSE 1017
- Smart, color touchscreen with 3.5-inch interface
- Temperature and pressure sensors on hot/cold water inlet supplies, mixed water outlet, and tempered water return
- BAS integration (BACnet® IP, BACnet MSTP and Modbus® protocols are supported.)
- Integrated pump control for reliable, consistent temperatures
- Compliant with lead free legislation requirements
- Field configurable without the need for a laptop or special software
Distribution Valves and Systems

Manifold Tempering Stations – ASSE 1017

When high and low capacity demand is required

Installer Friendly, Self-Contained Water Tempering and Recirculation Stations

- Fully assembled and tested system. Designed to save time, money and call backs during set-up and installation
- Mounted on heavy-duty welded struts for fast, easy installation
- Standard features include ASSE 1017 listed and CSA B125 approved valves, return line with recirculation pump, pressure/temperature gauges, GFCI outlet and ball valves
- Exclusive by-pass loop allows for fast easy set up. No need to wait for water to circulate throughout the building to set system temperature
- Optional features include automatic balancing valve, aquastat and temperature alarm

Lead Free®

HydroGuard® Multi-Valve Hi/Lo Systems

- Fully assembled and tested water tempering stations
- Feature ASSE and 1017 listed tempering valves with paraffin-based actuation technology
- Systems include PRV, pressure/temperature gauges, triple-duty checkstops and ball valves
- Control from as little as 0.5 gpm to 850 gpm

Lead Free®

HydroGuard® Series LFLM490, LFMM430 & LFSH1430 Supply Fixtures

- Includes ASSE 1016 or 1017 thermostatic tempering valve, union inlet-strainer checkstops, dial thermometer, valve control, shutoff valve and interconnecting piping
- Optional equipment includes cabinets (recessed, semi-recessed or wall mount), cold water by-pass and vacuum breaker

* The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.
Distribution Valves and Systems

Master Tempering Valves – ASSE 1017

Thermostatically mix and control hot and cold water to deliver safe, blended water

Master Tempering Valves

- Paraffin-based actuation technology responds dramatically to temperature fluctuations caused by changes in supply line temperature and pressure changes
- ASSE 1017 listed, CSA B125 approved
- Triple-duty checkstops with filtration screens and rotatable unions allow for horizontal and vertical mounting
- Available in rough bronze and polished chrome finish

Series LFSH1430 Single-Valve Hi/Lo

- Value engineered, single-valve does the work of two-valve manifold system
- Controls temperature for flows as low as 1.0 gpm (to ASSE 1017) and in excess of 200 gpm

Series LFMM430 Master Mixers

- The industry workhorse with over 50 years of reliability and unparalleled performance
- Available in five sizes up to 208 gpm to meet all requirements

US Patent No. 7,913,926

* The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.
Emergency Tempering Solutions

Emergency Tempering with Bypass – ASSE 1071

Deliver safe, tempered water to Eye/Face Wash, Drench Showers and Combination Units

**HydroGuard® XP Series**

- Features patented internal bypass that provides substantial flow in the event of hot water failure
- Ensures uninterrupted flow of flushing fluid in the event of hot water loss or actuator failure
- Paraffin-based actuation technology provides greater force than conventional elements resulting in superior control for improved safety
- Tamper resistant temperature adjustment includes locking mechanism to insure unauthorized set point readjustment
- ASSE 1071 listed
Industrial Valves and Controllers

A Complete Line of Self-Operating and Pneumatically Actuated Valves and Mechanical Controllers for Tempering and Industrial Processes

**#11 Self Operating Temperature Regulators**
- Interchangeable sensing and control components for minimum downtime, greater flexibility and added economy
- Open yoke design minimizes heat transfer from valve to bellows
- Setting scale provides easy, convenient reference when changing set points
- Large (7.8 in²) bellows provides extra valve positioning power
- Wide range of heating, cooling and mixing valve bodies available

**FLOWRITE® Heavy Duty Globe Control Valves**
- Heavy duty bronze and iron bodies
- Designs to meet 1/2" - 6" steam and water modulating, mixing or bypass applications
- Multiple packing choices – spring loaded
- Stainless steel hardware and actuator mounting accessories
- Field reversible 46 in² and 100 in² pneumatic diaphragm actuators available

**ACCRITEM® Rigid and Remote Bulb Blind Controllers**
- Precise, rapid response to temperature changes by sending a proportional pneumatic signal to the control valve
- Supply and pressure control gauges included
- Rugged, non-indicating construction is unaffected by moisture or dust
- Trouble-free operation – simple design with few moving parts
- Air or water operated
Bath & Shower Solutions

Combination Tempering – ASSE 1016, Type T/P

Affordable T/P protection against pressure and temperature changes

**HydroGuard™ T/P**

**Series e700 Combination Tempering Valve – ASSE 1016, Type T/P**

- The first affordable T/P combination shower valve that allows distribution of higher hot water temperatures, minimizing the risk of Legionella while protecting bathers against unsafe water temperatures
- Does not require seasonal adjustment of handle rotation stop common to pressure balancing valves
- Solid brass construction features 4 gpm capacity (at 45psid) and corrosion resistant internal components that will not stick or seize
- Self-contained cartridge simplifies maintenance and retrofits into Biltmore pressure balancing valves (model 3)
- ASSE 1016, Type T/P, and cUPC listed
- Ideal for hospitals, nursing homes, assisted living facilities or anywhere those with diminished physiological, mental and emotional capacities are resident
- 5-year limited warranty on internal tempering mechanism
- Simple back-to-back installation without cross-connecting pipes

U.S. Patent No. 7,163,157

PowersControls.com
Bath & Shower Solutions

Combination Tempering – ASSE 1016, Type T/P

Institutional grade construction, high-capacity output with over 40 years of dependable service

HydroGuard™ T/P

Series e420 Combination Tempering Valve – ASSE 1016, Type T/P

- T/P combination shower valve allows distribution of higher hot water temperatures, minimizing the risk of legionella while protecting bathers against unsafe water temperatures
- Guards against both pressure and temperature changes, meeting the most stringent requirements of ASSE 1016 – Type T/P
- Does not require seasonal adjustment of handle rotation stop common to pressure balancing valves
- Solid brass construction features 5.0 gpm capacity (at 45psid) and corrosion resistant internal components that will not stick or seize
- Self-contained cartridge simplifies maintenance and retrofits into HydroGuard® 420 valves dating back to 1960
- Ideal for hospitals, nursing homes, assisted living facilities – anywhere those with diminished physiological, mental and emotional capacities are resident
- High capacity models e427 and e428 are ideal for sitz baths, therapy tubs and multi-head showers (14 gpm @ 45psid). Listed ASSE 1016, Type T

e420 paraffin upgrade kit for valves dating back to 1960
Bath & Shower Solutions

Pressure Balancing – ASSE 1016, Type P

A legacy of bather protection since 1929. Powers Type A mixer earned first pressure balancing patent

Biltmore

Series P900 Pressure Balancing Valve

- Affordable protection against pressure fluctuations within a plumbing system
- Reliable poppet/diaphragm design won’t stick or seize like piston/sleeve type valves
- Cast integral checkstops prevent cross flow and simplify maintenance
- Simple back-to-back installation without cross-connecting pipes
- Shallow wall design installs in as little as 2” wall depth
- ADA compliant activation and configurations
- ASSE 1016, Type P and cUPC listed

U.S. Patent No. 6,050,285

HydroGuard®

Series HT115 High Temperature Flow Reduction Device

- Thermostatically shuts off water if temperature reaches 115°F (46°C)
- Ideal for pressure balancing and mechanical mixing valves
- Installs in minutes with no special tools
- ASSE 1062 listed

PowersControls.com
Bath and Shower Solutions

Pressure Balancing – ASSE 1016, Type P

**HydroGuard® Series P410 Pressure Balancing Valve**
- Rugged bronze construction for heavy use applications like health clubs, schools and light security correction facilities
- Reliable poppet/diaphragm design won’t stick or seize like piston/sleeve type valves in harsh water
- ADA compliant activation and configurations
- ASSE 1016, Type P compliant, CSA B125 approved
- U.S. Patent No. 6,050,285

**VisuGuard® Series F727 Combination Tempering Valve - ASSE 1016, Type T/P**
- Integral 1” LCD temperature display in °F or °C
- Single AAA battery provides up to four years of service
- Water tight enclosure protects electronics behind Lexan lens
- Back to back installation without costly cross over piping
- Precise temperature display within 1/10th of a degree
- ASSE 1016, Type T/P and cUPC listed
Bath and Shower Solutions

Surface Mounted Shower

Available with all Powers Series Point-of-Use Tempering Valves - ASSE 1016, Types T/P and P

HydroPanel II™ Surface Mounted Shower Systems.

- Ideal for installations where in-wall piping doesn’t exist or may be impractical such as schools, health clubs and light security correctional facilities
- Single unit stainless steel panel allows easy access to concealed components
- Vandal-resistant fasteners prevent tampering
- Modular design allows all vertical and horizontal piping to be concealed with standard components

HydroPanel II™ Series e700 – ASSE 1016, Type T/P

- Maximum protection against pressure and temperature changes utilizing Powers exclusive series e700 combination valves
- Tempering valves ASSE 1016, Type T/P and cUPC listed

HydroPanel II™ Series e420 – ASSE 1016, Type T/P

- Maximum protection combined with rugged construction and greater flow
- Tempering valves ASSE 1016, Type T/P compliant and CSA B125 approved

Biltmore Series P900 – ASSE 1016, Type T

- Powers most specified system protects against dangerous pressure swings
- Tempering valves ASSE 1016, Type P and cUPC listed

HydroPanel II™ Series P410 – ASSE 1016, Type T

- Powers rugged, high capacity, pressure balance option
- Tempering valves ASSE 1016, Type P compliant and CSA B125 approved

▲Valve only
Lavatory Tempering & Hot Water Solutions

Blended and Hot Water Tempering – ASSE 1070

Superior low flow protection for infrared, single-handle, two-handle and metering faucets

TempTAP™ Series 105, 115, 205 and 215

Thermostatic Lavatory Faucets – ASSE 1070

- Thermostatic tempering built inside the faucet
- ASSE 1070 and IAPMO cUPC listed
- NSF 61 Section 9 Annex G approved for Lead Free
- ADA compliant
- Integral checks and filters

Lead Free®

HydroGuard® LFe480/LFG480 Lavatory Tempering - ASSE 1070

- Allows facility to distribute water at higher temperatures, minimizing the potential occurrence of Legionella and other known bacteria while protecting against unsafe water temperatures
- Integral checks with filtration screens standard
- ASSE 1070 listed, CSA B125 certified
- Tamper-resistant temperature adjustment with locking mechanism from 80 – 120°F (27 – 49°C)

Lead Free®

HydroGuard® Series LFLM495 Lavatory Tempering - ASSE 1069, ASSE 1070, & ASSE 1017

- Powers highest capacity lavatory tempering valves for multiple lavatories and hot water heaters in flows from 12 gpm
- 1/2", 3/4" and 1" sizes with union connections – Sweat, NPT, CPVC & PEX, Quick-Connect
- Adjustable temperature selection with locking mechanism
- Integral checks with filtration screens are standard
- Series LFLM495 – ASSE 1069, 1070, 1017 and UPC listed, CSA B125 approved

* The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.
Specialty Products

Tempering and Control Providing Engineered Solutions for Commercial Applications

Series LF460 Alarm System

- Use in tandem with all Powers master tempering valves, Hi/Lo valves systems and PowerStations.
- Provides audible and visible alarm when temperature exceeds high or low set points.
- Can be used in conjunction with a solenoid valve to shut down water when temperature limit is exceeded.

PressureGuard™ Balancing Valve

- Adds pressure balancing protection to standard two-handle or single-lever mechanical shower valves.

HydroGuard™ ESP Electronic Shower Systems

- Infrared of Piezo technology delivers tempered water in vandal prone areas.
- Adjustable timing and lock-out features prevent tampering and abuse.
- ADA compliant operation, UL, CSA approved power source.