HydroGuard® T/P

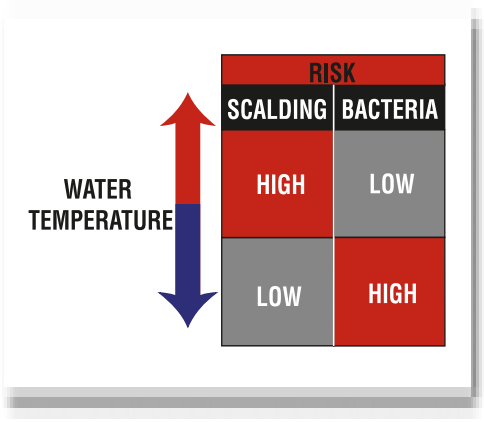
Series e700 Combination T/P Valve

Provides Unsurpassed Protection from Temperature & Pressure

POWERS™

Water Tempering Innovation Since 1891

Bacteria/Legionella Protection



Is Lower Better? The Other Side to the Coin.

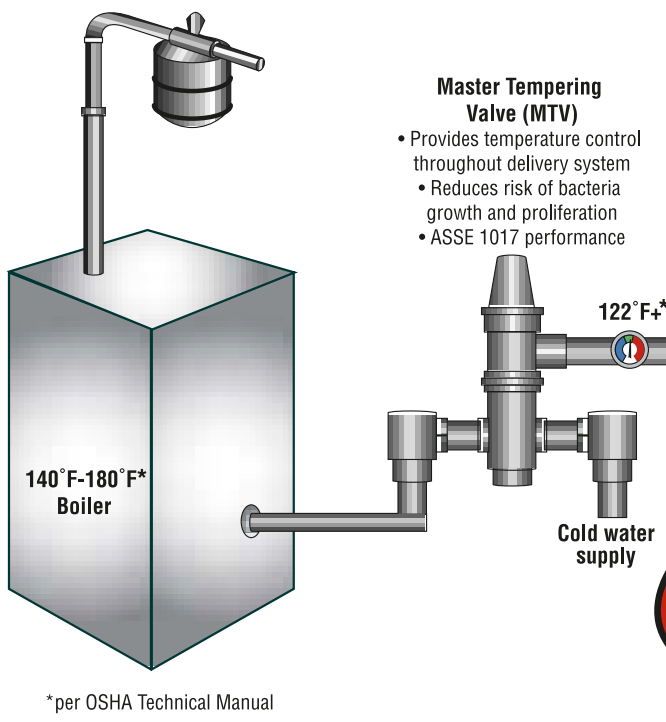
It's truly a double-edged sword. Lowering hot water supply temperature can minimize the risk of scalding to the bather but at the same time creates other potential health concerns. Among the most significant is the growth and proliferation of bacteria within the plumbing system, more specifically legionella.

Many healthcare professionals are convinced the occurrence of legionella is rare, when in fact the disease is more commonplace. Of the 2.4 million cases of pneumonia each year, it is estimated that as many as 100,000 are cases of Legionnaire's disease, and as few a 1,000 cases are actually reported to the CDC (U.S Center for Disease Control and Prevention).

OSHA's technical manual on legionnaire's disease states that water should be stored at a minimum of 140°F and delivered to all outlets at a minimum of 122°F to "minimize the growth of legionallae in a system". At 140°F, legionellae are killed within 32 minutes, at 151°F legionellae die within 2 minutes.

Affordable T/P Technology

Minimize Bacteria Risk, Protect Against Scalding



*per OSHA Technical Manual

Valve Type	Protection Provided per ASSE 1016*		Price & Performance Value
Point-of-use	Hot water temperature increases +25°F	Supply pressure fluctuations up to 50%	Complete Protection and Affordability
– Type P – Pressure balance	NO	YES	NO
– Type T – Thermostatic	YES	NO	NO
– Type T/P** – Combination	YES HydroGuard® T/P	YES HydroGuard® T/P	YES HydroGuard® T/P

*holds ±3°F

Generate hot water at 140°F*+ → Distribute at 122°F*+ → Protect bather with T/P technology

– **T/P –

- Provides temperature and pressure control at the point-of-use
- Provides temperature protection against seasonal changes in cold water temperature
- Prevents thermal shock resulting from sudden and dramatic changes in supply temperature and pressure
- Provides redundant temperature protection in the event of an upstream failure

HydroGuard® T/P

Safety for your Healthcare Facility

Healthcare & Bather Safety

Quality from POWERS™

The market for America's aging population is growing rapidly. As the baby boomer generation draws closer to retirement, robust growth will continue well into the future. By 2025, America will experience a 68% increase for those in the 55 – 64 age group and a 75% increase for those in the 65+ age group. In 2025, those at the traditional retirement age of 65 will account for 20% of the country's population, up from the current 13.4%.

The elderly, whose physiological, mental and emotional capacities diminish over time and those who require assistance from caregivers, are at a higher risk for scalding. HydroGuard T/P provides the utmost level of safety by protecting against severe temperature and pressure changes…..

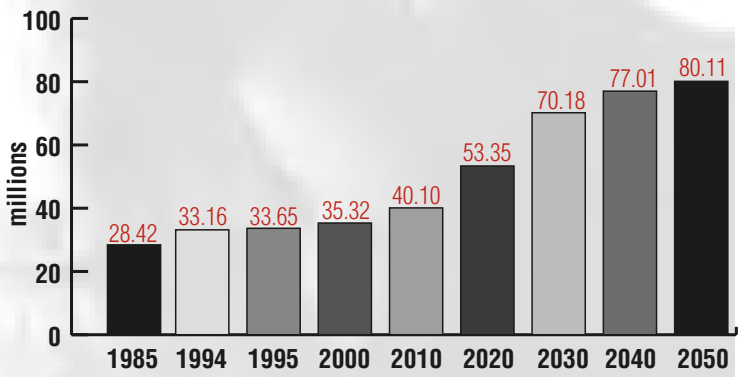
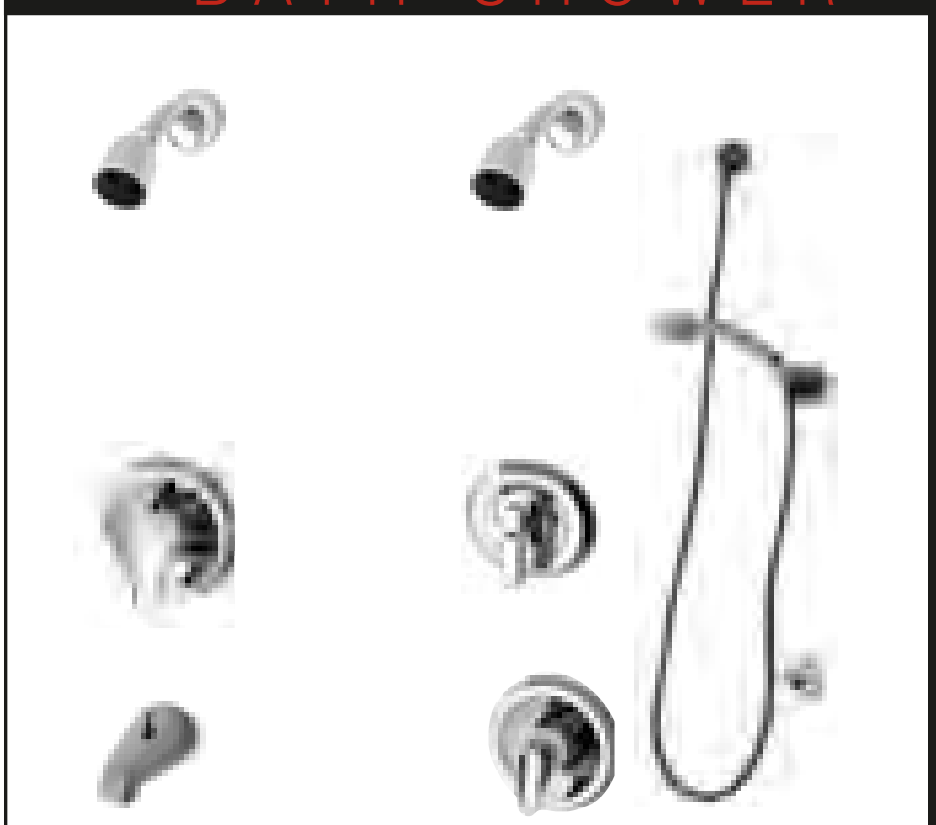


Table 1 - Population ages 65 Years and Over: 1985-2050
(Source: US Census Bureau)

BATH SHOWER SYSTEMS

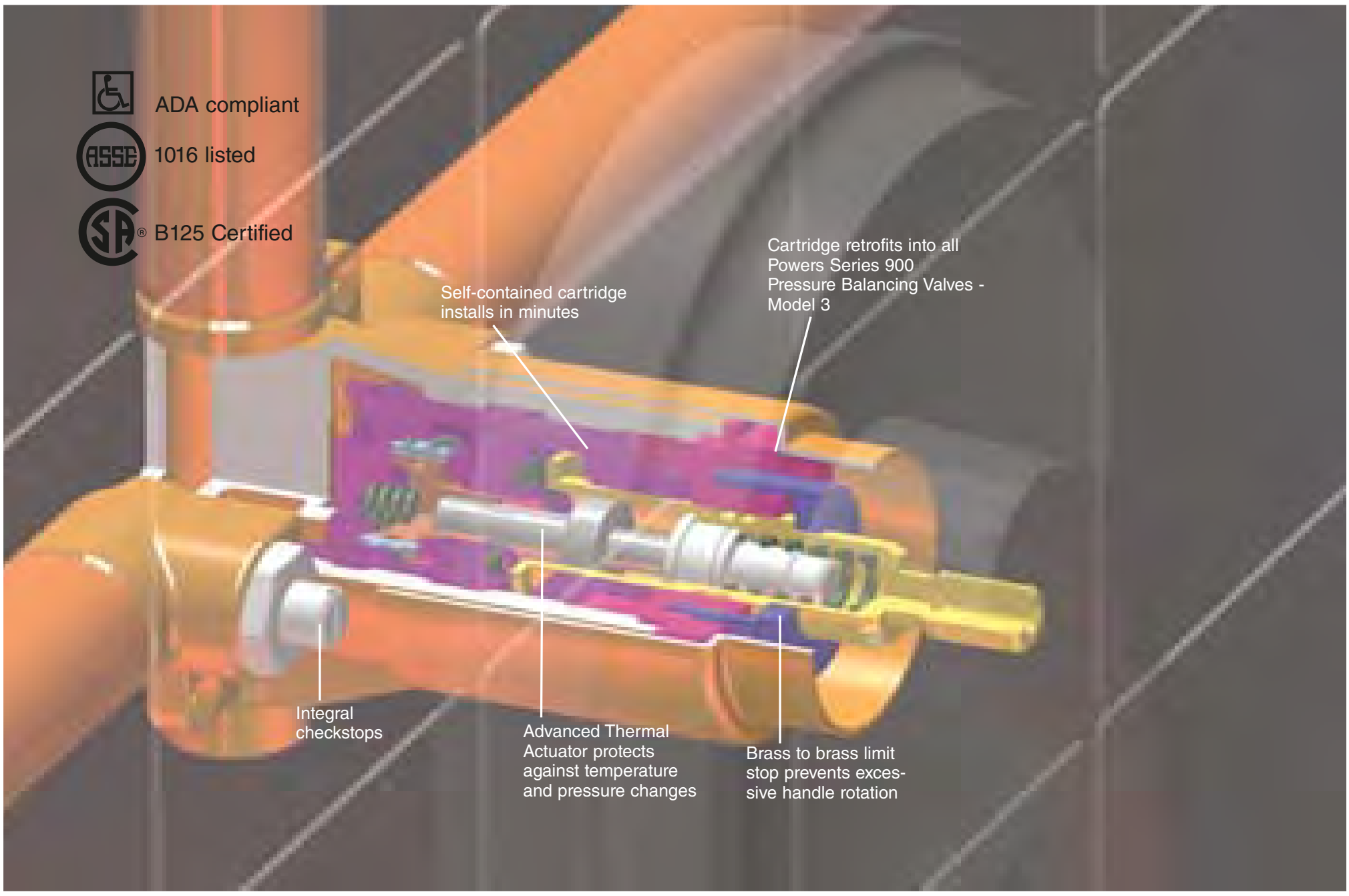


e705J1S000 e710J105Y0

e700 complete upgrade kits
220 451 (top), 220 452 (bottom),
and 220 453 (not shown)

e705 e707 e710

*additional shower system configuration shown on PS_CompUnits_e700



Features and Benefits

- Provides the thermal protection of a thermostatic valve not found with common pressure balance valves, while also responding almost instantaneously to a dramatic pressure fluctuation...even up to 50%.
- Unlike common pressure balance valves, it does not require the seasonal adjustment of the limit stop.
- Affordable. Will never be value-engineered.
- 5-year limited warranty on internal tempering mechanism.
- Capable of providing mixed outlet temperature within 10°F of hot water supply temperature for applications where low hot water temperatures exist.
- Won't stick or seize due to harsh water conditions.
- Certified and listed to the performance requirements of ASSE 1016 and CSA B125.
- Self-contained cartridge simplifies maintenance and repair. Installs in 5 minutes.
- Back-to-back installation without costly cross-over piping by simply rotating the stem 180°F re-labeling the ports.

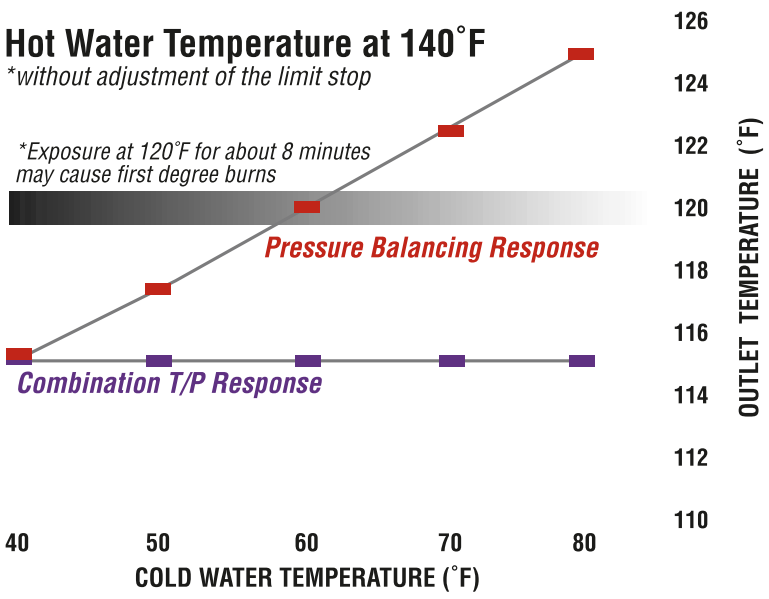
Advanced Thermal Actuation (ATA) Technology dramatically improves Valve performance and safety for the user while lowering the risk of liability for the facility owner

POWERS™

Temperature Effects

Type P valves come with a limit stop that sets the handle rotation to the maximum hot water position. The limit stop should be adjusted regularly by a certified plumber to accommodate for variations in seasonal cold water temperature especially in regional areas where extreme weather conditions dramatically affect temperature from water sources such as lakes and rivers. If the pressure balancing valve is installed during the winter months, the limit stop is usually set to deliver higher outlet temperature to compensate for colder conditions. As the weather gets warmer, temperature from cold water sources will rise causing an increase in water outlet temperature making it necessary to re-adjust the limit stop. Since temperature variation is brought about by seasonal changes, periodic adjustments to the limit stop becomes essential thereby ensuring the valve delivers safe water. Failure to regulate the limit stop in pressure balancing valves can cause higher water outlet temperature that can potentially be dangerous.

Effects of Seasonal Water Temperature Changes on Shower Valves



CW TEMP	HW TEMP	Outlet TEMP. Type P	Outlet TEMP. Type T/P
40°	140°	115.0°	115.0°
50°	140°	117.5°	115.0°
60°	140°	120.0°	115.0°
70°	140°	122.5°	115.0°
80°	140°	125.0°	115.0°
		D + 10.0°	0°

Type P: Outlet temperature increase between CW 40°F and 80°F = 10

Type T/P: Outlet temperature increase between CW 40°F and 80°F = 0

Combination valves (type T/P) eliminate the need for seasonal adjustment of the limit stop required by pressure balancing valves to accommodate variations in cold water inlet temperatures. They also protect against unauthorized adjustments. Unlike thermostatic valves (type T), combination valves must compensate for greater pressure fluctuations (50% vs 20%) within a plumbing system. The underlying reason that makes Type T/P superior is that the valves allow water to be distributed at higher temperatures (to inhibit legionella growth) while delivering safe temperatures to the bather (to protect from scalding).

Ordering Information

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Order Code

Valves
ABS Trim **e705**
Metal Trim **e710**
Flat Metal Trim **e707**

Showerheads
Economizer, Chrome-Plated ABS, Adjustable ..... **J**
Standard, Chrome-Plated Brass ..... **K**
Deluxe, Chrome-Plated Brass ..... **M**

Arm and Flange Kits
Standard Arm and Flange **1**
Deluxe Arm and Flange **2**
Standard Arm/Flange & Hi-Temp. Shut-Off **4**
Deluxe Arm/Flange & Hi-Temp. Shut-Off **5**

Tub Spouts
Diverter, Chrome-Plated Brass, 3/4" IPS ..... **Q**
Non-Diverter, Chrome-Plated, 1/2" IPS ..... **R**
Diverter, Chrome-Plated, 1/2" IPS ..... **S**
Diverter, Chrome-Plated Brass, 1/2" IPS ..... **T**
Diverter, Chrome-Plated, 1/2" Slipfit ..... **U**

Hand Shower Systems
24" Chrome ADA Wall Grab Bar System **1**
36" Chrome ADA Wall Grab Bar System **2**
Deluxe, Metal Hose, 30" Slide Bar **3**
Professional, Vinyl Hose, 30" Slide Bar **4**
Standard, Metal Hose, Two Wall Hooks **5**
Deluxe, Metal Hose, 24" Slide Bar **6**
Professional, Vinyl Hose, 24" Slide Bar **7**
Standard Plus, Metal Hose, 24" Slide Bar **8**
European, Metal Hose, 23" Slide Bar **9**
Professional, Metal Hose, 30" Glide Rail ..... **N**

Diverters
Concealed Diverting Valve, 1/2" IPS ..... **Y**
Exposed Diverter, Shower Arm-Type, Chrome-Plated ..... **Z**
Diverter, Concealed, Deluxe ABS Handle ..... **A**
Diverter, Concealed, Deluxe Metal Handle ..... **B**

Vacuum Breakers
Vacuum Breaker, Elevated, Chrome-Plated ..... **V**
Vacuum Breaker, In-Line ..... **W**

Specifications:

Construction ..... Cast Bronze
Capacity ..... 4 gpm @ 45 psid 50/50 mix
Maximum Hot Water Supply Temperature 190ºF (88ºC)
Minimum Hot Water Supply Temperature (approach temperature) ..... 10ºF (5.5ºC) above set point
Maximum Operating Pressure ..... 125psig (862 kPa)
Maximum Static Pressure ..... 125psig (862 kPa)
Minimum Flow tested to 1016 (for +/- 3ºF performance) ..... 0.5 gpm (3.781 L/min)
Shipping Weight ..... 3.5 lbs (1.6 kg)

Typical Specifications:

Valve shall meet the performance requirements of ASSE 1016, Type T/P compensating for 50% fluctuation in supply line pressures and compensate for changes in the water supply temperatures. Valve shall be capable of supplying mixed water temperature within 10°F of hot water supply temperature. Valve shall contain a powerful, paraffin-based 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 the 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 all cast bronze housing and a capacity of 4 gpm at 45psid. Valve shall include an adjustable brass to brass limit stop, factory set at 110°F. Valve shall always open through cold water to maximize bather safety.

Valve shall be Powers # e7xx. Any alternates must have written approval prior to bidding.

POWERS™

ISO 9001 CERTIFIED

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