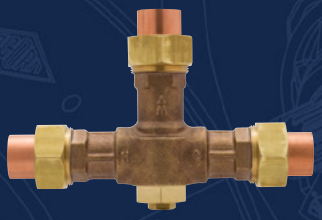
ACORN
CONTROLS®

MODEL NO. SV16

MODEL NO. ET71



OMEGA™ MODEL NO. ST7017

COMMAND STATION
MODEL NO. CSMV

Prevent and Protect

THERMOSTATIC MIXING VALVES BY ACORN ENGINEERING COMPANY

ACORN CONTROLS®

COMPLETE LINE OF SHOWERING AND TEMPERING PRODUCTS

SV16
Shower Valve

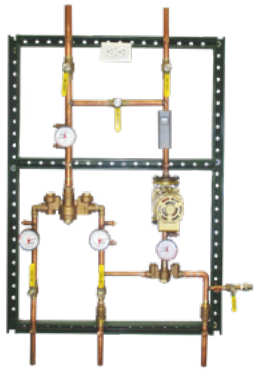
Tempflow®

ST70
Sink and Lavatory Tempering Valve

ET71
Emergency Tempering Valve

ST7069
Shower and Lavatory Tempering Valve

MV17
Hi-Lo Master Mixing Valve



CSMV
Command Station

INTRODUCTION

Acorn Engineering Company® has been manufacturing valves for plumbing fixtures in our North American manufacturing facilities for over 40 years. This core product line includes valves ideal for a variety of different applications in commercial and institutional markets. Since 2013, Acorn® has manufactured a new generation of valves as a part of our Acorn Controls division. Acorn Controls valves offer options for use with single fixtures, multiple fixtures or whole building water systems. Acorn is proud to continue providing valves while updating the product line with state-of-the-art technology that keeps people safe.

OUR PRODUCTS

All valves are either patented or have a patent pending and include state-of-the-art thermostatic sensors with fast response and long term reliability for the highest level of protection against hot or cold water supply temperature/pressure variations.

Setpoint adjustment limit stop (shower valve) or locking mechanisms (all other products) help prevent dangerous conditions or unauthorized setpoint changes.

Thermostatic point-of-use products permit the use of higher recirculation temperatures to protect against Legionella without increasing the risk of scalding. All models utilize lead-free DZR certified brass with accessible stops and strainers.

LISTINGS & APPROVALS

Acorn Controls offers a *complete line of lead-free products* that meet or exceed the following standards:

ASSE 1016	ASSE 1071
ASSE 1017	ANSI/ISEA Z358.1
ASSE 1070	ASME A112-18.1
ASSE 1069	CSA B125.3-11

WARNING: Cancer and Reproductive Harm - **www.P65Warnings.ca.gov**

LEAD-FREE

Where you see the lead-free icon, the product's wetted surface contacted by water contains less than 0.25% lead. This will meet lead-free requirements for NSF 61, Section 9 and Federal Public Law 111-380.

WHAT IS ACORN BASyC™?

Acorn BASyC™ provides distributed control and monitoring of Acorn Controls MV17/ET71 mixing valves and a wide variety of temperature, pressure and flow sensors for recirculated domestic hot water systems. Acorn BASyC is ideal for facilities that are looking to provide optimal bather safety.

UPGRADABLE WITH BASyC™

Where you see the Upgradable with BASyC logo, the product can be upgraded without repiping, a feature exclusive to Acorn BASyC.

THE WATER SAVING ADVANTAGE

WATER CONSERVATION

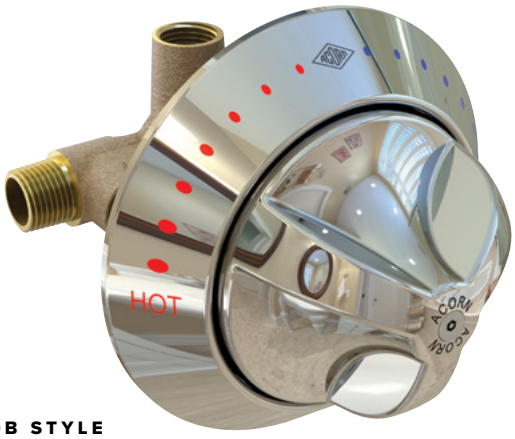
Acorn Controls thermostatic-only solutions for showering and lavatory tempering save water and reduce wait time when compared to pressure-balanced shower valves and mechanical mixers commonly used for lavatory tempering. How? Thermostatic valves automatically draw only from the hot water supply until cold water is actually needed for achieving the desired setpoint temperature. Since Pressure Balanced shower valves and mechanical mixers do not automatically limit the cold water supply, they waste cold water and slow the draw of hot water, causing a longer wait for the valve to reach the desired setpoint.

The longer the distance from the main recirculation loop or hot water supply to the valve, the greater the water savings and shorter the wait time for users of thermostatic vs. non-thermostatic solutions. In high use facilities like hospitals, universities and hotels, the thermostatic advantage can save thousands of gallons of water every year, while providing a much safer and more comfortable bathing experience.

NEO METRO - SLAB-EDGE™ BASIN
MODEL NUMBER: 9150 SERIES

SHOWER VALVE

MODEL NO. SV16



NOB STYLE
MODEL NO. SV16

LEVER STYLE
MODEL NO. SV16-LVR

ATTRIBUTE	VALUE
Flow Rate	4 GPM @ 45 psid
Minimum Flow Rate	per ASSE 1016 type T/P 1.25 gpm
Temperature Adjustment Range	85 to 115°F
Minimum Hot Water Temperature Required	5°F above setpoint
Maximum Hot Water Temperature	180°F
Maximum Supply Pressure	125 psi

FUNCTION:

SV16 is a thermostatic-based Temperature/Pressure compensating Shower Valve.

STANDARDS:

- ASSE 1016 Type T/P
- CSA B125.1
- ASME A112.18.1
- cUPC
- Lead-free

PATENT PENDING

PRODUCT FEATURES AND BENEFITS:

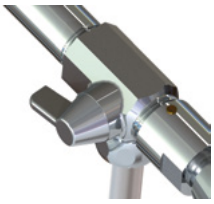
- Exceeds the setpoint control test requirements of ASSE 1016-2011, T/P at 1.25 GPM as certified by IAPMO Lab tests.
- Maximum temperature limit stop is factory set to 110°F – no installer adjustment required.
- Lead-free DZR Brass with corrosion-resistant internal components.
- Allows a bath temperature as high as 5 degrees below the hot water supply temperature, 5 degree approach temperature allows lower hot water distribution temperature, which is critical when low hot water supply temperatures are required by code or as a means to help avoid scalding.[1]
- Non-binding ceramic shut-off with non-rising stem ensures long-term reliability, eliminating the gap between the handle and faceplate to reduce risk of pinching, and provides ADA compliance throughout the entire temperature operating range.
- Integral check stops and accessible inlet strainers.
- Field reversible cartridge eliminates the need for cross-piping in back-to-back installations and helps easily rectify a reverse piping installation error.
- Thermostatic control is recommended by the CDC and ASHRAE in publications addressing higher hot water supply temperatures as a means of controlling the spread of Legionella.
- Comparable in cost to commercial grade Pressure Balance (Type P) shower valves.
- Available in all metal, ligature-resistant (std) or lever handle trim packages.
- Ideal for use with: Standard T/P valve for all Acorn Shower-Ware products and systems.
- IAPMO certified for use with low flow showerheads.

[1] *Based on scalding concerns while using Pressure Balancing valves and/or no scald protection at the fixture. Maintaining a minimum of 124°F throughout the domestic hot water recirculating system is recommended by the CDC, ASRAE, OSHA, AWT and others in published documents relating to Legionella control and prevention.*

PATENT PENDING PRODUCT OPTIONS AND ACCESSORIES

MODEL NO.SV16

ECONO-SHOWERHEAD
MODEL NO. ESH15



INLINE 3 PORT DIVERTER VALVE
MODEL NO. IDIV

HANDHELD GRAB BAR MOUNTING BRACKET
MODEL NO. HHGB

HANDHELD SUPPLY ELBOW
MODEL NO. HHSE

HANDHELD SHOWER
MODEL NO. HHW

GRAB BAR
MODEL NO. 1108

TUB SPOUT
MODEL NO. TUB1

SHOWERHEADS - FEATURING CONSTANT FLOW RESTRICTORS:

- 1.5 or 2.5 GPM Chrome Plated Brass Conical Ligature-Resistant Showerhead
- 1.5 or 2.5 GPM Chrome Plated ABS Economy Showerhead
- 1.5 or 2.5 GPM Large Chrome Plated Brass Showerhead
- 1.5 or 2.5 GPM Chrome Plated Brass Showerhead

SHOWERHEAD CONNECTION:

- Deluxe Arm and Flange

TUB SPOUTS:

- Tub Spout, Chrome Plated Brass w/ Divert. & 1/2" NPT or 3/4" NPT Adapter
- Tub Spout, Chrome Plated Zinc w/ Divert. & 1/2" NPT or 3/4" NPT Adapter
- Tub Spout, Chrome Plated Brass w/ Divert. & 1/2" Slip Fit Connection
- Tub Spout, Chrome Plated Zinc, No Divert. w/ 1/2" NPT Connection

HANDHELD SHOWER HANDLES:

- 1.5 GPM Chrome Handheld Shower
- 1.5 GPM White Handheld Shower

HANDHELD SHOWER HOSE:

- 60" Stainless Steel or Vinyl Handheld Shower Hose

HANDHELD MOUNTING:

- 24" or 30" Glide Rail
- Handheld Grab Bar Mounting Bracket
- Handheld Wall Mounting Bracket

DIVERTER:

- Diverter Valve
- Inline 3 Port Diverter Valve

GRAB BARS:

- 24" or 36" Grab Bar

VACUUM BREAKER:

- Exposed Elevated Vacuum Breaker
- Inline Vacuum Breaker

HANDHELD SUPPLY CONNECTION:

- Handheld Supply Elbow
- Quick Disconnect

HI-LO MASTER MIXING VALVES

MODEL NO. MV17

MODEL NO. 480BADA

MODEL NO. MV17

FUNCTION:

MV17 is intended for use in Hot Water Distribution Systems.

STANDARDS:

- Far exceeds ASSE 1017 requirement
- cUPC
- Lead-free
- CSA B125.3
- Patent No. 9,898,017

ATTRIBUTE	VALUE
Flow Rate	Up to 225 GPM @ 45 psid
Temperature Adjustment Range	100 to 160°F
Minimum Hot Water Temperature Required	5°F above setpoint
Maximum Hot Water Temperature	180°F
Maximum Supply Pressure	125 psi
IAPMO certified Minimum flow Rate, per ASSE 1017	MV17-1: 0.5 GPM MV17-2: 1 GPM MV17-3: 2 GPM MV17-4: 3 GPM MV17-5: 4 GPM

PRODUCT FEATURES AND BENEFITS:

- Lead-free DZR Brass (chrome-plated brass optional) with corrosion-resistant internal components.
- IAPMO certified minimum flows as low as 0.5 gpm far exceeds the requirements set forth in ASSE 1017.
- All valves provide Hi-Lo performance equal or superior to other manufacturers' Hi-Lo valves.
- All valves include ball valve shut-off – a proven, standard method for shut-off which does not trap debris and eliminates the need for additional shut-off valves.
- Integral strainers are accessible for cleaning.
- Reliable integral cartridge style checks.
- 5 available models ensure the appropriate size for your application.
- Connections: 1/2" to 2" NPT
- Allen wrench setpoint adjustment and lock nut resists unauthorized setpoint changes.
- The MV17 is capable of exceeding the temperature control accuracy requirements of ASSE 1017 at zero draw, i.e. user demand. The system must include a continuously operating recirculation pump capable of meeting the minimum flow rate of .5 to 4 GPM (based on the model) with a properly adjusted balancing valve. See our MV17 submittal sheet for more information.

EMERGENCY TEMPERING VALVES

MODEL NO. ET71

FUNCTION:

ET71 is intended for use with emergency eye washes, face washes, eye/face wash combinations, and drench showers.

STANDARDS:

- ASSE 1071
- CSA B125.3
- cUPC
- Lead-free
- Patent No.
  - 9,898,017B2
  - 9,879,658

PRODUCT FEATURES AND BENEFITS:

- Lead-free DZR Brass with corrosion-resistant internal components.
- IAPMO Lab Certified to ASSE 1071 with minimum flow rates as low as 0.5 GPM.
- The ET71 is capable of exceeding the temperature control accuracy requirements of ASSE 1071 at zero draw, i.e. user demand. The system must include a continuously operating recirculation pump capable of meeting the minimum flow rate of 0.5 to 3 GPM (based on the model) with a properly adjusted balancing valve. See the ET71 submittal sheet for more information.
- Integral strainers are accessible for cleaning.
- Reliable integral cartridge style checks.
- 4 models ensure the appropriate size/flow for your application; eye washes, face washes, drench showers and combination units.
- Patented, instantaneous cold water bypass ensures that hot water supply failure cannot prevent the cold water from reaching the safety device.
- Connections: 1/2" to 1-1/2" NPT
- Hex key setpoint adjustment and lock nut resists unauthorized setpoint changes.
- Optional Outlet Temperature Gauge and Connection "T."
- Unlike check stops that are standard with competitive products, optional Acorn locking ball valves meet ANSI Z358.1 and ASSE 1071 requirements that state "if shut-off valves are installed in the supply line for maintenance purposes, provisions shall be made to prevent unauthorized shut-off." Acorn's optional locking ball valves eliminate the need for a lockable cabinet to prevent unauthorized shut-off.
- Ideal for use with: Acorn Safety Eye Washes, Eye/Face Washes, Drench Showers, and Combination Units to provide tepid water per ANSI z358.1.

ATTRIBUTE	VALUE
Flow Rate	up to 150 GPM @ 45 psid
Temperature Adjustment Range	60 to 95°F
Minimum Hot Water Temperature Required	5°F above setpoint
Maximum Hot Water Temperature	180°F
Maximum Supply Pressure	125 psi
IAPMO certified Minimum Flow Rate, per ASSE 1071	ET71-1: 1GPM ET71-2: 1GPM ET71-3: 3GPM ET71-4: 3GPM

SUPPLY FIXTURES

MODEL NO. SFET

Acorn Controls offers a full line of supply fixtures that are 100% factory assembled and tested. They typically include everything required to ensure proper installation, set-up, service and troubleshooting. Supply fixtures are available using ST7069, MV17 or ET71 thermostatic mixing valves.

Typical items included:

- Ball valves on the inlets and outlet.
- Outlet temperature gauge.
- Piping.
- Tempering valve with integral checks and strainers.
- Cabinets are offered in wall-mounted and fully recessed versions, either painted or stainless steel with a piano hinge and lock.

VARIOUS INLET AND OUTLET ORIENTATIONS

- Hot/cold water by-pass.
- Inlet temperature gauges.
- Acorn is pleased to consider other modifications and options upon request.

SFET SERIES

UPGRADABLE WITH BASyC™

FEATURES:

- Lead-free supply fixtures based on ET71 Series Mixing Valves.
- Delivers safe, tepid water to safety systems such as eye/face washes and drench showers.
- 4 models/sizes based on minimum flow performance requirements and maximum flow demands.
- Controls temperature for both recirculating and non-recirculating supply systems.
- Special configurations allow for manifolding multiple valves, adding test ports, integrating hot and/or cold water by-pass lines, pumps, etc., all in one complete assembly.
- Available with upgradable BASyC option.

SFMV and SFMMV SERIES

UPGRADABLE WITH BASyC™

FEATURES:

- Lead-free supply fixture based on MV17 Master Mixing Valves.
- Controls temperatures in Hot Water Distribution Systems.
- 5 models/sizes for small to large commercial applications.
- Can be used with recirculating and non-recirculating systems, depending on specific fixture set up.
- SFMMV fixtures come standard with the BASyC upgradability.
- **SFMV fixtures can be upgraded to an Acorn BASyC system.**

SFST SERIES

UPGRADABLE WITH BASyC™

FEATURES:

- Lead-free supply fixtures based on the ST7069 Mixing Valve.
- Delivers safe, tempered water to point of use fixtures such as sinks, baths and showers.
- Ideal for commercial, institutional or residential applications.
- Available with upgradable BASyC option.

FUNCTION:

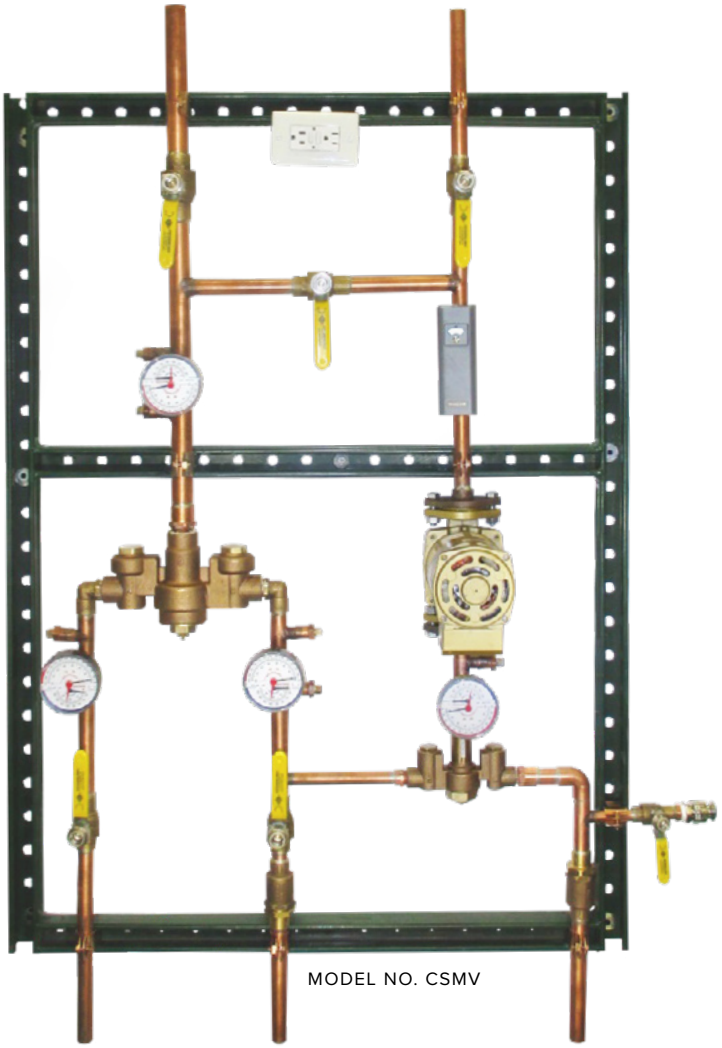
The Acorn Controls Command Station is a self-contained tempering and recirculating system that works with either the MV17 or ET71 valves. These systems are designed to reduce and/or eliminate the potential for improper piping, missed connections and/or components that are critical to the performance of the facilities hot water (CSMV) or tepid (CSET) water systems. Each unit is factory tested, engineered and customized as required to provide the exact features and benefits needed.

CSMV

The CSMV utilizes the MV17 valve (or valves) which are IAPMO approved/certified at the published minimum flow which far exceeds the performance requirements set forth in ASSE 1017 standard. When teamed with a properly sized recirculation pump, the CSMV offers the best in hot water distribution and control. As your needs change, the CSMV can accommodate by offering the first BAS upgradable system. Each unit is shipped with all the sensor ports required to easily add temperature, pressure and flow measurement capability utilizing Acorn BASyC™.

CSET

The CSET utilizes the ET71 valve (or valves) which are IAPMO approved/certified at the published minimum flow which far exceeds the performance requirements set forth in ASSE 1017 standard. When teamed with a properly sized recirculation pump, the CSET offers the best in tepid water distribution and control. As your needs change, the CSMV can accommodate by offering the first BAS upgradable system. Each unit is shipped with all the sensor ports required to easily add temperature, pressure and flow measurement capability utilizing Acorn BASyC.



MODEL NO. CSMV

FEATURES AND BENEFITS

- Lead free, DZR brass body with corrosion-resistant and lead free internal components. Integral checks with strainers prevent crossflow and prevent debris from entering/damaging the precision internal components of the valve.
- Temperature adjustment is made using an Allen wrench. A locknut on the bonnet prevents unauthorized or accidental temperature adjustment.
- Commercial quality thermal actuator provides repeatable, reliable performance.
- Includes lockable brass ball valves.
- Combination Temperature/Pressure gauges.
- Valves are IAPMO certified.
- Factory assembled to a heavy duty, welded uni-strut frame for quick and easy installation.
- Soldered ridges assembles are 100% air-under-water tested to 80 psi in order to ensure leak free installations.
- A GFI receptacle for electrical components.
- Command Stations are capable of exceeding the temperature control accuracy requirements set forth by ASSE at Zero GPM actual user demand. To achieve this, the system must include a properly sized and continuously operated recirculation pump that delivers at least the minimum flow rate of the valve and has a properly adjusted balancing valve.

BASyC™ DIGITAL MIXING VALVE

MODEL NO. ABMV

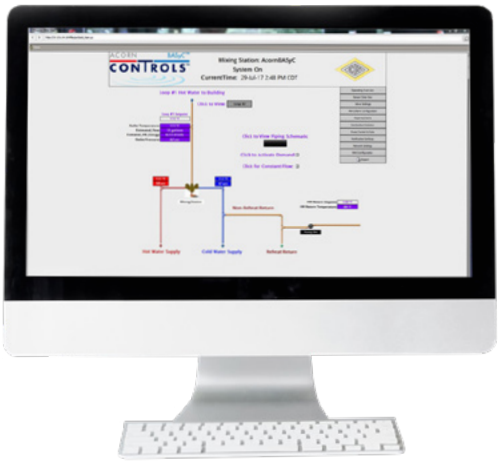
FUNCTION:

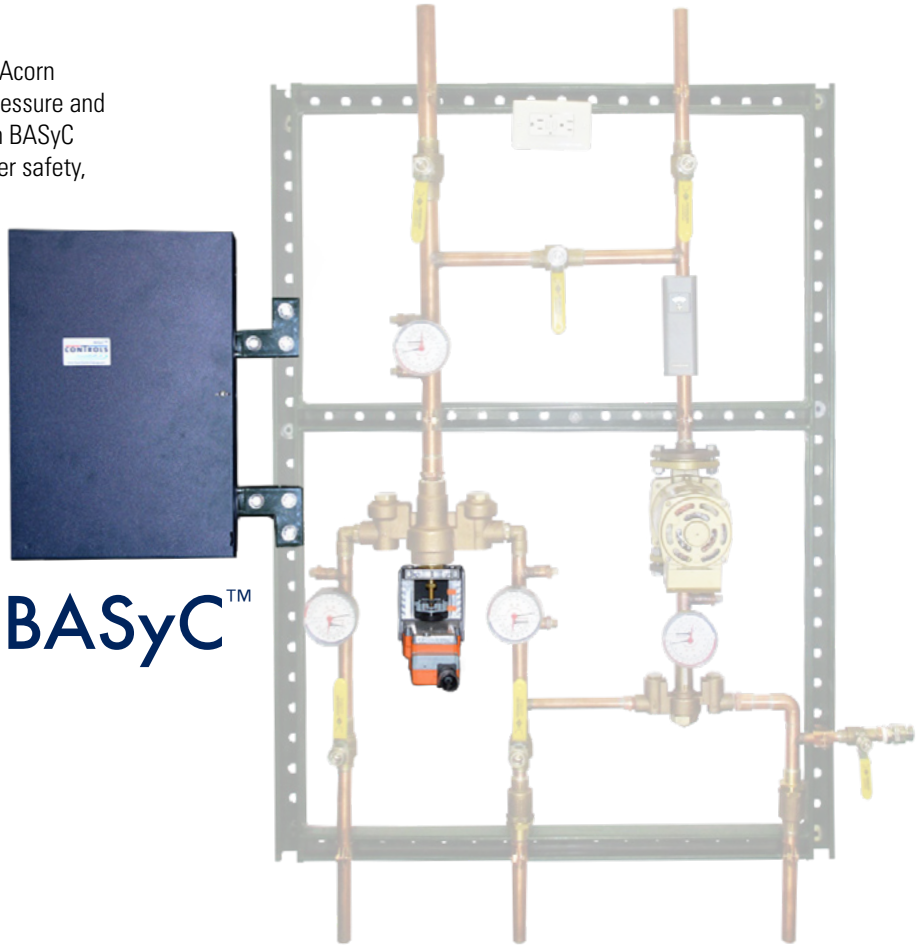
Acorn BASyC provides distributed control and monitoring of Acorn Controls mixing valves and a wide variety of temperature, pressure and flow sensors for recirculated hot/tepid water systems. Acorn BASyC is ideal for facilities that are looking to provide optimal bather safety, legionella control/monitoring and customized solutions.

STANDARDS:

» Based on valve selection

Operating Overview Screen





Command Station upgraded with BASyC

FEATURES AND BENEFITS

» A highly customizable report generator with the ability to export the data to a pdf, HTML, TEXT or CSV file for analysis beyond BASyC's powerful internal capabilities.

» BAS adapters for BACnet, Lonworks, ModBus or oBIX without external adapters or gateways.

» Primary and Secondary LAN adapters with full isolation from each other.

» RS-2323 and RS-485 adapters.

» The capability of 34 inputs/outputs: 16 universal inputs, 10 relay outputs, 8 analog outputs.

» One BASyC system can control up to 4 valves and 2 separate temperature loops or zones.

» A BASyC system is based on an control valve included as part of a Command Station or Supply Fixture assembly.

» User-programmable sanitization with available email alert includes "Safe Start"confirmation to minimize the risks associated with sanitizing recirculation temperatures.

» BASyC's open architecture allows for cost-effective customization. Any input or output not used for the recirculation LTHW application can be assigned to monitor and activate or control 3rd party devices. Contact Acorn for details and a price quotation.

» User-selectable outlet flow sensors give BASyC the capability to provide accurate flow and energy data at any user demand.

» BASyC is a 24 volt system and does not require an electrician for installation. Simply connect it to the nearest available 115VAC outlet.

» Redundancy in capacity and/or control available without the cost of a fully duplicated system. BASyC has the flexibility to offer whatever level of redundancy required at a low cost.

» An off-the-shelf, proven reliable, Belimo valve actuator with auto-ranging to make replacement fast, simply and low cost. Time-consuming and complicated repairs or servicing are never necessary.

ACCESSING ACORN BASyC™

There are multiple ways to access Acorn BASyC and its many features, functions and capabilities. Since BASyC is web browser capable, most users will access it from their desk via their LAN. It may be accessed via the handheld BASyC LCD user interface. No installation of special software is required for either method.

ACCESSING THROUGH THE LAN OR INTERNET USING THE EMBEDDED SOFTWARE:

Any user with the proper ID and password can access BASyC from their computer without the need to install any special software. Once logged in to BASyC, the users credentials give them access to:

- Configure the system
- Set alarms/alerts
- Control settings for email/texting alarm/alert messages
- Run reports
- Export data
- Reset the on-screen energy and flow data
- Verify the sensors signals are being received
- And more

Optional User Interface

ACCESSING THROUGH THE LCD DISPLAY:

- Changing the set point
- Viewing inlet/outlet temperatures and pressures
- Initiating sanitization
- Viewing flow and energy data
- And more

Acorn BASyC system that features two SFMMV supply fixtures, installed at Northwestern Medicines - Lake Forest Hospital

ACORN BASyC™ AND REDUNDANCY

Many design engineers and users demand redundancy during routine servicing or product replacement. All BASyC systems come standard with actuator/thermostatic sensor control redundancy to insure temperature control during:

- Power failure.
- Outlet sensor failure or replacement.
- Software reboot.
- Internal element degradation due to water quality and/or time.
- Actuator degradation over time.

Additionally, if you need redundancy in electronic control, capacity or both, BASyC's powerful automation capability will allow Acorn to address your specific requirements. Offering fully automatic to a combination of automatic and manual transfer options, BASyC can be configured and equipped to ensure that the most important safety and comfort-related parameters and capabilities remain active:

- Outlet temperature·setpoint control.
- Flow that meets peak demand.
- Communications for alarm/alert notifications.
- Recirculation with an integral backup pump.

Built to your specific requirements, the result will be a system that provides cost-effective redundancy superior to what's available from any competing systems. Please contact Acorn for details.

TEMPFLOW®

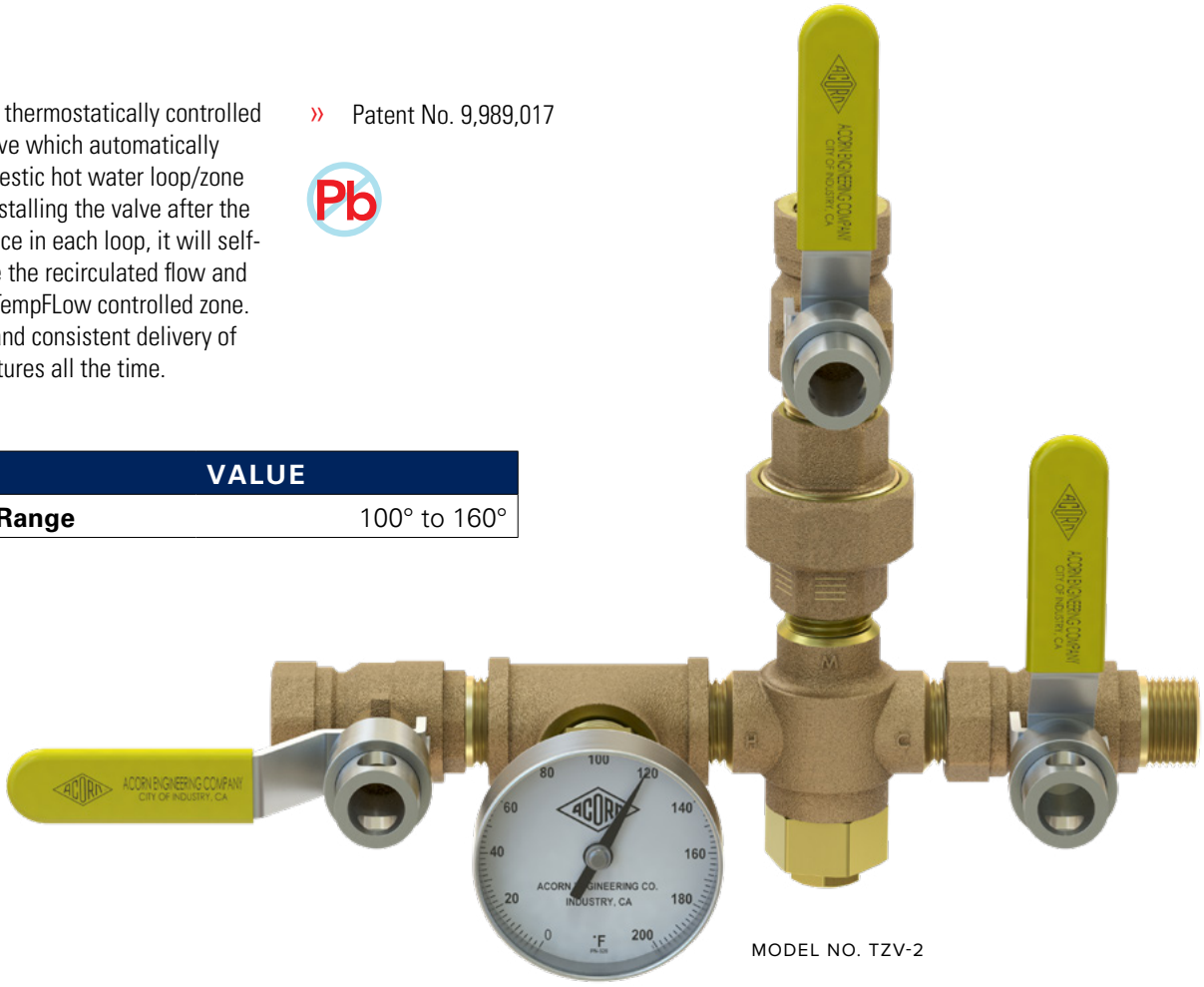
TZV SERIES

FUNCTION:

The TempFlow is a thermostatically controlled zone balancing valve which automatically maintains the domestic hot water loop/zone temperature. By installing the valve after the last hot water device in each loop, it will self-adjust and balance the recirculated flow and heat loss of each TempFLow controlled zone. This ensures fast and consistent delivery of hot water to all fixtures all the time.

» Patent No. 9,989,017

ATTRIBUTE	VALUE
Temperature Range	100° to 160°



MODEL NO. TZV-2

PRODUCT FEATURES AND BENEFITS

» Eliminates the need for time-consuming and costly setup balancing and frequent rebalancing required by Circuit Setters.

» Lead-free certified DZR brass body with corrosion-resistant and lead-free internal components.

» Includes a test port which can also serve as a bleed valve during setup.

» Integral and cartridge-style check with accessible strainers to prevent backflow and to filter debris from entering the valve.

» The TempFlow is field adjustable from 100° to 160°F. Replacement is not required if the target temperature changes.

» An Allen wrench/locknut helps prevent unauthorized setpoint adjustment.

» Commercial quality paraffin actuator provides repeatable, reliable performance.

» Factory set to 110°F (43°C).

» Enables/Promotes less expensive pumps.

» Reduces installation and maintenance costs.

» Reduces pipe/fitting erosion by minimizing fluid velocities.

AUTOMATIC TEMPERATURE MONITORING ALARM SYSTEM

MODEL NO. ATM-1

MODEL NO. ATM-1

SPECIFICATIONS:	
Mounting:	Wall or Desk
Electrical:	24 VAC
Transformer:	10 VAC to 24 VAC Plug-in
Power Consumption:	40 VA Max.
Temp Range:	40°F - 199°F (4°C - 93°C)
Accuracy:	± 1.0°F (± 1.8°C)
Sensor:	Type "T" Thermocouple
LED Display:	Red and Green
Alarm:	High Temperature Warning/Alarm

The Acorn Controls Automatic Temperature Monitor (ATM) is a microprocessor based controller ideal for sensing and alerting of abnormal temperature conditions. Target applications for this device are in health care and nursing facilities but can be used anywhere a temperature alarm is required.

FUNCTION

The Acorn Controls ATM-1 Automatic Temperature Monitoring Alarm System is ideal for monitoring domestic and institutional tempered water systems. With the use of an optional solenoid valve, the ATM-1 will alert and shut down tempered water flow when the water temperature exceeds preset limit conditions. Most common commercial uses would include hospitals, shower rooms, therapeutic applications, boilers and hot water heaters.

PRODUCT FEATURES AND BENEFITS

- Microprocessor Based Temperature Controller
- 110 VAC to 24 VAC Plug-In Transformer (40 VA)
- LED Temperature, Limit Setting, and Alarm Display
- Stainless Steel Cabinet
- Type "T" Thermocouple, with 10 Feet Wire
- Compression Fittings
- No Electrical Contractor is Required (Plug & Play)
- Red Warning Light and Buzzer
- Keyed Buzzer
- Latching Warning and Limit Alarm
- Manual Reset
- High/Low Temperature Monitoring
- Adjustable Temperature Settings
- Security Lockout Code

SHOWERING & LAVATORY TEMPERING VALVE

MODEL NO. ST7069

MODEL NO. ST7069

FUNCTION:

ST7069 is intended for use with single temperature showers, sinks, bidets, lavatories and bathtubs.

STANDARDS:

- ASSE 1069
- ASSE 1070
- CSA B125.3
- cUPC
- Lead-free
- Patent No. 9,989,017

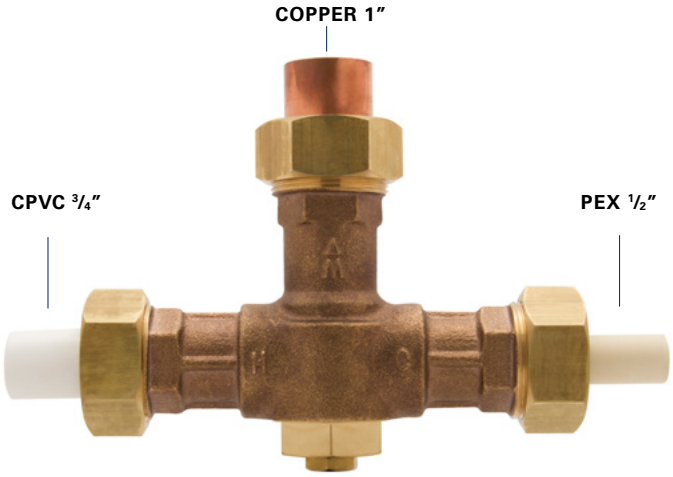
ATTRIBUTE	VALUE
Flow Rate	12 GPM @ 45 psid (handles up to 24 low flow faucets or 8 fixed temperature showers)
Temperature Adjustment Range	90 to 115°F
Minimum Hot Water Temperature Required	10°F above setpoint under normal operating conditions
Maximum Hot Water Temperature	180°F
Maximum Supply Pressure	125 psi

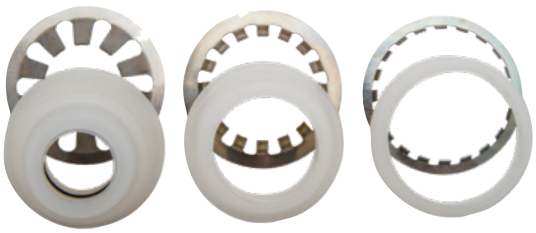
PRODUCT FEATURES AND BENEFITS:

- Lead-free DZR Brass with corrosion-resistant internal components.
- IAPMO Lab Certified to ASSE 1070 at .5 GPM, for excellent control accuracy of a single 1/2 GPM faucet.
- IAPMO Lab Certified to ASSE 1069 at .5 GPM for excellent control of a single, low flow, fixed temperature shower.
- Integral strainers are accessible for cleaning.
- Reliable integral cartridge style checks.
- 1/2 NPT connections.
- Allen wrench setpoint adjustment and lock nut resists unauthorized setpoint changes.
- Optional inlet ball valves and outlet gauge are available.
- Ideal for use with: Acorn Group Showers and Whitehall Hydrotherapy Tubs.

OMEGA™ WITH TWISTCONNECT™

MODEL NO. ST7017



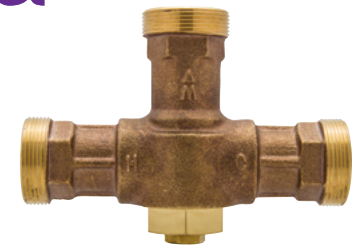


TWISTCONNECT™ DIRECT
TO COPPER, PEX & CPVC TUBING

With the Omega ST7017, pipe sizes and materials can be mixed and matched to suit your installation.

Omega™

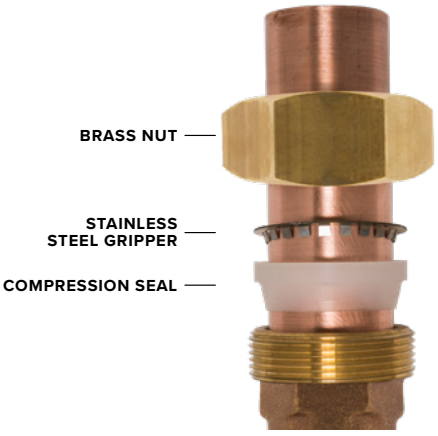
MODEL ST7017



(SHOWN WITHOUT TWISTCONNECT)
MODEL NO. ST7017

(UNASSEMBLED)
TWISTCONNECT ATTACHMENT

PATENT PENDING ON **TWISTCONNECT™**



ATTRIBUTE	VALUE
Flow Rate	1/2" 18.6 gpm, 3/4" 21.3 gpm, 1" 24.0 gpm (at 45 psid)
Temperature Adjustment Range	100 to 130°F
Minimum Hot Water Temperature Required	5°F above setpoint under normal operating conditions
Maximum Hot Water Temperature	180°F

FUNCTION:

The Omega ST7017 is intended for use in hot water distribution systems, as a hot water extender and/or to limit the distribution temperature supplied to sinks, bidets, lavatories, showers and/or bathtubs.

STANDARDS:

- ASSE 1070
- ASSE 1017
- CSA B125.3
- Lead-free
- Patent No. 9,898,017

PRODUCT FEATURES AND BENEFITS

- Lead-free DZR brass body with corrosion-resistant and lead-free internal components.
- Integral cartridge-style checks prevent cross-flow and strainers filter debris from entering the valve.
- Temperature adjustment is made using an Allen wrench. A locknut on the bonnet prevents unauthorized or accidental temperature adjustment.
- Commercial quality paraffin thermal actuator provides repeatable, reliable performance.
- Factory set to 105°F (41°C) and field adjustable.
- IAPMO certified to ASSE 1070 down to 0.1 GPM (0.4 LPM) within ± 7°F (5.5°C) .
- IAPMO certified to ASSE 1017 down to 0.1 GPM (0.4 LPM).
- Patent Pending TwistConnect™ allows for quick, easy and direct connection to Copper, PEX or PVC with no added fittings, connectors or special tools.
- The ST7017 is capable of exceeding the temperature control accuracy requirements of ASSE 1070 and 1017 at all flow requirements without requiring a continuously recirculating pump.
- Can be used as a hot water extender to increase hot water capacity.

ALPHA™ THERMOSTATIC SHOWER/ LAVATORY TEMPERING VALVE

MODEL NO. STP7069

FUNCTION

Alpha Model ST7069 is intended for use with group shower(s), meaning it could be used for one or two showers, sinks, tubs and lavatories.

STANDARDS

- ASSE 1069
- ASSE 1070
- CSA B125.3
- cUPC
- Lead-free
- Patent No. 9,898,017

MODEL NO. STP7069

ATTRIBUTE	VALUE
Flow Rate	4.5 GPM @ 45 psi
Temperature Adjustment Range	85°F-115°F
Minimum Hot Water Temperature Required	5°F Above Set Point
Maximum Hot Water Temperature	180°F
Maximum Supply Pressure	125 PSI

Alpha™

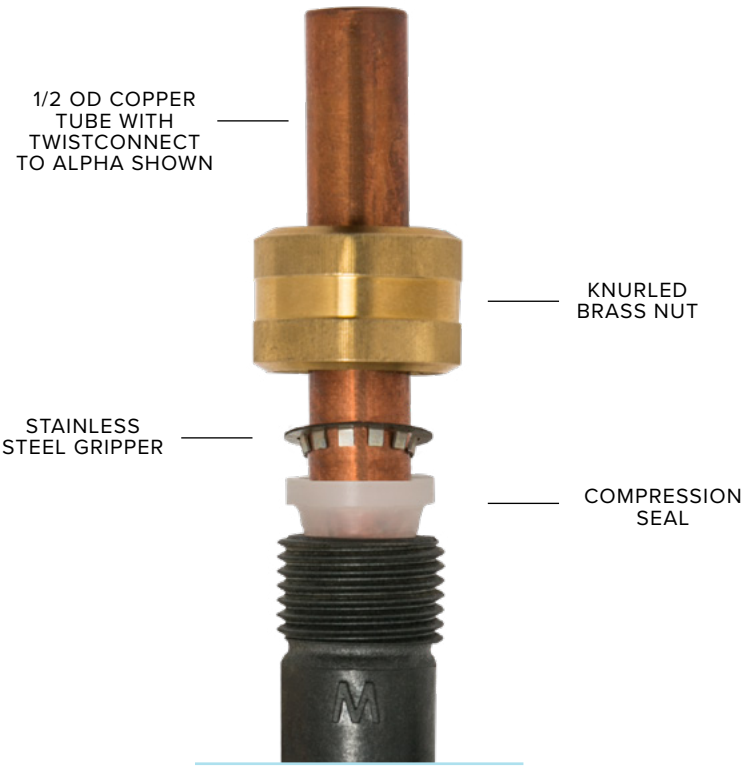
MODEL STP7069

PRODUCT FEATURES AND BENEFITS

- Noryl body/bonnet construction utilize Lead-free internal components that result in a corrosion/lime-resistant valve.
- IAPMO Lab Certified to ASSE 1070 at 0.25 GPM, for excellent control accuracy of a single low flow faucet. Also works with high flow and multiple faucets.
- IAPMO Lab Certified to ASSE 1069 at 1.25 GPM for excellent control of a single, fixed temperature shower.
- Integral mounting bracket.
- Integral cartridge-style checks prevent cross-flow.
- Strainers prevent debris from entering the valve.
- Factory set to 105°F (41°C) and field adjustable.
- Available with ½" NPS connections that accept standard flex connectors where desired. Optionally available with ⅜" or ½" Twistconnect™ fittings for quick/easy installtions using copper, PEX and/or CPVC.

TWISTCONNECT™

ALPHA™ MODEL STP7069, MODEL NO. ST70-12 and OMEGA™ MODEL ST7017



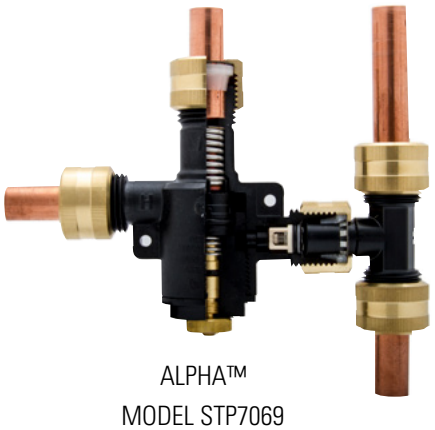
INSTALLATION:

PATENT PENDING

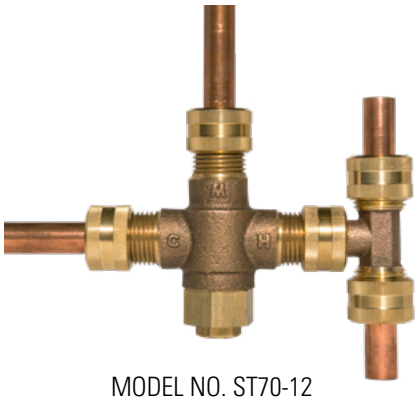
- Cut and deburr tube
- Assemble nut, gripper, and ferrule
- Hand tighten nut and wrench tighten ¼ turn

PRODUCT FEATURES AND BENEFITS:

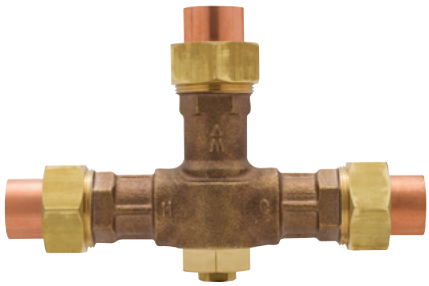
- No special tools required to assemble or disassemble
- Meets the requirements of ASSE 1061
- When tightened, provides stiff and rigid support to valve
- Only one kit required to accommodate copper, PEX and/or CPVC connections
- Offered in many sizes:
  ST70 & STP7069 – 3/8" & ½" ST7017 – ½", ¾", 1"
- TwistConnect tee offered in Noryl or DZR, Lead free brass (3/8 or 1/2 OD tubing)
- SS gripper prevents blow-out
- Kynar PVDF thermoplastic utilized to provide high temperature/chemical resistance
- Brass nut for strength and durability



ALPHA™
MODEL STP7069



MODEL NO. ST70-12



OMEGA™
MODEL ST7017

TEMPERING VALVE

MODEL NO. ST70

MODEL NO. ST70

FUNCTION:

ST70 is a valve intended for use with lavatories, tubs, and single or multi-station sinks.

STANDARDS:

- ASSE 1070
- CSA B125.3
- cUPC
- Lead-free
- Patent No. 9,898,017

PRODUCT FEATURES & BENEFITS:

- Lead-free DZR Brass with corrosion-resistant internal components.
- Brass or chrome plate finish.
- ST70: IAPMO Lab Certified to ASSE 1070 at 0.25 GPM, for excellent control accuracy to a single low flow faucet.
- Allen wrench temperature adjustment and locknut resists tampering.
- Reliable integral cartridge style checks and strainers improve reliability and ensure safe performance.
- Maximum Setpoint for ASSE 1070 performance: 115° F.
- Connections: Available with ½" NPT or 3/8" compression fittings, both of which will accept standard flex line connections.
- Factory set at 105° F
- Ideal for use with: Acorn lavatories and combys, Whitehall Manufacturing Patient Care Units, and Chronomite Instantaneous Electric Water Heaters.

ATTRIBUTE	VALUE
Flow Rate	ST70-12: 4.5 GPM @ 45 psid ST70-38: 4.0 GPM @ 45 psid
Temperature Adjustment Range	85 to 115°F
Minimum Hot Water Temperature Required	5°F above setpoint under normal operating conditions
Maximum Hot Water Temperature	180°F
Maximum Supply Pressure	125 psi

SHOWERING & LAVATORY TEMPERING VALVE

MODEL NO. ST7069

The one-valve solution for tempering groups of showers and lavatories in public restrooms.

MODEL NO. 1709HEU

ADA STAINLESS STEEL HIGH EFFICIENCY URINAL BY ACORN ENGINEERING COMPANY

ACORN ENGINEERING COMPANY

MODEL NO. 3802

TWO STATION CAST SOLID SURFACE MERIDIAN®-EDGE™ WASH BASIN BY ACORN ENGINEERING COMPANY

ACORN ENGINEERING COMPANY

FIGURE NO. 2005

FLOOR DRAIN WITH ROUND ADJUSTABLE STRAINER HEAD JAY R. SMITH MFG. CO.

SMITH SINCE 1926 JAY R. SMITH MFG. CO.

ACORN CONTROLS™

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"What sets us apart from competitors is our engineering and spirit. We have a 'can-do' spirit. If you ask us to do something, we will do it or figure out how to do it. That's the part our customers like, that's the part we like."

- Don Morris, President and CEO

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