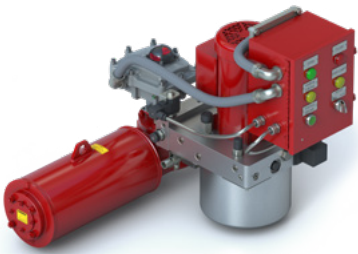


Safe, Reliable, & Ergonomic Solutions for District Heating & Steam Systems



OVERVIEW

District heating systems are essential for temperature control in large buildings and institutional campuses. These systems depend on centralized hot water or steam sources, serving a wide range of facilities. As safety regulations become more stringent, operators are seeking reliable, failsafe valve solutions to ensure safe and efficient operation.

Note: This customer success story is based on multiple successful installations in district heating and steam supply applications, delivered through trusted contractors and system integrators.

CHALLENGE

Traditional globe and rotary valves often rely on pneumatic actuators, which can become unreliable over time due to aging infrastructure, leaks, and frequent maintenance needs. Diaphragm-operated pneumatic actuators, in particular, require regular attention and replacement of components. In high temperature water and steam systems, even minor fluctuations can lead to dangerous conditions, and these systems require careful control to avoid operational risks.

Operators face several challenges:

- > Frequent failures and downtime due to aging pneumatic actuators.
- > Safety concerns related to valve operation and maintenance.
- > Space constraints and the need for flexible installation options.
- > Pressure to comply with evolving safety regulations.

SOLUTION

Bray delivers a comprehensive solution for district heating and steam system operators by integrating advanced valve technology with innovative electro-hydraulic actuator packages.

VALVE TECHNOLOGY

Bray's High Performance Butterfly Valves (HPBV) and Triple Offset Valves (TOV) are engineered to withstand the demanding conditions of hot water and steam service. These valves provide guaranteed zero-leak shutoff and robust performance, outperforming traditional globe and rotary valves, especially in applications where safety and reliability are paramount.

APPLICATION DETAILS

Plant Type	Institutional and municipal facilities.
Fluid	Hot water and steam.
Service	Automated valve packages.
Installation Dates	2024 & 2025

BRAY PRODUCT DETAILS

Valve Types	High Performance Butterfly Valve (HPBV) Series 43 Series 46 Triple Offset Valve (TOV) Tri Lok Series
Sizes	NPS 6, 8, 10 DN 150, 200, 250
Actuator	Electro-hydraulic actuator with mechanical spring failsafe. Remote or integral hydraulic power unit (HPU) mounting.
Performance	Superior reliability, safety, and reduced maintenance compared to previous solutions.

Continue to pg 2 to learn more about Bray's solution.

ELECTRO-HYDRAULIC ACTUATOR PACKAGES

For critical safety shutdown applications, Bray recommended electro-hydraulic actuator packages that combine the reliability of spring failsafe action with the simplicity of electric operation. These actuators offer:

- > **Straightforward Power Supply:** Operate using standard electric power—DC, single-phase, or three-phase—eliminating the need for external instrument air.
- > **Reliable Spring Failsafe Mechanism:** The spring action acts like a typical scotch yoke fluid-powered actuator, ensuring the valve closes upon loss of supply pressure or power — while maintaining valve position feedback for operators.
- > **Flexible Installation:** The Hydraulic Power Module (HPU) can be mounted integrally or remotely, making it ideal for severe service conditions (high heat, vibration), limited space, or above-grade installations. Local controls can also be configured as integral or remote, adapting to site needs.
- > **Self-Contained Design:** Bray's electro-hydraulic actuators require no external instrumentation.
- > **Advanced Safety Features:** Options for fail freeze, fail last, fail open, or fail close are available using spring or stored accumulator energy. Emergency Shutdown (ESD) capability, including partial stroke testing, is integrated and can be monitored by the control system.
- > **Ease of Maintenance:** The design uses standard electric and hydraulic components that are easily sourced, reducing dependence on the manufacturer for routine maintenance and repairs.

SYSTEM INTEGRATION

Bray's valve and actuator packages are designed for seamless integration with existing control systems, supporting both digital and analog signals. Quick-connect fittings and modular components simplify installation, upgrades, and ongoing maintenance.

RESULTS

- > **Reduced Downtime & Maintenance:** Operators report significant reductions in maintenance frequency and unplanned outages. Annual maintenance is limited to basic checks and hydraulic oil replenishment.
- > **Improved Safety & Compliance:** Bray's spring failsafe mechanism and zero leakage shutoff help meet strict safety standards, protecting personnel and assets.
- > **Lower Total Cost of Ownership:** Compared to previous pneumatic actuator systems, Bray's integrated systems provide a lower overall cost of ownership.
- > **Scalable Solution:** The flexibility and reliability of Bray's solutions have led to repeat installations and ongoing partnerships with contractors and system integrators.
- > **Customer Satisfaction:** Bray's products are recognized for their cost-effectiveness, reliability, and ease of integration with existing control systems.



Upper image shows valve and actuator mounted in very tight space. Lower image shows the actuator's hydraulic power unit mounted remotely, due to the space constraints near actuator.



Scotch yoke failsafe actuator with integrally mounted hydraulic power unit, installed in steam application.

**Bray delivers customized solutions for your toughest applications.
To learn more about our full line of flow control products, visit [BRAY.com](https://www.bray.com).**