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Red Valve

Power Industry
Valve Solutions Guide

A Red Valve Product for Every Application

- SO_2 Removal Systems
- Raw Water Intake
- Coal Handling
- Bottom Ash
- Fly Ash (up to 250° F/121° C)
- Condenser Box Feed
- Water Treatment / Deionized Water
- Lime Feed
- Absorber Towers

Series 75 Manual Pinch Valves on lime recirculation line.

Series 75 Manual Pinch Valves on control spray nozzles.

1

PVM - Series 75 Manual Pinch Valve

2

PAV - Type A Air-Actuated Pinch Valve

3

PCV - Series 5200 Control Pinch Valve

4

KDX - Series DX & D Knife Gate Valves

5

SPS - Pressure Sensors

6

JRE - Redflex J-1 Expansion Joint

7

CTF - Tideflex® TF-1 Check Valve

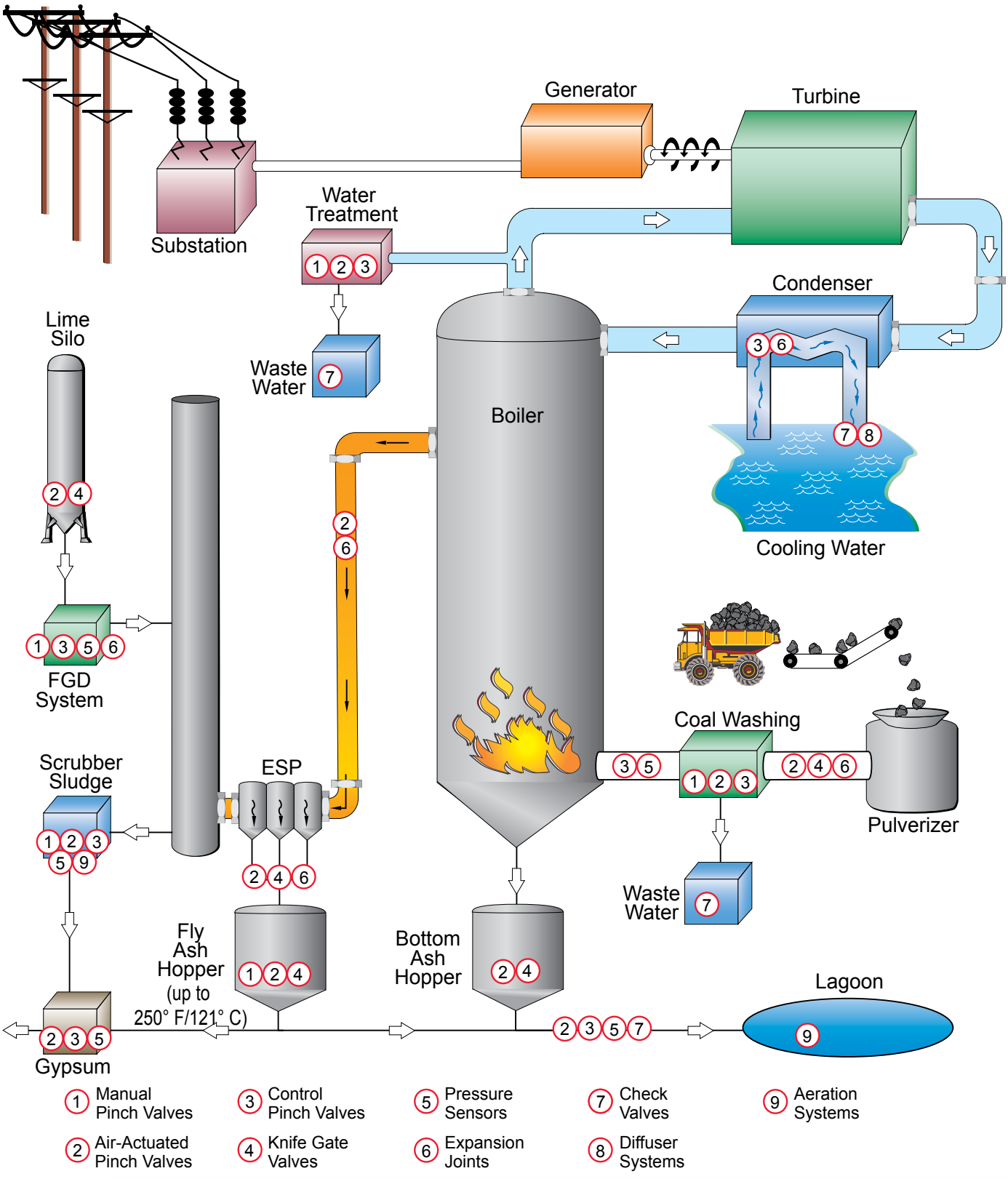
8

Tideflex® Diffuser Systems

9

Tideflex® Aeration Systems

Red Valve: The Total Solution for the Power Industry



Red Valve: For the Toughest Applications in the Power Industry

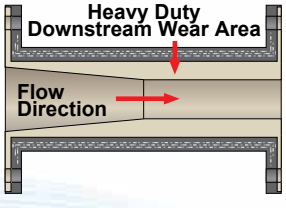
Series 5200 Control Valves being installed at a power plant.

Unmatched Reliability for Power Plants

Red Valve products are the top choice for coal-fired power plants, offering exceptional long-term performance and low-maintenance solutions. Since 1953, the power industry has trusted Red Valve for reliable control products. Our valves have set the global standard in power plants, delivering dependable, long-lasting service in challenging applications such as coal feed, ash, lime, and slurry control. Experts choose Red Valve for the toughest jobs that demand consistent performance.

Precision Throttling Control

Red Valve control pinch valves feature patented cone sleeve technology for precise flow control and long service life. Red Valve's cone sleeves are ideal for throttling control, creating a pressure drop that matches the flow rate of your application. With additional wear-resistant rubber on the downstream side, the cone sleeve ensures optimal service life and minimizes recovery inside the sleeve.



Lime Slurry in Flue Gas Desulfurization (FGD) Systems

Series 5200 Control Valves with cone sleeves on lime slurry.

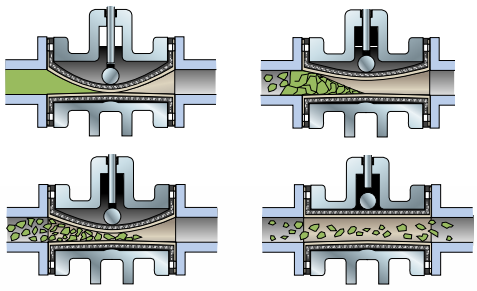
Pinch Valves: An Ideal Choice for FGD Systems

Red Valve pinch valves are ideal for handling abrasive and corrosive slurries in Flue Gas Desulfurization (FGD) systems, especially in lime feed lines, where they regulate slurry flow without clogging or scale buildup. Their unique design ensures positive, drop-tight shut-off, eliminating the need for isolation valves, and prevents lime from hardening or forming scale.

Pinch valves' flexing action breaks up dewatered lime, preventing blockages and ensuring smooth flow. Manual pinch valves are used in lime feed lines, hydrocyclone bypass lines, and pump isolation, often outlasting stellite valves in applications like absorber reagent handling. Pinch valves also handle calcium sulfate, an FGD byproduct, which is used in synthetic gypsum for wallboard manufacturing.

Pinch Valve Sleeves Are Self-Cleaning

The pinch valve sleeve's flexing action breaks up solid or dewatered slurry buildup, while its full-round port design prevents slurry from plugging or eroding.



As shown in the 4" PVC - Series 5200 illustrations above, the flexing action of the elastomer sleeve cleans the valve by removing any build-up when the control valve opens and closes.

Fly and Bottom Ash

Series D on bottom ash.

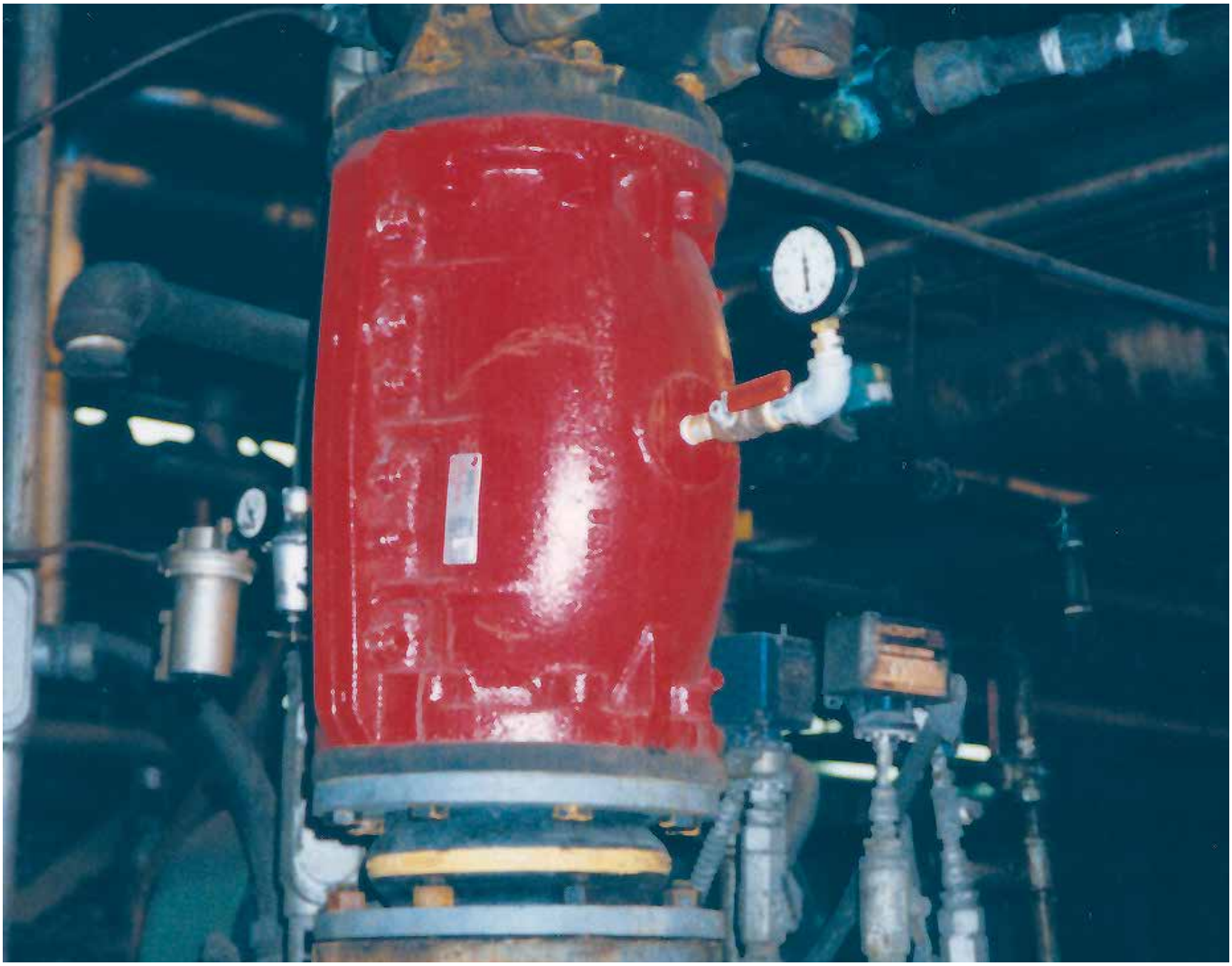
Valve Solutions for Ash Handling

Ash is one of the most abrasive materials encountered in a power plant, and Red Valve pinch valves and knife gate valves are commonly used in fly ash service on temperatures up to 250° F (121° C). Piston-actuated knife gate valves are ideal for transfer lines and hopper isolation once the ash is discharged into the precipitators.

For bottom ash systems, Red Valve's Series D Flexgate Slurry Knife Gate Valve is the preferred choice. The Series D features two elastomer seats that provide superior wear resistance and bi-directional sealing. The replaceable seats function as wipers, cleaning the gate during operation and significantly reducing packing wear.

Series D are commonly used in sluicing and slurry transfer lines to lagoons. Additionally, when ash is used as an additive in cement production, knife gates are utilized in dense phase conveying systems. Series D knife gates are available in large-diameter sizes to meet the demands of your application.

Coal Feed and Washing



Type A controlling flow of bottom ash settling ponds.

Durable and Efficient for Coal Conveying

Red Valve Type A Air-Actuated Pinch Valves are the preferred choice for conveying and injecting coal. Known for their full-port opening and abrasion-resistant pinch sleeve, the Type A has been a reliable solution since its introduction in 1953, initially designed for the world's first coal slurry pipeline.

Even at high velocities, the Type A pinch valve outperforms metal-seated valves in durability, due to its elastomer sleeve. The sleeve's resiliency reduces wear and ensures a drop-tight seal, even with coal trapped in the sealing area.

The Type A operates with simplicity and reliability. The body acts as a built-in actuator, eliminating the need for pneumatic, hydraulic, or electric actuators. By varying the pressure in the annular space between the body and sleeve, the valve can open, throttle, or close without any sliding or rotating parts. With no dead spaces for material to collect, the Type A ensures efficient flow control.

The Type A is also ideal for open-loop control in non-critical, low-pressure-drop applications. When paired with a proportional relay, it becomes an economical and effective slurry control valve.

Power Plant Discharge Water

Tideflex® Aeration and Mixing System installed inside a tank.

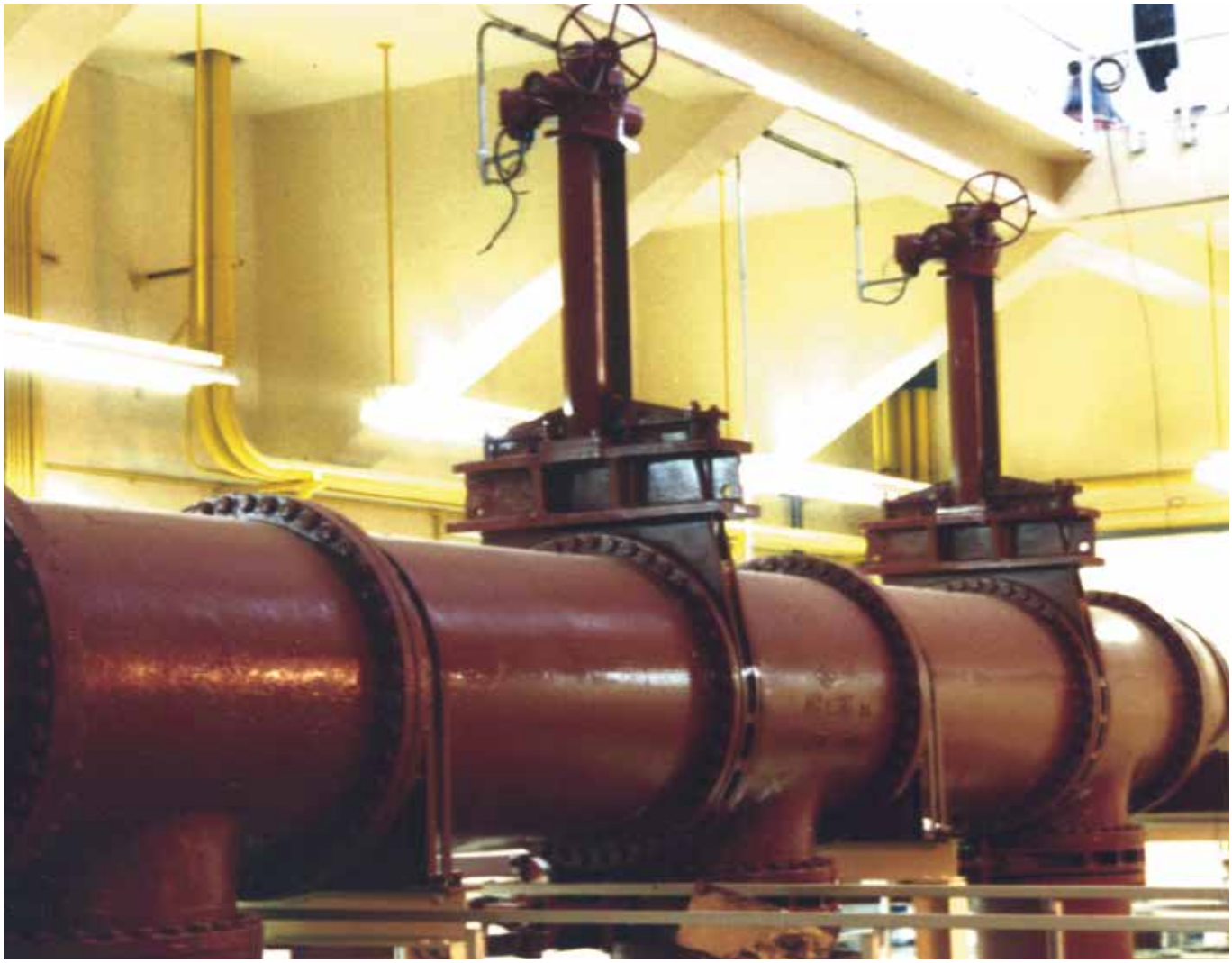
Superior Process Treatment for Power Plants

Many power plants generate discharge water that may contain constituents requiring pretreatment before release to a publicly owned treatment works or receiving waterbody. Large equalization tanks are used to hold the effluent for pretreatment and flow equalization. Tideflex® Aeration Mixing Systems are ideal for mixing in these tanks, offering high-rate mixing and oxygenation to keep the fluid aerobic with virtually no maintenance.

A large portion of power plant discharge water is hotter than ambient conditions and can impact receiving waterbodies when released in concentrated volumes. To reduce this thermal impact, Tideflex® Multiport Effluent Diffuser Systems are used. They distribute effluent through multiple Tideflex® Nozzles at higher velocity, promoting thorough mixing and dilution within a defined area. This lowers the effective concentration and temperature in the receiving waterbody. The systems also aid in color dissipation and foam control.

Tideflex® Nozzles on effluent discharge.

Raw Water Intake and Discharge



54" Knife Gate Valves on raw water intake system.

Reliable Raw Water Intake Solutions

The reliability of a raw water intake valve is critical, and Red Valve has become the manufacturer of choice for this application. We offer two exceptional valve styles for raw water intake: pinch valves and knife gate valves.

Red Valve's Series 5200 and 5400 Control Pinch Valves are ideal for raw water intake applications. The resilient pinch sleeve isolates the valve body and operating mechanism from the process fluid, ensuring consistent, leak-free closure. Since raw water often contains sticks, twigs, and other debris, Red Valve's full-port control valves provide a drop-tight seal on entrapped particles without any seats or discs that could impede valve operation.

For bi-directional closure, Red Valve offers the Series DX and Series D Flexgate Knife Gate Valves. The Series DX Slurry Knife Gate Valve is one of the most durable and user-friendly valves for difficult slurry applications. The fully elastomer-lined Series DX Valve prevents slurry build-up or dewatering by eliminating the seat cavity.

The Series D features durable elastomer seat cartridges that provide excellent wear resistance. The Series D features a cast or fabricated body and a heavy-duty stainless steel gate. A ductile cast iron body provides enhanced performance.

Custom-Designed Flanged Expansion Joints

72" Redflex® Expansion Joint on air recovery system at a coal fired power plant.

Redflex® Expansion Joints

Red Valve's Redflex® Expansion Joint product line offers a comprehensive range of custom expansion joints designed to meet the specific needs of your installation. We provide various arch styles to accommodate the unique movement requirements of each application.

For added durability, custom backup rings are available in both galvanized and stainless steel. Alternatively, our expansion joints can be supplied with a slip-on connection and stainless-steel mounting clamps for easy installation.

Redflex® Expansion Joints are available in a wide selection of elastomers, ensuring compatibility with a variety of chemical and temperature conditions.

Redflex® Expansion Joints are commonly used in condenser and cooling water systems, where significant thermal expansion and contraction are encountered.

Red Valve offers a worldwide, world-class custom service network. With corporate offices in Pittsburgh, PA, manufacturing facilities in Gastonia, NC, and a network of sales representatives around the globe, Red Valve has the sales engineering team to help you select the best choice of valves and related products for your applications.

Red Valve®
The World Leader in Pinch and Check Valve Technology™

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