



Red Valve

Mining Industry Valve Selection Guide



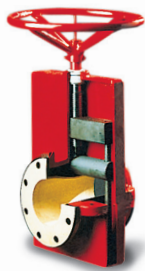
The World Leader in Pinch and Check Valve Technology™

The Best Choice for the Toughest Mining Challenges



Cost-Effective, Reliable Valve Solutions

Since its inception in 1953, Red Valve has been the world's leading manufacturer of pinch valves for the mining industry. Today, Red Valve products are used in every type of mining operation worldwide. A pioneer and innovator of valves built specifically for the toughest mining applications, Red Valve has enhanced the efficiency of the mining industry with a wide array of cost-effective flow control products and solutions.



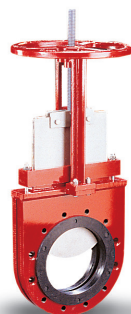
Series 75
Manual Pinch Valve



Series 5200
Control Pinch Valve



Pressure
Sensors



Slurry Knife
Gate Valve

A Red Valve Product for Every Application

Precious Metal Mining

- Acid Leaching
- Ball Mills
- Concentrators
- Flotation Cells
- Concentrate Lines
- Hydrocycles
- Tailings
- Thickener Underflow
- Circuit Sizing & Reduction

Iron Ore / Coal / Tar Sands

- Iron Ore Reduction
- Pelletizing
- Bio Isolation
- Coal Transport
- Coal Washing
- Dilute Coal Dust
- Distributor Tanks
- Filter Tanks
- Lead
- Taconite
- Sand Slurry
- Bitumen
- Potash
- Soda Ash

Aluminum / Bauxite

- Aluminum Oxide
- Caustic Soda
- Lime Feed
- Liquors
- Mud Washing
- Sodium Hydroxide

Phosphate Mine

- pH Control
- Recausticizers
- Sulfuric Acid
- Phosphoric Acid
- Dimmonium Phosphate
- Washing and Blending
- Drying and Filtering
- Sand and Silica Reduction
- Pelletizing



Slurry Knife Gate Valves



Dependable, Maintenance-Free Service, Year After Year

Designed for the most rugged mining operations, Red Valve Slurry Knife Gate Valves have excellent abrasion resistance and are ideal for applications with a high percentage of solids. These highly reliable valves are engineered for operator dependability, low maintenance and the least possible downtime.

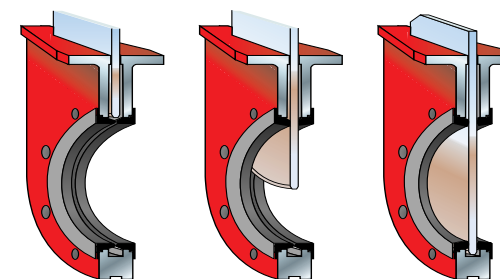
When open, Red Valve Slurry Knife Gate Valves provide full-port, unobstructed flow and drop-tight, bi-directional shutoff. Flow obstructions are eliminated and turbulence wear is minimized. A heavy-duty stainless steel gate passes through two rugged elastomer slurry seats, and the valve body and seats purge clean,

allowing the valve to close on demand. This unique design also prevents the process from spraying out of the valve, reducing safety and environmental concerns.

The seat cartridges control the gate-to-seat compression. As a result, problems with uneven seat wear or excess operating torque, common with other styles of slurry knife gate valves, are eliminated.

Red Valve Knife Gate Valves are ideal for on/off applications where the valves are not frequently cycled. Problems with valves corroding or binding due to the slurry dewatering in the valve seat and chest area are eliminated.

Closing Action



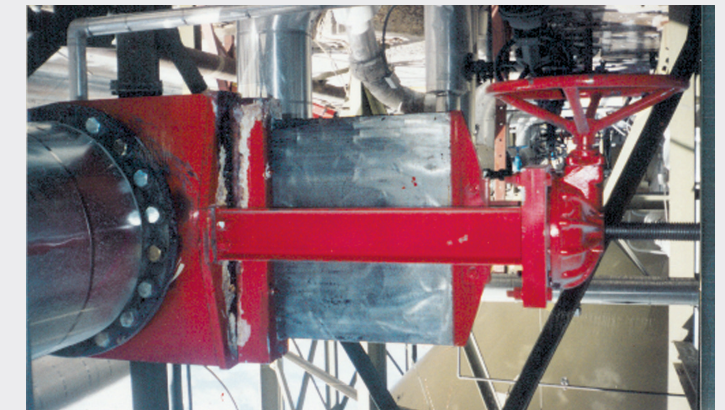
Open

Closing

Closed

Knife Gate Valve Applications

- Tailings
- Hydrocycle Feed Isolation
- Pump Grinder / Mill Isolation
- Flotation Cells
- Leaching Systems
- Thickener Underflow
- Bin / Tank Isolation Valves
- Recirculation Water
- Lime Systems



Features

- Handwheel, Bevel Gear, Pneumatic, Hydraulic Operators
- Special Portable Hydraulic Units Available
- Multiple Flush Connections Purge Heavy Percent of Solids
- Seats Cartridges Match Schedule 40 ID
- Special IDs for HDPE Pipe or Rubber-Lined Pipe Available



Replacing the seat cartridge is fast and easy, requiring only a few quick steps and little maintenance. Valve disassembly to replace the seat cartridges is not necessary.

Control Valve Products



Control Pinch Valves

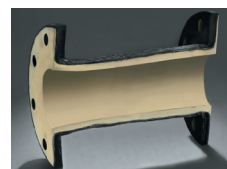
In slurry applications, it's a proven fact that rubber is tougher and more resilient than metal. In the wide-open position, there is virtually no wear or turbulence on Red Valve Pinch Valve Sleeves. Unlike flow patterns of conventional ball, plug or butterfly valves, which create a deflection that causes wear, the flow pattern of a Red Valve Pinch Valve is streamlined, even when throttled.

Control Valve Trims

Typically, Red Valve Control Pinch Valves are furnished with Cone Sleeve Trims for throttling applications. The unique Cone Sleeve Trim provides inherent linear flow characteristics which result in flow rates directly proportional to the amount of sleeve travel throughout the stroke of the valve while under constant pressure and pressure-drop conditions. Red Valve Control Pinch Valves with linear flow characteristics are often specified for liquid-level control and applications requiring constant gain.

Standard Sleeves

For more than half a century, Red Valve's elastomer experience and know-how has become legendary. Acting as an adjustable pipe for flow rate, Red Valve Pinch Valve Sleeves are the heart of the valve. Available in a variety of rugged elastomer materials and designs, Red Valve's Standard Sleeves are unmatched for abrasion resistance, consistently outlasting conventional metal valves.



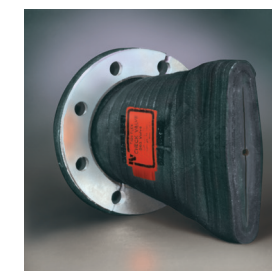
Cone Sleeves

Ideal for throttling control, Red Valve's Cone Sleeves create a pressure drop designed to match the flow rate of the application. With additional wear rubber on the downstream side, Red Valve Cone Sleeves provide optimal service life with minimized recovery inside the sleeve.



Series TFO Flow Restrictor

Designed to help eliminate cavitation on control valves, the TFO Flow Restrictor is an elastomer variable orifice that induces backpressure. As the flow rate increases, the pressure drop in the TFO increases in a near-linear pattern rather than exponentially, as with orifice plates. This distinguishing feature of the TFO provides variable flow characteristics and performance superior to the orifice plate restrictor, making the TFO the restrictor of choice to eliminate cavitation in high-pressure-drop and discharge-to-atmosphere applications.



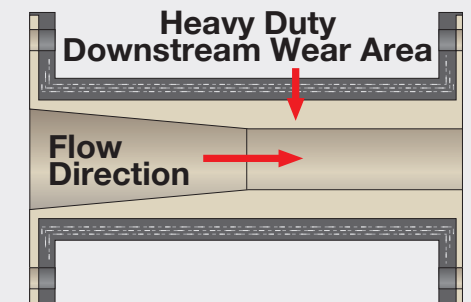
Control Valve Applications

- Flotation Cells
- Lime Feed
- Concentrators
- Thickener Underflow
- Sulfur / Phosphoric / Cyanide Acids
- Leaching

Cone Sleeve Advantages

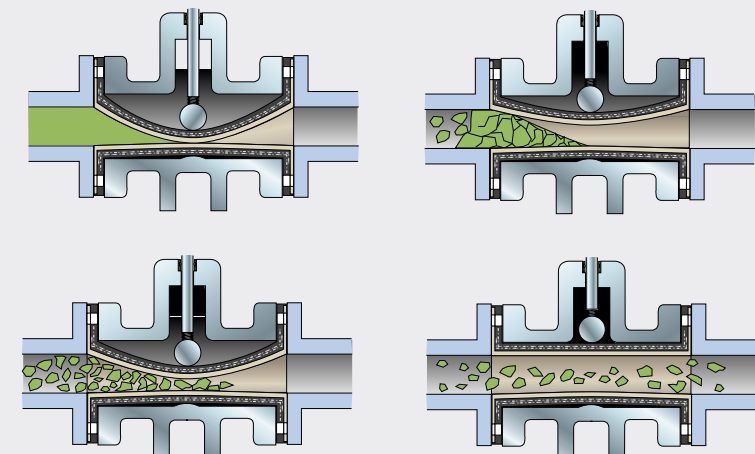
Cone Sleeve Trim provides tighter control with a 20:1 turn down ratio and 0.89 recovery factor. Pressure recovery occurs downstream of the sleeve, so cone sleeves can handle a higher pressure drop than other sleeve designs.

The configuration of the cone sleeve reduces erosion and provides a smooth venture flow pattern for throttling service.



Red Valve Products Self Clean

Every Red Valve Pinch Valve Sleeve's flexing action breaks away solid or dewatered slurry buildup. The full round port sleeve has no pockets for slurry to plug in or erode. This design even breaks up dewatered lime.



Mine Tailings



Solutions for Every Tailing Application

Red Valve offers solutions for every valve application challenge within a tailings disposal system. Red Valve's Series 70 and 75 Manual Pinch Valves – the industry's first choice for isolation valves in mine tailing systems – are engineered to last.

When open, Red Valve Pinch Valves are like a 100% full-port piece of wear-resistant pipe, with no restrictions in the line to impede flow. When closed, the valves provide Class 6 Shutoff.

Since the operating mechanism is isolated from the flow, a manual pinch valve can be left in the open or closed position for years without affecting the operating torques, which remain constant.

Red Valve's Series 9000 High-Pressure Control Pinch Valve, ANSI Class 300#, is another proven solution. Available with various actuators, including bevel gear actuators for manual operation

and hydraulic and electric actuators for automatic operation, the Series 9000 is equipped with a heavy-duty solid steel stroke adjustment unit that affords flexibility in control and stroke for abrasion sleeve wear, eliminating downtime.

Red Valve Slurry Knife Gate Valves are another ideal choice for use on tailings systems, especially where large-diameter sizes are required. A knife blade passes through two full-port elastomer seats, opening or closing the valve.

The world's largest manufacturer of pinch valves, Red Valve has an international reputation for quality-engineered products. Every Red Valve Control Pinch Valve and Slurry Knife Gate Valve is backed by our experience and dedication to innovative design, high engineering standards and skilled manufacturing. Versatile and durable, Red Valve products provide solutions to control your toughest flow control applications.

Tailings System Applications



When open, Series 75 Valves are like a 100% full-port piece of wear-resistant pipe, with no restrictions in the line to impede flow.

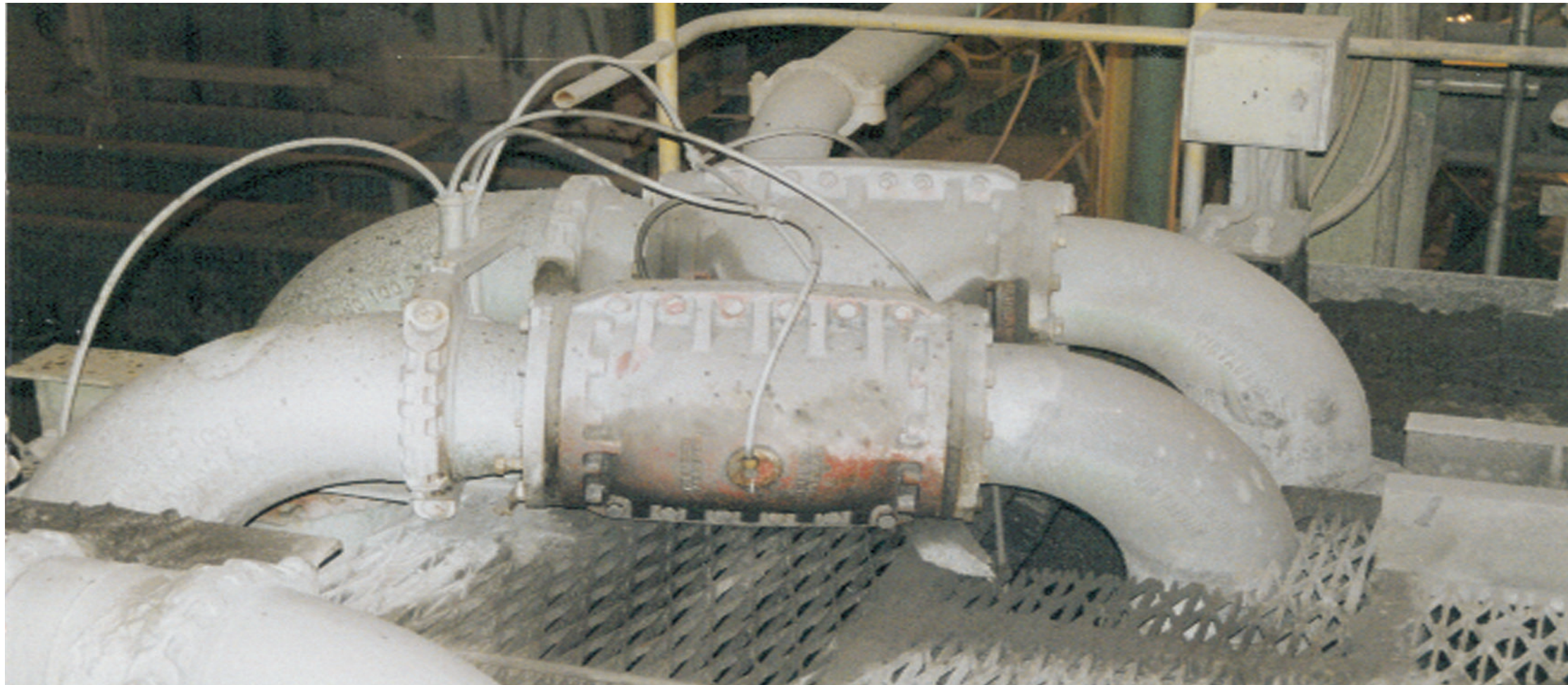


Series 9000 Hydraulic-Actuated Tailings Isolation Valve for 720 psi service at Homestake Mine in South Dakota.



High-Pressure Series 5400 Pinch Valves on tailings.

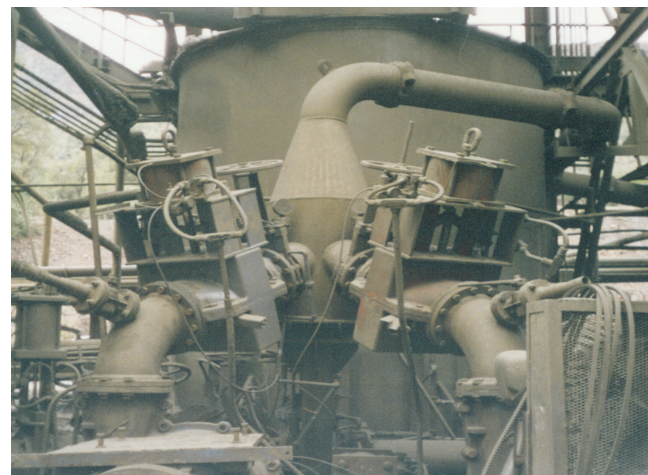
Flotation Cells and Thickener Underflow



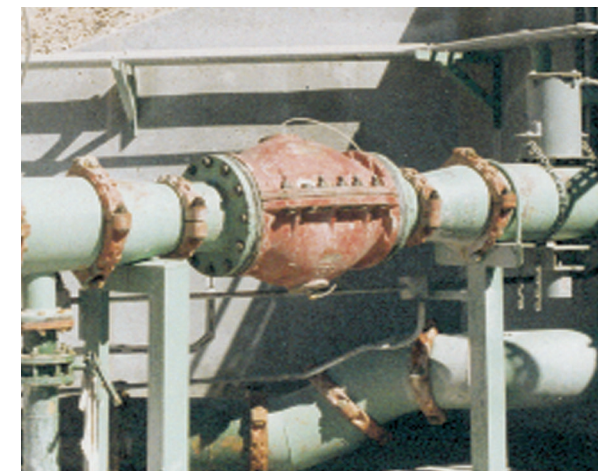
Precise, Repeatable Control

Flotation cells and thickener underflow lines are an area where Red Valve Pinch Valves play a vital role in increasing production and decreasing maintenance and downtime. Crushed ore entering the flotation cells or “spent” ore discharging from a thickener retain high solids content that can quickly destroy ball, butterfly and plug valves. Red Valve Pinch Valves, which are full-port when open, minimize erosion and optimize valve life.

Red Valve Pinch Valves are also ideal for pressure and level control applications. With a patented cone sleeve trim sized to match any application’s exact control requirements, Red Valve Pinch Valves provide precise, repeatable control across a wide range of pressure and flow conditions.



Flow Control Pinch Valves on a Dewatering System at Codelco Mine’s Filter Plant



Air-Operated Pinch Valve Maintains Level on Thickener Underflow System at the Escondito Mine in Chile

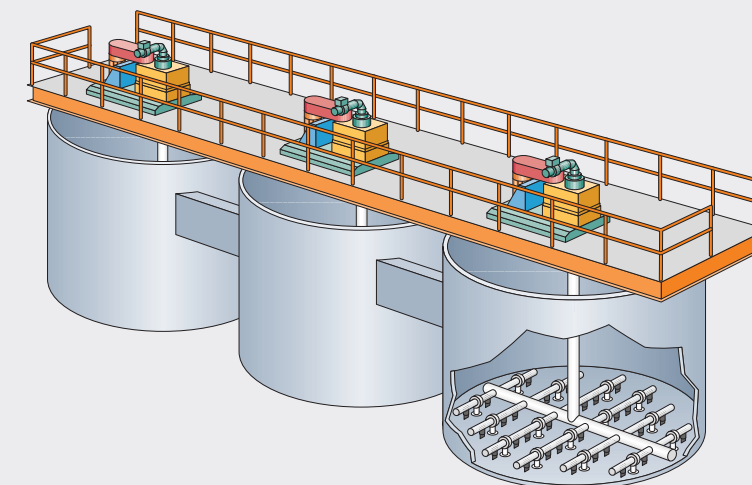
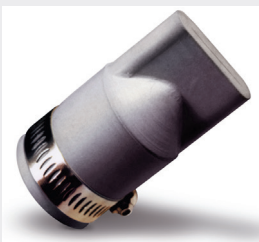
Mixing, Agitation and Sparging

Red Valve’s Tideflex® Air Diffusers eliminate maintenance costs associated with clogged or fouled diffusers. All-elastomer and maintenance-free, Tideflex® Air Diffusers are ideal for use on air diffuser manifolds in mining flotation cells, providing optimal aeration and mixing while preventing clogging.

Tideflex® Diffusers are also ideal for sparging, which keeps slurries in suspension, preventing separation, bridging and dewatering. Tideflex® Check Valves prevent nozzles from clogging.

The principle of operation for Tideflex® Diffuser Systems is simple - positive differential pressure opens the valve, allowing flow. Reverse differential pressure seals the Tideflex® Valve bill, preventing backflow of solids and liquids. The elastomer Tideflex® bill will even seal around entrapped solids. Tideflex® Air Diffuser Systems eliminate clogging air manifold and piping systems when blowers or compressors are stopped during routine shutdown or power failure.

Available in 1/2” to 6” sizes, Tideflex® Air Diffusers are easily retrofitted to existing diffusers. The valves are slipped onto the outside of a pipe stub and fastened with a stainless-steel hose clamp. The valves are also available with NPT male adapters for air diffuser manifolds that have tapped holes in the header pipes.



Features

- All-Elastomer, Maintenance-Free Construction Provides Optimum Aeration and Mixing
- Prevents Clogging of Air Manifold and Piping System
- Eliminates Maintenance Cost Associated with Clogged or Fouled Diffusers
- Duckbill Design Seals Around Solids
- Available in 1/2” - 6” Sizes
- Easily Retrofitted to Existing Structures



Red Valve offers a worldwide, world-class custom service network. With corporate offices in Pittsburgh, PA, manufacturing facilities in Gastonia, NC, and 114 sales representatives in 61 countries 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.

Represented by:



Red Valve®
The World Leader in Pinch Valve Technology™

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