



**WEH**

**Minerals**

**Isogate®**  
Valve Range

**ISO-GATE®**

**WHP10**



**Uniquely designed for easy maintenance and low total ownership cost, our Isogate® valve range is the proven choice for highly abrasive slurry applications.**



Weir Minerals is a world leader in the design and manufacture of pumps, hydrocyclones, hose, slurry valves, screens, mill liners, crushers, and rubber products. Applications include mining and minerals processing, sand and aggregate, chemical, and general industries. Based on advanced materials and designs, our products are engineered to add value to virtually any aggressive, corrosive slurry process.

#### **A history of expertise**

For over 50 years Weir Minerals has been a trusted and proven leader in the slurry valve market. Since the design of our very first slurry pinch valve in the 1960s, innovation has been our focus and is at the forefront of everything we do. This means our products and services are continuously evolving to meet your needs.

Today, Weir Minerals offers one of the world's widest selections of slurry valves on the market. With valve experts on six continents, and decades of experience behind them, Weir Minerals delivers unparalleled product quality and service to our customers worldwide.

#### **Versatile and reliable**

Isogate® slurry valves are uniquely designed with both ease of maintenance and low overall ownership costs in mind. They are engineered to handle the harshest and most abrasive process flow conditions.

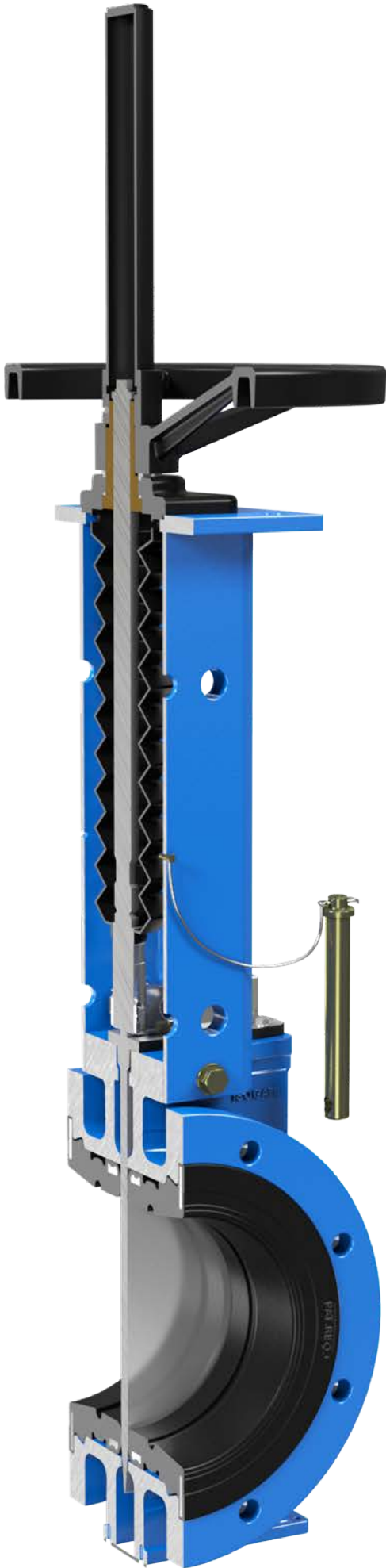
#### **Typical applications**

- Alumina
- Cement
- Coal
- Kaolin
- Mineral sands
- Hard rock mining
- Phosphates
- Pulp and paper
- Sand and gravel
- Soda ash
- Wet flue gas desulphurisation



# Isogate® Knife Gate Valves

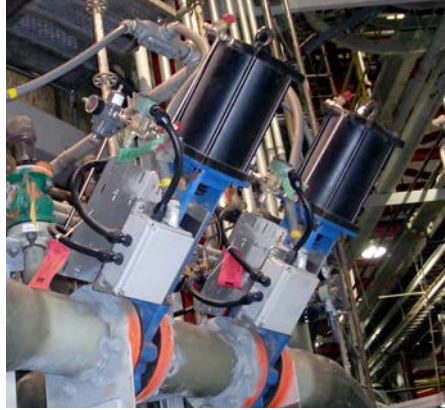
Heavy duty knife gate valves for  
abrasive and corrosive applications



Isogate® slurry knife gate valves are engineered to provide reliable on-off flow control service in tough, abrasive and corrosive applications. They are designed to deliver reliability and long service life in these severe service flow applications.

## Design features

- Two-piece elastomer sleeve design protects flow areas against corrosion
- Elastomer sleeves are easily replaced in the field without disassembling the valve
- Bi-directional 100% bubble tight shut-off
- Packingless design - no gate or stem packing
- Suitable for use in abrasive slurry services with high percentages of solids
- Open bottom allows for the purging of solids
- No seat cavities where solids can collect and cause gate interference
- Yoke design allows fitting for all types of actuators
- Flush control option allows for periodic cleaning of the lower discharge vent and allows flushing as needed



#### High pressure

##### Isogate® WH/WHP series valve

The Isogate® WH and WHP series high pressure slurry knife gate valves are designed to provide reliable service in tough, abrasive and high pressure slurry applications. Sizes range from 80mm (3") to 900mm (36"), operating to a maximum pressure of 5100kPa (740psi). Isogate® WH valve pictured below (with optional gate guard).



#### Wafer style

##### Isogate® WS series valve

The Isogate® WS series wafer-style slurry knife gate valve's unique design provides reliable service, ease of maintenance, and long term performance. Sizes range from 50mm (2") to 600mm (24"), operating to a maximum pressure of 1034kPa (150psi). Optional gate guards available. Isogate® WS valve pictured below.



#### Wide body

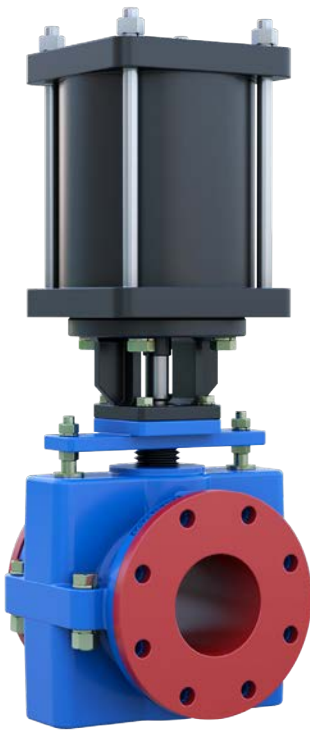
##### Isogate® WB series valve

The Isogate® WB series wide body slurry knife gate valve's robust design and heavy duty construction provides dependable reliability and long life in highly abrasive, corrosive and coarse slurry applications. Sizes range from 80mm (3") to 1370mm (54"), operating to a maximum pressure of 1400kPa (200psi). Optional gate guards available. Isogate® WB valve pictured below.



# Isogate® Mechanical Pinch Valves

Specifically designed for highly abrasive, flow control applications in liquid-solids slurry and gas-solids



The Isogate® mechanical pinch (MP) valve series is designed to provide effective control of abrasive and corrosive flow in industrial process systems. The double acting pinch mechanism closes the pinch sleeve along the valve centerline to maximise control of the process flow and minimise wear damage to the sleeve liner.

## Design features

- The compact short length design features integral end flange gaskets on the pinch sleeves designed to ensure tight installation into process piping
- Center pinch operation and flexible pinch sleeve construction designed to ensure accurate flow control and long pinch sleeve life
- The heavy duty internal pinch mechanism requires low input force for smooth hand wheel operation at maximum working pressures
- Linatex® premium rubber is the standard pinch sleeve liner material (a wide range of natural and synthetic rubber liner materials are also available)

## Closed body

**Isogate® MP CB series valve**  
(pictured top left)

The closed body features a cast metal body that encloses and protects the pinch sleeve and pinch bars while providing initial splash protection against leaking flow media.

## Open body

**Isogate® MP OB series valve**  
(pictured bottom left)

The open body pinch valve features weight saving high strength cast materials that allows for easy pinch sleeve replacement, and permits quick and positive indication of valve position.



# Isogate® Pneumatic Pinch Valves

Designed for on/off control of  
difficult process flow

The Isogate® pneumatic pinch (PP) valve series is designed to control abrasive and corrosive flowing media in industrial process systems. They are ideal for remote operations using typical plant air, and do not require auxiliary cylinder actuators.

## Design features

- Bi-directional shut-off and can be operated in any pipeline position
- The robust cast metal body contains the pneumatic/hydraulic supply pressure, encloses and protects the pinch sleeve, and provides secondary process containment
- Center pinch operation with flexible pinch sleeve or liner construction ensures positive closure and long life
- Linatex® premium rubber is the standard pinch sleeve liner material (wide range of natural and synthetic rubber liner materials are also available)

## One piece pinch sleeve

Isogate® PP 1S series valve  
(pictured top right)

The Isogate® PP 1S valve is a full bore pneumatic pinch valve designed for on/off control of difficult process flows. It features a low pressure drop design that is ideal for control of slurries containing large particles and/or a high percentage of solids.

## Two piece pinch liner

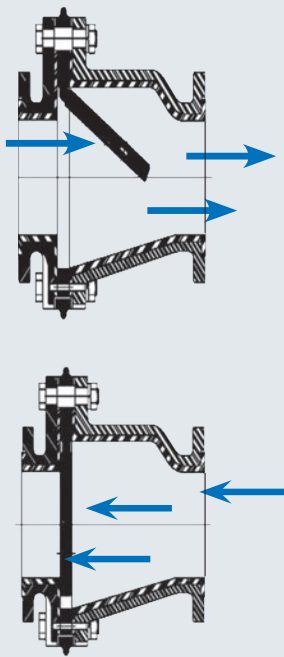
Isogate® PP 2L series valve  
(pictured bottom right)

The Isogate® PP 2L valve uses a two piece split pinch liner that responds quickly to changes in operating fluid control pressure. The PP 2L is ideally suited for flow control in process applications requiring frequent and/or rapid on/off flow cycles.



# Isogate® Check Valves

The Isogate® RF series check valve, designed for reverse flow prevention in harsh, abrasive applications

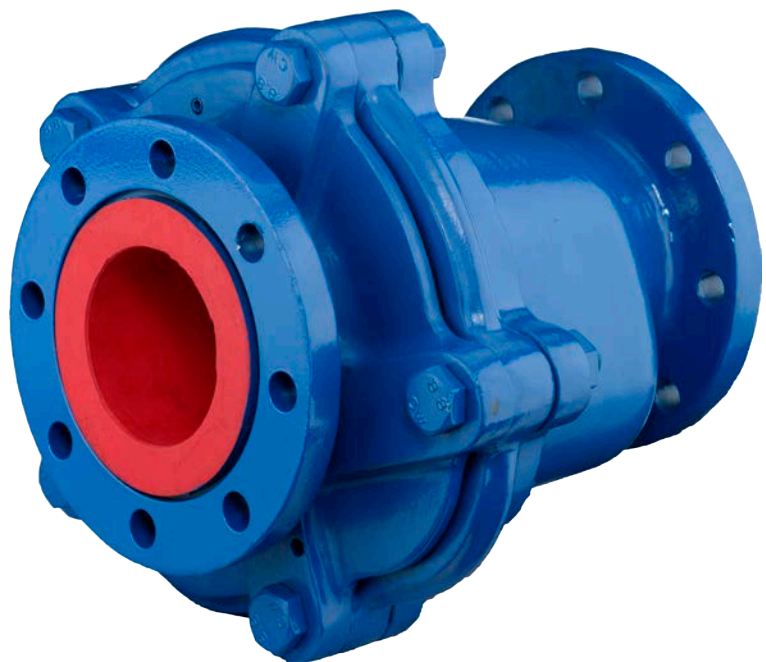


Above: Flow pattern through open and closed Isogate® swing check valve.  
Open - normal flow through valve (pictured top).  
Closed - reverse flow stopped (pictured bottom).

The single non-return Isogate® RF series check valve is specifically designed for reverse flow prevention for harsh, highly abrasive applications in slurry services.

## Design features

- Robust cast metal bodies
- Drip tight shut-off
- Full bore design with low friction loss and high flow capacity
- The replaceable moulded rubber liners and disc are held in place by the body fasteners - no adhesives are required
- Fully lined bodies and coated internal components are ideal for use in slurry applications
- Linatex® premium rubber is the standard wear liner and disc material (a wide range of natural and synthetic rubber liner and disc materials are also available)
- No internal metal parts are exposed to process flow





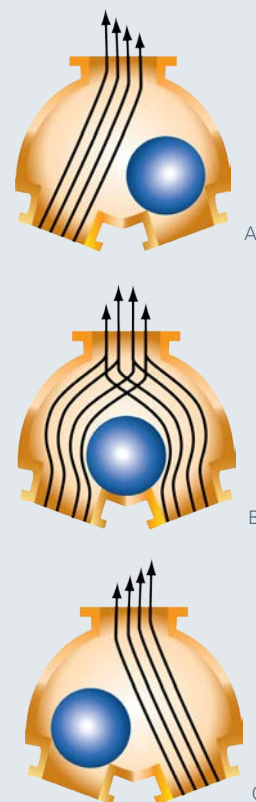
# Isogate® Check Valves

The Isogate® Autoball™ AB3 valve, designed for reliability in the toughest slurry applications

The Autoball™ AB3 valve is specially designed to enable quick changeover between duty and standby pumps in the toughest slurry applications.

## Design features

- Efficient pump change-over
- Automatic activation
- Less space required than complicated control system
- Simplicity of operation
- No metal components exposed to slurry
- Excellent abrasion resistance
- Replaceable ball seats and rails for fast and efficient maintenance
- Stainless steel fasteners



Above: When the active pump starts, the ball is forced across to the inactive inlet as pressure builds (refer A and C). Adequate static head is required above the valve to ensure the ball is firmly seated. If both pumps are operated, the ball will remain between the two lines of flow (refer B).

## Our sleeves and liners are designed to provide long lasting abrasion resistance for your application.



Replacement sleeves, featuring Linatex® premium rubber, fit most mechanical and pneumatic pinch valves and are designed to last longer and perform better than other OEM valve sleeves.

### Design features

- Available in neoprene, EPDM and other natural and synthetic rubbers
- Can be supplied with plain, integral flange, stub, or beaded end configurations
- Uniform liner thickness and Linatex® premium natural rubber designed to provide long wear life
- Manufactured with high strength nylon cord reinforcements and abrasion/ozone resistant outer covers

- Reduced bore, conical inlet, and thick wall replacement sleeves are available to ensure proper sleeve sizing and enhanced valve performance
- Flow, wear, and application analysis are used to determine the most suitable replacement sleeve size and construction - proper replacement sleeve sizing and construction reduces wear and improves valve performance

PLEASE NOTE: Not all products are available in all regions. Please check with your local Weir Minerals representative.

### Available sleeve and liner materials

#### Linatex® premium natural rubber

Linatex® premium rubber is the standard liner material for Isogate® pinch and check valves. It is 95% natural rubber and it exhibits outstanding resilience, strength and resistance to cutting, tearing and abrasion. Linatex® premium rubber provides superior wear performance for fine slurry abrasion and resistance to a wide range of chemicals. Recommended temperature range is -40° F to +158° F (-40° C to +70° C).

#### EPDM

EPDM has general resistance to most moderate chemicals, alcohol, ozone, and organic acids. It is affected by strong acids, solvents, most hydrocarbons, chloroform, and aromatic solvents. Recommended temperature range is -60° F to +300° F (-51° C to +149° C).

#### Neoprene Rubber

Neoprene has general resistance to moderate chemicals, salt water, oils, fats, grease, and a number of solvents. Affected by strong oxidizing acids, acetic acids, ketones, esters, and chlorinated and nitrogenated hydrocarbons. Recommended temperature range is -40° F to +210° F (-40° C to +99° C).

#### Polyurethane

Polyurethane has general resistance to ozone, some hydrocarbons, moderate chemicals, fats, oils, and greases. It is affected by concentrated ketones, esters, chlorinated and nitro hydrocarbons. Recommended temperature range is -65° F to +150° F (-54° C to +66° C).

#### Nitrile

Nitrile is chemically resistant to swelling from organic liquids, including animal and vegetable oils, mineral oils, ethylene glycol, hydrocarbons, and waxes. It has limited resistance to acidic and alkali environments. Recommended temperature range is -40° F to +225° F (-40° C to +107° C).

#### Butyl

Butyl is a highly saturated elastomer with excellent chemical stability, and good resistance to heat and oxidation. It is swollen by chlorinated hydrocarbon solvents. Recommended temperature range is -50° F to +250° F (-46° C to +121° C).

Other natural and synthetic rubber options are available.



## Minerals

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