Valve Solutions

Heavy Duty Pinch Valves
General Line Pinch Valves
Slurry Knife Gate Valves
Smart Features
Spares & Services
Valve solutions

For demanding shut-off and control applications

We deliver flow control solutions for the most demanding process conditions. Our story has started over 40 years ago making us the industry benchmark and experts on valve technology. During the years we have delivered over 150 000 products worldwide. Our robust full bore design enables effortless process flow. We provide services ranging from sizing, materials selection, installation, spare parts and maintenance to optimize the up and downstreams flow.

Product portfolio

1977 - Pinch valves
2000 - Plastic body valves
2002 - Pumps introduced
2009 - Slurry knife gate valves
2014 - Flowrox biggest DN1200 knife gate valves
2016 - Digital Services
2017 - Filter service
2018 - Mobile geotextile dewatering unit, ceramic disc filters, filter presses, Smart Filtration Digital Services
2019 - Industrial automation, plasma technology for water purification, smart filter presses

Focus Industries

Mineral processing
Metallurgy
Construction
Energy
Environment
Chemical

Flow control
Filtration
Environmental technologies
Industrial automation & digital services
Service

WE PROVIDE THE OPTIMAL SOLUTION:

YOUR BENEFITS

Low Total Cost of Ownership
Low operating costs
Improved process performance
Long service intervals
Minimized downtime
Heavy duty design

Ball valve
Flowrox valve solution

The shown comparison of cost over a period of 5 years on a DN100 pinch valve feeding abrasive slurry. The valve operates 4-6 times/hour. The conventional valve is a stainless ball valve with PTFE seats.
## Flowrox Valve Product Portfolio

### Pinch Valves

**PVG pinch valves**
- Pressure rating 10 bar
- Size DN50 - 250
- Low cycling applications
- For isolation duty

**Heavy duty pinch valves**
- Pressure rating up to 100 bar
- Size DN25 - 800
- High cycling applications
- For isolation & control purposes

### Slurry Knife Gate Valves

**SKW**
- Without flange
- Pressure rating 10 bar
- Size DN50 - 600
- Isolation duties only

**SKF**
- With flange
- Pressure rating 10 bar
- Size DN80 - 1500
- Isolation duties only

**SKH**
- With flange
- Pressure rating 20 bar
- Size DN80 - 600
- Isolation duties only

### Smart Solutions™

Enhance your performance with Smart Solutions™
- Smart valve series provide online information about the process, valve operations and condition of the valve.
- Enables advanced reporting and data analytics, making your process more reliable and transparent
- Fast analysis of faults and planning of maintenance

### Services

**Comprehensive Valve Installation, Maintenance and Spare Services**
- Site survey services
- Spare parts and component services
- Installation and maintenance services, repair services
- Analysis services / commissioning / training
Expansion project: Saving time during start-up with 330 Flowrox valves

Customer: Trafigura Mining Group, MATSA mine, Spain

Products: 330 PVE enclosed body & PVG shut-off valves

Application: Ore & water treatment & process water supply in copper, zinc and lead mining

Benefits: Increased safety, easy installation & maintenance, process reliability, light-weight products.

Long-term benefits in ownership

The Tranfigura Mining Group ordered 330 Flowrox PVE enclosed body pinch valves and PVG shut-off pinch valves for various demanding flow control and shut-off duties, from ore treatment to water treatment plant and process water supply.

“When the project was engineered, we constantly had in mind that the choice of appropriate instrumentation for each application is fundamental to the process performance. We decided that all control valves and also some of the shut-off valves would be pinch valves, which finally ended up saving us a lot of time in the start-up of the plant,” says Ms. Luisa Montes, a Project Team Member from MATSA mine.

All installed Flowrox Pinch Valves delivered were an enclosed body type and include an SBRT valve sleeve to meet the requirements of various mediums in different process areas and to achieve the longest sleeve life time.

As the valves are self-cleaning, even if any solids are accumulated in the sleeve wall, it breaks away when the valve is operated. This is due to the flexibility of the sleeve, making the valve lifetime longer than many other competing products on the market.

The Flowrox Pinch Valves were chosen to gain long-term benefits based on low total cost of ownership. The PVE control valves at the plant are actuated by pneumatic double acting actuators with positioners. Also, all of the on/off PVG valves include limit switches for position indication.

“In the future, we are definitely expecting cost savings,” Ms. Montes states.
Flowrox Valve References

**Customer:** HUSAB Uranium Mine, Namibia  
**Products:** Pinch valves  
**Application:** Tailings Transfer  
**Benefits:**  
- Increased process reliability  
- Cost efficiency with remote valve control  
- Low total cost of ownership

**Customer:** Wastewater treatment plant, Warsaw, Poland  
**Products:** DN500 control pinch valves  
**Application:** Flow control of biological sludge  
**Benefits:**  
- Gentle handling due to living bacteria in sludge  
- Wide and accurate flow control range  
- Extended maintenance interval

**Customer:** LKAB, Sweden  
**Products:** PV and PVE pinch valves  
**Application:** Thickener underflow  
**Benefits:**  
- Reliability with abrasive slurry  
- Wide and accurate flow control range  
- Extended maintenance interval
Heavy Duty Pinch Valves

Flowrox heavy duty pinch valves are “The pinch valves”. They are made to last and are ideal where shut-off and control applications involve abrasive or corrosive slurries, powders or coarse substances.

Made to Last

The operating principle of Flowrox pinch valves is simple. In the open position, the valve is full bore with no flow restrictions. During closing, two pinch bars squeeze the valve sleeve shut on the centerline. The sleeve is naturally wear resistant and when particles hit the sleeve’s rubber surface, the energy is absorbed and released when the rubber bounces back.

Heavy duty pinch valves provide bubble tight shut-off even if solids have built up on the sleeve wall. When compressed, any crystallized particles flake off the sleeve surface. The full bore structure ensures free flow of the medium. The construction and materials of the three main components (sleeve, body and actuator) can be tailored to suit your process conditions.

Benefits: This Is How We Flow!

- Long service intervals
- Only one wearing part
- Excellent for dry powders
- Low maintenance cost

Image: During closing, two pinch bars squeeze the valve sleeve shut on the centerline. See the Pinch Valve in action by scanning the QR code.
# Valve Model Selection Guide

<table>
<thead>
<tr>
<th>Type</th>
<th>Size (DN)</th>
<th>Actuator</th>
<th>Pressure class</th>
<th>Flange drilling</th>
<th>Body material</th>
<th>Shape of flange</th>
<th>Opening tags</th>
<th>Auxiliaries</th>
<th>Sleeve material</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV</td>
<td>25 - 1000</td>
<td>M = manual with gear</td>
<td>1 = 1 bar, 6 = 6 bar, 9 = 10 bar, 10 = 10 bar, 16 = 16 bar, 25 = 25 bar, 40 = 40 bar, 64 = 64 bar, 100 = 100 bar</td>
<td>1 = 1.0, 2 = DIN PN10, 3 = DIN PN16, 4 = DIN PN25, 5 = DIN PN40, 6 = ANSI150, 7 = ANSI300, 8 = BS TABLE D, 9A = AS TABLE D, 9B = AS TABLE E, 9C = JIS 10, 9D = JIS 16, 9 = OTHER</td>
<td>0 = GR5/Fe, 2 = AISI 316, 3 = aluminium, 4 = other, 5 = polyurethane/polyamide</td>
<td>type 1, type 2, type 3, type 4</td>
<td>Determined by Flowrox</td>
<td>R = readiness for ind. limit switches, R1 = AC/DC, R2 = DC, PNP, R3 = DC, NPN, S = magnetic limit switches, T = mech. limit switches, Q = quick exhaust valve, Z1 = solenoid valve, 24VDC, Z2 = solenoid valve, 230V, 50/60 Hz, Z3 = solenoid valve, 110V, 50/60 Hz, F = Filter regulator + Gauge, J1 = Junction box small, J2 = Junction box large, X = must be specified</td>
<td>SBRT = Styrene butadiene, EPDM = Ethylene propylene, NR = Natural rubber, NBR = Nitrile, CSM = Hypalon, EPDMB = Green liquor sleeve, CR = Chloroprene, IIR = Butyl, NRF = Foodstuff natural rubber, NBRF = Foodstuff nitrile, HNBR = Hydrogenated nitrile, FPM = Fluorine rubber, /M = SensoMate sleeve, /PU = PU-coating inside the sleeve, /VAC = Sleeve for suction</td>
</tr>
</tbody>
</table>

**Example:** PVE 150A10-203LR1Z2, SBRT

## Control Valves

The Flowrox control valves are designed for demanding control applications in which conventional valves encounter problems with wear due to increased turbulence.

When the controlled flow is abrasive, it is a big advantage to have only one, wear resistant, valve part in contact with the medium. The need for maintenance and spare parts is reduced.

Controllability can be further improved with conical sleeves or smart positioners.

Flowrox control valve sizing is based on international IEC60534 standard (harmonized with ANSI/ISA S75).

Flowrox Control Valve Sizing Program is available to ease your work.
General Line Pinch Valves

PVG and PVEG valves

Flowrox pinch valves are robust and cost-effective valves with simple, single-sided closing mechanism. PVG valves have a strong valve body and opening tags in the sleeve as standard. PVEG valves have a corrosion resistant and light-weight plastic body.

They are ideal for low cycle applications involving abrasion, corrosion and aggressive slurries. Through the reliability and structure, they offer substantial savings based on improved performance, long service lifetime and low total cost of ownership.

Benefits: This Is How We Flow!

- Long service intervals
- Only one wearing part
- Excellent for dry powders
- Simple sleeve replacement

*Image: The closing element squeezes the sleeve shut against the lower body half, providing a 100% tight shut-off. See the PVG in action by scanning the QR code.*
### PVG Valve Model Selection Guide

<table>
<thead>
<tr>
<th>Type</th>
<th>Size (DN)</th>
<th>Actuator</th>
<th>Pressure class</th>
<th>Flange drilling</th>
<th>Body material</th>
<th>Sleeve material</th>
<th>Auxiliaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVG = Flowrox Pinch valve</td>
<td>50 - 250</td>
<td>M = manual A = pneumatic E = electric</td>
<td>4 = 4 bar 6 = 6 bar 10 = 10 bar</td>
<td>2 = DIN PN 10 6 = ANSI 150 9 = other</td>
<td>0 = cast iron</td>
<td>SBRT = Styrene butadiene rubber EPDM = Ethylene propylene diene monomer</td>
<td>Z1 = solenoid valve, 24V DC Z2 = solenoid valve, 230V 50/60 Hz Z3 = solenoid valve, 110V DC 5 = Magnetic limit switches</td>
</tr>
</tbody>
</table>

Example: PVG 50M10, SBRT

### PVEG Valve Model Selection Guide

<table>
<thead>
<tr>
<th>Type</th>
<th>Size (DN)</th>
<th>Actuator</th>
<th>Pressure class</th>
<th>Flange drilling</th>
<th>Body material</th>
<th>Sleeve material</th>
<th>Auxiliaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVEG = Flowrox Pinch valve</td>
<td>50 - 150</td>
<td>M = manual A = pneumatic</td>
<td>6 = 6 bar 10 = 10 bar</td>
<td>2 = DIN PN 10 6 = ANSI 150 9 = other</td>
<td>5 = Polyamide</td>
<td>SBRT = Styrene butadiene rubber EPDM = Ethylene propylene diene monomer</td>
<td>Z1 = Solenoid valve, 24V DC Z2 = Solenoid valve, 230V 50/60 Hz Z3 = Solenoid valve, 110V DC 5 = Magnetic limit switches</td>
</tr>
<tr>
<td>PVEG/C = Flowrox Pinch valve</td>
<td>50 - 150</td>
<td>M = manual A = pneumatic</td>
<td>6 = 6 bar 10 = 10 bar</td>
<td>2 = DIN PN 10 6 = ANSI 150</td>
<td>5 = Polyamide</td>
<td>SBRT = Styrene butadiene rubber EPDM = Ethylene propylene diene monomer</td>
<td>Z1 = Solenoid valve, 24V DC Z2 = Solenoid valve, 230V 50/60 Hz Z3 = Solenoid valve, 110V DC 5 = Magnetic limit switches</td>
</tr>
</tbody>
</table>

Example: PVEG 150M10-25

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Image: PVEG50M manual polyamide body pinch valves in a hydrocyclone at Kara Mine, TMM, Tasmania, Australia.
Knife Gate Valves

Heavy Duty Slurry Knife Gate Valves isolate flow, even in the most demanding process conditions. The complete valve is built around an ease-of-maintenance concept.

Slurry Knife Gate Valves

The designs of Flowrox Slurry Knife Gate Valves are based on the years of experience Flowrox has gained, providing reliable solutions for abrasive and corrosive process applications. They feature a load distribution ring that prevents over compression and ensures tight sealing between the sleeve and the valve gate. To add to the ease of maintenance, the load distribution ring has been integrated into the sleeves of the valve.

The universal tower design of the valve accommodates most actuator types, allowing for actuator interchangeability. The tower also ensures that the top plate, body and actuator are always aligned and that the gate is in the right position. The valve body itself is a one-piece casting, eliminating the need for sealing between the body halves.

Benefits: This Is How We Flow!

- Small face-to-face dimension
- Easy installation
- Available in large size scale
- Low maintenance cost

*Image: Elastomer sleeves on both sides of the gate provide a tight shut off. See the Flowrox knife gate valve in action by scanning the QR code.*
## SKW / SKF Valve Model Selection Guide

<table>
<thead>
<tr>
<th>Type</th>
<th>Size (DN)</th>
<th>Actuator</th>
<th>Pressure class (PN)</th>
<th>Flange drilling</th>
<th>Body material</th>
<th>Gate material</th>
<th>Ring sleeve material</th>
<th>Auxiliaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>SKW</td>
<td>50 - 600</td>
<td>M = manual</td>
<td>10 = 10 bar standard</td>
<td>2 = DIN PN10 10</td>
<td>0 = Cast iron/</td>
<td>S = stainless</td>
<td>NR = natural rubber</td>
<td>R = readiness</td>
</tr>
<tr>
<td>SKF</td>
<td></td>
<td>MG = manual</td>
<td>standard</td>
<td>3 = DIN PN16 10</td>
<td>Welded steel</td>
<td>steel</td>
<td>+75°C max</td>
<td>for inductive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A = pneumatic</td>
<td>4 = DIN PN25 20</td>
<td>4 = DIN PN40 20</td>
<td>2 = AISI 316</td>
<td>Other on request</td>
<td>NBR = nitrile +100°C</td>
<td>limits R1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AU = pneumatic</td>
<td>5 = DIN PN40 20</td>
<td>6 = ANSI 150 20</td>
<td>4 = other</td>
<td>COATING: 0 = nothing</td>
<td>EPDM = ethylene</td>
<td>max R2 = AC/DC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H = hydraulic</td>
<td>7 = ANSI 300 20</td>
<td>9 = other 20</td>
<td></td>
<td></td>
<td>propylene +120°C max</td>
<td>R3 = DC, NPN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E = electric</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Z1 = solenoide</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>valve, 24V</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>Z2 = solenoide</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>valve, 230V,</td>
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<td></td>
<td></td>
<td></td>
<td>50/60 Hz</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Z3 = solenoide</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>valve, 110V,</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>50/60 Hz</td>
</tr>
</tbody>
</table>

**Example:** SKW 100M10-20S0-NR-G

## SKH Valve Model Selection Guide

<table>
<thead>
<tr>
<th>Type</th>
<th>Size (DN)</th>
<th>Actuator</th>
<th>Pressure class (PN)</th>
<th>Flange drilling</th>
<th>Body material</th>
<th>Gate material</th>
<th>Ring sleeve material</th>
<th>Auxiliaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>SKH</td>
<td>80 - 600</td>
<td>M = manual</td>
<td>20 = 20 bar standard</td>
<td>2 = DIN PN10 20</td>
<td>0 = Cast iron/</td>
<td>S = Stainless</td>
<td>NR = natural rubber</td>
<td>R = readiness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MG = manual</td>
<td>standard</td>
<td>3 = DIN PN16 20</td>
<td>Welded steel</td>
<td>steel</td>
<td>+75°C max</td>
<td>for inductive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A = pneumatic</td>
<td>4 = DIN PN25 20</td>
<td>4 = DIN PN40 20</td>
<td>2 = AISI 316</td>
<td>Other on request</td>
<td>NBR = nitrile +100°C</td>
<td>limits R1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AU = pneumatic</td>
<td>5 = DIN PN40 20</td>
<td>6 = ANSI 150 20</td>
<td>4 = other</td>
<td>COATING: 0 = nothing</td>
<td>EPDM = ethylene</td>
<td>max R2 = AC/DC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H = hydraulic</td>
<td>7 = ANSI 300 20</td>
<td>9 = other 20</td>
<td></td>
<td></td>
<td>propylene +120°C max</td>
<td>R3 = DC, NPN</td>
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<tr>
<td></td>
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<td>E = electric</td>
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<td>Z1 = solenoide</td>
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<td>valve, 24V</td>
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<td>Z2 = solenoide</td>
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<td>valve, 230V,</td>
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<td>Z3 = solenoide</td>
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<td></td>
<td></td>
<td></td>
<td>valve, 110V,</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>50/60 Hz</td>
</tr>
</tbody>
</table>

**Example:** SKH 200E20-30S0-NR

## Slurry Knife Gate Design

- **Gate**
- **Secondary seal**
- **Sleeve with integrated load distribution ring**
- **Removable bottom plate & flushing ports**

*Flowrox Knife Gate Valves are suitable for large-scale project deliveries with a selection of Flowrox pumps and valves.*
Smart Features

Enhance your performance with Smart Solutions™. Flowrox Smart features can be included into any old or new delivery. The Smart valves are next generation solutions delivering data and information in order to provide reliable and cost-efficient production. Real time information from site results in optimized production with maximized output and minimized unplanned shutdowns.

Smart Solutions™

Flowrox Smart valves provide you with online information about their condition, process and operations.

Flowrox Smart PVE is based on the reliable PVE valve and is equipped with a new smart positioner for detailed information about valve operations. The SPVE includes a leak sensor and various embedded instruments for additional information.

Optional SensoMate Smart sleeve detects the wearing before actual sleeve failure.

The Flowrox Smart Valve combined with the Flowrox Malibu™ IIoT user interface enables advanced reporting and data analytics, making your process more reliable and transparent. Malibu is accessible on any device with an Internet browser.

Technical Features

- Pre-fail indications
- Real time data in Flowrox Malibu
- Pressure measurement at the valve inlet/outlet
- Medium temperature measurement
- Leak sensor
- Connectivity with 3G/4G, WIFI or LAN

From Features to Benefits

- Online valve performance monitoring
  - Detect issues before they become a problem
- Automatic pre-fail indications
  - Savings in maintenance & unexpected shutdown costs
- Analytics tools
  - Help you make the correct decisions fast
- Advanced reporting tools
  - Access to detailed asset performance information
- Easy accessibility via Internet
  - Access where ever you are

The Flowrox smart instrumentation can be retrofitted to automatic pinch valves.
Flowrox Smart Valves:
The SPVE series provides online information about the process performance and condition of the valve.

The Flowrox Smart Valve combined with Flowrox Malibu enables advanced reporting and data analytics, making your process more reliable and transparent.
**Special Sleeve Features**

- Conical sleeve for control valves
- Suction sleeve for negative pressure applications
- SensoMate sleeve detecting and signalling critical wear
- Polyurethane lined sleeve with improved protection against wear in abrasive control applications
- Foodgrade rubber for FDA requirements

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To cover a wide range of applications, several rubber compounds are available.
We offer prompt support, spare parts and services in order to maximize your performance.

We manufacture and deliver original spare parts and components for all Flowrox products (valves, hose pumps, PC pumps).

- On-time trouble-free delivery of spares and services
- Cost savings through optimized service cycles and reduced downtime of equipment
- Longer life cycles for equipment

Flowrox valves are available in various sizes and models for various applications. Flowrox Services supports you throughout the entire life cycle.
Flowrox: Proven Performance

Flowrox is a family-owned global company headquartered in Finland. It specializes in flow control, pumping, filtration solutions and environmental technologies. Flowrox products and services are enhanced with IIoT solutions and intelligent systems. Flowrox serves a number of process industry applications, especially in mining, minerals processing, chemical, energy and environmental industries.

Flowrox has subsidiaries in Australia, Chile, China, Peru, South Africa, Russia, Sweden and the United States as well as more than 230 sales representatives in 80 countries.

This is how we flow!
Check out the Flowrox Pinch Valves in action by scanning this QR code.

Open your gates!
Check out the Flowrox Knife Gate Valves in action by scanning this QR code.

Get Smarter!
Check out the Flowrox Smart Solutions™ by scanning this QR code.

Contact your local Flowrox representative

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