

FLOWROX

Proven Performance

VALVES | flowrox.com

As of 1st of November 2021,
Flowrox brand
belongs to Neles Group.



Valve Solutions



Heavy Duty Pinch Valves
General Line Pinch Valves
Slurry Knife Gate Valves
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 valve type selection, sizing, materials selection, installation, spare parts and maintenance to optimise the up- and downstream flow.

Product portfolio

- 1977 • Pinch valves
- 2000 • Plastic body valves
- 2002 • Pumps introduced
- 2009 • Slurry knife gate valves

2011 -

Name changed from Larox Flowsys to

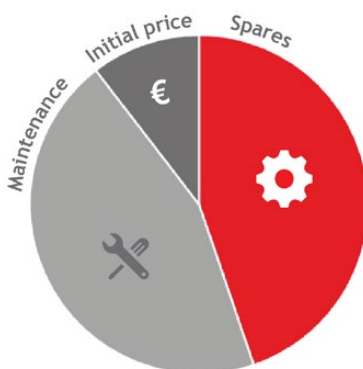
FLOWROX

- 2020 • Big knife gate valves DN900-1500
- 2021 • As of 1st of November 2021, Flowrox brand belongs to Neles Group.



WE PROVIDE THE OPTIMAL SOLUTION:

Ball valve



Flowrox pinch 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.

YOUR BENEFITS

Low total cost of ownership



Low operating costs



Improved process performance



Long service intervals



Heavy duty design

Flowrox Valve Product Portfolio

> Heavy Duty Pinch Valves



PV, PVE, PVE/S and PVS pinch valves

- Pressure rating up to 100 bar
- Size DN25 - 800
- High cycle applications
- For isolation & control purposes
- Temperature range: -50°C - +160°C

Actuator options:

- Manual
- Manual with gear
- Pneumatic
- Electric
- Hydraulic

> General Line Pinch Valves



PVG pinch valves

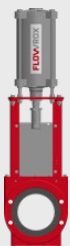
- Pressure rating up to 10 bar
- Size DN50 - 250
- Low cycle applications
- For isolation duty
- Temperature range: 0°C - +100°C



PVEG pinch valves

- Pressure rating up to 10 bar
- Size DN50 - 150
- Low cycle applications
- For isolation duty
- Temperature range: 0°C - +70°C

> Slurry Knife Gate Valves



SKW

- Pressure rating 10 bar
- Size DN50 - 600
- Isolation duties only
- Wafer
- Temperature range: -45°C - +100°C



SKF

- Pressure rating up to 10 bar
- Size DN80 - 1500
- Isolation duties only
- Flanged
- Temperature range: -45°C - +100°C



SKH

- Pressure rating 20 bar
- Size DN80 - 600
- Isolation duties only
- High pressure
- Temperature range: -45°C - +100°C

> 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

Trafigura 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 have 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.

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.



OUR CUSTOMER: TRAFIGURA MINING GROUP

Trafigura Mining is a market leader in copper, lead and zinc concentrates trading. The flagship mine, Aguas Teñidas (MATSA), is located in Andalucía, Spain. In the year 2015, the production of concentrates nearly doubled to 4,4 tons per year.



Flowrox Valve References



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



- Location:** Wastewater treatment plant, 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



- Location:** Iron ore mine, Sweden
Products: PV and PVE pinch valves
Application: Thickener underflow
Benefits:
- Reliability with abrasive slurry
 - Wide and accurate flow control range
 - Extended maintenance interval



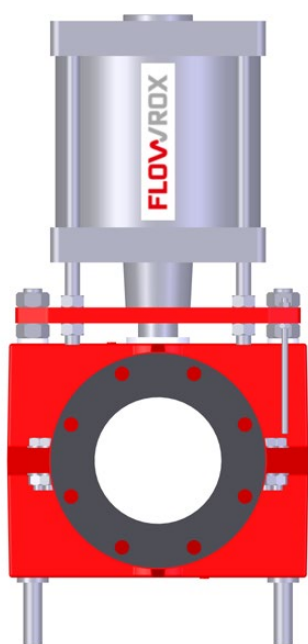
Heavy Duty Pinch Valves

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.



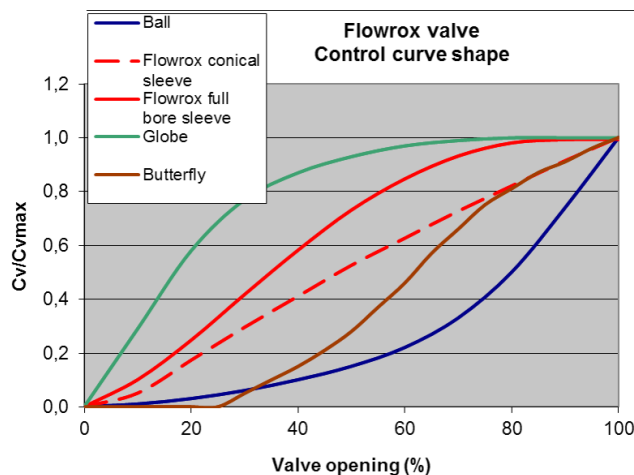
Control Valves

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.

Each valve can be sized and optimized for the optimal control range, to limit wear and velocity and also to prevent cavitation from occurring in the control valve. Controllability can be further improved, i.e. linearized and widened, with conical sleeves and smart positioners.

Flowrox Control Valve Sizing Programme is available to ease your work. The sizing is based on the international IEC60534 standard (harmonized with ANSI/ISA S75).



Improved controllability with conical sleeve results in linear control curve.



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

Customer benefits

Cost-effective



Reliable operation



Predictive maintenance



Sizing programme helps you choose the correct valve



Equipment optimized to your process

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.



Pinch Valve Type Markings



Heavy duty pinch valve with actuator

• PVE200AK6-203L,SBRT



General line pinch valve with actuator

• PVG100A6-2/60,SBRT



General line pinch valve with polyamide body

• PVEG100M10-2/65,SBRT

Find more information about the valve type markings from the [pinch valve model selection guide](#).

Flowrox General Line Pinch Valve References



Customer: Copper Mine, Finland
Products: PVG150M
Application: Tailings transfer, isolation valves
Benefits:

- Increased process reliability
- Extended maintenance interval
- Low total cost of ownership



Customer: Kara Mine, TMM, Tasmania, Australia.
Products: PVEG50M
Application: Hydrocyclone
Benefits:

- Trouble-free operation
- Low maintenance costs
- Long lifetime



Slurry 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.

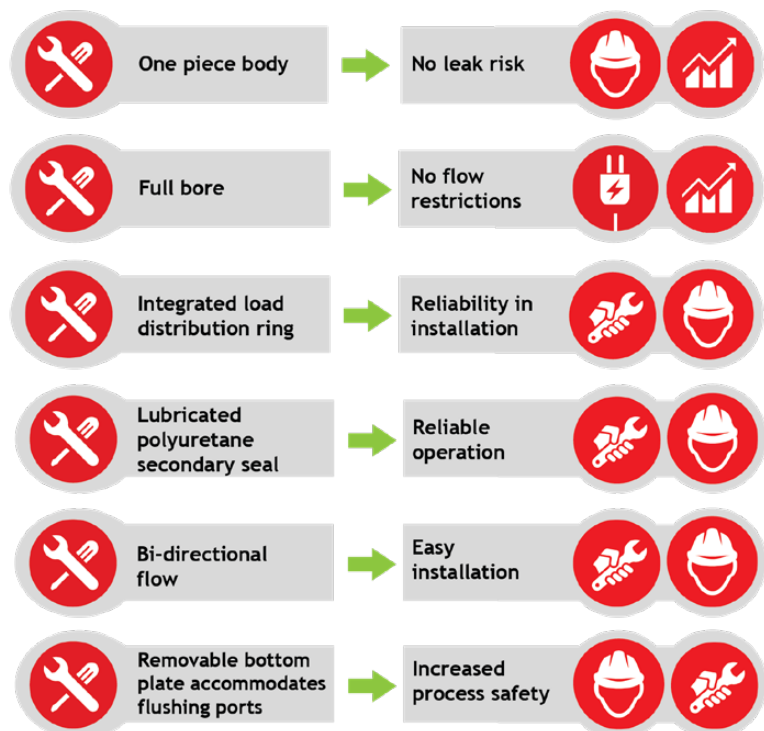
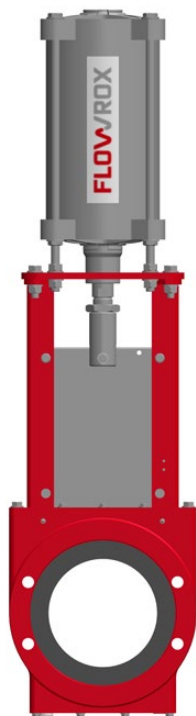
Slurry Knife Gate Valves

The designs of Flowrox Slurry Knife Gate Valves are based on 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 ease the maintenance, the load distribution ring is integrated into the valve's sleeves

The valve's universal tower design accommodates most actuator types, allowing the actuator's interchangeability. The tower also ensures that the top plate, body and actuator are always aligned and 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.

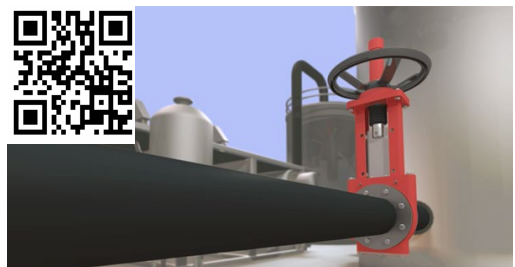
Flowrox SKF knife gate valves DN 900-1500 use a new approach. Instead of a tower design, two actuator cylinders are positioned on the sides.



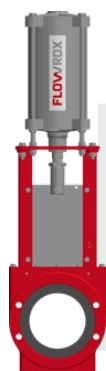
Benefits: This Is How We Flow!

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

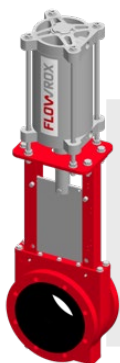
Image: Elastomer sleeves on both sides of the gate provide a tight shut off. See the Flowrox knife gate valve in action by scanning the QR code.



Knife Gate Valve Type Markings



Slurry Wafer Knife Gate Valve (SKW)
• SKW100A10-20S0-NR



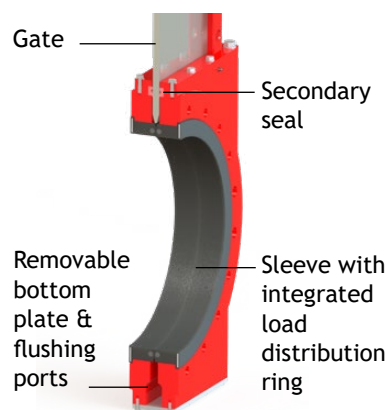
Slurry Flanged Knife Gate Valve (SKF)
• SKF100A10-20S0-NR



Slurry Knife Gate Valve for High Pressures (SKH)
• SKH100MG20-40S0-NR

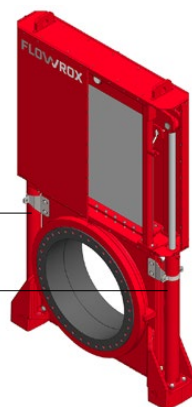
Find more information about the valve type markings from the [knife gate valve model selection guide](#).

Slurry Knife Gate Design DN50 - 800



Slurry Knife Gate Design DN900 - 1500

Flowrox SKF knife gate valves DN 900-1500 use a new approach. Instead of tower design, we use the “twin-actuator” where the actuators are positioned on the sides.



Pressure Classes for All Flowrox Knife Gate Valves

| Valve Size (DN) | Pressure Class (bar) |
|-----------------|----------------------|
| DN 80-900 | 10 |
| DN 1000 | 6 |
| DN 1050 | 6 |
| DN 1200 | 6 |
| DN 1350 | 4 |
| DN 1500 | 4 |



Flowrox SKW shut-off valves on the suction side of pumps in paste tanks.

Customer benefits

Cost-effective



Reliable operation



Long service intervals



Trouble-free operation

Spares parts for valves

Sleeves: The core of Flowrox valves

Our technologically advanced Flowrox sleeves guarantee high resistance to wear and corrosion, trouble-free operation and extended lifetime.

Robust Heart of the Pinch Valve

The handmade sleeve has reinforced construction, making it the pressure-containing part of the valve.

Standard Flowrox PV, PVE and PVG sleeves are equipped with opening tags to ensure full valve opening in all process conditions.

Ring Sleeves for Knife Gate Valves

The sleeve is a moulded part with a reinforcement steel ring integrated near the sealing area. The flange of the sleeve is reinforced with a load distribution ring to ensure even compression.

Ring sleeve material alternatives:

- NR
- EPDM
- NBR



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
- Food grade rubber for FDA requirements
- Extra thick sleeve for severe wear control valve applications

We manufacture and deliver spare parts for all Flowrox valves

- Fast delivery and availability 24/7 for contract customers
- Various material choices according to end-use applications
- High quality
- Service and spare part stocking agreements
- Training
- Analyzing and consultation services & technical support

Sleeve Material Alternatives

The high-grade Flowrox sleeve materials range from wear resistant styrene butadiene to numerous other elastomers and rubber compounds. These materials are highly resistant to abrasive and corrosive slurries, powders and granular substances.

- 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

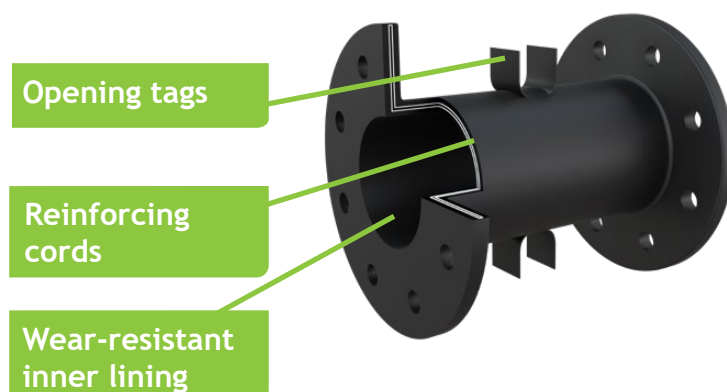


Find more information about the valve type markings from the [pinch valve sleeve model selection guide](#).

Certified high-quality sleeves

The Flowrox rubber sleeves are handmade layer by layer in a quality process covered by ISO9001:2015 and ISO14001:2015.

Sleeve has a reinforced construction, making them the pressure-containing part of the valve. Standard Flowrox PV, PVE and PVG sleeves are equipped with opening tags to ensure full valve opening in all process conditions.



The standard sleeve design consists of three sets of layers: the inner layer, the reinforcement layer and the outer layer.

TECHNICAL FEATURES

- **Size Range:** 25 mm - 1000 mm
- **Operating temperature:** -50 °C - +160 °C
- **Operating pressure** from vacuum to 100 bar

PRODUCT FEATURES

- Flexible
- Self-cleaning
- Multilayer construction
- Full bore
- 100% tight
- Only the sleeve is in contact with the medium
- Numerous elastomer compounds
- Special sleeve designs

PROCESS BENEFITS

- Excellent wear resistance
- High corrosion resistance
- No turbulence
- No jamming or clogging
- No flow restrictions
- Reduced process downtime

Services

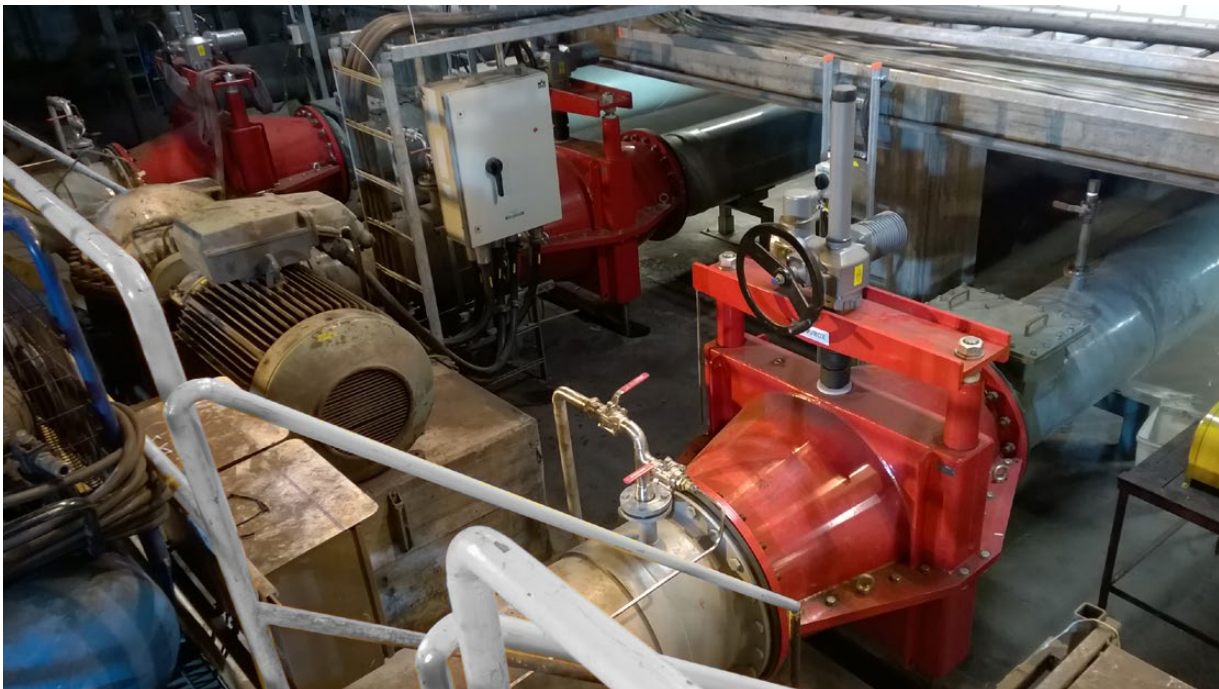
Global product support with local presence

We offer prompt support, spare parts and services in order to maximize your performance.

We manufacture and deliver original spare parts and components to all Flowrox pinch and knife gate valves, peristaltic pumps as well progressive cavity pumps.

With our pump and valve service you get:

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



Flowrox valves are available in various sizes and models for various applications. Flowrox Services support you throughout the entire valve life cycle.





In many applications Flowrox pinch valves are working so well that no maintenance is required for several years and the plant personnel can forget the valves as they present no problems.





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.



Proven Performance

We provide flow control solutions and services to process industry applications, especially in mining, minerals processing, metallurgy, construction, energy, and chemical industries.

Our offices are located in Australia, Chile, China, India, Russia, South Africa, United Kingdom and the United States. We also have more than 230 sales representatives in over 80 countries.

Flowrox, formerly known as Larox Flowsys, has more than 40 years of experience operating within heavy industries. It started in 1977 when a company Larox was founded. Larox manufactured pressure filters and pinch valves for demanding conditions. Later on, pinch valve product line separated to its own company: Larox Flowsys. In 2011, Larox Flowsys renamed to Flowrox.

As of 1st of November 2021, Flowrox brand belongs to Neles Group.



Neles Finland Oy
P.O. Box 26, FI-53101 Lappeenranta
Finland
Tel. +358 104 175 000

www.flowrox.com
info@flowrox.com

