

Reliable performance for demanding environments

Flow control solutions for
the minerals and metals industry



We are an established and trusted name in durable valve solutions for minerals and metals processing plants around the world. Our valves and pumps are built to perform and handle demanding media from abrasive slurries to the corrosive chemicals used in many of the extraction and refining processes.





Reliable performance for demanding environments

Valves and pumps play an important role throughout the mining cycle, especially in separation and refining processes. We offer customers extensive expertise and a wide portfolio of valve and pump solutions for a variety of minerals and metals processing applications.

Matching the application requirements with the right valve and pump solution is one of our core capabilities. Our extensive offering comes equipped with advanced product constructions, designed to withstand even the most demanding mining process environments.

All of our field-proven solutions are supported by comprehensive lifecycle services carried out by dedicated and skilled experts. Both products and services are designed to ensure the longest possible valve product lifecycle and long service intervals.

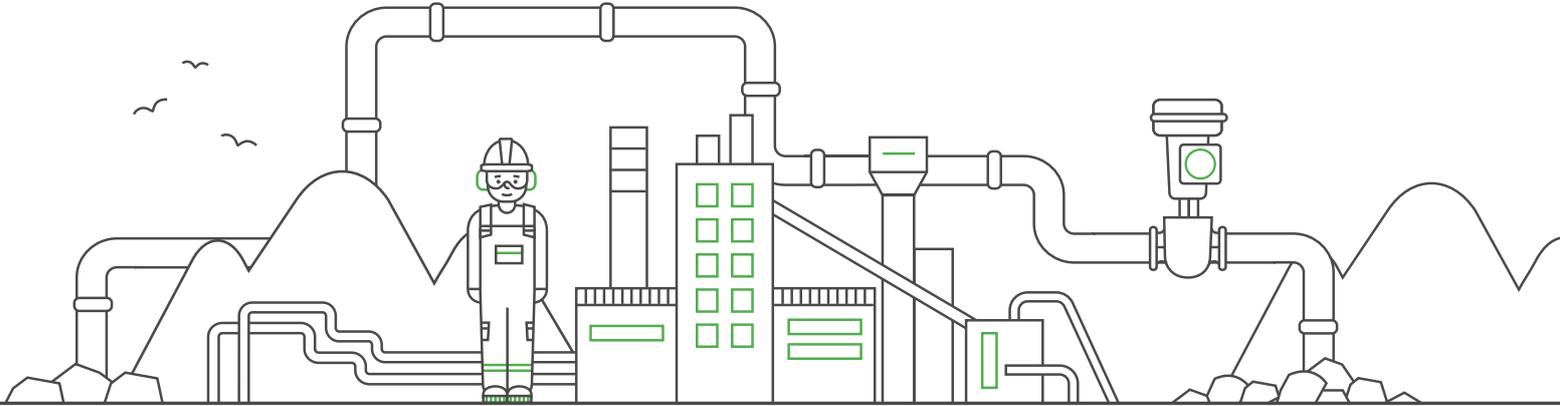
We manufacture and deliver valves and pumps from our own

dedicated valve technology centers located in China, North America, Brazil, Germany, Finland, South Korea, India and South Africa. Our global supply chain also ensures product and service availability anywhere in the world.

In addition to valves and pumps, Valmet's offering for the mining and minerals segment also includes for example advanced automation solutions and filter fabrics.



Flow control solutions in minerals and metals processing



Customer case: LKAB iron ore mine, Sweden

Pumping 72% rock solids in an iron ore mine

Challenge

Pumps suitable for paste and high-density slurries

- Reliable pumping process
- Save water but maintain the flow
- Occasional need to handle large particles

Benefit

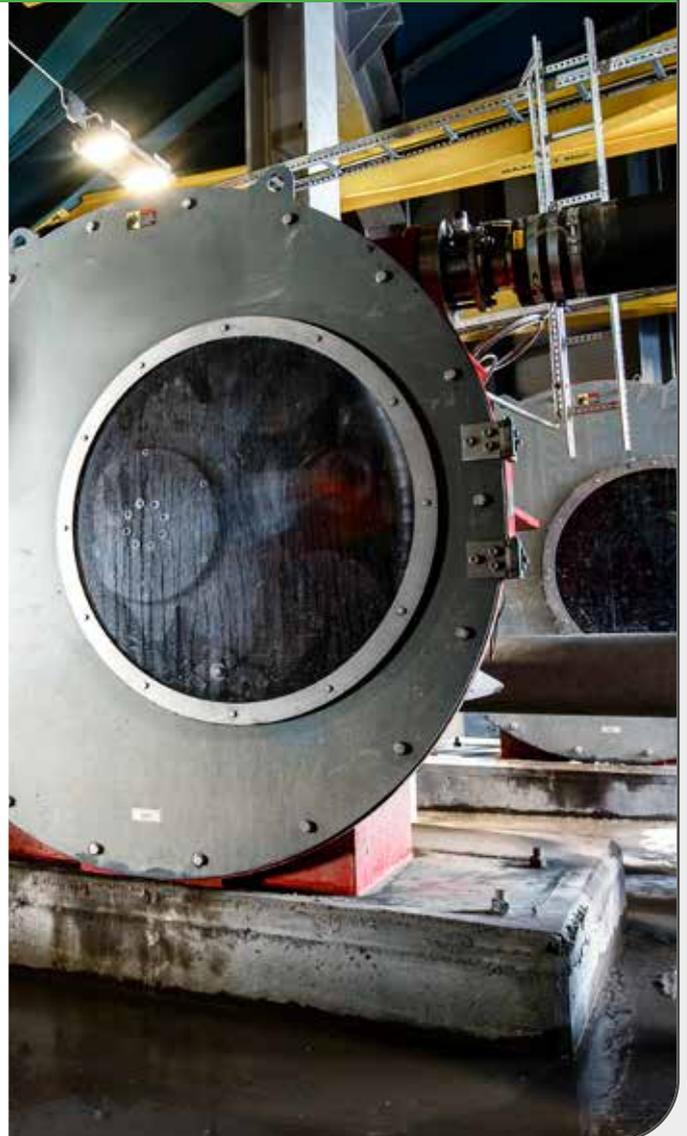
Reliable operation in the thickening process.

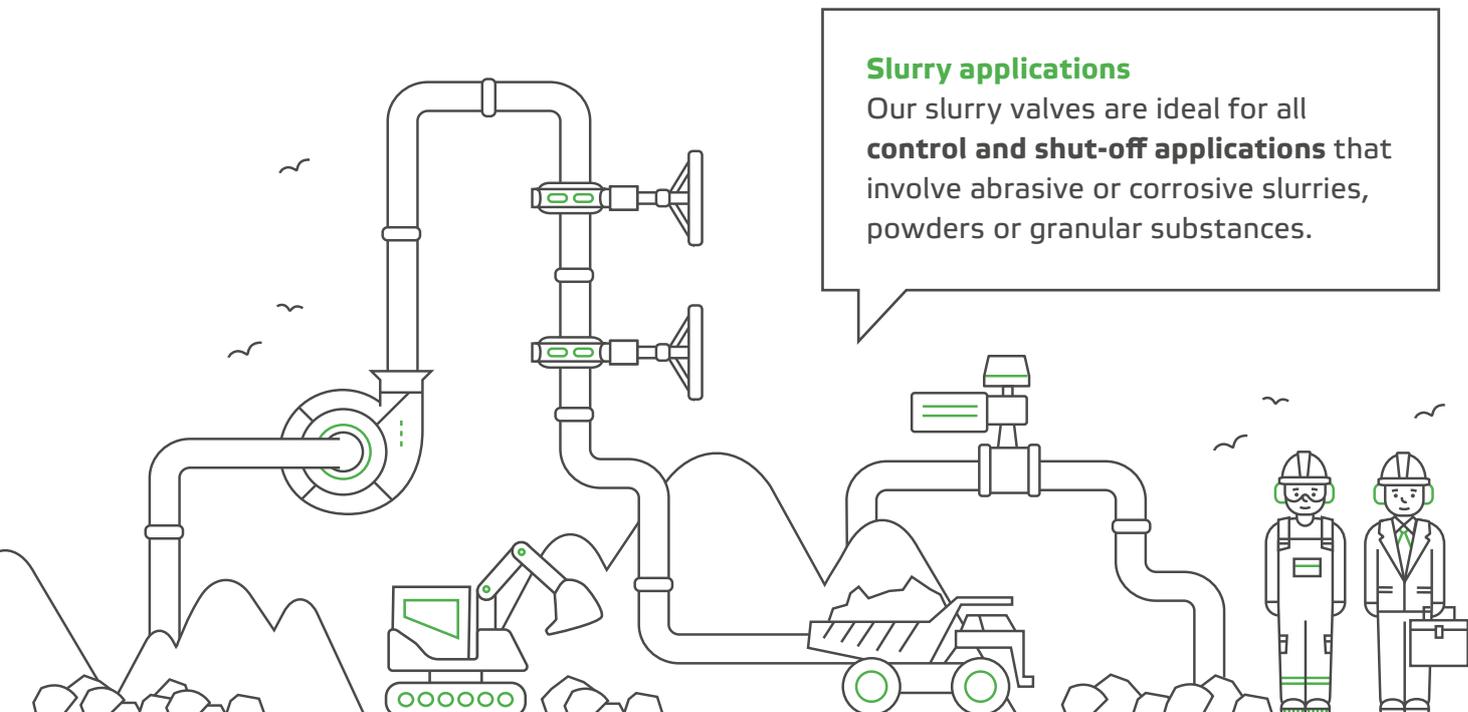
- The capability of the pumps to effectively pump solids: Enables to save water but maintain the flow
- 3-5 times longer hose lifetime
- Less maintenance
- Great support from the suppliers and local representative

Solution

Delivery:

- 4 Flowrox™ hose pumps LPP-T100





Customer case: Trafigura Mining Group, MATSA mine, Spain

Saving time during start-up

Challenge

Ensure process performance in each application

- Smooth start-up of the plant
- Cost savings
- Increase process reliability

Benefit

Long-term benefits based on low total cost of ownership, increased safety and process reliability

- Easy installation and maintenance: Self-cleaning and reliable valves with flexible sleeves
- Cost savings throughout the lifecycle of the pinch valves

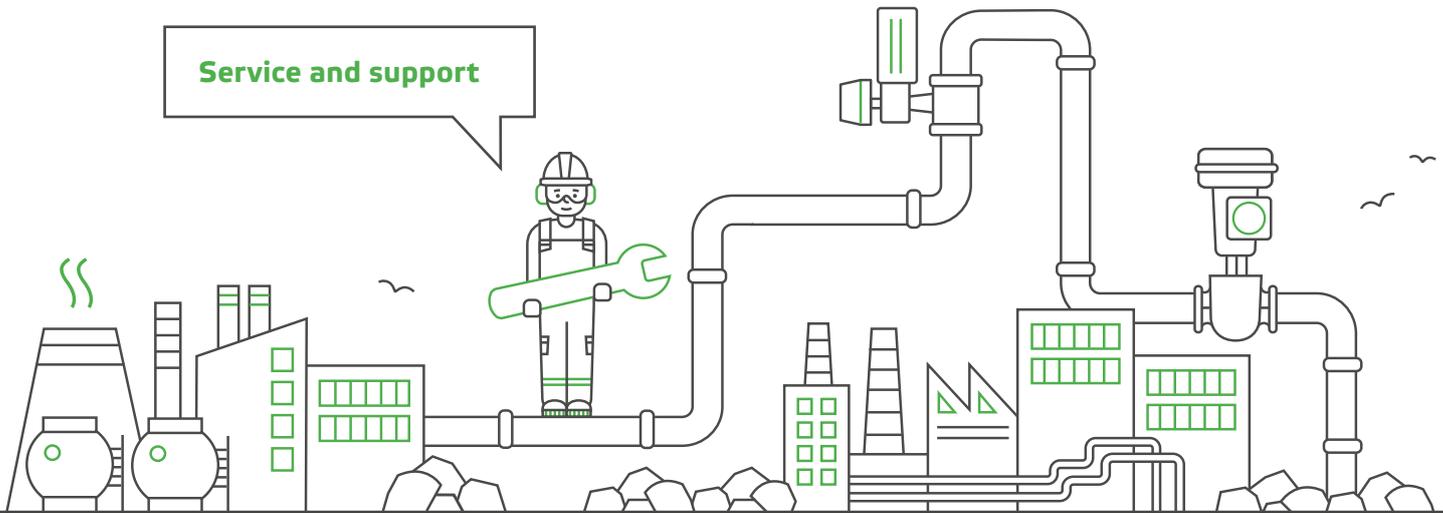
Solution

Delivery:

- In total 330 control and shut off pinch valves, including including Flowrox™ PVE and PVG pinch valves



Flow control solutions in minerals and metals processing



Customer case: Terrafame multi-metal mine, Finland

Guaranteed valve delivery in six hours

Challenge

Ensuring high, year-round availability in a metals production plant with 1000s of valves

- Raising overall utilization rate
- Keeping maintenance outages to a minimum
- Ensuring valve and part availability

Benefit

An agreement that improves operational reliability and reduces on-site stock

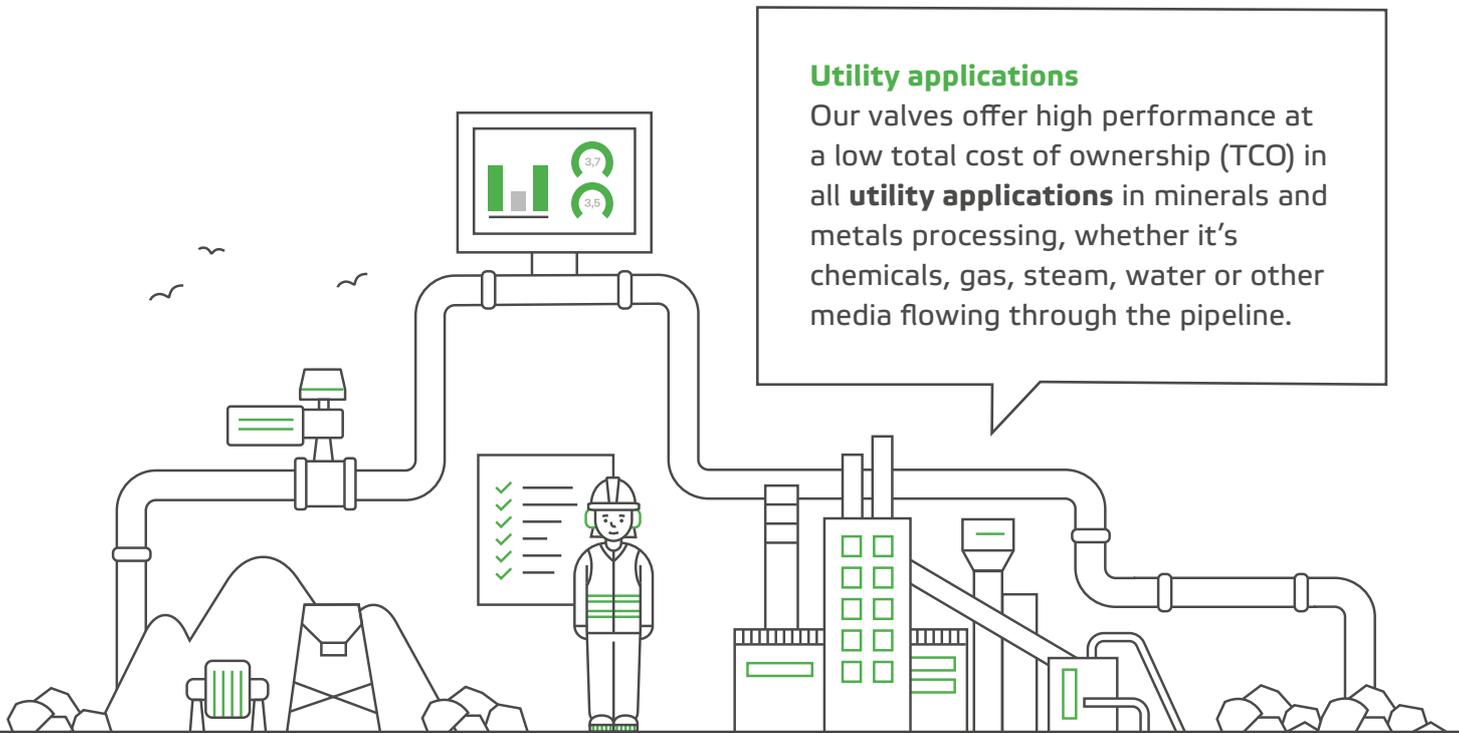
- Valve delivery within six hours
- Guaranteed reliability and availability
- Easier maintenance work
- Predictable maintenance and shutdown needs
- Improved cost-efficiency

Solution

Delivery:

- A service agreement covering all valves within the frame agreement, all valve components and guaranteed delivery





Utility applications

Our valves offer high performance at a low total cost of ownership (TCO) in all **utility applications** in minerals and metals processing, whether it's chemicals, gas, steam, water or other media flowing through the pipeline.

Customer case: Tarkwa gold mine, Ghana

Doubling valve lifespan

Challenge

Quality issues led to unplanned downtime and loss of output

- Unpredictable valve life
- Premature stoppages
- Unplanned downtime
- Unplanned maintenance costs

Benefit

Our valves improved the whole production process

- Double the valve lifespan
- Consistent reliability
- Reduced downtime
- Improved productivity
- Improved overall efficiency

Solution

Delivery:

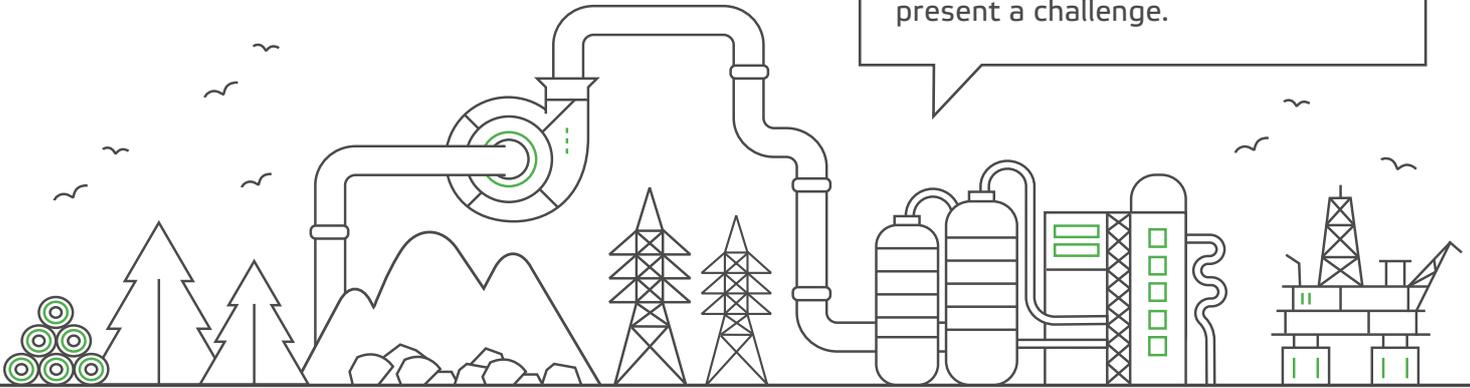
- Design and engineering services
- Nelprof™ valve selection software tool
- Control and on/off valves:
Ball valves, butterfly valves and segment valves



Flow control solutions in minerals and metals processing

Severe service applications

Our field-proven valves offer reliable performance in demanding environments such as **autoclave applications** where high temperatures, pressures and acid concentrations present a challenge.



Customer case: Leading Finnish nickel processing customer

Greatly improved autoclave process uptime

Challenge

Tough process conditions caused regular valve replacements

- Short valve lifetime
- Poor uptime
- Problems with level control operations

Benefit

Our valves provided significant benefits

- Valve lifetime extended from few weeks to 18 months
- Withstand harsh process conditions:
High pressures, acidic and erosive media
and elevated temperatures
- High ROI and short payback time

Solution

Delivery:

- Design and engineering services
- Neles™ WearBlock™ valves
- Composite materials
- Multi-material construction:
Erosion resistant ceramics and tough and reliable steels





Reliable performance with the right valve and pump partner

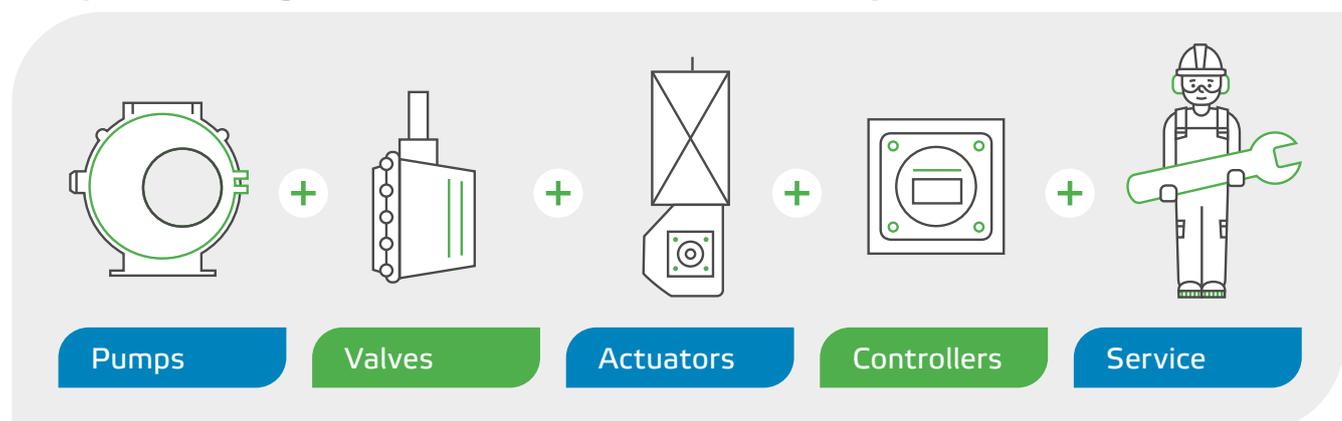
Enjoy the benefits that come with selecting a valve and pump partner that understands your process needs and unique challenges.

Our products provide industry-proven efficiency and reliability based on well-thought-out designs and material selections paired with dedicated service expertise.

In addition to a wide range of flow control solutions, we also offer filter fabrics and advanced process automation technologies.

Full product assemblies with service coverage across their entire lifecycle, all from one responsible source, ensure optimized performance.

Complete offering for the minerals and metals industry



Flow control solutions for the minerals and metals industry

Suitability by application area: Slurry applications Utility applications Severe service applications

Pinch valves

Flowrox pinch valves <input checked="" type="radio"/>						
Product	Series	Design	Specifications		Application	Bulletin
Flowrox pinch valves 	PVE-series Enclosed body	The enclosed body valve is the most common body type for Flowrox pinch valves. Its enclosed design prevents premature sleeve deterioration and protects the sleeve from the environment, making it extremely safe to operate.	Size:	DN 25 – 600 NPS 1" – 24" Bigger sizes upon request	Flowrox pinch valves for shut off and control applications involving abrasive or corrosive slurries, powders or granular substances. The rubber sleeve is the only wearing part.	4PV20
			Pressure:	Up to 100 bar / 1500 psi		
			Actuator:	Manual, manual with gear, pneumatic, electric or hydraulic		
Flowrox pinch valves 	PV-series Open body	The open body pinch valve is designed for non-hazardous media, lower pressures, and operating temperatures. This design isolates vibration and tolerates minor misalignments of the pipeline. It is also light-weight and easy to service.	Size:	DN 80 – 600 NPS 3" – 24" Bigger sizes upon request	Flowrox pinch valves for shut off and control applications involving abrasive or corrosive slurries, powders or granular substances. The rubber sleeve is the only wearing part.	4PV20
			Pressure:	25 bar / 375 psi		
			Actuator:	Manual, manual with gear, pneumatic, electric or hydraulic		
Flowrox pinch valves 	PVG-series	Flowrox PVG is a robust pinch valve with strong metal body, single-sided simple closing mechanism. Through its reliability and structure, offers substantial savings based on improved performance.	Size:	DN50 – 250 / NPS 2" – 10"	Designed for shut off applications involving pressure resistance, heat, abrasion, corrosion and aggressive slurries.	4PV21
			Pressure:	Up to 10 bar / 150 psi		
			Actuator:	Manual, pneumatic or electric		
Flowrox pinch valves 	PVEG-series	The PVEG is a robust yet compact and light-weight pinch valve made of polyamide blend with single-sided closing mechanism.	Size:	DN50 – 150 / NPS 2" – 6"	Applicable for industries that require bubble tight shut-off involving aggressive slurries, abrasion, corrosion, and pressure resistance.	4PV21
			Pressure:	Up to 10 bar / 150 psi		
			Actuator:	Manual or pneumatic		

Slurry knife gate valves

Flowrox slurry knife gate valves ●						
Product	Series	Design	Specifications		Application	Bulletin
Flowrox slurry knife gate valves 	SKW-series Slurry wafer knife gate valve	Featuring integrated load distribution ring that prevents over compression during installation. Designed with one-piece body and universal tower design allowing for actuator interchangeability.	Size: DN50 – 600 / 2" – 24" Pressure: 10 bar / 150 psi Seat: Several material options		Flowrox slurry knife gate valves are designed for heavy duty purposes to isolate flow, even in the most demanding process conditions. The bi-directional flow tolerates backflow and elastomer sleeves on both sides of the gate provide tight shut off.	4SK20
Flowrox slurry knife gate valves 	SKF-series Slurry flanged knife gate valve	Flanged Integrated load distribution ring prevents over compression during installation. One-piece body & universal tower design for actuator interchangeability.	Size: DN80 – 1500 Pressure: ASME 2" – 24" Pressure range: 0 – 10 bar Seat: Several material options	Size: DN1000 – 1200 / 40" – 48" Pressure: 6 bar / 90 psi Seat: Several material options		
Flowrox slurry knife gate valves 	SKH-series Slurry high pressure knife gate valve	Featuring ring sleeve retaining flanges preventing over compression and ease of installation. One-piece body and universal tower design for actuator interchangeability.	Size: DN80 – 600 / 3" – 24" Pressure: Up to 20 bar / 300 psi Seat: Several material options		For high pressure applications Isolation duties only	

Segment valves

Neles™ segment valves ●						
Product	Series	Design	Specifications		Application	Bulletin
Neles segment valves 	R-series Cv-element Q-elements (noise)	Pre-engineered segment types and materials acc to industry mediums. Control and on/off applications	Size: DN 25 – 800 Pressure: ASME 1" – 32" DIN, ASME, JIS-ratings Materials: Metal and soft seated		Benchmark control performance for minerals processing. Provides constant gain over wide control range	

Ball valves

Neles ball valves ● ● ●						
Product	Series	Design	Specifications		Application	Bulletin
Neles ball valves 	X-series Q-elements (noise)	Seat supported modular ball valve. Valve modularity widens the options in material selections to meet application requirements	Size:	DN25 – 200in full bore DN80 – 200 in reduced bore. For larger sizes, see bulletin	Minerals processing on/off and control service. Widely used valve in e.g. gold, steel and multimetal processing	1X26
Neles ball valves 	E-series	A new generation ceramics, Mg-PSZ, lines the series E flow path	Materials:	Neles Wear Block materials available for the toughest applications	Demanding applications such as bauxite processing and autoclaves	1E220
Jamesbury™ ball valves ●						
Product	Series	Design	Specifications		Application	Bulletin
Jamesbury ball valves 	7000-series Standard port	Pre-engineered valve types and materials according to industry standards for control, on/off and manual use	Size:	DN15 – 500 (½" – 20")	Applications up to 260 °C / 500 °F High performance Xtreme™ seat materials Low emission stem seals	B107-1 B107-3
	9000-series Full port		Size:	DN15 – 600 (½" – 24")		
Jamesbury ball valves 	4000-series	Pre-engineered valve types and materials according to industry standards for control, on/off and manual use	Size:	Standard port: DN15 – 65 (½" – 2½") Full port: DN15 – 50 (½" – 2")	Applications up to 260 °C / 500 °F High performance Xtreme™ seat materials Low emission stem seals	B105-1
			Body:	Carbon steel, 316SS		
			Ball/stem:	Carbon steel, 316SS, Monel, Hastelloy C		

Butterfly valves

Neles butterfly valves ● ●					
Product	Series	Design	Specifications	Application	Bulletin
Neles butterfly valves 	L-series S-discs (noise)	Pre-engineered valve types and materials according to industry standards. Low lifecycle costs	Size: DN25 – 600 Pressure: ASME 1" – 36" EN, ASME, JIS-ratings Materials: Metal and soft seated	Economical performance for control and shutoff service in minerals processing plants	L12: 2L121 LW: 2LW20
Jamesbury butterfly valves ●					
Product	Series	Design	Specifications	Application	Bulletin
Jamesbury butterfly valves 	800-series	Pre-engineered valve types and materials according to industry standards for control, on/off and manual use	Size: Wafer: DN65 – 750 (2½" – 30") Lugged: DN65 – 500 (2½" – 60") Pressure: ASME 150 & 300 Body/trim: Carbon steel, 316SS, Alloy 20, 254SMO®, Monel, Hastelloy C Seat: Teflon®, Xtreme, UHMV, 316SS/PTFE, 316SS/XT	Economical performance for control and shut-off service in all soft seated applications	W101-6 W104-1 W105-1
Neles™ Easyflow™ ● ●					
Product	Series	Design	Specifications	Application	Bulletin
Neles Easyflow 	JA-series	Although compact and lightweight, the JA-series is designed to be rugged, reliable, and to comply with a variety of industry standards	Size: DN50 – 600 Pressure: PN10, PN16, Class 150 pressure ratings	Water and slurry applications, all nondemanding applications in the minerals processing plant	W152-1

Globe valves

Neles globe valves ●					
Product	Series	Design	Specifications	Application	Bulletin
Neles globe valves 	G-series Tendril™ & Omega™ trims (Noise & Cavitation)	Compact and lightweight construction Large range of trims with various Cv and characteristics to fit process conditions	Size: DN 15 – 900 (½" – 36") Pressure: ASME 150 – 2500 PN 10 – 320 JIS 10K – 20K	High capacity and heavy duty globe valves for various processes such as alumina production and support processes	GU: 4GV21 GB: 4GV25 GM: 4GV20

Suitability by application area: Slurry applications Utility applications Severe service applications

Peristaltic pumps

Flowrox peristaltic pumps <input checked="" type="radio"/>						
Product	Series	Design	Specifications		Application	Bulletin
Flowrox hose pumps 	LPP-T-series	Flowrox LPP pumps incorporate an advanced rolling design, which eliminates friction, maximizes hose life, and lowers energy consumption.	Size: DN32, 40, 50, 65, 80, 100 Volume: 0,5 – 100 m ³ /h / 2.2 - 440 gpm Pressure: 7,5 or 10 bar / 150 or 108 psi Solids: Up to 80 % Temperature: Up to 95 °C / 203 °F Particle size: 25 % from DN size Suction lift: 0 – 8 m / 0 – 26 ft capability		Toughest industrial applications such as thickener underflow, heavy duty slurry transfer, tailings transfer, sampling and dosing	4LPPT20
Flowrox hose pumps 	LPP-D-series		Size: DN15, 20, 25 Volume: 0,1 – 2 m ³ /h / 0 – 7.9 gpm Pressure: 7,5 or 16 bar / 108 or 232 psi Solids: Up to 80 % Temperature: Up to 95 °C / 203 °F Particle size: 25 % from DN size Suction lift: 0 – 8 m / 0 – 26 ft capability			4LPPD20

Actuators

Neles actuators <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>						
Product	Series	Design	Specifications		Application	Bulletin
Neles actuators 	B1-series	Designed for ISO 5211/1 when Neles linkages are utilized	Torque: From 25 Nm to 120 000 Nm for maximum supply pressure of 10 bar		Suits an extensive range of minerals processing applications	6B20
Neles actuators 	V-series	Multi springs with a rolling diaphragm design for precise control application and heavy duty severe application	Thrust: 1890 – 264 860 N Temperature: -55 to +120 °C Pressure: Range up to 10 bar		Applications up to 260 °C / 500 °F High performance Xtreme seat materials Low emission stem seals	VD: 6DA20 VB: 6VB20 VC: 6CA20

Suitability by application area: ○ Slurry applications ● Utility applications ● Severe service applications

Actuators

Jamesbury™ Quadra-Powr™ X ● ● ●						
Product	Series	Design	Specifications		Application	Bulletin
Jamesbury Quadra-Powr X 	QPX-series	Rolling diaphragm design, along with new one-piece diaphragm retainer and UHMW Polyethylene bearing, assures extremely long cycle-life Low-friction operation provides exceptionally smooth actuation	Action: Spring return		For control and on-off actuation	A110-4
Rack and pinion actuators ● ●						
Product	Series	Design	Specifications		Application	Bulletin
Jamesbury rack and pinion actuators 	Rack and pinion actuators	Corrosion treatments: Electroless nickel, hard anodized protection, PTFE coating	Action: Double acting or spring return Input: 2.5 – 7.0 bar Torque: 3.2 – 6211 Nm		Economical rotary actuation for ball and butterfly valves	RNP: A112-1 VPVL: A111-5

Neles valve controls

Neles valve controls ● ● ●						
Product	Series	Design	Specifications		Application	Bulletin
Neles valve controls 	ND9000™, NDX™	Designed to operate in all control valve actuators and in all industry areas. Unique diagnostics capabilities	Single and double action, linear and rotary operation, HART® 4 – 20 mA smart functions		Leading control performance for minerals processing. Modular design with add on functionalities	ND9000: 7ND9021 NDX: 7NDX22, 7NDX23
Stonel smart on/off monitoring ● ● ●						
Product	Series	Design	Specifications		Application	Bulletin
Stonel smart on/off monitoring 	Quartz™ Eclipse™	On/off monitoring	Features according to industry needs		Compact on/off valve position feedback with modular design	7QZ22
	Axiom™ On/off valve controller	On/off monitoring with integrated solenoid valve			High performance on/off valve control and position feedback Many solenoid valve options	7AN20, 7AM21, 7AX21

Standards and certifications





Valmet's professionals around the world work close to our customers and are committed to moving our customers' performance forward – every day.

Valmet Flow Control Oy

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