

The industry benchmark for pumping

Flowrox™ pump solutions





We exist to make your life easier

We deliver advanced pumping solutions for the most demanding process conditions. Our story started over 40 years ago making us industry experts on flow control. Over the years we have delivered over 150,000 products worldwide. Our unique pump design saves energy and water increasing your process availability and reducing total cost of ownership.

Product portfolio

- 1977** Pinch valves
- 2002** Peristaltic pumps
- 2008** Pump service, metering pumps
- 2011** Name changed from Larox Flowsys to Flowrox
- 2011** Progressive cavity pumps
- 2015** Pulsation dampeners
- 2017** Packaged pumping systems
- 2019** Centrifugal pumps
- 2021** Flowrox brand acquired by Neles
- 2022** Valmet and Neles merged



We provide the optimal solution

Flowrox peristaltic pumps have the unique eccentric rolling hose compression. The rolling design extends the hose life time and simplifies maintenance.



Customer benefits

- Low total cost of ownership
- Low operating costs
- Improved process performance
- Long service intervals
- Minimized downtime
- Heavy duty design

Flowrox pump references

Customer case: LKAB iron ore mine, Sweden

Products: Flowrox LPP-T100 / LPP-T4" Hose Pumps

Application: Thickener underflow, tailings

- Benefits:**
- Ability to pump thicker slurries
 - Extended service intervals with easier maintenance
 - Operational reliability

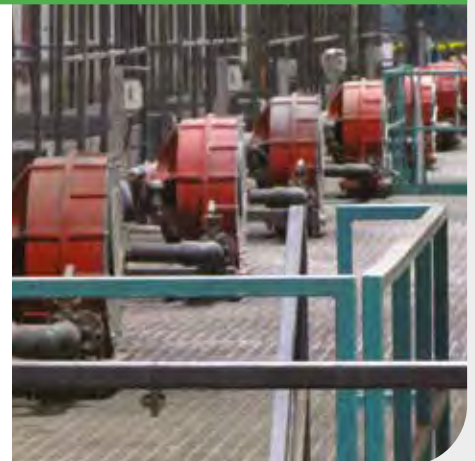


Customer case: Terrafame, Finland

Products: Flowrox LPP-T65 / LPP-T2.5" Hose Pumps

Application: Washing liquid circulation pumps

- Benefits:**
- Large capacity
 - Moving process water with high solids content
 - Savings in energy



Customer case: Deer Island Waste Water Treatment Plant, USA

Products: Flowrox PC Pump, EL Series

Application: Waste water slurry pumping

- Benefits:**
- Increased pumping efficiency
 - Savings in maintenance costs
 - Savings in energy consumption



Customer case: Chemical plant, CHEMPARK, Germany

- Products:** Flowrox LPP-T65 / LPP-T2.5"
peristaltic hose pumps
- Application:** Feeding automatic filter presses
- Benefits:**
- Long service intervals
 - Less wearing parts
 - Reliable operation



Customer case: Surfactor, Finland

- Products:** Flowrox LPP-D pumps
- Application:** Glue feed, color dosing
- Benefits:**
- Accurate dosing
 - Long maintenance intervals
 - Low maintenance cost



Customer case: Paper mill, Finland

- Products:** Flowrox E250/10 PC Pumps
- Application:** Paste pumping from coating kitchen to paper coating machine
- Benefits:**
- Higher capacity with better output
 - Savings in maintenance costs
 - Increased productivity



Reliable Flowrox pumps paired with automated flexible filtration

Customer case: Aquachem GmbH and CURRENTA GmbH & Co. OHG

OUR CUSTOMER: Aquachem GmbH

James Babbe founded Aquachem GmbH in 1994. The company is based in Senden, Bavaria, Germany. It is mostly involved in the water and wastewater industry as well as in construction, the chemical process industry, and metal, food, pharma and ATEX applications. Since 2000, Aquachem has focused on developing and designing fully automatic filter presses. With nearly three decades of experience in using filter presses for solid liquid filtration, Aquachem offers efficient and optimized solutions.

OUR END CUSTOMER: CURRENTA GmbH

CURRENTA GmbH & Co. OHG is the manager and service provider of three CHEMPARK sites located in Germany in Leverkusen, Dormagen and Krefeld-Uerdingen. A joint venture between Bayer and Lanxess offers 70 companies based at CHEMPARK more than 1,000 chemical-related services across an area covering 11 square kilometers / 4.4 sqmi. These include utilities, environmental services, safety and security, infrastructure, analytics, vocational training, logistics, and maintenance services.

Project name: Isolation of solids from waste water generated by flue-gas scrubbing

Products: LPP-T65 / LPP-T2.5" peristaltic hose pumps x 8

Application: Feeding eight fully automatic filter presses for flue-gas scrubbing process

Benefits:

- Long service intervals
- Self-priming
- Reversible run capability
- Less wearing parts
- High quality





CURRENTA has been extremely satisfied with operation and reliability of Flowrox pumps.



Flowrox LPP-T hose pumps are easy to incorporate into any control system.



Successfully isolated solids from waste water generated by flue-gas scrubbing. When pumps operate smoothly, filters can do their job.

Flexible production through automation

CURRENTA provides services to various operations and their different demanding applications within the large CHEMPARK area. Filters and pumps need to adapt quickly to changing process conditions.

“Slurry in the filtration plant varies as we have numerous types of waste from multiple producers. Applications vary from diffused lithium batteries to pharmaceutical waste. Filtration plant needs to adapt to continuous process changes receiving non-homogeneous feed from flue-gas scrubbing yet offer 100 % reliable and safe operation. It is a demanding application as the filtrate needs to be clean to be released back into the process or the river Rhine,” explains **Michael Schulte**, Technical Foreman of incineration plants at CHEMPARK Leverkusen, CURRENTA.

“The application is very abrasive and requires high performance and resilience from the process equipment. As in any startup, we have faced some challenges. However, on rare occasions when

a pump has failed, we have always received excellent and immediate support from Flowrox,” adds **James Babbé**, the CEO & Founder of Aquachem GmbH. Aquachem is focused on developing and designing fully automatic filter presses used in this application.

Matching process requirements with Flowrox process equipment

“We have been using Flowrox pumps since 2009. They insure steady and reliable feed, which is essential for our unique fully automatic filter solutions. If the pump does not work, filtration equipment does not run either. Pump is the heart of the movement,” Babbé explains.

“I could recommend Flowrox pumps for any filter feed application.”

Flowrox LPP-T hose pumps allow continuous monitoring and are easy to incorporate into any control system.

“We are familiar the with superior performance of Flowrox pumps. In 2008 we built a new tank farm for

fluid waste treatment. We needed reliable pumps for challenging application which could handle extreme duty cycles. We first looked for joint membrane pumps which fit our requirements to pump 35 m³/h / 154 gpm. However, we ended up ordering Flowrox LPP-T transfer pumps and they have performed to our expectations,” Schulte explains.

Professional and localized customer service

“I could recommend Flowrox pumps for any filter feed applications. At Aquachem we are impressed by professionalism of the company. Beyond product benefits and technical features that are superior

to its competitors, I also appreciate the openness when working with Flowrox. They provide an outstanding representative network, localized customer service and utmost professionalism in everything that is being done,” Babbé complements.

Peristaltic pumps

Flowrox heavy duty hose pumps are designed for the toughest industrial applications. They are ideal for demanding processes involving abrasive, corrosive, viscous or crystallizing media with high solids content.

Advanced rolling design

The operating principle of the Flowrox hose pumps is based on the peristaltic effect. As the cylindrical rotor rotates along the hose, the process medium gets pushed forward through the hose. At the same time, the hose behind the compression point reverts to its original circular shape creating a suction effect at the pump inlet port. As a result, the hose bore is re-filled

with the medium. No backward flow or slip can occur as the hose is squeezed tight by the roller.

















Due to their technical features, Flowrox hose pumps provide exact flow per revolution. They also incorporate an advanced rolling design, which eliminates friction, maximizes hose life and lowers energy consumption. Energy efficiency, long hose life and low

maintenance generates substantial savings during the life cycle of peristaltic pumps. Lifetime of Flowrox pumps' hoses is 3-5 times longer than conventional hose pumps.

Trailblazing pump technology

Flowrox LPP-T pumps are equipped with a patented hose flange and reliable in-line pipe connections, as well as a hose leak detection unit.

Flowrox heavy duty hose pumps from features to benefits

	Rolling pump design	→				Save energy up to 40%
	Less friction	→				75% less glycerine
	Longer hose lifetime	→				Less maintenance
	Pump up to 80% solids	→				Save water

Technical features

- Only the hose is in contact with the medium
- Positive displacement with no backflow
- Single roller design that enables minimized friction
- Low lubrication need, only 25% that of conventional peristaltic pumps
- No overheating at high continuous flow rate
- Dry run capability
- Selfpriming up to full vacuum





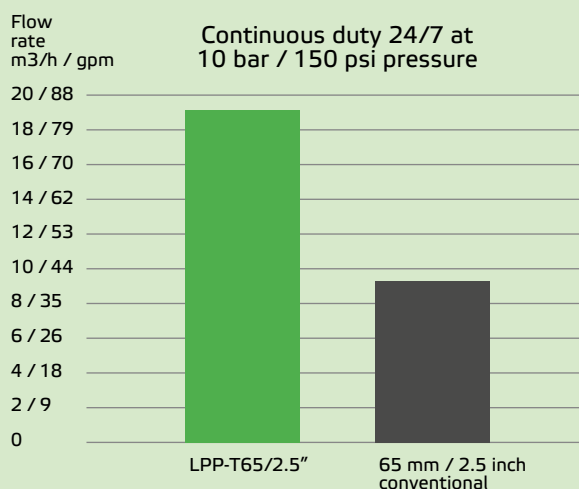
Comparison of Flowrox technology

Flowrox rolling technology is capable of operating in continuous duty with its maximum pressure and maximum flow in the same point. This is where the conventional pump compromises either on pressure or flow.

Compared to Flowrox pumps, conventional hose pumps can only reach either half the flow or half the pressure in continuous duty.

What is more, Flowrox pumps can perform even with high temperature media up to 95 °C / 203 °F.

Flowrox hose pump technology vs. conventional technology



Patented adjustment mechanism senses hose wear when compression is readjusted. This helps to maximize hose lifetime and minimize the risk of over-compression. There is no need for shimming.

The LPP-T100 / LPP-T4" is one of the world's largest hose pumps, with a maximum continuous flow of 100m³/h / 440 gpm.

For transferring, dosing and metering

The innovative Flowrox peristaltic pumps set the industry standard for peristaltic pump technology. Designed for heavy industrial duties, they are ideal for pumping diverse slurries and dosing a wide range of abrasive, corrosive, viscous or crystallizing media.

LPP-T pumps provide substantial savings through improved process performance and efficiency, long service intervals and low maintenance costs. They are manufactured using durable elastomers and advanced materials, making them perfect for pumping a wide range of media.

Progressive cavity pumps

Flowrox progressive cavity (PC) pumps are ideal for demanding industrial slurry and paste pumping applications, especially with highly viscous or shear sensitive liquids and sludges.













Advanced spiral technology

In PC pumps, the pumped medium continuously shifts spaces (progressing cavities) between the rotor and the stator, enabling nearly pulsation-free pumping. With Flowrox technology it is possible to deliver up to 10 bar / 150 psi of pressure per single stage. This is possible with our evenwall stator technology that forms the heart of the entire pump.

Customer benefits

- Over 30% higher pumping capacity compared to a conventional PC pump with same rpm
- Save energy up to 15% compared to a conventional model
- Minimized maintenance time enables the highest run time possible

Flowrox progressive cavity (PC) pumps from features to benefits

	Advanced product structure	→				Longer maintenance interval
	Evenwall® stator	→				Higher pressure with RPM
	2/3 rotor geometry	→				30% higher flow with same speed

Technical features

- Combination of an elliptic rotor and a stator with even wall thickness
- More pressure with less strain
- Increased flow per revolution
- Long rotor/stator lifetime
- Less backflow



Through advanced technology and precise design, Flowrox PC Pumps offer you significant savings by reducing pumping costs.

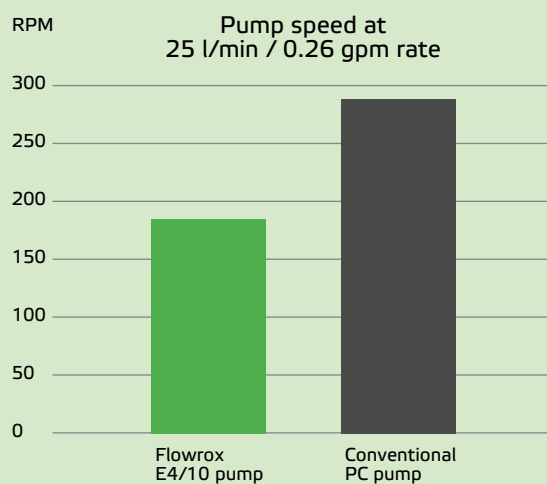


Comparison of Flowrox technology

Less RPM needed to achieve the same flowrate.

When the Flowrox PC pump performance is compared with conventional PC pumps, Flowrox 2/3 geometry pumping elements need less RPM than conventional 1/2 geometry pumping elements to achieve the same flow rate. Slower rotation speed guarantees less wear.

Flowrox spiral technology vs. conventional technology



Centrifugal pumps

Flowrox centrifugal pumps are designed to continuously run in heavy duty conditions. The pump components are wear-resistant and can withstand the most abrasive and corrosive slurries.

Horizontal and vertical centrifugal pumps

Centrifugal pumps by Flowrox are most fit for mining, minerals processing and other industrial applications. Despite tough conditions, the pumps deliver reliable performance.













Flowrox CF-S is a horizontal centrifugal pump designed for the continuous pumping of extremely abrasive and corrosive slurries. Wear-resistant components are made to withstand heavy-duty conditions.

Flowrox CF-V centrifugal pump with vertical cantilever design runs continuously in heavy duty conditions. Wear-resistant components are fit for the most abrasive and corrosive slurries.

The CF-V pump is most suitable for mining, minerals processing and other industrial operations, delivering reliable performance in sumps and pits.



CF-S from features to benefits

	Large particle impellers	→				General pump for coarse & fine slurries
	Abrasion and corrosion resistant	→				Longer maintenance intervals
	Two piece body	→				Ease of maintenance

CF-S technical features













- High flow rates
- Robust bearing assembly
- Liner easily replaceable
- Metal and elastomer liners are interchangeable
- Cast in impeller threads require no inserts or nuts
- One-piece frame cradles the cartridge type bearing and shaft assembly



Despite tough conditions, Flowrox centrifugal pumps deliver reliable performance.



CF-V from features to benefits

	Advanced cantilevered design	→				No bearings in slurry
	Large particle impellers available	→				Robust pump for any application
	Continuous or "snore" operation capability	→				Dry run capability

CF-V technical features

- Cantilevered depth up to 3,6 m / 9.8 ft
- No bearings in slurry
- Large particle impellers available
- Continuous or "snore" operation
- Abrasive & corrosive resistant
- Ease of maintenance

Despite tough conditions, Flowrox centrifugal pumps deliver reliable performance.



Flowrox Expulse™ pulsation dampeners

We provide complementary equipment that is designed to support the optimal flow. Enhance your process with the Flowrox Expulse pulsation dampener.



Quiet and durable design
















It is common for positive displacement pumps to produce pulsation. The Flowrox Expulse is a flexible inline pulsation dampener, which quiets noise

while settling pressure peaks and uneven flows. The design is based on a double hose structure with resilient inner hose, reinforced outer hose and compressed air between the hoses.

Flowrox Expulse

- Absorbs up to 90% of the pulsation
- Up to 10% energy savings
- Reduces hammering of the pipeline and makes pump bearings and gearboxes last longer
- All in one; flexible pipeline connection and dampener
- Can be installed on any pulsating pump from any brand
- There are no breaking diaphragms or bladders
- Flowrox Expulse is self-cleaning
- Does not collect sediment or particles

Flowrox Expulse from features to benefits

	Reduces noise	→			Quiets the annoying noise of the pulsating pump in the pipelines
	Saves energy	→			Absorbs up to 90% of pulsations and saves up to 10% of energy
	Easy, independent and reliable	→			Easy to install for any pulsating pump
	Protects pump bearings and gearbox	→			Reduces pipeline pulsations
	Simple and flexible	→			Easy and fast to maintain

Technical features

- Absorbs up to 90% of pulsations
- Enables pump bearings and gearbox last longer
- Saves pumping energy up to 10%
- Easy to install on any pulsating pump type



Standard spare parts

With decades of experience in developing innovative flow control solutions and elastomer technology, we offer a wide selection of superior elastomers for diverse media and process conditions. The correct mechanical hose design and material selection are essential for optimizing hose lifetime.

Optimal pump hoses and tubes for each media

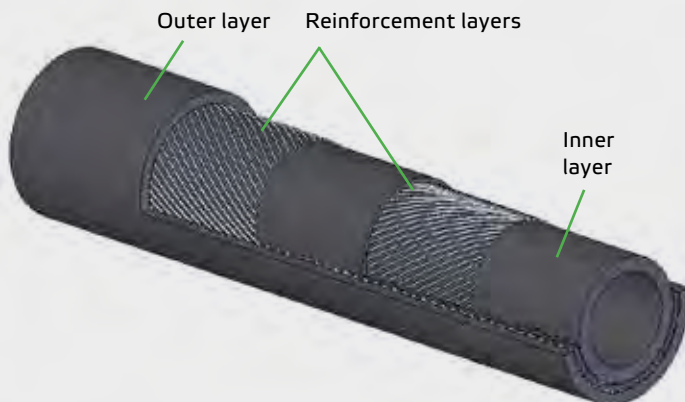
Our high-grade hose materials include chemical resistant ethylene propylene (EPDM), oil and fat resistant nitrile rubber (NBR), which is available also for food grade mediums (NBRF), and extremely abrasive natural rubber (NR), which is ideal for heavy wearing applications.

- To guarantee the best possible mechanical characteristics, the hose cover is always made of natural rubber.
- FXM tube material options are Norprene®, Tygothane® and Tygon lined Norprene®.

LPP-T pump hose is preformed for easier installation



LPP-D pump hose construction



Auxiliaries

Revolution sensor & pressure transmitter

The revolution sensor calculates the cycles of the pump. Pressure transmitter can be used to detect overpressure of the pipeline.



The hose leak detector

The hose leak detector indicates hose leakage into pump housing. It automatically stops the rotation of the pump when connected to the control system.





Pump services

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

We manufacture and supply rotors, stators, drive shafts, coupling rods, joint assemblies, bearings sets and sealings. Spare parts are manufactured according to highest quality and environment standards with 20 years of experience.

A reliable partnership

Enjoy the benefits that come with selecting a 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.

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

We offer:


- 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

Customer benefits



- Maintenance for valves & pumps
- Specialised customer service
- Fast deliveries
- Wide selection of materials
- High-quality spare parts
- Service and warehousing agreements

Flowrox pump product portfolio




Pumps

Peristaltic pumps				
Product	Series & type markings	Design	Specifications	Application
Flowrox hose pumps, transfer pumps 	LPP-T-series Global: LPP-T65GM10-2-0-N-D North America: LPP-T2.5GM10-2-0-N-D	Advanced rolling design eliminates friction, maximizes hose life, lowers energy consumption	Size: DN32, 40, 50, 65, 80, 100 Volume: LPP-T1.25", 1.5", 2", 2.5", 3", 4" 0,5 – 100 m³/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
Flowrox hose pumps, dosing pumps 	LPP-D-series Global: LPP-D20GM7.5-G3/4-3-N-DR North America: LPP-D3/4GM108-G3/4-3-N-DR		Size: DN15, 20, 25 LPP-D½", 3/4", 1" Volume: 0,1 – 2 m³/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	
Flowrox hose pumps, metering pumps 	FXM-series Global: FXM2-S-36-N011 North America: FXM2-S-36-N011	Accurate metering: Positive displacement provides same output on every cycle	Size: 2 and 3 Volume: 0 – 0,84 m³/h Pressure: Up to 8,6 bar / 124 psi Temperature: Up to 46 °C / 115 °F Suction lift: 0 – 8 m / 0 – 26 ft capability	Chemical dosing applications that require accurate metering
Progressive cavity pumps				
Product	Series & type markings	Design	Specifications	Application
Flowrox progressive cavity pumps 	E-series Global: FPC-E35/ 10-80-2-0-0-0BN-NBR-GP-C / North America: FPC-E35/ 10-80-2-0-0-0BN-NBR-GP-C	Advanced spiral technology, 2/3 rotor geometry, combination of an elliptic rotor and a stator with even wall thickness	Size: 2/10, 4/10, 10/10, 20/10, 35/10, 70/10, 150/10, 250/10 Volume: 0 – 228 m³/h / 0 – 1000 gpm Pressure: Up to 10 bar / 150 psi 0 – 1000 gpm Temperature: Up to 70 °C / 158 °F	Flooded suction duties e.g. paper coating and paste pumping
Flowrox progressive cavity pumps 	EL-series Global: FPC-E35/ 10-80-2-0-0-0BN-NBR-GP-C / North America: FPC-E35/ 10-80-2-0-0-0BN-NBR-GP-C	Advanced spiral technology and 2/3 elliptic rotor geometry	Size: 50/6, 100/6, 200/6, 330/6 Volume: 0 – 188 m³/h / 0 – 830 gpm Pressure: Up to 6 bar / 87 psi Temperature: Up to 70 °C / 158 °F	Flooded suction duties e.g. municipal waste pumping
Flowrox progressive cavity pumps 	D-series Global: FPC-E35/ 10-80-2-0-0-0BN-NBR-GP-C / North America: FPC-E35/ 10-80-2-0-0-0BN-NBR-GP-C	1/2 rotor geometry and compact size	Size: 004/12, 010/12, 025/12, 075/12 Volume: 0 – 0,75 m³/h / 0 – 6.6 gpm Pressure: Up to 12 bar / 175 psi Temperature: Up to 70 °C / 158 °F	Flooded suction duties e.g. flocculant and chemical dosing

Pumps

Centrifugal pumps				
Product	Series & type markings	Design	Specifications	Application
Flowrox centrifugal pumps 	CF-S-series Global: CF-6S4-F-MMM-GP-20-BD North America: CF-6S4-F-MMM-GP-20-BD	Open and closed impellers. Several material options for impellers and liners.	Volume: 2,3 – 4000 m ³ /h / 10 – 18 000 gpm TDH: Up to 73 m / 240 ft	Corrosive and abrasive slurries e.g. minerals processing
Flowrox centrifugal pumps 	CF-V-series Global: CF-1,5V-P-MM-900-BD North America: CF-1,5V-P-MM-900-BD		Volume: 0 – 1135 m ³ /h / 0 – 5000 gpm TDH: to 50 m / 160 ft	Coarse, abrasive and corrosive slurries e.g. sump pump in minerals processing. Dry run capability.

Auxiliaries

Complementary products				
Product	Series & type markings	Design	Specifications	Application
Flowrox Expulse pulsation dampener 	Global: FPD65-10-0-2-NR North America: FPD2.5-10-0-2-NR	All in one; flexible pipeline connection and dampener	Size: DN32 – DN100 / 1.25" – 4" Hose: NR Standard Wetted parts: AISI316 & NR Pressure: 10 bar / 145 psi Temperature: +75 °C / +167 °F Filling media: Oil free compressed air Auxillaries: Flanges	For hose pumps in applications where pulsation dampening is needed
Revolution sensor & pressure transmitter 			The revolution sensor calculates the cycles of the pump. Pressure transmitter can be used to detect overpressure of the pipeline.	For hose pumps
Hose leak detector 			The hose leak detector indicates hose leakage into pump housing. It automatically stops the rotation of the pump when connected to the control system.	For hose pumps

Standard spare parts

Standard spare parts		
Product	Specifications	Application
Hoses 	<ul style="list-style-type: none"> NR, EPDM, NBR, NBRF 	For transferring and dosing pumps
Tubes 	<ul style="list-style-type: none"> FXM tube material options: Norprene®, Tygothane® and Tygon lined Norprene® 	For metering pumps
Spare parts and spare part kits 	<ul style="list-style-type: none"> Bearing sets Sealing sets 	For hose pumps
Rotors 	<ul style="list-style-type: none"> 1/2 and 2/3 geometry Black nitrated carbon steel Stainless steel Hard chrome plated Hardened Ceramic coated 	For PC pumps
Stators 	<ul style="list-style-type: none"> All materials e.g. NBR, EPDM, CSM, FPM 1/2 and 2/3 geometry 	For PC pumps
Shafts 	<ul style="list-style-type: none"> Drive shafts 	For centrifugal pumps
Bearing units 	<ul style="list-style-type: none"> Complete bearing assemblies 	For centrifugal pumps
Shaft seals 	<ul style="list-style-type: none"> Mechanical seals Sealing cords e.g. teflon and graphite 	For centrifugal pumps



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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