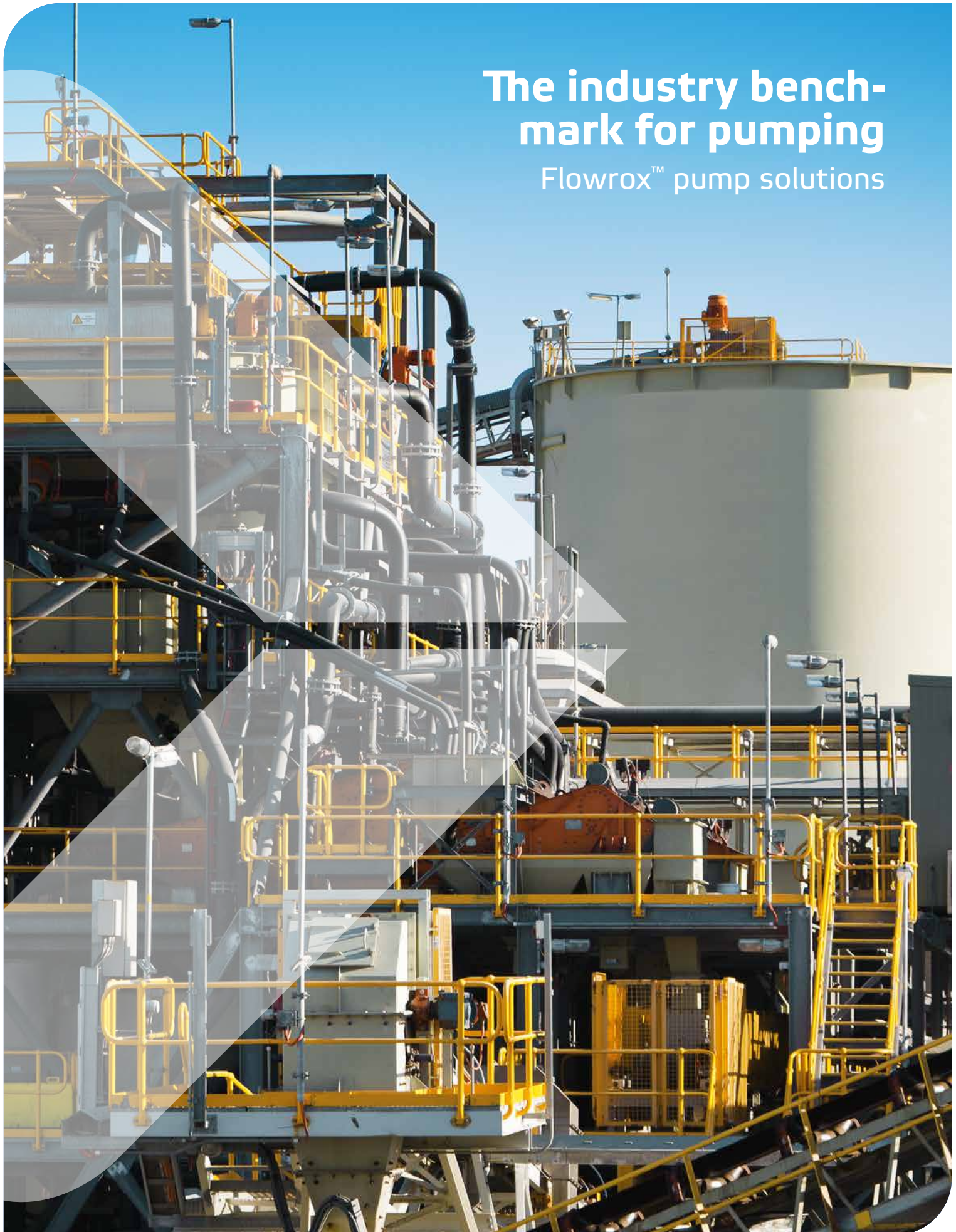


# The industry benchmark for pumping

Flowrox™ pump solutions





## Flowrox™ – Industry leading products with new identity

Flowrox valves and pumps now have a fresh new look that has been aligned with the rest of Valmet's industry leading offering of flow control solutions for demanding mining, metal and steel industry applications. The new branding will have no effect on the things that you already know and love about Flowrox.



# We exist to make your life easier

We deliver advanced pumping solutions for the most demanding process conditions. Our story started over 45 years ago making us industry experts on flow control. Over the years we have delivered over 200,000 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
- 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



# 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





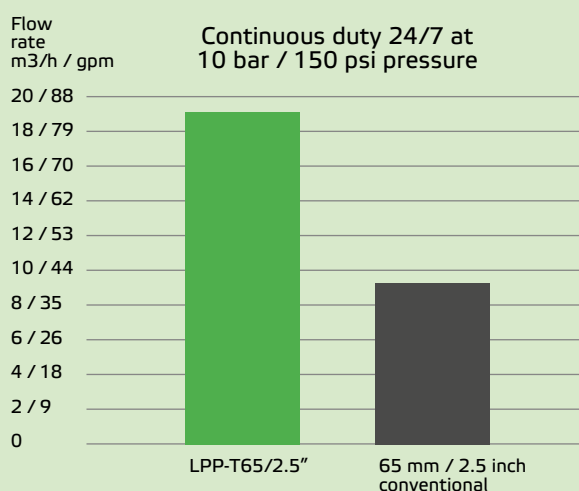
## Comparison of Flowrox technology

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.

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.

The LPP-T100 / LPP-T4" is one of the world's largest hose pumps,

with a maximum continuous flow of 100m<sup>3</sup>/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, Flowrox LPP-T and LPP-D pumps are ideal for pumping diverse slurries and dosing a wide range of abrasive, corrosive, viscous or crystallizing media.

Combined with accurate metering and a selection of different tube

materials, the Flowrox FXM pumps are an ultimate choice for chemical dosing applications which require accurate metering.



*FXM pumps provide accurate metering.*

# 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.



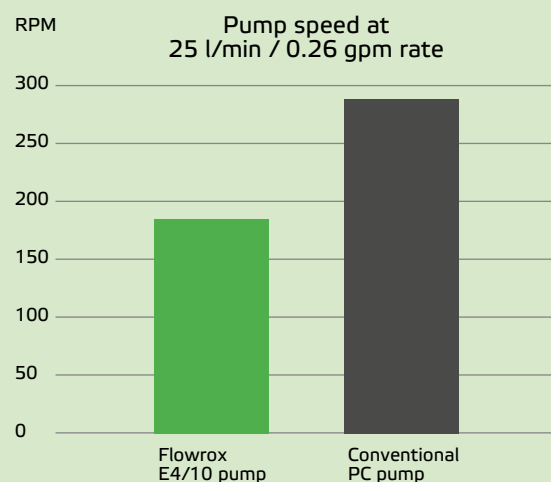


## Comparison of Flowrox technology

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









# 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

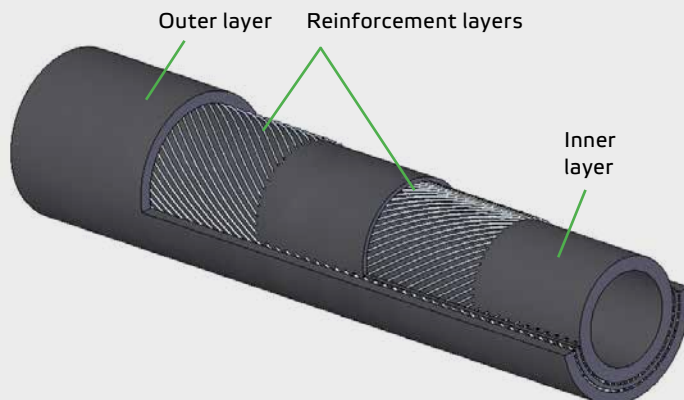
Our high-grade hose materials include chemical resistant ethylene propylene (EPDM), oil and fat resistant nitrile rubber (NBR), which is available also for food grade mediums (NBRF), and extremely abrasive natural rubber (NR), which is ideal for heavy wearing applications.

- 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.

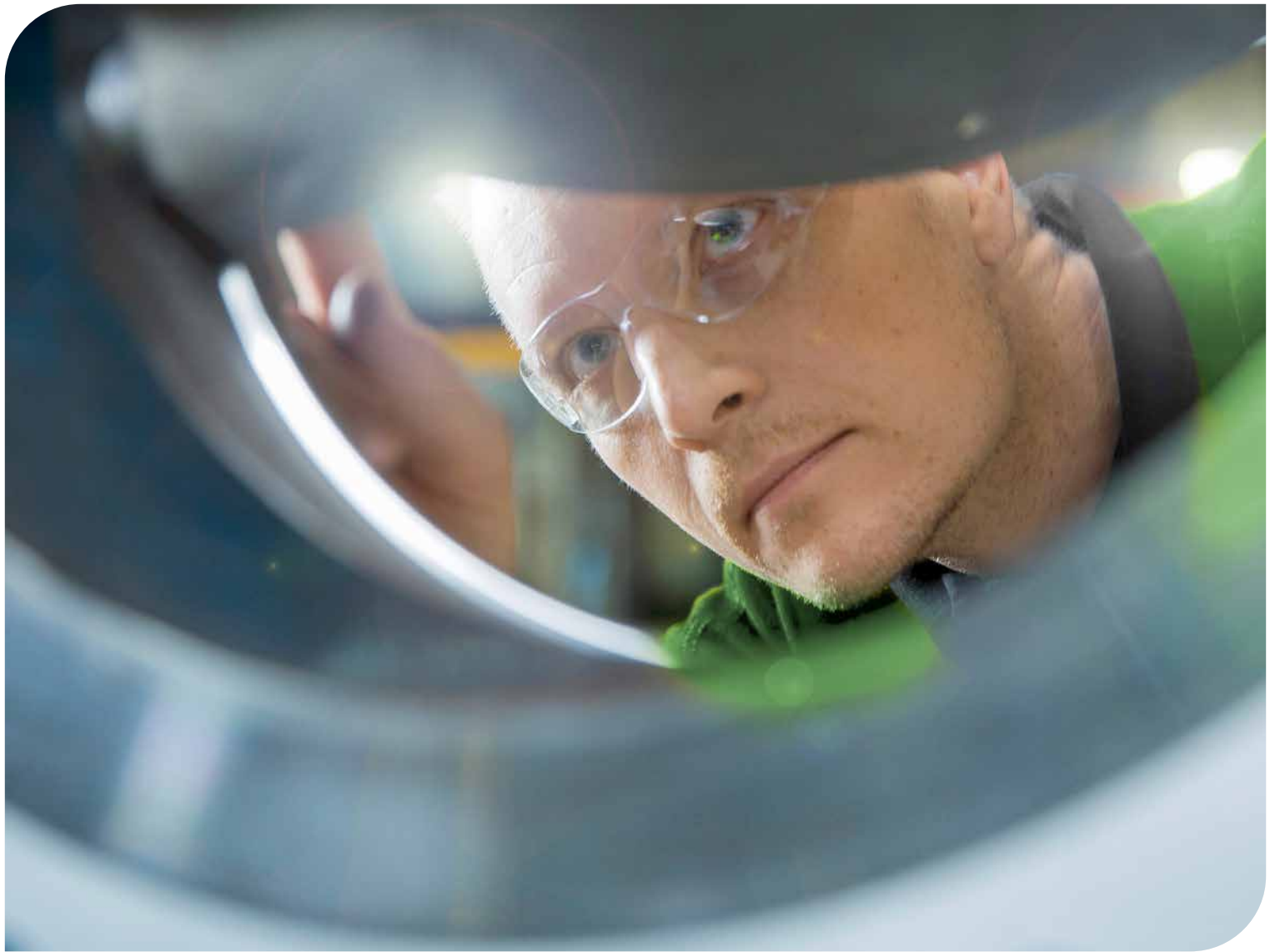


### The hose leak detector

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
<b>Flowrox hose pumps, transfer pumps</b> 	<b>LPP-T-series</b> 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	<b>Size:</b> DN32, 40, 50, 65, 80, 100 LPP-T1.25", 1.5", 2", 2.5", 3", 4" <b>Volume:</b> 0,5 – 100 m³/h / 2.2 - 440 gpm <b>Pressure:</b> 7,5 or 10 bar / 150 or 108 psi <b>Solids:</b> Up to 80 % <b>Temperature:</b> Up to 95 °C / 203 °F <b>Particle size:</b> 25 % from DN size <b>Suction lift:</b> 0 – 8 m / 0 – 26 ft capability	Toughest industrial applications such as thickener underflow, heavy duty slurry transfer, tailings transfer, sampling and dosing
<b>Flowrox hose pumps, dosing pumps</b> 	<b>LPP-D-series</b> Global: LPP-D20GM7.5-G3/4-3-N-DR North America: LPP-D3/4GM108-G3/4-3-N-DR		<b>Size:</b> DN15, 20, 25 LPP-D½", 3/4", 1" <b>Volume:</b> 0,1 – 2 m³/h / 0 – 7.9 gpm <b>Pressure:</b> 7,5 or 16 bar / 108 or 232 psi <b>Solids:</b> Up to 80 % <b>Temperature:</b> Up to 95 °C / 203 °F <b>Particle size:</b> 25 % from DN size <b>Suction lift:</b> 0 – 8 m / 0 – 26 ft capability	
<b>Flowrox hose pumps, metering pumps</b> 	<b>FXM-series</b> Global: FXM2-S-36-N011 North America: FXM2-S-36-N011	Accurate metering: Positive displacement provides same output on every cycle	<b>Size:</b> 2 and 3 <b>Volume:</b> 0 – 0,84 m³/h <b>Pressure:</b> Up to 8,6 bar / 124 psi <b>Temperature:</b> Up to 46 °C / 115 °F <b>Suction lift:</b> 0 – 8 m / 0 – 26 ft capability	Chemical dosing applications that require accurate metering




**Flowrox™ – Industry leading products with new identity.**

They now have a fresh new look that has been aligned with the rest of Valmet's industry leading offering.

## Pumps

Progressive cavity pumps				
Product	Series & type markings	Design	Specifications	Application
<b>Flowrox progressive cavity pumps</b> 	<b>E-series</b> 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	<b>Size:</b> 2/10, 4/10, 10/10, 20/10, 35/10, 70/10, 150/10, 250/10 <b>Volume:</b> 0 – 228 m³/h / 0 – 1000 gpm <b>Pressure:</b> Up to 10 bar / 150 psi 0 – 1000 gpm <b>Temperature:</b> Up to 70 °C / 158 °F	Flooded suction duties e.g. paper coating and paste pumping
<b>Flowrox progressive cavity pumps</b> 	<b>EL-series</b> 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	<b>Size:</b> 50/6, 100/6, 200/6, 330/6 <b>Volume:</b> 0 – 188 m³/h / 0 – 830 gpm <b>Pressure:</b> Up to 6 bar / 87 psi <b>Temperature:</b> Up to 70 °C / 158 °F	Flooded suction duties e.g. municipal waste pumping
<b>Flowrox progressive cavity pumps</b> 	<b>D-series</b> 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	<b>Size:</b> 004/12, 010/12, 025/12, 075/12 <b>Volume:</b> 0 – 0,75 m³/h / 0 – 6.6 gpm <b>Pressure:</b> Up to 12 bar / 175 psi <b>Temperature:</b> Up to 70 °C / 158 °F	Flooded suction duties e.g. flocculant and chemical dosing

## Auxiliaries

Complementary products				
Product	Series & type markings	Design	Specifications	Application
<b>Flowrox Expulse pulsation dampener</b> 	Global: FPD65-10-0-2-NR North America: FPD2.5-10-0-2-NR	All in one; flexible pipeline connection and dampener	<b>Size:</b> DN32 – DN100 / 1.25" – 4" <b>Hose:</b> NR Standard <b>Wetted parts:</b> AISI316 & NR <b>Pressure:</b> 10 bar / 145 psi <b>Temperature:</b> +75 °C / +167 °F <b>Filling media:</b> Oil free compressed air <b>Auxillaries:</b> Flanges	For hose pumps in applications where pulsation dampening is needed
<b>Revolution sensor &amp; pressure transmitter</b> 			The revolution sensor calculates the cycles of the pump. Pressure transmitter can be used to detect overpressure of the pipeline.	For hose pumps
<b>Hose leak detector</b> 			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
<b>Hoses</b> 	<ul style="list-style-type: none"> <li>NR, EPDM, NBR, NBRF</li> </ul>	For transferring and dosing pumps
<b>Tubes</b> 	<ul style="list-style-type: none"> <li>FXM tube material options: Norprene®, Tygothane® and Tygon lined Norprene®</li> </ul>	For metering pumps
<b>Spare parts and spare part kits</b> 	<ul style="list-style-type: none"> <li>Bearing sets</li> <li>Sealing sets</li> </ul>	For hose pumps
<b>Rotors</b> 	<ul style="list-style-type: none"> <li>1/2 and 2/3 geometry</li> <li>Black nitrated carbon steel</li> <li>Stainless steel</li> <li>Hard chrome plated</li> <li>Hardened</li> <li>Ceramic coated</li> </ul>	For PC pumps
<b>Stators</b> 	<ul style="list-style-type: none"> <li>All materials e.g. NBR, EPDM, CSM, FPM</li> <li>1/2 and 2/3 geometry</li> </ul>	For PC pumps
<b>Shafts</b> 	<ul style="list-style-type: none"> <li>Drive shafts</li> </ul>	For centrifugal pumps
<b>Bearing units</b> 	<ul style="list-style-type: none"> <li>Complete bearing assemblies</li> </ul>	For centrifugal pumps
<b>Shaft seals</b> 	<ul style="list-style-type: none"> <li>Mechanical seals</li> <li>Sealing cords e.g. teflon and graphite</li> </ul>	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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