LPP PUMP

THE SOLUTION YOU’VE BEEN LOOKING FOR
LAROX PERISTALTIC PUMPS (LPP)

The innovative Larox peristaltic pumps set the industry standard for peristaltic pump technology. Designed for heavy industrial duties, the LPP pumps are ideal for abrasive, corrosive, viscous or crystallizing media.

**ONE COMPRESSION IS ALL YOU NEED**

A single, bearing-mounted roller presses against the hose only once per the 360 degree operating cycle, producing the maximum flow per revolution and offering the longest lifetime possible.

**UNIQUE ROLLING DESIGN**

Larox LPP pumps incorporate an advanced design, which eliminates friction, maximizes hose lifetime and lowers energy consumption. The roller is mounted on a crankshaft creating eccentric rotation during the 360 degree operating cycle.

Compared to conventional peristaltic pumps, the LPP pumps double the flow per hose compression.

**THE OPERATING PRINCIPLE OF A PERISTALTIC PUMP**

The operating principle of the LPP pump 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 gets filled with the medium. No backward flow can occur as the hose is squeezed tight by the roller.

**TECHNICAL FEATURES**

- Only the hose is in contact with the medium
- No gland water or packing
- Full vacuum capability
- No backward flow
- 360 degree operating cycle
- In-line hose connection

**PROCESS BENEFITS**

- No wear and corrosion
- Dry run capability
- Self-priming
- Exact flow per revolution
- Extended hose life
- No overheating
- Lower operating costs

Larox LPP pumps are equipped with reliable hose flange and in-line pipe connections.
TRAILBLAZING TECHNOLOGY

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

Equipped with the standard technical features of a typical peristaltic pump such as positive displacement and self priming, the LPP pumps provide exact flow per revolution. Seal less pumps will not get damaged even if they run dry for longer periods of time. The LPP pumps are compact in design and require only a small footprint.

STANDARD TECHNICAL FEATURES FOR PERISTALTIC PUMPS include

• Only the hose is in contact with the medium
• No gland water or packing
• Full vacuum capability
• No backward flow
• Positive displacement

RESULTING IN PROCESS BENEFITS SUCH AS

• No wear and corrosion
• Dry run capability
• Self-priming
• Exact flow per revolution irrespective of the pipeline pressure
• Accurate flow
• No mixing or shearing of the medium

The trailblazing LPP pumps produce higher flow per hose compression than any other peristaltic pump. They are designed to operate continuously at high speeds and in high pressures without the risk of overheating making them perfect for heavy duty applications.

Incorporating an advanced design, the Larox LPP pumps can offer unbeatable additional features including

• 360 degree operating cycle
• Only one compression per revolution
• Rolling hose contact
• In-line pipe connection
• Reliable hose connection
• Low lubrication need

and process benefits such as

• Higher flow per compression than any other peristaltic pump
• Extended hose lifetime
• High pressure capability
• No overheating at higher continuous flow rate
• Lower energy consumption
• Easy maintenance
• Lower operating costs

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

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

The LPP pump hose includes three sets of layers: the inner layer, the reinforcement layers and the outer layer.

• The inner layer which is the only part of the hose in contact with the medium is resistant to abrasive wear and chemicals
• The reinforcement layers give the hose its pressure retaining capability
• The protecting outer layer facilitates the hose return to its original shape after compression creating a suction effect

THE HOSE QUALITY YOU CAN RELY ON

The high-grade LPP hose materials include chemical resistant ethylene propylene, oil and fat resistant nitrile rubber and abrasive resistant natural rubber which is ideal for heavy wearing applications. It is preformed for easier installation. To guarantee the best possible mechanical characteristics, the hose cover is always made of natural rubber.

EPDM
• Ethylene propylene
• Medium: chemicals

NBR
• Nitrile rubber
• Medium: oil and fat

NR
• Natural rubber
• Medium: extremely abrasive

Rigid, reliable and tight connection flanges at both ends of the hose further improve LPP pump hose’s resistance to high pressures, temperature and pressure variations and other process conditions.

EQUIPPED TO PERFORM

Larox LPP pumps are equipped with in-line pipe connections; a hose leak detection unit and a patented adjustment mechanism that senses hose wear when compression is readjusted. This helps to maximize hose lifetime and minimize the risk of over-compression. The compression adjustment is based on measuring the compression force making readjustment easy.

All stages of the LPP pump and hose design, and manufacturing are covered by ISO 9001:2000.

The preformed LPP hoses enable secure, trouble free and fast assembly.
A MULTITUDE OF APPLICATIONS

Larox peristaltic pumps have proven their suitability for a wide range of industries and applications. Designed for industrial pumping, the LPP pump is ideal for slurries with high solid content, abrasive, corrosive, viscous and crystallizing media.

Brewery

Widely used in brewery filtration, kieselguhr also known as diatomaceous earth or diatomite, is extremely abrasive, causing intense wear in conventional pumps. To optimize their filtration efficiency, Paulaner Brauerei, the largest brewery in Munich, Germany replaced a traditional hose pump with a Larox LPP 1.5” pump to feed kieselguhr to a Larox pressure filter which dewatered the spent kieselguhr before disposal.

Mining

At Mt Garnet zinc concentrator in Queensland Australia a LPP 1.5” pump operates as a thickener underflow pump and delivers lead slurry to a filter feed tank serving a horizontal filter press. In thickener applications, constant output flow from the thickener secures stability throughout the whole process. The Larox LPP pump allows an in-line installation where suction lines can be significantly shorter. This prevents settling of the heavy lead slurry in the pipeline.

Chemical Process Industries

Due to its highly corrosive properties, there are only a few pumps that can reliably handle sulphuric acids and fewer that can provide flexible flow control when the supply tank is on a higher level than the discharge head. The Larox LPP can do both. At Kemira Growhow Plant in Finland the Larox LPP provides a safe and reliable liquid transfer even when handling the most aggressive media.

Steel

Raahe Steelworks in Finland has drastically cut down maintenance costs and lengthened maintenance intervals after replacing a conventional pump with a Larox peristaltic pump (LPP 1.5”) in their abrasive gypsum slurry application. The replaced progressive cavity (mono) pump had required changing of its rubber stator and stainless steel rotor every 1 to 2 weeks.
LAROX PUMPS IN THE PROCESS

Chemical Process Industries
Larox LPP40 pumps benefit Delta Chemicals, a leading chemicals manufacturer located in Baltimore, USA. The LPPs pump water based aluminum trihydrate solids carried by aluminum chloride and aluminum trihydrate solids carried by aluminum sulphate. Delta Chemicals has experienced longer hose life and no additional glycerine use since the installation compared to traditional peristaltic pumps. The advanced rolling design of the LPP allowed for a smaller pump motor and less frictional wear on the hose resulting in lower maintenance costs and electrical consumption.

Cement
The key raw materials of Autoclaved Areated Concrete (AAC) are lime and quartz sand. Pumping of this abrasive slurry is a demanding task. The robust LPP65 has provided Celcon-owned H+H Siporex, a leading North European aercrete producer with a solution that saves both time and money. Previously used and tested conventional hose and centrifugal pumps proved unsuccessful resulting in high maintenance costs and reduced maintenance intervals.

INDUSTRY | APPLICATION / MEDIA
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Mining and Metal Industry | Metal concentrates, mineral slurries, flocculants
Chemical Process Industries | Paints, acids, resins
Water and Effluent Treatment | Slurries, sludge, mud, additives
Pulp and Paper Industry | Paper coatings, glues, additives
Pigments and Fillers | GCC, PCC, talc, kaolin, TiO₂
Energy Production | Lime, waste slurries, gypsum
Food and Beverage Industry | Filtering, filtration aids, diatomaceous earth, starch
Construction Industry | Mortars, plasters, bentonite, cement
Oil and Offshore | Drilling mud, waste sludge
LPP PUMP SIZE RANGE

PRODUCT SPECIFICATIONS

- Size range: LPP 1”, LPP 1.5”, LPP 2.5”, LPP 3”
- Flow capacity: Up to 176 gpm
- Maximum operating pressure: 150 psig
- Standard drive unit: Helical bevel geared motor
- Auxiliaries: Pressure transmitter, revolution detector, hose leakage detector, connector hoses, pressure transmitter
- Frequency inverters
- The pump can also be equipped with a parallel shaft geared motor

<table>
<thead>
<tr>
<th>TECHNICAL DATA</th>
<th>LPP 1”</th>
<th>LPP 1.5”</th>
<th>LPP 2.5”</th>
<th>LPP 3”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>~ 286 lbs.</td>
<td>~ 793 lbs.</td>
<td>~ 2116 lbs.</td>
<td>~ 5401 lbs.</td>
</tr>
<tr>
<td>Flow/revolution</td>
<td>0.073 gallon</td>
<td>0.33 gallon</td>
<td>1.42 gallon</td>
<td>3.06 gallon</td>
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<tr>
<td>Maximum flow</td>
<td>9.6 gpm</td>
<td>37.5 gpm</td>
<td>92 gpm</td>
<td>176 gpm</td>
</tr>
<tr>
<td>Maximum pressure</td>
<td>150 psig</td>
<td>150 psig</td>
<td>150 psig</td>
<td>110 psig</td>
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<tr>
<td>Lubricant volume</td>
<td>0.21 gallon</td>
<td>0.26 gallon</td>
<td>0.79 gallon</td>
<td>2.2 gallon</td>
</tr>
<tr>
<td>Adjustment torque – new hose</td>
<td>11 ft. lb.</td>
<td>22 ft. lb.</td>
<td>44.25 ft. lb.</td>
<td>88.5 ft. lb.</td>
</tr>
<tr>
<td>– readjustment</td>
<td>7 ft. lb.</td>
<td>18.5 ft. lb.</td>
<td>37 ft. lb.</td>
<td>81 ft. lb.</td>
</tr>
<tr>
<td>Hose bore and flange connection</td>
<td>1 inch</td>
<td>1.5 inch</td>
<td>2.5 inch</td>
<td>3 inch</td>
</tr>
<tr>
<td>Motor power</td>
<td>0.5 – 2 hp</td>
<td>1.5 – 5.5 hp</td>
<td>4 – 15 hp</td>
<td>12 – 25 hp</td>
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</tbody>
</table>
FOR YOUR LOCAL LAROX REPRESENTATIVE PLEASE CALL 1-888- FLOWSYS OR 1-888-356-9797