Food Pumps
Stainless steel centrifugal pumps for the food industries

www.packopumps.com
Food manufacturers should select pumps with these two concerns in mind:

**The first is food safety.**
The greatest fear of food manufacturers is a food safety issue that triggers a recall or plant shutdown. That’s why food pumps should be designed with optimal cleanability in mind. In this brochure you will discover why Packo pumps stands out from the competition.

**The second is greater efficiency.**
Most food professionals rate greater efficiency as the second most important consideration to select a pump. Their concern is to avoid production disruptions and increase throughput. Continue reading to find out how Packo pumps will help you achieve these and even more goals.

We optimize your flow
Product overview

<table>
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<tr>
<th>EHEDG</th>
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<th>1935/2004</th>
<th>FDA</th>
<th>ATEX</th>
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<td>Hygienic low cost process pump</td>
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<td>Hygienic process pump with limited options</td>
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<td>FP2</td>
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<td>Hygienic process pump</td>
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<td>3A certified hygienic process pump</td>
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<td>EHEDG certified</td>
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<td>MFP2</td>
<td>Open or Semi-open</td>
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<td>O</td>
<td>Extreme energy saving thanks to optimum pump hydraulics</td>
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<td>Flow up to 1200 m³/h</td>
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<td>Max inlet pressure: 40 bar</td>
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<td>Milk collecting pump for lorries &amp; trucks</td>
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<td>VPCP</td>
<td>Vane</td>
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<td>Large free passage, damage free pumping</td>
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<td>IMO</td>
<td>Open, Closed or Vortex</td>
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<td>Cantilever pump up to max 200°C for hot frying oil</td>
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</tbody>
</table>

Legend

- √ = approved/standard
- O = optional
Dairy and general food industry

Packo Pumps has unrivalled experience in this sector. E.g., we have developed the first pumps for the dairy industry and have continuously improved them with our customers. Although the industry puts high demands on the cleanliness of the pumps, the standards are far exceeded by Packo Pumps. The basis for this is a well-considered design and the standard application of electropolishing as a final surface treatment. A number of EHEDG and 3A certified pumps were developed specifically for this sector.

Typical applications:
- Milk, whey, curd, brine, yeast, blood, CIP, etc.

Brewery and beverages

Perfect cleanliness, high reliability, minimal product damage, low noise and extremely high pump efficiencies resulting in lower energy bills, are some of the most important properties for this field of application. With a flow rate up to 1200 m³/h Packo Pumps offers just about the widest range of food grade pumps for this market segment. Packo Pumps is heading to become the norm in this market. The fact that the Packo pump for beer and wine filtration became a standard, is the strongest evidence for this.

Typical applications:
- Wine, beer and fruit juice filtration, gentle pumping of mash as well as handling trub, water, sugar solutions, syrups, extracts, CIP, etc.

Vegetables & potatoes

A significant part of our core business is realised in this sector. Based on our experience, we may call ourselves specialists in this market segment. Whether it is about damage free pumping of potatoes or any kind of vegetable, in all these cases Packo Pumps provides you with a reliable solution. A well thought out design ensures smooth and damage free pumping without losing track of the hygienic aspect, durability or reliability.

Typical applications:
- Transfer and blanching of potatoes and vegetables.

Meat, fish & frying oil

Some of the toughest applications take place in this sector. The production process - from transferring seafood, preparing and injecting brine or pumping frying oil at 200°C - is extremely demanding for the pumps. There are many reasons to prefer Packo pumps for the job. One is their unrivalled durability and efficiency when it comes to working in harsh conditions.

Typical applications:
- Transfer of fish and seafood, handling brine, batter and frying oil to 200 °C.
According to applicable standards and legislations, particularly within Europe, but also outside.

- **Packo pumps** are designed to be outstanding in the food industry. With their unparalleled hygienic and robust design, they rank among the most efficient pumps in the food sector.
- Discover some of Packo pumps characteristics and find the perfect match for your food production process.

**Designed for food**

**Packo pumps** are designed to be outstanding in the food industry. With their unparalleled hygienic and robust design, they rank among the most efficient pumps in the food sector.

- **Large seal cavity**
- **No small clearances**
- **Hydraulic high quality product with the highest pump efficiencies and lowest NPSH values.**
- **Lower energy bills thanks to Packo Pumps.**

**Perfectly cleanable construction. EHEDG and 3A certificate available for food pumps, pharmaceutical pumps and also for CIP return pumps.**

**Before shipping all pumps are subjected to a thorough automated testing procedure. Performance and hydrostatic pressure tests, as well as a vibration test and control of the main dimensions are part of the standard test procedure. 100% final inspection!**

- **ISO 9001:2008**
- **ISO 14001**

**Packo pumps are designed to be outstanding in the food industry. With their unparalleled hygienic and robust design, they rank among the most efficient pumps in the food sector.**

- **Electropolished design (for wetted & non-wetted parts)**
  - All pumps are electropolished. Compared to other techniques, this has the following advantages:
    - easy to clean
    - increased corrosion resistance
    - no bacteria traps
- **Electropolished**
- **Glass bead blasted**
- **Mechanical polishing 240 grit**
- **Electropolished for wetted & non-wetted parts**
- **Standardized mechanical seals to EN12756. Limited number of dimensions for the full Packo pump range.**
- **Sterile balanced seals (spring not in contact with liquid) available, also for higher inlet pressures.**
- **Isotropic valve stems**
- **Standardized motor dimensions to IEC. Available in accordance with local motor laws.**
- **Packo Pumps**

*Higher risk of bacteria traps with other pump brand.*
Waste water
- Stainless steel pumps with industrial finish
- Pumps with vortex impeller
- Cantilever pumps & vertical sump pumps up to 1.5 m length

Filtration
- Tangential filtration, microfiltration, ultrafiltration, reverse osmosis, etc.
- High system pressure
- EHEDG, 3A & 1935/2004 EC
- High flow rate up to 1700 m³/h at low energy consumption

Pasteurizing
- EHEDG, 3A & 1935/2004 EC
- Food safety & cleanability
- Low energy consumption
- Higher temperatures

Collection, storage & unloading
- Milk collecting at high flow rate
- Low NPSH and high efficiency
- Low noise level
- Driven by hydraulic or electric motor

Evaporation
- EHEDG, 3A & 1935/2004 EC
- Low NPSH
- Operation under vacuum
- Double mechanical seals

Cleaning In Place
- CIP forward
- Air handling CIP return pumps
- Special seals for frequently dry running

Filtration Pump series:
- FP series ....... p.20-24
- MFP series ...... p.26-28
- FPP2 ............ p.30
- FMS ............. p.32

Pasteurizing Pump series:
- FP series ... p.16-24

Collection, storage & unloading Pump series:
- CRP series ..... p.34-36
- RMO ............ p.40

Evaporation Pump series:
- FP series ....... p.20-24
- MFP series ...... p.26-28

Cleaning In Place Pump series:
- CRP series ...... p.34-36
Brewing industry

**Brewhouse**
- Gentle mash handling during transfer and filtration (lauter tun & thin bed filtration)
- Wort & trub handling
- CIP & water handling
- Double mechanical seals
- High flow rate up to 1700 m³/h
- Low energy consumption
- 1935/2004 EC

**Stainless steel industrial pump series:**
- NP60 .......... p.46
- ICP series .... p.46
- MCP series .... p.47
- IRP ............ p.48

**Beer filtration**
- High flow rate up to 1700 m³/h at high efficiency
- Low energy consumption
- EHEDG, 3A & 1935/2004 EC

**Pump series:**
- FP series ........ p.16-24
- MFP series ....... p.26-28

**Cleaning In Place**
- CIP forward
- Air handling CIP return pumps
- Special seals for frequently dry running

**Pump series:**
- CRP series ...... p.34-36

**Waste water**
- Stainless steel pumps with industrial finish
- Pumps with vortex impeller
- Cantilever pumps & vertical sump pumps up to 1.5 m length

**Pump series:**
- ICP series ....... p.46
- IFF & MFF ...... p.46
- MCP series .... p.47
- IM series ...... p.48

**Cold beer brewing process**
- Cold wort handling
- Yeast handling and propagation
- Kieselguhr
- Carbonisation
- Kepping, bottling & washing
- CIP
- EHEDG, 3A & 1935/2004 EC

**Pump series:**
- FP series ........ p.16-24
- MFP series ...... p.26-28
- FMS .............. p.32
- CRP series ...... p.34-36
Vegetable & potato industry

Blanching
- High temperatures up to 98°C
- Lowest NPSH available on the market
- Low energy consumption
- 1935/2004 EC

Pump series:
- ICP series ...... p.46
- IFF & MFF ...... p.46
- MCP series ...... p.46
- IM series ...... p.48

Transport of vegetables
- Lowest product damage on the market
- Special designed vane
- Large free passage
- Stainless steel
- 1935/2004 EC

Pump series:
- VPCP ............. p.42

De-stoning, washing & cutting
- Abrasive / erosive applications
- Special coating seal chamber
- Solids & fibers handling
- Vortex impellers
- 1935/2004 EC

Pump series:
- NP60 .......... p.46
- ICP series ...... p.46
- IFF & MFF ...... p.46
- MCP series ...... p.47
- MWP series .... p.47

Waste water
- Stainless steel pumps with industrial finish
- Pumps with vortex impeller
- Cantilever pumps & vertical sump pumps up to 1.5 m length

Pump series:
- ICP series ...... p.46
- IFF & MFF ...... p.46
- MCP series ...... p.47
- IM series ...... p.48
In addition to the industries presented in the previous pages Packo Pumps can offer a wide range of food grade pumps to almost every industry. We have unlimited solutions regardless of the application. When it comes to cleanability, food safety, easy maintenance, energy consumption and reliability Packo Pumps is the ideal partner.

**Other applications in the food industry**

- **Hot frying oil**
  - Fries, chicken nuggets, etc.
  - Leakage free solution
  - Maintenance free solution up to 200°C
  - **Pump series:** IMO ............... p.44

- **Brine injector**
  - Food safety
  - Product viscosity up to 1000 cP
  - EHEDG, 3A & 1935/2004 EC
  - **Pump series:** FP series .......... p.18-24
    MFP series ........ p.26-28

- **Batter & emulsions**
  - Water, salt, proteins, sugar, gelatine, etc.,…
  - Product viscosity up to 1000 cP
  - EHEDG, 3A & 1935/2004 EC
  - **Pump series:** FP series .......... p.16-20

- **Animal blood handling**
  - EHEDG, 3A & 1935/2004 EC
  - Product viscosity up to 1000 cP
  - Hemoglobin, plasma & concentrate
  - **Pump series:** FP series .......... p.16-24

- **Fish & shellfish**
  - Damage free pumping
  - Blanching & cooling
  - 1935/2004 EC
  - **Pump series:** VPCP .............. p.42
    ICP series ........ p.46
    IFF & MFF ...... p.46
    MCP series ...... p.47

- **Egg white/egg yolk**
  - Food safety, EHEDG, 3A & 1935/2004 EC
  - CIP & CIP return
  - **Pump series:** FP series .......... p.16-24
    CRP series ........ p.34-36

- **Soy milk/soy drinks**
  - Food safety, EHEDG, 3A & 1935/2004 EC
  - CIP & CIP return
  - **Pump series:** FP series .......... p.16-24
    CRP series ........ p.34-36

- **Glycol**
  - For cooling applications
  - Special solutions down to minus 40°C
  - **Pump series:** KCP series .......... p.46
    MCP series ...... p.47

- **Beverages**
  - Food safety
  - CIP & CIP return
  - Filtration, mixing, carbonisation, etc.
  - **Pump series:** FP series .......... p.16-24
    MFP series ....... p.26-28
    CRP series ....... p.34-36
    SFP series ....... p.38

In addition to the industries presented in the previous pages Packo Pumps can offer a wide range of food grade pumps to almost every industry. We have unlimited solutions regardless of the application. When it comes to cleanability, food safety, easy maintenance, energy consumption and reliability Packo Pumps is the ideal partner.
Pump series FP60

Characteristics
These low cost pumps have stainless steel 316L pump casings constructed in cold rolled plate, 100% non-porous and extremely smooth. The pumps have open investment cast impellers in 316L. Thanks to its crevice-free design and electropolishing as a final surface treatment, the FP60 pump series are a reliable component for your food production process.

Your benefits
- High pump efficiency resulting in lower energy consumption
- Low NPSH values: less risk on cavitation
- Electropolished: easy to clean
- Easy construction and easy maintenance: less downtime
- Easy to install
- Best value for money

Application areas
The FP60 food pump series are mainly used for pumping clean and slightly contaminated liquids coming from dairies, cheese factories, breweries, distilleries, beverage industry, etc. They are often used as process pump for heat exchangers, filtration units, filling machines, brine injectors, batter machines and CIP cleaning systems. Typical liquids are milk, whey, curd, batter, brine, beer, CIP, alcohol, etc.

Pump series FP60
Performance
- max. flow rate: 40 m³/h
- max. differential head: 27 m
- max. liquid viscosity: 500 cP
- max. temperature: 95°C
- impeller type: open
- max. free passage: 15 mm
- max. motor power: 2.2 kW
- max. speed: 3000/3600 rpm
- available frequency: 50/60 Hz

Technical specifications
- materials wetted parts: stainless steel 316L or similar
- mechanical seal configuration: single, quench
- available material o-ring: EPDM, FKM
- connections: hygienic fittings
- surface finish: hygienic quality, internal welds hand polished + electropolished (casing 0.8 μm - impeller 3.2 μm)
- certificates & legislation:

Performance curves at 2900 rpm

FP60

FP60
1 Electropolished, easy to clean construction, no bacteria traps and no small clearances in order to clean the area around the O-ring
2 Pressed stainless steel in 2B quality plate, extremely smooth
3 Large seal cavity to clean mechanical seal properly
4 Monobloc execution with std. IEC motors
5 FDA approved mechanical seals
6 One seal diameter for the entire range: Ø 18

Flow (m³/h)

Head (m)
Pump series FP1

Characteristics

The Packo stainless steel centrifugal pumps of the FP1 series are the best “value for money” food grade pumps, mainly used for pumping clean and slightly contaminated liquids. This series achieves an overall high efficiency, leading to a lower energy consumption for your production process. Thanks to its modular concept it also guarantees an easy maintenance.

Your benefits

• High pump efficiency resulting in lower energy consumption
• Low NPSH values: less risk on cavitation
• Electropolished: easy to clean
• Easy construction and easy maintenance: less downtime
• Easy to install
• Best value for money

Application areas

FP1 pumps are mainly used for pumping clean and light contaminated products from dairies, cheese dairies, breweries, distilleries, beverage industry, etc.

They are often used as process pumps for heat exchangers, filtration units, filling machines, brine injectors, batter machines and CIP cleaning systems.

Typical fluids are milk, whey, curd, batter, brine, beer, CIP, alcohol, etc.

Pump series

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<tr>
<th>FP1</th>
<th>Performance</th>
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<td>max. flow rate 55 m³/h</td>
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<td>max. differential head 40 m</td>
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<td>max. inlet pressure 6 bar</td>
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<td>max. liquid viscosity 1000 cP</td>
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<td>max. temperature 140°C</td>
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<td>impeller type open</td>
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<td>max. free passage 18 mm</td>
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<td></td>
<td>max. motor power 5.5 kW</td>
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<td></td>
<td>max. speed 3000/3600 rpm</td>
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<td>available frequency 50/60 Hz</td>
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<td>Technical specifications</td>
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<td>mechanical seal configuration single</td>
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<td>available material o-ring EPDM, FKM, FEP, FFKM</td>
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<tr>
<td></td>
<td>connections hygienic fittings</td>
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<td></td>
<td>surface finish hygienic quality, internal welds hand polished + electropolished (casing 0.8 μm - impeller 3.2 μm)</td>
</tr>
<tr>
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<td>certificates &amp; legislation</td>
</tr>
</tbody>
</table>

FP1

1 Electropolished, easy to clean construction, no bacteria traps and no small clearances in order to clean the area around the O-ring
2 Pressed stainless steel in 2B quality plate, extremely smooth
3 Large seal cavity to clean mechanical seal properly
4 Monobloc execution with std. IEC motors
5 Standardized mechanical seals to EN 12756 FDA approved bellow mechanical seals or sterile O-ring seals (spring not in contact with the liquid)
6 One seal diameter for the entire range: Ø 33

Performance curves at 2900 rpm

![Performance curves at 2900 rpm](image-url)
Pump series FP2

Characteristics

These pumps have stainless steel 316L pump casings constructed in thick cold rolled plate, 100% non-porous and extremely smooth. The pumps have open investment cast impellers, constructed in 316L or duplex materials. Thanks to its crevice-free design and electropolishing as a final surface treatment, the FP2 pump series are perfectly cleanable, resulting in a reliable component for your food production process.

Your benefits

- High pump efficiency resulting in lower energy consumption
- Low NPSH values: less risk on cavitation
- Electropolished: perfectly cleanable
- Easy construction and easy maintenance: less downtime
- Standard components
- Easy to install
- 2 mechanical seal diameters for entire range
- Robust construction

Application areas

The Packo process pumps of the FP2 series are used in the most demanding hygienic applications in almost all industries such as dairies, breweries, beverage industry, distilleries, etc. They are the ideal solution for filtration applications, pasteurisation, evaporating systems, yeast propagation and for CIP cleaning systems as well. Typical applications include filtration of beer, wine and fruit juices as well as pumping yeast, whey and curd.

Performance curves at 2900 rpm

Pump series FP2

<table>
<thead>
<tr>
<th>Performance</th>
<th>FP2</th>
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<tr>
<td>max. flow rate</td>
<td>110 m³/h</td>
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<tr>
<td>max. differential head</td>
<td>110 m</td>
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<tr>
<td>max. inlet pressure</td>
<td>13 bar</td>
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<tr>
<td>max. liquid viscosity</td>
<td>1000 cP</td>
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<td>max. temperature</td>
<td>140°C</td>
</tr>
<tr>
<td>impeller type</td>
<td>open</td>
</tr>
<tr>
<td>max. free passage</td>
<td>22 mm</td>
</tr>
<tr>
<td>max. motor power</td>
<td>45 kW</td>
</tr>
<tr>
<td>max. speed</td>
<td>3000/3600 rpm</td>
</tr>
<tr>
<td>available frequency</td>
<td>50/60 Hz</td>
</tr>
</tbody>
</table>

Technical specifications

- Materials wetted parts: stainless steel 316L or similar
- Mechanical seal configuration: single bellow, sterile, quench, double
- Available material o-ring: EPDM, FKM, FEP-FKM, FFKM, Silicone
- Connections: hygienic fittings
- Surface finish: hygienic quality, internal welds hand polished + electropolished (coating 0.8 μm - impeller 3.2 μm)
- Certificates & legislation: USP, NSF, FDA approved, bellow seal sterile seal

FP2

1. Electropolished, easy to clean construction, no bacteria traps and no small clearances in order to clean the area around the O-ring
2. Pressed stainless steel in 2B quality plate, extremely smooth
3. Large seal cavity to clean mechanical seal properly
4. Monobloc execution with std. IEC motors
5. Standardized mechanical seals to EN 12756
6. FDA approved bellow mechanical seals or sterile O-ring seals (spring not in contact with the liquid)
7. One seal diameter: Ø 33 mm, except for 250 types: Ø 43 mm
### Pump series FP2+

#### Characteristics

These 3A certified pumps have stainless steel 316L pump casings constructed in thick cold rolled plate, 100% non-porous and extremely smooth. The pumps have open investment cast impellers, constructed in 316L or duplex materials. Thanks to its crevice-free design and electropolishing as a final surface treatment, the FP2+ pump series are perfectly cleanable, resulting in a reliable component for your production process.

#### Your benefits

- High pump efficiency resulting in lower energy consumption
- Low NPSH values: less risk on cavitation
- Electropolished: perfectly cleanable
- Easy construction and easy maintenance: less downtime
- Standard components
- Easy to install
- 2 mechanical seal diameters for entire range
- Robust construction

#### Application areas

The Packo 3A certified process pumps of the FP2+ series are used in the most demanding hygienic applications in almost all industries such as dairies, breweries, beverage industry, distilleries, etc.

They are the ideal solution for filtration applications, pasteurisation, evaporating systems, yeast propagation and for CIP cleaning systems as well.

In pharmaceutical and biotech industry they are mainly used for handling Purified Water and as CIP forward pump in cleaning systems.

#### Technical specifications

- **Materials wetted parts**: stainless steel 316L or similar
- **Mechanical seal configuration**: single sterile, quench, double
- **Available material O-ring**: EPDM, FKM, FEP, FFKM, Silicone (spring not in contact with the liquid)
- **Connections**: 3A approved hygienic fittings only
- **Surface finish**: hygienic quality, internal welds hand polished + electropolished (wetted parts 0.8 μm)

#### Performance curves at 2900 rpm

### Pump series FP2+

<table>
<thead>
<tr>
<th>Parameter</th>
<th>FP2+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. flow rate</td>
<td>110 m³/h</td>
</tr>
<tr>
<td>Max. differential head</td>
<td>110 m</td>
</tr>
<tr>
<td>Max. inlet pressure</td>
<td>13 bar</td>
</tr>
<tr>
<td>Max. liquid viscosity</td>
<td>1000 cP</td>
</tr>
<tr>
<td>Max. temperature</td>
<td>140°C</td>
</tr>
<tr>
<td>Impeller type</td>
<td>Open</td>
</tr>
<tr>
<td>Max. free passage</td>
<td>22 mm</td>
</tr>
<tr>
<td>Max. motor power</td>
<td>45 kW</td>
</tr>
<tr>
<td>Max. speed</td>
<td>3000/3600 rpm</td>
</tr>
<tr>
<td>Available frequency</td>
<td>50/60 Hz</td>
</tr>
</tbody>
</table>

#### FP2+

1. Electropolished, easy to clean construction, no bacteria traps and no small clearances in order to clean the area around the O-ring
2. Pressed stainless steel in 2B quality plate, extremely smooth
3. Large seal cavity to clean mechanical seal properly
4. Monobloc execution with std. IEC motors
5. Standardized mechanical seals to EN 12756 FDA approved sterile O-ring seals (spring not in contact with the liquid)
6. One seal diameter: Ø 33 mm, except for 250 types: Ø 43 mm
Pump series FP3

Characteristics
The pumps have closed impellers with 3-dimensionally profiled blades and large passage and they are constructed in 316L or duplex materials. Thanks to its crevice-free design and electropolishing as a final surface treatment, the FP3 pump series are perfectly cleanable, resulting in a reliable component for your production process. These perfectly cleanable pumps have stainless steel 316L pump casings constructed in thick cold rolled plate, 100% non-porous and extremely smooth.

Your benefits
- High pump efficiency resulting in lower energy consumption
- Low NPSH values: less risk on cavitation
- Electropolished: perfectly cleanable
- Easy construction and easy maintenance: less downtime
- Easy to install
- 2 mechanical seal diameters for the entire range
- Robust construction

Application areas
These perfectly cleanable process pumps are the ideal solution for filtration applications, pasteurisation, evaporating systems, yeast propagation and for CIP cleaning systems as well.

Typical applications include filtration of beer, wine and fruit juices as well as pumping yeast, whey and curd.

Pump series
<table>
<thead>
<tr>
<th>FP3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance</td>
</tr>
<tr>
<td>max. flow rate</td>
</tr>
<tr>
<td>max. differential head</td>
</tr>
<tr>
<td>max. discharge pressure</td>
</tr>
<tr>
<td>max. liquid viscosity</td>
</tr>
<tr>
<td>max. temperature</td>
</tr>
<tr>
<td>impeller type</td>
</tr>
<tr>
<td>max. free passage</td>
</tr>
<tr>
<td>max. motor power</td>
</tr>
<tr>
<td>max. speed</td>
</tr>
<tr>
<td>available frequency</td>
</tr>
</tbody>
</table>

Technical specifications
- materials wetted parts: stainless steel 316L or similar
- mechanical seal configuration: single, quench, double
- available material o-ring: EFDM, FKM, FEP-FKM, FFKM, Silicone
- connections: hygienic fittings
- surface finish: hygienic quality, internal welds hand polished + electropolished (casing 0.8 μm - impeller 3.2 μm)
- certificates & legislation: bellow seal sterile seal

Performance curves at 2900 rpm

FP3
- 1 Electropolished, easy to clean construction, no bacteria traps and no small clearances in order to clean the area around the O-ring
- 2 Pressed stainless steel in 2B quality plate, extremely smooth
- 3 Large seal cavity to clean mechanical seal properly
- 4 Monobloc execution with std. IEC motors
- 5 Standardized mechanical seals to EN 12756
- FDA approved bellow mechanical seals or sterile O-ring seals (spring not in contact with the liquid)
- 6 Two seal diameters: - motor power ≤ 45 kW: Ø 43 mm - motor power > 45 kW: Ø 70 mm
Pump series MFP2

Characteristics

The Packo pumps of the MFP2 series are used on the most demanding hygienic applications in almost all industries such as dairies, breweries, beverage industry, distilleries, etc. These robust pumps have stainless steel 316L cast pump casings and open or semi-open investment cast impellers, constructed in 316L or duplex materials. Thanks to its crevice-free design and electropolishing as a final surface treatment, the MFP2 pump series are the ideal reliable component for your production process.

Your benefits

- High pump efficiency resulting in lower energy consumption
- Low NPSH values: less risk on cavitation
- Electropolished: easy to clean
- Easy construction and easy maintenance: less downtime
- Standard components
- Easy to install
- Robust construction

Application areas

These robust process pumps are the ideal reliable component for filtration applications, pasteurization, yeast propagation as well as for CIP cleaning systems.

Typical applications include filtration of beer, wine and fruit juices as well as pumping yeast, whey, curd, CIP, etc.

Pump series MFP2

Performance

| max. flow rate | 120 m³/h |
| max. differential head | 65 m |
| max. inlet pressure | 10 bar |
| max. liquid viscosity | 1000 cP |
| max. temperature | 140°C |
| impeller type | open and semi-open |
| max. free passage | 25 mm |
| max. motor power | 22 kW |
| max. speed | 3000/3600 |
| available frequency | 50/60 Hz |

Technical specifications

- Materials wetted parts: stainless steel 316L or similar
- Mechanical seal configuration: single, quench, double
- Available material o-ring: EPDM, FKM, FEP-FKM, FFKM, Silicone
- Connections: hygienic fittings
- Surface finish: hygienic quality, internal welds hand polished + electropolished
- Certificates & legislation: FDA approved bellow mechanical seals or sterile O-ring seals (spring not in contact with the liquid)

Performance curves

- MFP2

MFP2
1. Electropolished, easy to clean construction, no bacteria traps and no small clearances in order to clean the area around the O-ring
2. Solid design thanks to investment cast casings and impellers
3. Large seal cavity to clean mechanical seal properly
4. Monobloc execution with std. IEC motors
5. Standardized mechanical seals to EN 12756
6. FDA approved bellow mechanical seals or sterile O-ring seals (spring not in contact with the liquid)
7. One seal diameter for the entire range: Ø 33 mm
Pump series MFP3

Characteristics
The Packo pumps of the MFP3 series are used on the most demanding hygienic applications in almost all industries such as dairies, breweries, beverage industry, distilleries, etc. These robust pumps have stainless steel 316L cast pump casings and closed investment cast impellers, constructed in 316L or duplex materials. Thanks to its crevice-free design and electropolishing as a final surface treatment, the MFP3 pump series are the ideal reliable component for your production process.

Your benefits
- High pump efficiency resulting in lower energy consumption
- Low NPSH values: less risk on cavitation
- Electropolished: easy to clean
- Easy construction and easy maintenance: less downtime
- Standard components
- Easy to install
- Robust construction

Application areas
These robust process pumps are the ideal reliable component for filtration applications, pasteurization, yeast propagation as well as for CIP cleaning systems.

Typical applications include filtration of beer, wine and fruit juices as well as pumping yeast, whey, curd, CIP, etc.

Pump series MFP3

Performance
<table>
<thead>
<tr>
<th>MFP3</th>
<th>max. flow rate</th>
<th>max. differential head</th>
<th>max. discharge pressure</th>
<th>max. liquid viscosity</th>
<th>max. temperature</th>
<th>impeller type</th>
<th>max. free passage</th>
<th>max. motor power</th>
<th>max. speed</th>
<th>available frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1200 m³/h *</td>
<td>70 m</td>
<td>12 bar</td>
<td>500 cP</td>
<td>140°C</td>
<td>closed with back vanes and balancing holes</td>
<td>27 mm</td>
<td>250 kW</td>
<td>3000/3600</td>
<td>50/60 Hz</td>
</tr>
</tbody>
</table>

Technical specifications
- materials wetted parts: stainless steel 316L or similar
- mechanical seal configuration: single, quench, double
- available material o-ring: EPDM, FKM, FEP-FKM, FFKM, Silicone
- connections: hygienic fittings
- surface finish: hygienic quality, internal welds hand polished + electropolished
- certificates & legislation: USP, 3A, NSF, FDA

Performance curves
* Higher capacities up to 1700 m³/h available in industrial range (industrial fittings and welds not hand-polished).

MFP3
1. Electropolished, easy to clean construction, no bacteria traps and no small clearances in order to clean the area around the O-ring
2. Solid design thanks to investment cast casings and impellers
3. Large seal cavity to clean mechanical seal properly
4. Monobloc execution with std. IEC motors
5. Standardized mechanical seals to EN 12756 FDA approved bellow mechanical seals or sterile O-ring seals (spring not in contact with the liquid)
6. Mechanical seal diameters depending on motor power: 43 - 70 - 110 mm
Pump series FPP2

Characteristics

The food grade Packo stainless steel pumps of the FPP2 series are pumps made of solid, machined stainless steel 316L and are extremely suitable for high system pressure applications up to 40 bar. Typical applications can be found in reverse osmosis applications in all kind of food related applications such as whey filtration, CIP waste filtration, beer filtration, etc.

Your benefits

- Suitable for system pressure applications up to 40 bar
- High pump efficiency resulting in lower energy consumption
- Low NPSH values: less risk on cavitation
- Electropolished: easy to clean
- Easy construction and easy maintenance: less downtime
- Standard components
- Easy to install
- 1 seal diameter for entire range

Application areas

The Packo high pressure pumps of the FPP2 series are used primarily in the reverse osmosis (RO) applications for the filtration of, for example, contaminated CIP-water, whey, etc. They are also used as a booster pump in a variety of skids.

You will find them in just about all industries including the dairy industry, breweries, beverage industry as well as in water treatment industry.

Pump series FPP2

Performance

- max. flow rate: 70 m³/h
- max. differential head: 70 m
- max. inlet pressure: max. 40 bar
- max. liquid viscosity: 500 cP
- max. temperature: 140°C
- impeller type: open
- max. free passage: 15 mm
- max. motor power: 22 kW
- max. speed: 3000/3600 rpm
- available frequency: 50/60 Hz

Technical specifications

- materials wetted parts: stainless steel 316L or similar
- mechanical seal configuration: single, quench, double
- available material o-ring: EPDM, FKM, FEP-FKM, FFKM, Silicone
- connections: Tri-Clamp connections
- surface finish: hygienic quality, internal welds hand polished
- certificates & legislation: + electropolished

Performance curves at 2900 rpm

FPP2

- max. flow rate: 70 m³/h
- max. differential head: 70 m
- max. inlet pressure: max. 40 bar
- max. liquid viscosity: 500 cP
- max. temperature: 140°C
- impeller type: open
- max. free passage: 15 mm
- max. motor power: 22 kW
- max. speed: 3000/3600 rpm
- available frequency: 50/60 Hz

Technical specifications

- materials wetted parts: stainless steel 316L or similar
- mechanical seal configuration: single, quench, double
- available material o-ring: EPDM, FKM, FEP-FKM, FFKM, Silicone
- connections: Tri-Clamp connections
- surface finish: hygienic quality, internal welds hand polished
- certificates & legislation: + electropolished
Pump series FMS

Characteristics
The hygienically designed Packo multistage pumps from the FMS series are used as process pumps in the most diverse applications in food, pharmaceutical and chemical industries. They are the right match for operations at moderate flows and high pressures.

Your benefits
• Ideal for operation at moderate flow rate and high pressures
• High pump efficiency resulting in lower energy consumption
• Low NPSH values: less risk on cavitation
• Electropolished: easy to clean
• Easy construction and easy maintenance: less downtime
• Standard components
• Easy to install

Application areas
For use in food, brew, beverage, pharmaceutical and chemical industries, as transfer and mixing pump for liquid food products, drinks, medicines, lotions, etc.

Typical applications: process pump for plate heat exchangers, pasteurizer systems, filters, filling machines, mixers, deaerators, carbonators and high pressure cleaning systems.

Pump series FMS

Performance
max. flow rate 50 m³/h
max. differential head 160 m
max. inlet pressure 8 bar
max. liquid viscosity 250 cP
max. temperature 140°C
impeller type open
max. free passage 14 mm
max. motor power 45 kW
max. speed 3000/3600 rpm
available frequency 50/60 Hz

Technical specifications
materials wetted parts stainless steel 316L or similar
mechanical seal configuration single, quench, double
available material o-ring EPDM, FKM
connections hygienic fittings
surface finish hygienic quality, internal welds hand polished + electropolished

certificates & legislation

Performance curves at 2900 rpm

FMS

Flow (m³/h)

Head (m)
Pump series CRP

Characteristics

The pumps of the CRP series are perfectly cleanable EHEDG certified air handling pumps and are mainly used to pump a mixture of liquid and air. Constructed in thick cold rolled plate, 100% non-porous and extremely smooth. The pumps have open or closed investment cast impellers, constructed in 316L or duplex materials. Thanks to its crevice-free design and electropolishing as a final surface treatment, the CRP pump series are perfectly cleanable, resulting in a reliable component for your production process.

Your benefits

- Higher pump efficiency compared with a classic liquid ring pump
- Low NPSH values: less risk on cavitation
- Electropolished: perfectly cleanable
- Easy construction and easy maintenance: less downtime
- Construction without non-return valve
- Easy to install
- 2 mechanical seal diameters for the entire range
- Robust construction
- Limited noise level

Application areas

Thanks to its unique air handling design based on a standard centrifugal pump, the CRP series are particularly suitable as a CIP return pump, as well as for unloading applications. They are used in the most demanding hygienic applications in almost all industries such as dairies, breweries, beverage industry, distilleries, etc.

Technical specifications

- Materials wetted parts: stainless steel 316L or similar
- Mechanical seal configuration: single bellow, sterile, quench, double
- Available material o-ring: EPDM, FKM, FEP+FKM, FFKM or similar
- Connections: hygienic fittings only
- Surface finish: hygienic quality, internal welds hand polished + electropolished (casting: 0.8 μm + impeller: 3.2 μm)
- Certificates & legislation: EHEDG, FDA, USP, EAC

Performance curves at 2900 rpm
Pump series CRP+

Characteristics
The pumps of the CRP+ series are perfectly cleanable EHEDG and 3A certified air handling pumps and are mainly used to pump a mixture of liquid and air. Constructed in thick cold rolled plate, 100% non-porous and extremely smooth. The pumps have open investment cast impellers, constructed in 316L or duplex materials. Thanks to its crevice-free design and electropolishing as a final surface treatment, the CRP+ pump series are perfectly cleanable, resulting in a reliable component for your production process.

CRP+
1 Electropolished, easy to clean construction, no bacteria traps and no small clearances in order to clean the area around the O-ring
2 Unique air handling design with cleanable air separator
3 By-pass to casing taking care about air evacuation
4 Monobloc execution with std. IEC motors
5 Standardized mechanical seals to EN 12756 FDA approved sterile O-ring seals (spring not in contact with the liquid)
6 One mechanical seal diameter: Ø 33 mm
7 Optional: Novapad seal for applications with poor lubrication

Your benefits
- Higher pump efficiency compared with a classic liquid ring pump
- Low NPSH values: less risk on cavitation
- Electropolished: perfectly cleanable
- Easy construction and easy maintenance: less downtime
- Standard components
- Easy to install
- 1 mechanical seal diameter for the entire range
- Robust construction
- Limited noise level

Application areas
Thanks to its unique air handling design based on a standard centrifugal pump, the CRP series are particularly suitable as a CIP return pump, as well as for unloading applications.

They are used in the most demanding hygienic applications in almost all industries such as dairies, breweries, beverage industry, distilleries, etc. In pharmaceutical and biotech industry they are mainly used for CIP return applications.

Pump series CRP+

<table>
<thead>
<tr>
<th>Performance</th>
<th>CRP+</th>
</tr>
</thead>
<tbody>
<tr>
<td>max. flow rate</td>
<td>80 m³/h</td>
</tr>
<tr>
<td>max. differential head</td>
<td>75 m</td>
</tr>
<tr>
<td>max. inlet pressure</td>
<td>10 bar</td>
</tr>
<tr>
<td>max. liquid viscosity</td>
<td>10 cP</td>
</tr>
<tr>
<td>max. temperature</td>
<td>140°C</td>
</tr>
<tr>
<td>impeller type</td>
<td>open</td>
</tr>
<tr>
<td>max. free passage</td>
<td>22 mm</td>
</tr>
<tr>
<td>max. motor power</td>
<td>22 kW</td>
</tr>
<tr>
<td>max. speed</td>
<td>3000/3600 rpm</td>
</tr>
<tr>
<td>available frequency</td>
<td>50/60 Hz</td>
</tr>
</tbody>
</table>

Technical specifications
- Materials wetted parts: stainless steel 316L or similar
- Mechanical seal configuration: single bellow, sterile, quench, double
- Available material O-ring: EPDM, FKM, FEP-FKM, FFKM or similar
- Connections: 3A hygienic fittings only
- Surface finish: hygienic quality, internal welds hand polished + electropolished (wetted parts 0.8 μm)

Performance curves at 2900 rpm

- Head (m)
- Flow (m³/h)

- Performance curves for CRP+ at 2900 rpm

- CRP+
  - sterile seal
  - novapad

- Novapad seal for applications with poor lubrication
High Shear pump series SFP2 & SFP3

Characteristics
High shear pump with open or closed impeller and patented stator for high flow and pressure. The shear is generated between the rotor and an innovative and optimized perforated stator. The shear can be optimized and increased by raising the speed of rotation. Shear rates up to 100,000 s⁻¹ can be achieved at a maximum speed of 3600 rpm.

Your benefits
• Shear rates up to 100,000 s⁻¹
• Highest efficiency on the market, energy saving
• Use of std. components
• Self pumping
• Hygienic design, so easy to clean
• Easy installation and maintenance
• Very quiet operation

Application areas
The Packo shear mixer pump is mainly used for in-line mixing, homogenisation and dispersion applications.

Mixing of two liquids:
• with a large different specific gravity,
• having a large different viscosity or
• that are difficult to mix.

Also dispensing of:
• solids in liquids and
• dispersion of gas in liquids.

Pump series SFP2 & SFP3

Performance

<table>
<thead>
<tr>
<th>Performance</th>
<th>SFP2</th>
<th>SFP3</th>
</tr>
</thead>
<tbody>
<tr>
<td>max. flow rate</td>
<td>80 m³/h</td>
<td>200 m³/h</td>
</tr>
<tr>
<td>max. differential head</td>
<td>40 m</td>
<td>50 m</td>
</tr>
<tr>
<td>max. pressure</td>
<td>inlet: 10 bar</td>
<td>discharge: 10 bar</td>
</tr>
<tr>
<td>max. shear</td>
<td>100,000 s⁻¹</td>
<td>60,000 s⁻¹</td>
</tr>
<tr>
<td>max. liquid viscosity</td>
<td>1000 cP</td>
<td></td>
</tr>
<tr>
<td>max. temperature</td>
<td>140°C</td>
<td></td>
</tr>
<tr>
<td>impeller type</td>
<td>open</td>
<td>closed</td>
</tr>
<tr>
<td>max. motor power</td>
<td>2.2 kW</td>
<td>45 kW</td>
</tr>
<tr>
<td>max. speed</td>
<td>3600 rpm</td>
<td></td>
</tr>
<tr>
<td>available frequency</td>
<td>50/60 Hz</td>
<td></td>
</tr>
</tbody>
</table>

Technical specifications

<table>
<thead>
<tr>
<th>Technical specifications</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>materials wetted parts</td>
<td>stainless steel 316L or similar</td>
<td></td>
</tr>
<tr>
<td>mechanical seal configuration</td>
<td>single, quench, double</td>
<td></td>
</tr>
<tr>
<td>available material o-ring</td>
<td>EPDM, FKM, FEP-FKM, FFKM or similar</td>
<td></td>
</tr>
<tr>
<td>connections</td>
<td>hygienic fittings</td>
<td></td>
</tr>
<tr>
<td>surface finish</td>
<td>hygienic quality, internal welds hand polished</td>
<td></td>
</tr>
<tr>
<td>+ electropolished</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 seal diameters for the entire range:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- SFP2: Ø 33 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- SFP3: Ø 43 mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Certificates & legislation

1 Electropolished, easy to clean construction, no bacteria traps and no small clearances in order to clean the area around the O-ring
2 Pressed stainless steel in 2B quality plate, extremely smooth
3 Large seal cavity to clean mechanical seal properly
4 Monobloc execution with std. IEC motors
5 Standardized mechanical seals to EN 12756 FDA approved bellows mechanical seals or sterile O-ring seals (spring not in contact with the liquid)
6 2 seal diameters for the entire range:
   - SFP2: Ø 33 mm
   - SFP3: Ø 43 mm

Performance curves at 2900 rpm

<table>
<thead>
<tr>
<th>Flow (m³/h)</th>
<th>Head (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 - 160</td>
<td>100 - 200</td>
</tr>
<tr>
<td>40 - 160</td>
<td></td>
</tr>
<tr>
<td>20 - 160</td>
<td></td>
</tr>
<tr>
<td>10 - 160</td>
<td></td>
</tr>
<tr>
<td>0 - 160</td>
<td></td>
</tr>
</tbody>
</table>

Flow (m³/h)

Head (m)
Pump series RMO

Characteristics

This pump serie is especially produced for installation on lorries and trucks and are constructed on a stainless steel bearing pedestal. They can be equipped with an optional hydraulic or electric motor. Pumps provided with an electric motor can be powered by the batteries of the truck and can be executed in a monobloc design. These perfectly cleanable pumps have stainless steel 316L pump casings constructed in thick cold rolled plate, 100% non-porous and extremely smooth. Some of them have an investment cast casing, resulting in an even more solid design.

Your benefits

• High pump efficiency, low motor power
• Low NPSH values: less risk on cavitation
• Short built-in dimensions, space saving
• Robust design, smooth operation
• Higher capacity
• Low noise level

Application areas

The RMO series are used on trucks and lorries for the handling of liquids in the food industry such as milk, beer and wine. They can also be used for the handling of AD Blue, drinking water and other liquids.

Pump series RMO

Performance

- max. flow rate: 250 m³/h
- max. differential head: 30 m
- max. inlet pressure: 3 bar
- max. liquid viscosity: 500 cP
- max. temperature: 140°C
- impeller type: open / closed
- max. free passage: 21 mm
- max. speed: variable

Technical specifications

- materials wetted parts: 316L or similar
- mechanical seal configuration: single
- available material o-ring: EPDM, FKM
- connections: hygienic fittings
- surface finish: hygienic quality, internal welds hand polished + electropolished (casing 0.8 μm - impeller 3.2 μm except for MFP series)
- drive: hydraulic motor or electromotor

<table>
<thead>
<tr>
<th>Pump series RMO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance</td>
</tr>
<tr>
<td>max. flow rate</td>
</tr>
<tr>
<td>max. differential head</td>
</tr>
<tr>
<td>max. inlet pressure</td>
</tr>
<tr>
<td>max. liquid viscosity</td>
</tr>
<tr>
<td>max. temperature</td>
</tr>
<tr>
<td>impeller type</td>
</tr>
<tr>
<td>max. free passage</td>
</tr>
<tr>
<td>max. speed</td>
</tr>
</tbody>
</table>

Technical specifications

- materials wetted parts: 316L or similar
- mechanical seal configuration: single
- available material o-ring: EPDM, FKM
- connections: hygienic fittings
- surface finish: hygienic quality, internal welds hand polished + electropolished (casing 0.8 μm - impeller 3.2 μm except for MFP series)
- drive: hydraulic motor or electromotor

Performance curves at 1450 rpm

In practice pumps are operating at lower or higher speed depending on the application.
Pump series VPCP

Characteristics

The Packo stainless steel pumps of the VPCP series are the reference in soft and damage free pumping of vegetables, potatoes, mussels, shrimps, etc. Due to the fact that they have an extremely large passage and to its specially designed vane they guarantee a smooth handling of your product.

Your benefits

- Soft and damage-free pumping
- Easy maintenance: short downtimes
- Extremely large passage
- Electropolished stainless steel 304L: no rusting & easy to clean
- Monobloc design: space saving

Application areas

The Packo VPCP pump range is specifically designed for damage-free pumping of potatoes and vegetables but also seafood such as mussels, cockles and shrimp. The VPCP pump can be used in Belgian fries process lines, transport of vegetables to blanching lines as well as for transport of pasta from pasta cookers.

Performance curves

Performance

max. flow rate 1000 m³/h
max. differential head 20 m
max. liquid viscosity 100 cP
max. temperature 80°C
impeller type special designed vane
max. free passage 213 mm
max. motor power 55 kW
max. speed 1200 rpm
available frequency 50/60 Hz

Technical specifications

materials wetted parts stainless steel 304 or similar
mechanical seal configuration Single
available material o-ring NBR (FDA)
connections industrial
surface finish industrial finish: welds are not hand polished.
final surface treatment: electropolished

Pump series VPCP

VPCP/125-315 Ø 105mm
VPCP/150-400 Ø 133mm
VPCP/200-500 Ø 171mm
VPCP/250-630 Ø 213mm

Materials wetted parts: stainless steel 304 or similar
Mechanical seal configuration: Single
Available material o-ring: NBR (FDA)
Connections: Industrial
Surface finish: Industrial finish: welds are not hand polished
Final surface treatment: Electropolished

Pump series

VPCP

<table>
<thead>
<tr>
<th>Performance</th>
<th>VPCP</th>
</tr>
</thead>
<tbody>
<tr>
<td>max. flow rate</td>
<td>1000 m³/h</td>
</tr>
<tr>
<td>max. differential head</td>
<td>20 m</td>
</tr>
<tr>
<td>max. liquid viscosity</td>
<td>100 cP</td>
</tr>
<tr>
<td>max. temperature</td>
<td>80°C</td>
</tr>
<tr>
<td>impeller type</td>
<td>Special designed vane</td>
</tr>
<tr>
<td>max. free passage</td>
<td>213 mm</td>
</tr>
<tr>
<td>max. motor power</td>
<td>55 kW</td>
</tr>
<tr>
<td>max. speed</td>
<td>1200 rpm</td>
</tr>
<tr>
<td>available frequency</td>
<td>50/60 Hz</td>
</tr>
</tbody>
</table>

Technical specifications

Materials wetted parts: Stainless steel 304 or similar
Mechanical seal configuration: Single
Available material o-ring: NBR (FDA)
Connections: Industrial
Surface finish: Industrial finish: welds are not hand polished
Final surface treatment: Electropolished

Certificate & legislation

Bellow seal

Application areas

The Packo VPCP pump range is specifically designed for damage-free pumping of potatoes and vegetables but also seafood such as mussels, cockles and shrimp. The VPCP pump can be used in Belgian fries process lines, transport of vegetables to blanching lines as well as for transport of pasta from pasta cookers.
Pump series IMO

Characteristics

The Packo submersible cantilever pump series IMO are suitable for handling liquids with a temperature up to 200°C. They are especially constructed to handle liquids that are difficult to seal such as paints, varnishes, galvanic coatings, hot frying oil, etc.

The pumps are available in cantilever execution up to 0,5 m length.

Your benefits

- Cantilever design = leakage free (no seals and plain bearings)
- Sealless pump: reducing downtime and operating costs
- Electropolished: easy to clean
- Robust design
- Not sensitive for dry running

Application areas

Particularly suitable for pumping liquids that are difficult to seal such as hot frying oil up to 200°C. They are also used for pumping waste water from industrial waste such as CIP, acids, condensate, etc.

Pump series IMO

Performance

<table>
<thead>
<tr>
<th></th>
<th>IMO</th>
</tr>
</thead>
<tbody>
<tr>
<td>max. flow rate</td>
<td>800 m³/h</td>
</tr>
<tr>
<td>max. differential head</td>
<td>60 m</td>
</tr>
<tr>
<td>max. inlet pressure</td>
<td>atmospheric</td>
</tr>
<tr>
<td>max. liquid viscosity</td>
<td>500 cP</td>
</tr>
<tr>
<td>max. temperature</td>
<td>200°C</td>
</tr>
<tr>
<td>impeller type</td>
<td>open, semi-open, closed</td>
</tr>
<tr>
<td>max. free passage</td>
<td>45 mm</td>
</tr>
<tr>
<td>max. motor power</td>
<td>110 kW</td>
</tr>
<tr>
<td>max. speed</td>
<td>3000 rpm</td>
</tr>
<tr>
<td>available frequency</td>
<td>50/60 Hz</td>
</tr>
</tbody>
</table>

Technical specifications

<table>
<thead>
<tr>
<th></th>
<th>IMO</th>
</tr>
</thead>
<tbody>
<tr>
<td>materials wetted parts</td>
<td>stainless steel 316L or similar</td>
</tr>
<tr>
<td>mechanical seal configuration</td>
<td>no seal - cantilever</td>
</tr>
<tr>
<td>available material o-ring</td>
<td>FKM - EPDM - Special</td>
</tr>
<tr>
<td>connections</td>
<td>industrial or hygienic</td>
</tr>
<tr>
<td>surface finish</td>
<td>industrial finish: welds are not hand polished. final surface treatment: electropolished</td>
</tr>
<tr>
<td>certificates &amp; legislation</td>
<td></td>
</tr>
</tbody>
</table>

Performance curves

![Performance curves](image)
Our wide range of stainless steel pumps

Standard Packo pump range

General industrial pumps

**Pump Series NP60**
Low cost industrial stainless steel centrifugal pump.
Energy saving thanks to high efficiency.
Easy concept and maintenance.
- Max. flow up to 40 m³/h
- Max. 2.5 bar
- Motor power up to 2.2 kW

**Pump Series ICP1**
The best ‘value for money’ industrial stainless steel centrifugal pump.
Energy-saving with high efficiency.
Modular concept built up with standard components.
Easy maintenance.
- Max. flow up to 55 m³/h
- Max. 4 bar
- Motor power to 5.5 kW

**Pump Series ICP2 & ICP3**
Robust execution in pressed stainless steel 316L.
High efficiency and very low NPSH.
Modular concept composed with standard components.
Easy maintenance.
Available with hygienic fittings, pump series ICP+.
- Max. flow up to 300 m³/h
- Max. 12 bar
- Motor power up to 90 kW

**Vortex Pump Series IFF & MFF**
Stainless steel vortex pump with recessed impeller.
Ideal as a process pump for pumping liquids with a significant proportion of solids and / or long fibers.
Available with hygienic fittings.
- Max. flow up to 350 m³/h
- Max. 3 bar
- Motor power up to 45 kW

**Pump Series MCP2**
Robust design in cast stainless steel 316L.
Extremely efficient thanks to optimum pump hydraulics.
Modular concept composed with standard components.
Easy maintenance.
- Max. flow up to 120 m³/h
- Max. 6.5 bar
- Motor power up to 22 kW

**Pump Series MCP3**
Robust design in cast stainless steel 316L.
Extremely efficient thanks to optimum pump hydraulics.
Modular concept composed with standard components.
Easy maintenance.
- Max. flow up to 1700 m³/h
- Max. 7 bar
- Motor power up to 250 kW

**Pump Series ICP2 & ICP3**
Robust execution in pressed stainless steel 316L.
High efficiency and very low NPSH.
Modular concept composed with standard components.
Easy maintenance.
- Max. flow up to 300 m³/h
- Max. 12 bar
- Motor power up to 90 kW

**Vortex Pump Series IFF & MFF**
Stainless steel vortex pump with recessed impeller.
Ideal as a process pump for pumping liquids with a significant proportion of solids and / or long fibers.
Available with hygienic fittings.
- Max. flow up to 350 m³/h
- Max. 3 bar
- Motor power up to 45 kW

**Pump Series MCP2**
Robust design in cast stainless steel 316L.
Extremely efficient thanks to optimum pump hydraulics.
Modular concept composed with standard components.
Easy maintenance.
- Max. flow up to 120 m³/h
- Max. 6.5 bar
- Motor power up to 22 kW

**Pump Series MCP3**
Robust design in cast stainless steel 316L.
Extremely efficient thanks to optimum pump hydraulics.
Modular concept composed with standard components.
Easy maintenance.
- Max. flow up to 1700 m³/h
- Max. 7 bar
- Motor power up to 250 kW

**Pump Series NMS**
Multistage pump in an industrial design.
Ideal for moderate flow rate and high pressures.
- Max. flow up to 50 m³/h
- Max. 16 bar
- Motor power up to 45 kW

**Duplex Pump Series MWP2**
Robust execution in wear resistant duplex material.
Ideal for pumping erosive / abrasive products.
- Max. flow up to 50 m³/h
- Max. 6 bar
- Motor power up to 11 kW
### General industrial pumps

#### Pump Series IPP2
- High pressure pump suitable for system pressures up to 40 bar.
- Made of solid, machined stainless steel 316L.
- Especially for use in reverse osmosis applications.
- Available with hygienic fittings.
- Max. flow up to 120 m³/h
- Max. head of 7 bar
- Motor power up to 22 kW

#### Selfpriming Pump Series MSP2
- Robust execution in cast stainless steel 316L.
- Suitable for CIP return, truck unloading, etc.
- Ideal for pumping air containing liquids.
- Available with hygienic fittings.
- Max. flow up to 70 m³/h
- Max. 3 bar
- Motor power up to 11 kW

#### Air handling Pump Series IRP
- Industrial air handling pump for CIP return applications as well as for truck and tank unloading, etc.
- High efficiency and low NPSH in comparison with a classic liquid ring pump.
- Limited noise level.
- Easy maintenance.
- Available with hygienic fittings, pump series IRP+.
- Max. flow up to 120 m³/h
- Max. 7 bar
- Motor power up to 22 kW

#### Submersible Pump Series IM
- Available as cantilever pump series IM without mechanical seal or support bushing for insertion length of 0.5 m.
- With support bushing for series IMXL with insertion length up to 1.5 m.
- Particularly suitable for pumping liquids that are difficult to seal, such as paints, varnishes, galvanic coatings, hot frying oil, etc.
- Max. flow up to 800 m³/h
- Max. 6 bar
- Motor power up to 90 kW