



Food Pumps

Stainless steel centrifugal and volumetric pumps
for the food industry



Food manufacturers should select pumps with these two concerns in mind:

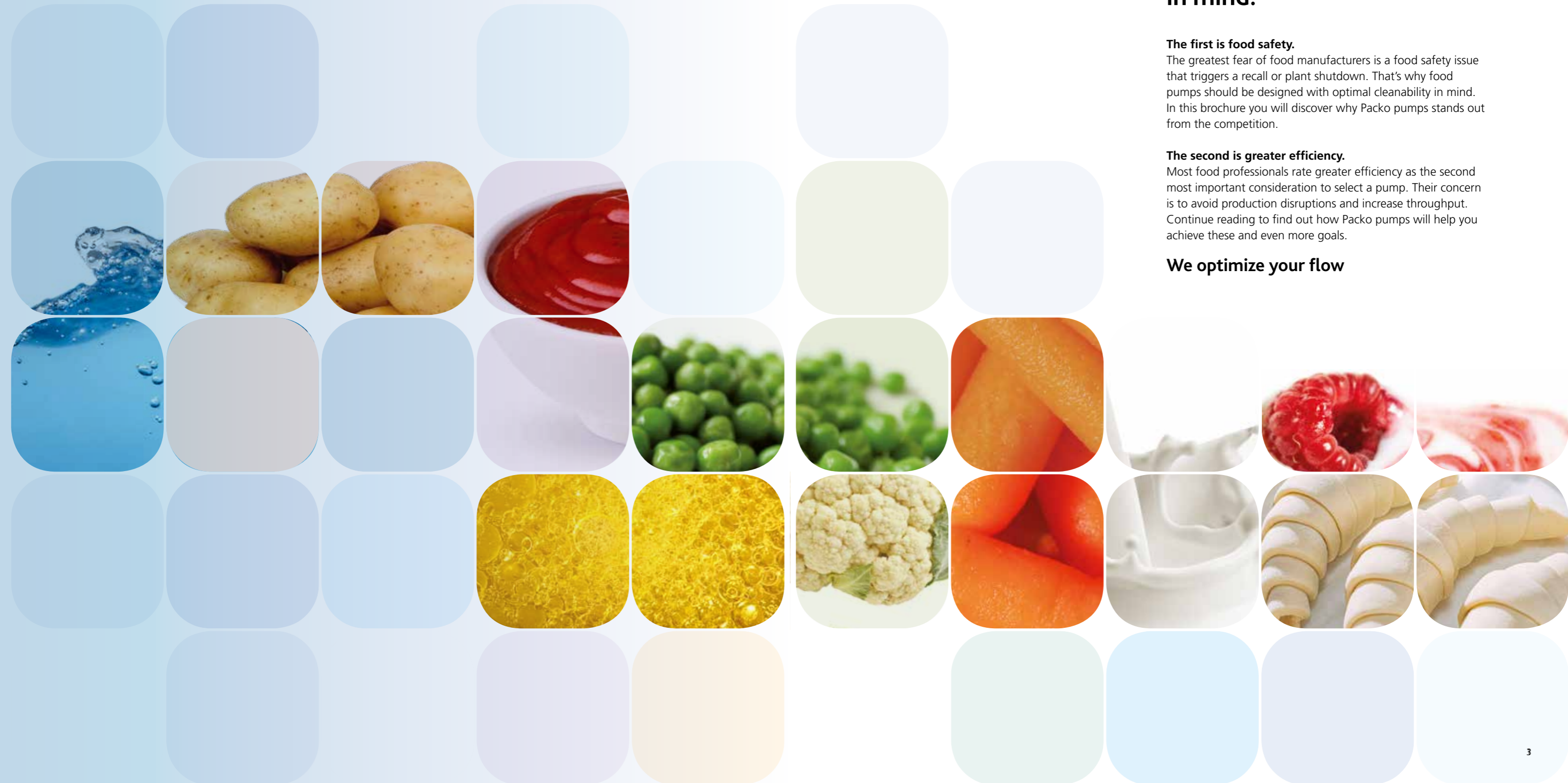
The first is food safety.

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

Centrifugal pumps

	3A	1935/2004 EC	FDA	ATEX	MEI	Hand polished welds	Electropolished	Pump casing
FP60	-	√	√	O	√	√	√	Pressed
FP1	-	√	√	O	√	√	√	Pressed
FP2	-	√	√	O	√	√	√	Pressed
FP2+	√	√	√	O	√	√	√	Pressed
FP3	-	√	√	O	√	√	√	Pressed
MFP2	-	√	√	O	√	√	√	Investment Cast
MFP3	-	√	√	O	√	√	√	Investment Cast
FPP2	-	√	√	-	-	√	√	Machined
FPP3	-	√	√	-	-	√	√	Machined
FMS	-	√	√	O	-	√	√	Pressed or Investment cast
CRP	-	√	√	O	-	√	√	Pressed
CRP+	√	√	√	O	-	√	√	Pressed
SFP2	-	√	√	O	-	√	√	Pressed
SFP3	-	√	√	O	-	√	√	Pressed
RMO	-	√	√	-	√	√	√	Pressed or Investment cast
VPCP	-	√	√	-	-	-	√	Welded
IMO	-	√	√	-	-	-	√	Pressed or Investment cast
GFP	-	√	√	-	-	√	√	Pressed or Investment cast
MSCP	-	√	√	-	-	-	√	Investment Cast
CM	-	√	√	O	-	√	√	Machined

Volumetric pumps

	3A	1935/2004 EC	FDA	ATEX	Hand polished welds	Quench seal	Double seal	Special feature	Page
ZL	O	√	√	O	√	O	O	Rotary lobe pump	58
ZP	O	√	√	O	√	O	O	Circumferential piston pump	60
ZS	O	√	√	O	√	O	O	Twin screw pump	62

	Impeller	Quench seal	Double seal	Special feature	Page
FP60	Open	O	-	Hygienic process pump with limited options	18
FP1	Open	-	-	High value for money process pump	20
FP2	Open	O	O	Hygienic process pump	22
FP2+	Open	O	O	3A certified hygienic process pump	24
FP3	Closed	O	O	EHEDG certified process pump	26
MFP2	Open or Semi-open	O	O	Extreme energy saving thanks to optimum pump hydraulics	28
MFP3	Closed	O	O	Flow up to 1800 m³/h	30
FPP2	Open	O	O	Max inlet pressure: 40 bar	32
FPP3	Closed	O	O	Max inlet pressure: 40 bar	34
FMS	Open	O	O	Multistage pump	36
CRP	Open or Closed	O	O	Air handling centrifugal (CIP return)	38
CRP+	Open	O	O	Air handling centrifugal (CIP return)	40
SFP2	Open	O	O	High shear pump	42
SFP3	Closed	O	O	High shear pump	42
RMO	Open or Closed	-	-	Milk collecting pump for lorries & trucks	44
VPCP	Vane	-	-	Large free passage, damage free pumping	46
IMO	Open, Closed or Vortex	-	-	Cantilever pump up to max 200°C	48
GFP	Open or Closed	O	-	Multi-phase pump for gas containing liquids	50
MSCP	Star impeller	-	-	Self-priming side channel pump	52
CM	2 zone mill	-	O	Hygienic colloid mill	54

√ = standard
O = available as an option
- = not available / not applicable



Our expertise in your market

Dairy and general food industry

Packo 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 cleanability 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. Specifically for this sector, a complete portfolio of pumps were developed according to EHEDG and 3A standards.

Typical applications:
Milk, yoghurt, cream, ice cream, whey, curd, brine, yeast, blood, 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 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.

Brewery

Perfect cleanability, 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 1800 m³/h Packo offers just about the widest range of food grade pumps for this market segment. Packo 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:
Gentle pumping of mash, handling trub, wort, water, sugar solutions, syrups, extracts. Beer transfer and filtration, dry hopping, CIP, etc.

Beverage

When it comes to truck unloading, filtration applications, bi-directional or gentle pumping of shear sensitive liquids, with its wide range of pump technologies and capacities, Packo offers a peace-of-mind solution for every pumping application in the beverage industry. We leave the competition behind with our supreme efficiency, low shear and complete certification to worldwide regulations and standards.

Typical applications:
Transfer of wine, juice (concentrate), soft drinks, sugar syrups, (carbonated) water, extracts, juice filtration, CIP.

Our expertise in your market

Bakery

Packo pumps are designed for optimal performance in a wide range of viscosities and capacities. With a hygienic design, CIP-performance and optional heating/cooling capability, they are well-suited for a wide range of processes in the bakery industry, from the smallest artisanal bakery up to industrial scale operations. Unique heli-lobe rotors guarantee gentle pumping with minimal pulsation, retaining the characteristics of your valuable ingredients.

Typical applications:

CIP, dough, cream fillings, puddings, egg, yeast, fat, paste, fondants and creams.

Sweets

With our proven technology of special shaft seal configurations – for example, triple lip seals and knife edge seals - Packo offers a very reliable solution when it comes to the challenging sealing of sugar or chocolate based products, even where flushing is not an option, which is common in the confectionary industry. For processing tenacious masses through the pump without adding and mixing in air, Packo offers solutions including overall heated pump heads and an enlarged rectangular inlet. Furthermore, for dispersion, dissolving, mixing applications and texture agent activation, our patented high shear pump is the perfect, and unrivalled, addition.

Typical applications:

CIP, chocolate, hard and soft candy mass, gums, gelatin and toppings.

Convenience food

Hygienic design, easy-cleaning, reliability, high-flexibility and suitability for process automation are key features of Packo pumps for the convenience food industry. With our wide range of state-of-the-art rotor geometries and materials, Packo is the technology leader when it comes to wear-resistance, dosing accuracy and handling of soft particles in a wide range of applications.

Typical applications:

Transfer of soups, stews, dressings, sauces, tomato concentrate, mayonnaise, ketchup, marmalade, jams and ready meals.

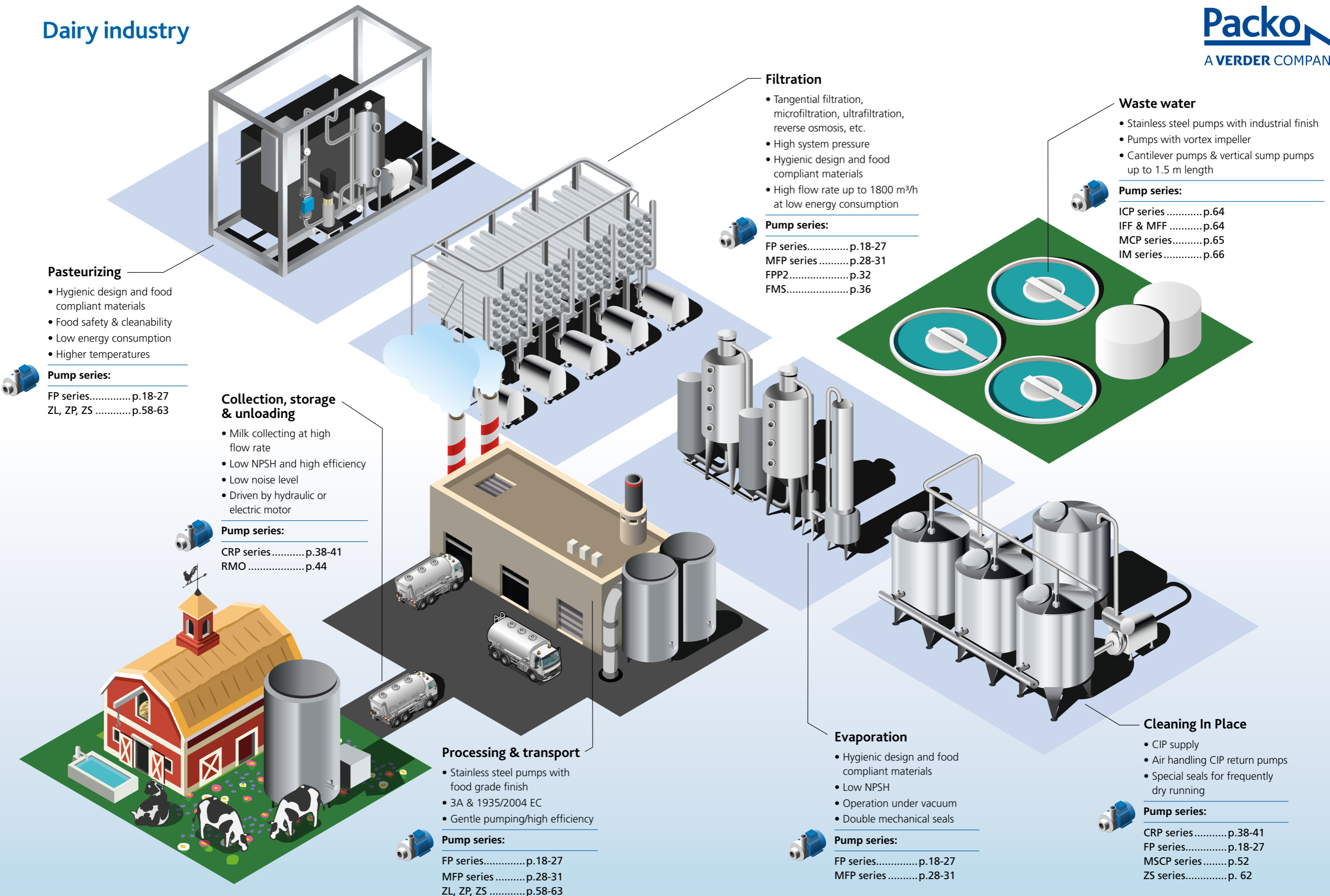
Meat, fish & frying oil

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 up to 200 °C.



Pasteurizing

- Hygienic design and food compliant materials
- Food safety & cleanability
- Low energy consumption
- Higher temperatures

Pump series:

FP series..... p.18-27
ZL, ZP, ZS p.58-63

Collection, storage & unloading

- Milk collecting at high flow rate
- Low NPSH and high efficiency
- Low noise level
- Driven by hydraulic or electric motor

Pump series:

CRP series p.38-41
RMO p.44

Processing & transport

- Stainless steel pumps with food grade finish
- 3A & 1935/2004 EC
- Gentle pumping/high efficiency

Pump series:

FP series..... p.18-27
MFP series p.28-31
ZL, ZP, ZS p.58-63

Filtration

- Tangential filtration, microfiltration, ultrafiltration, reverse osmosis, etc.
- High system pressure
- Hygienic design and food compliant materials
- High flow rate up to 1800 m³/h at low energy consumption

Pump series:

FP series..... p.18-27
MFP series p.28-31
FPP2..... p.32
FMS..... p.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.64
IFF & MFF p.64
MCP series..... p.65
IM series p.66

Evaporation

- Hygienic design and food compliant materials
- Low NPSH
- Operation under vacuum
- Double mechanical seals

Pump series:

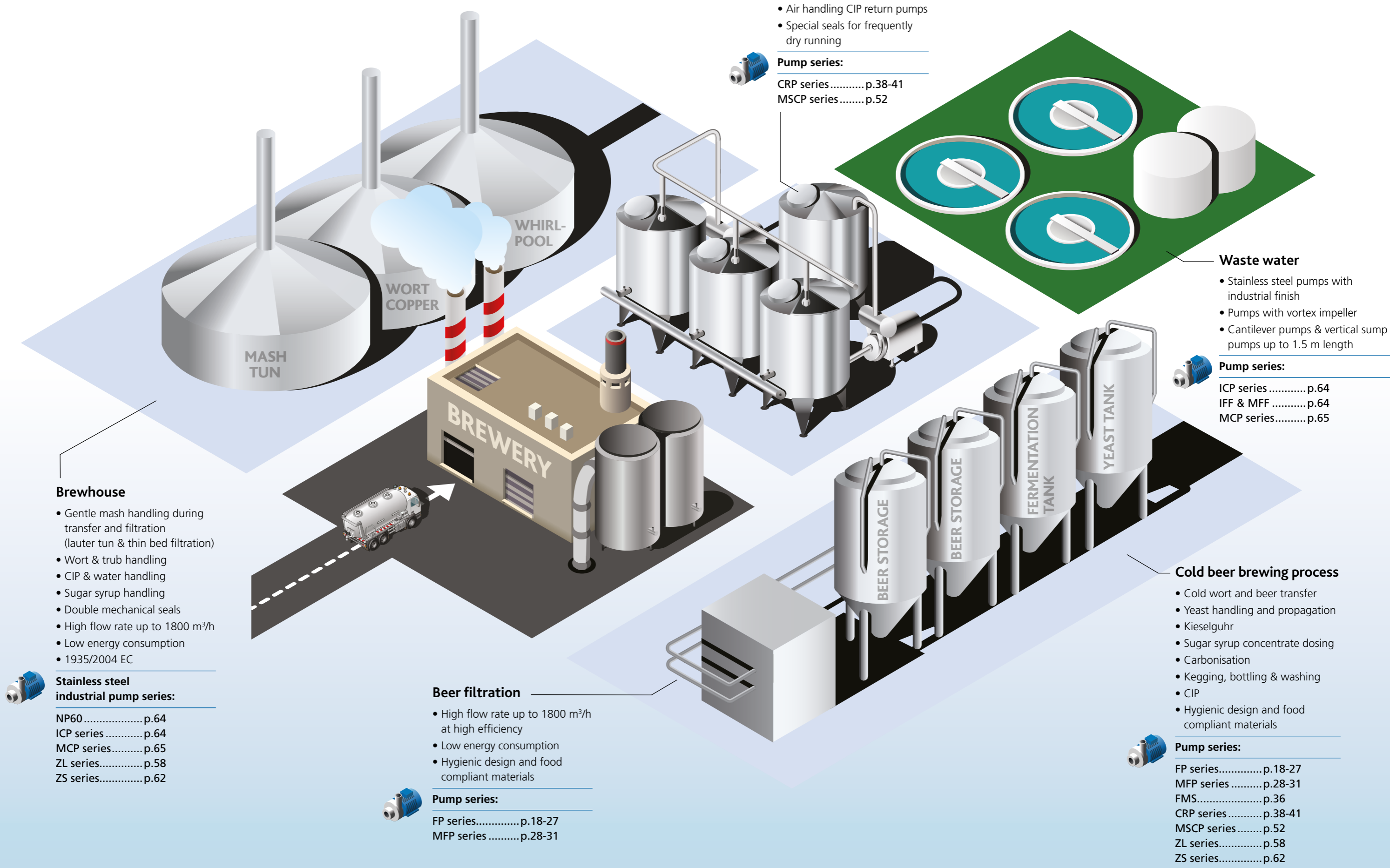
FP series..... p.18-27
MFP series p.28-31

Cleaning In Place

- CIP supply
- Air handling CIP return pumps
- Special seals for frequently dry running

Pump series:

CRP series p.38-41
FP series..... p.18-27
MSCP series..... p.52
ZS series..... p. 62



Brewhouse

- Gentle mash handling during transfer and filtration (lauter tun & thin bed filtration)
- Wort & trub handling
- CIP & water handling
- Sugar syrup handling
- Double mechanical seals
- High flow rate up to 1800 m³/h
- Low energy consumption
- 1935/2004 EC

Stainless steel industrial pump series:

- NP60 p.64
- ICP series p.64
- MCP series p.65
- ZL series p.58
- ZS series p.62

Beer filtration

- High flow rate up to 1800 m³/h at high efficiency
- Low energy consumption
- Hygienic design and food compliant materials

Pump series:

- FP series p.18-27
- MFP series p.28-31

Cleaning In Place

- CIP supply
- Air handling CIP return pumps
- Special seals for frequently dry running

Pump series:

- CRP series p.38-41
- MSCP series p.52

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:

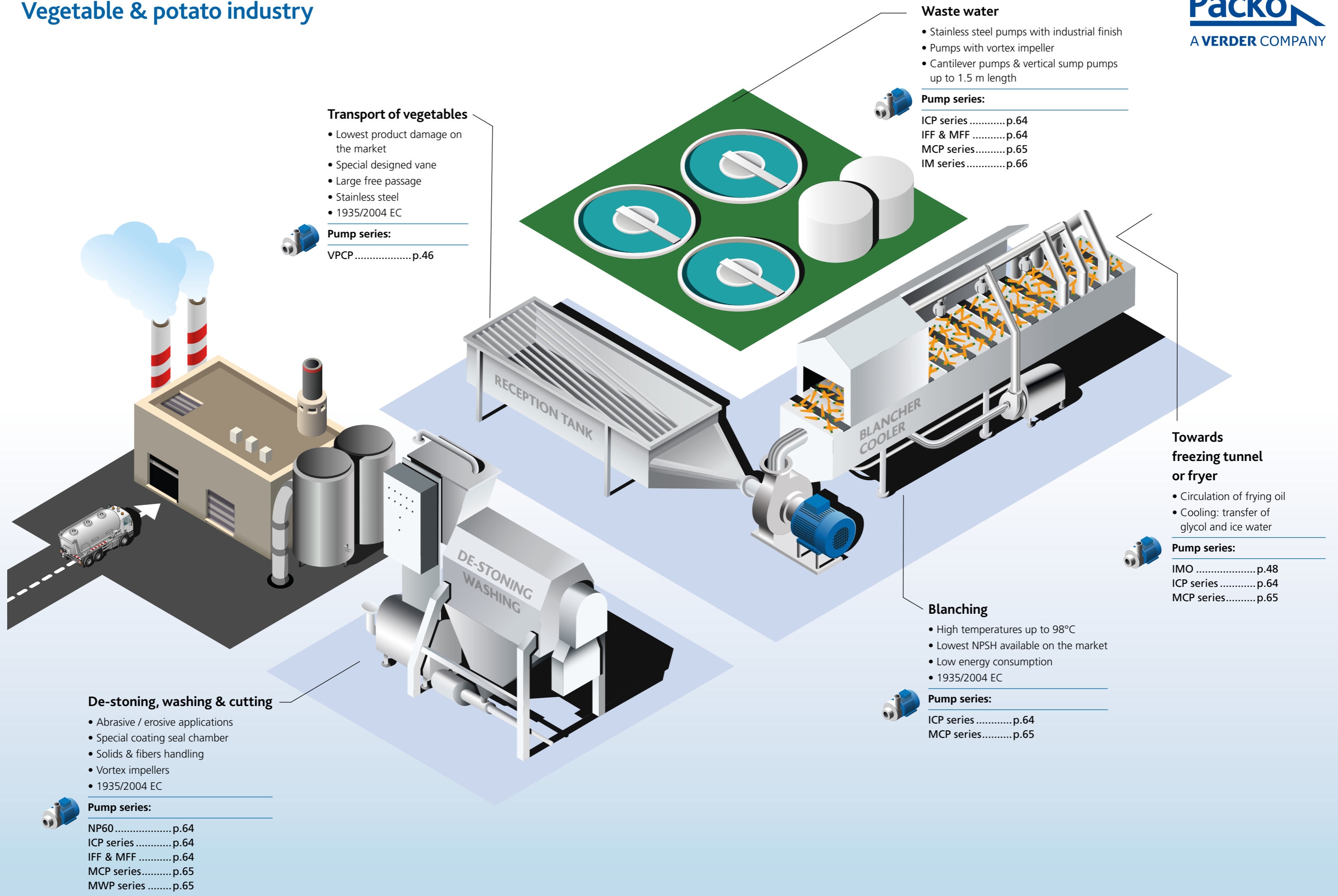
- ICP series p.64
- IFF & MFF p.64
- MCP series p.65

Cold beer brewing process

- Cold wort and beer transfer
- Yeast handling and propagation
- Kieselguhr
- Sugar syrup concentrate dosing
- Carbonisation
- Kegging, bottling & washing
- CIP
- Hygienic design and food compliant materials

Pump series:

- FP series p.18-27
- MFP series p.28-31
- FMS p.36
- CRP series p.38-41
- MSCP series p.52
- ZL series p.58
- ZS series p.62



Transport of vegetables

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

Pump series:

VPCP p.46

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.64
IFF & MFF p.64
MCP series p.65
IM series p.66

De-stoning, washing & cutting

- Abrasive / erosive applications
- Special coating seal chamber
- Solids & fibers handling
- Vortex impellers
- 1935/2004 EC

Pump series:

NP60 p.64
ICP series p.64
IFF & MFF p.64
MCP series p.65
MWP series p.65

Towards freezing tunnel or fryer

- Circulation of frying oil
- Cooling: transfer of glycol and ice water

Pump series:

IMO p.48
ICP series p.64
MCP series p.65

Blanching

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

Pump series:

ICP series p.64
MCP series p.65

Other applications in the food industry

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 is the ideal partner.

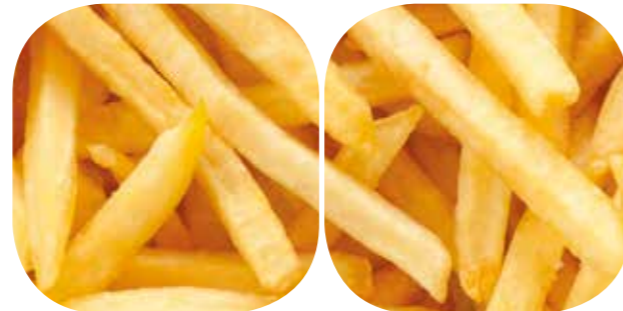
Hot frying oil

- Fries, chicken nuggets, etc.
- Leakage free solution
- Maintenance free solution up to 200°C



Pump series:

IMOp.48



Brine injector

- Product viscosity up to 1000 cP
- Food safety: hygienic design and food compliant materials



Pump series:

FP series.....p.18-27
MFP seriesp.28-31
ZL, ZP.....p.58-61



Batter & emulsions

- Water, salt, proteins, sugar, gelatine, etc,...
- Product viscosity up to 1000 cP
- Food safety: hygienic design and food compliant materials



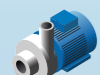
Pump series:

FP series.....p.16-20
ZL, ZP, ZSp.50-50



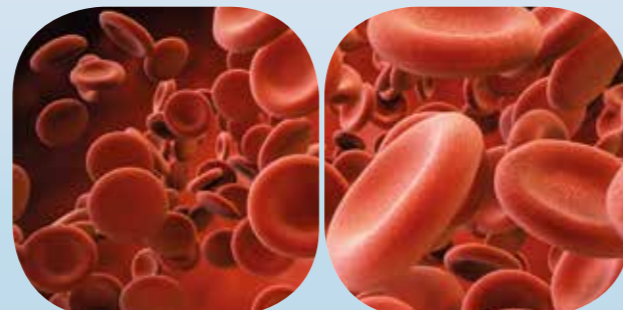
Animal blood handling

- Food safety: hygienic design and food compliant materials
- Product viscosity up to 1000 cP
- Hemoglobine, plasma & concentrate



Pump series:

FP series.....p.18-27
ZL, ZP, ZSp.58-53



Fish & shellfish

- Damage free pumping
- Blanching & cooling
- 1935/2004 EC



Pump series:

VPCPp.46
ICP seriesp.64
IFF & MFFp.64
MCP series.....p.65



Egg white/egg yolk

- Gentle pumping
- Food safety: hygienic design and food compliant materials
- CIP supply & CIP return



Pump series:

FP series.....p.18-27
CRP seriesp.38-41
MSCP seriesp.52
ZL, ZP, ZSp.58-63



Soy milk/soy drinks

- Food safety: hygienic design and food compliant materials
- CIP supply & CIP return



Pump series:

FP series.....p.18-27
CRP seriesp.38-41
MSCP seriesp.52
ZL, ZP, ZSp.58-63



Animal and vegetable fats

- Butter, margarine, cocoa butter, palm stearin,...
- Food safety: hygienic design and food compliant materials
- Heating jackets on pump head



Pump series:

FP2 series.....p.18-27
ZL, ZP, ZSp.58-63



Glycol

- For cooling applications
- Special solutions down to minus 40°C



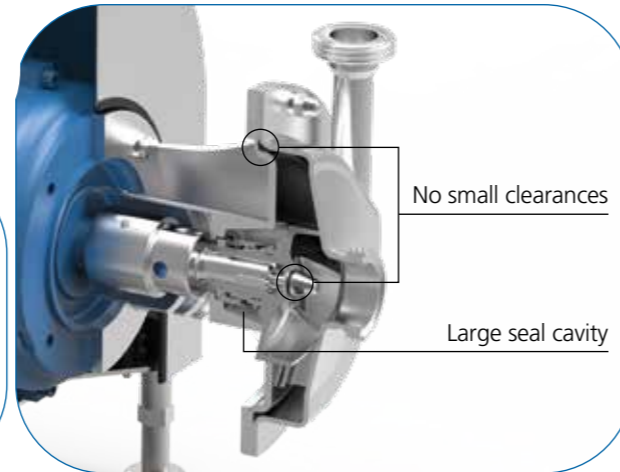
Pump series:

ZS series.....p.62
ICP seriesp.64
MCP series.....p.65





Perfectly cleanable construction. Designed according to EHEDG and 3A. Certificate available for food pumps, pharmaceutical pumps and also for CIP return pumps.

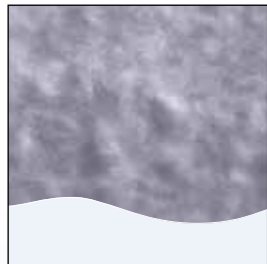


Hydraulic high quality product with the highest pump efficiencies and lowest NPSH values.

Lower energy bills thanks to Packo pumps.

Easy, modular, maintenance friendly and robust concept.

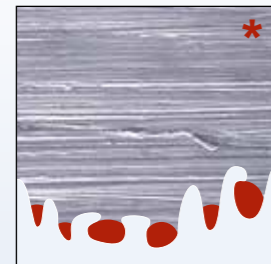
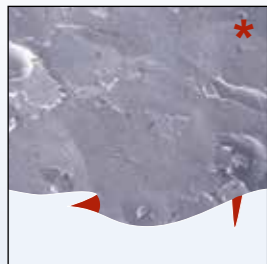
Electropolished design (for wetted & non-wetted parts)



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

* Higher risk of bacteria traps with other pump brand.

Centrifugal pumps 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. Discover some of Packo pumps characteristics and find the perfect match for your food production process.



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.



According to applicable standards and legislations, particularly within Europe, but also worldwide.



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 9001:2015
ISO 14001:2015



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IEC



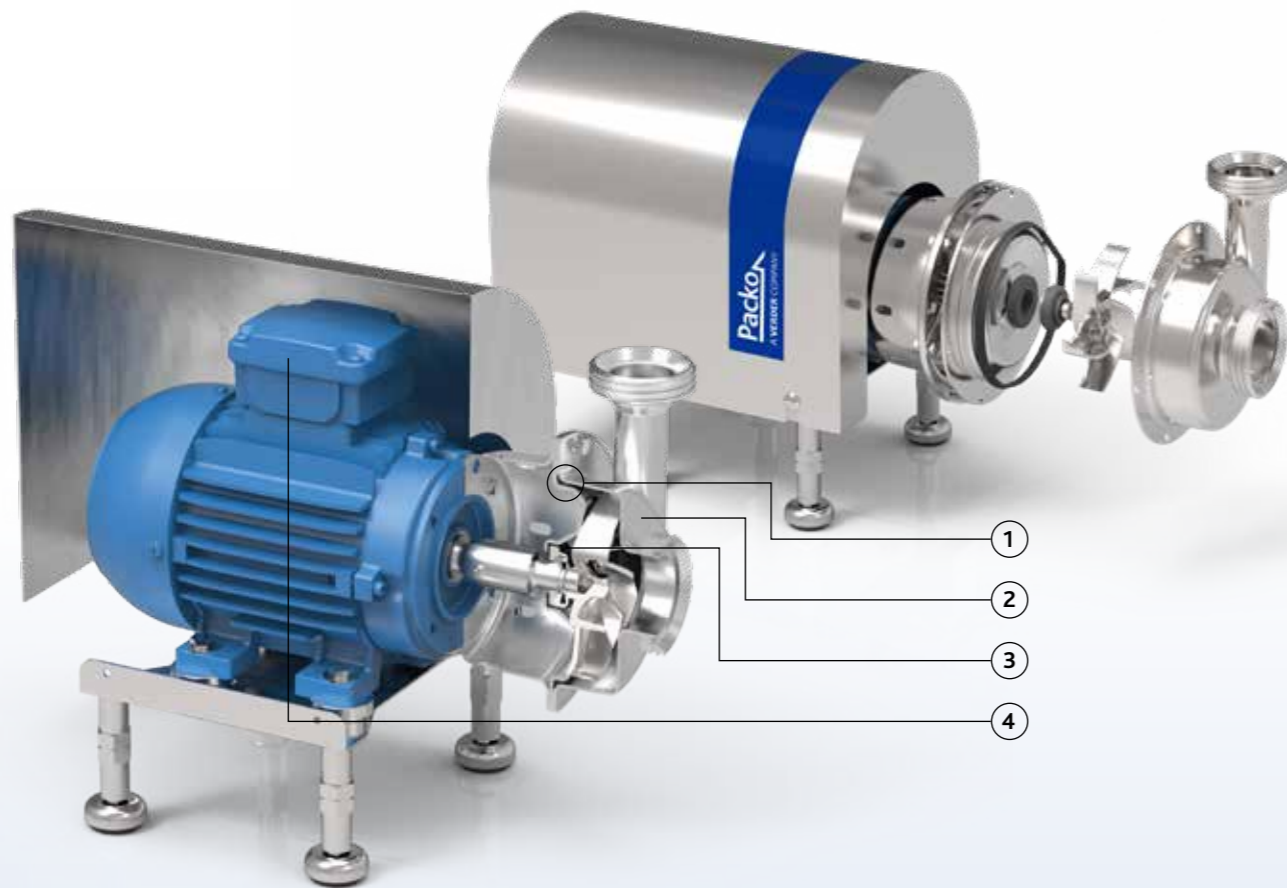
Standardized motor dimensions to IEC. Available in accordance with local motor laws.

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.



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



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.

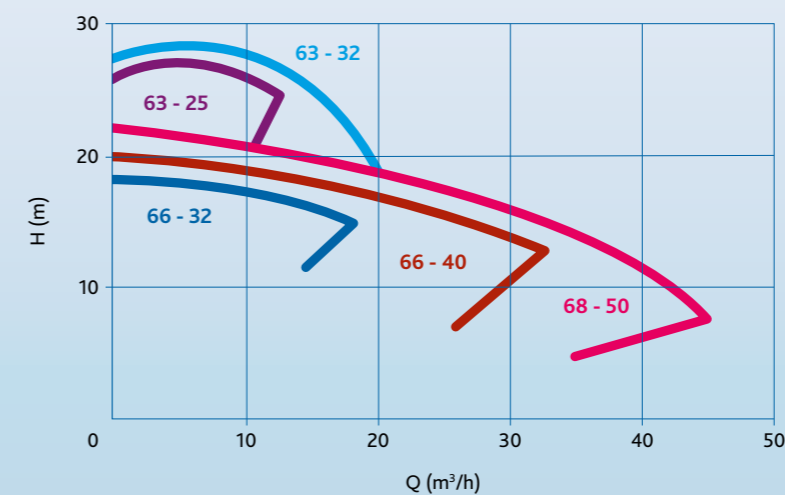
They are often used as process pump for heat exchangers, filtration units, filling machines, brine injectors, batter machines and CIP cleaning systems.

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

Pump series	FP60
Performance	
max. flow rate	40 m ³ /h
max. differential head	27 m
max. inlet pressure	3 bar
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

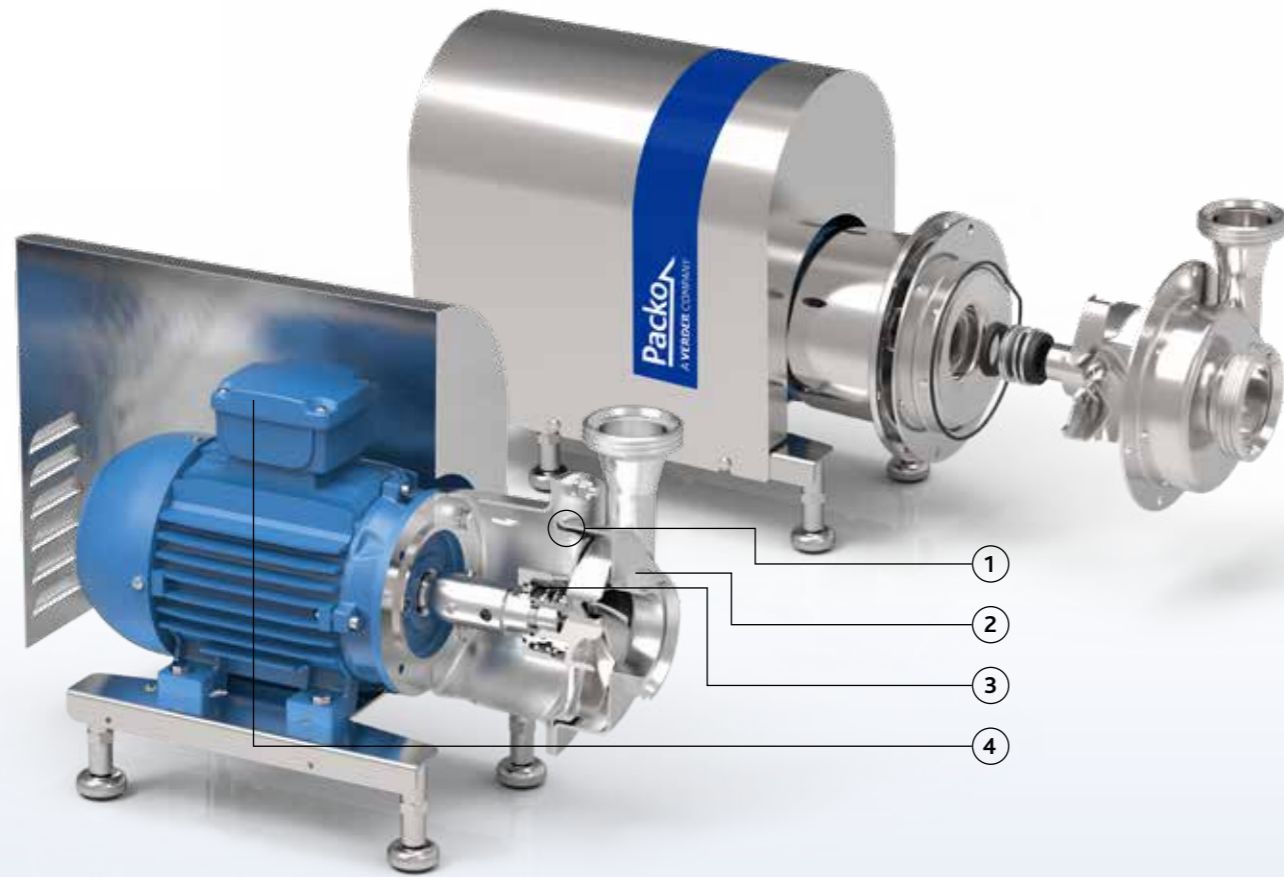


Pump series FP1



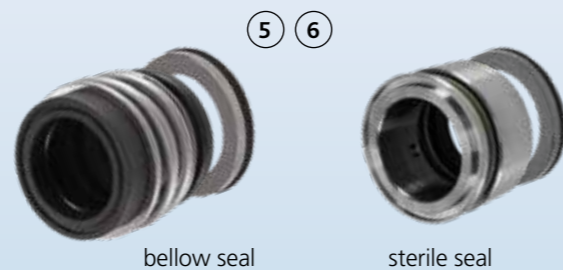
Characteristics

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.



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



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

Performance

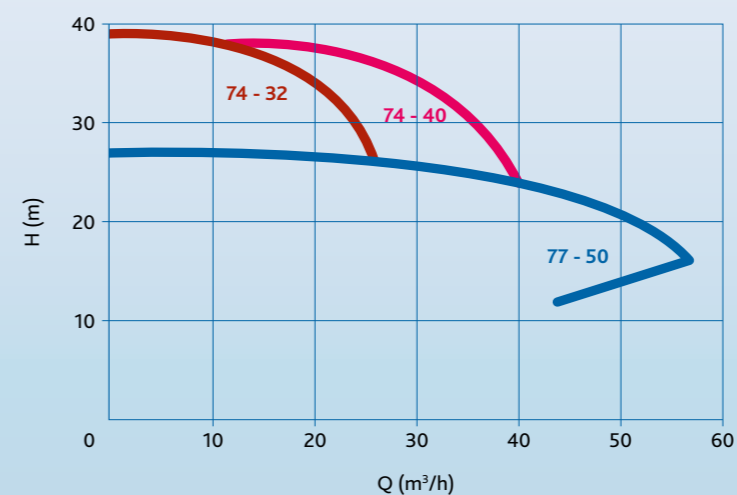
max. flow rate	55 m³/h
max. differential head	37 m
max. inlet pressure	6 bar
max. liquid viscosity	1000 cP
max. temperature	140°C
impeller type	open
max. free passage	18 mm
max. motor power	5.5 kW
max. speed	3000/3600 rpm
available frequency	50/60 Hz

Technical specifications

materials wetted parts	stainless steel 316L or similar
mechanical seal configuration	single
available material O-ring	EPDM, FKM, FEP, FFKM
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

FP1

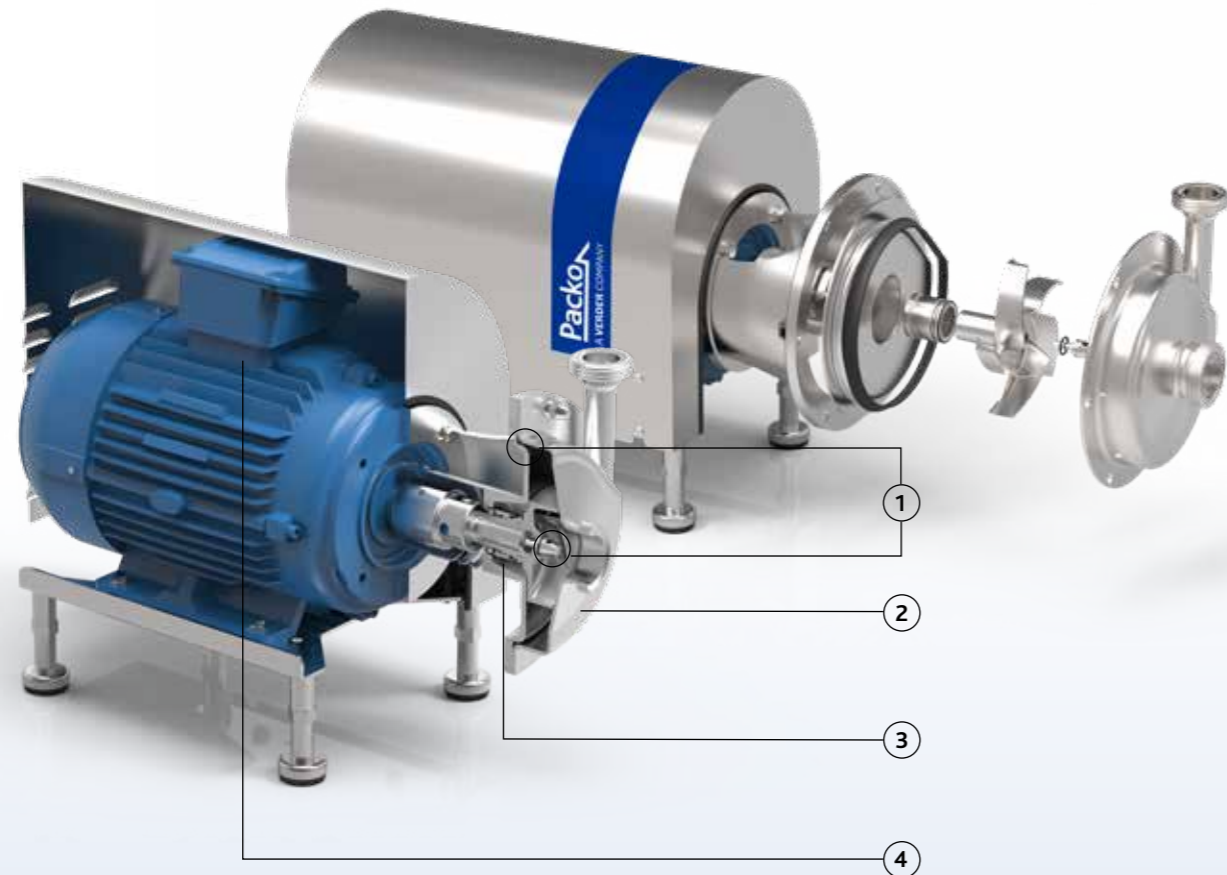


Pump series FP2



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.



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 bellow mechanical seals or 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
315 types: Ø 70 mm



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
- Standardized seals guaranteeing worldwide easy availability and low spare parts prices
- Robust construction

Application areas

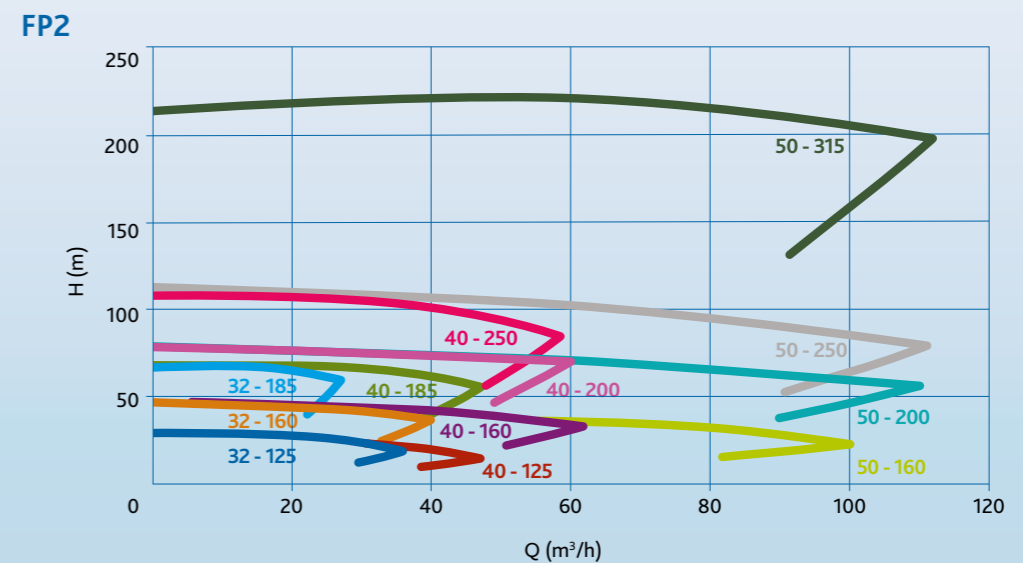
The Packo process pumps of the FP2 series are used in the most demanding hygienic applications in almost all industries such as dairies, breweries, beverage industry, distilleries, etc.

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.

Pump series	FP2
Performance	
max. flow rate	110 m ³ /h
max. differential head	220 m
max. inlet pressure	13 bar
max. liquid viscosity	1000 cP
max. temperature	140°C
impeller type	open
max. free passage	22 mm
max. motor power	90 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 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 (casing 0.8 µm - impeller 3.2 µm)
certificates & legislation	

Performance curves at 2900 rpm

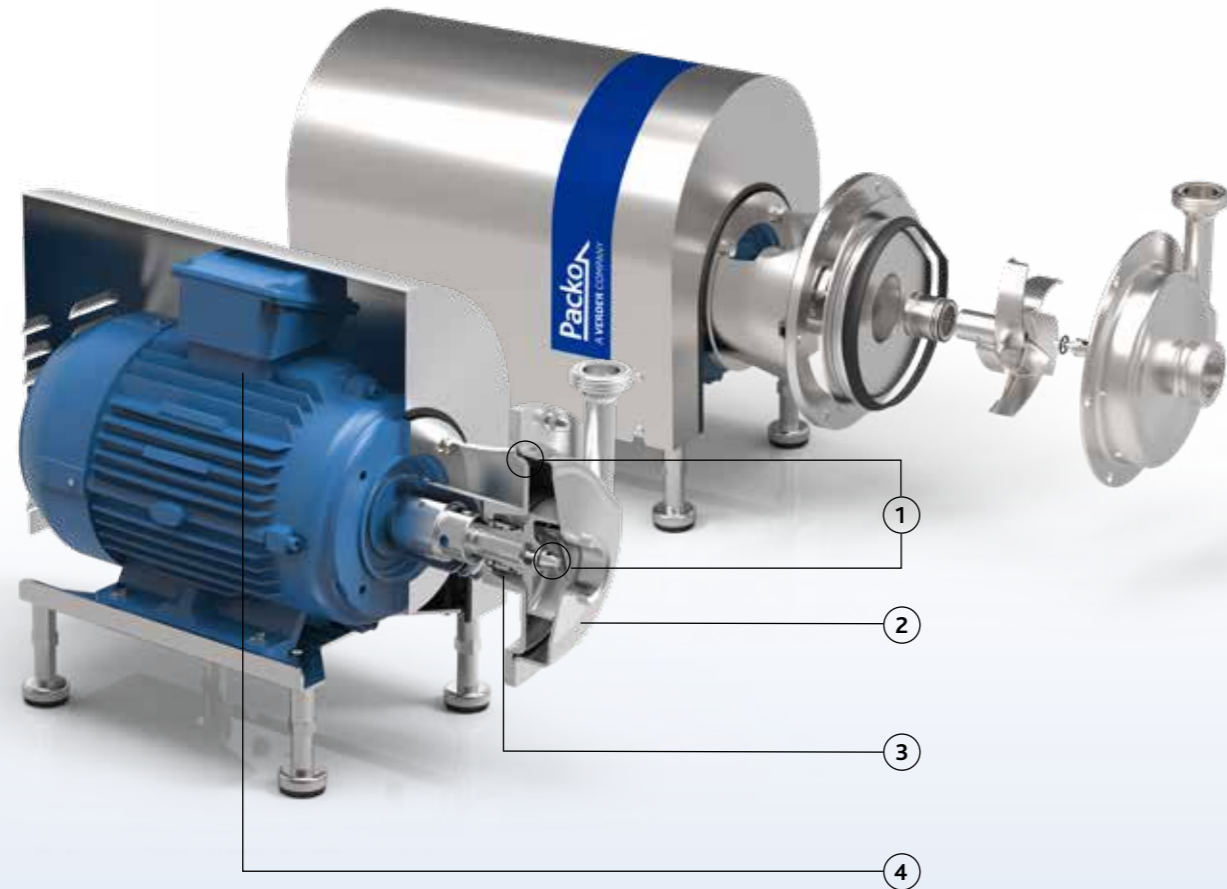


Pump series FP2+



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.



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



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.

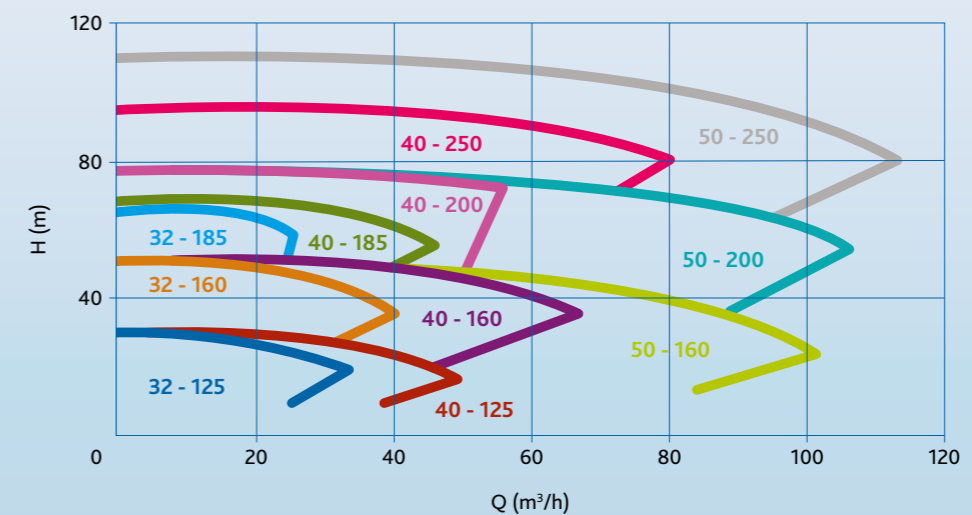
They are the ideal solution for filtration applications, pasteurisation, evaporating systems, yeast propagation and for CIP cleaning systems as well.

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

Pump series	FP2+
Performance	
max. flow rate	110 m ³ /h
max. differential head	110 m
max. inlet pressure	13 bar
max. liquid viscosity	1000 cP
max. temperature	140°C
impeller type	open
max. free passage	22 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 sterile, quench, double
available material O-ring	EPDM, FKM, FEP-FKM, FFKM, Silicone
connections	3A approved hygienic fittings only
surface finish	hygienic quality, internal welds hand polished + electropolished (wetted parts 0.8 µm)
certificates & legislation	

Performance curves at 2900 rpm

FP2+

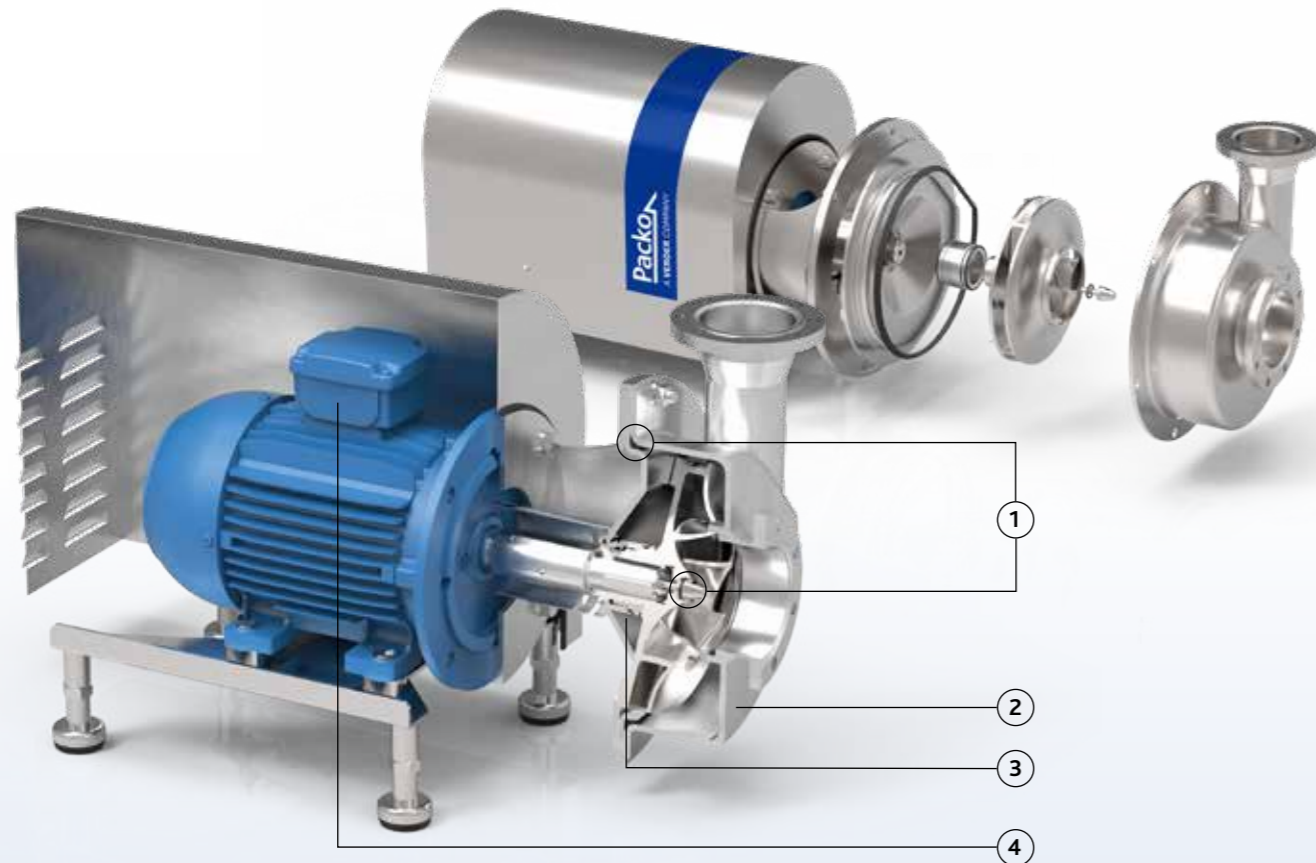


Pump series FP3



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.



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



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

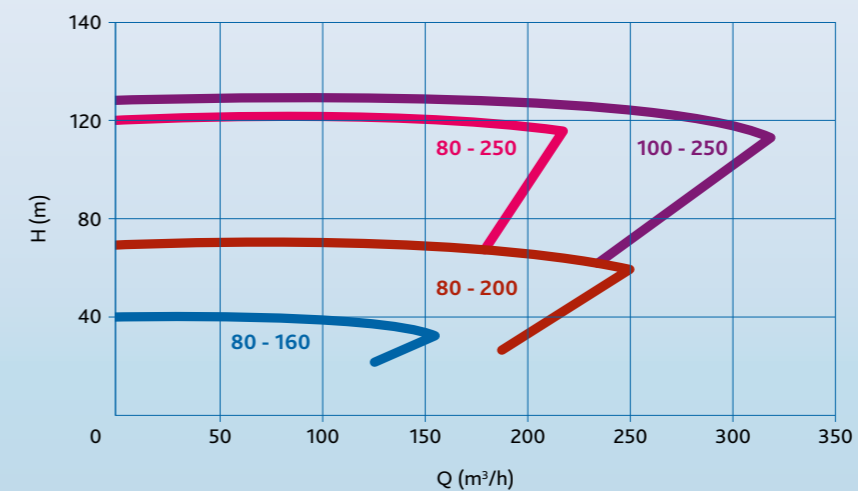
These perfectly cleanable process pumps are the ideal solution for filtration applications, pasteurisation, evaporating systems, yeast propagation and for CIP cleaning systems as well.

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

Pump series	FP3
Performance	
max. flow rate	320 m³/h
max. differential head	120 m
max. discharge pressure	15 bar
max. liquid viscosity	1000 cP
max. temperature	140°C
impeller type	closed with back vanes and balancing holes
max. free passage	21 mm
max. motor power	90 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	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	

Performance curves at 2900 rpm

FP3

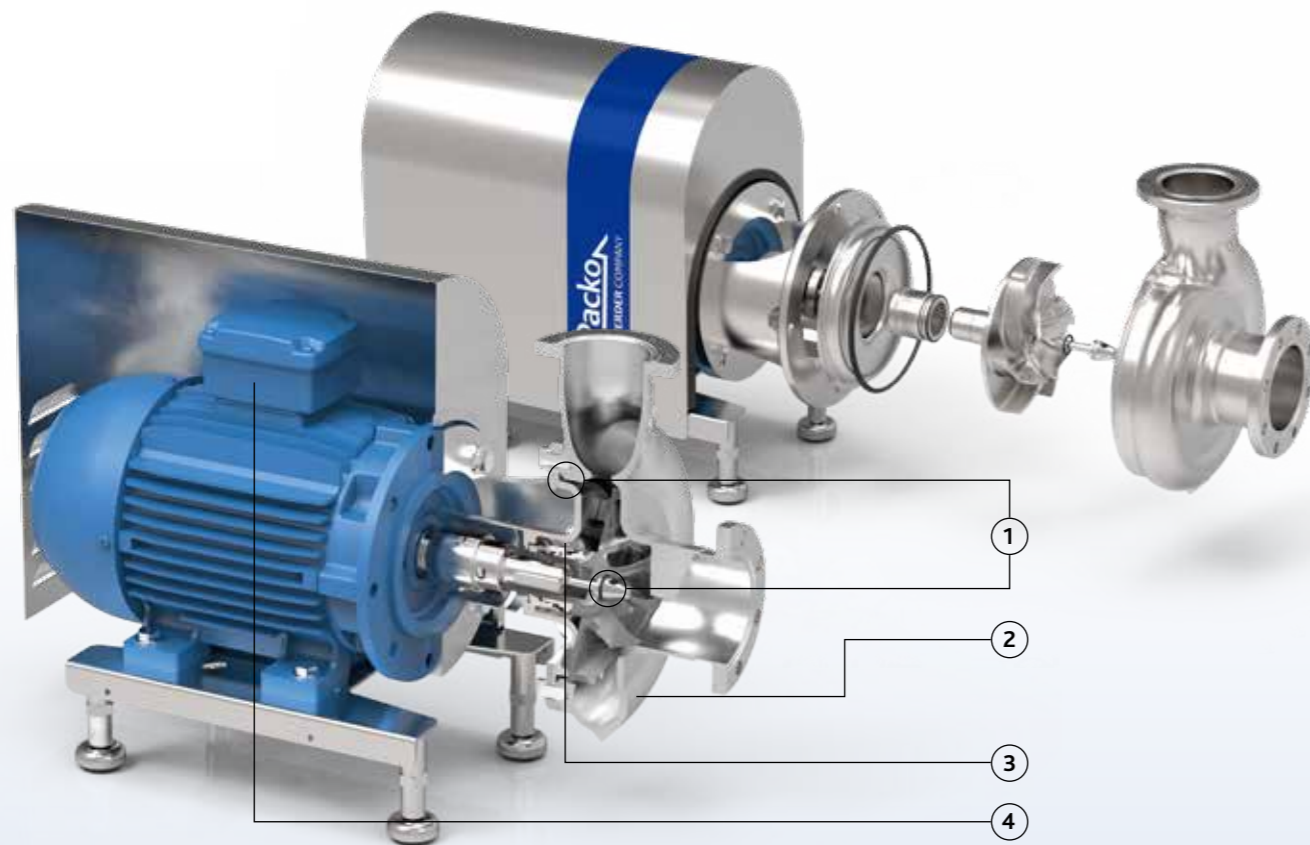


Pump series MFP2



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.



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 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 mm



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

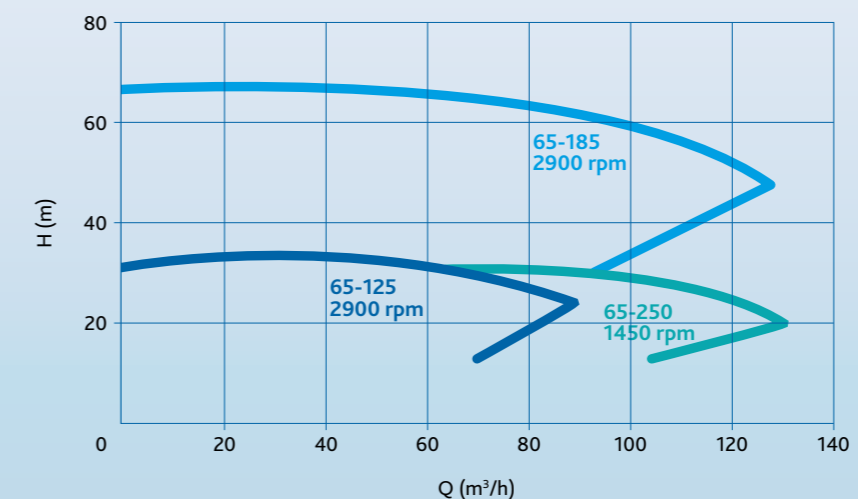
Application areas

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 m ³ /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	

Performance curves

MFP2

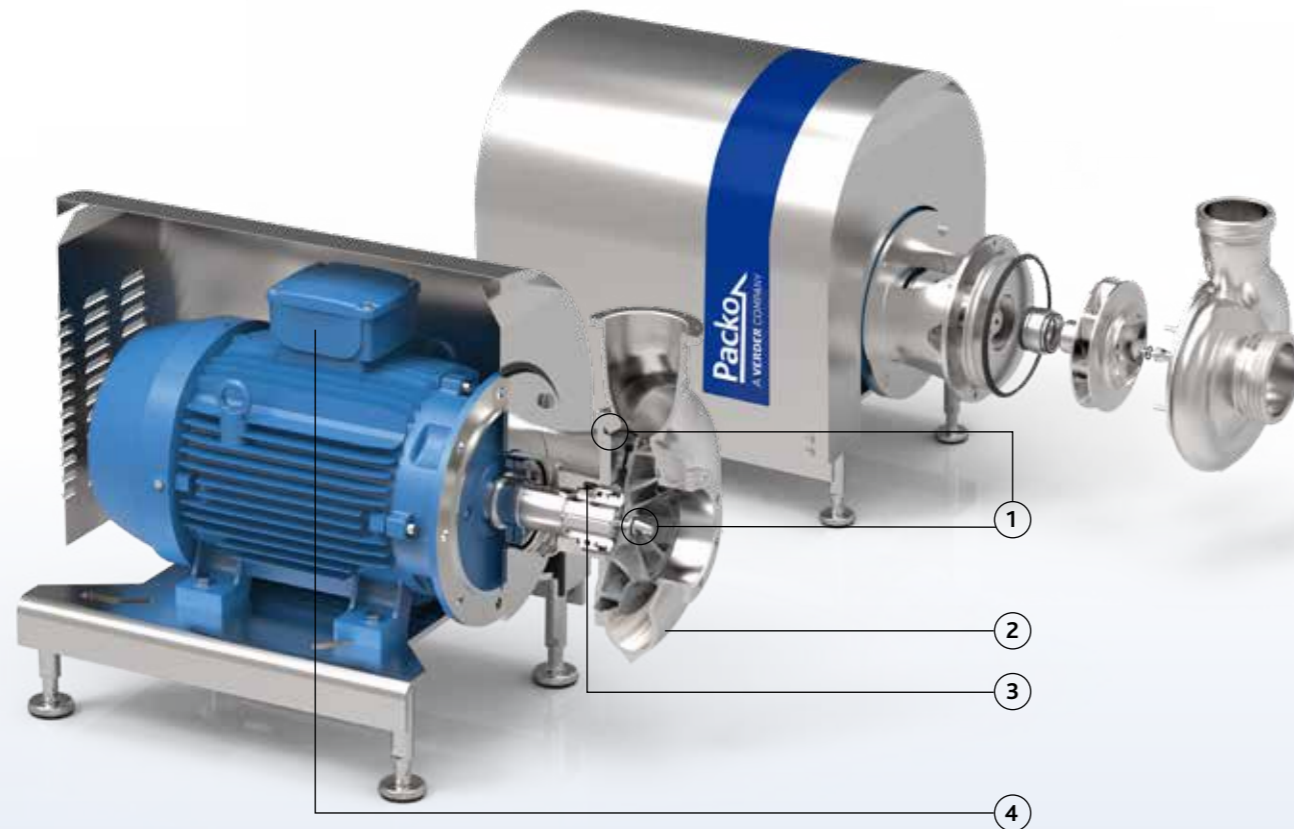


Pump series MFP3



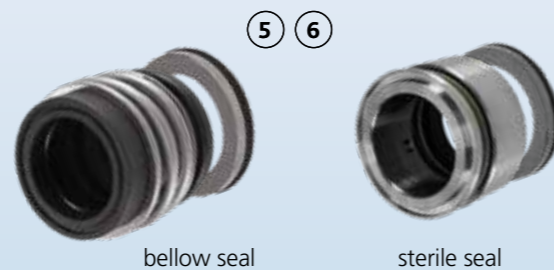
Characteristics

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.



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 - 100 mm



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

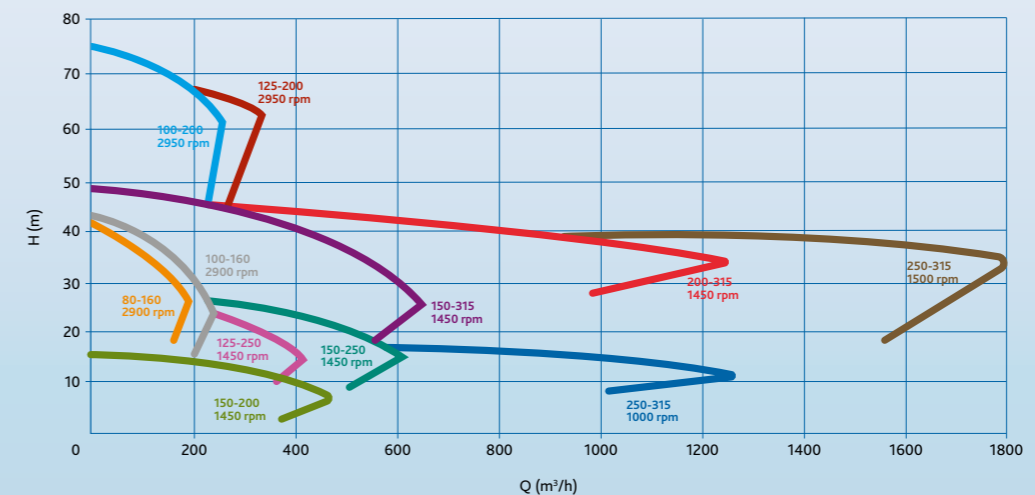
Application areas

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	
max. flow rate	1800 m ³ /h
max. differential head	75 m
max. discharge pressure	12 bar
max. liquid viscosity	500 cP
max. temperature	140°C
impeller type	closed with back vanes and balancing holes
max. free passage	27 mm
max. motor power	250 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	

Performance curves

MFP3

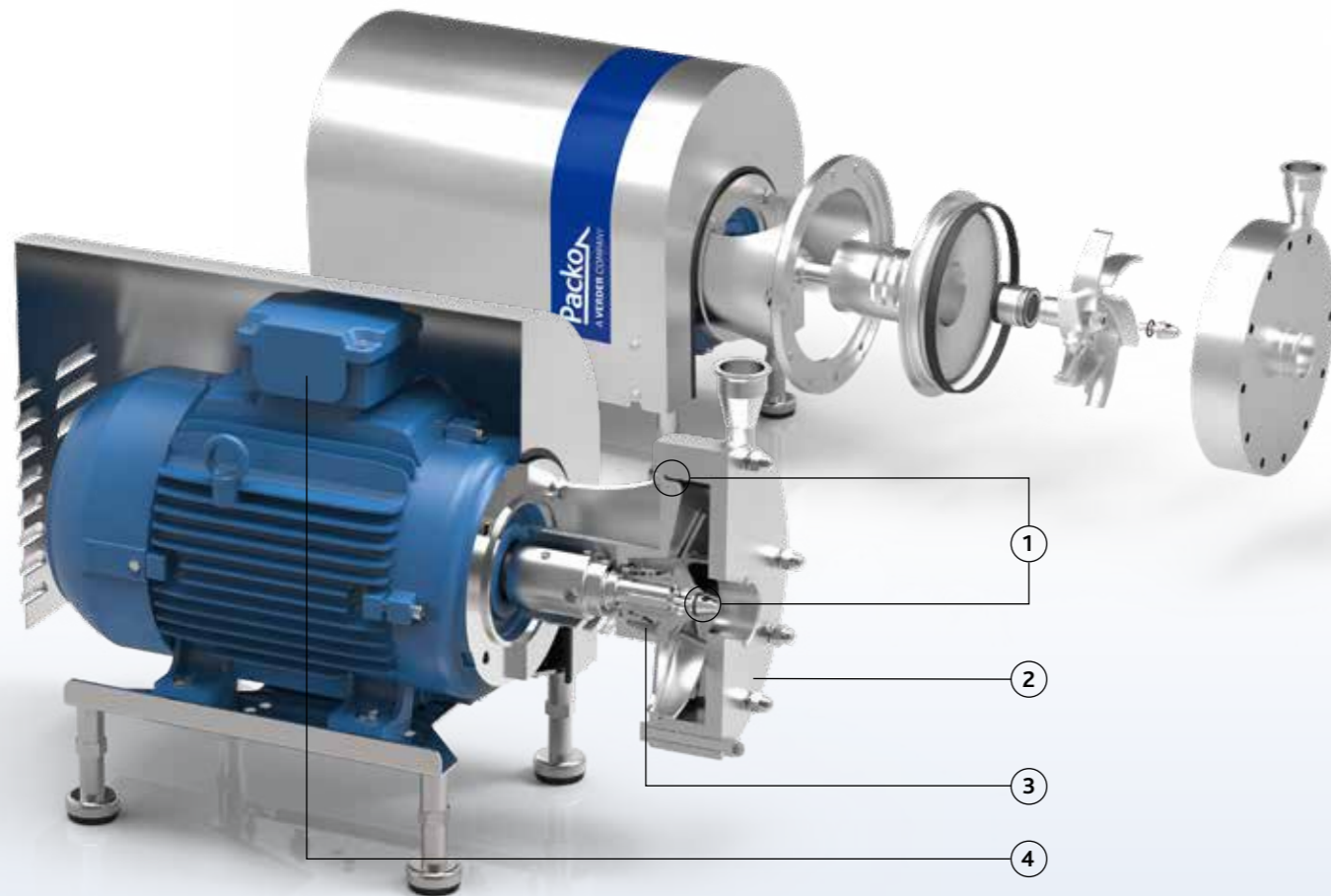


Pump series FPP2



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.



FPP2

- 1 Electropolished, easy to clean construction, no bacteria traps and no small clearances in order to clean the area around the O-ring
- 2 Fully machined stainless steel, 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 40-250 type: Ø 43 mm



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
- 2 mechanical seal diameters for the entire range

Application areas

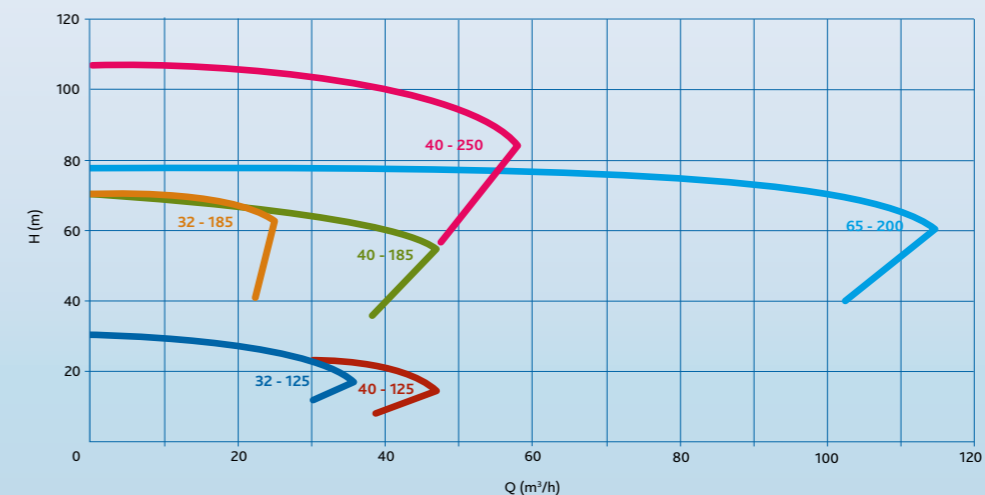
The Packo high pressure pumps of the FPP2 series are used primarily in the reverse osmosis (RO) applications for the filtration of, for example, contaminated CIP-water, whey, etc. They are also used as a booster pump in a variety of skids.

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	110 m ³ /h
max. differential head	110 m
max. inlet pressure	max. 40 bar
max. liquid viscosity	1000 cP
max. temperature	140°C
impeller type	open
max. free passage	22 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, FEP-FKM, FFKM, Silicone
connections	Tri-Clamp connections
surface finish	hygienic quality, internal welds hand polished + electropolished
certificates & legislation	

Performance curves at 2900 rpm

FPP2

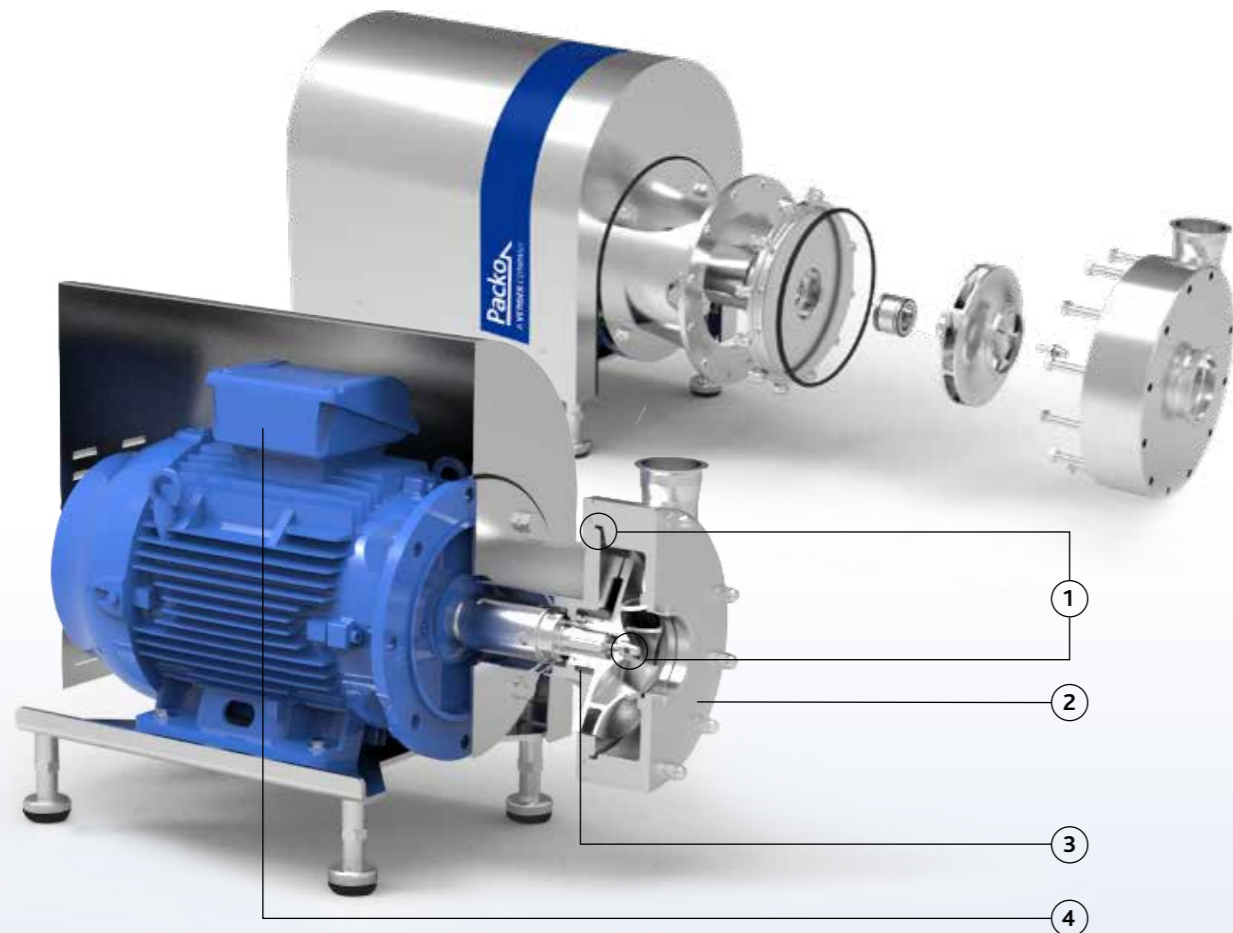


Pump series FPP3



Characteristics

The food grade Packo stainless steel pumps of the FPP3 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.



FPP3

- 1 Electropolished, easy to clean construction, no bacteria traps and no small clearances in order to clean the area around the O-ring
- 2 Fully machined stainless steel, extremely smooth
- 3 Large seal cavity to clean mechanical seal properly
- 4 Monobloc execution with std. IEC motor with angular contact bearing.
- 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 43 mm



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 mechanical seal diameter for the entire range

Application areas

The Packo high pressure pumps of the FPP3 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

Performance

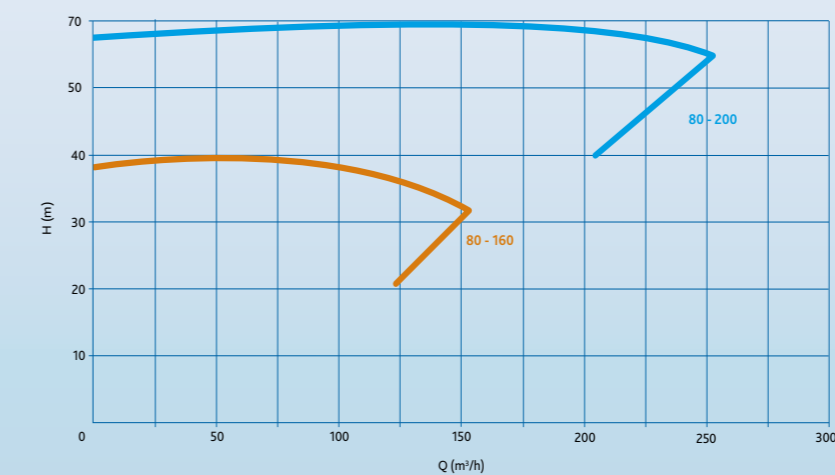
max. flow rate	200 m ³ /h
max. differential head	70 m
max. inlet pressure	max. 40 bar
max. liquid viscosity	1000 cP
max. temperature	140°C
impeller type	closed
max. free passage	17 mm
max. motor power	45 kW
max. speed	3000/3600 rpm
available frequency	50/60 Hz

Technical specifications

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

Performance curves at 2900 rpm

FPP3

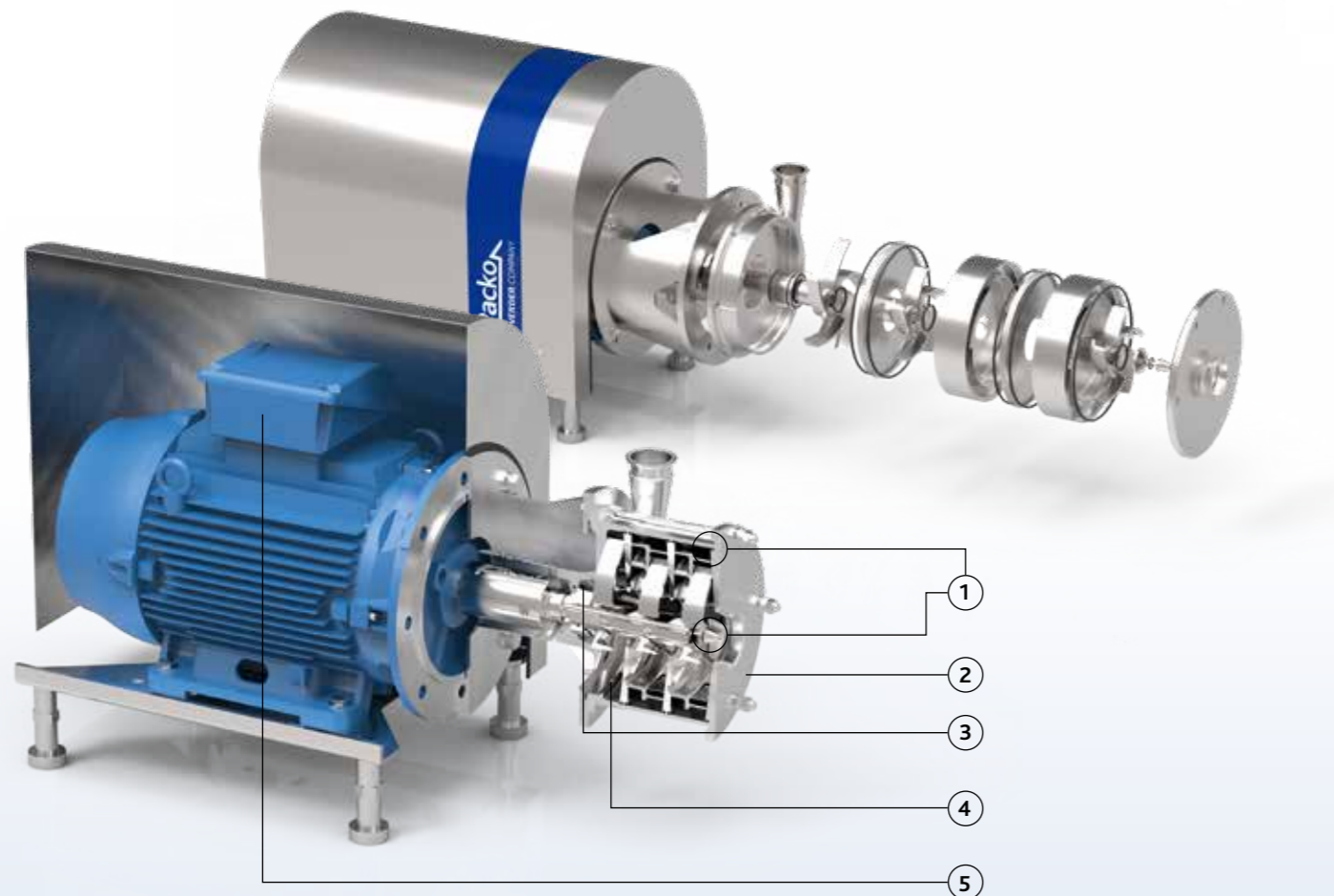


Pump series FMS



Characteristics

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



FMS

- 1 Electropolished, easy to clean construction, no bacteria traps and no small clearances in order to clean the area around the O-ring
- 2 Investment cast design
- 3 Large seal cavity to clean mechanical seal properly
- 4 Open impellers: no axial forces on motor bearings
- 5 Monobloc execution with std. IEC motors
- 6 Standardized mechanical seals to EN 12756
FDA approved bellow mechanical seals or sterile O-ring seals (spring not in contact with the liquid)







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

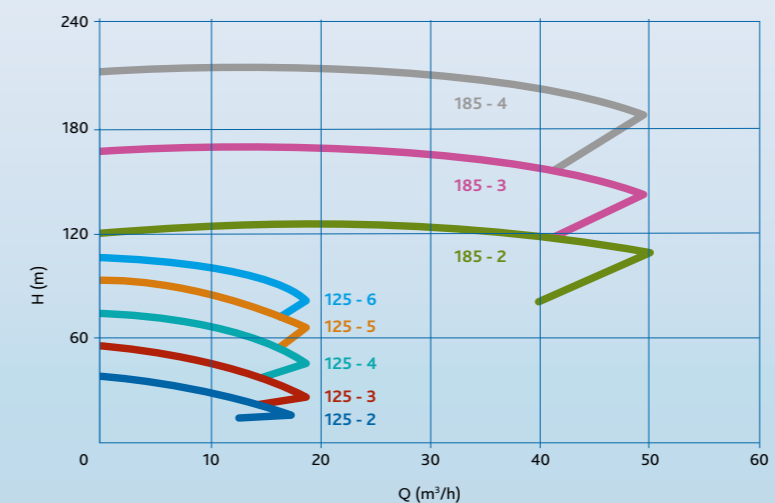
For use in food, brew, beverage, pharmaceutical and chemical industries, as transfer and mixing pump for liquid food products, drinks, medicines, lotions, etc.

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 m ³ /h
max. differential head	215 m
max. inlet pressure	10 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

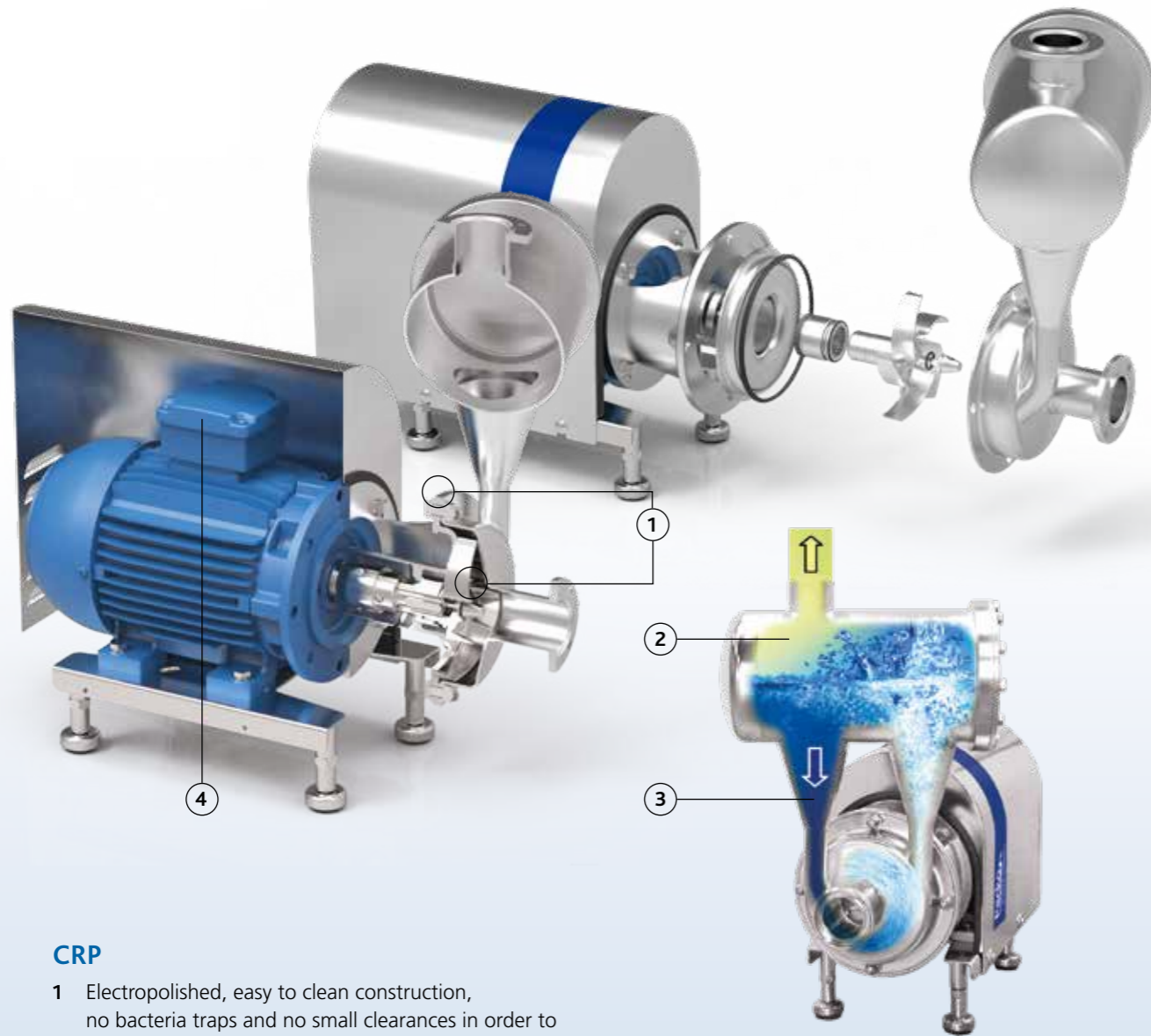


Pump series CRP



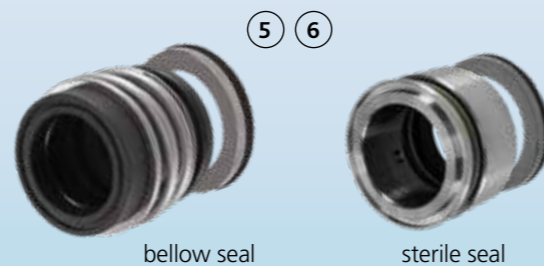
Characteristics

The pumps of the CRP series are perfectly cleanable 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.



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 bellow mechanical seals or sterile O-ring seals (spring not in contact with the liquid)
- 6 One mechanical seal diameter: 33 mm, except for 80-160: Ø 43 mm



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.

Pump series

Performance

	CRP
max. flow rate	150 m ³ /h
max. differential head	75 m
max. inlet pressure	13 bar
max. liquid viscosity	10 cP
max. temperature	140°C
impeller type	open or closed
max. free passage	22 mm
max. motor power	22 kW
max. speed	3000/3600 rpm
available frequency	50/60 Hz

Technical specifications

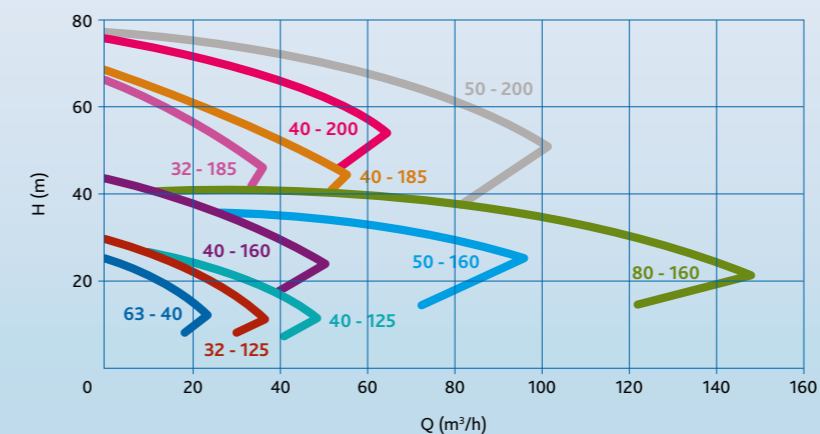
materials wetted parts	stainless steel 316L or similar
mechanical seal configuration	single bellow, sterile, quench, double
available material O-ring	EPDM, FKM, FEP-FKM, FFKM or similar
connections	hygienic fittings only
surface finish	hygienic quality, internal welds hand polished + electropolished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

certificates & legislation



Performance curves at 2900 rpm

CRP

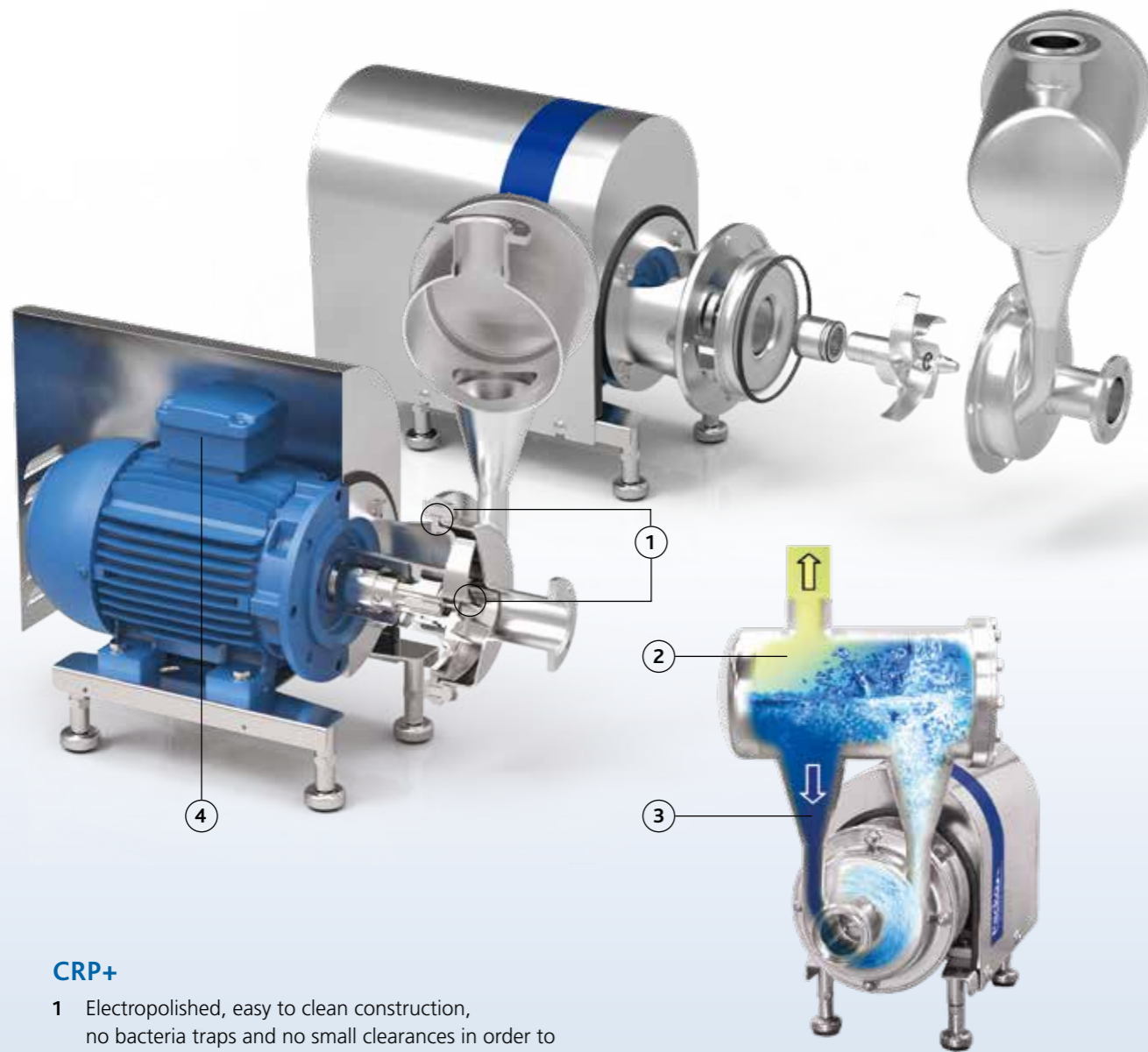


Pump series CRP+



Characteristics

The pumps of the CRP+ series are perfectly 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

Performance

max. flow rate	105 m ³ /h
max. differential head	75 m
max. inlet pressure	13 bar
max. liquid viscosity	10 cP
max. temperature	140°C
impeller type	open
max. free passage	22 mm
max. motor power	22 kW
max. speed	3000/3600 rpm
available frequency	50/60 Hz

Technical specifications

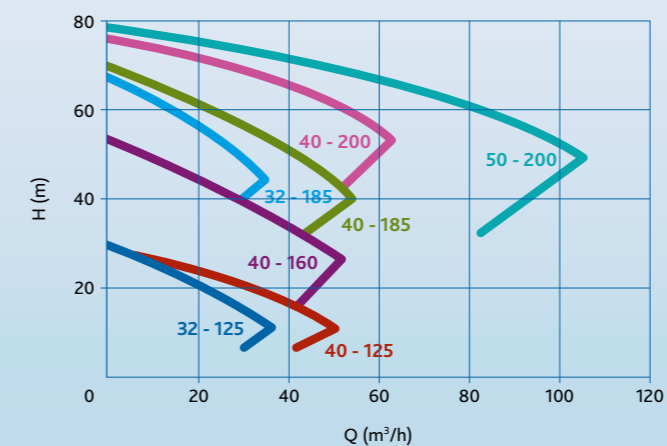
materials wetted parts	stainless steel 316L or similar
mechanical seal configuration	single bellow, sterile, quench, double
available material O-ring	EPDM, FKM, FEP-FKM, FFKM or similar
connections	3A hygienic fittings only
surface finish	hygienic quality, internal welds hand polished + electropolished (wetted parts 0.8 µm)

certificates & legislation



Performance curves at 2900 rpm

CRP+

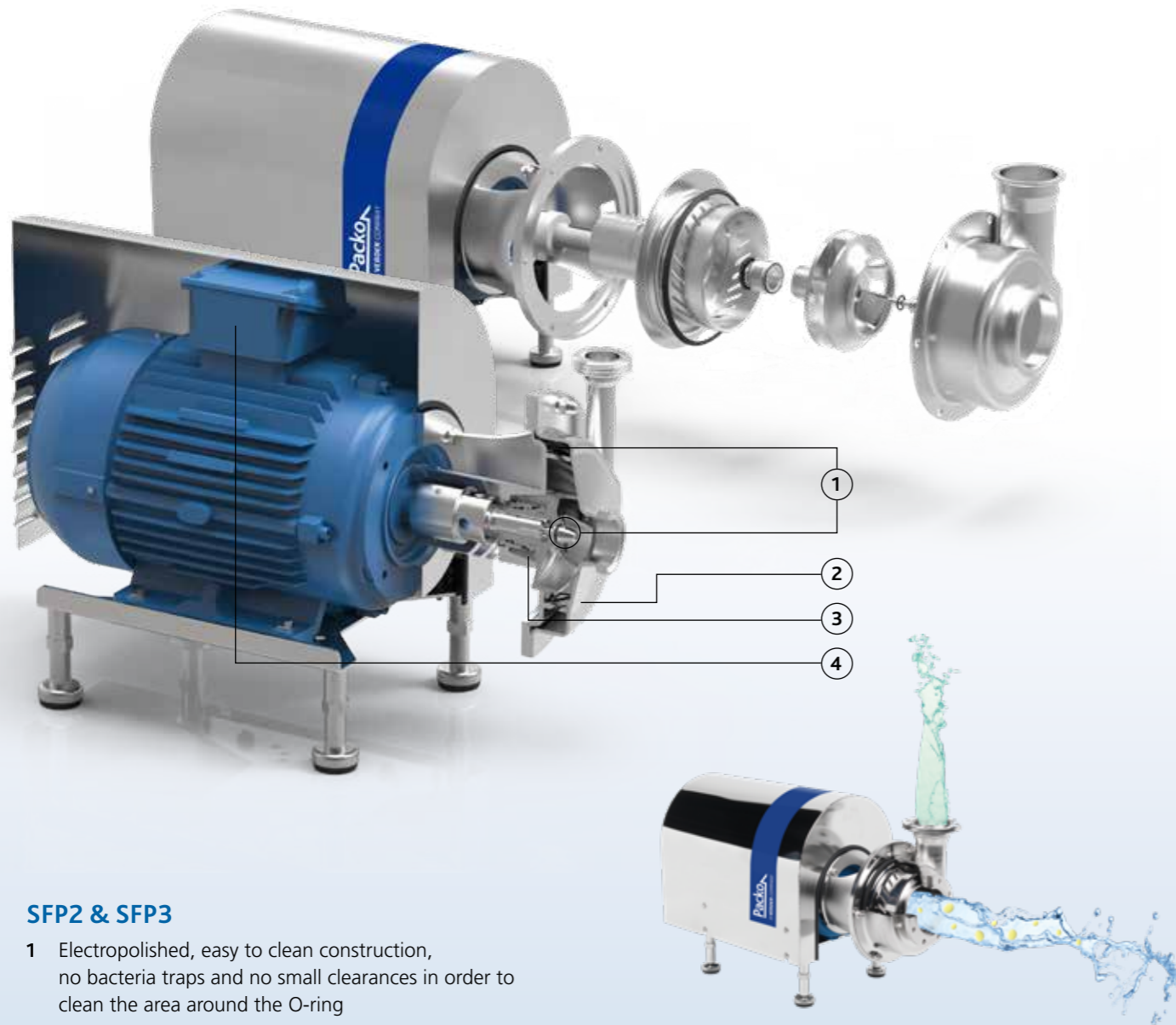


High Shear pump series SFP2 & SFP3



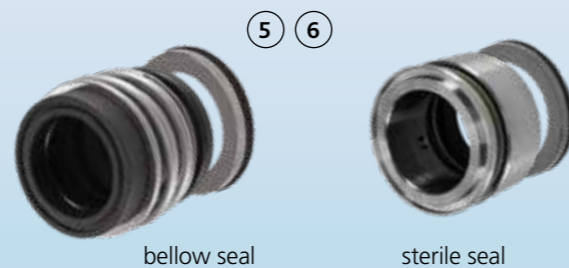
Characteristics

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.



SFP2 & SFP3

- 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 2 seal diameters for the entire range:
- SFP2: Ø 33 mm
- SFP3: Ø 43 mm



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 dispergation applications.

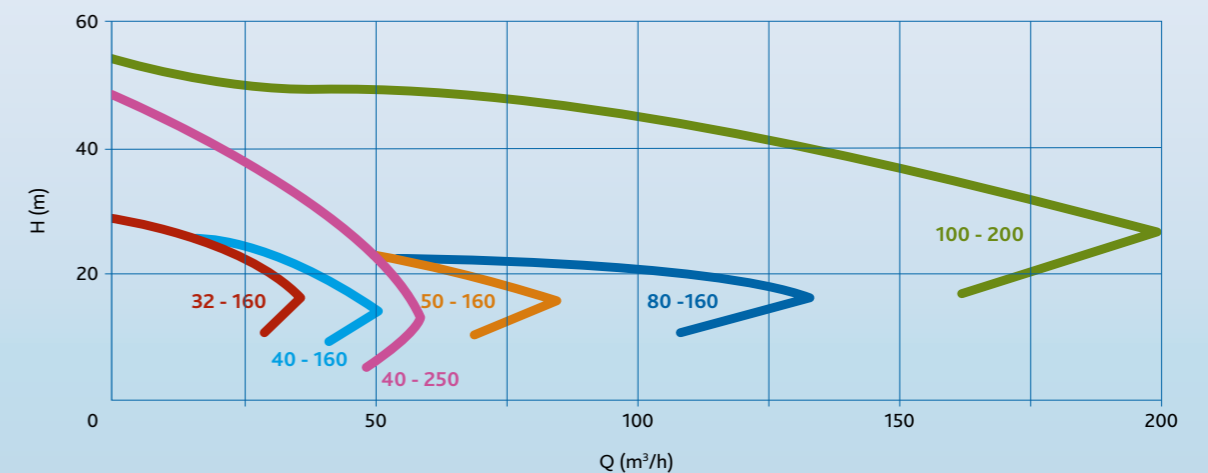
- Mixing of two liquids:
- with a large different specific gravity,
 - having a large different viscosity or
 - that are difficult to mix.

- Also dispersing of:
- solids in liquids and
 - dispersion of gas in liquids.

Pump series	SFP2	SFP3
Performance		
max. flow rate	80 m ³ /h	200 m ³ /h
max. differential head	45 m	55 m
max. pressure	inlet: 10 bar	discharge: 10 bar
max. shear	100.000 s ⁻¹	60.000 s ⁻¹
max. liquid viscosity	1000 cP	
max. temperature	140°C	
impeller type	open	closed
max. motor power	22 kW	45 kW
max. speed	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 or similar	
connections	hygienic fittings	
surface finish	hygienic quality, internal welds hand polished + electropolished (wetted 0.8 µm - impeller 3.2 µm)	
certificates & legislation		

Performance curves at 2900 rpm

SFP2 & SFP3

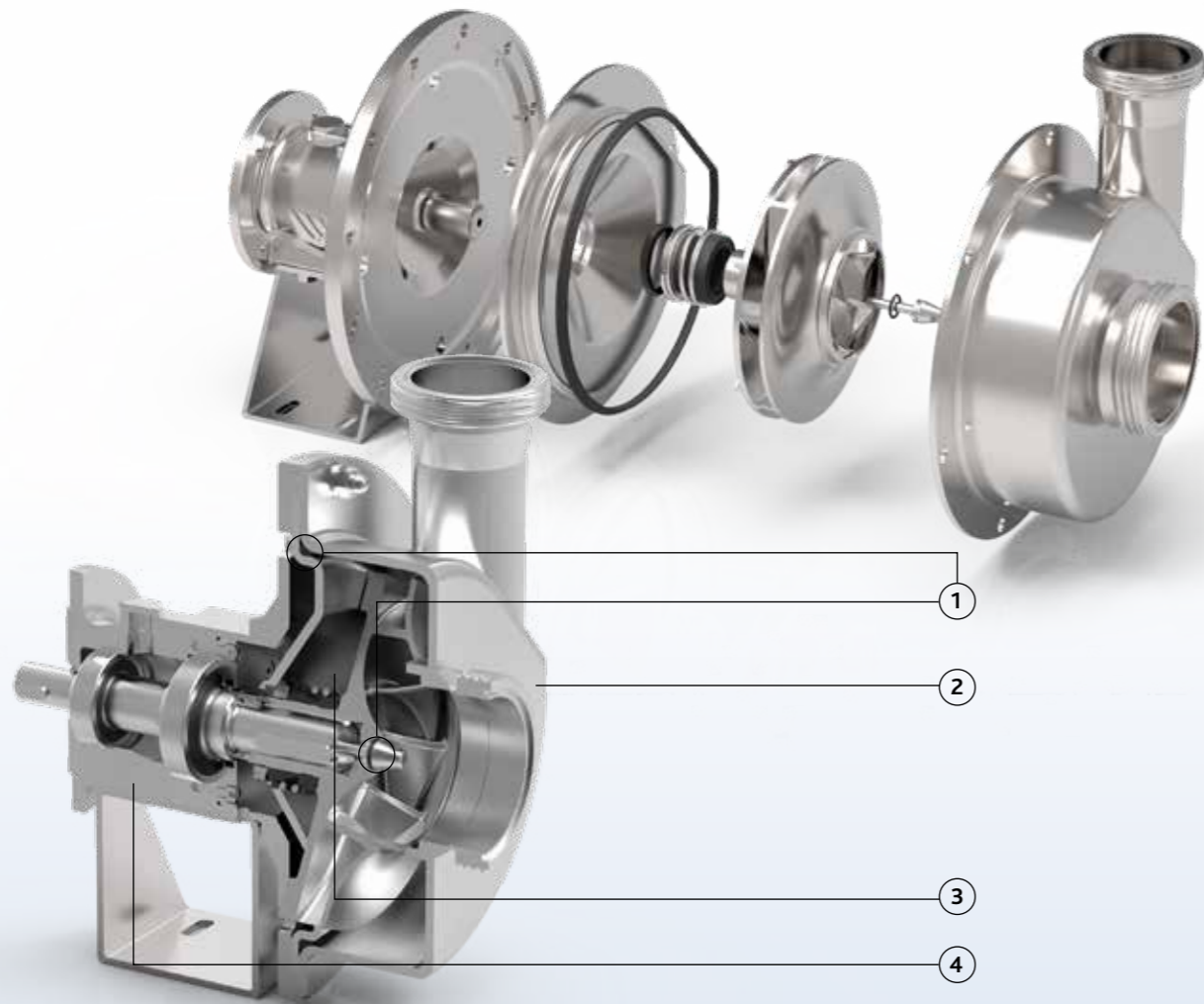


Pump series RMO



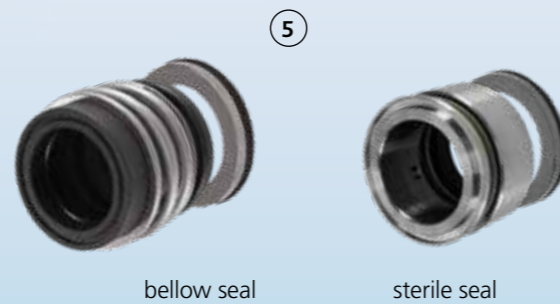
Characteristics

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.



RMO

- 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 or investment cast stainless steel, robust design
- 3 Large seal cavity to clean mechanical seal properly
- 4 Cast solid bearing housing with pedestal suitable for hydraulic motor
- 5 Standardized mechanical seals to EN 12756
FDA approved bellow mechanical seals or sterile O-ring seals (spring not in contact with the liquid)



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

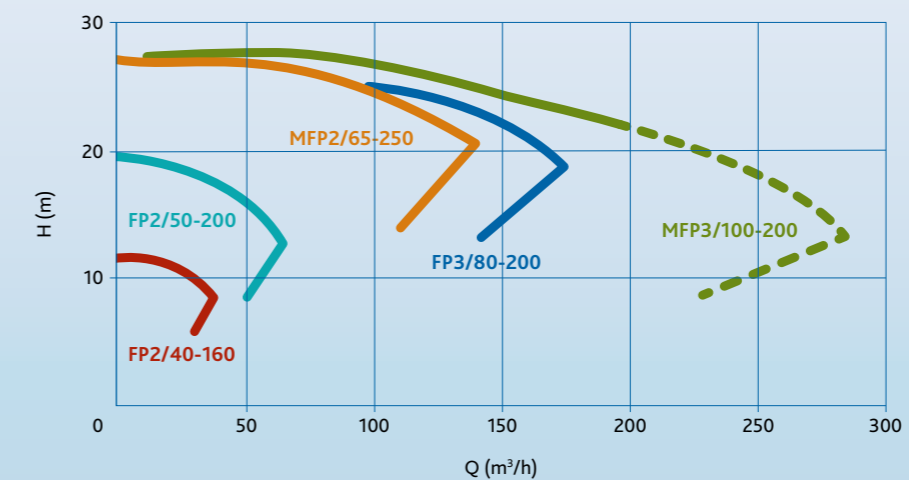
Application areas

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 m ³ /h
max. differential head	30 m
max. inlet pressure	10 bar
max. liquid viscosity	1000 cP
max. temperature	140°C
impeller type	open / closed
max. free passage	25 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
certificates & legislation	

Performance curves at 1450 rpm

RMO



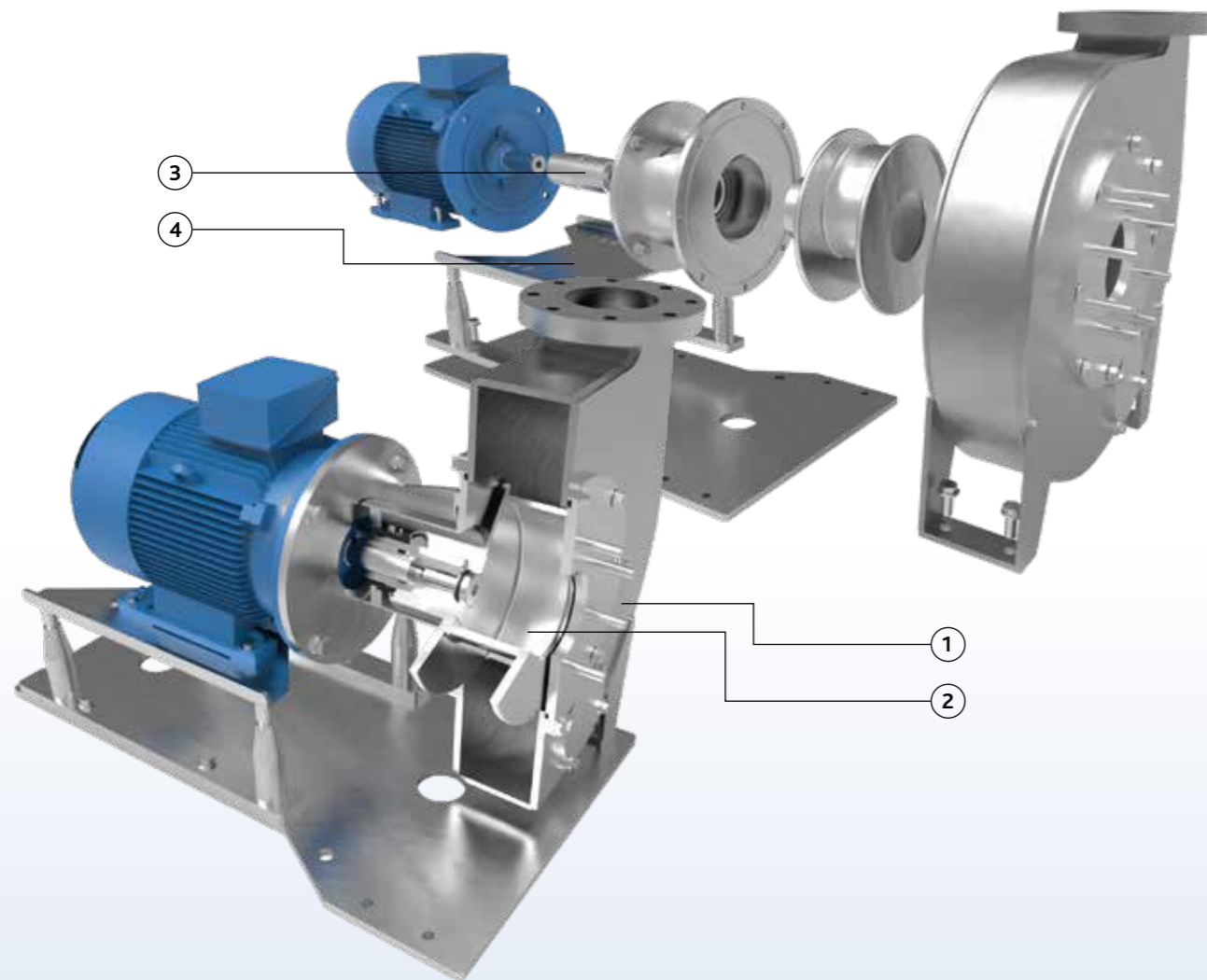
In practice pumps are operating at lower or higher speed depending on the application.

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.



VPCP

- 1 Electropolished: corrosion resistant, no rusting
- 2 Especially designed vane with large passage: pumping without product damage
- 3 Duplex stub shaft allows a quick and easy disassembly of the vane
- 4 Sledge construction: pump can be easily slid backwards while the pump casing remains in the piping system: short downtimes
- 5 Standardized FDA approved rubber bellow mechanical seals to EN 12756, 2 sizes for the entire range:
 - seal diameter Ø 80 mm up to 11 kW
 - motor power \geq 18,5 kW: Ø 110 mm
- 6 Also available in horizontal version: HPCP






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

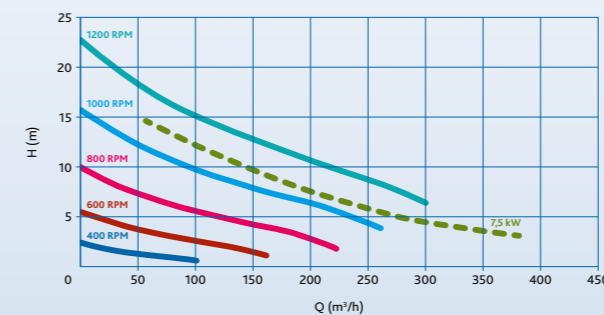
The Packo VPCP pump range is specifically designed for damage-free pumping of potatoes and vegetables but also seafood such as mussels, cockles and shrimp.

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.

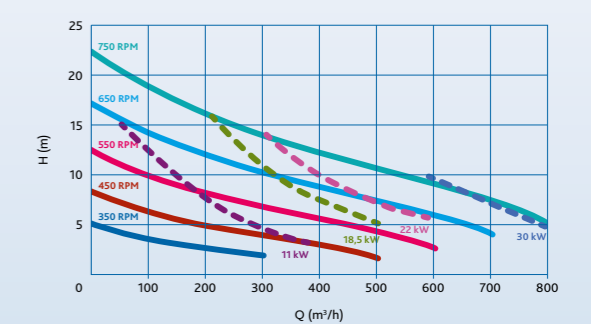
Pump series	VPCP
Performance	
max. flow rate	1000 m ³ /h
max. differential head	20 m
max. liquid viscosity	100 cP
max. temperature	80°C
impeller type	special designed vane
max. free passage	213 mm
max. motor power	55 kW
max. speed	1200 rpm
available frequency	50/60 Hz
Technical specifications	
materials 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
certificates & legislation	  

Performance curves

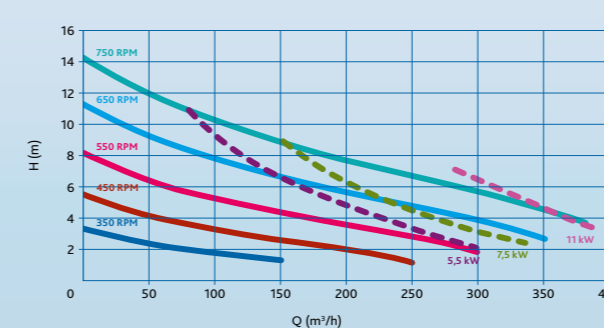
VPCP/125-315 Ø 105mm



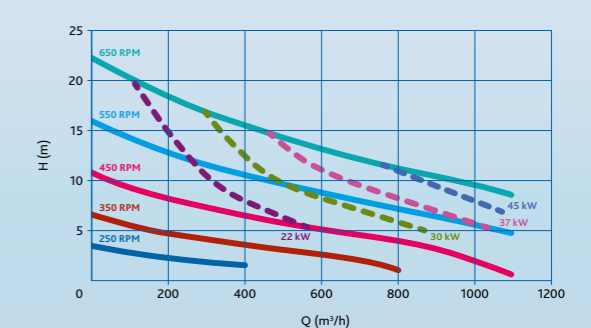
VPCP/200-500 Ø 171mm



VPCP/150-400 Ø 133mm



VPCP/250-630 Ø 213mm

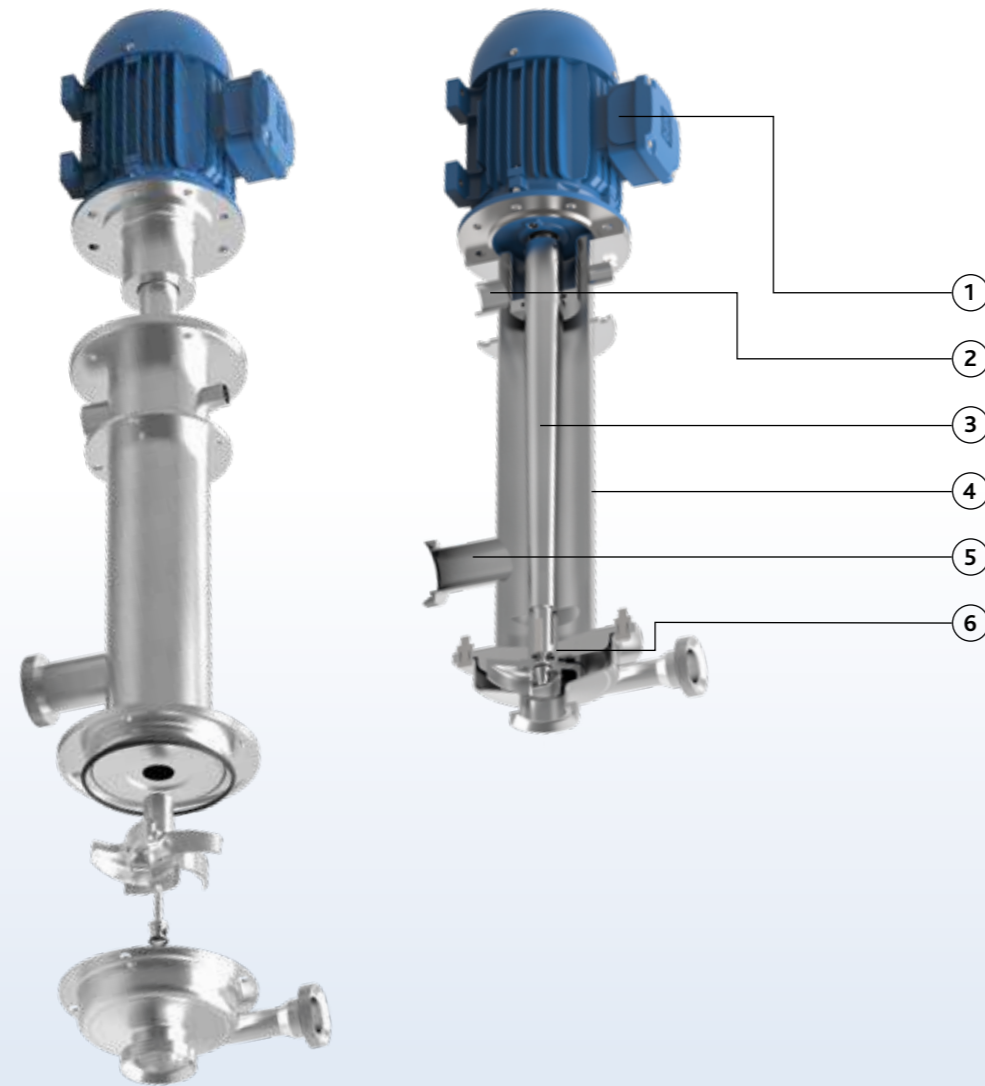


Pump series IMO



Characteristics

The Packo pumps of the IMO series are cantilever pumps that are placed next to a reservoir. They are suitable for pumping 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.



IMO

- 1 Use of standard IEC motors
- 2 Connection for cleaning purposes
- 3 Tapered shaft, fully machined
- 4 High strength column support pipe. Rigidly maintains alignment between motor and casing. Protects pump shaft.
- 5 By-pass for overflow
- 6 Cantilever design = no mechanical seals, no plain bearings. Reduced downtime and operating costs. No bottom bearing, no oil or water pipes required to lubricate these bearings.




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

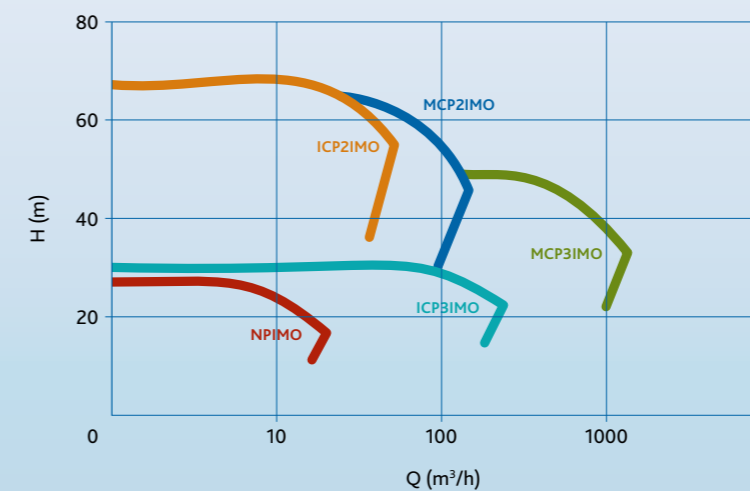
Particularly suitable for pumping liquids that are difficult to seal such as hot frying oil up to 200° C.

They are also used for pumping waste water from industrial waste such as CIP, acids, condensate, etc.

Pump series	IMO
Performance	
max. flow rate	1000 m ³ /h
max. differential head	60 m
max. inlet pressure	atmospheric
max. liquid viscosity	1000 cP
max. temperature	200°C
impeller type	open, semi-open or closed
max. free passage	45 mm
max. motor power	132 kW
max. speed	3000 rpm
available frequency	50/60 Hz
Technical specifications	
materials wetted parts	stainless steel 316L or similar
mechanical seal configuration	no seal - cantilever
available O-ring materials	FKM - EPDM - Special
connections	industrial or hygienic
surface finish	industrial finish: welds are not hand polished. final surface treatment: electropolished
certificates & legislation	  

Performance curves

IMO

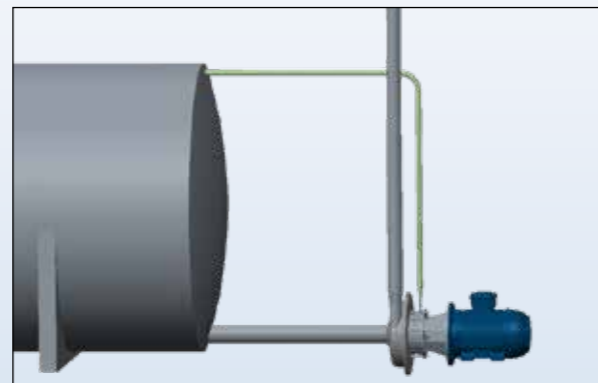
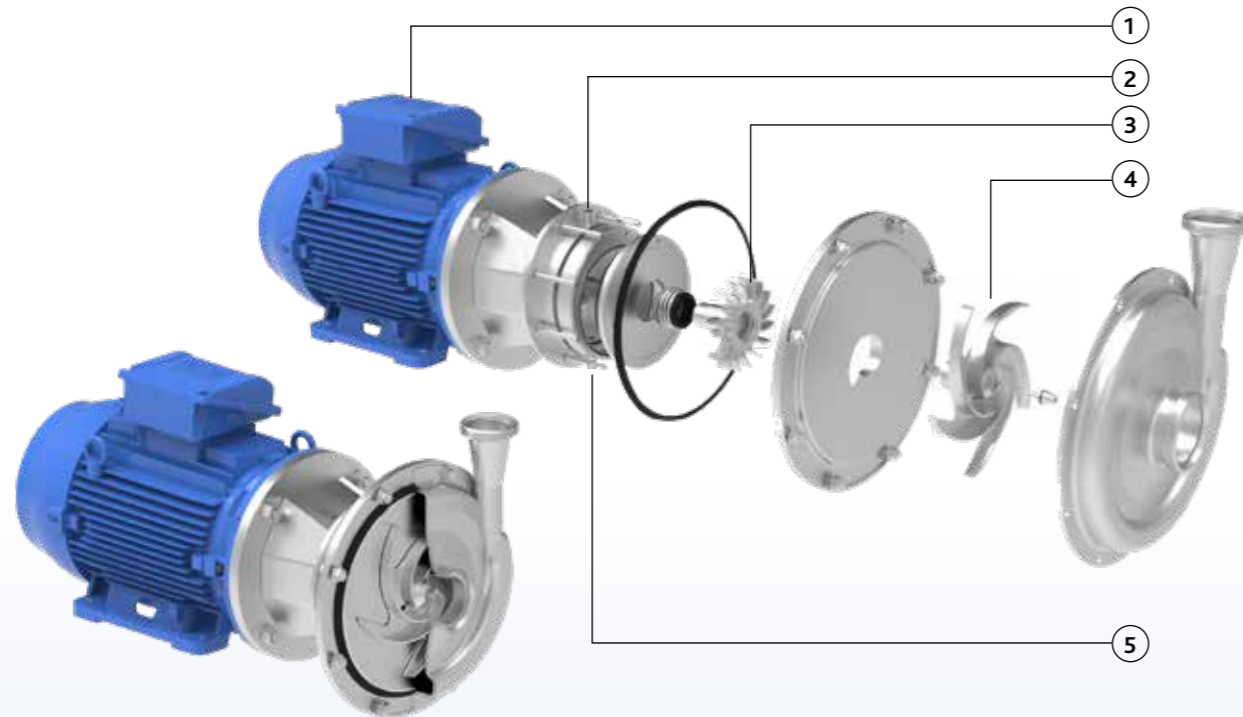


Pump series GFP



Characteristics

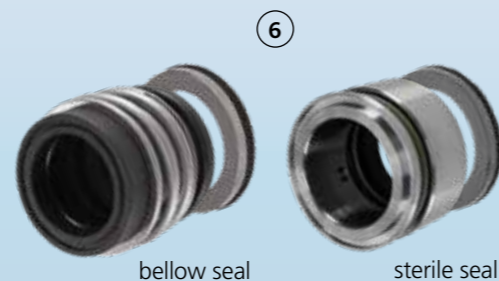
The multi-phase pump is a combination of a standard centrifugal pump and a liquid ring pump both mounted together on 1 motor and 1 shaft. The centrifugal pump is used for pumping the liquid and brings the main performance of the pump. When a gas-bubble starts to build up in the eye of the centrifugal impeller, it is evacuated by the liquid ring impeller. The pump has 1 suction and 2 discharges: a main discharge of the centrifugal pump and a smaller discharge of the liquid ring pump that functions as an air and foam vent. The air/foam vent is typically connected back to the suction vessel.



GFP multi-phase pump connected to a suction vessel

GFP

- 1 Monobloc execution with std IEC motors
- 2 Air vent
- 3 Liquid ring impeller
- 4 Centrifugal impeller
- 5 Clean water inlet
- 6 Standardized mechanical seals to EN 12756
FDA approved bellow mechanical seals or sterile O-ring seals (spring not in contact with the liquid)



Your benefits

- Electropolished stainless steel AISI316 and better: highly corrosion resistant
- High pump efficiency resulting in lower energy consumption
- Low NPSH values: less risk on cavitation
- Monobloc construction: less floor space, easy installation and maintenance (no aligning)
- Self-adjusting vacuum, no snifting valve required

Application areas

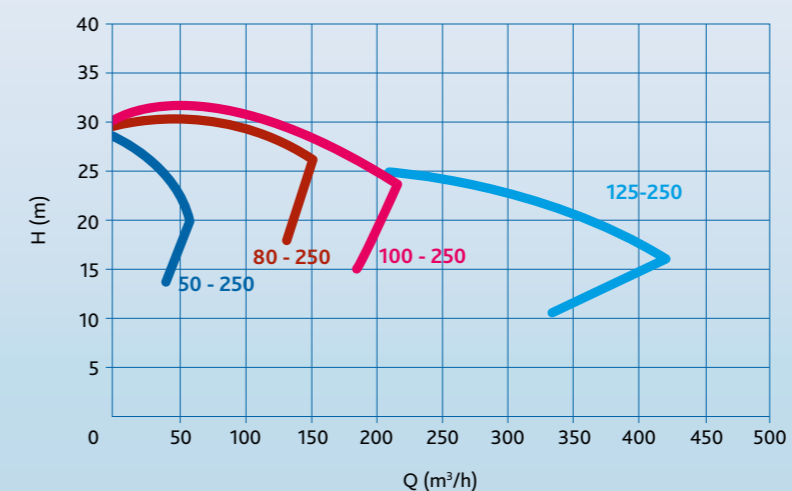
The GFP multi-phase pump is typically used for foaming liquids and (viscous) liquids containing gas in the food-industry.

Offering a solution to liquids that are difficult to pump with standard centrifugal pumps. E.g. starch slurries, proteins,...

Pump series	GFP
Performance	
max. flow rate	400 m³/h
max. differential head	30 m
max. inlet pressure	10 bar
max. liquid viscosity	1000 cP
max. temperature	140°C
impeller type	open or closed
max. gas content	30%
max. motor power	45 kW
max. speed	1800 rpm
available frequency	50/60 Hz
Technical specifications	
materials wetted parts	stainless steel 316L or similar
mechanical seal configuration	single bellow, sterile
available material O-ring	EPDM, FKM, FFKM
pump connections	EN1092-1 & ANSI flanges, DIN11851, SMS, RJT, Tri-Clamp
surface finish	electropolished
certificates & legislation	

Performance curves at 1500 rpm

GFP

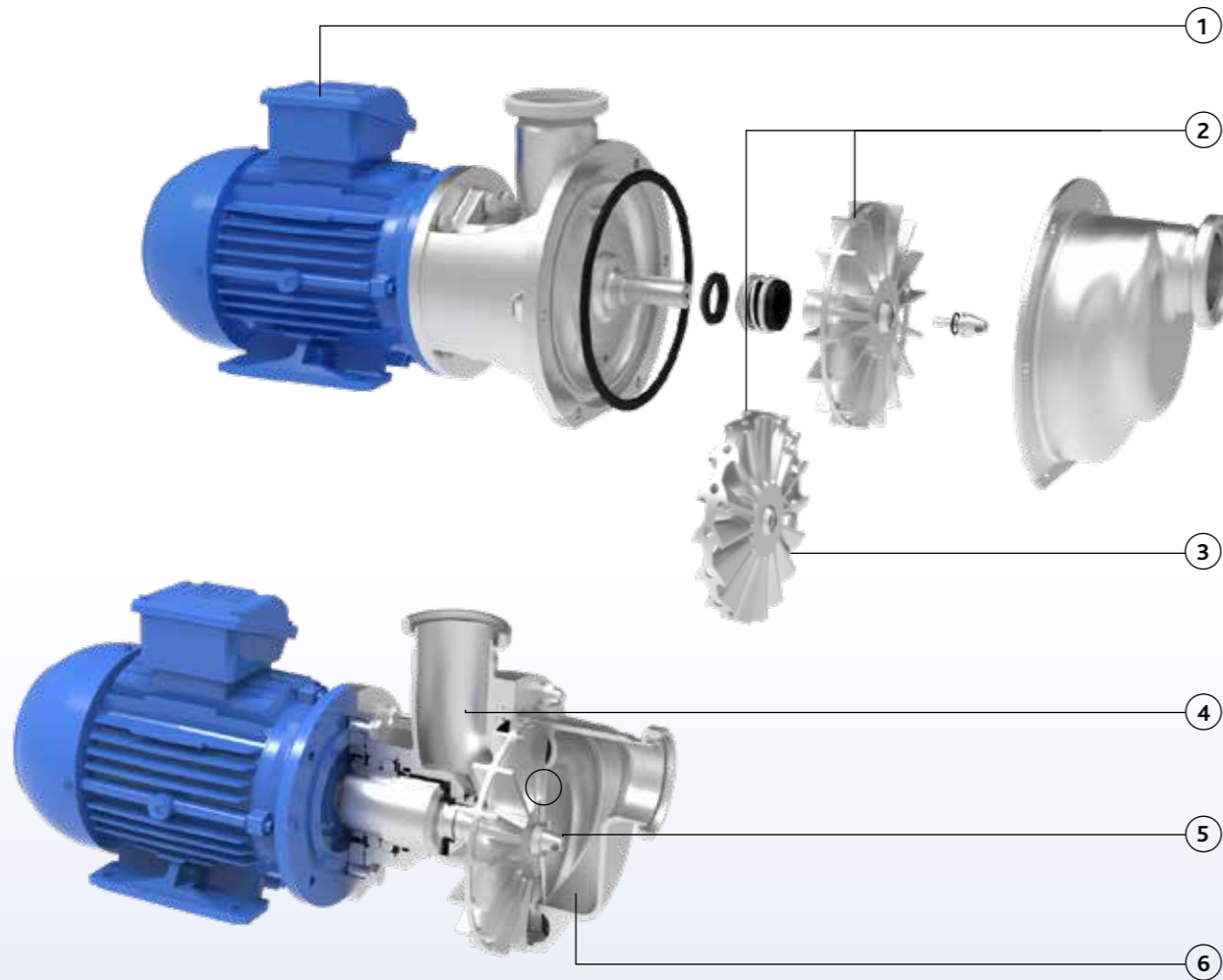


Pump series MSCP



Characteristics

Both the pump casing, the impellers and the lantern piece with bearing support of this self-priming pump consist of electrolytically polished precision casting in stainless steel 316L. This results in a robust, reliable pump with a very fine surface structure.



MSCP

- 1 Monobloc version with standard IEC motors (4-pole)
- 2 Connection ring on the outside of the blades. Pump casing is cleaned better than with an impeller attached to the outside and yet there is no resonance of the blades as with open impellers.
- 3 Impeller with profiled blades (optional) results in exceptional suction and air handling capacity and in a low NPSH.
- 4 Pump outlet on seal chamber. The liquid flushes the mechanical shaft seal, ensuring perfect cleaning of the seal chamber.
- 5 No dead space around impeller mounting screw.
- 6 When stopped, sufficient liquid remains in the pump to be able to start up again.
- 7 FDA approved mechanical seals to EN 12756
Different types of seals available.



Your benefits

- Exceptional suction power and air handling capacity thanks to impeller with profiled blades (optional)
- Sucks the suction line completely empty
- Also suitable for foaming liquids and liquids that are slightly more viscous
- Hygienic design
- Electrolytically polished: easy to clean
- Standard engine and mechanical seal are the best guarantee for reasonable spare part prices

Application areas

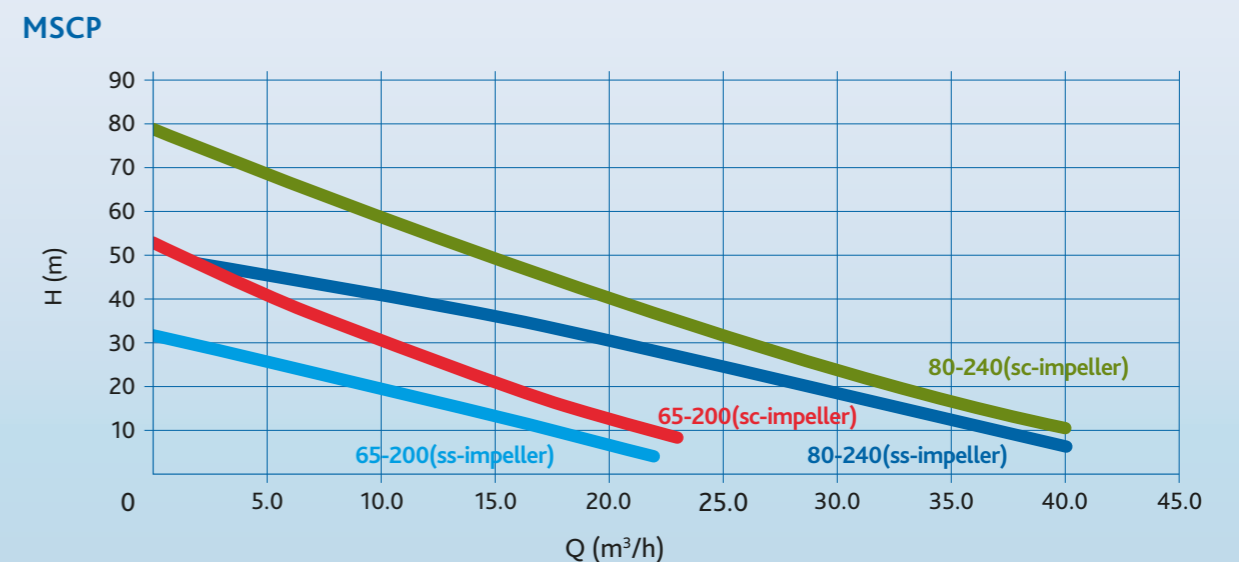
This self-priming side channel pump is used in various applications where air must be pumped in against a high back pressure in the discharge line.

The MSCP has exceptional suction power and air handling capacity. This means it can completely empty the suction line, even with foaming and slightly more viscous liquids.

It is often used for unloading trucks and pumping in high silos.

Pump series	MSCP
Performance	
max. flow rate	40 m ³ /h
max. differential head	75 m
max. inlet pressure	5 bar
max. liquid viscosity	300 cP
max. temperature	140°C
impeller type	star impeller with straight or profiled blades
airhandling capacity	up to 50 litre/min
suction depth	up to 8,5 m
max. motor power	15 kW
max. speed	1500/1800 rpm
available frequency	50/60 Hz
Technical specifications	
materials wetted parts	stainless steel 316L or similar
mechanical seal configuration	diverse types single mechanical seal
available material O-ring	EPDM, FKM, FFKM
connections	DIN11851, SMS, RJT, DIN11864-1, DIN11864-2
surface finish	electropolished
certificates & legislation	

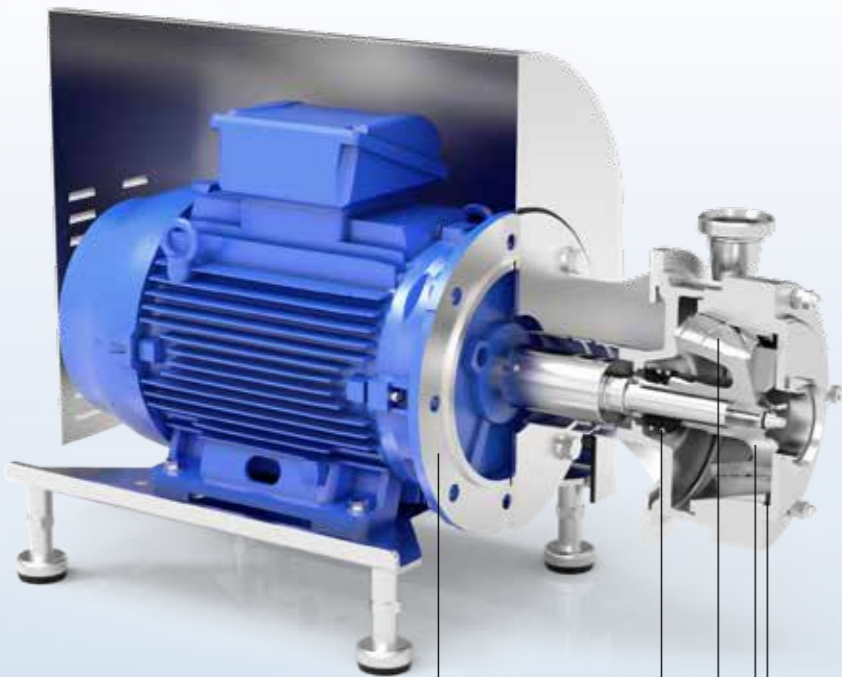
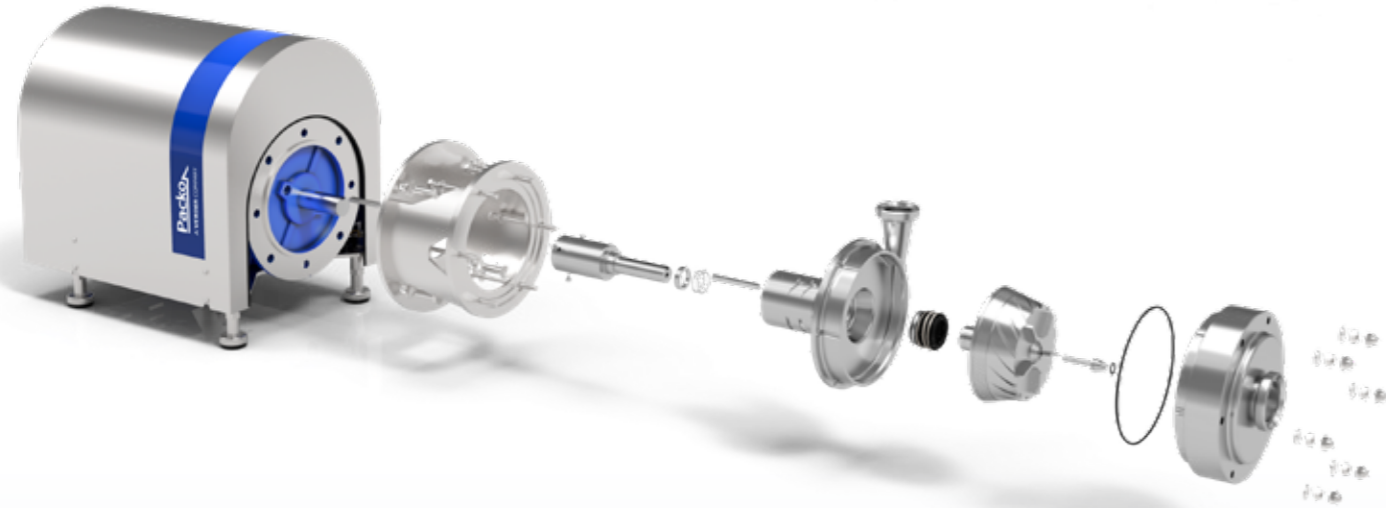
Performance curves at 1500 rpm



Colloid mill Series CM

Characteristics

The CM is a hygienic colloid mill with toothed rotor and stator in electropolished duplex stainless steel. They are used to grind particles in suspension precisely and with reproducible results in an annular gap between the stator and rotor which can be adjusted by changing the axial position of the rotor. The rotor and stator contain 2 milling zones and thanks to the high shear forces between rotor and stator the CM will also mix the fluid.



CM

- ① Adjustable milling gap between rotor and stator
- ② Integrated centrifugal impeller
- ③ Helicoidal rotor grooves
- ④ Standardized mechanical seals to EN 12756
- ⑤ Monobloc execution with std. IEC motors

Your benefits

- Electropolished 316L and duplex stainless steel: highly corrosion resistant and perfectly cleanable
- Adjustable milling gap between rotor and stator allows optimal setting for every product
- Easy robust construction and easy maintenance: less downtime
- Standardized seals guaranteeing worldwide easy availability and low spare parts prices
- Low noise level thanks to helicoidal rotor grooves
- Rotor with integrated centrifugal impeller improves suction capability and creates additional discharge pressure

Application areas




The Packo CM colloid mill is used for a wide range of purposes in the production line in the general food, fruit & vegetable and cosmetic industry. The principal applications are wet size reduction of solids in suspension, pulping and mashing of bulky solids and generation of high viscous suspensions and emulsions.

Series

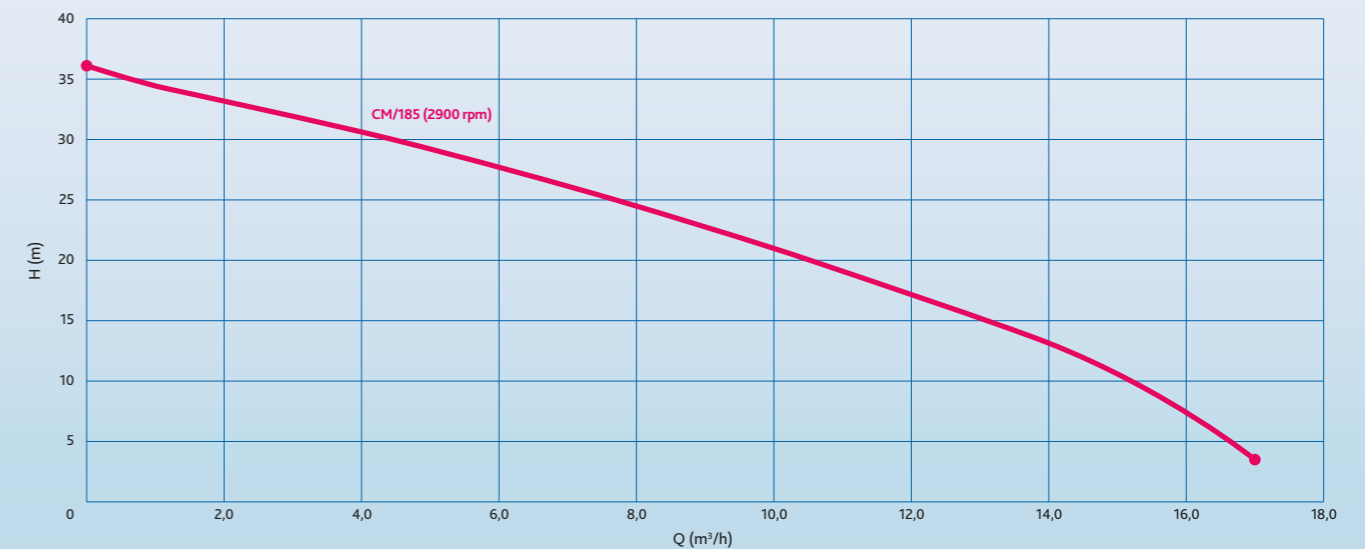
Performances

Series	CM
Max flow rate	15 m ³ /h
Max differential head	35 m with water
Max inlet pressure	10 bar
Max. fluid viscosity	100.000 cP with feed pump
Max temperature	140°C
Max motor power	45 kW
Max speed	3600 rpm
Available frequency	50/60 Hz

Technical specifications

Materials wetted parts	stainless steel 316L and duplex
Mechanical seal configuration	single, bellow, sterile, quench, double
Available material O-ring	EPDM, FKM, FEP-FKM, FFKM
Connections	hygienic fittings
Surface finish	hygienic quality, electropolished
Certificates & legislation	  

Performance curve with water at 2900 rpm





BQA_QMS019_C_1994041

BQA_EMS019_C_2015041

ISO 9001:2015 - ISO 14001:2015
Before shipping all pumps are subjected to a thorough automated testing procedure. Performance and hydrostatic pressure tests, as well as control of the main dimensions are part of the standard test procedure. 100% final inspection!



Thanks to the expertise of Packo in the field of pumps, but also in terms of process knowledge, we strive for the best possible solution for your system. Support in your pump selection thanks to CAPDATA (Computer Aided Pump Selection Program).

Maintenance friendly design
Front loaded seals: pump does not need to be mounted out of the installation to change seals.

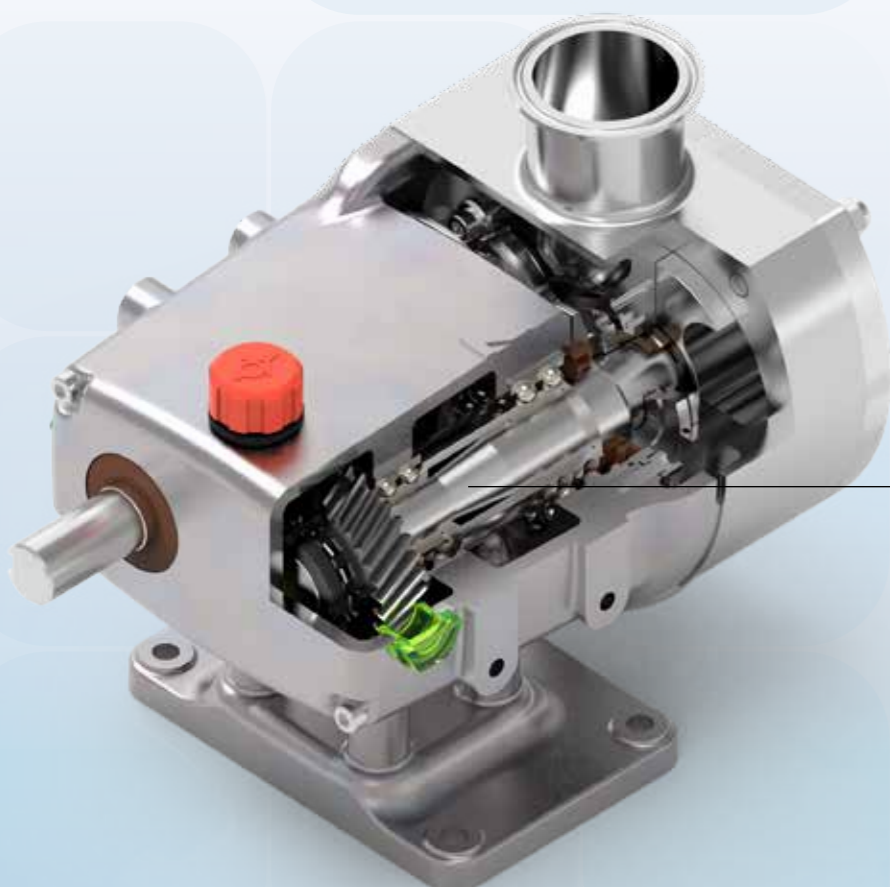
Easy modular concept
Rotors can be changed, even to other geometries without timing spindles or opening the gearbox for adjustments.

Volumetric pumps designed for food

Packo pumps are designed to be outstanding in the food industry. Their design is unparalleled when it comes to hygiene, gentle pumping and easy maintenance. They rank among the pumps with the lowest Total Cost of Ownership in the food sector. Discover some characteristics of the Packo hygienic volumetric pumps and find the perfect match for your food production process.



Perfectly cleanable construction.
EHEDG and 3A certificate available.



Food grade oil-filled gearbox increases bearing lifetime and requires minimal service effort. Ball bearings generate very low heat, helical and grinded gears guarantee smooth operation.



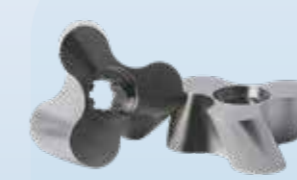
Circumferential Piston rotor



Tri-Lobe rotor



Multi-Lobe rotor



Heli-Lobe rotor

Different rotor geometries and materials available, the optimal solution is available for every application.

According to applicable standards and legislations, particularly within Europe, but also outside.

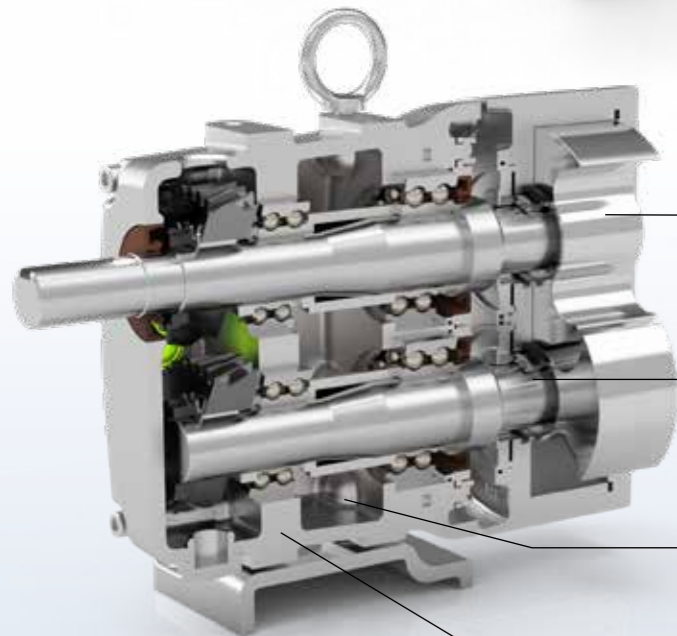
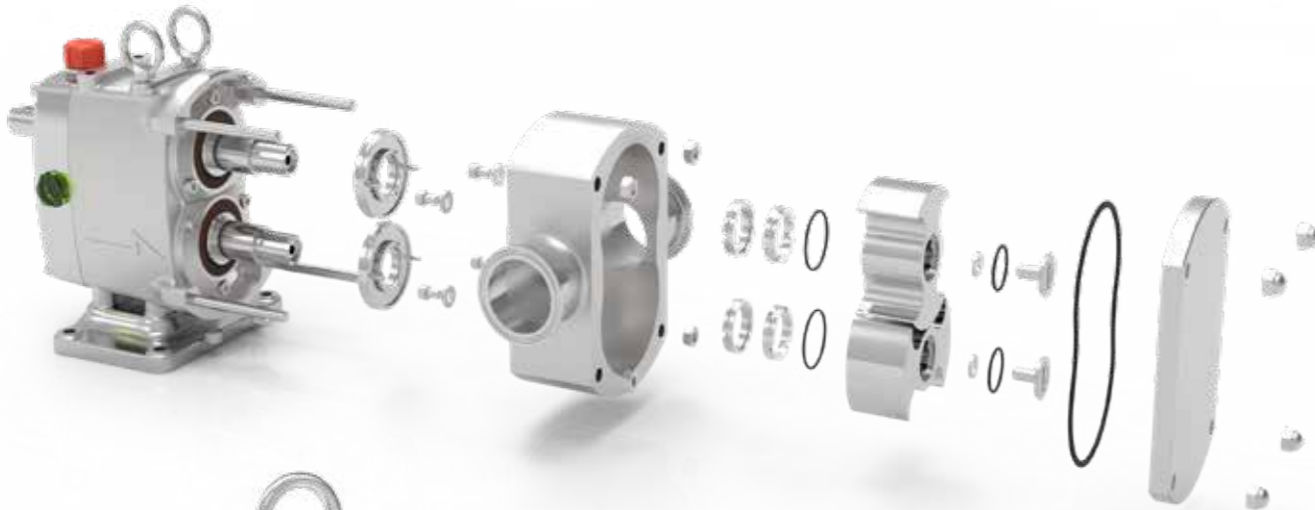


Pump series ZL



Characteristics

Packo rotary lobe pumps are state of the art. The series can be equipped with a variety of rotors and options to adapt to almost all hygienic pumping applications. This guarantees an optimal and efficient operation of the pumping process.



ZL

- 1 Available with various rotor geometries (Bi-Wing, Tri-Lobe, Heli-Lobe, Multi-Lobe, Single Wing, Bi-Lobe): the optimal solution is available for every application.
- 2 Rotors can be changed without timing spindles, or opening the gearbox for adjustments.
- 3 Available with various sealing arrangements: single, flushed, double, O-ring seal, triple lip seal, etc. which are interchangeable.
- 4 Wetted seal parts can be replaced without disassembling the rotor case: pump does not need to be mounted out of the installation to change seals.
- 5 Food grade oil-filled gearbox increases bearing lifetime and requires minimal service effort. Ball bearings generate very low heat, helical and grinded gears guarantee smooth operation.
- 6 Investment cast stainless steel gearbox available

Application areas

The Packo pumps of the ZL series are designed for a wide range of hygienic applications in dairies, breweries, the pharma and cosmetics industry and bakeries, as well as for pumping liqueurs, detergents, shampoos, gels, etc. They are the ideal solution for gentle pumping of low to high viscous liquids.



Your benefits

Cleaner

- Certified to EC1935/2004, EHEDG and 3A versions available
 - Wetted surfaces with Ra < 0.6 µm
 - Wetted parts in SS316L

Improved CIP performance

- Optimized design to eliminate dead spaces, O-ring grooves without dead corners
- Wetted parts of mechanical seals directly in the product stream

Shorter downtimes / higher flexibility

- Faster maintenance
 - Pump can stay in piping during replacing seals thanks to front loaded seals

- No need to open gearbox for adjusting axial clearances between rotors and casing
- Rotors can be changed without timing
- Universal mounting
 - Top or bottom shaft can be switched without gearbox disassembly
 - Pumps can be mounted with both horizontal and vertical port connections
- Heating jackets for casing and front cover, pressure relieve valve, by-pass valve and many more options available

Pump series

ZL

Performances

Max flow rate	100 m³/h
Max viscosity	1.000.000 cP
Max differential pressure	20 bar
Max temperature	150°C

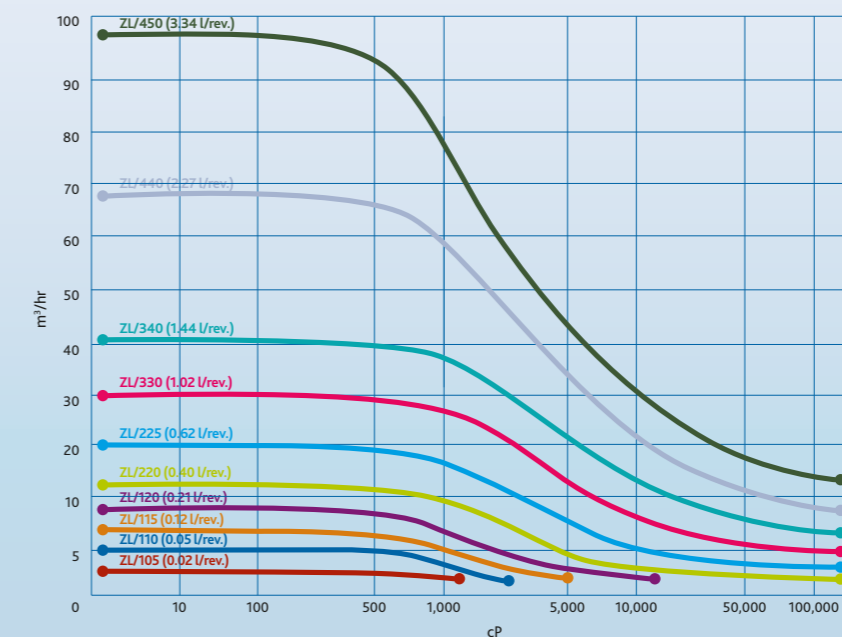
Technical specifications

Materials wetted parts	stainless steel 316L
Seal configuration	single, flushed, double mechanical seal, O-ring seal, triple lipseal
Available material O-ring	EPDM, FKM, FFKM
Connections	sanitary and industrial fittings, rectangular inlet available
Mounting position	horizontal and vertical
Surface finish	food quality, internal welds hand polished to 0.6 µm

certificates & legislation



Pump curves

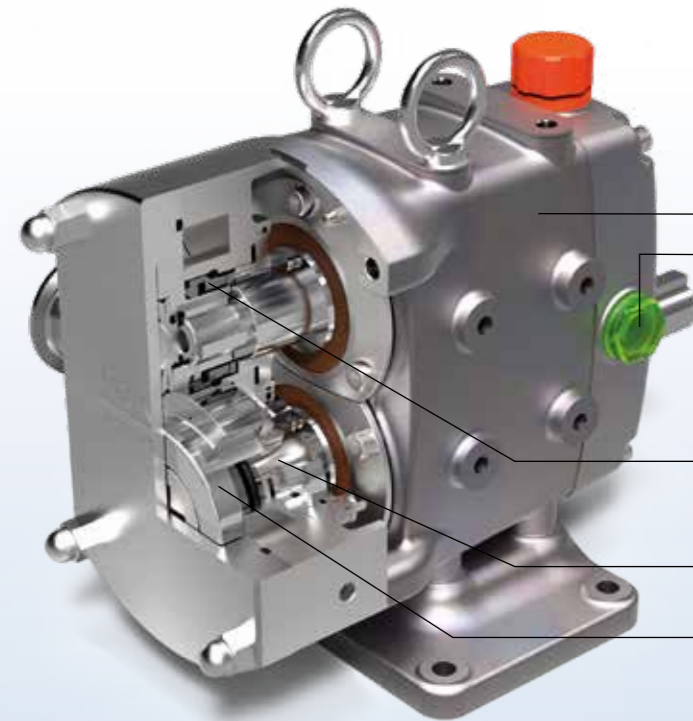
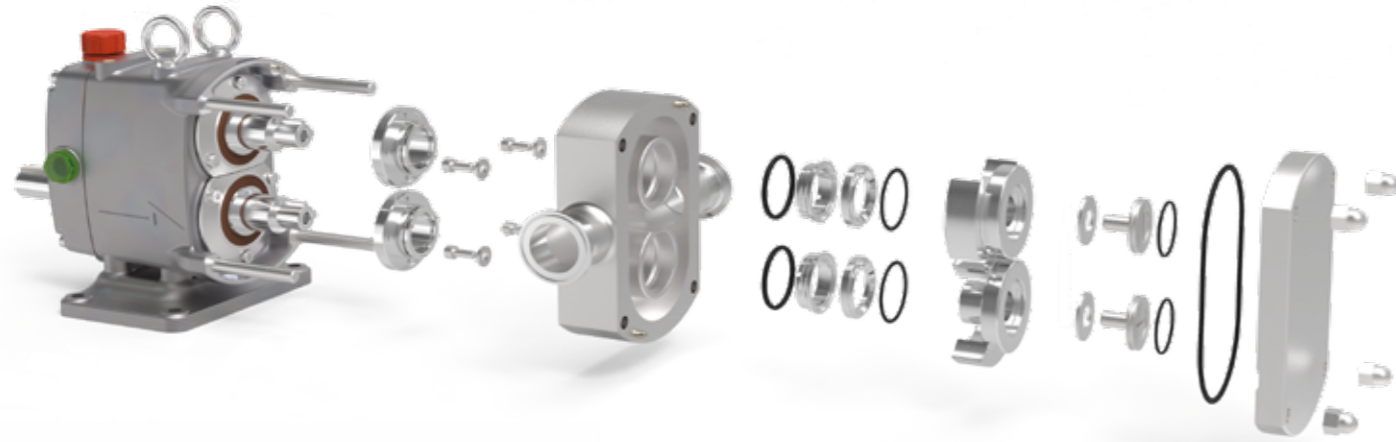


Pump series ZP



Characteristics

The Packo pumps of the ZP series are hygienic stainless steel Circumferential Piston Pumps. The rotors, made of the special non-galling material Nitronic 60, forgive high temperatures and abrasive particles, furthermore they offer a very good efficiency especially with low viscosity products. A high displacement, good suction capability and good cleanability are further features of the ZP series.



ZP

- ① Investment cast stainless steel gearbox available.
- ② Food grade oil-filled gearbox increases bearing lifetime and requires minimal service effort. Ball bearings generate very low heat, helical and grinded gears guarantee smooth operation.
- ③ Design and Position of the seals, brings the CIP-fluid in direct contact with them.
- ④ Wetted seal parts can be replaced without disassembling the rotor case: pump does not need to be mounted out of the installation to change seals.
- ⑤ Smaller clearances result in less slip which results in better efficiency by pumping low viscous fluids.
- ⑥ Non galling rotors avoid blocking of casing and rotors in case of contact.

Application areas

The Packo ZP Circumferential Piston Pumps are the perfect solution for use in the most difficult applications, e.g. critical suction conditions, high temperatures or abrasive fluids. Use of small clearances in combination with non-galling materials provide maximum efficiency and operational reliability.



Circumferential Piston rotors

Your benefits

Cleaner

- **Certified to EC1935/2004, EHEDG and 3A versions available**
 - Wetted surfaces with Ra < 0.6 µm
 - Wetted parts in SS316L and Nitronic 60
- **Unbeatably easy CIP cleanability**
Due to the forward positioning of the mechanical seal in the piston, all areas that are difficult to clean are sealed off from the product area. Emergency solutions such as CIP holes offered by competitors are completely eliminated.
- **Shorter downtimes / higher flexibility**
- **Faster maintenance**
 - Pump can stay in piping during replacing seals thanks to front loaded seals.
 - No need to open gearbox for adjusting axial clearances between rotors and casing.
 - Rotors can be changed without timing.

Extended service intervals

The oil-lubricated bearing pedestal avoids frequent relubrication of the bearings with grease. This reduces maintenance and increases operational reliability. In addition, oil reduces friction values, resulting in less heat generation and better efficiency.

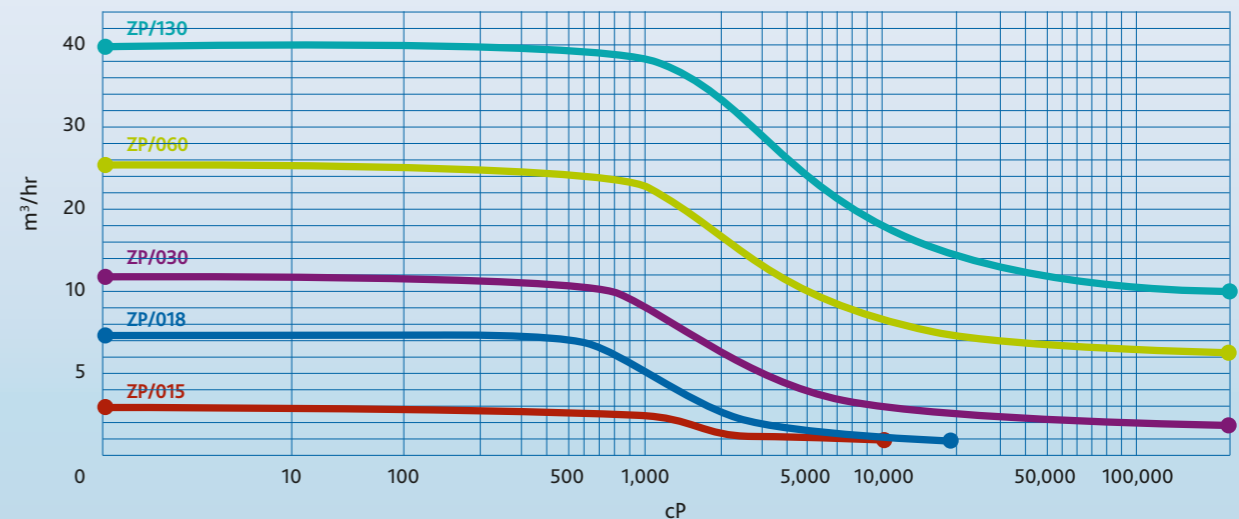
Universal mounting

- Top or bottom shaft can be switched without gearbox disassembly.
- Pumps can be mounted with both horizontal and vertical port connections.

• **Heating jackets for casing and front cover, pressure relieve valve, by-pass valve and many more options available.**

Pump series	ZP
Performances	
Max flow rate	42 m³/h
Max viscosity	1.000.000 cP
Max differential pressure	15 bar
Max temperature	180°C
Technical specifications	
Materials wetted parts	stainless steel 316L and Nitronic 60
Seal configuration	single, flushed, double mechanical seal, O-ring seal, triple lipseal
Available material O-ring	EPDM, FKM, FFKM
Connections	sanitary and industrial fittings, rectangular inlet available
Mounting position	horizontal and vertical
Surface finish	food quality, internal welds hand polished to 0.6 µm
Certificates & legislation	

Pump curves (Data for guidance only. Based on 0 bar at pump inlet.)

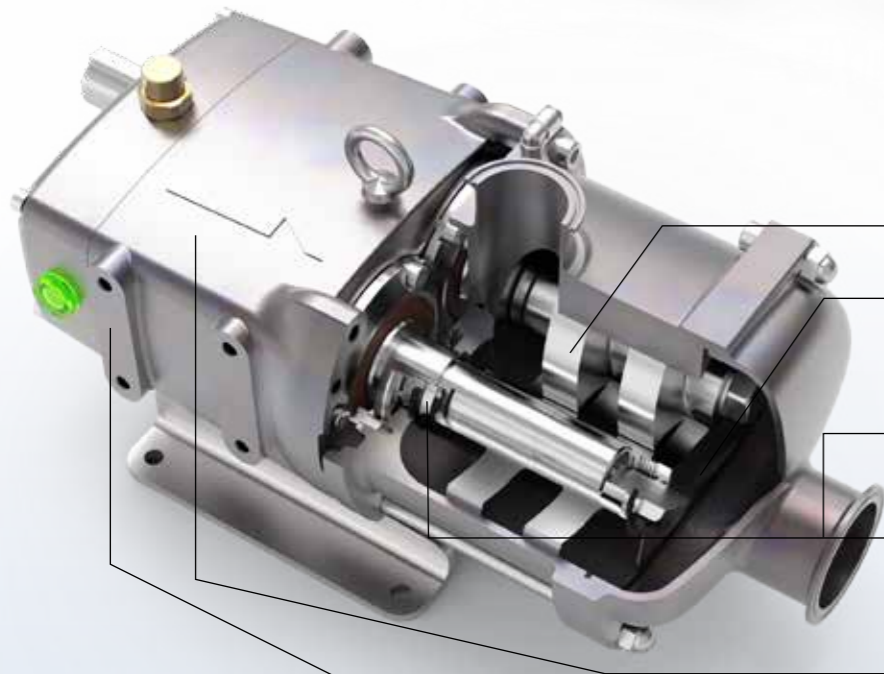


Pump series ZS



Characteristics

Packo twin screw pumps offer maximum flexibility in terms of the type of application, as well as the nature of the medium to be pumped. Exceptionally good hygiene and cleanability make this type of pumps more and more popular.



- ZS**
- ① Different selectable screw pitches allow an exact adjustment to flow rate, pressure and particle size.
 - ② Due to the constant geometry of the conveying chamber, an extremely gentle transport is ensured, another advantage is the low-pulsation conveying characteristics.
 - ③ Available with various sealing arrangements: single, flushed, double, triple lip seal, etc. which are interchangeable.
 - ④ Compact seal design enables large cross-sections in the outlet area of the pump, minimizing the influence of a narrow bottle neck on the medium, due to changes in flow speeds.
 - ⑤ Food grade oil-filled gearbox increases bearing lifetime and requires minimal service effort. Ball bearings generate very low heat, helical and grinded gears guarantee smooth operation.
 - ⑥ Investment cast stainless steel gearbox.

Application areas

The Packo ZS twin screw pumps were designed for pumping low to high viscous and gaseous liquids in hygienic applications in dairies, breweries, the pharma and cosmetics industry and bakeries. The ZS is the ideal positive displacement pump for gentle pumping of viscous liquids without damaging contained solids, such as fruit in yoghurt, nuts in ice cream, etc. Thanks to the wide range of allowable speed, the ZS pump can also be used as CIP+ pump, making a by-pass centrifugal pump redundant.

Your benefits

Cleaner

- Certified to EHEDG, 3A and EC1935/2004
 - Wetted surfaces with Ra < 0.8 µm
 - Wetted parts in SS316L
 - Gearbox in stainless steel
- Pump can be operated bi-directional
- Different screw options to adapt perfectly to each application
- **Maximum product protection**
 - No change in chamber geometry, thus no product squeezing
 - Linear conveying characteristic, since direction of flow is identical to the direction of rotation
 - Constant pressure build up
 - Smooth, low-shear pumping characteristics
- **2 in 1 Feature Convey and CIP with the same pump**
 - Designed without dead spaces, O-ring grooves without dead corners
 - Wetted parts of mechanical seals directly in the product stream
 - Pump casing with large corners avoids product sticking and simplifies the cleaning process
- **Heating/ Cooling jacket for casing and, many more options available**

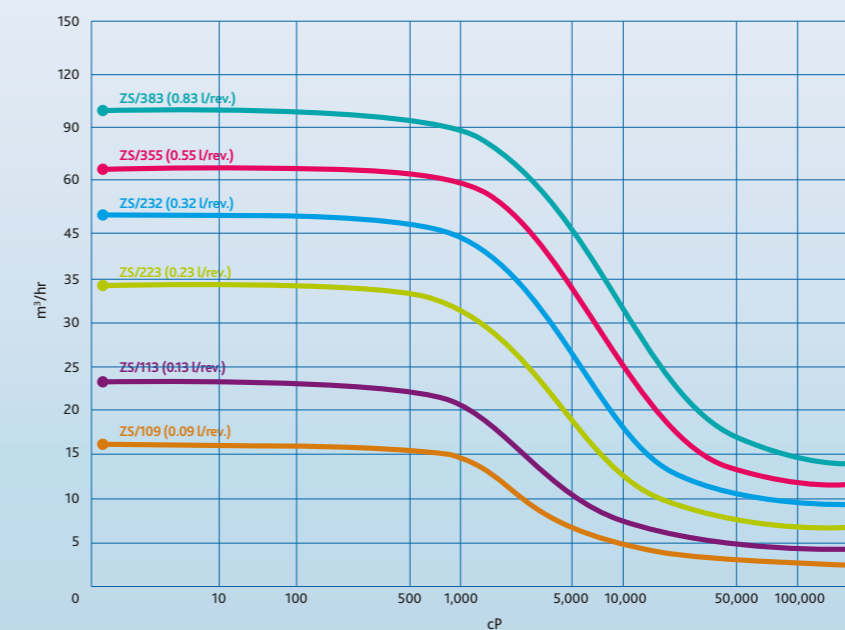
Highest flexibility

- Connections according to customer requirements
- High speed range allows adjustment to nearly each viscosity

Pump series

Performances	ZS
Max flow rate	100 m ³ /h
Max viscosity	1.000.000 cP
Max differential pressure	12 bar
Max temperature	150°C
Technical specifications	
Materials wetted parts	stainless steel 316L
Seal configuration	single, flushed, double mechanical seal, triple lipseal
Available material O-ring	EPDM, FKM, FFKM
Connections	sanitary and industrial fittings
Surface finish	food quality, internal welds hand polished to 0.8 µm
Certificates & legislation	

Pump curves



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. head 27 m
- Motor power up to 2.2 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 320 m³/h
- Max. head 220 m
- Motor power up to 90 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. head 65 m
- Motor power up to 22 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. head 215 m
- Motor power up to 45 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. head 37 m
- Motor power to 5.5 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 750 m³/h
- Max. head 35 m
- Motor power up to 250 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 1800 m³/h
- Max. head 75 m
- Motor power up to 250 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. head 60 m
- Motor power up to 11 kW

General industrial pumps



Pump Series IPP2

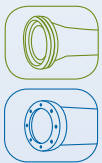
High pressure pump suitable for system pressures up to 40 bar!

Made of solid, machined stainless steel 316L.

Especially for use in reverse osmosis applications.

Available with hygienic fittings.

- Max. flow up to 110 m³/h
- Max. head 110 m
- Motor power up to 22 kW



Air handling Pump Series IRP

Industrial air handling pump for CIP return applications as well as for truck and tank unloading, etc.

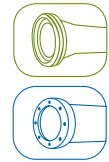
High efficiency and low NPSH in comparison with a classic liquid ring pump.

Limited noise level.

Easy maintenance.

Available with hygienic fittings, pump series IRP+.

- Max. flow up to 150 m³/h
- Max. head 75 m
- 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 fitting.

- Max. flow up to 70 m³/h
- Max. head 43 m
- Motor power up to 11 kW



Submersible Pump Series IM

Available as cantilever pump series IML 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 1000 m³/h
- Max. head 60 m
- Motor power up to 132 kW



Packo
A VERDER COMPANY
We optimize your flow



Watch the Packo Pumps video.