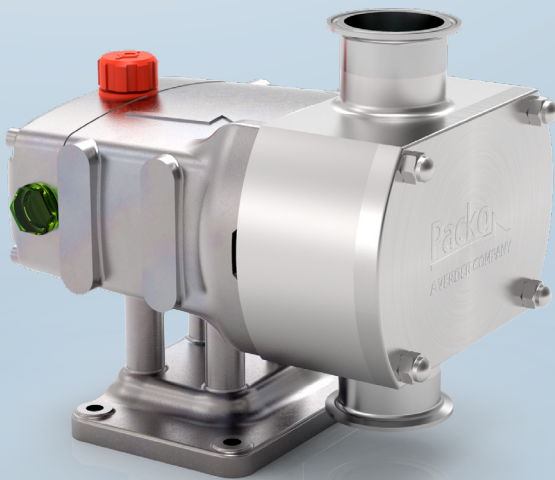


INNOVATIVE HYGIENIC PUMPING SOLUTIONS

HYGIENIC PUMP PROGRAM



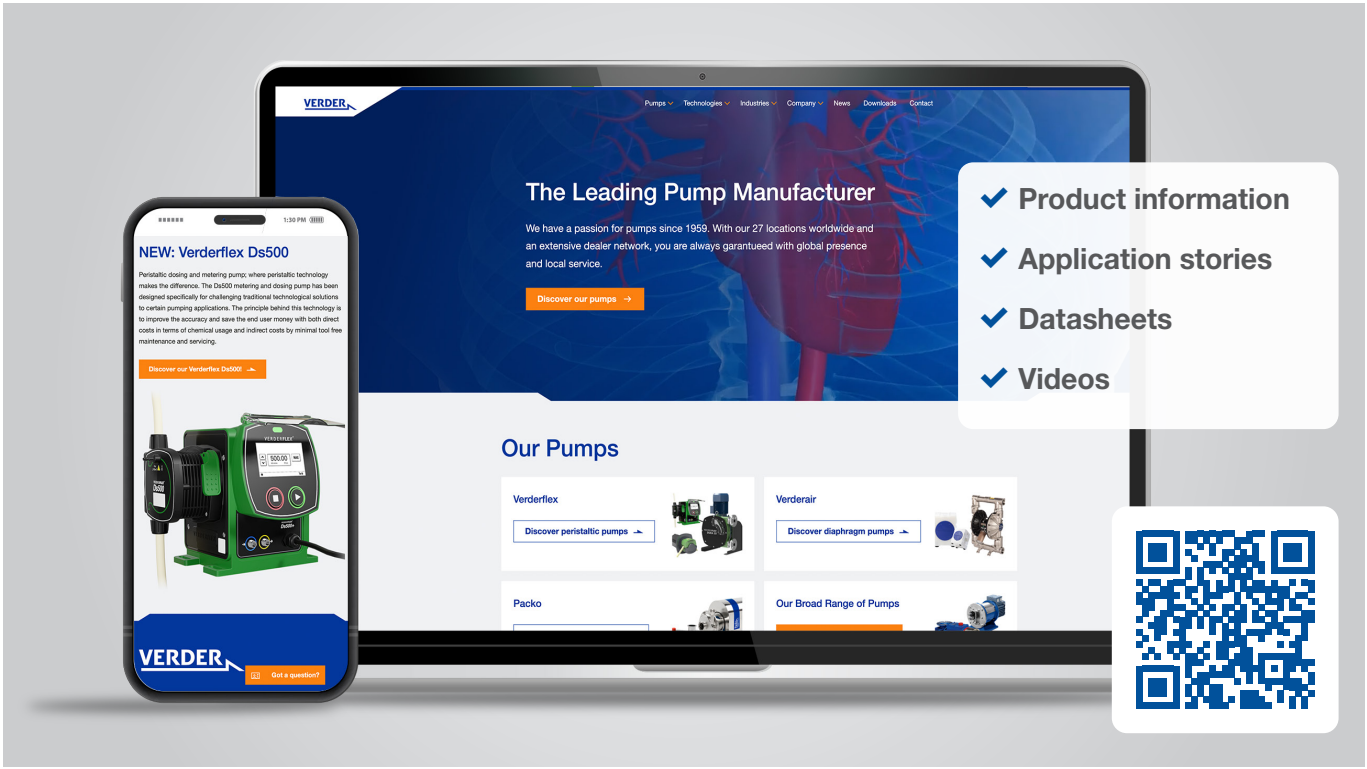
- ✓ Best cleanability
- ✓ Certified quality
- ✓ Innovative pumping solutions



ENABLING PROGRESS

GET IN TOUCH

With the hygienic pump manufacturer



Contact VERDER

If you would like to know more about VERDER hygienic pumps then please visit our website www.verderliquids.com where you will find the full breakdown of our pump range as well as application stories, latest news and technical datasheets and more.

VERDER LIQUIDS BV

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The Netherlands
info@verderliquids.com
www.verderliquids.com

At VERDER, we are committed to providing you with excellent service globally. Our expanding network reaches out across all five continents, comprising our own branches in 24 countries, supplemented by experienced independent distributors. This ensures local support and easy access to spare parts for our customers, underlining our dedication to excellence and comprehensive coverage worldwide.

THE VERDER GROUP

Enabling progress



The VERDER group is a family-owned business founded in 1959 in the Netherlands; the group consists of a worldwide network of production and sales offices. Group companies are involved in the development and distribution of industrial and hygienic pump solutions, high-tech equipment for quality control and Research & Development into solid material (solids sample preparation and analytical technologies).

- 1 Company
- 24 Countries
- Pump experts since 1959
- 24 Manufacturing sites
- Global network
- Local distributors
- In-house service & maintenance
- A solution for every application
- In-depth knowledge of processes and applications

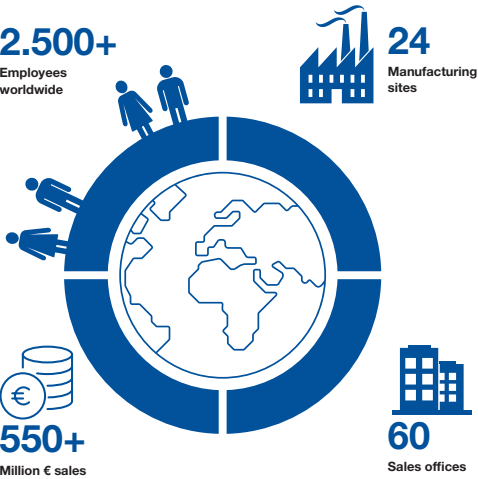
For years, VERDER has led in innovation, driving our and our customers' success. Our global network of over 70 sales and manufacturing sites offers personalized sales and technical services, ensuring close customer relationships crucial for providing specific support and building lasting, trusting partnerships.

VERDER is dedicated to making a positive impact by aligning with the UN's Sustainable Development Goals (SDGs) through our Environmental, Social, and Governance (ESG) program. Our goal is to lessen our environmental footprint, enhance employee well-being, and uphold ethical practices.

Inventing to make the world a better place

We leverage our expertise in sample preparation, analytical equipment, and professional pumping to empower our customers. We enable progress by improving their operations, we contribute to safer, more efficient, and sustainable processes, products, and services. Our contributions are pivotal in securing safe food supplies, ensuring responsive healthcare, and safeguarding clean drinking water in millions of households.

As a united family, we embrace our societal responsibilities with passion and a commitment to excellence. Our collective efforts are aimed at fostering a healthier, safer, and more sustainable world for all.



APPLICATIONS IN HYGIENIC INDUSTRIES

VERDER offers a wide program of pumps for hygienic applications in the food, pharma and dairy industry. Examples of the processes where our pumps operate successfully are listed below. Of course, there are many other areas in the hygienic market where our pumps can be applied.

Beverage pages

Hot brewing process	12, 18
Cold beer brewing process	12, 18
Filtration	12, 18, 22
CIP	12, 14, 18, 26
(Waste) water treatment	12, 24, 26



Dairy pages

Collection, storage & unloading	14, 23
Filtration	12, 16, 22
Evaporation	12, 16
Heat treatment	12, 16, 18
CIP	12, 14, 18, 26
(Waste) water treatment	12, 24, 26



Vegetables & potatoes pages

Destoning, washing, cutting	12, 22
Transport of vegetables	22
Blanching	12
Frying	23
CIP	12, 14, 18, 26
(Waste) water treatment	12, 24, 26



Food / Feed pages

Mixing/dispersing	20
Brine injection	12, 14, 16
Fish & shellfish handling	22
Egg white/yolk handling	16, 18
Animal blood handling	12, 16, 18
Animal feed systems	22
CIP	12, 14, 18, 26
(Waste) water treatment	12, 24, 26



Biotech/Pharma/Cosmetics pages

Destilling	12, 14, 26
Purifying	12, 26
Injection	12, 26
Filtration	12, 14
CIP	12, 14, 18, 26
(Waste) water treatment	12, 24, 26



HYGIENIC DESIGN PRINCIPLES & CERTIFICATIONS





EC 1935/2004

European regulation about food materials and articles intended to come into contact with food. Guidelines about the traceability and the use of materials that do not deteriorate the colour, flavour, smell or taste of the properties of the food.



Additional regulation on top of EC1935/2004 is the EC10/2011 for plastic materials and articles intended to come into contact with foodstuffs. It concerns a.o. ion exchange resins, rubber and silicones.



ASME BPE
Standard for the design and construction of equipment used in the manufacturing of biopharmaceuticals and pharmaceutical industry.



The European Hygienic Engineering and Design Group has defined European standards for process equipment in hygienic environments. It concerns cleanability, engineering and design of process equipment.



This American standard specifies criteria for the design and fabrication of equipment that comes into contact with food. The guiding purpose of 3-A sanitary standards is to protect public health by using sanitary certified equipment.



ATEX is a European Directive (2014/34/EC) for explosion-proof electrical and mechanical equipment, components and protective systems. It concerns the manufacture of products which are used in potentially explosive atmospheres.



The American Food and Drug Association is an organization that gives references for food and pharmaceutical products to stipulate and classify substances that are compliant.



The United States Pharmacopeia (USP) has defined the minute standards to safeguard the quality of medicines and other health care technologies for pharmaceutical and bio-technology industries. There are guidelines for quality, purity, strength and consistency.



Minimum Efficiency Index, guideline for efficiency of pumps. This index gives a percentage from the sold pumps in the market on a certain moment with a low hydraulic efficiency on BEP. From 01/2015 MEI ≥ 0.4. 95% of our centrifugal pumps complies to MEI.

SUPERIOR FINISHING GRADES



Every hygienic industry has its specific expectations and above all critical finishing requirements. PACKO has 3 major finishing grades with matching couplings for the centrifugal pump range so that the pumps can very easily meet the necessary certificates within these specific industries without being overspec in terms of cost.

Industrial/basic food finishing	Hygienic finishing	Pharmaceutical finishing
<ul style="list-style-type: none"> - Rough finishing of internal welds - Industrial couplings (EN 1092-1, BSP, ANSI and more) - Electropolishing 	<ul style="list-style-type: none"> - Hand polished internal welds - Hygienic couplings (DIN 11851, Tri-clamp, SMS , RJT and more) - Electropolishing 	<ul style="list-style-type: none"> - Hand polished wet pump parts up to a minimum roughness of 0.4µm, pharmaceutical couplings (Tri-clamp, and more) - Electropolishing

Electropolishing: a superior finish

Most austenitic steel alloys contain iron, 18% chrome and 8% to 10% nickel. The rich metals chrome and nickel are responsible for the chrome oxide skin which gives stainless steel a high corrosion resistance. By electropolishing, which is an anodizing process where the treated objects are hung anodically in baths filled with electrolyte and electric current. The chemicals dissolve the impurities and iron. By this process, the ratio of chrome and nickel on the surface improves, making the stainless steel chemically very inert due to the development of a chromium oxide layer on the surface. This results in a lower average roughness which makes products more difficult to adhere and avoids bacterial traps and increases the cleanability. In addition, the surface is given greater resistance to corrosion.

THE HYGIENIC PROGRAM

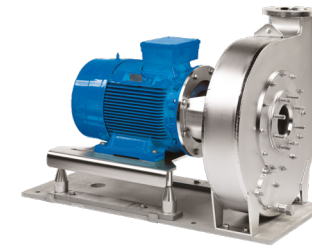
Offering a wide range of hygienic solutions



PACKO standard centrifugal pumps



PACKO prime centrifugal pumps



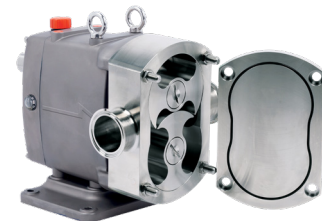
PACKO dedicated centrifugal pumps



PACKO shear pumps and Verdemix



PACKO rotary lobe pumps



PACKO circumferential piston pumps



PACKO Twin screw pumps



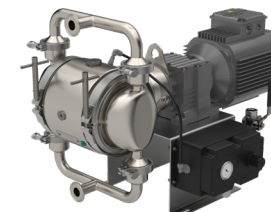
VERDERAIR air driven diaphragm pumps



VERDERFLEX peristaltic dosing pumps



VERDERFLEX hygienic hose pumps



VERDERAIR electrical diaphragm pumps

OUR PRODUCTION COMPANIES

We are rightly proud of our production companies, with VERDER brands being produced in 7 locations in Germany, United Kingdom, Belgium, Poland, South Korea, Italy and Spain. In-house pump production allows us to be more responsive to customer demands, assures the shortest lead times and maintains greater control over quality and costs.



VERDERFLEX & VERDERMAG – United Kingdom

VERDER’s British manufacturing facility comprises the development and production of the VERDER house brand VERDERFLEX (peristaltic pumps) and VERDERMAG (mag drive centrifugal pumps).

These pump series seek excellence from every aspect of the product and its journey to the customer. Continuous improvements provide the best possible product. After four decades of development and production, it is still the goal to further improve the performance and build of every pump we make.



Metplast (MTP) – Poland

Our VERDERAIR PURE, e-PURE and HC-PURE machined double diaphragm pumps are manufactured at the Metplast production location, according to the very highest production standards. In this modern production location everything is focused towards maintaining the highest standard of quality with a stringent protocol of testing.



PONNDORF – Germany

The VERDERFLEX Rollit pump, hygienic and industrial, is manufactured at Ponndorf, Germany.

For over 50 years, Ponndorf has been developing and manufacturing high-quality peristaltic pumps, which are known for their rigid and robust construction.

The Rollit pumps are lubricant-free roller peristaltic hose pumps that are easy to maintain, especially if you need a quick hose change, and available in a standard single and twinhead version.



PACKO – Belgium & South Korea

PACKO, our manufacturing company, specializes in producing the highest quality stainless steel centrifugal pumps, as well as hygienic rotary lobe and twin-screw pumps for industrial, food, and pharmaceutical uses.

Our Belgian-made centrifugal pumps undergo a unique electropolishing process to ensure uncompromised surface quality. Additionally, we produce static and dynamic mixers and Verderhus screw impeller pumps. Our rotary lobe and twin-screw pumps are made in South Korea.



MICRODOS – Italy

MICRODOS is a manufacturer of small dosing pumps and systems. They produce Microdos solenoid and peristaltic pumps including related professional control instruments and complete dosing systems.

Microdos has developed a strong position in Southern European countries for applications in swimming pools, detergent dosing and water treatment applications. Microdos also provides private labelling pumps for third party companies.



ITC – Spain

ITC supplies dosing pumps and control systems for agricultural and water treatment applications, and has a manufacturing and assembly facility in Barcelona.

ITC’s commitment is based on innovation, quality and excellent service. They offer an technified irrigation system, without losses and that allows greater control and precision of fertilizer than conventional irrigation systems.

OUR HYGIENIC PUMPS

Key players with highest hygienic standards

The hygienic pumps from VERDER are problem solvers for the hygienic market. We offer a high quality program of hygienic pumps, each having its own special advantages in specific application areas. Most pumps in our hygienic portfolio are manufactured in industrial, food or pharmaceutical versions. Our portfolio is extensive; we can offer a pump solution tailored to your specific hygienic process.

PACKO centrifugal, rotary lobe and twin screw pumps

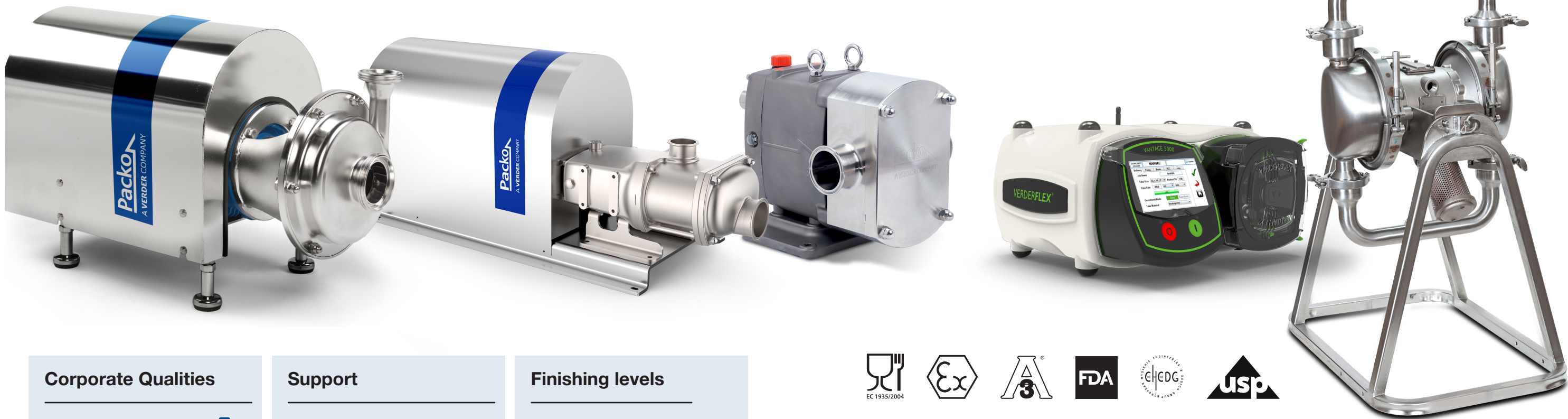
PACKO is specialized in hygienic pumps. Centrifugal, rotary lobe and Twin screw pump cover almost all application in situations where a hygienic pump level is required.

VERDERAIR HI-CLEAN pumps

VERDERAIR HI-CLEAN is a complete series double diaphragm pumps; air operated or electrically driven, which fits the application best.

VERDERFLEX peristaltic pumps

VERDERFLEX hygienic peristaltic pumps are perfect pumps for applications where additives are being dosed. Full control of dosing applications in the hygienic market.



Corporate Qualities

- Priority orders
- Worldwide network
- Specific OEM features
- Own manufacturing
- In house engineering



Support

- Digital pump selector
- Standard spare parts
- Strong logistic services
- Worldwide stock available

Finishing levels

- Finishing grades
Industrial - Food - Pharma
- Hose & tube qualities
FDA CFR 21- EC/1935-2004
USP Class VI
Platinum Cured Silicone







PACKO STANDARD CENTRIFUGAL PUMPS

This pump series can meet the high requirements of EHEDG and 3A certification. They excel in hygienic cleanability, reliability and are easy to handle. All PACKO centrifugal pumps are configured to order, offering a huge range of pump configurations. The standard pumps are used in demanding applications such as dairy, food & beverage and pharmaceutical. This series is also perfectly applicable in industrial applications such as mining, chemicals and waste water. In fact at all duties where a high corrosion resistance is required.

All of these pumps are available in industrial, food and pharmaceutical finish.



PACKO Standard	FP60	FP1	FP2/3	MFP 2/3
Concept	Economic	Value for money	Continuous duty	High flow
Max. flow [m³/h]	40	55	320	1800
Differential head [mwc]	27	37	120	75
Min. internal surface roughness [µm]*	0,8	0,8 (impeller 3,2)	3,2	3,2
Certifications*				

* highest possible levels

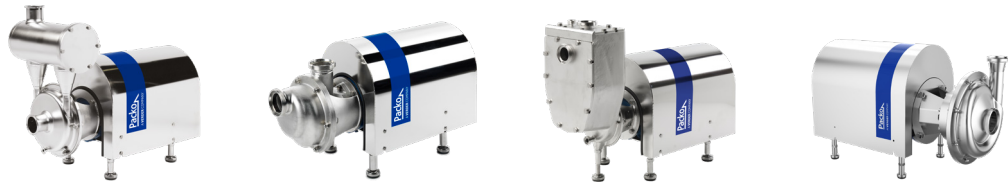






PACKO PRIME CENTRIFUGAL PUMPS

The PACKO prime pumps are a range of pumps especially configured for CIP return applications and truck unloading. Used in the most demanding applications in dairy, food & beverage but also in more industrial applications where liquid air-gas mixtures have to be pumped. Everywhere where a self-priming capability is required.

- Depending on the liquid, gas/air quantity, solids loaden fluids, and the self-priming or air-handling requirements there are models available as:
- pump with static degasser or an air screw
 - side channel pump
 - centrifugal liquid ring vacuum pump

All of these pumps are available in industrial, food and pharmaceutical finish.



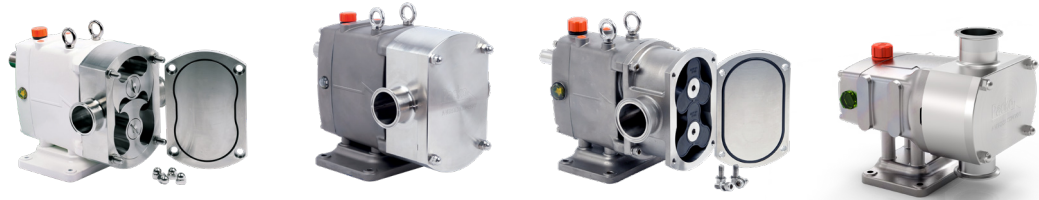
PACKO Prime	CRP	MSCP	MSP2	GFP
Concept	Centrifugal	Side channel	Self-priming	Defoaming
Max. flow [m³/h]	150	50	70	400
Differential head [mwc]	75	80	43	30
Internal surface roughness [µm]*	0,4	3,2	3,2	3,2
Certifications*				

* highest possible levels



PACKO ROTARY LOBE & CIRCUMFERENTIAL PISTON PUMPS

Each series of the PACKO rotary lobe and circumferential piston pumps is state-of-the-art. The pumps can be fitted with a variety of features and rotors to adapt to almost all hygienic pumping tasks. The pumps can be customized to meet the optimum function or performance to your process.



	ZL	ZP	ZW	ZLC
Concept	Rotary lobe pump	Circumferential piston	Wine pump	Pharmaceutical lobe pump
Max. flow [m³/h]	100	42,5	18	100
Max. discharge pressure [bar]	20	15	6	20
Internal surface roughness [µm]*	0,6	standard 0,6 (option 0,4)	0,6	0,4
Certifications*				

* highest possible levels

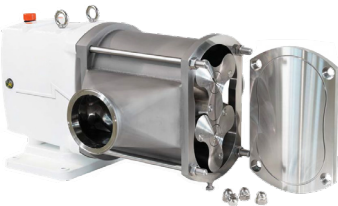
The Packo rotary lobe pumps are developed and engineered for specific applications, such as:

✓ Cheese curd pump

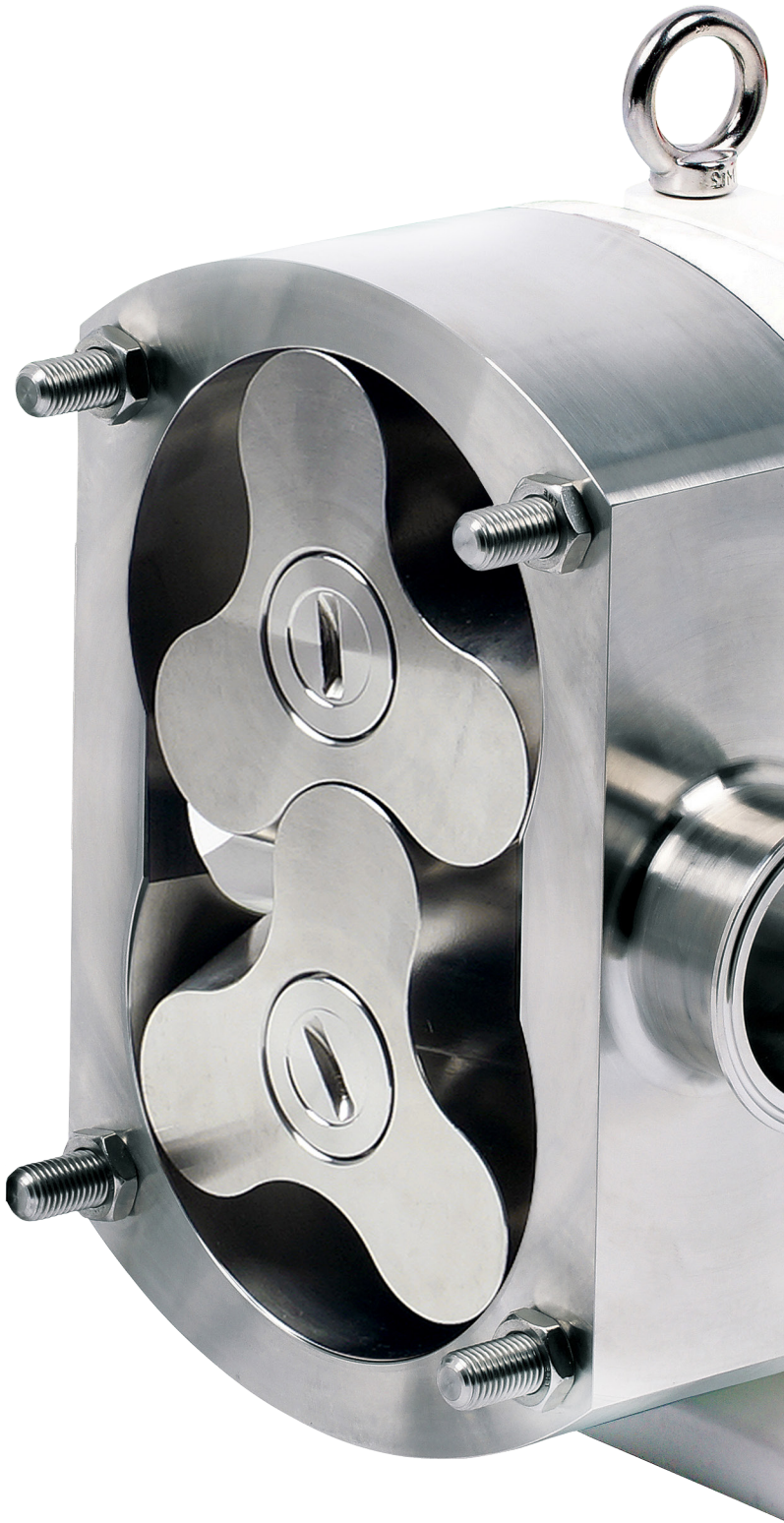
The Packo ZL560 is probably the biggest cheese curd pump made to gently handle the product without damaging the curd particles.

✓ Transfer of wine

The ZW pump is executed with PE rotors to prevent galling from grape skins, seeds and stem.

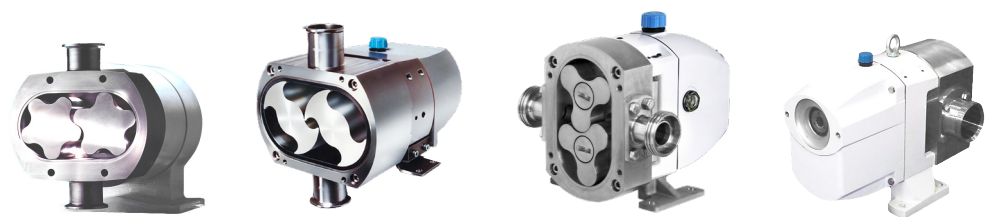






ZL560
Cheese curd pump
12 l/rev
4
0,6



PACKO ROTARY LOBE PUMPS

PACKO's range of rotary lobe pumps includes a variety of types and models, each representing the state of the art in its specific application. The pumps are available in a wide variety to suit your specific application. PACKO rotary lobe pumps are a valuable addition to the existing PACKO pump program because of their balanced seal assembly and the strong shaft construction. They are the preferred solution for applications with pressures over 12 bar.

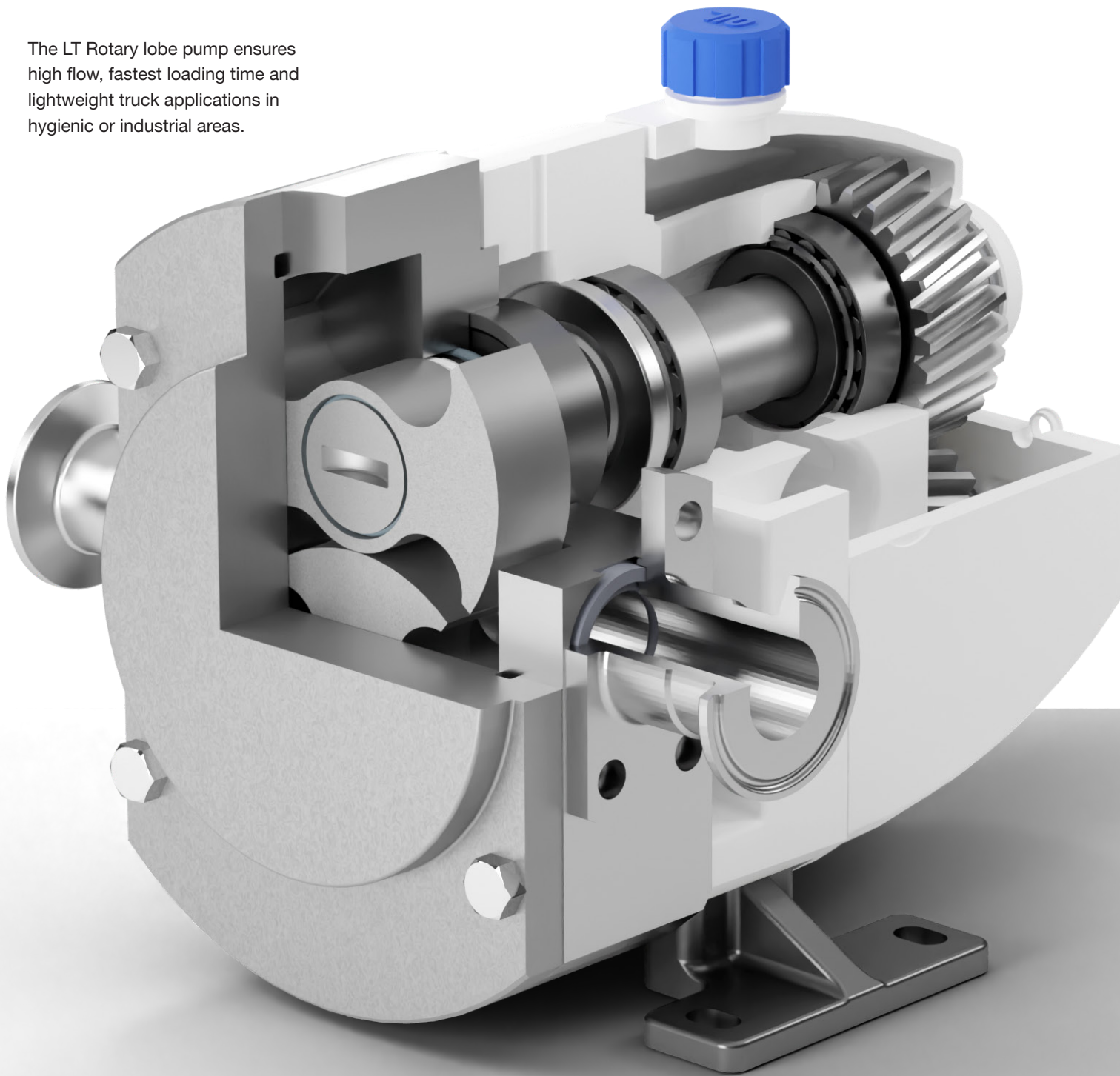


	55	ULTIMA	HP	LT
Concept	Rotary lobe- ultra clean	Rotary lobe - heavy duty	Rotary lobe - Bi-wing	Rotary lobe - tanker
Max. flow [m³/h]	44	44	131	41
Max. discharge pressure [bar]	20	15	15	15
Internal surface roughness [µm]*	< 0,5	< 0,5	< 0,8	< 0,8
Certifications*				

* highest possible levels

✓ Truck unloading

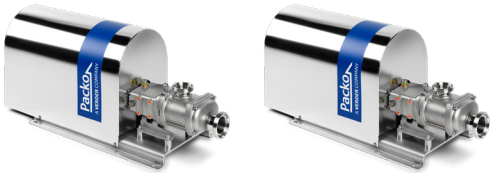
The LT Rotary lobe pump ensures high flow, fastest loading time and lightweight truck applications in hygienic or industrial areas.





PACKO TWIN SCREW PUMPS

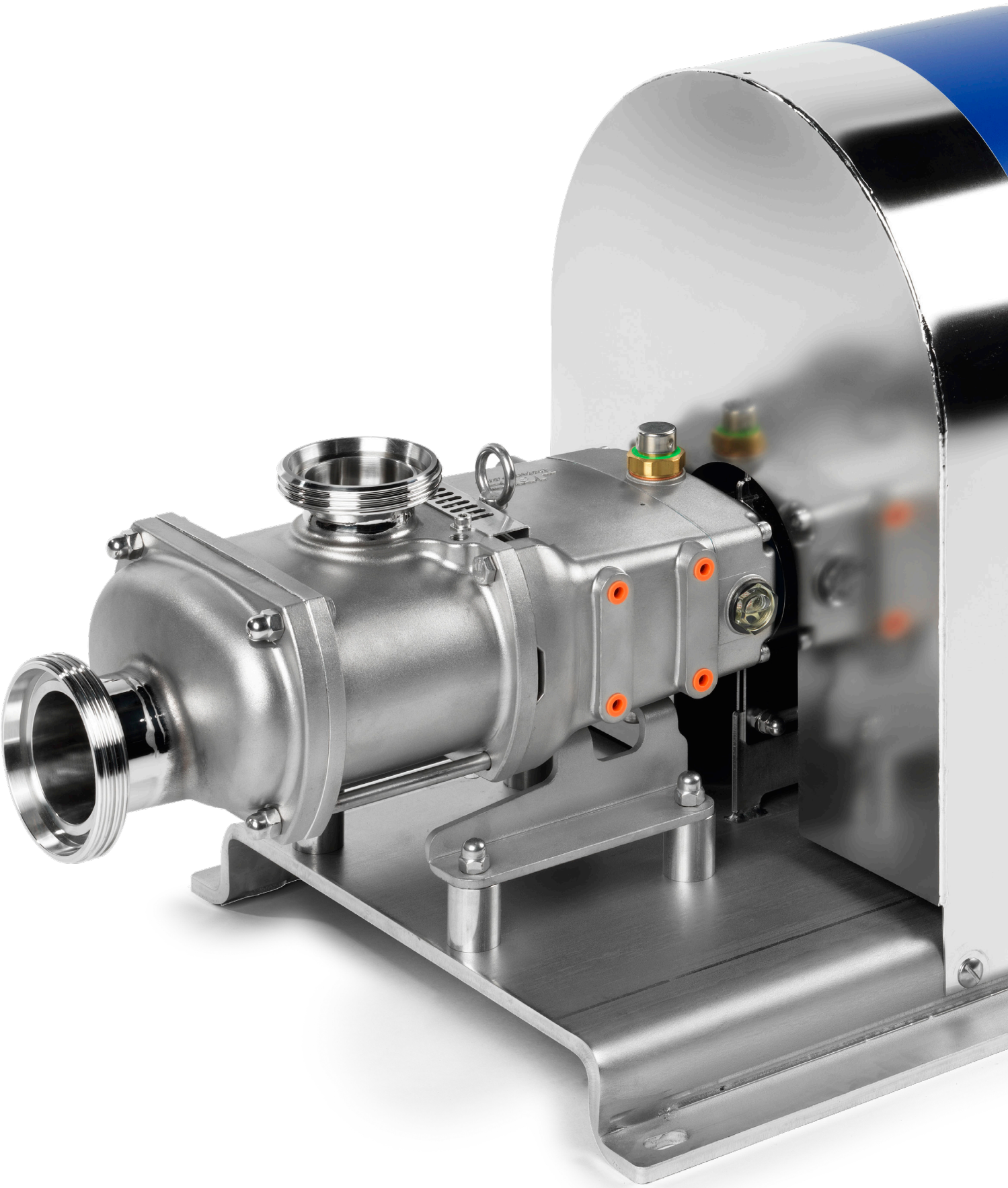
All advantages of rotary lobe pumps and centrifugal pumps are combined in the PACKO Twin screw series. This two-in-one operation pump series is excellent for pumping not only high-viscous liquids and pastes but also the thin-liquid cleaning fluids that are used for CIP cleaning. The pumps provide a pulsation free flow for gentle operation.

The PACKO Twin screw series offers highest flexibility, the hygiene standard is unmatched in this product area. The ZS sets the standard, the use of stainless steel in combination with optimally shaped and easy to clean surfaces is a huge benefit in any modern food production. The inner values are polished surfaces with a quality of <Ra 0.6µm. Smooth transitions and large curves prevent product build-up and simplify cleaning and sterilization, in addition, better product handling is achieved.



	ZS	ZSC
Concept	Twin screw	Twin screw pharma
Max. flow [m³/h]	100	100
Max. discharge pressure [bar]	12	12
Internal surface roughness [µm]*	0,6	0,4
Certifications*		

* highest possible levels



PACKO SHEAR AND MIX PUMPS & MIXERS













The shear mix pump range consists of a high shear mixer with a patented stator for high flow and pressure and a homogenizer shear mixer for the dispersion of higher viscosities which can also be executed as a full unit. These shear mixers have the highest efficiency on the market, offering energy savings. The range is complemented with static and dynamic mixers. Shear mixer pumps and static mixers are mainly used for in-line mixing, homogenizing and dispersing.

Shear mixer pumps and static mixers are the best choice when the fluids to be mixed have:

- a large difference in specific gravity
- a large different viscosity
- a difficult mixing match

This series is also perfect for dispersing of solids in liquids and gas in liquids.



PACKO Shear	SFP	JSB	Verdermix VSM	Colloid mill CM
Concept	Shear mixer	Homogenization mixer	Static mixer	Grinding & mixing
Max. flow [m³/h]	200	60	-	15
Differential head [mwc]	55	70	-	35
Internal surface roughness [µm]*	3,2	1,6	-	3,2
Certifications*	  	  	  	  

* highest possible levels

PACKO DEDICATED PUMPS

The PACKO dedicated centrifugal pumps are developed and engineered for specific applications. It is an application dedicated pump series for:



Filtration

The FPP pump with high inlet pressure or the FMS multi-stage pump when a high outlet pressure is required.



Animal feed proces













The MWP pump which is a duplex pump with higher resistance against abrasive fluids.



Hydro transfer

The VPCP pump, a high flow pump, with the guaranteed lowest product damage on the market for the transport of e.g. vegetables such as potatoes and shellfish like mussels and prawns.



PACKO dedicated	FMS	FPP	MWP	VPCP
Concept	Multi stage	High inlet pressure	Abrasive resistant	Product pump
Max. flow [m³/h]	50	200	55	1000
Differential head [mwc]	160	70	60	20
Internal surface roughness [µm]*	3,2	3,2	3,2	3,2
Certifications*	  	  	  	  

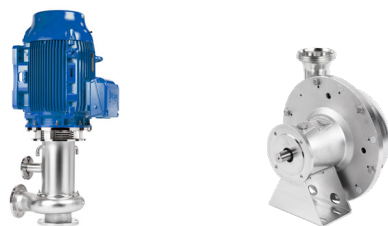
* highest possible levels







✓ Non-sealable liquids

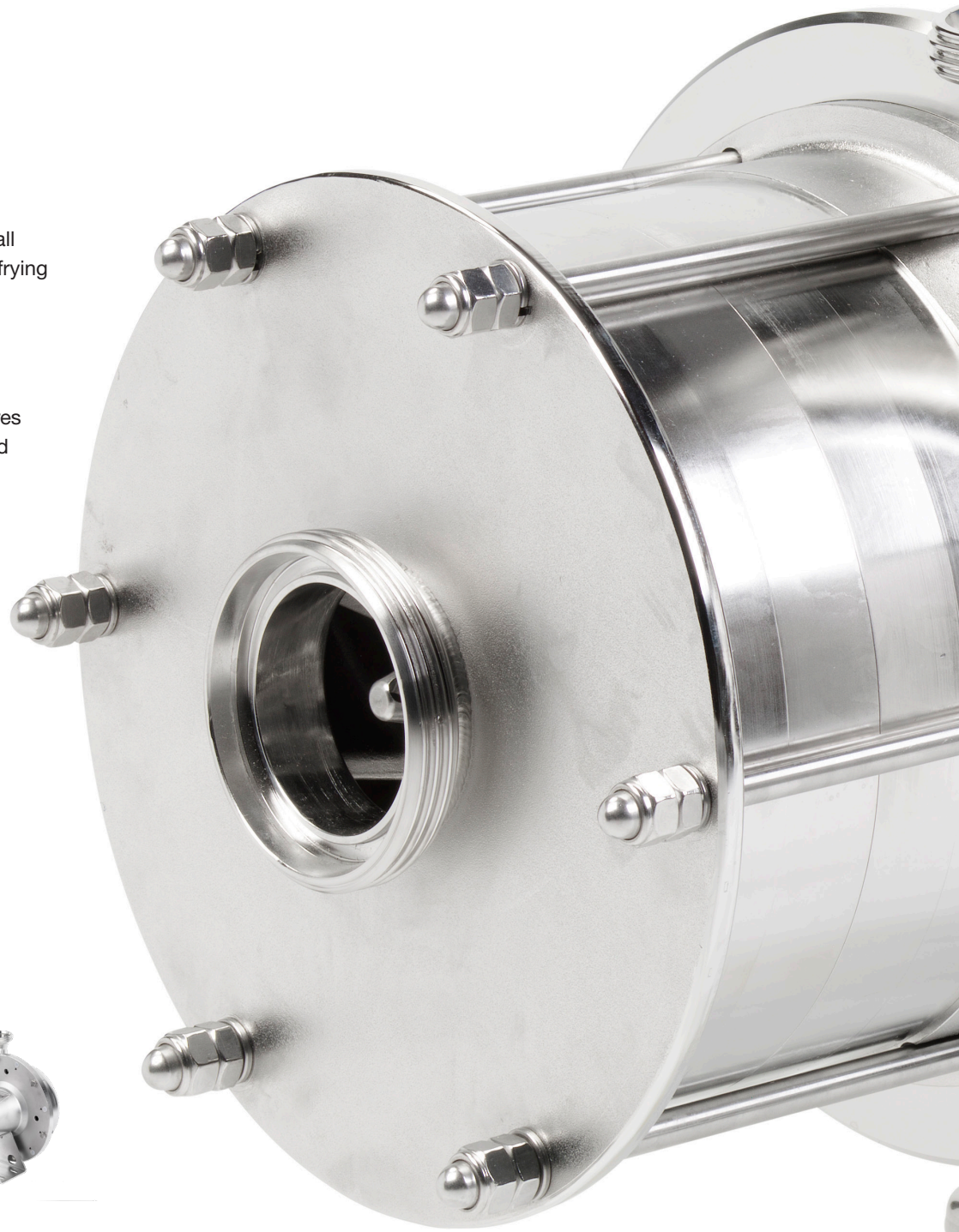
The IM cantilever pump handles all non-sealable liquids such as hot frying oil with care.

✓ Truck unloading

The RMO centrifugal pump ensures high flow, fastest loading time and lightweight truck applications in hygienic or industrial areas.



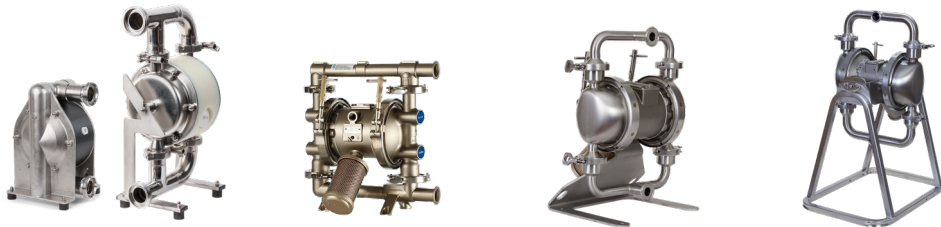
IM(X)L & IMO	RMO
Cantilever	Truck unloading
800	250
60	30
3,2	3,2
  	  







VERDERAIR HI-CLEAN HYGIENIC DIAPHRAGM PUMPS

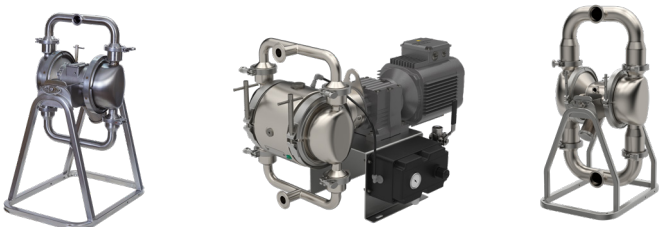
The VERDERAIR HI-CLEAN pumps are designed for operation in food, beverage and pharma applications. The series consist of hygienic air operated (AODD) and electrically driven (EODD) operated diaphragm and air operated piston pumps. When compressed air is not available, a unique electrically driven series is available EODD), with all benefits of the normal AODD series, including automatic stalling against a closed discharge line! As a second advantage the pump can run in low pulsation mode.




The single piece manifold reduces clamps and areas for food or bacteria to hide. HI-CLEAN pumps come with an externally serviceable air valve. Due to the rotatable stand the pump can rotate 360 degrees for quick draining and servicing of the pump.



	HC-PURE	FDA serie	Hi-Clean	Hi-Clean
	High hygienic series	FDA series	Sanitary ball series	Pharma series
Max. flow [l/min]	650	606	870	870
Max. discharge pressure [bar]	7	8	8	8
Max. solids particles [mm]	10	6,3	19	19
Internal surface roughness [µm]	< 0,8	3,2	0,8	0,5
Certification				

✓ All series
(except HC-PURE)
also available as
electrically
driven model

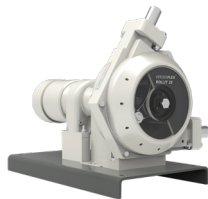





Hi-Clean	Hi-Clean	Hi-Clean
3A certified	Electrically driven	Sanitary Flapper
870	378	340
8	7	8
19	96,5	96,5
0,8	0,8	0,8
		

VERDERFLEX HYGIENIC PERISTALTIC PUMPS

VERDERFLEX peristaltic pumps are manufactured in ISO 9001, ISO 14001 and ISO 18001 accredited facilities in Germany and the UK. VERDERFLEX pumps are used for precise, gentle, aseptic transfer of shear sensitive cultures, nutrient dosing, inter-reactor transfer using USP VI rated tubing.

The Vantage 5000 combines precision dosing with advanced compliance assistance including time stamped record keeping, security from USB backed up settings and records and reassurance of real time feedback and control to master controllers and PLCs. It is a perfect solution for precise and controlled single or batch inline dosing/filling applications. The Rollit hose pumps are lubrication-free. This gives advantages in food and pharma applications because there is no contamination possible; even extending to our new Rollit Thru which gives the option of larger bore continuous tubing in this range of pumps allowing end-to-end process control.



	Vantage 5000	Rapide	Rollit	Rollit Thru
Concept	Advanced dosing/metering system	Compact transfer	High flow	Single use tube batch production
Max. flow	6,600 ml/min	17 l/min	6,9 m³/h	125 (l/h)
Max. discharge pressure [bar]	7	2	2	1-2
Functions	<ul style="list-style-type: none">Record keepingDigital communicationAnalog feedback and control	Basic transfer at set speed	Can be inverter controlled	<ul style="list-style-type: none">Single use tubing4 position pump head
Food or pharma graded tubing and hoses*	<ul style="list-style-type: none">Platinum cured SiliconeVerderprene	<ul style="list-style-type: none">Platinum cured SiliconeVerderprene	Verderprene	<ul style="list-style-type: none">Platinum cured SiliconeVerderprene
Certifications				-

*interchangeable with most other tubing brands

✓ High accuracy

The peristaltic range gives the options of easy batch tube change, minimum maintenance, and with the Vantage 5000 up to +/- 1% accuracy on a fully controlled dose/metering or transfer application for Single Use Tubing.

✓ Interchangeable tubing

Our tubing is interchangeable with all other major tubing suppliers as long as the ID/OD and properties are similar.





VERDER LIQUIDS

The leading pump manufacturer

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VERDER

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