



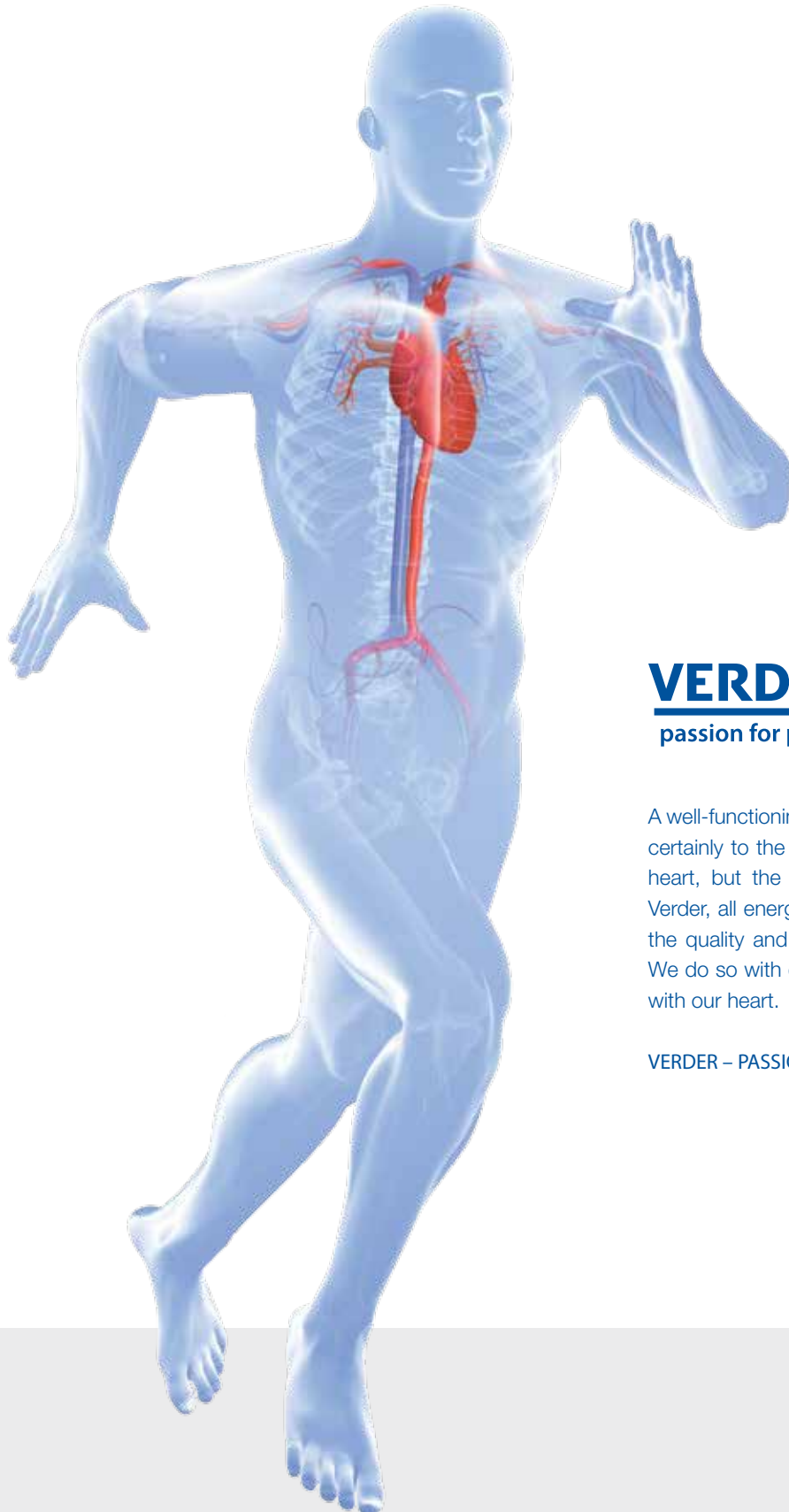
VERDERLOBE **PRODUCT OVERVIEW**

Rotary lobe and circumferential piston pumps *by Wright Flow Technologies*



Benefits

- *Meets all cleanability processes*
- *Extended and improved pump life*
- *Ease of maintenance*



VERDER passion for pumps

A well-functioning pump helps you succeed. That applies certainly to the most important pump in life, the human heart, but the same goes for pumps in business. At Verder, all energy and attention is focused on improving the quality and performance of our pump and service. We do so with energy, dedication and most importantly, with our heart.

VERDER – PASSION FOR PUMPS



THE VERDER GROUP

- 1 Company
- 27 Countries
- 55 Years of expertise
- Global network
- Local distributors
- In-house service & maintenance
- A solution for every application

The Verder group is a family owned business formed over 55 years ago in the Netherlands; the group consists of a worldwide network of production and distribution companies. Group companies are involved in the development and distribution of industrial pumps, pumping systems, high-tech equipment for quality control, research and development into solid material (solids sample preparation and analytical technologies). The Verder Group employs over 1600 people and has an annual turnover in excess of 380 million Euros.

Verderlobe rotary lobe and circumferential pumps made by Wrightflow, are a part of the successful Verder pump program.

Verderlobe rotary lobe and circumferential piston pumps

Verderlobe pumps are used in a wide range of industries. Ideally suited to both hygienic and industrial applications from food, beverage, dairy, pharmaceutical or personal care.

Due to the EHEDG certification and the CIP capability the Verderlobe pumps are often used as a reliable pump in the biotechnology for e.g. feeding ultra-filtration processes or sterile filling application. In the food industry the Verderlobe pumps with special chocolate clearance are used for enrobing sweets or biscuits with chocolate. Also for pumping shampoo and shower gel from the storage tank to the production line Verderlobe pumps are used in the personal care industry.

VERDERLOBE ROTARY LOBE PUMPS AND CIRCUMFERENTIAL PISTON PUMPS

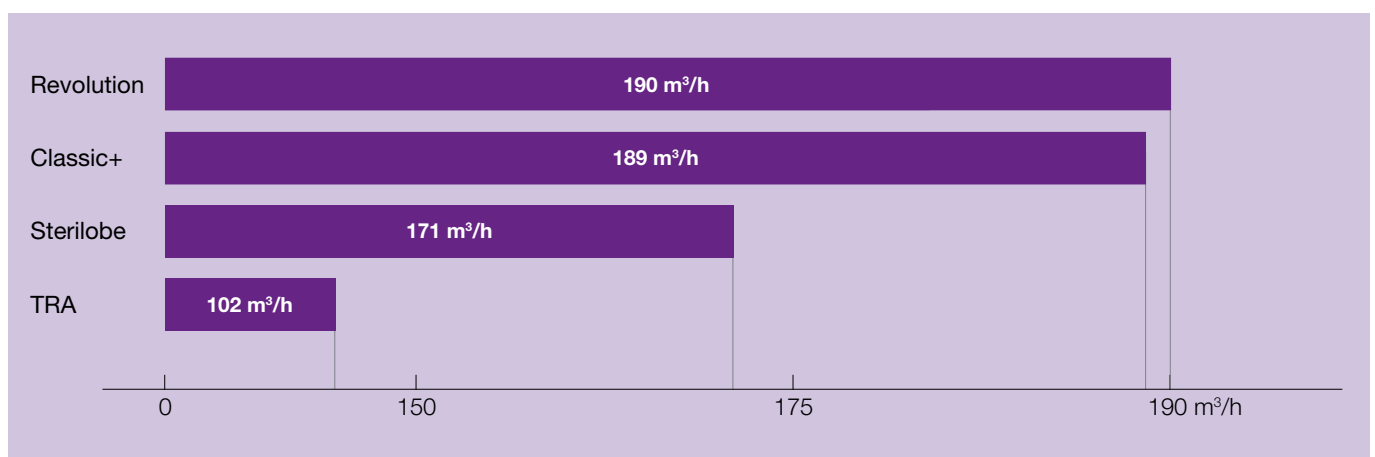
Widely used in hygienic process industries, Verderlobe pumps offer smooth low pulse pumping action for the transfer of both viscous and non-viscous fluids and shear sensitive media. Hygienic surface finishes, the self-draining capabilities, FDA conforming materials and specially designed hygienic sealing devices are all common features of Verderlobe pumps.



Verderlobe characteristics

- High quality materials
- Surface quality of up to 0.4 $\mu\text{m Ra}$
- Various sealing options
- Rotor clearance according to application
- Certified according to ATEX and EHEDG
- 3A and FDA compliant

Verderlobe Performance Overview

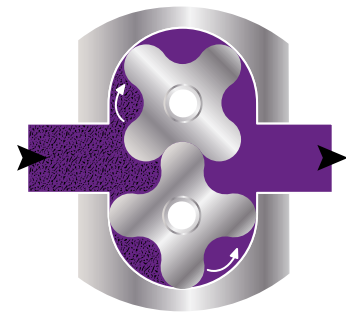




How does a **lobe pump** work?

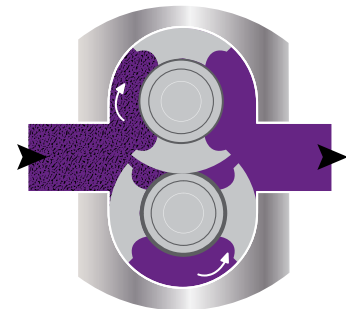
Rotary lobe pump

In a rotary lobe pump the inlet pressure transfers the fluid into the void created by the diverging rotor lobes. As the lobes continue to rotate, liquid is trapped within the cavity between the lobes and transported to the discharge side of the pump. The converging lobes displaces fluid into the discharge port creating a pressure differential across the pump head. The fluid is carried between rotor lobe surfaces from inlet to outlet. The rotor surfaces cooperate to provide continuous sealing.



Circumferential piston pump

Circumferential piston pumps utilise twin or single wing rotors. Manufactured in a special non galling alloy they enable the pump to run with close clearances to optimise efficiency. They can achieve relatively high pressures and are very efficient, even on low viscosity fluids. The circumferential piston pump operates on a similar principle as the rotary lobe pump. The arc shaped rotor wings travel in annular cylinders within the pump head, transporting product from the inlet to the discharge port. The fluid is carried from inlet to outlet in spaces between piston surfaces. There are no sealing contacts between rotor surfaces.



What are **your benefits** using a Verderlobe pump?

The core benefits of using a Verderlobe pump are the perfect cleaning capabilities, the ease of maintenance and the extended life time thanks to the improved construction. Verderlobe pumps mean reliable and safe pumping of food and pharma related fluids.

Meets all cleanability processes

- Self draining pump head
- Innovative sealing design with no dead zones
- Modular pump design for easy disassembly for COP (Clean out of place) and CIP (Clean in place)
- Interior surface finish up to 0.4 μm
- Casing profile cusps maximize efficiency and draining capability

Extended and improved pump life

- Timed non-contacting rotors minimize shear while providing extended run-dry capability
- Helical timing gears provide high torque and quieter operation for extended pump life
- Tapered roller bearings provide higher operating speed and better discharge pressures
- Improved volumetric efficiency in low and high viscosity applications

Ease of maintenance

- Fast front loaded seal change while pump is still in-line
- Easy front access shimming for setting rotor clearance
- Removable foot for easier placement

THE VERDERLOBE PROGRAM

An overview

Verderlobe pumps by Wright Flow Technologies deliver pumping solutions across a wide range of viscosities. From gentle action on shear sensitive liquids, or slurries with soft solids, to demanding abrasive media, Wright Flow pumps get the job done.



Verderlobe Classic+

The compact allrounder

- Vertical and horizontal
- Self draining
- CIP-capable
- FDA, 3A, ATEX certified

Flow max.	189 m ³ /h	Pressure max.	12 bar
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Verderlobe Sterilobe

Best for hygienic applications

- Seal change from the front
- Improved CIP properties and self-draining
- EHEDG, FDA, 3A, ATEX certified

Flow max.	171 m ³ /h	Pressure max.	15 bar
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Verderlobe TRA

Very robust performer

- Seals made of SiC / SiC
- Powder coated gearbox housing
- One-piece shaft for long lifespan
- 3A, FDA, ATEX certified

Flow max.	102 m ³ /h	Pressure max.	34 bar
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Verderlobe Revolution

Perfect for any application

- Hybrid: rotary lobe or circumferential piston pump
- Outstanding CIP / SIP capabilities
- Sealing change from the front
- EHEDG, FDA, 3A, ATEX certified

Flow max.	190 m ³ /h	Pressure max.	31 bar
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VERDERLOBE **CLASSIC+**

The compact allrounder



The Classic+ series combines an established construction method with new, innovative features. The pumps are perfect for demanding tasks both in continuous conveying processes and in intermittent operations.

Features of the Verderlobe Classic+

- Tri-lobe or multi-lobe rotor form
- Vertical and horizontal mounting
- Self-draining possibility
- Low shear
- CIP-capable
- ATEX certified, FDA and 3A compliant





Versatile and reliable

For temperature sensitive applications the pumps can be equipped with heating or cooling jackets at the rotor housing and/or at the front cover. For protection of the pump an optional spring or pneumatic safety air valve is available pneumatically, which protects the pump from overpressure. This option is available for automatic CIP processes with compressed air operation. The Classic+ pumps can be mounted vertically or horizontally.

Characteristics

- Standard 0,8 µm Ra surface quality, higher surface finishing possible
- Mechanical seals and O-rings in various designs
- Optional: seals made of perfluoroelastomer (Isolast or Kalrez)
- Optional: special drives for demanding and sensitive applications

Technical details

Flow	up to 189 m ³ /h	Viscosity	up to 200,000 mPas
Pressure	max. 12 bar	Temperature	max. 180 °C





VERDERLOBE STERILLOBE
Best for hygienic applications



The Sterilobe rotary lobe pumps are specially designed and developed for the high demands of the pharmaceutical industry and are excellent suitable for sensitive media.

Seals accessible from the front

The seals of the rotary piston pump are accessible at the front. This simplifies exchange of the seals and keeps replacement times as short as possible. Seals are available in various designs and material configurations.

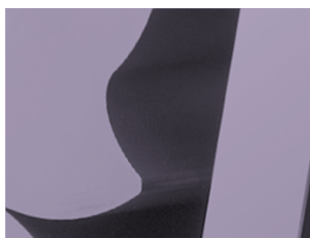
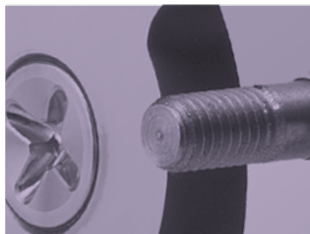
Features of the Verderlobe Sterilobe

- Easy sealing change from the front
- Reduced maintenance time and therefore lower costs
- Clean and corrosion resistant surfaces
- Improved CIP properties and self-draining through optimized housing geometry

Many customization features

Pressure relief valves

All pumps can be equipped with pressure relief valves in the cover. These valves protect the pump and the seals from overload. The spring loaded piston valve is protected against undesired adjustments. The valves can be equipped with a hand wheel for manual operation or with a pneumatic control piston for automatic opening for CIP cleaning.





Temperature control

If required, all pumps can be fitted with heating jackets on the rotor cover and/or rotor housing.

EHEDG and hygienic applications

The pump complies with the EHEDG guidelines and even exceeds these in the critical area of the seals, making the Sterilobe pump an absolute hygienic pump. The inner surface quality corresponds to 0.6 µm Ra, 25% better than usual. This value can also be optimized for certain applications. The motor cover is made of stainless steel. This facilitates cleaning and avoids corrosion.

Rotors

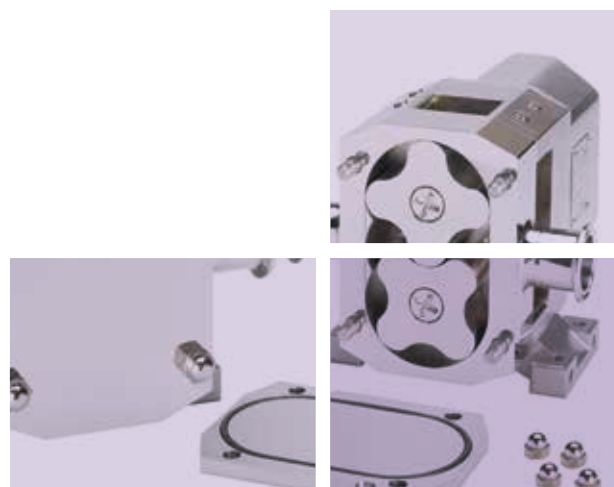
There are two rotor shapes available for the Sterilobe: bi-wing and multi-lobe. Both are for temperatures up to 150°C. The rotors are made of 316L stainless steel, optional also a nickel-containing, temperature-resistant alloy (W808) is available. The bi-wing rotor gives a higher flow rate and is better suited for higher viscosities, the multi-lobe rotor generates a lower pulsed flow and is best suited for shear sensitive media.

Characteristics

- Standard surface finish: 0.6 µm Ra
- Higher surface polishing possible
- FDA and 3A compliant
- Certified according to EHEDG and ATEX
- Mechanical seals and O-rings in various designs

Technical details

Flow	up to 171 m ³ /h	Viscosity	up to 200,000 mPas
Pressure	max. 15 bar	Temperature	max. 150 °C





VERDERLOBE TRA

Very robust performer



The reliability of the circumferential piston pumps is already known for many decades now. Their robust design and the excellent cleaning properties make these pumps excellent appropriate in many areas with high hygienic requirements. The gentle pumping of shear sensitive media or media with soft solids makes circumferential piston pumps the perfect solution for the food and beverage industry and for the cosmetics manufacturing industry.

Features of the Verderlobe TRA

- Single-piece stainless steel shaft and helical synchronized gear wheels for excellent stability and great resistance
- Seals made of SiC/SiC instead of C/SiC
- Powder coated gearbox housing
- The pump housing is screwed tightly to the gearbox housing thus facilitating cleaning and maintenance work





Two models serve all your needs

The TRA10 is designed for easy strip cleaning and is the ideal choice for COP processing environments. The pump casing is independently fastened to the gearbox to prevent damage to the seals when the cover is removed and to allow the rotors to be turned while spraying down the fluid chamber.

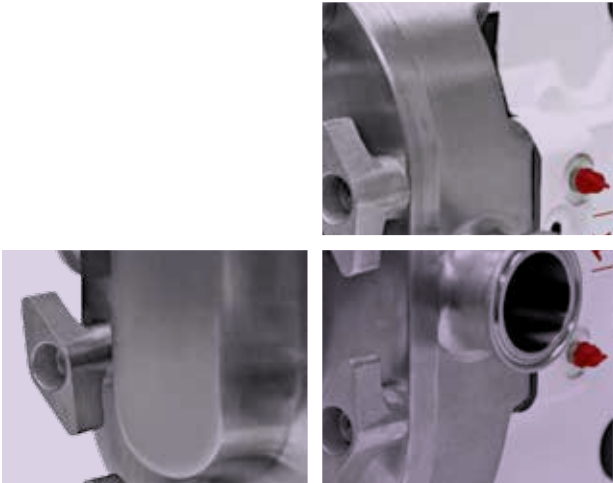
The TRA20 series pumps can be built for CIP processing environments with added options, with internal design to allow vigorous flushing through all internal chambers. A very robust performer, the TRA20 series pumps allow the highest pressure capabilities in the Verderlobe line.

Characteristics

- Standard 0.8 µm Ra surface quality, higher surface finishing possible
- Pump housing in 316 stainless steel
- Wear-free, nickel-based alloy for the rotors
- Can be flexibly positioned in four positions
- Standard: two-bladed rotor
- Optional: single rotor for large solids
- FDA compliant, 3A, ATEX

Technical details

Flow	up to 102 m ³ /h	Viscosity	up to 200,000 mPas
Pressure	max. 34 bar	Temperature	max. 150 °C





VERDERLOBE **REVOLUTION**

Perfect for any application

The Verderlobe Revolution pumps can be executed as a rotary lobe pump or as a circumferential piston pump, according to your needs.

The Revolution is an excellent alternative to other circumferential piston pumps. They allow up to 34% higher flow rates than comparable pumps. Purchase of a Verderlobe Revolution is an investment in innovative technology that pays back in a short time.

Features of the Verderlobe Revolution

- Standard 0.8 μm Ra internal surface finish
- Optional clearances: Front face, hot, high temperature/high viscosity (chocolate)
- Several seal options
- Hygienic port options: Tri-clamp, DIN 11864, DIN 11851 Male, SMS Male
- Industrial port options: ASA/ANSI 150 lb. or 300 lb. RF, DIN 2633, BSP Male, NPT Male
- Certified according to FDA, 3A, EHEDG, ATEX



Longer life time due to helical gears

The helical gears enable an optimal transmission of force, a quieter operation and higher pressure. The life span of helical gears is twice as long compared to conventional ones.

No blockages thanks to short flushing pipe lines

The flushing pipe lines are very short compared to other models. Impurities and blockages on the seals can be effectively prevented.

Quick change of seal

The seals of the Revolution can be changed without removing the pump out of the process line. Saving maintenance time and money!

Technical details

Flow	up to 190 m ³ /h	Viscosity	up to 440,000 mPas
Pressure	max. 31 bar	Temperature	max. 150 °C





VERDERLOBE **REVOLUTION**

Perfect for any application

Highlights of the Revolution

The Verderlobe Revolution is the first hybrid rotary lobe and circumferential piston pump with front loading seals. Performance and redefined ease of maintenance are the result. With its food certifications 3A and EHEDG, and suitability for ATEX environments this pump series is top A class for hygienic applications.

CIP capable circumferential piston pump

The Revolution is the world's only pump that, also in its configuration as a circumferential piston pump, is completely suitable for CIP or SIP cleaning. Cross-contamination and contamination in the medium is effectively prevented and manual cleaning is much easier, saving time and cost!



Rotary lobe rotors for hygienic applications

In the configuration as a rotary lobe pump the Verderlobe Revolution is suitable for high-purity and aseptic processes. The pump is also excellent applicable for shear sensitive media and for self-draining processes.

Circumferential piston rotors for higher pressures

As a circumferential piston pump the Revolution is self-priming and reaches pressures up to 31 bar. The Revolution is the only circumferential piston pump that is unlimited enabled for CIP and SIP. This reduces the cleaning efforts and saves time and money.

Improved power transmission thanks to robust shafts

Compared to the rotary lobe and circumferential piston pumps of other manufacturers, the shaft of the Revolution pump has a larger diameter. A reinforced impeller and the reinforced bearings result in a longer life time and a better power transmission. This reduces maintenance and repair costs and ensures a higher reliability.

Mechanical seals of the Revolution

- Seals without dead spots: no cross-contamination.
- Accessible from the front: quick and easy change without removing the pump out of the process line.
- Internal seals have a longer life time than external seals.

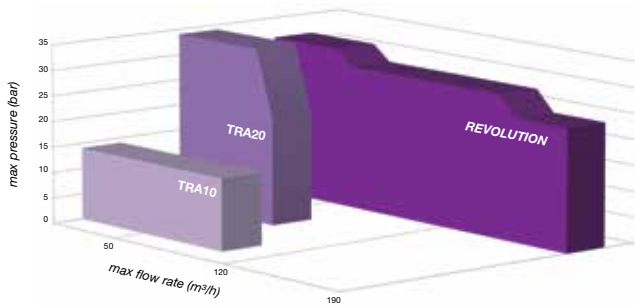


Preventive maintenance kits ensure trouble free operation and superior performance.

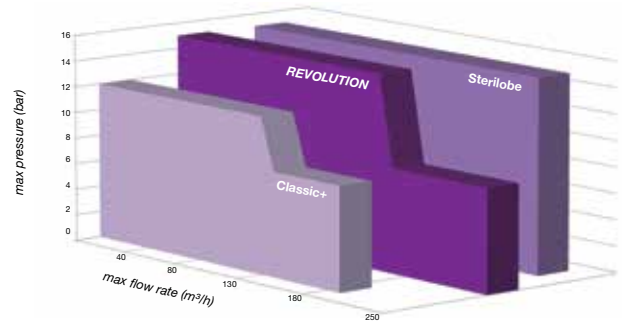


VERDERLOBE OVERVIEW

Pump range comparison



Flow range comparison circumferential piston pumps vs Revolution



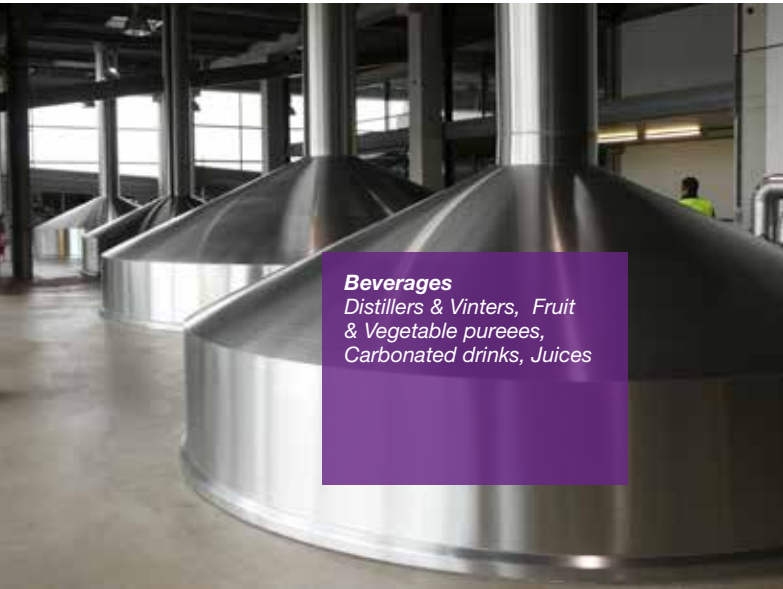
Flow range comparison rotary lobe pumps vs Revolution

When to use which pump principle

Application	Rotary lobe pumps	Circumferential piston pumps	Hybrid pump Revolution
CIP / SIP processes	++	-	++
Aseptic processes	++	-	++
Self-emptying required	++	+	++
Confined space conditions	+	+	+
Low downtime	++	-	++
Hygienic applications	++	-	++
Shear sensitive media	++	++	++
Self-priming applications	+	+	+
Strip clean cleaning	-	++	+
Pressure > 30 bar	-	+	+
Media with solids	-	+	+
Thin liquid media	-	+	+
Material certificates required	++	+	++

(- not suitable, + suitable, ++ well suitable)

VERDERLOBE: A **PUMP SOLUTION** FOR EVERY APPLICATION



Beverages
Distillers & Vinters, Fruit & Vegetable pureees, Carbonated drinks, Juices



Pharmaceutical
Medicinal chemicals, Creams & ointments, Syrops, Injectables, Ultra-filtration, Blood & plasma processing



Chemical
Raw ingredients, Chemical transfer, Solvent recovery.



Dairy
Butter, Cheese, Cream, Milk, Yogurt, Yogurt Fruits



Food
Baby food, Edible oils, Soft fruits & vegetables, Soups & sauces, Egg, Fish, Meat, Poultry, Whey proteins, Confectionary, Petfood



Personal care
Skin care products, Toothpastes, Cosmetics, Shower & shaving liquids, Hair care products



*Any questions? Visit our website
www.verderliquids.com.*



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