

VERDERLOBE PRODUCT **OVERVIEW**

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





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 26 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, and 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.

Among the most successful of Verder's technologies is its innovative Verderlobe, Rotary Lobe pump range.

What is a lobe pump & why use one?

The advantages of working with Verder

Expertise

With over 55 years experience providing innovative pumping solutions, Verder has the expertise and knowledge to supply the most appropriate pumping technical solution.

Partnership

The Verder Group has developed a vast, complimentary network of over 25 group companies and 40 experienced distribution partners with a presence in almost every corner of the world. With such worldwide affiliations, Verder is able to support its products internationally.

VERDERLOBE Rotary lobe Pumps The Verderlobe pumps can be divided into two different types. One is the Rotary Lobe Pump the other one is the Circumferential Piston 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.

The Circumferential Piston Pump operates on a similar principle. 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.

Widely used in hygienic process industries, Verderlobe pumps offer smooth low pulse pumping action for the transfer of both viscous and non-viscous fluids. Fine surface finishes, the self-draining capabilities, FDA conforming materials and specially designed hygienic sealing devices are all common features of Verderlobe pumps. Also EHEDG certifications are available for some Rotary Lobe pumps.

Rotary Lobe pumps have superior hygienic characteristics and can be very easily Cleaned in Place (CIP). Each pump and rotor type has specific advantages depending on the liquid being pumped and the requirements of the application. 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.

Where to use a lobe pump?

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



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The Verderlobe program

Verderlobe pumps by Wright Flow Technologies deliver 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.

Characteristics Verderlobe • Great flexibility • High quality materials • Various sealing options • Media - touched components made of high quality stainless steel • Configurable gap dimensions according to application • Quick and easy to clean • Robust and reliable for long operating times • Surface quality of up to 0.4 μm Ra • Certified according to ATEX and EHEDG • 3A and FDA compliant



Rotary lobe pump Verderlobe Classic+

- Vertical and horizontal
- Self draining
- Reversible rotation direction
- CIP-capable
- Certified according to FDA, 3A, ATEX





Rotary lobe pump Verderlobe Sterilobe

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





Circumferential piston pump Verderlobe TRA

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

Hybrid pump Verderlobe Revolution

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



Rotary lobe pump Verderlobe Classic+

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.

Advantages of Verderlobe Classic+

Tri-Lobe or Multi-Lobe Rotor form
 Vertical and horizontal mounting

 Self-draining possibility
 Low shear
 Reversible rotation direction
 CIP-capable

 ATEX certified, FDA and 3A compliant

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

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.

Easy to use cartridges

The cartridges allow a simple and fast maintenance. The rotating shaft seal area is separated from the medium, thus enabling a better operation and a simple assembly and maintenance. They are available as single-acting, rinsed or double-acting sealing configurations.

Technical details

Flow range	up to 189 m³/h
Pressure	max 12 bar
Viscosity	up to 200,000 cSt
Temperature	max 180 °C





Rotary lobe pump Verderlobe Sterilobe

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. The seals are easily accessible from the front and are therefore fast and easy to exchange.

Advantages of 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

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

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.

Many customization features

Pressure relief valves

All pumps up to a flow rate of 171 m³/h 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. These are designed not to influence the temperature of the liquid during the pumping process.

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 μ m 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.





VERDERLOBE Circumferential piston Pumps

Advantages of Verderlobe TRA

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

Circumferential piston pump Verderlobe TRA

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.

Characteristics

- Pump housing in 316 stainless steel
- Wear-free, nickel-based alloy for the rotors
- Can be flexibly positioned in four positions
- FDA compliant, 3A, ATEX
- Standard: Two-bladed rotor
- Optional: single rotor for large solids

Two models

There are two models available to serve all your needs.

TRA10 Circumferential piston pumps

Designed for easy strip cleaning, the TRA10 series 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.

TRA20 Circumferential piston pumps

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.

Technical details

Flow range	up to 102 m³/h
Pressure	max 34 bar
Viscosity	up to 200,000 cSt
Temperature	max 150 °C





Advantages of Verderlobe Revolution

Excellent CIP / SIP capabilities
All seals are accessible from the front and can be replaced or serviced quickly
Self-emptying pump head without dead spots: less product loss
Identical rotor housing and identical seals for the selected size enable a simple
"one change" from a rotary lobe pump to a circumferential piston pump
Ideal for solids containing media
Significant cost savings thanks to longer service life and lower maintenance costs

Hybrid pump Verderlobe Revolution

The new revolutionary Revolution pumps can be executed as a rotary lobe pump or as a circumferential piston pump, according to your wishes. The pumps are available in seven sizes. With each size a specific flow range can be achieved; in total 35 different displacement volumes can be reached (max 190 m³/h); the maximum pressure is 31 bar.

The revolution is also an excellent alternative for the circumferential piston pumps of Waukesha; comparable sizes of Verderlobe allow up to 34 % higher flow rates than Waukesha. Purchase of a Revolution is an investment in innovative technology that pays back in a short time.

Characteristics

- Standard 32 RA internal surface finish
- Optional clearances: Front face, hot, high temperature/high viscosity (chocolate)
- Hygienic port options: Tri-clamp, DIN 11864, DIN 11851 Male, SMS Male
- Certified according to FDA, 3A, EHEDG, ATEX
- Industrial port options: ASA/ANSI 150 lb. or 300 lb. RF, DIN 2633, BSP Male, NPT Male
- Several seal options

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, also when demanding, high viscous media are pumped. This reduces maintenance and repair costs and ensures a higher reliability.

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.

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!

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!





Highlights of the Revolution

The Revolution is the first hybrid rotary lobe & circumferential piston pump with front loading seals. Performance & 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.



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 revolutionary 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.

Robust shaft for long life

Compared to the rotary lobe and circumferential piston pumps from other manufacturers the shafts of the Revolution have a significantly larger diameter. Resulting in a stronger shaft and a correspondingly reinforced bearing, which allow a longer life time and improved power transmission, even when pumping demanding, highly viscous media. Reduction of maintenance and repair costs and a longer service life.

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.











Application areas

Aromas Butter Chemicals Emulsions Glucose Resins Yogurt Adhesives Body care products Solvent Oils Acids Soap

Flow range comparison rotary lobe pumps vs Revolution



Application areas

Carpaint Baby food Fat Cream cheese Fruit filling Fruit juice concentrate Gelatin Cocoa butter Mash Shampoo Ink Toothpaste

Flow range comparison circumferential piston pumps vs Revolution



When to use which pump principle

Application	Rotary lobe pumps	Circumferential piston pumps	Hybrid pump Revolution
CIP / SIP processes	++	х	++
Aseptic processes	++	х	++
Self-emptying required	++	+	++
Confined space conditions	+	+	+
Low downtime	++	Х	++
Hygienic applications	++	х	++
Shear sensitive media	++	++	++
Self-priming applications	+	+	+
Strip Clean Cleaning	Х	++	+
Pressure > 30 bar	Х	+	+
Applications with solid materials	х	+	+
Thin liquid media	х	+	+
Material certificates required	++	+	++

Preventive Maintenance Kits

Ensure trouble free operation & superior performance

Seal face kit

Includes:

- Seal faces
- Seal seats
- Wave springs
- Packing
- Lubricant

Bearing kit

Includes:

- Front bearings
- Rear bearings
- Grease seals
- Oil seals
- Shim kits
- Gear keys
- Gear locknuts & washers
- Spacers

Elastomer kit

Includes:

- Sealing O-rings
- Cover O-rings
- Rotor, retainer / shaft O-rings
- Lubricant



Advantages of maintenance kits:

- Everything you need in one place
- Reduce frequency of repairs
- Increase service life
- Increase uptime
- Save time and money
- Kits incl. exploded diagram and parts list





Applications Verderlobe pumps

Verder has a broad pumping program and will always find a solution for your pumping problem. With our skilled engineers, our well trained technicians and our (after) sales support you will have the best pump for your process.

To mention only a few of our application areas we have taken some industries to highligh but there are applications in many industries.



Dairy

- Butter
- Cheese
- Cream
- Milk
- Yogurt
- Yogurt Fruits

Beverages

- Distillers & Vinters
- Fruit & Vegetable Pureees
- Carbonated Drinks
- Juices

Personal care

- Skin Care products
- Toothpastes
- Cosmetics
- Shower & shaving liquids
- Hair Care products

Chemical

- Raw ingredients
- Chemical transfer
- Solvent recovery

Food

- Baby food
- Edibe oils
- Soft fruits & vegetables
- Soups & sauces
- Egg
- Fish
- Meat
- Poultry
- Whey proteins
- Confectionary
- Petfood

Pharmaceutical

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









Verder service

Verderlobe pumps are designed and engineered to create long working life. However, as with all industrial process equipment working, parts in contact with the fluid will sooner or later need to be replaced. Verder can advise on the spare part kits to keep on stock for the number of pumps you have purchased. Verderair offers several spare part kits for wetted parts exposed to natural wear.

Our fast delivery ensures your production process will be operational. To order spare parts immediately send an email to info@verder.com



Contact Verderlobe

If you would like to know more about Verderlobe lobe pumps made by Wrightflow 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.

You can also find your local supplier at www.verderliquids.com Email: info@verder.com

To provide you with the best possible service all Verder pumps are supported by a distribution network that covers all five continents and is continuing to expand. Our group of distributors includes members of the Verder Group and experienced independent companies. Our worldwide distribution network also help to provide our customers local support and spares availability.



If you would like to know more about Verderlobe 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.

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