



DEMAND-BASED PUMPING TECHNOLOGY

Vogelsang rotary lobe pumps
for the oil, petrochemical and
chemical industries





YOU CAN RELY ON IT

**Quality, experience and
expertise guarantee
future-proof technology**

As the inventor of the elastomer-coated rotary lobe pump and a relentless agent for innovation, Vogelsang has ranked among the world's leading mechanical engineering companies in the area of pumping and cutting technology for decades.

Especially regarding critical industries such as the petrol and chemical branches, where the safety of people and the environment undoubtedly come first, reliably running, robust machines are essential. Based on our extensive and varied experience, as well as our continuous research, we develop highly functional components and systems, which ensure long-term trouble-free operation as well as the necessary safe handling.

Both the production process and the quality of materials we use, speak for how seriously we take our commitment to our customers. The adaptability and versatility of our machines provide a substantial base for economic efficiency and enable industrial companies to combine success with sustainability.

COMPLETE SOLUTIONS FOR A STEADY WORKFLOW

Vogelsang rotary lobe pump applications in the oil and petrochemical industries

Vogelsang rotary lobe pumps excel wherever they are implemented, especially when processing heavy oils and other media containing an extremely high solids content. Their compact design helps satisfy the stringent requirements of the mineral oil and petrochemical industry.



Industrial ports

Tank farms are located in ports with tanks containing fuel oil, vegetable oil, diesel, biodiesel or even chemicals. Thanks to their flexibility, Vogelsang pumps can be used for loading a wide range of viscous fluids with high efficiency and a large flow rate onto ships. As Vogelsang pumps are reversible, they can be used for both filling and emptying the tanks.



MBR for refineries

The reuse of water from industrial and refinery processes is becoming increasingly common. For this purpose, ultrafiltration membranes are used. Vogelsang rotary lobe pumps can be used for the permeate and backwash cycle thanks to their bidirectional ability.



Road tankers

Tank vehicles require compact, maintenance-friendly and high-capacity pumps that can be installed in the tightest of spaces. In this respect, Vogelsang pumps are ideal for mobile applications. The reversible direction of flow enables the tank to be loaded and unloaded with a single pump.



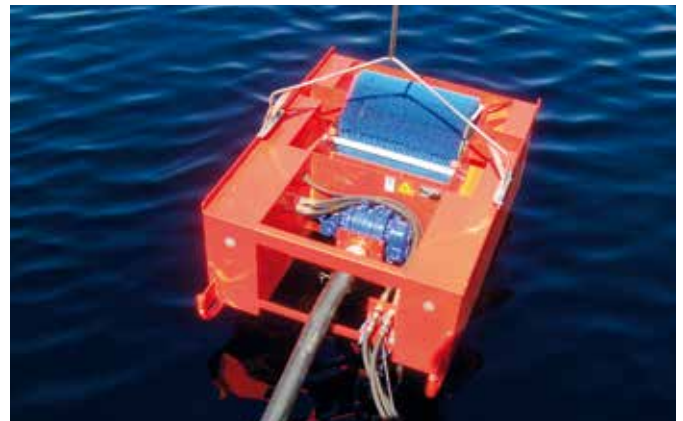
Loading/unloading oil depot tanks

Filling oil depot tanks can be a tricky application. The trains or trucks need to be completely filled in an accurate manner. Vogelsang pumps are compact but sturdy, have a high capacity and are able to handle various fluids even with a high viscosity. Thanks to their special design, pumping fluids with a high content of foreign matter poses no problem at all.



Tank cleaning

Layers of sediment build up at the base of tanks over time, which reduces their storage capacity. It is particularly important for this sediment to be removed from time to time. Thanks to their dry-running resistance, this can be achieved by using a Vogelsang pump as a submersible or by installing it outside the tank.



Skimmers

The unique internal geometry of Vogelsang pumps ensures a gentle pumping action that does not emulsify oily water. The pump can also handle solids measuring up to 90 mm. Vogelsang rotary lobe pumps can be used in many applications, including as a transfer pump in oil recovery skimmers and for emergency pumping of heavy crude or bunker oil and bitumen.

VARIETY OF USES WITH NO LIMITATIONS

Vogelsang rotary lobe pumps in the chemical industry

The chemical industry is a very challenging sector with many different processes and stringent requirements. Vogelsang rotary lobe pumps are designed to provide trouble-free, maintenance-friendly and economical pumping. With a non-contact, rotating positive displacement pump, Vogelsang pumps can reliably pump a wide variety of liquids, especially highly viscous and abrasive media. They can be used for several processes, including dosing tasks or filling and emptying tanks, given their ability to change the discharge direction.

Their compact and space-saving design allows Vogelsang pumps to be integrated in any system. They require almost 70% less space than a typical progressive cavity pump. The patented InjectionSystem, the unique HiFlo® lobes, the Quality Cartridge mechanical seal and other Vogelsang innovations ensure maximum efficiency in the system.

Vogelsang pumps minimize production costs while maximizing service time. Their high durability and QuickService concept for easy maintenance provide uninterrupted operations and significantly reduce maintenance time compared to other positive displacement pumps. Maintenance time is reduced considerably by up to 30% with the Vogelsang IQ series pumps. As a result, the Vogelsang pumps can be used in the most time-consuming chemical applications.

Vogelsang rotary lobe pumps can handle any viscous, abrasive or chemically aggressive media that flows, even with viscosities up to 100,000 mPas or temperatures higher than 100°C.

- Plasters and rendering coatings
- Paints and lacquers
- Mucilage, glues and adhesives
- Bitumen
- Natural latex
- Pesticides and chemical fertilizers
- Soap, shampoos, paste, creams
- Cosmetic raw materials
- Acids such as sulfuric, nitric, formic or acetic
- Bases such as sodium or potassium hydroxide
- Chlorine, dry chloride or chloride media
- Ceramic or other emulsions
- Polymers
- Hydrocarbon, oxidants such as hydrogen peroxide, oils or fuel oils, solvents or esters in the petrochemical industry
- Salt solutions such as sodium sulfate
- Kaolin or lime milk
- Wastewater from the chemical industry



"We have over one hundred Vogelsang rotary lobe pumps in operation at KS Recycling, which are installed predominantly on tanks and vehicles, because they are compact and powerful. But the most important point for us is that their maintenance is very easy."

Guido Schmidt, General Manager
KS Recycling GmbH & Co. KG, Sonsbeck, Germany

"After extensive use of Vogelsang rotary lobe pumps in applications where our customers demanded uninterrupted service, I can say that Vogelsang pumps provided a trouble-free solution to our pumping needs!"

Carl Malkiewicz, Senior Project Manager
Andritz-Ruthner, Inc., Pittsburg, Texas, USA

"We have been working with Vogelsang rotary lobe pumps for the past four years, and they have always been reliable. They are extremely robust and silent."

Peter Kranz, Head of Engineering Harold Scholz & Co. GmbH,
Recklinghausen, Germany

"For cleaning and wear parts replacement works, including for lobes, wear plates and the Quality Cartridge mechanical seal, the pump remains firmly screwed into the pipeline. This saves a lot of time and money. Servicing is actually easy."

Peter Kranz, Head of Engineering Harold Scholz & Co. GmbH,
Recklinghausen, Germany



CONSTANT POWER FOR MANY USES

Vogelsang rotary lobe pumps: the efficient choice for diverse transfer processes

No matter if it is the pumping of contaminated waste oil or the production of glues and adhesives – where requirements on safety and continuous processes are high, there is no room for compromise. In the chemical, mineral oil and petrochemical industries where mechanical stress on machinery is high, performance becomes a question of durability, quality material and demand-based engineering.



Vogelsang rotary lobe pumps are not only constructed for maximum power and resilience towards highly abrasive viscous or chemically aggressive media. They are made for long-term use, meaning that service and maintenance are done easily and quickly due to their intelligent design.

The principle

The concept of Vogelsang pumps is ingeniously simple: the rotating lobe seals the medium on the suction side in a chamber between the housing and lobe. It pumps it at the top and bottom of the pump chamber through the pump to the discharge side. This enables a particularly compact type of construction with gentle pumping, good priming and dry-running characteristics, as well as easy access to the pumping elements.

Compact and space saving

Vogelsang pumps can be integrated into any system – even in the tightest of spaces. A subsequent installation of a Vogelsang pump usually does not cause any problems either, especially in the case of pumps in the IQ series. These are fitted with universal connection options, which makes it possible to adapt them to a wide range of installation situations in a few simple steps.

Quick and low-cost maintenance

Vogelsang pumps are easy to operate and are as low maintenance as they are easy to service. Thus they provide for short downtimes, high availability and, above all, low running costs.

Cartridge seal

Particularly for the chemical industry, there are special variants of the seal available, such as a double mechanical seal, compliant with TA-Luft, the German air pollution control regulation.

Tailored to your needs

The Vogelsang technical team designs each pump to meet the needs of each application. Every delivered pump is the best solution for the specific application, perfectly combining all the different features and options regarding wet-end and lobes materials. Vogelsang rotary lobe pumps can also handle applications in a potentially explosive atmosphere (ATEX). Vogelsang pumps can also be certified by Physikalisch-Technische Bundesanstalt (the German national metrology institute). Thanks to their unique construction, the pumps prevent the propagation of deflagrations and detonations in the plant, thereby negating the need for additional flame arresters in the filling and drain pipes.

ENHANCE IF NECESSARY – REDUCE WHERE POSSIBLE

Well-thought-out details make our products better

Since we are adamant that we keep our pumps designs as simple as possible, every single component is a carefully composed masterpiece. On the one hand, this reduced overall construction enables clients to quickly and easily replace all elements that are subject to wear. On the other hand, every single one of these components is examined closely and, if need be, offered in alternatives to match up to specific uses. This is a great benefit for working environments where flexibility is just as important as power and efficiency.

The lobes for the VX and IQ series pumps

Optimized for the application at hand

If the focus is on high volumetric efficiency and pulsation-free running, the patented HiFlo and HiFlo Plus lobes are the ideal choice. Thanks to their helical coiling, they enable constant pumping and more sealing lines. If sturdy operation is your priority, classic two-wing lobes are perfect. Both lobe types are also available with replaceable lobe tips on request.

The material used for the lobe is just as important as its design: from classic elastomeric coatings to solid-material lobes made of stainless steel, we can provide just the right, long-lasting lobe material for your medium.

- **NBR** (wastewater, greases, saltwater)
- **NBR white** (food)
- **EPDM-SL** (water, acids, lyes)
- **EPDM-AL** (drinking water)
- **EPDM white** (food)
- **CSM** (oil, acids, lyes)
- **FPM** (chemicals, acids, lyes, saltwater)
- **PUR** (fine-grained abrasive media)
- **PU** (abrasive media)
- **Stainless steel** (aggressive media, food, higher temperatures)
- **Steel, nitrided** (abrasive media, higher temperatures)



HiFlo Plus reduces vibrations and noise build-up from Vogelsang rotary lobe pumps, particularly at high pressures, to a scale that might otherwise be expected of centrifugal pumps.

The Quality Cartridge mechanical seal

Made to facilitate exchange

A pump seal that can be replaced in just one single step, significantly simplifying maintenance while also lowering the risk of transmission damage. This is a reality with the Quality Cartridge mechanical seal from Vogelsang. This mechanical seal in a cartridge design is completely preassembled. It represents the highest factory-tested safety standard, runs with minimal problems and installs quickly. Thanks to its unique construction, it incorporates all seal components, thus allowing reliable replacement of all the sealing elements when the gasket is changed – including the gasket between the gearbox and the buffer chamber. The Quality Cartridge mechanical seal is also highly user-friendly. It is preassembled for quick-and-easy replacement on-site, without the need for any expensive special tools.

Advantages at a glance

- Quick-and-easy change of seal: installation errors are prevented
- Installation takes less time than when changing conventional seals

Cartridge mechanical seal repair

We offer optional repair of the Quality Cartridge mechanical seal. Use our complete spare parts kit and the installation tool to repair the mechanical seal yourself in a very short time. This allows you to keep your repair costs low.



Quality Cartridge mechanical seal



QuickService housing

Very straightforward maintenance is a priority at Vogelsang, so everything is handled on-site without dismantling the pump from the pipe.



Advantages of the rotary lobe pumps at a glance

- Compact design
- Self-priming and dry-running resistant
- Resistance to foreign matter thanks to the innovative InjectionSystem
- Reversible direction of flow
- Pulsation-free running HiFlo-rotary lobes
- High efficiency
- Service- and maintenance-friendly
- Minimal downtimes
- High availability



VX230 rotary lobe pump

PROVEN POWERHOUSE WITH ALL THE RIGHT MOVES

The adaptable VX series for task-driven conveying processes

Rotary lobe pumps in the VX series have an impressive range of sizes and designs and many installation options. All the models have two things in common: a compact design and easy maintenance. With five series and up to eight sizes per series, a VX rotary lobe pump can be adapted to almost any delivery rate and pressure range.

Materials for any application

The VX series is available in a wide range of materials needed for the very stringent requirements in the oil and chemical industries, such as gray cast iron for hydrocarbons or stainless steel for slightly corrosive chemicals. Furthermore, the VX series wet-end is available in a nickel-base alloy, a material that has a high resistance against corrosion and oxidizing media, and is excellent for a wide range of chemical process environments such as sulfuric, nitric, formic or acetic acids, solvents, chlorine, dry chlorine or chloride media.

Special configurations

On request, we can offer customized products to fit the stringent needs of the oil and chemical industries:

- Separate buffer chambers
- ATEX compliant pumps
- API 676-compliant rotary lobe pumps
- Double mechanical seal
- Flushing system for mechanical seal
- Variable frequency drives



Pump housing segment with Injection module



Radial wear plate

Advantages of the VX series at a glance

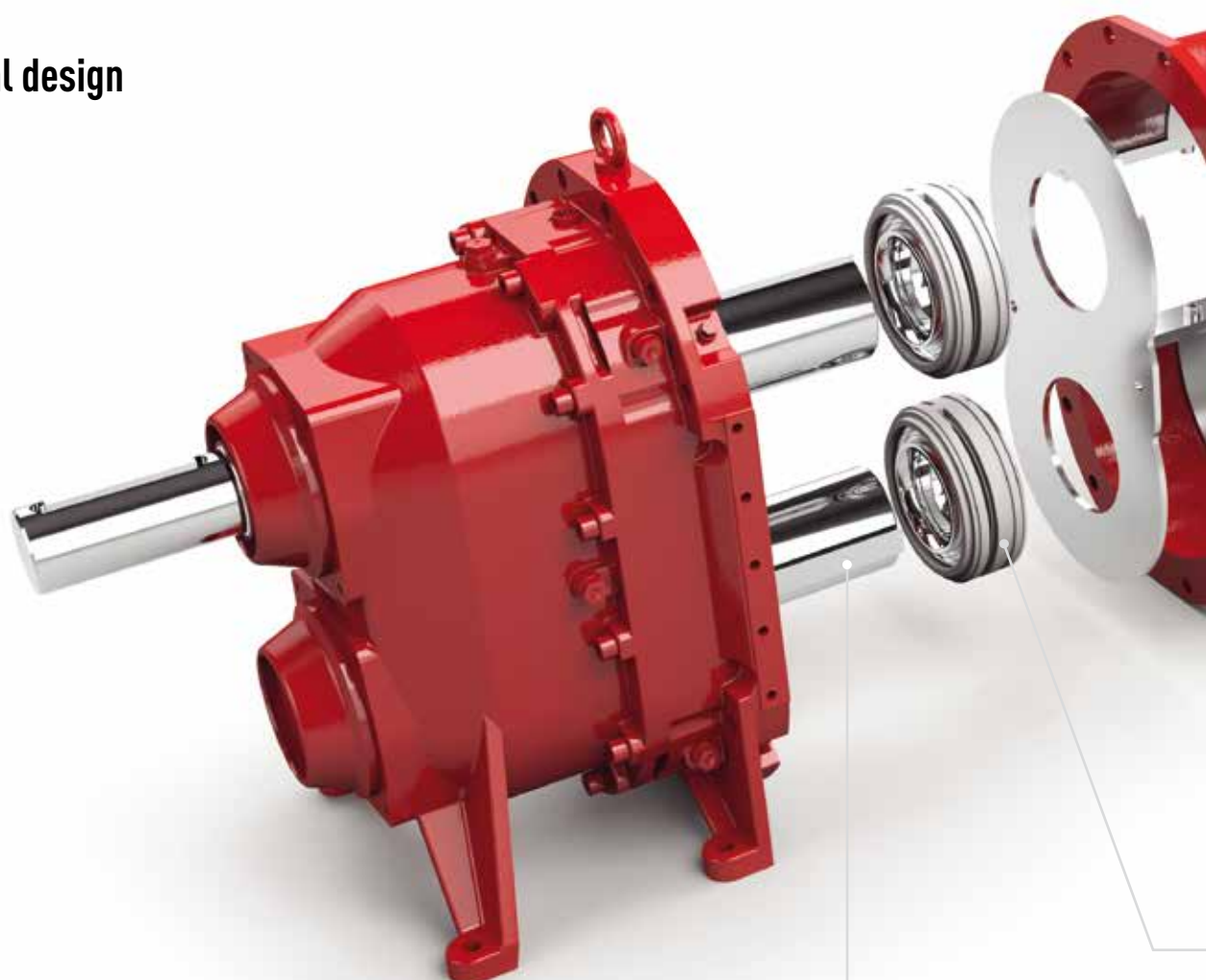
- Fast access to the pump chamber by removing the cover
- On-site service and maintenance
- Self-priming and dry-running resistant
- Shaft warranty
- Free passage up to max. 90 mm
- Pressure up to 16 bar
- Capacity up to 1,417 m³/h

VX SERIES ROTARY LOBE PUMPS

Perfection,
from technical design
to service

Adjustable pump housing segments

Optimum utilization
of materials for
prolonged service life

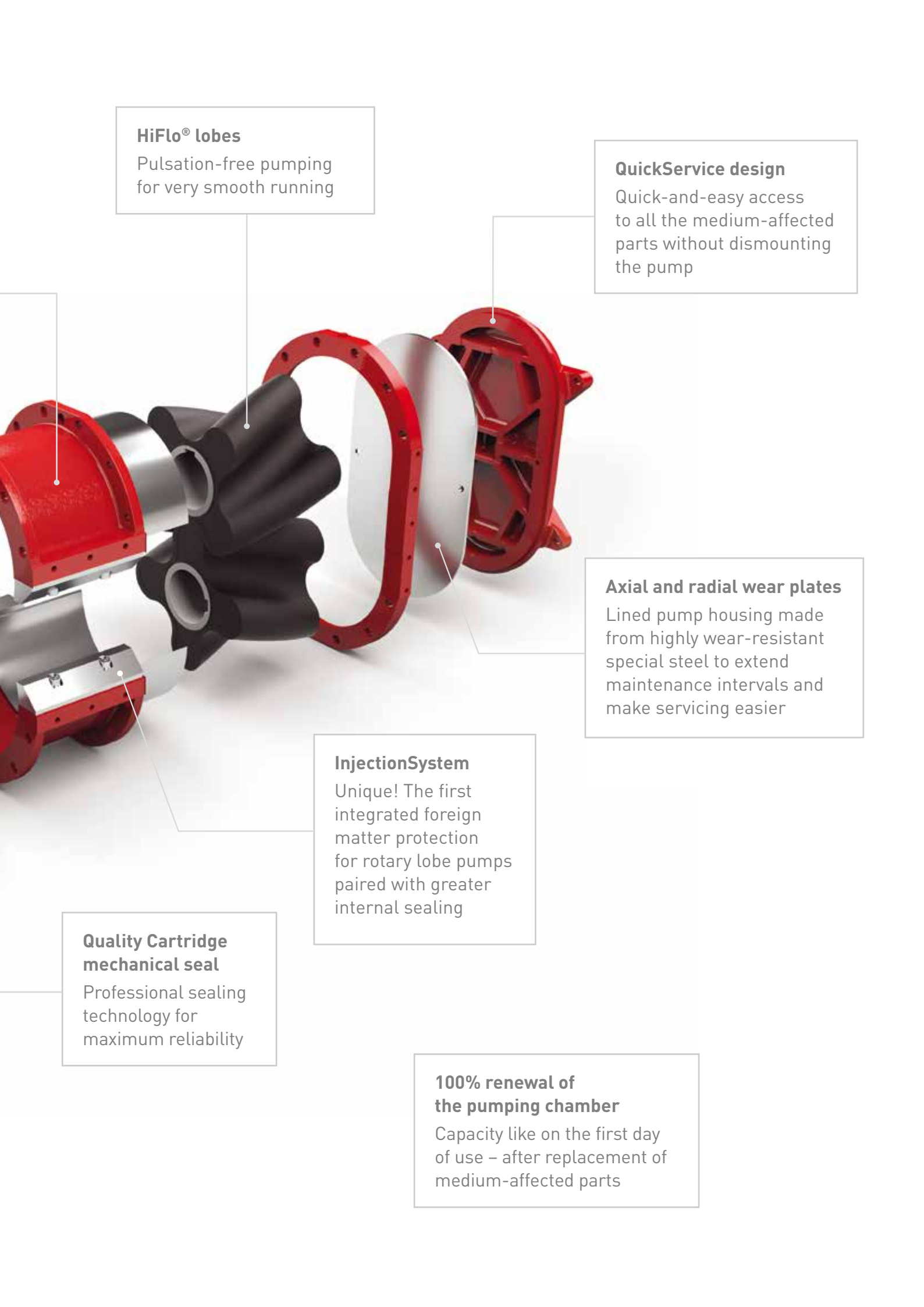


Component-based design

Major savings from
single part replacement

Break-proof shafts

Maximum shaft diameters
for very smooth running



The image shows an exploded view of a rotary lobe pump assembly. The components are arranged horizontally from left to right: a red inlet/outlet flange, a black lobe rotor, a silver-colored axial wear plate, a red radial wear plate, and a red outlet flange. A mechanical seal is shown at the bottom left. Callout boxes with leader lines point to various parts: 'HiFlo® lobes' points to the black rotor; 'QuickService design' points to the red housing flanges; 'Axial and radial wear plates' points to the silver and red plates; 'InjectionSystem' points to the rotor's internal structure; 'Quality Cartridge mechanical seal' points to the seal at the bottom left; and '100% renewal of the pumping chamber' points to the area between the wear plates.

HiFlo® lobes

Pulsation-free pumping
for very smooth running

QuickService design

Quick-and-easy access
to all the medium-affected
parts without dismounting
the pump

Axial and radial wear plates

Lined pump housing made
from highly wear-resistant
special steel to extend
maintenance intervals and
make servicing easier

InjectionSystem

Unique! The first
integrated foreign
matter protection
for rotary lobe pumps
paired with greater
internal sealing

Quality Cartridge mechanical seal

Professional sealing
technology for
maximum reliability

100% renewal of the pumping chamber

Capacity like on the first day
of use – after replacement of
medium-affected parts

SERVICE AND HANDLING MADE EVEN EASIER

The economically constructed
IQ series for the utmost in performance
with minimal effort



IQ112-114 rotary lobe pump



Given their unchallenged cost-effectiveness thanks to reduced maintenance and service, our IQ series stands for state-of-the-art pump technology. The pump's compact dimensions and flexible connectors lead to a wide range of installation options without having to make any adjustments. Thanks to their excellent dry-running protection and the possibility to increase capacity up to 40%, pumps of the IQ series facilitates handling even during operation. This saves a substantial amount of money, each and every day.

The pump chamber is fully integrated in the pump cover. The pumping elements can be accessed freely in a few easy steps while the pump remains firmly screwed into the pipeline.

Easy integration

The connecting parts used for the variable series allow the majority of installation conditions to be met. This means that the IQ series pumps can be quickly and easily attached or installed in a wide range of positions, including on tank vehicles and mobile units, without special connections.

Low operating costs

The number of central spare parts has been reduced by 50% in comparison to the conventional design. The costs for replacement parts are reduced accordingly. The concept of the IQ series allows further cost savings as the time required for cleaning and replacing parts has been significantly reduced. IQ pumps are designed so that less than half the time is required to replace all wear parts – including rotary lobes, wear plates, the pump housing and gaskets – compared to rotary lobe pumps that are commonly found on the market.

Special applications

The nominal delivery rate of IQ pumps is up to 154 m³/h at pressures of up to 7 bar. All the parts that come into contact with the pumped medium, such as the pump cover, gearbox housing and connections, are cast from stainless steel and are therefore resistant to chemicals.



IQ series pumps can be quickly and easily attached or installed in a wide range of positions, without the need for special connections.

Advantages of the IQ series at a glance

- Quicker, optimum access to the pumping elements
- Pump remains firmly screwed into the pipeline during service and maintenance work
- Integrated dry-running protection
- Self-priming, good suction capacity
- Easy and flexible integration

IQ SERIES ROTARY LOBE PUMPS

**Perfection, from technical
design to service
and maintenance**

Dry-running protection and optimum suction

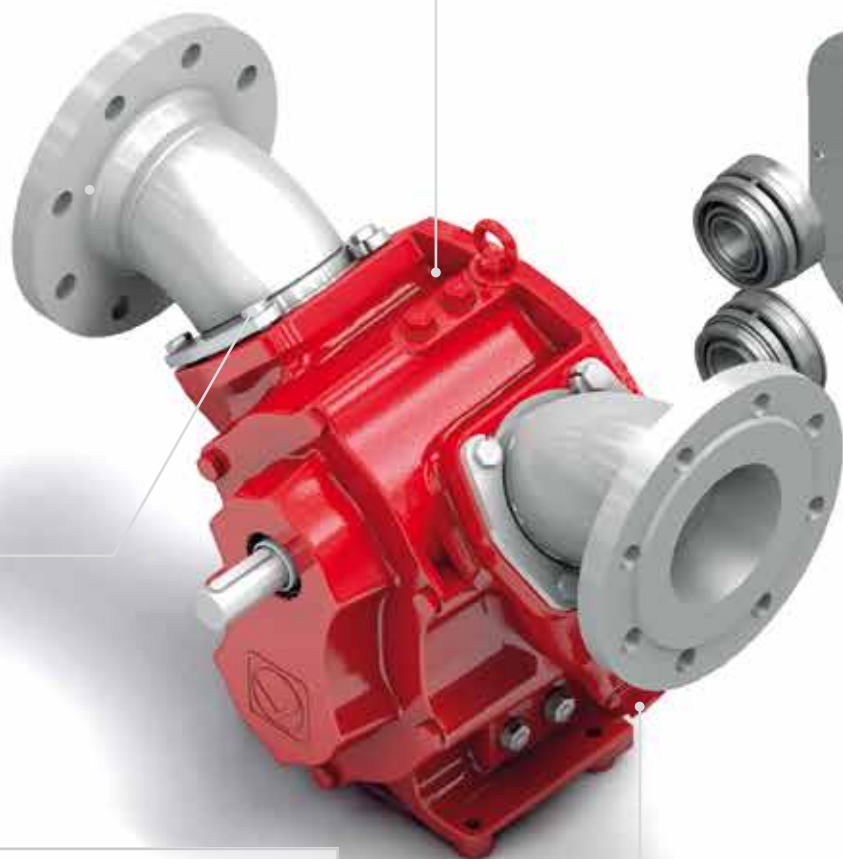
Protection from dry running and powerful suction due to provision of fluid reservoir and innovative gearbox housing

Flexible connection options

Versatile connectors allow integration in the widest variety of system designs in just a few hand movements

Drain plug

Simple, clean, almost complete draining of the pump chamber for service and maintenance work thanks to intelligently positioned drain plug



Wear plates

Straightforward replacement involving less maintenance work and minimum downtime

QuickService design

Fast disassembly of the pump cover and simple access to pump elements as an optimal prerequisite for service and maintenance

InjectionSystem

Unique! The first integrated foreign matter protection for rotary lobe pumps

Delivery rate to measure

Interchangeable HiFlo lobes and pump cover of different sizes for up to 40% higher pumping capacity

Innovative design

The IQ series, which is based on just a few individual elements, makes maintenance easier and saves on spare part costs

Save time and money each day

The intelligent design with flexible connectors and adaptive pump capacity makes installation easier and guarantees efficient operation



WHEN IT COMES TO SERVICE, WE LEAVE NOTHING TO CHANCE

**Comprehensive services
for smooth operation and a
long lifetime**

Support and supply from A to Z

Because we are aware that close customer proximity is essential for our mutual success, we design our services to best meet your needs. In Germany and in countries where we have subsidiaries, Vogelsang service centers and contractual partners generate an active dialog with our customers and provide reliable support.

This means you always get the precise support you need in every phase of our partnership. Our highly qualified staff make it possible – experts such as consultants and technicians who know your Vogelsang machines inside and out.



Since its establishment in 1929, Vogelsang has become an internationally recognized mechanical engineering company with numerous branches, sales centers and subsidiaries.



We think ahead

Thinking ahead in your best interest begins with our extensive and detailed product documentation. Spare parts are available within a short time due to our high degree of vertical integration in production. In addition, you will always find an authorized service partner in your area who can help with repairs and wear part replacement. The Vogelsang ServicePack completes the offer. Whether you need start-up, on-site training, training at the Vogelsang facility, or full service support with a maintenance contract and a wear parts service package – we offer a support program tailored specifically to your needs.

What we offer

We provide solutions in the following sectors:
AGRICULTURE, BIOGAS, INDUSTRY,
TRANSPORTATION, WASTE WATER



Our broad range of products and services

- Consulting and service
- Data management and control technology
- Disintegration technology
- Individually tailored solutions for special applications
- Pumps and pump systems
- Solid matter feeders
- Solids reduction, separators and mixers
- Spreading technology
- Supply, disposal and cleaning

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SPECIFICATION

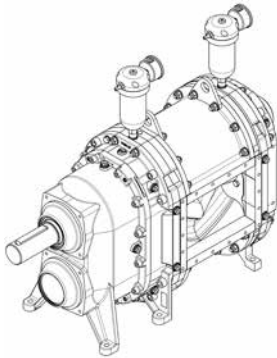


DEMAND-BASED PUMPING TECHNOLOGY

Vogelsang rotary lobe pumps
for the oil, petrochemical and
chemical industries

VX series

Vogelsang VX series rotary lobe pumps –
proven reliable in the widest variety of pumping tasks

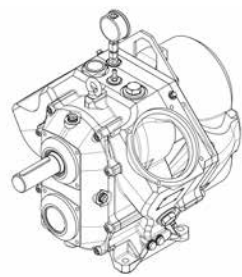


Type	Marathon	Stroke volume	Max. capacity*		Max. pressure			Max. speed	Max. shaft deflection	
		l/rev.	m³/h	l/min	Q bar	QD bar	Marathon bar	min ⁻¹	Q mm/bar	QD mm/bar
VX100 series										
45		0.29	17	290	10			1,000	0.01	
64		0.42	25	420	9			1,000	0.02	
90		0.59	35	590	7			1,000	0.04	
128		0.84	50	840	4			1,000	0.08	
VX136 series										
70	140 [70/70]	1.27	61	1,016	10		16	800	0.01	0.002
105	210 [105/105]	1.90	91	1,520	10	12	16	800	0.03	0.004
140	280 [140/140]	2.53	121	2,024	8	12	14	800	0.05	0.007
210	420 [210/210]	3.80	182	3,040	5	10	12	800	0.16	0.016
280		5.06	243	4,048		8		800		0.031
420		7.59	364	6,072		6		800		0.090
VX186 series										
92	184 [92/92]	3.56	128	2,136	10		16	600	0.01	
130	260 [130/130]	5.03	181	3,018	10	12	16	600	0.02	0.003
184	368 [184/184]	7.12	256	4,272	8	12	14	600	0.05	0.008
260	520 [260/260]	10.06	362	6,036	5	10	12	600	0.12	0.012
368		14.24	513	8,544	3	8		600	0.33	0.028
390		15.09	543	9,054	3	7		600	0.40	0.028
520		20.12	724	12,072		6		600		0.069
736		28.48	1,025	17,088		3		600		0.191
VX215 series										
226		15.47	501	8,345	5	8		540	0.10	0.010
320		21.88	708	11,815	2.5	7		540	0.29	0.026
452		30.94	1,002	16,708		5		540		0.063
640		43.76	1,417	23,630		3		540		0.161
VX230 series										
226		13.45	436	7,263	8	12		540	0.05	0.006
320		19.04	617	10,282	5	10		540	0.13	0.012
452		26.90	872	14,526		10		540		0.029
640		38.08	1,234	20,563		6		540		0.073

* Maximum theoretical capacity. In practice, the capacity is normally lower, depending on pressure difference, medium viscosity and pump installation.
We would be happy to configure the best rotary lobe pump for your application with the help of our computer-assisted sizing software.

IQ series

Greater cost-effectiveness thanks to reduced maintenance and service



Type	Stroke volume	Max. capacity*		Max. pressure	Max. speed	Max. shaft deflection
		m³/h	l/min			
	l/rev.			bar	min ⁻¹	mm/bar
IQ112 series						
81	1.02	55	918	7	900	0.04
114	1.44	78	1,296	5	900	0.08
IQ152 series						
112	2.61	110	1,827	7	700	0.03
158	3.67	154	2,596	5	700	0.08

* Maximum theoretical capacity. In practice, the capacity is normally lower, depending on pressure difference, medium viscosity and pump installation.
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