



More than just pumps

VISCOPOWER

Progressive cavity pumps
of the 500 series



VISCOPOWER

The FLUX VISCOPOWER progressive cavity pump pumps low-viscosity to high-viscosity media at up to 100 000 mPas.

The VISCOPOWER progressive cavity pump works on the principle of a rotating displacement device. Progressive cavity pumps can be used in almost all sectors of industry. They are distinguished by the fact that they pump constantly, gently and with low pulsation. Depending on the medium and application, flow rates of up to 80 l/min and pumping pressures of up to 15 bar are achieved.

Operational principle

The medium to be pumped is first fed into a pumping chamber from where it is then displaced upwards. More specifically, it works using a rotating shaft in the pump tube of the progressive cavity pump. This shaft with a rotor at its lower end rotates against a fixed stator. The worm-shaped geometry of the rotor and stator produces cavities in which the medium in question is then pumped from the suction connector at the lower end of the tube upwards to the pressure connector.

The advantages at a glance:

- ▶ High pumping pressure of up to 15 bar thanks to displacement device principle
- ▶ High pump capacity of up to 80 l/min
- ▶ Gentle pumping with little turbulence
- ▶ Very quick and easy to clean
- ▶ Design with minimal dead space makes the pump ideal for the pharmaceutical and food sectors
- ▶ Can be used vertically and horizontally
- ▶ Can pump soft solids without damaging them



FLUX products are developed and certified for use around the globe. They meet the most exacting of requirements and safety standards. Whether food, pharmaceuticals or industry - or for hygienic or hazardous areas: there are pump versions suited to every use.



Examples of media

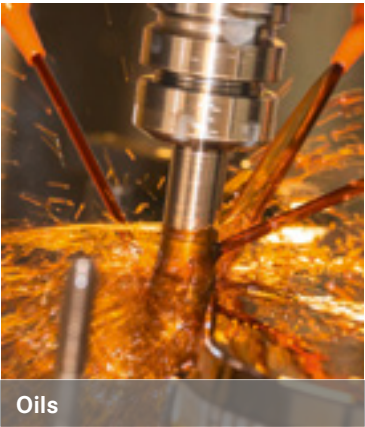
Virtually all media, from low-viscosity to high-viscosity and pasty, media that is sensitive to shearing and even media containing solids can be pumped with the VISCOPOWER. And the pump can be used in all sectors such as industry, chemicals, hygienic, pharmaceuticals and cosmetics. Even media that is not capable of flowing can be pumped with ease when the pump is combined with the FLUX VISCOFLUX lite and VISCOFLUX mobile S drum-emptying systems.



Glue



Paints & varnishes



Oils

Industry



Lip gloss



Ointments



Toothpaste

Pharmaceuticals & cosmetics



Molasses



Tomato purée



Juice concentrates

Food

Properties and design

The VISCOPOWER progressive cavity pumps were developed with a focus on making the medium-contacting wetted surfaces especially easy, intuitive and quick to dismantle and clean. The well thought-out design allows the pump to be dismantled quickly and effortlessly. Seals and contours are designed to minimise dead space. These properties make the pump highly suitable for use in the food, cosmetics or pharmaceutical industry.

Huge range of applications

There is already a large choice of pre-configured variants for the most common applications and areas of use. Above and beyond this, the modular design allows each pump to be individually configured for its own particular application.



Flexibly constructed for the future

Could your requirements, areas of use or media change in the future? That's not an issue for the VISCOPOWER series! Standardised interfaces and a modular system allow components such as worms, stators, motors and seals to be replaced to make the pump fit for changing pumping tasks.

Up to
80%
faster to assemble/
disassemble as there
are fewer parts!



1 Robust outer tube in electropolished steel

Five different standard lengths available: 400, 700, 1 000, 1 200 and 1 500 mm

2 Torsion shaft

Reinforced shaft for higher transfer of torque

3 Mechanical seal

Closed version shown: for hygienic applications or open version for industrial applications

4 O-ring – sealing between rotor and drive shaft

Gap between rotor and drive shaft is sealed using an open O-ring, allowing the pump to be hygienically cleaned with ease

5 Rotor

Four different rotor-stator geometries provide the right solution for any application

6 Stator

Available in PTFE, NBR and FKM to suit every medium

7 Stator casing

With integrated suction protection with extra reinforcement, also available as version for drums with inliner

8 Motor connection

Can be easily converted for motor flange or gearbox, so it can be used for all motor types

9 Clamp connection

Can not be loosen by vibration

10 Motor flange (shown) or gearbox

Features a motor flange (shown) to accommodate three-phase motors or a gearbox to accommodate commutator motors and brushless motors

Dismantled in just 30 seconds



Open clamp on pump tube



Remove pump tube



Unscrew stator housing



Remove stator

Power lies in the detail

Every last detail of the VISCOPOWER has been thought through. It delivers up to 87 % more pumping pressure and, thanks to four different rotor geometries, up to 60 % more pump capacity. But not only has the range of options grown, many details of the FLUX VISCOPOWER make work easier and safer. Everything from the bayonet fitting for the motor flange version to suction protection for inliners.

VISCOPOWER comes in two versions



F 570: gearbox version

Two-stage gearbox i = 16

- For use with compressed air or commutator motors as well as brushless motors
- For media up to max. 30 000 mPas
- Lightweight – for mobile use

Single-stage gearbox i = 7

- For high-speed asynchronous motors
- For media up to 80 000 mPas



F 580: Motor flange version

- For use with asynchronous motors / spur gear motors / compressed air motors
- For media up to 100 000 mPas
- Freewheel bearing prevents the pump from running in the wrong direction
- For stationary use
- Comes with speed sensor for indirect, contact-free measurement of quantities

One pump tube – four different options

With four different rotor geometries, the VISCOPOWER has the right solution for every requirement. No matter whether you need max. pump capacity, the delivery head or a low pump capacity for more accurate metering, one of the four geometries is sure to provide the ideal solution while keeping the same pump tube diameter.



Rotor R17

Attains a high pumping pressure at lower pump capacities

Geometry: 1/2-helix
Max. pump capacity: 17 l/min*



Rotor R52

Standard rotor for a good balance between pumping pressure and pump capacity

Geometry: 1/2-helix
Max. pump capacity: 52 l/min*



Rotor R33

Theoretically similar pumping pressure to R52 and R83 with greater pump capacity

Geometry: 1/2-helix
Max. pump capacity: 33 l/min*



Rotor R83

Attains maximum delivery quantities

Geometry: 3/2-helix
Max. pump capacity: 83 l/min*

All the motors at a glance

VISCOPOWER F 570 and F 580 can be run with many drive motors; be it commutator motors, three-phase motors, compressed air motors or brushless motors.

F 570 with two-stage gearbox i = 16

Commutator, compressed air or brushless motors

- For media up to 30 000 mPas



F 570 with single-stage gearbox i = 7

For high-speed asynchronous motors

- For media up to 80 000 mPas



F 580 with motor flange

For asynchronous motors / spur gear motors

- For media up to 100 000 mPas



Bayonet fitting for a simple motor connection

Thanks to the bayonet fitting on the motor flange version, the pump can be easily hung on the motor and the screws can then be tightened without the pump having to be stopped.



Prepared for any connection

Eith the standardised clamp connection on the discharge, all kinds of hose connections, outlet fittings, flowmeters, bypass valves etc. can be easily connected using clamp adapters.



Suction protection for containers with and without inliners

Depending on whether you want to use the VISCOPOWER to empty containers with or without inliners, the pump has the right suction protection for both scenarios. And the containers in both scenarios are protected from external forces by a heavy-duty wall. There is also a stator housing with clamp connection for pumps connected to tanks and IBCs.



Use in an industrial application

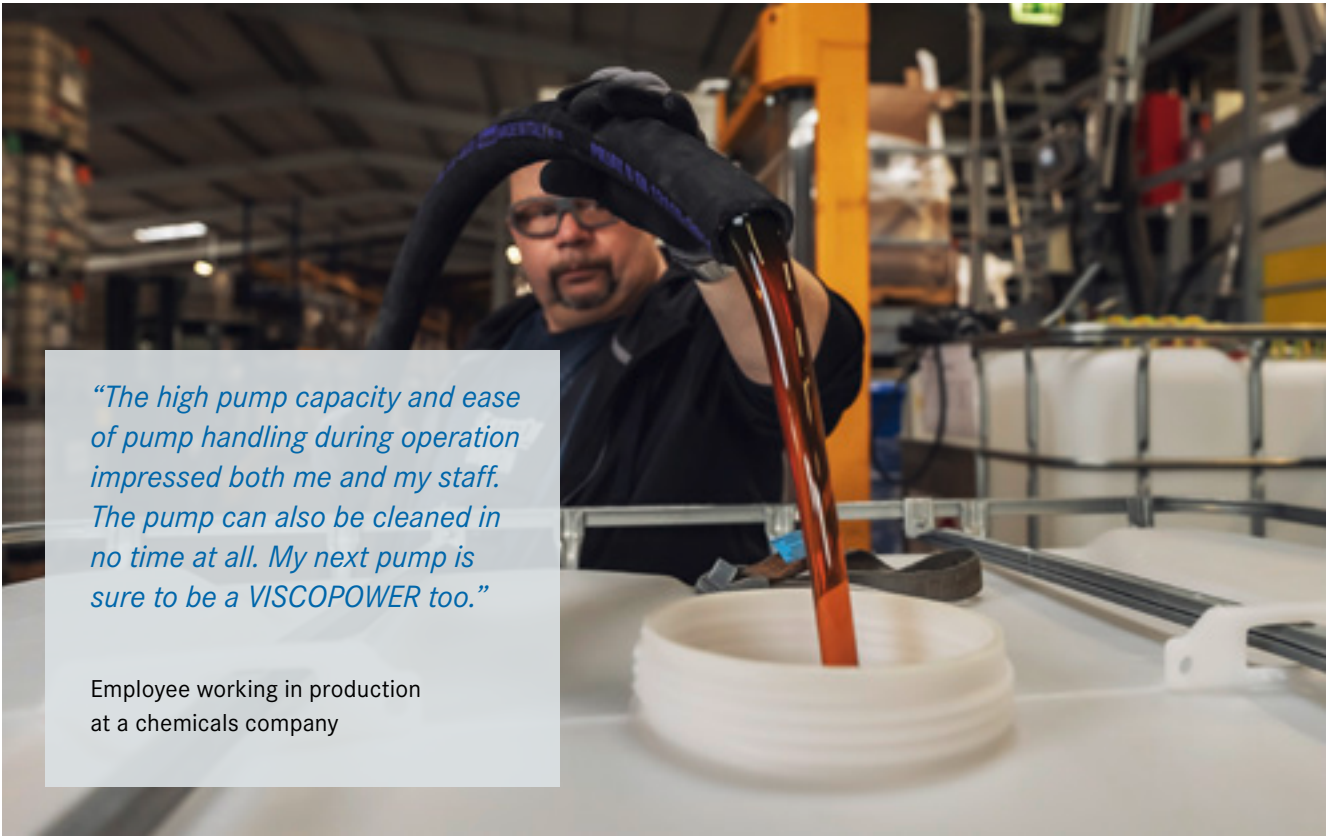
Low-viscosity, high-viscosity, pasty, viscous or highly flammable – the requirements faced in industrial applications are hugely varied. Thanks to its modular design, the VISCOPOWER can be perfectly matched to even the most demanding pumping job. Common industrial applications for the VISCOPOWER include filling and decanting oils, lubricants, paints, resins, hardeners, glues and much more.

Production of fertiliser



Requirement:
Decanting liquid plant fertiliser from IBCs into various containers for further processing. Desired pump capacity > 20 l/min

Solution:
VISCOPOWER F 570 with two-stage gearbox, 1 200 mm long
FLUX F 458 motor with 700 W
R32 stator geometry
Chemical hose, 1.5 m long
Achieved pump capacity 30 l/min



“The high pump capacity and ease of pump handling during operation impressed both me and my staff. The pump can also be cleaned in no time at all. My next pump is sure to be a VISCOPOWER too.”

Employee working in production at a chemicals company

Use in a hygienic application

The VISCOPOWER makes light work of the stringent requirements applicable in the hygiene sector – thanks to its design with minimal dead space, the use of a closed mechanical seal and electropolished surfaces. It satisfies the EU standard (EC) 1935/2004 and (EU) 10/2011, FDA and 3A standards as well as the ATEX directives. Typical areas of use in the hygiene sector include Vaseline, wool fat, creams, tomato purée, juice concentrates, honey and much more.

Gin production – HEIMAT DISTILLERS



Requirement:

Filling agave syrup or juice concentrates from IBCs into stainless steel canisters for further processing into alcoholic and non-alcoholic beverages. It is important that the liquids are pumped gently and without any bubbles with good metering accuracy.

Solution:

VISCOPOWER F 570 with two-stage gearbox, 1 200 mm long
Closed mechanical seal
R17 rotor geometry with PTFE stator
FLUX F 457 motor with 800 W
Food grade hose 3 m with discharge elbow



“I was particularly impressed with how easy it is to very quickly dismantle and clean the pump with virtually no tools. This is very important for us because we tend to produce small batches but with ever-changing media. So it saves me and my staff a lot of time on a daily basis.”



Rouven Richter, co-founder of HEIMAT DISTILLERS



"Every single motor armature is individually crafted. I am very fussy but believe that the more accurately I work, the better the product and the longer the customer will get to enjoy it."

Jannis Kauselmann, cutting machine operator

Made in Maulbronn



For more than 70 years, FLUX has been producing pumps, motors and accessories only in Germany. With its own production facilities, welding shop, motor winding room, plastic injection moulding unit and assembly workshop in Maulbronn, southern Germany, FLUX can rightly claim 100 % MADE IN GERMANY. The recipe for the success of FLUX's exemplary product quality is a low staff turnover, a family-like sense of belonging, staff with decades of experience as well as continually training the next generation of workers.



"Here in assembly, everything comes together. We have to handle every single part. If a component isn't right, we notice straight away. Every fully assembled pump is tested to check it is working properly and not leaking. Nothing can go wrong after that."

Marie-Louise Hefter, who works in pump assembly



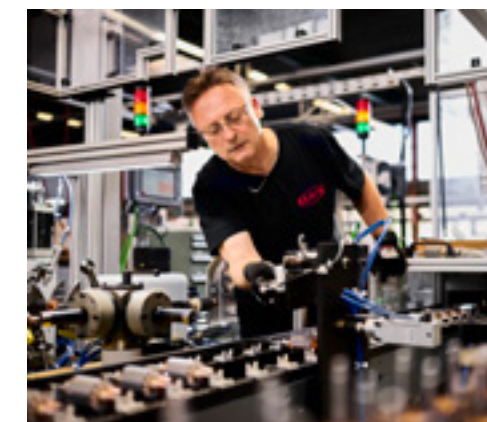
"The exciting thing about my work is that it's very varied. Sometimes I'm working on an automatic arc welding system, which performs several welding processes at once and which I program myself. Other times, it's very hands-on because every now and then I have to weld special parts by hand."

Benni Pasler, cutting machine operator also trained in welding



"The unique thing about FLUX is that our plastic pumps have an inner tube with a metal core, which makes them highly robust. I encase this metal core with plastic on my injection moulding machine so that acids and alkalis cannot come into contact with the metal."

Robin Haller, process technician for plastic and rubber technology



"We have set ourselves the goal of improving all the time. In the motor winding room in particular, this means that we work to tighter tolerances than is normally the case in motor production. But that is the secret to the longevity of our motors."

Rüdiger Werknies, head of the motor winding room

"Right from the start of assembly to testing and packaging, I have control over the quality of every single motor. I have to really concentrate because we also work with motors for use in hazardous areas, which have to be really safe. Every single employee at FLUX is valued and we are one big family. You can't take that for granted."

Barbara Geromüller, motor assembly & shop chair



Accessories and special equipment

Single-vendor solution: to supplement our huge range of pumps, FLUX also supplies an extensive range of accessories. This ensures smooth and safe operation as well as simplifying the task in hand. No matter whether intended for mobile or stationary use – FLUX accessories turn a FLUX pump into a tailored delivery system for any application and purpose.



FLUX VISCOFLUX drum-emptying system

And FLUX has developed the VISCOFLUX family for pasty media, media that does not flow and where the VISCOPOWER alone comes up against the limits of its capabilities. The VISCOFLUX drum-emptying systems were specially developed for emptying lidded drums with high-viscosity contents. The medium is extracted continuously and very gently. All systems almost fully empty the drums, leaving a residual volume of less than 1 %.



VISCOFLUX mobile S
The VISCOFLUX mobile S drum-emptying system is a mobile and therefore highly flexible variant of the tried and tested VISCOFLUX drum-emptying system. VISCOFLUX mobile S is ideally suited to gently, efficiently and safely pumping high-viscosity, pasty media and media that is no longer capable of flowing. It can even pump from conical drums with aseptic bags. The drum-emptying system was developed for use in pharmaceutical, food and cosmetics industries.

VISCOFLUX lite
The VISCOFLUX lite drum-emptying system is used to pump high-viscosity media barely capable of flowing from ISO lidded drums. In the Ex version, it is also suited for use in zone 1 hazardous areas and for pumping a whole host of flammable media (zone 0/1). The emptying process is gentle and continuous. As with the VISCOFLUX mobile S, a residual volume of < 1 % remains in the drum.



Today the FLUX name is recognised around the globe as the trademark for top standards in pump technology. Everything started with the invention of the electric drum pump in 1950. Nowadays FLUX has an extensive range of products each of which can be customized. FLUX pumps are used for example in the chemical and pharmaceutical industries; in machinery and plant engineering as well as companies in electroplating, effluent treatment and the foodstuffs sector.

Whether single-product or system solution – FLUX quality is synonymous with a long service life, excellent economy and maximum safety.

In addition to the excellent product quality FLUX customers appreciate the superb level of expertise our staff has to offer as well as their genuine customer focus.

These days FLUX-GERÄTE GMBH supplies pumps to almost 100 countries around the globe.

