BEINLICH

70 YEARS SUCCESSFUL PUMP TECHNOLOGY

beinlich pump systems


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SEVEN DECADES PUMP SYSTEMS

Beinlich Pumpen GmbH is an international supplier of dosing and transfer pumps for industrial applications in process engineering and hydraulic systems. Beinlich offers a large selection of high-performance external and internal gear pumps, high pressure radial piston pumps and progressive cavity pumps and has acquired an extensive technical knowledge in pump technology for more than 70 years. Both the optimal evaluation of individual customer requirements and the precise observation of the markets lead to a continuous development of the products. The company, based in Gevelsberg, was founded in 1951 and is part of the Echterhage Group.

70 YEARS

In the course of seven decades Beinlich Pumpen has developed from a classic manufacturer of lubrication pumps to a supplier of highly specialised pumps. In addition to flexible standard products, Beinlich relies on the knowledge gained over many years from accompanying individual customer projects. The company offers its customers much more than just a product.

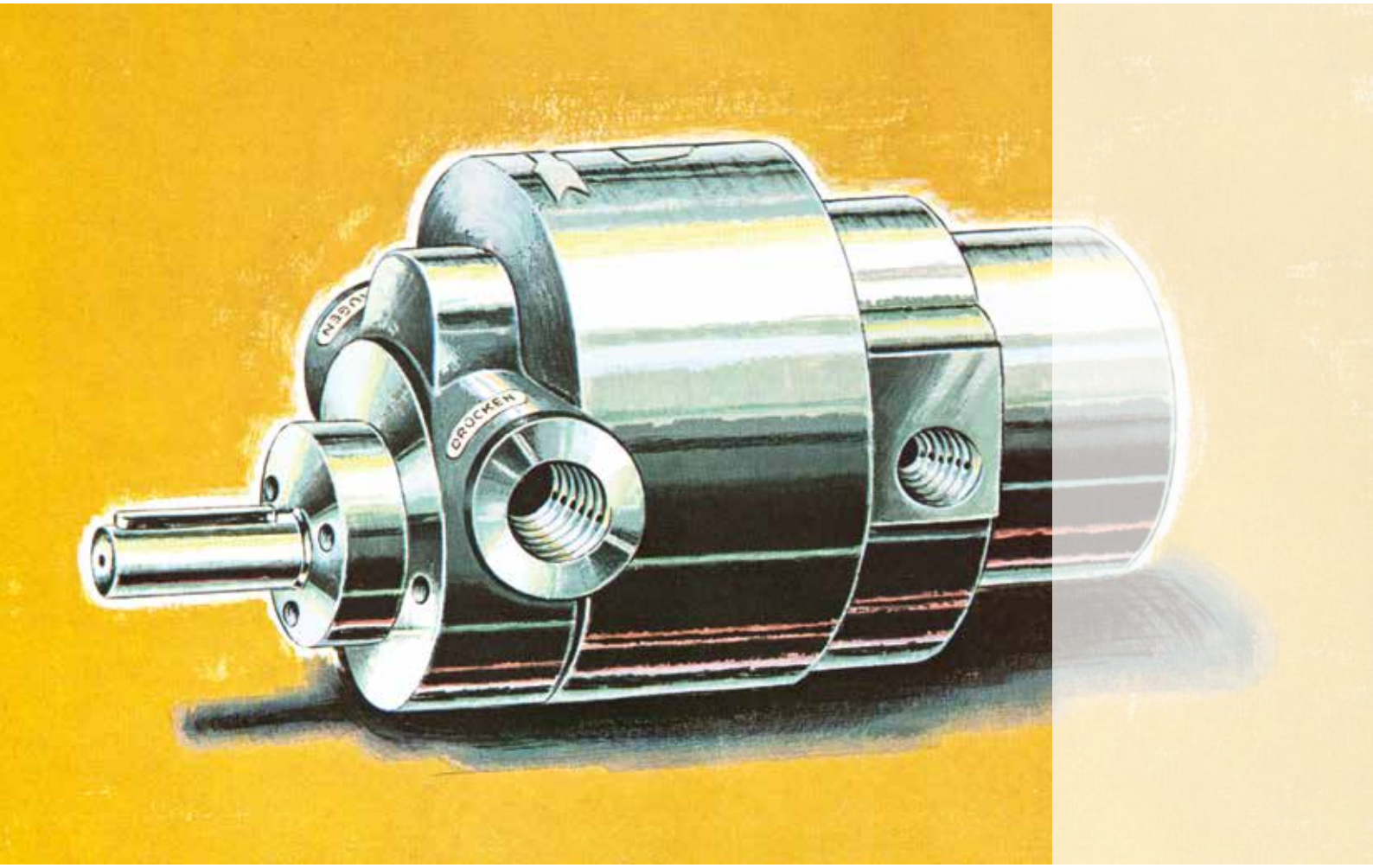
Beinlich is a specialist pump supplier, for example at high pressures, unusual viscosity or solids content. But how could the traditional company develop into an expert for special solutions?

Already when the company's founder Günther Beinlich built the first pumps in the German city of Velbert in 1951, he was doing something significantly different from his competitors: While almost all manufacturers concentrated on one area, the first-generation external gear pumps were suitable for both lubricating oil and hydraulic applications.

Over the years, the pump design was adapted so that the products could also be used as feed and delivery pumps, but basically, for a long period of time, Beinlich remained an industrial pump manufacturer for the classical mechanical and plant engineering of that time.

A "fateful" project

The company took its first decisive step towards becoming a manufacturer of special pumps with a project in the early 1970s when special pump units were needed in mines for spraying polyol isocyanate – i.e. PU synthetic resin. Due to this experience with a new medium, the technicians had gained important material knowledge, which had a decisive influence on the development of the company in the years that followed.



However, the dynamic continued in other directions in the 1980s and 1990s: an internal gear pump was developed to enable less noisy applications; radial piston pumps developed inhouse were used for load holding in larger hydraulic systems; the company's own external gear pump was further developed into a pressure build-up or booster pump. With all these new products the company always oriented itself towards large specialized suppliers.

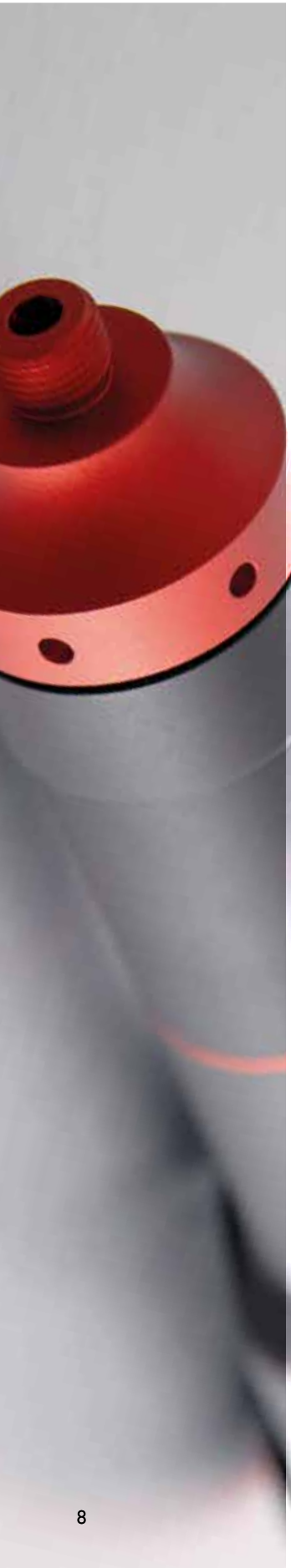
But Beinlich was too small to be a serious competitor and sometimes even a customer of the specialists. The company was never concerned with "copying", but with the further development of knowledge or the use of parts of a technology. Over the years, this has resulted in extensive pump knowledge, which now forms the foundation of the company.


beinlich
Mehrere Förderströme mit einer Pumpe
Hochleistungs-Zahnradpumpen
ein- und mehrstufig
Beinlich Harmsheidt
Gear pumps
for special service conditions

Open for anything

Beinlich regularly trains young talents in all important disciplines. The trainees and students can build on existing knowledge, develop it consistently and apply it to ever new customer requirements. Many remain with the company for a long time. 30 years of employment is not unusual at Beinlich. Many employees experienced and helped shape the second decisive step in its development. At the end of the 90s, the company moved to Gevelsberg and became part of the Echterhage Holding. From this connection with VSE Volumentechnik GmbH, DST Dauermagnet-SystemTechnik GmbH, HBE GmbH and Oleotec S.r.l most diverse new product ideas and applications developed in the following years.

Above all, a broader view beyond the classic industrial sectors had its effect. New orders from the food, cosmetics and electronics industries challenged the material knowledge and ideas of the technicians time and again.



Application knowledge is the key to success

To seal electronic components, a customer needed a pump for methyl acrylate, a fluid that crystallises quickly due to the heat of bearing friction and can block the bearings. Together with the customer, Beinlich then developed step by step a pump with an encapsulated bearing. Eventually, this resulted in the pump series DARTec®.

For other pump developments the initial impulse comes from within the company, such as with the ViSCO.pump®, a high precision progressive cavity pump. This pump technology has not been in Beinlich's portfolio yet. However, the company wanted to offer a pump which is less stressful for susceptible fluids, provides a constant discharge and does not require a dispensing valve. This fourth positive displacement pump variant rounds off the product portfolio - and further innovations are planned for the coming years.

The idea of opening up markets with product developments does include a high potential and at Beinlich there is a quite good counter calculation: 80 % of the projects are based on user knowledge. The Beinlich employees know the characteristics of the pumps in most customer systems and the behaviour of many fluids under a wide range of ambient conditions. With this expertise gained from many years of projects, the company can offer their customers in various industries the best possible solutions, whether they are traditional machine builders, manufacturers of highly sensitive electronic components or a pharmaceutical company operating under strict regulations.

The employees contribute to the customers' success with precise application knowledge. Through flexibility and product variety Beinlich can react quickly to customer requests and new market requirements.

PRODUCT OVERVIEW

ZPA

External gear pump

The self-priming external gear pump ZPA is particularly suitable for uncritical media without fillers which are compatible to the used standard materials.

Z P A

The pump is an ideal solution for bottling and filling, as it can be variably applied in any installation position. A combination to multiple flow pumps is as possible as the combination with high pressure radial piston pumps.

Advantages

- Variable installation position
- Low pulsation
- Low noise operation
- Long service life
- High volumetric efficiency
- Different material combinations possible

Applications

Filling, bottling, filtration, heating circuits, cooling circuits, lubrication oil hydraulics, high temperature application (on request)

Displacements

0.1 to 2,600 cc/rev

ZPI

Internal gear pump

Thanks to internal gear wheels, the gear pump ZPI allows an especially low-noise conveying of the fluid which not only reduces the noise emission but also the costs for noise-absorbing measures.

Z P I

The high volumetric efficiency of the ZPI internal gear pump has a positive effect on the energy balance due to the improvement of the overall efficiency.

Advantages

- Low pulsation
- Low noise operation
- Long service life
- High volumetric efficiency

Applications

Low noise hydraulic drives, coolant pumps for machine tools, „overdrive pumps" for hydraulic presses in combination with Beinlich radial piston pumps

Displacements

1.00 to 207.00 cc/rev

TR/TRG

Radial piston pump

The TR / TRG radial piston pump was designed for the high pressure range up to 700 bar and for uncritical, clear media. The low-noise and low-pulsation radial piston pump is available in different versions.

TR / TRG

Beinlich offers the product series TRD/TRGD with coated pistons for poorly and non-lubricating media. Additionally, various seals can be assembled to meet the different requirements (triple shaft seal with block chamber, mechanical seal with block chamber or magnetic coupling).

Advantages

- High pressure range
- For low viscosity applications
- Different coatings
- Wear protection
- Different sealing options (incl. magnetic coupling)
- For process applications

Applications

Test stands, high pressure hydraulics, high pressure dosing

Displacements

0.42 to 42.88 cc/rev

ZPD

External gear dosing pump

Our most flexible line of external gear pumps, the ZPD has been used in countless applications the world over.

Z P D

The basis of its success stems from a platform of customization that rivals even the most competent competitors. Available in cast iron and stainless steel bodies, the ZPD flaunts 43 displacement sizes, 5 shaft seal options and multiple bearing and wear plate choices. ZPD gear pumps are specifically used for wide flow range metering applications and transfer applications. Volumetric efficiency values of over 90% are typically achieved.

Advantages

- Low-pulsation and precise dosing of the medium being transferred
- High pressures
- Large flow range
- Multiple construction material options
- Multiple sealing options

Applications

Dosing of medias without fillers: polyurethanes, isocyanate, polyol, catalyst, additives, silicones, fuels, adhesives, oils, hotmelts, paints

Displacements

0.10 to 517.00 cc/rev

ZPDA

External gear dosing pump

The high-precision ZPDA dosing pumps are specifically designed for start stop dosing. The low pulsation gear design provides a constant flow with very rapid pressure build-up.

Z P D A

Internal clearances based on fluid viscosities are held within a few microns to insure the highest efficiency possible, even at high differential pressures up to 200 bar. Depending on the application, DLC coatings are available for the wetted parts to provide additional corrosive resistance and abrasive particle resistance as well. Direct mounting of a VSE flow meter on the rear plate is also available.

Advantages

- Low-pulsation and precise dosing of the medium being transferred
- High-precision "start–stop dosing"
- Rapid pressure build-up
- Option for direct mounting of VSE flow meter
- Corrosion/wear resistant coatings

Applications

Dosing of medias without fillers: polyurethanes, isocynate, polyol, catalyst, additives, silicones, fuels, adhesives, oils, hotmelt, paints and ink

Displacements

0.1 to 26.0 cc/rev

ECO.pump

External gear dosing pump

New to the Beinlich lineup, the ECO.pump boasts as a highly capable external gear pump at an economical price point.

E C O . P U M P

Competent at metering viscous media up to 200,000 mPa·s, the ECO.pump lends itself to many common applications. The stainless steel body and compact design allow the pump to be used as an in-line device. Available with a variety of displacement sizes, the ECO.pump is the cost effective solution for your metering pump needs.

Advantages

- Low-pulsation dosing of the medium
- Easy and fast assembly and disassembly
- Economical
- Light weight

Applications

Dosing of media without fillers:
isocyanates, adhesives, silicones, polyols, hotmelt, paints and oils

Displacements

0.15 to 6.0 cc/rev

DARTec®

External gear dosing pump

The DARTec® gear dosing pump was specifically designed for high precision dosing of thermally reactive fluids.

D A R T E C

Its protected sealed needle bearing system eliminates material contact with bearings preventing shear and frictional heat in these areas normally associated with external gear pumps. Because of this innovation there is a notable reduction in the amount of solvent required to flush the pump and downtime between jobs. This also leads to overall improved efficiency, typically > 95 %. The DARTec® is also available in a low weight construction (700 grams) and is optimal for use on 3 and 4 axis robot dispensing equipment.

Advantages

- Low-pulsation and exact dosing of the medium being transferred
- High-precision „start-stop-dosing“
- Low mass options
- High inlet pressure
- Highest efficiency of all Beinlich gear pumps

Applications

UV-curable fluids, acrylics, organic peroxides,
additives, thermally reactive fluids

Displacements

0.1 to 6.0 cc/rev

ViSCO.series®

Progressive cavity pump

The ViSCO.pump® is based on the volumetric principle of an endless (infinite) piston whereas the core components rotor and stator form a perfectly sealed metering chamber.

V I S C O . S E R I E S

The eccentric movement of the rotor allows for a low-shear motion of the medium from one chamber to the next chamber without squeezing the media. Dispensing proportional to speed, accuracy and repeatability is ± 1%. Its light weight space saving design is highly applicable for small 3 and 4 axis dosing robots. Well suited for filled media the ViSCO.pump® lends itself to countless applications where reliability and repeatability is a must.

Advantages

- High dosing accuracy, ± 1% volumetric
- Continuous dosing
- Speed proportional transfer
- Valveless closed system
- Handles abrasive media
- Low pulsation and shear

Applications

Dosing of filling compounds, coating of electronic components, protective coating of printed circuit boards, application of epoxy resin adhesives, bead dispensing, sealing, underfillings, dosing and metering, filling

Displacements

0.01 to 11.00 cc/rev

CUSTOMER-SPECIFIC SOLUTIONS

In direct cooperation with the customer and in a very short time, Beinlich develops and produces solutions which meet the demands and specific requirements of the application. Standard materials like steel or stainless steel can be used as well as special materials (e.g. titanium, PEEK).

Additionally, the customer can also choose from different shaft seals, e.g. mechanical contact seal with block chamber or a leakage free magnetic coupling, to achieve an optimum of durability and a reduction of downtimes.

All Beinlich pumps can be delivered complete with motor, bell housing and coupling. Mounting of VSE flow meter on many sizes is also a standard option.

MODERN PRODUCTION AND ASSEMBLY

By continuously developing our products and adapting them to market requirements and by using the most modern processes in production and assembly, we are prepared for the demands of the future.

We combine the extensive know-how of our long-time employees with the latest manufacturing technologies in special design construction and individual production. We continuously invest in our machinery in order to be able to process customer orders even more efficiently. On our precise test benches, all pumps are intensively tested for their respective requirements. This way we can assure you of the highest level of quality and functionality.

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