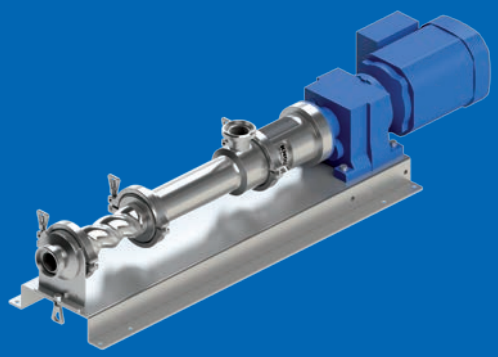
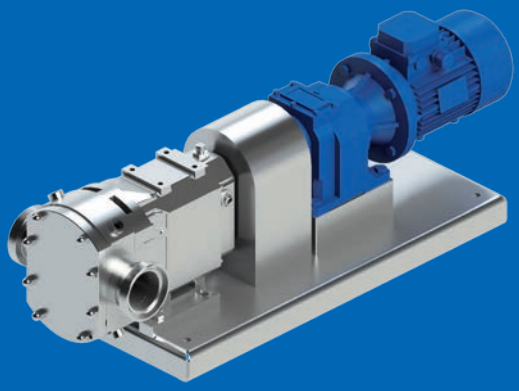
Positive displacement pumps

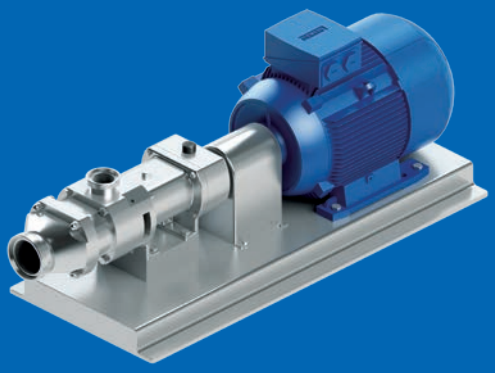
KNOLL
.It works

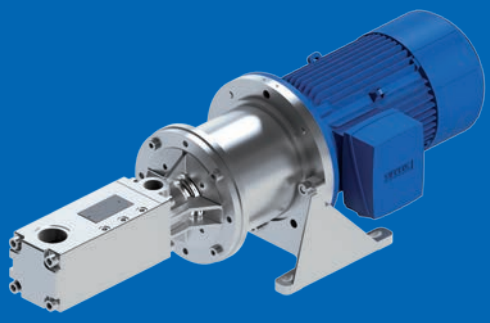
Version 02-2017

Contents









Rotating displacement pumps convey media using mechanically-moved displacement elements. Thanks to conveying chambers that remain stable, a linearly-controllable and very gentle product conveying is possible, even with different pressure ratios.

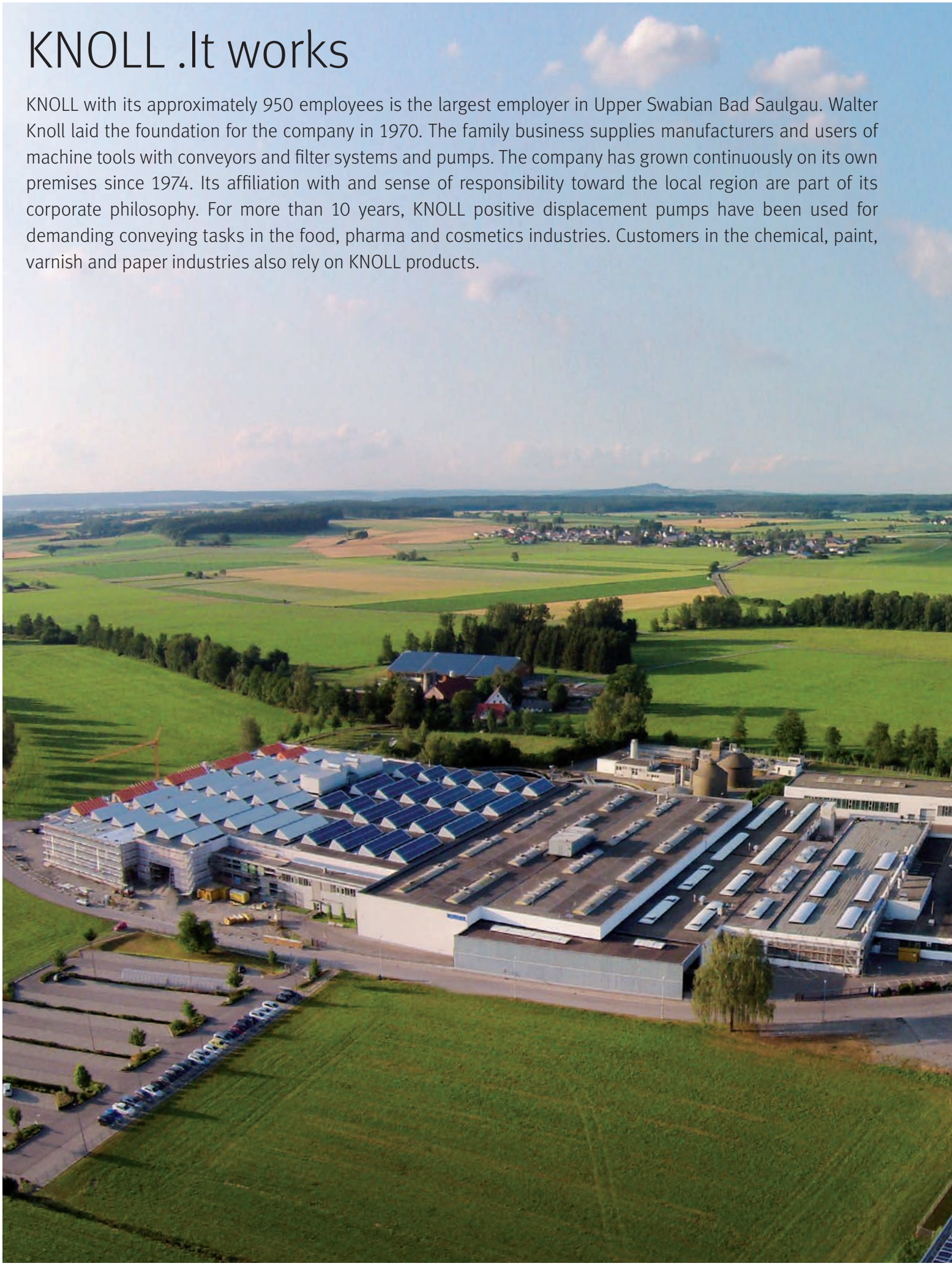
Rotating displacement pumps are especially suitable for volumetric dosing tasks and for the conveying of viscous to very high-viscosity media. No other type of pump can manage such a broad spectrum of fluid properties: from thick to thin, homogenous to lumpy, lubricating to abrasive, neutral to aggressive.

Thanks to the very different shapes of rotating displacement pumps, the selection of the correct pump is crucial for the application case in question in order to find the most economical pump solution (the lowest life cycle costs).

KNOLL positive displacement pumps inspire with their wide variety of possible uses, their solid design and great durability.

KNOLL .It works

KNOLL with its approximately 950 employees is the largest employer in Upper Swabian Bad Saulgau. Walter Knoll laid the foundation for the company in 1970. The family business supplies manufacturers and users of machine tools with conveyors and filter systems and pumps. The company has grown continuously on its own premises since 1974. Its affiliation with and sense of responsibility toward the local region are part of its corporate philosophy. For more than 10 years, KNOLL positive displacement pumps have been used for demanding conveying tasks in the food, pharma and cosmetics industries. Customers in the chemical, paint, varnish and paper industries also rely on KNOLL products.



MX

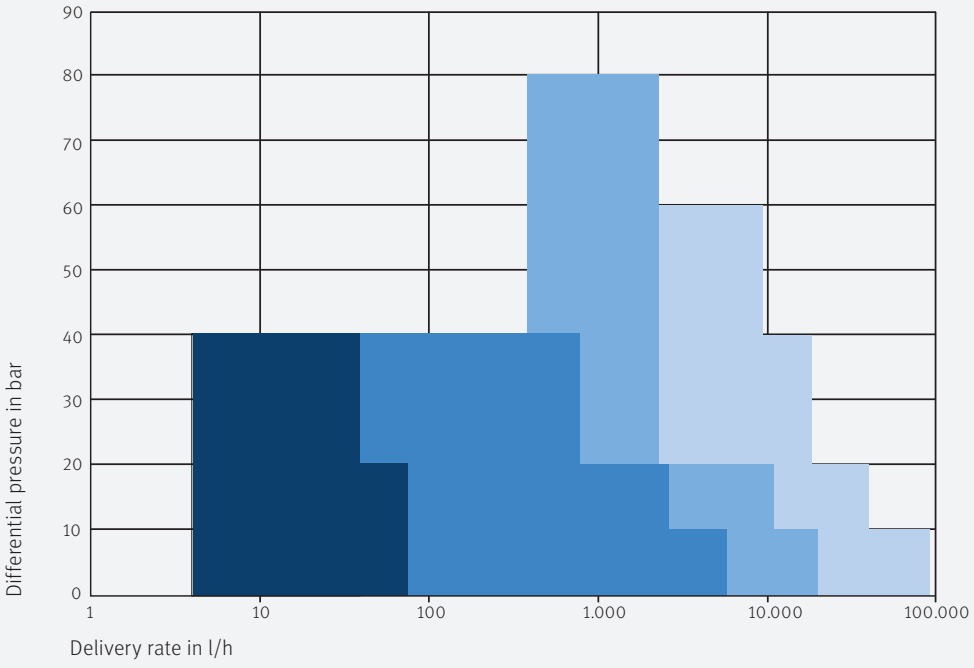
Progressing cavity pumps

The KNOLL MX progressing cavity pump precisely fulfills the demanding requirements of the food, pharma and cosmetics industries. State-of-the-art design features allow excellent ease of cleaning and maintenance. Therefore, the pump is available with all common certificates. And thanks to its great pressure stability, the MX can also be used in many ways in the chemical, paint and paper industries, among others.

Benefits

- 10 bar per pressure stage thanks to EvenWall® technology
- Compact dimensions with high pressures
- Gentle product delivery
- Quick and easy cleaning, CIP and SIP capable
- Low dead space, hygienic design
- Easy to service

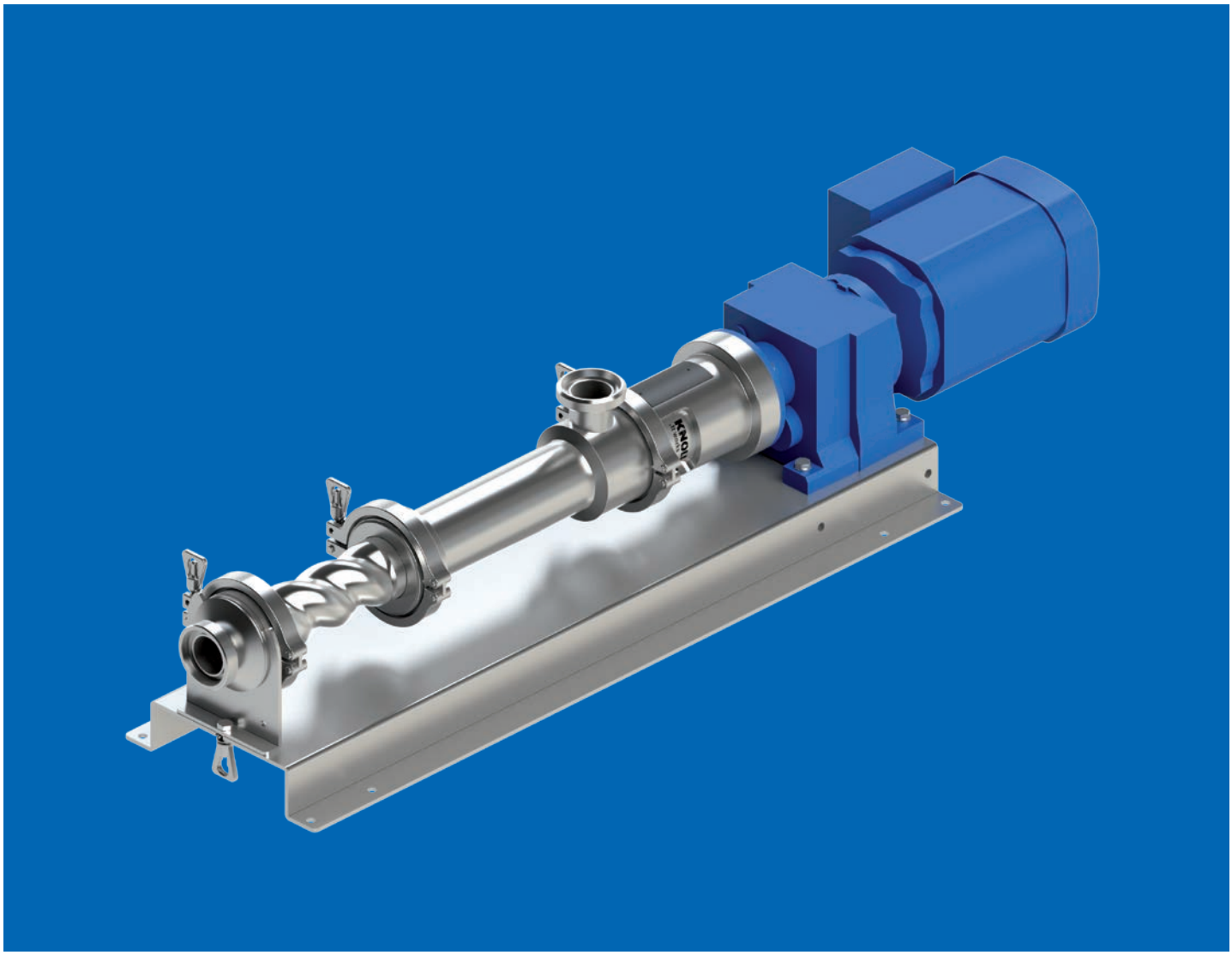
Power range



Details based on a medium with a viscosity of 1 mPas
and a density of 1.0 kg/dm³

Design Features

- Modular design
- Quick to disassemble, e.g. due to clamp locks
- Robust cardan joint with hygienic joint liner
- EvenWall® stators with even elastomere wall thickness
- Solid bearing housing with generous sealing space



Pumping system

Stator – Rotor – System

ML

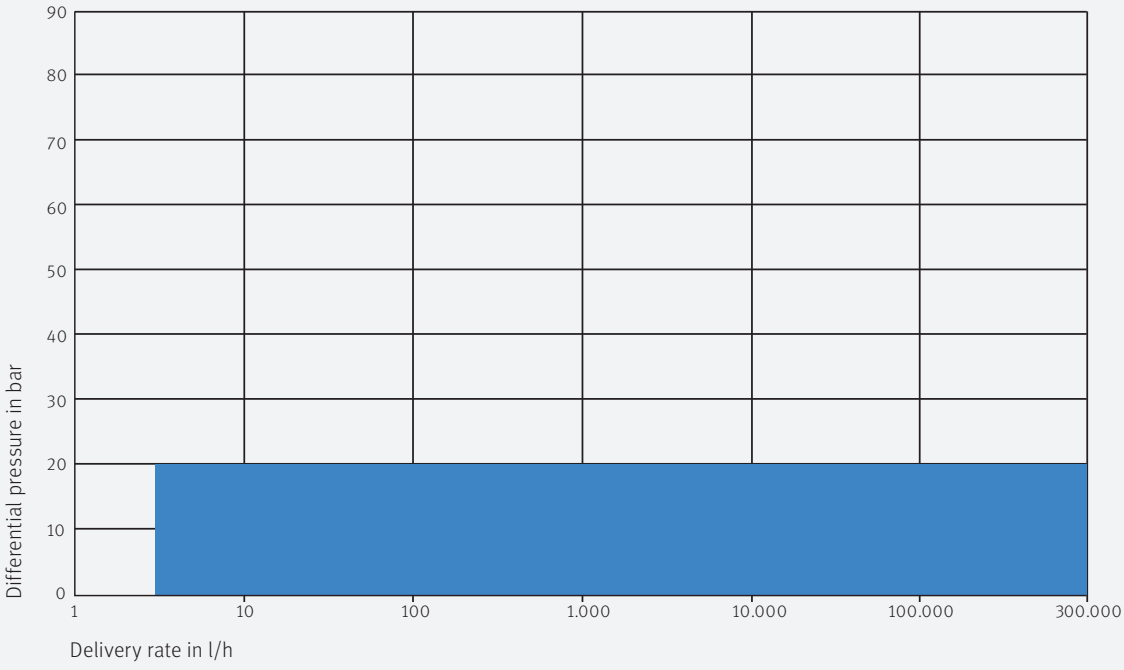
Rotary lobe pumps

The KNOLL ML rotary lobe pumps are extremely well-suited for highly-demanding conveying tasks due to their robust construction. In the food industry, rotary pumps are the most frequently-used positive displacement pumps. Their small space requirement, easy maintenance and reliability have been inspiring people for decades.

Benefits

- CIP and SIP capable
- Optionally completely of stainless steel (also bearing housing)
- Robust Design (bearing housing with 2 x 4 bearings)
- Max. 20 bar
- Good intake behavior
- Various rotor shapes

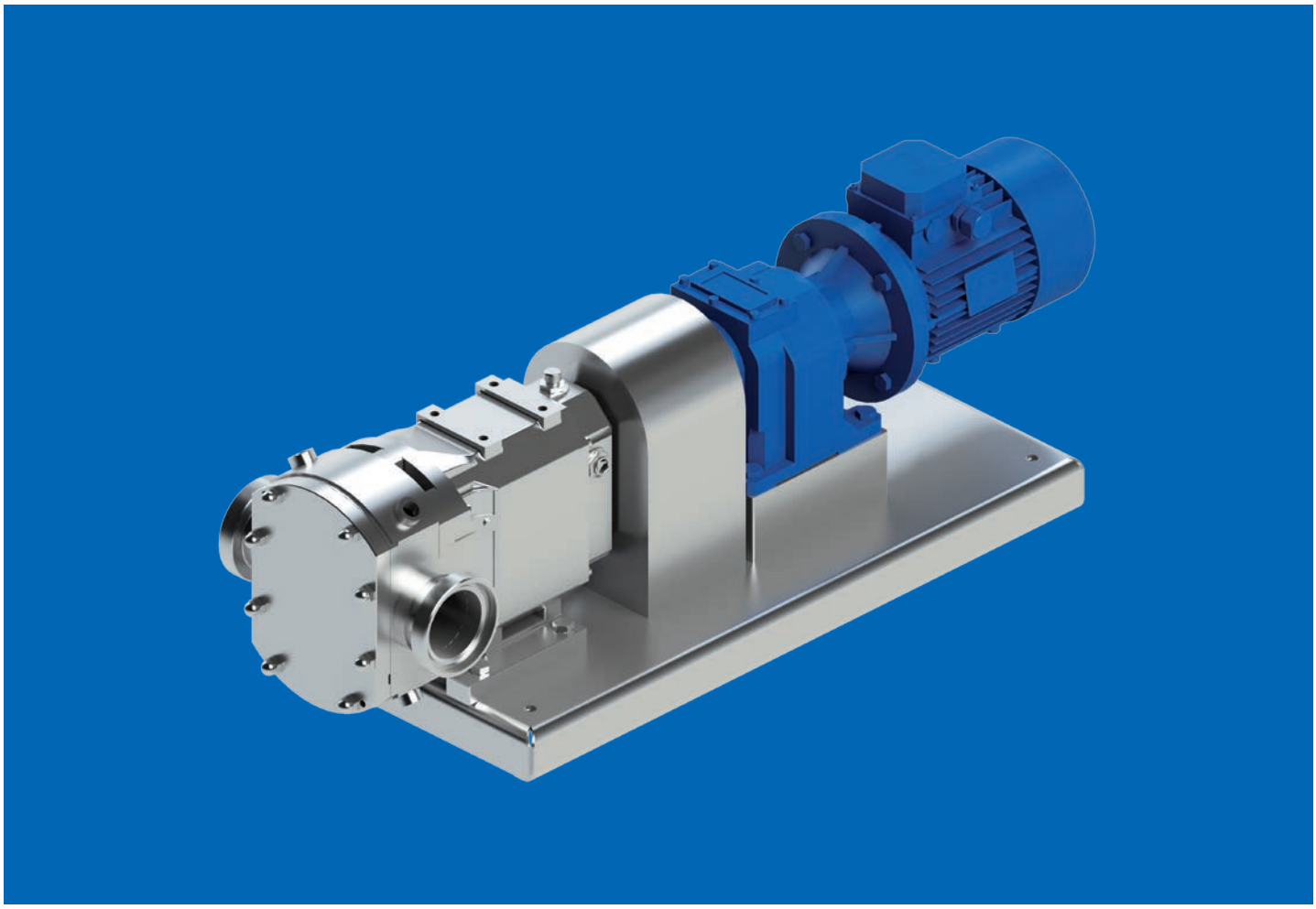
Power range



Details based on a medium with a viscosity of 1 mPas
and a density of 1.0 kg/dm³

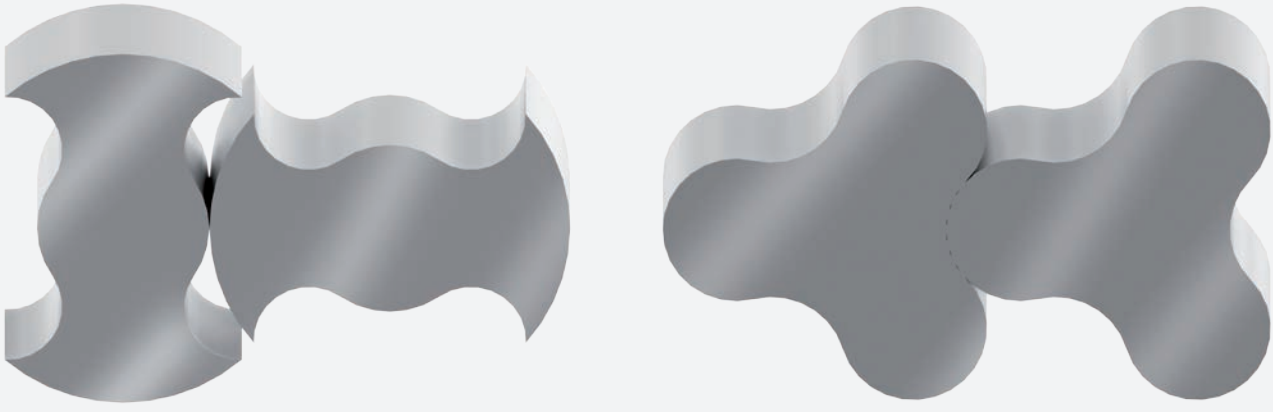
Design Features

- Solid bearing housing with 8 roller bearings
- External synchronization gear
- Robust pump construction thanks to short overhung and rigid shaft
- Exchangeable rotor options
- Compact design



Pumping system

Touchless rotary piston



MS

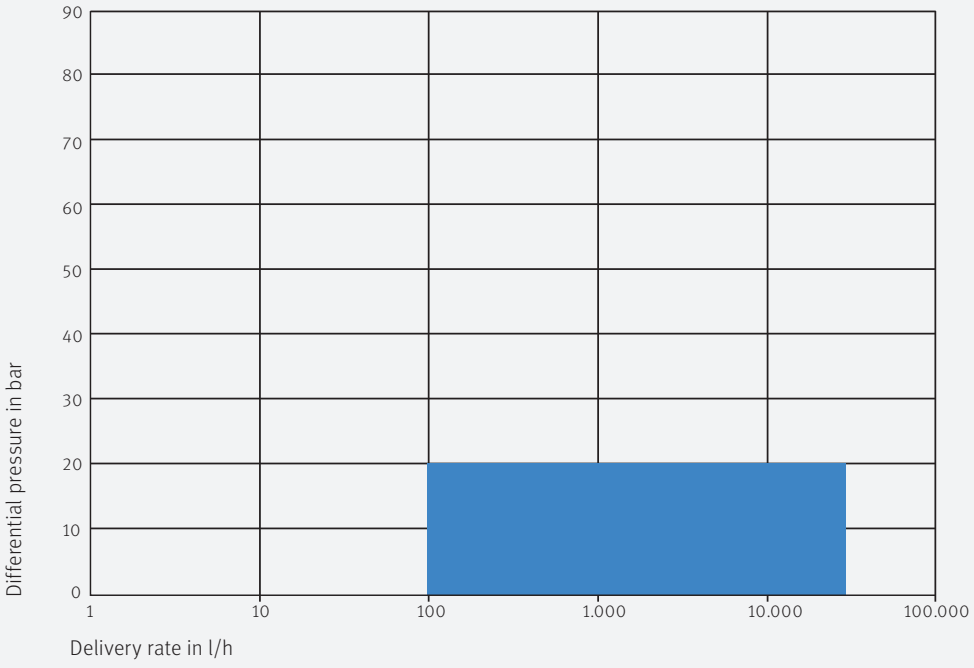
Screw pumps

Due to the very great speed range, the KNOLL MS screw pump is used both for the conveying of viscous products and simultaneously as CIP cleaning pump. Double screw pumps are high-performance units, which are becoming ever more popular thanks to their benefits in the food sector.

Benefits

- Greatest flexibility due to very great speed range
- Conveying of viscous products and CIP cleaning fluids with only one pump
- Gentle product conveying thanks to axial conveying without change of direction
- Very easy to clean thanks to optimal flushing paths
- Touchless elastomere-free conveying elements
- Nearly pulsations-free – ideal conveying behavior

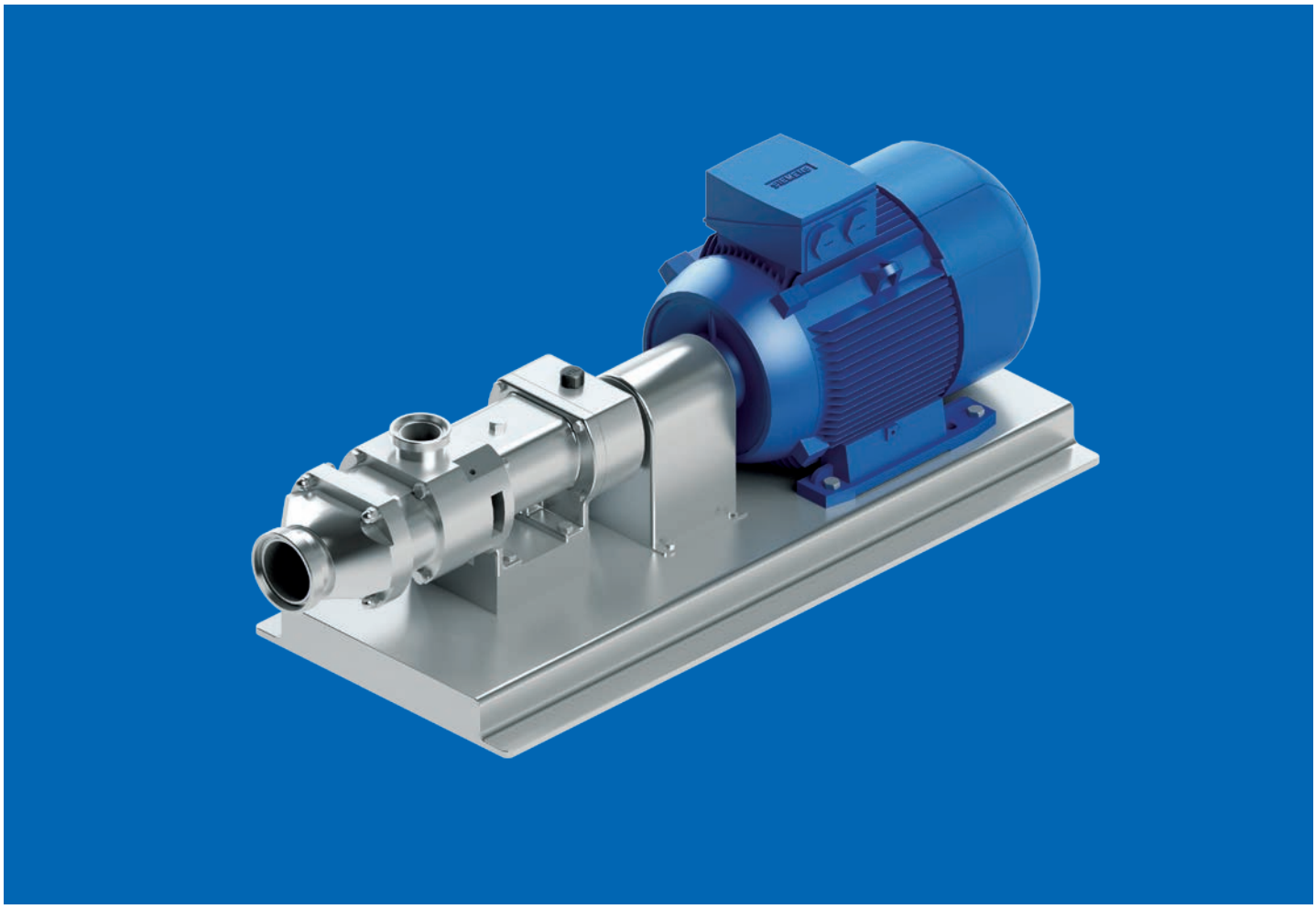
Power range



Details based on a medium with a viscosity of 1 mPas
and a density of 1.0 kg/dm³

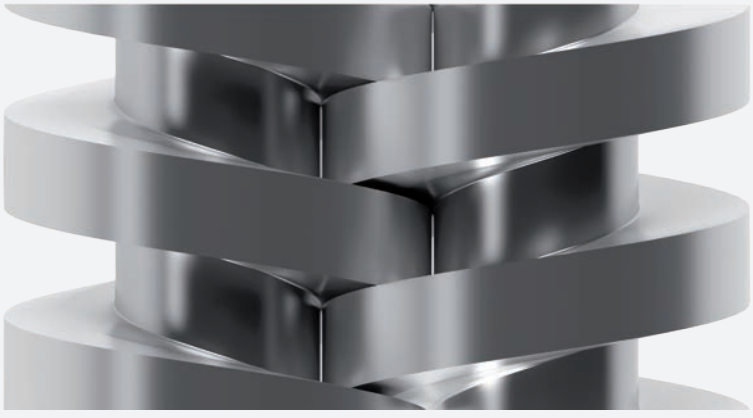
Design Features

- Robust bearing with needle and ball bearings with oil circulation lubrication
- External synchronization gear
- 3-part pump housing for great flexibility
- Different spindle geometries for optimal conveying behavior
- Low individual weights – easy to maintain and service



Pumping system

Touchless double spindles



KTSV

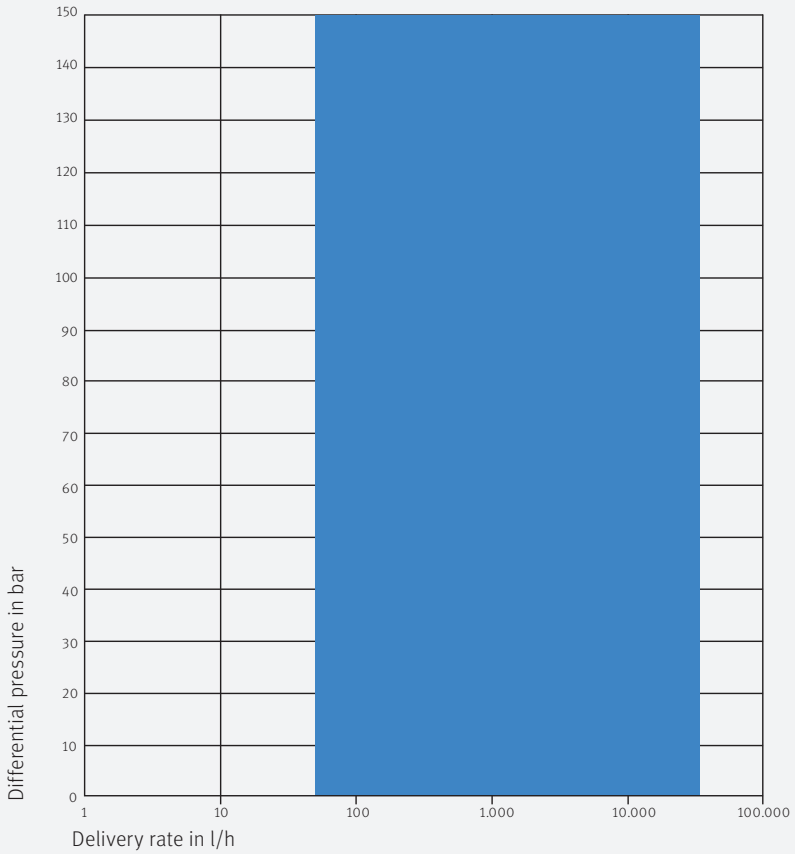
Screw pumps

The KNOLL KTSV screw pump is a self-priming positive displacement pump for lubricating and low-abrasive media. Due to its great pressure stability, high performance density and compact design, this pump is used frequently in the chemical industry and in various areas of mechanical engineering.

Benefits

- High-pressure capable up to 150 bar
- Long service life thanks to high resistance to wear
- Low pulsation
- Extremely temperature-resistant
- Gentle conveying of fluids
- Small installation space

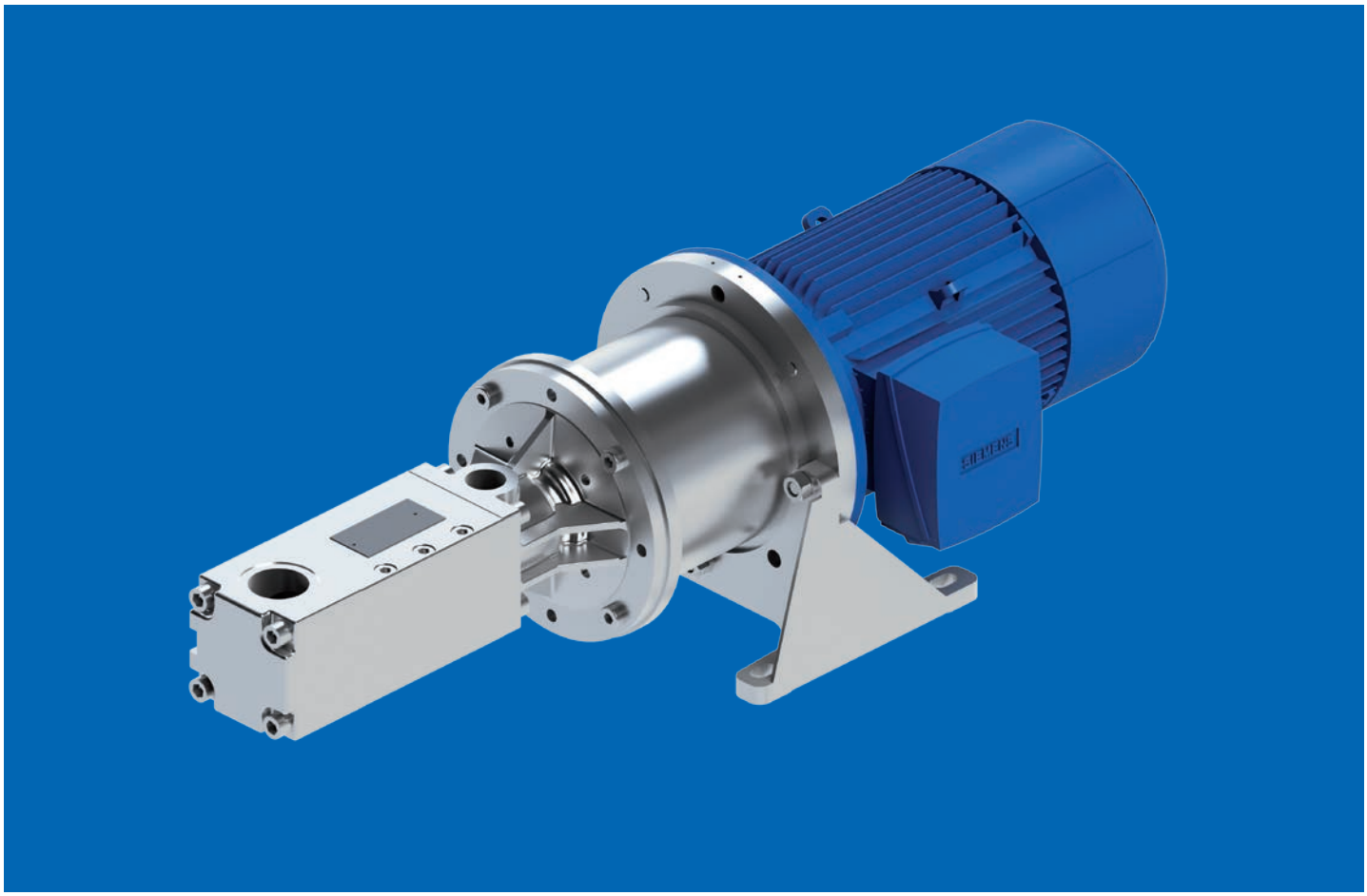
Power range



Details based on a medium with a viscosity of 1 mPas and a density of 1.0 kg/dm³

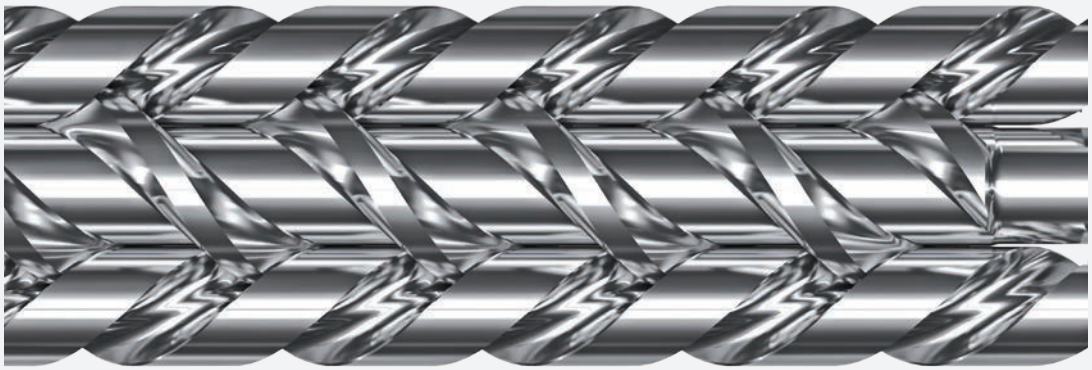
Design Features

- Wear-proof spindle housing thanks to ceramic liner
- Precision-made screw spindles
- Internal axial thrust compensation
- External main bearing for long service life
- Labyrinth for effective pressure reduction and high-efficiency



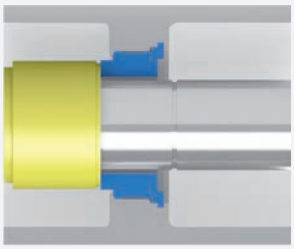
Pumping system

Drive spindle with 2 conveyor spindles

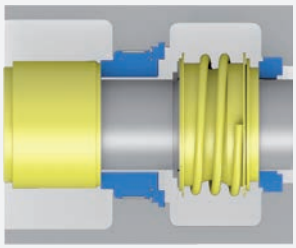


Options

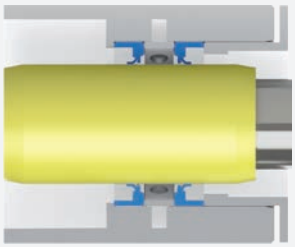
Shaft seal variants
(excerpt)



Axial face seal
single-acting



Axial face seal
double-acting



Lip seal

Double jacket for tempering
(depicted for MX pumps)

Pump assembly
with double jacket

Suction housing
with double jacket

Hopper housing
with double jacket

Base plates

Base plate
(cap profile)

Base plate with
tilting base

Hygiene
base frame

Mobile
base plate

Accessories

Pressure monitoring
Temperature monitoring
Quench vessel

Drive options

3-phase (geared) motors
Servo (gear) motors
Frequency inverter

Checklist

Contact details

Company:

Address:

Contact person:

Telephone / E-mail: /

Process description

Product specification

Medium:

Flow rate (l/h):

Viscosity (mPas):

Density (kg/dm³):

Temperature (°C):

Concentration (%):

Particle size (mm):

Discharge pressure (bar):

Inlet pressure (bar):

Arrangement:

Regulations:

Cleaning ☐ CIP ☐ SIP ☐ manual

Medium:

Temperature (°C):

Concentration (%):

Comments:

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