# Progressing cavity pumps MX

KNOLL
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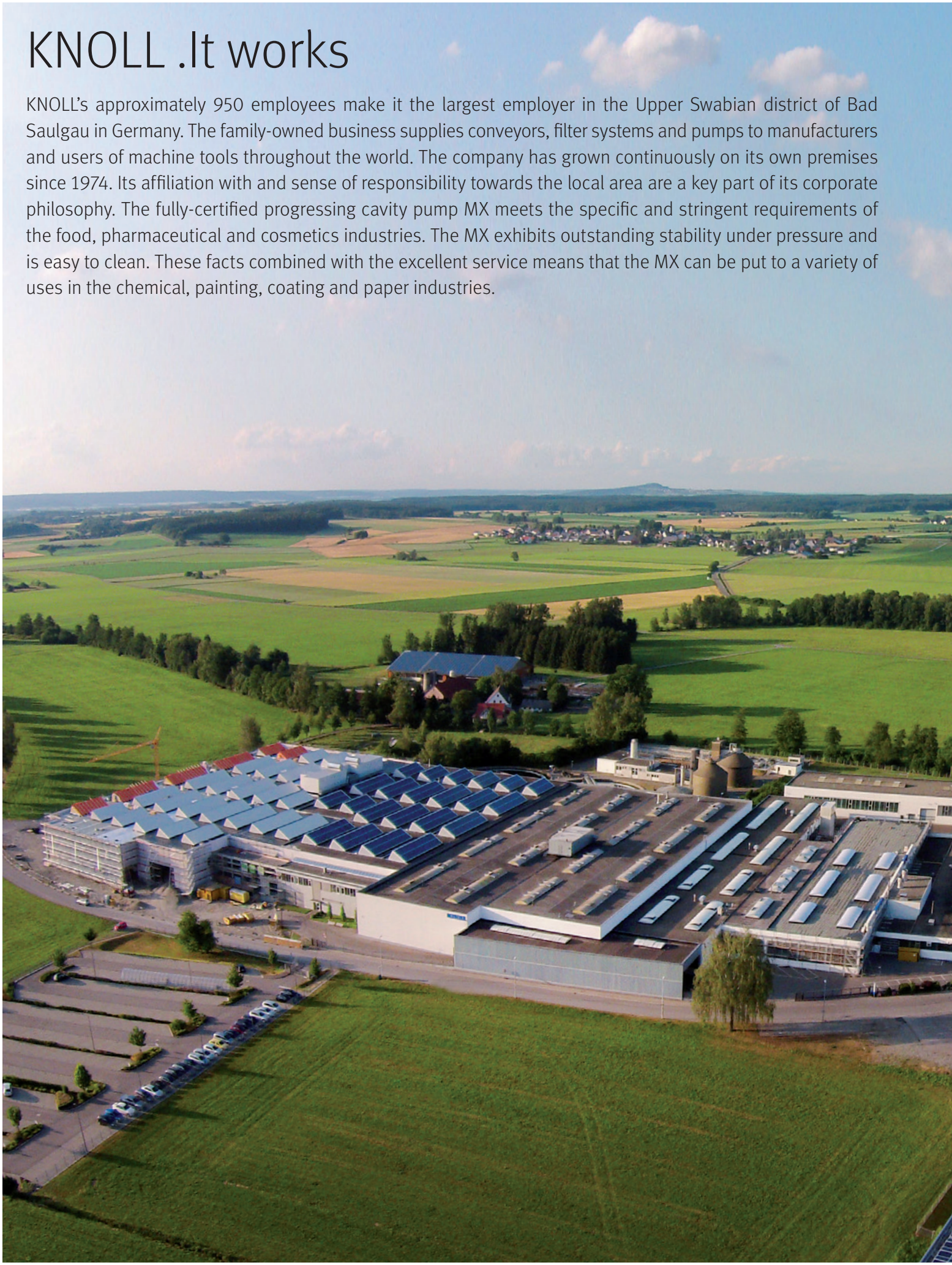
Content

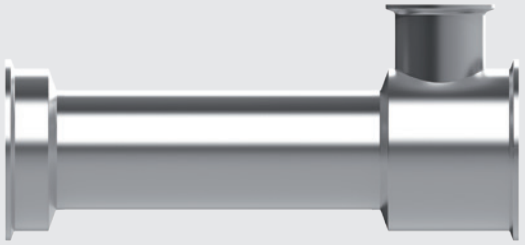
# KNOLL .It works

KNOLL's approximately 950 employees make it the largest employer in the Upper Swabian district of Bad Saulgau in Germany. The family-owned business supplies conveyors, filter systems and pumps to manufacturers and users of machine tools throughout the world. The company has grown continuously on its own premises since 1974. Its affiliation with and sense of responsibility towards the local area are a key part of its corporate philosophy. The fully-certified progressing cavity pump MX meets the specific and stringent requirements of the food, pharmaceutical and cosmetics industries. The MX exhibits outstanding stability under pressure and is easy to clean. These facts combined with the excellent service means that the MX can be put to a variety of uses in the chemical, painting, coating and paper industries.



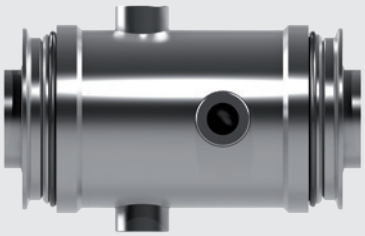
Discharge nozzle DIN32676

Stator EW40/10

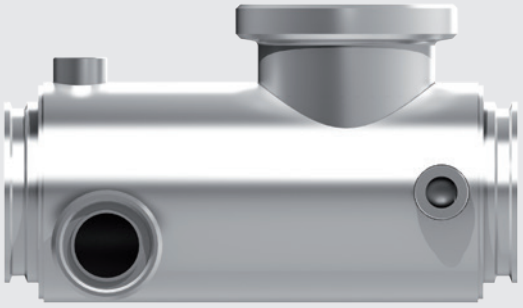


Suction housing DIN32676

Discharge nozzle tangential outlet



Stator EW25/10 with double jacket



Hopper housing with CIP nozzle and double jacket

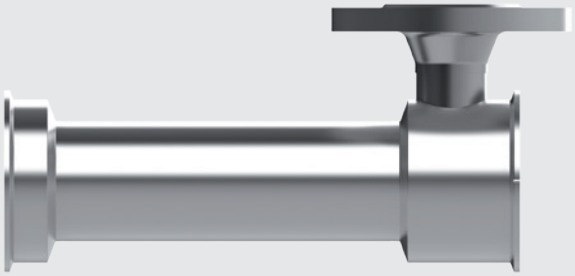
Discharge nozzle DIN11851

Stator EW30/10

Suction housing DIN11851

Discharge nozzle EN1092-1

Stator EW15/40



Suction housing EN1092-1

Discharge nozzle DIN11864-1

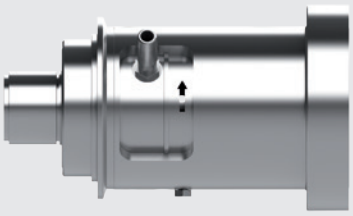
Stator EW20/20

Rectangular hopper housing with two CIP nozzles

# Modular design

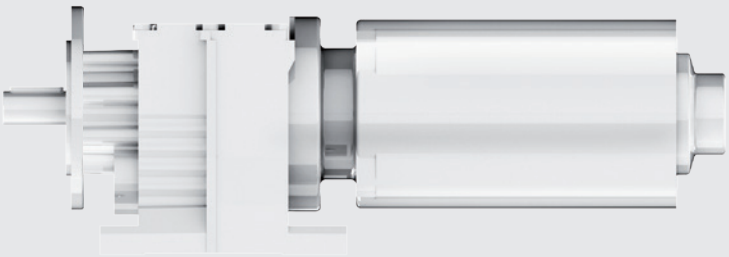
The modular design of the MX makes it suitable for numerous applications and extremely easy to maintain. The wide variety of components enable the pump to be modified in the optimum way to suit customers' specific applications.

Hygienic mechanical seal MXHS

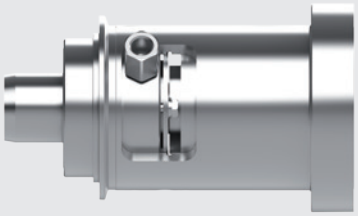


Double acting mechanical seal for quench MXHS-MXEB

Elastomer bellow mechanical seal MXEB

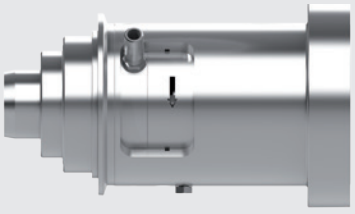


Gear motor in aseptic design

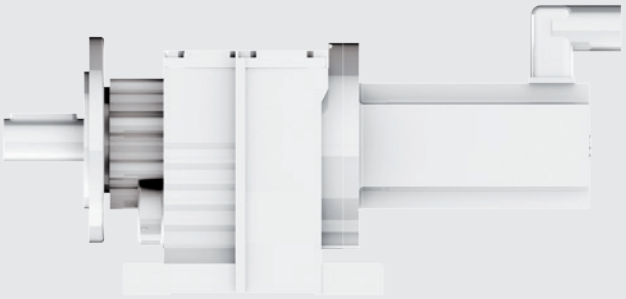


PS shaft seal with flushing

Spur gear motor



Gland packing with flushing

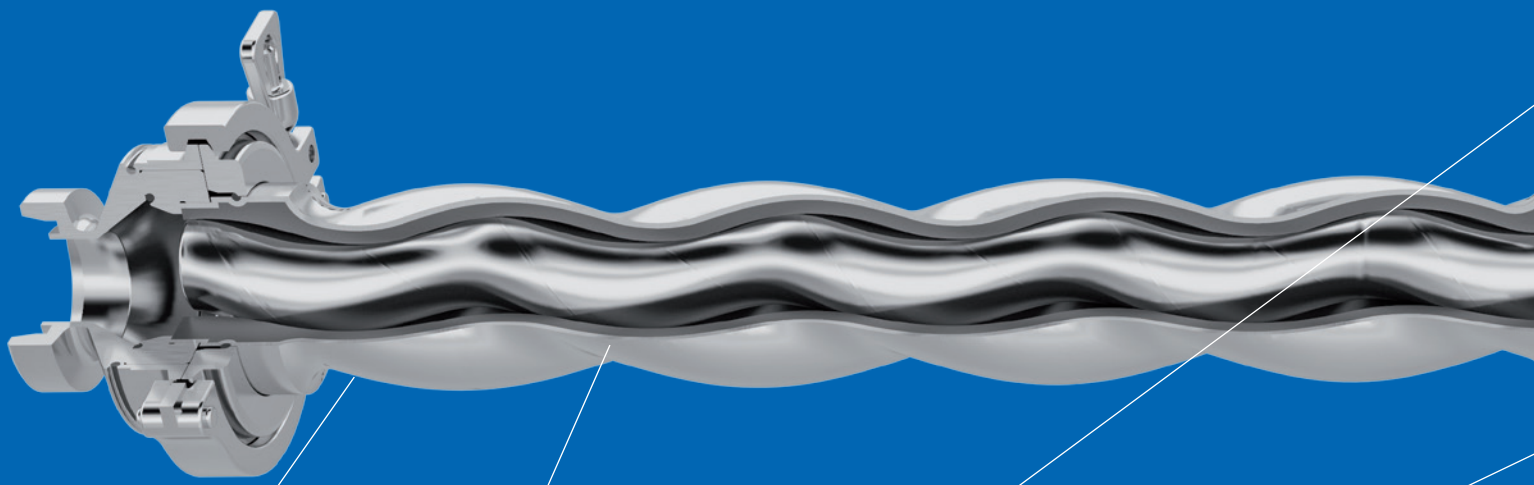


Servo gear motor

## Advantages

1. 10 bar per pressure stage thanks to EvenWall® technology
2. Compact assembly length at high pressures
3. Low-impact product delivery
4. Quick and easy to clean
5. Captive connecting elements
6. Modular design
7. Outstanding stability under pressure

## Design features – example MX20S



Modular design (various pump assemblies can be adapted)

Stators in EvenWall® design (uniform elastomer wall thickness)

Fast disassembly and assembly by means of clamping closures

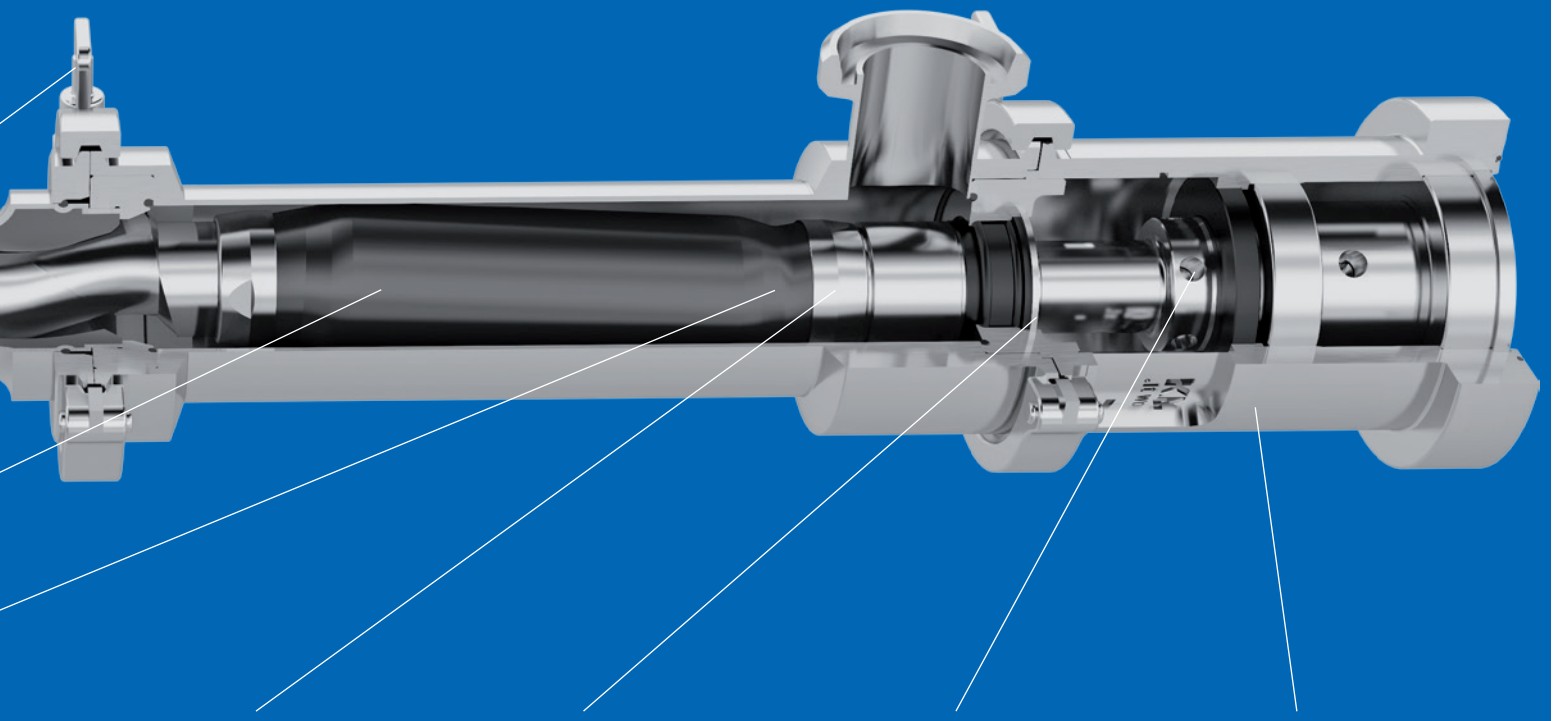
Hygienic sleeve

Cardan joint

## Features

- Compatible with CIP and SIP
- Hygienic design
- Design with minimal dead space
- Extremely easy to service
- Intelligent interfaces

The progressing cavity pump MX meets the specific and stringent requirements of the food, pharmaceutical and cosmetics industries. Advanced design features make the pump extremely easy to clean and service, and it comes with all standard certificates. The fact that the MX exhibits outstanding stability under pressure means that it can also be put to a variety of uses in the chemical, painting, coating and paper industries.



Non-slip cylindrical connection elements prevent the unintentional loosening of pump components

Spacious sealing chamber for all seal assemblies

Wear parts can be replaced quickly via a separation point opposite the product

Robust and splash-resistant bearing housing enables a fully assembled “standby pump” to be fitted even without a drive

## Type code

MX 20S-15/20

- Designation
- Size
- Model
- Pump assembly size
- Pressure stage

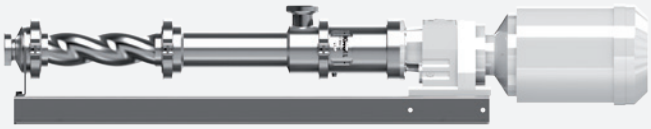
| | |
|---|---|
| Size: | Drive shaft diameter |
| Model: | Suction, submergible, hopper, and follower plate versions |
| Pump assembly size: | Rotor diameter |
| Pressure stage: | 20 = 2-stage (max. 20 bar) |

# Application examples

Food industry | dairy industry | beverage industry | pharmaceutical industry | cosmetics industry | painting and coating industry | chemical industry

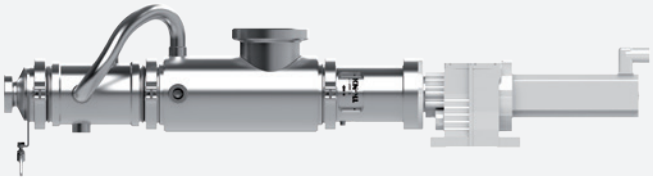
## Pet food industry
## MX20S-15/20

| | |
|---|---|
| Medium: | meat slurry |
| Flow rate: | 78 l/h |
| Pressure: | 10 bar |
| Viscosity: | 1,500 mPas |



## Confectionary industry
## MX20R-25/10

| | |
|---|---|
| Medium: | fat / fruit puree |
| Flow rate: | 450 l/h |
| Pressure: | 7 bar |
| Viscosity: | 70,000 mPas |



## Baked goods industry
## MX50R-80/10

| | |
|---|---|
| Medium: | dough |
| Flow rate: | 5,800 l/h |
| Pressure: | 6 bar |
| Viscosity: | 12,000 mPas |

# Food industry | dairy industry | beverage industry | pharmaceutical industry | cosmetics industry | painting and coating industry | chemical industry

# Application examples

## Food industry
## MX50S-50/40

Medium: dairy products
Flow rate: 300 – 3,000 l/h
Pressure: 30 bar
Viscosity: 1,300 mPas

## Automotive industry
## MX50R-80/20

Medium: 1K pur adhesive
Flow rate: 3,900 l/h
Pressure: 30 bar
Viscosity: 1,500,000 mPas
Special feature: solid stator made from tool steel

## Chemical industry
## MX20S-25/10

Medium: cleanser
Flow rate: 200 – 800 l/h
Pressure: 0.5 bar
Viscosity: 1 mPas

# Suction version

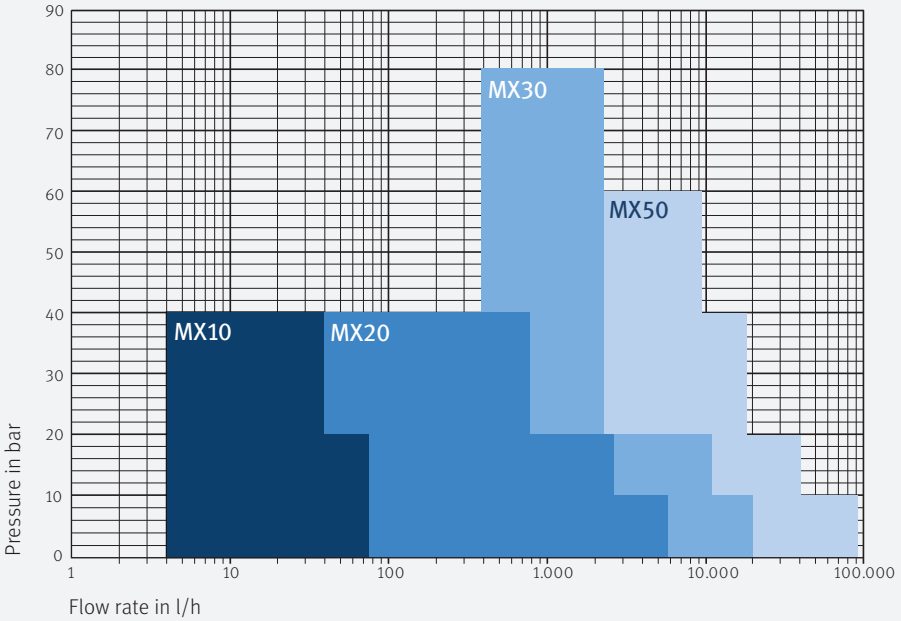
Types
MX10S
MX20S
MX30S
MX50S

## Application

- Metering and transferring applications
- Suitable for aqueous to highly viscous media
- Low-impact delivery of products containing solids

## Features

- Vertical and horizontal configuration possible
- Can be used regardless of the direction of rotation
- Self-priming pump to 0.2 bar absolute
- Available as a mobile or stationary pump
- CIP and SIP cleaning possible
- Ability to control the temperature of the entire pump
- Short assembly length




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

Types
MX10F
MX20F
MX30F
MX50F

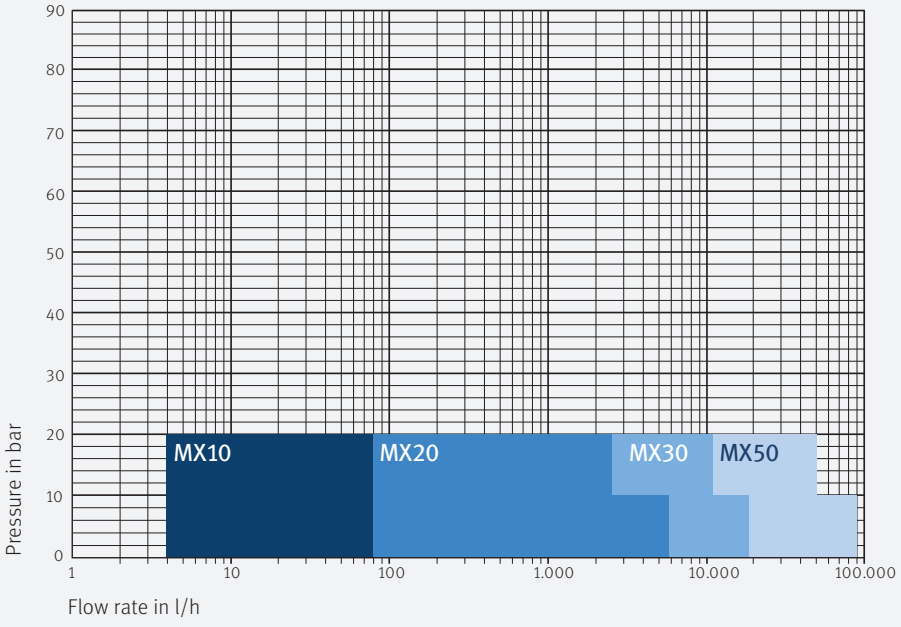
# Follower plate version

## Application

- Drum and hopper drained via follower plate
- Low-impact delivery of products containing solids

## Features

- Self-priming pump to 0.2 bar absolute
- Short assembly length
- Uniform metering with low pulsation




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

# Submerged version

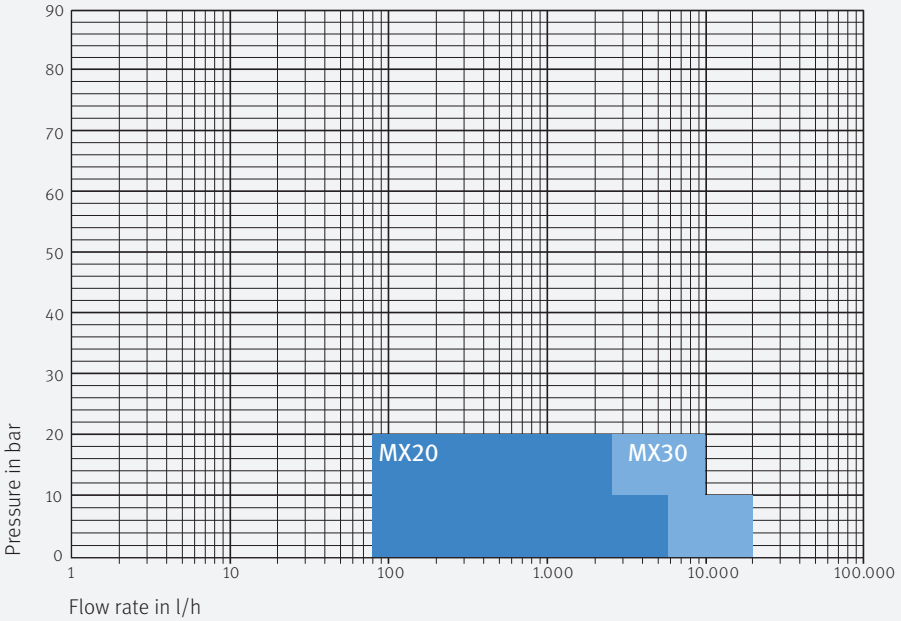
Types
MX20T
MX30T

## Application

- Metering and transferring applications
- Suitable for aqueous to highly viscous media
- Low-impact delivery of products containing solids

## Features

- Easy to drain drums, mixers, agitators and big bags
- Short assembly length
- Cassette design with minimal dead space
- Uniform metering with low pulsation
- Quick and easy to clean




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

Types
MX20R
MX30R
MX50R

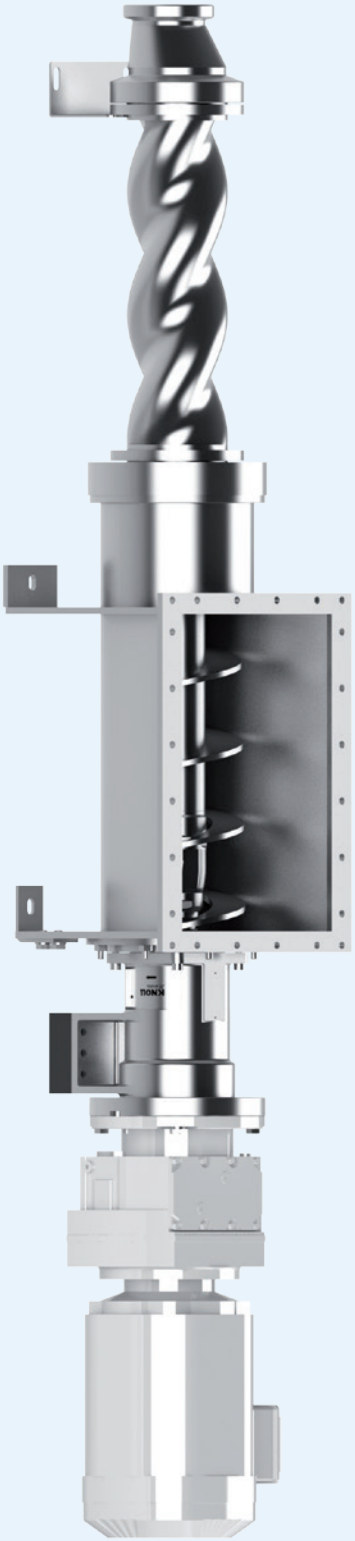
# Hopper version

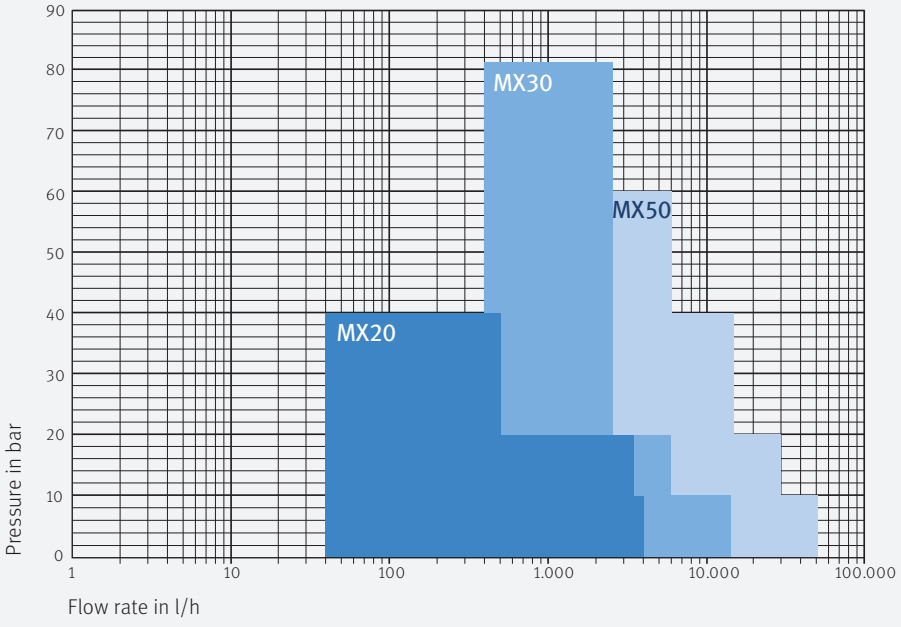
## Application

- Highly viscous to airtight media
- Suitable for media with a high solids content
- Metering and transferring applications

## Features

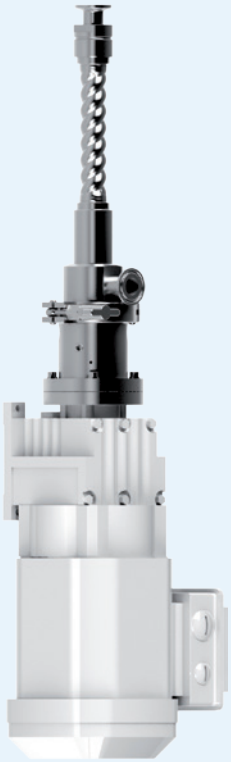
- Conical screw conveyor ensures optimum emptying of the hopper floor
- Position of the mechanical seal ensures excellent cleanability
- Well-designed separation points for easy disassembly
- Trough shape prevents deposits from forming on the hopper walls
- Additional extension hopper can be adapted
- Reliable delivery of the medium to the pump assembly thanks to stable screw conveyor shortly before the pump assembly
- Overfeeding in the pump tunnel ensures efficient conveying






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

# Pump series



## MX10 S; F

| | |
|---|---|
| Max. pressure: | 40 bar |
| Flow rate: | 1 up to 75 l/h |
| Viscosity: | up to 200,000 mPas |
| Temperature: | -30 °C up to 140 °C |
| Solids passage: | up to 6 mm |

Available pump assemblies

- 8/40
- 10/20

## MX20 S; R; F; T

| | |
|---|---|
| Max. pressure: | 40 bar |
| Flow rate: | 5 up to 5,600 l/h |
| Viscosity: | up to 200,000 mPas |
| Temperature: | -30 °C up to 140 °C |
| Solids passage: | up to 22 mm |

Available pump assemblies

- 15/20
- 15/40
- 20/20
- 20/40
- 25/10
- 25/20
- 30/10
- 30/20
- 40/10

## MX30 S; R; F; T

| | |
|---|---|
| Max. pressure: | 80 bar |
| Flow rate: | 50 up to 20,000 l/h |
| Viscosity: | up tp 200,000 mPas |
| Temperature: | -30 °C up to 140 °C |
| Solids passage: | up to 48 mm |

Available pump assemblies

- 30/80
- 50/10
- 50/20
- 60/10

## MX50 S; R; F

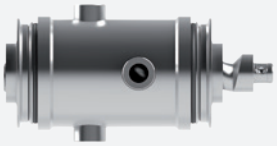
| | |
|---|---|
| Max. pressure: | 60 bar |
| Flow rate: | 500 up to 100,000 l/h |
| Viscosity: | up to 200,000 mPas |
| Temperature: | -30 °C up to 140 °C |
| Solids passage: | up to 76 mm |

Available pump assemblies

- 50/40
- 50/60
- 60/40
- 80/10
- 80/20
- 100/10

# Options and certificates

## Double jacket for tempering



Pump assembly with double jacket

Suction housing with double jacket

Hopper housing with double jacket

## Base plates

Base plate in cap profile

Base plate with height adjustable feet

Hygienic base frame

Mobile base plate

## Materials

| | |
|---|---|
| Materials in contact with the product: | 1.4571, 1.4404, 1.4301 |
| Elastomer parts: | Elastomers in different qualities, with conformity FDA 21 CFR 177.2600 and EU 1935/2004 |
| Connections: | DIN11851, DIN32676, DIN11864-1, DIN11864-2, DIN11864-3, DIN EN1092-1 |

## KNOLL Maschinenbau GmbH is certified in accordance to:



## The MX is available in:


# 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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**KNOLL Maschinenbau GmbH**
Schwarzachstraße 20
DE-88348 Bad Saulgau
Tel. +49 (0) 75 81/20 08-0
Fax +49 (0) 75 81/20 08-230
info.itworks@knoll-mb.de
www.knoll-mb.de
blog.mx-pumps.com

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