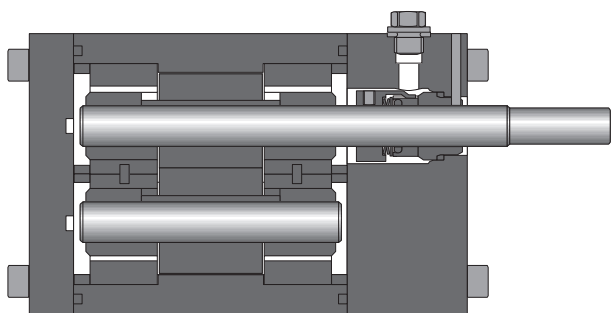


PRODUCT INFORMATION



Gear pumps

Series LZ / LZM

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## Description

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### *General*

The LEDERLE-HERMETIC external gear pumps are built and marketed successfully world wide for many years. The mode of operation, design and application have been constantly optimised and adapted to industry requirements. They are manufactured in conventional and hermetically sealed design. The magnetic coupled design provides service free operation without leakage.

The compact design allows rapid and effective turnover.

### *Function*

External gear pumps are positive displacement pumps that cover a wide range of applications.

The applications are in chemical, petrochemical, pharmaceutical and paint industries as well as in general industry. In external gear pumps two counterrotating gears of equal size are enclosed in the casing. The gears transmit the torque as well as the fluid. The fluid is transferred in the chambers between the gear teeth by counterrotation of the shafts from suction to discharge side. The materials used for the gears, the shafts and bearings allow high forces and temperatures. The pump casing is sealed to the atmosphere by O-rings.

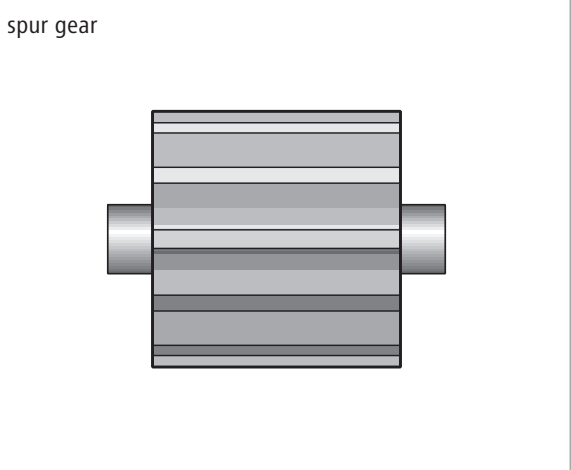
# Design

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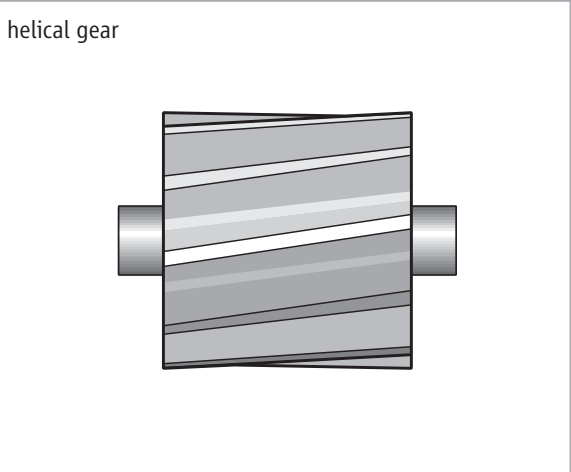
**The following gear styles are applied:**

This gear style is used for low to high viscous products, for controlled pulsation in high rotational speeds.

Herringbone gears are available as a special execution.



This gear style is used for the pumping of high viscous fluids like e.g. polymers. Pulsation is greatly reduced.



## Application range

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### **Capacity**

The nominal capacity of positive displacement pumps is proportional to the rotational speed. HERMETIC produces pumps with a capacity up to 120 m<sup>3</sup>/h .

### **Temperature**

Depending on the materials of construction and the fluid, temperatures up to 280 °C can be handled. Heating or cooling of the pumps is controlled by heating or cooling jackets on the casing and covers.

### **Pressure**

Depending on external gear design, gear pumps can handle differential pressures up to 100 bar. Special executions allow for higher differential pressures.

### **Viscosity**

The LZ pump series are suitable for viscosities from 0,3 to 5.000.000 mPas. The operating range of series LZM magnetic coupled pumps is limited to max. 6.000 mPas.

### **Connections**

Nominal size is related to the pump size. The range is from DN 20 to DN 150 and pressure rating from PN 25 to PN 100. Special designs like ANSI dimensions are available on request.

The connection can be horizontal or vertical.

### **Shaft sealing**

All sizes of the LZ / LZM series can be equipped with different kinds of shaft sealing. Available are single or double mechanical seals, packed glands or hermetically sealed magnetic coupling. With the LZM hermetically sealed models, the shaft seal is replaced by a magnetic coupling. This avoids the wear of the sealing surfaces. The permanent magnetic coupling transmits the torque between pump and driver.

### **Environmental safety**

The pumps are suitable for use on hazardous gases. Certifications for mechanical explosion protection according to European standard 94/9/EC (ATEX) Ⓔ II 2 G c T2 to T6 are available. The pump seals are also certified by TÜV Cert to comply with "TA-Luft".

### **Quality**

HERMETIC gear pumps are state of the art and quality is compliant to design standards e.g. VDMA, DIN and EN standards. Our quality manual according to ISO 9001 supports the manufacturing process.

## Material and performance range

### Standard design

Casing and covers are made of 1.4571 / 1.4581. The gears or gear shafts are available in 1.4112 or CPM 420 V material. Bearings are available in carbon, SiC or SiC 30.

### Special design

The pump components can also be made of special materials, e.g. Hastelloy or 1.4539. Coatings are also available.

### Performance range

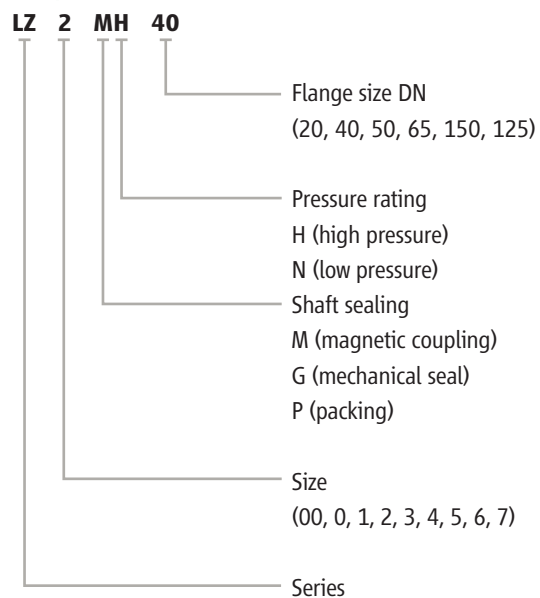
Flow [m <sup>3</sup> /h]:	0,05 to 120
Differential pressure [bar]:	25 / 40 / 100
Viscosity [mPas]:	0,3 to 5.000.000
Viscosity on magnetic coupled pumps [mPas]:	0,3 to 6.000
Temperature [°C]:	-20 to +250
Pressure rating [PN]:	25 / 40 / 65 / 100

### Sizes

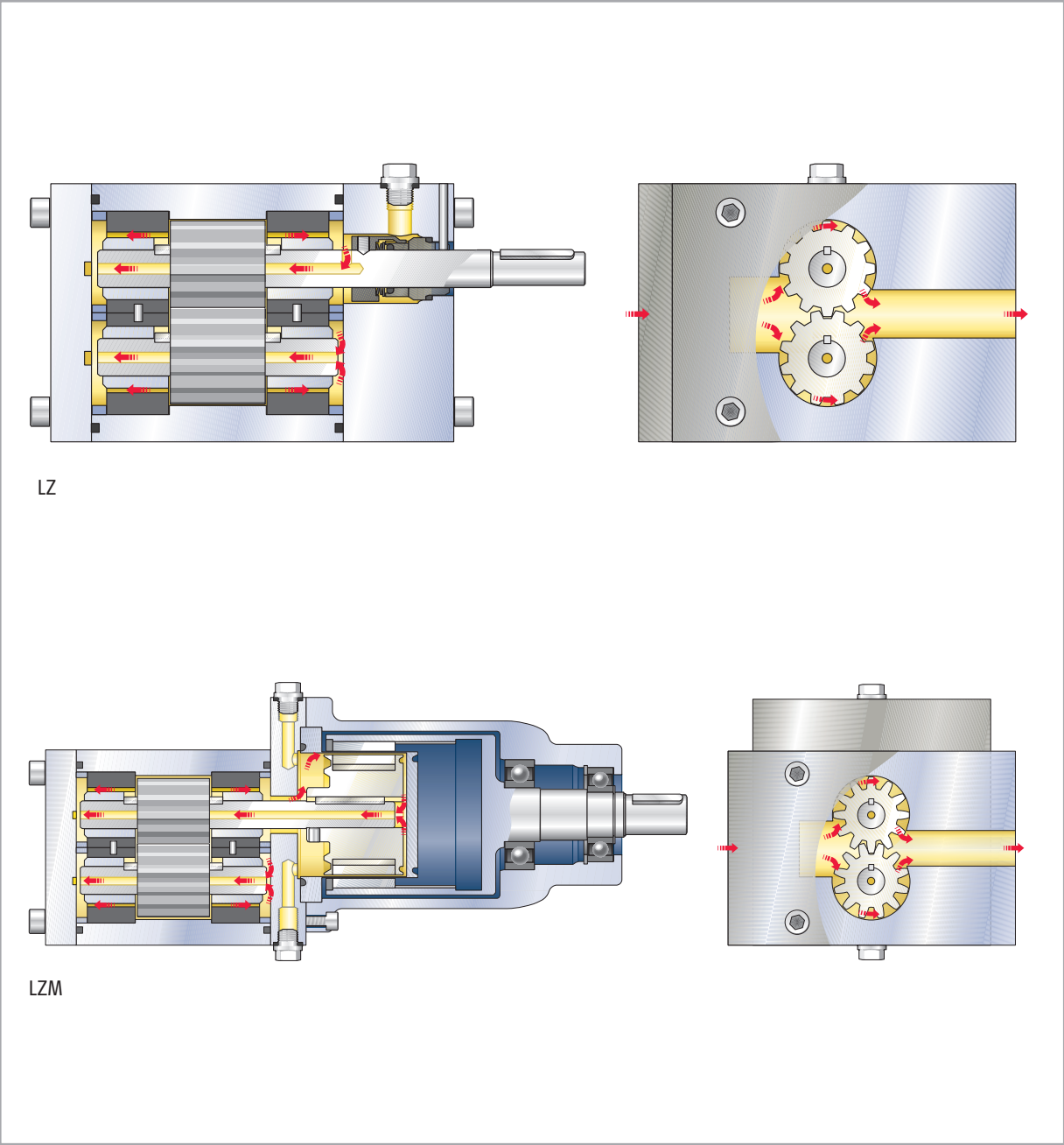
#### Connections LZ / LZM 00 – 7

Pump size	Connections
LZ / LZM 00	20 mm
LZ / LZM 0	20 mm
LZ / LZM 1	20 mm
LZ / LZM 2	40 mm
LZ / LZM 3	50 mm
LZ / LZM 4	65 mm
LZ / LZM 5	125 mm
LZ / LZM 6	125 mm
LZ / LZM 7	150 mm

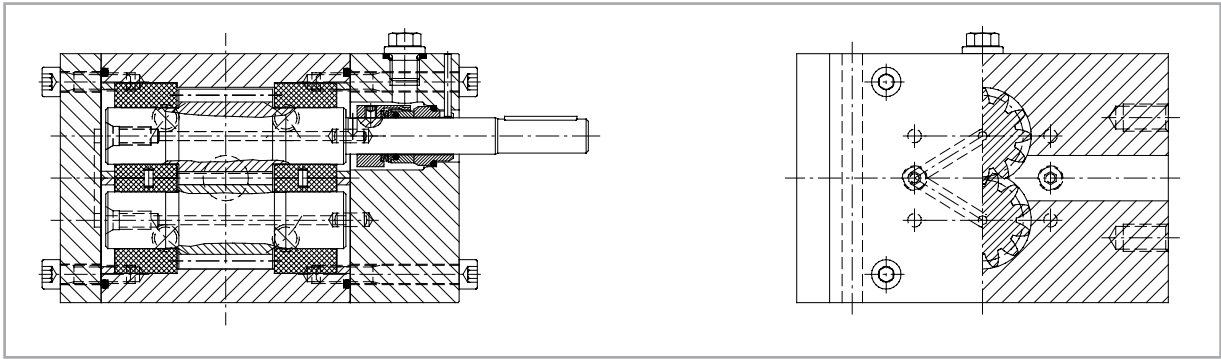
### Pump and hydraulic denomination



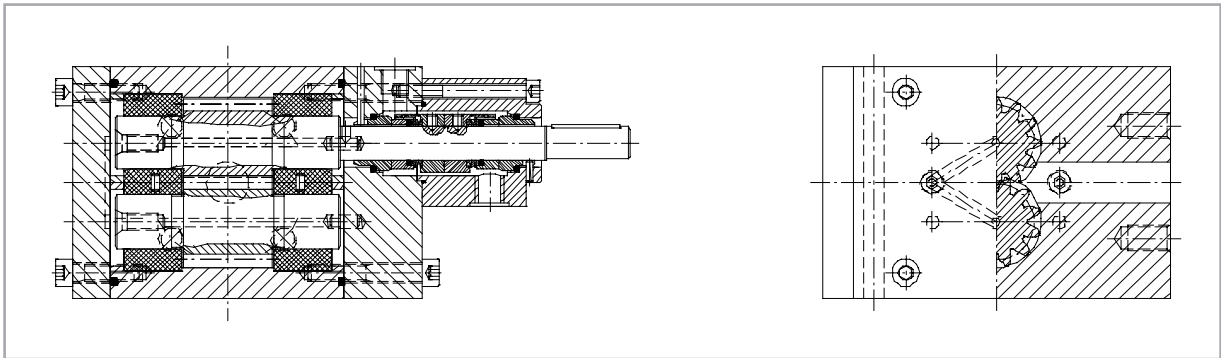
Functional principle



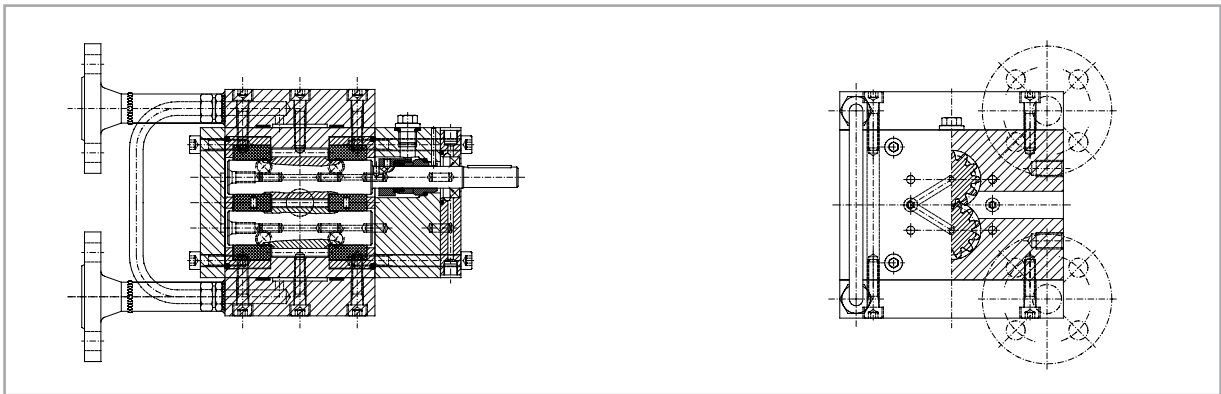
*Cut view of LZ pump with single mechanical seal*



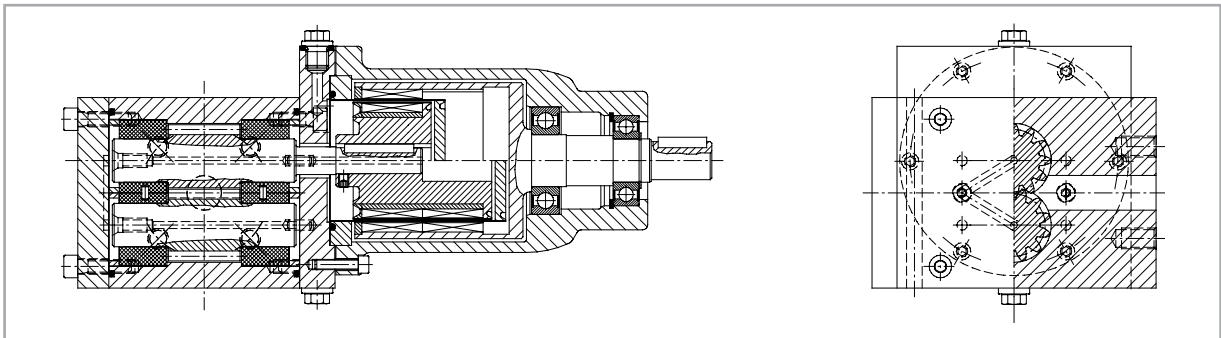
*Cut view of LZ pump with double mechanical seal*



*Cut view of LZ pump with single mechanical seal and heating jacket*

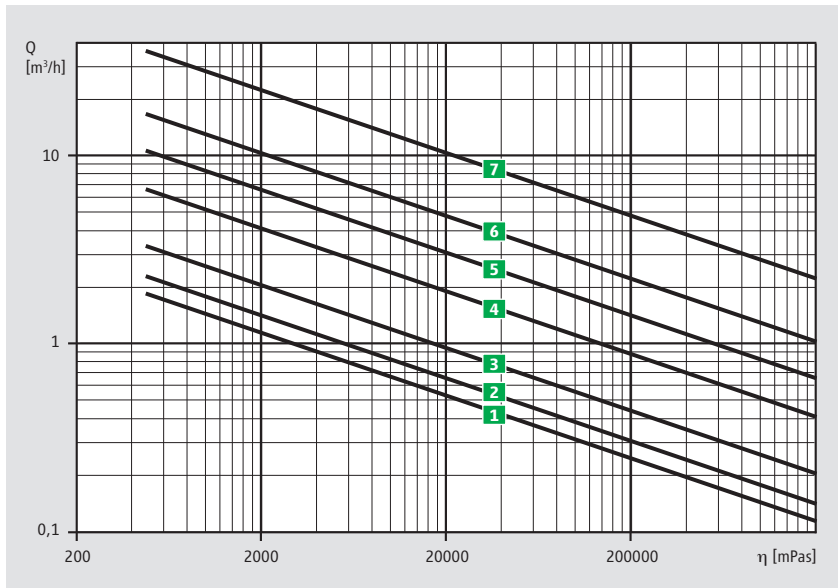


*Cut view of LZM pump with magnetic coupling*



# Performance curve

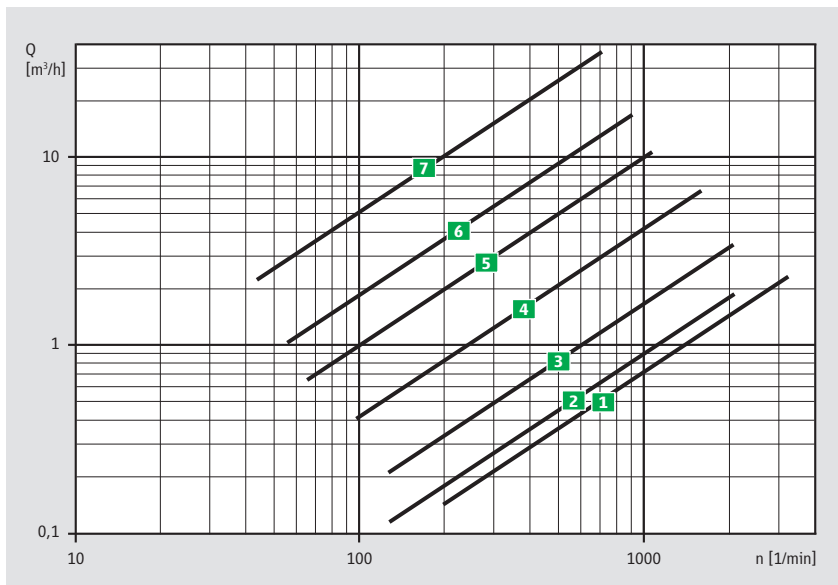
## Capacity / Viscosity



### Denomination to the performance curve

- 1 LZ 0 / LZM 0
- 2 LZ 00 / LZM 00
- 3 LZ 1 / LZM 1
- 4 LZ 2 / LZM 2
- 5 LZ 3 / LZM 3
- 6 LZ 4 / LZM 4
- 7 LZ 5 / LZM 5

## Capacity / Rotating speed



### Denomination to the performance curve

- 1 LZ 00 / LZM 00
- 2 LZ 0 / LZM 0
- 3 LZ 1 / LZM 1
- 4 LZ 2 / LZM 2
- 5 LZ 3 / LZM 3
- 6 LZ 4 / LZM 4
- 7 LZ 5 / LZM 5