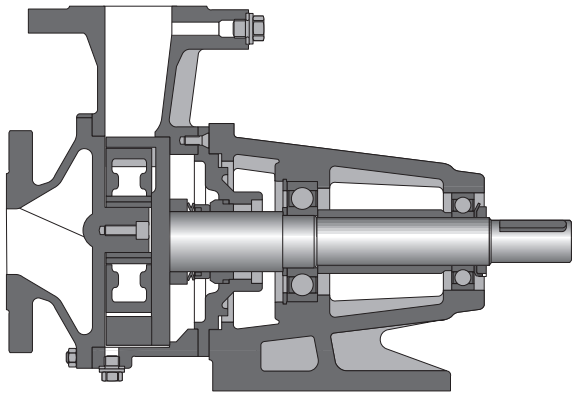
PRODUCT INFORMATION



Internal gear pumps

Series HP/MHP

LEDERLE Hermetic

Contents

Description

General

Internal gear pumps have been built and marketed successfully by LEDERLE-HERMETIC for many years. 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 simple construction allows for low cost and rapid repair.

Function

Internal gear pumps are positive displacement pumps that cover a wide range of applications. In internal gear pumps two counterrotating gears of equal size are enclosed in the casing. The driving gear transmits the torque as well as the fluid. The idling gear which is guided on a product lubricated eccentric pin, transmits fluid and seals the suction from discharge side. The fluid is transferred in the chambers between the gear teeth by rotation of the gears from the suction to discharge side.

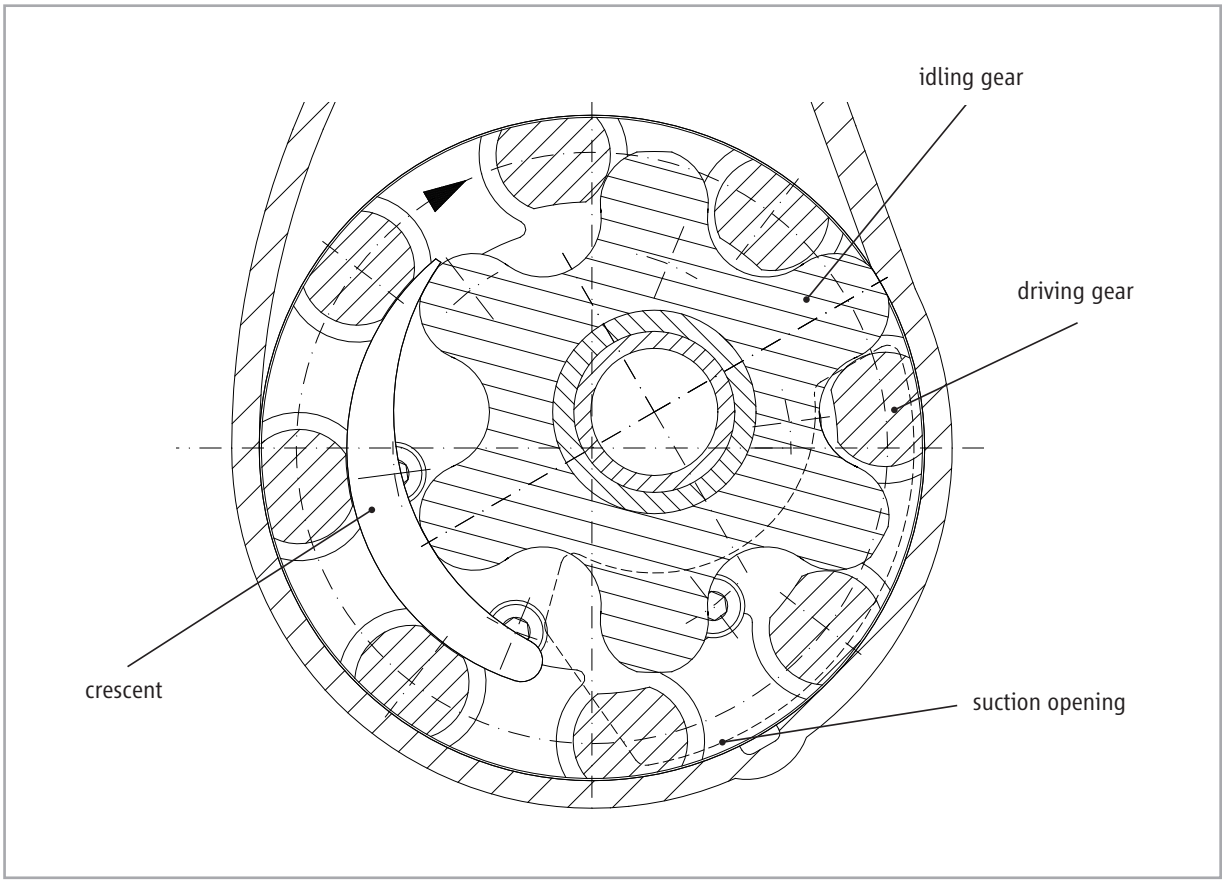
Internal gear pumps feature low pulsation operation.

Design

The driving shaft and the driving gear are equipped with sealed ball bearings. The idling gear is guided by a product lubricated bearing. The magnet coupled design uses product lubricated bearings for both driving and driven gear. All sizes of HP/MHP series can be equipped with an integrated pressure relief valve mounted on the casing cover.

Features of internal gear pumps:

- suitable for low to high viscous fluids
- nearly no pulsation on high rotational speed applications
- good suction ability
- quiet operation



Application range

Capacity
The nominal capacity of positive displacement pumps is proportional to the rotational speed. HERMETIC produces pumps with a capacity up to 60 m³/h .

Temperature
Depending on the materials of construction and the fluid, temperatures up to 200 °C can be handled. Heating or cooling of the pumps is controlled by heating or cooling jackets on the casing and covers.

Pressure
The internal gear pumps can be used for pressures up to 12 bar.

Viscosity
The HP pump series is suitable for viscosities from 1 to 1.000.000 mPas. The operating range of series MHP magnetic coupled pumps is limited to max. 5.000 mPas.

Connections
Nominal size is related to the pump size. The range is from DN 25 to DN 125. Pressure rating is PN 16. Special designs like ANSI dimensions are available on request.

The connection can be horizontal or vertical. Suction is front, discharge is left or right on request.

Shaft sealing
All sizes of the HP / MHP 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 MHP 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) ⟨Ex⟩ II 2 G c T3 to T6 are available. The pump seals are also certified by TÜV Cert to comply with “TA-Luft”.

Quality
HERMETIC interal 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

The casing and cover are made of 1.4571 / 1.4581 or GGG 40. The bearing bracket is made of GGG 40 (LC 1025). The driving gear is made of 1.4581 or GGG 40. The idling gear can be made of PEEK / 1.4581, 1.4462 or GG 25. Bearing bushings and sleeves are made of tungsten carbide (CD 6 N) or silicon carbide (SiC 30).

Special design

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

Performance range

Flow [m³/h]:	1 to 60
Differential pressure [bar]:	max. 12
Viscosity [mPas]:	1 to 1.000.000
Viscosity magnetic coupled series MHP [mPas]:	1 to 5.000
Temperature [°C]:	–20 to +200
Pressure rating [PN]:	16

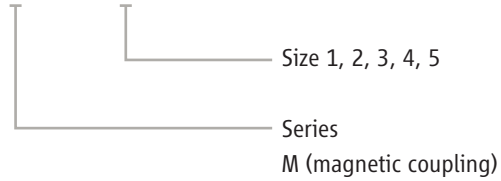
Sizes

Connections HP / MHP 1 – 5

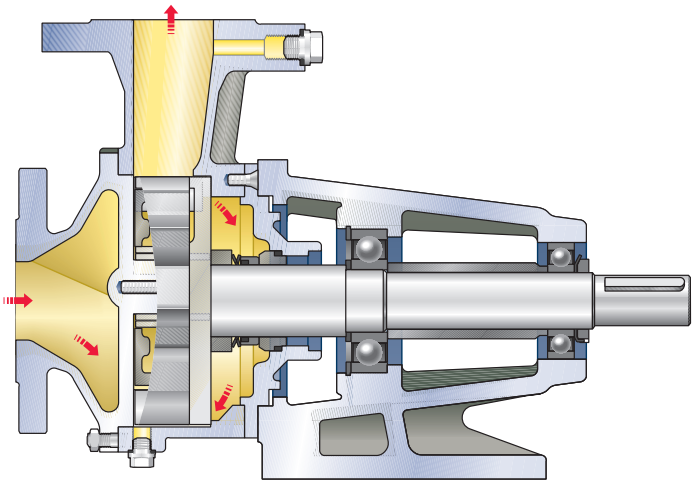
Size	Connection diameter (suction and discharge)
HP / MHP 1	32 / 32 mm
HP / MHP 2	50 / 50 mm
HP / MHP 3	80 / 80 mm
HP / MHP 4	100 / 100 mm
HP / MHP 5	150 / 125 mm

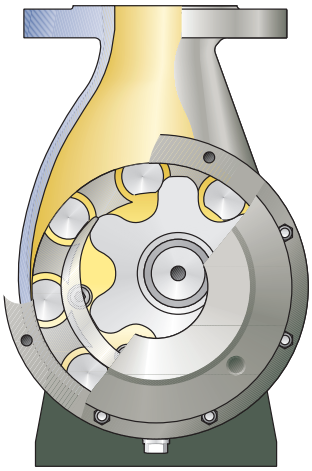
Pump and hydraulic denomination

HP / MHP 1 – 5

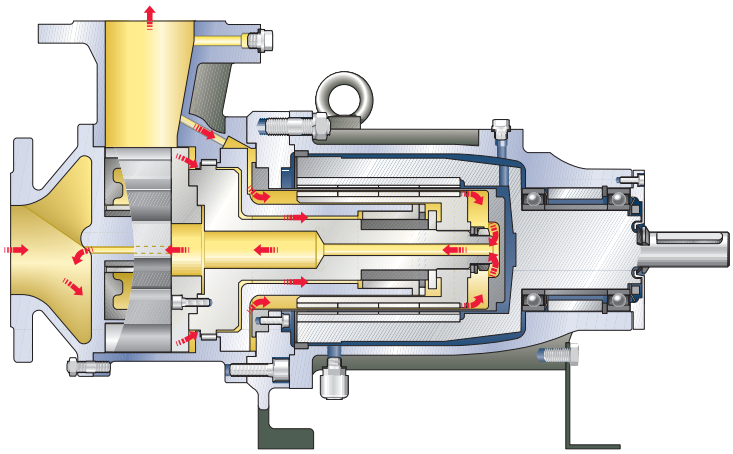


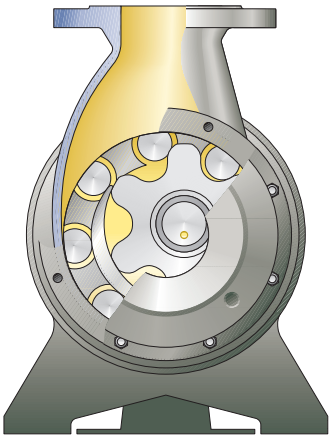
Functional principle





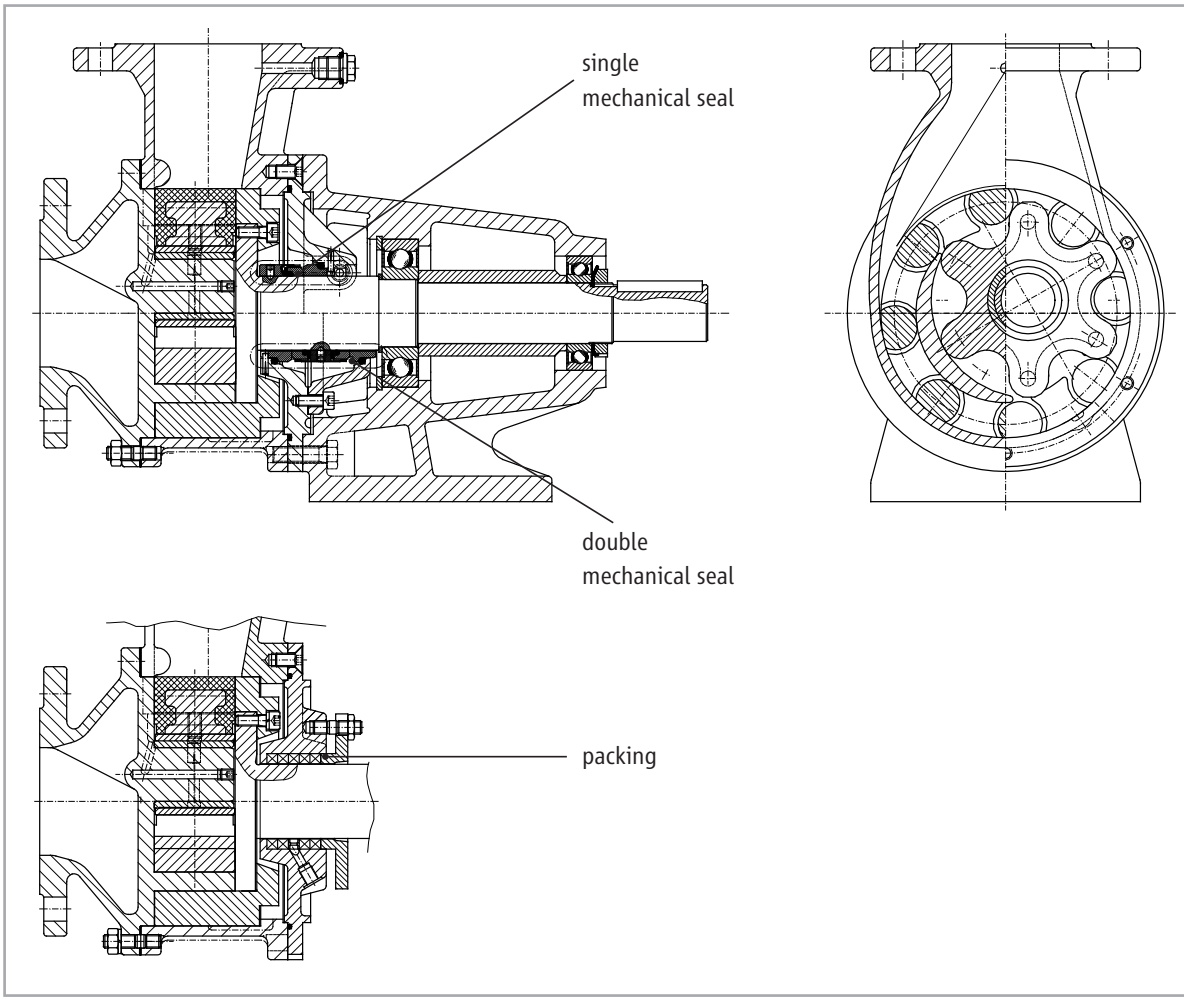
HP



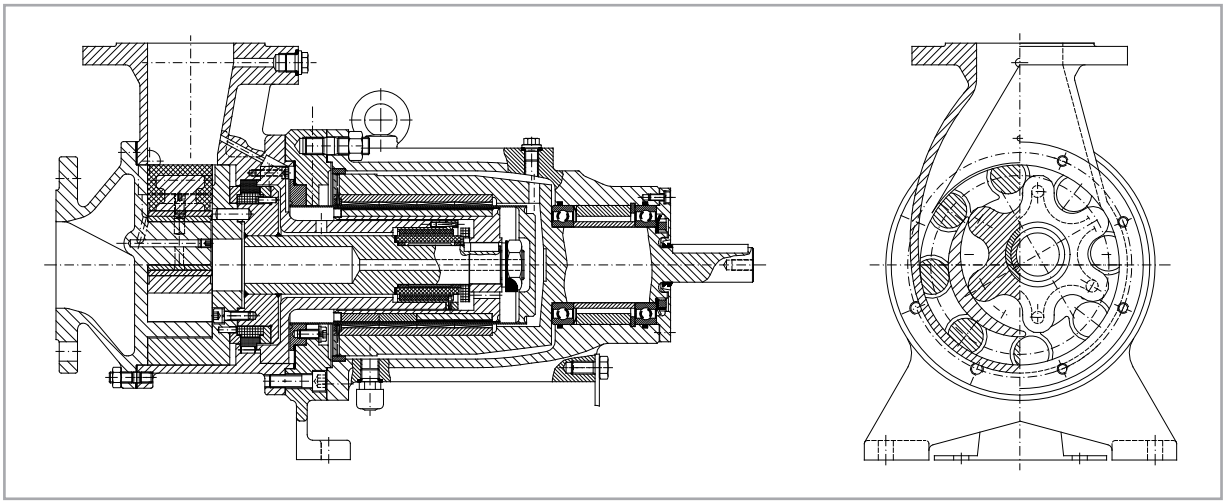


MHP

Cut view of HP pump with single and double mechanical seal resp. gland packing

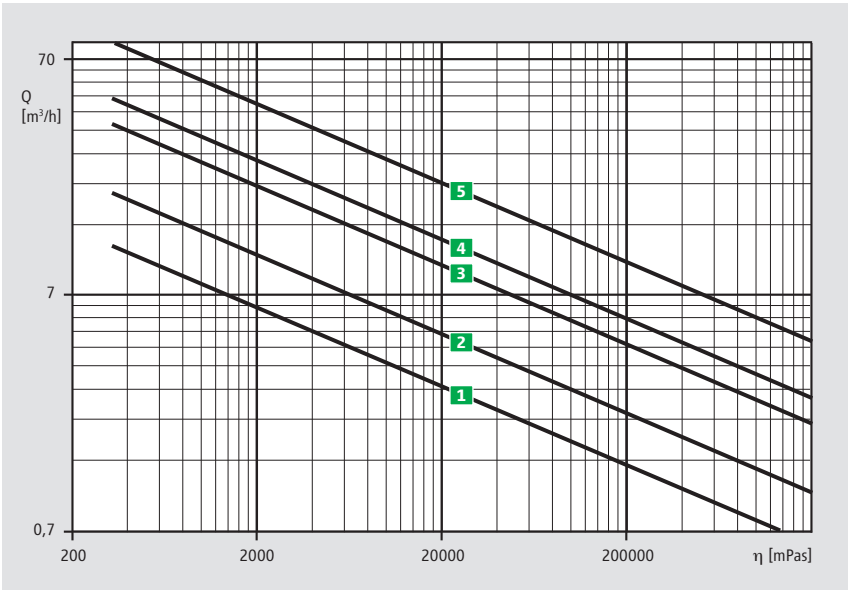


Cut view of magnetic coupled MHP pump



Performance curve

Capacity / Viscosity



Denomination to the performance curve

1 HP 1 / MHP 1

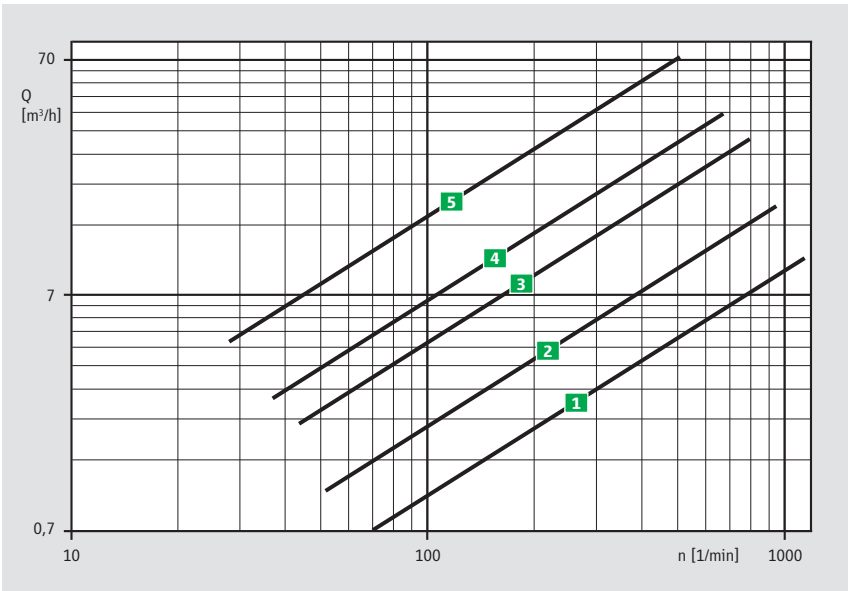
2 HP 2 / MHP 2

3 HP 3 / MHP 3

4 HP 4 / MHP 4

5 HP 5 / MHP 5

Capacity / Rotating speed



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PRODUKTINFO
HP-MHP/E/07/2010

All details as stated in this document comply with the technical standard that is applicable at the date of printing. These details are subject to technical innovations and modifications at any time.

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