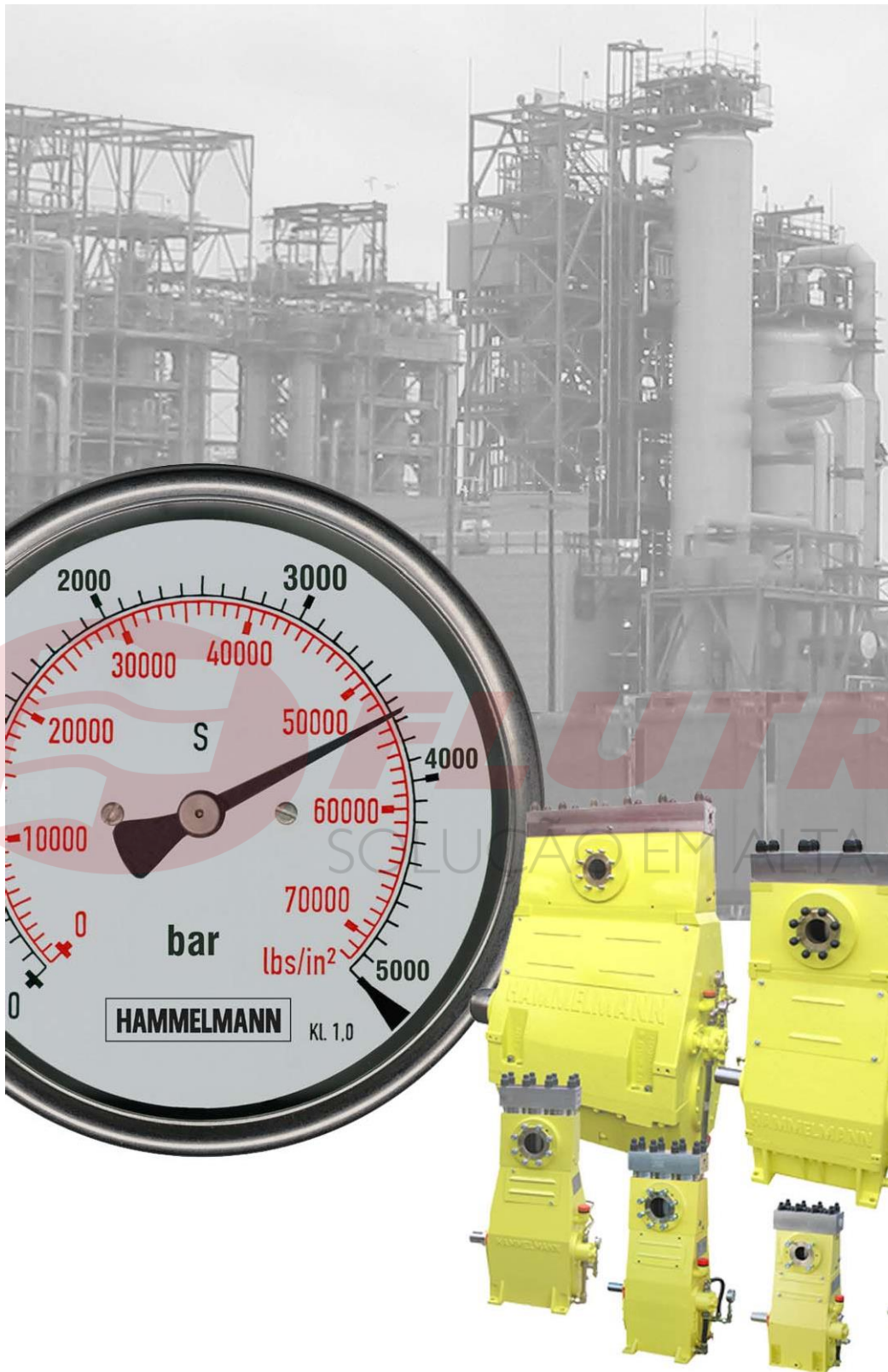
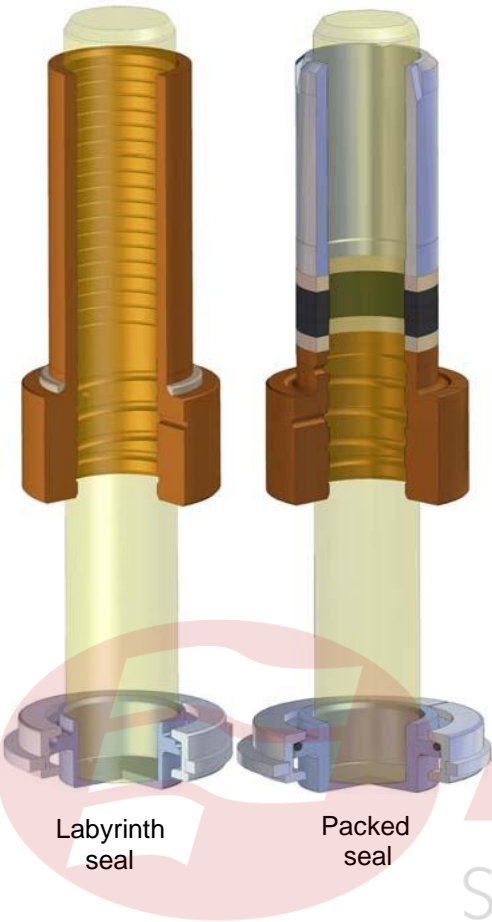


# Process pumps



## Series 5 process pumps

Hammelmann series 5 Triplex and Quintuplex pumps provide the highest standards of safety and reliability.



### Sealing systems

The seal designs which are absolutely unique to Hammelmann enable safe, reliable, continuous duty operation at pressures up to 3800 bar. The choice of high pressure seal system depends upon the pump's application.

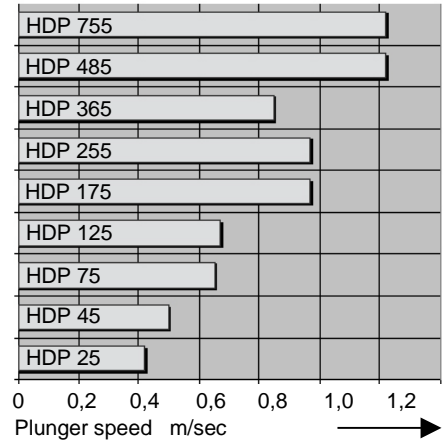
#### Labyrinth seal

The high pressure seal is formed within the minute cylindrical gap between the plunger and the labyrinth insert. The medium pressure is continuously reduced along the sealing surface. A minimum amount of high pressure leakage serves as lubricant and is returned to the pump suction chamber.

#### Packed seal

PTFE/Graphite rings maintain the high pressure seal while plunger guidance is provided by a separate bush.

## Plunger speed



The series 5 pumps are conservatively rated for power with low plunger speeds ensuring limited wear of plungers and sealing elements.



#### Low pressure seal packs

The suction chamber is sealed by combining spring tensioned PTFE rings either side of a lantern ring which is used either for flushing, cooling or lubricating the seal (optional).

## Extensive performance range

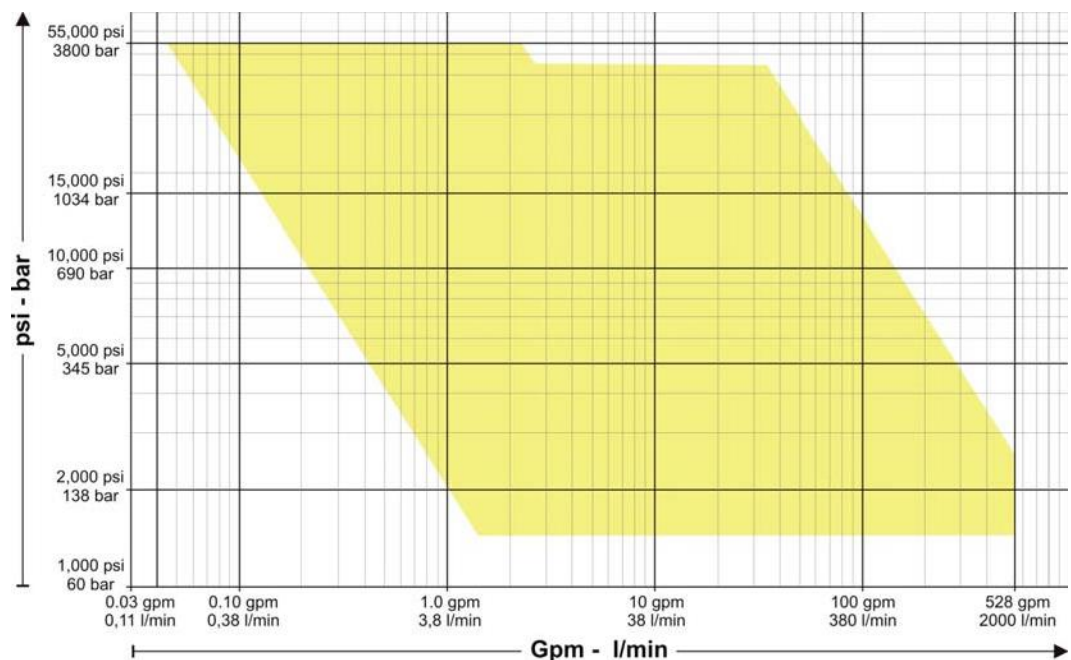
Power ratings up to 750 kW

Flow rates up to 2000 l/min

Operating pressures up to 3800 bar

Viscosities up to 2000 mPa s

Fluid temperatures -40 up to +200 °C



## Compact construction

Hammelmann pumps produce maximum performance from a minimal footprint which is the result of combining a compact integral speed reduction gear end with the concept of a vertical configuration.



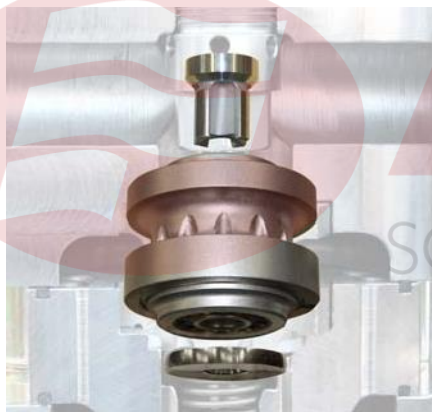
The integral speed reducer with twin helical gears arranged in a herringbone configuration ensures smooth running and even power transmission without axially loading the bearings.

## Valves

To ensure that the pump construction is appropriate for the pumped medium we have a number of alternative valve designs available.

### Conical/Plate valve

The suction valve is in disc form plate design and the discharge valve is conical. Both seat to a one piece component.



### Twin conical valves

Suction and discharge valves are both conical in this configuration



## Wetted parts materials

Plunger	Ceramic, tungsten
Seals	NBR / Polyamide FFKM / PEEK
Housings	Chromium nickel steel, duplex steel

Other options available.

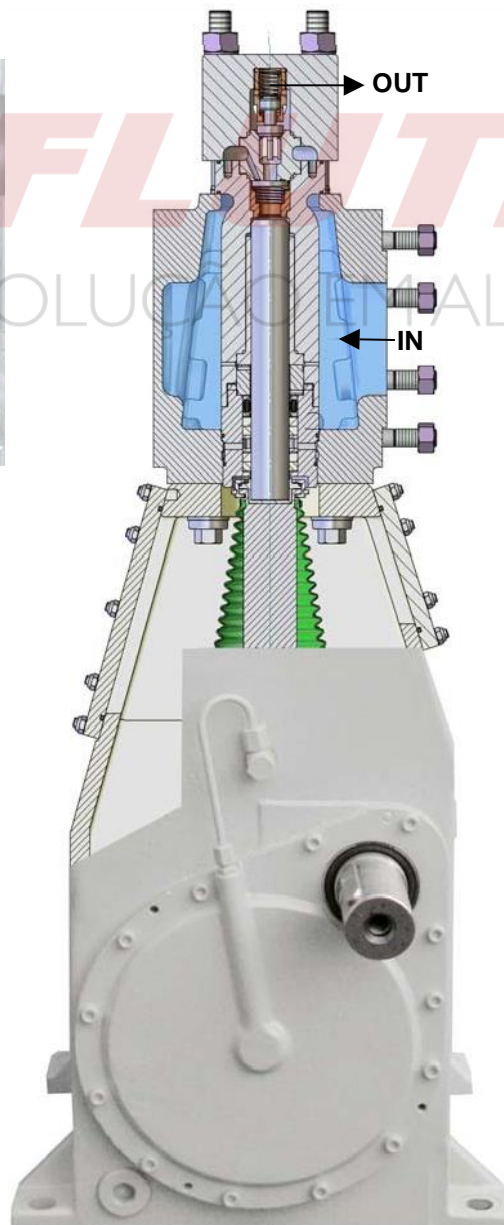


TA-Luft (Clean Air) certified to VDI 2440

## Gas tight design

Our latest variation of this pump series is the **Zero emission** where the pumped fluid is hermetically sealed within the pump, preventing leakage to atmosphere during operation.

The intermediate chamber of the pump can be outfitted with gas tight covers which provide a seal to atmosphere. The chamber is then charged with inert gas.



## Bellows system

The bellows are the hermetic seals for the power end to prevent the intrusion of fluid or gas. They are available in FKM, H-NBR and PTFE.

## Typical fluids

Acrylic acid	Hydrocarbons
Adipoladipinat	Inhibitors
Amine	Jet fuel
Ammonia	LDHI
Butane	Methanol
Carbon dioxide	Methyl ester
Crude oil	Pentane
Diesel oil	Process water
Ester	Propylene
Ethanol	Reservoir water
Fatty acids	Salt water
Glucose	Scale squeeze
Glycol	Vinyl acetate
Hot water	Waste water

## Typical applications

Methanol injection  
Fatty alcohol process  
LDPE  
Wet oxidation  
CO<sub>2</sub> extraction  
Mill scale removal  
Non woven fabrics  
Boiler feed pumps  
Re-injecting reservoir water

## Recommendations and standards

EU Machine directive 98/37/ EU  
ATEX 94/9/EU  
API 674 (with exceptions)

Other customer specified standards,  
i.e.

NORSK M501  
NORSOK M650  
NACE MR 0175  
NACE MR0175

## Pump units

Hammelmann offer a wide range of process pump units for the chemical, oil and gas industries.



HDP 75 – Waste water  
Op. pressure 160 bar  
Flow rate 83 l/min



HDP 175 – Acrylic acid  
Op. pressure 2500 bar  
Flow rate 13 l/min



HDP 755 – Reservoir water  
Op. pressure 212 bar  
Flow rate 1660 l/min



HDP 235 - Pentane  
Op. pressure 350 bar  
Flow rate 300 l/min



HDP 45 - LDHI  
Op. pressure 1035 bar  
Flow rate 11,5 l/min



HDP 255 - Methanol  
Op. pressure 285 bar  
Flow rate 250 l/min