

PUMPS



Oil & Gas



Steel



Chemicals

COMPANY OVERVIEW



Hammelmann GmbH

Founded 1949

Located in Oelde, Germany

Company in the Interpump Group

340 Employees in Oelde

65 % Export share

40 Agents worldwide

DAUGHTER COMPANIES



USA



China

Spain

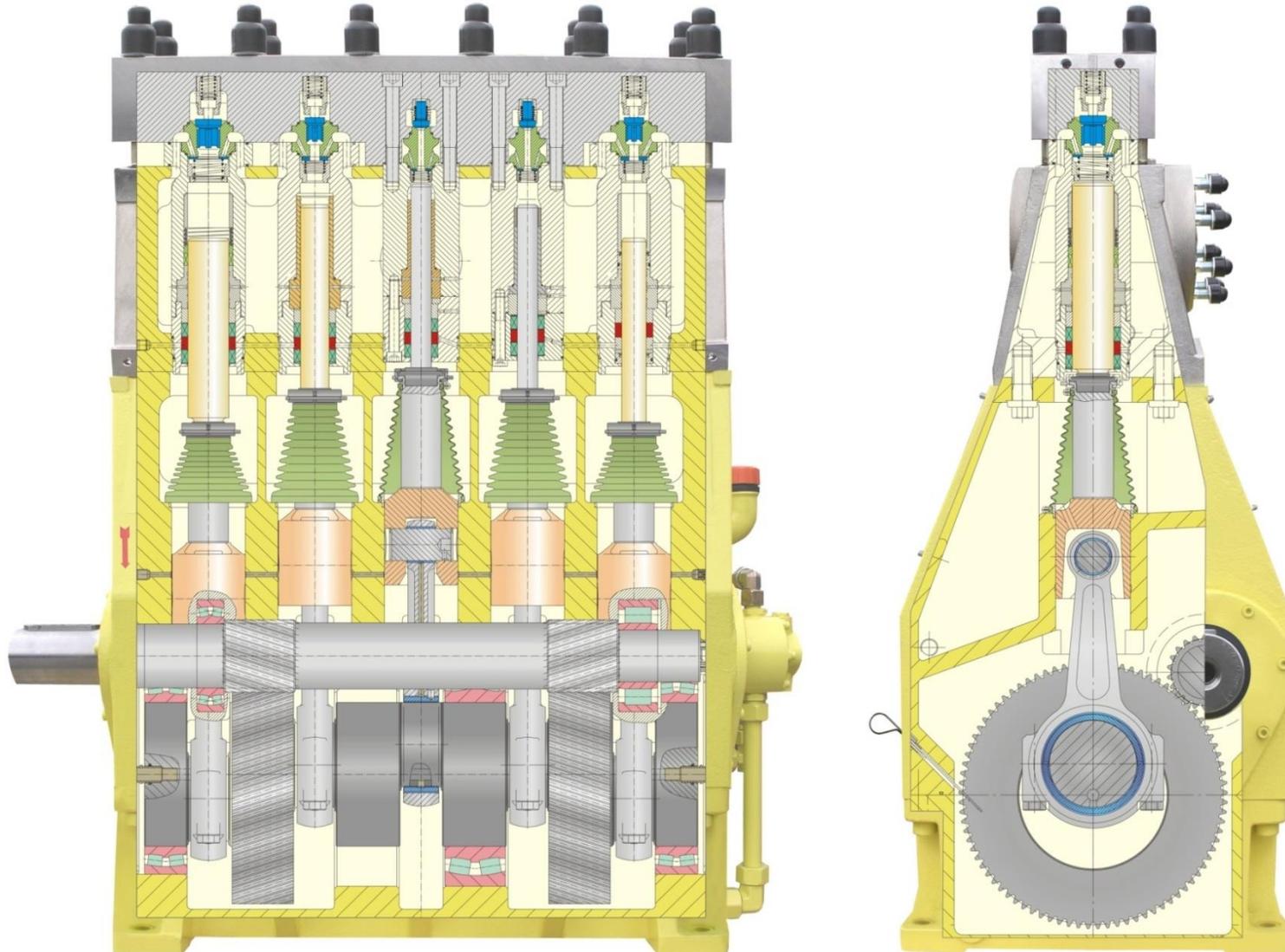


Brazil



Australia

Cut VIEW

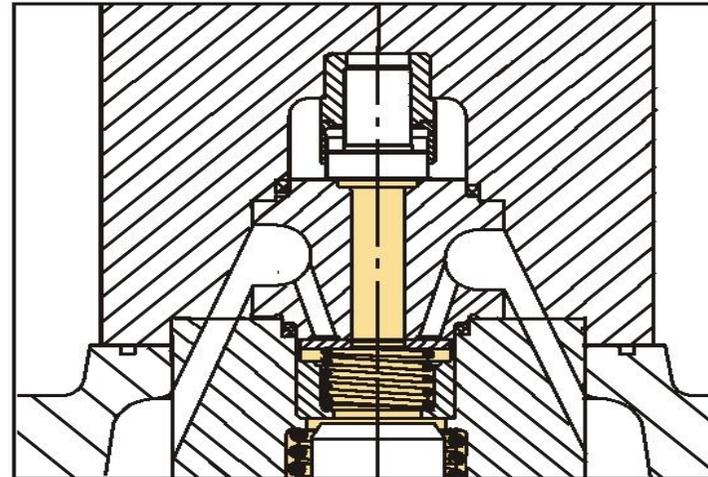
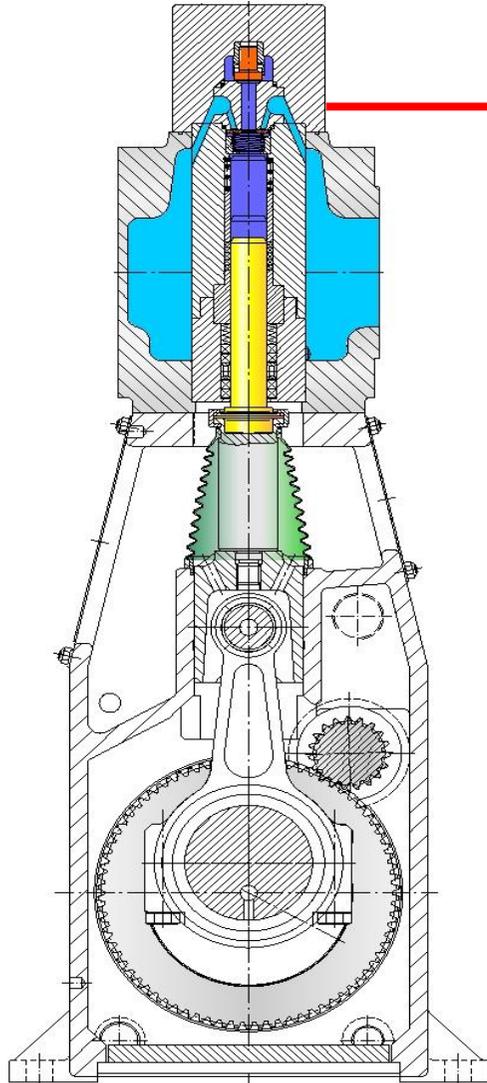


- ▶ **Vertical plunger pump** with 3, 5 or 7 plungers depending on pressure and flow requirements.

internal speed reduction gear to reduce motor speed (e.g. 1500 rpm) to crank speed (e.g. 400 rpm).

Hammelmann pump provides high power combined with excellent efficiency on a small footprint.

PUMP HEAD



- ▶ No alternating stress
- ▶ Fatigue cracking eliminated
- ▶ Parts continuously loaded and unloaded are rotationally symmetrical

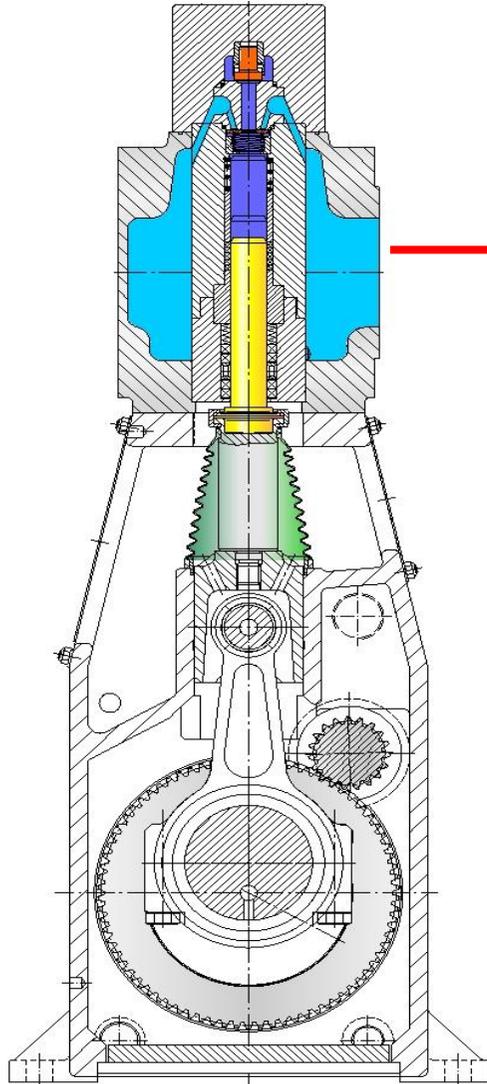
▶ Design features

The valve block is not subjected to alternating stress and therefore not sensitive to cracking by low cycle fatigue.

A minimum clearance volume (dead area) results in low pulsation and high volumetric efficiency.

 clearance volume

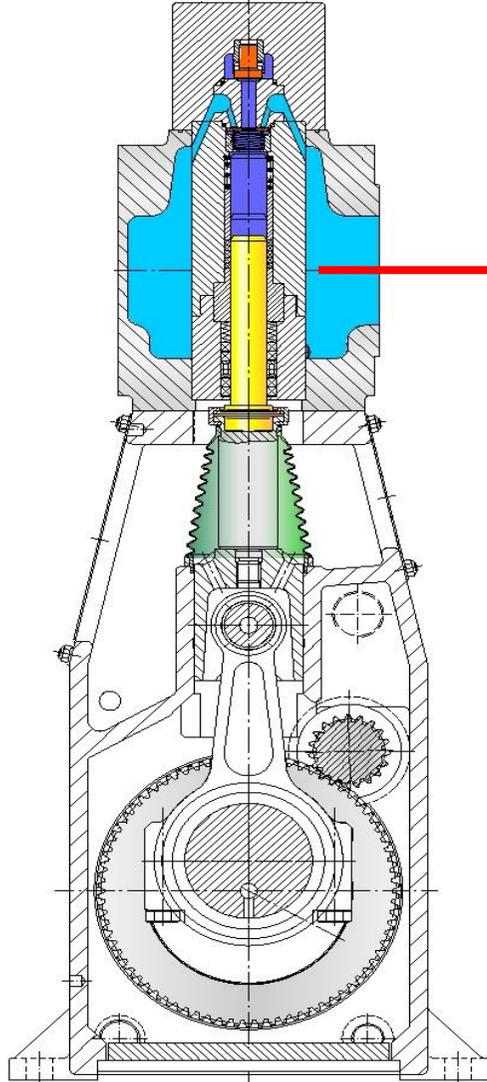
SUCTION CHAMBER



Suction chamber

- ▶ Pressure loaded components encapsulated in the suction chamber
- ▶ Medium cannot escape to atmosphere
- ▶ No uncontrolled leakage
- ▶ High pressure leakage directed back into the suction chamber
- ▶ Fluid cooled high pressure seals

PISTON SEAL ASSEMBLIES



Sealing designs

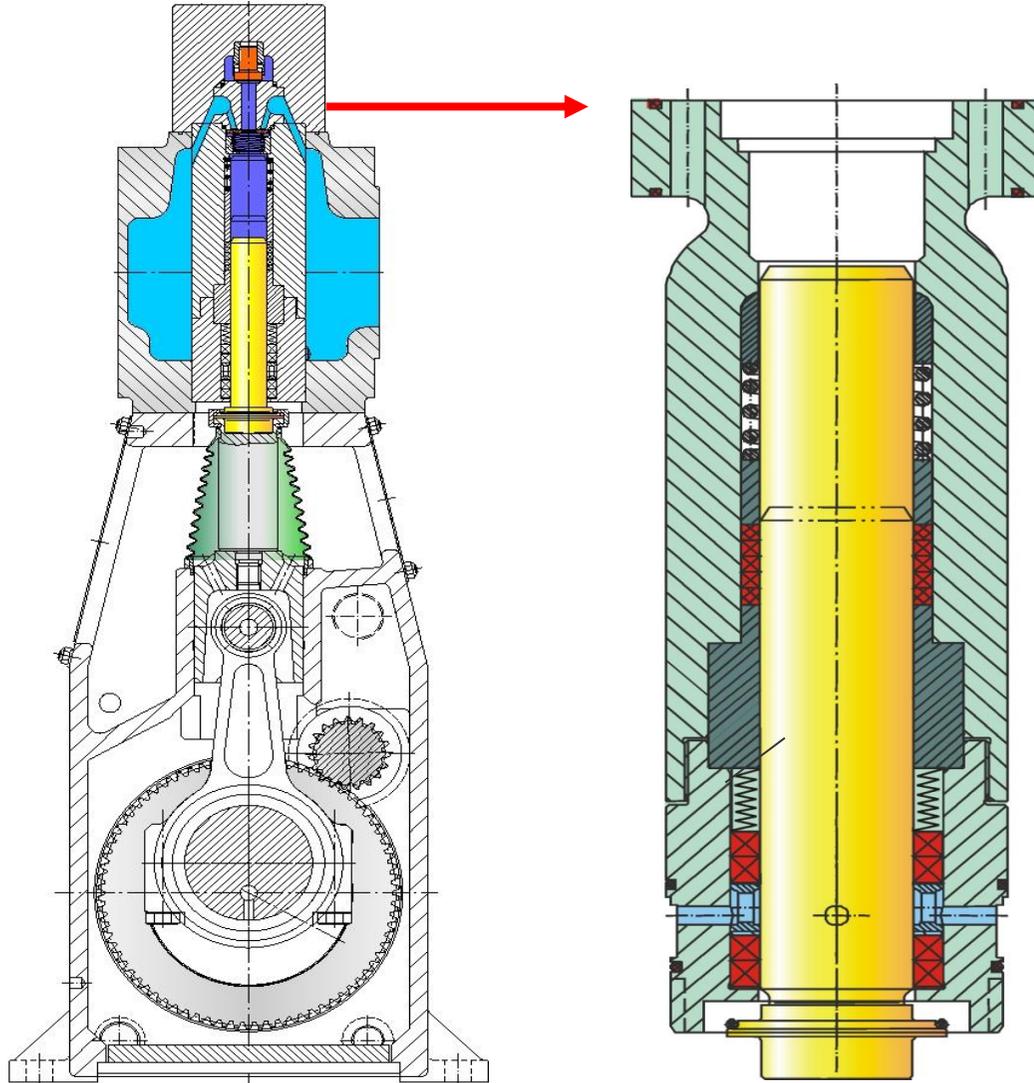
Labyrinth seal

- ▶ No seal collars or packings on the high pressure side
- ▶ Extended service life
- ▶ Long intervals between planned maintenance tasks
- ▶ Choice of plunger materials
- ▶ Self centering plunger connections

Packed seal

- ▶ Resistant to dirt and abrasives

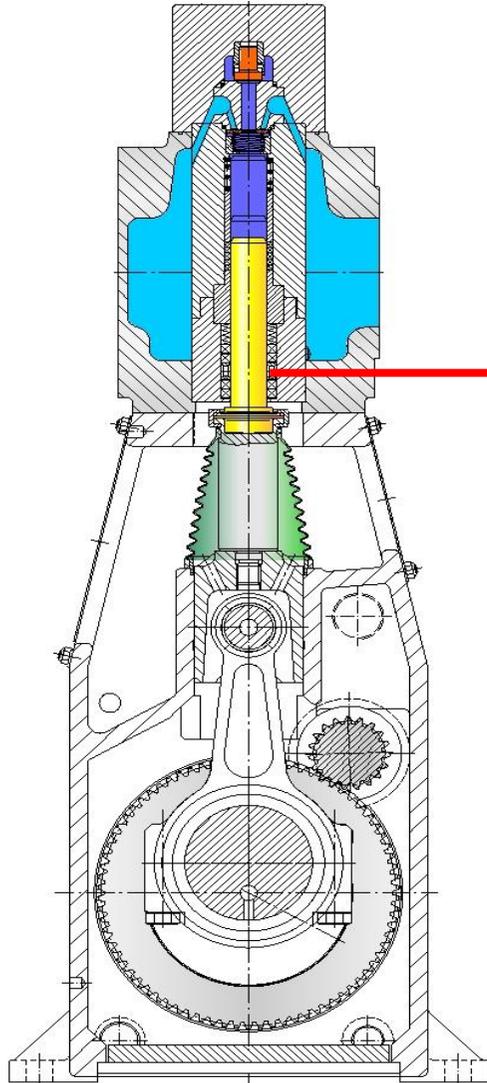
PACKED PLUNGER SEAL



- ▶ Operating pressure up to 1200 bar up to 17,400 psig
- ▶ For abrasive or corrosive fluids
- ▶ Self adjusting packings

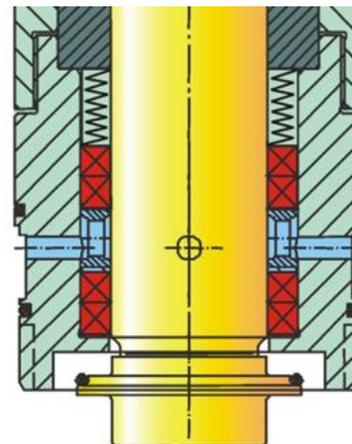
- Bush
- Seals
- Pressurised parts
- Plunger
- Barrier fluid

LOW PRESSURE PLUNGER SEAL



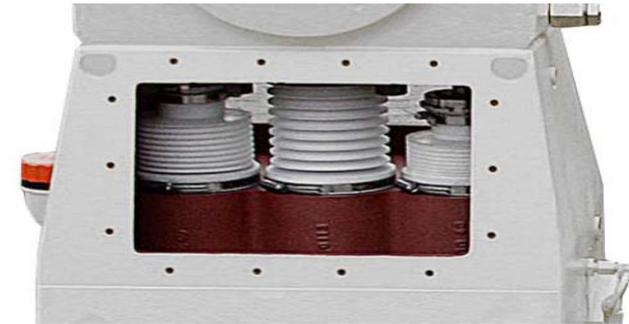
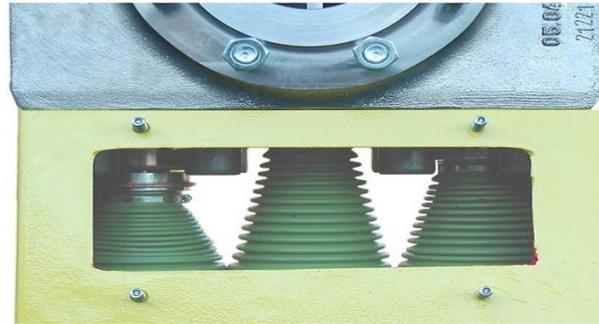
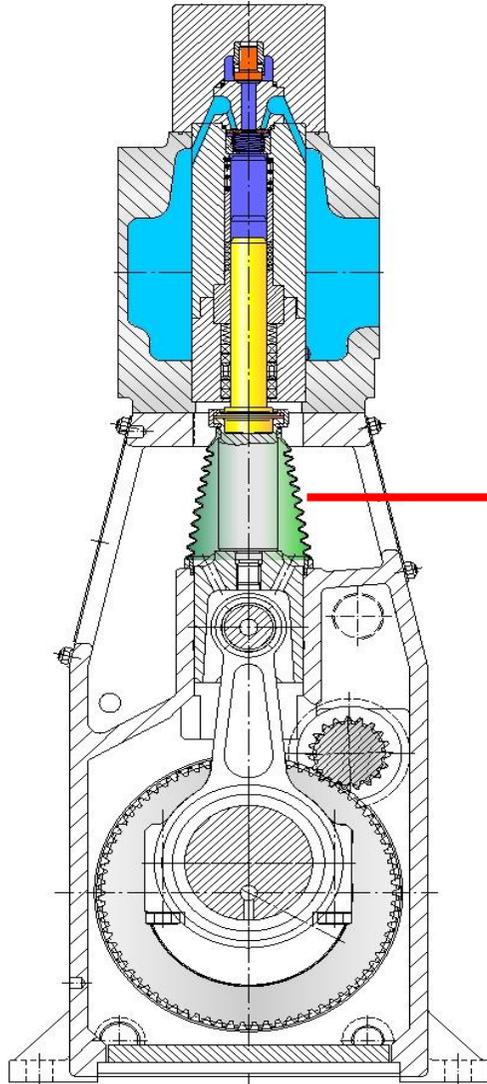
Low pressure sealing

- ▶ Spring loaded seal pack
- ▶ Lantern ring for cooling, flushing or leakage monitoring (only used in special applications)



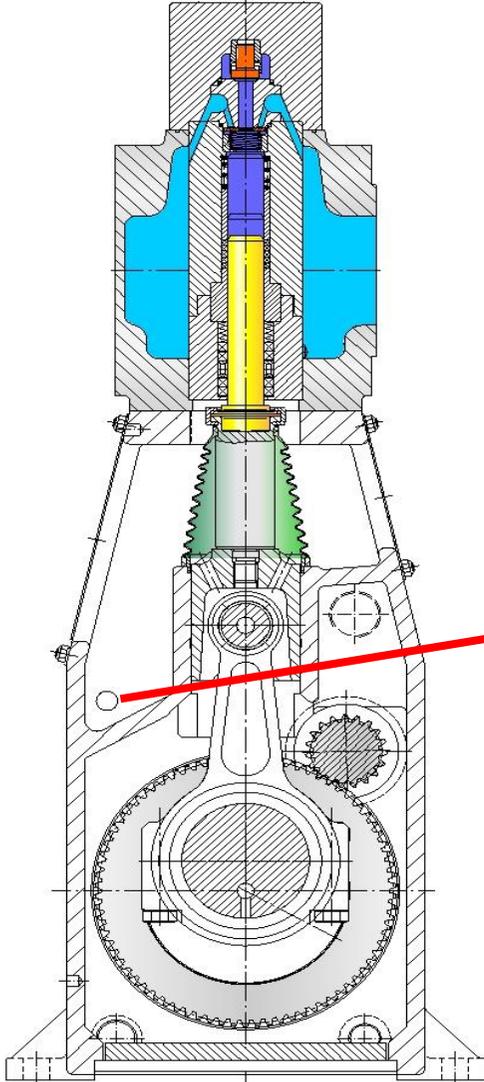
- ▶ Plunger
- ▶ Bushing
- ▶ Seals

BELLOW SEAL



- ▶ Forms a hermetic seal between suction chamber and crank section
- ▶ Prevents fluids and gases entering the crank section
- ▶ Available with Viton, Nitrile rubber or PTFE material

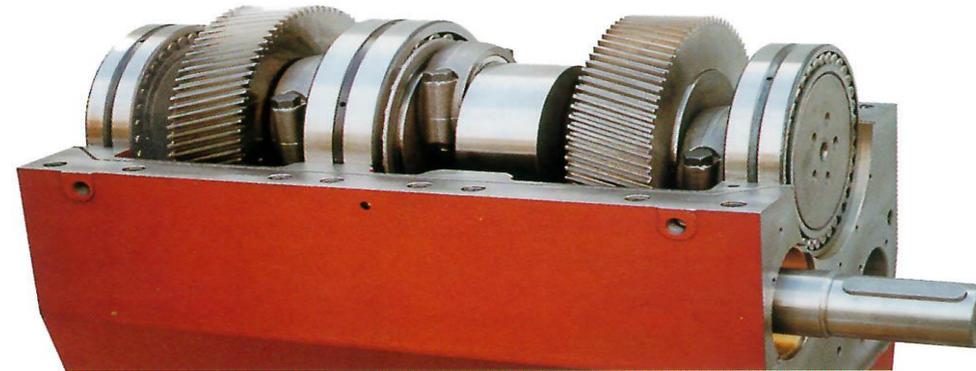
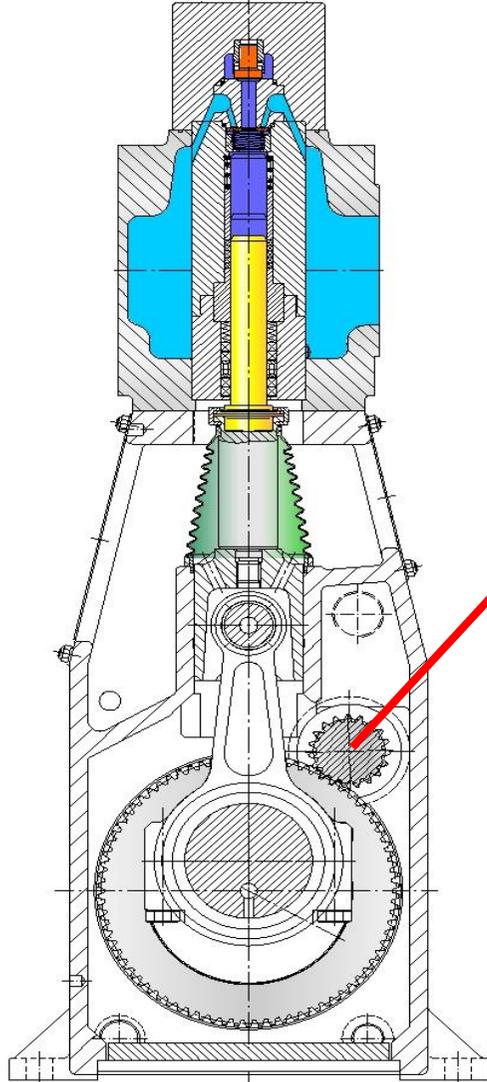
LOW PRESSURE PLUNGER SEAL



Drainage point

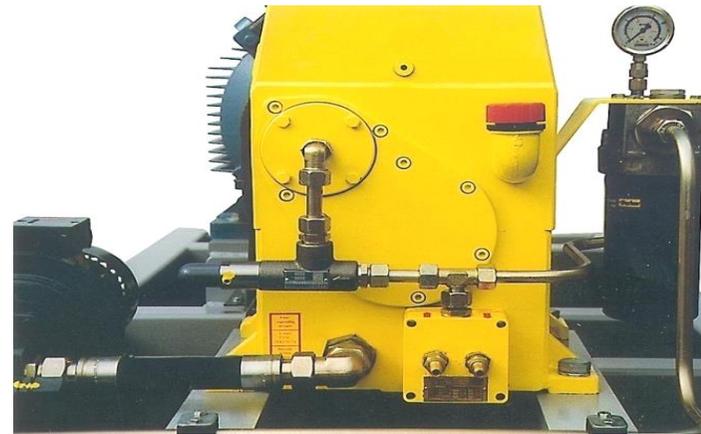
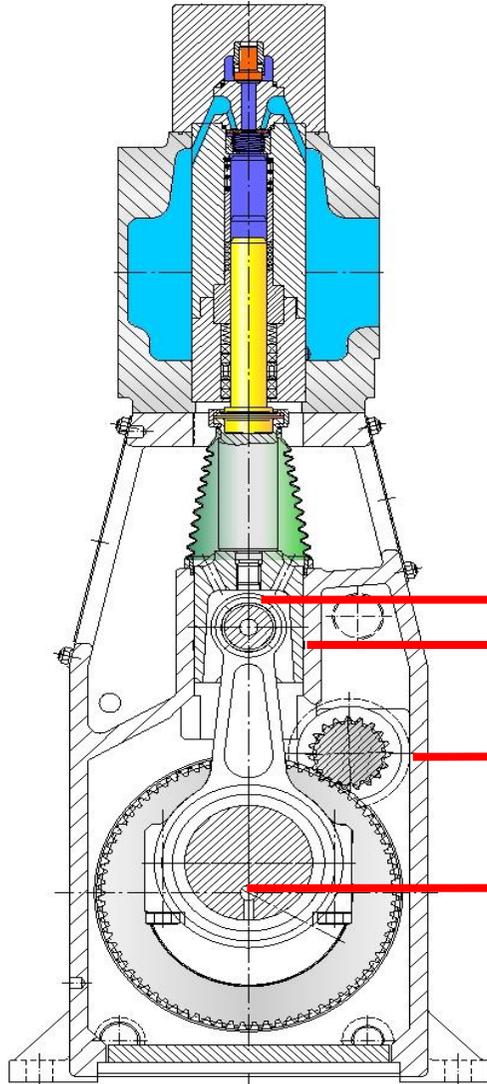
- ▶ To drain off leaked fluids from the intermediate chamber
- ▶ Can be used for leakage indication

INTERNAL SPEED REDUCTION GEAR



- ▶ Pressurised oil lubrication system (pump, filter, cooler)
- ▶ Helical gears in herringbone configuration
- ▶ Drive shaft supported by 2 bearings
- ▶ Heavy duty crankshaft bearings
- ▶ Compact design
- ▶ Mechanical efficiency > 95 %

PRESSURIZED OIL LUBRICATING SYSTEM



- ▶ Forced lubrication of all rotating and sliding components
- ▶ Maximum operational safety
- ▶ Even temperature distribution

Process information



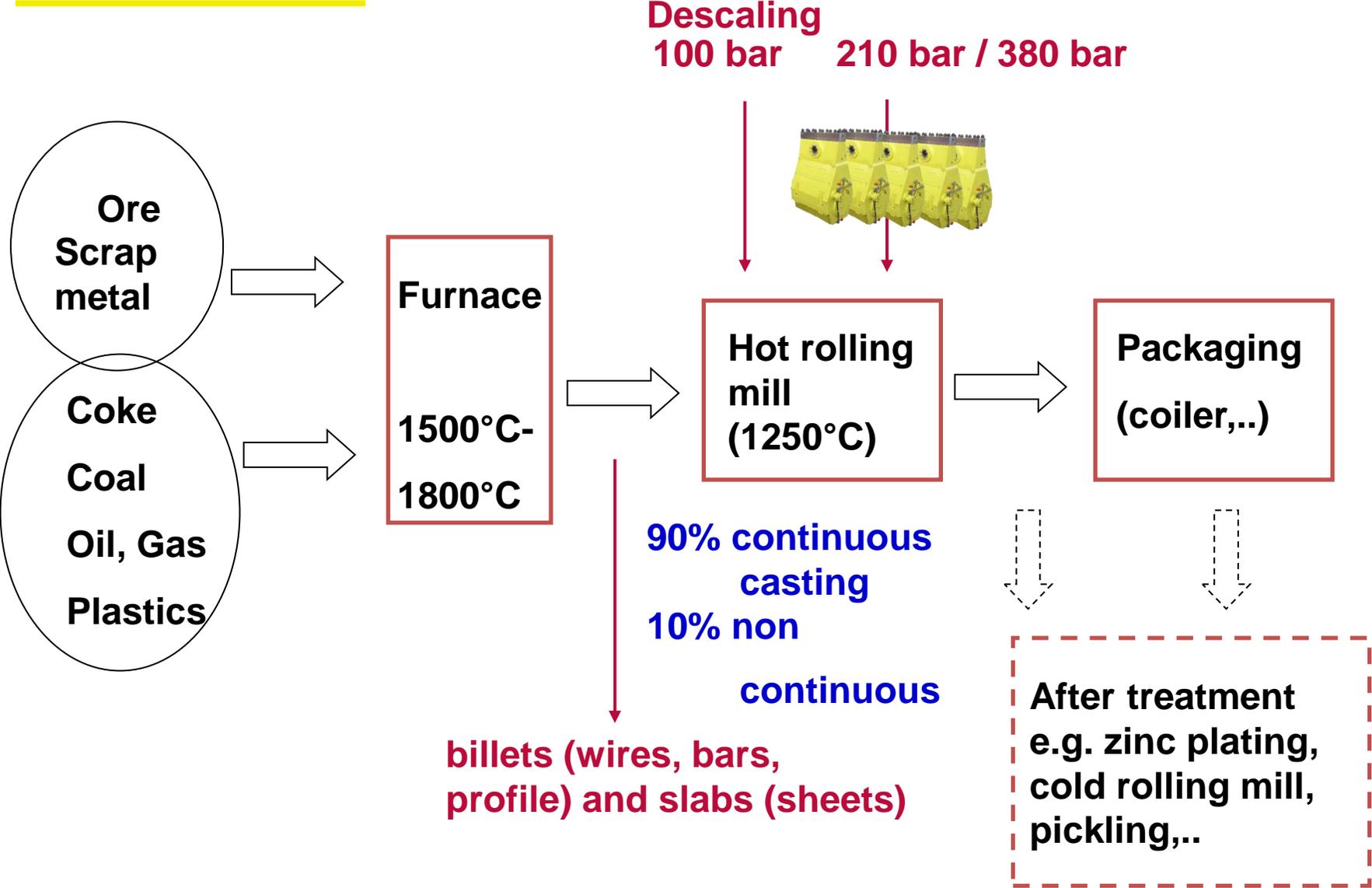
Steel production

- removal of scale after casting
- improvement of steel quality

Descaling pumps



Process information



Process information



- slab dimensions (LxWxH) approx. 12m x 2,5m x 300mm
- casting speed max. 6m/min
- end of line slab speed max. 20 m/sec
- sheet thickness min. 0,8 mm
- end of line stripe length approx. 4 km

Process information

- Removal of primary scale
 - > after the caster
 - > descaling pressure approx. 100 bar
 - > centrifugal pumps are used
- Removal of secondary scale
 - developed from first rolling step down to 30 mm
 - > after the induction furnace
 - > pressure 200 to 380 bar
 - > with plunger pumps

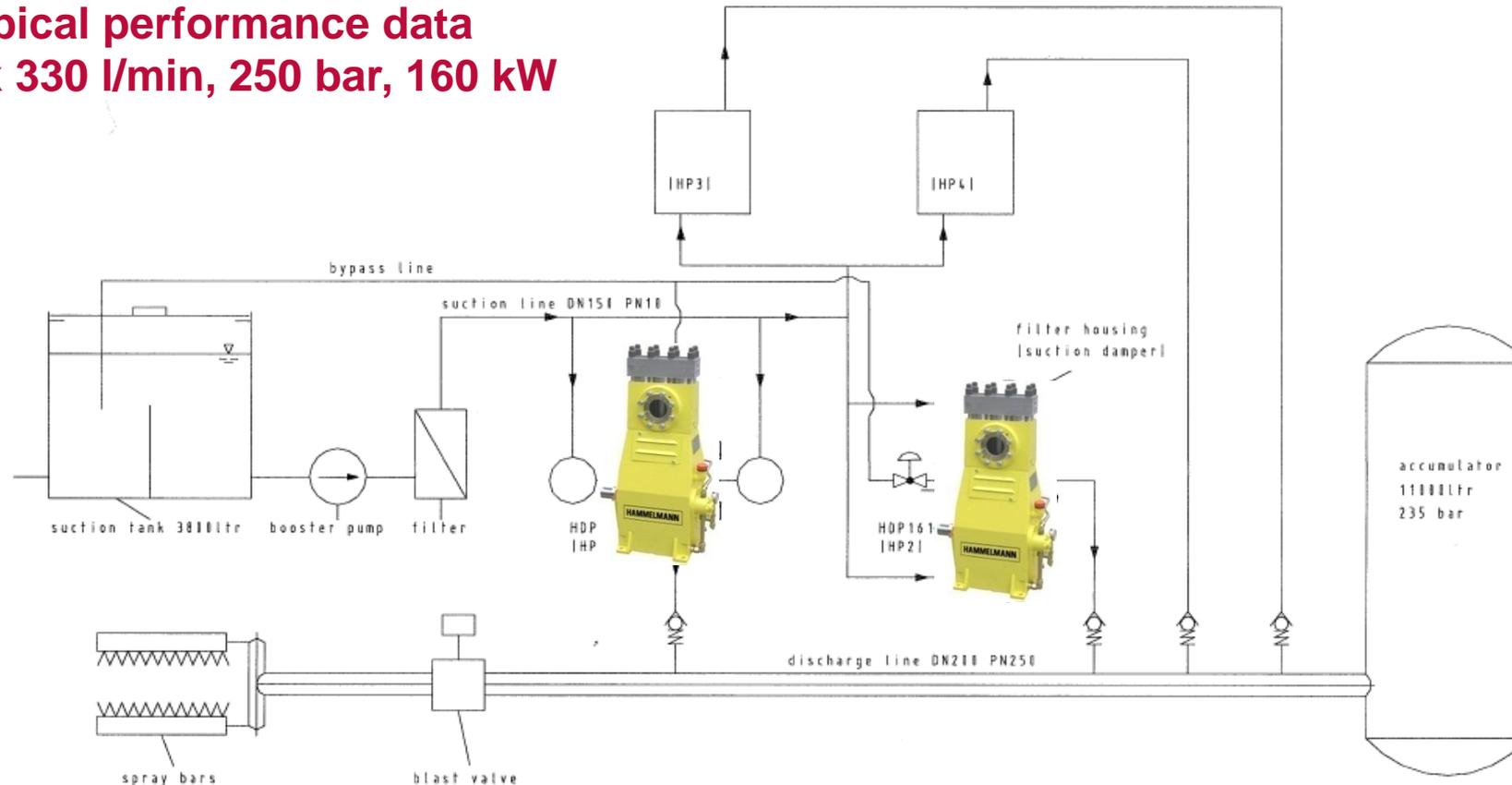


Process information

Installation

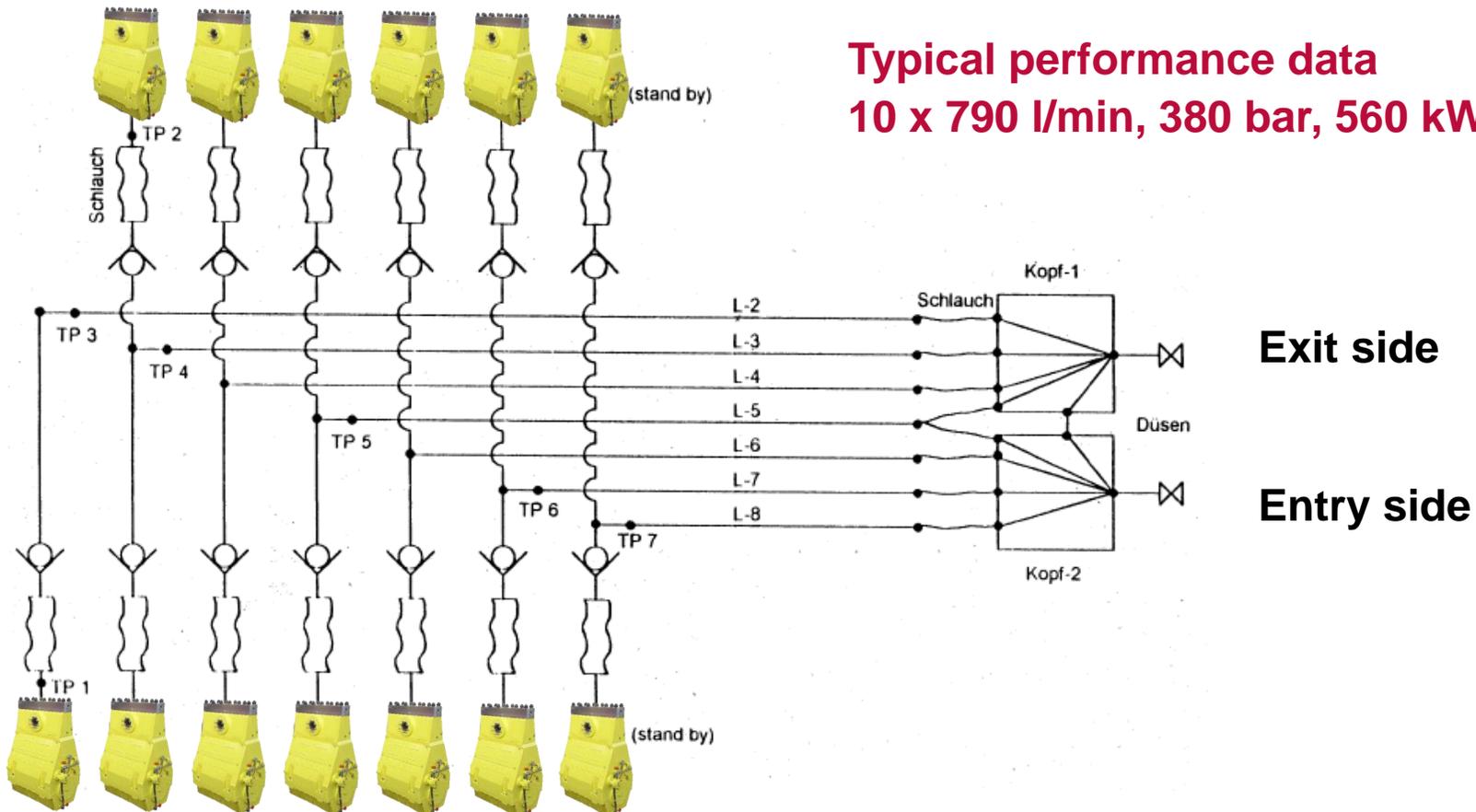
A) Accumulator system

Typical performance data
2 x 330 l/min, 250 bar, 160 kW



Process information

B) Direct descaling



Typical performance data
10 x 790 l/min, 380 bar, 560 kW

Pump technology



HDP 757
piston dia. 100 mm
max. 1100 l/min
max. 250 bar



HDP 757
piston dia. 75 mm
max. 790 l/min
max. 450 bar