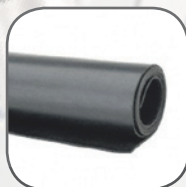
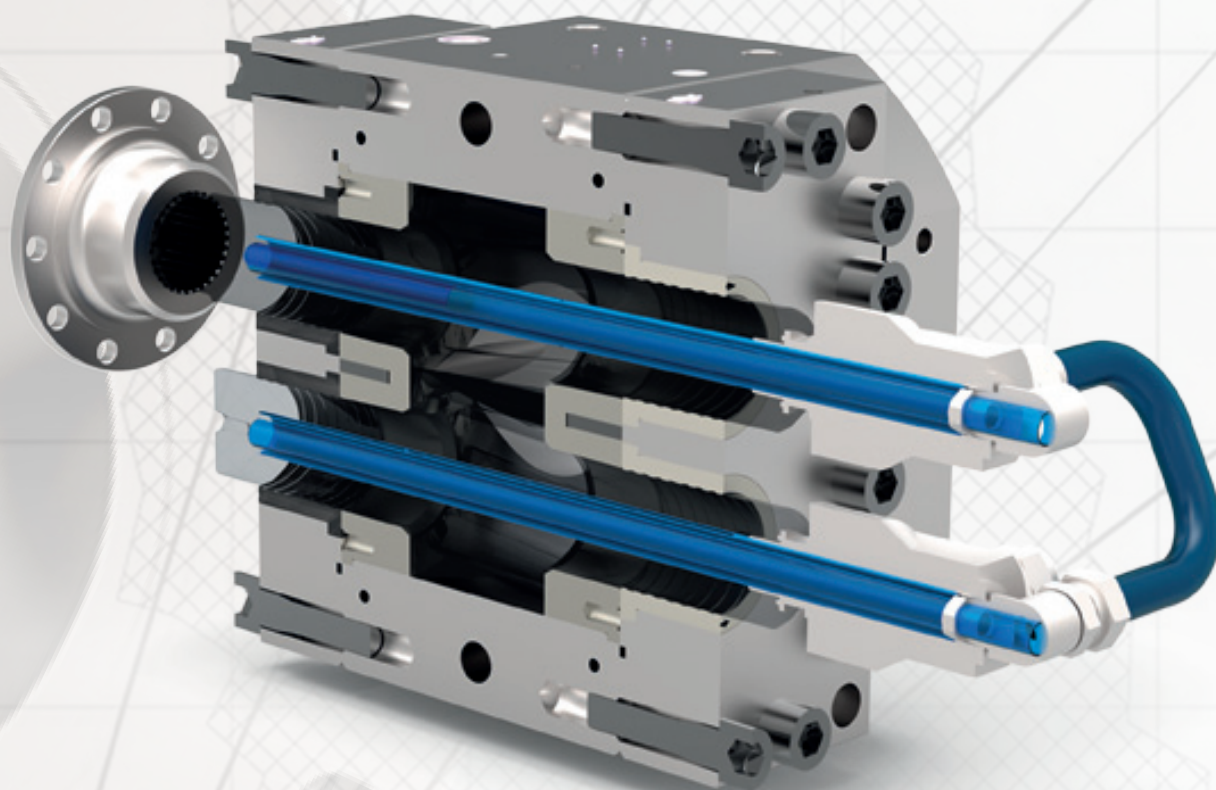


GEAR PUMPS

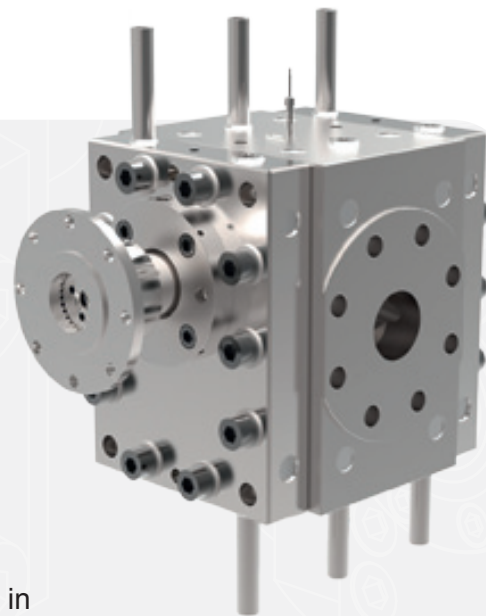
Rubber Application

high precision gear pump for metering
and pressure generation tasks



Made For Rubber Applications

Gear pumps provide a reliable means to increase capacity of existing lines, improve the dimensional stability of extruded profiles, efficiently build high pressure required for strainer applications and provide an excellent return on investment. The benefits of gear pump assisted extrusion are well known for thermoplastic applications and many of the same benefits can be realized for rubber. The key to a successful rubber pump installation is the correct pump design and pump size selection. Witte's ability to provide proven solutions for the rubber industry and our strength in providing an engineered solution to our customer's unique requirements gives our customers an advantage.

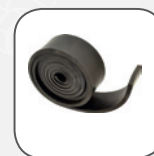


Gear pumps for rubber applications

Housing:	Alloy steel with stainless steel options
Gears:	Through hardened and nitrided H13 tool steel
Friction Bearings:	Through hardened D2 tool steel optional: other materials
Shaft Seal:	Viscoseal optional: other materials
Heating/cooling:	Jacketed pump housing and tempered gearshafts for use with pressurized hot water temperature system

Applications

Typical applications: EPDM, CR, NR, NBR, SBR, NR FPM, BR and others.



Pump Operation Parameters

Viscosity:	Up to 30.000 Pas
Temperature:	Up to 160 °C (320 °F), for rubber 80°C (176 °F) to 110°C (230 °F)
Suction Pressure:	Up to 120 bar (1.740 psig)
Differential Pressure:	Up to 250 bar (3.626 psig) with high pressure design up to 350 bar (5.076 psig)
Discharge pressure:	Up to 350 bar (5.076 psig) with high pressure design up to 450 bar (6.526 psig)

The values listed are maximum values and must not coincide under certain circumstances.

Special Gear Design

Helical Gear Design



- standard for rubber pumps
- reduced pulsation (compared to spur gears)
- self wiping design

Spur Gear Design



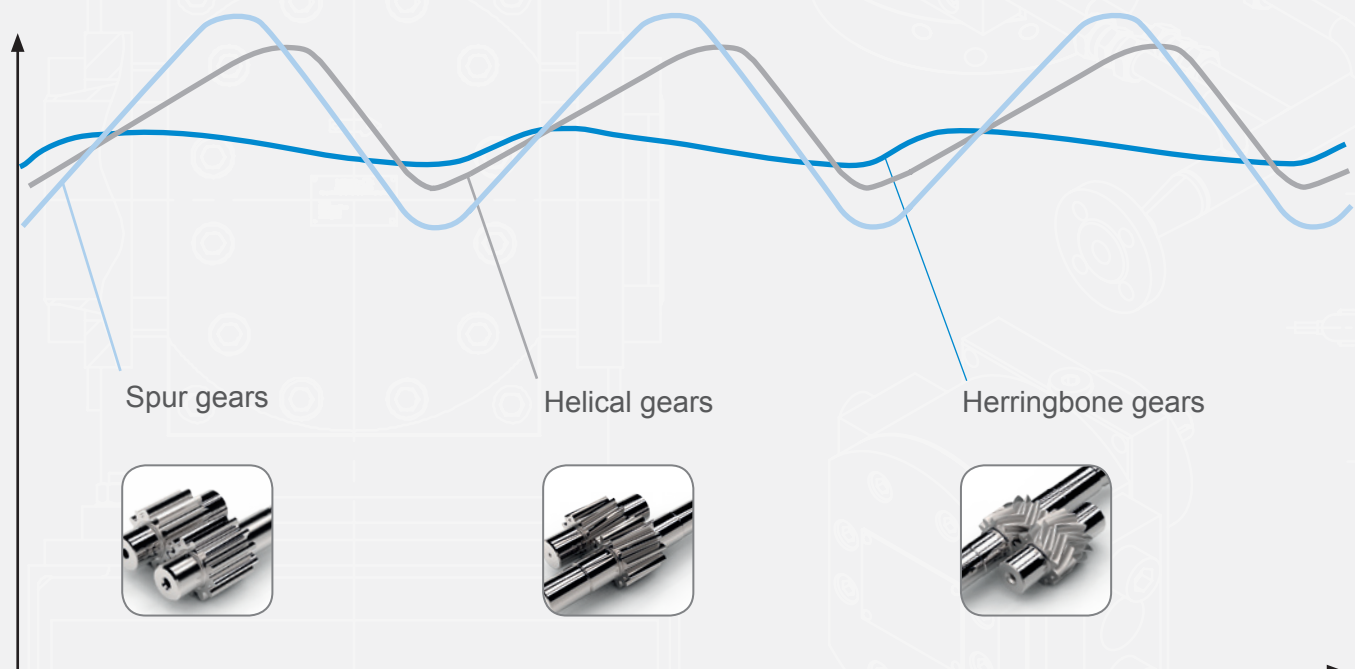
- standard for high pressure gear pumps
- best volumetric efficiency
- no axial thrust

Herringbone Gear Design



- lowest pulsation
- no axial thrust
- optimized temperature profile across rubber flow

Example: comparison of pulsation



Herringbone gears: comparison of pulsation

Advantages

Advantages of Gear Pump Assisted Rubber Extrusion

- Reduced pressure on the rubber extruder allows the rubber extruder to operate more efficiently and at higher throughput
- Ability to control extruder head pressure as an independent process parameter with control system
- Able to handle higher discharge pressure with less temperature rise for straining and high pressure applications
- Accurate metering of rubber compound to downstream equipment giving improved control on the final product
- Handle operating conditions which have not been possible previously
- Increase productivity of existing lines

Suitable for typical rubber compounds

EPDM

CR

NBR

SBR

NR

FPM

BR

and
many
others

Flexible suitable for products as

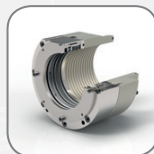


and
many
others

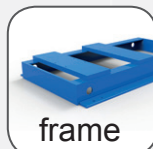
Different gear designs available



Special seal solution for many different application cases



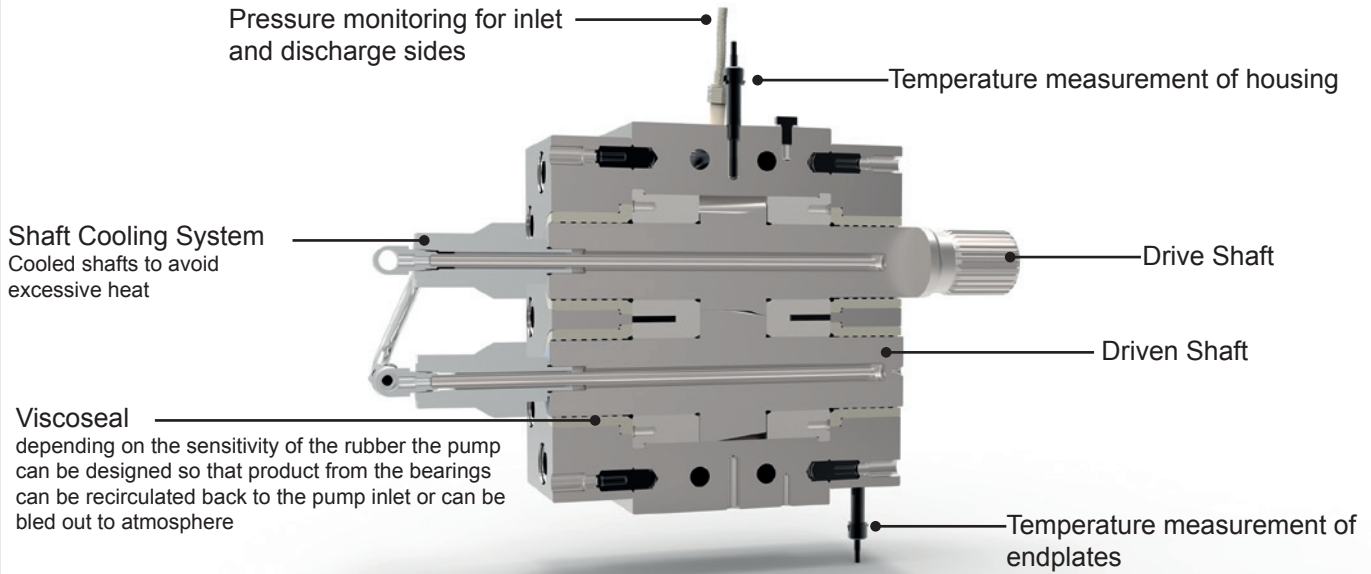
Optional equipment



and
many
others

Designed for Rubber

Pump Cross Section



Example Rubber Application

