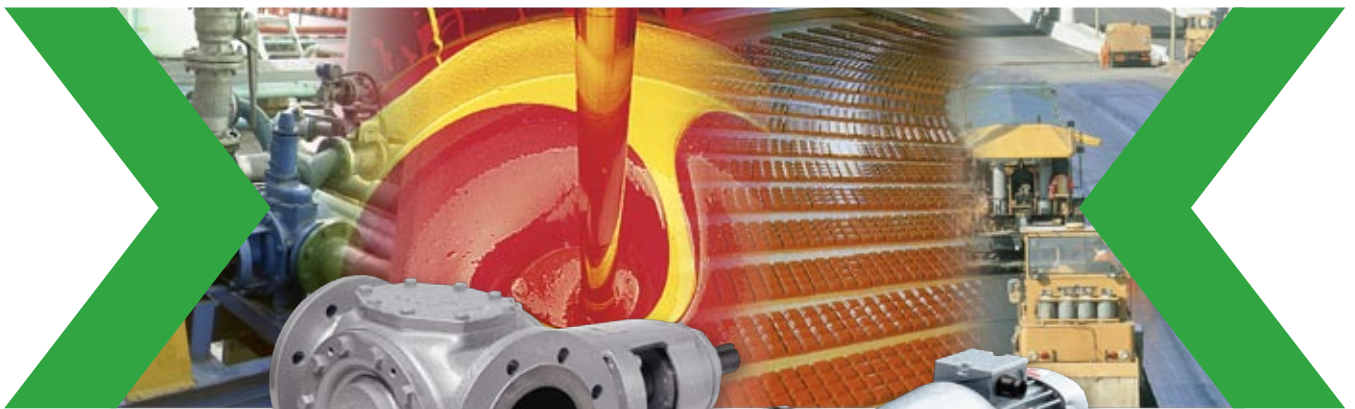




**JOHNSON PUMP**  
AN SPX BRAND

# TopGear Internal Gear Pumps



**SPX**<sup>®</sup>

# TopGear –

## When reliability is the priority

*Gear pumps are used in all types of manufacturing industries for the transportation of both thin and thick liquids, from chocolate to diesel fuel. Our gear pumps have a sturdy design, offering high reliability as well as long life.*

We make gear pumps that our customers can rely on.

The moment you buy a gear pump from Johnson Pump, you will join thousands of industrial customers who rely on our pump technology.

Their main interest is not the pump itself, but smooth, high-quality, uninterrupted production – at a lower total cost.

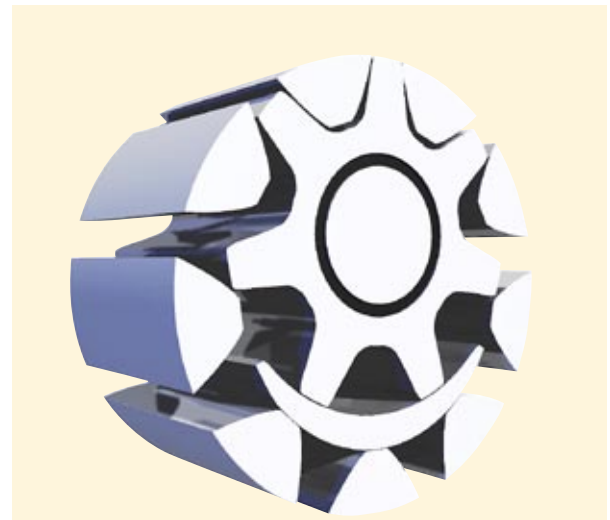
Johnson Pump has more than 50 years of experience in developing and manufacturing gear pumps and is one of the leading suppliers in the market.

The wide Johnson Pump TopGear programme is divided into three ranges :

the L-range : Low viscosity - highefficiency

the G-range : General purpose

the H-range : High demanding applications



### Typical characteristics

- Robust and reliable operation
- High and low viscous products
- Smooth flow
- Simple design - only two moving parts
- Easy maintenance
- Reduced down time for service
- Wide range of materials
- High efficiency
- Conforms to API 676

# TopGear –

## Knowledge results in the perfect solution

*Technical know-how and customer knowledge have been the driving forces for Johnson Pump when designing the programme of gear pumps. TopGear pumps are used in various industries and environments, which have thousands of liquids that need to be pumped.*

TopGear offers a combination of strong design with small or large clearances, unique gear tooth profile and options such as electrical heating and built-on safety relief valves.

Sometimes the fluids are explosive, sometimes poisonous. They can be free-flowing or extremely viscous. Johnson Pump has the experience and knowledge to meet the demands these different characteristics place on the pumps.

Together with our customers we select the right material and choose the right seal options to help you reach the optimal lifetime for the pump in various applications.

- **Petrochemicals**

*Pure or filled bitumen, pitch, diesel oil, crude oil, lube oil*

- **Chemicals**

*Sodium silicate, acids, plastics, mixed chemicals, isocyanates*

- **Paint and Ink**

- **Resins and Adhesives**

- **Pulp & Paper**

*Acid, soap, lye, black liquor, kaolin, lime, latex, sludge*

- **Food**

*Chocolate, cacao butter, fillers, sugar, vegetable fats and oils, molasses, animal food*

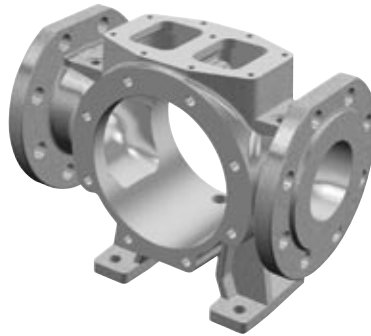




# Features and Benefits

## Improved priming, low NPSHr

- Ports above centerline
- Maximised ports



## Flange connections options

- EN
- ANSI

## Improved design for low and high viscous media

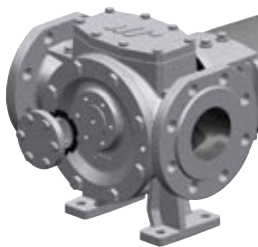
- Optimised teeth profile
- Smooth flow



## *H-range/G-range*

## Optimised efficiency

- Axial rotor locking
- Adjustable clearances
- Hydraulic design

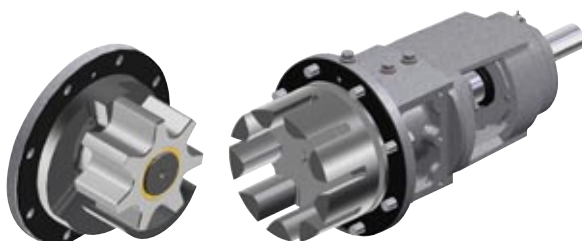


## Eliminated leakage during thermal expansion

- Pin cover
- Safety sealed

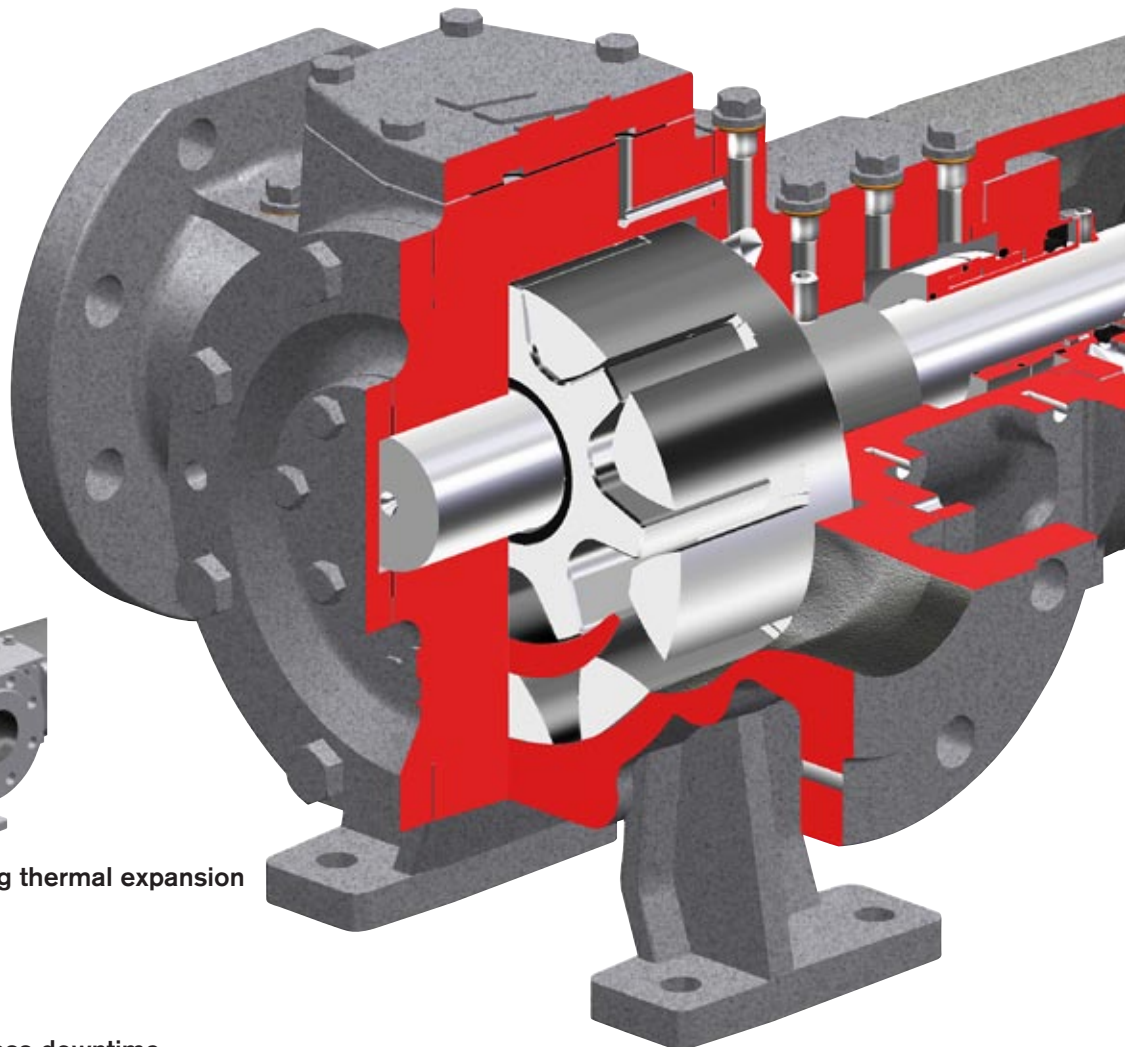
## Less downtime

- Front and back pull-out



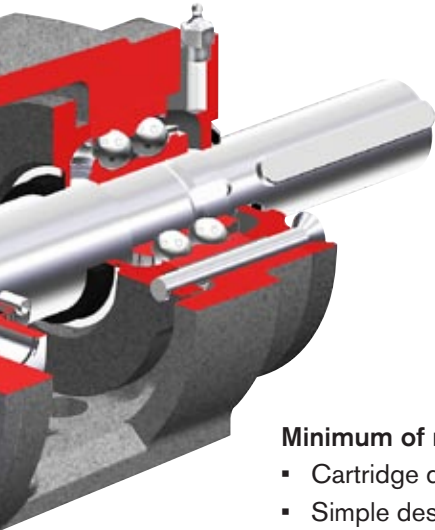
## Prolonged service life

- Double ball bearing design
- Adjustable axial clearance
- Allows V-belt drive
- Accepts higher axial forces



### Several material options

- Shaft seal materials
- Bearing materials
- Hydraulic parts

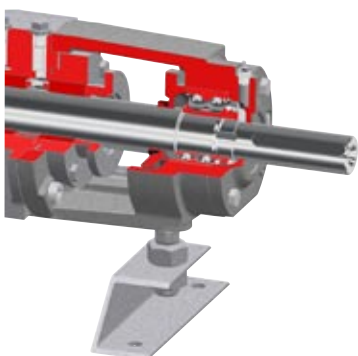


### Minimum of maintenance

- Cartridge design
- Simple design

### Maximised lifetime

- Compact rotor
- Strong shafts
- Maximised bearing design
- Possibility for selection of hardmetal bearings
- On seals thanks to seal relief channel

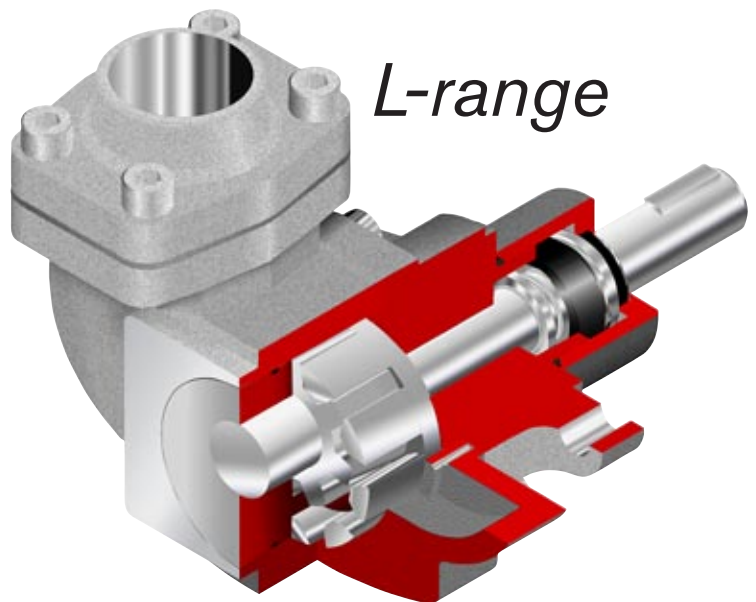


### High volumetric efficiency

- Small radial and axial clearances
  - reduced slip
- Optimised rotor/gear shape

### Long service life

- Large bearing diameters
- Rotors machined in one piece from steel bar
- Hardened interior parts



### Less down time

- Pumps and motors flanged to pedestals
  - correct alignment between pump and drive shaft
- Compact units easy to assemble

### Prolonged seal life

- Pressure relief channel from the seal area back to the suction side

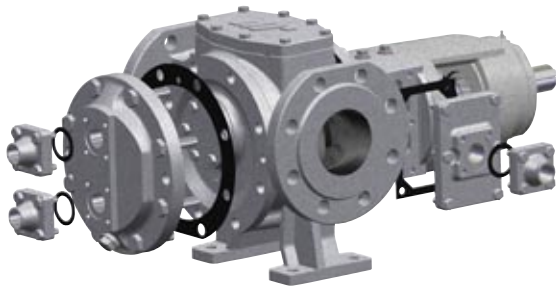
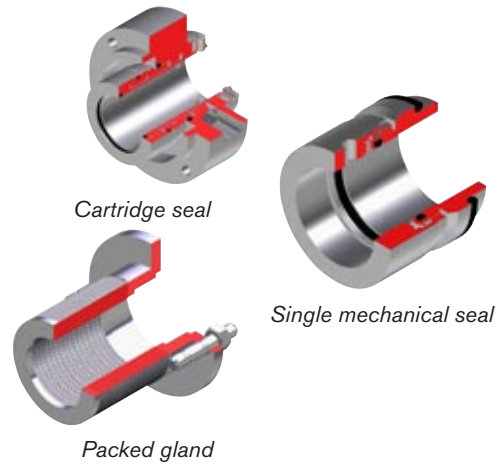
### Large vertical ports

- Improved priming capability
- Reduced risk of cavitation

# Options

## Shaft seal options

Shaft seal options include packed gland, single and double mechanical seals (to EN 12756), lip seals and cartridge seals.



Jackets for pump cover and around the shaft seal

## Jacket options

Heating and cooling jackets guarantee the performance of the pump in a start-up or a shut-down procedure. They also provide the pump with the best condition for the seals during operation. Different options : thermal oil, steam or electrical heating.



Single safety relief valve

## Safety relief valve options

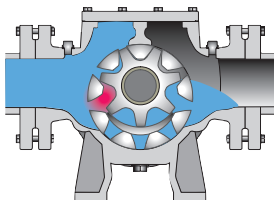
Built-on safety relief valves protect the pump, as well as other equipment in the system, from overpressure.

When the pump is used bidirectionally, a double safety relief valve is provided.

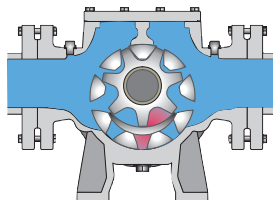


Double safety relief valve

# Operating principle

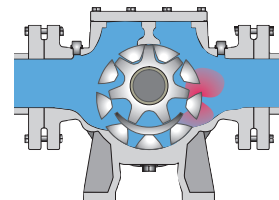


As the rotor and idler unmesh, an underpressure is created and the liquid enters the newly created cavities.



Liquid is transported in sealed pockets to the discharge side.

The walls of the pump casing and the crescent create a seal, that separates suction from discharge side.

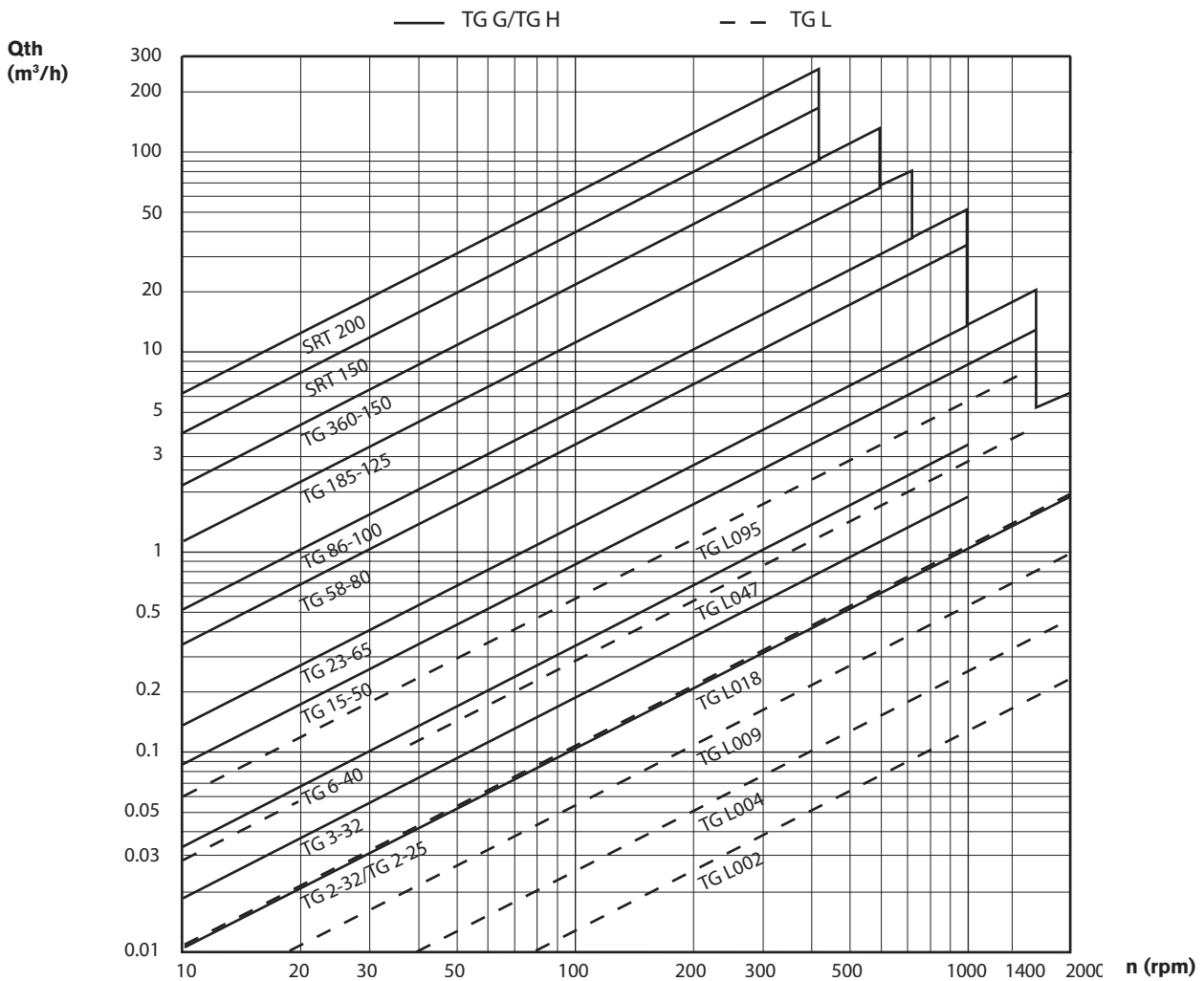


The rotor and idler mesh and liquid is pushed into the discharge line.

# Technical data

	TG L	TG G			TG H
		TG GS	TG GP	TG GM	
<b>Casing</b>	Cast Iron	Cast Iron			Stainless Steel Cast Steel Ductile Iron
<b>Idler &amp; rotor</b>	Steel	Iron Stainless Steel			Nodular Iron Stainless Steel
<b>Max Capacity (m³/h)</b>	8	80	130	250	130
<b>Max differential pressure (bar)</b>	30	10	16		16
<b>Max temperature (°C)</b>	250	200	300		300
<b>Max viscosity (m.Pas)</b>	60 000	5 000	80 000		80 000

# General performance



**SPX**<sup>®</sup>

**PROCESS EQUIPMENT**

Your local contact:



SPX Process Equipment BE N.V.  
Evenbroekveld 2-4  
BE-9420 Erpe-Mere, BELGIUM  
Phone: +32 (0)53 60 27 15. Fax: +32 (0)53 60 27 01  
E-Mail: [jp-industry.be@processequipment.spx.com](mailto:jp-industry.be@processequipment.spx.com)



For more information about our worldwide locations, approvals, certifications, and local representatives, please visit [www.johnson-pump.com](http://www.johnson-pump.com) and [www.spxpe.com](http://www.spxpe.com).

SPX reserves the right to incorporate our latest design and material changes without notice or obligation. Design features, materials of construction and dimensional data, as described in this bulletin, are provided for your information only and should not be relied upon unless confirmed in writing. Certified drawings are available upon request.