

# TopGear

INTERNAL GEAR PUMPS



Gear pumps are used in all types of manufacturing industries for the transportation of both thin and thick liquids, from diesel fuels to chocolate. The Johnson Pump brand heavy duty pumps are designed around high reliability as well as long life.

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.

The extensive TopGear series is divided into three ranges; the TG G-range for general purposes, the TG H-range for high demanding applications and the TG L-range that offers high efficiency when transporting low viscosity fluids. For applications demanding leak-free operation a magnetically driven, TG MAG, is available.

We help our customers expand and enhance their food and beverage, power and energy and industrial production processes. For more information, visit [www.mstellla.co.za](http://www.mstellla.co.za)

# TopGear

## When reliability is the priority

### TG G & TG H ranges

#### IMPROVED PRIMING, LOW NPSHR

- Ports above centerline
- Oversized ports for better efficiency

#### IMPROVED DESIGN FOR LOW AND HIGH VISCOUS MEDIA

- Optimized gear tooth profile
- Smooth flow

#### HIGH EFFICIENCY

- Axial rotor locking
- Adjustable clearances
- Balanced hydraulic design

#### ELIMINATED LEAKAGE DURING THERMAL EXPANSION

- Pin cover
- Safety sealed

#### SEVERAL MATERIAL OPTIONS

- Shaft seal materials
- Bearing materials
- Hydraulic parts

#### PROLONGED SERVICE LIFE

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

#### MINIMUM OF MAINTENANCE

- Cartridge design
- Simple design

#### MAXIMIZED LIFETIME

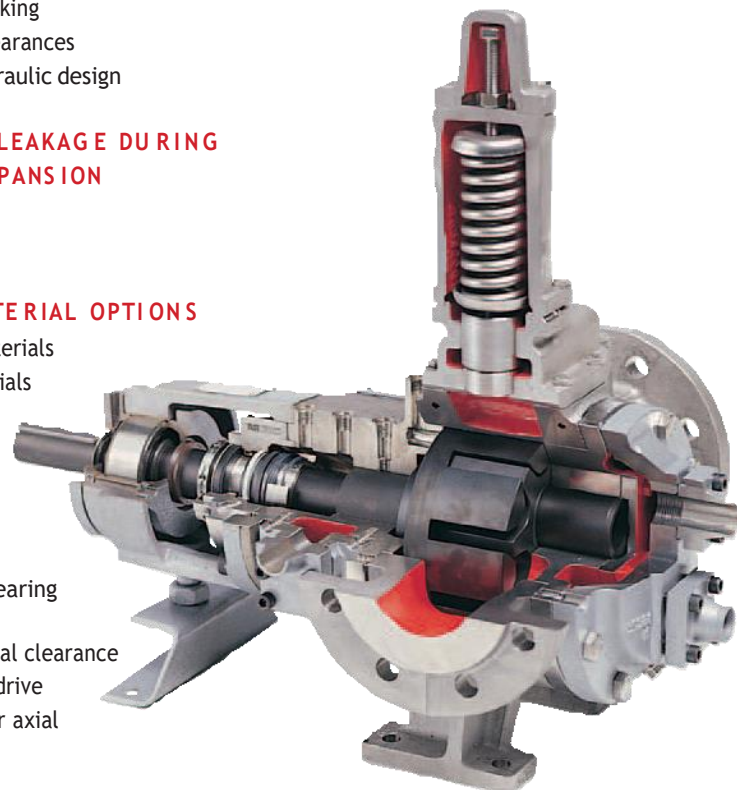
- Compact rotor
- Strong shafts
- Maximized bearing design
- Possibility for selection of hardmetal bearings
- On seals thanks to seal relief channel

#### LESS DOWNTIME

- Front and back pull-out

#### FLANGE CONNECTIONS OPTIONS

- EN
- ANSI



# TG L range

## LARGE VERTICAL PORTS

- Improved priming capability
- Reduced risk of cavitation

## HIGH VOLUMETRIC EFFICIENCY

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

## LESS DOWN TIME

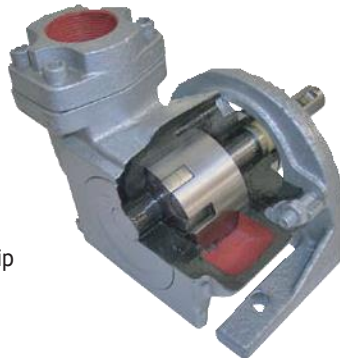
- Pumps and motors flanged to pedestals - correct alignment between pump and drive shaft
- Compact units easy to assemble

## PROLONGED SEAL LIFE

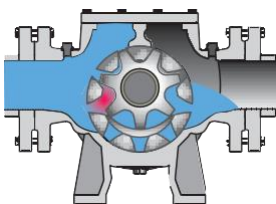
- Pressure relief channel from the seal area back to the suction side

## LONG SERVICE LIFE

- Large bearing diameters
- Rotors are machined from solid bar stock material.
- Hardened interior parts



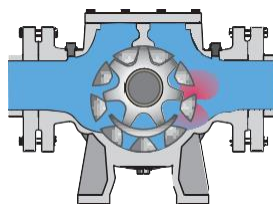
## OPERATING PRINCIPLE



As the rotor and idler unmesh, an under-pressure 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	
PUMP CASING	CAST IRON	CAST IRON			STAINLESS STEEL CAST STEEL DUCTILE IRON
IDLER	STEEL	CAST IRON STEEL STAINLESS STEEL			
ROTOR	STEEL	CAST IRON NODULAR IRON STAINLESS STEEL			
MAX CAPACITY (M <sup>3</sup> /H)	8	80	130	130	
MAX DIFFERENTIAL PRESSURE (BAR)	30	10	16	16	
MAX TEMPERATURE (°C)	250	200	300	300	
MAX VISCOSITY (M.PAS)	60 000	5 000	80 000	80 000	

# Typical product applications

TopGear pumps are used in various industries and environments, which have thousands of liquids that need to be pumped.

### 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 feeds



## Options

### SHAFT SEAL OPTIONS

Shaft seal options include packed gland, single and double mechanical seals, lip seals and cartridge seals.



Magnetic drive available as the TG MAG.

### 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.



### SAFETY RELIEF VALVE OPTIONS

Built-on safety relief valves protect the pump, as well as other equipment in the system, from over pressure. When the pump is used bi-directionally, a double safety relief valve is available.



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