



# **GEHO® Piston Diaphragm Pumps**

T/ZPM Series

**The GEHO® pump is a vital organ in any mine, because it's one that never fails.**





### The heart of the mine.

The lifeblood of your mine relies on the healthiest of hearts. GEHO pumps all day every day, in the most sustainable way possible.

Constant innovation means that our GEHO® positive displacement pumps have been trusted across the globe for over 100 years. If you are pumping abrasive slurries and sludges of medium to high viscosity or corrosive material at high temperatures, then our GEHO® piston diaphragm pump is the pump for you. And with up to 98% availability and outstanding efficiency, GEHO® high pressure slurry pumps are designed to meet your requirements, both today and tomorrow.

Synertrex® real time performance data and risk predictions deliver efficiency, consistency and longevity for your pump. This revolutionary technology works together with our unrivalled aftermarket support delivered 24/7 by the Weir Minerals global network to minimise your total cost of ownership.

Put simply, GEHO® pumps are designed to be unstoppable and unbeatable.

# GEHO pumps all day every day, to keep your mine running.

## Proven performance

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GEHO® pumps have been pivotal to the success of countless mining operations for over a century due to their proven track record of performance.

Mining giants from around the globe have relied on them for generations to deliver uninterrupted and trouble-free operation.

## Continual innovation

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Our state-of-the-art pump technology and pumping solutions are continually being innovated by our research team in the Netherlands.

Our expert team of engineers in Venlo are constantly evolving the design and capabilities of our GEHO® pumps to deliver superior pump efficiency, reliability and availability.

And your GEHO® pump comes equipped with our revolutionary Synertrex® technology, delivering remote diagnostics to allow you to optimise, predict and adapt to the conditions of your mine.

Turn to page 11 for more information about our Synertrex® technology.





## Range of applications

Our robust range of GEHO® pumps are built to handle the most abrasive, corrosive and high temperature slurries, sludges and tailings.

These workhorses can handle slurry concentrations of up to 85% and temperatures up to 250°C. They are designed for the following range of applications:

- Ore pipeline transport
- Tailings disposal
- Autoclave feed
- Digester feed
- Reactor feed
- Coal gasification
- Mine dewatering and desludging
- Mine backfill
- Hydraulic ore hoisting
- Biomass feed

## Always reliable

With availability of 98%, you can bank on your GEHO® piston diaphragm pump performing day in, day out.

And with outstanding efficiency of up to 96%, not a single kilowatt of energy goes to waste.

Our unique GEHO® positive displacement pumps showcase design features that ensure uninterrupted and trouble-free operation.

Turn to page 8 and 9 for pump features and capabilities.



# The heart of sustainable pumping solutions

## 50%

**Cut energy usage**

GEHO® pumps can cut energy usage by up to half. That's money saved and a more environmentally sustainable operation for your mine.

## 30%

**Reduce water consumption**

GEHO® pumps reduce water consumption by up to a third, meaning lower usage of this critical resource.

## 50%

**Cut carbon emissions**

GEHO® pumps can dramatically reduce carbon emissions. That's a cleaner environment for you and your children for generations to come.









# Hard at work. All day, every day.

## The GEHO® piston diaphragm pump

The GEHO® piston diaphragm pump is a crankshaft driven pump, usually driven by a gearbox, motor and variable speed drive. The pump diaphragms protect the moving parts from the abrasive slurry, and the pump non-return valves remain as sole wear parts.

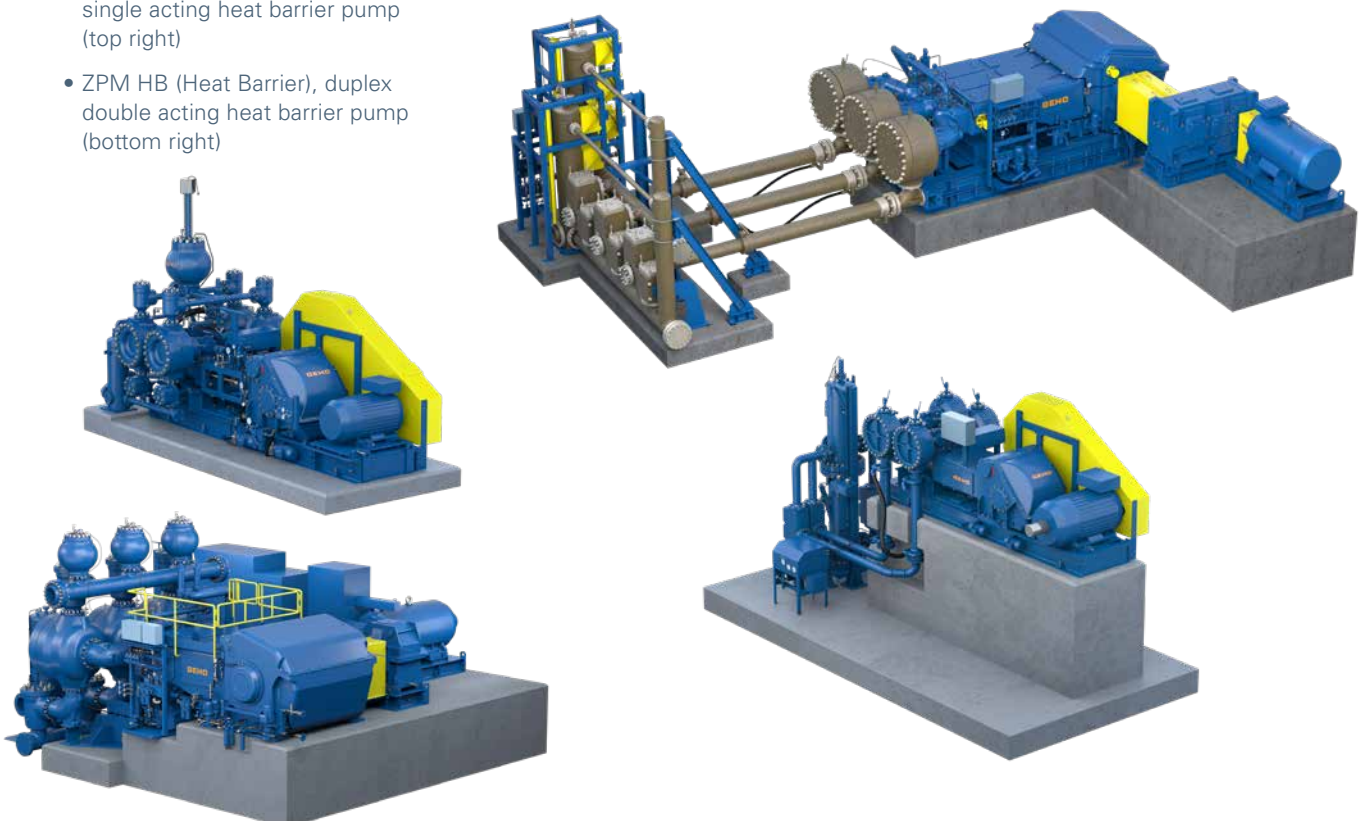
The GEHO® piston diaphragm pump comes in four models:

- TZPM, triplex single acting pump (bottom left)
- ZPM, duplex double acting pump (top left)
- TZPM HB (Heat Barrier), triplex single acting heat barrier pump (top right)
- ZPM HB (Heat Barrier), duplex double acting heat barrier pump (bottom right)

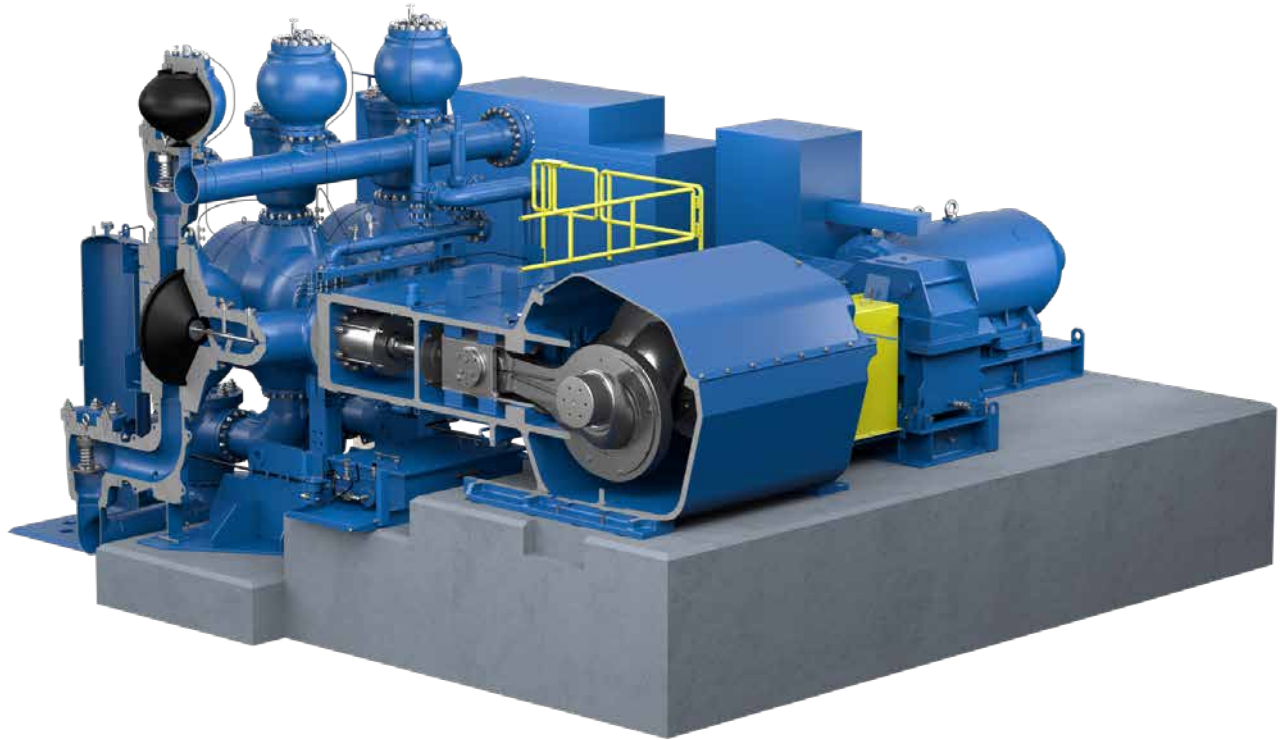
## Capabilities

Your GEHO® T/ZPM series pump really will make the most of your mine with:

- Capacities up to 1,600 m<sup>3</sup>/h
- Discharge pressure up to 32,000 kPa
- Solids concentration up to 85%
- Viscosity up to 8,000 mPas
- Yield stress up to 200 Pa
- Particle size up to 6 mm
- Slurry temperature up to 250°C







## Main features and benefits

Whether it's transporting ore, tailings or feeding processes, our rugged range of GEHO® piston diaphragm pumps handle the toughest conditions with might. They deliver:

- High pump efficiency (up to 96%) which means lower energy costs and reduced carbon footprint
- High availability (yearly preventative maintenance intervals) because they are a heavy duty industrial pump
- Minimised piston wear and long service intervals for piston seal and cylinder liner as diaphragm protects piston and liner from abrasive slurry
- Maximised valve lifetime based on extensive experience, lessons learned and continuous development and maximised pump availability for end users because the valves are the only wear parts (application specific designs are available)
- Quick replacement of valves and seat due to hydraulic valve seat removal
- Low pulsation level due to large dampening volume and pump synchronisation. Pulsation dampeners are nitrogen pre-charged allowing for safe operation
- Protection against over-pressurisation due to integrated pressure relief valve at propelling liquid side
- Long-lasting piston seals with low friction and maximum efficiency due to piston running in hydraulic fluid
- High reliability because of conservative mechanical rod loading (pump loading is based on experience and extensive reference list)
- Heavy duty pump solution for rugged mining environments as pump is sealed against exterior contamination
- High reliability and minimised maintenance during operational lifetime due to resilient, robust single-piece frame with low stress levels
- Minimised cooling water requirements and maximised pump reliability for pumping high temperature slurry due to heat barrier with floating separator
- Long diaphragm lifetime due to automatic PLC controlled diaphragm positioning system allowing for routine annual replacement

# The lifeblood of your mine relies on the healthiest of hearts.

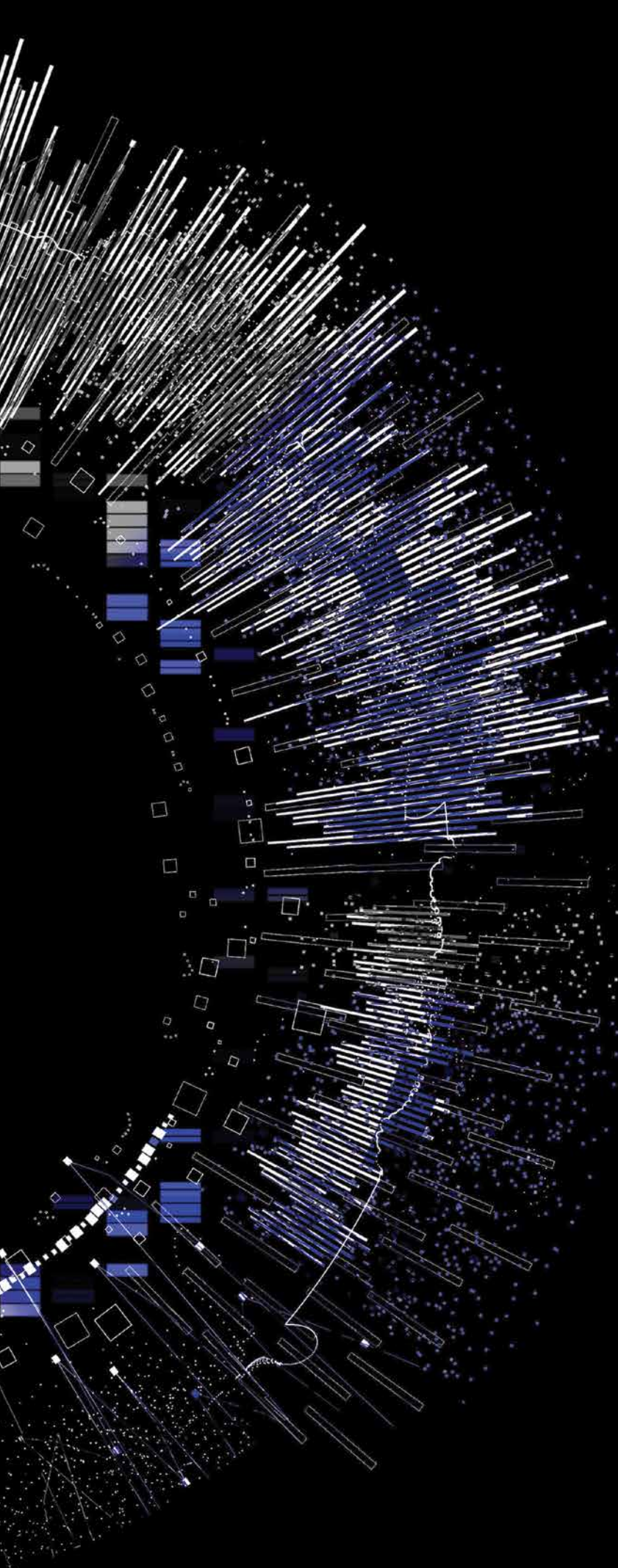


## Global but local

Whether you're in Alaska or Australia, we have a local after-sales service team on standby, ensuring your GEHO® pump is monitored, optimised and serviced no matter what.

Our ongoing partnership with you includes:

- Comprehensive support under flexible servicing agreements tailored to your unique needs
- Installation and commissioning by highly qualified and dedicated service engineers
- 24/7 on-site technical assistance to ensure optimised performance of your equipment and to minimise unplanned downtime
- On-site training and workshop training available at our GEHO® pumps training academy for operators and maintenance professionals to improve general knowledge and equipment maintenance
- Reliable and cost-effective repairs, overhauls and modifications
- A guarantee to provide genuine spare parts manufactured using quality materials and processes to ensure that they are reliable and long-lasting, helping to optimise the performance of your pump
- Partnership with world-wide experts in hydraulics to ensure the highest quality and availability of parts
- Reliable and timely availability of our GEHO® spare parts from our manufacturing facility and regional distribution centers that cover every continent (or from an agreed consignment stock on-site) to help reduce your operating costs



## The Power of Synertrex®

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Advanced technologies have revolutionised every digital process on the planet. And GEHO® positive displacement pumps are no different.

With Synertrex®, monitoring data analytics and enabling predictive maintenance has never been easier. Synertrex® sensors are placed on your pump to collect critical operating data. This allows you to increase productivity, foresee risk and enhance overall performance. This reduces downtime and increases productivity and output.

Our world-leading team of experts can virtually visit your site, assess the operability of our equipment, and provide technical advice and support from our Synertrex Monitoring Centre in Venlo, The Netherlands.

With a GEHO® pump there are no surprises, only outstanding performance that you can predict, track and monitor.





Minerals



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