



# HIGH PERFORMANCE BEARINGS FOR MINING

## MINING

Mining is a global industry that serves as the critical source behind the raw materials needed to maintain and improve standards of living for people everywhere. From road construction and the automobiles that drive on them to hospital equipment and computers, our world depends on the outputs that come from mining.

In the mining industry, operations are intensive, risk-prone, and unpredictable. Design engineers are challenged to design for solutions that withstand constant operation under extreme conditions, excessive wear and tear, and demanding timelines that can't be delayed due to unplanned maintenance.

## APPLICATION CHALLENGES

- High load capacity
- Corrosive environments
- Long maintenance intervals
- Increasing safety regulations
- Smooth consistent low friction
- Long service time

## MINING APPLICATIONS

- Motor grader
- Off-highway
- Pipelayer
- Wheel-tractor scraper
- Track-type skidder
- Wheel-type loader
- Earthmoving compactor
- Excavator
- Bulldozer

## THE GGB ADVANTAGE



### MAINTENANCE-FREE

GGB bearings are self-lubricating, making them ideal for applications requiring long bearing life without continuous maintenance, as well as operating conditions with inadequate or no lubrication.



### CORROSION RESISTANT

In harsh mining conditions, where corrosive elements abound, GGB provides corrosion-resistant materials for enduring performance.



### LOWER SYSTEM COST

GGB solutions replace grease, save space with slim designs, and reduce maintenance needs, extending service life and lowering ownership costs.



### EXTENDED SERVICE LIFE

GGB bearings deliver reliable performance in demanding conditions, enduring heavy loads and harsh environments to extend the lifespan of diverse applications.



### ENVIRONMENTAL

Greaseless, lead-free GGB bearings comply with increasingly stringent environmental regulations such as the EU RoHS and WEEE directives.



### GLOBAL FOOTPRINT

GGB has manufacturing, sales, service and support locations around the globe. This vast network of resources and expertise enables us to respond promptly to your bearing needs wherever you do business.

## Stronger. Together.

With our extensive global presence and deep expertise in various applications, our capabilities are pushing the boundaries. We strive to expand the horizons of what's achievable, encouraging customers from all industries to collaborate with us and foster innovation together.

Today, our products can be found everywhere – from scientific vessels at the bottom of the ocean to racecars speeding down the tarmac to the Curiosity rover exploring the surface of the Mars.

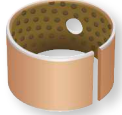
# RECOMMENDED PRODUCTS

The following products are particularly well suited for mining applications\*. Contact your local Timken sales representative for bearing product selection and design assistance.



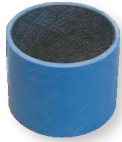
### HI-EX®

A Metal-Polymer hydrodynamic composite bearing, the lead-free HI-EX features marginal lubrication for good wear and chemical resistance under thin film conditions. Suitable for use with low viscosity fluids, it's approved to standard ASTM E595/ ECSS-Q-ST-70-02C and rated for a maximum temperature of 250°C.



### DX®10

A Metal-Polymer grease-lubricated bearing solution, the lead-free DX10 features enhanced chemical and erosion resistance and is ideal for harsh environments. From piston and oil pumps to reciprocating bushings, it features great wear and fatigue performance with high loads and temperatures.



### HPMB®

A Fiber Reinforced Composite bearing, the high-precision HPMB features machinable inner and outer diameters for superior application precision, circularity and cylindricity tolerance (with pre-machined available for immediate installation).



### SBC with GAR-MAX®

A sealed GAR-MAX bearing that excludes contamination to offer maintenance-free alternative to greased bronze and roller bearings. The self-lubricating SBC with GAR-MAX features excellent resistance to shock loading and misalignment and high static load capacity.



### GAR-MAX®

GAR-MAX, a Fiber Reinforced Composite bearing, features excellent resistance to shock loading and misalignment and high load capacity. With great chemical resistance, it's ideal for hydraulic cylinders, backhoes, skid steer loaders, and front-end loaders.



### GGB-CSM®

A thick walled monometal bearing, the self-lubricating and maintenance-free GGB-CSM is produced by metallurgic powder and features homogeneously distributed solid lubricant (graphite, MoS<sub>2</sub>) in the metallic matrix. With lead-free and corrosion resistant alloys available, it can handle temperatures up to 600°C (depending on alloy).



### GGB-SHB

A case hardened steel bearing, the GGB-SHB features a plain or grooved sliding layer and is ideally suited for lubricated applications where there is low rotation speed with high specific pressure.



### TriboShield®

With the TriboShield technology, GGB can reduce the friction and extend the durability of any complex shaped part by coating the substrate with our special designed low friction paints.



### TriboMate

Our TriboMate technology is the pairing of a GGB bearing with a GGB polymer coating. The technology reduces significantly the static and dynamic friction, improves start and stop behaviors and increases load carrying capability.



\*Performance depends on different operating conditions.



[www.ggbearings.com](http://www.ggbearings.com)



Stronger. Together.

Order-No. 11659

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