

# Building the Future

**SOLUTIONS WITH A HUGE IMPACT**



# The GGB Advantage

With manufacturing facilities around the world, including cutting edge R&D facilities, flexible production platforms and extensive customer support networks, GGB offers unmatched technical expertise combined with razor sharp responsiveness and customized solutions. Our global presence and local logistics networks ensure our customers receive only the highest quality bearing solutions, in a timely manner and with extensive engineering support. We don't just make products, we build partnerships. That's the GGB Advantage.



Construction application experts



Global Footprint



Fast turnaround for prototypes

## QUALITY / CERTIFICATION

Our world-class manufacturing plants in the United States, Brazil, China, Germany, France and Slovakia are **CERTIFIED IN QUALITY AND EXCELLENCE IN THE INDUSTRY** according to ISO 9001, TS 16949, ISO 14001, ISO 50001 and OHSAS 18001. This allows us to access the industry's best practices while aligning our quality management system with global standards.

For a complete listing of our certifications, please visit our website:

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



# to Build a better Future

In 2018, construction industry spending amounted to \$11.4 trillion USD worldwide. By 2025, that number is expected to increase to an estimated \$14 trillion USD (according to a survey conducted by Statista between 2011-2017). With construction projects booming, engineering firms and contractors have no time to waste on unreliable machinery and equipment downtime.

In the past the construction and earth-moving equipment industry, has been hesitant in utilizing new innovations and technology, but as technology continues to advance, the urgency to adapt is more crucial. Since each project has its own set of unique challenges, delays, and scheduling conflicts, each project has to be analyzed for the most efficient solution.

With heavy-duty equipment constantly facing high loads, exposed to dirt and other contaminants, they need to count on tribological materials that are designed for reliable performance. GGB has kept these points in mind when designing a line of self-lubricating and maintenance-free bearings that drastically reduces or eliminates unplanned maintenance and downtime. Our self-lubricating materials offer a solution that is environmentally friendly, not requiring lubrication to operate while also providing a more durable and reliable performance than traditional greased bronze or steel bearings.

Our plain bearings are smaller and lighter than conventional roller and needle bearings allowing equipment manufacturers to reduce the size and weight of their assemblies.

GGB bearings offer excellent performance over a wide range of load, speed and temperature conditions and since lubrication is eliminated, equipment no longer needs to be taken out of operation to be serviced, resulting in reduced maintenance costs, substantial savings and an environmentally friendly product.



## ADVANTAGES



Maintenance-Free

— Self-lubricating bearings are ideal for applications requiring long bearing life without continuous maintenance in operating conditions with inadequate or no lubrication



Improved Performance & Service Life

— Superior wear resistance and high shock load capacity result in extended bearing service life and improved reliability. Excellent low friction properties reduce power losses for improved equipment performance.



Lower System Costs

— Reduce costs by eliminating the need for machining grease paths, lubrication lines and auto-lube systems. The compact, one-piece construction provides space and weight savings and simplifies assembly.



Environmentally Friendly

— Greaseless, lead-free GGB bearings comply with as the End of Life Vehicle (ELV) and the Restriction of increasingly stringent environmental regulations such Hazardous Substances (RoHS) directives to restrict the use of hazardous materials in electrical and electronic equipment.

# Construction Applications

## A RELIABLE, GREASELESS SOLUTION

GGB solutions are used in a wide range of construction equipment, delivering high reliability under the most extreme conditions in applications such as heavy-duty-earth-moving and digging equipment, graders, excavators, concrete pumps, pile drivers, and lifting equipment such as fork lifts and pallet trucks, scissor lifts, access platforms and more.

- Articulating Joints
- Axle Trunnions
- Blade Leveling Cylinders
- Bucket Pivots
- Conveyors
- Crawlers
- Critical Clearance Joints
- Drill Pivots
- Dump Body Pivot
- Dumpers
- Frame/Walking beam Trunnion
- Kingpins
- Lift Cylinders
- Linkage Pins
- Motor Graders
- Rock Shaft
- Skid Steers
- Steering Cylinders
- Suspension or Track Trunnions
- Transmissions
- Wheel Pitching Mechanisms



## RECOMMENDED PRODUCTS

From extreme loads and impacts to excessive corrosion and friction, construction applications present bearings with some of the most challenging conditions imaginable. Designing equipment to withstand these challenges requires careful forethought and precision-manufactured components. GGB bearing solutions are engineered with these conditions in mind, to increase your peace of mind.



**DX®**  
Marginally lubricated material for grease or oil-lubricated applications. Provides optimum performance under relatively high loads and low speeds. DX® is suitable for linear, oscillating and rotating movements.



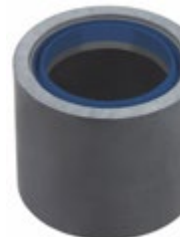
**DX® 10**  
DX®10 bushings extend the life and reduce maintenance costs of heavy-duty kingpins. Tough, abrasion-resistant sliding surfaces withstand even the harshest environments, while providing higher load capacity, greater heat resistance and significantly lower wear rates than conventional kingpin bearings.



**DP4**  
Self-lubricating, lead-free material offers low friction and high wear resistance under both dry and lubricated conditions, providing excellent performance in pumps, hydraulic cylinders, steering systems and frame, pedal, cab and seat pivots.



**DTS10®**  
Self-lubricating and machinable, DTS10 provides low friction and excellent resistance to wear, chemicals, cavitation, flow erosion and fatigue in lubricated hydraulic applications. It also complies with the EU ELV Directive and RoHS regulations.



**SBC with GAR-MAX®**  
SBC with GAR-MAX is a sealed bearing cartridge designed to provide a cost effective, environmentally friendly and maintenance-free alternative to conventional greased bronze, hardened steel or roller bearings. The SBC with GAR-MAX provides a sealed, grease free plain bearing unit to meet the demanding performance and economic requirements of construction equipment.



**HSG**  
This fiber reinforced composite material offers industry leading strength with an exceptionally high static load capacity of 60,000 PSI (415 mPa), excellent shock, contamination and misalignment resistance, and very good friction and wear properties.



**GAR-MAX®**  
Fiber reinforced composite material provides very good friction and wear properties, as well as high load capacity and excellent resistance to shock loads, misalignment, chemicals and contamination.



**HPMB®**  
Fiber reinforced composite material offers grease-free operation while providing high load capacity, excellent shock and edge loading capacity, low friction with negligible stick-slip and excellent corrosion resistance with low wear rate for extended bearing life.



**HI-EX®**  
HI-EX® provides good wear and chemical resistance under thin-film conditions. It can be used with low-viscosity fluids and temperatures up to 250°C (480° F) and can be supplied with grease indents or plain sliding layer for hydrodynamic applications.



**EP®**  
EP® polymer plastic materials provide excellent wear resistance and low friction in both dry and lubricated operating conditions.

THE TRIBOLOGICAL SOLUTION PROVIDER FOR INDUSTRIAL PROGRESS,  
REGARDLESS OF SHAPE OR MATERIAL



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