



# SHIFTING INTO THE FUTURE IN **TRANSMISSION BEARINGS**



The Global Leader  
in High Performance Bearing Solutions





## Introduction

GGB is the world's largest manufacturer of high performance polymer bearings for maintenance-free dry, marginally and fully lubricated applications.

GGB's extensive product portfolio includes metal-polymer, high performance engineered plastic and bimetal bearings.

GGB has manufacturing facilities worldwide, and has remained the foremost supplier of self-lubricating bearings to industrial and automotive markets for almost 50 years. GGB's global network of local sales engineers services over seventy countries.

## GGB Service and Support

As a world-class supplier, GGB offers a professional service with unrivaled customer technical support via a team of experienced applications engineers including:

- Application analysis
- Bearing dimensions calculation
- Production specification
- Design recommendations

Other special support activities may be considered such as:

- Lifetime estimation
- Test rig evaluation



## Metal-Polymer Bearings

The GGB metal-polymer bearings include PTFE and thermoplastic based materials. They share a common structure of a steel backing bonded to porous bronze interlayer that is impregnated and overlaid with a low-friction polymer bearing layer.

### DP4



DP4 offers low friction and high wear resistance under high loads and in boundary lubrication conditions.

DP4 is widely mounted in shifting towers and shifting forks.

### DP31



DP31 provides excellent resistance to flow erosion, cavitation and fatigue under cyclic loads.

Applications include pumps and planetary gear sets.

### DTS10®



DTS10® is machinable for reduced tolerances with low friction and excellent resistance to fatigue, oil packages, cavitation and flow erosion.

DTS10® offers good behavior in frequent dry stop-start conditions.

## Engineered Plastics Bearings

GGB's EP™ range consists of injection molded thermoplastic compounds with solid lubricants and fillers, including non-abrasive fibers. They offer lightweight solutions with a homogenous bearing structure that can be produced in almost any shape and form.

### EP™44



EP™44 offers good load and temperature resistance properties with a good resistance to chemical attack from oils.

### EP™64



EP™64 offers superior resistance to load and higher temperatures with increased resistance to chemical attack from oils.

### GGB-SZ



GGB-SZ bearings offer a high load capacity and very good fatigue strength characteristics at high temperatures.



Shift rails  
Shifting towers



Epicyclic gear  
set washer



Planetary gear  
set washer



Shifting fork  
end clips



Washers for  
bi-directional loads



Input/Output Shaft

## Applications

GGB's bushings and washers are widely used in manual transmissions MT, automated manual transmissions AMT, automatic transmissions AT, double-clutch transmissions DCT and continuously variable transmissions CVT and also in transfer cases and transaxes.

Applications include:

- Rear output shaft bearing
- Main shaft bearing
- Reverse idler bearing
- Clutch releases
- Shifting actuators
- Differential gears
- Torque converters
- Sector bushings
- Accessory drives



- Shifting towers
- Shift rails



- Planetary gear sets/carriers



- Solenoids
- Pumps

## The GGB Advantage

GGB's compact and precision-made maintenance-free plain bearings are perfectly suited to operate in boundary and hydrodynamic lubricated conditions.

The advantages of collaborating with GGB include:

### IMPROVED EFFICIENCY FOR REDUCED EMISSIONS

- Low coefficient of friction and break away torque, no stick-slip effect
- High precision and dimensionally stable
- High wear-resistant performance under a wide range of load, speed and temperature conditions

### WEIGHT REDUCTION FOR LOWER FUEL CONSUMPTION

- Weight reduction from the thin walled bearing structure or light construction
- Reduced power consumption from the low friction bearing surface

### REPLACE NEEDLE AND ROLLER BEARINGS

- Composite bearing overlay avoiding metal-to-metal contact and no moving parts to enable reduced noise
- Economic and easy to assemble with no moving parts
- Reduced material usage with the compact bearing design
- Self-lubricating and tolerant to contamination and lubricant starvation for reliable operation

### GLOBAL FOOTPRINT

- Manufacturing plants located around the world operating to the highest quality standards and with flexible logistical support
- Local sales and application engineering assistance to reply promptly to your bearing needs
- Rapid turnaround in the design and supply of prototypes and sample



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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.

### GLOBAL FOOTPRINT

<https://www.ggbearings.com/en/company/global-footprint>

For additional market/product offerings, go to <https://www.ggbearings.com/en>



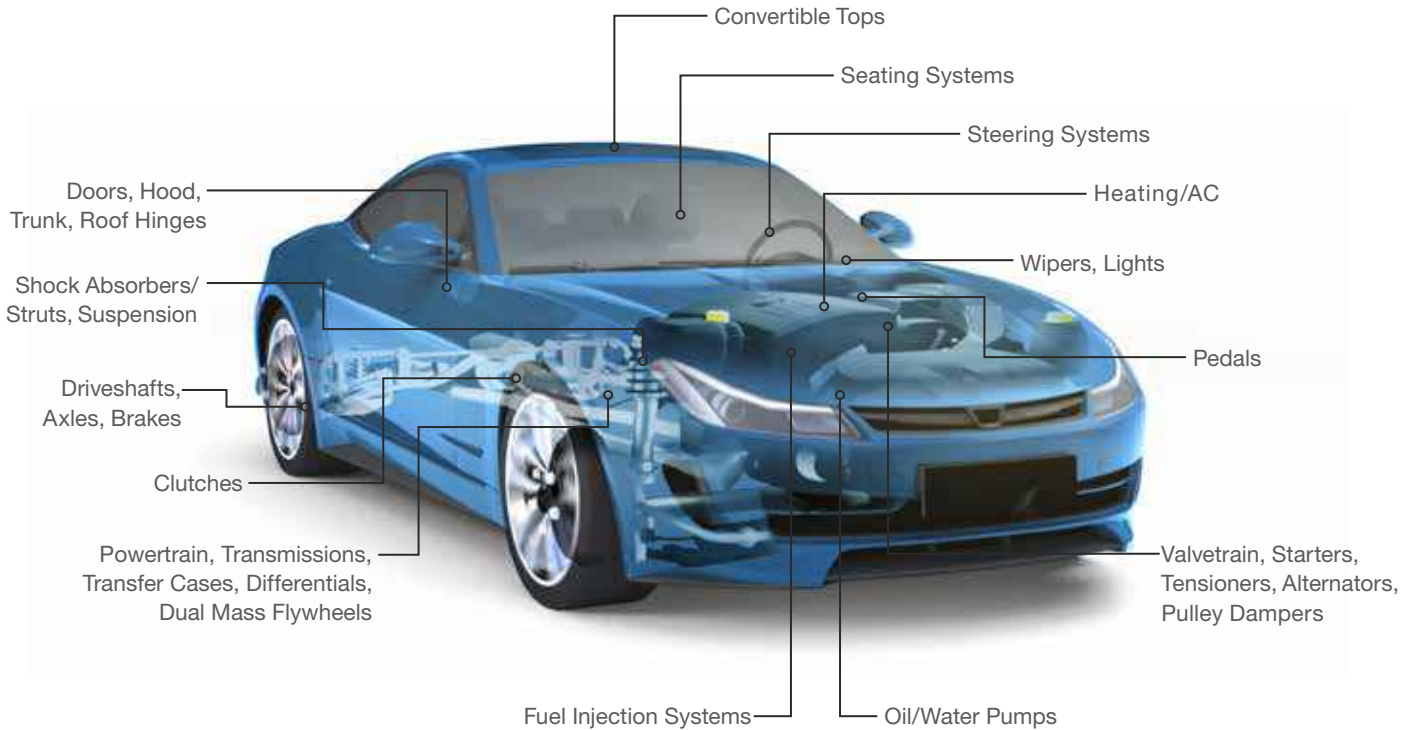


## Your Complete Bearing Solutions Provider

GGB offers a comprehensive selection of plain bearing solutions to meet the world's most demanding bearing needs. We manufacture Metal-Polymer Bearings, Engineered Plastics Bearings, Fiber Reinforced Composite Bearings, Metal & Bimetal Bearings, in addition to a range of supporting assemblies, bushing blocks and thrust plates.

### INDUSTRIES SERVED INCLUDE:

- [Aerospace](#)
- [Automotive](#)
- [Energy](#)
- [Fluid Power](#)
- [Industrial](#)
- [Primary Metals](#)
- [Construction/Agriculture](#)
- [Recreation](#)



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