



**On Track for Improved  
Railway Performance**

 **GGB**

an EnPro Industries company

## A proud history and bright future

Railways today are experiencing significant changes in the quest for greater efficiency, reliability and performance. These advancements require careful consideration of design issues, lifetime estimations, stress calculations, technical support and price factors.



**Advancements in railway transportation require careful consideration of a variety of issues, including design and price factors.**

In evaluating these factors, many manufacturers often rely on outdated “proven” designs that ignore the potential offered by newer technologies and design strategies. This approach can put greater stress and loads on railway components and jeopardize cargo and passenger safety.



## Going beyond business as usual

Relying on outdated designs can have serious consequences. As an example:



Manufacturers often use traditional plastic bearings in their cold-tempered EMU brake calipers.



In very low temperatures these bearings can cause the calipers and braking system to fail.



This can result in significant financial liability and reputation costs to the manufacturer.



By partnering with a tribological expert early in the design phase, a newer type of bearing material that withstands a much wider temperature range could have been used.

**What if there was a way to increase the effectiveness of your design while meeting cost-saving targets?**



## The GGB solution

By partnering with you early in the design process, the GGB engineering team is able to review your assemblies and make sure both the bearing and surrounding components are optimized for performance and cost-effectiveness.

Partnering early in the design phase also increases your customers' satisfaction by identifying ways to reduce noise and vibration, increase energy efficiency and extend maintenance intervals.

With early collaboration, GGB provides the following benefits:



Railway application experts



Global footprint



Fast turnaround for prototypes



Improved overall system efficiency



Increased cost effectiveness

## GGB railway applications

### The advantage of GGB products:

- Self-lubricating, maintenance-free
- Low friction and high load capacity
- Corrosion and contamination resistance
- Wide temperature range
- Low noise

### Brakes

Brake linkages  
HSG, GAR-MAX®,  
GGB-DB®, GGB-CSM®, MLG

### Couplers

HSG, GAR-MAX®, MLG

### Bogies

- Anti-roll bar bushes  
GAR-MAX®, GGB-DB®,  
GGB-CSM®, GAR-FIL
- Friction damper parts  
HSG, GAR-MAX®, GGB-DB®,  
GGB-CSM®, DP4®,  
Spherical bearings
- Horn block axial guide plates  
HPF
- Side bearer liners  
HPF, GGB-MEGALIFE® XT
- King pin bushes  
HPMB®, HSG, GAR-MAX®,  
GGB-DB®, GGB-CSM®, GGB-CBM®
- Center pivot liner  
HPF





- GGB Vertriebsbüros
- 📍 GGB Fertigungswerke

## 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.



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