



Tribological Solutions for a Rapidly Growing World



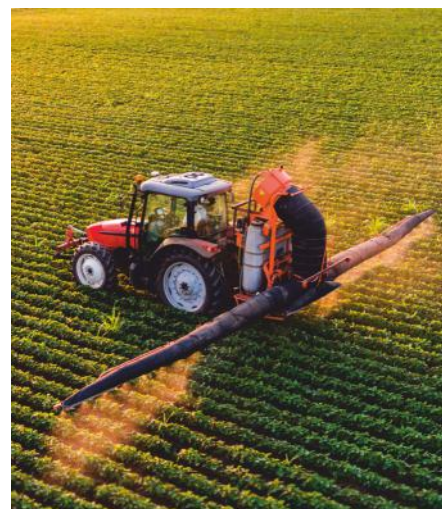
 **GGB**
BY TIMKEN

Innovation Changes Everything

Advancements in the agricultural industry require careful consideration of design issues, lifetime estimations, stress calculations, technical support and price factors.



From adding necessary weight and introducing expensive costs to remedy these problems, outdated design strategies do not offer ideal solutions.

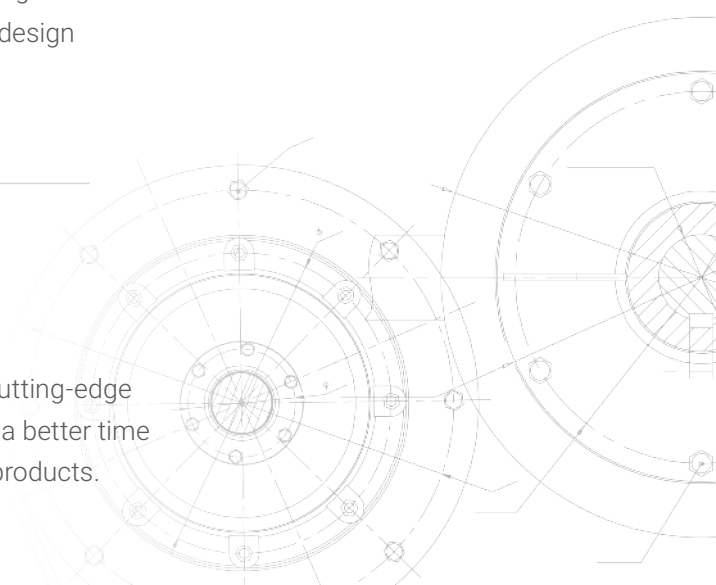


What if there was a way to increase your equipment's service life without sacrificing your budget?

In farm machinery equipment, agricultural bearings are subjected to **friction and wear** during periods of inadequate, marginal and boundary **lubrication** - often under hostile conditions with **high loads** where **corrosion** occurs and dirt is introduced. **Greased bearings**, and the space needed for them, become a necessity in such situations. From adding necessary weight and introducing expensive costs to remedy these problems, outdated design strategies do not offer ideal solutions.

MOVING BEYOND OUTDATED DESIGNS

As outdated designs can have serious consequences, you need cutting-edge solutions informed by innovative thinking - and there's never been a better time to utilize newer technologies such as self-lubricating tribological products. We have solutions for the troubles you're facing on a daily basis:



OUTDATED DESIGN	GGB SOLUTION
Greased bearings (grease pockets forming)	Self-lubricated operation; grease free
High load for hostile environment	High-strength corrosion resistance
Heavy part weight	Lightweight design saves on energy cost
Constant maintenance	Maintenance-free
Susceptible to temperature fluctuation	Expanded temperature capability
Short service life	Increased abrasion resistance and less friction

The GGB Advantage

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.

Through early collaboration with GGB, you benefit from:



Agriculture application experts



Global footprint



Increased cost effectiveness



Improved overall system efficiency



Fast turnaround for prototypes

GGB AGRICULTURAL EQUIPMENT APPLICATIONS

✓ **Seeding Row Unit**
GAR-MAX®

✓ **Transmission**
EP®, DP31

✓ **Rock Shaft**
GAR-MAX®

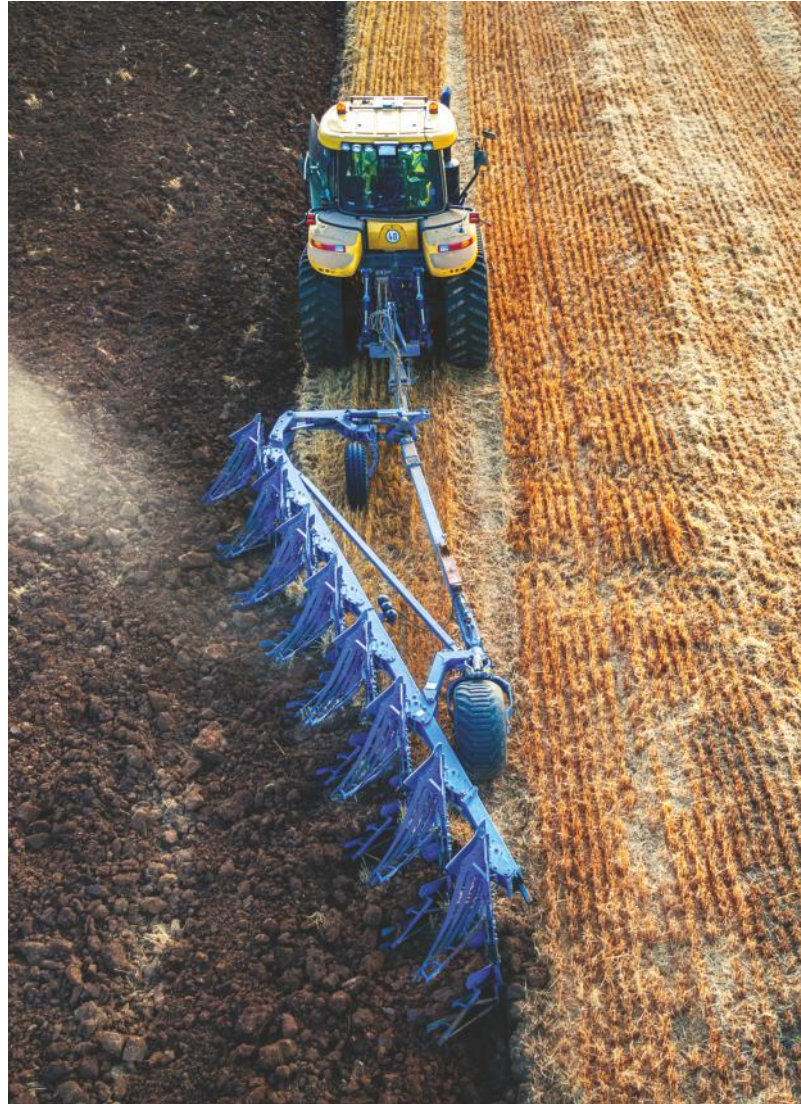
✓ **Cabin Door Hinges, Control Lever, Pedal and Seat Pivots**
DX®, EP®

✓ **Wiper Arm**
DP4®, EP®

✓ **Front Axle Trunnion, Kingpin and Differential**
HI-EX®, DX®10, DX®, GAR-MAX®



PUSHING BOUNDARIES TO CO-CREATE A HIGHER QUALITY OF LIFE



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