



The Global Language of Business

# HFG takes maintenance, repair and overhaul (MRO) services to a new level with GS1-based serialised bearings



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**CHALLENGE:** As a leading provider of maintenance, repair and overhaul (MRO) services for the rail industry, HFG Transport Technik GmbH (HFG) needed to track each bearing system's usage and capture valuable information about its maintenance history throughout its long lifecycle in order to comply with regulations and improve safety practices.

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**SOLUTION:** The company revised its processes to use a GS1 serialised Global Trade Item Number® (SGTIN) encoded in a DataMatrix barcode, which is laser-etched on each of its bearing systems. The barcode identifies the individual bearing system and contains other valuable information such as the manufacturing company name and date of production.

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**BENEFITS:**

- Ensure HFG and other stakeholders are handling the correct bearings
- Quickly identify which bearings are mounted on which customers' rail vehicles for improved MRO services and faster recalls, if needed
- Ability to link all usage and maintenance data with each bearing for proactive servicing and improved safety
- More easily comply with regulatory requirement to provide a complete history of maintenance for each bearing

## Caring for railway bearing systems

Established in 1959, HFG is a leading specialist in Europe in revising and refurbishing roller bearings for rail vehicles and provides a wide range of maintenance, repair and overhaul services. The company uses its more than 60 years of experience to also produce its own bearing components and series.

HFG provides condition-based maintenance, reconditioning or adjustment of bearing geometry based on customer-specific needs to ensure maximum reliability and cost effectiveness. The company's certified reconditioning process and experienced employees ensure that it can take care of customers' bearing systems to minimise their security risks.

HFG's international customer base includes railway operators such as Deutsche Bahn AG, Bochumer Verein, ÖBB, Hupac Intermodal, Swiss Federal Railways SBB, Polish PKP Cargo and Vattenfall Europe.

## Traceability throughout a lifetime

Bearings play a major role in rail safety and may be used for up to 60 years. According to global regulations, it is especially critical that each individual bearing be tracked and traced throughout its entire lifecycle and across all stakeholders. In addition, a comprehensive usage and maintenance history must be consistently captured for each bearing to show that actions for safety have been taken.

HFG needed to uniquely identify each bearing in a way that would be durable and last over its long lifetime. After consulting with GS1 Germany, the company decided to implement GS1 standards and established the following objectives:

- Uniquely identify each system built with a Serialised Global Trade Item Number.
- Apply on the system a robust machine-readable GS1 DataMatrix barcode that contains the system's SGTIN.
- Track the systems' SGTINs throughout the maintenance, repair and overhaul processes associated with their lifecycles.

## Accessing valuable data with a single scan

HFG has now revised and standardised its processes to assign and apply a Serialised GTIN encoded in a DataMatrix barcode on each of its bearing systems. The barcode not only identifies the individual system, it also contains other valuable information such as manufacturing company name and date of production. Serialised GTINs in DataMatrix barcodes are also used to uniquely identify components of the system such as roller elements.



HFG uses laser technology to etch each DataMatrix barcode onto its respective system or component so that it can always be accurately identified throughout its entire lifecycle. Now with a single scan, all stakeholders—whether HFG, railway operator, MRO workshop or testing/certification organisation—can easily identify the bearing and access all associated information to track and trace its location and path along the supply chain and support MRO services on a customer's site.

## Positioned for significant benefits

HFG is taking additional steps to ensure all of its bearing systems can be easily identified and managed. For example, bearings scheduled for servicing may have been manufactured prior to HFG's use of GS1 standards. In these cases the company assigns an SGTIN and etches the associated GS1 DataMatrix into the bearing. With this practice, all bearings will eventually be unambiguously identified and marked, enabling HFG to track and manage each and every bearing installed on rail vehicles throughout all customer locations.

Because each serialised GTIN is globally unique, HFG can use the same marking process for any and all of its customers, making the process highly efficient.

Customers and other stakeholders can also verify that they are handling the correct bearings based on scanning the DataMatrix barcodes. For example, operators can capture and track exactly which bearings they mounted into which vehicles in case of a recall or other need.

And since no two bearings have the same serialised GTIN, HFG and its customers can now easily link all maintenance and usage data to each bearing using its SGTIN. Consider that they can track and access the number of kilometres travelled by each individual bearing or the number of tonne-kilometres covered since its last servicing. Operators and HFG can capture and access measurement and testing information recorded for each bearing for better and more informed decisions

*Due to the durability of the laser-etched DataMatrix barcode, all stakeholders can track and manage each individual system and component long after the original manufacture date.*

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“The serialisation and marking of revised and refurbished items is a significant challenge, but also offers massive potential benefits. The use of GS1 standards enables us to realise that potential. Our customers and we are completely satisfied with the results.”

**Frank Wachendorf,**  
Sales Director,  
HFG Transport Technik GmbH



Based on its initial investment and the estimated savings associated with time, costs and productivity, HFG projects a payback period of five to seven years. Yet, as the company makes use of the rich usage and maintenance information provided by GS1 standards, a plethora of other applications and benefits are expected.

about if and when to service the individual bearing system.

Finally, HFG and rail operators can more efficiently and effectively comply with the regulatory requirement to provide a comprehensive and consistent history for each bearing, ultimately leading to greater safety for railways and their passengers.

Based on its initial investment and the estimated savings associated with time, costs and productivity, HFG projects a payback period of five to seven years. Yet, as the company makes use of the rich maintenance information provided by GS1 standards, a plethora of other applications and benefits are expected.

Frank Wachendorf, HFG's Sales Director, summarises the outcomes and company's expectations in this way: "The serialisation and marking of revised and refurbished items is a significant challenge, but also offers massive potential benefits. The use of GS1 standards enables us to realise that potential. Our customers and we are completely

satisfied with the results."

## Keeping railways safely running

HFG is moving forward with its worldwide deployment of using GS1 standards to uniquely mark its bearings. In doing so, the company has discovered some unexpected benefits such as the identification of inefficiencies—even pain points—in the "before" processes along with associated data management in support of the safety-critical bearings in which HFG specialises. HFG customers have also experienced benefits such as more reliable and safer rail systems. In short, the changeover to the new way of working with GS1 standards has offered a "win-win" scenario for both HFG and its customers.

## Contact

Interested in learning more about this success story? Contact GS1 at [www.gs1.org](http://www.gs1.org).

Interested in learning more about the GS1 standard for MRO in rail? Contact your local GS1 Member Organisation at [www.gs1.org/contact](http://www.gs1.org/contact) or visit <http://www.gs1.org/rail>.

With special thanks to :



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