

THE HARDER THE TASK,
THE HIGHER OUR PERFORMANCE



LOCOMOTIVE



GHH-BONATRANS
Pioneers of wheelset solutions

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Powerful solutions for Locomotives

GHH-BONATRANS supplies wheelsets for locomotives with various types of driving force transmissions to the wheelset. Individual components are made of high quality materials and the parts are produced and assembled with uncompromising accuracy.

Besides complete locomotive wheelsets, GHH-BONATRANS also supplies individual parts – wheels, axles and tyres, which are based on both our proprietary designs' and customers' designs. Assembly of wheelsets using these individual parts is carried out at the customer's facility or the parts are delivered as spares.

Wheelsets and their parts for locomotives require high strength and fatigue resistance, since these wheelsets transmit large forces from the locomotive driving unit at high speeds, and are also exposed to high axle loading. GHH-BONATRANS designs and manufactures wheelsets meeting these requirements while maintaining optimized wheelset weight and guaranteeing high production accuracy. We supply these wheelsets to the majority of the world's leading manufacturers across the globe.



Selected customers

ALSTOM

BOMBARDIER
the evolution of mobility

中国中车
CRRC

ELECTRO-MOTIVE

GE
GE Transportation

SIEMENS

ŠKODA

STADLER

Axles and special protection systems

GHH-BONATRANS supplies a wide range of axles for locomotives, including various levels of protection ensuring increased lifespan of axle and decreased LCC of wheelset.

- Powered and non-powered axles
- Axles with additional seats (in total up to 6)
- Solid, semi or fully hollow axles, including threaded axles
- Induction-hardened axle **BONAXLE®**
- Axles with molybdenum coating
- Cold rolled axles
- Axles with high-thickness painting



The newly developed material **BONASTAR®4BD** is a groundbreaking solution for heavy locomotive applications.

The contact between the wheel and the rail, which is no bigger than the size of a 1 euro coin, has to transfer not only the weight of the locomotive and the guiding forces but also the traction power which often exceeds 0.5 MW. In other words, locomotive wheels are exposed to extreme loads and if we want to secure their high lifespan, we have to use first-class materials with well-balanced mechanical properties.

BONASTAR®4BD is the answer to this challenging situation. This specially developed wheel material is primarily dedicated to disc-braked wheels (4BD is an acronym of "for brake disc"). **BONASTAR®4BD** is derived from the standardized ER8 material (acc. to EN13262), however, based on our extensive experience in the field its characteristics have been significantly improved in many details. Consistent collection of data from wheel operation together with precise tread profile failure analysis contribute to the development of all our **BONASTAR®** wheel materials.

Thanks to long-term research and development in both material and design, we achieve wheel lifespan levels exceeding 2,000,000 km. Obviously proper maintenance and optimized reprofiling intervals do play a significant role too.

BONASTAR®4BD



ER8



GHH-BONATRANS is a benchmark in the Locomotive segment

- Wheelsets for high tractive effort
- Wheelsets for the most powerful locomotives worldwide
- World locomotive record (357 km/h) on GHH-BONATRANS wheelsets
- World's strongest electric rack and adhesion locomotive running on GHH-BONATRANS axles

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