

THE HARDER THE TASK,
THE HIGHER OUR PERFORMANCE



LOCOMOTIVE



GHH-BONATRANS
Pioneers of wheelset solutions

Powerful solutions for Locomotives

GHH-BONATRANS supplies wheelsets for locomotives with various types of driving 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 designs' or customers' designs.

Materials of locomotives wheels and axles require well balanced mechanical properties as strength and fatigue. As locomotive's wheelsets are designed for high traction power. GHH-BONATRANS designs and produces wheelsets which meet the strictest requirements. For our design school is characterized by optimized wheelset weight with guaranteed high production accuracy. The wheelsets are supplied to the entire world.



Selected customers

ALSTOM

中国中车
CRRC

ELECTRO-MOTIVE

Wabtec
CORPORATION

SIEMENS

CZ LOKO
Locomotion Excellence

TOSHIBA

STADLER

Axles and special technologies

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
- Solid, semi or fully hollow axles
- Axles with high-thickness painting
- Induction-hardened axles **BONAXLE®**
- Axles with molybdenum coating
- Cold rolled axles



The innovative wheel steel grades **BONASTAR®ER8**, **BONASTAR®ER9**, **BONASTAR®4BD** and **BONASTAR®G2** are 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®ER8, **BONASTAR®ER9** and **BONASTAR®4BD** is the answers to this challenging situation.

The innovative steel grades are derived from the standard steel grades ER8, ER9 and ERS8 (acc. to EN 13262:2020), 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. The steel grades **BONASTAR®** are fully in accordance with EN 13262:2020.

The innovative steel grade **BONASTAR®G2** is dedicated for demanding conditions on tracks correspond to GOST standard requirements. The material is derived from the standard steel grade 2 (acc. to GOST 10791-2011). The steel grade **BONASTAR®G2** is still fully in accordance with GOST 10791-2011 and DSTU GOST 10791:2016.

Thanks to long-term research and development in both material and design, we achieve wheel lifespan exceeding 2,000,000 km.

GHH-BONATRANS is a benchmark in the Locomotive segment

- Wheelset for high traction power
- Wheelsets for the most powerful locomotives worldwide
- World locomotive record (357 km/h) on GHH-BONATRANS wheelsets
- World's strongest locomotives running on GHH-BONATRANS wheelsets

BONASTAR®4BD



ER8



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