

Why we do believe in our GROUP:

<b>GHH</b> We Speak Low Floor	<b>World Leader, recognized for all Low Floor solutions</b> More than 7.000 vehicles running on our wheelsets
<b>BONATRANS</b> European Leader in the Freight and Heavy Rail-market	<b>43% Market share</b> 181 new Rolling Stock projects since Year 2000
<b>GHH-BONATRANS GROUP</b> Most powerfull and innovative R&D and Technical department	<b>45 employees dedicated to engineering</b> Many registered patents from noise absorbers to bogies with driven wheel axle
<b>GHH-BONATRANS GROUP</b> Largest testing and research facilities	Fatigue testing of wheelset, resilient wheels, wheels and axles, rubber elements and coating test equipment

OFFICES

CZECH REPUBLIC

BONATRANS GROUP a.s.  
Revoluční 1234  
735 94 Bohumín  
  
Tel.: +420 597 083 112  
E-Mail: info\_cz@ghh-bonatrans.com

GERMANY

Gutehoffnungshütte Radsatz GmbH  
Gartenstrasse 40  
D-46145 Oberhausen  
  
Tel.: +49 (0)208 - 7400 0  
E-Mail: info\_de@ghh-bonatrans.com

INDIA

BONATRANS India Private Limited  
Plot No. A – 119  
Shendra Five Star Industrial Area  
Shendra MIDC, Aurangabad 431 154  
  
Tel.: +91240 7113900  
E-Mail: info\_in@ghh-bonatrans.com

HONG KONG

Bonatrans Asia Limited  
Rooms 2103-4, 21/F.,  
Wing On Centre  
111 Connaught Road Central  
  
Tel.: +86 136 0132 7096  
E-Mail: info\_asia@ghh-bonatrans.com

info@ghh-bonatrans.com  
www.ghh-bonatrans.com



COMPANY  
PROFILE





# GHH-BONATRANS GROUP

## All products and services — one partner

## GHH-BONATRANS GROUP

THE WHEEL – One of the most important inventions in the history of mankind. How simple, yet indispensable. Now, there are “wheels” and there are wheels. To keep everything work in the most efficient way, it must be not only skillfully crafted, but must be firstly smartly designed. And this is exactly where we excel. Since 1808 our company has been producing wheels. Today we designs and produces the highest-quality wheelsets, running gears, wheels and axles for all types of rolling stock: locomotives, commuter units, high speed units, subways, trams and freight wagons. We are GHH-BONATRANS GROUP.

### Strategy

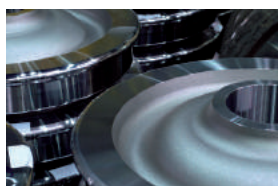
The group strategy is aiming for sustainable, profitable growth in all business segments. The growth will be driven by innovation in products, services and processes and by a global presence of a highly motivated team.

**Dr. Raimund Abele** / CEO of GHH-BONATRANS GROUP

### GHH - BONATRANS GROUP: All products and services - one partner

Thanks to our unique expertise, we are one of the best producers in the world capable of manufacturing wheelset, wheel or axle regardless of how demanding the product's application in practice must be. Our portfolio consists of both standardized products as well as turn-key products tailored carefully to the requests of our most demanding clients. We maintain this technological leadership thanks to our strong team of 50 engineers, who focus on the research and development of new designs, materials and technological processes.

GHH-BONATRANS GROUP offers the most comprehensive product portfolio and reaches world-wide recognition for its performance on high technology- as well as commodity-products and full-service solutions due to its widely extended competence, expertise and market coverage.



### Freight

GHH-BONATRANS GROUP provides to its clients complete services in development and deliveries of wheelsets and their parts – wheels and axles. Thanks to many years of experience in development of dozens of various designs, and thanks to ongoing improvements of development methods and technologies, the BONATRANS development team is able to offer a new optimal design within a very short lead time.



### High Speed

GHH-BONATRANS GROUP provides products for high dynamic loading in high-speed operations with high material cleanliness and special composition. Based on this strong performance the GROUP can register important OEM projects as the new ICX generation or the world wide supply of High Speed and Very High Speed products.



### EMU/DMU

GHH-BONATRANS GROUP traditionally supplies wheelsets for EMU and DMU vehicles. The units usually being used in commuter traffic with frequent take offs place high demand on the weight optimization, because every extra kilo is reflected in increased energy consumption. In this area GHH-BONATRANS GROUP offers the customers a tailored design to ensure that the wheelset operating on a particular vehicle and a particular line does not weight even a gram too much. To achieve this goal GHH-BONATRANS GROUP uses not only advanced FEM, but also applies its innovative research and development base allowing to verify properties of real products.

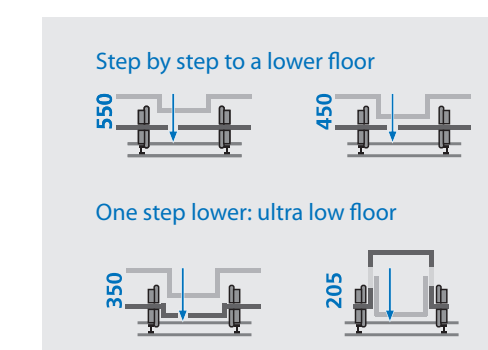


### Metro

Traditionally offered wheelset for underground/metro systems places especially high demand on the efficient noise reduction in all frequencies. Metro units are usually operating underground where the contact between rails and wheels can generate very displeasing noise which can affect the comfortable traveling. In the context of noise reduction GHH – BONATRANS GROUP offers a wide variety of solutions ranging from the shape optimization of wheel web, through the ringed and tuned dampers up to completely new innovative and highly efficient noise absorbers that even need neither groove nor screw-holes for optimal mounting on the wheel.

### Lowfloor LRV + Tram

We speak Low Floor:



From development and engineering to production and assembly, the complete wheelset system is the core of our expertise. Our products fulfill the requirements of any specific vehicle platform:

- Driven and non-driven wheelsets
- Independent wheel axes with cranked axles
- Independent wheel unit with or without swivel-mounted wheels

World wide delivery of tailor made solutions: GHH-BONATRANS GROUP is the partner of the manufacturers of Low-Floor Light Rail Vehicles.

The systems are supplied with resilient wheels of the extensive product range of GHH-BONATRANS GROUP for a significant reduction of noise and vibrations.

### Service

Service and maintenance of wheelsets and running gears are carried out at GHH-Radsatz in Oberhausen, Germany. The service activities of GHH-Radsatz in Oberhausen include the main inspection and repair of wheelsets and running gears for all types of vehicles. The focus is on Light Rail products with resilient wheels and on motor- and trailer wheelsets of EMU, DMU, locomotives and special vehicles.

### Components

Resilient Wheels / Solid Wheels / Tyred Wheels / Axles / Noise Absorber / Accessories