

# SILENT WHEELS ON TRACK



**METRO**

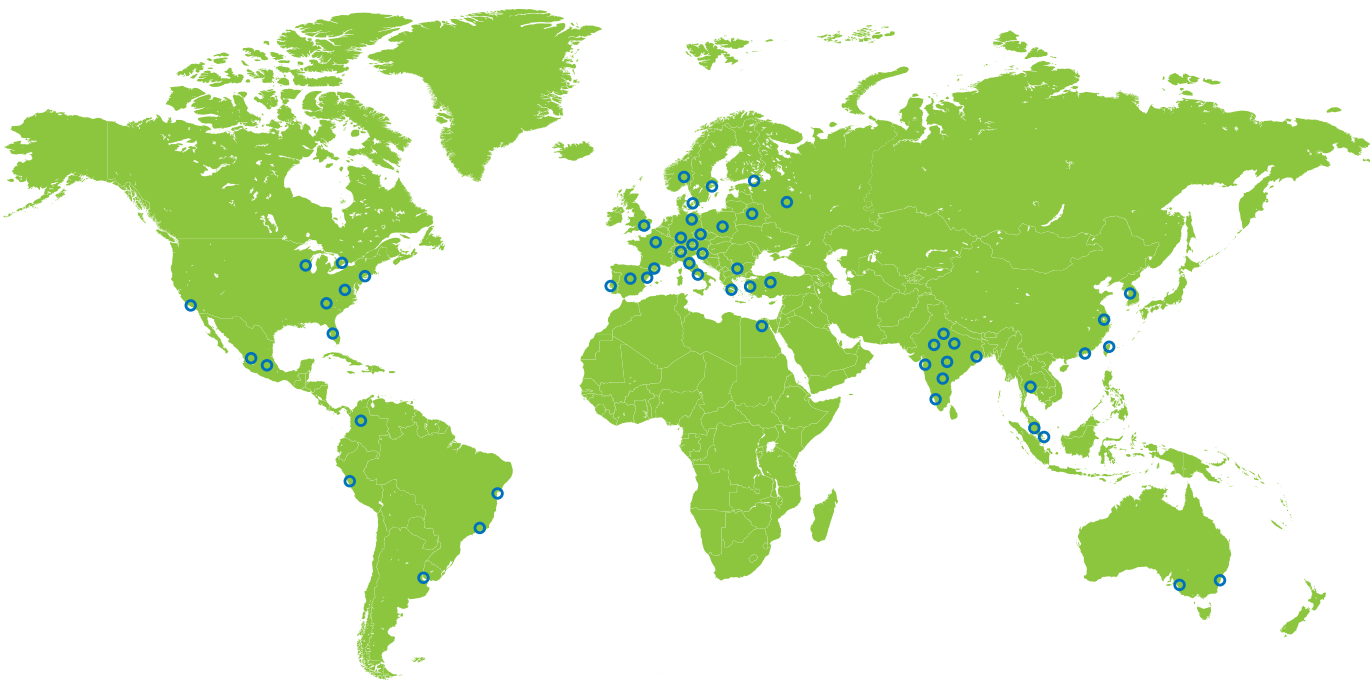


**GHH-BONATRANS**  
Pioneers of wheelset solutions

## Reliable wheelsets for world Metros

GHH-BONATRANS has many years of experience in the development and production of wheels, axles, and wheelsets for metro trains operated in most metro systems in major cities and metropolitan areas on five continents. Due to specifics of individual operations, almost every project requires an individual approach by our designers.

We pay special attention to noise reduction and operational safety. Thanks to **BONASILENCE®** – highly efficient wheel noise absorbers designed for repeated use – our wheels achieve top-tier performance in noise reduction.



### The following cities and metropolitan areas operate their metro systems on GHH-BONATRANS wheels:

Adelaide, Ahmedabad, Ankara, Athens, Bangkok, Barcelona, Bengaluru, Berlin, Boston, Buenos Aires, Cairo, Chicago, Copenhagen, Delhi, Gimpo, Guadalajara, Hong Kong, Hyderabad, Incheon, Izmir, Jaipur, Kochi, Kolkata, Kuala Lumpur, Lima, Lisbon, London, Los Angeles, Lucknow, Madrid, Medellin, Mexico City, Milan, Minsk, Moscow, Mumbai, Munich, Nanjing City, New York, Newcastle, Nuernberg, Oslo, Paris, Prague, Rio de Janeiro, Rome, Salvador, Seoul, Shanghai, Sidney, Singapore, Sofia, St. Petersburg, Stuttgart, Stockholm, Taipei, Toronto, Valencia, Vienna, Washington and Warsaw.

## Key references

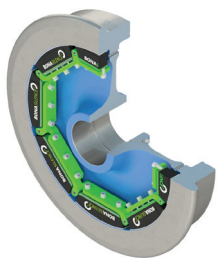




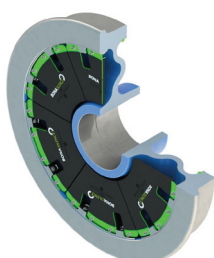
## Solutions for quiet cities

Noise impacts not only metro passengers but also city residents living and working above metro tunnels. GHH-BONATRANS is a global leader in noise reduction technology.

Our **BONASILENCE®** noise absorbers, designed for installation on wheels, can significantly reduce rolling noise by up to **8 dB(A)** and squealing noise in curves by up to **30 dB(A)**. We provide complete noise reduction systems tailored to the specific type of metro train and conditions of a given metro system to achieve maximum noise reduction. **BONASILENCE®** noise absorbers are designed for repeated use (in case of wheel replacement), helping operators reduce costs as well as carbon footprint.



Multi-segment  
absorber  
**BONASILENCE®M**



Leaf  
absorber  
**BONASILENCE®D**

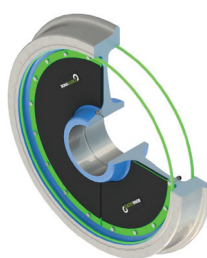


Plate and ring  
absorber  
**BONASILENCE®PR**  
**BONASILENCE®PR+**

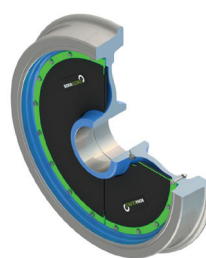
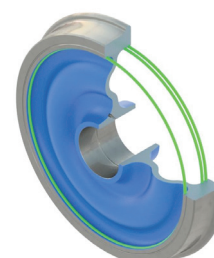


Plate  
absorber  
**BONASILENCE®P**



Ring  
absorber  
**BONASILENCE®R**  
**BONASILENCE®R+**

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