

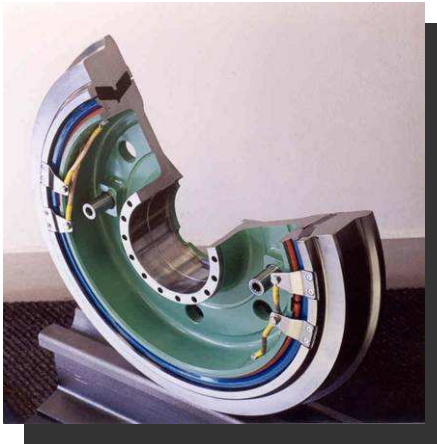
# Solutions for passenger transport and locomotives

- Tailor made solutions and short design lead time
- Wide worldwide experience in all areas of passenger transport applications
- Lightweight solutions for reduced unsprung mass and ride comfort
- Safety and resistance to damage in service
- Environmental friendliness – low noise
- High fatigue resistance – BONATRANS own fatigue testing laboratory enables fatigue validation and optimisation of new designs

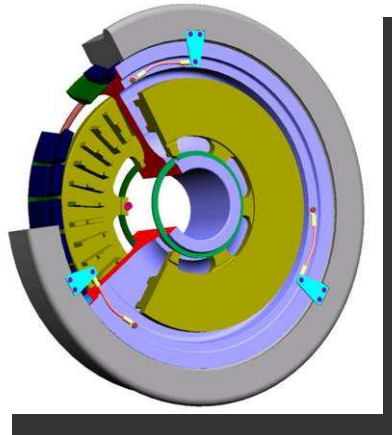


# Products for urban transport

- Solutions for trams and metro unit
- Special attention given to noise reduction – BONATRANS resilient wheels and noise absorbers



Resilient wheels



Wheelsets for metro applications



Picture: Siemens metro Oslo (Norway) unit with BONATRANS resilient wheels

# Products for regional and intercity transport

- Lightweight optimised designs of power and trailer wheelsets for EMU/DMU units as well as for individual coaches
- Increased resistance to rolling contact fatigue



Power wheelsets



Trailer wheelsets



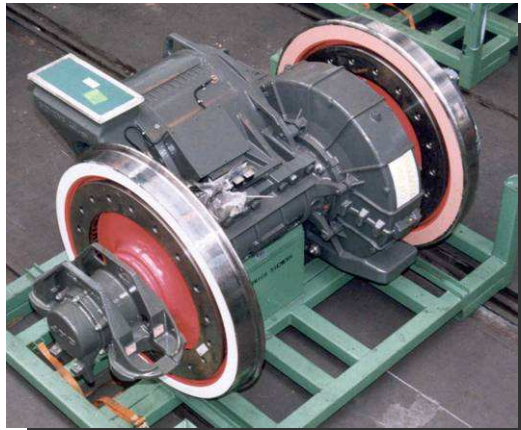
Wheels, axles



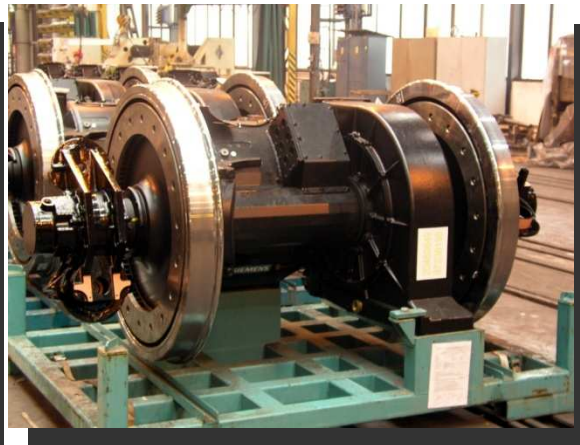
Picture: Bombardier AGC train unit for SNCF with BONATRANS wheelsets

# Products for locomotives

- Wheelsets for high tractive effort
- Wheelsets for the most powerful locomotives worldwide
- World locomotive speed record on BONATRANS wheelsets – 357 km/h



Power wheelsets



Wheels, axles



Picture: Siemens Taurus locomotive that reached the world speed record on BONATRANS wheels

# Products for very high speed trains

- Products for high dynamic loading in high-speed operations
- High material cleanliness and special composition
- Very precise machining and noise reduction



Power wheels (with noise absorbers)



*Picture: DB ICE3 high speed trains are equipped also with BONATRANS wheels*