

FAG Wheelset Bearings and Gear Bearings in the Autorail Grande Capacité



Examples of Application Engineering

Publ. No. WL 07 539 EA



AGC regional train built by Bombardier Transportation, France

Photo: Bombardier Transportation

Bombardier Transportation will be building 500 new regional express trains of type AGC (Autorail Grande Capacité) for the SNCF by the end of 2007.

In accordance with the wishes of the French National Railways, the AGC trains, which are available in several versions, will be adapted to the requirements of the various French regions. For example, AGC

trains can run on either diesel fuel, electricity or a combination of the two. Moreover, the seating capacity can be varied by combining two to four cars.

In spite of the many versions, maintenance and repair of the trains are enormously simplified by their modular design which uses numerous identical components.

The AGC offers operators greater operating flexibility as well as short idle times and passengers greater freedom of movement and a high level of comfort.

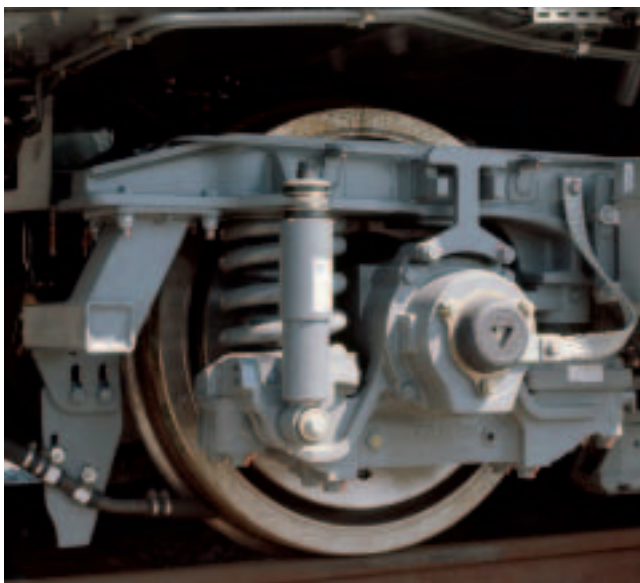
FAG Kugelfischer AG supplies ready-to-mount tapered roller bearings and wheelset bearing housings for all versions of the AGC.

Technical data

| | |
|------------------------------|------------|
| Max. axle load – motor bogie | 19 t |
| Travelling speed | 160 km/h |
| Annual mileage | 150 000 km |

Wheelset bearing housings

The wheelset bearing housings of type **ASG130K.176472.-** are used both in the trailer bogies and in the motor bogies. Wheelset guidance towards the middle of the bogie is provided by a Meggi-type axle box bearing, on the opposite side by a rubber/metal element (trailer bogie) or a set of coil springs (motor bogie).

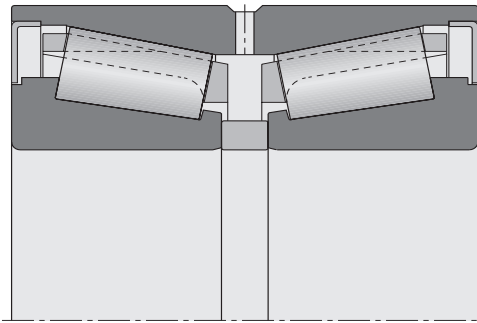


After the housings had been dimensioned using advanced structural analysis methods (FEM), both versions were subjected to extensive testing at independent institutes.

The dynamic tests in the respective bogies were conducted at the AEF in Vitry/France. The calculation results were verified by the Steinbeis Transfer Center by means of static load tests at the University of Applied Sciences Würzburg – Schweinfurt.



Rolling bearings



Rolling bearings of type **FAG 807811** are double row tapered roller bearing units with polyamide cages that are greased at the manufacturing plant with a lubricant in accordance with EN 12081 and fitted with two shields. In conjunction with the bearing housing, the shields form an extremely effective sealing system which has passed the most stringent tests at FAG and the approval tests in accordance with UIC 5151-5. The bearing unit has also passed the approval tests in accordance with EN 12082 required by the SNCF on test rigs of the AEF in Vitry/France. The maintenance intervals for the wheelset will – thanks to the high-quality bearing components and the use of polyamide cages – be long.

Wheelset Gear

Two-stage helical spur gear – SHZ 495:

Input shaft:

2 Cylindrical roller bearings **FAG NU2215E.MPA.C3,**
FAG NU215E.MPA.C3

1 Four-point bearing **FAG QJ215N2.MPA.C4.F59**

Intermediate shaft:

2 Cylindrical roller bearings **FAG NJ2219E.MPA.C3**

Output shaft:

2 Tapered roller bearings **FAG 807586**
(\varnothing 262.0 x 355.6 x 57.15 mm)

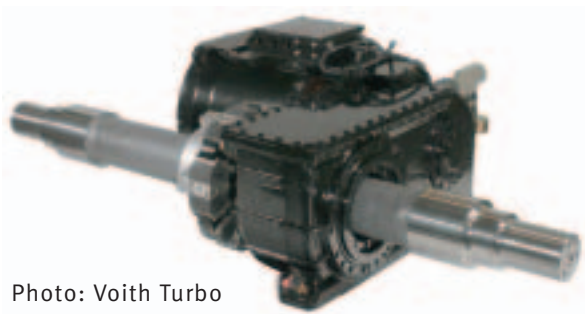


Photo: Voith Turbo

FAG Kugelfischer AG

Product line Railway

Postfach 1260

D-97419 Schweinfurt/Germany

Tel.: +49 9721 913978

Fax: +49 9721 913788

E-mail: rail_transport@fag.de

www.fag.com