

FAG Wheelset Bearings for the Variobahn in the Rhein-Neckar Region



Examples of Application Engineering

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Journal roller bearing of the Variobahn

Photo courtesy of: Bombardier Transportation

The modern Bombardier metropolitan railway of the suburban traffic enterprises of Heidelberg, Mannheim und Ludwigshafen have been designed in five and seven car variations.

The entire quantity of orders consists of 110 vehicles (40 by 2003, an op-

tional 70 more starting from 2003). The significant advantage of employing these railcars in the metropolitan railway is the 70% low floor height. This, in combination with infrastructure modifications makes stepless entrance to the cars for wheelchair users possible.

FAG supplies for the motor bogie the journal roller bearings consisting of the split light alloy housings and cylindrical roller bearings.

Vehicle data

Axle load – motor bogie	11 t
Maximum speed	80 km/h

Motor bogie



Journal roller bearings

Housings

The journal roller bearing housing ANM090Z.175254. – are in the proven MD 523/524 form; the design derived from the IC and ICE mainline trains of the DB AG.

The housing bodies were optimized, with the help of modern structural analysis methods, for the application in order to minimize space and material (aluminum alloy G-ALSi7Mg-wa) utilization.

The separable makes a wheelset exchange possible without disassembling the chassis.

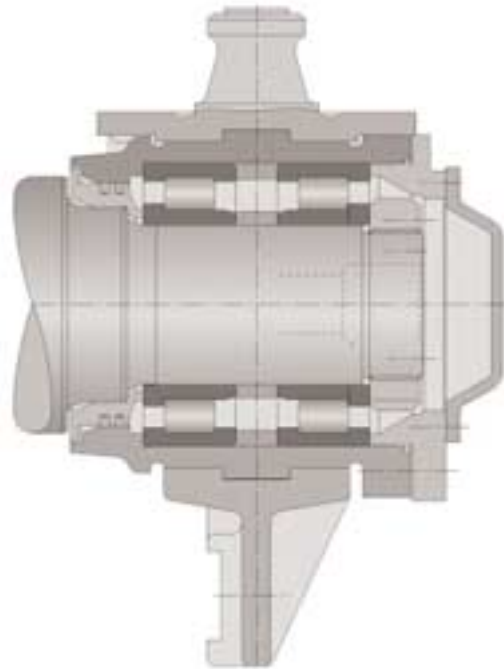


Bearings

Route-optimized roller bearings with polyamide cages and coordinated spacer sets are used:

FAG WJ90x160TVP and
FAGWJP90x160P.TVP

The calculated L_{10} rating life of the bearings amounts to around 3 million running kilometers, which is more than sufficient for metropolitan railway applications.



Sealing and Lubrication

With the employment of a lamella ring seal on the wheel side and a modern lithium soap-based grease with EP additives, bearing maintenance usually coincides with the first wheel change.

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