FAG Journal Roller Bearings in the EG 3100 engine for the DSB Gods

FAG
Rolling Bearings

Examples of Application Engineering

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EG 3100 engine: Developed and built by Siemens Krauss-Maffei Lokomotiven GmbH, Munich

Courtesy of Siemens Krauss-Maffei Lokomotiven GmbH

The tunnel under the great belt (Storebæltforbindelsen) and the combined bridge/tunnel connection between Denmark and Sweden (Øresundforbindelsen) are important links in the transport chain from Sweden via Denmark to Germany. The cargo department of the Danish Railway (DSB Gods) ordered 13 heavy-duty engines for freight traffic on this route from Siemens Krauss-Maffei (plus a further 7 as an option).

The FAG OEM und Handel AG supplies the journal roller bearings for the twelve-wheel engines.

Vehicle data

Wheel arrangement	Co´Co´
Vehicle weight	129 tons
Axle load	21.5 tons
Max. operational speed	140 km/h
Drive power	6500 kW

Journal roller bearings

The engine's twelve-wheel design requires two different cylindrical roller bearing-cartridge type units.
The dimensions of the unit for the fixed axles are 160x270x170 mm.
The bearings of the middle axle of each bogie allow axial displacement of ± 15 mm.
Main dimensions of these units: 160x270x176 mm.

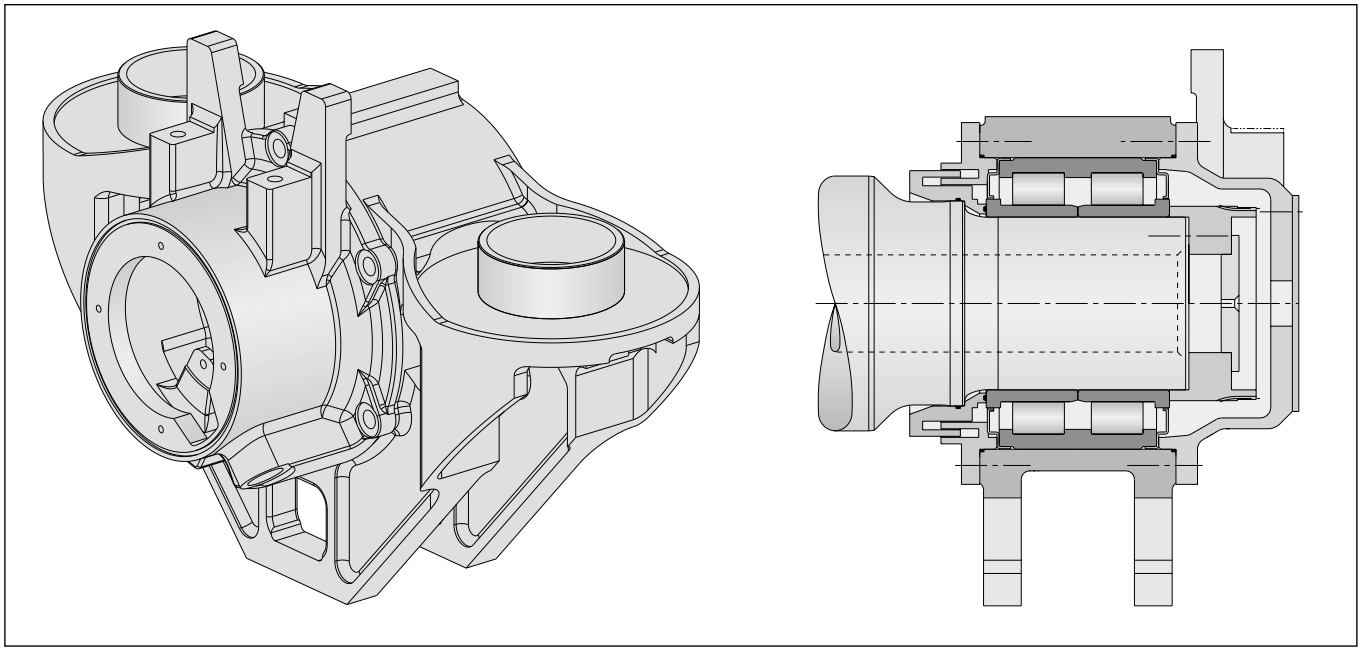
Bogie and wheelsets

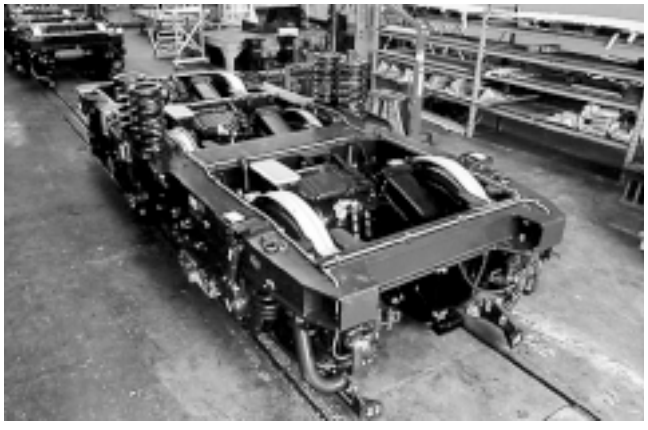
The friction weight required to overcome the 15.6 pro mil gradient of the Great Belt Tunnel is achieved by a twelve-wheel design. Each axle of the EG 3100 is driven by a three-phase motor with a power of 1100 kW. Load transmission is via a single-stage transmission in suspension bearing arrangement.

Lubrication and sealing

Both bearing units are protected from contamination by means of lateral metal seals so that the lubricant does not have to be exchanged until after 1 million km. Relubrication is necessary after approximately 350 000 km due to the high lubricant stress in the bearings of the axle with end play.

Cylindrical roller bearing – cartridge unit for the middle axle (displacement bearing)





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