

Universal Axlebox Bearing Support for Diesel-Hydraulic Locomotives



Examples of Application Engineering

RFB 2 GB-D



Diesel-hydraulic locomotive G1206

Vossloh Locomotives GmbH has developed a platform for diesel-hydraulic locomotives. The vehicles of series G1206, G1000, G1700 and G2000 are intended for regular transport as well as heavy shunting operations. These locomotives have proved reliable in operation in nine countries (2008), partly in cross-border traffic, e.g. between Germany, France and the Netherlands.

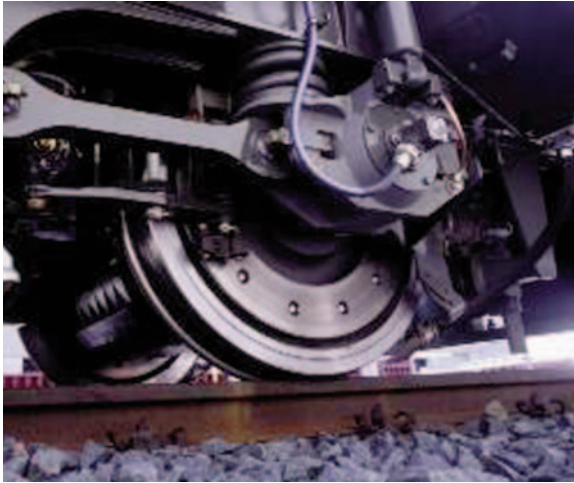
With their modular design, the locomotives can be adapted to meet the operators' specific requirements for performance and equipment in a cost-efficient manner. Schaeffler Group Industrial has developed an axlebox bearing housing for Vossloh's locomotive platform that allows for installation of two different types of rolling bearings.

It can be fitted with either a cylindrical roller bearing unit or a tapered roller bearing unit.

Schaeffler Group Industrial has delivered all axlebox bearings with universal axlebox bearing housings for platform locomotives since September 2006.

Vehicle Data

Drive system	Diesel-hydraulic
Axle arrangement	B´B´
Max. speed	120 km/h
Bogie wheelbase	2,400 mm
Axle load	25 t
Maintenance interval	1 million km

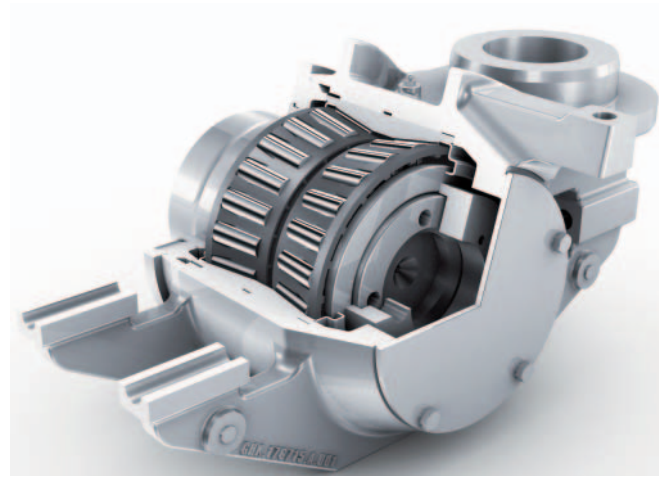


These two bearings meet the requirements of the EN 12080 standard and are supplied with rolling bearing grease FAG Arcanol L222 approved according to EN 12081.

Axlebox bearing housing

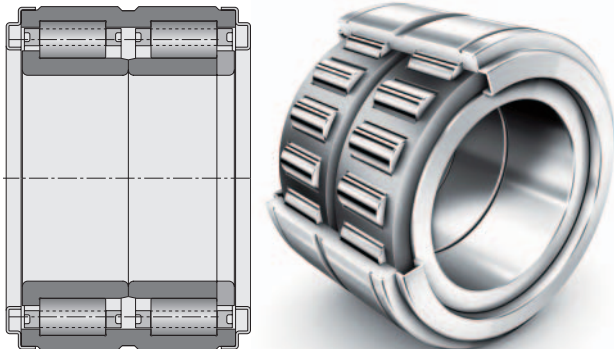
The single-piece FAG housing is made of spheroidal graphite cast iron EN-GJS-400-18-LT according to EN 1563.

The strength of the housing has been optimized and confirmed using the appropriate analyses (finite element method).

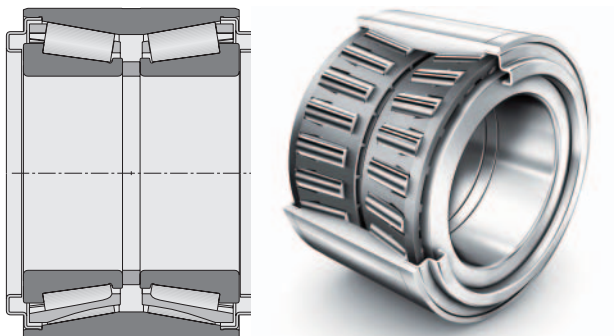


Axlebox bearings

The specially developed axlebox bearing housing allows for installation of two different types of bearings:



- 1) Cylindrical roller bearing units with dimensions (dxDxB): 150 x 250 x 160 mm



- 2) Tapered roller bearing units with dimensions (dxDxB): 150 x 250 x 160 mm

Test stand runs

The performance capacity of the axlebox bearing with TAROL unit has been tested and confirmed in accordance with EN 12082. In addition, a water ingress test according to UIC 515-5 has been carried out.

Lifecycle costs (LCC)

As the overall systems are required to achieve a high operating life, cost-efficiency calculations must also consider maintenance costs.

These include preventive maintenance as well as corrective maintenance. The reliability of the system is calculated based on the MDBF value (mean distance between failures) and the failure probability. This way, lifecycle costs can take account of failures caused by unanticipated defects or premature wear. Schaeffler Group Industrial provided the data relevant for the LCC calculation.

Schaeffler KG

Railways Sector
Georg-Schäfer-Strasse 30
97421 Schweinfurt (Germany)
Phone.: +49 9721 91-3998
Fax: +49 9721 91-3788
E-mail: rail_transport@schaeffler.com
www.fag.com www.ina.com