

Rolling Bearings in the Wheelset Reverse Gear Units of the Regio-Shuttle RS1

FAG

Examples of Application Engineering

WL 07 546 GB-D



Regio-Shuttle RS1, operated by Erfurter Industriebahn GmbH

The Regio-Shuttle RS1, a product of Stadler, is manufactured by Stadler Pankow GmbH in Berlin. Since 1996, more than 350 trains have been delivered to 17 German public transport providers, 23 of them to Erfurter Industriebahn GmbH (EIB), which operates its fleet in Thuringia and on five lines in the northern part of Lower Franconia. The design, which is reminiscent of a truss bridge girder, gives the Regio-Shuttle RS1 a distinctive appearance.

As the trains are equipped with a pneumatic spring system, they run with a smoothness that is unusually high for local trains. The single-unit Regio-Shuttle RS1 was designed for single driver operation and as an independent rail car unit, but up to six units can be coupled together (multi-traction). With high acceleration rates and a maximum speed of 120 km/h, the Regio-Shuttle RS1 can easily be integrated into main line traffic.

As the low-floor portion of the trains totals ca. two thirds, and the entrance height is very low, passengers can board and exit comfortably.

Schaeffler Group Industrial supplies FAG rolling bearings for the wheelset reverse gear units of all Regio-Shuttle RS1 trains.

SCHAEFFLER GROUP
INDUSTRIAL

Technical data

Mass	40 t.
Motor output	2×257 kW
Max. speed	120 km/h
Low floor portion	65 %

Wheelset reverse gear unit GGM 170 HA/328

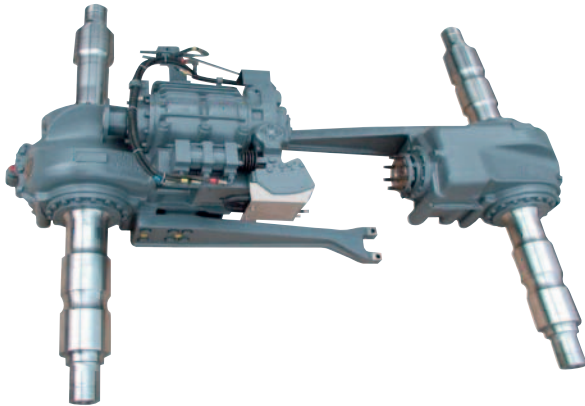
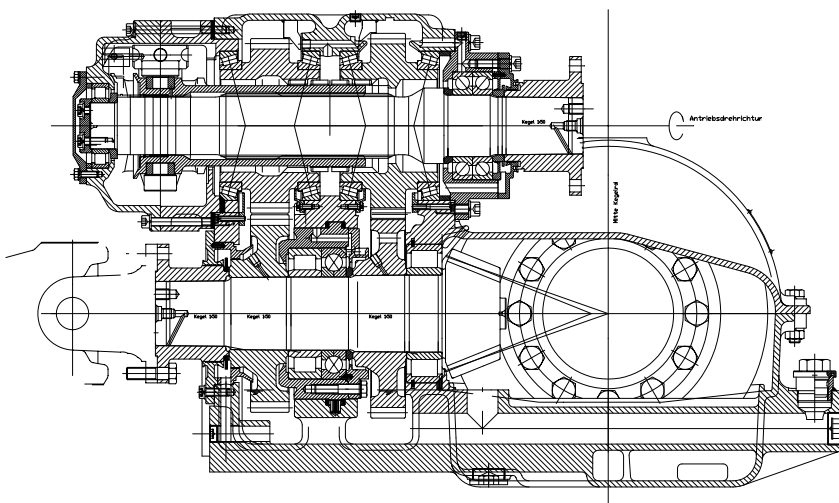


Foto: Gmeinder Getriebe- und Maschinenfabrik GmbH

The wheelset reverse gear unit is a spur-bevel gear for coupled wheelsets. The torque is applied to the transfer axle via the input shaft. One half of the torque is transmitted directly to the driving axle of the transfer axle drive via the bevel pinion shaft. By means of a universal joint shaft, the other half is transmitted to the wheelset axle of the end axle drive via the bevel pinion shaft. The sense of rotation of the drive shaft is always the same. By means of a hydraulic 3-position shift cylinder the gear is shifted to reverse the sense of rotation of the wheelset axle while the rotational direction of the drive motor remains the same.

Drawings: Gmeinder Getriebe- und
Maschinenfabrik GmbH



FAG bearings

Input shaft:

The input shaft is supported in a cylindrical roller bearing **NU212-E** and an angular contact ball bearing pair **7216-B**. Axial forces that act on the input shaft's input flange are taken up by the angular contact ball bearing pair.

Loose wheels:

The two loose wheels are supported in 2 tapered roller bearings **F-804622.TR1** (special design) each (X-arrangement).

Intermediate shaft:

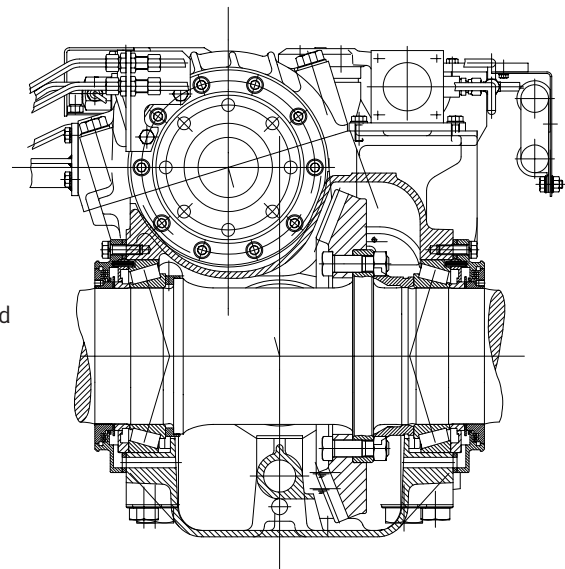
The intermediate shaft is supported in 2 cylindrical roller bearings **NJ2211-E** of NJ design.

Bevel pinion shafts:

At the bevel pinion shafts, two cylindrical roller bearings **NU2219-E** und **F-803167.NU2220-E** (special design) each take up the radial loads whereas a four point bearing **QJ219** each takes up the axial forces from the gearing. These bearings also take up the forces from the universal joint shaft.

Output shafts:

The output shafts are supported in two tapered roller bearings **F-800163.TR1** (special design) each (X-arrangement). This arrangement permits easy mounting and safe adjustment of the bearings.



Schaeffler KG

Product Line Railway Bearings

Georg-Schäfer-Str. 30

97421 Schweinfurt (Germany)

Phone +49 9721 91-0

Fax +49 9721 91-3435

E-Mail rail_transport@schaeffler.com

Internet www.fag.com