

# FAG Wheelset Bearings for Innovative Light Regional Express Train



Examples of Application Engineering

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LIREX experimental train

Courtesy of ALSTOM LHB GmbH

The LIREX (Light Innovative Regional EXpress) experimental train is an advanced development of the Copenhagen commuter train that has been developed through a joint venture of the German railways, the railway industry and the state Sachsen-Anhalt for attractive electric or diesel-electric suburban trains of the future.

Main targets of development:

- Implementation, testing and optimisation of innovative technologies and components
- Modular vehicle concept at reduced operating cost
- Example of tomorrow's suburban passenger transport provided by the German Federal Railways.

For the first time, a single-wheelset running gear is used with a Federal Railway vehicle. The reduced running gear mass adds to the travelling comfort and saves the rail superstructure.

**FAG supplies wheelset bearings consisting of split housings and cylindrical roller bearings, which were specially designed for the LIREX.**

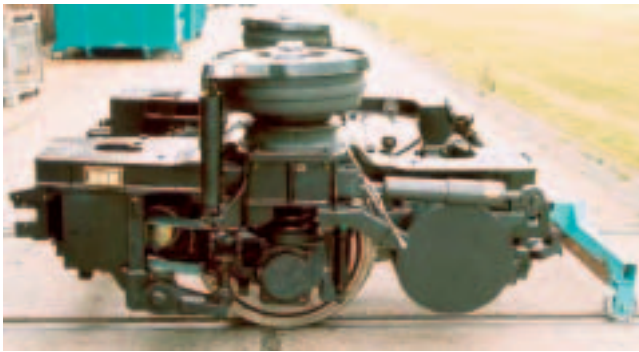
## Vehicle data

Maximum static wheelset load	21 t
Maximum speed	160 km/h

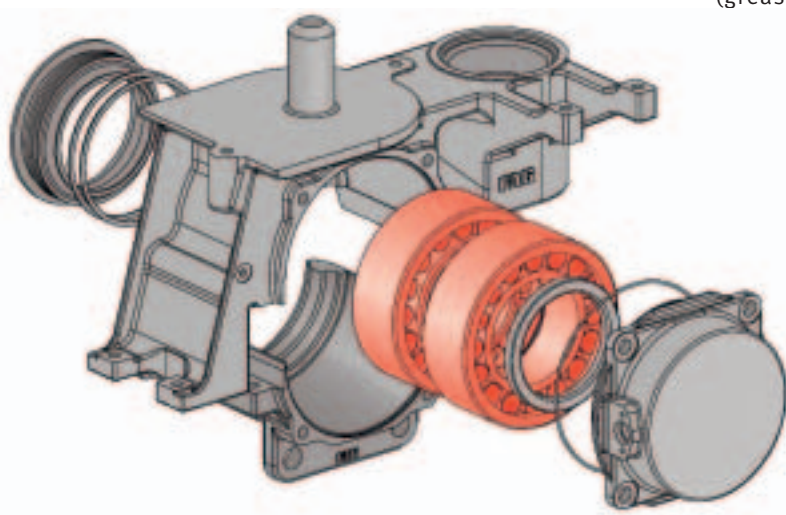
## Running gear

The end cars have just a single-wheelset running gear, KERF, and are supported, at their opposite end, by a neighbouring car. The middle cars are shorter and have two running gears.

### KERF single-wheelset running gear



### FAG wheelset bearing for LIREX



## Wheelset journal roller bearings

The bearing unit consists of a split housing with varying cover designs, sealing system, cylindrical roller bearings and grease.

## Housing

- Material: Spheroidal graphite cast iron
- Split design for fast dismounting the wheelset without the need to remove springs, shock-absorbing and guiding elements
- Compact construction by central arrangement of the primary spring
- The adapters for primary spring, wheelset guide, and pneumatic spring suspension integrated in the housing top
- Wheel-facing end sealed by labyrinth reinforced with lamellar rings

## Rolling bearings

- Well-proven cylindrical roller bearings **WJ120x215TVP** and **WJP120x215P.TVP** with polyamide cages for long maintenance intervals.  
References: ET423 and VT641 (both German Federal Railways), XTER 73500 (SNCF), S-TØG Copenhagen (DSB).
- Separable bearings ensure easy mounting and dismounting and quick access to the functional surfaces during inspections.
- Initial mounting and greasing by FAG service staff (grease approved by DB)

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