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# FAG Wheelset Bearings for the IC4 Diesel Multiple Unit



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## Examples from Application Engineering

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**IC4 diesel multiple unit, developed and built by Breda Costruzioni Ferroviarie SpA, Pistoia, Italy**

Courtesy of Breda Costruzioni Ferroviarie S.p.A.

The four-car diesel unit for the Danish State Railways (DSB) is used in intercity services.

The modern train offers:

- Reduced travelling times
- High passenger comfort

- High reliability
- Low life cycle cost
- Modern design
- Low environmental impact

The lightweight car structures are made of aluminium.

The powered axles are accommodated in the end bogies.

**From the 3rd Quarter 2002 FAG will supply the complete wheelset bearings of motor bogies and trailer bogies for 83 trains with the possibility of more in the near future.**



Up to five cars can be coupled to form a train.

## Vehicle data

Top travelling speed	200 km/h
Tare weight	140 t
Maximum axle load	20 t
Total engine power	4 x 560 kW
Seated passengers	208

## Wheelset bearings

- Cartridge bearings consisting of tapered roller bearings TAROL Ø150 x 250 with integrated seals and grease filling
- Split swing arm housing made of spheroidal graphite cast iron to EN 1563.

The required strength has been determined with the boundary-element-method (BEM).

The speed pick-up is bolted to the housing ring and not, to the cover as is usual. This results, in the housing being more axially compact.

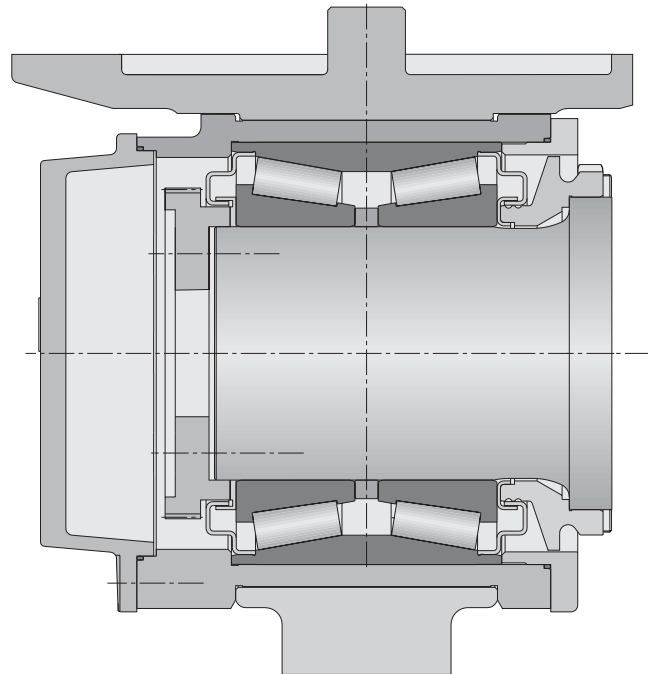
## Split swing arm housing



## Bogie and wheelsets

The bogie design enables an easy passive radial adjustment of the wheelset bearings.

Disk brake and traction motor are also accommodated in the fully suspended part of the propulsion assembly and can be withdrawn without having to dismount the wheelset and drive unit.



## Lubrication and sealing

The heart of the bearing sealing system is a labyrinth seal formed by profiled sheet metal parts.

At the wheel end an additional gap-type seal with backing ring protects the bearings from contaminants. Maintenance and grease renewal are required after 1 million kilometers.

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