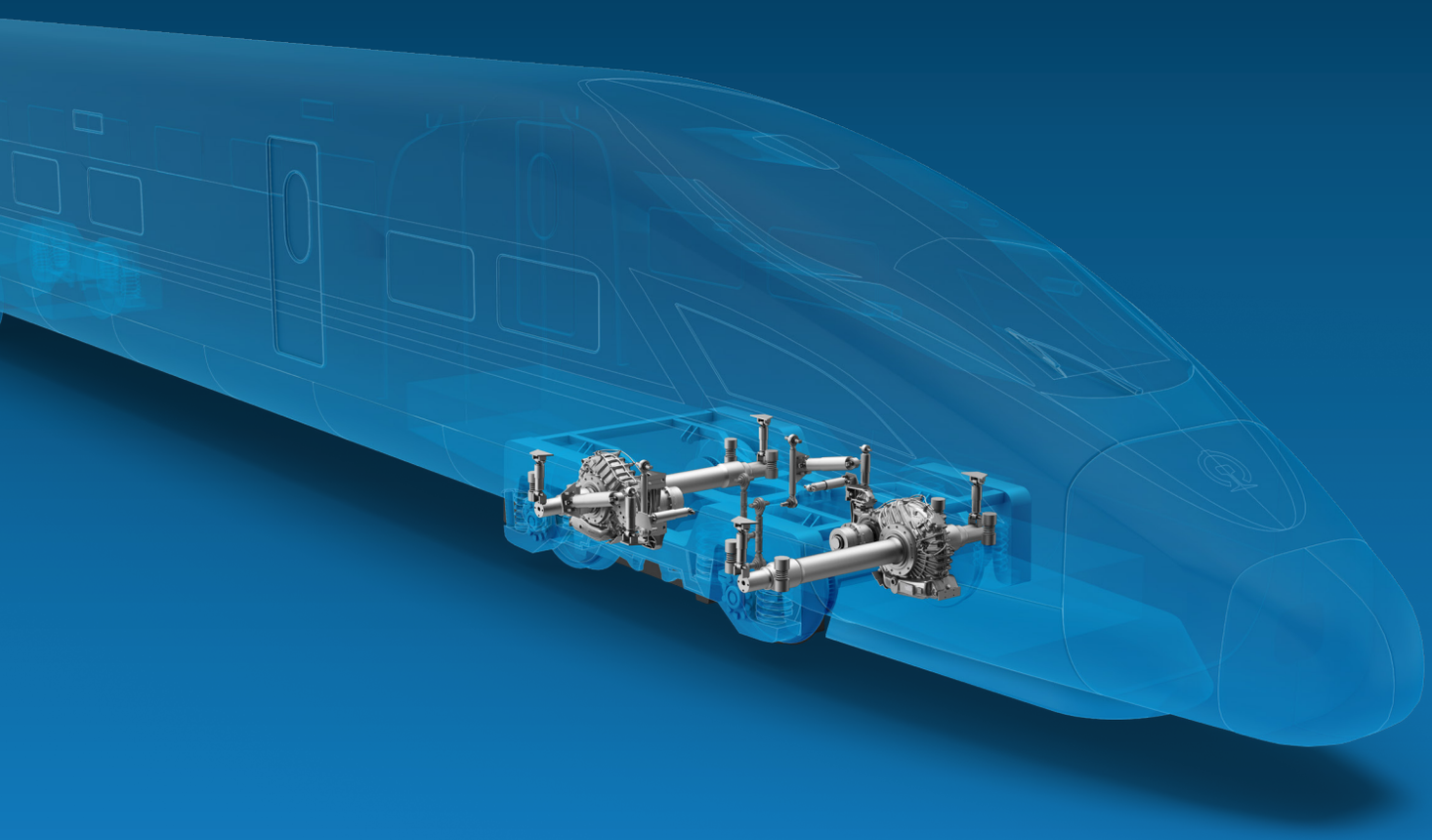
Powerful and flexible

Spur Gear Drive
ZF Highspeed



With high speed into the future

High velocity, flexibility, reliability, comfort, cost-effectiveness and safety – these are the essential characteristics of the new ZF Highspeed transmissions for high-speed trains.

Average train speeds are rising all the time and with them, the demands placed on modern train transmissions with respect to safety, comfort, and cost-effectiveness. When speeds exceed 250 kilometers per hour, the materials are subjected to extreme strain.
ZF Highspeed, a new high-speed transmission, is especially designed for this application. What is more, this newly developed unit is already designed for the train generations of the future, thanks to its modular assembly principle which can be flexibly adapted to customer requirements.

As a technological leader, ZF also sets the benchmark here. This single stage aluminum housing gearbox is designed to accommodate three different gear ratios, offering flexibility with cost benefits. Advanced gear technology with higher load capacity and noise optimized design, together with new and improved labyrinth sealing rounds off the profile of this high performance transmission.

One housing for many transmission variants

The advantage of this approach is that rail operators can cover the different wheelbases and gear ratios in their fleets with a single transmission type, because all transmission variants for top speeds of 250 to 600 km/h have the same housing. This modular principle also enables the transmission to be quickly adapted to special customer applications and prototypes can rapidly be made available for use.

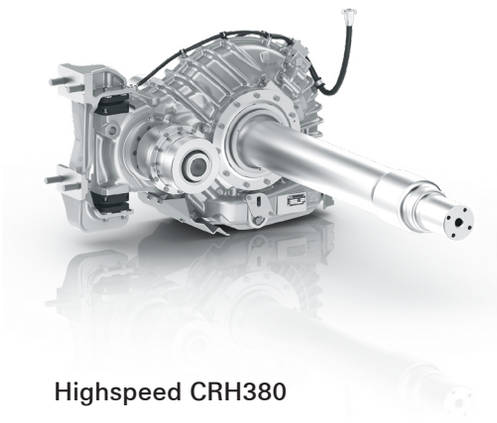
Tough and economical

In developing this new transmission, high priorities were placed on comfort and cost-effectiveness. Precision gear technology ensures especially quiet operations, even at very high speeds. Modern production technology increases the strength of the individual components, so that despite high loads, challenging maintenance targets are not compromised.

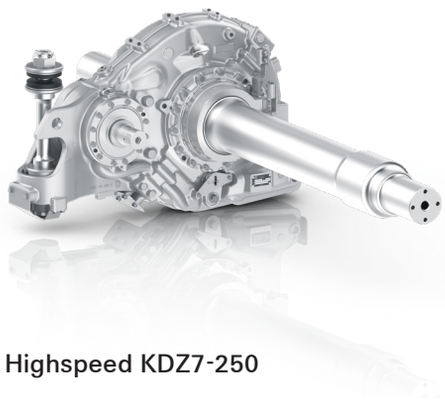
ZF's Highspeed CRH380 is already successfully in operation – with almost

10,000

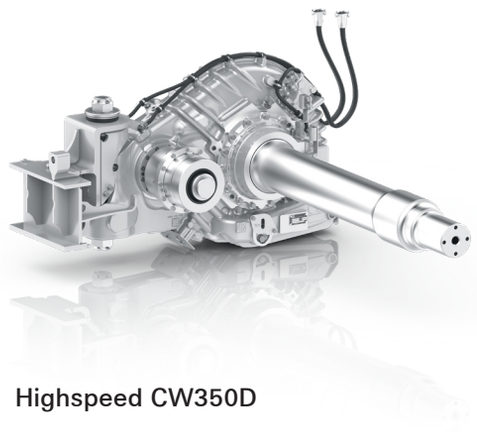
units



Highspeed CRH380



Highspeed KDZ7-250



Highspeed CW350D

	CRH380	KDZ7-250	CW350D
Input torque [Nm]	3,000	2,215	3,179
Ratio	i = 2.42	i = 3.59	i = 2.52
Center distance [mm]	380	370	382
Weight approx [kg]	327	315	320
Max. speed [km/h]	380	275	380
Max. operating speed [km/h]	350	250	350

Highlights

- Single-stage drive
- Robust aluminum housing
- New, improved labyrinth technology
- Bearing temperature monitoring optional
- Accelerometer optional
- Optimized oil supply
- Low bearing temperature
- High efficiency
- Low noise emission
- Optimized transmission weight

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