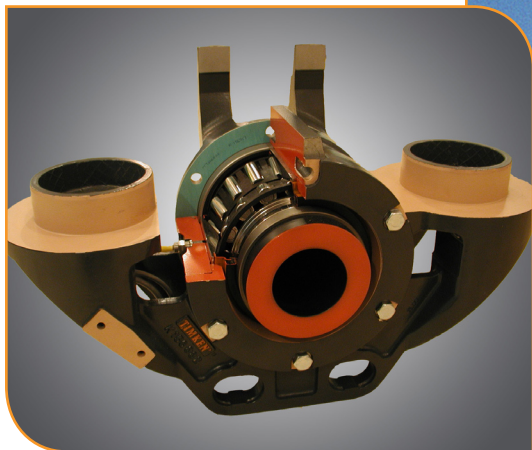


Talgo 350 Features Timken Sensor Technology

TIMKEN

Where You Turn

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Customer

Bombardier Transportation Group
Berlin, Germany

Market

Rail

Application

Locomotives

The Timken Advantage

Timken helps Bombardier monitor bearing temperatures on the Talgo 350 train. Timken's sensor solution features:

- Axle bearings, aluminum housings and a sensor assembly for continuous temperature monitoring
- Control unit visible to locomotive operator

High-speed locomotives can really turn up the heat – especially when they reach speeds of 250 mph. To monitor bearing temperatures, Timken supplied 480 high-tech axle bearing assemblies to Bombardier Transportation for use in the locomotives of 30 trains that RENFE - the Spanish state railway - has ordered from Talgo in Spain.

Bombardier supplied 60 high-speed locomotives – two for each Talgo 350 train – equipped with Timken-developed advanced sensor technology to monitor bearing temperature.

Bombardier used Timken bearings and housings for its first order from Talgo in 2003 and turned to the company once again to meet the more demanding environment of high-speed rail. Trains on RENFE'S Madrid-Barcelona line travel at speeds up to 250 mph.

"Bombardier needed a solution that exceeded performance specifications of what is generally available on the market," says Mat Happach, Timken vice president – rail. "They turned to us because they knew our knowledge of friction management and sensor technology could overcome the challenge. We were able to use our engineering expertise to provide our customer and the railway with a fully-integrated system that will provide lasting benefits in the demanding environment of everyday operation."

The Timken components include axle bearings, aluminum housings and a sensor assembly that continuously measures the temperature throughout the entire bearing system. All the bearing assemblies are networked with the control unit in the locomotive and visible to the driver.