

TIMKEN TECHNICAL KNOWLEDGE, SUPPLY CHAIN AND CUSTOMER SERVICE KEEP STADIUM ROOF RETRACTING

CHALLENGE: ▼

The Mercedes-Benz Stadium in Atlanta, Georgia, home of the Atlanta Falcons, is a world-class stadium due to its incredible fan experience and signature eight-petal retractable roof.

Its initial opening, however, was delayed three times due to challenges with the roof. The kinetic architecture firm that designed and supplied the roof mechanization struggled to make each 500-ton steel “petal” flexible enough to properly distribute loads across a rail system to help the roof retract. And competitor tapered roller bearings used in one of the roller positions in the re-engineered roof panels failed.

TIMKEN SOLUTION: ▼

The architecture firm approached Timken to hone in on the issue.

Unlike many Timken bearing applications that move at high speeds, the maximum speed of the uplift rollers is only 13.5 rpm. But because each bearing has to perform under loads of up to 75,000 lbf, our selection analysis focused on the bearing contact stress under these loads and ensuring the lubrication was appropriate.

Using Timken Syber Bearing System Analysis software platform, internal tools and teamwork between sales, customer service and application engineering, we specified and delivered 400 high-performance Timken® tapered roller bearings with enhanced finishes and enhanced internal geometries in less than 15 weeks.

RESULTS THAT MATTER: ▼

Our selected bearings were an ideal fit for the roof panels. They reduced the maximum contact stress by 45% compared to the existing design bearings. The stadium roof is now fully functioning and operates to the original specification.



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The Timken team applies their know-how to improve the reliability and performance of machinery in diverse markets worldwide. The company designs, makes and markets bearings, gear drives, automated lubrication systems, belts, brakes, clutches, chain, couplings, linear motion products and related industrial motion rebuild and repair services.

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