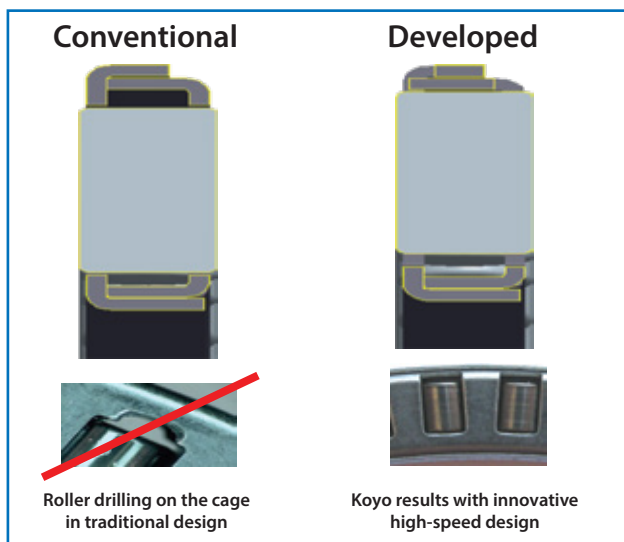
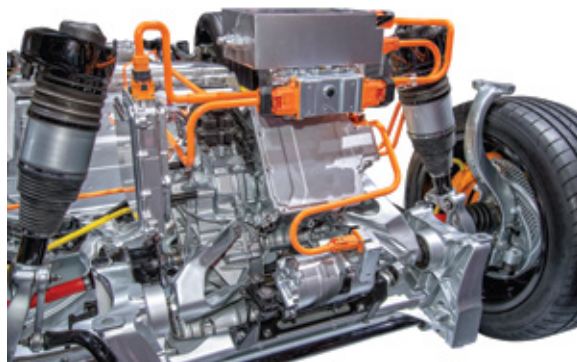


High Speed Thrust Bearing

The Challenge:

A leading U.S. auto manufacturer wanted to replace an angular contact ball bearing in their Electric Vehicle (EV) transmission with a Koyo thrust bearing. However, given the bearing's high load and speed condition, they were concerned about bearing performance.



Analysis:

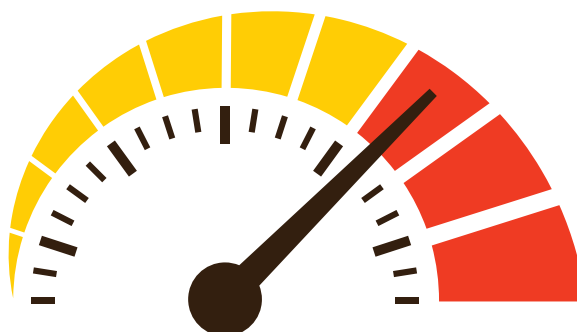
Initial internal analysis for Pressure*Velocity (PV) indicated a wrap around style roller cage would counter act the negative effect of roller drilling typical in extremely high speed applications.

Test data has shown Koyo wrap around style cages perform above expectations showing little to no cage wear at high speeds. However, testing had only been conducted under light loads.

Koyo's Solution:

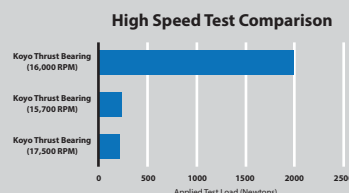
In collaboration with the customer, Koyo engineers were able to simulate actual application conditions and quickly create test parameters for Koyo's proprietary high speed test stand.

The bearings were tested at extreme speeds and under much greater load conditions.



Result:

Koyo was able to successfully prove performance of the thrust bearing at 16,000 RPM's and 2000N load (18% of the BDLR) to meet bearing L10 with no spalling or abnormal wear. This information further boosts confidence that the Koyo's wrap around cage thrust bearings can survive in today's high speed applications.



Solutions For Demanding Applications