

Ultra-High-Speed Large-Diameter Ball Bearings for Motors in Hybrid Vehicles

As the ultra-high-speed motors for Hybrid Vehicles increase in size and output, NSK has developed a large-diameter bearing (inner diameter of 160 mm and outer diameter of 190 mm) which delivers the fastest rotation speeds of any ball bearing for automotive applications with two million dmn (bearing diameter x maximum rotating speed).

Product Features

- Carbon fibre reinforced PEEK (Polyetheretherketone) cage: dramatically improves cage durability despite the tremendous centrifugal force generated by the high-speed rotation.
- Inner ring guide: use of a crown cage for the ball guide along with the outer diameter of the inner ring as guide surfaces controls vibration and skidding damage resulting from cage runout
- Optimised internal design and long life technology: optimised radial clearance, ball diameter, number of balls, and groove dimensions inside the bearing module control friction and heat generation. In addition, the use of heat treatment technology and a material with superior dimensional stability on the inner and outer rings controls age deterioration of dimensions and radial clearance during usage, improving durability.

Benefits

- In spite of the large size, the new bearing is capable of ultra-high-speed rotation exceeding two million dmn, faster than any other ball bearing used for automotive applications
- The new ball bearing contributes to achieving higher power output in drive motors and generators of hybrid cars, helping improve fuel efficiency and driving performance

Condition Description

- High Speed

Industries

- Automotive

