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

Due to ultra-high-speed motors for Hybrid Vehicles increasing 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 (1)

Product Features

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

Benefits

- Capable of ultra-high-speed rotation exceeding two million dmn. Faster than any other ball bearing used for automotive applications
- Higher power output in drive motors and generators of hybrid cars, helping improve fuel efficiency and driving performance ⁽¹⁾d_mn : bearing diameter x maximum rotating speed

Condition Description

- High Speed

Industries

- Automotive