

Application of Cylindrical Roller Bearings with Ribs to Gear Units of Railway Vehicles

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Helical gears are commonly used in the gear units of railway vehicles in Japan, and a bearing type used for the gear units is a tapered roller bearing. In order to prevent seizure of bearings, this study examined the use of cylindrical roller bearings with ribs that allow a certain degree of axial displacement of inner rings and outer rings, and compared its performance with that of a conventional structure using tapered roller bearings through various rotating tests. The results showed that the temperature rise immediately after the start of rotation and torque of the pinion shaft are lower in cylindrical roller bearings with ribs than those in tapered roller bearings, through the rotation tests using an actual gear unit.