

High Efficiency Hub Unit



In order to respond to the recent trends of strengthening CO₂ emission restrictions, further torque reduction is required to wheel hub units for fuel consumption improvement. However low friction torque and high reliability (sealing performance) are incompatible, and difficult to satisfy both performance at the same time.

JTEKT has developed and mass-produced a high efficient hub unit with low friction torque and high reliability in order to respond to the market demand, by adopting JTEKT's original low friction torque technology, HUB_LFT® (Low Friction Torque).

This report presents the development results of low friction torque and high reliability hub unit.

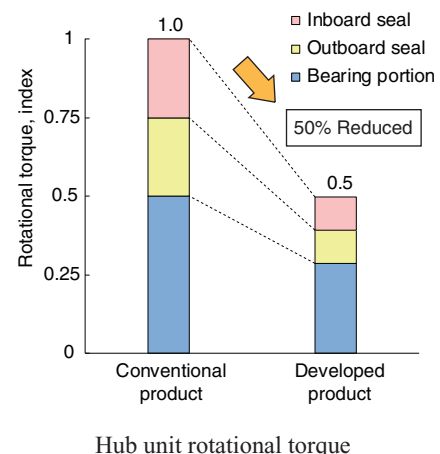
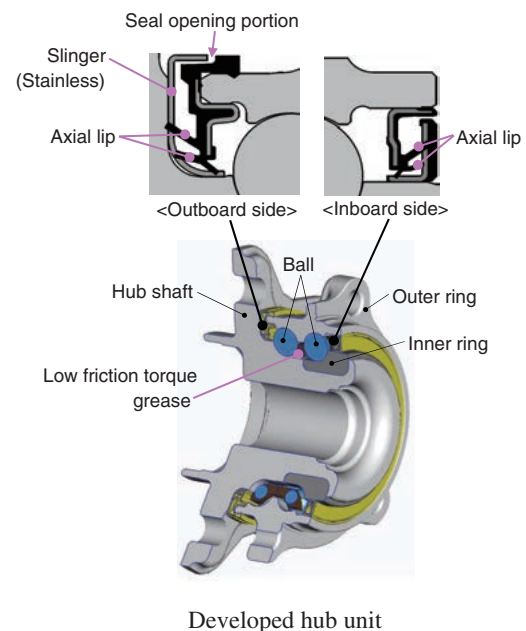
Features

- ① Adoption of low friction torque grease

In order to reduce torque of the bearing portion, preload optimization. And low friction torque grease with low-viscosity base oil and microparticulization thickener was adopted. In addition anti-false brinelling is greatly improved by improvement of low temperature fluidity.
- ② Adoption of high reliability outboard seal

A stainless slinger was adopted in order to prevent from corrosion of the lip sliding surface. Lip wear and degradation of seal performance occur due to lip sliding on the corroded surface by muddy salt water at conventional outboard seal. And the labyrinth was designed with the stainless slinger at the seal opening portion to significantly reduce the amount of muddy water that ingress into the lip portion.
- ③ Double axial lips

Eliminated the radial main lip and added axial lip with an optimum lip reaction force on the outboard and inboard seal, in order to reduce the seal rotational torque while maintaining sealing performance.
- ④ In order to improve the oil film formation, improved the surface profile around seal lip sliding area of the slinger, and the lip sliding resistance is reduced.
- ⑤ By adoption of Hub LFT, the rotational torque of the developed hub unit was reduced by 50% compared to the conventional hub unit.



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