

3rd Generation Tapered Roller Hub Unit



This report introduces the 3rd Generation Tapered Roller Hub Unit for pickup trucks and full-size SUVs. This newly developed product has drastically improved durability under harsh environments, and improves fuel economy through reduced friction torque and weight.

Aim of development

Pickup trucks and full-size SUVs are heavy in comparison to passenger vehicles. In addition, these vehicles require durability as they are often used in harsh environments that involve unpaved roads and low temperatures. By integrating the inner ring and hub shaft, and by employing our original LFT[®] (Low Friction Torque) technology, we JTEKT have developed and are now mass-producing the 3rd Generation Tapered Roller Hub Unit with low friction torque to respond to the market requirements of high performance, such as reduced friction torque, and improved durability, such as high resistance to muddy salt water.

Features

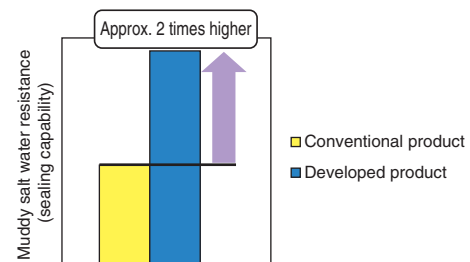
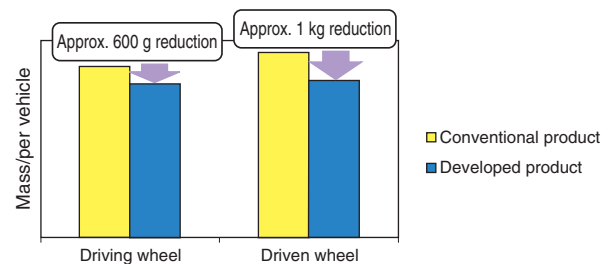
- ① Achieves high strength and reduced weight
Through the development of a third generation (integration of inner ring and shaft) and optimal design, the shaft strength has been improved together with the hub unit achieving approximately 600 g in weight reduction for the driving wheels, as well as approximately over 1 kg in weight reduction for the driven wheels per vehicle, compared with the conventional product.
- ② Higher sealing capability
Achieves over twice the resistance to muddy salt water of the conventional product through optimized seal design (rubber material, grease on the lip, lip design).
- ③ Better fuel economy
Contributes to better fuel economy through a combination of 50% reduction in drag torque and reduced weight, through optimized seal design and LFT[®] technology.
- ④ Improved quietness
Reduces brake vibration due to uneven wear by improving runout accuracy of the shaft flange.

⑤ Improved reliability and durability

Achieves high reliability and durability by reducing clearance variation, improving anti-brinelling performance, and high sealing capability, among other improvements.



Driving wheel (left) and driven wheel (right)



(West JAPAN Technical Center, Bearing Operations Headquarters)

JTEKT CORPORATION