

TECHNICAL INSIGHT

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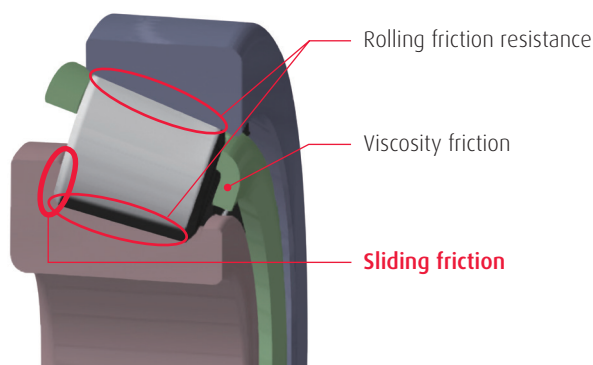
Low-Friction Tapered Roller Bearings <Gen6>

Development Objectives

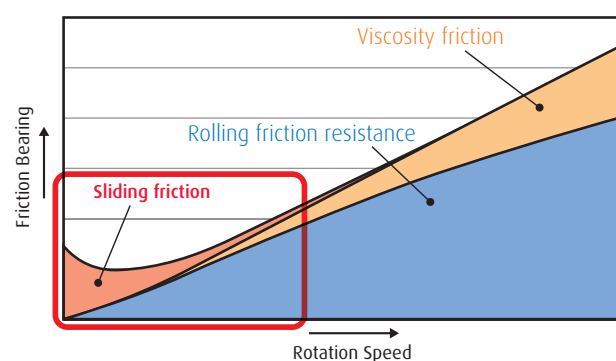
Low-Friction by improving the surface roughness of roller heads and large rib

General Description and Product Features (Structure and Operating Principles)

Background

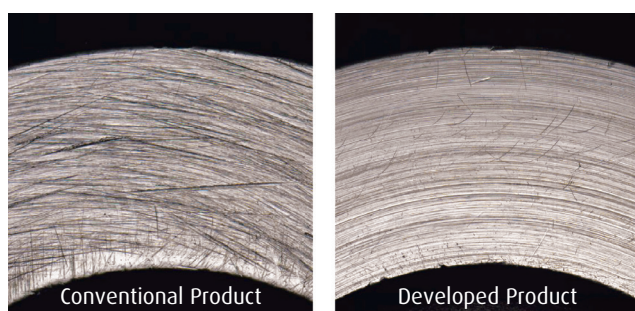


The friction of a tapered roller bearing mainly consists of rolling friction resistance, viscosity friction and sliding friction and, in general, the bearing is likely to have higher friction than other bearing types.



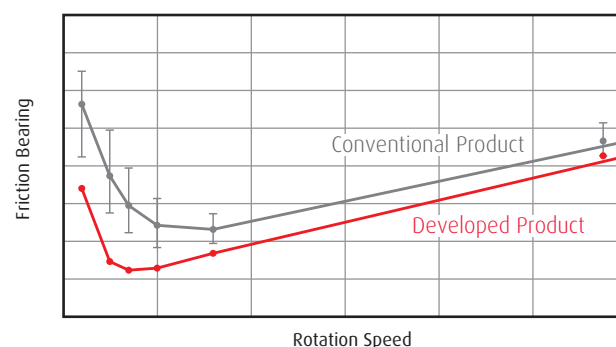
In particular, for friction in lower-speed range, the sliding friction of the roller heads and the large rib is dominant.

Methods and Result



Photos of Roller Head

The surface properties of roller heads and large rib are optimised.



Reduction in friction by 60% on average in the low-speed range (up to 500rpm) and 10% on average in the high-speed range are achieved.

* The effect differs depending on lubrication conditions.

Expected Effects

- › Lower fuel consumption ⇒ Lower fuel consumption during low-speed traveling in particular
- › Reduction in friction is possible without varying size, rated capacity, and rigidity
- › The product is also applicable to existing specifications, since the inner specifications will not be changed