MOTION & CONTROL NSK

TECHNICAL INSIGHT

A PUBLICATION OF NSK EUROPE

Super Long-life Needle Roller

Development Objectives

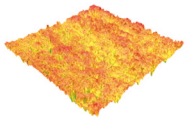
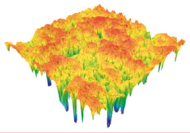
Efficiency improvement of transmission

- Compact, lightweight
- Oil friction loss reduction

- Improved durability
- Sustains a lubrication film

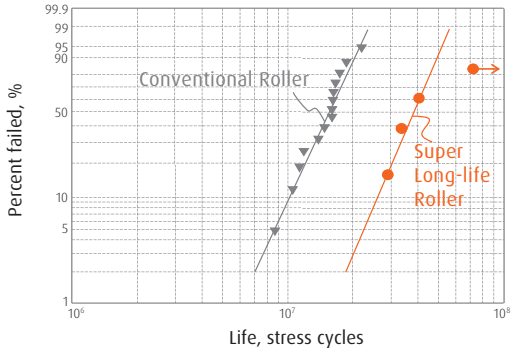
General Description and Product Features (Structure and Operating Principles)

Features of the NSK-developed Roller

	External View	Surface Hardness	Enlarged Shape of Surface Layer
Conventional Roller		Standard	
Super Long-life Roller		High hardness	
		I. The topmost surface is specially treated, thereby increasing surface hardness	II. Oil sump is formed on the surface layer, thereby enhancing the oil film retention performance between the two surfaces in contact

Life Endurance Test Result of a Needle Roller

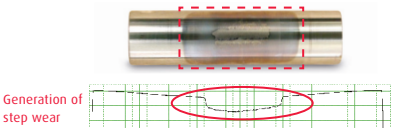
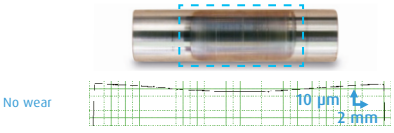
Test Conditions
Bearing tested: Thrust needle roller bearing
Load condition: Standard
Lubrication: Low-viscosity oil
Lubrication condition: Lean lubrication



Life endurance performance was improved by more than double

Wear Endurance Test Result of a Planetary Shaft

Test Conditions
Bearing tested: Planetary needle roller bearing
Load condition: Heavy load
Lubrication: Low-viscosity oil
Lubrication condition: Lean lubrication
Shaft: Special heat treatment (SUJ2)

	Planetary Shaft (after test)
Use of Conventional Roller	
Use of Super Long-life Roller	

Suppress wear of the shaft (counterpart component)