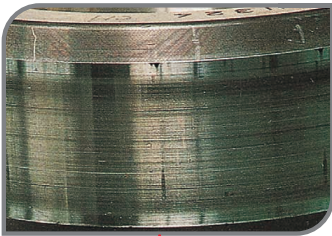


Bearing Damage and Countermeasures

SMEARING

Damage condition	Possible causes	Countermeasures
<p>Smearing is surface damage which occurs from a collection of small seizures between bearing components caused by oil film rupture and/or sliding. Surface roughening occurs along with melting.</p>	<ul style="list-style-type: none"> • High speed and light load • Sudden acceleration/deceleration • Improper lubricant • Entry of water 	<ul style="list-style-type: none"> • Improve the preload • Improve the bearing clearance • Use a lubricant with good oil film formation ability • Improve the lubrication method • Improve the sealing mechanism

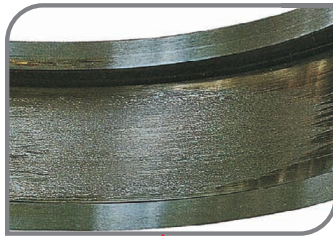


SMEARING

Part: Inner ring of a cylindrical roller bearing

Symptom: Smearing occurs circumferentially on raceway surface

Cause: Roller slipping due to excessive grease filling

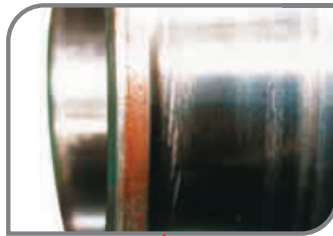


SMEARING

Part: Outer ring of a cylindrical bearing

Symptom: Smearing occurs circumferentially on raceway surface

Cause: Roller slipping due to excessive grease filling



SMEARING

Part: Inner ring of a spherical roller bearing

Symptom: Partial smearing occurs circumferentially on raceway surface

Cause: Incorrect lubrication



SMEARING

Part: Convex rollers of a spherical roller bearing

Symptom: Smearing occurs at the center of the rolling surface

Cause: Incorrect lubrication