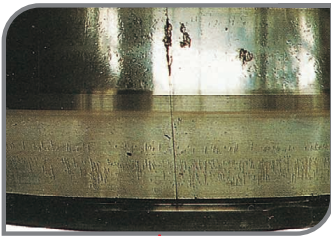


Bearing Damage and Countermeasures

CRACKS

Damage condition	Possible causes	Countermeasures
Cracks in the raceway ring and rolling elements. Continued use under this condition leads to larger cracks or fractures.	<ul style="list-style-type: none"> • Excessive interference • Excessive load, shock load • Progression of flaking • Heat generation and fretting caused by contact between mounting parts and race way ring • Heat generation due to creep • Improper taper angle of tapered shaft • Improper cylindricality of shaft • Interference with bearing chamfer due to a shaft corner radius that is larger than bearing chamfer dimension 	<ul style="list-style-type: none"> • Correct the interference • Check the load conditions • Improve the mounting method • Use an appropriate shaft shape



CRACKS

Part: Inner ring of a spherical roller bearing

Symptom: Axial cracks occur on raceway surface

Cause: Large fitting stress due to temperature difference between shaft and inner ring



CRACKS

Part: Outer ring of a double-row cylindrical roller bearing

Symptom: Thermal cracks occur on the outer ring side face

Cause: Abnormal heat generation due to contact sliding between mating part and face of outer ring



CRACKS

Part: Cross section of a fractured inner ring in a spherical roller bearing

Symptom: Origin is directly beneath the raceway surface



CRACKS

Part: Roller of a spherical roller bearing

Symptom: Axial cracks occur on rolling surface