

1 Improper Fit



Phenomenon: Fretting Corrosion (Left)



Phenomenon: Creep (Right)

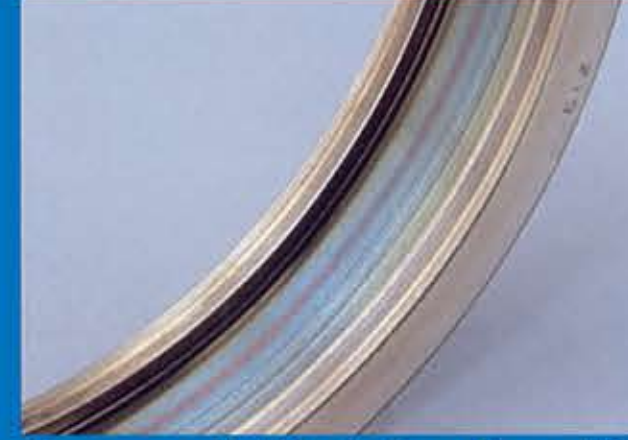
Cause: Less Interference Fit with Shaft



Phenomenon: Scuffing on Inner Ring Bore Surface

Cause: Excessive Interference Fit with Shaft

2 Improper Lubrication



Phenomenon: Heat Discoloration on Raceway/Guide Surface of Retainer



Phenomenon: Scuffing on Roller End Surface and Inner Ring Rib

Cause: Improper Lubrication Method or Inappropriate Lubricant



Phenomenon: Wear on Retainer Pocket Surface/Guide Surface

3 Improper Adjustment



Phenomenon: Smearing on Raceway

Cause: Improper Preload



Phenomenon: Seizure at Roller End Surface and Inner Ring Rib

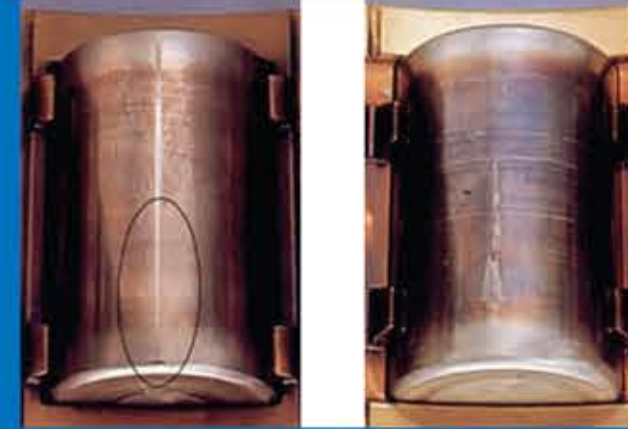
Cause: Insufficient Bench End Play

4 Mishandling



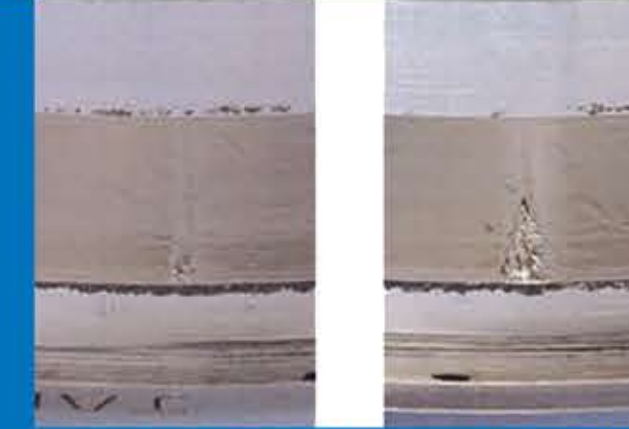
Phenomenon: Dents on Retainer

Cause: Retainer Received Impact



Phenomenon: Scratches (Left)/Scuffing (Right) on Roller Surface

Cause: Careless Handling During Assembly



Phenomenon: Flaking at Intervals on Roller Pitch (Due to Scratches and Scuffing)



Phenomenon: Scuffing on Bore Surface

Cause: Diagonal Assembly or Foreign Matter on Fitting Surface

5 Misalignment (Inclination of Bearings)



Phenomenon: Symmetrical Fretting on Upper and Lower Sides

Cause: Misalignment



Phenomenon: Broken Retainer

Cause: Abnormal Load Due To Misalignment



Phenomenon: Flaking on Opposite Faces of Raceway

Cause: Diagonal Assembly

6 Corrosion



Phenomenon: Rust Generated on Raceway at Intervals on Roller Pitch

Cause: Bearings Left Unused for Long Period Under Moist Conditions



Phenomenon: Rust Generated on One Row of Raceway

Cause: Water Contamination During Operation

6 Corrosion (continued)



Phenomenon: Flaking Generated Around Half the Raceway

Cause: Flaking Caused by Rust

7 Impact Load



Phenomenon: Broken Retainer

Cause: Excessive Vibration or Impact During Operation



Phenomenon: Flaking at Intervals on Ball Pitch

Cause: Indentations Caused by Impact Load Develop into Flaking



Phenomenon: Cracks and Chips on Inner and Outer Rings and Rollers (Left) / Seizure Caused by Chips on Ribs (Right)

Cause: Excessive Axial Impact Load



8 Electric Pitting



Phenomenon: Electric Pitting (Pit or Ridge) and Staining

Cause: Current Passed Through Inside of Bearing

8 Electric Pitting (continued)



Phenomenon: Electric Pitting (Pit or Ridge) and Staining

Cause: Current Passed Through Inside of Bearing



9 Dirty Lubricant



Phenomenon: Indentations on Raceway

Cause: Contamination by Foreign Matter or Flakes from Other Bearing



Phenomenon: Smearing/Wear on Roller

Cause: Lubricant Contaminated by Water or Other Foreign Matter