

## Bearing Damage and Countermeasures

### FRETTING

Damage condition	Possible causes	Countermeasures
<p>Wear occurs due to repeated sliding between two surfaces (bore, shaft, roller, etc.) Fretting occurs at fitting surface and also at contact areas between raceway and rolling elements. Fretting corrosion is another term used to describe the reddish brown or black wear debris.</p>	<ul style="list-style-type: none"> <li>• Incorrect lubrication</li> <li>• Vibration with a small amplitude</li> <li>• Insufficient interference</li> </ul>	<ul style="list-style-type: none"> <li>• Use a proper lubricant</li> <li>• Apply preload</li> <li>• Check the interference fit</li> <li>• Apply a film of lubricant to the fitting surface</li> </ul>



**FRETTING**

**Part:** Inner ring of a deep groove ball bearing  
**Symptom:** Fretting occurs on the bore surface  
**Cause:** Vibration



**FRETTING**

**Part:** Inner ring of an angular contact ball bearing  
**Symptom:** Notable fretting occurs over entire circumference of bore surface  
**Cause:** Insufficient interference fit



**FRETTING**

**Part:** Outer ring of a double-row cylindrical roller bearing  
**Symptom:** Fretting occurs on the raceway surface at roller pitch intervals