

# NTN BOWER® HEAVY DUTY BEARINGS



## Diagnosing Tapered Roller Bearings in Heavy Duty Trucks



**Seizure**

**Symptom:**

- Bearing unable to rotate
- Rollers may be fused to raceway
- Cage may be missing

**Cause:**

- Inadequate amount of lubricant
- Improper lubricant
- Contaminated lubricant
- Improperly applied lubricant
- Improper mounting
- Axle and/or hub not within specification
- Improper bench end play



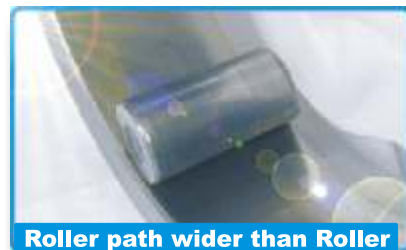
**Water Etching**

**Symptom:**

- Grey discoloration of internal surfaces (raceways or rollers)
- Localized areas of heavier grey discoloration where rollers may have stopped for long periods of time

**Cause:**

- Moisture has contaminated lubricant



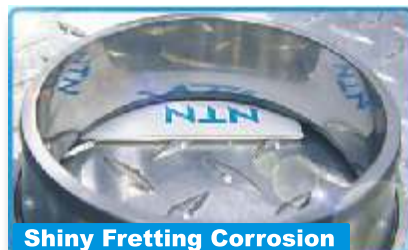
**Roller path wider than Roller**

**Symptom:**

- Roller path on raceway wider than the roller contact length

**Cause:**

- Improper installation, bench end play not set correctly



**Shiny Fretting Corrosion**

**Symptom:**

- Polishing of bearing surface to near mirror finish where bearing interacts with axle or hub

**Cause:**

- Axle or hub out of tolerance and bearing sliding against mating surface



**Mechanical**

**Symptom:**

- Bearing part has been dented

**Cause:**

- Mishandling of bearing prior to installation
- Bearing dropped
- Mishandling by delivery service



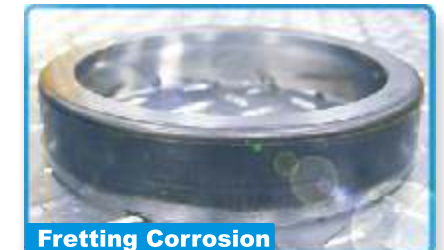
**Cage Fracture**

**Symptom:**

- Cage is fractured

**Cause:**

- Inadequate amount of lubricant
- Improper lubricant
- Contaminated lubricant
- Improperly applied lubricant



**Fretting Corrosion**

**Symptom:**

- Brown or rust-like discoloration of bearing surface

**Cause:**

- Hub or axle fit too loose

