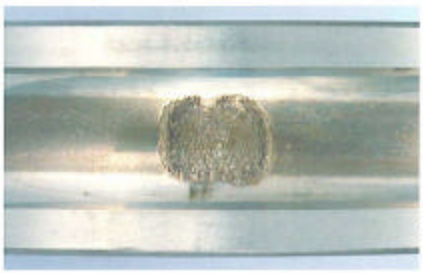
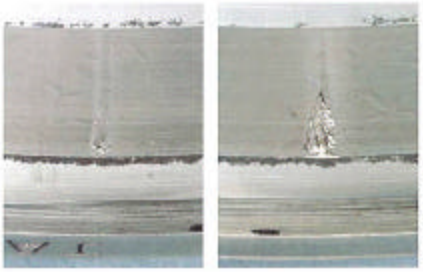
Ⅲ. Failures, Causes and Countermeasures

1 Flaking, Pitting

Phenomena, causes and countermeasures		Examples of failures
Phenomena	■ Flaking is a phenomena in which the bearing surface turns scaly and peels off due to contact load repeatedly received on the raceway and rolling surface during rotation. Occurrence of flaking indicates that the end of a bearing's service life is near. ● Pitting is a phenomena in which small holes 0.1 mm in depth are generated on the raceway surface by rolling fatigue. ※Flaking and pitting are often found at an early stage. In this case, countermeasures should be taken, after examining the causes.	■ Flaking on inner ring of Deep Groove Ball Bearing  (A-6977) ■ Flaking on inner ring of Cylindrical Roller Bearing  (A-7024)
Causes	Flaking and pitting occur early in a bearing's service life under the following conditions: 1) During operation, bearing internal clearance becomes narrower than specified. 2) Bearing ring is mounted at an inclination by mistake. 3) Flaw is created during mounting, or brinelling, nicks, rust, etc. occur on the raceway surface or rolling surface. 4) Inaccurate shape of shaft or housing (imperfect circle, depressions on surface.)	■ Flaking on outer ring of Double-Row Cylindrical Roller Bearing  (A-6466, 6473) ■ Flaking on inner ring of Tapered Roller Bearing  (A-6644, 6645)
Countermeasures	■ Flaking a) Use a bearing with heavier rated load. b) Check if abnormal load is being generated. c) Improve lubrication method to ensure better formation of lubricant film, by increasing the viscosity. d) When a failure is discovered at an early stage, the countermeasures described above should be taken, after investigating the causes. ● Pitting a) Increase viscosity of lubricant to ensure better formation of lubricant film. (Care should be taken because foreign matters appear similar to holes caused by brinelling or corrosion.)	■ Flaking on inner ring of Spherical Roller Bearing  (A-6476)