






III . Failures, Causes and Countermeasures

8 Smearing

	Phenomena, causes and countermeasures	Examples of failures
Phenomena	<ul style="list-style-type: none"> ■ Smearing is a phenomena where minute seizure is concentrated on the rolling surface. In smearing, the surface is partially melted by heat of high temperature generated by friction; and on some parts, the surface damaged becomes significantly rough. 	<ul style="list-style-type: none"> ■ Smearing on inner ring raceway surface of Deep Groove Ball Bearing  (A-6640)
Causes	<ol style="list-style-type: none"> 1) Smearing occurs if the oil film disappears as rolling elements stop rotating due to inappropriate use or improper lubrication, and then start to slide on the raceway surface. 2) In ball bearings, smearing is caused by sliding or spinning of balls; and, in roller bearings, smearing tends to occur when the roller enters into on from the load zone. 	<ul style="list-style-type: none"> ■ Smearing on ball surface  (A-6641) <ul style="list-style-type: none"> ■ Smearing on inner ring raceway surface of Angular Ball Bearing  (A-6642)
Countermeasures	<ol style="list-style-type: none"> a) Review followed by countermeasures to improve the formation of oil film. b) Provision for extreme-pressure lubricant. c) Adoption of countermeasures to prevent sliding. (by diminishing mounting clearance.) 	<ul style="list-style-type: none"> ■ Smearing on outer ring raceway surface of Cylindrical Roller Bearing  (A-7435) <ul style="list-style-type: none"> ■ Smearing on roller rolling surface of Cylindrical Roller Bearing  (A-6480)