DR.PUMP
& ENGINEERING
CO., LTD

When the pump fails!

BEARING FAILURE SYMPTOMS

4c67 Damage due to wear

Fatigue by breakage of case

Characteristics:
Peeling of race in thick plates with case-hardened bearing parts

Causes:
– Break or flaking of case
– Load too high or case thickness at specified load too little, e.g. due to incorrect design loads

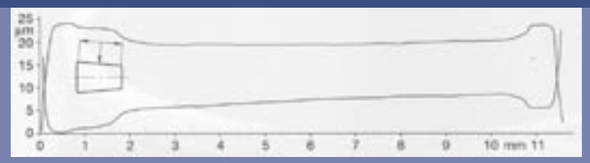
Remedy:
– Adapt thickness of case to the load conditions
– Prevent overloading

Fatigue due to wear

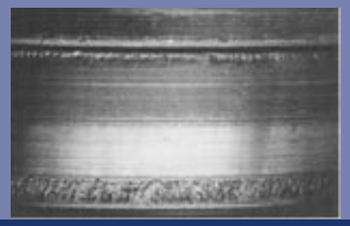
Characteristics:
Local delamination, e.g. on rolling elements of tapered roller bearings, run mark streaky.

Causes:
Change in geometry of rolling elements due to wear in case of contaminated lubricant, e.g. as a result of ingress of foreign matter due to damaged seals. Local overloading in part in connection with insufficient preloading of tapered roller bearings.

Remedy:
– Change lubricant on time
– Filtering of lubricating oil
– Improvement of packing
– Change worn seals in good time
– Special heat treatment for rings and rollers

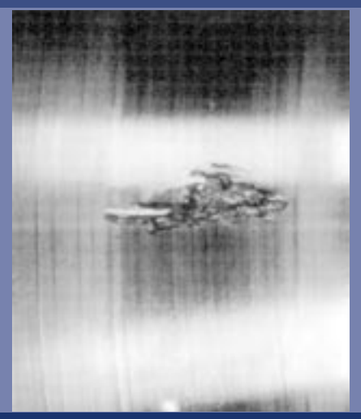


a: Transverse thrust of a roller



b: Race of inner ring and roller with fatigue damage

Wear in certain areas can change the geometry of rolling elements to such extent that it results in fatigue due to local overloading.



Failure mechanism as in this case wear on the edges of the races, transverse thrust of roller