

Agenda

- Introduction
 - » Bearing Function
 - » Physical Behavior in a Rotating Bearing
 - » Bearing-Parts & Types
 - » Mounting-on Shaft & in Housing
- Design & Engineering
 - » Tolerances, Fits & Clearances
 - » Forces & Life
 - » Lubrication
- Illustrate Behavior, Design & Engineering
 - » Case Histories & Post Mortems

unction, Behavior, Parts, Types, & Mounting

- Brgs. are joints between rolling & stationary
- Most machines have multiple bearings
- #rolling element brgs.>>#journal brgs. (oil film)
- Fascinating Physical Behavior
 - » clearances about 0.0001 inch for typical bearing
 - » hydroplaning on thin oil film, millionths of inch
 - » demonstrate bearing defect frequencies
- Parts Textbook Figs. 10-17,18,19, seals & shields*
- Types & Ratings Text Figs. 10-20&21 & reverse side*
- Mounting Text Sec. 10.11 + pillow block * & mounting
*shown on the reverse side of this handout

Design & Engineering

- Tolerances, Fits & Clearances
 - » these 3 are mutually exclusive
 - » Tolerances- of components, 5 ABEC grades
 - » Fits-brg. to shaft & brg. to housing
 - » radial internal Clearances
 - 50mm bore brg. clearance \cong 0.00055 inch
 - mounting (interference fit) & running removes ~80% clearance
 - clearance shifts to unloaded side (top)
 - changes in fit, load, thermal growth alters clearance