Training Course Title

BEARING MAINTENANCE TECHNOLOGY & BEARING ROOTCAUSE FAILURE ANALYSIS

Duration : 5Days

Venue : SKF Reliability Training Institute Al-Najim Co. Premises (Al-Khobar)

Course Details : Enclosed

Course Fee : SAR 14,000 Per Participant

Course Date : 06-10-2012 To 10-10-2012

Trainer : Mr. Powell

WE 201 - Bearing Maintenance and Technology

Recommended for

Service, maintenance, machine repair, or plant/facility engineering staff of an industrial plant, OEM facility, institution, public utility or commercial building which uses rolling bearings and related equipment. Managers and technicians at industrial plants and OEM facilities responsible for rolling bearing performance and reliability. Rotating equipment engineers, reliability engineers, millwrights, mechanics, and maintenance supervisors. Those interested in rolling bearing and rotating equipment performance.

Course objective

The course objective is to provide information to improve the service life of rolling bearings, which improves the reliability of rotating equipment.

Prerequisites

Participants should have an understanding of industrial safety. A fundamental knowledge of and ability to use basic hand tools is required.

Course description

Bearing maintenance apprenticeship uses a combination of hands-on training, audiovisuals, lectures and discussion opportunities. Specific topics include:

Bearing Basics

- History of bearings
- Bearing life cycle
- Fundamentals of rolling bearing technology
- Bearing components, terminology
- Bearing cage, types
- Basic loads
- Lubrication
- Seal, shield
- Bearing life calculations
- Factors effecting the performance of rolling bearings
- Bearing quality, operating environment
- Installation practices
- Fits and tolerances

Mounting and dismounting

- Bearing mounting and dismounting procedures
- Careless handling, neglected maintenance and poor lubrication
- Hands-on demonstrations to correctly mount and dismount bearings

Fundamentals of lubrication

- Importance of selecting the proper lubricant for an application
- Maximize bearing life through an improved understanding of proper lubricating principles and functions

Bearing failure causes and analysis

- Identify and interpret actual bearing failures

WE 204 - Bearing Root Cause Failure Analysis

Recommended for

Service, maintenance, machine repair, or plant/facility engineering staff of an industrial plant, OEM facility, institution, public utility or commercial building which uses rolling bearings and related equipment. Managers and technicians at industrial plants and OEM facilities responsible for rolling bearing performance and reliability. Rotating equipment engineers, reliability engineers, millwrights, mechanics, and maintenance supervisors. Those interested in rolling bearing and rotating equipment performance.

Course objective

To provide inspection procedures and instructions for analyzing failed bearings (due to mounting errors, heat, vibration, etc.) and their components. Students will learn to determine the true root causes of bearing failures and its impact on service life. Furthermore key aspects of machine reliability are explored.

Course description

The Root Cause Bearing Failure Analysis course is taught to the new ISO Standard 15243. The course is complemented with audio-visuals, lectures, hands-on training, and discussion of actual failures. Workshops include failure cause studies, visual damage assessment, failure mode detection and reporting. Participants will analyze actual bearings from various applications to assess the damage and apply the ISO methodology to determine the root cause failure mechanism.

Specific topics include:

Bearing function

- Learn how bearings support loads
- Bearing types and their use

Mounting damage

- Examples of improper installation procedures

Operating environment

- Bearing reaction to moisture, contamination, and other external influences

Maintenance

- Results of poor maintenance practices

Lubrication

- Effects of marginal and excessive lubrication
- Contamination and its effect

Vibration / Impact damages

- How to identify this type of damage
- Implement corrective actions to avoid damage

Bearing failures

- Application specific – pumps, gearboxes, motors, fans, extruders, compressors etc.
- See and inspect sample bearings that have failed – identify, and interpret actual bearing failures.