

WE 203 – Practical Applications in Bearing Lubrication

Recommended for

Maintenance personnel and engineers responsible for bearing lubrication, lubricant specification and lubrication system planning and design.

Course objective

Upon completion, students will be able to evaluate and select appropriate lubricants for a wide variety of rolling element bearing applications.

Course description

This course covers real-world bearing lubrication in a dynamic, skillsbased learning approach. Upon course completion, students will have learned the skills needed to choose, apply and maintain lubricants, and lubricating procedures in bearing applications plant wide. Case histories will be used to demonstrate concepts and stimulate discussion. Students will be guided through examples, then apply the concepts to arrive at practical solutions to their own in-plant situations.

Specific topics includes:

Lubrication fundamentals

- Functions of lubrication
- Basic expressions
- Lubricant additives and their effects
- Avoiding surface damage in bearings

Grease lubrication

- Grease functions and properties
- Grease delivery and metering systems
- Selection of grease type: choosing the right grade, base, stiffness, and oil for your application
- Compute grease intervals and re-lubrication amounts for a variety of application conditions, such as contamination, high or low temperatures, and vibration

Oil lubrication

- Choosing the right lubricant: oil and grease quality standards and testing
- Effects of cleanliness and contamination
- Using the new life theory to predict the effects of contamination on bearings
- Effects of water ingress
- Effective use of filtration and choosing the right filter
- Change-out intervals
- Bearing housing design concepts
- Comparison of oil delivery methods: static, wick-feed, lifting rings, circulating oil, mist, air-oil, oil spot
- Determining oil flow rates

Applying lubricants

- Determining lubrication quantities and intervals
- Hands-on lubrication and re-lubrication procedures for pillow blocks, ball bearings, roller bearings, sealed and shielded bearings
- Electric motor re-lubrication

Common errors / troubleshooting

- Over-greasing, under-greasing, and mixing greases corrective actions

Other topics covered

- Standstill precautions, storing spare bearings, and shelf life considerations

Course length

2 days