LUBRICATION PRINCIPLES AND PRACTICE
Selection of lubricant, properties of lubricants, lubrication systems

LPP-201

Description: LPP-201 LUBRICATION PRINCIPLES AND PRACTICE

Without a doubt, incorrect lubrication practices cost industry millions of dollars in shortened equipment life and high maintenance costs. Too much, too little, to often, not often enough, wrong choice of lubrication is found more often than expected. This course shows the attendee how to select the proper lubricant (oil or grease) and which choice gives the longest life to bearings and gears. In addition you will learn how to calculate the correct amount of grease for a bearing and how often re-greasing is required. You don't need a degree in "tribology—the study of lubrication" to understand this course. Mechanics and engineers walk away with confidence on recommending the proper lubricant and correct lubrication system. Inexpensive spectrographic oil analysis and ferrographic oil analysis are discussed as well as the benefits of troubleshooting equipment wear and lubrication failure. Learn how to use a Visgage portable viscosity meter to determine if oil is beyond the usable life and needs change out.

Friction and Lubrication
- What is friction?
- Sleeve bearing lubrication
- Purpose of lubrication
- Lubrication basic principles
- Review questions

Differences in Lubrication
- Manufacturing lubricants
- Types and grades of lubricants
- Non-petroleum lubricants
- Grease and thickeners
- Product stream lubrication
- Advantage of oil over grease
- Advantage of grease over oil
- Review questions

Detergents and Additives
- Purpose of additives
- Additive types
- Review questions

Viscosity
- What is viscosity
- Comparison between low and high viscosity
- How load affects lubrication
- How speed affects lubrication
- Low speed lubrication
- Review questions

Viscosity Index
- Temperature effect on viscosity
- Behavior of high vs low viscosity oils
- Properties of mineral oil lubricants
- Measuring viscosity
- Using a portable Visgage
- Review questions

Resistance to Oxidation
- Why oil oxidizes
- Harmful deposits
- Synthetic oils
- Review questions

Lubrication Charts
- Which lubrication should I use?
- Application of lube charts
- Review questions

Greasing
- Choices in grease
- Calibrating a grease gun
- Alemite fittings
- Use of Perma devices
- Calculation of correct amount
- Calculation of proper interval
- Churning example
- Banded balls in bearings
- Review questions

Simple Lubrication
- Submerged oil system
- Wet sump lubrication
- Splash lubrication
- Ring type oiler
- Gravity of Feed lubrication
- Bottle lubrication
- Pad and wick oilers
- Review questions

Circulating Oil Systems
- System components
- Cooler and filter
- Review questions

Forced Feed Lubrication
- Pump to point lubrication
- Filter priming and pump
- Positive displacement pumps
- Meter divider block
- Check valves
- Review questions

Oil Mist Lubrication
- Oil mist advantages
- Operating principles
- Mist generators
- Oil mist application
- Review questions

CLASSROOM ACTIVITIES-

We use real equipment that will be used by our instructors to let the attendee witness the actual work involved. We also use industrial video to bring field work into the classroom. Real mechanics are shown accomplishing tasks in plant or facility loca-tions. When you leave this course you will be well grounded in lubrication practices and theory and how to service lubrication systems. Our approach is not just another showing of power point slides but rather an interactive class where attendees are called upon for answers and can ask for hands-on steps to be repeated to see it work.

DURATION, ATTENDANCE and TIMES

One day duration (8 hours) and up to 12 students may attend. Minimum of 6 students.
In order to teach the one day courses remotely, they would both need to be taught in the same week at the customer location. We would not drive that distance for a one (1) day hands-on course. All courses, would include working on hands-on devices, work books, class books, and an instructor.