Mechanical Fundamentals for Operators

This program will improve your mechanical skills and give you a better overall understanding of mechanical devices and terminology. Many organizations implement this training to reach their goals for Lean Manufacturing/Lean Maintenance. This is not a program on mechanical theory; it is practical applications that can be used immediately at your facility. You will learn how to reduce costly downtime and reduce maintenance calls through proper mechanical maintenance practices. This program will not only teach people what to look for in belt/pulley wear, but it will also teach them how to correctly select the proper belt for replacement. You will cover not only mechanical devices such as drive chain, sprocket types and selection, and mechanical drive couplers. You will also gain practical knowledge of how, when, and what to lubricate, as well as problems that exist in real world machinery and devices. Every student in this program will assemble, adjust, and learn the proper installation of several types of drive couplers, as well as chain drives, sprocket drive assembly, adjustment, and proper tensioning. Come prepared for a highly interactive experience, learn from a hands-on approach, and gain knowledge that will increase confidence and communication between operators and maintenance personnel.

Program Topics:

I. Proper Tools

- Reading Dial Indicators
- Proper Tools for the Job
- Hand Tool Safety

II. Bearings and Seals

- Terms and Classifications
- Bearing Types and Materials
- Seal Types and Materials
- Operation and Replacement
- Troubleshooting Belt Drive Failure

III. Belts

- Belt Types and Identification
- Numbering Systems
- Pulleys and Sheaves
- Pulley and Sheave Installation
- Proper Alignment and Tension

IV. Drive Couplers

- Types of Drive Couplers
- Proper Installation and Alignment

V. Lubricant

- Types and Classifications

VI. Chain Drive Systems

- Chain Types and Identification
- Numbering Systems
- Sprocket Types and Identification
- Proper Alignment and Tensioning
- Troubleshooting Chain Failure

Hands-On Labs

- Fractional Horsepower Pulley Installation and Removal
- Proper Belt Selection and Tensioning
- Multi-Grove Sheave Installation and Removal
- Matched Belt Selection and Tensioning
- Soft Foot Correction
- Identification of Proper Components
- Breaking and Sizing Chain
- Install a Single Row Chain Drive
- Installing Idler Sprockets
- Double Row Chain System Installation
- Assembly and Alignment of Couplings
- Install a Spline Coupling System
- Install a Flexible Coupling System

- Viscosity
- Compatibility
- Common Lubricant Problems