

Corporate Office

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Predictive and Preventative Maintenance

Course Description: This course introduces the students to fluid power system predictive and preventive maintenance concepts and routines that should be understood and implemented in order to minimize downtime due to wear and failures. A systematic approach will be used by looking at each of the primary components of a fluid power system.

Specifically, students will begin with reservoirs and fluid maintenance such as filtration, sampling, etc. Next, pumps and pump alignment are discussed including vibration and sound analysis. Conductor and connector discussion follows and includes leakage topics. Pressure, directional, and flow control topics will include electrical maintenance as well. Seal leakage and failure will be addressed with actuators. Overall system cleanliness will then be covered. Finally a discussion of maintaining records and the impact of concepts such as Overall Equipment Effectiveness (OEE) on quality programs such as Six-Sigma will complete the course.

Prerequisites: None

Textbook: CFC-Solar customized 3-ring binder.

Learning Objectives:

- Know the effects of heat, noise, vibration, and leaks on system performance
- Learn the difference between predictive and preventive maintenance
- Know the effect of reservoir design on system fluid
- Identify/classify different fluid types and purposes
- Review contamination
- Identify filtration types and optimum location
- Calculate target cleanliness
- Identify major causes of pump failures
- Review proper assembly practices for hoses, tubing, and pipes
- Know the effects of connectors on leakage
- Recognize when control devices are failing
- Use electronic test equipment to quantify and predict failures
- Review seals and their effect on leakage
- Develop maintenance schedules