

Maximizing Machinery Reliability...precision balancing Seminar Synopsis

Abstract

This extensive hands-on course prepares attendees to perform precision field balancing of rotating equipment. It not only teaches the concepts of unbalance and affects it has on overall machinery reliability, but focuses on the application of the theory through an Activity-Based curriculum design. Depending on facility component availability, the course can be structured to take the knowledge and skills mastered in a classroom setting and applied to field components during the session.

The course is designed to address the specific instrument attendees will use in the field, and classroom activities are designed using running training demonstrator units to ensure application of all concepts.

Seminar Duration

The duration of this seminar is 2 – 3 days depending on client preference, worker availability, and the attendees' backgrounds.

Who should attend?

This seminar is designed primarily for maintenance, engineering, technical support and management personnel whose job functions involve rotating machinery field balancing.

Highlights

In this seminar, you will gain knowledge and experience relating to:

- Machinery Reliability Concepts Overview
- Introduction to Unbalance
- Unbalance Diagnosis
- Single Plane Balancing
- Multiple Plane Balancing and Special Situations
- Working with Weights
- Balancing Tips and Precautions

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Associated Task(s)

PFB1: Given a machine with a confirmed unbalance problem, using your instrument, determine corrections needed, make balance corrections, and confirm resolution of the problem.

Seminar Objectives

Upon successful completion of the seminar, the student will be able to:

1. Explain the following maintenance philosophies, including the role each plays in an overall machinery reliability improvement process:
 - Breakdown/Corrective
 - Preventive Maintenance (PM)
 - Condition-based / Predictive Maintenance (PdM)
 - Precision Maintenance
2. Explain common symptoms and causes of machinery unbalance.
3. Explain the adverse effects of unbalance on machinery vibration, bearing life, and energy consumption.
4. Using proper terminology, explain the common types of unbalance that are found on industrial machinery and how these types of unbalance are quantified.
5. Explain and demonstrate how to construct and utilize vector diagrams to determine corrections for unbalance problems.
6. Explain and demonstrate how to perform each of the following major steps of a balancing task:
 - A. Planning and Pre-balancing
 - B. Equipment Setup
 - C. Balance Program Operation