

REVERSE AND LASER ALIGNMENT (REF:OTSRLA001)

Course Objectives

- Understand the concepts of alignment and misalignment and of ensuring that misalignment is eliminated when ever possible.
- To have a full comprehension of the consequences of misalignment and be able to describe them.
- To ensure that they recognize and are able to describe the types of misalignment which can occur.
- To be able to describe and carry out pre-alignment procedure checks.
- To be able to carry out the graphical reverse alignment procedure and attain an alignment of +/- 0.002 T.I.R.
- To be able to describe the concept of desired alignment and be able to plot graphs in order to carry out the procedure.
- To be able to describe the concept of hot alignment and be able to plot graphs in order to carry out the procedure.
- To be able to use the Pruftechnik Optalign laser alignment equipment to carry out alignment of a pump and motor

Course Description

This course will provide practical training on the main alignment techniques including Reverse Alignment and Laser Alignment. Students will be given opportunity to practice these alignment techniques on our training rigs and will use a Pruftechnik Laser Alignment system as part of the training process.

Who should attend

The course is targeted at technicians involved in the operation and maintenance of all plant rotating machinery. The primary function is to provide them with the knowledge and practical training to carry out reverse graphic alignment without error. The course is an essential preliminary step before embarking upon laser alignment techniques.

Pre-Requisites

All Attendees should have a sound power generation and mechanical background.

Course Outcome

At the end of this course you will be able to align shafts of turbines.

Course Outline 5 days

Day 1 Introduction to alignment

Types of coupling
Rigid Couplings
Material Flexing Couplings
Consequences of Misalignment
Principles of shaft alignment
Parallel Misalignment
Angular Misalignment
Belt and pulley alignment
Methods of correcting shaft alignment
Methods of alignment
Straight edge and feeler gauge method.
Rim and Face method.
Reverse indicator method.
Laser Alignment
Pre alignment checks
Sag
Soft foot
Run out
Mechanical looseness
Motor magnetic centre
Piping strain
Rim and face alignment

Day 2 Methods of alignment

Graphical reverse alignment
Carry out practical alignment of pump and motor
Desired alignment
Graphical hot alignment



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Day 3 Methods of alignment

Laser alignment
Practical use of optalign laser alignment kit

Day 4 Methods of alignment

Practical use of optalign laser alignment kit

Day 5 Methods of alignment

Laser alignment
Practical use of optalign laser alignment kit

Review and assessment

Course Outline 3 days

Day 1 Introduction to alignment

Types of coupling
Consequences of Misalignment
Principles of shaft alignment
Methods of correcting shaft alignment
Methods of alignment
Pre alignment checks
Rim and face alignment

Day 2 Methods of alignment

Graphical reverse alignment
Carry out practical alignment of pump and motor
Desired alignment
Graphical hot alignment

Day 3 Methods of alignment

Laser alignment
Practical use of optalign laser alignment kit

Review and assessment

