Connectors and Shaft Positioning

Setting up, Examining, and Managing

Introduction

An overview of coupling designs and applications for transferring torque and rotation from the driving shaft to the rotating machine—a pump, compressor, or turbine—will be given during this training session on Connectors and Shaft Positioning. The importance of proper coupling installation, maintenance, and failure analysis will be highlighted throughout the training session. The subjects are especially created for technicians and engineers who haven't worked with couplings much and need to brush up on their technical understanding of different operating loads and coupling characteristics. The training course will concentrate on failure avoidance, root cause analysis, and problem detection.

One technical ability that falls under this category is shaft positioning. If successful outcomes with pumps, compressors, or turbines are to be expected, measurement tools and the expertise and experience of the technician are required. In order to address misalignment issues with rotating machinery, this training course will give participants essential training knowledge and expertise in shaft alignment. The main focus will be on how to diagnose, pinpoint, and fix the underlying causes of misalignment, unbalance, and vibration for enhanced machine performance and seamless operation.

Throughout this training course, a variety of real-world practical challenges and case studies from the current engineering practice will be discussed and solved through many workshops.

This training session on Course N Carry Connectors & Shaft Positioning will emphasise:

- The significance of carefully choosing pairings
- Installation guidelines for couplings: mounting and dismounting
- Typical coupling issues and possible pitfalls
- Shaft alignment's effects
- The best approaches and procedures for measuring shaft alignment
- Misalignment's effects on pump and compressor performance

Objectives

After completing this training session on connectors and shaft positioning, you will understand:

- Recommendations for installing couplings correctly
- Resolving typical coupling issues and preventing failures
- Monitoring vibration in relation to machinery performance and coupling health
- Techniques and procedures for effectively aligning spinning machinery
- Using both contemporary laser optic technology and the traditional reverse dial methods

Training Methodology

All participants in this Connectors & Shaft Positioning training course will actively participate in discussions and cooperative problem-solving as a result of the workshop principles, formal lectures, and interactive examples. During multiple workshops, real-world cases will be chosen and solved through teamwork, allowing for a better understanding of the problems' physical nature and demonstrating the effective use of evaluation tools. There will be lots of chances to engage in candid, active dialogue and exchange professional insights on a range of industrial applications. All instructional materials will be supplied.

Organizational impacts

After completing this training programme, the delegate will be qualified to evaluate how rotating machines and related equipment installed inside the company operate and, if necessary, provide recommendations for possible changes.

This training session on Connectors and Shaft Positioning will impart the following knowledge:

- Permit the delegate to operate the rotating machine as efficiently as possible.
- Give the delegate the assurance to evaluate the machine's operating efficiency.
- Permit actions to enhance machine performance for the specified use.
- Provide superior care for machine condition monitoring, upkeep, and troubleshooting.

Personal Imapct

- Increased self-assurance when resolving issues with rotating machinery
- A deeper understanding of how plant efficiency is impacted by a spinning machine operating well
- An improved understanding of how to operate equipment and use instrumentation to prevent failures
- Enhanced aptitude for machine operation analysis on a personal level
- Improved capacity to solve challenging and complex problems

Who should attend?

- Experts who handle the upkeep and operation of rotating machinery
- Novice technicians want to expand their expertise
- Individuals engaged in vibration analysis and condition monitoring
- The maintenance personnel are responsible for fixing any issues with the machinery.
- The maintenance planners and engineers that oversee the condition of the machines

Course Outline

Day 1

Types, Applications, and Functions of Couplings

- Categorization and Utilisation of Connections
- Qualities of Stiff Couplings
- Qualities of Flexible Connections
- Choosing Coupling Parameters for Pumps, Compressors, and Turbines
- Benefits and Drawbacks of Various Types

Day 2

Installation, Upkeep, and Troubleshooting of Couplings

- Best Practices for Installation & Safety Concerns
- Linking Inspection with Function
- Monitoring and Analysis of Vibrations
- Condition monitoring and preventive maintenance
- Prevention of Failures and Troubleshooting

Day 3

Basics of Shaft Positioning

- Shaft Alignment Requirement
- Shaft Misalignment's Effects
- Misalignment Types: Angularity and Offset
- Methods of Measuring
- Method for Rim and Face Alignment: TIR Calculation

Day 4

Techniques for Alignment Measurement

- Methodology of Reverse Dial
- Restoring Alignment: Soft Foot and Foundation
- Determination of Thermal Growth
- Technique using Laser Optics
- Vibration Monitoring Shows Misalignment

Day 5

Misalignment's Effect on Seals and Bearings

- Impact of Bearing Misalignment
- Results of Vibration Monitoring as a Sign of Misalignment
- Misalignment's Effect on Pump and Compressor Seals
- Control and Prevention of Leaks
- Synopsis and Conclusions

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