KOENIG
step forward

KOENIG SOLUTIONS · COURSE OUTLINE

Shaft Alignment: Couplings, Reverse Dial & Laser

Learn to select, install and maintain couplings, and to align shafts using rim and face, reverse dial and laser methods.

5 Days	5	25
DURATION	MODULES	TOPICS

COURSE OVERVIEW

This course covers the classification, selection and operation of rigid and flexible couplings for pumps, compressors and turbines, followed by their installation, inspection, vibration monitoring and troubleshooting. It then addresses the fundamentals of shaft alignment, including the effects and types of misalignment and the rim and face measurement method. Reverse dial and laser optic alignment techniques are examined alongside correction of foundation and soft foot issues and thermal growth determination. The course concludes with the effects of misalignment on bearings and seals, and approaches to leakage control and prevention.

WHO THIS COURSE IS FOR

- **Maintenance Engineers**
- **Reliability Engineers**
- **Rotating Equipment Technicians**
- **Vibration Analysts**
- **Mechanical Technicians**

LEARNING OBJECTIVES

- Classify rigid and flexible couplings by type and application
- Select coupling parameters for pumps, compressors and turbines
- Apply installation best practices and coupling safety procedures
- Interpret vibration monitoring results to detect misalignment
- Identify types of shaft misalignment such as offset and angularity
- Apply the rim and face alignment method to determine TIR
- Apply reverse dial and laser optic alignment techniques
- Assess the effect of misalignment on bearings and seals

COURSE SYLLABUS

5 Modules, 25 Topics

DAY 1

01

Couplings: Types, Application & Operation

TOPICS

- Classification & Application of Couplings
- Characteristics of Rigid Couplings
- Characteristics of Flexible Couplings
- Selection of Parameters of Couplings for Pumps & Compressors and Turbines
- Advantages & Disadvantages of Different Types

DAY 2

02

Couplings: Installation, Maintenance & Troubleshooting

TOPICS

Installation Best Practices & Safety Issues · Coupling Inspection in Operation · Vibration Monitoring and Analysis · Preventive Maintenance & Condition Monitoring · Failure Prevention & Troubleshooting

DAY 3

03

Shaft Alignment Basics

TOPICS

- Need for Shaft Alignment
- Effects of Shaft Misalignment
- **Types of Misalignment:** Offset and Angularity
- Measuring Techniques
- **Rim and Face Alignment Method:** TIR Determination

DAY 4

04

Alignment Measurement Methods

TOPICS

- Reverse Dial Methodology
- **Correcting Misalignment:** Foundation and Soft Foot
- Thermal Growth Determination
- Laser Optic Technique
- Misalignment Detected by Vibration Monitoring

DAY 5

05

Effect of Misalignment on Bearings & Seals

TOPICS

- Effect of Misalignment of Bearings
- Vibration Monitoring Results as Indication of Misalignment
- Effect of Misalignment on Seals of Pumps and Compressors
- Leakage Control & Prevention
- Summary and Conclusions

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

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