SERBA DINAMIK SDN. BHD.(266724-K)
(A member of SERBA DINAMIK Group)

Practical Approach To Precision Alignment Methods

Introduction

Misalignment is one of the leading causes of damage to bearings, seals, coupling and other component inside the rotating equipment. Based on record given by rotating equipment experts, a substantial amount of machinery problems are due to misaligned shaft. Machinery that is forced to shutdown due to this problem can contribute to loss of extensive revenue and damages that required repair or replacement of internal parts which is extremely expensive. A well-aligned shaft prevent excessive loading of bearings and avoid fatigue failure. Thus increasing the useful life of machinery.

Objectives

1. To provide participants with practical knowledge of accurately align any type of rotating machines in a variety of different ways.
2. To pose a step-to-step procedure in executing the alignment.
3. To familiarise and educate participants in using different alignment methods namely Conventional Methods (Rim & Face Method, Reverse Dial Indicator Methods) and Precision Laser Alignment Method.
4. To assess the experienced craftsmen on their capability and exposure of the latest technology available
5. The ultimate aim shall be that the participants are able to practically and confidently carry out the alignment task in the fields

Who Should Attend

√ Engineers
√ Supervisors
√ Inspectors

Cancellation & Transfer

If you are unable to attend, a substitute participant is welcome to attend in your place at no additional charge. A full refund, less 10% administrative charge, will be given if cancellation is received in writing at least 14 working days prior to the course. A 50% refund and documentation will be given if cancellation is received less than 7 days prior to the course.

Venue

SDSB Training Room / Hotel

Course Instructors

Lead Instructor
Dato' Dr. Ir. Mohd Abdul Karim Abdullah

The Managing Consultant of Serba Dinamik Sdn. Bhd. (SDSB) who has acquired more than 23 years of hands-on experience in managing, supervising, lecturing and carrying out various tasks related to turbomachinery maintenance nation-wide and internationally. Among other experience but not least is as follows: -

- Conducting public and in-house training course covering topics on precision alignment and balancing, maintenance & inspection of steam turbines, compressors and pumps, predictive / preventive maintenance and turbomachinery protection system.
- Involved in field management and supervision for overhauling of steam turbines, gas turbines, reciprocating & centrifugal compressors and pumps of various made / brand.
- Executing project control function in the job planning and work scheduling to maintain the planned work and production schedule. Analyse schedule impacts resulting from design alternatives, field change and site condition encountered and revising the project schedule when necessary to incorporate any changes.
- Planning, recruiting and managing human resources for various plant shutdown & maintenance representing company management and other construction & fabrication projects.
- Miscellaneous experience on construction & fabrication for various projects under the company involving civil activities & mechanical such as checking fabrication drawings, erection drawings, interprets engineering drawings for tender proposal, recheck piping spool isometric drawings for dimensional accuracy and conformity with plans, elevations and specification.
- Involved actively and executively as a CEO of Serba Dinamik Group.
- Profesional engineer contribution
  -Mentor for the IEM Training Scheme (Mechanical discipline)
  -Personal campaign for recruitment of more graduate engineer into being active member of IEM

Asst. Instructor :
En. Mokhtar Mohd. Tahir

The Reliability Manager with Serba Dinamik Sdn. Bhd. who has 20 years of experience in the oil and gas industry including constructions, commissioning, troubleshooting and maintenance. Comprehensive knowledge of static and rotating equipment with particular expertise in condition monitoring, vibration analysis, troubleshooting and overhaul for rotating equipment

•Actively perform maintenance and repair of rotating equipment during planned and unplanned shutdown, and assist instrumentation calibrate and setting vibration probe during turnaround

•Lead troubleshooting activities on turbomachineries nationwide in Malaysia inclusive of rectification machine problem such as in situ balancing

•Collection of condition maintenance data and analysis work on it thereafter

Kindly send your registration form and cheque or bank draft, payable to:-
Serba Dinamik Sdn. Bhd.
7-5, Pusat Dagangan UMNO Shah Alam, Lot 8, Persiaran Damai, Seksyen 11, 40100 Shah Alam, Selangor.

Registration is on receipt of payment.
Kindly ensure early booking for the limited seats to avoid any inconvenience

Content

Day 1

- **Understanding Misalignment**
  - Definition
    - >Reliability centered maintenance
    - >Categories of misalignment/preloads
    - >Preload classification
    - >Preload detection
    - >Misalignment causes
    - >Misalignment vibration
    - >Misalignment vibration at 2x rpm of rotor
    - >Special consideration for harmonics at 2x 3x and 4x rpm
    - >Evaluation harmonics for complete analysis to determine vibration source
    - >Most usual for misalignment errors

- **Practical Approach to Precision Alignment Check & Corrective Methods**
  - Overview of different methods : Pros & Cons
    - >Pre-alignment checks
      - Definition
      - Basic checking & correcting soft foot

Day 2

- **Practical Approach to Precision Alignment Check & Corrective Methods.**
  - Machinery soft foot : Measurement, analysis & correction.
    - >Rim & Face Method
    - >Procedure
    - >Setting up the graph
    - >The 'T' bar overlay
    - >Motor & pump example in the side view
    - >Other Rim & Face graphing examples
  - Reverse Dial Indicator Method
    - >The procedure for Reverse Indicator Method
    - >Shim thickness calculation (vertical alignment)
    - >Shim thickness calculation (horizontal alignment)
    - >Reverse Indicator alignment (vertical plane) with thermal growth on one machine (sight machine)

- **Practical Exercises on Alignment Kits/Training Kits.**

Day 3

- **Application of Laser Alignment System**
  - General : Light as a measurement tool
  - The Optalign System
  - Preparation for Alignment
  - Alignment Using Optalign System
  - Coupling Function
  - Optalign Application
  - Expansion of Optalign System

- **Alignment Consideration for Specific Types of Machines & Conditions**
  - Types of couplings : Flexible & Rigid
    - >Misalignment tolerances between respective types
    - >Specification & installation procedure and effect on alignment condition
  - Aligning machines with long coupling spool
    - >Using Modelling the Shaft to Coupling Spool Method
    - >Using Laser Alignment Method
    - >Using Modelling the Face-Face Method
  - Aligning Vertical Machines
    - >Using Laser Alignment Method
      - Flow chart
      - Procedures
      - Option : Non - symmetrical flange type
  - Using Conventional Method
    - >Rim & Face
    - >Reverse Dial Indicator

Registration Form

Course Fee : RM2,200.00

☐ Yes! Please register the following participants for course **"Practical Approach To Precision Alignment Methods"**

☐ I am unable to attend but please put me on your mailing list

No.	Name (Dr/Mr/Mrs/Ms)	Designation

Approving Manager/Contact Person:

Designation:

Company Stamp: