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

Inspection & Maintenance of Pumps Course

Introduction

This course is a part of a 6-module package on "Integrated Machinery Diagnosis, Inspection & Maintenance Course (Inclusive of On-Job-Training)" which is tailored to include the following features:

- Theory sessions through dynamic and highly impact lectures by qualified and experienced instructors with years of hands-on and real life experience;
- Video-audio aides on selected topics;
- Hands-on practical exercises on training kits on relevant topics to reinforce theoretical understanding;
- Presentation of real case problems and solutions on related topics, a share of valuable experience for reference; and
- Real plant exposure through On-Job-Training (Module 5 & 6) with participants attached directly with Serba Dinamik's field service team in carrying out actual field diagnostic and maintenance activities.

In this course, participants will be exposed to real industrial practices in areas of pumps monitoring and diagnosis system, the technology used to identify problems and solutions to it. Upon knowing this vital information, the next focus will be into understanding practical pumps fundamentals, the functions of critical pumps parts, overhaul and inspection procedures based on internationally accepted practice and standard

Objectives

1. To provide a strong fundamental and practical knowledge of pumps to participants
2. To create a new generation of rotating equipment craftsmen with knowledge in the latest state of art technology, skills and experience in solving pumps problems both maintenance and inspection
3. To provide participants with sufficient information to be a competent turbomachinery specialist/craftsmen

Who Should Attend

√ Engineers
√ Supervisors
√ Personnel involved in machinery maintenance or inspection

Course Methodology

1. The entire course shall focus on the subjects that are relevant and important
2. Practical exercise shall be provided to reinforce the theoretical understanding through written questionnaires
3. Case studies

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 25 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 :
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.

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

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

- **Basic Pumping Concepts**
- **Understanding definition :**
  - Force
  - Work
  - Power
  - Horsepower
- Energy
- Velocity & Acceleration
- Static suction life
- Pressure losses
- Available NPSH
- Required NPSH
- Checking pump capacity
- Pumping hot water
- Computing pump power requirement
- Effects of operational factors
- Priming a pump

- **Understanding the operation of Pumps**
  - Pump Development & Applications
  - Basic pump hydraulics
  - End-suction centrifugal pump
  - Rotary pump
  - Reciprocating pump
  - Metering pump

- **Troubleshooting of typical pump problem**
  - Cavitation
  - Unbalance
  - Misalignmen

- **Techniques used**
  - Vibration analysis
  - Oil analysis
  - Thermography

Day 2

- **Pumps Inspection & Maintenance**
- **Overhauling of centrifugal pumps**
  - Preparation
  - Work areas & rigging
  - Moving a pump
  - Disassembling a pump
  - Inspecting pump parts
  - Checking clearances
  - Reassembling a pump
  - Reinstalling a pump

- **Packing & Seals**
  - Pump seal requirement
  - Stuffing boxes
  - Types of stuffing boxes
  - Packing materials
  - Installing packing
  - Mechanical seal

- **Exercises & demonstration**

Day 3

- **Mechanical Seal**
- **Types of mechanical seal**
  - Rotating or stationary
  - Balanced or unbalanced
  - Horizontally or vertically monitored
  - Design feature
  - Arrangement : Double back to back, double face to face & tandem seals.
  - Double face to face & tandem seals.
  - Cartridge mechanical seal

- **Failure in mechanical seals**
  - >Running faces
  - >Non-wearing parts
  - >Elastomer
  - >Rotary face
  - >Pitting
  - >Chemical attack
  - >Stationary face
  - >Spring failure
  - >Sleeve wear
- Sealing hot water & pressure
- Installing & replacing bearings
- Exercises & Demonstration

Registration Form

☐ Yes! Please register the following participants for course
"Inspection & Maintenance of Pumps Course"

☐ 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: