



3 Day`s Workshop on
Industrial Rotating Machineries in Plant: Operation, Maintenance, CBM,
Performance and Efficiency Improvement
Pumps, Air Compressors, Bearings, Seals, Separator`s and Lubrication.
(25-27 (Thu-Sat) Oct 2018 at Goa)

Workshop Objective and Description:

The objective of this workshop is to provide the participants with latest operation & maintenance strategy for Pump, Compressor & Plant machinery. Maintenance time can be reduced by adopting new techniques and methods including some Predictive maintenance techniques and condition monitoring tools. Knowing in and out will do help in understanding and predicting faults. It will also help in planning O&M activities.

Learning Outcomes:

Identification of the condition of the Pump, Compressor & Plant machinery (plant equipment), Reduction of breakdown time, predictive maintenance implementation, extending the life of the equipment`s, improving the whole plant efficiency.

Who Should Attend? Practicing engineers of all levels, GETs & DETs with Electrical, Electronics, Instrumentation, Mechanical, Production background.

COURSE CONTENT: This intensive workshop will use Interaction with various industrial experts, Instruction, quizzes, case studies and discussions to impart useful and usable knowledge to the participating delegates on:

1. The different types of pumps, compressors and associated equipment, such as bearings, seals, filters, separators, etc.
2. The principles of start-up and operation of these machines and their optimal maintenance, diagnostics and troubleshooting techniques.
3. The efficient and trouble-free operation of pumps, compressors will be discussed in depth along with their ability to control the main operational parameters.



4. The approach to maintenance that emphasizes physical principles and clear technical reasoning.
5. **The best practices for maintenance and repair of rotating equipment.**
6. The measurement and control of performance of these machines.
7. The inspection and diagnosing the root cause of problems including condition monitoring. **CBM Techniques.**
8. The troubleshooting techniques for operational problems of pumps, compressors.

Module 1: Pumps - Operation and Maintenance:

- ❖ Pumps - Principles And Characteristics, Details and Materials
- ❖ Selection of Pumps, Routine Maintenance of centrifugal Pumps
- ❖ Pumps - Operation , Maintenance and Trouble Shooting
- ❖ Energy Saving in Centrifugal Pumps
- ❖ Pump shaft Couplings – Types and Method of Alignment

Module 2: Type of Lubricants & Selection of Lubricant

- ❖ Handling, Storage and Application of lubricants
- ❖ Bearing Lubrication & Method of Applying Lubricants.

Module 3: Bearings- Types, Selection & its fitting and Failure Analysis Antifriction Bearings Types, Care in Bearings fitting and dismounting, Bearing Failure Analysis

Module 4: Gears & Gear Boxes; Type of Gears; Gear Teeth Construction Details & Failure

Module 5: Air compressors & Blowers –Operation and Maintenance

- ❖ Selection and Application of Air Compressors; Reciprocating Air Compressor Screw Compressors; Centrifugal Air Compressor; Overview of API 610 and API 674

Module 6: Air Compressors

- ❖ Maintenance of Air Compressors; Compressed Air System and Compressor Efficiency; Air Dryers; Energy Conservation and How to save energy?
- ❖ Review and Feedback; Final Quiz, Assessment, Feedback,

Prerequisite: Basic knowledge of Mechanical Engineering and experience in maintenance will be helpful.



Delivery Methodology:

- Introduction and Objective Setting
 - Pre and Post Test,
 - Knowledge Presentations,
 - Assignments & Exercise,
 - Case Study & Learning through Animations.
 - Feedback and Assessment
 - Discussion and Interaction.
 - Delivery 9:30 AM to 17:00 PM including lunch/Tea breaks.
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Registration Details:

Dates of the program: 25-27 (Thu-Sat) Oct 2018 at Goa (3 Days).

Participation fees: INR 30000 per delegate (Excluding GST@18%; Training program includes training material hard copies, Tea, Lunch & snack)

Payment: ECS/NEFT/DD in favor of "Centre for Industrial Solutions and Advanced Training" Payable at Nagpur, Maharashtra, India. Account No: 0509102000003353
Bank: IDBI, Wardha- 442001, MS, India; IFSC Code: IBKL0000509; MICR Code 442259001. (GST Code: 27ABBPW5589J1ZV; SAC Code 99-9293; State Code 27)

Venue: Goa (To be informed 7 Days before)

For Registration please do contact to,

We prefer on line Registration through our web www.cisat.co.in.

1. Vikas +91-8669546332; 7709012815; vikas@cisat.co.in; cisat.nagpur@gmail.com;
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Contact for any In-house Training Program at your plant or location.

Centre For Industrial Solution and Advanced Training

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Contact: +91- 7709012815; 8669546332



1. Expert Profile Mr. H Singh (Mechanical Engg).

Qualification: B.Sc.(Mech)Engg, MBA [XLRI],Jamshedpur, F I E.(Fellow of Institute of Engineers).

Experience: 36+ Yrs Industrial Experience.

Association:

Ex-Asst. Divisional Manager -**Tata Steel Works**, Jamshedpur.

Ex-Head of Engg. & GM (Tech) **ISMT Ltd.**, Pune

GM & Ex-Head of Engg. **Ispat Industries Ltd.**,Nagpur. Now, Jindal Steel Works.

He is now Principal **Technical Consultant and Industrial Trainer** providing Plant Productivity Improvement & Skill Up gradation Services.

He is an experienced Technocrat with Post Graduate Diploma in Mechanical, Electrical Engineering & Metallurgy and MBA (XLRI).

With rare combination of experience in varied areas & successful implementation of significant improvements In different plants, now offers services in Plant maintenance Engineering, Productivity improvement, Employee Skill upgradation training .

He has worked as head of Engineering, GM (Tech) & MR for QMS in ISMT Ltd. [Indian Seamless Alloys & Steels], Pune for 7 years. Earlier he worked as GM (Engg) for 5 years in Nippon Denro Ispat, Nagpur (now, Jindal Steel Works) & as Asstt. HOD for over two decades in Tata Steel plant, Jamshedpur.

A Fellow Member of Institute of Engineers & Senior Associate member of Maratha Chamber Of Commerce, Industries and Agriculture, Pune.

Overseas assignments also executed and attended International Plant Engineering Seminar workshop.

He is delivering Various Training programs on

- **World class Maintenance Management Techniques**
- **Predictive and preventive maintenance techniques**
- **Hydraulics and Pneumatics**
- **Pumps and Compressor etc..**
- **Cost Reduction Techniques**

Now, Training and Service Provider for Plant Productivity as Principal Technical Consultant and Industrial Trainer in Engineering. to many Reputed Manufacturing Plants

He also offers Service Support in:

- **Total Plant Productivity & Workplace Maintenance Engineering Solutions for World class Performance.**



- Implementaion of TPM, 5 S, Kaizen, TQM , Quality Circles & OEE., Work Culture & Skill Upgradation Training

2. Expert Profile Mr A S Dhawad Mechanical Engineering- Turbine

Professional Experience: 38+ Years

Work experience: O&M, Consultant, Design & reverse Engineering. Power Plant.

Specialization :

- ❖ Specialization in maintenance field particularly turbine boiler, ash handling plant and its auxiliary system.
- ❖ Developed various indigenous spare parts required for turbine as an import substitute items by reverse engineering.
- ❖ Carried out number of annual and capital overhauls and its associate systems **departmentally.**
- ❖ Special purpose machines for T-slot insitu machining for HP and IP casing, deepening of steam heating grooves were carried out under my guidance and supervision that saved Rs. 174 lacs in the year 1991-92.
- ❖ Balancing, reblading and machining of HP & IP rotors.
- ❖ Repair of Shrouds plates.
- ❖ Retrofitting of new version LP rotor under R&M scheme.

Technical Responsibilities :

- ❖ Planning, scheduling, project management, supervising and executing the jobs for task completion.
- ❖ Maintenance, operation, boiler and TG set overhauling (annual and capital overhaul), repair, testing, commissioning of unit in the field of turbine, generator, boiler, valves, governing system, cooling towers, ash handling plant, coal procurement department, water treatment plant, sewage treatment plant, hydrogen generating plant.