CENTRIFUGAL PUMPS

Basic Concepts of Operation, Maintenance & Troubleshooting

Who should attend:

Anyone involved with the use, management, or maintenance of pumping systems will find beneficial elements in the course. The course is applicable to engineers who need to understand the pump as part of a system rather than a single component. Engineers and Technicians from consultants, contractors, pump suppliers, plant/facilities managers. Those who complete the course would be able to understand the technical aspects of centrifugal pumps understand the engineering principles involved in designing pumps and operating & maintaining pumping installations

Course Objectives:

To review the relevant fluid dynamic principles, the technical vocabulary, calculate total head and select a centrifugal pump for a typical industrial pump system. The participants will leave with an understanding of the technical information required to order and install a pump. They will also be able to diagnose and solve pumping problems. This course provides a bridge between the theory learned in college or university and the real world. The course promotes a dynamic exchange of ideas and makes a complex subject matter easy to understand by using many examples and brief exposes. The solutions to many problems with pump systems will be discussed.

Course Outline:

- Working mechanism of a centrifugal pump
- General components of centrifugal pumps
- Rules of thumb for pumps
- Pump internal suction system
- Definition of important terms: Capacity, Head, NPSH, Capacity, Power and efficiency, Specific speed, The affinity laws
- Understanding centrifugal pump performance curves
- How to select a centrifugal pump
- Pump installation
- Concept of cavitations
- General symptoms of cavitations and its affects on pump performance and pump parts
- Cavitation damage on impellers
- Two basic requirements for trouble-free operation of centrifugal pumps:
  - *PREVENT CAVITATION:* Cavitation of the pump should not occur throughout its operating capacity range.
  - *MINIMIZE LOW FLOW OPERATION*
- Corrosion and materials of constructions
- Sealing
- Troubleshoot pumps using pump curves and gauge readings
- Diagnostic chart for centrifugal pump troubles
- Controlling centrifugal pumps
- Symptoms and cause of hydraulic and mechanical failure
- General pump FAQs

For any further information please contact us at:

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