

PRACTICAL PUMP & VALVE TECHNOLOGY



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TRAINING TITLE

PRACTICAL PUMP & VALVE TECHNOLOGY

VENUE

Dubai, UAE

DURATION

5 Days

DATES

26 - 30 December 2021

PRICE

US\$4,000 per attendee including training material/handouts, morning/afternoon coffee breaks and Lunch buffet.

TRAINING INTRODUCTION

The course will cover topics concerning different types of industrial valves, the control valves and the safety relief valves. Hydraulic pumps, the dynamic and the positive displacement types will be addressed in this course. The sealing and flushing systems plus bearing and lubrication loops are also covered.

The selection and troubleshoot of such systems will also be addressed in detail. Delegates will learn how different system operate, their limit of performance and the best operating condition with least troubles and least failure.

TRAINING OBJECTIVES

The participant will gain deeper understanding of the control valves and safety relief valves used in different industrial applications. The delegates will learn more about different types of hydraulic as well as dynamic pumps, their performance, operation, control and troubles shooting. The delegate will be able to select the appropriate type of valves and pumps for the application.

TRAINING AUDIENCE

Heads of Maintenance and Operation, Mechanical and Chemical Engineers, Equipment Specialists, Technical Engineers, Operation Engineers, Planning Engineers, Engineers involved with control and safety valves and pumps of different types.

TRAINING OUTLINE

Chapter 1

Control Valves

Valves Performance

Tightness Criterion

Flow Characteristics

Dead time

Time Constant

Valves Design

Linear Type

Rotary Type

Valves actuators

Hydraulic actuators

Pneumatic actuators

Valves Positioners

Chapter 2

Safety and Relief Valves

Valves Design

Spring-loaded pressure relief valves

Balanced Relief Valves

Pilot Operated PRV

Valves characteristics

Design pressure

Superimposed back pressure (degree of fluctuation)

Built-up back pressure during operation

Valve Installation

Valves Sizing and Selection

Calculation of Relieving Area

Constant backpressure

Variable Backpressure

Capacity Requirement for External Fire

Valve Sizing Simplified Method

Chapter 3

Valves Troubleshooting

Common-Valve Problems

Cavitation

Flashing

Choked Flow

High Velocities

Water-Hammer

High Noise Level

Fugitive Emission

Installation Faults

Inlet and outlet pipe size

Backpressure effects

Piping supports

Reaction forces

Parallel and series RV installation

Chapter 4

Hydraulic Pumps

Types and Designs

Gear Pumps

Vanes Pumps

Swash piston pumps

Performance Curves

Operation

Cavitation

Foam and bubbles

Overheating

Capacity Control

Chapter 5

Dynamic Pumps

Centrifugal Pumps

Axial Flow pumps

Performance

Operation

Capacity Control

Multistage Pumps

Balancing Systems

Cavitation Problem

NPSH required
Suction Energy
Sealing Systems
Mechanical seals
Flushing Systems
Bearings and Lubrication
Troubleshooting

TRAINING CERTIFICATE

MAESTRO CONSULTANTS Certificate of Completion for delegates who attend and complete the training course

METHODOLOGY

Our courses are highly interactive, typically taking a case study approach that we have found to be an effective method of fostering discussions and transferring knowledge. Participants will learn by active participation during the program through the use of individual exercises, questionnaires, team exercises, training videos and discussions of “real life” issues in their organizations. The material has been designed to enable delegates to apply all of the material with immediate effect back in the workplace.