

Training Title

PUMP & VALVE TECHNOLOGY

Training Duration

5 days

Training Venue & Dates

REF ME054	Pumps & Valve Technology	5	15 – 19 March, 2021	\$ 6,250	Amsterdam, Netherlands
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In any of the 5 star hotels. The exact venue will be intimated on finalizing.

Training Fees

- 6,250 US\$ per participant includes Training Materials/Handouts, Tea/Coffee breaks, Refreshments and International Buffet Lunch.

Training Certificate

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

TRAINING DESCRIPTION

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 trouble shooting. The delegate will be able to select the appropriate type of valves and pumps for the application.

WHO SHOULD ATTEND

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 METHODOLOGY

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A highly interactive combination of lecture and discussion sessions will be managed to maximize the amount and quality of information, knowledge and experience transfer. The sessions will start by raising the most relevant questions, and motivate everybody finding the right answers. The attendants will also be encouraged to raise more of their own questions and to share developing the right answers using their own analysis and experience

All attendees receive a course manual as a reference.

- 30% Lectures
- 30% Workshops & Work Presentations
- 20% Case Studies & Practical Exercises
- 20% Videos & General Discussions

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

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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

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Capacity Control
Multistage Pumps
Balancing Systems
Cavitation Problem
NPSH required
Suction Energy
Sealing Systems
Mechanical seals
Flushing Systems
Bearings and Lubrication
Troubleshooting

Note:

Pre & Post Tests will be conducted

Case Studies, Group Exercises, Group Discussions, Last Day Review & Assessments will be carried out.

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