

FIELDVUE Technical/Practical



Overview

Participants on this course will be provided with training on the installation, calibration and commissioning of DVC's using Handheld Communicator and ValveLink software. Valve diagnostic analysis and fault diagnosis. All activities involve a practical "hands-on" approach.

Pre-Requisite

Industrial trade and/or engineering background.



Learning Outcomes

At the conclusion of this course, participants will have knowledge of

- ◆ Positioner basics: construction, principle of operation and familiarisation of components;
- ◆ Installation, commissioning, using 475 field communicator;
- ◆ Installation using AMS ValveLink set-up Wizard: via HART/Foundation FieldBus;
- ◆ Detailed configuration and set-up of alerts/alarms;
- ◆ Valve performance diagnostics; valve signatures, stroking: full and partial (SIS);
- ◆ DVC maintenance / fault finding process; and
- ◆ Tag management: data save and reporting/printing.

Control Valve Technical/Practical

Overview

Participants will gain knowledge regarding all relevant aspects control valves and their construction, I/P transducers and positioners; their construction, operation and repair. This course also incorporates a practical "hands on" exercise.

Pre-Requisite

Trade certificate preferred.

Learning Outcomes

At the conclusion of this course, participants should be able to or have knowledge of:

- ◆ Understand what happens inside a control valve from basic fluid mechanics point of view
- ◆ Appreciate the difference between cavitation and flashing and know what is choked flow
- ◆ Aware of all the different types of control valves commonly in use and their applications
- ◆ Obtain a basic understanding on how to select materials for bodies, trims, packing boxes and gaskets
- ◆ Understand the failure modes for control valves and demonstrate new approaches to troubleshooting.
- ◆ Awareness of diagnostic equipment

- ◆ Control Valve assembly, including the process of lapping, seat leak and hydrostatic testing
- ◆ Actuator Bench Set comprehension, adjustment and maintenance
- ◆ Valve I/P transducers/positioner function, operation, calibration and maintenance
- ◆ Pneumatic accessories that are available to allow the control valve to operate



Control Valve Engineering

Overview

Participants will gain knowledge regarding all aspects on control valves and related equipment ie:construction; operation. This course also involves comprehension of valve sizing exercises.

Pre-Requisite

Trade and/or engineering background

Learning Outcomes

At the conclusion of this course, participants should be able to:

- ◆ Understand what happens inside a control valve from basic fluid mechanics point of view
- ◆ Know about all the different types of control valves commonly in use and understand the relative advantages of each
- ◆ Have an understanding on how to select materials for bodies, trims, packing boxes and gaskets
- ◆ Choose between different valve characteristics on offer and comprehend seat leakage rates
- ◆ Appreciate the difference between cavitation and flashing and know what is choked flow
- ◆ Recognise severe service applications, have an appreciation for their associated problems and understand ways to overcome them
- ◆ Understand the failure modes for control valves and demonstrate new approaches to troubleshooting
- ◆ Make use of a computer sizing program to assist with the selection of control valves
- ◆ Valve I/P transducers/positioner function operation
- ◆ Pneumatic accessories that are available to allow the control valve to operate



Control Valve Engineering II

Overview

This 4-1/2 day course is for practising engineers and senior technicians who are seeking advanced

training in control valve selection and sizing; and severe service. This course proceeds from a review of

basic sizing and selection concepts to advanced concepts used when selecting and sizing control valves

for severe service and unusual applications. The course will also include lectures and numerous

problem-solving sessions that make extensive use of FirstVue software and other sizing and selection

tools.

Pre-Requisite

Participants should have completed the Control Valve Engineering I or have the equivalent experience

(minimum of two years specifying control valves and instrumentation). Familiarity with FirstVue is highly

recommended.

Course Topics

- ◆ Aerodynamic Noise
- ◆ Whisper Trim®
- ◆ IEC Noise Prediction
- ◆ WhisperFlo® Diffusers
- ◆ Cavitation Issues and Solutions
- ◆ Steam Conditioning Valves
- ◆ High Pressure/Temperature Issues
- ◆ Sizing for Two Phase Flow, Fluid Mixtures and Dissolved Gas
- ◆ Corrosive/Erosive Service
- ◆ Actuators: Stroking Speed, Hysteresis
- ◆ Other Control Application Guidelines



Introduction to Valves & Actuation

Overview

Participants in this course will look at a brief history and have an understanding of the operation, types, components of ball and butterfly valves. Handling the various components of the valves leading into methods of actuation along with working demonstrations.

Pre requisite

None.

Outcomes

- ◆ Principle of operation
- ◆ Differentiate between Trunnion and floating ball style
- ◆ Understand seating forces.
- ◆ Identify problem areas for the various styles of valves
- ◆ Triple Offset Butterfly Valves
- ◆ Metal seated valves use and limitations.
- ◆ Understand actuation and its applications.
- ◆ Remote monitoring and partial stroke operations.

Actuators, Sizing & Selection

Overview

Course participants will learn about the various types of pneumatic actuators, their operation, sizing and selection.

Pre requisite

Have a basic understanding of rotary valves

Outcomes

- ◆ Understand the torque curves of the various ¼ turn actuators.
- ◆ Size and select both rack and pinion and scotch yoke.
- ◆ Overview of the various mounting methods.
- ◆ Prepare actuated valve bids and data sheets.

Valve Automation



Introduction/maintenance for Pneumatic Actuators

Overview

During this course participants will understand the operation and maintenance of scotch pneumatic actuators.

Pre requisite

Have an understanding of ball and butterfly valves.

Outcomes

- ◆ Scotch yoke actuator operation
- ◆ Understand actuator torque curves
- ◆ Application of control systems
- ◆ Reconfigure fail direction
- ◆ Learn maintenance procedures
- ◆ Activate DVC partial stroke testing
- ◆ View remote monitoring.
- ◆ Interpret DVC partial stroke valve signatures
- ◆ Learn how to dispose of an unwanted spring return module



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Relief Valve Technical/Practical



Overview

Participants will gain knowledge of Function; Design; Operation; and the required Maintenance procedures for safety relief valves.

Pre-Requisite

Trade and/or Engineering background

Learning Outcomes

At the conclusion of this course, participants will have knowledge of:

- ◆ Relief Valve Basics
- ◆ Terminology
- ◆ Pressure Relief Valve Design & Operation
- ◆ Codes & Standards
- ◆ Farris Product Scope
- ◆ Relief Valve Sizing
- ◆ PRV Sizing and Selection (Using SizeMaster)
- ◆ Relief Valve Performance Issues
- ◆ Relief Valve Types and Features
- ◆ General Maintenance and Testing Procedures



OUR ACCREDITATIONS



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