



EMERSON

Local Business Partner

Course 1300 Control Valve Engineering I

FISHER™

Date: 8 - 10 February 2022
Location: WPC, 1 Harvard Way, Canning Vale, WA 6155
Cost: \$2,200 per person + GST
Registration: training@wpc.com.au

Participants will gain knowledge regarding all aspect of control valves and related equipment including construction and operation. This course also involves comprehension of valve sizing exercises.

Pre-Requisite: Trade and/or engineering background

- Western Process Controls (WPC) is an Australian owned and operated company established in 1987 as the exclusive Fisher Controls representative. Today WPC has multiple office locations and represents FlowControls and Pressure Management Business units of Emerson Automation Solutions. WPC also represents a range of other premier international industrial process control manufacturers to provide valve solutions for any application.
- WPC provides control, automated and pressure safety relief valves to many organisations within the metropolitan, country areas and offshore sites in Victoria, Tasmania and Western Australia.
- Our workshop has NATA laboratory and hydro testing accreditation and is a Fisher Authorized Repair facility.
- WPC provides training for pressure relief devices designed to re-close and prevent further flow of fluid after normal operation conditions have been restored.
- WPC provides training which is ideal for technicians and engineers involved with the commissioning, operation or maintenance of plants utilizing the latest technology.
- WPC specialises in valve automation and FIELDVUE solutions.
- WPC is dedicated to providing its customers with quality products and services on time and to their requirements.
- WPC provides an in-depth insight into maintenance, sizing and selection of pressure relief devices.
- Quality System is designed in accordance with Standard AS/NZS/ ISO9001; ISO/IEC.

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Authorized Service



Day 1

Introductions & Course Objectives Specifications and Terminology

A discussion on common specifications including, ANSI Pressure and Temperature classes, ANSI leakage classes, flow coefficients, characteristics and flanges.

Valve Characteristics

An explanation of the theory of matching valve characteristic to the process and guidelines for selecting valve characteristics will be given.

Sliding Stem Valve Design Options

A discussion on guiding, balancing, soft seats, balanced plug seals, shutoff methods, seat ring retention, gaskets, flow direction, trim materials and packing types. Advantages and limitations will be covered.

Lunch

Valve Sizing, Liquids

Explains the theory behind the sizing equations and techniques employed to size valves for liquids. Class will work a sample problem.

Sliding Stem Actuators

A discussion of the function and operation of spring and diaphragm pneumatic actuators, double acting pistons, and double acting spring bias pistons. Advantages and limitations will be covered. Class will work a sample problem.

Day 2

Bench Set

A discussion of the bench set concept and its importance to shutoff.

Valve Sizing, Gases

Explains the theory of gas sizing. The discussion will include critical flow, sizing equation, steam sizing and the sizing procedure. Class will work a sample problem.

Sliding Stem Actuator Sizing

A problem solving session covering the selection, sizing and bench set of sliding stem actuators using the Quick Size and Catalogue 14 methods in the sizing program. Class will work a sample problem.

Butterfly Valves

A discussion on swing through style, lined valves, pressure drop limits, eccentric disc and seals.

Lunch

Ball Valves

A discussion on V-notch style, seals, pressure drop limits, flanged V-notch & eccentric plug style.

Rotary Actuators

A discussion on spring & diaphragm and piston actuators, travel stops, fail direction and lost motion.

Sizing Rotary Valves

Explains the procedure for liquid and gas sizing for rotary valves. Class will work a sample problem.

Rotary Actuator Sizing

A discussion on sizing rotary spring and diaphragm actuators. T_b and T_d will be explained. Calculations will be done using the delta P, Catalogue 14, and computer sizing methods.

Day 3

Valve Positioners

A discussion of the function and operation of pneumatic & I/P positioners. Discussion will include operation, friction effect, calibration effect and bypass.

Accessories for Actuators

A discussion on the operation and function of transducers and accessories.

High Pressure Valves

A discussion on valve bodies especially designed for high pressure. (Include types EH, HP)

Cavitation Damage Protection

Discussion will include bubble formation, damage coefficient, application ratio, one and two stage protection, trim selection and choked flow sizing. Include CAV III, IV. Class will work sample problems.

Lunch

Valve Noise Fundamentals

A presentation on the basic technology of predicting and abating control valve noise. The discussion will include Whisper trim designs and applications.

Severe Service Applications Review

A review of high pressure, erosive, corrosive, cavitation, gas noise service and the importance of identifying those applications before a valve is selected.

Course Evaluation