COURSE OVERVIEW IE0277-3D

Configuration, Installation, Maintenance of STI Actuator & Positioner

Course Title

Configuration, Installation, Maintenance of STI Actuator & Positioner

Course Reference

IE0277-3D

Course Duration/Credits

Three days/1.8 CEUs/18 PDHs

Course Date/Venue

Session(s)	Date	Venue
1	May 26-28, 2025	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
2	July 28-30, 2025	Glasshouse Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
3	September 07-09, 2025	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
4	November 24-26, 2025	Glasshouse Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Course Description

This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.

This course is designed to provide participants with a detailed and up-to-date overview of the configuration, installation and maintenance of STI actuator and positioner. It covers the principles of valve actuation, actuator parts, actuator response and operation of piston actuators; the advantages and limitations of actuators; the electric actuator operation and common actuator and positioner types; the positioner function, principles of positioner operation and positioner parts; how positioners can improve valve response time; and how positioners can change valve flow characteristics and actuator response.

During this interactive course, participants will learn the selection factors that indicate the appropriate actuator or positioner for system applications; the failsafe requirement and the appropriate actuator response; the external fail-safe devices used with piston actuators; the actuator-sizing criteria, sizing pneumatic actuators, sizing electromechanical and electrohydraulic actuators; the configuration, installation and maintenance of actuator and positioner; and troubleshooting and overhauling actuators and positioners.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Configure, install and maintain STI actuators and positioner in a professional manner
- Discuss the principles of valve actuation including actuator parts, actuator response and operation of piston actuation
- Identify the advantages and limitations of actuators
- Employ electric actuator operation and recognize the common actuator and positioner types
- Recognize positioner function, the principles of positioner operation and positioner parts
- Explain how positioners can improve valve response time as well as how positioners can change valve flow characteristics and actuator response
- Apply selection factors that indicate the appropriate actuator or positioner for system applications
- Identify failsafe requirement and the appropriate actuator response
- Recognize external fail-safe devices used with piston actuators
- Discuss actuator-sizing criteria and illustrate sizing pneumatic actuators and sizing electromechanical and electrohydraulic actuators
- Configure, install and maintain actuator and positioner efficiently
- Troubleshoot and overhaul actuators and positioners

Exclusive Smart Training Kit - H-STK®

*Participants of this course will receive the exclusive "Haward Smart Training Kit" (**H-STK®**). The **H-STK®** consists of a comprehensive set of technical content which includes **electronic version** of the course materials, sample video clips of the instructor's actual lectures & practical sessions during the course conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations of configuration, installation, maintenance of STI actuators and positioner for industrial process control and instrument technicians.

Course Fee

US$ 3,750 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Certificates are accredited by the following international accreditation organizations: -

- British Accreditation Council (BAC)

  Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

- The International Accreditors for Continuing Education and Training (IACET - USA)

  Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

  Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

  Haward Technology Middle East will award **1.8 CEUs** (Continuing Education Units) or **18 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:

Mr. Barry Pretorius is a **Senior Instrumentation Engineer** with over **30** years of extensive experience within the **Oil**, **Gas**, **Petrochemical**, **Refinery** & **Power** industries. His expertise widely covers in the areas of Distributed Control System (**DCS**), **DCS** Operations & Techniques, **Plant Control** and Protection Systems, **Process Control & Instrumentation**, **Cascade Control Loops**, **Split-Range Control Loops**, **Capacity Control** & Other Advanced Control Schemes, **Safety Instrumented Systems**, **Plant Automation** Operations & Maintenance, Programmable Logic Controller (**PLC**), **Siemens PLC** Simatic S7-400/S7-300/S7-200, **PLC & SCADA** for Automation & Process Control, **Artificial Intelligence**, **Allen Bradley PLC** Programing and Hardware Trouble Shooting, Schneider **SCADA System**, **Wonder Ware**, **Emerson**, **Honeywell**, **Honeywell** Safety Manager PLC, **Yokogawa**, Advanced **DCS Yokogawa**, **Endress & Hauser**, Field Commissioning and Start up Testing Pre Operations, System Factory Acceptance Test (**FAT**), FactoryLink ECS, Modicon 484, Rockwell Automation, System Site Acceptance Test (**SAT**), **SCADA HMI & PLC** Control Logic, **Cyber Security** Practitioner, **Cyber Security** of Industrial Control System, **IT Cyber Security** Best Practices, **Cybersecurity** Fundamentals, **Ethical Hacking & Penetration Testing**, **Cybersecurity** Risk Management, **Cybersecurity** Threat Intelligence, **OT Whitelisting** for Better Industrial Control System Defense, **NESA** Standard and Compliance Workshop, **OT**, **Cyber Attacks** Awareness - Malware/Ransom Ware / Virus /Trojan/ Philsing, **Information Security Manager**, **Security System** Installation and Maintenance, Implementation, Systems Testing, Commissioning and Startup, **Foxboro DCS & Triconics**, **SIS** Systems, Advanced **DC Drives**, Motion Control, **Hydraulics**, **Pneumatics and Control Systems** Engineering, **Electrical & Automation Control Systems**, **HV/MV Switchgear**, **LV & MV** Switchgears & Circuit Breakers, **High Voltage Electrical Safety**, **LV & HV Electrical System**, **HV Equipment** Inspection & Maintenance, **LV Distribution Switchgear & Equipment**, **Electrical Safety**, **Electrical** Maintenance, **Transformers**, **Medium & High Voltage Equipment**, **Circuit Breakers**, **Cable & Overhead Line** Troubleshooting & Maintenance, **Electrical Drawing & Schematics**, **Voltage Distribution**, **Power Distribution**, **Filters**, **Automation System**, **Electrical Variable Speed Drives**, **Power** Systems, **Power Generation**, **Diesel Generators**, **Power Stations**, Uninterruptible Power Systems (**UPS**), **Battery Chargers**, **AC & DC Transmission**, **CCTV** Installation, **Data & Fire Alarm** System, **Evacuation** Systems and **Electrical Motors & Variable Speed Drives**, & Control of Electrical and Electronic devices.

During Mr. Pretorius's career life, he has gained his practical experience through several significant positions and dedication as the **Senior Technical Analyst, Team Leader, Pre-operations Startup Engineer, Automation System's Software Manager, Automation System's Senior Project Engineer, PLC Specialist, Site Manager, Senior Project & Commissioning Engineer, Technical Director, Project Engineer, Radio Technician**, **A T E Technician** and **Senior Instructor/Trainer** from various companies like the ADNOC Sour Gas, Ras Al Khair Aluminum Smelter, Johnson Matthey Pty. Ltd, Craigcor Engineering, Unitronics South Africa Pty (Ltd), Bridgestone/Firestone South Africa Pty (Ltd) and South African Defense Force.

Mr. Pretorius's has a Higher Diploma in **Electrical Engineering Heavy Current**. Further, he is a **Certified Instructor/Trainer** and delivered numerous trainings, courses, workshops, seminars and conferences internationally.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

30% Lectures
20% Practical Workshops & Work Presentations
30% Hands-on Practical Exercises & Case Studies
20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0900	***Principles of Valve Actuation***
0900 - 0945	***Actuator Parts***
0945 - 1030	***Actuator Response***
1030 – 1045	*Break*
1045 - 1115	***Operation of Piston Actuators***
1115 - 1145	***Advantages & Limitations of Actuators***
1145- 1230	***Electric Actuator Operation***
1230– 1245	*Break*
1245– 1315	***Common Actuator & Positioner Types***
1315 - 1345	***Positioner Function***
1345 - 1420	***Principles of Positioner Operation***
1420 - 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

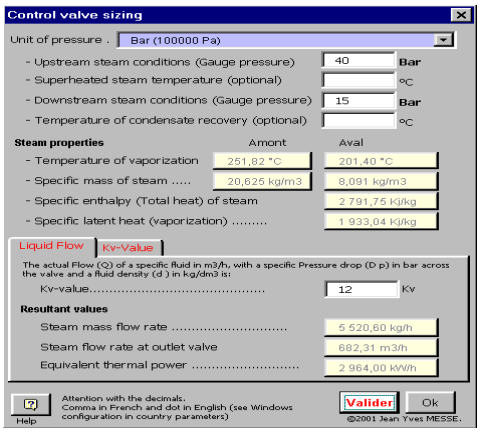
0730 – 0830	***Positioner Parts***
0830 – 0930	***How Positioners can Improve Valve Response Time***
0930 – 0945	*Break*
0945 – 1015	***How Positioners can Change Valve Flow Characteristics***
1015 – 1045	***How Positioners can Change Actuator Response***
1045 - 1230	***Selection Factors that Indicate the Appropriate Actuator or Positioner for System Applications***
1230 – 1245	*Break*
1245 – 1315	***Failsafe Requirement & the Appropriate Actuator Response***
1315 - 1345	***External Fail-Safe Devices used with Piston Actuators***
1345 - 1420	***Actuator-Sizing Criteria***
1420 - 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

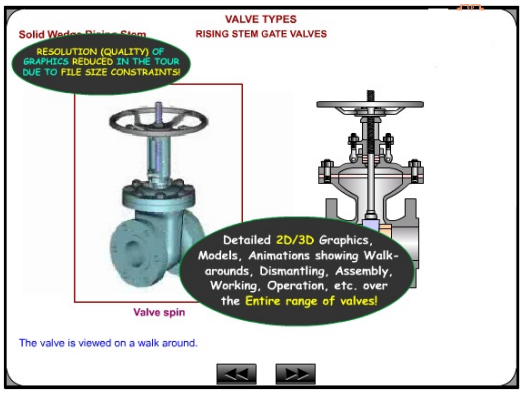
0730 – 0830	***Sizing Pneumatic Actuators***
0830 – 0930	***Sizing Electromechanical & Electrohydraulic Actuators***
0930 – 0945	*Break*
0945 – 1030	***Configuration of Actuator & Positioner***
1030 – 1100	***Installation of Actuator & Positioner***
1100 - 1200	***Maintenance of Actuator & Positioner***
1200 – 1215	*Break*
1215 – 1300	***Troubleshooting Actuators***
1300 - 1330	***Troubleshooting Positioners***
1330 – 1345	***Actuator & Positioner Overhauling***
1345 - 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Simulators (Hands-on Practical Sessions)

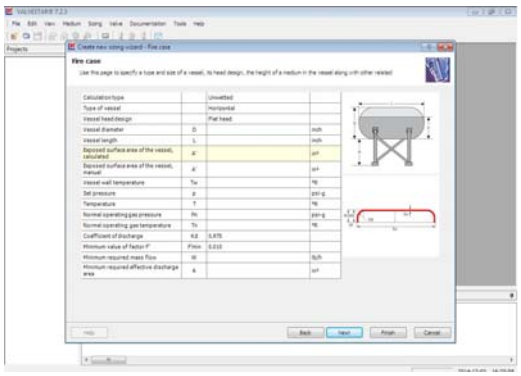
Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using our state-of-the-art simulators "Valve Sizing Software", "Valve Software 3.0", "Valvestar 7.2 Software" and "PRV2SIZE Software".



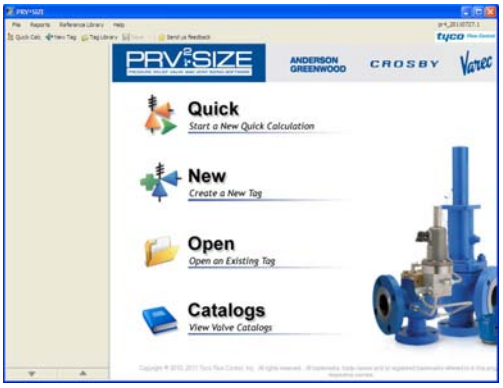
Valve Sizing Software



Valve Software 3.0



Valvestar 7.2 Software



PRV²SIZE Software

Course Coordinator

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org