Technical Seminar Series

An Introduction to Fluid System Components & Applications Delivered Live.
Contributing to Continuous Professional Development (CPD) Hours.

Overview

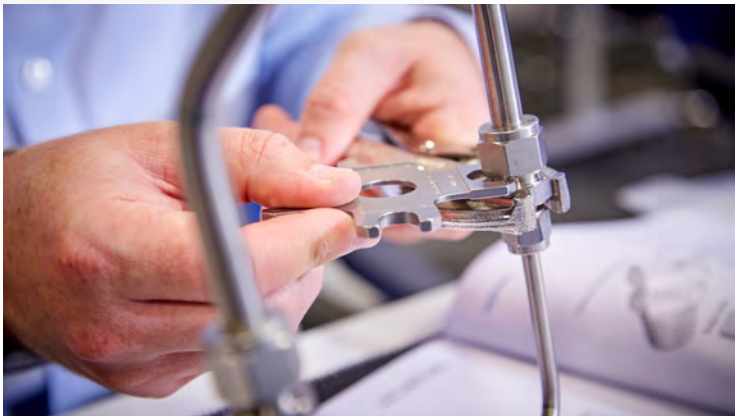
Selecting the correct components is a primary consideration when making decisions for your fluid system. In **Swagelok Ontario | Atlantic Canada's Technical Seminar Series**, you will learn the fundamental features and functions of measurement devices, regulators, hose, valves, threads, and end connections. In addition, you will gain the knowledge necessary to help select the most suitable components for your application to improve efficiency, while reducing and resolving common issues.

Once the introduction is successfully completed, you will own the skills to list general fluid system components using the correct terminology and identify key design and performance characteristics of the components. You will be confident in discussing the various types of components, including their applications, and be able to state vital design considerations when choosing regulators, valves, measurement devices, hoses, threaded fittings, and other components for a fluid system.

This program is designed to assist in the awareness and comprehension of fluid system components and functions.

We will utilize graphics, animations, tables, applications, and most importantly, samples for hands-on explanation.

In addition, **we will also discuss** the proper selection process to better meet your application needs.



Content

The Technical Seminars are presented in modules of 90 minutes in length, and can be delivered as a single unit or multiple sessions in one day.

Continuing Education for Professional Engineers
We cater to Ontario and all Atlantic Canada provinces requiring Engineers to complete CPD hours.

Main Contact for Technical Seminar Series:

Phil Reid,
Training & Technical Support Manager
(613) 540-0642

phil.reid@swagelok.com

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Technical Seminar Series

Introduction to Measurement Devices

Understand and identify fluid system measurement components

Technical Seminar Overview

Fluid system measurement devices typically exhibit several common characteristics. These characteristics, along with performance criteria, will be covered in this module.

You will be confident in discussing the various types of fluid system measurement components including:

- Pressure Gauges
- Transducers (Transmitters)
- Flowmeters
- Bimetal Thermometers

Upon completion, you should be able to identify:

- What is a Pressure gauge?

- Pressure Gauge Operating Principles (Bourdon Tube)

- What is a Pressure Transducer/Transmitter?

- Transducers/Transmitters-Functions

- What is a Variable Area Flowmeter (VAF)?

- Flowmeters-Variable Area Flowmeters-Functions

- What is a Bi-Metal-Thermometer?

- Bimetal Thermometer Operating Principle

Duration: 1.5 Hours*

***Continuous Professional Development (CPD) Hours that meet provincial requirements, including Professional Engineers Ontario (PEO)**

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Technical Seminar Series

Introduction to Regulators

Understand regulator function, selection, and design for improved performance and safety

Technical Seminar Overview

Pressure Regulators typically exhibit several common characteristics that are not dependent on a particular type, make, or manufacturer of regulators.

The instructors introduce characteristics that are common across the industry:

- Droop (or Flow Effect)
- Creep
- Accumulation
- Choked-Flow
- Lock-up (Seat-Load Drop)
- Joule-Thomson
- Optimal Flow
- SPE-Supply Pressure Effect
- Relate function and performance characteristics
- Sizing of regulators and utilizing flow charts (Basic)

Duration: 1.5 Hours*

***Continuous Professional Development (CPD) Hours that meet provincial requirements, including Professional Engineers Ontario (PEO)**

Upon completion, you should be able to:

- Explain the difference between a valve and regulator
- Understand regulator terminology
- Differentiate components within a regulator
- Recognize performance attributes of a regulator
- Relate performance characteristics to the importance of good selection and design
- Consider venting and proportional relief valves to enhance safety for certain systems

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Technical Seminar Series

Introduction to Hose

Learn hose fundamentals and best practices

Technical Seminar Overview

Understanding the fundamentals of hose helps to extend hose cycle life, ensure safety, and lower total cost of ownership. Instructors introduce common terminology, explain variables impacting hose selection, and show how to select hose for different applications.

Choose the best hose for your application and extend hose life by understanding:

- Common terms (Construction, Core Tube, Reinforcement Layers, End Connections)
- How to evaluate hose fit for purpose (Hose Life, Considerations)
- Hose selection variables
- Guidelines for hose installation
- List common issues found in hose applications
- Best Practices & Proper Installation and Inspection Techniques

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Technical Seminar Series

Introduction to Valves

Understand function, features, and construction
to safely select the right valves

Technical Seminar Overview

Safety is a key consideration when selecting, maintaining, or replacing valves. Learn the fundamentals to choose the right valves for your applications by identifying proper valve types and functions, understanding key features and construction, and diagnosing common issues.

Topics include:

- Valve Function
- Valve Construction
- Valve Actuation Methods
- End Connection Seal Technology
- Key consideration in valve selection, installation, and maintenance
- Define common fluid system terminology

Duration: 1.5 Hours*

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Technical Seminar Series

Introduction to Thread & End Connections

Technical Seminar Overview

Many mechanical end connections have threads. Therefore, thread standards can be used to help define and identify end connection standards. Identifying threads and distinguishing common thread types used in fitting end connections can be challenging. In this module, we describe the different sealing requirements of both tapered and parallel threads, as well as demonstrate thread preparation and proper installation procedures of these thread types.

Topics include:

- Thread Standards
- End Connection Standards
- End Connection Seal Technology
- Tapered threads. NPT (also known as ASME B1.20.1), ISO 7/1 (also known as EN 10226-1 and JIS B0203)
- Straight threads. ASME B1.1 (unified screw thread), ISO 228/1, ISO 261 straight threads

Duration: 1.5 Hours*

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