

Support Associate Certification



What You Need to Know

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A Fluid Power Support Associate (SA) demonstrates proficiency in key fluid power terminology, a general knowledge of fluid power principles, an understanding of basic fluid power component functions, the understanding of basic properties of fluids, the usage and application of seals, and a basic comprehension of fluid power safety principles.

Understanding Basic Business Terminology

- Understand Basic Terminology.
 - Understand difference between B2B and B2C companies.
 - Understand the supply chain.
 - Understand reading part numbers and model codes.
 - Understand quotations and quotation terms.
 - Understand purchase orders.
 - Understand sales orders.
 - Understand shipping and receiving process and terms.
 - Understand quality and quality management.
 - Understand channels to market and common sales terms.

Fluid Power Principles

- Understand Basic Hydraulic and Pneumatic Concepts
 - Understand Pascal's Law.
 - Understand non-compressible fluids.
 - Understand the Ideal Gas Law.
 - Understand the concept of pressure.
 - Understand force when applied to motion and actuator movement.
 - Understand rotary force (torque).
 - Understand the concept of pump flow and actuator speed.

- Understand what determines pressure in a hydraulic system.
- Understand the Law of Conservation of Energy and its application to fluid power.

Function of Fluid Power Components

- Identify and Understand the Function of Fluid Power Components
 - Understand the term and functions of a prime mover.
 - Understand the types and functions of a pump.
 - Understand the types and functions of a reservoir.
 - Understand the types and functions of accumulators.
 - Understand the types and functions of valves
 - Understand the types and functions of actuators.
 - Understand the function and applications of filters.
 - Understand the function and applications of conductors.
 - Understand the function and applications of instruments.
 - Understand the function and applications of a pneumatic receiver.
 - Understand the function and applications of a compressor.

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- Understand the function and applications of an FRL.
- Understand the unique characteristics of a pneumatic valve.
- Understand the unique characteristics of pneumatic actuators.
- Understand the function and applications of vacuum generators.

Fluid Properties

- Understand the Function, Types, and Properties of Fluids Used in Fluid Systems.
 - Understand the primary function of hydraulic fluid is to efficiently transmit energy.
 - Understand the types of hydraulic fluids.
 - Understand properties of hydraulic fluids.
 - Understand the importance of fluid cleanliness and contamination control.

Seals

- Understand Types of Seals and Proper Methods of Seal Selection.
 - Understand types, locations, and functions of seals used in fluid power components.
 - Understand the importance of seal materials and fluid compatibility.
 - Understand Function of seal durometer.
 - Understand common seal shapes and their applications.
 - Know how fluid power seals are specified.
 - Understand rotary shaft seals.

Safety

Specific Hydraulic Pneumatic, and Electrical safety guidelines.

- Recognize the inherent dangers of fluid power systems and exhibit a basic understanding of required safety precautions
 - Oil injection/ingestion - understand what a fluid injection injury is, understand how it can occur, and know the urgency of medical attention.
 - Understand and recognize the hazards of incorrect sizing, material selection, or types of components used.
 - Precautions - Be aware of general precautions associated with fluid power equipment.
 - Understand the usage and application of Personal Protective Equipment (PPE) and understand the general recommendations for use.

