
RIGID AND FLEXIBLE HOSE CONNECTIONS



YOU WILL LEARN HOW TO:

- Obtain a greater understanding of the basic aspects related to hose design and construction.
- Recognize the various hose types from the design as well as application point of view.
- Size and select the right type of hose for a particular application.
- Know about the different materials of construction and the use of reinforced material.
- Obtain a detailed perspective on other hose selection criteria based on parameters such as pressure and temperature and also get to understand better, concepts such as shelf life and useful life of hoses in general.
- Identify the common hose fittings, adaptors, couplings and clamps and also other miscellaneous fittings.
- Understand the various hose standards and testing procedures.
- Demonstrate a sound understanding of standard installation practices and hose routing.
- Be well versed in maintenance and safety practices related to hoses.
- Understand the various aspects related to hose failures in general and learn about the common

WHO SHOULD ATTEND:

- Mechanical engineers and technicians
- Plant engineers and supervisors
- System and design engineers
- Hose manufacturers and suppliers
- Project managers and Consultants
- Plant layout and safety specialists
- Maintenance engineers and technicians

The Workshop

Hose design and construction is a very technical and precise science. Proper selection and sizing of hoses and allied fittings is critical to ensuring the efficiency of a hydraulic system. Good installation and routing practices not only enhance system performance and efficiency but also provide sufficient safeguards under conditions of extreme pressure and temperature. Proper material selection is vital to ensuring long service life of the hose and also goes a long way in minimizing the possibility of premature hose failures.

It is also important to strictly adhere to safety considerations, while deciding on the type of hose to be used in a particular application. Hose condition in general can be effectively monitored through the implementation of timely maintenance practices. In the event that any failure symptoms are identified, remedial measures must be undertaken well in time, if catastrophic failures are to be prevented.

Pre-requisites

No specialist knowledge or skills are required – only a technical background so that there is a basic understanding of various components comprising a hydraulic system and for such factors as the difference between pressure and force.

In fact this course is a good introduction to someone who has had no dealings with hoses in the past as well as an important refresher course for hydraulic system specialists who benefit from the back-to-basics approach.

Practical Sessions

This is a practical, hands on workshop enabling you to work through practical exercises which reinforce the concepts discussed.

To gain full value from this workshop, please bring your laptop/notebook computer.

The Program

INTRODUCTION

- What constitutes a good hose?
- Hose design principles
- Common hose types
- Rigid and flexible applications

CLASSIFICATION AND TYPE

- Classification based on the medium used – Hydraulic, Air, Fuel
- Classification based on the nature of application – Compressor line, Fuel line, Brake line, lubrication line, work equipment control
- Classification based on the equipment type - Plant machinery, Automobile, Marine, Aircraft
- Low, Medium and High-pressure hoses

HOSE DESIGN AND CONSTRUCTION

- Hose requirements
- Hose selection and sizing
- Pressure surges and drops
- Pressure and temperature ratings
- Design considerations of common air, hydraulic and fuel hoses

HOSE FITTINGS AND ASSEMBLY

- Common fittings, connectors, adapters, couplings and clamps used in hydraulic, pneumatic and fuel hose lines
- Design and type
- Assembly and fitting
- Commonly used thread types
- Miscellaneous hose fittings

MATERIALS OF CONSTRUCTION

- Common hose materials
- Material compatibility
- Reinforcement material
- Metallic, non-metallic materials used in the construction of common connectors, fittings and couplings

HOSE STANDARDIZATION AND TESTING

- Purpose of standardization
- Hose standards – SAE, DIN, BS
- Testing requirements
- Test procedures
- Prototype and production testing
- Bursting and Impulse testing
- Service simulation

INSTALLATION AND MAINTENANCE

- Generally recommended installation practices
- Installation procedure on fixed and flexing applications
- Hose routing
- General upkeep and maintenance of hoses

HOSE FAILURES AND TROUBLESHOOTING

- Shelf life and useful life of hoses
- Common hose failures
- Ways to prevent premature hose failures
- General troubleshooting techniques
- Safety considerations

SUMMARY, OPEN FORUM AND CLOSING