



شركة ميرك العربية السعودية
MEIRC Saudi Arabia

Pneumatics: Operations and Troubleshooting

Duration 5 Days

Introduction

This course covers pneumatic systems construction, design applications, operations, maintenance and management issues and will provide you with the most up-to-date information and best practice in dealing with pneumatics.

Who Should Attend

This is an excellent course for multi-craft personnel

Course Objectives

At the end of this workshop participants will be able to:

- Work with basic pneumatic components
- Describe the basic physical principles of compressed air
- Understand how basic pneumatic components function in a pneumatic circuit
- Read pneumatic schematics
- Understand the operation and application of standard pneumatic valves and actuators
- Competently describe the symbols for standard pneumatic valves and actuators
- Describe air actuation and its application
- Perform simple circuit design using standard symbology and functions such as automatic return, logic control, speed control, pressure sequencing, reduced actuator forces and timing
- Work safely with pneumatic components and systems
- Troubleshoot simple pneumatic problems
- Apply a simple preventative maintenance program to lengthen pneumatic components life
- Make simple repairs to pneumatic systems
- Understand essential pneumatic terms and understand their key applications
- Discuss the correct operation, control sequences and procedures for the safe operation of various simple pneumatic systems
- Initiate an effective inspection and maintenance program
- Minimize forced outages and prevent serious damage to pneumatic equipment
- Outline the latest technologies available for electro pneumatic systems

Course Outlines:

INTRODUCTION TO PNEUMATICS

- Origin of Pneumatics
- Overview of workshop



FUNDAMENTALS

- Force
- Work
- Power
- Energy
- Mass
- Weight
- Torque
- Density
- Specific gravity
- Specific weight

AIR PREPARATION

- Characteristics of air
- Air generation and distribution
- Characteristics of pneumatic systems

SYMBOLOLOGY ISO 1219

- Symbols and standards
- Practical Exercise

PNEUMATIC ELEMENTS

- Components of pneumatic systems
- Actuator and output devices
- Cylinders (single and double acting)
- Directional control Valves
- Types
- Other control valves
- Non-return valves
- Pressure Valves
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BASIC CIRCUIT DESIGN

SEQUENCE CONTROL

CASCADE CIRCUITS INTRODUCTION

TROUBLESHOOTING AND FAULT FINDING PNEUMATIC SYSTEMS

- Flow chart analysis of pneumatic circuits



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- Maintenance