OPTIMUM
ENGINEERING TRAINING

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OPTIMUM
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SMC CORPORATION, A WORLDWIDE PNEUMATICS COMPANY, PURSUES GLOBAL SATISFACTION AND SUPPORTS AUTOMATION THROUGH THE MOST ADVANCED PNEUMATICS TECHNOLOGIES.

Established in Japan in 1959, SMC Corporation is the global leader in pneumatic technology and industrial automation and offers over 12 000 basic components in more than 700 000 variant forms.

SMC offers automation solutions on all five continents with thousands of engineering and sales staff around the globe.
Available in 83 countries, SMC prides itself in constantly researching and developing, and has been voted one of the world's most innovative companies in Forbes Magazine's Top 100.

SMC Corporation South Africa officially opened its doors in 2016, with head office based in Midrand, Johannesburg.
SMC offers service and training nationwide, which means that machine builders and end-users can now benefit from increased levels of technical support and the availability of customized products and training.

SMC's fully functional showroom showcases the latest in pneumatic technologies and our diverse range. This flexible and interactive space is the ideal location to experience and learn more about our world-class offerings.

Our trade counter is open for orders, collections, repairs and technical advice and we invite you to pop in at any time!
As a general supplier of pneumatic components, SMC provides products compatible with multiple applications and complete systems. A broad range of customized variations is offered to meet infinitely diverse requirements.

Comprehensive Didactic courses are offered at our state-of-the-art facilities throughout the year.

OPTIMUM ENGINEERING TRAINING

BASIC PNEUMATICS

Course Duration: 3 Days

Content: Pneumatic Principles

- Compressed air
- Pressure
- Flow

Air Preparation – Construction, Working Principle, and Application

- Receivers
- Pressure regulators
- Filters
- Water Separators
- Lubricators

Actuators – Construction, Working Principle, and Application

- Linear actuators
- Rotary actuators

Control Valves– Construction, Working Principle, and Application

- Directional Control Valves (2/2 Way, 3/2 Way, 5/2 Way, 5/3Way)
- Flow Control Valves
- Pressure Control Valves
- Sensors

Maintenance of Pneumatic Systems

Pneumatic Symbols (ISO 1219)

- Symbolic representation of pneumatic devices and standards

Pneumatic Diagrams

- Read Diagrams
- Design Diagrams

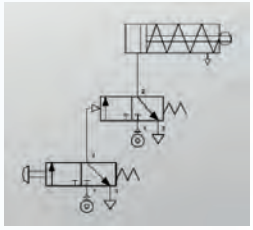
Practical

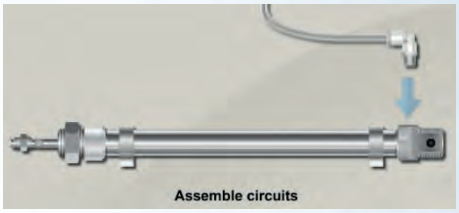
- Selecting pneumatic components and building circuits according to diagrams

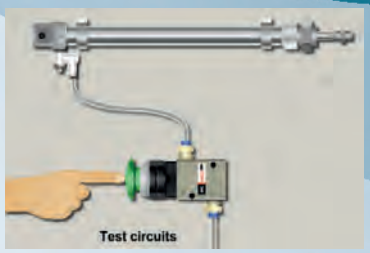
Outcomes:

On completion of the course the participant:

- knows the fundamentals of compressed air generation and preparation
- can identify and describe the operation of pneumatic components
- can identify and explain pneumatic symbols
- can read and interpret pneumatic circuit diagrams
- can design, assemble and test basic pneumatic circuits







OPTIMUM ENGINEERING TRAINING

ELECTRO-PNEUMATICS

Course Duration: 3 Days

Content: Basic Electrical Principles

- Push Buttons
- Switches
- Relays
- Sensors
- Timers
- Counters

Electrical Control of Electro-Pneumatic Systems Pneumatic Symbols (ISO 1219)

- Electrical and Pneumatic Symbols and Standards

Electro-Pneumatic Diagrams

- Read Electro-Pneumatic Diagrams
- Design Electro-Pneumatic Diagrams

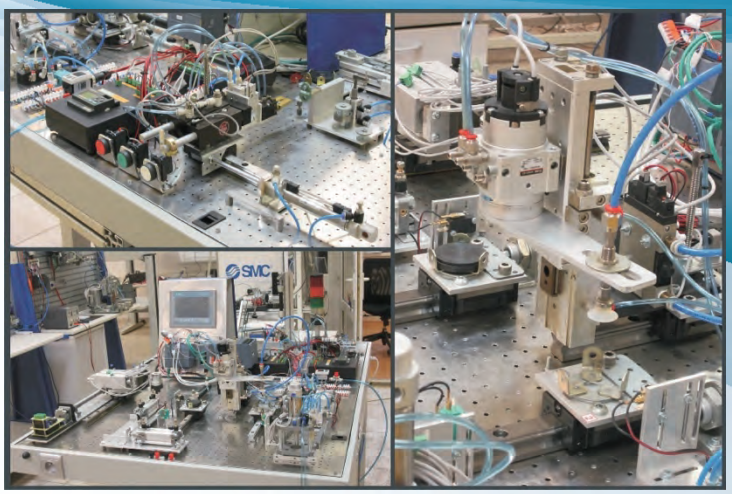
Practical

- Selecting electro-pneumatic components and building circuits according to diagrams

Outcomes:

On completion of the course the participant:

- can identify and describe the operation of electro-pneumatic components
- can identify and explain pneumatic and electro-symbols
- can read and interpret electro-pneumatic circuit diagrams
- can design, assemble and test electro-pneumatic circuits



OPTIMUM ENGINEERING TRAINING

BASIC HYDRAULICS

Course Duration: 3 Days

Content: Basic Hydraulics Principles

- Pressure
- Flow

Basic Hydraulics Power Pack

Actuators – Construction, Working Principle, and Application

- Linear actuators
- Rotary actuators

Control Valves– Construction, Working Principle, and Application

- Directional Control Valves (2/2 Way, 3/2 Way, 4/2 Way, 4/3Way)
- Flow Control Valves
- Pressure Control Valves

Hydraulic Symbols (ISO 1219)

- Symbolic representation of hydraulic devices and standards

Hydraulic Diagrams

- Read Hydraulic Diagrams
- Design Hydraulic Diagrams

Practical

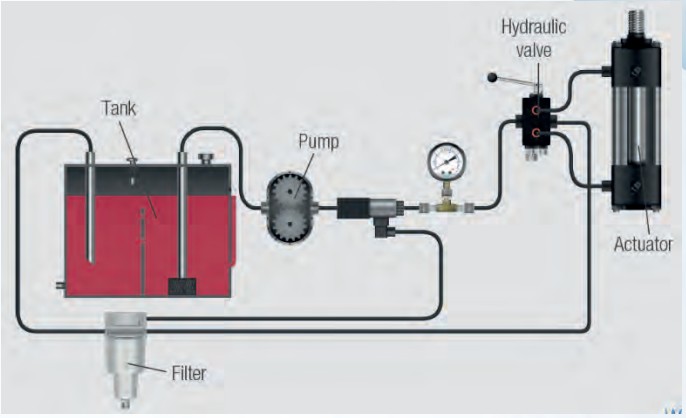
- Selecting Hydraulic Components and Building Circuits According to Diagrams

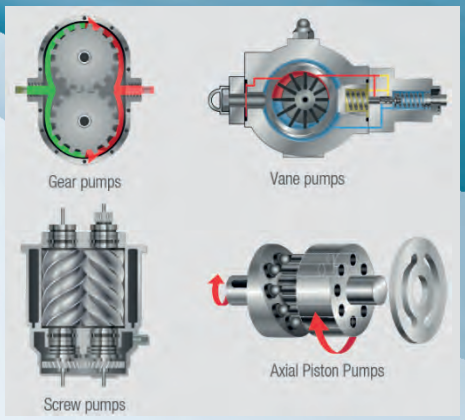
Safety in Hydraulic Systems

Outcomes:

On completion of the course the participant:

- knows the fundamentals of a hydraulic power pack
- can identify and describe the operation of hydraulic components
- can identify and explain hydraulic symbols
- can read and interpret hydraulic circuit diagrams
- can design, assemble and test basic hydraulics circuits





OPTIMUM
ENGINEERING TRAINING

ELECTRO-HYDRAULICS

Course Duration: 3 Days

Content: Basic Electrical Principles

- Push Buttons
- Switches
- Relays
- Sensors
- Timers
- Counters

Electrical Control of Electro-Hydraulics Systems

Hydraulic Symbols (ISO 1219)

- Electrical and Hydraulic Symbols and Standards

Electro-Hydraulic Diagrams

- Read Electro-Hydraulic Diagrams
- Design Electro-Hydraulic Diagrams

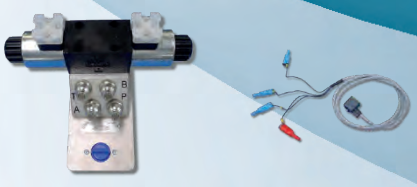
Practical

- Selecting Electro-Hydraulic components and building circuits according to diagrams

Outcomes:

On completion of the course the participant:

- can identify and describe the operation of Electro-Hydraulic components
- can identify and explain Hydraulic and Electro-Hydraulic symbols
- can read and interpret Electro-Hydraulic circuit diagrams
- can design, assemble and test Electro-Hydraulic circuits



OPTIMUM ENGINEERING TRAINING

MECHATRONICS

Course Duration: 4 Days

Content:

- Integrating pneumatics, hydraulics, electronics and PLC's to form a mechatronic system
- Create, download and test advanced control programs
- Fault finding

Outcomes
The Participant:

- can identify and describe the operation of pneumatic, hydraulic, electronic and PLC components
- can test a mechatronic system
- can download a program and commission a PLC control system
- can write multi-tasking PLC programs
- can troubleshoot advanced mechatronic systems