

## **A report on 3-days international training on "BASIC PNEUMATICS"**

**Organized By SMC Pneumatics (India) Pvt. Ltd., TADA.**

***16<sup>th</sup> – 18<sup>th</sup> November, 2015***

### **Day-1**

#### **Forenoon Session**

1. Introduction to Automation and its applications in Industry
2. Types of automation
3. Introduction to Basic Pneumatics
4. Tea Break
5. Description of Air Production System
6. The Air consuming System
7. Compressed Air theory
8. Units (Non-Metric Units)
9. Properties of gases
  - Isothermal Changes(Boyles Law)
  - Standard Volume
  - Air Humidity
  - Relative Humidity
  - Pressure and Flow
10. Air Compression and distribution
11. Reciprocating and Rotary Compressors

#### **Afternoon Session**

1. Air Treatment
  - Micro filters
  - Sub-Micro Filters
  - Filter selection
2. Air quality
  - Filtering Levels
3. Pressure regulation
  - Standard Regulator
  - Pilot Operated Regulator
  - Filter Regulator
  - Characteristics
4. Tea Break

5. Directional Valves
  - Valve function
  - Valve Type
  - Valve Operation
  - Valve Mounting
  - Valve sizing

## **Day-2**

### **Forenoon Session**

1. Introduction to Actuators
2. Linear Cylinders
3. Spherical Cylinder Options
4. Cylinder sizing
5. Air flow and Consumption
6. Tea Break
7. Rotary Actuators
8. Rack and Pinion Type
9. Vane type Rotary Actuators
10. Special actuators
11. Hollow rod cylinders
12. Rotating cylinders
13. Air chuck (Gripper)

### **Afternoon Session**

1. Symbols used in Pneumatics
2. Introduction to basic circuits
  - Basic rules
  - Rest position
3. Circuit Layout
4. Nomenclature
5. Sample diagrams
6. Tea Break
7. Hands-on-Training on simple circuits

## Day-3

### **Forenoon Session**

1. Basic circuits
2. Elementary functions
3. Time functions
4. Cylinder Control
5. Manual Control
6. Tea Break
7. Direct operation and Speed control
8. Control from two points: OR Function(AND ) interlock circuit

### **Afternoon Session**

1. Hands-on-Training
2. Tea Break
3. Hands-on-Training
4. Exam on Basic Pneumatic



Trainer demonstrating the Pneumatic kit



Trainer demonstrating the process of automated material handling system