



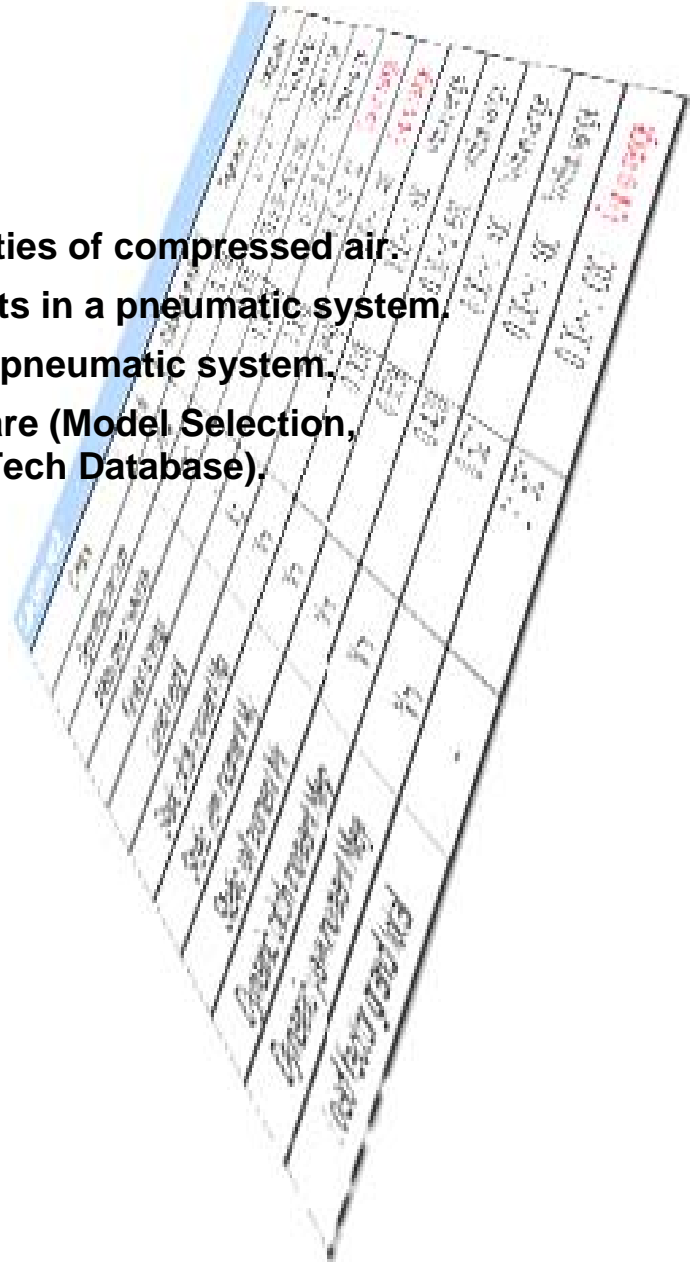
## 513M.12 Sizing & Selection

### Course Objectives

- The fundamentals of sizing.
- Pressure versus flow and the properties of compressed air.
- Properly sizing individual components in a pneumatic system.
- Calculating the flow rate of an entire pneumatic system.
- How to use SMC online sizing software (Model Selection, Guided Cylinder Sizing Software, E-Tech Database).

### Course Outline

- Sizing Fundamentals
  - Basics
    - Why Sizing?
    - What Requires Sizing?
    - Terms and Definitions
    - Selection Criteria
  - Pressure
    - Definition of Pressure
    - Common Pressure Units
  - Flow
    - Definition of Flow
    - Common Flow Rate Units
    - Flow Rate Standards:
      - Cv
      - Qn (Flow Section "S")
      - Sonic Conductance C





## 513M.12 Sizing & Selection

- **Sizing a Pneumatic System**
  - Bore Size Calculation
  - Actuator Air Consumption
  - Actuator Peak Air Consumption
  - Valve Size Selection
  - Tubing Selection
  - Speed Controller / Fitting Selection
  - Calculate System Flow Rate
  - Sizing Exercise 1 & 2
- **Introduction to SMC Software**
  - Model Selection Sizing Software
  - Guided Cylinder Sizing Software
  - E-Tech

Key	Symbol	Function
Esc	Esc	Escape
F1	F1	Function 1
F2	F2	Function 2
F3	F3	Function 3
F4	F4	Function 4
F5	F5	Function 5
F6	F6	Function 6
F7	F7	Function 7
F8	F8	Function 8
F9	F9	Function 9
F10	F10	Function 10
F11	F11	Function 11
F12	F12	Function 12
Print	Print	Print Screen
ScrLk	ScrLk	Screen Lock
NumLk	NumLk	Num Lock
Del	Del	Delete
Ins	Ins	Insert
Home	Home	Home
End	End	End
PageUp	PageUp	Page Up
PageDown	PageDown	Page Down
Arrow	Arrow	Arrow
Enter	Enter	Enter
Space	Space	Space
Tab	Tab	Tab
Shift	Shift	Shift
Ctrl	Ctrl	Control
Alt	Alt	Alt
Win	Win	Windows
Cmd	Cmd	Command
Esc	Esc	Escape

