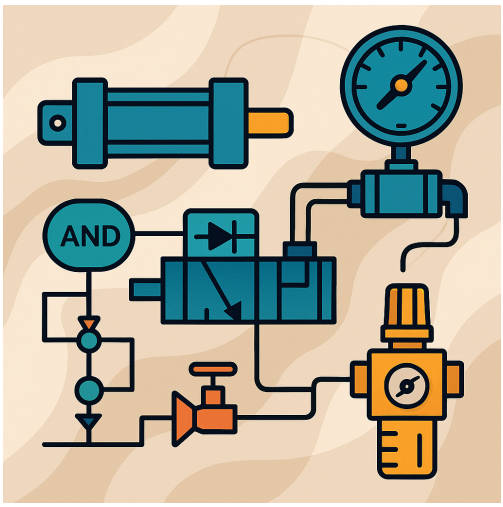
Understanding Pneumatics

September 2025

Course Overview

After completing this course, students will develop the skills needed to identify pneumatic components, read pneumatic prints, and wire & plumb pneumatic circuits.. **This is a hands-on course.**



Course Objective

To provide the necessary information, resources, and activities needed to become proficient in identifying industrial pneumatic components. Taking that knowledge and applying it to real-world scenarios, where students configure, wire, and plumb pneumatic circuits.
Part of this course also covers reading pneumatic prints..

Who Should Attend

This course is recommended for anyone interested in understanding how pneumatics work in industrial automation environments.

Course Length and Cost

Per Student Cost:	$1350 USD
Course Length:	3 Days

Client Expectations

Students are expected to attend the entire training session to receive their certificate. Each student should have their own workstation with a variety of pneumatic components. These components should be expendable. Students will be disassembling components which may

cause damage. This course relies on cooperation with the client to provide as much equipment as possible for the class. In addition, make the following available:

- Computer and necessary software, including: Microsoft Office
- Access to the Internet
- Dry-erase board for examples, assignments, etc.

Provider Expectations

The contractor will provide the following:

- Student Workbook with exercises
- Pneumatic Valve Reference (Digital)
- Lab exercise results can be provided (One possible solution per exercise)
- Certificate of Completion or Achievement
    - A completion certificate is provided to students who complete the entire class, but with no assessment
    - An achievement certificate is provided for those who complete the entire class and pass a written and programming assessment

Course Agenda

Day 1:

- Safety
- Building Blocks of Pneumatic Valves
- Pneumatic Controls: Limits, Regulators, Cushions
- Topics: Air prep, valves, actuators
- Diagrams: ISO symbols, airflow paths
- Using Fluid To Force Transmission
- Using A Pneumatic System For Energy Transmission
- Pneumatic Energy Controls

Day 2

- Air DIstribution
- Understanding Compressors
- Motors

- Check Valves and Cylinders
- Flow Control Valves
- Quick Exhausts, Silencers
- Connecting Pneumatic Components (Lab)
- Repairing Valves

Day 3

- Regulators, Excess Flow Valves
- Boosters, Sequence Valves
- Comprehensive Lab
- Assessment

Adjustments

It may be necessary to adjust the course curriculum depending on the students' understanding of the material. Every effort will be made to include as much information as possible.

Time permitting, troubleshooting will be incorporated into the program. Troubleshooting will be limited to software, edits, and hardware configurations unless the client provides faulty equipment to be used.

If you have questions about any part of the course or would like to modify the course curriculum, please reach out to **PO Controls** to discuss. Price may vary depending on the extent of changes.