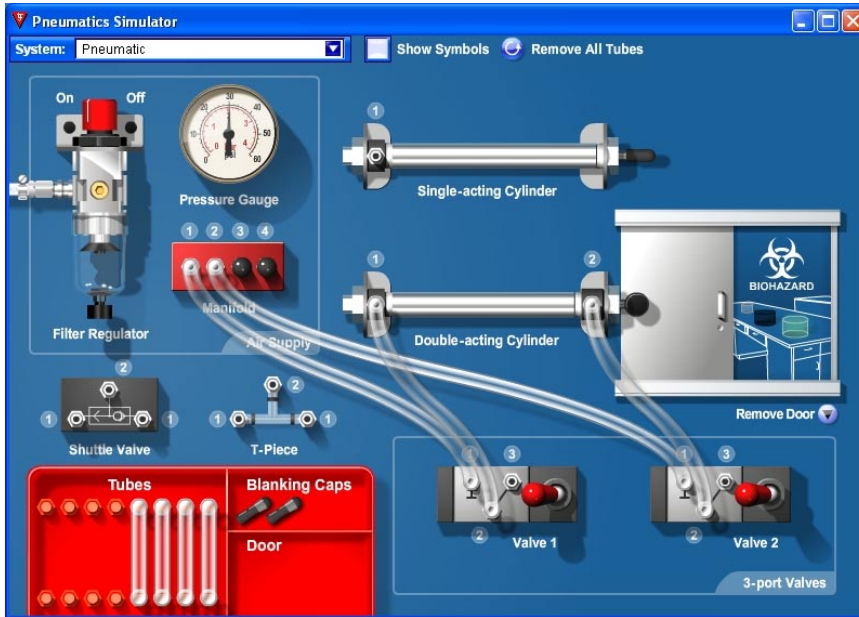


Pneumatics (Engineering Unit)



This is one of a series of instructional curriculum units designed specifically to operate within a lockstep environment where all students carry out assignments simultaneously within the same topic area. It can be run independently, or as an ideal addition to our ScanTEK Technology Program.

This unit makes use of hardware supplied with the ScanTEK technology module. It includes 10 lessons of on-screen curriculum materials in an html format. These can be delivered via a LAN using our ClassAct classroom management system or via the Internet using our ClassCampus management system.

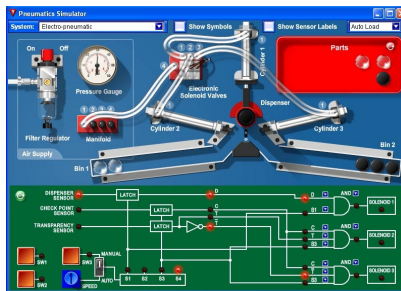
The curriculum includes continuous assessment, assessment tests and a workbook journal to create a portfolio of work during the lessons. Typical activities include hands-on investigations, problem-solving, and group projects.

Each lesson contains between one and two hours of study. A lesson typically begins with a PowerPoint presentation that provides students with background information required to complete the rest of the lesson. If used with our ClassAct SRS system, questions integrated into the PowerPoint can be tracked as each student responds on their handheld keypad.

Demonstration activities are carried out by the instructor using purpose built hardware. Students carry out hands-on activities using a software simulation of the hardware. The students also have an opportunity to verify their solutions using the hardware.

Where appropriate, research activities that include the use of multimedia explorers are also incorporated.

This instructional unit uses a unique software simulation of pneumatic and electro-pneumatic systems. This enables a whole class to carry out activities in the same topic areas at the same time.



The simulator allows the student to construct, operate and evaluate pneumatic circuits. The electro-pneumatic system allows students to construct electronic circuits to control the operation of a pneumatic part sorting system.

A variety of pneumatic components are provided in the simulator. These components are:

- Single-acting Cylinders
- Double-acting Cylinder
- 3-port Valves
- Shuttle Valve
- T-Piece
- Solenoid Valves
- Filter Regulator

Topic areas include:

- Principles of Pneumatics
- Components, Symbols and Circuits
- Cylinders
- Valves
- Speed Control
- Pneumatic Logic Functions
- Electro-pneumatics
- Sequential Control & Automatic Circuits
- Time Delays
- Problem Solving

Activities include:

- Identify safety rules when working with pneumatics.
- Discover the symbols used to represent pneumatic components.
- Demonstrate the operation of single-acting and double-acting cylinders.
- Construct a pneumatic circuit to use a shuttle valve.
- Identify the use of flow regulators in controlling cylinder speed.
- Construct pneumatic circuits to function as OR, AND & NOT operators.
- Observe how a time delay can be constructed into a pneumatic circuit.
- Construct electronic circuits to control a pneumatic system.

Each lesson is designed to meet a number of performance objectives. These include academic, technical and occupational objectives. The lessons are written in such a way as to enable a student to attain the performance objectives, with continuous assessment activity questions and assessment test questions linked to these in order to provide a measure of true competency.

The performance objectives are used by the ClassAct or ClassCampus management systems to generate a comprehensive portfolio of student reports.

The items supplied with this instructional unit include:

- 12 x Pneumatics Accessory Kit-C
- On-screen Student Curriculum CD
- Instructor's Guide

Additional items required:

- ST270/40 Pneumatics
- Computer

Module Facts

Order as:
ST270/LS/10 Pneumatics (Engineering)

	No.	Average time
Lessons	10	75 mins
Total		12.5 hours



ClassAct, ClassAct SRS & ClassCampus enabled



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