

Pneumatics (10-assignment)



This is an integrated instructional module designed specifically to operate within a Modular Program environment. It is ideal for use with our Scantek Technology program. The module includes a 10-assignment exploratory curriculum that is split into two parts. Each part includes a pre-test and post test. The module includes hardware, software and curriculum materials sufficient to provide a complete learning experience.

The curriculum incorporates continuous assessment through questions. When used in conjunction with a ClassAct networked management system, this provides instant feedback of student performance. The assessments begin with a comprehensive pre-test. This quiz includes questions for each subsequent assignment, together with questions that will specifically test math and reading ability.

Every assignment starts with a series of questions designed to track inventory. These ensure that any missing items are located before they are needed.

Each assignment is divided into a series of tasks. Hands-on tasks form the core of the student work. Where appropriate, these are accompanied by research tasks based upon software applications. Assessment questions are incorporated into each task.

Typical 10-assignment topic areas include:

- Building and testing pneumatic circuits
- Pneumatic component symbols
- Operation of single acting and double acting cylinders
- Pressure, force and area relationship
- Operation of a 3-port valve
- Exhaust restrictors

Typical 10-assignment activities include:

- Identify the properties of fluids and evaluate the use of compressed air as a medium for transmitting power.
- Evaluate the idea of a pneumatic circuit and learn how to connect and operate the Pneumatics Trainer.
- Investigate pressure and the different scales used to measure it.
- Recognize how symbols can be used in pneumatics to simplify the design and drawing of circuits and components.
- Investigate the operation of a single acting cylinder and 3 port valve in designing circuits for pneumatic vise and stamping applications.
- Evaluate various type of pneumatic cylinders as the output component of a pneumatic circuit and investigate how they operate.
- Investigate valves in detail and recognize them as switch-like components.
- Investigate the relationship between force, pressure and area.
- Carry out a number of cylinder sizing calculations for real pneumatic systems.
- Design a pneumatic system to operate a sliding door.
- Investigate how the flow speed of compressed air is controlled in a circuit and how this affects the performance of a pneumatic circuit.
- Design, test and evaluate a solution to a automatic sliding door application using pneumatics.

Each assignment is designed around a list of performance objectives. These lists include academic, technical and occupational objectives. The assignments are written in such a way as to enable a student to attain the performance objectives, with the assessment questions linked to these in order to provide a measure of true competency.

The performance objectives are used by the ClassAct management system to generate a comprehensive portfolio of student competency reports. Default reports supplied with this module include:

- Entry report
- Technical/Occupational Exit report
- Basic Skills report based upon the federal SCAN's report.

The items supplied with this instructional module include:

- 10-assignment On-Screen Student Assignment Guide CD
- 10-assignment Student Assignment Guide
- 10-assignment Student Workbook
- 10-assignment Instructor's Guide
- Computer Aided Instruction software
- Pneumatics trainer
- Hand pump compressor
- Pneumatics accessory kit

Additional items required:

- Computer

Module Facts

For Technology Program, order as: ST270/10 Pneumatics

	No.	Average time
Assignments	10	45 minutes
Extension Activities	2	45 minutes
Total		9 hours



LJ Technical Systems
 Web site: www.ljgroup.com