

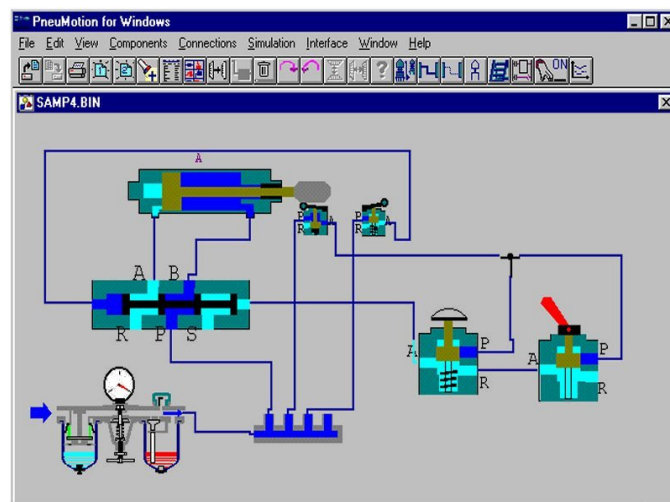
PNEUMOTION

PneuMotion is a pneumatics CAD, simulation and operation software package

PneuMotion enables the study of pneumatics principles and technology. The software is a computer-aided design tool that teaches students how to design and operate pneumatic and electro-pneumatic circuits. The software's HMI animation provides an accurate working simulation of pneumatic devices and circuits.

Users can change the default parameters of the pneumatic components, such as piston extension and retraction, speed and timer set point. Software algorithms adjust the system's response to present a realistic pneumatic system response. All units are metric.

In addition to simulation of virtual circuits, PneuMotion can control actual electro-pneumatic circuits. When connected to the PneuFlex or PneuLine training panel, the software provides on-line graphic tracking of circuits in operation. (Requires computer interface control unit.)



Pneumatic component library

- A wide selection of components for creating pneumatic and electro-pneumatic systems.
- Conditioning unit: provides pressurized air to the system.
- Valves: 3/2 roller operated spring returned valve (used as pneumatic limit sensor and switch); 3/2 air operated air returned valve; 3/2 air operated spring returned valve; 3/2 manually operated spring returned valve (push button valve); 3/2 manually operated manually returned valve (toggle valve); 5/2 air operated spring returned valve; 5/2 air operated air returned valve
- Cylinders: Double acting cylinder. The cylinder's extension and retraction times are adjustable; spring return cylinder (2 types); double acting cylinder with two roller valves; diaphragm operated cylinder.
- Miscellaneous: logic gate AND; logic gate OR; single pilot valve; pneumatic delay; pneumatic counter.
- Connectors: T-connector; manifold.
- Electrical components: 5/2 solenoid operated solenoid returned valve; 5/2 solenoid operated spring returned valve; cylinder with magnetic switches fitted as limit sensors; relay with four changeover contacts; V+ power supply; pushbutton; lamp; electronic delay unit; electronic counter.
- Text component: symbolic and user defined text captions can be added to diagrams.

Functions and tools

- Component selection: components required for a circuit are loaded from a complete component library, text list or graphic library; components are placed on screen, resized and repositioned through point and click mouse operation.
- Component connections: pneumatic and electrical connections are drawn and removed by point and click mouse operation; user can link two or more pushbutton switches to simulate the system response when the two valves are activated simultaneously.
- Cross-section (symbolic) display of components and circuits: enables examination of component's design and structure, ports and significant internal elements (e.g., spool, spring, etc.)
- Schematic display of components and circuits, as they would appear in standard schematic drawings.
- Ladder diagrams: software can generate electrical connections in circuit drawing from ladder diagram; software automatically generates ladder diagram from circuit drawing; drawing and editing of ladder diagrams using standard symbols; ladder diagram can be tested in simulation.
- Dynamic simulation of single component operation; four methods of simulation, allow user to observe how a component functions and how air flows through a component as a function of its internal elements.
- Simulated execution of user-designed pneumatic and electro-pneumatic circuits. User can "pressurize" the virtual system, "run" it and observe the following: responses of "visible" components, such as piston rod movements; responses of "non-visible" components such as a valve's spool movements; air flow through the components and changes in air pressure in the pneumatic tubes; errors indicating logic problems in the circuit.
- Timing diagram: drawn on screen as the components change their state; serves to identify overlapping signals in the control system.
- Software can control actual electro-pneumatic circuits.
- Software can perform on-line graphic tracking of pneumatic circuits in operation.
- Parameter setting options for piston extension and retraction, speed, timer set point, etc.
- Software monitors pressure and flow during circuit operation; diagram graphically presents flow and pressure in the pneumatic circuit.
- File options: standard Windows management tools, including: New, Open, Save, Save As, Sort, Search, Print and Delete.
- Editing options: standard Windows graphic tools, including: copy, paste and cut, resize, rotate and mirror.
- Zoom display options
- User can simultaneously create, run and compare two different circuits.

PC requirements

- Pentium III 350 MHz with 32 MB RAM, CD-ROM drive or network access for installation
- Operating system: Windows 98/2000/XP



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