Learning Systems
Fluid Power: Pneumatics

- **Basic Pneumatics Training Software**: A versatile software package that is used to teach basic pneumatics.

- **Applied Pneumatics Training Packages**: Apply practical training to reinforce theoretical pneumatic knowledge.

- **Applied Electro-Pneumatics Training Packages**: Teach setup, operation and troubleshooting of electro-pneumatic processes.

- **Closed-Loop Pneumatics Training Package**: Teach setup, commissioning and troubleshooting of closed-loop control assemblies.

- **Servo-Pneumatics Training Package**: Teach position-related applications using industrial components and practices.

Create an Effective Learning Environment

www.festo.com/uslearningsystems
Create an Effective Learning Environment

The Proper Training Tools Create an Effective Learning Environment

Get your students involved by using Festo Learning Systems...
The Gateway to Your Student’s Success!

Consider our low cost solutions for fluid power training. These turn-key training packages will help to create an exciting and challenging learning environment that can be customized to fit any budget.

The following pneumatic training packages are available:
• Basic Pneumatics
• Applied Pneumatics
• Applied Electro-Pneumatics
• Closed-Loop Pneumatics
• Servo-Pneumatics

Festo Learning Packages offer:
• Courseware starting with simple concepts and logically progressing to more challenging assignments
• Scalability: the basic package can be used as a training aid for more advanced concepts
• Extensive hands-on training
• A way to continually reinforce concepts
• Actual industrial components
• Exercises based upon real manufacturing situations
• Excellent instructor support: curriculum, software and documentation
• Understanding of complex manufacturing processes
• Flexibility: instructors can design their own exercises

All components and accessories may be purchased individually. • Contact your local Festo Representative for further details.
Basic Pneumatics Training Software

Start with our Award-Winning Software for Pneumatics Training and Simulation: FluidSIM®

FluidSIM is a versatile software program used as a resource for:
- Basic Pneumatics
- Electro-Pneumatics
- Circuit drawing and interpretation
- Programmable logic controllers
- Design and testing of virtual circuits
- Advanced concepts in the field of fluid power

FluidSIM contains over 60 exercises, 100 library components and topical slides that cover the principles of pneumatics and electro-pneumatics.

Using this low cost system, instructors can teach:
- Characteristics of compressed air systems
- Pascal’s Law
- ISO 1219 fluid power symbology
- Operating principles of common pneumatic components
- Basic pneumatic circuit design and interpretation

With the optional EasyPort®, users can interface Festo’s software simulations to external training hardware.

*EasyPort is an optional interface device that connects Festo software simulations to external training hardware.

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Applied Pneumatics Training Packages

Use these flexible training packages to reinforce the concepts taught with the Basic Pneumatics Training Software Package and apply actual manufacturing processes to theoretical knowledge.

Use the Basic Training Package to teach:
- In-depth operating principles of actuators, valves and logic devices
- Principles of pressure and flow
- Basic principles and terminology of control technology

Basic Training Package includes:
- Cylinders, Directional Control Valves, Gauges and Logic Devices
- Time Delay and Pressure Sequencing Valves
- Mechanical Limit Switches
- Flow Control and Quick Exhaust Valves
- Pressure Regulator, Filter Regulator and Manifold
- Pneumatic Tubing and Storage Tray
- Basic Pneumatics Workbook and Textbook
- Tabletop Component Profile Plate

The Advanced Training Package adds these elements:
- Sequence of operations
- Vacuum control
- Programming of automated processes using steppers
- Signal flow, circuit planning, design and system construction

Advanced Training Package includes:
- Back Pressure Valve
- Vacuum Generator, Suction Cup and Vacuum Control Valve
- Pneumatic Counter, Pneumatic Proximity Switch
- Emergency Stop Valve
- Stepper modules and Linear Drive
- Pneumatic Tubing and Storage Tray
- Advanced Pneumatics Workbook

Optional Accessories:
- FluidStudio Pneumatic Training Software
- FluidSIM Pneumatic Resource Software
- Super-Quiet Compressor

(Note: Does not include tabletop mounting board)

FluidStudio Pneumatic Training Software
FluidSIM Pneumatic Resource Software
Super-Quiet Compressor

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Applied Electro-Pneumatics Training Packages

Use these learning packages to reinforce the concepts taught in Applied Pneumatics courses.

**Use the Basic Training Package to teach:**
- Basic principles of DC electricity and pneumatics
- Functions and uses of electro-pneumatic devices
- Contact switches, relays, and pressure sensors
- Ladder logic

**Basic Training Package includes:**
- Cylinders, Solenoid Operated Directional Control Valves
- Relays, Switches, Indicator / Electrical Distribution box
- Limit Switches and Reed Switches with Cylinder Mounting
- Pneumatic Manifold and Filter Regulator
- Pneumatic Tubing and Storage Tray
- 24V DC Power Supply and Electrical Connection Cords
- Basic Electro-Pneumatics Workbook and Textbook
- Tabletop Component Profile Plate

**The Advanced Training Package adds these elements:**
- Proximity sensors and counters
- Delay-on and delay-off timers
- External operator control of circuits, including single/continuous cycle, emergency stop, etc.
- Programmed control of electro-pneumatic circuits
- Troubleshooting electro-pneumatic processes

**Advanced Training Package includes:**
- Time Delay Relays and Counter
- Inductive, Optical and Inductive Sensors
- Emergency Stop Switch
- Pneumatic Tubing and Storage Tray
- Advanced Electro-Pneumatics Workbook

*Note: The Advanced Electro-Pneumatics Training Package is intended as an extension to the Basic Training Package.*

**Optional Accessories:**
- FluidSIM Pneumatic Resource Software
- EasyPort*
- Super-Quiet Compressor

*EasyPort is an optional interface device that connects Festo software simulations to external training hardware.

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Create an Effective Learning Environment

Closed-Loop Pneumatics Training Package

Use this training package to introduce the concepts of feedback in pneumatic circuits.

Use this learning system to teach:
• Pressure and position control
• Action sequence of a closed-loop system: controlled, manipulated disturbance and reference variables
• PID (Proportional, Integral, Differential) controls
• Differences between open and closed-loop control action sequences
• Setup, commissioning and troubleshooting of closed-loop control assemblies, devices and systems with analog controller cards

Closed-Loop Pneumatics Training Package includes:
• Manual and Solenoid Operated Directional Control Valves
• Pressure gauge
• Flow Control Valves
• Manifold
• Electrical Switch Box
• Filter Regulator
• Air Reservoirs
• PID Controller
• Comparator
• Proportional Valve
• Analog Pressure Transducer
• Position Encoder

Optional Accessories:
FluidStudio Pneumatic Training Software
FluidSIM Pneumatic Resource Software
Super-Quiet Compressor

All components and accessories may be purchased individually. • Contact your local Festo Representative for further details.
Servo-Pneumatics Training Package

Use this training package to teach position control using Servo-Pneumatics.

**Use this learning system to teach:**
- Setup and commissioning of multi-axis pneumatic positioning systems
- Principles of closed-loop systems
- Relationships between velocity and acceleration
- Digital technology to implement servo-pneumatic drive control circuits
- Programming and trouble-shooting of numerically controlled multi-axis positioning systems
- Programming and implementation of handling systems
- Emergency stop functions in a two-axis system

**Servo-Pneumatics Training Package includes:**
- Filter Regulator
- Shock Absorbers
- Position Encoder with Mounting Accessories
- 3/2 Solenoid Valve
- 5/3 Proportional Valves
- Axis Controller, SPC-200 with Control Unit and Accessories
- Axis Interface for Position Encoder
- Emergency Stop Switch
- Linear Drive E-Stop
- Pneumatic Linear Drive
- Pneumatic Linear Drive with Integrated Position Encoder
- Axis Interface for Position Encoder
- Gantry Kit
- Parallel Jaw Gripper Kit
- Pneumatic tubing and storage tray
- Servo-pneumatic Positioning Workbook
- Programming Software: WinPISA for SPC 200
- SPC 200 Operating Instructions
- Tabletop component profile plate
- Tabletop Power Supply

**Optional Accessories:**
Super-Quiet Compressor

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Festo Fluid Power Training Packages seamlessly integrate with:

**Learning Systems**
**Festo Workstations**
(Catalog: 13032944)
- Designed with the instructor in mind
- Available as movable or stationary designs
- Lockable drawers for secure storage of training components

**Learning Systems**
**Software Simulation**
(Catalog: 13032941)
- FluidStudio computer based training for fluid power
- FluidSIM Fluid Power training aid for instructors and a design tool for engineers
- COSIMIR PLC 3D simulation tool for practical PLC training
- COSIMIR for Robotics 3D simulation software for modeling and programming robotic workcells

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