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AutoControl

Innovative Intuitive Hydraulic
and Pneumatic Training
System



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Innovative Intuitive Hydraulic and Pneumatic Training System

The [Innovative Intuitive Hydraulic and Pneumatic Training System](#) features a dual-sided design, with one side dedicated to hydraulic training and the other to pneumatic training. This versatile system enables users to perform both basic hydraulic drive and control experiments, as well as pneumatic transmission and control experiments. Additionally, it allows for the integration of complex training modules, such as electric-pneumatic, pneumatic-hydraulic, electric-hydraulic, and comprehensive pneumatic-electric-hydraulic control systems. Ideal for PLC, solenoid, pneumatic, hydraulic, and relay training, this [Innovative Intuitive Hydraulic and Pneumatic Training System](#) offers a comprehensive solution for skill development.

Key Features of the [Innovative Intuitive Hydraulic and Pneumatic Training System](#)

- **Realistic Component Design:** All transparent hydraulic and pneumatic components are meticulously crafted to reflect the actual internal structure and working principles of industrial systems, providing an authentic and immersive learning experience.
- **High-Quality Materials:** Components are constructed from transparent plexiglass, ensuring high clarity, compact size, and lightweight design. This makes it easier for students to observe and understand the function and operation of each component.
- **Comprehensive Learning:** Students can build basic hydraulic and pneumatic circuits, analyze spool movement within the loop tank, and observe fluid flow direction, covering a broad range of disciplines in hydraulic and pneumatic technology.



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- **User-Friendly Training Panel:** The panel is designed with a T-slot and rapid joint system, allowing for easy insertion and operation of hydraulic and pneumatic components, enhancing the ease of use.
- **Vivid Demonstrations:** The transparent plexiglass construction vividly illustrates the structure and operation of hydraulic and pneumatic components, greatly enhancing the educational experience.
- **Simple Circuit Assembly:** Leak-proof, quick-insert interfaces ensure that circuit experiments can be assembled easily, quickly, and cleanly, improving the efficiency of the training process.
- **Secure Component Fixing:** All components are securely fixed with quick-type slab fixing on the base, ensuring stability and safety during operation.
- **Advanced PLC System:** The trainer is equipped with a Mitsubishi FX1S-20MR PLC, featuring 12 inputs and 8 relay outputs. This system integrates PLC with hydraulics and pneumatics to support automatic control experiment teaching.

This [Innovative Intuitive Hydraulic and Pneumatic Training System](#) is an essential tool for mastering hydraulic and pneumatic circuit design and operation, catering to various training needs while providing a hands-on, immersive learning experience.

Typical Training Contents of [Innovative Intuitive Hydraulic and Pneumatic Training System](#)

Typical Hydraulic Training Modules

1. Directional Control Circuits

Sequence Action Circuit

- Manual Directional/Reversing Valve Circuit
- Pilot-Oriented Pressure Relief/Overflow Valve Circuit

Sequence Action Circuit

- Sequence Valve Circuit
- Pressure Relay Circuit
- Limit Switch Circuit
- Travel/Reversing Valve Circuit

Lock Circuit

- Mid-Position Function Solenoid Reversing Valve Circuit
- Pilot Check Valve Circuit

2. Pressure Control Circuits

Pressure Regulating Circuit

- Single-Stage Pressure Regulating Circuit
- Two-Stage Pressure Regulating Circuit

Pressure Reducing Circuit

- Pressure Reducing Valve Circuit

Booster Circuit

- Booster Cylinder Circuit

Pressure Relief Circuit

- Pressure Relief Circuit by Reversing Valve

3. Speed Control Circuits

Throttle Speed Regulating Circuit

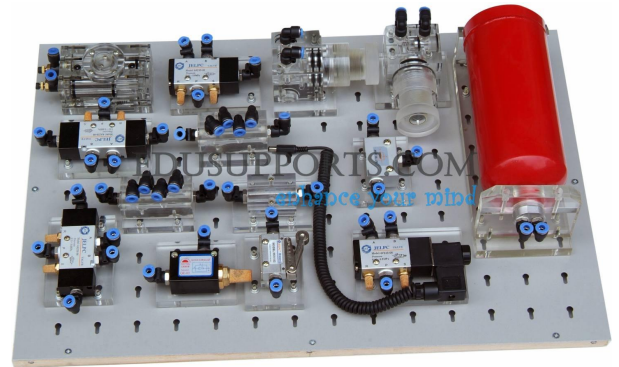
- Oil-Inlet Throttle Speed Regulating Circuit
- Oil-Return/Back Throttle Speed Regulating Circuit
- Reversing Speed Regulating Circuit of Gear Pump
- Complex Speed Control Circuit by Gear Pump and Speed Regulating Valve
- Secondary Feed Circuit of Series Speed Regulating Valve
- Secondary Feed Circuit by Parallel Speed Regulating Valve

Speed Shift Circuit

- Speed Shift Circuit of Flow Valve

Synchronization Circuit

- Synchronization Circuit of Series Hydraulic Cylinder



Hydraulic Training Modules

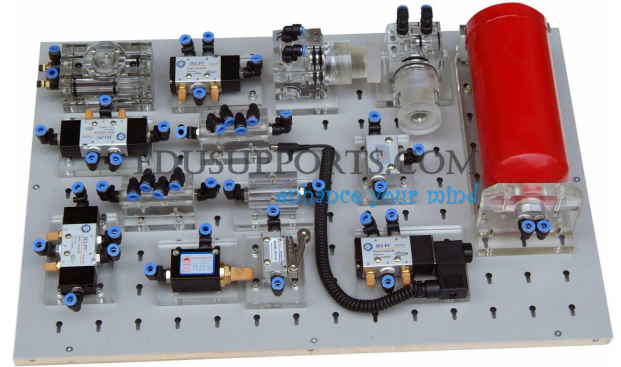
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Typical Pneumatic Training Modules

Pressure Control Circuits

- Secondary Pressure Control Circuit
- High and Low Pressure Shift Circuit
- Overload Protection Circuit
- Unloading Circuit



Pneumatic Training Modules

Directional Control Circuits

- Single-Acting Cylinder Reversing Circuit
- Double-Acting Cylinder Reversing Circuit
- Single-Cylinder Reciprocating Control Circuit
- Single-Cylinder Continuous Reciprocating Control Circuit
- Sequence Action Circuit of Straight Cylinder and Rotating Cylinder
- Multi-Cylinder Sequence Action Circuit
- Double Cylinders Synchronous Action Circuit

Speed Control Circuits

- Single-Acting Cylinder Speed Regulating Circuit
- One-Way Speed Regulated Circuit of Double-Acting Cylinder
- Two-Way Speed Regulated Circuit of Double Pneumatic Acting Cylinder
- Speed Shift Circuit
- Buffer Circuit

Other Circuits

- Relay Circuit
- Counting Circuit
- Interlock Circuit
- Four Cylinders Linkage Circuit
- OR-Gate Type Shuttle Valve Application Circuit
- Quick Exhaust Valve Application Circuit

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Main Technical Parameters of [Innovative Intuitive Hydraulic and Pneumatic Training System](#)

Main Technical Parameters

- 1.Power Supply: AC 220V 50HZ
- 2.DC power supply: Input AC 220V, output DC 24V/2A
- 3.Motor power: 250W Power supply: AC220V

Nominal capacity: 10L

- 4.rated output pressure 1Mpa
- 5.Dimensions: 1500mm × 900mm × 1700mm

This [Innovative Intuitive Hydraulic and Pneumatic Training System](#) offers powerful performance and quiet operation, making it ideal for comprehensive training in both hydraulic and pneumatic systems.