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AutoControl

Revolutionary Visible Hydraulic and Pneumatic Trainer



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www.edusupports.com

sales@edusupports.com

Revolutionary Visible Hydraulic and Pneumatic Integrated Trainer

The [Revolutionary Visible Hydraulic and Pneumatic Integrated Trainer](#) is a state-of-the-art, dual-sided training system designed for comprehensive hydraulic and pneumatic education. This advanced trainer offers a unique combination of hydraulic and pneumatic training on a single platform, making it ideal for a wide range of technical skill development, including PLC, solenoid, hydraulic, pneumatic, and relay training.

Key features include of [Revolutionary Visible Hydraulic and Pneumatic Integrated Trainer](#)



SKU: 0401010020

- **Dual-Sided Design:** The Revolutionary Visible Hydraulic and Pneumatic Integrated Trainer features a vertical double-sided platform, with one side dedicated to pneumatic experiments and the other to hydraulic experiments. It includes transparent components for enhanced visibility of internal structures.
- **Realistic Hydraulic Components:** All transparent components are crafted to replicate the actual internal structures of industrial-grade hydraulic and pneumatic components, providing a realistic learning experience that reflects true industrial principles.
- **Premium Material Construction:** The hydraulic and pneumatic components are made from high-quality transparent plexiglass, offering high clarity, compact size, and lightweight design. This enables students to clearly observe the function and operation of each component and analyze fluid dynamics within the system.

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- **Industrial-Grade Pneumatic Components:** The pneumatic components and valves are industrial-grade, ensuring reliability and durability during training exercises.
- **User-Friendly T-Slot Panel Design:** The training panel features a T-slot design with rapid joint connections for easy insertion and operation of hydraulic and pneumatic components, streamlining the assembly process for students.
- **Leak-Proof Circuit Assembly:** The circuit experiments utilize a leak-proof, quick-insert interface, ensuring that assembly is simple, quick, and clean, enhancing the overall learning experience.
- **Stable Component Fixing:** Both hydraulic and pneumatic components are securely fixed using quick-type slab fixing, ensuring stability during operation and training.
- **Low-Noise Air Compressor:** The system includes a silent air compressor with noise levels below 57dB, providing oil-free, odorless, clean, and dry gas for pneumatic operations.
- **Superior Sealing Performance:** The hydraulic components offer excellent sealing performance, preventing leaks under operating pressures of up to 0.8-1 MPa.

Hydraulic Experimental Panel

- **Power Module:** Equipped with three-phase leakage protection, outputting 380V/220V, and 24V DC, ensuring safety and reliability during experiments.
- **PLC Module:** Integrated with secure sockets for input and output points, PLC programming software, learning software, and a programming cable for advanced training.
- **Relay Unit:** Features easily accessible relay connectors for convenient connections during training sessions.
- **Button Switch Unit:** Various push-button switches are connected to the panel for easy operation during experiments.
- **Electronic Control Interface:** Solenoid valve connectors are integrated into the panel for seamless connection and control.
- **Modular Hydraulic Components:** The hydraulic components are mounted on a fast backplane, allowing for quick assembly and disassembly during training.

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Pneumatic Experimental Panel

- **Power Module:** Includes single-phase leakage protection with an output voltage of 220V, cutting off power when earth leakage current exceeds 30mA. The electric control uses DC 24V with overvoltage protection for enhanced safety.
- **PLC Module:** Features secure sockets for input and output points, along with PLC programming and learning software, and a programming cable.
- **Relay Unit:** Relay connectors are accessible for easy connections during pneumatic training.
- **Button Switch Unit:** Various push-button switches are integrated into the panel for straightforward operation.
- **Electronic Control Interface:** Solenoid valve connectors are included for efficient control and operation.
- **Modular Pneumatic Components:** The



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Typical Training Contents of [Revolutionary Visible Hydraulic and Pneumatic Integrated Trainer](#)

Hydraulic System Training:

1. Basic Hydraulic Circuit Training

Pressure Control Circuits:

- Pressure regulation using pressure relief/overflow valves.
- Single-stage pressure regulation via remote ports.
- Pressure reduction using pressure reducing valves.
- Pressure relief through various valve configurations (e.g., three-position four-way valves, two-position two-way valves).
- Pressure holding using pilot check valves.
- Decompression circuits using throttle and sequence valves.

Speed Control Circuits:

- Inlet, return, and bypass throttle speed regulation.
- Speed regulation using speed-regulating valves in various configurations (e.g., differential connection, series, and parallel circuits).
- Speed reduction and synchronization circuits involving solenoid valves and throttle valves.

Directional Control Circuits:

- Reversing circuits using various types of reversing valves.
- Sequence action circuits incorporating sequence valves, proximity switches, and pressure relays.
- Lock circuits utilizing one-way valves, reversing valves, and pilot check valves.

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2. Hydraulic System Demonstrations

- Hands-on assembly and disassembly training to observe and understand the structure and working principles of hydraulic transmission systems.

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Pneumatic System Training:

1. Basic Pneumatic Circuit Training

Single and Double Pneumatic Cylinder Control:

- Direct and speed control of single and double pneumatic cylinders.
- Remote and hand-operated circuit controls.
- Interlock and delay control circuits.
- Reciprocating and multi-cylinder control circuits.



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Main Technical Parameters of [Revolutionary Visible Hydraulic and Pneumatic Integrated Trainer](#)

Hydraulic Section:

Motor:

- Power: 0.75kW
- Speed: 1420r/min

Pump:

- Rated Pressure: 0.8-1.0MPa
- Nominal Displacement: 7.8cc/rev

Pneumatic Section:

Compressor:

- Displacement: 65L/min
- Noise Level: <57dB (Silent Operation)

Motor:

- Power: 750W
- Voltage: 220V
- Speed: 2860r/min

PLC Model:

- FX1S-20MR-001

Bench Dimensions:

- 1650mm × 900mm × 1750mm