

AutoControl

Ultimate Transparent
Hydraulic Control Trainer



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Ultimate Transparent Hydraulic Control Trainer

This [Ultimate Transparent Hydraulic Control Trainer](#) is an advanced platform designed for hydraulic circuit design and demonstrations, ideal for hydraulic teaching classes. It allows for an in-depth study of the internal structure and working principles of various hydraulic components.

This [Ultimate Transparent Hydraulic Control Trainer](#) is an essential tool for mastering hydraulic circuit design and operation, catering to the needs of various hydraulic disciplines and providing a hands-on, immersive learning experience.

Key features include of [Ultimate Transparent Hydraulic Control Trainer](#)



SKU: 0401010020

- **Realistic Component Design:** All transparent hydraulic components are crafted to reflect the actual internal structure and working principles of industrial hydraulic components, providing an authentic learning experience.
- **High-Quality Materials:** Components are made from imported transparent plexiglass, offering high clarity, compact size, and lightweight design, making it easier for students to observe and understand the function and operation of each component.
- **Comprehensive Learning:** Students can construct basic hydraulic circuits, analyze the movement of spools within the loop tank, and observe the fluid flow direction within the spool body, covering a broad spectrum of hydraulic disciplines.

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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 components.
- **Vivid Demonstrations:** The transparent plexiglass construction vividly demonstrates the structure and operation of hydraulic components, enhancing the learning experience.
- **Simple Circuit Assembly:** The leak-proof, quick-insert interfaces ensure that circuit experiments are assembled easily, quickly, and cleanly.
- **User-Friendly Training Panel:** The panel is designed with a T-slot and rapid joint system, allowing for easy insertion and operation of hydraulic components.
- **Vivid Demonstrations:** The transparent plexiglass construction vividly demonstrates the structure and operation of hydraulic components, enhancing the learning experience.
- **Simple Circuit Assembly:** The leak-proof, quick-insert interfaces ensure that circuit experiments are assembled easily, quickly, and cleanly.
- **Secure Component Fixing:** All hydraulic components are securely fixed with quick-type slab fixing on the base, ensuring stability during operation.
- **Dual Control Methods:** The trainer offers two control methods—PLC control and relay control. By using the programmable controller (PLC), students can optimize control plans and compare the advantages of PLC control over traditional relay control.
- **Advanced PLC System:** Equipped with a Mitsubishi FX1S-20MR PLC with 12 inputs and 8 relay outputs, the system integrates PLC with hydraulics to facilitate automatic hydraulic control experiment teaching.



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Comprehensive Training Modules for [Ultimate Transparent Hydraulic Control Trainer](#)

1. Directional Control Circuits

Reversing Action Circuits

1.1.1 Manual Directional/Reversing Valve Circuit

1.1.2 Reversing Circuit Using Pilot-Oriented Pressure Relief/Overflow Valve

Sequence Action Circuits

1.2.1 Sequence Valve Circuit

1.2.2 Pressure Relay Sequence Circuit

1.2.3 Limit Switch Sequence Circuit

1.2.4 Travel/Reversing Valve Sequence Circuit

Lock Circuits

1.3.1 Mid-Position Function Solenoid Reversing Valve Lock Circuit

1.3.2 Pilot Check Valve Lock Circuit

2. Pressure Control Circuits

Pressure Regulating Circuits

2.1.1 Basic Pressure Regulating Circuit

2.1.2 Two-Stage Pressure Regulated Circuit

Pressure Reducing Circuits

2.2.1 Pressure Reducing Valve Circuit

Booster Circuits

2.3.1 Booster Cylinder Circuit

Pressure Relief Circuits

2.4.1 Reversing Valve Pressure Relief/Venting Circuit

3.Speed Control Circuits

Throttle Speed Regulating Circuits

3.1.1 Oil-Inlet Throttle Speed Regulating Circuit

3.1.2 Oil-Return/Back Throttle Speed Regulating Circuit

3.1.3 Gear Pump Reversing Speed Regulating Circuit

3.1.4 Complex Speed Control Circuit Using Joint Gear Pump and Speed Regulating Valve

3.1.5 Series Speed Regulating Valve Secondary Feed Circuit

3.1.6 Parallel Speed Regulating Valve Secondary Feed Circuit

Speed Shift Circuits

3.2.1 Flow Valve Short-Contact Speed Shift Circuit

Synchronization Circuits

3.3.1 Series Hydraulic Cylinder Synchronization Circuit

This [Ultimate Transparent Hydraulic Control Trainer](#) provides a detailed understanding of hydraulic control systems, covering various essential circuits for directional control, pressure regulation, and speed management. Each module is designed to enhance practical skills and theoretical knowledge in hydraulic technology, making it ideal for professionals and students alike.

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Main Technical Parameters for [Ultimate Transparent Hydraulic Control Trainer](#)

1. Motor Specifications

- **Power:** 400W
- **Speed Range:** 0-1500 r/min

2. Hydraulic Pump Features

- **Pump Maximum Pressure:** 2.5 MPa
- **Circuit Action Pressure:** 0.3-0.8 MPa
- **Noise Level:** ≤ 58 dB
- **Dimensions:** 550mm \times 350mm \times 600mm
- **Additional Components:** Gauge, oil temperature indicator, oil intake and return filter, safety valve

3. Power Supply

- **AC Supply:** AC220V, 50Hz
- **DC Supply:** Input AC220V, Output DC24V/3A

4. Bench Dimensions

- **Size:** 1250mm \times 650mm \times 1800mm

This [Ultimate Transparent Hydraulic Control Trainer](#)'s technical specifications are designed for optimal performance, offering precise control and efficient operation, making it ideal for professional training and educational purposes.