

AutoControl

High-Visibility Forklift Hydraulic Control System Trainer



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www.edusupports.com

sales@edusupports.com

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The **High-Visibility Forklift Hydraulic Control System Trainer** is an advanced, visual training platform designed to demonstrate hydraulic circuit design and control principles for forklift hydraulic systems. Its unique feature is the transparent plexiglass components, crafted to industrial standards, which make the internal structure and working principles of hydraulic parts vividly clear and intuitive. This hands-on learning trainer enables students to explore the structure, functionality, and principles of each hydraulic component, providing real-time visual feedback as they design and assemble hydraulic circuits. The forklift simulation includes movements such as upward, downward, forward, and backward, allowing students to fully understand the forklift's hydraulic system and its control mechanisms.

Key Features of the **High-Visibility Forklift Hydraulic Control System Trainer**

1. **Easy Operation:** The training panel is designed with a T-slot system, and all hydraulic components use rapid joints, simplifying assembly and disassembly.
2. **Transparent Components:** Hydraulic components are made of high-quality transparent plexiglass, allowing students to clearly observe the internal structures and fluid dynamics in action.
3. **Leak-Proof Circuit Assembly:** The circuit experiment uses leak-proof, quick-connect interfaces, making assembly clean, quick, and efficient.
4. **Comprehensive Setup:** The training platform includes a sturdy bench, a control panel, a forklift unit, various hydraulic components, electrical control devices, and a PLC.
5. **Realistic Forklift Simulation:** The forklift body, crafted from imported transparent plexiglass, is durable and wear-resistant. The system simulates real forklift movements while being highly corrosion-resistant and visually intuitive for students.
6. **Mobility:** Equipped with four universal wheels, the training bench can be easily moved and disassembled, providing flexibility in classroom environments.

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- Robust Construction:** The bench is built from 1mm-thick SPCC cold-rolled steel, providing durability and aesthetic appeal. The surface is treated with medium-temperature phosphating anti-rust paint and electrostatic spraying for long-term use.
- PLC-Controlled System:** The main control system is managed by a PLC programmable controller, allowing seamless communication with a PC for intelligent control and hydraulic circuit management. This reinforces students' learning of PLC control principles.



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- Relay Control Option:** In addition to PLC control, the trainer offers an independent relay control unit. Comparing both methods, students gain deeper insights into the advantages of PLC programmable control and strengthen their understanding of PLC programming.

This **High-Visibility Forklift Hydraulic Control System Trainer** provides an interactive, visual, and comprehensive learning experience, making it an ideal training tool for vocational schools, colleges, and technical institutions focused on hydraulic systems and forklift operation.

Typical Training Contents of High-Visibility Forklift Hydraulic Control System Trainer

1. **Understand the Basic Structure of Hydraulic Forklifts:** Gain comprehensive knowledge of the essential components and design of hydraulic forklifts.
2. **Understand the Transmission System of Hydraulic Forklifts:** Learn how the hydraulic transmission system powers and operates the forklift.
3. **Learn the Hydraulic System of Hydraulic Forklifts:** Study the key components and workings of the forklift's hydraulic system in detail.
4. **Learn the Manual Control Principle of Hydraulic Forklifts:** Explore how manual controls are used to operate the forklift's hydraulic system.
5. **Learn the Automatic Control Principle of Hydraulic Forklifts:** Understand how automatic controls function in the forklift's hydraulic system.
6. **Demonstrate the Rising Action of Hydraulic Forklifts:** Observe and simulate the upward motion of the forklift's hydraulic system in action.
7. **Demonstrate the Falling Action of Hydraulic Forklifts:** Experience the downward motion and control of the hydraulic system in real-time.
8. **Demonstrate the Forward Tilt Action of Hydraulic Forklifts:** Simulate and analyze the forward tilt operation of the forklift's hydraulic system.
9. **Demonstrate the Backward Tilt Action of Hydraulic Forklifts:** Understand the backward tilt mechanism and how it affects forklift operation.

Main Technical Parameters of High-Visibility Forklift Hydraulic Control System Trainer

1. **Power Supply:** AC220V, 50HZ
2. **DC Power Supply:** Input AC220V, Output DC24V/3A
3. **PLC:** Mitsubishi FX1S-20MR with 12 inputs and 8 outputs
4. **Hydraulic Pump Motor:** Power 250W, speed range 0-1500r/min, hydraulic pump noise ≤ 58 dB, required pressure range for oil circuit: 0.3-1.3Mpa (maximum pump pressure: 1.5Mpa)
5. **Solenoid Reversing Valve:** AC24V with suction force of 3Mpa
6. **Training Bench Dimensions:** 1500mm \times 660mm \times 1760mm
7. **Forklift Unit Dimensions:** 760mm \times 660mm \times 1360mm

This **High-Visibility Forklift Hydraulic Control System Trainer** offers high-performance, real-world simulations with industrial-grade components for in-depth learning of forklift hydraulic controls.