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Ultimate Hydraulic System Training Kit



Edusupports

www.edusupports.com

sales@edusupports.com

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The **Ultimate Hydraulic System Training Kit** is an advanced educational tool designed to provide clear, hands-on learning experiences in hydraulic systems. The kit features components made from transparent plexiglass, allowing users to observe the internal structures and workings of hydraulic systems with unmatched clarity. This transparency is particularly beneficial for students, offering a unique opportunity to visually grasp the principles, performance, and structure of hydraulic systems in real-time.

Key Features of **Ultimate Hydraulic System Training Kit**

- **Transparent Hydraulic Components:** The hydraulic components and pump are crafted from high-quality transparent plexiglass, mirroring the design of physical components. This transparency allows for an unobstructed view of the internal mechanisms, making it easier to understand the operation of hydraulic transmission systems.
- **High-Precision Valve Spool:** Manufactured to meet strict industrial standards, the valve spool offers high accuracy in the entire assembly. The gap between the valve body and the spool is maintained within 0.015-0.028 mm, ensuring precise control and operation.



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- **Durable Transparent Pipelines:** The kit includes imported transparent pressure pipes with quick-connect joints, providing both ease of use and excellent sealing performance. This design ensures convenient operation and minimizes the risk of leaks during experiments.
- **Superior Sealing Performance:** The hydraulic system is engineered to operate without leakage, even under pressures up to 0.8 MPa. This feature guarantees a clean and efficient learning environment, free from the complications of fluid leakage.
- **Extended Hydraulic Cylinder:** The hydraulic cylinder included in the kit is designed with a length greater than 200mm, allowing for a broad range of experimental applications. This extended length provides more flexibility and a comprehensive understanding of hydraulic functions.
- **High-Precision Manufacturing:** All hydraulic components are manufactured to high precision according to standard physical structures, ensuring accuracy and reliability in every experiment. The components are designed to reflect real-world hydraulic systems, making them ideal for educational purposes.

Educational Benefits of **Ultimate Hydraulic System Training Kit**

The **Ultimate Hydraulic System Training Kit** is specifically designed to enhance the learning experience for students studying hydraulic transmission systems. The transparent components provide a direct visual representation of the system's operation, making it easier for students to grasp complex concepts.

- **Clear Understanding of Hydraulic Principles:** The transparency of the components allows students to see the exact flow of hydraulic fluid, how the valves operate, and how the system responds to various inputs. This direct observation is invaluable for understanding the principles of hydraulic transmission.
- **Practical Learning Experience:** The kit enables students to conduct experiments on the performance, principles, and structures of hydraulic systems. This hands-on approach reinforces theoretical knowledge and improves practical skills.
- **Realistic Industrial Simulation:** The components are made according to industrial standards, providing students with a realistic simulation of real-world hydraulic systems. This prepares them for future careers in industries where hydraulic systems are prevalent.

Applications of **Ultimate Hydraulic System Training Kit**

The **Hydraulic System Training Kit** is versatile and can be used in various educational settings, including:

- **Technical and Vocational Schools:** Ideal for training students in technical and vocational programs focused on hydraulics, mechanics, and engineering.
- **Engineering Laboratories:** Useful in university and college engineering labs for teaching fluid mechanics, control systems, and mechanical engineering principles.
- **Industry Training Programs:** Can be used in industry-specific training programs to upskill employees in hydraulic system maintenance and troubleshooting.

Typical Training Contents of **Ultimate Hydraulic System Training Kit**

1. Recognition of Hydraulic Systems

- **Hydraulic Transmission System Composition:** A demonstration of the various components that make up a hydraulic transmission system.
- **Structure and Working Principle:** Observation, disassembly, and assembly training to understand the structure and operation of different parts within a hydraulic transmission system.

2. Typical Hydraulic Circuit Experiments

- **Pressure Relief Circuit:** Experimentation with a pressure relief circuit controlled by a reversing valve.
- **Pressure Reducing Circuit:** Study and experimentation with pressure reducing mechanisms.
- **Pressure Regulating Circuit:** Learning how to regulate pressure using a pressure relief valve/overflow valve.
- **Automatic Control Reversing Circuit:** Experimenting with circuits that reverse automatically.
- **Manual Control Reversing Circuit:** Hands-on practice with manually controlled reversing circuits.
- **Volume Throttling Speed Control Circuit:** Experimentation with volume throttling to control speed.
- **Throttle Speed Regulating Circuit:** Utilizing a speed regulating valve to manage and adjust speeds.

3. Pump Characteristic Tests

- **Pressure-Flow Rate Test:** Understanding the relationship between pressure and flow rate in a hydraulic pump.
- **Pressure-Volume Efficiency Test:** Measuring the volume efficiency under varying pressures.
- **Pressure-Overall Efficiency Test:** Evaluating the overall efficiency of the pump at different pressure levels.

Main Technical Parameters of **Ultimate Hydraulic System Training Kit**

1. Quantitative Gear Pump:

- Rated Pressure: 2.5 MPa
- Rated Flow: $\geq 4\text{L/min}$

2. AC Variable Speed Motor:

- Rated Voltage: AC 220V
- Rated Power: Not less than 200W
- Rated Speed: 1400 r/min

4. Dimensions:

- Kit Dimensions: 600mm × 285mm × 705mm
- Pump Dimensions: 390mm × 250mm × 350mm
- Training Kit Dimensions: 415mm × 295mm × 170mm