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### **Electro-hydraulic Proportional and Servo Performance Testing Bench**

**PN:0401040020**

#### **Electro-hydraulic Proportional and Servo Performance Testing Bench**

##### **Main Features**

- 1.steel frame structure, platform bench, foundation stability, stiffness, no distortion, no vibration.
- 2.easily expand the proportion of a variety of control and performance testing of servo, closed-loop.
- 3.hydraulic pump station can provide a constant voltage source, constant current source, configure accumulator, cooler, heater, high-precision oil filter.
- 4.data acquisition card, and professional software,designed feature rich, user-friendly virtual instrument, instead of expensive signal generator and other traditional instruments. Precise control, high-speed data acquisition system, multi-channels virtual instrument settings, allowing the system to achieve high-speed, high precision and strong anti-interference ability.
- 5.one system, and one elements test, the system uses a variety of classic test circuit, to enable students to master the test principle and to learn from multiple perspectives, understand the significance of the performance test, and the impact on system performance.
- 6.overall compact integrated Manifold connections to meet the dynamic test conditions.

#### **Electro-hydraulic Proportional and Servo Performance Testing Bench**

##### **Typical Experimental Contents**

- 1. Electro-hydraulic proportional directional valve performance testing**

- 1.1 pressure gain characteristics
- 1.2 compare different test circuit on valve performance test
- 1.3 valve pressure drop characteristics
- 1.4 step response characteristics
- 1.5 frequency response characteristics
- 1.6 compare system parameters on dynamic performance test
- 1.7 traffic load characteristics
- 1.8 constant valve pressure drop control features
- 1.9 compare PID parameters on valve performance test
- 1.10 detection experimental device
- 1.11 compare different loading on valve performance test

## **2. Electro-hydraulic proportional directional valve control servo cylinder closed loop position system performance experiment (closed-loop control)**

- 2.1 testing experiments
- 2.2 step response characteristics
- 2.3 displacement performance test
- 2.4 frequency response characteristics
- 2.5 control system error experiments
- 2.6 PID performance testing
- 2.7 System parameters on the dynamic performance test
- 2.8 position control system components, working principle and correction methods
- 2.9 computers application in the position control system

## **3. Electro-hydraulic proportional relief valve performance testing**

- 3.1 steady-state load characteristics
- 3.2 steady-state pressure control characteristics
- 3.3 load flow step characteristics test
- 3.4 detection experimental setu
- 3.5 input current signal step response characteristics
- 3.6 frequency response characteristics test
- 3.7 compare system parameters on the dynamic performance test
- 3.8 sine wave application in the position control system
- 3.9 compare PID parameters on the valve performance test

3.10 computer application in the proportion of overflow test system

3.11 compare different test loop on valve performance test

3.12 compare different load on valve performance test

3.13 Control system error experiments

#### **4. Electro-hydraulic proportional flow control valve performance testing**

4.1 detection experiments

4.2 steady-state flow control features

4.3 Control system error experiments

4.4 steady-state pressure - flow control characteristics

4.5 compare system parameters on the dynamic performance test

4.6 compare different test loop on valve performance test

4.7 compare different load on the valve performance testing

4.8 sine wave plication in the position control system

4.9 computer application in the position control system

4.10 compare PID parameters on the valve performance test

#### **5. Electro-hydraulic proportional force control performance test (valve cylinder optional)**

5.1 mechanical properties

5.2 step response characteristics

5.3 detection experimental device

5.4 system parameters on the dynamic performance

5.5 open-loop and closed-loop performance comparison experiments

#### **6. Electro-hydraulic proportional speed control performance test (valve motor optional)**

6.1 detection experimental device

6.2 step response characteristics

6.3 open-loop and closed-loop performance comparison experiments

6.4 frequency response characteristics

6.5 system parameters on the dynamic performance test

#### **7. Electro-hydraulic proportional servo valve performance testing**

7.1 pressure gain characteristics

7.2 load flow characteristics

7.3 step response characteristics

7.4 frequency response characteristics

7.5 physical meaning of each parameter and method of calculation

7.6 sine wave application in the position control system

7.7 control system error experiments

7.8 computer applications in the position control system

7.9 compare different test loop on valve performance test

7.10 compare different loading on valve performance test

7.11 PID parameters on the valve performance test

## **8. Electro-hydraulic proportional servo valve control servo-cylinder position system performance experiment (closed-loop control)**

8.1 step response characteristics

8.2 frequency response characteristics

8.3 detection experimental device

8.4 compare system parameters on the dynamic performance test

8.5 sine wave application in the position control system

8.6 sine wave application in the control system

8.7 control system error experiments

8.8 computer application in the position control system

8.9 PID parameters on valve performance testing

## **9. Electro-hydraulic servo force control performance test (valve cylinder optional)**

9.1 step response characteristics

9.2 mechanical characteristics

9.3 detection experimental device

9.4 system parameters on the dynamic performance

9.5 open-loop and closed-loop performance comparison experiments

## **10. Electro-hydraulic servo speed control performance test (valve motor optional)**

10.1 step response characteristics

10.2 frequency response characteristics

10.3 detection experimental device

10.4 system parameters on the dynamic performance

10.5 open-loop and closed-loop performance comparison experiments

## **11. Industrial hydraulic integrated technology, cognition and design experiments**

## Electro-hydraulic Proportional and Servo Performance Testing Bench

### Main Technical Parameters

Nos	Items	Specification	
1	Variable blade pump	Power	3.75kw
		Voltage	380v/50hz
		Displacement	16.7ml/r
		Max Pressure	14Mpa
		Speed	1450r/min
2	Vane pump	Power	2.2kw
		Voltage	380v/50hz
		Displacement	8ml/r
		Pressure	7Mpa
		Speed	1500r/min
3	Fluid air cooling circulator	Power	38w
		Voltage	220v
		Displacement	20L/min
		Pressure	1.4Mpa
4	Cooling tank	volume	60L
5	Bench dimension	L*W*H	1600*540*1670mm
6	Weight	KG	125

\*Products and configuration list described herein are subject to changes without notice.

\*Optionals above is available for orders above 30 sets.