

Changsha Fanli Edusupports Co.,Limited

Add:No.137, Yuelu Street, Changsha City, 410000, Hunan, China

Tel: 0086-731-82201784 Fax: 0086-731-82201784

Email:sales@edusupports.com Web:<https://www.edusupports.com/>

PLC and Hydraulic Trainer(High-Pressure)

PN:0401010050

PLC and Hydraulic Trainer(High-Pressure) Features

This PLC and hydraulic trainer is a professional hydraulic circuit experiments,hydraulic application experiments and hydraulic curriculum design platform.It is designed for training and assessment of subjects such as hydraulic drive,PLC control technology in colleges and vocational schools with a variety of hydraulic components modules and programmable controller module.It can meet the teaching of the hydraulic disciplines for teaching and training of:

- 1,The composition of hydraulic transmission system.
- 2,The basic hydraulic circuit experiments
- 2,Performance test experiments of common hydraulic components
- 3,PLC electrical control experiment:machine-electric-hydraulic integrated control experiments.

PLC and Hydraulic Trainer(High-Pressure) Performance

- 1,The training panel is designed as T-slot and all hydraulic components use rapid joint which can inserted for easy operation.
- 2,All hydraulic components and valves are used industrial grade physical components and valves with pressure up to 6.3MPa,and when beyond this value, pressure automatic relief.
- 3,The hydraulic modules are all independent modules with spring pins

plate, which can be assembled easily into a variety of hydraulic circuits on the T-solt panel.

4, The quick couplings are used for hydraulic circuits connection and the electrical control circuit use training connecting wires with protective function. The students can build circuits under the guidance of instruction books or design their own system circuits. The hydraulic components in this trainer is complete for designing more complex applications circuits. Various circuits design and constitution up to 90 kinds of experiments.

5, The hydraulic circuit can be electrical controlled independently by relay unit or by PLC. It highlights the advantages of PLC control by comparison of this two control modes to make students have a better understanding of PLC.

6, With current leakage protection, when earth leakage current exceeds 30mA, the power will cut off. The electric control use DC 24V with over-current protection to prevent damage under malfunction.

7. Force control three-dimensional animation software (Optional)

PLC and Hydraulic Trainer(High-Pressure)

Typical Training Contents

Part A. Hydraulic Circuit Training

1. Pressure control circuits

1.1 Pressure regulated circuit

1.1.1 One-stage pressure regulated circuit

1.1.2 Two-stage pressure regulated circuit

1.1.3 Three-stage pressure regulated circuit

1.1.4 One-stage pressure regulated circuit from remote port

1.1.5 Two-stage pressure regulated circuit from remote port

1.1.6 Dual-pressure circuit

1.2 Pressure reducing circuit

1.2.1 One-stage pressure reducing circuit

1.2.2 Two-stage pressure reducing circuit

1.3 Pressure holding circuit

- 1.3.1 Pressure holding circuit by reversing valve
- 1.3.2 Pressure holding circuit by one-way valve
- 1.3.3 Pressure holding circuit by pilot check valve

1.4 Balancing circuit

- 1.4.1 Balancing circuit by sequence valve
- 1.4.2 Balancing circuit pilot sequence valve
- 1.4.3 Balancing and pressure holding circuit
- 1.4.5 Balancing circuit by pilot check valve and one-way throttle valve
- 1.4.6 Balancing circuit by pilot check valve, One-way throttle valve circuit

1.5 Pressure relief circuit(Pressure-venting circuit)

- 1.5.1 Pressure relief circuit by travel valve
- 1.5.2 Reversing circuit by two position two-way valve
- 1.5.3 Pressure relief circuit by pilot oriented pressure relief valve/overflow valve
- 1.5.4 Pressure relief circuit by three position four-way reversing valve(M-type,mid position function)
- 1.5.5 Pressure relief circuit by three position four-way reversing valve(Y-type,mid position function)

1.6 Buffer circuit

- 1.6.1 Buffer circuit by speed regulated valve
- 1.6.2 Buffer circuit by pressure relief valve/overflow valve

2.Speed control circuits

2.1 Throttle speed regulated circuit

- 2.1.1 Oil-inlet throttle speed regulated circuit by throttle valve
- 2.1.2 Oil-return throttle speed regulated circuit by throttle valve
- 2.1.3 By-pass throttle speed regulated circuit by throttle valve
- 2.1.4 Oil-return throttle speed regulated circuit by speed regulated valve
- 2.1.5 Oil-inlet throttle speed regulated circuit by speed regulated circuit
- 2.1.6 By-pass throttle speed regulated circuit by speed regulated valve

2.1.7 Bidirectional/Two-way oil-inlet throttle speed regulated circuit by one-way throttle valve

2.1.8 Bidirectional/Two-way oil-return throttle speed regulated circuit by one-way throttle valve

2.1.9 Bidirectional/Two-way oil-inlet throttle speed regulated circuit by two-way throttle valve

2.1.10 Bidirectional/Two-way oil-return throttle speed regulated circuit by two-way throttle valve

2.1.11 Oil-inlet throttle speed regulated circuit of back pressure valve

2.2 Fast-speed movement circuit

2.2.1 Differential connection fast-speed movement circuit by one-way valve

2.2.2 Differential connection fast-speed movement circuit by two position and three-way solenoid directional valve

2.3 Speed shift circuit

2.3.1 Fast and slow speed connection circuit by travel valve

2.3.2 Speed shift circuit by series speed regulated valve

2.3.3 Oil-inlet control speed shift circuit

2.3.4 Oil-return control speed shift circuit

2.3.5 Differential connection by two position and two-way solenoid valve

2.3.6 Differential connection by two position and three-way solenoid valve

2.3.7 Speed shift between fast and slow circuit

2.3.8 Speed shift circuit by parallel regulated valve

2.3.9 Oil-return control speed shift circuit by parallel regulated valve

2.3.10 Bidirectional/Two-way speed shift circuit

3. Directional control circuit

3.1 Reversing circuit

3.1.1 Continuous reciprocating motion circuit by two position and four-way solenoid valve

3.1.2 Continuous reciprocating motion circuit by three position and four-way solenoid valve

3.2 Lock circuit

3.2.1 Lock circuit by one-way valve

3.2.2 Lock circuit by pilot check valve

3.2.3 Lock circuit by three position four-way solenoid reversing valve(O-type,mid position function)

3.2.4 Lock circuit by three position four-way solenoid reversing valve(M-type,mid position function)

4. Multi cylinders control action circuit

4.1 Sequence action circuit

4.1.1 Sequence action circuit by single sequential valve

4.1.2 Sequence action circuit by dual sequential valve

4.1.3 Sequence action circuit by pressure relay

4.1.4 Sequence action circuit by travel switch/limit switch

4.1.5 Sequence action circuit by joint sequence valve and travel switch/limit switch

4.1.6 Sequence action circuit by joint pressure relay and travel switch/limit switch

4.2 Synchronization action control circuit

4.2.1 Oil-inlet throttle bidirectional/two-way synchronization circuit

4.2.2 Oil-return throttle bidirectional/two-way synchronization circuit

4.2.3 Oil-out throttle synchronization circuit speed regulated valve

4.2.4 Oil-inlet throttle synchronization circuit speed regulated valve

Part B.PLC electrical control experiment: machine - electric - hydraulic integrated control experiments.

1.PLC programming instructions and ladder programming

2.Learn and use PLC programming software

3.Communication of PLC and computer

4.PLC application and optimization solutions in the hydraulic transmission

system.

Part C. Hydraulic Circuits Simulation Software (optional)

PLC and Hydraulic Trainer(High-Pressure)

Main Technical Parameters

1	Motor	Rated power	1.5KW
		Power supply	AC380V
		Rated speed	1420r/Min
2	Quantitative gear pump	Displacement	7.8cc/rev
		Rated pressure	7MPa
3	Fuel tank	Volume	40L
		Dimensions	500 × 360 × 310mm
4	Dimensions	L*W*H	1580×650×1820mm

PLC and Hydraulic Trainer(High-Pressure)

Configuration List

Nos	Items	Qty	Marks
1	Motor	1	
2	Gear pump	1	
3	Throttle valve	1	
4	Pilot oriented pressure relief valve/overflow valve	1	
5	Oil tank	1	
6	Circuit board	1	
7	Oil level gauge	1	
8	Oil suction filter	1	
9	Air filter	1	
10	Hydraulic oil	1	No supply
11	Shockproof pressure gauge	1	
12	Hydraulic cylinder	2	
13	Three position and four-way solenoid directional/reversing valve	1	

Nos	Items	Qty	Marks
14	Three position and four-way solenoid directional/reversing valve	1	
15	Two position and four-way solenoid directional/reversing valve	2	
16	Two position and three-way solenoid directional/reversing valve	1	
17	Three position and four-way manual directional/reversing valve	1	
18	Pilot oriented pressure relief valve/overflow valve	1	
19	Direct-acting pressure relief valve	1	
20	Pilot oriented sequence valve	2	
21	Pressure reducing valve	2	
22	Throttle valve	2	
23	Speed regulating valve	1	
24	Pilot check valve	2	
25	One-way valve	1	
26	Pressure Relay	1	
27	Flowmeter	1	Optional
28	Motor tachometer	1	
29	Stopwatch	1	
30	PLC communication cable	1	
31	Limit switch	4	
32	Main power supply module	1	
33	Button module	1	
34	Electronic control module (integrated	1	

Nos	Items	Qty	Marks
	control module electrical)		
35	Time relay module	1	
36	DC relay module	1	
37	PLC module	1	
38	Diego plug	2	
39	Diego plug	2	
40	Diego plug	8	
41	Diego plug	8	
42	Diego plug	14	
43	Diego plug	14	
44	Sheath socket	1 pack	
45	PLC programming software	1	
46	Force control circuit demos and control software	1	Optional
47			
48			
49	Hydraulic basic principles and elements of cognitive demo system software	1	Optional
50	Common hydraulic components cognitive experiment courseware	1	Optional
51	CD	1	
52	educational software	1	Optional
53	Experimental instructions	1	
54	Tee	6	
55	Tee	5	
56	Pressure gauge	5	
57	Quick couplings(male)	50	

Nos	Items	Qty	Marks
58	Quick couplings(female)	25	
59	Compression resistant hose	12	
60	Hydraulic valve manifold	14	
61	Adjustable wrench	1	
62	Adjustable Wrench	1	
63	Allen wrench	1	
64	Open-end wrench		
65	Open-end wrench	1	
66	Open-end wrench	1	
67	Open-end wrench	1	
68	Phillips screwdriver	1	
69	Screwdriver	1	
70	Needle-nose pliers	1	
71	Tool box	1	
72	Dust cover	1	
73	Combination pad	8	
74	O-ring	18	
75	O-ring	8	
76	Blocking wire	4	
77	Teflon tape	1	
78	Quick connector	2	
79	Pressure gauge	1	
80	Training bench	1	

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

*Optionals above is available for orders above 30 sets.