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PLC and Transparent Hydraulic Trainer(Transparent

Hydraulic Circuit, Low pressure)

PN:0401010010

PLC and Transparent Hydraulic Trainer(Transparent Hydraulic Circuit, Low pressure) Features

This transparent hydraulic trainer is a professional platform for hydraulic circuit design and demonstrating of hydraulic experiment. The internal structure and working principle of various hydraulic components can be conveniently studied in the hydraulic teaching class. All transparent hydraulic components are made according to the actual internal structure of industrial hydraulic components which can reflect the tectonic principle and work principle of industrial hydraulic components. All hydraulic components are made of imported transparent plexiglass with perfect high diaphaneity, small volume and light weight etc. Students can learn the structure, work principle and function of each single hydraulic component, and also can constitute any fundamental hydraulic circuit to survey the movement situation of spool in the loop tank and flow direction of fluid in the spool body. It can meet the teaching of the different hydraulic disciplines for demonstrating and training of:

1. The composition of hydraulic transmission system.
2. The structure and working principle of various parts of a hydraulic transmission system observing, disassembly and assembly training.
3. PLC electrical control experiment: machine-electric-hydraulic integrated

control experiments.

4. The basic hydraulic circuit constitution

PLC and Transparent Hydraulic Trainer(Transparent Hydraulic Circuit,Low pressure) Performance

1,The training panel is designed as T-slot and all hydraulic components use rapid joint which can inserted for easy operation.

3,the hydraulic components are made of transparent plexiglass,the structure and the working process of the hydraulic components are vividly demonstrated.

4,Circuit experiment adopts leak proof fast inserted interface makes experiment circuit assembly simple, quick, clean

5,All hydraulic components fixed floor adopts quick type slab fixed.

6,All hydraulic components are made at high-precision according to standard physical structure,the gap between valve body and valve spool is 0.015-0.028mm,and accuracy is ± 0.2 mm

7,Good sealing performance,There is no leakage of hydraulic components when the system is working under the conditions of a pressure not more than 0.8 MPa.

8,Various circuits design and constitution up to 90 kinds of experiments.

9,With three control modes:PLC control,relay control and manual control.

(1).There are two automatic control modes:PLC and relay control;

(2).Solenoid valve control(three control methods):

a Pressure relay control mode (2 inputs)

b Proximity switch control mode (4 inputs)

c Manual control mode (6 inputs)

PLC and Transparent Hydraulic Trainer(Transparent Hydraulic Circuit,Low pressure) Typical Training Contents

Part A Basic Hydraulic Circuit Constitution and Training

1.Pressure control circuits

1.1 Pressure regulated circuit

1.1.1 Pressure regulated circuit by pressure relief valve/overflow valve

1.1.2 Multi-stage pressure regulated circuit by multi-stage pressure relief valve/overflow valve

1.2 Pressure reducing circuit

1.2.1 One-stage pressure reducing circuit

1.3 Pressure holding circuit

1.3.1 Pressure holding circuit by pilot check valve

1.4 Decompression circuit

1.4.1 Decompression circuit by throttle valve

1.4.2 Decompression circuit by sequence valve

1.5 Pressure relief circuit(Pressure-venting circuit)

1.5.1 Pressure relief circuit by two position two-way valve

1.5.2 Pressure relief circuit by pilot oriented pressure relief valve/overflow valve

1.5.3 Pressure relief circuit by two position two-way valve

2.Speed control circuits

2.1 Speed regulated circuit

2.1.1 Oil-inlet throttle speed regulated circuit (constant pressure throttle governor)

2.1.2 Oil-return throttle speed regulated circuit (constant pressure throttle governor)

2.1.3 By-pass throttle speed regulated circuit (variable pressure throttle governor)

2.1.4 Differential connection fast-speed movement circuit

2.1.5 Speed regulated circuit by speed regulated valve

2.1.6 Speed-reducing/Slow-speed circuit by solenoid valve and speed regulated valve

2.1.7 Differential circuit of two position three-way valve

2.1.8 Secondary feed circuit

3.Direction control circuit

3.1 Reversing circuit

3.1.1 Reversing circuit by reversing valve

4.Double/Twin cylinders synchronous/sequence circuit,

4.1 Sequence action circuit

4.1.1 Sequence action circuit by sequence valve

4.1.2 Sequence action circuit by proximity switch, reversing valve

4.1.3 Sequence action circuit by pressure relay, proximity switch

4.2 Synchronization circuit

4.2.1 Double/Twin cylinders synchronization action circuit

4.2.2 Synchronization circuit by shunt valve

4.2.3 Synchronization circuit by speed regulating valve

4.2.4 Synchronization circuit by throttle valve

4.3 Lock circuit

4.3.1 Lock circuit by reversing valve

4.3.2 Lock circuit by pilot check valve

4.3.3 Lock circuit by one-way valve

5.Relay control circuit

5.1 Sequence control by relays, proximity switches

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.

The Main Technical Parameters of [PLC and Transparent Hydraulic Trainer\(Transparent Hydraulic Circuit,Low pressure\)](#)

Nos	Items	Specification	
1	Motor	Rated power	0.75KW
		Power supply	AC380V
		Rated speed	1420r/Min
2	Quantitative gear pump	Displacement	7.8cc/rev
		Rated pressure	0.3-2 MPa
3	Dimensions	L*W*H	1600×650×1800mm

Configuration List of [PLC and Transparent Hydraulic Trainer\(Transparent Hydraulic Circuit,Low pressure\)](#)

Nos	Items	Qty
1	Motor	1
2	Gear pump	1
3	Throttle valve	1
4	Pressure relief	each
	valve/overflow	
	valve	
5	Hydraulic station	each
	board	
6	Oil tank	1
7	Section Aluminum	6
8	Oil temperature and level gauge	1
9	Oil suction filter	1

10	Air filter	1
11	Single rod double-acting cylinder	2
12	Double acting double rod cylinder	1
13	Pressurized cylinder	1
14	Three position and four-way solenoid directional valve/reversing valve(M-type)	1
15	Three position and four-way double solenoid directional valve/reversing valve(O-type)	1
16	Two position and four-way single solenoid directional/reversing valve	2
17	Two position and three-way single solenoid directional/reversing valve	1
18	Two position and two-way single solenoid directional/reversing valve	1
19	Two position and two-way single solenoid directional/reversing valve	1
20	Two position and four-way manual	each
21	directional/reversing valve	
22	Pilot check valve	2
23	Shunt flow valve	1
24	Speed regulated valve	1
25	Pilot oriented pressure relief valve/overflow valve	2
26	Pressure reducing valve	1
27	Sequence valve	2
28	One-way throttle valve	1
29	Throttle valve	1

30	One-way valve	2
31	Pressure Relay	1
32	Tee/Three-way pipe joint	6
33	Four-way pipe joint	3
34	Quick couplings(male)	80
35	Quick	40
	couplings(female)	
36	Pressure gauge	2
37	Shockproof pressure gauge	1
38	Transparent tube with quick couplings	15
39	Bottom plate for hydraulic components	30
40	PLC communication cable	1
41	Proximity Switch(NPN-type)	4
42	Main power supply module	1
43	Button Module	1
44	Electronic control module (integrated control module)	1
45	DC relay module	1
46	PLC module	1
47	Time relay module	30
48	Sheath socket	165

49	Diego plug	2
50	Diego plug	2
51	Diego plug	10
52	Diego plug	10
53	Diego plug	15
54	Diego plug	15
55	PLC programming software	1
56	Allen wrench	1
57	Adjustable Wrench	1
58	Adjustable Wrench	1
59	Open-end wrench	1
60	Open-end wrench	1
61	Open-end wrench	1
62	Open-end wrench	1
63	Inner ring plier	1
64	Snap ring plier	1
65	Needle-nose plier	1
66	Blocking wire	5
67	Blocking wire	2
68	Screwdriver,	1
69	Screwdriver	1

70	Teflon tape	1
71	Plug	8
72	Combination pad	16
73	Self-locking button	2
74	Tool box	1
75	Dust cover	1
76	O-ring	6
77	O-ring	8
78	O-ring	8
79	O-ring	8
80	O-ring	8
81	O-ring	18
82	O-ring	5
83	O-ring	8
84	O-ring	9
85	Nylon pad	18
86	Indicator light	2
87	Quick couplings	2
88	Button switch	2
89	Pressure gauge	1
90	Training bench	1
91	Experimental instructions	1
92	Hydraulic simulation	Optional

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

*Optionals above is available for orders above 30 sets.