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PLC and Transparent Hydraulic Control Trainer(Transparent Hydraulic Circuit,Low Pressure)

PN:0401010020

PLC and Transparent Hydraulic Control Trainer Features

PLC and Transparent Hydraulic Control Trainer is a professional hydraulic circuit design and demonstrating of hydraulic experimental platform.The internal structure and working principle of various hydraulic components can be convenient studied in the hydraulic teaching class.All transparent hydraulic components are made according to actual internal structure of industrial hydraulic components which can reflects tectonic principle and work principle of industrial hydraulic components.All hydraulic components are made of imported transparent plexiglass with performance of high diaphaneity,small volume and light weight etc,.Students can learn the structure,work principle and function of each single hydraulic components, and also can constitute any fundamental hydraulic circuit to survey 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.

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,The are two control methods:PLC control and relay control.Using the programmable controller control (PLC), optimizing the control plan.By comparison the two control methods,trainees can understand the superiority and advanced of PLC control.

7,PLC use Mitsubishi FX1S-20MR,12 input ,8 output (relay output).To use the

combination of PLC and hydraulic in the system can achieve automatic hydraulic control experiment teaching.

PLC and Transparent Hydraulic Control Trainer Typical Training Contents

1. Directional control circuits

1.1 Reversing action circuits

1.1.1 Reversing circuit of manual directional/reversing valve

1.1.2 Reversing circuit by pilot oriented pressure relief valve/overflow valve

1.2 Sequence action circuits

1.2.1 Sequence action circuit of sequence valve

1.2.2 Sequence action circuit of pressure relay

1.2.3 Sequence action circuit of limit switch

1.2.4 Sequence action circuit of travel/reversing valve

1.3 Lock circuits

1.3.1 Lock circuit of mid position function solenoid reversing valve

1.3.2 Lock circuit by pilot check valve

2. Pressure control circuits

2.1 Pressure regulating circuits

2.1.1 Pressure regulating circuit

2.1.2 Two-stage pressure regulated circuit

2.2 Pressure reducing circuits

2.2.1 Pressure reducing circuit of pressure reducing valve

2.3 Booster circuits

2.3.1 Booster circuit of booster cylinder

2.4 Pressure relief circuit(Pressure-venting circuit)

2.4.1 Pressure relief circuit by reversing valve

3. Speed control circuits

3.1 Throttle speed regulating circuits

3.1.1 Oil-inlet throttle speed regulating circuit

3.1.2 Oil-return/back throttle speed regulating circuit

3.1.3 Reversing speed regulating circuit of gear pump

3.1.4 Complex speed control circuit by joint gear pump and speed regulating valve

3.1.5 Secondary feed circuit of series speed regulating valve

3.1.6 Secondary feed circuit by parallel speed regulating valve

3.2 Speed shift circuits

3.2.1 Speed shift circuit of flow valve short-contact

3.3 Synchronization circuits

3.3.1 Synchronization circuit of series hydraulic cylinder

PLC and Transparent Hydraulic Control Trainer Main Technical Parameters

1. Motor

Power: 400W

Speed range 0-1500r/min

2.Hydraulic Pump(with a gauge, oil temperature indicator, oil inhale and return filter, safety valve)

Circuit action pressure:0.3-0.8MPa

Noise ≤58dB

Dimensions:560mm×340mm×610mm

3.Power supply

AC supply:AC220V 50HZ

DC supply:input AC220V,output DC24V/3A

4,Bench dimensions:1270mm × 660mm × 1830mm

PLC and Transparent Hydraulic Control Trainer Configuration List

Nos	Items	Quantity
Hydraulic Station		
1	Motor	1
2	Gear pump	1
3	High precision Digit tachometer	1
4	Pilot oriented pressure relief valve/overflow valve	1
5	Oil tank	1
6	Hydraulic station board	1
7	Pressure gauge	1
8	Oil level gauge	1
9	Oil filter	1
10	Air filter	1
11	Hydraulic oil	None
12	Auxiliary oil tank	1
Hydraulic Control Components		
13	Double-acting cylinder	2
14	Pressurized cylinder	1
15	Three position and four-way solenoid directional/reversing valve(O-type)	1
16	Three position and four-way solenoid directional/reversing valve(M-type)	1

Nos	Items	Quantity
17	Three position and four-way solenoid directional/reversing valve(H-type)	1
18	Two position and four-way solenoid directional/reversing valve	2
19	Two position and two-way solenoid directional/reversing valve	1
20	Three position and five-way manual directional/reversing valve	1
21	Two position and four-way manual travel/reversing valve	1
22	Pilot oriented pressure relief valve/overflow valve	1
23	Direct-acting pressure relief valve	1
24	Sequence valve	2
25	Pressure reducing valve	1
26	Direct-acting throttle valve	1
27	Speed regulated valve	2
28	Pilot check valve	2
29	One-way valve	2
30	Pressure Relay	1
Monitoring and Control Components		
31	Control button	1
32	Relay	1
33	Limit switch(normally open, normally closed)	2
34	PLC	1
35	PLC communication cable	1
36	Pressure relay plug wire	1
37	Solenoid cable	3

Nos	Items	Quantity
Software and Documentation		
38	PLC programming software	1
39	Experimental instructions	1
Auxiliary Components		
40	Tee	10
41	Transparent compression resistant hose (φ8)	1 roll
42	Pressure gauge	3
Tools		
43	Phillips screwdriver	1
44	Screwdriver	1
45	Allen wrench	2
46	Adjustable wrench	1
47	Scissor	1
48	Needle-nose pliers	1
49	Inner ring pliers	1
50	Snap ring pliers	1
51	Oil plug	5
52	Tool box	1
Spare Parts and Worn Parts		
53	Quick connector	5
54	O-ring(various size)	1 pack
Bench&Cabinet		
55	Training bench	1
56	Training cabinet	1

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