

ELECTRO HYDRAULIC TRAINER

(Model : TMS- ElectroHydraulics)

(Family of Training systems)

Double sided Hydraulic & Electrohydraulic Trainer [optional]



Power Pack



Side view

SALIENT FEATURES

- ◆ Choice of 2 table top models Hydraulic/Electro Hydraulic trainer (optionally PLC may be supplied.)
- ◆ Use of aluminium profile grooved plate (CD= 25MM) experiment board. Optionally table with drawers (3 Nos.) to store components when not in use & 4 Nos. of caster wheels.
- ◆ Zero leakage flat quick release socket plug arrangement provided for building circuits, Light hydraulic components are mounted using lever operated moulded adapters for quick release & placement.
- ◆ List of components may be modified as per your requirement.
- ◆ Top electrical panel row exists in electro hydraulics / Pneumatic only

Technical Specification

Item	Electro - Hydraylic Trainer	Qty
Oil Distribution and manual controls, gages	Sub plate (1 station manifold) with 4 ports each equipped with Quick release plugs.	2
	Glycerin filled 70 bar pressure gauges with Quick release sockets gauges to a and b ports.	2
Direction Control Element	4/2 way single solenoid 24 VDC spring return	1
	4/3 way double solenoid 24 VDC spring return	1
Actuating devices (Output)	Single acting cylinder 40mmx100mm spring return & QR adaptor	1
	Double acting cylinder with in line flow control valve 40mm x 100 mm stroke & QR sockets.	1
Connections	A) Flexible hoses, R1 type 1/4" ID with flat type Quick release sockets (one end 90° & other straight) Length 2000mm	2
	Length 1500mm	2
	B) Flat type quick release plugs (M)	20
	C) Flat type quick release sockets(F)	10
Electrical Connection	Electrical circuit 4mm Banana Patch cord	5
	500mm;	5
	100mm	5
Logic Control	Limit switches NC/NO	02
	Proximity Switch (Inductive)	01
Resource-Panel	24VDC power supply. 8 Relay card PLC interfaceable with NO NC contact & 24Vdc coil, Dual Timer WITH NO-NC contacts or Optionally Siemens PLC (12 input+ 8 output) with CDP & ladder software.	
Power Generation	Power pack (50 bar) consist of : a) Tank 25Ltr. b) Gear Pump 3LPM with ball valve for flow measurement in Beacker (optional), c) Electric motor 0.5 HP 1440 RPM 230VAC, d) Oil Breather Oil level indicator, sunction filter / Strainer, Return line filter, 70 Bar Gage, e) Relief valve.	
Mechanical Dimension	Aluminum profile rack (table top) with T groove experiment board (Optionally double sided) . Total dimension : 1165 mm (L) x 300 mm (W) x 800/990 mm (H) , Aluminum Grooved T bolt Board : L = 1070mm, W = 70 mm, Height - 700mm, Groove pitch = 25mm, Reclining at 0°, 20°, 30°. Oil Tray (1070mm x 300 mm x 20 mm) Powder coated MS Net Weight : 70/75 kg. Gross Weight : 85/90kg.	
Optional Experiments only for Electro-hydraulic Trainer	1) Servo position control (Close loop) consisting of CIP panel with servo control using relay control circuit, EMT8 power supply for stroke length display, linear motion (100 mm, stroke) potentiometer (5KΩ) as a position sensor coupled to D.A. cylinder.	
	2) Proportional flow and direction control valve with built in amplifier with +5V I/P voltage to control flow and direction 5KΩ servo pot to sense position coupled to D.A. cylinder, open loop position control, EMT8 panel to display stroke length.	
	3) Proportional flow and direction control valve with amplifier card & LVDT feedback close loop control.	

◆ List of Experiments

A) Working with electric control:

- To operate single Solenoid with & S.A. cylinder.
- To operate single solenoid with limit switch & S.A. cylinder.
- To operate double solenoid with D.A. cylinder.
- To operate double solenoid with Limit switch & D.A. cylinder.
- To operate Flow control check valve.
- Fluid possess easiest way at the junction
- Extending a cylinder by operating a push button
- Signal storage by electrical self-locking, setting & resetting using a momentary contact switch / logic control circuit
- Mechanical locking by means of momentary contact switch contacts.
- Electrical locking & signal storage by means of relay contacts.
- To operate single Solenoid with Proximity Switch & D.A. cylinder.

B) Working with PLC control

- Cylinder In and Out
- Cylinder pushTo out, push To In & D.A. cylinder.
- Cylinder with delayed returns.
- Double Cylinder

List of Optional Experiment

- Pressure dependent reversing & sequence control of cylinders [optional]
- Sequencing of two-cylinder using proximity switch. [optional]
- Sequencing of two cylinder [optional]

C) Optional: Control element & actuating device :

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| • Sequence Valve | 1 No. |
| • Pressure Reducing valve | 1 No. |
| • Hydraulic motor | 1 No. |
| • Counter balance valve | 1 No. |
| • Diaphram type accumulator | 1 No. |
| • Pilot operated check valve | 1 No. |
| • Pilot operated pressure relief valve | 1 No. |
| • Pressure switch | 1 No. |

Transparent elements (Optional):

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| • 4/3 way DC hand lever Valve | 1 No. |
| • Double acting cylinder | 1 No. |

Cut section element (Optional):

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| • 4/3 way DC hand lever Valve | 1 No. |
| • Double acting cylinder | 1 No. |
| • Single acting cylinder | 1 No. |
| • Flow control valve | 1 No. |