



BASIC HYDRAULIC TRAINER

- The **Basic Hydraulic Trainer (SAP-38A-I)** outlines the basic Principle of Hydraulic Control System, hydraulic Components & its applications.
- The **Basic Hydraulic Trainer (SAP – 38A-I)** is capable of being used to demonstrate the design, construction and application of basic hydraulic components and circuits.
- Industrial components are used in the kit so that the students get hands on practical training in using industrial components.
- This full-fledged simulator is used for imparting with a variety of different circuits which covers the entire range of basic hydraulic system. The simulator and the accessories are suitable for working at 50 bar pressure each hydraulic components of the simulator can with stand 200 bar working pressure. This unique trolley mounted simulator will be of robust in construction and compact in design there would be adequate space for proper orientation of valves.
- The power pack will be mounted on the bottom of simulator structure and the headers will be located at the front of simulator. The simulator will show the application of linear actuator, rotary actuator, pressure control circuits, speed control circuits, sequence control circuits, energy saving circuits, logic control circuits etc.

OBJECTIVES-

- ❖ Function & identification of Basic Hydraulic components & their symbols.
- ❖ Direct and indirect manual controls, stroke dependent controls and pressure dependent controls with pressure sequence valves.
- ❖ Design & function of basic hydraulic System.
- ❖ Functional diagrams.
- ❖ Application and fault findings of Hydraulic controls.
- ❖ To empower students to design their own circuits.
- ❖ The Trainer is Modular & Upgradable
- ❖ Operation & Instruction Manual provided for Operation ease.

Technical Specification:-

No.	Item Name	Technical Specifications
1	Single Acting Cylinder-	Qty: 1 No.; Bore: 40 mm x Stroke: 75/100mm, Mounting: Foot Make: Polyhydron/ Equivalent
2	Double Acting Cylinder-	Qty: 1 No.; Bore: 40 mm x Stroke: 75/100mm, Mounting: Foot; Make: Polyhydron/ Equivalent
3	Directional Control Valves-	Qty: 2Nos; 1/4", 4/3-way Hand Lever valve, 1/4", 4/2-way Hand Lever valve, Make: Polyhydron/ Equivalent
4	Flow Control Valve-	Qty: 1 No.; 1/4" (F), Square Body. Make: Polyhydron/ Equivalent
5	Pressure Relief Valve-	Qty: 1 No.; 1/4", 60 Kg/cm ² Make: Polyhydron/ Equivalent
6	Block Manifold- (P & T)	Qty: 2 Nos.; 1/4", 4 ways; Make: Polyhydron/ Equivalent
7	Male Connector-	1/4" Quick Release Couplings.
8	Hydraulic Hoses-	Qty: 10 No's
9	Non-Return Valve	Qty: 1 No.; 1/4" Make: Polyhydron/ Equivalent
10	Drain Plug-	Magnetic type
11	Pressure Gauge-	Qty: 1 No.; Range- 100 Kg/cm ² , Dial Size: 50/60 mm, Glycerin Filled.
12	Oil Hydraulic power pack-	MS Powder Coated Oil Tank, Capacity: 25 Liters. with Oil Level Indicator, Breather, Oil filter & suction, Drain port, Relief Valve with Pressure Gauge Gear Pump: 3-5 LPM, 40/60 Bar, Breather, oil filter & suction. Electric Motor: Single Phase, 1/2 HP/ 1HP, 230VAC / 3φ, 1/2 HP/ 1 HP, 1500 RPM, 415V AC with DP Switch/DOL starter
13	Pressure Sequence Valve	Qty: 1 No; 1/4" (F), Square Body, 60kg/cm ² . Make: Polyhydron/ Equivalent
14	Hydraulic Motor (Optional)-	Qty: 1 No; 3 LPM, 1/4"; Make: Polyhydron/ Equivalent
15	Hydraulic Accumulator (Optional)-	Qty: 1 No; Capacity: 0.075 Liters, mWP bar: 250 bar, Weight: 0.62 Kg, Connection: 1/2" BSP; Make: Polyhydron/ Equivalent
16	Needle Valve (Optional)-	Qty: 1 No; 1/4", Make: Polyhydron/ Equivalent
17	Meter-in Circuit & Meter Out Circuit	
18	Bleed-off Circuit	
19	Transverse & Feed Circuit	
20	Pulley Arrangement to carry load applied to the actuator, i.e., Double Acting Cylinder (Optional)	
21	Sufficient Hydraulic Oil for hydraulic power pack.	

Note: We will also provide pressure header, return header, leakage header fitted with quick coupler and other necessary fitting and fitting with quick couplers which would be required to develop the different said hydraulic circuits.

Range of experiments:

- ❖ Study of fundamental principles of Hydraulics & its applications.
- ❖ Study of Meter-in Circuit & Meter-out circuit.
- ❖ Study of Bleed-off Circuit.
- ❖ Study of Transverse & Feed Circuit.
- ❖ Study of Speed Control, Pressure Control & Flow Control.
- ❖ Study of Direction Control.
- ❖ Study of Hydraulic valves
- ❖ Study of Hydraulic Actuators.
- ❖ Study of sequencing operation using Pressure Sequence Valve.
- ❖ Study of Hydraulic Power Pack.
- ❖ Study of Hydraulic Accumulator & Hydraulic Motor (Optional).

Features: -

- ❖ Compact Ergonomic Design.
- ❖ ISO Symbol for each mounted component.
- ❖ User-Friendly, Self-Explanatory Systems.
- ❖ Leak proof Safety Measures, sturdy piping & Robust Construction.
- ❖ Training Manuals mimic Charts for Operation Ease.
- ❖ System Frame with Caster Wheel Arrangement for ease in movement.
- ❖ Inbuilt Safety Measures to avoid improper usage.
- ❖ Wall mounting assemblies of hydraulic actuator & self-reciprocating cylinder.
- ❖ QRC couplings provided, Tubing for circulation of pressure (Hose Pipe Tubing)
- ❖ Manifold for distribution.
- ❖ Oil Hydraulic power pack for power supply . .
- ❖ Optional component are available to allow fault operation and diagnosis training.
- ❖ Hydraulic motor & Hydraulic Accumulator (Optional).

System Dimension- 3.5 Ft. (L) X 2Ft. ((W) X 4.5 Ft (H)

Weight: Approx. 100kg.

Services Required:

- ❖ Electric supply 1φ 230 V AC, 6A, 50Hz / 3φ supply of 415 V AC, 16A, 50Hz suitably used for direct on line starting of an induction motor

Note:

All descriptive matter and illustrations are intended to give only a general idea of the equipment Detailed specifications may be altered at the company's discretion without any notice.



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