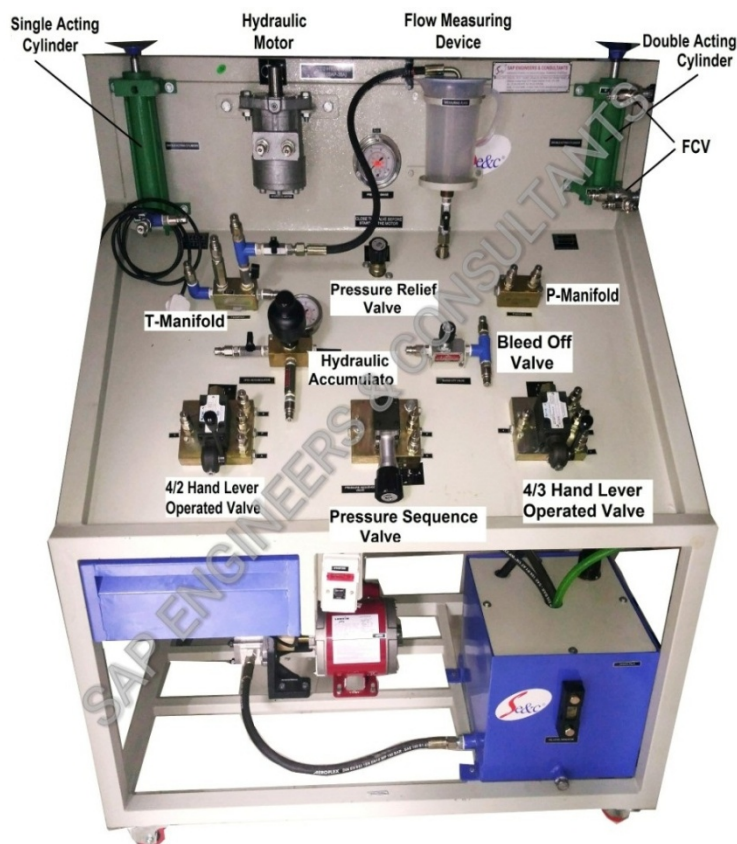


# SAP E & C ADVANCED HYDRAULIC TRAINER (PRODUCT CODE: SAP – 38A)



The **Advanced Hydraulic Trainer (SAP – 38A)** outlines the basic Principle of Hydraulic Control System, hydraulic Control System Components & its applications.

- The **Advanced Hydraulic Trainer (SAP – 38A)** is capable of being used to demonstrate the design, construction and application of 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 Hydraulic components & their symbols.
- ❖ Direct and indirect manual controls, stroke dependant controls and pressure dependant controls with pressure sequence valves.
- ❖ Design & function of electro-hydraulic System.
- ❖ Functional diagrams.
- ❖ Application and fault findings of Electro 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 × Stroke: 75/100mm, Mounting: Foot <b>Make:</b> Polyhydron/ Equivalent
2	Double Acting Cylinder-	Qty: 1 No.; Bore: 40 mm × Stroke: 75/ 100mm, Mounting: Foot; <b>Make:</b> Polyhydron/ Equivalent
3	Directional Control Valves-	Qty: 2 No's, 4/3 way & 4/2, 1/4" Hand Lever Operated; <b>Make:</b> Polyhydron/ Equivalent
4	Flow Control Valve-	Qty: 1 No.; 1/4" (F), Square Body. <b>Make:</b> Polyhydron/ Equivalent
5	Pressure Relief Valve-	Qty: 1 No.; 1/4", 60 Kg/cm <sup>2</sup> <b>Make:</b> Polyhydron/ Equivalent
6	Pressure Sequence Valve-	Qty: 1 No.; 1/4" (F), Square Body, 60kg/cm <sup>2</sup> <b>Make:</b> Polyhydron/ Equivalent
7	P & T Manifold Block	Qty: 1 No.; 1/4", 4 ways; <b>Make:</b> Polyhydron/ Equivalent
8	Male Connector-	1/4" Quick Release Couplings
9	Pressure Gauge-	Qty: 1 No.; Range- 100 Kg/cm <sup>2</sup> , Dial Size: 50/60 mm, Glycerin Filled.
10	Hydraulic Motor-	Qty: 1 No.; 3 LPM, 1/4", Flange Mounting Type; <b>Make:</b> Polyhydron/ Equivalent
11	Drain Plug-	Magnetic type
12	Hydraulic Accumulator-	Qty: 1 No.; Capacity 0.075 Ltr, mWP bar: 250 bar, Weight: 0.62 Kg, Connection: 1/2" BSP <b>Make:</b> Polyhydron/ Equivalent
13	Hydraulic Hoses-	10 Nos.
14	Needle Valve-	Qty: 1 No.; 1/4", 1 No. <b>Make:</b> Polyhydron/ Equivalent
15	Flow Measuring Device	Qty: 1 No. Capacity: 1 Litre
16	Oil Hydraulic power pack-	MS Powder Coated Oil Tank, Capacity: 25 Liters. with <b>Oil Level Indicator, Breather, Oil filter &amp; suction, Drain port, Relief Valve with Pressure Gauge</b> Gear Pump: 3-5 LPM, 40/60 Bar, ,, Breather, oil filter & suction. <b>Electric Motor:</b> Single Phase, 1/2 HP/ 1HP, 230VAC / 3φ, 1/2 HP/ 1 HP, 415V AC with DP Switch/DOL starter
17	Transverse & Feed Circuit	
18	Meter-in Circuit & Meter Out Circuit	
19	Bleed-off Circuit	
20	Pulley Arrangement / Circular Weighing Platform	to carry load applied to the actuator, i.e., Double Acting Cylinder
21	Hydraulic Telescopic Cylinder (Optional)	
22	Limited Rotary Actuator (Optional)	
23	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 sequencing operation using Pressure Sequence Valve.
- ❖ Study of Speed Control, Pressure Control & Flow Control.
- ❖ Study of Direction Control.
- ❖ Study of Hydraulic valves
- ❖ Study of Hydraulic Actuators.
- ❖ Study of Hydraulic Power Pack.
- ❖ Study of Hydraulic Accumulator & Hydraulic Motor.
- ❖ Study of operation of Telescopic Cylinder (Optional).
- ❖ Study of operation of Limited Rotary Actuator (Optional).
- ❖ Study of flow rate measurement for speed control circuit

**Features: -**

- ❖ Compact Ergonomic Design.
- ❖ ISO Symbol for each mounted components.
- ❖ 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.
- ❖ M.S. powder coated cubical plant with standard Instrument Mountings.
- ❖ Inbuilt Safety Measures to avoid improper usage
- ❖ Wall mounting assemblies of hydraulic actuator & self-reciprocating cylinder.
- ❖ Hydraulic motor & Hydraulic Accumulator.
- ❖ QRC couplings provided, Tubing for circulation of pressure (Hose Pipe Tubing)
- ❖ Manifold for distribution.
- ❖ Oil Hydraulic power pack for power supply.
- ❖ Flow measuring device provided on the kit.
- ❖ Optional component are available to allow fault operation and diagnosis training.
- ❖ Training literature – Instruction & operation manual, troubleshooting & maintenance tips will be provided in soft copy as well as hard copy format.

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

**Weight:** - Approx 125Kg

**Services Required:**

- ❖ Electric supply 1 $\phi$  230 V AC, 6A, 50 Hz / 3 $\phi$  supply of 415 V AC, 16A, 50 Hz 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.

