



**The Advanced Hydraulic Trainer 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 students get hands-on practical training using industrial components.
- This full-fledged simulator is used for imparting a variety of different circuits which cover the entire range of basic hydraulic systems.
- The simulator and accessories are suitable for working at **50 Bar pressure**, and each hydraulic component of the simulator can withstand **200 Bar working pressure**.
- This unique **trolley-mounted simulator** is robust in construction and compact in design, with adequate space for proper orientation of valves.
- The **power pack** will be mounted on the bottom of the simulator structure and the **headers** will be located at the front of the simulator.

**The simulator demonstrates applications such as:**

*Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.*



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- Linear actuator
- Rotary actuator
- Pressure control circuits
- Speed control circuits
- Sequence control circuits
- Energy-saving circuits
- Logic control circuits

### Objectives

- Function & identification of hydraulic components & their symbols
- Direct and indirect manual controls, stroke-dependent controls, and pressure-dependent controls with pressure sequence valves
- Design & function of electro-hydraulic systems
- 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 ease of operation

| No | Item Name                  | Technical Specifications                                                                  |
|----|----------------------------|-------------------------------------------------------------------------------------------|
| 1  | Single Acting Cylinder     | Qty: 1 No.; Bore: 40 mm × Stroke: 75/100mm, Mounting: Foot. Make: Polyhydron / Equivalent |
| 2  | Double Acting Cylinder     | Qty: 1 No.; Bore: 40 mm × Stroke: 75/100mm, Mounting: Foot. Make: Polyhydron / Equivalent |
| 3  | Directional Control Valves | Qty: 2 Nos.; 4/3 Way & 4/2, 1/4" Hand Lever Operated; 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.; 60 Kg/cm <sup>2</sup> ; Make: Polyhydron / Equivalent                         |
| 6  | Pressure Sequence Valve    | Qty: 1 No.; 1/4" (F), Square Body, 60kg/cm <sup>2</sup> ; Make: Polyhydron / Equivalent   |
| 7  | P & T Manifold Block       | Qty: 1 No.; 1/4" 4 ways; Make: 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. Make: Polyhydron / Equivalent              |
| 11 | Drain Plug                 | Magnetic Type                                                                             |

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| No | Item Name                                       | Technical Specifications                                                                                                                                                                                                                                                                                                  |
|----|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12 | Hydraulic Accumulator                           | Qty: 1 No.; Capacity 0.075 Ltr, mWP bar: 250 bar, Weight: 0.62 kg, Connection: ½" BSP. Make: Polyhydron / Equivalent                                                                                                                                                                                                      |
| 13 | Hydraulic Hoses                                 | —                                                                                                                                                                                                                                                                                                                         |
| 14 | Needle Valve                                    | Qty: 1 No.; 1/4" 1 No. Make: 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 oil level indicator, breather, oil filter & suction, drain port, relief valve with pressure gauge. Gear Pump: 3-5 LPM, 40/50 Bar, breather, oil filter & suction. Electric Motor: Single Phase ½ HP / 1 HP, 230 VAC / 3Φ, ½ 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                                                                                                                                                                                                                                                                                                  |

### 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).

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- 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

- **Size:** 3.5 Ft. (L) × 2 Ft. (W) × 4.5 Ft. (H) **Approx**
- **Weight:** Approx. 125 Kg

### Services Required

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

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**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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