

**Product Name :****Four Cylinder Four Stroke Petrol Engine with Eddy Current Dynamometer Test Rig****Product Code :****ALABS-A104-420****Description :****Four Cylinder Four Stroke Petrol Engine with Eddy Current Dynamometer Test Rig**

The test setup consists of Four Cylinder Four Stroke Petrol Engine coupled to Eddy Current Dynamometer. The engine is advanced MPFI Petrol Engine with Electronic Control Unit (ECU). The dynamometer provides variable load on engine to study engine performance under variable load conditions. The engine can be operated at different throttle settings enabling investigation of engine performance at different speeds. Exhaust gas calorimeter is used for estimation of heat carried away by exhaust gases for determination of heat balance of the engine. Air is supplied to the engine through an air box, fitted with orifice plate. Arrangement has been made to conduct Morse Test of the engine to determine its frictional power.

The instrumentation console includes measuring instruments for Engine Speed, Torque, Air consumption, Fuel Consumption & temperature of water, gases.

**Experimental Capabilities:**

- Determination of brake power & mechanical efficiency at different load conditions.

- Determination of fuel consumption & brake specific fuel consumption, brake thermal efficiency.
- Determination of air consumption & volumetric efficiency, Air/Fuel Ratios.
- Calculation of Heat balance of the engine. To study performance of engine at different operating speeds.
- To conduct Morse test on petrol engine & calculate frictional power of the engine.

**Specifications:**

*Engine:*

- Four Cylinder Petrol Engine, with MPFI System complete with ECU, starter. Capacity 1200 cc, Output Power 73 hp @ 6000 RPM, Torque 100 RPM
- Dynamometer Options:
  - Eddy current dynamometer: Water Cooled, Capacity 30 kW with electronic controller.
- Calorimeter: Shell & Tube type Heat Exchanger
- Air Box: Made in M.S. with damper & Orifice Plate
- Morse Test Arrangement: Switches to cut off ignition or fuel supply of each cylinder.
- Instrumentation Console:
  - Load cell with digital indicator for Load Measurement, Range 0-50 Kg
  - Non-contact type sensor with Digital indicator for Engine speed, Range 0-9999 RPM
  - U Tube Differential Manometer for Air, Range 0-300 mm
  - 'K' Type Thermocouples & 8 channel digital temperature indicator, Range 0-600 °C
  - Volumetric Fuel Measurement Unit with digital indicator
  - Rotameter for water, Range 100-1000 LPH – 2 Nos.

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