

**Product Name :**  
Single Cylinder Two Stroke Petrol Engine Test Rig - IC  
Engine Lab

**Product Code :**  
ICE0001



### Description :

Single Cylinder Two Stroke Petrol Engine Test Rig

### Technical Specification :

#### Introduction

The test rig is designed to provide self-contained facility for teaching spark Ignition engine principles. The unit is instrumented so that the following experiments can be carried out.

- 1). BHP MEASUREMENT
- 2). BRAKE THERMAL EFFICIENCY
- 3). FUEL CONSUMPTION MEASUREMENT
- 4). AIR INTAKE MEASUREMENT

#### The Engine Test Rig Facilitate To Evaluate The Following:

- 1). Performance at various throttle position
- 2). BHP measurement from no load to full load

#### Description

Three main components from main parts of the test rig. Welded steel base plate, complete with Mechanical Brake or A.C. Alternator or D.C. Generator or Eddy Current Dynamometer, Drive coupling and with safety guard, anti vibration mounting.

Resistance loading (Resistance bank) with selector switches to load the engine from no load to full load (Only for A.C. Alternator & D.C. Generator) Panel board positioned over the base plate consisting of fuel system with flow measurement by burette, air flow measurement system, temperature indicator.

### **Dynamometer (As Applicable)**

- 1). The dynamometer used is a mechanical Brake capable of absorbing a maximum load of 2.5 HP at a speed to 2800 RPM.
- 2). The Loading device use din an AC alternator of matching capacity to load the engine up to 2.5 HP at 2800 RPM along with Resistance loading arrangement for alternator.
- 3). The Loading device used is DC Generator of matching capacity to load the engine up to 2.5 HP at 2800 RPM along with Resistance loading arrangement provided with selector switches.
- 4). The loading device used is and Eddy Current Dynamometer of matching capacity to load the engine up to 2.5 HP at 2800 RPM.

### **Instrumentation (as applicable)**

The following instrumentation is provided.

- 1). 'U' tube manometer for air flow rate
- 2). Burette for fuel flow rate
- 3). Speed indicator-Digital
- 4). Digital Temperature Indicator-Multi point indicator with thermocouples.
- 5). Digital Voltmeter, Ammeter

### **Controls**

The test rig is arranged for manual control of the engine with a kick start arrangement for engine starting & manual throttle control. Fuel measuring arrangement: Fuel Measuring Arrangement consists of fuel tank, burette and suitable cock all mounted on a suitable frame work and panel board and supplied with fuel piping from fuel tank to Engine.

### **Air intake measurement & heat carried away by exhaust gas**

Consisting of an air tank mounted on an iron stand fitted with a suitable orifice plate, manometer, Thermocouple for measuring the exhaust gas temperature with pocket connection with instruments suitably mounted on a panel board.

### **Engine**

Single Cylinder two stroke Air Cooled Petrol Engine to develop 2.5 HP @ 2800 RPM

### **Services**

Electrical supply of 230V, Single Phase, 50Hz AC

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