LAB ENGINEERING

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Product Name :	**Product Code :**
Multicylinder Four Stroke Petrol Engine Test Rig With Hydraulic Dynamometer Or A.C Alternator With Resistance Loading With Morse Test Facility	IC Engine0004

Description :

Multicylinder Four Stroke Petrol Engine Test Rig With Hydraulic Dynamometer Or A.C Alternator With Resistance Loading With Morse Test Facility

Technical Specification :

Introduction:
The test rig is designed to provide self-contained facility for teaching Internal Combustion (spark Ignition) engine principles. The equipment is instrumented so that the following experiments could be performed.

Bhp Measurement
Ihp Measurement (By Morse Test Arrangement)
Fuel Consumption Measuement
Air Intake Measurement
Measurement Of Heat Rejected To Water JackET
Heat Balance Test

The Engine Test Rig Facilitate To Evaluate The Following

Performance (BHP Measurement) from no load to full load
Performance at various throttle position
Heat Balance Sheet
Morse test

Description

Two main components from main parts of the test rig. Welded steel base plate, complete with Dynamometer, Drive shaft with safety guard, engine starting battery of 12V capacity and cooling water arrangement. Panel board positioned over the base plate consisting of fuel system with flow measurement by burette, air flow measurement system, temperature and speed indicator.

Dynamometer (as applicable)

The Dynamometer used is a Hydraulic Dynamometer capable of absorbing a maximum load of 10 BHP at a speed of 1500 RPM.

The Loading device used is an AC Alternator of matching capacity to load the engine upto 10HP at 1500 RPM along with Resistance loading arrangement with selector switches.

Instrumentation (as applicable)

The following instrumentation is provided.

Engine oil pressure gauge

Engine charging circuit ammeter

'U' tube manometer for air flow rate

Burette for fuel flow rate

Speed Indicator-Digital

Digital Temperature Indicator-Multi point indicator with thermocouples.

Digital Voltmeter, Ammeter

Engine Starting

The test rig incorporates a 12V DC electrical system designed for use with typical engine self starter system. The battery is included in the scope of supply.

Controls

The test rig is arranged for manual control with Ignition switch for engine starting, manual throttle control, manual control for hydraulic dynamometer loading and a manul operated cultch actuator arrangement to drive the engine with load or without load (For No Load testing).

Fuel Measuring Arrangement

Fuel Measuring Arrangement consists of fuel tank, burette and suitable cock all mounted on a suitable framework 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. Heat carried away by cooling water

Consists of suitable inlet and outlet piping with flow control valve. Rota meter to measure the rate of flow of cooling water and Thermocouple with pocket connections for measuring inlet and outlet water temperature.

Engine (as applicable)

Four Cylinder Four Stroke Water Cooled Vertical Petrol Engine to develop 10 HP @ 1500 RPM. (Make: "Isuzu" used) Three Cylinder Four Stroke Water Cooled Vertical Petrol Engine to develop 8 HP @ 1500 RPM. (Make: Maruti-New)

Four Cylinder Four Stroke Water Cooled Vertical Petrol Engine to develop 10 HP @ 1500 RPM. (Make: Ambassador-New) Services

Electrical supply of 230V, Single Phase, 50Hz AC & external cooling water supply.