

Product Name :
Variable Compression Ratio Petrol / Diesel Engine Test Rig
- IC Engine Lab

Product Code :
ICE0004



Description :

Variable Compression Ratio Petrol / Diesel Engine Test Rig

Technical Specification :

Introduction

The test rig is designed to provide self-contained facility for teaching Compression Ignition engine principles. The equipment is instrumented so that the following experiments could be performed.

- 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). Heat Balance Sheet
- 2). BHP Measurement from no load to full load

Description

Two main components from main parts of the test rig. Welded steel base plate, complete with Rope Brake Dynamometer/ A.C. DC Generator/Eddy Current Dynamometer provided with 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)

- 1). The Dynamometer used is a Mechanical Brake capable of absorbing a maximum load of 5HP at a speed of RPM.
- 2). The Loading device used is an AC Alternator of matching capacity to load the engine upto 5HP at 1500 RPM along with Resistance loading arrangement with selector switches.
- 3). DC Generator of matching capacity to load the engine upto 5 HP at 1500 RPM along with Resistance loading arrangement provided with selector switches.
- 4). The loading device used is an Eddy Current Dynamometer of matching capacity to load the engine upto HP at 1500 RPM.

Instrumentation (as applicable)

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

Controls

The test rig is arranged for manual control with Hand cranking start arrangement for engine starting.

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

Single Cylinder Four Stroke Water Cooled Vertical Diesel Engine to develop 5 HP @ 1500 RPM. (Make: Kirloskar)

Services

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

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