

PC BASED I. C. ENGINE TEST RIG

MODEL: HMT07



FEATURES

- Compact, comprehensive, sturdy design
- Easy and versatile operation
- Choice of engine
- Choice of dynamometer
- Menu driven screens with comprehensive HELP menu
- Graphical display
- Convenient data acquisition system

DESCRIPTION

The test rig is designed for students to perform various tests on an IC Engine with the help of a PC. An IC Engine is run at various loads and the data is stored in PC using sensors and interface device.

The load on the engine can be varied from the PC*

The system provides logical inferences of the test performed on any I. C. Engine within the range of the dynamometer. The test rig facilitates to print and download the acquired data for the further analysis and graph plotting.

** This facility is available as optional additional on select dynamometers.*

SOFTWARE

The software is Windows based user friendly. The software enables design/modification of the mimic diagram. The data acquired, the data analysed and its calculations can be viewed in a tabular and/ or graphical form. Various graphs can be viewed e.g. η_{Th} , v/s fuel consumption, rpm v/s BP, etc. The software also permits printing of the various data/screens. There is a facility to plot P- θ diagram. (Optional). The cylinder pressure is measured using a Piezo pressure transducer. This along with Crank Angle Marker and fast data acquisition module enables user to view P- θ plot on the PC

INSTRUCTION MANUAL

Self -explanatory operating manuals are provided with each system. Detailed theory as well as practical exercises is also included in the manual

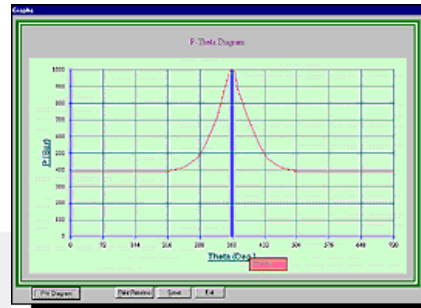
LIST OF EXPERIMENT

1. To determine Brake Power
2. To determine engine volumetric efficiency
3. To determine engine mechanical efficiency *
4. To determine engine brake thermal efficiency
5. To determine engine specific fuel consumption
6. Complete energy balance using exhaust gas calorimeter.
7. Determining air/ fuel ratios
8. Plot P- θ diagram (Optional)

* Depending upon type of engine selected

COMPONENTS

1. IC Engine
2. Dynamometer
3. Calorimeter
4. Torque Transducers
5. Engine Fuel Consumption Meter
6. Air Flow Transducer
7. Temperature Sensor
8. Data Interface Module
9. Software with single user license



OPTIONAL ADDITIONAL

1. PC with Colour monitor with Windows XP/Windows 7 (Home), one serial port R232
2. Interface device for PC Control of engine load
3. Engine indication system consisting of a Piezo Sensor, Crank Angle marker and necessary software
4. Water flow transducer for engine cooling water measurement
5. Water flow transducer for calorimeter water flow measurement
6. Battery
7. Battery charger

SERVICES REQUIRED

1. Water supply and drainage arrangement
2. Electric supply
3. Fuel for engine

WEIGHT

- PC based Single cylinder four stroke diesel engine test rig: 364 Kg

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- (1) Since research and development is an on-going activity, the specifications mentioned herein are subject to change without notice
- (2) Photographs are indicative only.