Heat Engines Laboratory

Room Number: G 120/ H 124

Faculty In Charge: Dr. Saud Ghani

Teaching Assistant In Charge: Eng. Pratheesh Ben

Two Shaft Gas Turbine

Power Output-10 kW. Mechanical loading of power turbine by close-coupled eddy current dynamometer. Load cell to measure torque developed by power Turbine. Digital Instrumentation mounted on the control panel including: Turbine Shaft Speed , Pressures, Temperature, Fuel flow and Torque. Analogue instrumentation to include: Fuel level, Fuel Pressure, Oil Temperature, Oil Pressure, Filter condition, Brake load level. Computer interface for connection to a PC is also provided.

Category: Teaching Equipment

Courses: Thermodynamics II, Energy Systems Laboratory, Heat Engines

Engine Test Bed

Variable compression, single cylinder engine test bed. Engine test bed has motor to start the engine, dynamometer to load and measure the load on the engine, fuel flow measurement, temperature measurement, pressure measurement etc with data acquisition system for acquisition of all data to a PC. Various engines (diesel/gasoline) can be fitted to the test bed for performance testing.

Category: Service Units

Courses: Energy Systems Laboratory, Heat Engines

Gasoline Engine

4 Stroke Variable Compression Air Cooled S. I. Engine. Comprising a 392cc single cylinder engine with a max. power output of 7.5 kW at 3600 rpm and a max. torque of 23 Nm at 2500 rpm. The compression ratio can be varied from 5.5:1 to 10:1 via a graduated piston system, the engine design allows the compression ratio to be varied while running. Lean/rich mixture device, Model # P 8166, from Cussons UK.

Category: Teaching Equipment

Courses: Energy Systems Laboratory, Heat Engines

Diesel Engine

4 Stroke Variable Compression Air Cooled C.I. Engine. Petter AC1 comprising a 392cc single cylinder engine with a max. power output of 5 kW at 3600 rpm and a max. torque of 15.6 Nm at 2650 rpm. The compression ratio can be varied from 14:1 to 20:1 via a graduated rod inserted into the combustion chamber. The engine design does allow for the compression ratio to be varied while running. To be tested on P 8190 Engine Test bed from Cussons

Category: Teaching Equipment

Courses: Energy Systems Laboratory, Heat Engines

Stirling Cycle Hot Air Engine

The cycle on which the engine is based consists of two isothermal processes and two constant volume processes (the latter being performed with the aid of a regenerator). The source of heat is provided from a low voltage electric element so that it may readily be controlled and measured. Output is measured by the simple dynamometer supplied

Category: Demonstration Equipment

Courses: Heat Engines

Exhaust Gas Analyzer for petrol engine

Used to measure the emisssions of CO, CO2, Nox, HC etc.

Category: Measuring Equipment

Courses: Selected Topics II

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Exhaust Gas Analyzer for Diesel Engine

Gas analyzer which measure the particulate matter in exhaust emission. Mainly for diesel engines.

Category: Measuring Equipment

Courses: Selected Topics II

Digitizing Oscilloscope

Oscilloscope with option for data acquisition to a computer.

Category: Measuring Equipment

Courses: NA

Fluke Hydra

Data acquisition unit with 10 channels. Can connect various thermocouples. Can measure, voltage, current, resistance and temperatures.Additionally, all units have bi-directional communication via RS-232C, which enables control from a host computer. The RS-232C interface also supports stand-alone use with a serial printer. An optional GPIB/IEEE-488 interface is available for the 2620A only.

Category: Measuring Equipment

Courses: NA