

**I.C. ENGINE LAB**

Mahindra diesel engine



The set-up consists of a 4- cylinder, 4- stroke diesel engine connected to hydraulic type dynamometer for loading. It is provided with necessary instruments for combustion pressure and crank angle measurements. These signals are interfaced to computer through engine. Different kind of test can be performed using this set-up like, measurement of volumetric efficiency and energy auditing of the engine.

Maruti zen MPFI petrol engine



The set-up consists of 4 cylinder 4- stroke MPFI Maruti Zen petrol Engine with hydraulic dynamometer. The test rig is used to obtain volumetric efficiency of the engine and to conduct the energy auditing.

Computerized CRDI Engine test rig



The engine is single cylinder water cooled four stroke automotive diesel engine. Diesel fuel is injected directly into the combustion chamber with common-rail fuel injection equipment. The fuel parameters like fuel quantity, injection timing, number of injections, fuel pressure in the rail, etc. can be changed online with the help of an Open ECU. Open ECU based variation in above parameters simplifies the research by bringing so many parameters in the preview of research. Above mentioned parameters can be optimized by click of mouse at various rpm points to study their effect on Engine Efficiency, Ignition Delay and Emission etc. This can also be used for training of engineering students.

Computerized petrol engine test-rig with eddy current dynamometer.



The setup consists of Three cylinders, 4 strokes petrol (ALTO M.P.F.I.) engine connected to eddy current type dynamometer for loading. It is provided with necessary instruments for combustion pressure and crank angle measurements. These signals are interfaced to computer through engine indicator for P-V diagrams.

Exhaust Gas Analyser



The computerized set-up is used for the measurement of concentration of various gases present in the exhaust gases. Exhaust emission test of CO, HC, CO<sub>2</sub>, O<sub>2</sub>, NO<sub>2</sub> on petrol engine can be done using this set-up.

Peter Kirloskar diesel engine with electrical dynamometer

Producer gas plant

Textual two-stroke diesel engine

Computerized test set up of Mahindra dual fuel diesel engine

Kirloskar diesel engine with electrical dynamometer

CFR Petrol engine

Single cylinder petrol engine(horizontal) with mechanical dynamometer

6-Cylinder diesel engine

Boiler (Retherm)

Compressor

MPFI Petrol engine (Maruti zen)	
Ambassador petrol engine	
2 stroke petrol engine model	
2 stroke diesel engine model	
Steering mechanism model	
Compound steam engine	
Single steam engine	
Wiring diagram of electrical system of car	
Magneto ignition system	
Different type of valves	
Different type of bearings	
Gear box and Clutch	
4-stroke 4-cylinder petrol engine (cut section)	
Cut section of carburettors	
Fuel injector (cut section)	
Fuel pump (cut section)	
Crank shaft	
Mechanical fuel pump	
Cam shaft	
Connecting rod	
Mechanical brake system	
Hydraulic brake system	
Differential	
Steering gear box	
Steering wheel	
4-stroke diesel engine	
4-stroke diesel engine (single cylinder)	
Propeller shaft	

Single cylinder 4-stroke petrol engine	
Gear box	
Clutch plate	
Dynamo	
Piston	
Valve guide	
Lancashire boiler	
Babcock Wilcox boiler	
Gas analyser	
Wankel engine	
Torque converter	
Cut section of Tata Cummins 6-cylinder diesel engine	
Rover gas turbine	