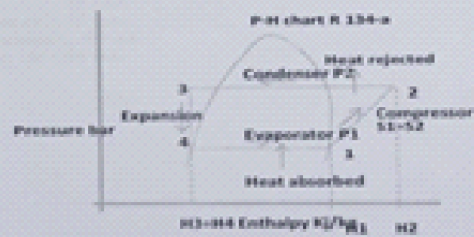
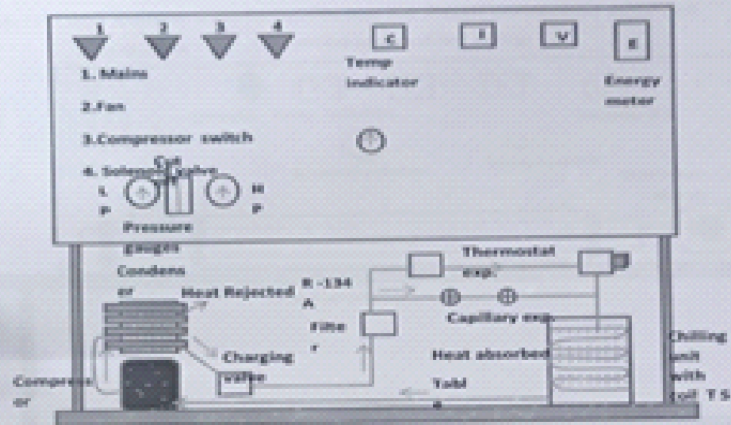


Heat transfer lab

AIM: To demonstrate the working of vapor compression refrigeration system and calculate coefficient of performance



JAIN COLLEGE OF ENGINEERING & RESEARCH, HOSUR, BELAGAVI

(Approved by AICTE, New Delhi, Affiliated to VTU Belagavi & Recognized by Govt. of Karnataka)

Energy Conversion laboratory (18MEL58)

Do's

1. Always set the accelerator knob to the minimum condition and start the engine
2. The level of fuel in the fuel tank should be checked before start the engine
3. Check the cooling water circulation to the engine before start
4. Ensure zero load on the engine before start
5. Always raise the load on the engine in increments as given in manual
6. Frequently, at least once in three months, grease all visual moving parts
7. While testing the flash and fire point keep sufficient safe distance
8. Be punctual for lab sessions
9. Ensure sufficient fuel level while starting the Multi cylinder engine
10. Note down thermocouple readings, voltage and amps by turning the knob gently
11. If any abnormal sound noticed when the engine is running, reduce the load on the engine and shut down the engine and inform to lab technician
12. Complete the calculation part after conduction of test and plot the graph
13. Avoid crowd while conducting tests on engines the engine
14. Wearing shoes for the lab is mandatory
15. Read the instructions before conducting the Expt./ Start the engine

Do not's

1. Do not stop engine when it is on maximum load
2. Do not turn off the cooling water immediately when the engine is stopped

B. E. MECHANICAL ENGINEERING
Choice Based Credit System (CBCS) and Outcome Based Education (OBE)
SEMESTER –V

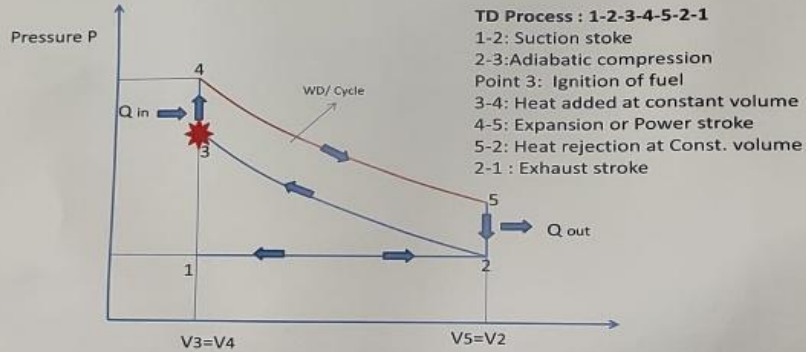
ENERGY CONVERSION LABORATORY

Course Code: **18MEL58**
 Teaching Hours/Week (L:T:P) 0:2:2
 Credits 02

CIE Marks 40
 SEE Marks 60
 Exam Hours 03

Sl No.	Experiments
Part A	
1	Lab layout, calibration of instruments and standards to be discussed
2	Determination of Flash point and Fire point of lubricating oil using Abel Pensky and Marten's (closed) / Cleveland's (Open Cup) Apparatus.
3	Determination of Calorific value of solid, liquid and gaseous fuels.
4	Determination of Viscosity of lubricating oil using Redwoods, Saybolt and Torsion Viscometers.
5	Valve Timing/port opening diagram of an I.C. Engine.
Part -B	
6	Performance Tests on I.C. Engines, Calculations of IP, BP, Thermal efficiency, Volumetric efficiency, Mechanical efficiency, SFC, FP, A:F Ratio, heat balance sheet for a. Four stroke Diesel Engine b. Four stroke Petrol Engine c. Multi Cylinder Diesel/Petrol Engine, (Morse test) d. Two stroke Petrol Engine e. Variable Compression Ratio I.C. Engine.
7	Measurements of Exhaust Emissions of Petrol engine.
8	Measurements of Exhaust Emissions of Diesel engine
PART C (OPTIONAL)	
9	Visit to Automobile Industry/service stations.
10	10 Demonstration of p- θ , P-V plots using Computerized IC engine test rig
Scheme of Examination: ONE question from part A: 30 Marks ONE question from part B: 50 Marks Viva–Voice : 20 Marks Total : 100 Marks	

P-V diagram for Otto cycle



Department of Mechanical Engineering

ENERGY CONVERSION LABORATORY

Multi cylinder Test rig(Morse test)

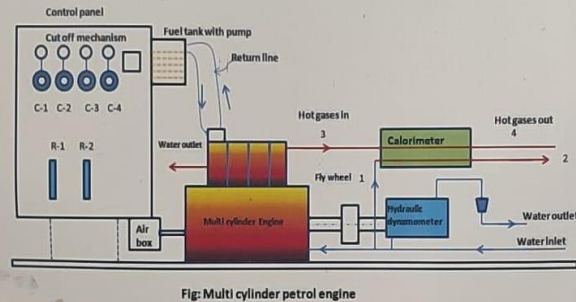


Fig: Multi cylinder petrol engine