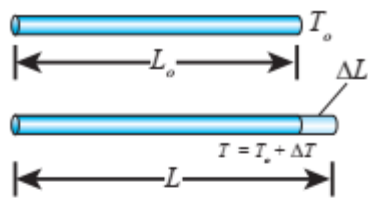


SIR CV RAMAN COACHING CENTRE – IDAPPADI ,SALEM

XL PHYSICS UNIT – 8 - IMPORTANT DIAGRAMS

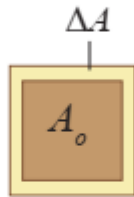
PREPARED BY Dr.G.THIRUMOORTHY,M.Sc,B.Ed,Ph.D ,PHYSICS

[thiruphysics1994@gmail.com](mailto:thiruphysics1994@gmail.com) ,8610560810



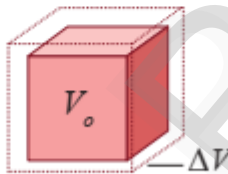
$$\frac{\Delta L}{L_0} = \alpha \Delta T$$

(a) Linear expansion



$$\frac{\Delta A}{A_0} = 2\alpha \Delta T$$

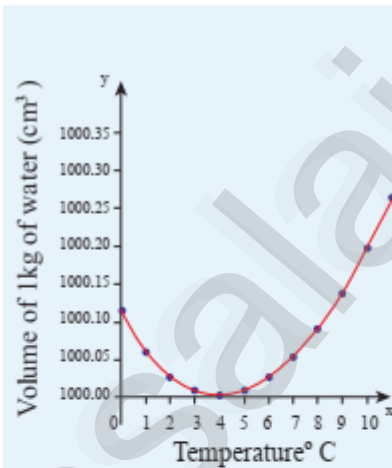
(b) Area expansion



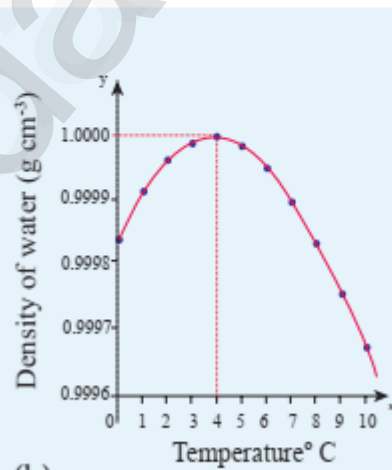
$$\frac{\Delta V}{V_0} = 3\alpha \Delta T$$

(c) Volume expansion

Figure 8.4 Thermal expansions



(a)



(b)

Figure 8.5 Anomalous Expansion of water

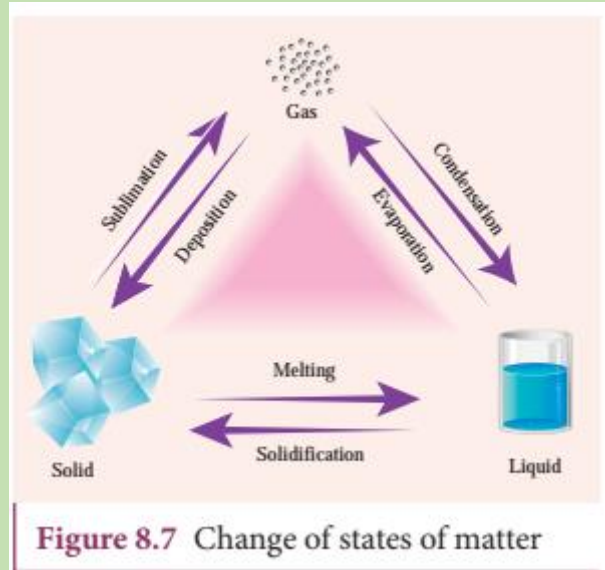


Figure 8.7 Change of states of matter

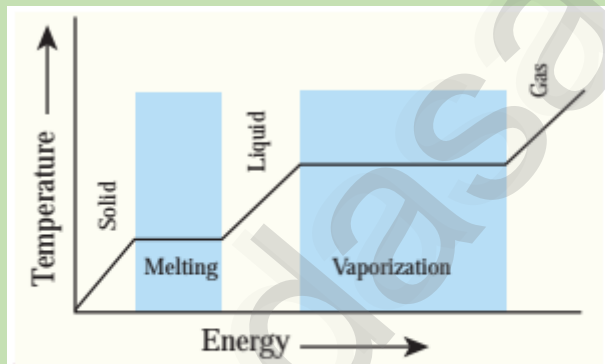


Figure 8.8 Temperature versus heat for water

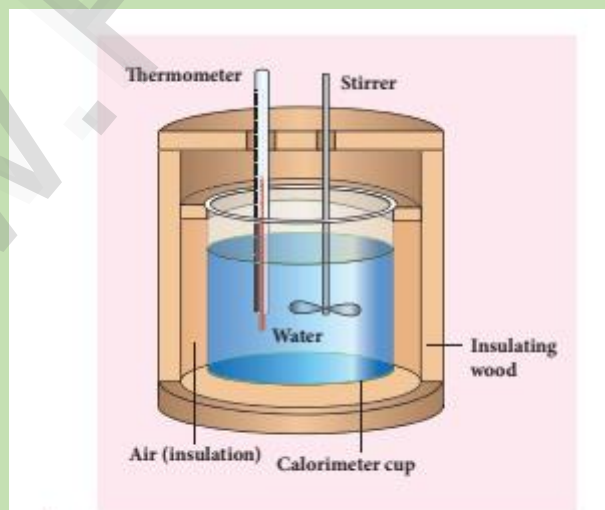
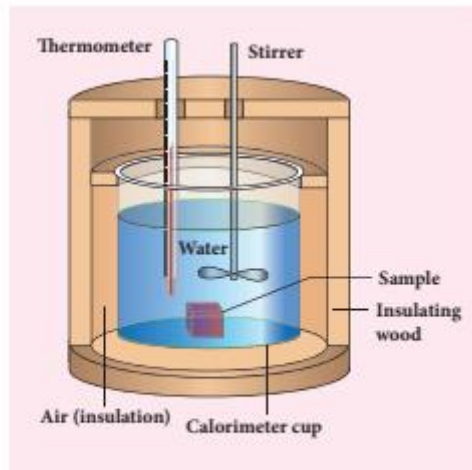
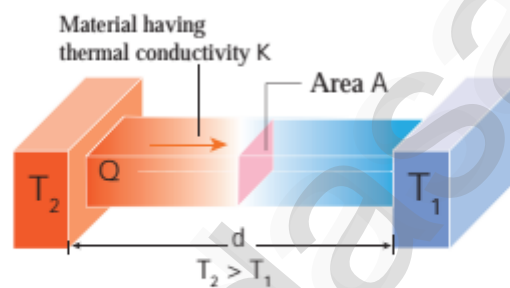


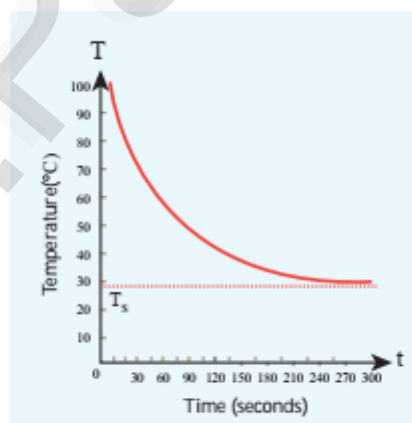
Figure 8.9 Calorimeter



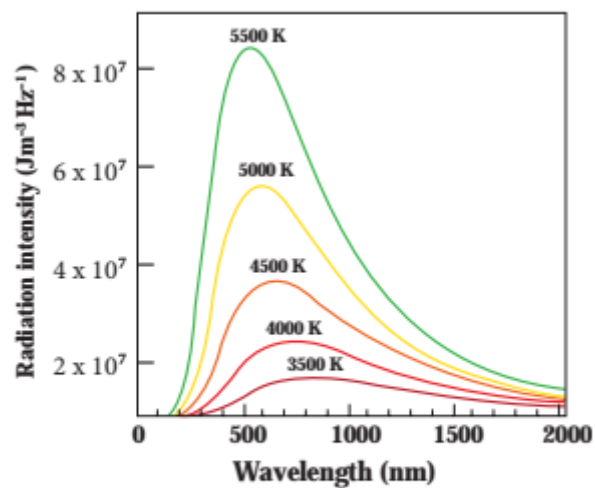
**Figure 8.10** Calorimeter with sample of block



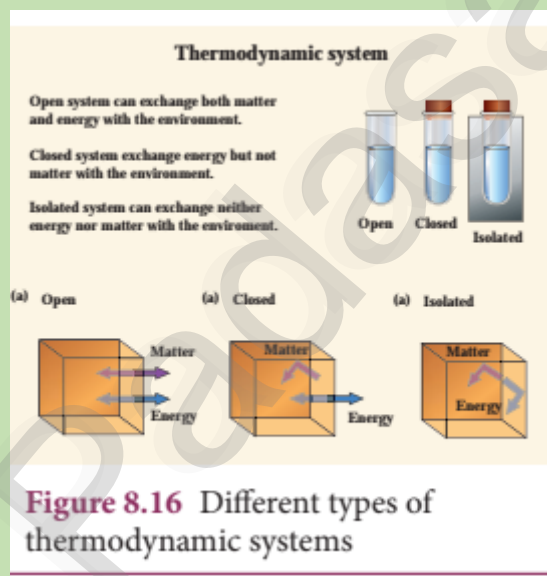
**Figure 8.11** Steady state heat flow by conduction.



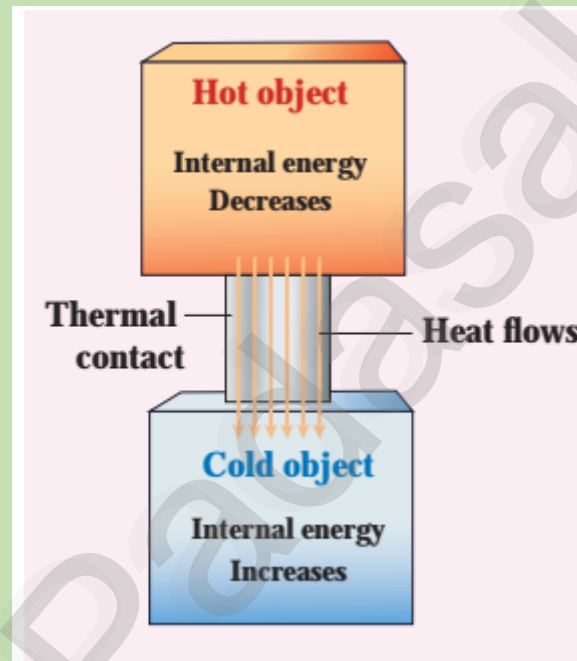
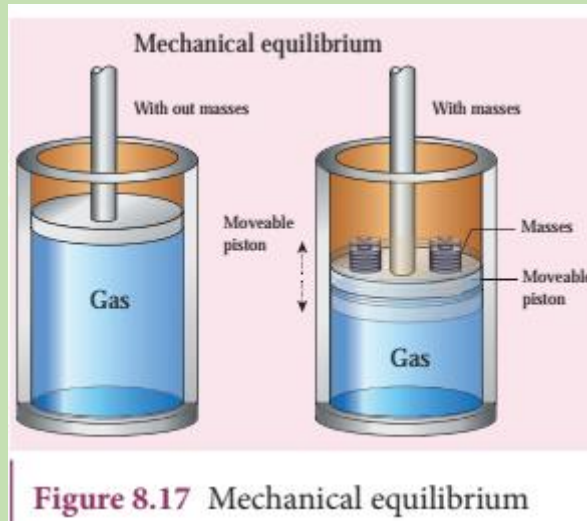
**Figure 8.12** Cooling of hot water with time

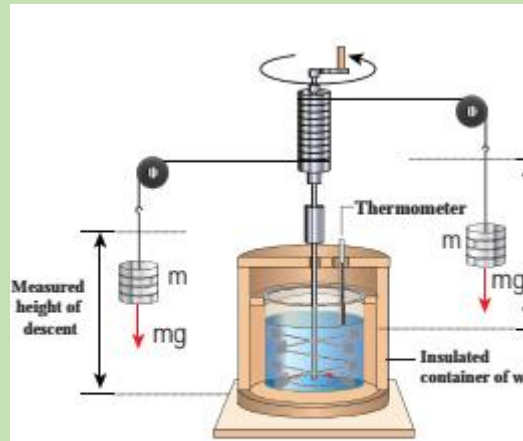


**Figure 8.13** Wien's displacement law

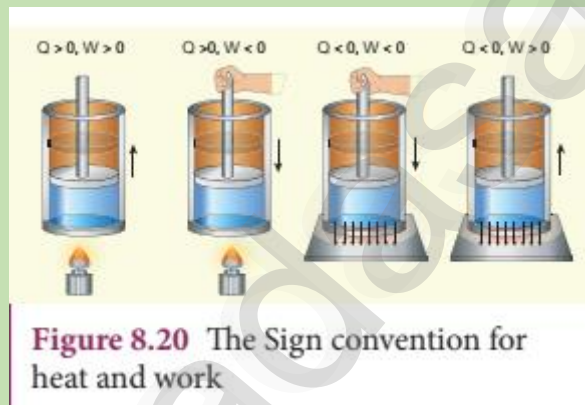


**Figure 8.16** Different types of thermodynamic systems





**Figure.8.19** Joule's experiment for determining the mechanical equivalent of heat energy.



**Figure 8.20** The Sign convention for heat and work

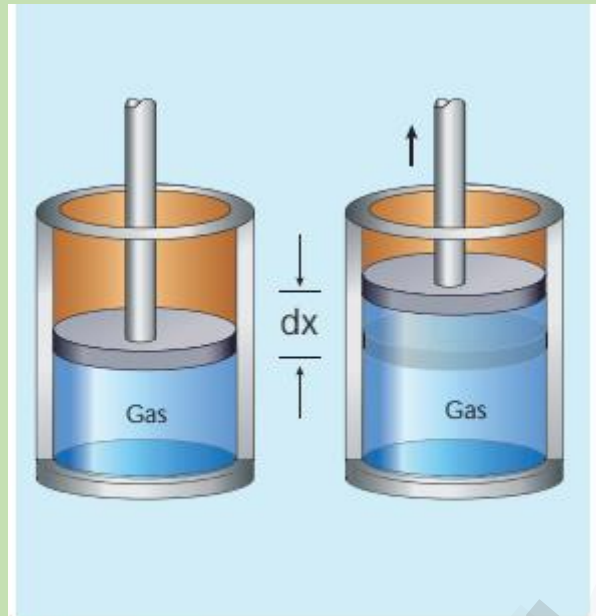


Figure 8.21 Work done by the gas

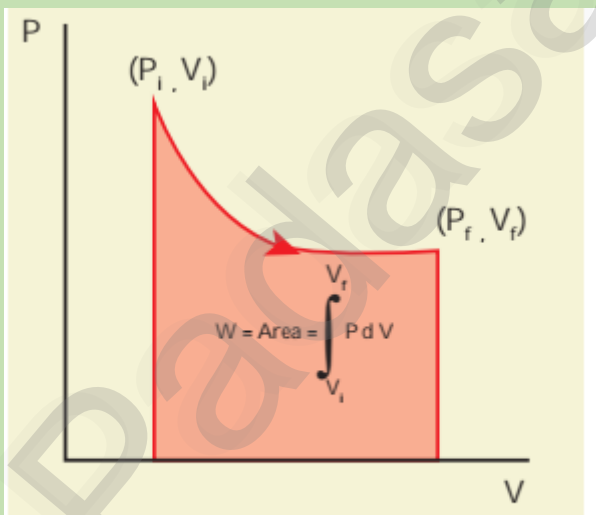
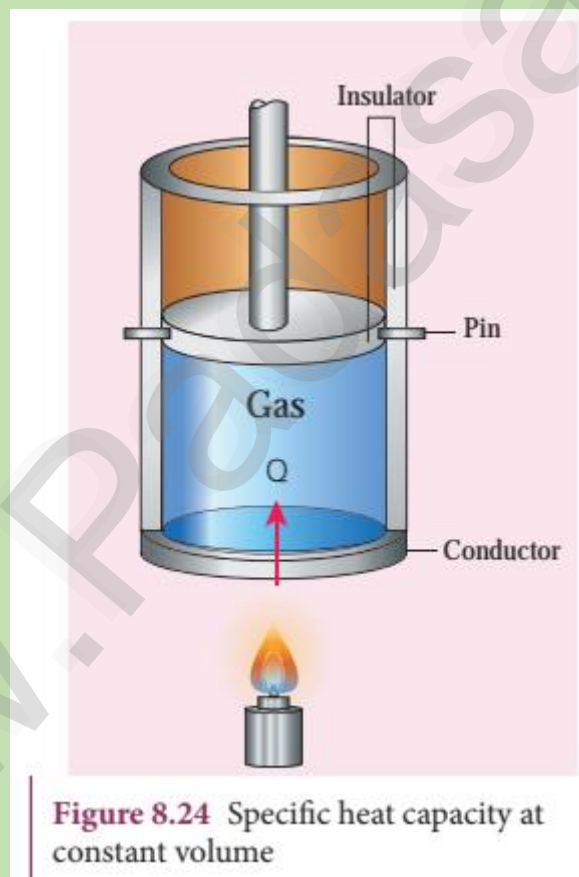
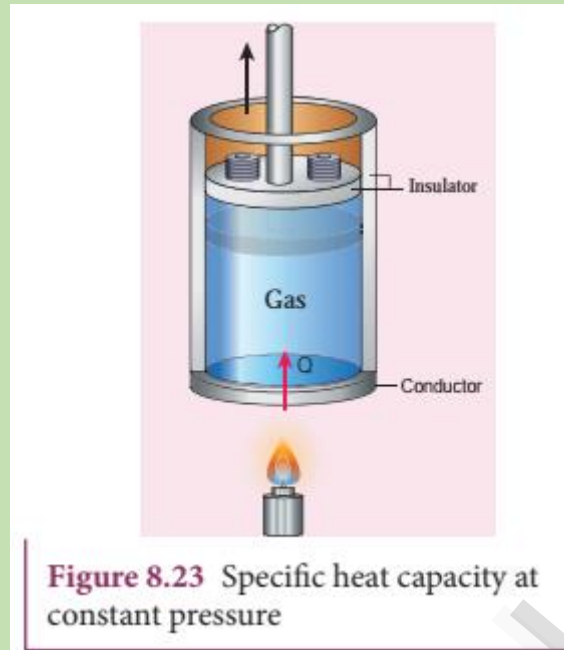
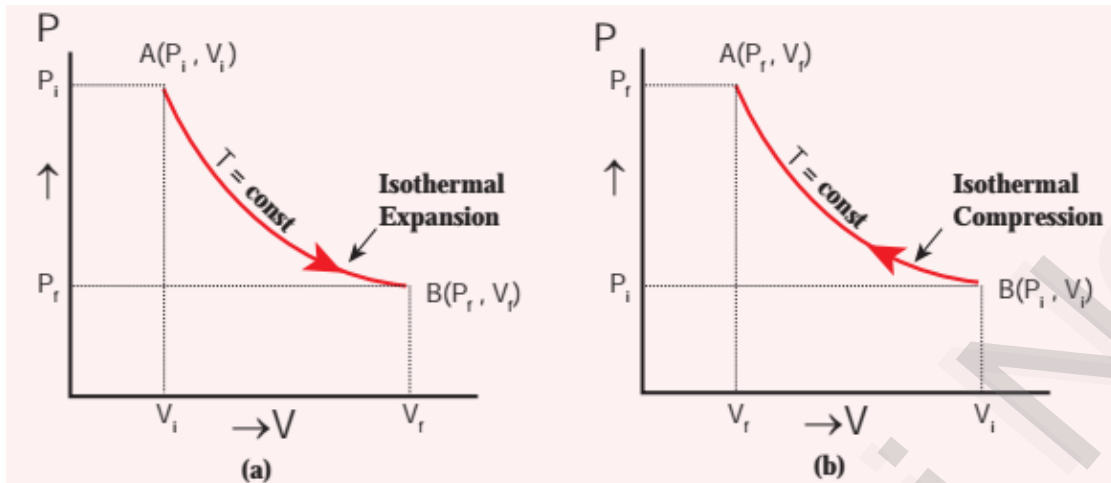


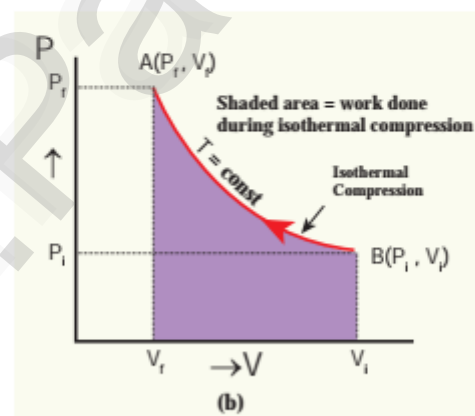
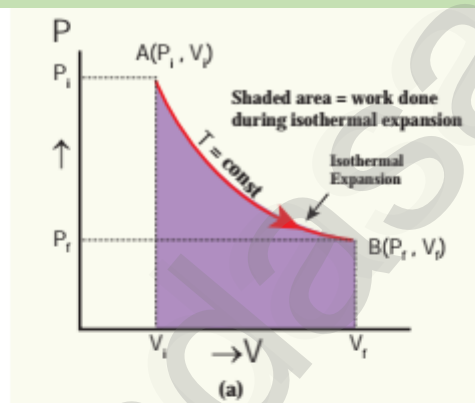
Figure 8.22 Work done by the gas during expansion



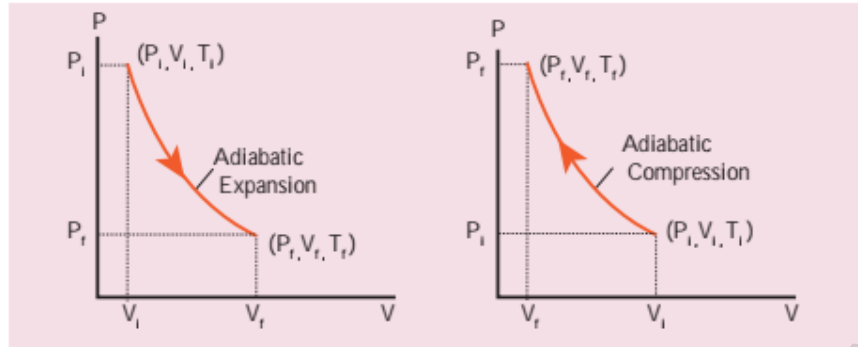




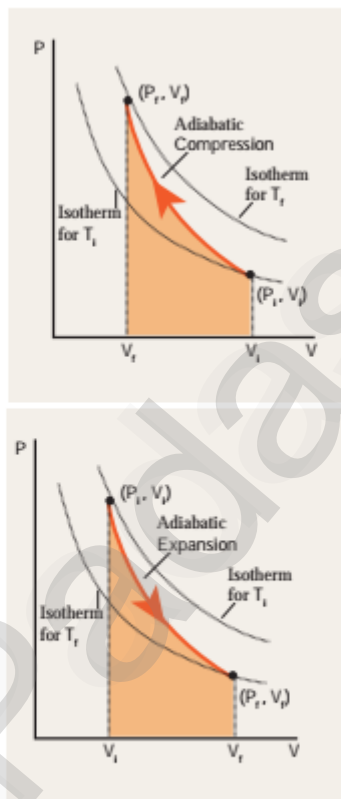
**Figure 8.25** (a) Quasi-static isothermal expansion (b) Quasi-static isothermal compression



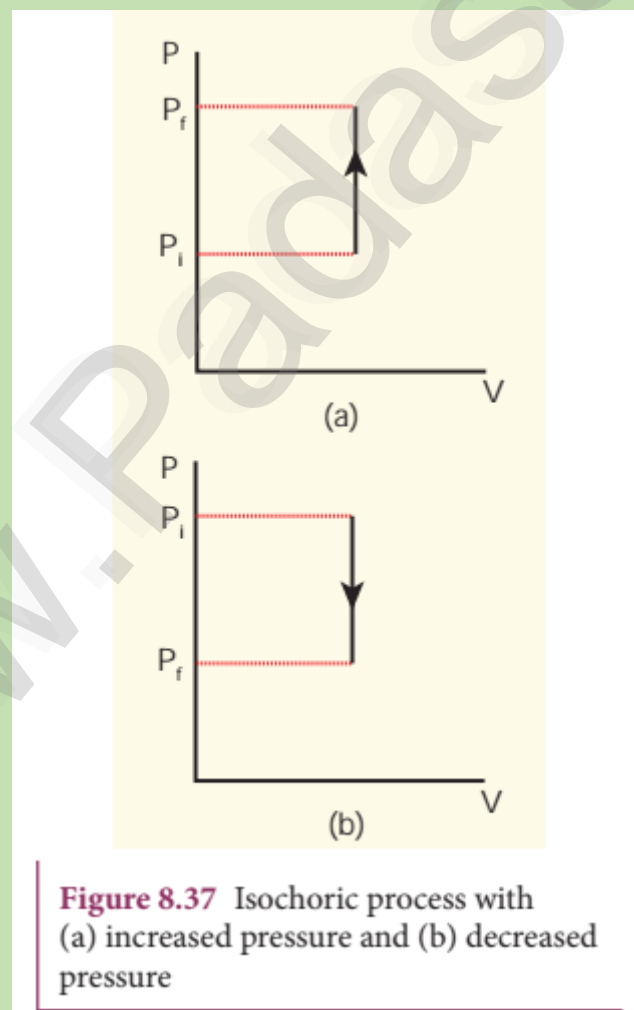
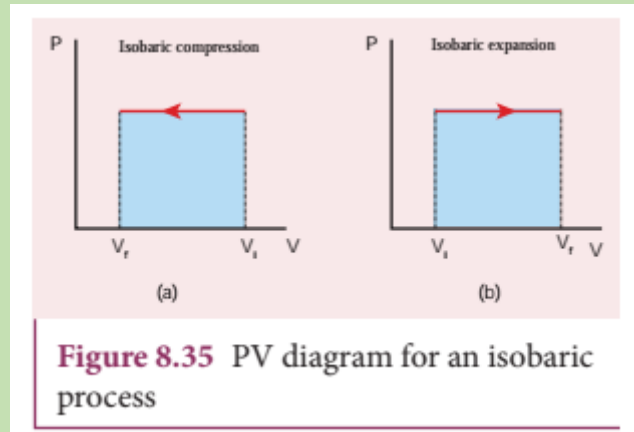
**Figure 8.27** Work done in an isothermal process.

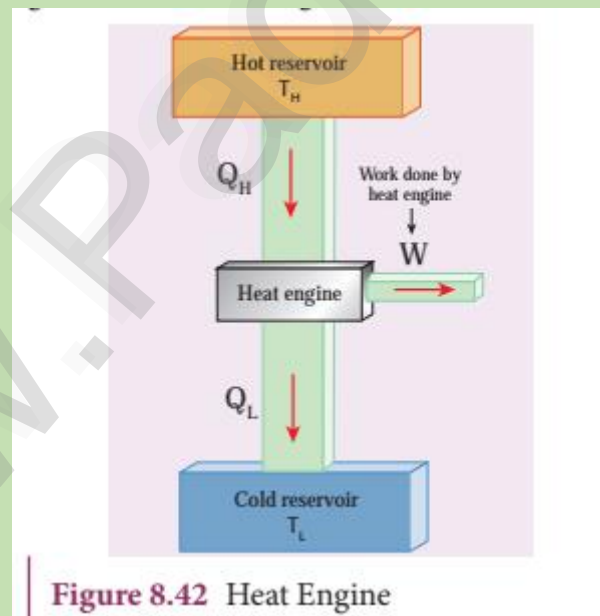
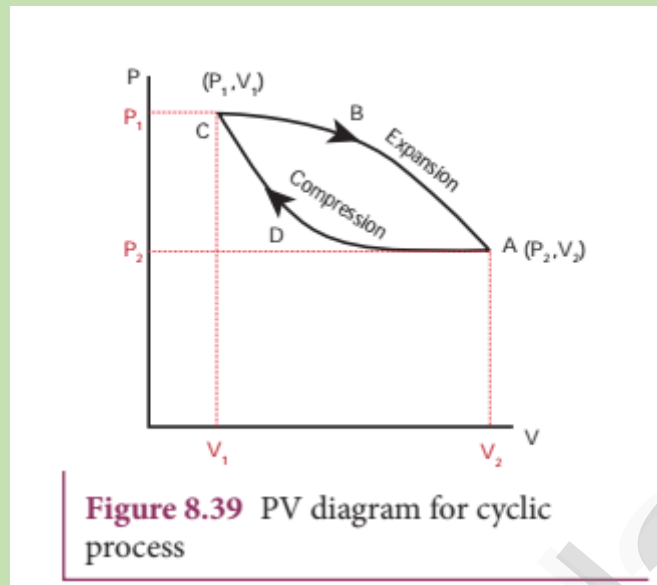


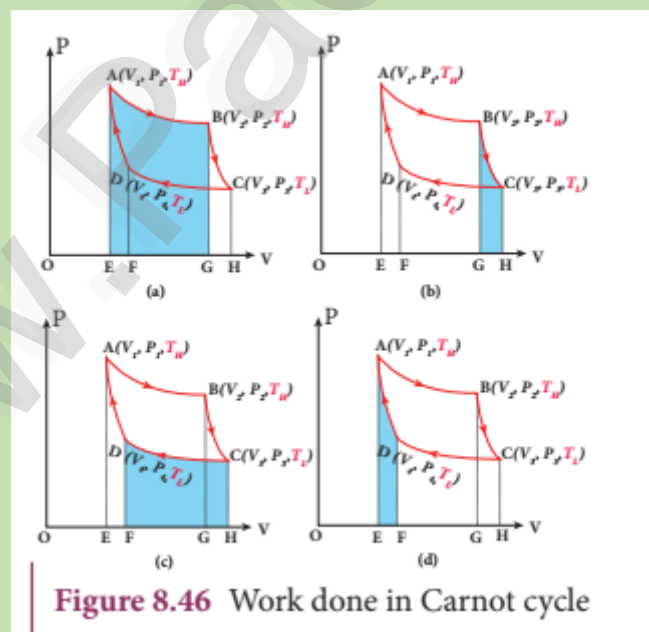
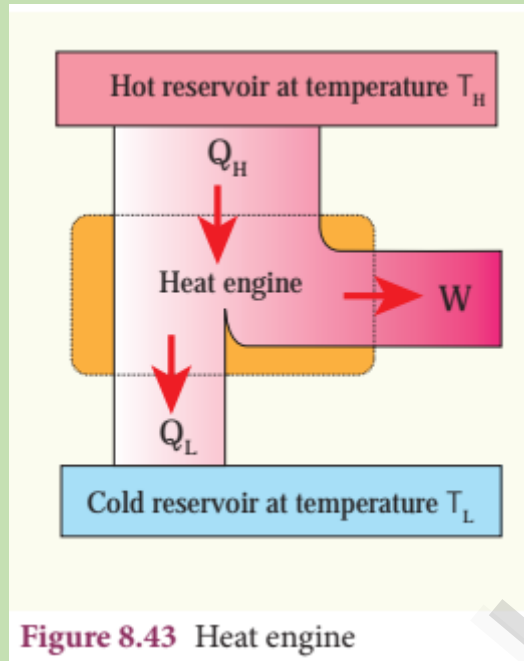
**Figure 8.30** PV diagram for adiabatic expansion and adiabatic compression

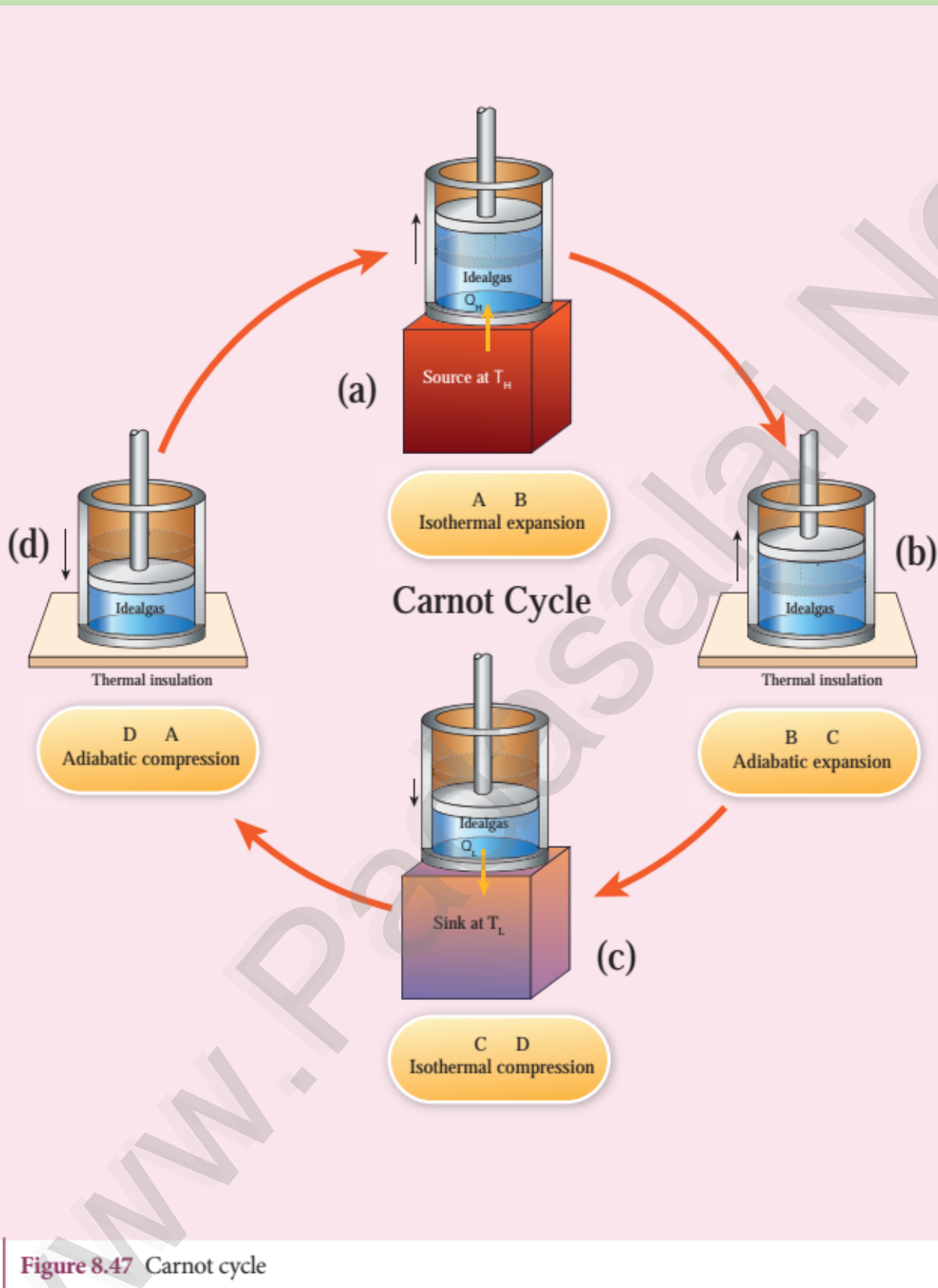


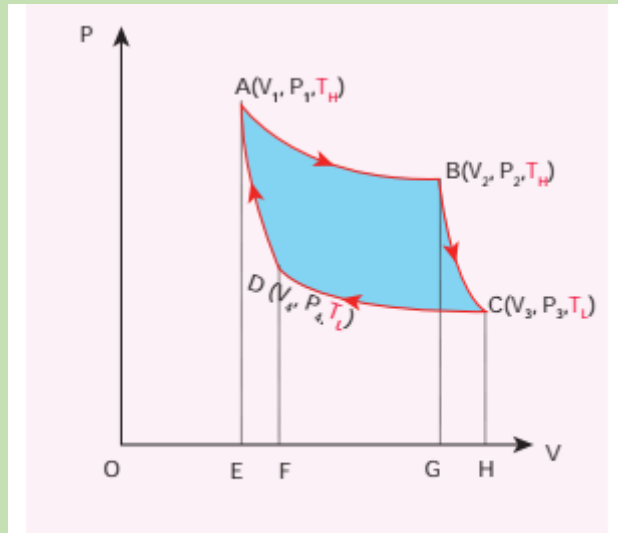
**Figure 8.32** PV diagram - Work done in the adiabatic process



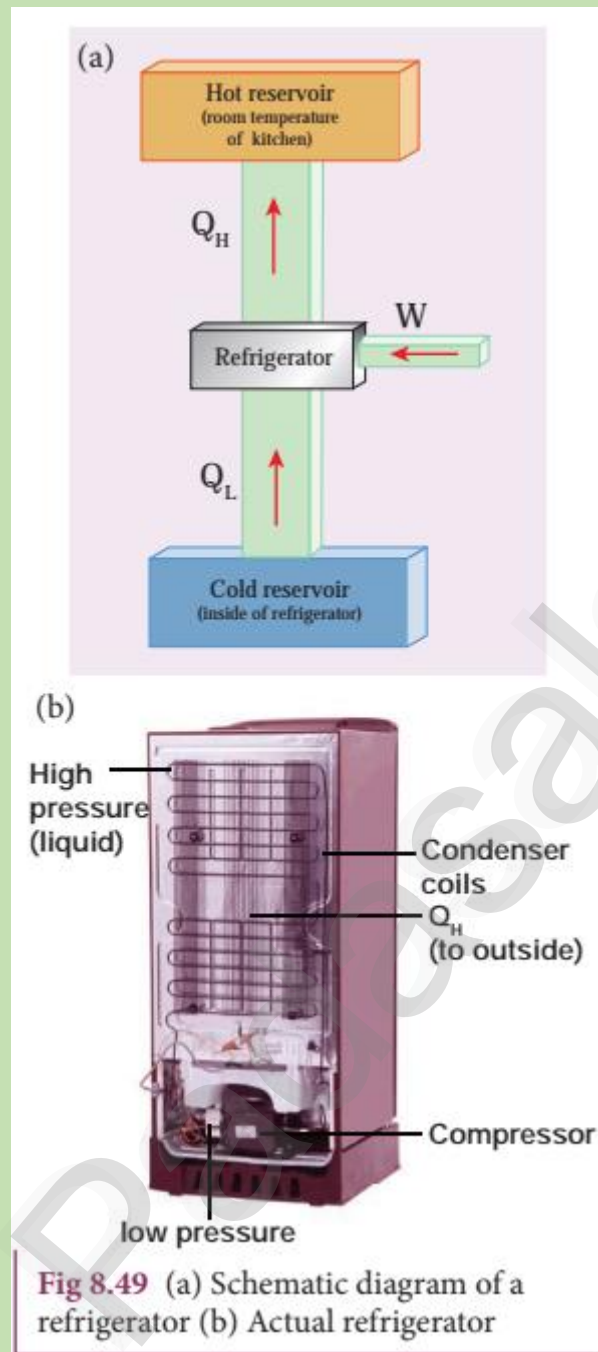








**Figure 8.48** Net work done in Carnot cycle



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