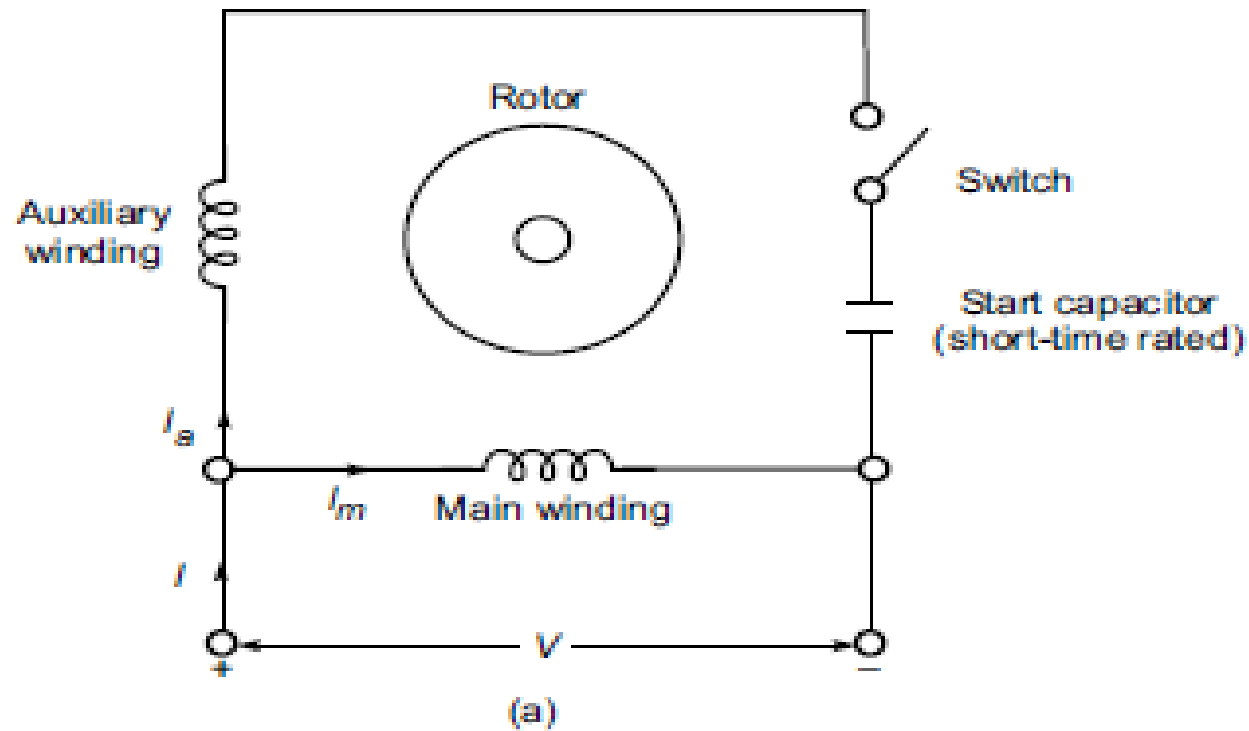


# Module-4

## Lecture -33

- Topic covered as:
  - ✓ Capacitor-start Motor and its applications
  - ✓ Two value capacitor motor and its applications

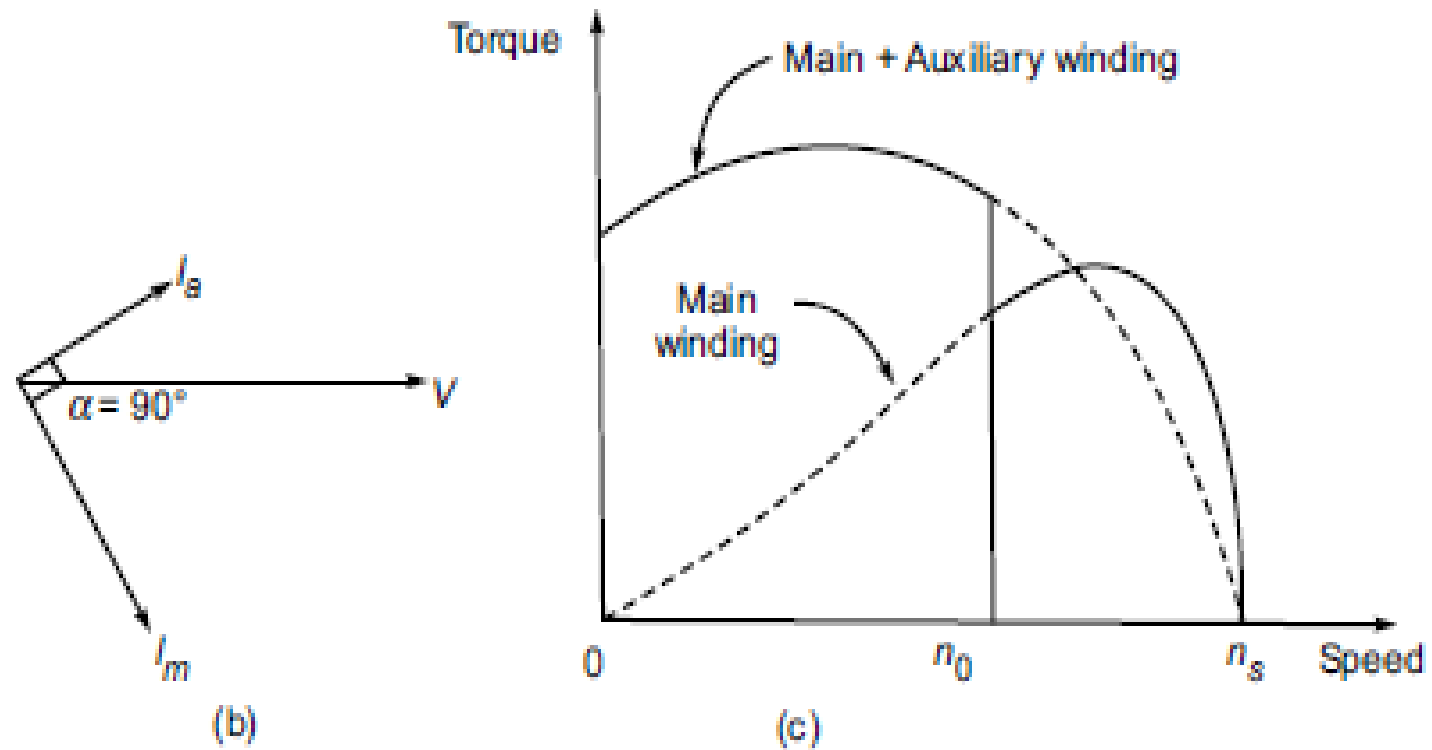
# Capacitor-start Motor



# Capacitor-start Motor

- It uses the capacitor only for the purpose of starting.
- The capacitor value is usually so chosen as to give  $a = 90^\circ$  elect.
- The starting torque is high.
- capacitor need only be short-time rated

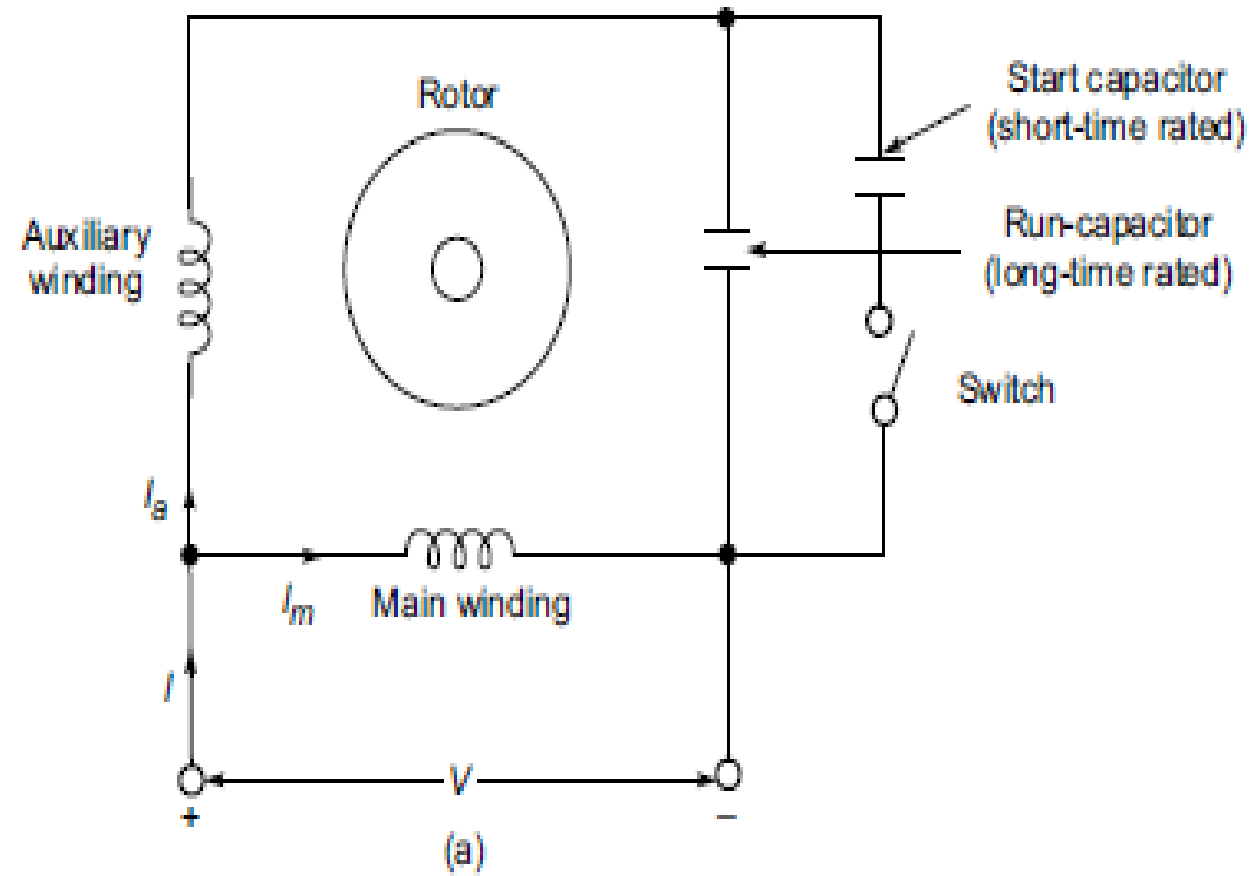
# Capacitor-start Motor



# Application of Capacitor-start Motor

- Motor has a high starting torque and therefore is used for hard starting loads.
- Typical application in compressors, conveyors, pumps, certain machine tools, refrigeration and air-conditioning equipment.
- Available up to sizes as large as 6 kW.

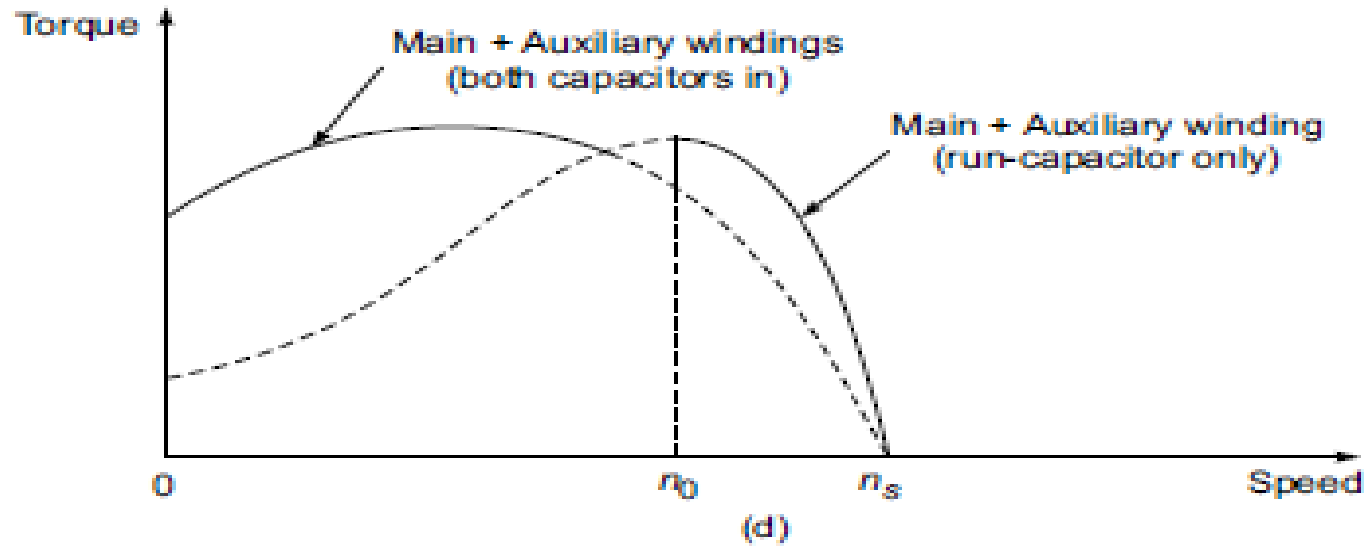
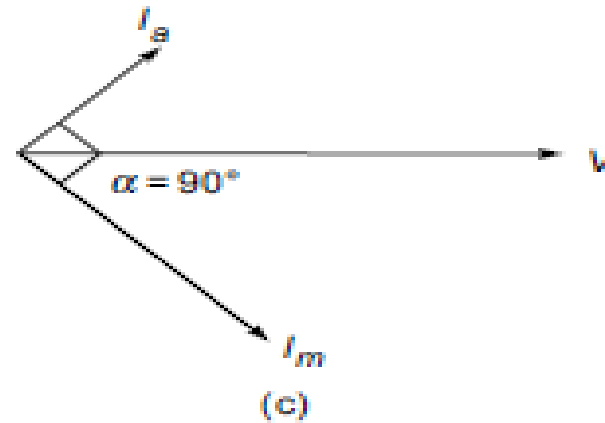
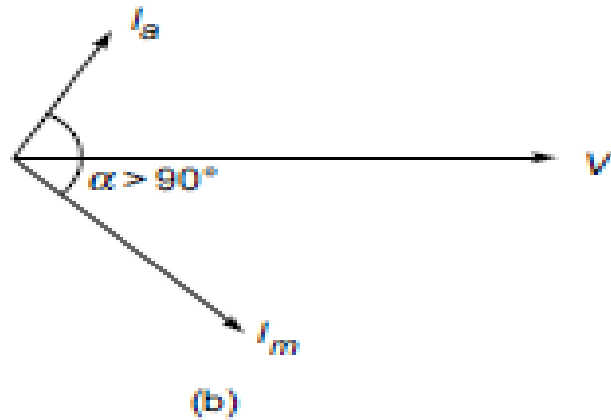
# Two value capacitor motor



# Two value capacitor motor

- 2-value capacitor motor not only uses a capacitor for starting but also continuous (run) operation.
- The capacitor used permanently is called the *run capacitor*, the use of which improves the motor running performance.
- At starting (both capacitors in circuit) where  $\alpha > 90^\circ$  elect. so that when the start-capacitor is disconnected  $\alpha$  becomes  $90^\circ$  elect.

# Two value capacitor motor





## Application of two value capacitor motor

- It combines the advantages of capacitor-start and permanent-capacitor motors and is used for hard to start loads.
- It gives a high power factor and efficiency under running conditions.
- applications in refrigerators, compressors and stockers.

Permanent Capacitor 1-ph I.M.