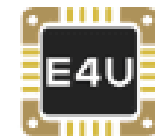
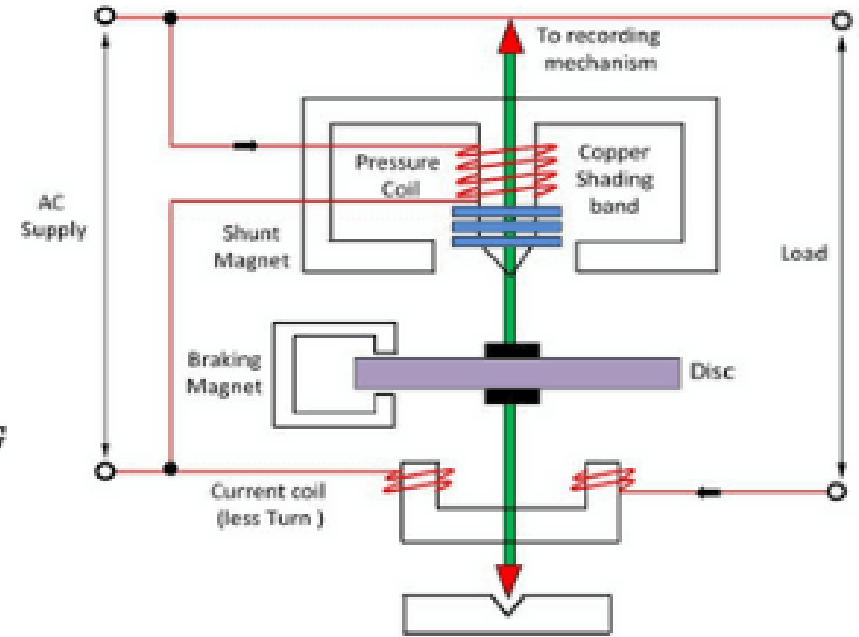
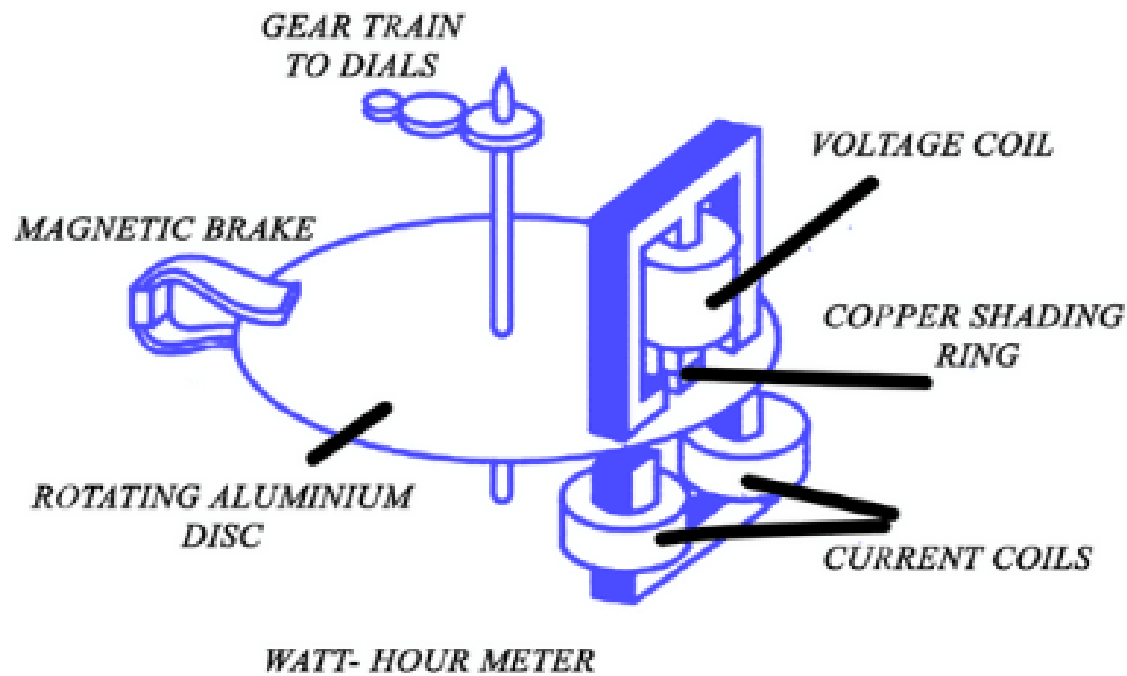


Chapter-12

(Operation of Energy Meter)

Lecture-1

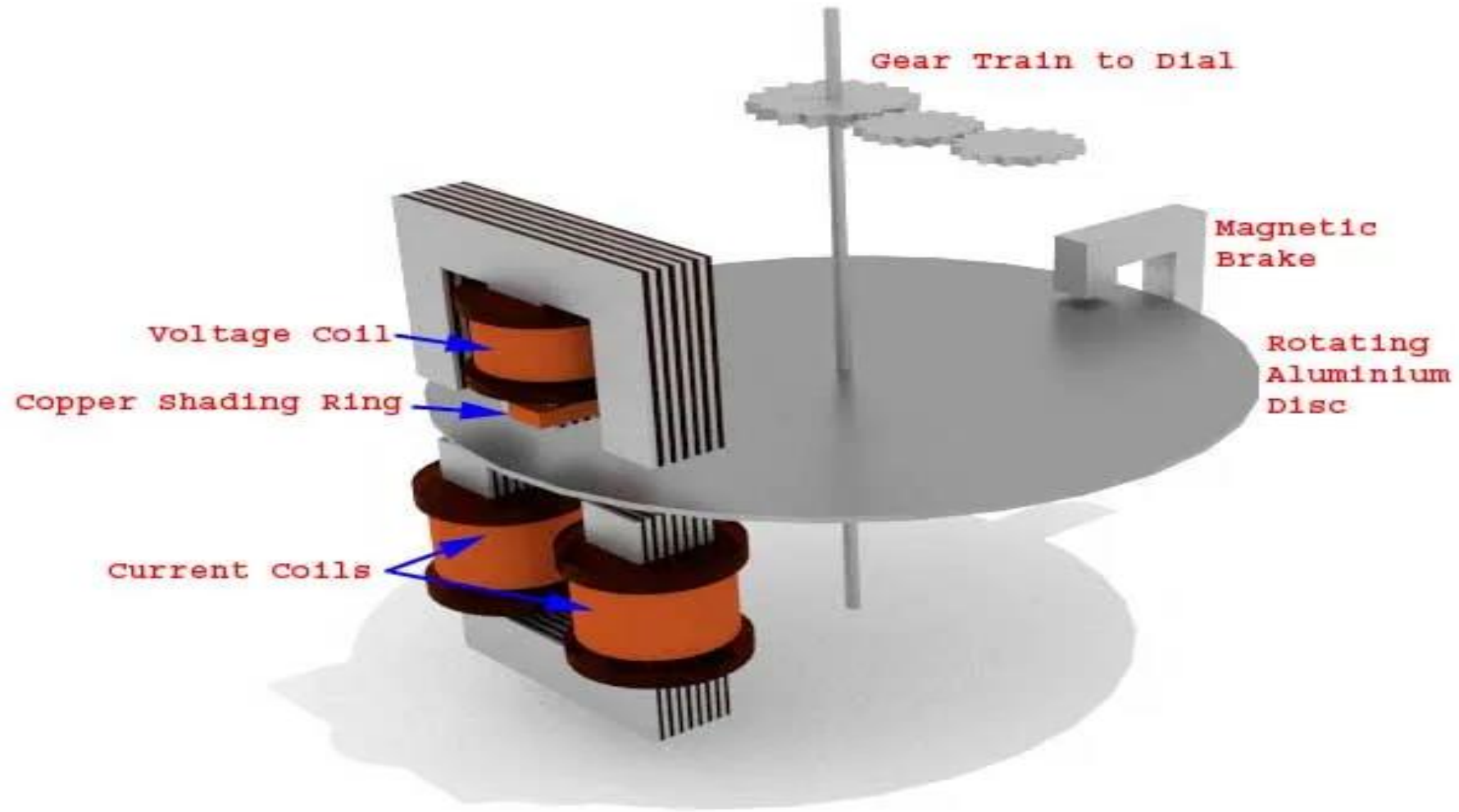
What is the Construction of AC Energy Meter?



Electrical 4 U

Principle of Operation of Energy Meter:

- Energy meters are the basic part to measure the power consumption. It is used everywhere, no matter how big or small consumption it is. It is also known as watt-hour meter. Here we discuss the construction and working principle of induction type energy meter.
- To understand the structure of watt-hour meter, we must understand the four essential components of the meter. These components are as follows:
 - Driving system
 - Moving system
 - Braking system
 - Registering system



Driving System:

- The components of this system are two silicon steel laminated electromagnets. The upper electromagnet is called shunt magnet and it carries a voltage coil consisting of many turns of thin wire. The lower electromagnet is called series magnet and it carries the two current coils consisting of a few turns of thick wire. Current coils are connected in series with the circuit and load current passes through it.
- Where as voltage coil is connected to the supply mains and produce a high ratio of inductance to resistance. There is copper bands in the lower part of shunt magnet which provides frictional compensation so that the phase angle between shunt magnet flux and the supply voltage is exactly 90° .