

DC GENERATOR

DC Generator - Basics

Means of converting **mechanical energy** into **electrical energy**.

Internally produces **only A.C.**

Commutators and brush assemblies used as a crude but effective way to **rectify the AC produced** internally to give a **DC output** to the external load,

Faraday's law of induction

- *“ Whenever the number of lines of force linking with a circuit changes, an e.m.f. is induced in the circuit, proportional to the rate of change of flux.”*

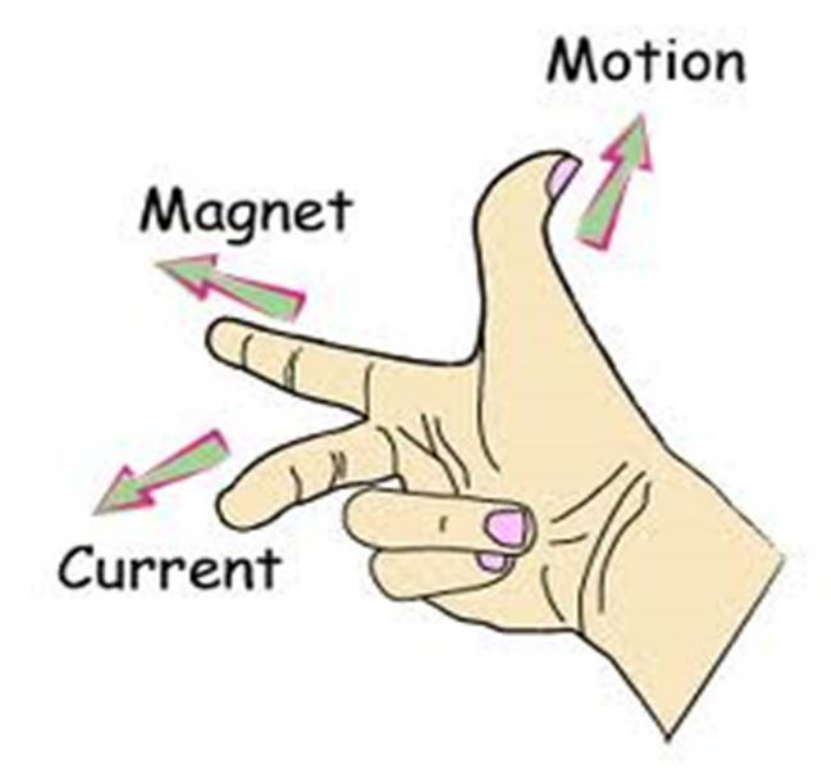
Essentials for production of EMF in a DC Generator

Main magnetic field created by field windings, carrying a current and wound round the poles.

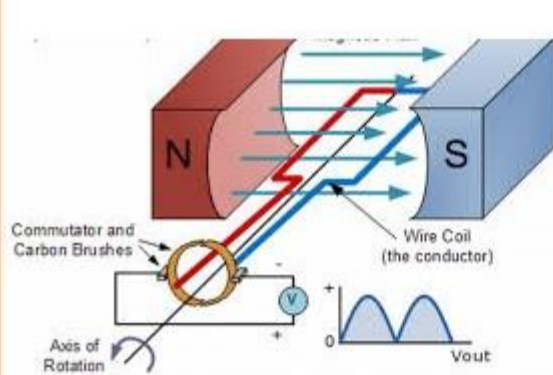
Windings (conductors) placed around a rotating armature in which an alternating EMF is produced.

A prime mover to drive the armature windings in the main field to cause a relative motion required for inducing an EMF in the conductors.

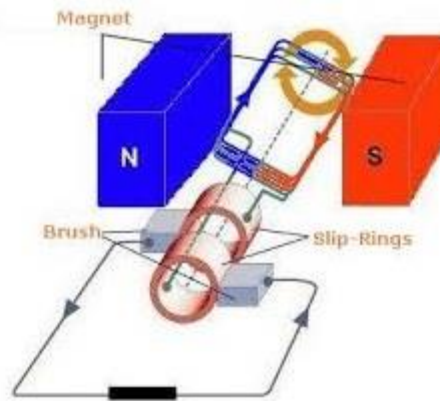
A Commutator and brush assembly to collect and rectify the EMF induced to get a DC output.



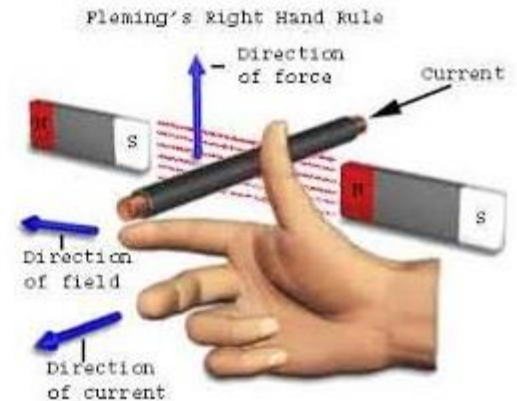
Working Principle of AC and DC Generators



DC Generator

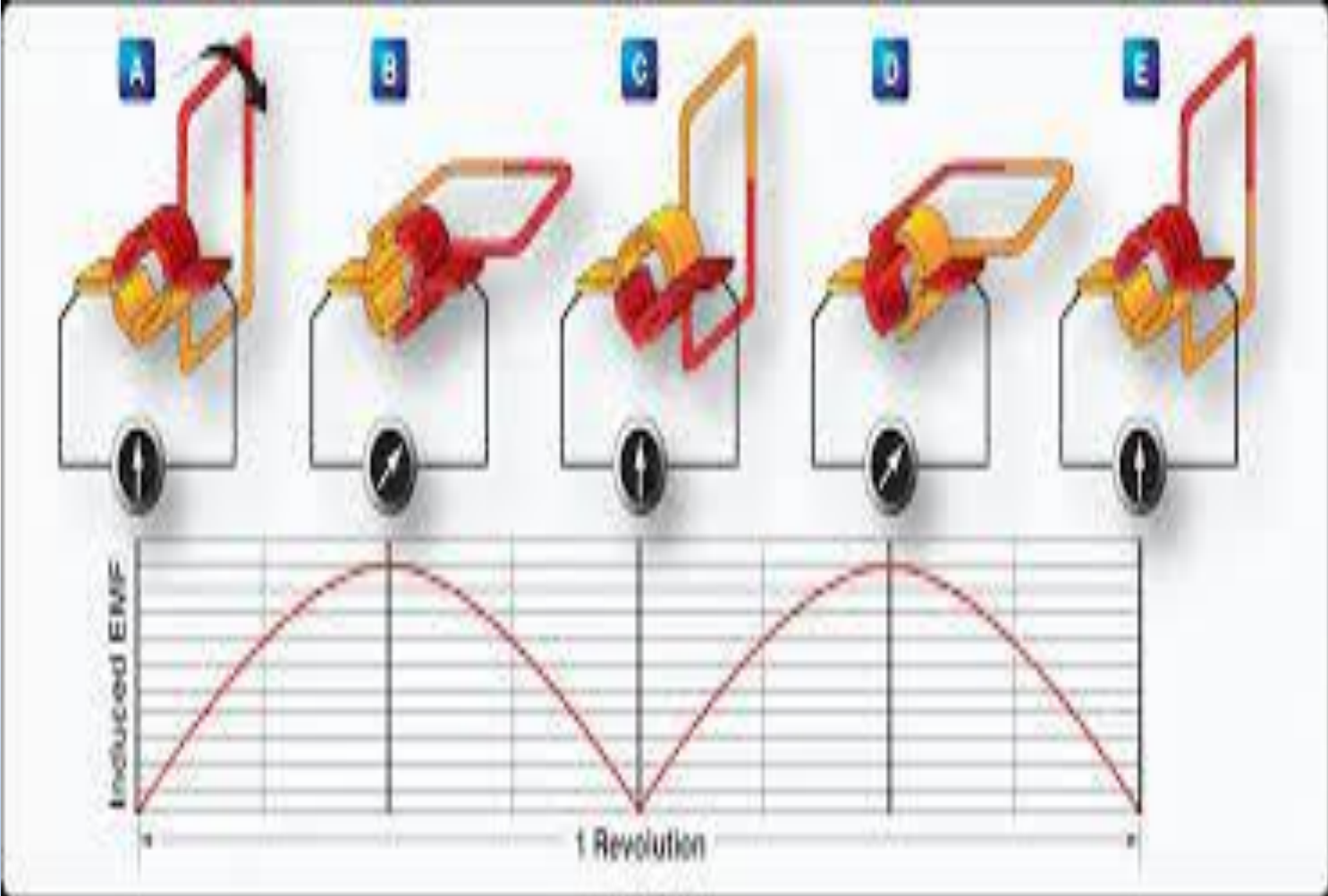


AC Generator



Fleming Right Hand Rule

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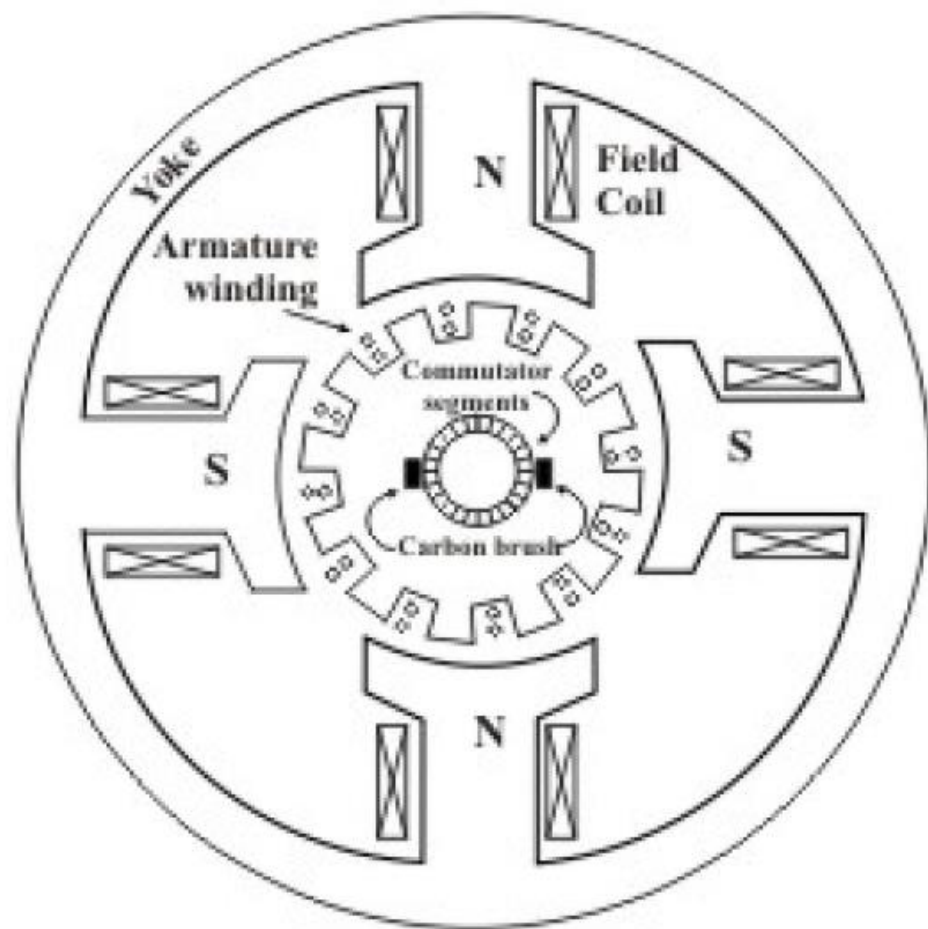


■ Construction of DC machine

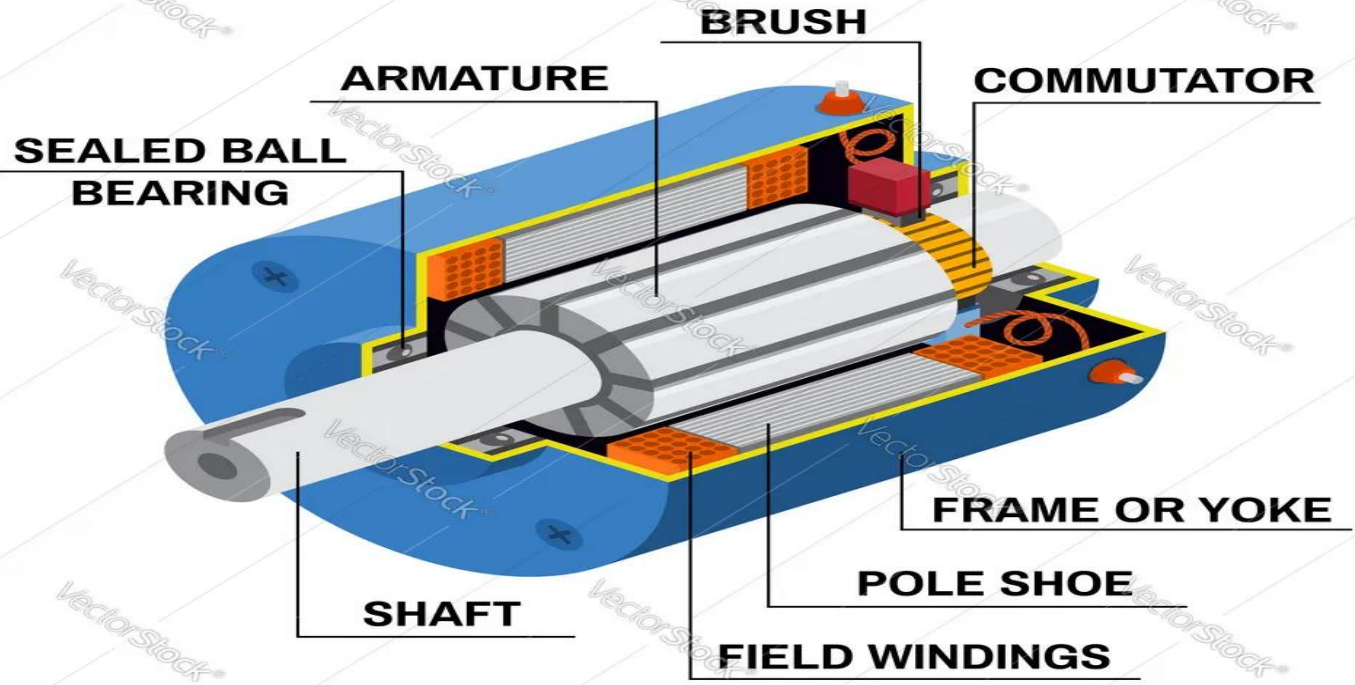
Now we will discuss about practical construction of DC Generator:-

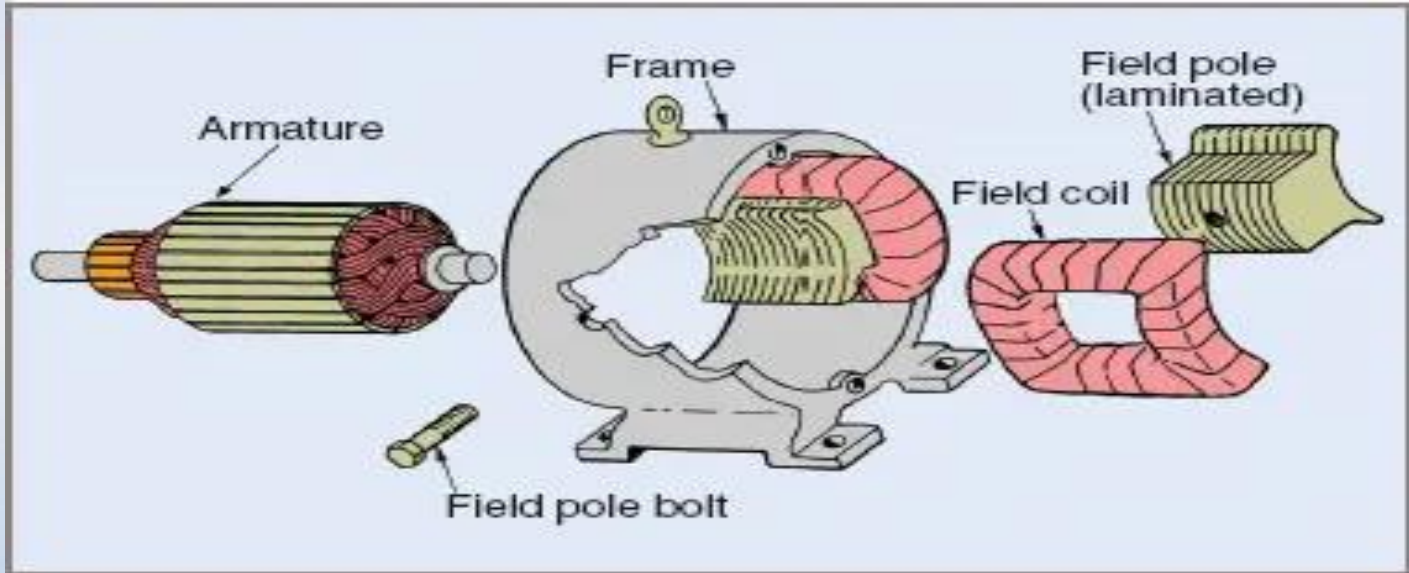
A DC generator has the following parts

1. Yoke
2. Pole & Pole shoes
3. Field winding
4. Armature of DC generator
5. Commutator
6. Brushes of generator
7. Bearing



DC GENERATOR



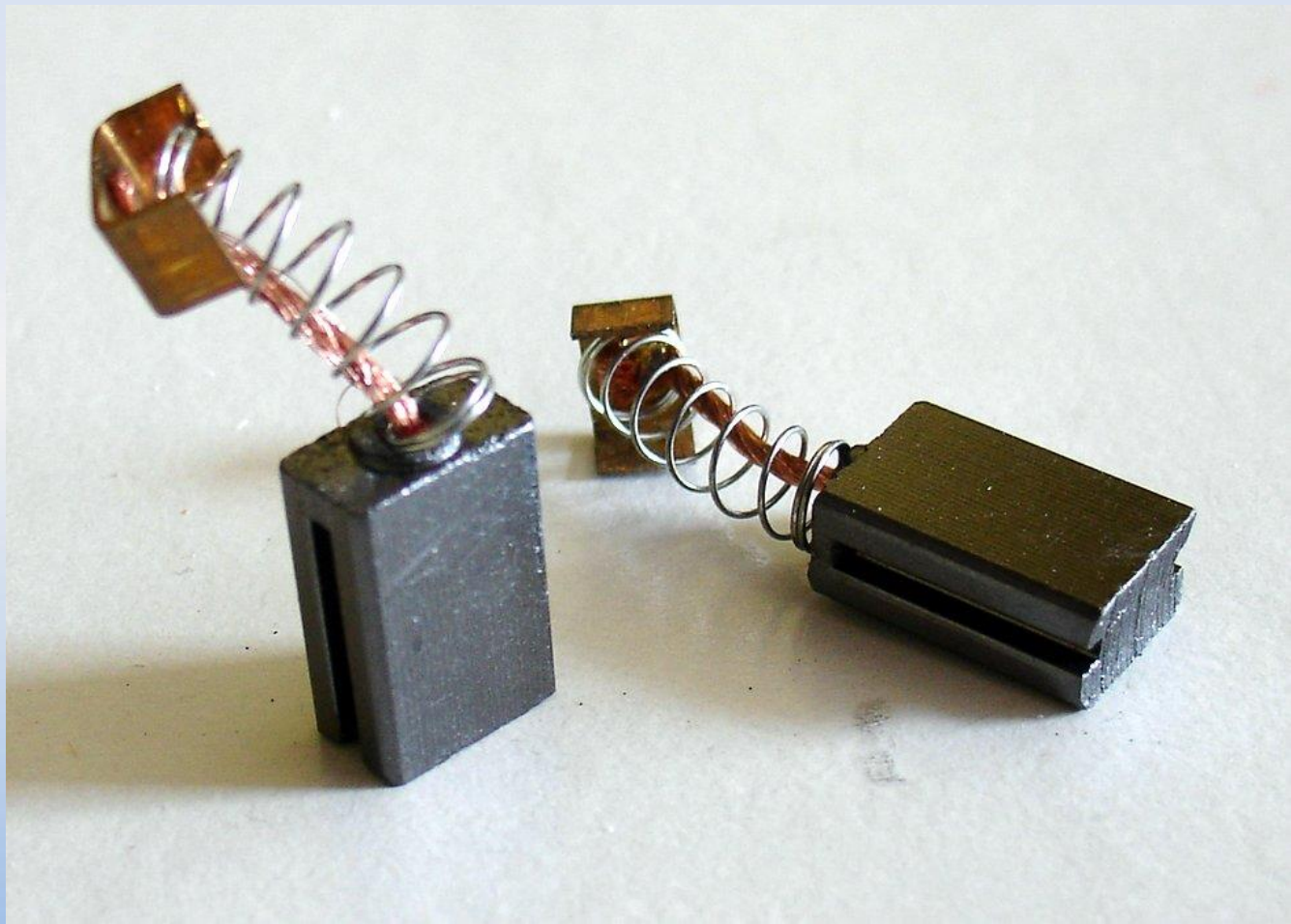




Commutator Working

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DC Generator

Seperately
Excited

Self Excited

Shunt
Generator

Series
Generator

Compound
Generator

Long shunt

Short shunt