RAMA UNIVERSITY

www.ramauniversity.ac.in

FACULTY OF ENGINEERING & TECHNOLOGY

Electrical Machine-ii

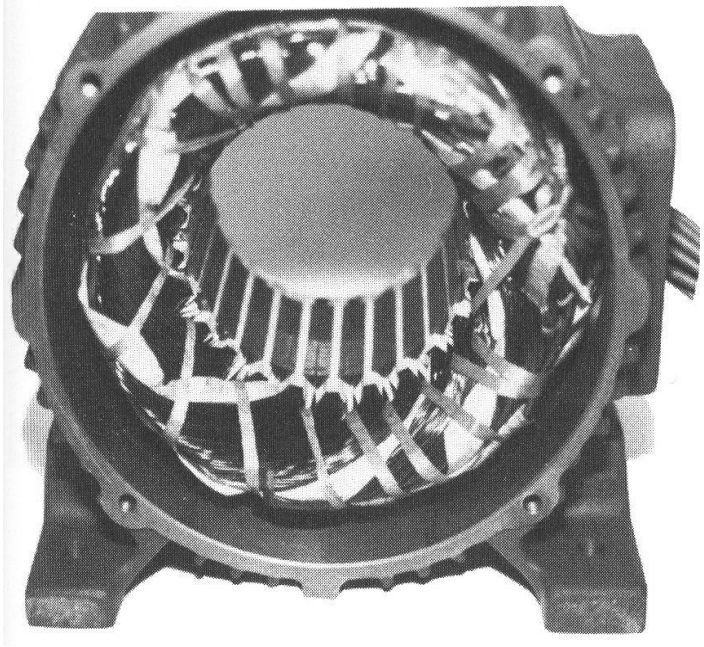
Amit Kumar Singh

Construction Of Induction Motor

An induction motor has two main parts

A stationary stator

- consisting of a steel frame that supports a hollow, cylindrical core
- core, constructed from stacked laminations (why?), having a number of evenly spaced slots, providing the space for the stator winding



Stator of IM

Construction of Induction Motor (Contl..)

A revolving rotor

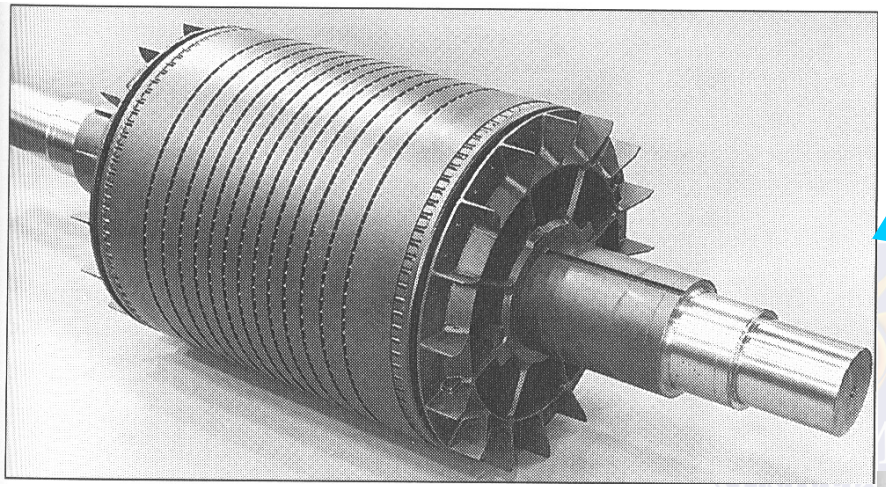
- composed of punched laminations, stacked to create a series of rotor slots, providing space for the rotor winding one of two types of rotor windings
- conventional 3-phase windings made of insulated wire (wound-rotor) similar to the winding on the stator
- aluminum bus bars shorted together at the ends by two aluminum rings, forming a squirrel-cage shaped circuit
- (squirrel-cage)

Two basic design types depending on the rotor design

- squirrel-cage: conducting bars laid into slots and shorted at both ends by shorting rings.
- wound-rotor: complete set of three-phase windings exactly as the stator. Usually Y-connected, the ends of the three rotor wires are connected to 3 slip rings on the rotor shaft. In this way, the rotor circuit is accessible.

INDUCTION MOTOR

Construction



Squirrel cage rotor

Wound rotor

Notice the
slip rings