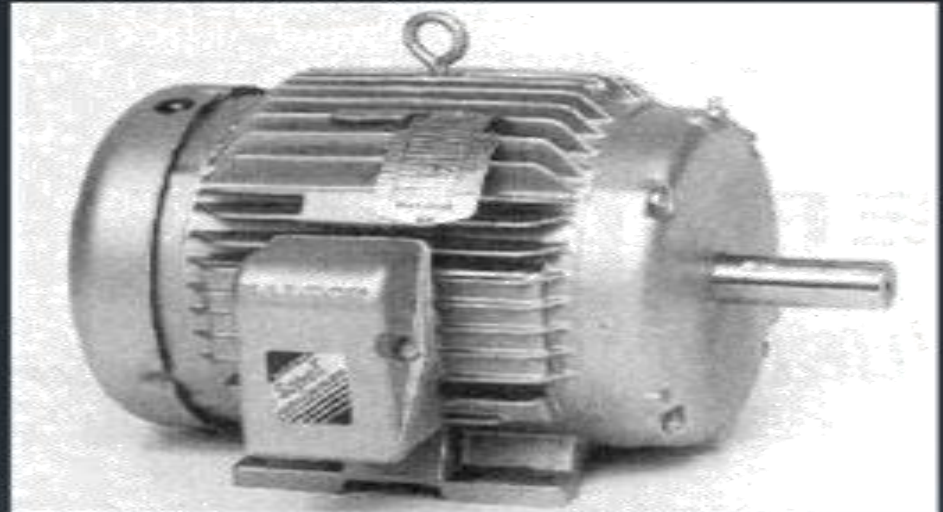


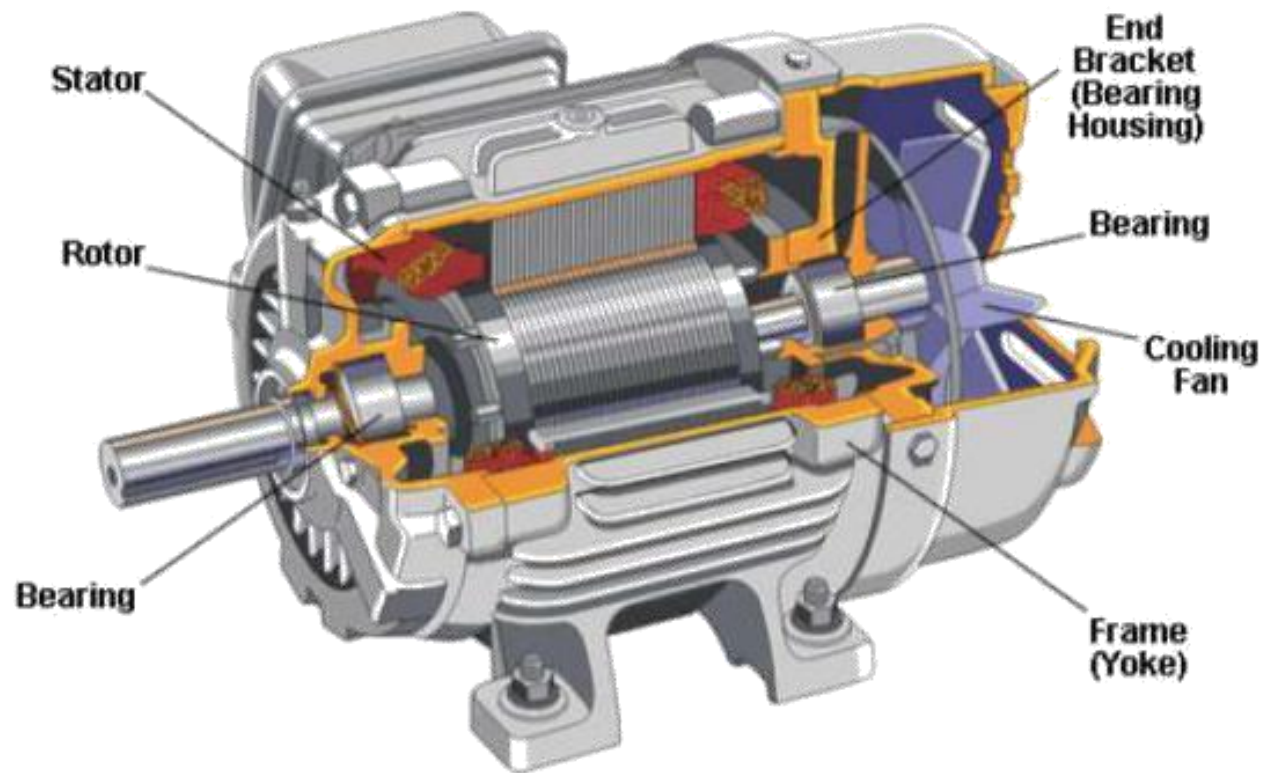
AC MOTOR: INDUCTION MOTOR


- **Most common motors in industry**



- **Advantages:**
 - Simple design
 - Inexpensive
 - High power to weight ratio
 - Easy to maintain
 - Direct connection to AC power source

Parts of AC Motor



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- *An induction motor works on transforming action.*
 - *The stator works as the primary while the rotor works as the secondary.*
 - *It is also called asynchronous motor.*

- It consists of two parts:

1. *Stator* - It is the stationary part of the motor.

2. *Rotor* - It is the rotating part of the motor.

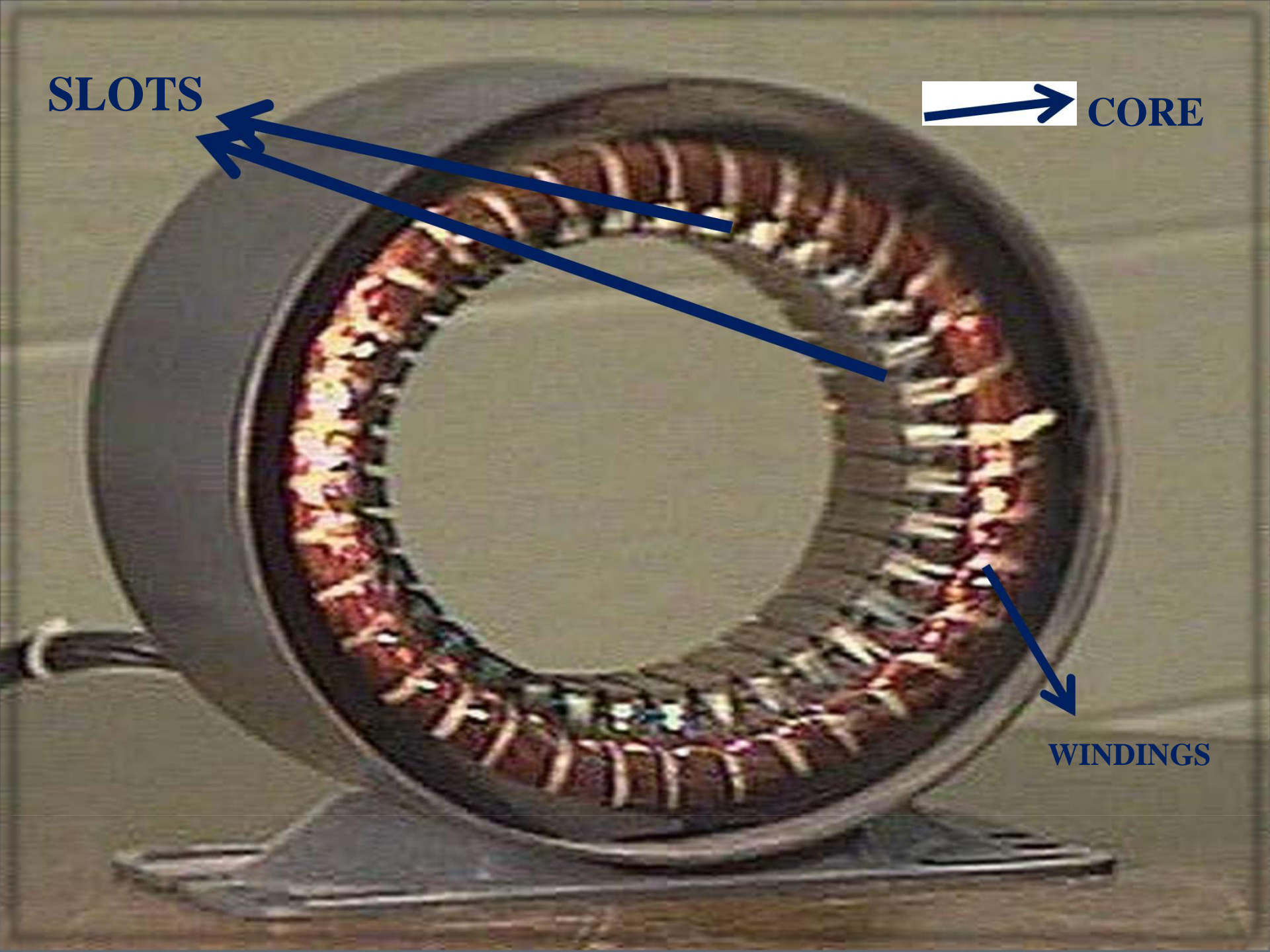


STATOR

SLOTS



CORE



WINDINGS

- Stator has three main parts:



~~*Outer Frame*~~ — It is the outer body of the of the motor.

It protects the inner part of the machine.



~~*Stator Core*~~ — Built up of high grade silicon steel.

Carries the alternating magnetic field.



~~*Stator winding*~~ — Has a three phase winding.

ROTOR



- There are two types of rotors which are employed in 3 – phase induction motor.

- *Squirrel Cage Rotor.*


- *Phase Wound/ Slip Ring Rotor.*


SQUIRREL

CAGE

ROTOR



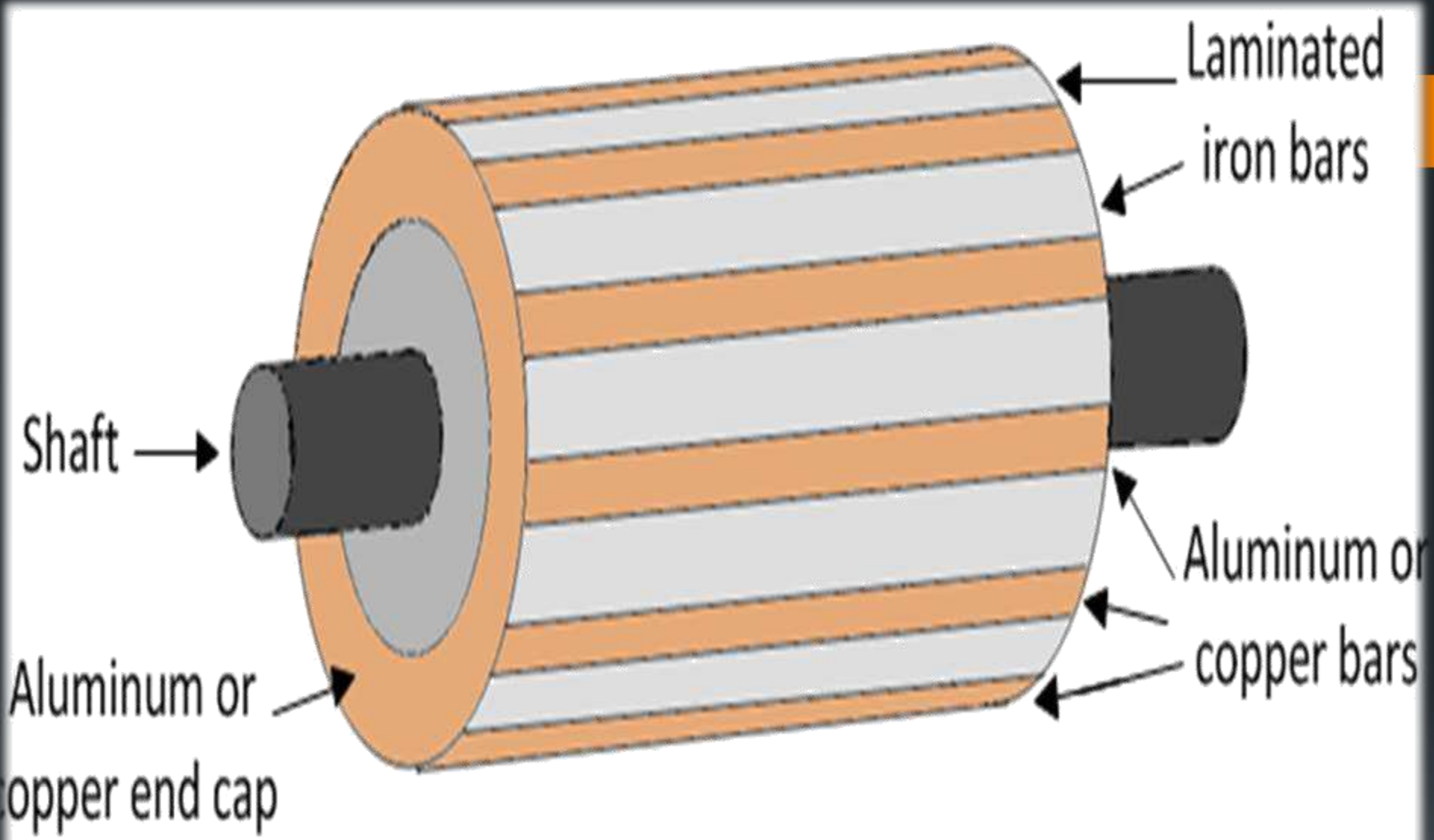
- It consists of a laminated cylindrical core  having semi closed circular slots at the outer periphery.
- Copper or aluminum bar conductors are placed in these slots and short circuited at each end by copper or aluminum rings called short circuiting rings.
- The rotor winding is permanently short circuited and it is not possible to add any external resistance.

- The rotor slots are not parallel to the shaft but skewed to – 

- ✓ Reduce humming .

- ✓ Provide smoother torque for different positions of rotor.

- ✓ Reduce magnetic locking of stator and rotor



Induction Motor Squirrel Cage Rotor



