8.3 AC motor general description and principles of operation

8.3.1 General description of an AC motor

An AC motor has two main parts: a stator, which is fixed, and a rotor, which rotates with the shaft.

The stator is the stationary part of the motor. Within the stator assembly there is an iron core constructed from thin iron sheets coated with insulation. Copper wire, which forms the phase windings, is placed in the slots of the iron core.

The rotor is the moving part in the motor. The rotor core is made of a stack of sheet-steel laminations. Aluminium, copper or bronze conductors are placed in slots around the outer periphery of the rotor core, and these conductors are shorted together by circular end rings at each end of the rotor. A speed sensor and a thermal sensor are enclosed in the motor too.

8.3.2 Principle of operation

Figure below shows a two-pole AC motor supplied by a three-phase current.

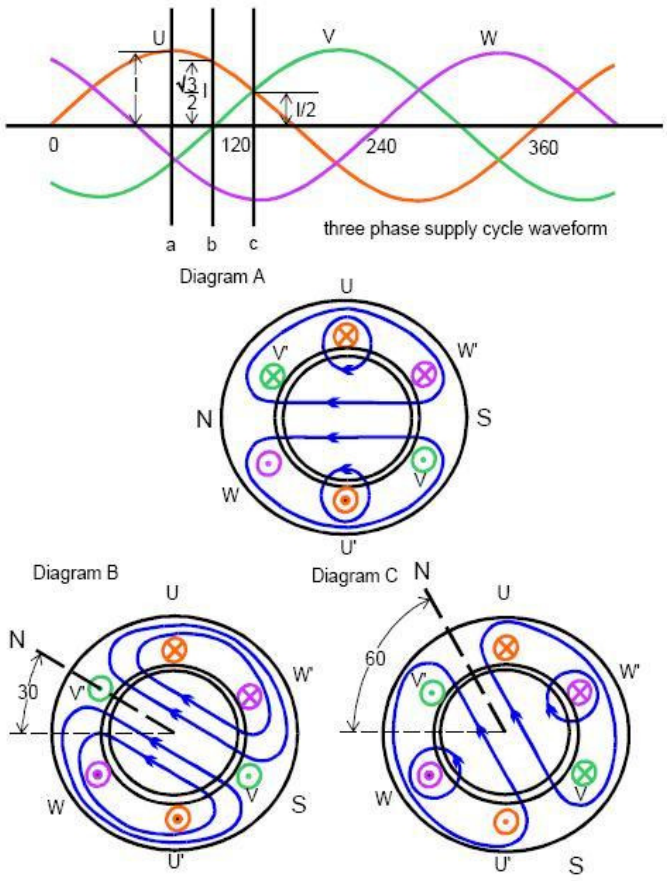

Figure 6: *Stator currents and flux in a two-pole AC motor.*

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