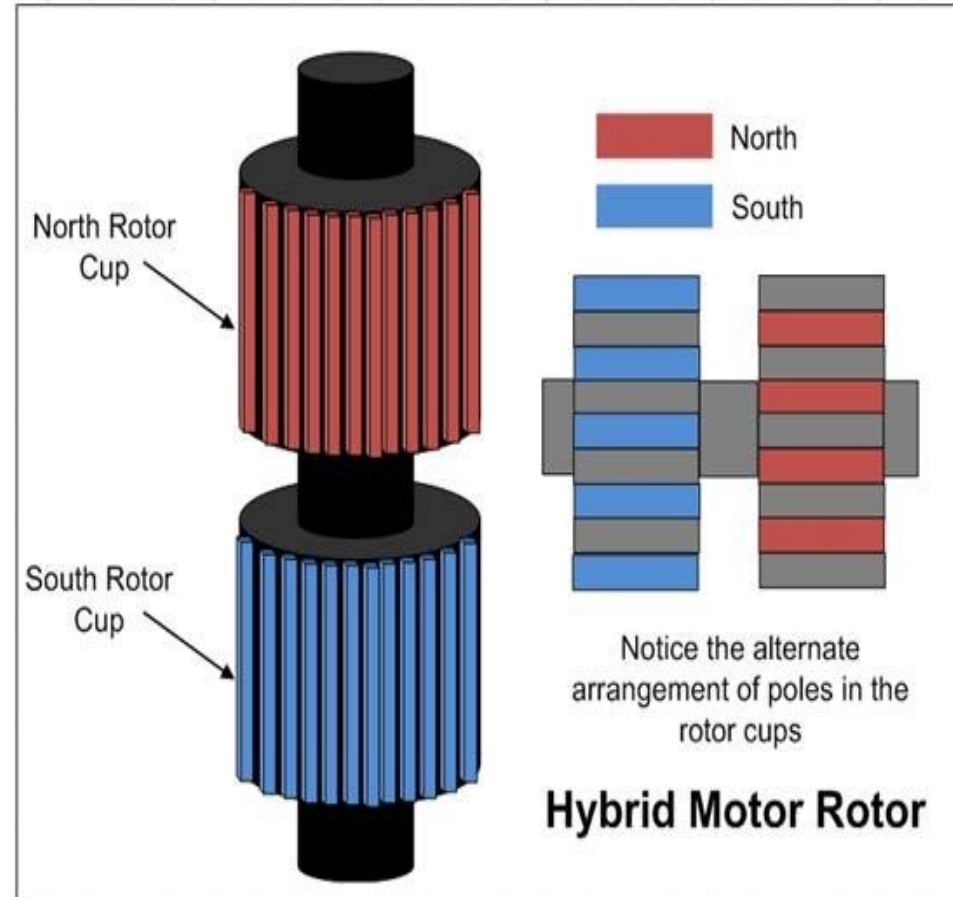


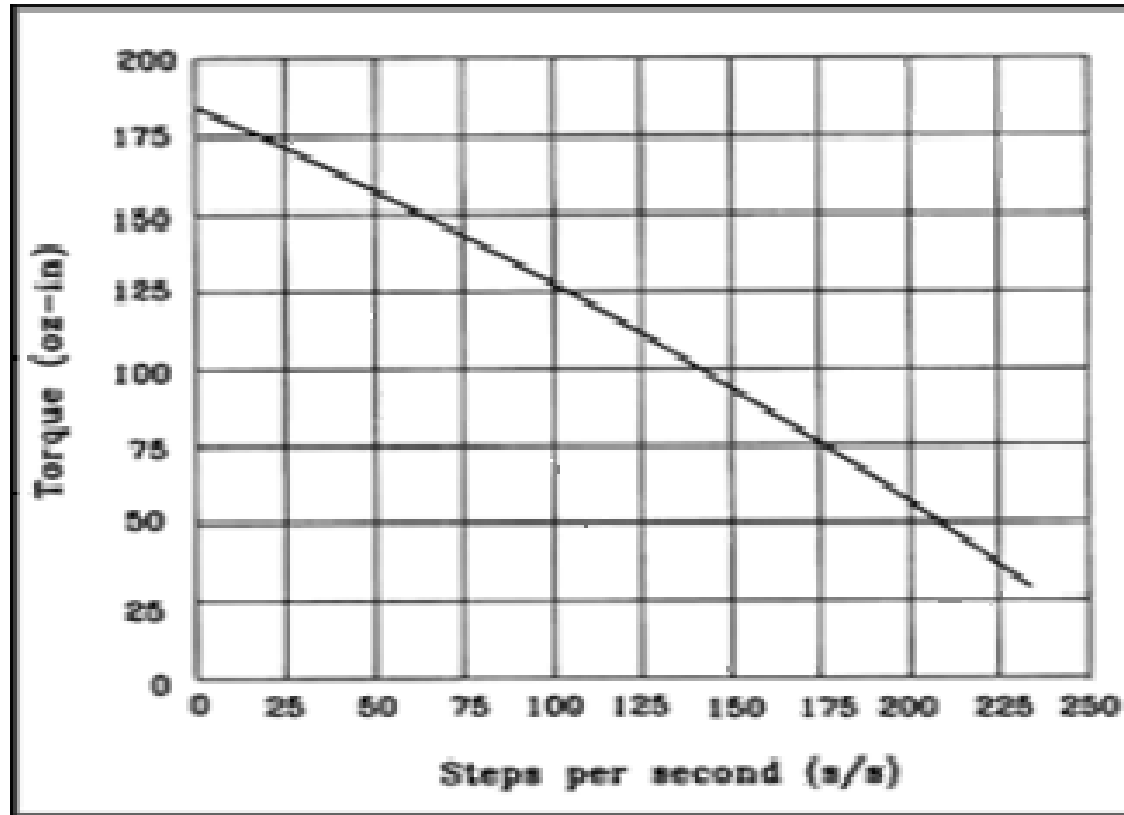
Special Electrical Machines

Hybrid Stepper Motor

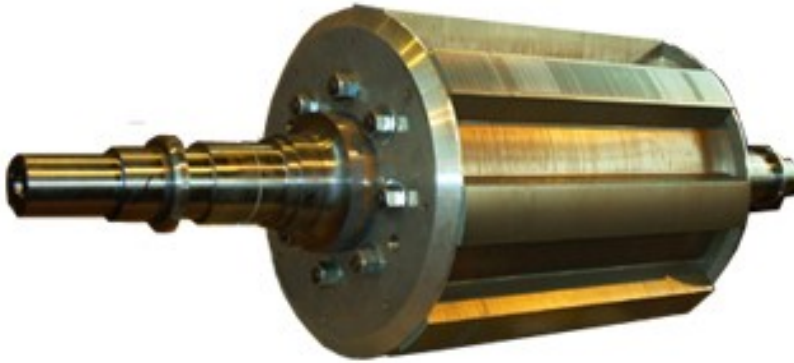
**Combine the feature of both
Variable reluctance and
permanent magnet
Two Separate Stacks North &
South**



Torque Vs Steps Per Second

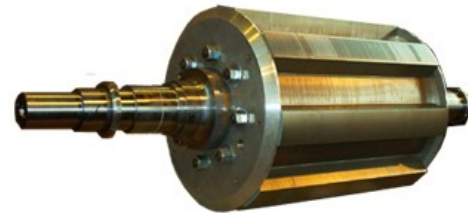
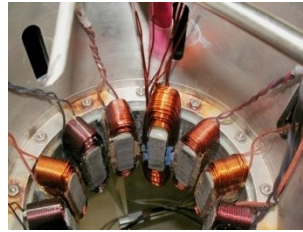


Switched Reluctance Motors



Introduction

- The switched reluctance motor (SRM) is an electric motor in which torque is produced by the tendency of its moveable part to move to a position where the inductance of the excited winding is maximized.
- SRM is a type of synchronous machine. It has wound field coils of a DC motor for its stator windings and has no coils or magnets on its rotor.



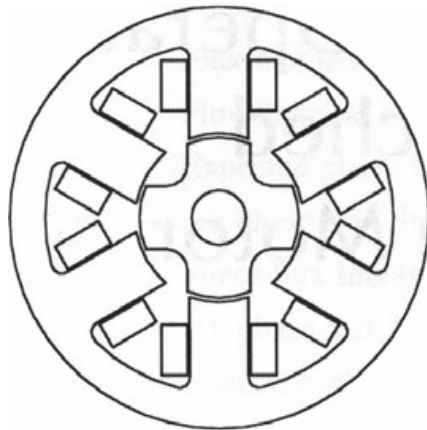
- It can be seen that both the stator and rotor have salient poles; hence, the machine is a doubly salient, singly excited machine.

Introduction-cont.

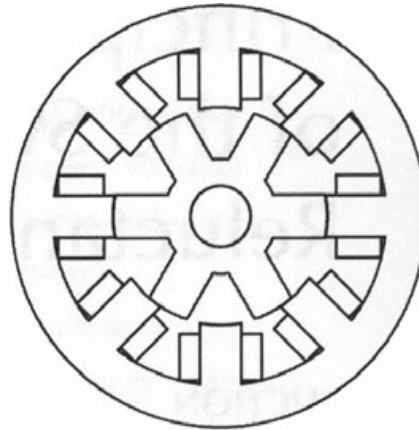
Stator windings on diametrically opposite poles are connected in series or parallel to form one phase of the motor.

Several combinations of stator and rotor poles are possible, such as 6/4 (6 stator poles and 4 rotor poles), 8/4, 10/6 etc.

The configurations with higher number of stator/rotor pole combinations have less torque ripple.



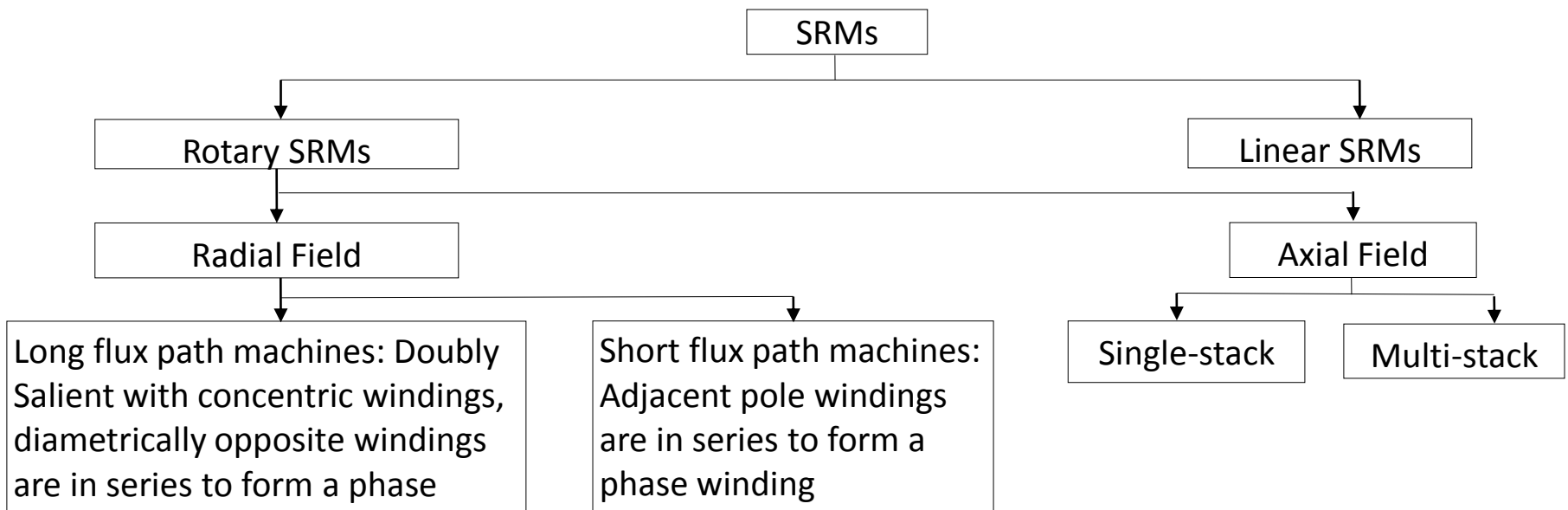
6/4 Pole



8/6 Pole

Configuration

- Initial classification is made on the basis of the nature of the motion (i.e., rotating or linear).
- The linear SRMs (LSRMs) have found application in the marketplace by catering to machine tool servos.
- The rotary machine-based SRM is differentiated to radial field SRM and axial field SRM by the nature of the magnetic field path as to its direction with respect to the axial length of the machine.



THANKS....

Queries Please...