# Two Phase AC servo motor -

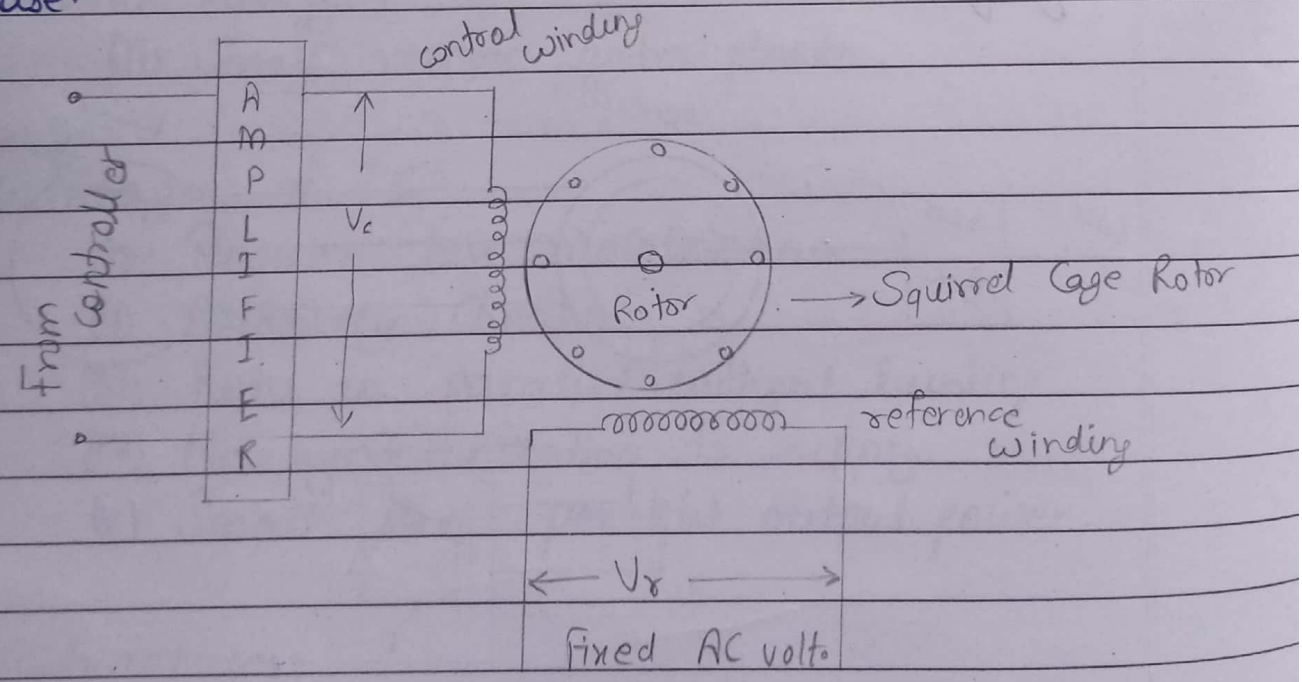
—x—x—x—

Servo motor means control motors. They are used in feedback control systems. Their power ratings varies from a fraction of watt to a few hundred watts. The rotor of the motor has long length & smallest diameter. The rotor inertia is very low & high speed of response. They operate at low speed even at zero speed.

—x—x—x—

## Construction -

The two phase AC servo motor has two distributed windings which are displaced from each other by 90°. One winding is called reference phase or fixed phase and other winding is called control phase.

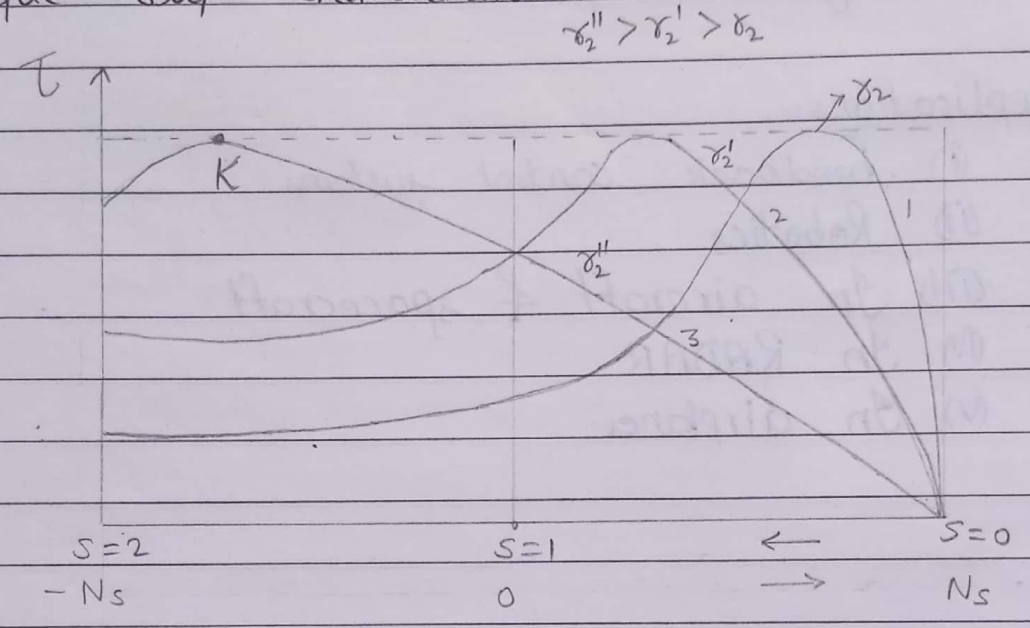



## Working -

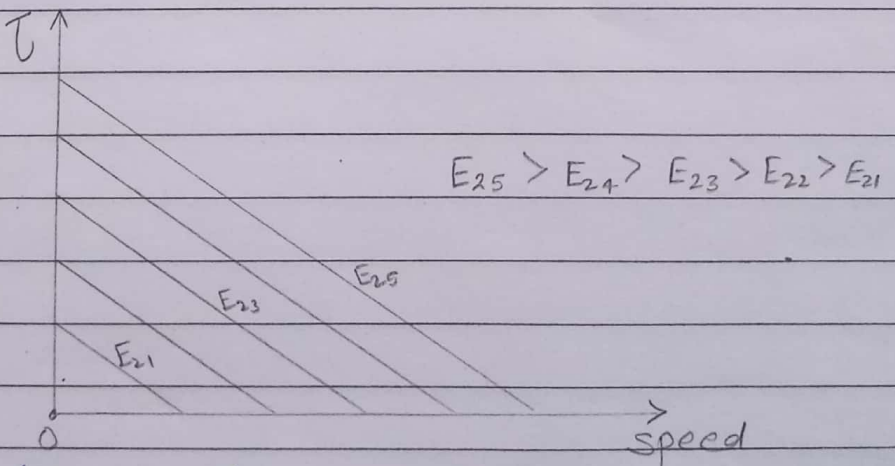
Reference phase is supplied from a constant voltage source $V_r$ & control phase is supplied with a variable voltage of same frequency as the reference phase.

The control phase is usually supplied from a servo amplifier. The speed & torque of the rotor are controlled by the phase difference between the control voltage & the reference phase voltage. The reversing the phase difference from leading to lagging, the direction of rotation can be reversed.

* Torque - slip Characteristics -




* Torque - Speed characteristics -




A high rotor resistance ensures a negative slope for good stability. A servomotor rotates only when a detectable error occurs at low voltage. Hence torque-speed characteristics is linear.