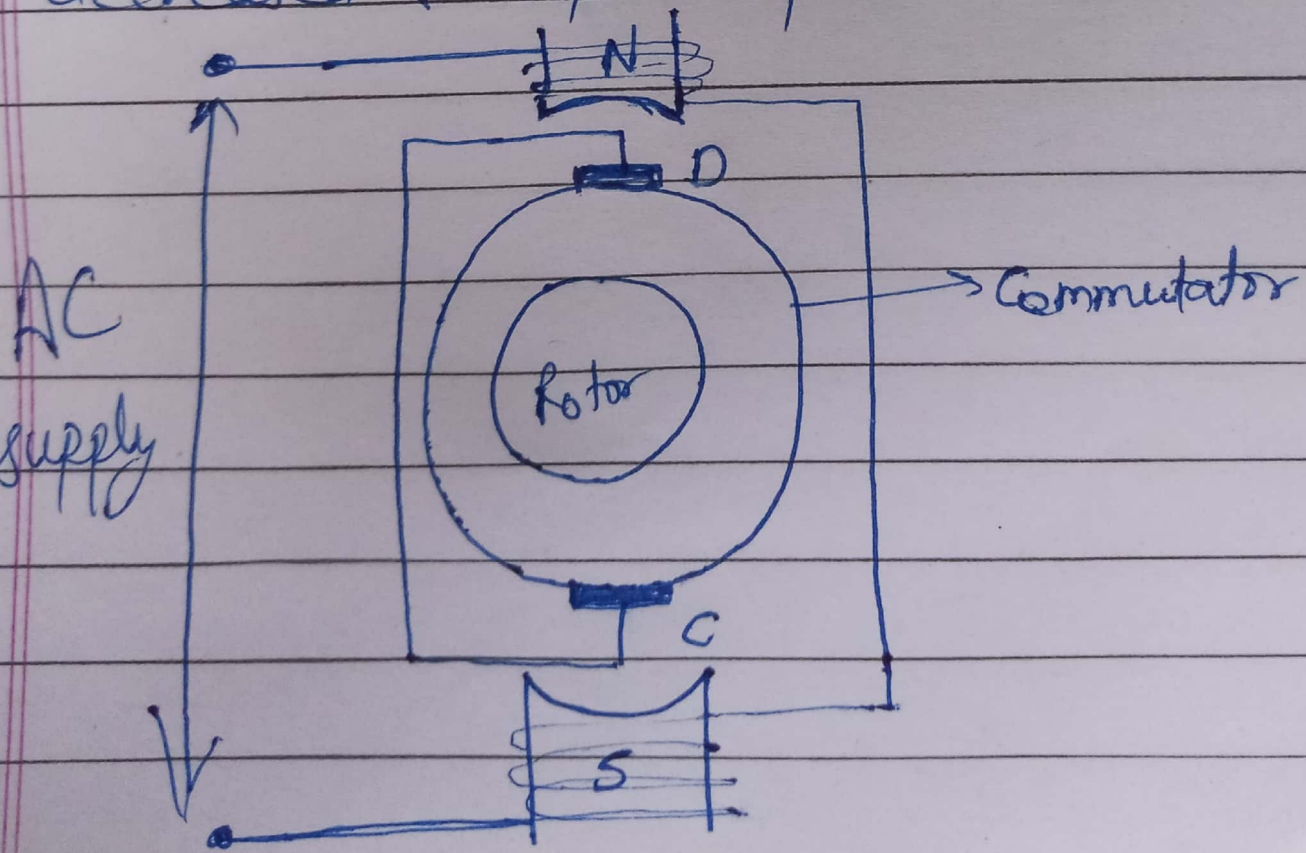
Repulsion Motor

It is a 1ϕ electric motor that operates by providing i/p AC. It starts as a repulsion motor & runs as an induction motor.

Construction-

It consists of a pole core that is the N & S pole of magnet. The construction is similar to split-phase IM & DC series motor. The flux is evenly distributed & the gap b/w stator & rotor is decreased, reluctance decreased & improve pf.



Working -

(i) When $\alpha = 90°$

Let C & D are aligned vertically at 90° & rotor aligned horizontally along D-axis which is the direct^n of current flow. By Lenz's law, rotor current is zero, and acts as an open ckt. transformer.

(ii) When $\alpha = 0°$

When C & D are oriented along d-axis & short circuited. Therefore, net emf induced in the motor is very high.

Stator current = Rotor current.

Here, the stator & rotor fields are 180° opposite in phase.

(iii) When $\alpha =$ ~~450~~ $45°$

When C & D are aligned at 45° & shorted. Let, rotor is fixed & stator is rotated.

$E_s = I_s . N_s$