

# LOAD TEST ON A DC SERIES MOTOR

Exp No:2

Date:

**Aim:** To conduct load test on a DC Series Motor and to find its efficiency

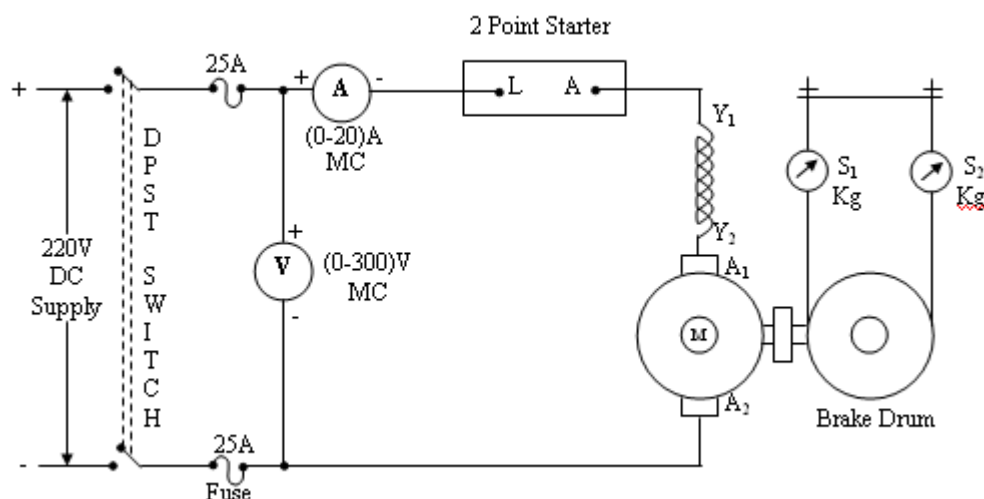
## **Apparatus required:**

S.no	Name of the Apparatus	Range	Type	Quantity
1.	Ammeter	(0-20)A	MC	1
2.	Volt meter	(0-300)V	MC	1
3.	Tachometer	(0-3000)rpm	Digital	1
4.	Connecting wires	2.5sq.mm	Copper /Aluminum	Few

## **Procedure:**

1. Connections are made as per the circuit diagram.
2. After checking the load condition, DPST switch is closed and starter resistance is gradually removed.
3. for various loads (can be overloaded by 15%), Voltmeter, Ammeter readings, speed and spring balance readings are noted.
4. After bringing the load to initial position, DPST switch is opened.

## **Circuit diagram:**



## **Precautions:**

1. The motor should be started and stopped with load.
2. Brake drum should be cooled with water when it is under load.

### Observation Tables:

[illegible]

Diameter of the Brake drum =      cm.

**Formulae used:**

$$\text{Torque } T = (S1 \sim S2) \times R \times 9.81 \text{ Nm}$$

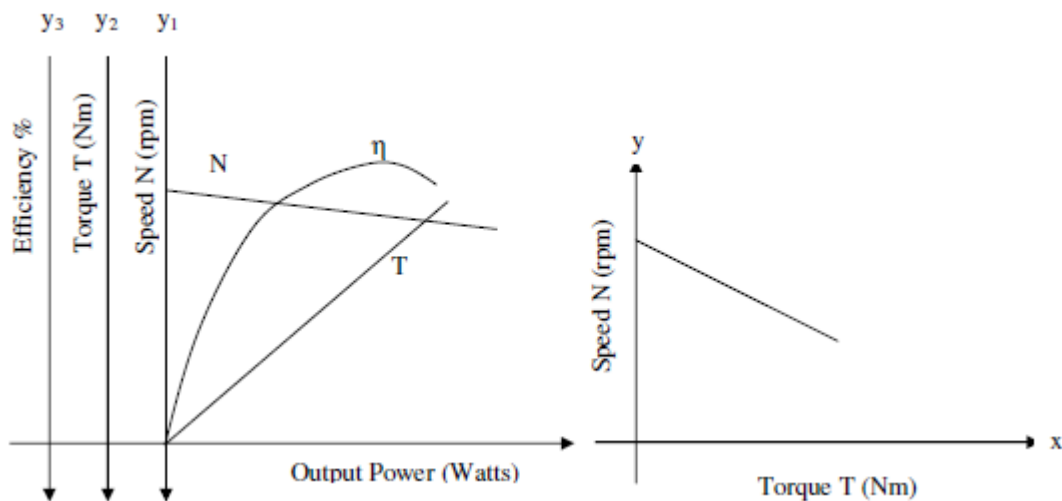
Input Power  $P_I = VI$  Watts

Output Power  $P_m = 2\pi NT/60$  Watts

$$\text{Efficiency} = \frac{\text{OutputPower}}{\text{Inputpower}} \times 100$$

### Model Calculations:

### Model Graphs:



**Result:**