



SNS COLLEGE OF TECHNOLOGY
(An Autonomous Institution)
COIMBATORE-35

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE NAME: 19EEB210 - Electrical Machines and Drives

III YEAR -MECH / VI SEMESTER

Unit 1 :

Types of Electric Drives - Factors Influencing the choice of Electrical Drives



CONTENTS

- What is an Electric Drives?
- Types in Electric Drives.
- Explanation of each type of motor.
- Factors Influencing the choice of Electrical Drives
- Selection of Motor based on Load Variation



ELECTRICAL DRIVES & TYPES

- An electrical drive is an industrial system which performs the conversion of electrical energy into mechanical energy or vice versa for running and controlling various processes.
- The system employed for motion control is called an electrical drive.
- Types of Electrical Drives:
 1. Group Drive
 2. Individual Drive
 3. Multi-Motor Drive



GROUP DRIVE

- Drive consists of only one electric motor which drives several machines.
- Rating of an electrical drive can be smaller.
- If electric motor is subjected to any fault all the equipments become idle.



INDIVIDUAL DRIVE

- If a single motor is used to drive a single machine and all the mechanisms belonging to the same machine.
- Due to power loss, the efficiency of such drive is also poor.

MULTIMOTOR DRIVE

- A separate motor is provided for driving the separate mechanism.
- Increase the overall productivity.



Comparison between AC Drive and DC Drive

S.NO	D.C.DRIVE	A.C DRIVE
1	SPEED TORQUE CAN BE ACHIEVED EASILY	IT IS NOT EASY TO ADJUST SPEED TORQUE CURVES
2	SELF STARTING	NOT SELF STARTING
3	FREQUENT MAINTENANCE IS REQUIRED	LESS MAINTENANCE
4	COSTLY	CHEAPER
5	RECTIFYING CIRCUIT IS NECESSARY	NO NEED



FACTORS INFLUENCING THE CHOICE OF ELECTRICAL DRIVES

- **LIMIT OF SPEED RANGE**
- **EFFICIENCY**
- **BRAKING**
- **STARTING REQUIREMENTS**
- **POWER FACTOR**
- **LOAD FACTOR**
- **AVAILABILITY OF SUPPLY**
- **ECONOMICAL ASPECTS**



SELECTION OF MOTOR BASED ON LOAD VARIATION

- CONTINUOUS LOAD
- CONTINUOUS VARIABLE LOAD
- PULSATING LOAD
- IMPACT LOADS
- SHORT TIME INTERMITTENT LOAD
- SHORT TIME LOAD



SUMMARY

