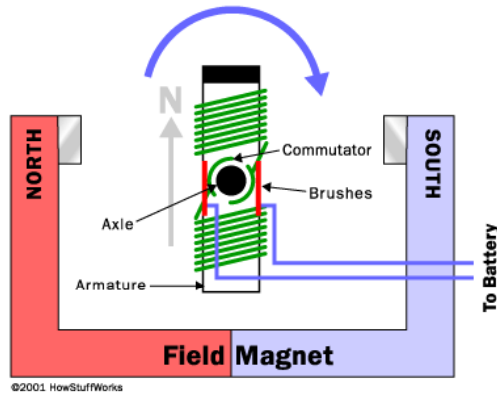


Electrical Systems III



DC Motors

Brushed DC Motor



Two wire control

Low cost of construction/ Simple and inexpensive control

No controller is required for fixed speeds

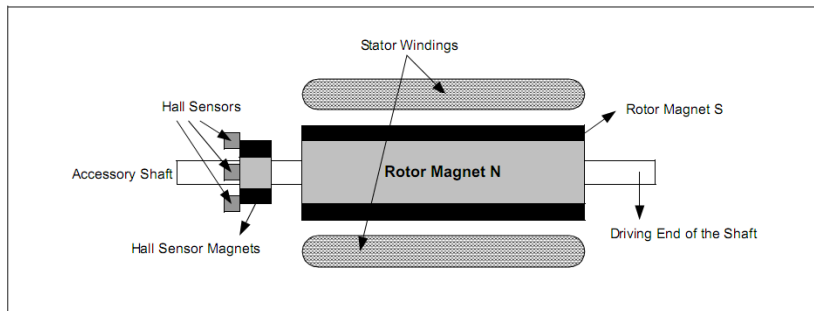
At higher speeds, brush friction increases, thus reducing useful torque

Poor heat dissipation due to internal rotor construction

Higher rotor inertia which limits the dynamic characteristics

Brush Arcing will generate noise causing EMI

Brushless DC (BLDC) Motor



High efficiency, no voltage drop across brushes

High output power/frame size.

Because BLDC has the windings on the stator, which is connected to the case, the heat dissipation is better

Higher speed range – no mechanical limitation imposed by brushes/commutator

Higher cost of construction

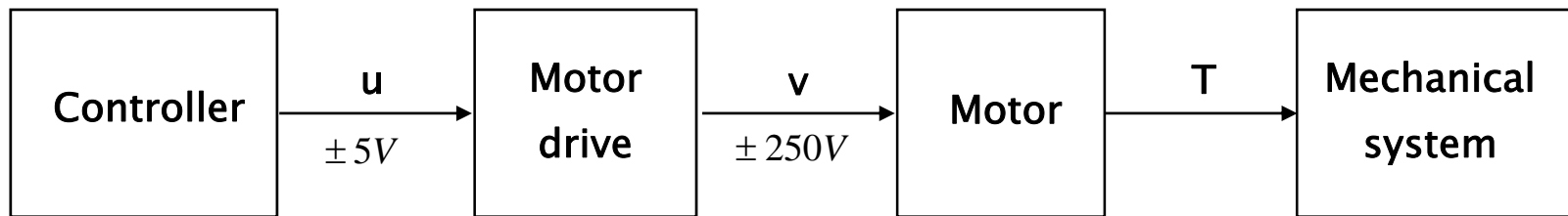
Electric Controller is required to keep the motor running

Other Motors:

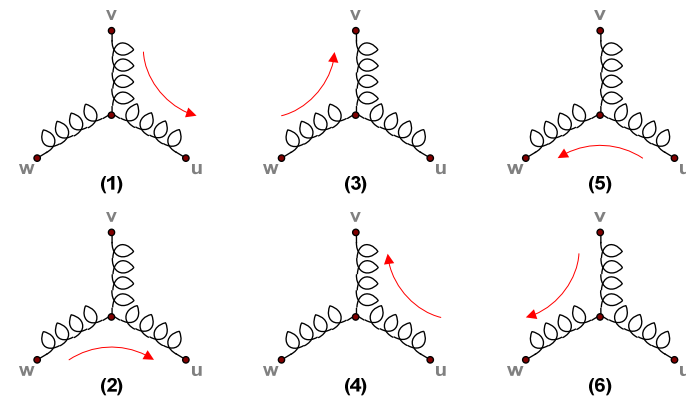
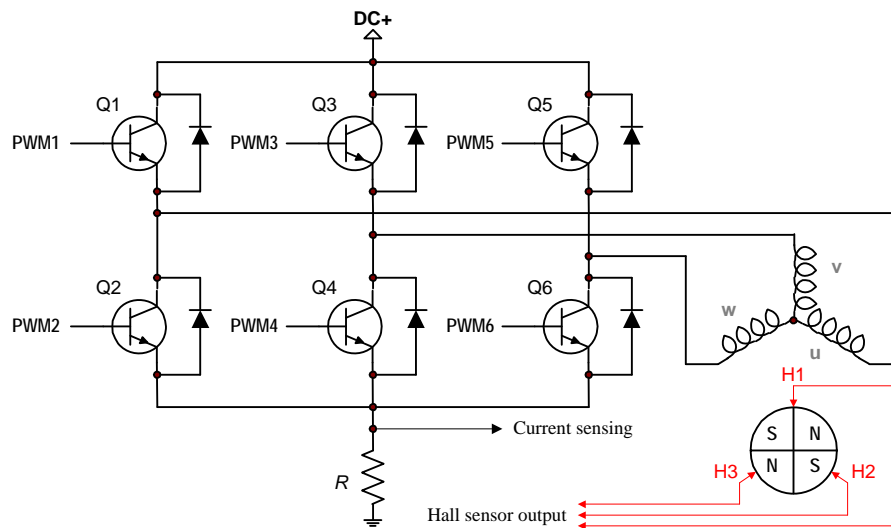


Constitution of DC Servomotor System

Motor drive system :

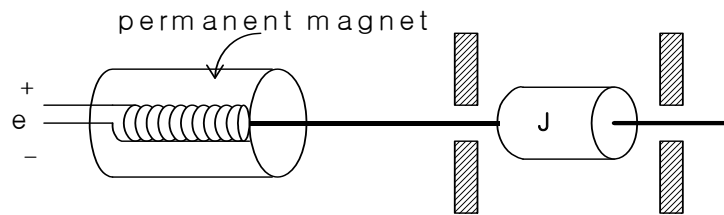


3 phase BLDC motor driver :



Constitution of DC Servomotor System

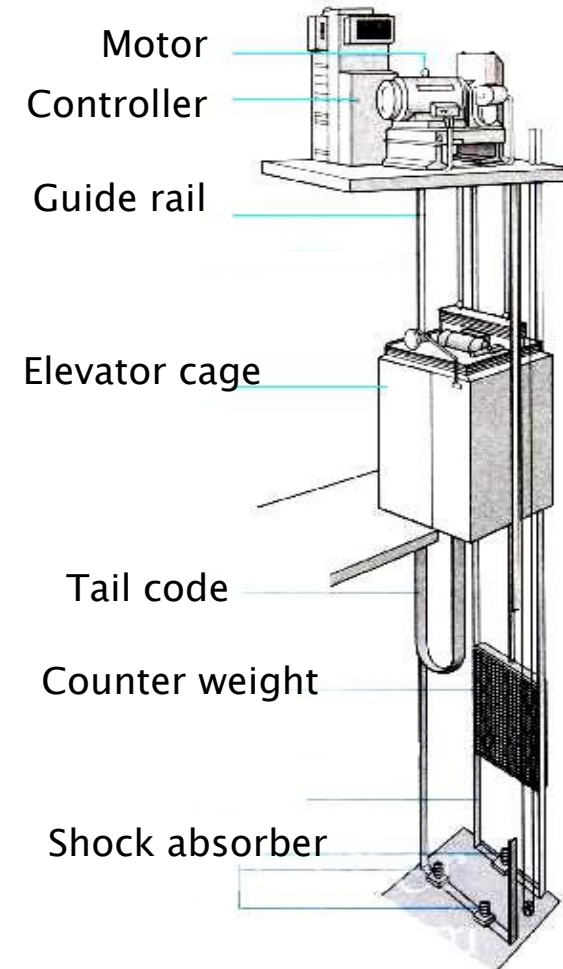
DC servo motor :



Electric Energy → Mechanical energy



ex) Elevator structure :



Electric Vehicle

Safety and Maneuverability Control Allocation for 2WD/4WD Electric Vehicle

