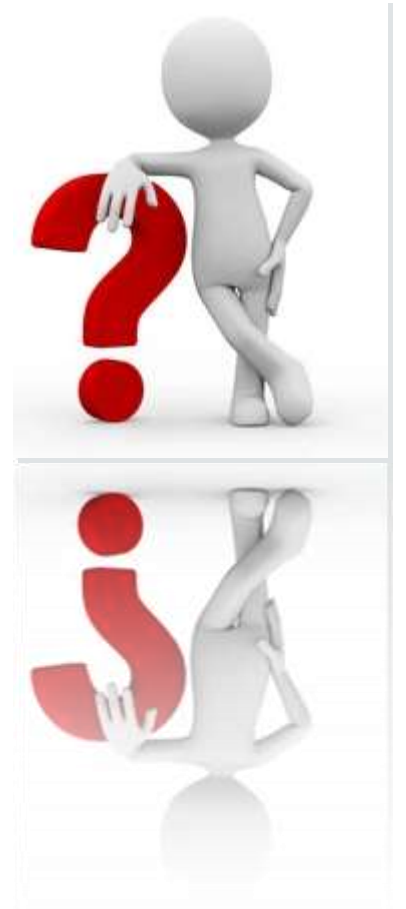
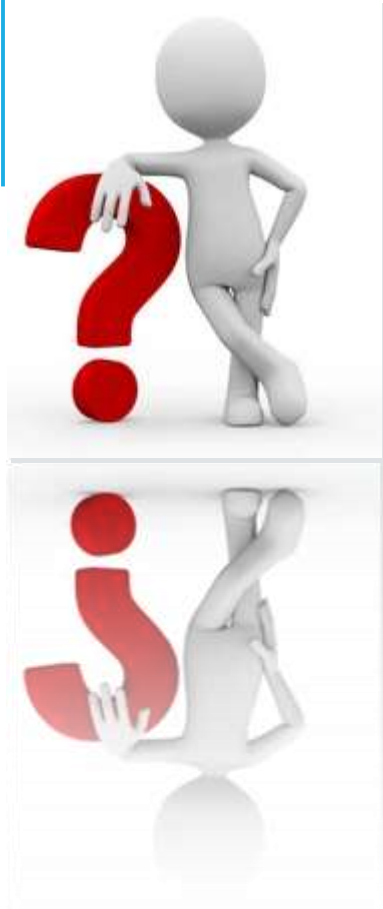


19MO611-AUTOTRONICS

UNIT 1 – INTRODUCTION

REQUIREMENT OF STARTING SYSTEM





COMPONENTS AND WORKING OF STARTING SYSTEM :

- The starter motor is an electric motor that rotates your engine in order to allow the spark and fuel injection systems to begin the engine's operation under its own power.
- Typically, the starter is a large electric motor and stator coil mounted to the bottom (generally to one side) of the vehicle's transmission bell housing where it connects to the engine itself.
- The starter has gears which mesh with a large flywheel gear on the back side of the engine, which turns the central crank shaft. Because this is a lot of physical weight and friction to overcome, starter motors are generally powerful, high-speed motors and use an ignition coil to ramp up their power before engaging.



PARTS OF STARTER SYSTEM:

1. Starter System without Relay

- When the key is turned in the start position, electric current will flow from the battery through the fuse and ignition to go to terminal 50 of the starter motor solenoid. Then the solenoid will activate and connect terminal 30 on the starter motor with the armature coil, which causes current from the battery to flow into the coil so that the armature can rotate quickly.

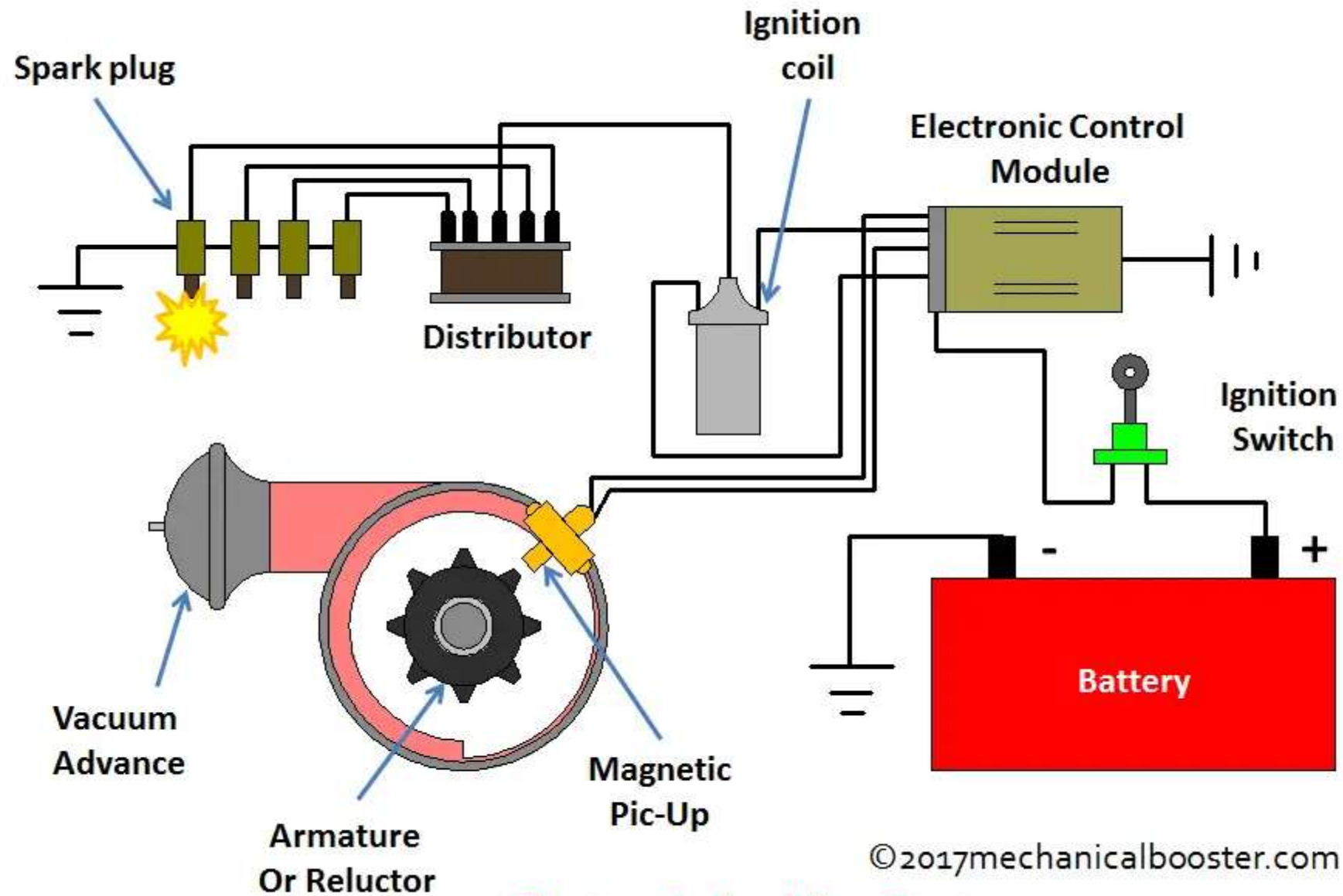
2. Starter System with Relay

- When the key is turned in the start position, the current will flow from the battery to the fuse through the contacts to terminal 85 of the relay, which then exits through terminal 86 to the mass. In this condition, the magnetic coil on the relay has been electrified to cause magnetism, which will attract the relay point contacts and make terminals 30 and 87 of the relay connected.



Electronic Ignition System Working Principle:

When the ignition switch is closed (i.e. the switch is 'ON' .), the reluctor rotates which makes the teeth of the reluctor cone closer to the permanent magnet. It reduces the air gap between reluctor tooth and sensor coil. Thus, the reluctor provides a path for the magnetic lines from the magnet. The magnetic field is passed on to the pick up every time when the reflector teeth pass the pickup coil in which an electric pulse is generated. This small current then triggers the electronic control unit which stops the flow of battery current to the ignition coil. The magnetic field in the primary winding collapses and the high voltage is generated: in the secondary winding. It led to spark in a spark plug via a distributor. Meanwhile, the reflector , teeth pass past the pickup coil. Therefore, the pulse unit is ended. It causes the electronic control unit to close the primary circuit.



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Electronic Ignition System



Advantages of Electronic Ignition System:

- These are low maintenance systems as compared to others .
- It has no moving parts because it is controlled by the electronic control unit(ECU).
- Emission is less as compared to other means because this system is environmentally friendly.
- It increases the efficiency of the engine and also it is fuel-efficient.
- It is more accurate as compared to the magneto system.
- The vehicles having this system have a long life and also reliable.



Disadvantages of Electronic Ignition System:

The main disadvantage of electronic Ignition is that this system is very expensive because all cannot afford the vehicles having an electronic ignition system.



THANK YOU