Objective of Lecture: Tyre Specification:

Learning outcome: From this Lecture the students are able Know about the type tyre of Quality of the tyre.

Tools use.: Chalk & Black Board
Books

Lecture: The tyre specification indicate the size of the tyre and also indicate quality and company made by whom.

The tyre specification also indicate the bead distance on diameter of the bead in inches.

The tyre specification also indicate the play rating of the tyre.

Example:

Suppose on the tyre is written 8.25 X 20-10PR

Then it would indicate as under.

8.25 is width of tyre from shoulder to shoulder

20 is the bead distance on diameter of bead in inches.

10PR is the plage ply rating is in this tyre there is as 10 plies.

Ply rating: Every vehicle manufacturer Specifies the ply rating of tyres to be used in the vehicle In case ply rating is more than tyre is capable of taking more load but all of the same tyre the capacity to absorb shock will reduced.

Explain the causes and Remedies of tyre wear

Life of the tyre depends basically on the surface we take. In buses the tyres give satisfactory service for 50 to 60 thousand Km.

→ Where as in case of cars they run up to 20 to 30 thousand km.

The life of the tyre is increased by the following.

(1) Avoid Overloading: If we take overloading then the tyre may be burst. In case of overloading over and fast wearing of other parts, the tyre runs hot, the side plies of the tyre which get loosened will soon come out and make the tyre useless.

(2) Wrong Loading: While loading the vehicle specially trucks, care should be taken to place the load in the centre of the body. Load in no case should be kept at rear or front. If we load like that than front or rear or side tyre is wear.

(3) Over-Inflating tyre: The pressure should give proper to the tyre, some drivers either due to ~~crisis~~ curiosity or for the sake of carring extra load, put a little pressure in tyre. This is total wrong presumption as over-inflated tyre neither get extra capacity to bear the load nor made strong. On the contrary the cords fitted in tyre become loose which eventually make it useless.

(4) Under-Inflating tyre: Under inflated tyre tread in the centre of crown is slightly lifted up while both shoulders get bulged out This bulging loose inside the tyre run hot resulting in premature failure.

Model Question

(i) What is the meaning tyre specification ?
(ii) What is the meaning of 8.25 X 20 - 10PR explain it briefly ?
(iii) What are defect of tyre and state the remedies of these ?

Reference :

Name of Author	Title book
C.P Nakra	Automobile Engg
Dr Kripal Singh	Automobile Engg
R.B Gupta	Automobile
Internet	

Fuel & Ignition System

Objective of Lecture: Battery Ignition System & Magnetic Ignition system (Petrol Engine)

Learning Outcome: By this lecture the students are able to know about Battery ignition system and they also came to know how the ignition is take place inside the Eng Engine.

Tools use: Chalk & Black Board & ~~Book~~.

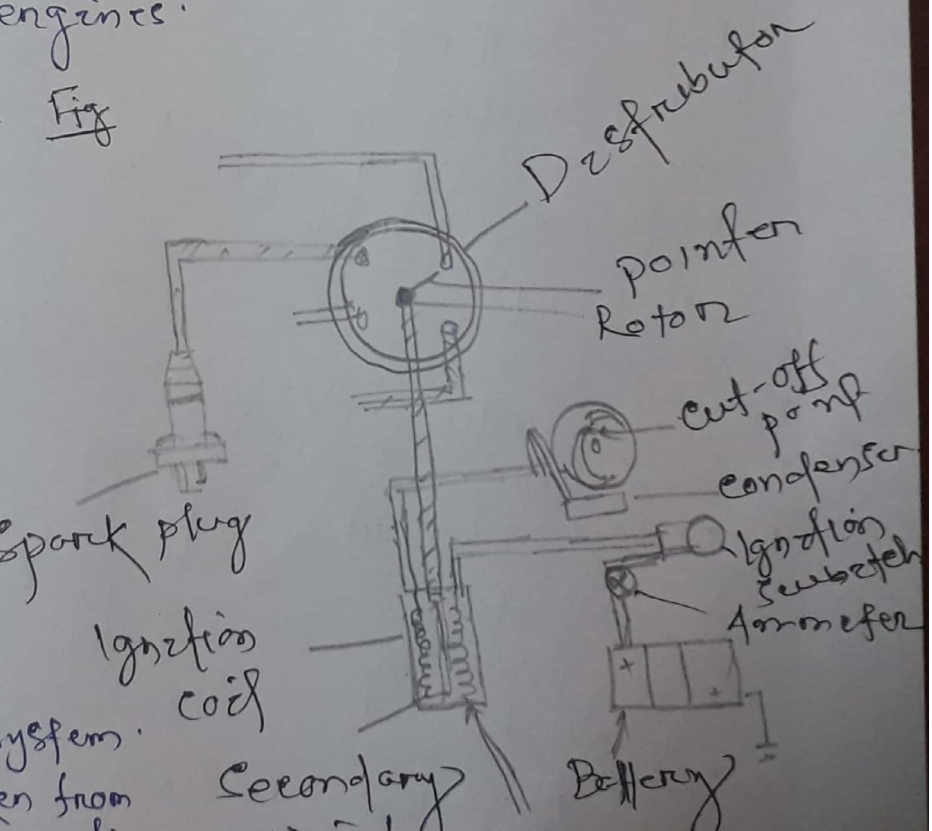
Lecture: In battery ignition the current is taken from battery to ignite the mixture inside the combustion chamber.

→ Battery ignition system used in almost all the petrol vehicle except small engines such as engines used in motor cycle, scooter mopeds motor boats or portable engines.

Main components

1. Battery
2. Ammeter
3. Ignition switch
4. Condenser
5. Contact breaker point
6. Ignition coil
7. Distributor
8. Spark plug

Fig



(Battery Ignition System)

Operation

In battery ignition system. the current is taken from the battery to the ignition switch through ammeter. From ignition switch to the primary winding of the ignition coil. From primary winding of the ignition coil to the condenser.

When the contact breaker point is not contact at that time high current about 8000 to 10000 volt is increase and when contact breaker point is contact. of that time high voltage transfer to the secondary winding of ignition coil. From the secondary winding to connect the high tension wire of the distributor. In distributor there is rotor and pointer. The pointer come contact with point of the spark according to the firing order of the engine. Then the spark plug make spark inside the particular combustion chamber of the cylinder.

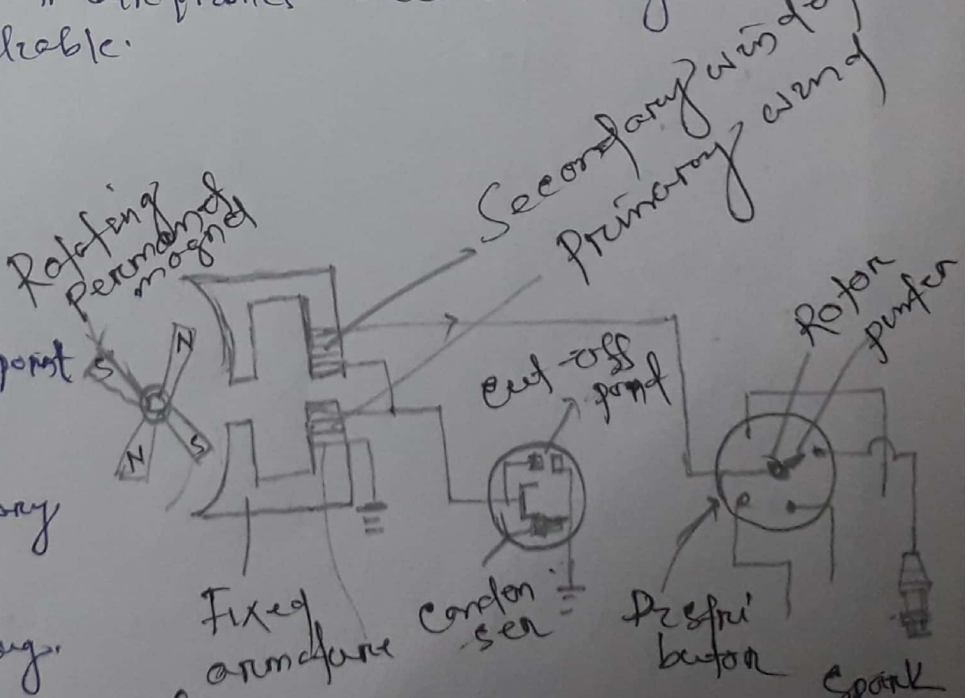
Magneto Ignition System:

In magneto ignition system a magneto produces and supplies the current in the primary ckt in stead of the battery.

* This system is commonly used in two wheeler and also used small airplanes because they are extremely reliable.

Main parts

1. Magneto
2. Ignition Switch
3. Condenser
4. contact breaker point
5. Distributor
6. Primary & secondary winding
7. Spark plug.



(Magneto Ignition System)

Construction: The magneto is basically an electrical generator which is turned to creat a periodic high voltage pulse rather than continuous current.

A electrical generator is the reverse of an electromagnet. In an electro magnet there is a coil of wire around an iron bar (ie armature). When the current is applied to electromagnetic coil (ie with a battery) the coil creat magnetic field in the armature. In a generator the process reversed and a magnet moves past the armature to create electric current in the coil. There magneto ignition system is two types like

(i) Rotating magnet type.
(ii) Rotating armature type.

and other connection are same like the battery ignition system.

Operation or Function

In magneto ignition system current taking to the coil or armature then magnetic field is produced between them. This magnetic field produce e.m.f which is supplied to the primary winding then flow to the condenser and the contact breaker point. When the contact breaker point is open at that time high voltage approximately 20,000 volt is create and when it become contact is flow secondary winding then to the high tension terminal of the distributor. In distributor the rotator rotate and make contact with point of spark plug according firing order of the engine. for which spark take place inside the combustion chamber to burn the charge or air fuel mixture.

Model Questions

(1) State the type of ignition system of the engine.
(2) Describe briefly about the Battery ignition system
(3) Describe briefly about the Magneto ignition system
(4) Compare between Battery & Magneto ignition System.

Reference

Name of Author	Title books
R. B Gupta.	Automobile Engg
C. P. Nakra	Automobile Engg.
Dr. Kripal Singh	Automobile Engg
& Internet	