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WORKSHEET NO: 12

LESSON PLAN

Subject: Applied Technology	Year/Level: 13
Final lesson	Date: 16/08/21
Topic: Motorized Machines and Engines	

Various Lubrication Systems

The various lubrication systems used for lubricating the various parts of engine are classified as

1. Mist lubrication system
2. Wet sump lubrication system, and
3. Dry sump lubrication system.

1. Mist lubrication system:

Mist lubrication system is a very simple type of lubrication. In this system, the small quantity of lubricating oil (usually 2 to 3%) is mixed with the fuel (preferably gasoline). The oil and fuel mixture is introduced through the carburetor. The gasoline vaporized and oil in the form of mist enters the cylinder via the crank base.

2. Wet-sump lubrication system:

In the **wet-sump lubrication system**, the bottom of the crank case contains an oil pan or sump that serves as oil supply, oil storage tank and oil cooler. The oil dripping from the cylinders, bearings and other parts, fall under gravity back into the sump, from where it is picked up by pump and recirculates through the engine lubrication system. There are three varieties in wet-sump lubrication system. They are:

2.1 Splash lubrication System:

Splash lubrication system is used on small, stationary four-stroke engines. In this system, the cap of the big end bearing on the connecting rod is provided with a scoop which strikes and dips into the oil-filled through at every revolution of the crank shaft and oil is splashed all over the interior of crank case into the piston and over the exposed portion of the cylinder is shown in the figure below.

2.2 Splash and pressure lubrication system:

Splash and pressure lubrication system is combination of splash and pressure system as shown in below figure. In this system, the lubricating oil is supplied by a pump under pressure to main and cam shaft bearings. the oil is also directed in the form of spray from nozzle or splashed by a scoop or dipper on the big end to lubricate bearings at the big end of the connecting rod, crank pin, gudgeon pin, piston rings and cylinder.

2.3 Pressurized lubrication system:

In **pressurized lubrication system**, the lubricating oil is supplied by a pump under pressure to all parts requiring lubrication as shown in below figure. The oil under the pressure is supplied to main bearings of the crank shaft and camshaft.

3. Dry-sump lubrication system:

In **dry-sump lubrication system**, the oil supply is carried from an external tank. The oil from the sump is pumped by means of a scavenging pump through filters to the external storage tank. The oil from the storage tank is pumped to engine cylinder through and oil cooler. The oil pressure may vary from 3 to 8 bars.

Review questions

1. Discuss the difference between a two stroke and four stroke engines.

2. List down with their uses the main parts of internal combustions of engines?

3. Explain the difference between suction stroke and compression stroke?

4. Write down three advantages of a four stroke Engines?

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5. Write down three disadvantages of a four stroke Engines?

6. Differentiate mist lubrication system with wet sump lubrication system.

7. Discuss the following:

a) Splash lubrication system

b) Splash and pressure system

c) Pressured lubrication system.

