EXPERIMENT NO. 3

OBJECT:

To study and sketch the model of S.I. Engine(2-stroke petrol).

EQUIPMENT

Model of 2-stroke petrol engine (cut section)

CONSTRUCTIONAL DETAIL

1. Cylinder
2. Cylinder head
3. Piston
4. Piston ring
5. Connecting rod
6. Crank
7. Crank shaft
8. Flywheel
9. Ports
10. Spark plug
11. Carburetor

WORKING PRINCIPLE

In this engine one cycle is completed in one revolution of crank shaft and two stroke of the piston. This type of engine is called two stroke engine.

A 2-stroke petrol engine works on Otto-cycle or constant volume cycle. In this cycle the suction, compression, expansion and exhaust takes place during two strokes of the piston. It means that there is one working stroke after every revolution of crank shaft. A two stroke engine ahs ports instead of valves. In every

movement of the piston from BDC to TDC or TDC to BDC there is two processes takes place simultaneously.

SUCTION STROKE & COMPRESSION STROKE

In this stroke piston moves from B.D.C. to T.D.C. and compressed the charge and due to compression temperature and pressure of the charge increases and ignition takes place by spark plug. During this process piston uncovers the inlet port and fresh charge enters into the crank case.

EXPANSION & EXHAUST STROKE

After ignition burnt gases inside the cylinder expands due to that piston again moves from T.D.C. to B.D.C. and power produced on crank shaft and during this process piston uncovers the outlet port and burnt gases exist from out let port.

PARTS OF 2-STROKE PETROL ENGINE

PORTS

Ports are used in 2-stroke engines. Ports are out in the cylinder body to allow the flow of charge into the cylinder. There are three ports in two stroke engine.

1. Inlet port
2. Outlet port
3. Transfer port

The opening and closing of these ports are controlled by the up and down movement of the piston in the cylinder.

SPARK PLUG

It is mounted on cylinder head and at the end of the compression stroke when the temperature and pressure increases, it provides a spark to ignite the compressed charge.

CARBURETTOR

It is used to prepare the air fuel mixture and then send the correct quantity of this mixture into the engine cylinder according to the load requirement.

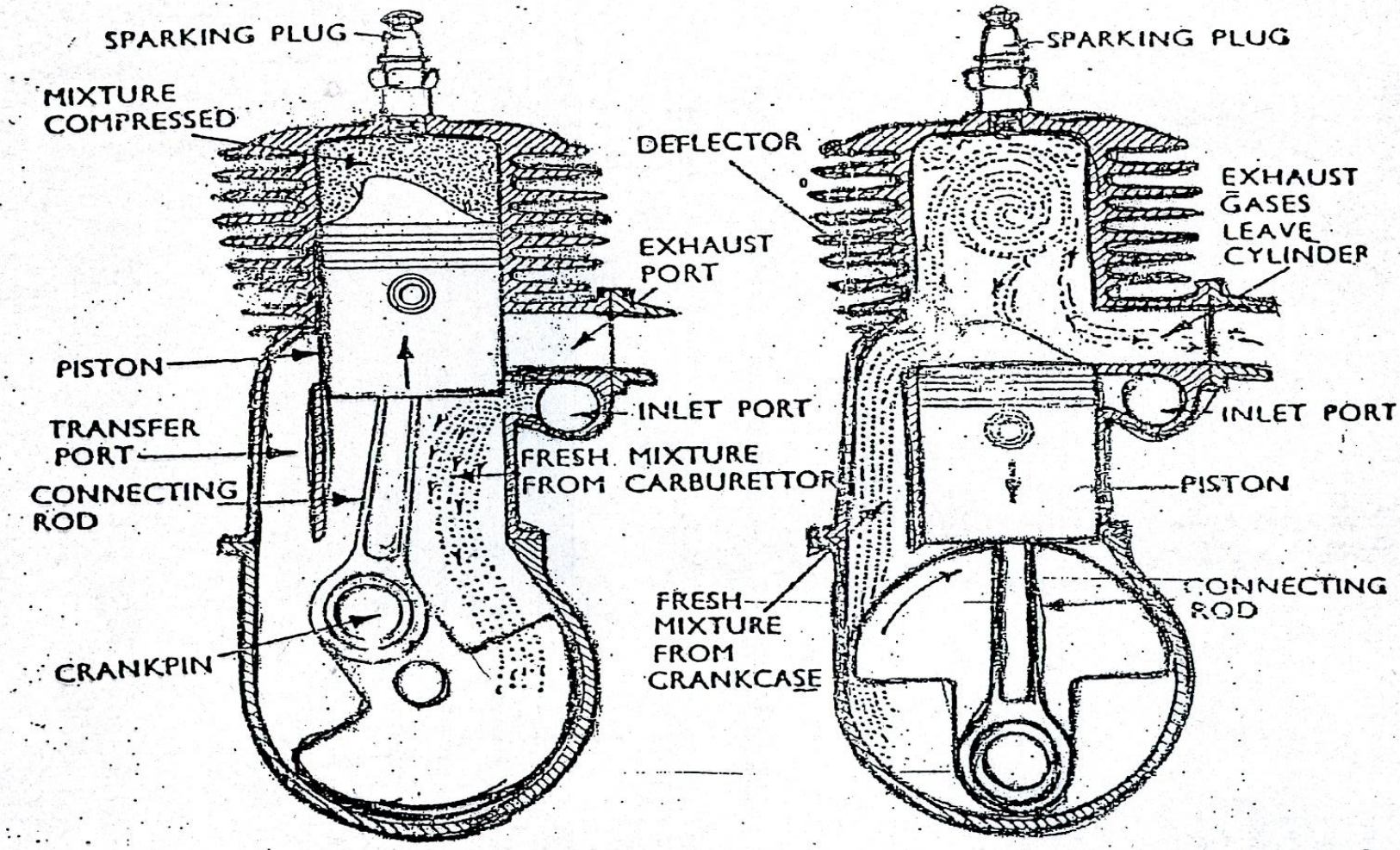
APPLICATIONS

2-Stroke engines are used in scooters, motorcycles.

RESULT

The study and sketch of 2-stroke petrol engine is done.

DISCUSSION



A 2-stoke petrol showing constructional details and working.