

Carburetion

- The fuel system on a small engine consists of several components;

- ⊕ Carburetor

- ⊕ Fuel Lines

- ⊕ Fuel Filter

- ⊕ Fuel tank

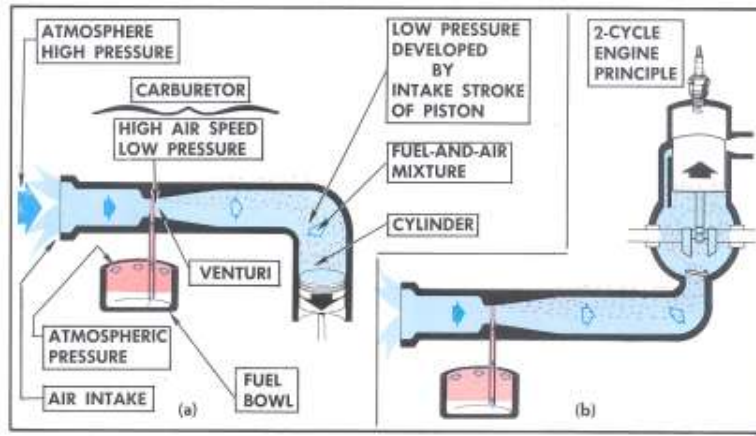
Carburetion

- The function of the carburetor is threefold;
- It breaks up or atomizes the fuel into a fine spray and it mixes with air to make a mixture that will burn readily
- It regulates the ratio of fuel to air
- It regulates the amount of the fuel-air-mixture going into the combustion chamber

Carburetion

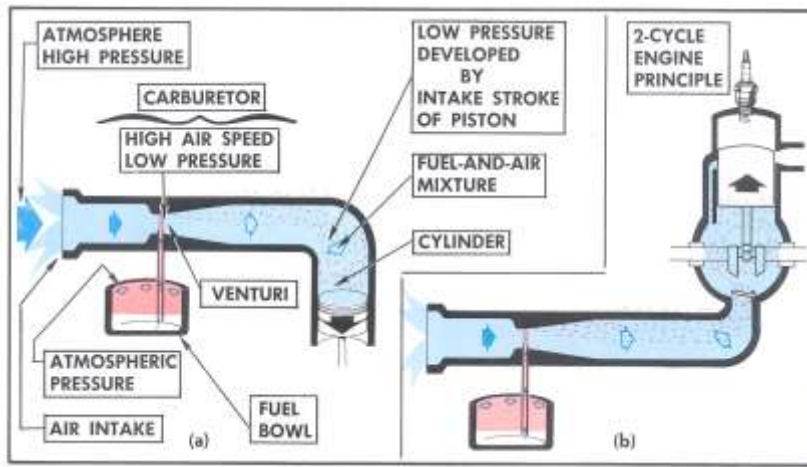
- The ratio of fuel air is controlled by adjusting needle valves and this allows you to select the proper mixture for the conditions under which you operate your engine
- **Too lean** a fuel-air mixture may result in hard starting, overheating, pre-ignition & valve burning
- **Too rich** a fuel-air mixture may result in excessive fuel consumption, carbon build up in the cylinder and cause pre-ignition

Carburetion: Principles of Operation



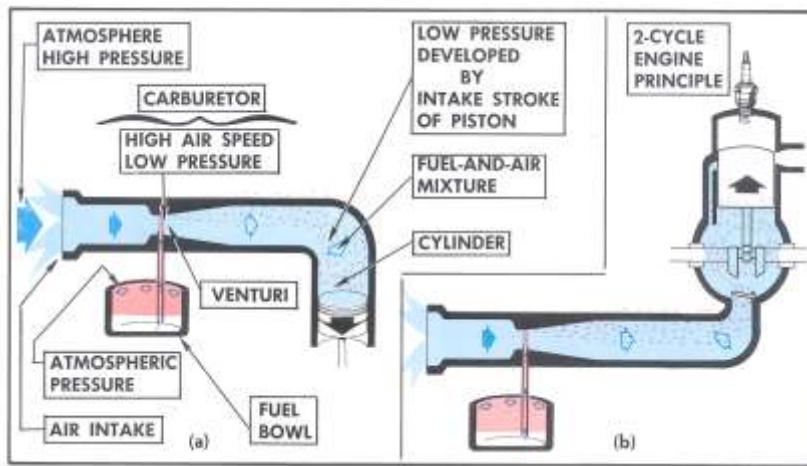
- As the piston moves down a partial vacuum is created in the cylinder
- Atmospheric pressure pushes air through the carburetor air intake to equalize this pressure
- The air speed increases in the venturi (the narrow passage in the air intake passage)

Carburetion: Principles of Operation



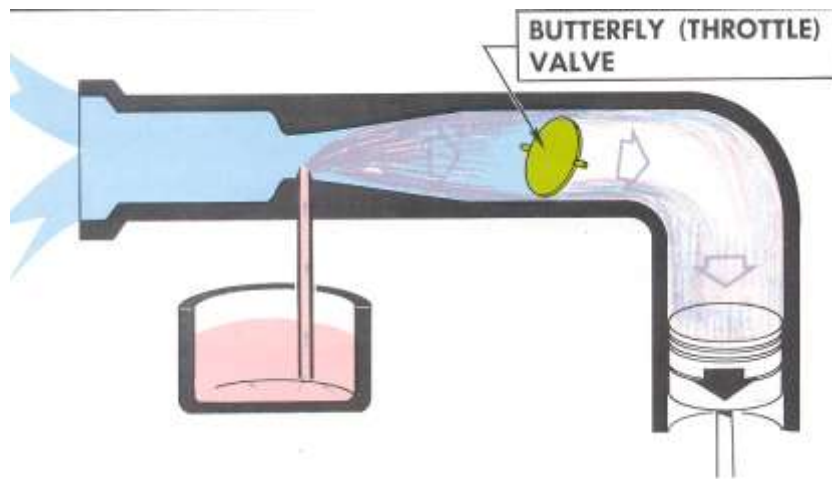
- As the air speed increases the pressure is lowered.
- Because the pressure is lowered atmospheric pressure in the fuel bowl pushes fuel through the pipe to the venturi and into the air stream

Carburetion: Principles of Operation



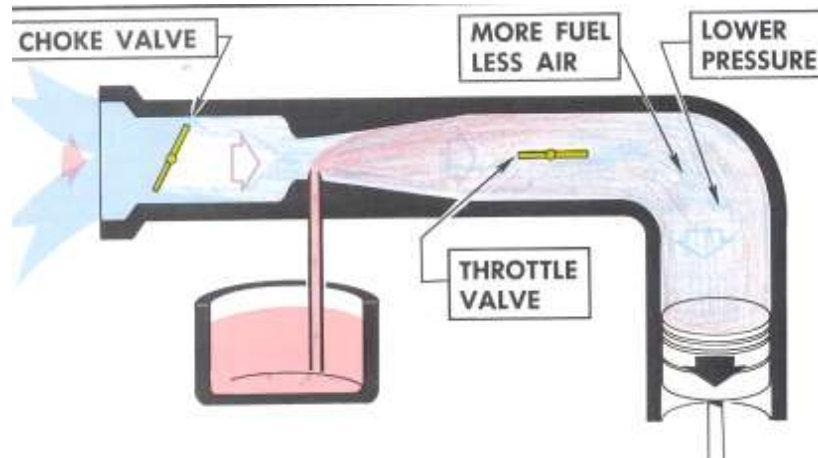
- The speed of the air in the venturi and the turbulence past the venturi atomize the fuel and mix the tiny droplets with air.
- Once the air & fuel are mixed, the next job of the carburetor is to provide a means whereby the amount of mixture that enters the cylinder can be controlled

Carburetion: Principles of Operation



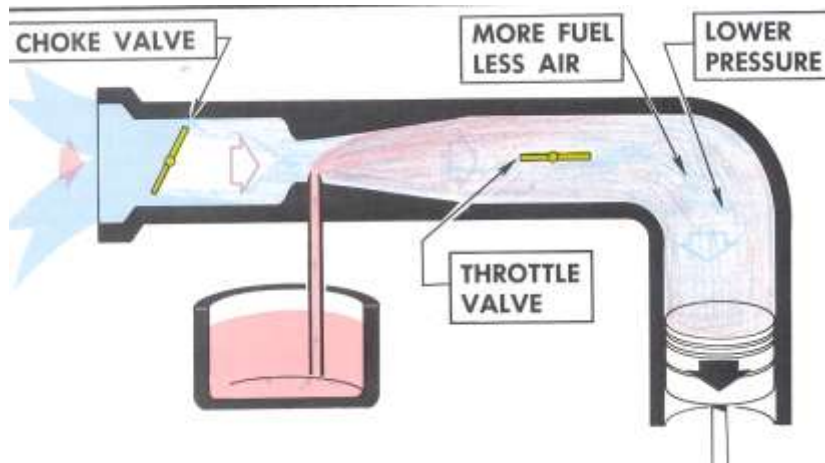
- ***A butterfly (throttle) valve*** in the manifold controls the fuel air mixture
- If you want your engine to run fast open your butterfly (throttle) valve, the more fuel and air that gets delivered the faster it will run

Carburetion: Principles of Operation



- A **“Choke” valve** is used to aid in cold starts
- It helps provide a better vaporization of the fuel–air and it provides more fuel-air (a richer mixture)
- The choke valve is similar to the butterfly except it is placed on the air-intake side of the carburetor.

Carburetion: Principles of Operation



- When the choke is closed air entering is restricted.
- The pressure inside the carb. & cylinder is further reduced and this increases the vaporization of the fuel.
- Some engines use a primer setup instead of a choke valve

Carburetion: Principles of Operation



Carburetion: Principles of Operation

Next Up!

Types of Carburetors

