

# Carburetor Anatomy



**A LOOK AT THE PARTS AND  
TYPES OF CARBURETORS**

# Types of Carburetors

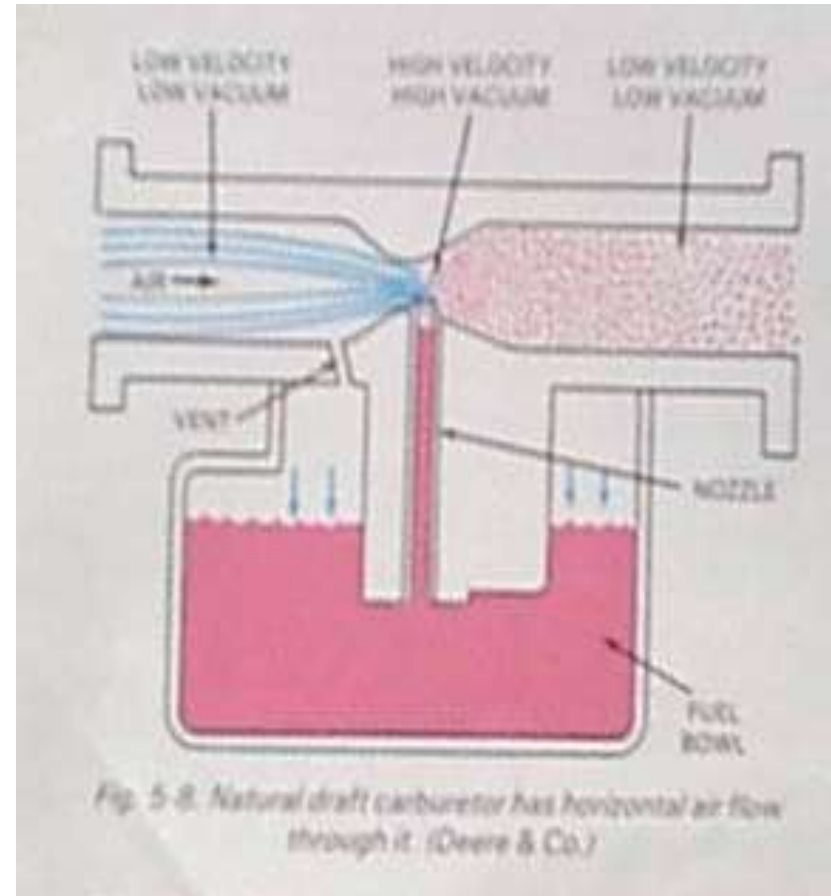
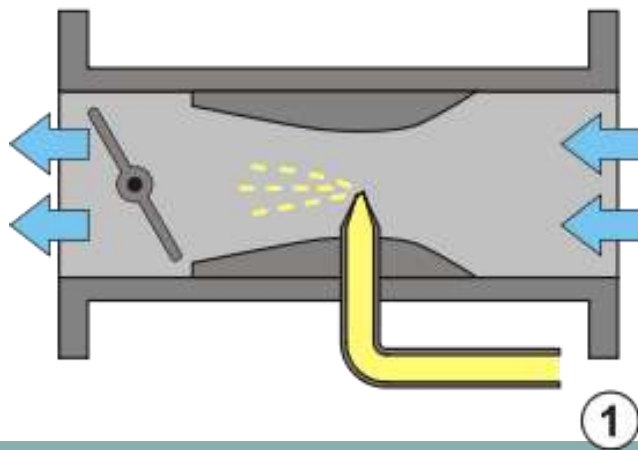


- Three common types of carburetors.
  - Natural or side draft
  - Updraft
  - Downdraft

# Natural Draft Carburetor



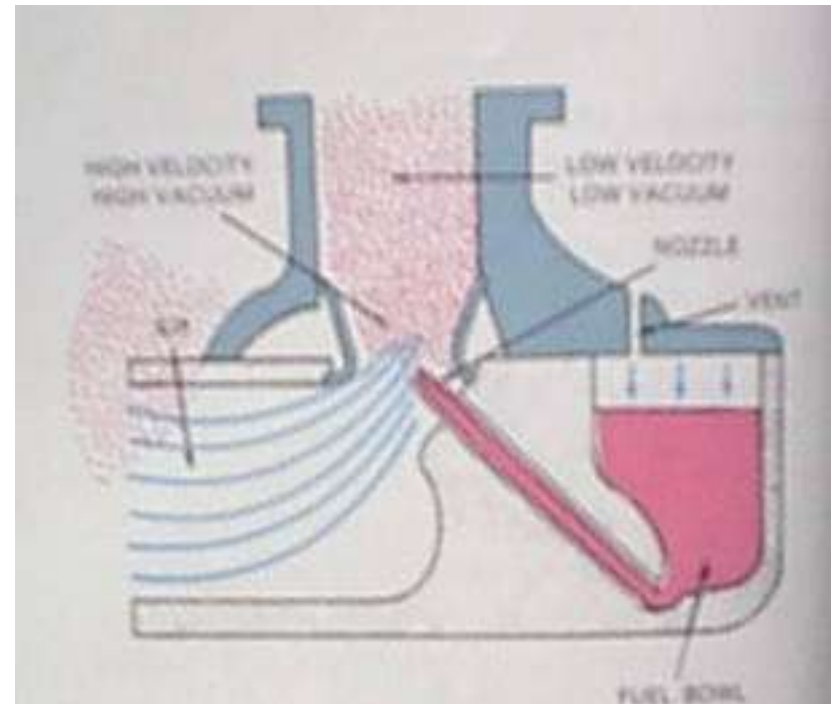
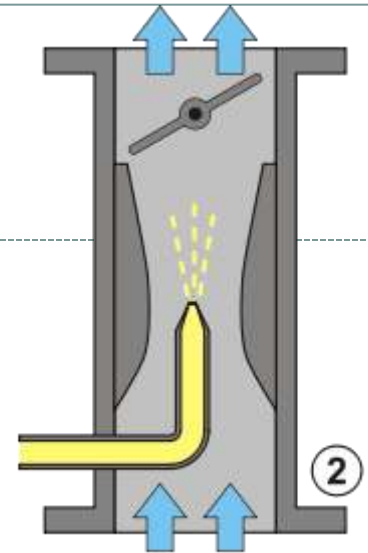
- This carburetor is used where there is little space on top of the engine. The air horizontally into the manifold. The air



# Updraft Carburetors



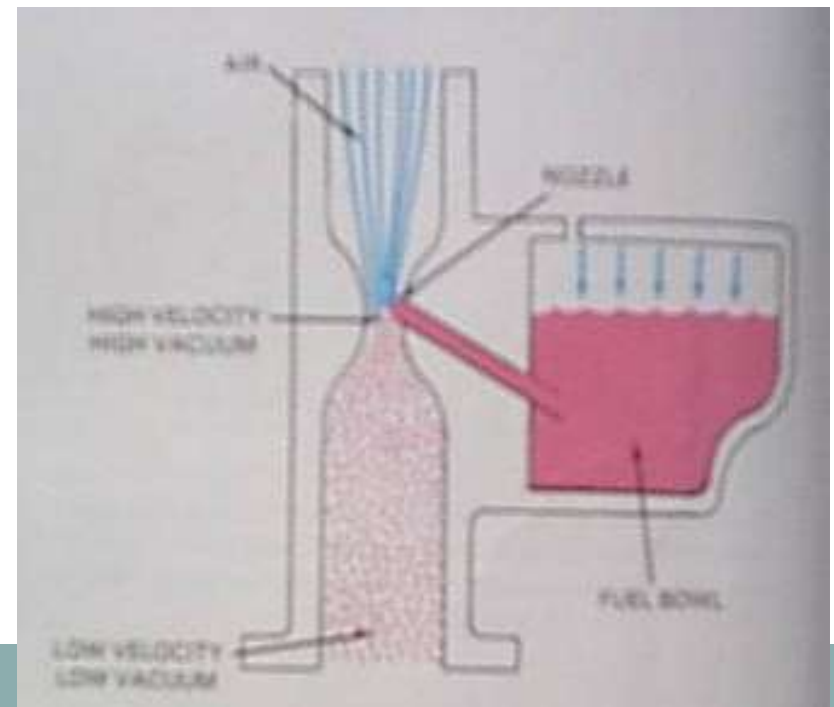
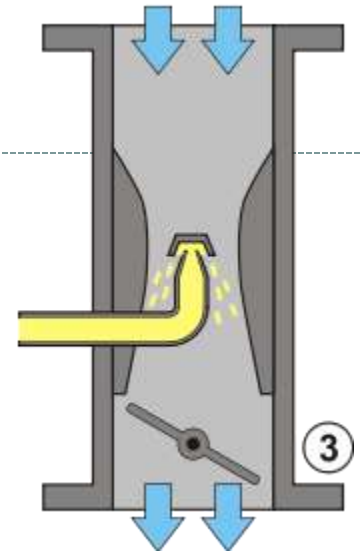
- This type is placed low on the engine and use a gravity fed-fuel supply.
  - The tank is above the carburetor and the fuel falls to it.
- Even though this carburetor uses gravity to receive the fuel from the tank, the air-fuel mixture must be forced upward into the engine.



# Downdraft Carburetors



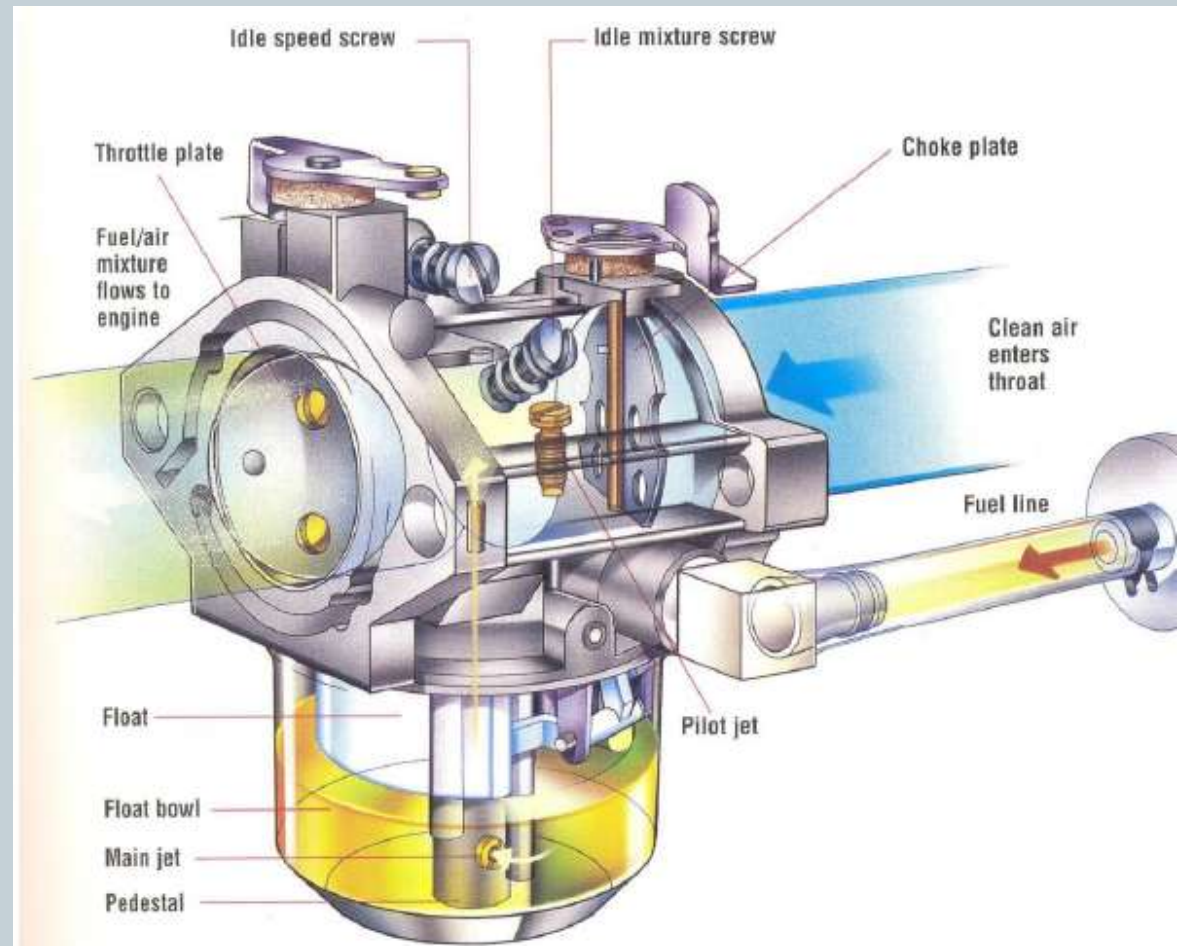
- This carburetor operates with lower air velocities and larger passages. This is because gravity assists the air-fuel mixture flow to the cylinder.
- The downdraft carburetor can provide large volumes of fuel when needed for high speed and high power output.



# Carburetor Anatomy



- Choke
- Throttle
  - Full
  - Idle
  - Partial
- Governor
- Load Adjustment
- Primer
- Fuel Control
  - Float Type
  - Diaphragm



# The Choke



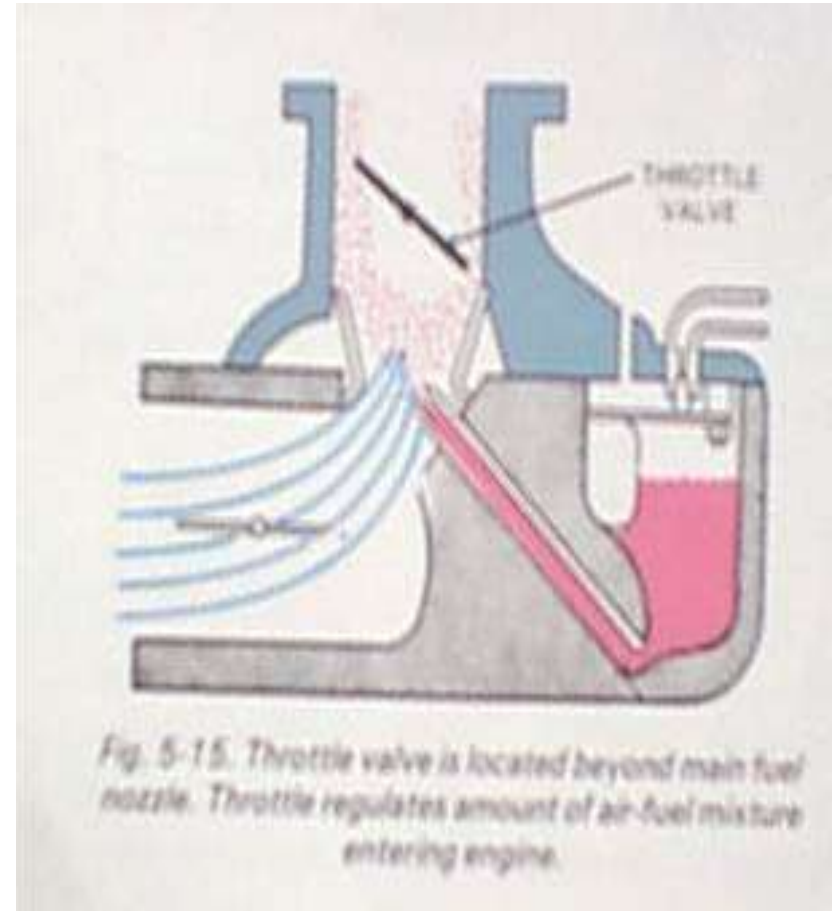
- Round disc mounted on a shaft located at the intake end of the carburetor
- Since cold fuel is hard to vaporize, the choke is used during cold engine starts to provide a rich mixture to the carburetor in order to get the engine started.



# The Throttle



- Round disc mounted on a shaft beyond the main fuel nozzle in the carburetor.
- It regulates the amount of air-fuel mixture entering the cylinder.

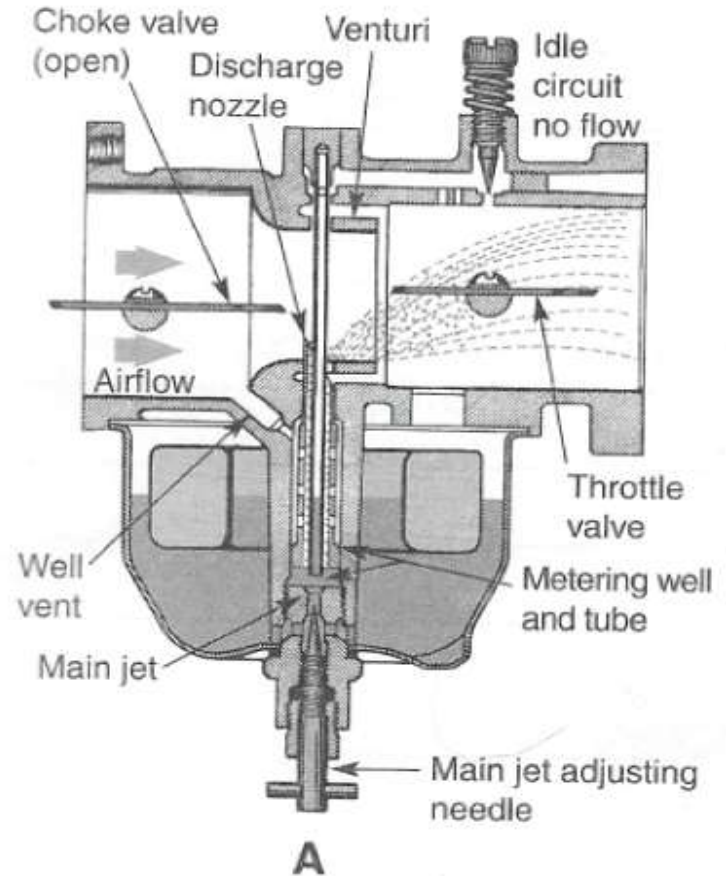




# Throttle Valve – Full Throttle



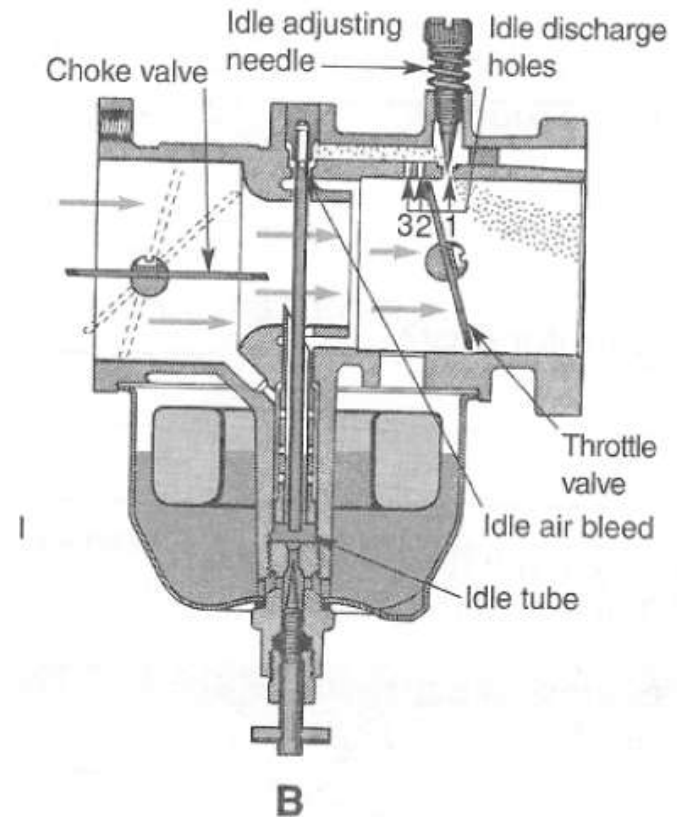
- Full flow of fuel is drawn from main nozzle
- Choke and throttle fully open



# Throttle Valve – Idling



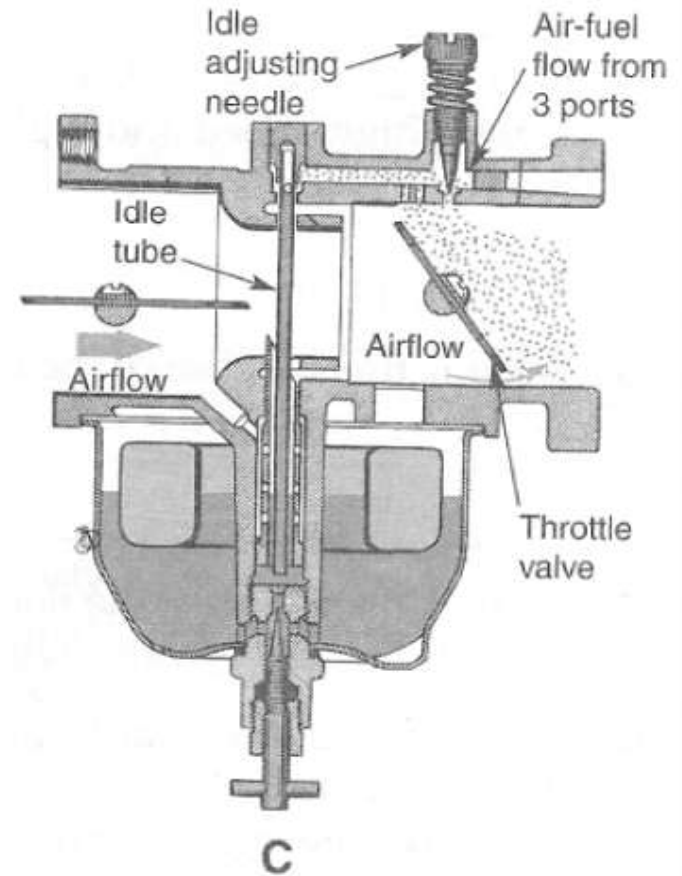
- Carburetor supplies just enough air-fuel mixture to keep engine running
- Choke is wide open; Throttle valve is closed
- Engine is running from primary idle discharge hole



# Throttle Valve – Partial Throttle



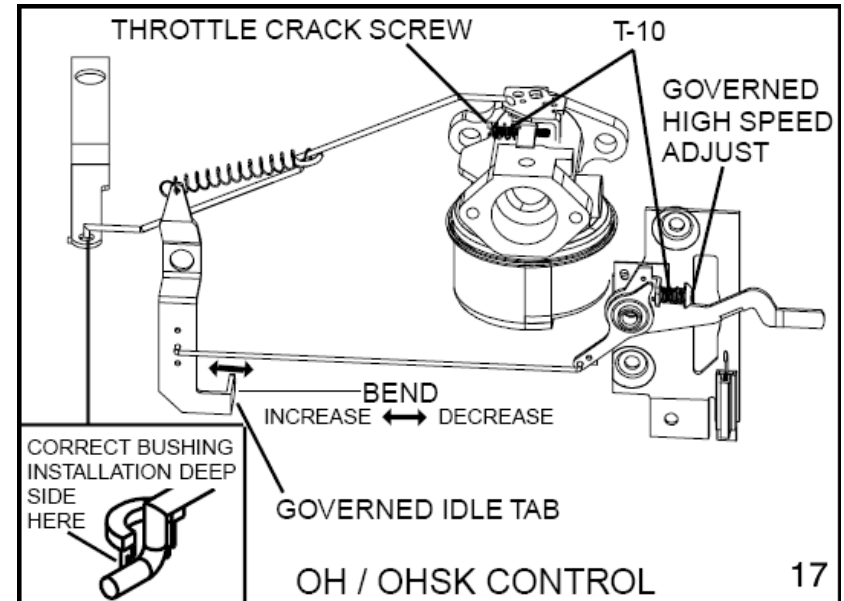
- Throttle valve partially open
- Both primary and secondary discharge holes are open



# Governor



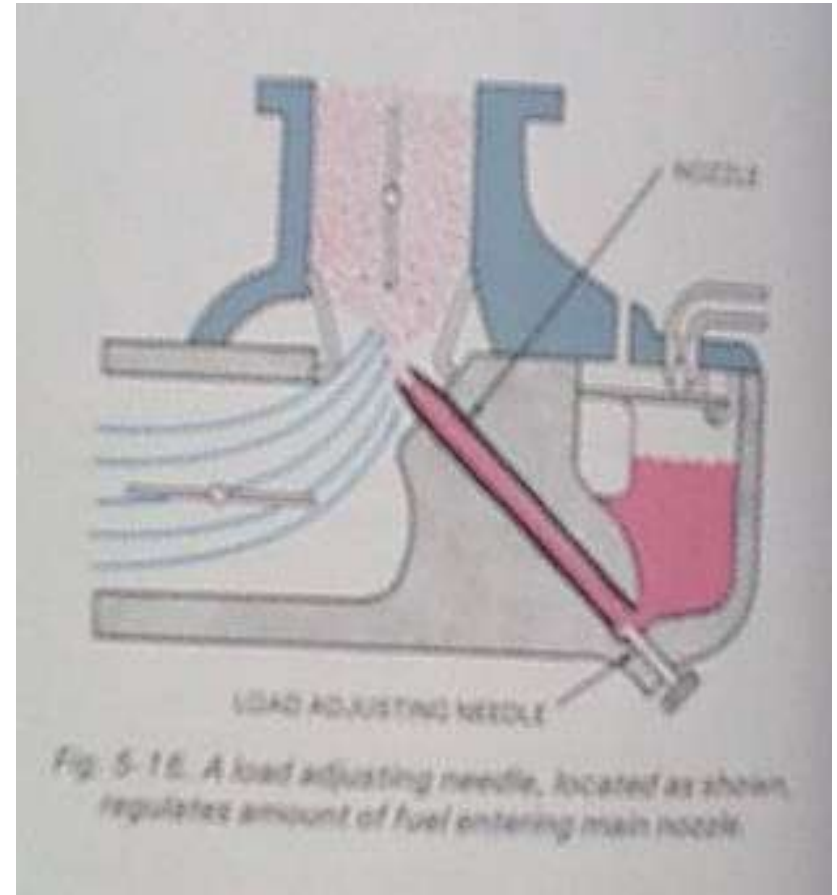
- Automatically operate the throttle valve to maintain a specific engine speed
- Prevent over-speeding and limit high and low speeds



# Load Adjustment



- The amount of fuel entering the main discharge nozzle is sometimes regulated by a load adjusting needle.
- Many carburetors today have a fixed jet or orifice which is preset to allow the proper amount of flow. These carburetors are non-adjustable.



# The Primer



- Many small engines have hand operated plunger called a primer. When depressed it forces additional fuel through the main nozzle prior to starting a cold engine.



# Fuel Control: Float type or Diaphragm carburetors



## Float Type

- Uses a float to maintain a constant level of fuel in the fuel bowl
- Opens & closes a needle valve as the float lowers or raises

## Diaphragm

- Uses differences in atmospheric pressure and vacuum pressure to pulsate a diaphragm to pump fuel
- The pulsation of the diaphragm takes place on every intake and compression stroke.



# Fuel Control: Float type or Diaphragm carburetors

## Float Type



## Diaphragm

