## FUEL MIXTURE CONTROL IN RELATION TO THROTTLE POSITION

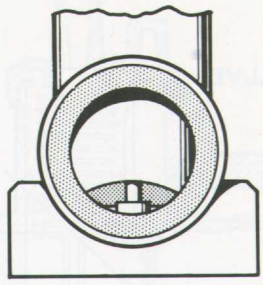

FIG. 40 IDLE TO 1/8 THROTTLE OPENING:

Idle and low speed system controls fuel mixture.

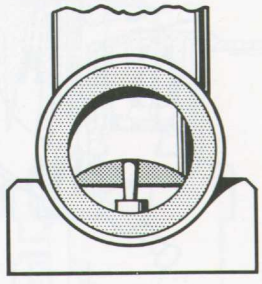

FIG. 41 1/8 TO 1/4 THROTTLE OPENING:

Throttle valve cutaway controls fuel mixture.

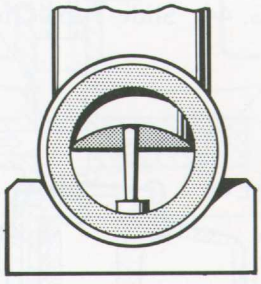

FIG. 42 1/4 TO 3/4 THROTTLE OPENING:

Jet needle controls fuel mixture.

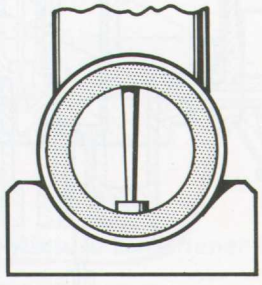

FIG. 43 3/4 TO FULL THROTTLE OPENING:

Main Jet controls fuel mixture.

The above illustrations show the throttle position where each system predominates in fuel mixture control. The operating ranges of these systems overlap each other to provide a smooth transition from one system to another.

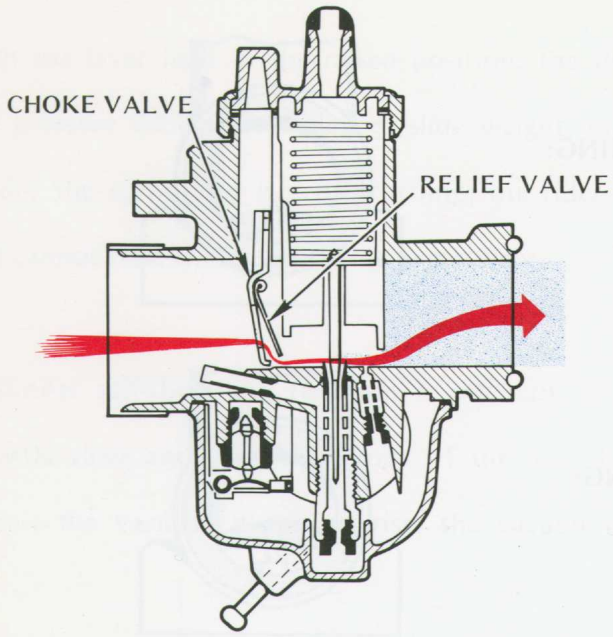


FIG. 44 Slide-Type Choke Valve

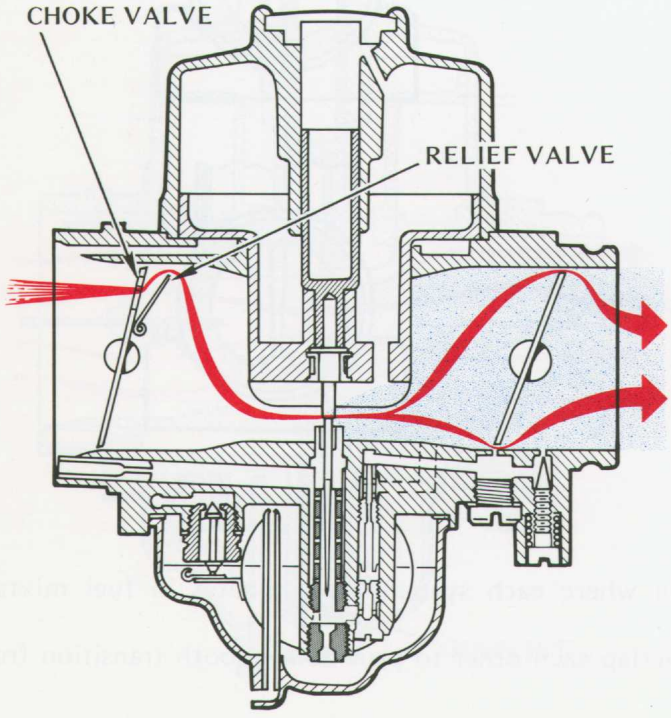


FIG. 45 Pivoted Disc-Type Choke Valve

Fuel does not vaporize well in a cold engine and tends to condense on intake port and cylinder walls. Because a smaller percentage of the fuel is vaporized in a cold engine, the carburetor must deliver a richer mixture in order for the combustion chamber to have enough vaporized fuel to make a combustible air-fuel mixture. The mixture must not be excessively enrichened, however, or the combustion chamber will become flooded with liquid fuel which may not ignite.

The cold starting system used in Honda motorcycles may be either a supplemental fuel delivery circuit (Mixture Enrichener) or a choke valve that enrichens the mixture by obstructing the carburetor bore (see Choke Effect, pages 4-5).

Choke Valve:

A choke valve is the most commonly used cold starting device. In motorcycle carburetors, it may be either a flat slide (Fig. 44) or a pivoted disc (Fig. 45). The choke valve is connected to a lever or knob by which the rider controls the choke valve position.

When the choke valve is closed, it reduces the volume of air that can flow through the carburetor bore to fill the vacuum created in the engine cylinder, thus maintaining a partial vacuum at all fuel discharge jets and orifices. Atmospheric pressure in the float chamber than forces more fuel into the carburetor bore. A spring loaded relief valve within the choke slide or disc limits carburetor bore vacuum to a certain level to reduce the possibility of flooding.

Mixture Enrichener:

A mixture enrichener is used in Honda two-stroke motorcycles instead of a choke valve in order to improve fuel atomization and further reduce the possibility of flooding. A plunger valve, controlled by an external lever or knob, opens or closes a supplemental fuel delivery circuit (Fig. 46). The valve is either fully open or closed; there is no provision for partial opening positions.

When the valve is open, the mixture enrichening circuit functions like an atomizer (see Atomizer Principle, page 3). Fuel flows from the float bowl through a metering jet, then through a perforated tube where the fuel is initially aerated. When the aerated fuel reaches the enrichener valve juncture, it is combined with the airstream in a passage that parallels the carburetor bore. The mixture is then sprayed into the carburetor bore at a point downstream from the throttle slide.

The throttle slide must be closed for the mixture enrichener circuit to be fully effective. A closed throttle slide maintains a high vacuum at the discharge port of the mixture enrichener, and air rushes through the mixture enrichener air passage to fill that vacuum. Raising the throttle slide causes a loss of vacuum at the discharge port and diminishes the mixture enrichener airstream.

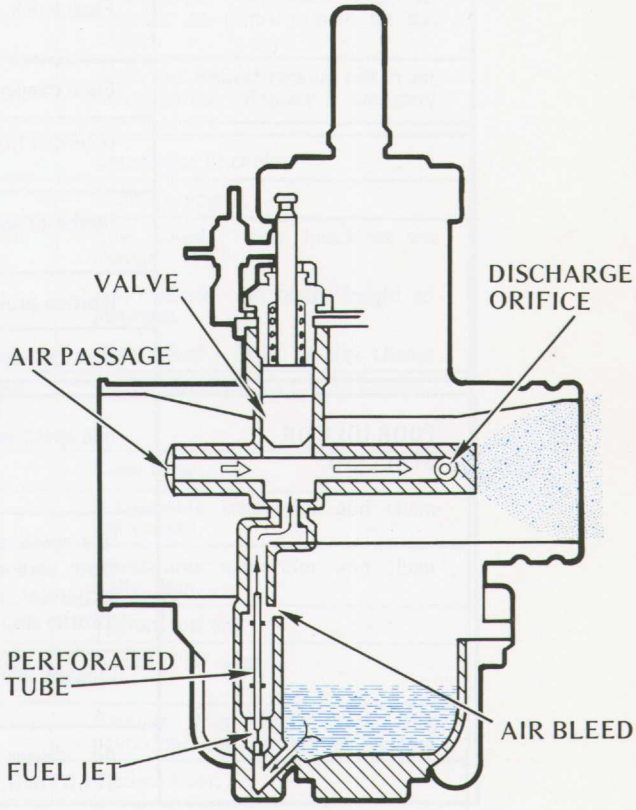


FIG. 46 Mixture Enrichener Circuit