However, depending upon its usage, it may result in engine stalling or flooding. To counter this situation, a relief valve (29) is incorporated in the choke valve (26) to open or closes at a preset suction pressure, to produce a proper fuel air mixture for cold weather starting. It is therefore possible to close the choke valve completely during warm-up driving and then fully open the valve after warm-up. **(Fig. 3-95)**

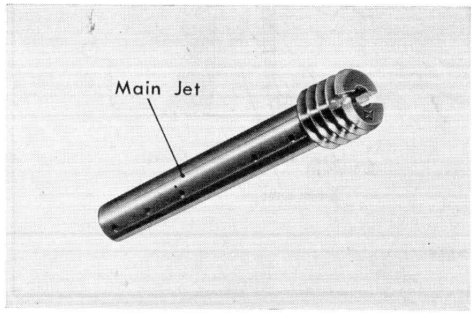

Figure 3-96. Main jet

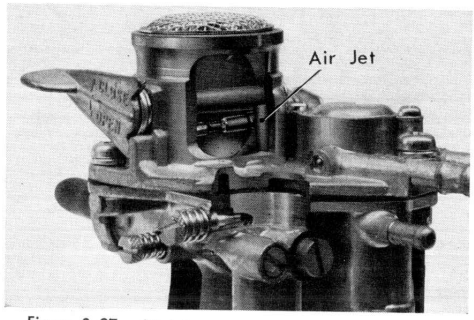

Figure 3-97. Air jet

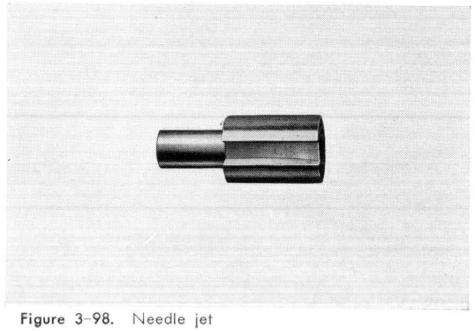

Figure 3-98. Needle jet

5. FUNCTION OF THE RESPECTIVE COMPONENTS

a. Main jet

It restricts the fuel flow during full throttle condition (top speed) to provide a proper fuel mixture. Not only does it function at top speed but also is effective to a certain degree at intermediate speed. The larger the main jet size mumber, greater will be the fuel flow and providing a richer fuel mixture. **(Fig. 3-96)**

b. Air jet

During full throttle opening, the fuel mixture at high engine speed will become rich and at slow engine speed the mixture becomes lean. To prevent such a condition, air is bled into the main jet. The function of the air jet is to restrict the amount of air.

As the air jet is made larger, the amount of air is increased, resulting in a lean fuel mixture, however, at the throttle opening, a high engine speed will provide a lean mixture with a smaller variation in fuel consumption between high and low engine speed. **(Fig. 3-97)**

c. Needle jet

During full or half throttle opening, the fuel which had been metered by the main jet is again metered by the needle jet. The adjustment is performed in conjunction with the jet needle which is explain in the following section. The needle hole is made exceptionally accurate. **(Fig. 3-98)**

d. Jet needle

The jet needle in conjunction with the needle jet described earlier, regulates the fuel mixture at the intermediate throttle opening (principally between ¼ to ½ throttle opening). The long tapered jet needle is located centrally within the center hole of the throttle valve and with the tapered end inserted into the needle jet. The vertical movement of the throttle valve to which the jet needle is attached controls the flow of the fuel in respect to the throttle opening to afford a correct fuel mixture ratio. There are five needle clip grooves (which are counted from the top) to regulate the richness of the fuel mixture. The fuel mixture becomes richer as the clip is moved progressively from the No. 1 groove to the No. 5 groove. **(Fig. 3-99)**

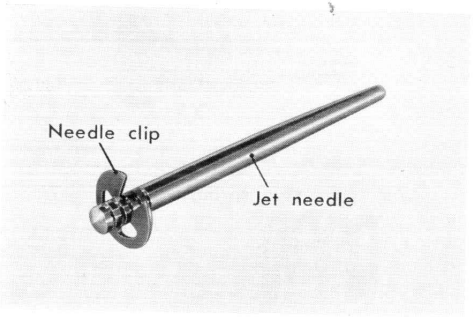

Figure 3-99. Jet needle

e. Throttle valve

The function of the throttle valve is to control the amount of air taken into the engine which serves to increase the engine RPM and the power output, and in addition, performs the important function of controlling the fuel air mixture. **(Fig. 3-100)**

The throttle valve is cut-away on the air inlet side. By changing the size of the cut-away (designated by cut-away No.) the pressure actuating the needle valve can be altered to change the amount of fuel flow and causes a change to the fuel mixture. The valve with a larger cut-away number will produce a leaner fuel mixture. However, the range of its effectiveness is mainly at low speed from idling speed to approximately ¼ throttle opening. It has no effect beyond ½ throttle opening.

The throttle valve is normally operated by the throttle cable attached to the top of the carburetor. A throttle stop screw keeps the throttle valve in the idle position.

Turning the stop screw in will cause the throttle valve to rise, and backing off on the stop screw will lower the throttle valve.

(Caution)

The throttle valve guide groove serves as a junction for the throttle cable and the throttle valve and also to maintain the throttle valve in the correct relative position within the carburetor, therefore, if it is reversed, the cut-away will be on the wrong side and will result in rich fuel mixture as well as causing insufficient engine speed.

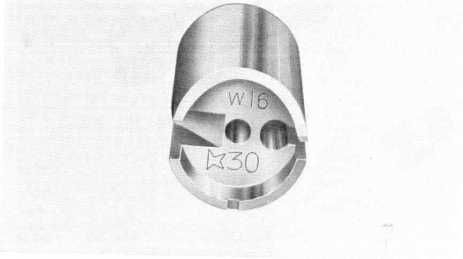

Figure 3-100. Throttle valve

f. Slow jet

The slow jet regulates the fuel flow during idling and small throttle opening, and permits the air to enter through the air bleed to mix with the fuel for atomization.

The slow jet is similar to the main jet in that the larger the jet size number, the greater will be the fuel flow and consequently a richer fuel air mixture **(Fig. 3-101)**

Figure 3-101. Slow jet