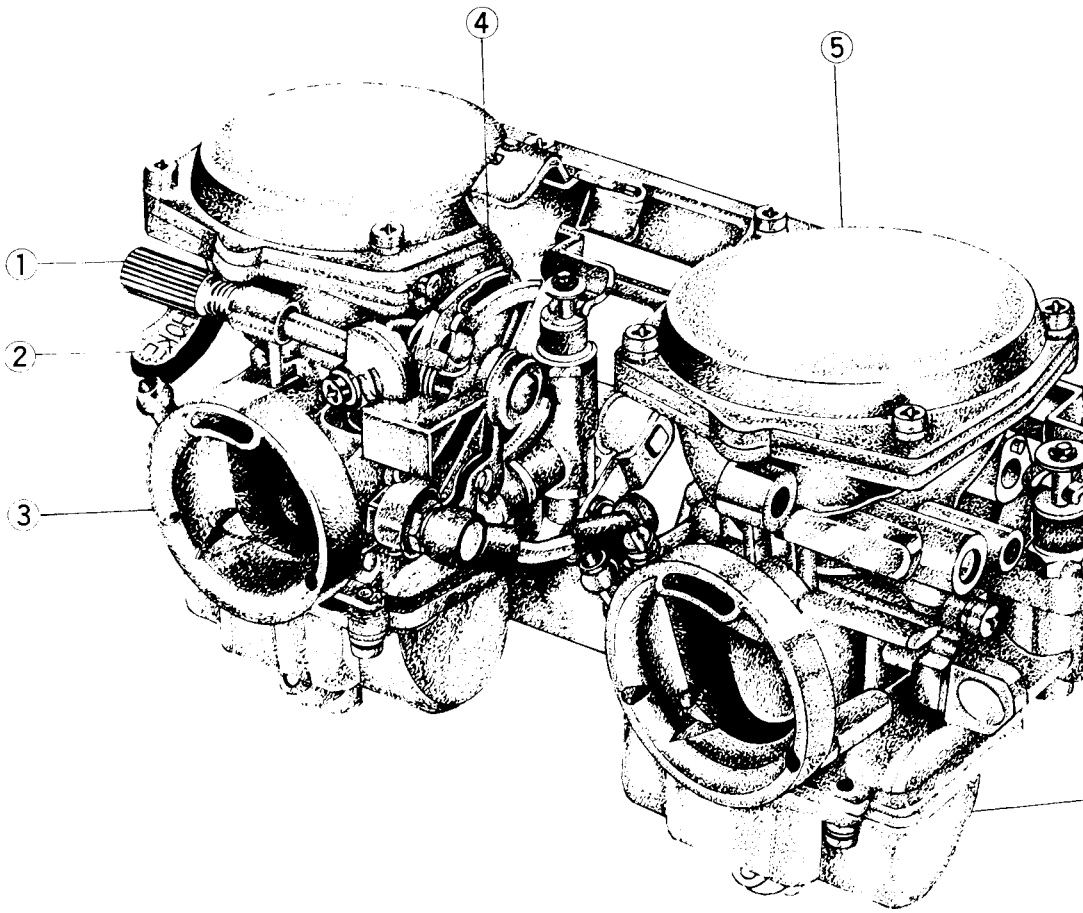
Carburetors

1. Idling Screw
2. Choke Lever
3. Carburetor Body
4. Pully
5. Carburetor Cap
6. Linkage Mechanism
7. Starter Plunger Unit
8. Float Bowl



of carburetor operation, special adjustments, and the checking and replacement of carburetor parts.

A linkage mechanism turns each carburetor butterfly valve the same amount in response to throttle grip movement so that the carburetors operate in unison. As the throttle grip is turned counterclockwise, the throttle accelerator cable turns the carburetor pulley. Through the linkage mechanism the pulley opens the butterfly valves. As the throttle grip is turned clockwise or is released, the linkage mechanism return spring, together with the throttle decelerator cable, closes the butterfly valves.

One of the basic principles in carburetor operation is that the pressure exerted by a moving body of air is less than atmospheric pressure. As the engine draws air in through the carburetor bore, the air pressure in the carburetor bore is less than the air pressure in the float chamber, which is vented to the atmosphere. This difference in air pressure forces fuel up through passages into the carburetor bore, where it is atomized by the high-speed air flowing into the engine.

Another important principle is the Venturi Principle, which states that when an air passage narrows, moving air flows faster, exerting even less pressure. For example, at low speeds (0 ~ % throttle) the vacuum piston is at its lowest position, forming what is called the "primary venturi". In this position, the vacuum piston constricts the air passage to increase air flow speed over the jets. Thus, even at low engine speeds, there is enough pressure differential to force the necessary amount of fuel into the air stream.

The amount of fuel passing through a jet depends both on the size of the jet (variable in the case of the needle jet) and on the speed of the air flow over the jet. The speed of this air flow is in turn determined both by the engine rpm and by the dimensions of the passage (varied by the vacuum piston) just above the jet. The size of the jet openings, the various dimensions of the air passages, and the engine rpm are correlated through carburetor design so that, when properly adjusted, the carburetor meters the fuel and air in the correct proportions at different throttle openings.

The ratio of fuel-to-air at different throttle openings depends on a number of factors, but alteration of the ratio is primarily controlled by the following:

0~1/4 throttle pilot screw
¼-3/4 throttle jet needle position
¾-1 throttle main jet size

The carburetor specifications (Table 11) have been chosen for best all around performance, and ordinarily will not require any change. However, sometimes an alteration may be desirable for improved performance under special conditions when proper mixture is not obtained after the carburetor has been properly adjusted,