Carburetor

GENERAL DESCRIPTION

The fuel system consists, basically, of a fuel supply tank, fuel shut-off valve, fuel strainer, carburetor, intake-exhaust manifold, air cleaner and a variable speed governor.

Liquid fuel flows from the supply tank by gravity through the fuel strainer and sediment bulb to the carburetor. Air enters these naturally aspirated systems through the air cleaner, where dirt and abrasive material are removed.

Clean air and fuel is metered to the engine by the carburetor; in varying proportions to meet the changing demands of load and speed. The variable speed governor controls the carburetor throttle to admit a greater or lesser volume of air-fuel mixture. This supports the operator's demand for engine speed, and provides power to maintain that speed, up to the capacity of the engine.

The operation, inspection, repair and adjustment of the various parts of the fuel system are covered in the following divisions of this service manual section, under appropriate major headings.

CARBURETOR OPERATION

The function of the carburetor is to meter the required amount of fuel to meet varying demands of engine load and speed, and to discharge this fuel into the intake air stream in as fine a spray as possible.

The air-fuel ratio is not constant for all loads and speeds. Idle and low speeds require rich fuel mixture; full load, full speed operation requires the leanest fuel mixture. The modern carburetor with its air-bleed-well method of compensation, will give these proportionate air-fuel mixtures to meet load-speed demands, resulting in smooth, economical engine performance. To simplify the explanation of how the carburetor functions, we will divide it into four systems and discuss each, separately.

- FUEL SUPPLY SYSTEM
- IDLING SYSTEM
- LOAD SYSTEM
- STARTING SYSTEM

Fuel Supply System

The fuel supply system is that portion of the carburetor consisting of the fuel inlet strainer, fuel needle valve and seat, fuel float, fuel bowl and the bowl air vent.

The function of the float and fuel needle valve is to maintain an even level of fuel in the bowl. The float assembly consists of a float-body soldered to a float lever. This assembly hinges on the float axle supported by a bracket on the bowl cover. Fuel from the supply tank enters the bowl through the inlet strainer and the float needle valve. As the level of fuel rises in the bowl, the float is carried upward until the float lever forces the needle valve against its seat, stopping further inflow of fuel.

While the engine is in operation, fuel flows from the bowl through the main metering jet to the load system or idling system and the float valve maintains just enough opening to sustain a constant level of fuel in the bowl.