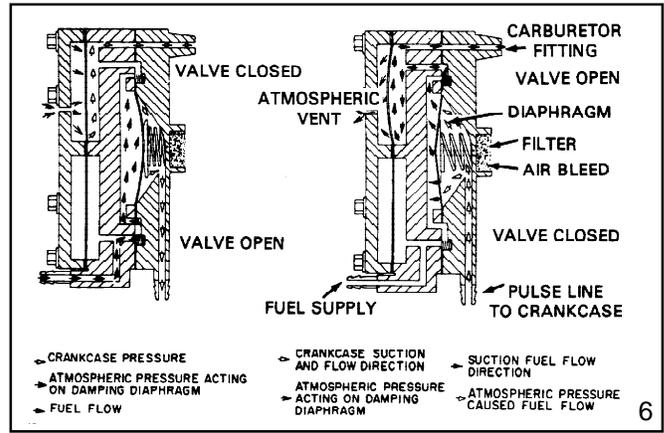


IMPULSE FUEL PUMPS

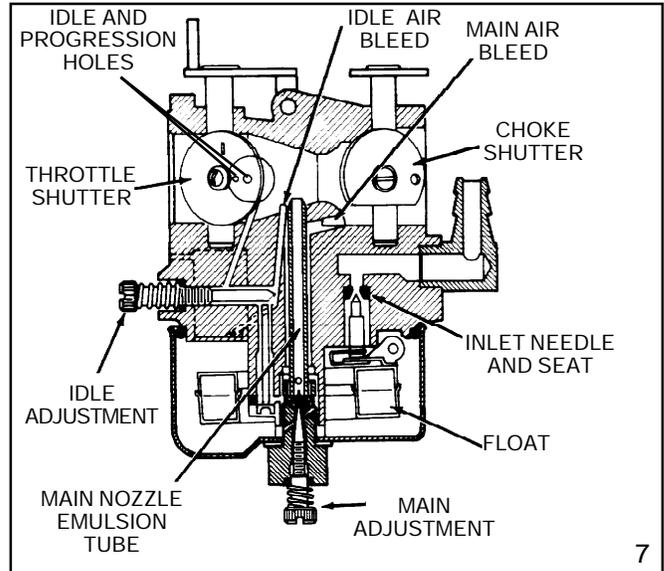
Impulse fuel pumps may either be mounted externally onto the carburetor fuel inlet or remotely mounted. These pumps are connected in the fuel line between the fuel supply and the carburetor or directly to the fuel inlet.

Impulse fuel pumps are operated by crankcase impulses created by the up and down movement of the piston. A hose called a pulse line connects the fuel pump diaphragm chamber to the crankcase and transmits these impulses to the pump diaphragm. The impulses actuate the diaphragm and flap valves to lift the fuel from the fuel tank to the carburetor (diag. 6).



FLOAT STYLE CARBURETORS

A float is used to maintain the operating volume of fuel in the carburetor bowl. As the fuel is used by the engine, the fuel volume in the carburetor bowl drops and the float moves downward. This allows the inlet needle valve to move off the sealing seat. Fuel flows by gravity or a pulse pump into the fuel bowl. As the fuel volume in the bowl again rises, it raises the float. This upward float motion moves the inlet needle valve to the closed position. When the needle contacts the seat, the fuel flow is stopped. The tapered end of the inlet needle varies the fuel flow rate so that the fuel volume in the carburetor bowl will remain constant (diag. 7). The float height is set according to the service procedure.



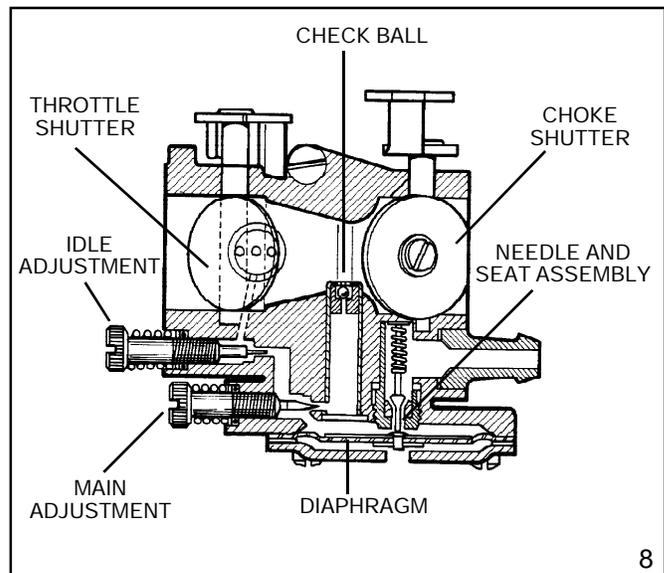
DIAPHRAGM (PRESSURE DIFFERENTIAL) CARBURETORS

This type of carburetor uses a rubber-like diaphragm which is exposed to intake manifold pressure on one side and to atmospheric pressure on the other. Tecumseh diaphragm carburetors use the diaphragm as a metering device. As the intake manifold pressure decreases due to downward piston travel, the atmospheric pressure on the vented side of the diaphragm moves the diaphragm against the inlet needle. The diaphragm movement overcomes the spring tension on the inlet needle and moves the inlet needle off the seat. This permits the fuel to flow through the inlet valve to maintain the correct fuel volume in the fuel chamber. The inlet needle return spring closes the inlet valve when the pressure on the diaphragm equalizes or a pressure higher than atmospheric exists on the intake side (upward piston travel). The diaphragm meters a correct fuel volume in the fuel chamber to be delivered to the mixing passages and discharge ports (diag. 8).

A main or idle adjustment needle may be replaced by an internally fixed jet on some models.

The main nozzle contains a ball check valve. The main purpose of this ball check is to eliminate air being drawn down the main nozzle during idle speeds and leaning the idle mixture.

An advantage of the diaphragm carburetor over the float system is that the diaphragm carburetor increases the angle that the engine may be operated at.



COMPONENTS

Loosen screw until it just clears throttle lever, then turn screw in 1 turn.

Place detent reference mark to proper location.

Check spring for return action and binding.

Remove welch plug and blow air through air passages.

Remove adjustment screw. To adjust 20° slant engines, the engine must be mounted in its normal 20° slant position.

Check ball is not serviceable on some models.

*NON METALLIC ITEMS - CAN BE DAMAGED BY HARSH CARBURETOR CLEANERS

COMPONENTS:
 IDLE SPEED ADJUSTMENT SCREW
 THROTTLE SHAFT AND LEVER
 DETENT REFERENCE MARK ON THROTTLE SHUTTER
 THROTTLE SHUTTER
 THROTTLE SHAFT RETURN SPRING
 IDLE
 IDLE PROGRESSION HOLE
 IDLE AIR BLEED
 *IDLE MIXTURE ADJUSTMENT SCREW AND "O" RING (If Present)
 *MAIN MIXTURE ADJUSTMENT SCREW AND "O" RING (If Present)
 WELCH PLUG (If Present)
 *MAIN NOZZLE CHECK BALL (If Present)
 CHOKE SHAFT AND LEVER
 CHOKE SHUTTER
 MAIN NOZZLE
 *INLET FITTING SCREEN
 *INLET FITTING
 *INLET SEAT GASKET
 *INLET NEEDLE SEAT AND SPRING ASSEMBLY
 *DIAPHRAGM GASKET
 *DIAPHRAGM
 ATMOSPHERIC VENT HOLE

Check shaft for binding. Position shutter opening towards inlet fitting side or air horn.

Blow air through passage.

Part of inlet fitting. If fuel is restricted, clean or replace fitting.

Bulb primer models have Viton* one way valve, in or behind fitting.

Remove and replace.

Proper installation of assembly is important.

Gasket and diaphragm sequence may be reversed on some models. Head of rivet must touch inlet needle. Rivet is hooked into inlet needle control lever on some models.

Hole must be clean. On models with bulb primer, vent hole is very small and is located off center.

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Blow air through passage.

Check shaft for looseness or binding. Shutter must be positioned with detent reference marks on top parallel with shaft and to the right or 3 o'clock position.

Check spring for return action and binding.

Remove idle adjustment screw. Check needle tip and condition of "O" ring. Remove welch plug and blow out all passages.

NOTE: On models which have metering rods, do not install idle adjustment screw with carburetors upside down, as pin will obstruct movement of adjustment screw causing damage.

*NON METALLIC ITEMS - CAN BE DAMAGED BY HARSH CARBURETOR CLEANERS

COMPONENTS:
 IDLE AND INTERMEDIATE AIR BLEED
 THROTTLE SHAFT AND LEVER
 THROTTLE SHUTTER
 DETENT REFERENCE MARK
 THROTTLE SHAFT RETURN SPRING
 IDLE AND INTERMEDIATE ORIFICES
 IDLE AND INTERMEDIATE FUEL CHAMBER (COVERED WITH WELCH PLUG)
 IDLE AND INTERMEDIATE FUEL MIXTURE PASSAGE
 *IDLE ADJUSTMENT SCREW AND "O" RING
 ATMOSPHERIC VENT
 SOFT BAFFLE PLUG
 IDLE AND INTERMEDIATE FUEL TRANSFER PASSAGE
 METERING ROD OR PIN IN FUEL TRANSFER PASSAGE
 BALL PLUG (DO NOT REMOVE)
 CUP PLUG
 IDLE AND INTERMEDIATE FUEL TRANSFER PASSAGE
 IDLE AND MAIN FUEL PICK UP ORFICE
 IDLE SPEED ADJUSTMENT
 MAIN NOZZLE (EMULSION TUBE)
 CHOKE SHAFT AND LEVER
 CHOKE PLATE
 HIGH SPEED AIR BLEED
 INLET FITTING
 *INLET NEEDLE AND SEAT
 *FLOAT BOWL GASKET
 FLOAT SHAFT
 INLET NEEDLE CLIP (If Present)
 IDLE FUEL TRANSFER PASSAGE AND ANNULAR GROOVE
 FLOAT
 FLOAT BOWL
 *GASKET
 NUT AND MAIN ADJUSTMENT SEAT
 *MAIN ADJUSTMENT SCREW AND "O" RING SEAL

Loosen screw until it just clears throttle lever, then turn screw in one turn.

Removable on emission carbs. non-metallic only.

Check shaft for binding position opening to bottom of air horn.

Blow air through passage. Do not remove restrictor if present.

Proper installation is important.

Replace.

Must hook over float tab.

Check float for leaks or dents. Clean bowl and adjust float level position gasket or gaskets.

If the carburetor is used on a 20° slant engine, the engine must be in its normal 20° slanted position for adjustment.

Check needle for damage and "O" ring for cracks. Clean all passages in nut with compressed air.

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