McCULLOCH

SERVICE BULLETIN # 1129

MODEL 1-61

DATE 7/20/61

SUBJECT PREVENTING STALLING AND POWER LOSS DUE TO FUEL PUDDLING

When Model 1-61 chain saw engines are operated for a prolonged period without a change in the position of the chain saw, fuel puddling can result. Fuel puddling occurs at idling speed because the velocity of the air passing through the carburetor venturi is not great enough to break the fuel mixture into a fine spray. Because the fuel mixture is not broken into this fine spray, the heavier, non-combustible elements in the fuel, will collect in large droplets around the reed valve assembly and on the sides of the fuel transfer passage. As long as the idling Model 1-61 stays in the same position or attitude, the large droplets will not affect the engine operation. When the idling chain saw is moved to a cutting position, the droplets have a tendency to flow towards the lowest point in the fuel transfer passage and collect or puddle together. When the low point is near the fuel transfer passage ports, the puddled fuel will be drawn into the combustion chamber.

When any puddled fuel, consisting of these heavy elements, enters the combustion chamber at idling speed, there is not enough of a proper fuel/air mixture with it to keep the engine running and as a consequence the engine will load up and stall.

To eliminate troubles caused by fuel puddling and to obtain more effective vaporization of the fuel in the crankcase, the reed valve assembly and its associated parts are replaced with new, improved parts as follows:

1. A redesigned Reed Plate, P/N 57656A, with an 0.095-inch (0.241-cm) diameter hole drilled through it. The hole induces an agitating effect which breaks up the droplets of heavy elements collecting on the reed plate.

2. A Reed Valve, P/N 51809A, which has been redesigned for use with the new reed plate.

3. A Fuel Deflector, P/N 57654 is used to guide the fuel/air mixture, along with the broken-up droplets, directly into the crankcase. (The heavy elements entering the crankcase will not interfere with the engine operation and will be burned during the first few minutes of high speed operation).

4. A Reed Clamp, P/N 57658, is used to reinforce the fuel deflector and help hold it in position.

COPYRIGHT 1961 McCULLOCH CORPORATION

LITHO IN U.S.A.

5. An Insulator (gasket), P/N 57657, is used as a spacer to prevent the end of the fuel deflector hitting on the crankcase.

6. A new Gasket, P/N 57145, for installation between the airbox and the reed plate assembly.

A complete list of the new or improved parts is as follows:

Quantity	Part No.	Part Name	Quantity	Part No.	Part Name
1	57145	Gasket - Airbox	1	57657	Insulator - Gasket
1	57656A	Reed Plate	1	51480	Lockplate
1	51809A	Reed Valve	1	57658	Reed Clamp
2	103740	Screw 8-32x5/8 in. lg.	1	57654	Fuel Deflector

Installation of the fuel deflector and the reed valve assembly on Model 1-61 engines is as follows:

1. Drain the fuel tank.

2. Remove the airbox cover and the air filter element.

3. Disconnect the choke and throttle control rods. Disconnect the fuel hose from the fuel pump connection and remove the carburetor.

4. Remove the chain guard and the two screws attaching the forward bottom of the fuel tank to the gearcase top brace (see figure1).

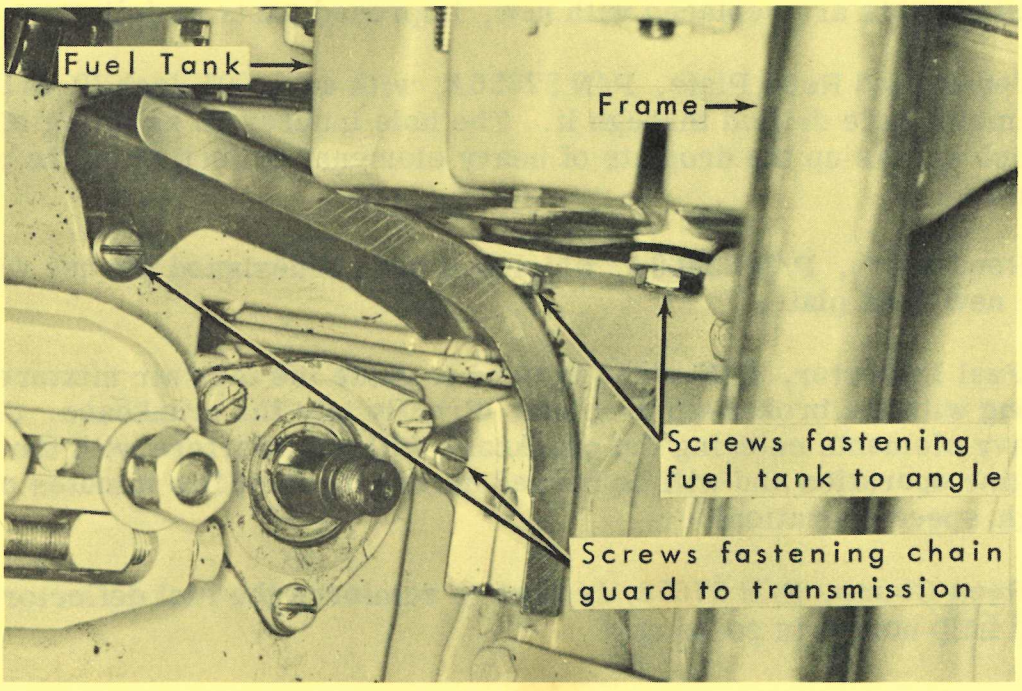


FIGURE 1

5. Remove the five screws fastenting the frame brace to the fuel tank top. Then remove the two screws from the rear top of the fuel tank (see figure 2).

6. Lift the fuel tank and remove the clamp and fuel hose from the tank connection. (The fuel hose does not have to be removed from the airbox.) Remove the fuel tank.

7. Remove the screw fastening the end of the airbox handle to the handle brace. Remove the two screws holding the airbox assembly to the crankcase. The airbox can now be removed by lifting it up and toward the cylinder head to disengage the oiler pushrod from the oiler rod extension.

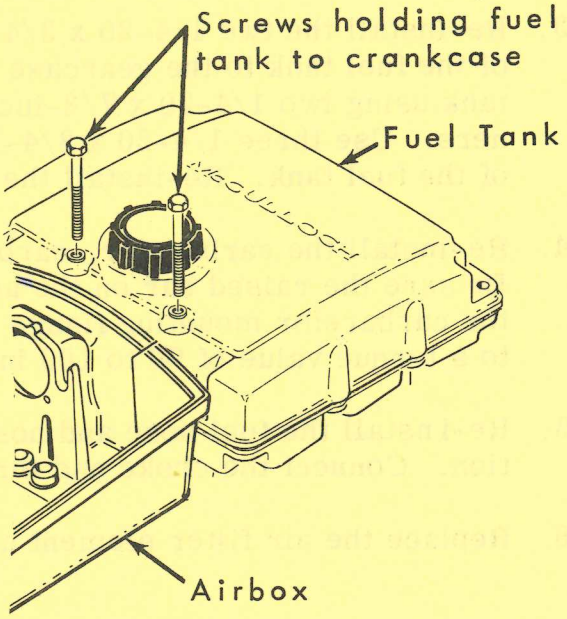


FIGURE 2

8. Remove the two screws fastening the reed valve assembly to the airbox. Remove the reed valve assembly and gaskets from the air box and discard them.

9. Using the new Screws, P/N 103740, and the new Lockplate, P/N 51480, install the new Reed Clamp, P/N 57658, the Fuel Deflector, P/N 57654, the new Reed Plate, P/N 57656A, the new Reed Valve, P/N 51809A, and the Airbox Gasket, P/N 57145, on the airbox (see figure 3, last page). Tighten the screws, fastening the reed valve assembly to the airbox, to a torque value of 30 to 35 inch-pounds (2-1/2 to 3 foot-pounds). Lock the screws in place by bending the lockplate ends up against the screw heads.

10. Place the Insulator, P/N 57657, on the crankcase over the fuel transfer passage and place the airbox assembly in position on the crankcase. Be sure the oiler push rod enters the sleeve on the oiler rod extension.

11. The two rear screws (removed in step 7 above) can now be started through the airbox, reed plate assembly and insulator. Tighten the screws just enough to hold the airbox in place. Re-install the screw holding the airbox handle to the handle brace.

12. Set the fuel tank in place and install the fuel hose and clamp on the tank connection. Re-install the two 10-24 x 3 inch long screws and fasten the fuel tank and the forward end of the airbox assembly to the crankcase. Tighten the four airbox-to-crankcase attaching screws to a torque value of 55 to 60 inch-pounds (4-1/2 to 5 foot-pounds).

13. Re-install the two 1/4-20 x 3/4-inch long screws holding the forward end of the fuel tank to the gearcase brace. Install the frame brace on the fuel tank using two 1/4-20 x 7/8-inch long screws and nuts at the fuel tank corners. Use three 1/4-20 x 3/4-inch long pan head screws along the front of the fuel tank. Re-install the chain guard.

14. Re-install the carburetor, carburetor gaskets and the carburetor adapter. Be sure the raised bar on the adapter rim lines up with the raised bar on the carburetor mounting flange of the airbox. Tighten the carburetor screws to a torque value of 90 to 100 inch-pounds (7-1/2 to 8-1/3 foot-pounds).

15. Re-install the fuel hose and hose clamp on the carburetor fuel pump connection. Connect the choke and throttle control rods.

16. Replace the air filter element and the airbox cover.

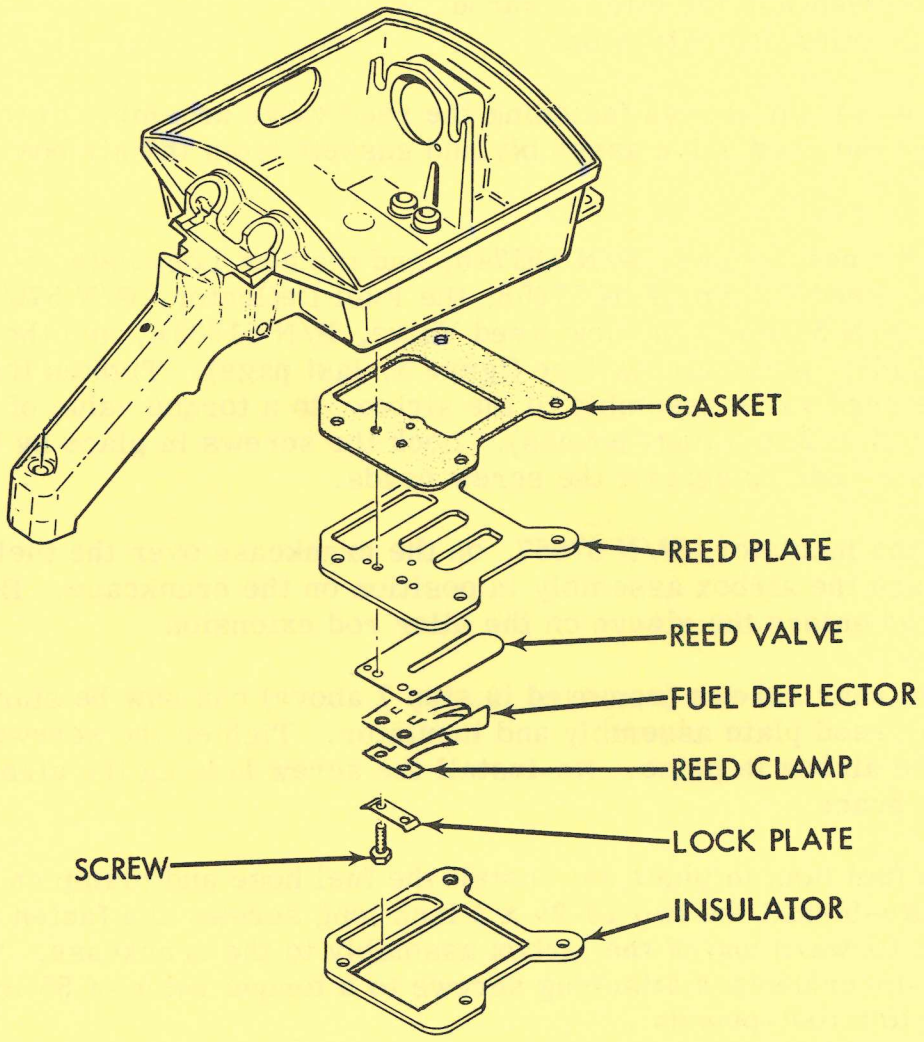


FIGURE 3