SERVICE BULLETIN #1030

McCULLOCH

MODEL MAC D30 – D36 DATE 8/11/58

SUBJECT LUBRI-MAC Operation and Service Instruction, and Chain Installation Procedure

With the use of LUBRI-MAC, the condensate-type chain oiler, in McCulloch chain saw engines, Models MAC D30 and D36, a new system is incorporated that requires understanding by both the servicing mechanic and user if optimum results are to be obtained from it.

This bulletin is intended to provide you with an understanding of the condensate-type chain oiler; of how it functions; its service requirements; and chain installation and break-in procedures.

FUNCTION: The condensate-type chain oiler provides a continuous flow of lubricant to the bar and chain so long as the engine is running. It accomplishes this by picking up a portion of the oil from the fuel mixture that enters the crankcase from the carburetor, and then passing this mixture through a valvular passage onto the bar and chain. The functioning of this system, basically, is as follows:

As fuel enters the crankcase a portion of the mixture is retained by the Condensate Oil Pickup, P/N 50138, (A) (See Figure 1). The mixture retained by the pickup is forced by crankcase pulse pressure, through passage (B), past Valve Seat, P/N 50171, (C) and out passage (D) onto the bar and chain. Disc Valve, P/N 50174, (E) is forced against Valve Seat (C) by spring (F), P/N 50173 and crankcase suction when pulsating action in the crankcase would normally pull the lubricant in the passages back into crankcase. This Valve Disc prevents possible air locks in the system once it has been primed. It also prevents possible air leaks through the passage into the crankcase.

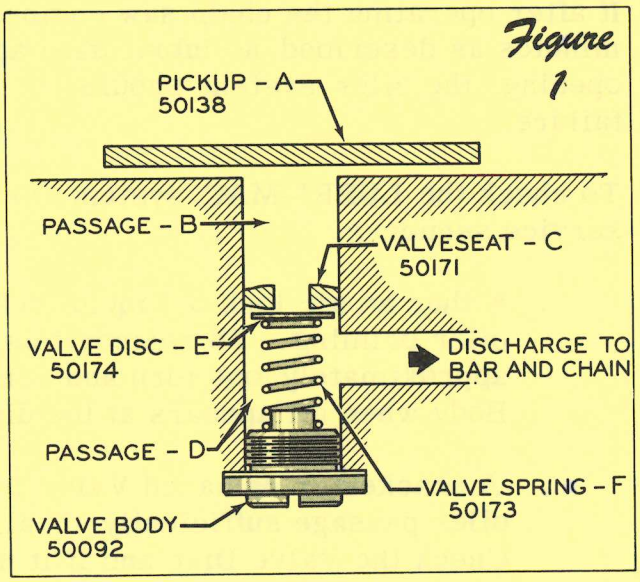


Figure 1

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NOTE: Under normal operating conditions a new saw or one that has been stopped for lack of fuel will require approximately 90 seconds running time to sufficiently saturate the Condensate Oil Pickup in order to provide a continuous and adequate supply of lubrication to the chain. This priming time can be accelerated by depressing the choke button slightly while the engine is running.

LUBRI-MAC SERVICE INSTRUCTIONS

As with any chain saw the chain oiler should be checked to make certain it is functioning before a new chain is installed. To check the LUBRI-MAC, start the engine with the bar and clutch guard removed.

CAUTION

Make certain clutch rotor is securely tightened onto crankshaft before starting engine.

Run the engine at about half throttle and while the engine is running, hold a piece of paper in front of the chain oiler discharge opening. If the oiler is functioning properly a spray of oil will appear on the paper. If oil does not appear, depress the choke button just enough to slow the engine down, but not enough to stop the engine, and hold for several seconds. This will permit a greater volume of fuel to enter the crankcase and will hasten saturation (priming) of the Condensate Oil Pickup.

If after operating the chain saw engine for a maximum of two and one-half minutes as described, no lubrication appears from the chain oiler discharge opening, the oiler system should be checked to determine the cause of failure.

To check the LUBRI-MAC system for cause of failure, use the following service sequence.

- Either an air lock or liquid lock in the oiler system can prevent oiler priming. To remedy this, loosen Valve Body, P/N 50092, approximately one turn and run the engine. Tighten the Valve Body when oil appears at the discharge opening.

- A cracked or damaged Valve Disc, P/N 50174, will not seal the oiler passage sufficiently to allow full flow of lubricating oil. Check the Valve Disc and if it is cracked or damaged replace it.

. A distorted Valve Spring, P/N 50173, will prevent the Valve Disc from resting flush against the Valve Seat. This will permit leakage back into the crankcase which can result in a loss of lubrication at the chain oiler discharge opening.

. Check the spring for kinks and make certain that not more than one and one-half turns of spring coil are about the Valve Body locating boss. (See Figure 2.)

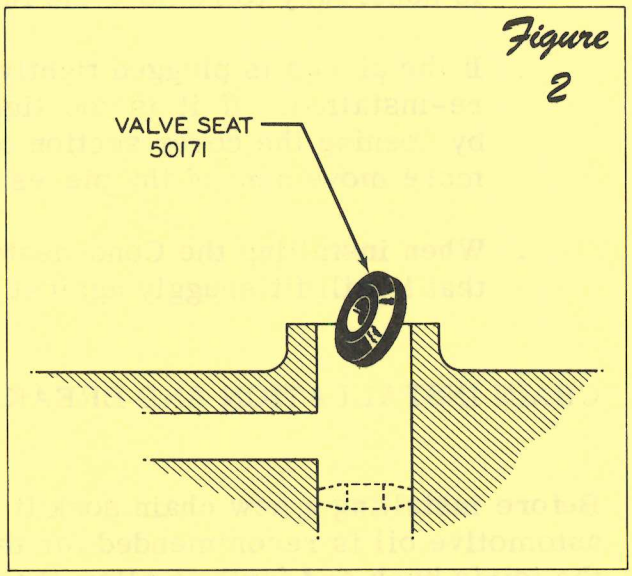


Figure 2

. If the Valve Seat, P/N 50171, is cracked or torn the condensate-type chain oiler will not function properly. If the Valve Seat is damaged it should be removed and a new one installed.

. CAUTION: When installing the Valve Seat, insert it endwise in the valve opening (See Figure 3) and push it all the way back to its seat before turning it into position. If the Valve Seat is not installed in this manner there is a possibility of its being damaged by the sharp edges of passage (D), (See Figure 1.) as it is pushed into place.

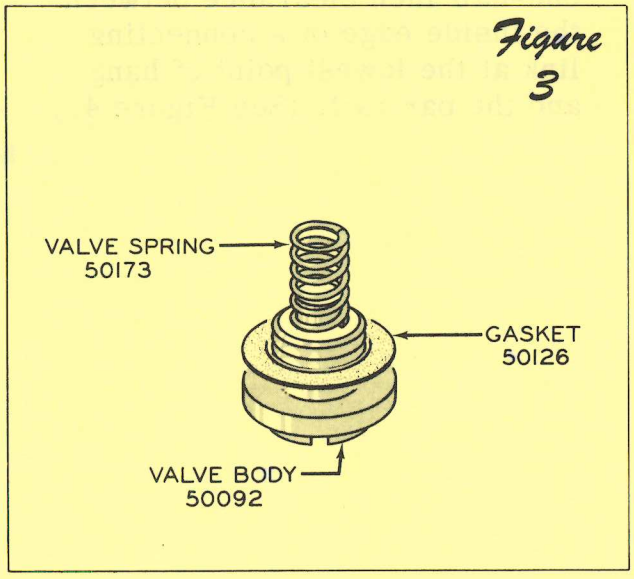


Figure 3

- The Condensate Oiler Pickup, P/N 50138, should pick up excess fuel mixture freely. If for any reason the pickup becomes plugged or is too tightly compressed, fuel/oil mix will not collect in sufficient quantity for maximum discharge. To check the pickup it is necessary to remove the fuel tank.

- If the pickup is plugged tightly it should be cleaned thoroughly and re-installed. If it is too tightly compressed, it can be loosened by opening the cover section of the pickup and refolding it to allow more movement of the pieces within.

- When installing the Condensate Oiler Pickup, form it slightly so that it will fit snuggly against the crankcase when in place.

CHAIN INSTALLATION AND BREAK-IN PROCEDURES

Before installing a new chain soak it thoroughly in oil. Thirty-weight automotive oil is recommended for this. With the chain in oil, move the joints back and forth to allow the oil to work around the rivets and rivet holes. This practice should be followed when installing any new chain on any saw.

With the chain installed, adjust the chain tension so that, hanging free, there will be at least one-half inch clearance between the inside edge of a connecting link at the lowest point of hang and the bar rail. (See Figure 4.)

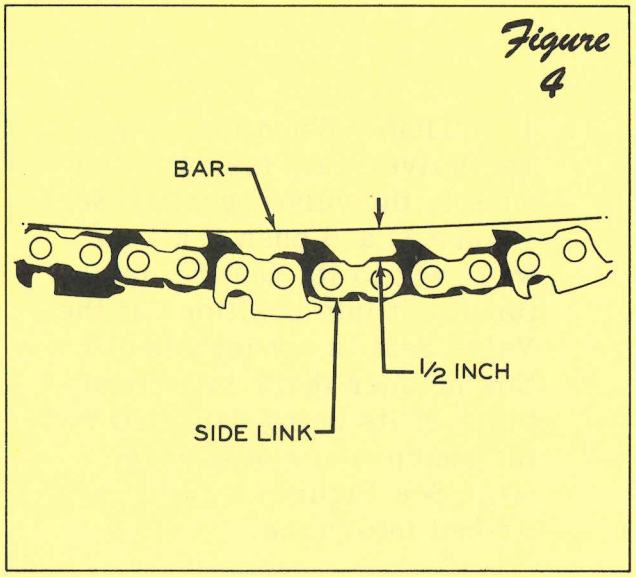


Figure 4

With the chain installed and adjusted, start the engine and run it at half throttle for several minutes. While running the saw, depress the choke button until the engine noticeably slows down. After running the saw a maximum of two and one-half minutes as described, the condensate-type chain oiler system should be working satisfactorily.

You can check whether or not the LUBRI-MAC is operating satisfactorily with the chain in place. This is accomplished by merely observing the chain joints after the engine has been run for several minutes and then stopped. If just a trace of oil appears at the top edge of the chain between the joints, the oiling system is working.

REMEMBER: LUBRI-MAC oils the chain constantly while the engine is running. And it oils the chain and bar at precisely the correct place to provide maximum lubrication protection and it does this without loss or waste of lubrication. Because of this, then, it is not necessary to provide oil in heavy quantities and as a result, only traces of oil will be observed by the user.