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MANUAL PREVIEW

Caterpillar
Operator's Manual
#10 Auto Patrol
S/n 9F1 & up

Operator's Manual

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CT-O-10 GRDR

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Lubrication

Detailed instructions regarding the lubrication of this machine are given on the folded LUBRICATION CHART on the following page. Careful attention to these instructions and the proper selection of the oil to be used will add much to performance, reliability, economy and long life of your machine.

It is important to use the type of oil that is best suited to your machine—taking into account the current outside temperature and the temperature range which is likely to be experienced before refilling again.

Practically all oil companies have adopted the S.A.E. (Society of Automotive Engineers) viscosity number system—which classifies oils in terms of viscosity or fluidity. The oils with the lower numbers are lighter, and flow more readily than do the oils with higher numbers. The S.A.E. number refers only to the viscosity of the oil, and has no reference to any other characteristics or properties.

In preparing to refill with fresh oil, any compartment should be drained when it is warm—it is best to drain after the machine has run for some time. Most of the sediment will then be in suspension, and therefore, will readily drain.

The following recommendations give the grades of oil best suited for use in your machine for the various operating temperatures.

Crankcase Lubricating Oil: S.A.E. 30 oil will continue to be satisfactory for the crankcase and air cleaner in freezing ($0^{\circ}\text{C}.$) and sub-zero ($-18^{\circ}\text{C}.$) weather, where warm storage for the machine is provided. 20W should be used only for extremely cold weather conditions, particularly when the machine must remain out of doors and is not operating for long periods of time. In such cases 20W is needed for cranking ability and the immediate establishment of oil circulation. Under the same conditions, use 10W oil in the air cleaner.

Naturally, any precautions taken to house the machine or to cover it with a tarpaulin, or to warm the engine before starting will cause better immediate oil distribution and contribute to quicker starting. When the engine is excessively cold the cooling system liquid and crankcase lubricating oil may be drained and heated to assist in starting and to assure immediate distribution of oil. The engine should always be allowed to idle for a few minutes after starting to assure adequate lubrication before operating on normal load.



FUEL CONTROL LEVER POSITIONS ON ENGINES EQUIPPED TO BURN "TRACTOR FUEL"

1—Main tank position for running with "tractor fuel." 2—Off position for shutting off both gasoline and "tractor fuel." 3—Aux. tank position for starting with gasoline.

rod forward. Grasp the crank in the left hand and engage the ratchet by pushing the crank in with the right hand. Stand with the right hand resting on the right side of the radiator and pull the crank over the top part of its circle. Repeat until the engine starts. **Do not spin the crank** as this may cause the impulse starter to release and the engine to back-fire. Allow the engine to run until it warms up. Be sure that the cooling system has been filled and that the lubricating oil pressure gauge is registering the correct pressure. When the engine is warm the operating pressure is approximately 30 pounds.



CORRECT POSITION FOR CRANKING THE ENGINE

1—Choke control rod.

Do not spin the crank as this may cause the impulse starter to release and the engine to backfire. Temperature and altitude will change the length of time necessary to crank with the choke on. Actual experience in starting will determine this interval. Allow the engine to run until it warms up. Be sure that the cooling system has been filled and that the lubricating oil pressure gauge is registering the correct pressure. When the engine is warm the operating pressure is approximately 30 pounds.

The spark is retarded for starting by the action of the impulse starter in the magneto. After starting, the impulse starter releases and the engine operates with the spark set at the correct advance position.

If the engine is cold, starting will be easier if the cylinders are primed. A tablespoonful of gasoline in each priming cock is ample. See the topic, OPERATING IN COLD WEATHER.

Avoid over-choking or over-priming the engine when starting it. If the engine is flooded from either of these causes it should be cranked several times with the choke "OFF" to dissipate the excess fuel.

If, after following the procedure outlined in the previous paragraphs, the engine fails to start when cranked a few times, make an inspection at the various points where difficulty may arise. Be sure that the carburetor contains gasoline. If in doubt, open the drain valve on the carburetor float bowl. If the fuel is not reaching the carburetor, operate the fuel pump priming lever. If the glass bowl on the fuel pump is not full, inspect the fuel tank for shortage. If there is fuel in the tank, inspect the fuel line and screens to see if they are clogged. See the topic, CARE OF THE FUEL SYSTEM. See that the magneto is functioning. Check as outlined under the topic, MAGNETO.

MANIFOLD HEAT CONTROL

On engines equipped to burn "tractor fuels", the heat exchange valve is located at the left side of the engine in the hot air valve body between the two manifolds. The position "1", allows the exhaust from only two cylinders to be diverted around the inlet manifold. This is the correct setting for burning gasoline or similar fuels of high vaporizing



HEAT EXCHANGE VALVE IN "TRACTOR FUELS" MANIFOLD
1—Setting to use gasoline. 2—Setting to use "tractor fuels."