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3. Drain first stage fuel filter daily. This will also prevent ice damage to the filtering element where freezing temperatures are encountered.

4. DO NOT USE WASTE OR LINTY RAGS AROUND FUEL CONTAINERS OR FUEL INJECTION EQUIPMENT.

5. Use of clean fuel and daily care of the first-stage filter will prolong the life of the final-stage filter. For further details see Section on Fuel Injection.

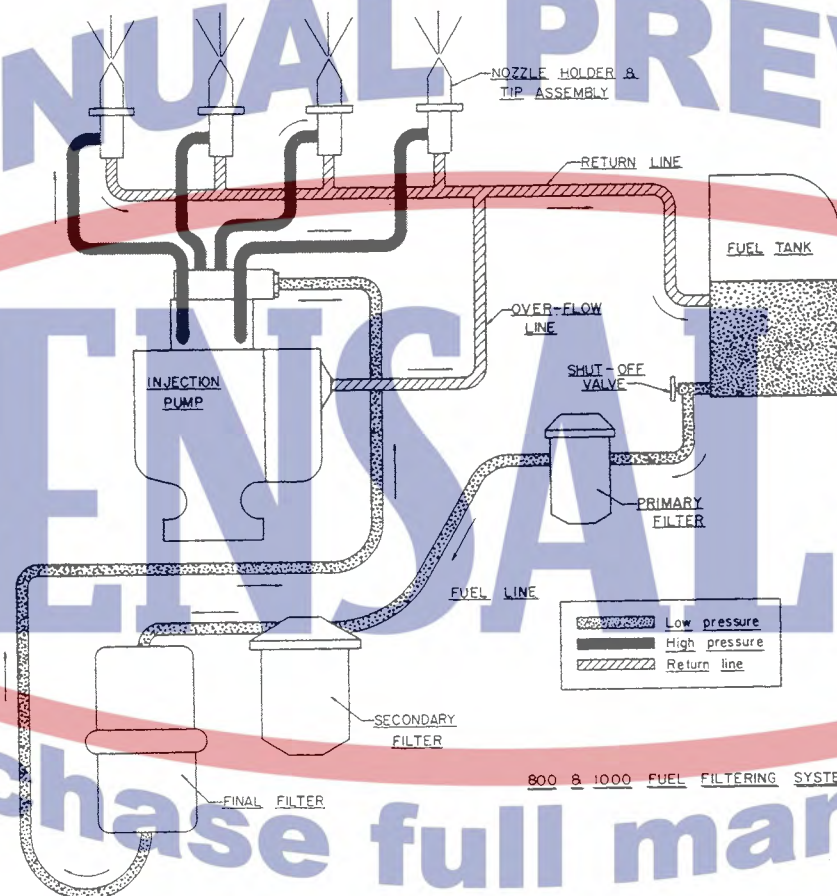


Figure 6 - Schematic of Fuel Filtering System

LUBRICATION RECOMMENDATIONS

Diesel engines operate with much higher pressures in the combustion chambers than their gasoline counterparts. Diesel fuels have much higher endpoints, that is, heavier ends of fuel which do not vaporize readily and burn completely. This results in a tendency to form deposits in the combustion area as well as in the ring grooves which could cause clogging of energy cells, rings sticking in the grooves and poor performance in general with resultant rapid wear and increased maintenance expense.

To counteract these conditions, the choice of fuels and lubricating oils must be made according to the specifications.

Except for the break-in period, designated elsewhere in this manual as the first 50 hours, select the grade of oil as shown in the preceding chart.

Continental Diesel Engines have full pressure lubrication through drilled passages in the cylinder block and crank shaft to all main and connecting rod bearings as well as to the timing gears and overhead valve rocker arms, the over flow from which lubricates the tappets. The oil pressure is automatically regulated by a spring loaded relief valve.

A by-pass type oil filter is provided to remove dirt and foreign elements from the oil, a percentage of which is passed through the filter during the operating period. The removal of grit, sludge, and foreign particles causes filter elements to clog and become ineffective unless they are replaced at regular intervals.

Oil filter elements or cartridges should be replaced at every oil change or approximately every 50 hours operation.

OIL CHANGE FREQUENCY

Engine oil does not "wear out". However, heavy-duty detergent in diesel engines becomes contaminated from by-products of combustion, dirt, water, and unburned fuel entering the crankcase and the detergents holding the carbon particles in suspension in the crankcase.

In normal industrial operation, Continental Diesel engines should have the oil and filter element changed after every 50 hours of operation. The oil should be drained when the engine is at normal operating temperature.

OIL PUMP

The oil pump on four cylinder diesels is mounted on the front bearing cap. It is a gear type pump driven by the timing gear on the crankshaft.

This pump rarely gives any trouble; if it does it can be readily removed and either repaired or replaced with a new one.

The normal oil pressure is 30 to 40 lbs. At idling speed it should not fall

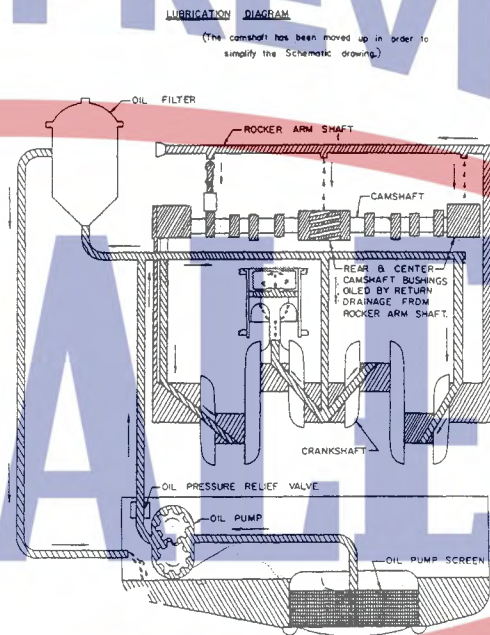


Figure 7 - Lubrication Diagram

(The camshaft has been moved up in order to simplify the schematic drawing.)

below 7 lbs. If the pressure fluctuates or falls below these limits, STOP THE ENGINE IMMEDIATELY, and find the cause to the trouble. Refer to engine overhaul for repairing.

AIR CLEANER

Diesel engines, when operating, consume several thousand cubic feet of air per hour. Since dusty air is full of abrasive matter, the engine would soon wear excessively if it was not protected by the air cleaner collecting dust in an oil cup.

Air cleaners are not 100% efficient, and their efficiency is DECREASED by the lack of proper servicing.

Proper servicing means cleaning thoroughly, refilling with new oil, and maintaining air tight connections between the air cleaner and the intake manifold so that all air entering the engine is filtered.

The number of hours an engine may be permitted to run before the air cleaner is serviced depends entirely on operating conditions, and no definite interval can be established. In extremely dusty operations this might be once or twice a day, while in dust free areas the air cleaner should be serviced when changing the oil.

Dirt and foreign particles, removed from the air, settle to the bottom of the air cleaner oil sump. This deposit must not be permitted to build up to any quantity. The speed at which this builds up indicates how often the air cleaner should be serviced.

IT REQUIRES ONLY A COMPARATIVELY SMALL QUANTITY OF ABRASIVE DUST TO WEAR OUT AN ENGINE. A planned air cleaner servicing program will increase the life of an engine.



Figure 8 - Air Cleaner



Figure 9 - Oil Filter

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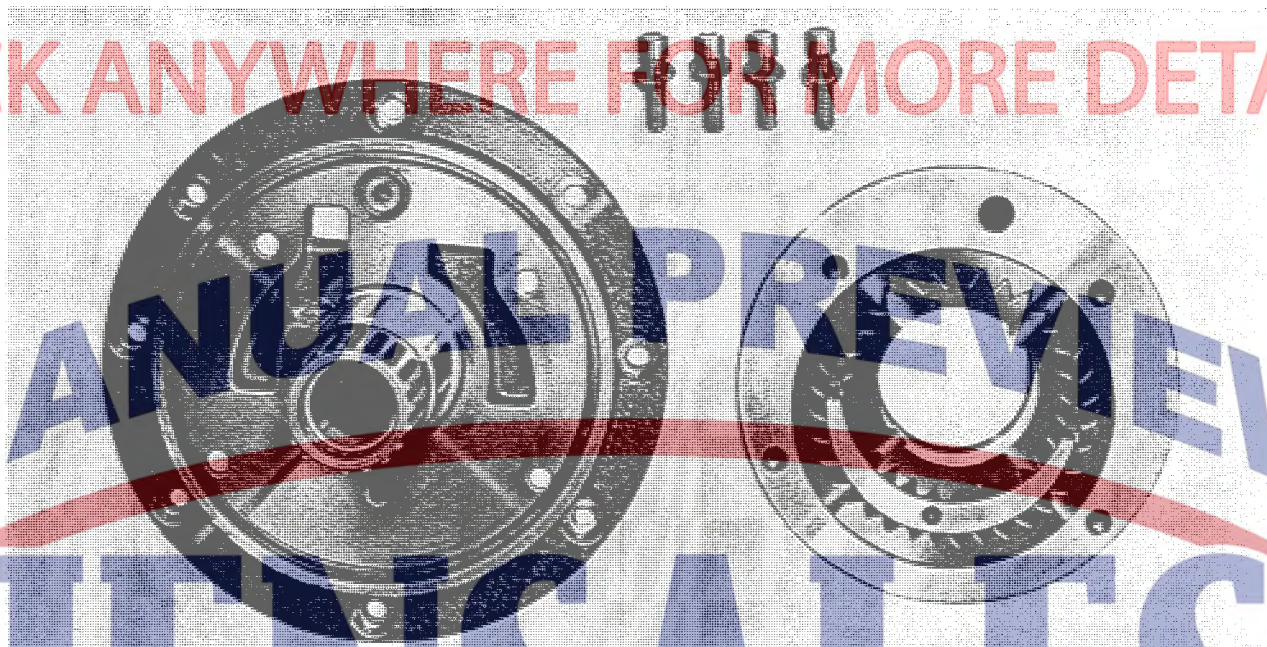


Figure 10 - Pump Gears and O-Ring

5. Seal in front pump housing is removed with a puller.
6. Inspect bushing on inside of stator spline for wear. Replace if necessary. Refer to Figure 10. Note pressure outlet O-ring.
7. Remove oil ring and snap ring from the turbine shaft.
NOTE: This shaft was removed when converter housing was removed from tractor.
8. Press bearing from turbine shaft.
9. Remove plug and pressure relief valve assembly from the rear, lower right of housing. Figure 11.
10. Cooler by-pass valve is removed from rear of housing by removing the retainer and spring. Figure 11.



Figure 11 - Removing Relief Valve

SECTION G - INSTALLING TORQUE CONVERTER IN TRACTOR

INSTALLING CONVERTER ASSEMBLY (DONUT) IN TRACTOR

1. Center converter on fly-wheel with pilot stub centered in pilot bearing.
2. Start all converter assembly mounting screws and turn until finger tight. DO NOT tighten at this time.

3. Using a small whetstone, remove the sharp edges on converter hub driving lugs. The seal located in the pump housing can be damaged when the converter housing is brought into place, if these sharp edges are not removed.



4. Coat converter hub lightly with clean lubricant. This allows the seal to slide in place. It also prevents seal from becoming glazed during the first few revolutions of the converter unit. Figure 12.

Figure 12 - Preparing Donut for Installation

INSTALLING TORQUE CONVERTER HOUSING IN TRACTOR

1. Bring housing over torque tube and position it straight behind converter unit.
2. Check location of notches on converter hub. Turn pump gear so driven lugs enter the notches on the converter hub when housing is brought forward.
3. Bring housing forward being careful not to damage the oil seal in the pump.
4. Start all screws holding converter housing to flywheel housing. Tighten securely.

REPLACING TURBINE SHAFT

1. Bring shaft through converter housing and into spline in turbine.
2. Install gasket and bearing retaining plate on rear of converter housing.

REPLACING LINES AND LINKAGE

1. Install the full flow filter assembly.
2. Connect lines and linkage to and around converter housing.
3. Install drive shaft and rear belly pan.

COMPLETING INSTALLATION

1. Turn engine over 4 or 5 times with starter. This centers the converter unit. CAUTION: Pull out fuel shut-off so engine cannot start.



Figure 13 - Tightening Donut Cap Screws

2. Reach through holes in flywheel housing and tighten converter unit mount bolts securely. Make sure to tighten all six bolts. Figure 13.



3. Fill transmission to level plug with type "C" torque converter fluid. Make sure level plug is removed to vent transmission.

4. Start engine and run for three to five minutes.

5. Check transmission level and add fluid if necessary.

6. Check converter pressure. Figure 14.

Figure 14 - Checking Converter Pressure