

LUBRICANTS

Engine Lubricating Oils



We recommend John Deere Torq-Gard Supreme Engine Oil for use in the engine crankcase. Torq-Gard Supreme is compounded specifically for use in John Deere engines and provides superior lubrication under all conditions. NEVER PUT ADDITIVES IN THE CRANKCASE. Torq-Gard Supreme Oil was formulated to provide all the protection your engine needs. Additives could reduce this protection rather than help it.

If Torq-Gard or Torq-Gard Supreme is not used, use an engine oil that conforms to one of the following specifications:

SINGLE VISCOSITY OILS

API Service CD/SD
MIL-L-2104C
Series 3*

MULTI-VISCOSITY OILS

API Service CC/SE, CC/SD, or SD
MIL-L-46152

* As further assurance of quality, the oil should also be identified as suitable for API service designation SD.

Depending on the expected prevailing temperature for the fill period, use oil of viscosity as shown in the following chart.

Some increase in oil consumption may be expected when SAE 5W-20 or SAE 5W oils are used. Check oil level more frequently.

Air Temperature	John Deere Torq-Gard Oil	Other Oils	
		Single Viscosity Oil	Multi-Viscosity Oil
Above 32°F.	SAE 30	SAE 30	Not recommended
-10°F. to 32°F.* *	SAE 10W-20	SAE 10W	SAE 10W-30
Below -10°F.	SAE 5W-20	SAE 5W	SAE 5W-20

* * SAE 5W-20 oil may be used where required to insure optimum lubrication at starting, particularly for an engine subjected to -10°F. or lower for several hours.

Transmission Hydraulic Oils

Use only John Deere Hy-GARD Transmission and Hydraulic Oil or its equivalent in the transmission hydraulic system. Other types of oil will not give satisfactory service and may result in eventual damage. This special oil, available from your John Deere dealer, may be used in all weather conditions.

NOTE: John Deere Hy-GARD Transmission and Hydraulic Oil may be added to or mixed with John Deere Type 303 Special-Purpose Oil.

Greases

John Deere Multi-Purpose Lubricant or an equivalent SAE Multipurpose-Type grease is recommended for grease fittings. Application of grease as instructed in the lubrication section of the operator's manual will provide proper lubrication and will keep contamination out of bearings.

Storing Lubricants

A tractor can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture, and other contamination.

Group 25 SEPARATION

SEPARATING ENGINE FROM CLUTCH HOUSING

Remove right-hand or left-hand cowl. Disconnect battery cable and ground strap. Remove battery, side grille screens, hood, muffler, and front ballast (if used). Drain cooling system.

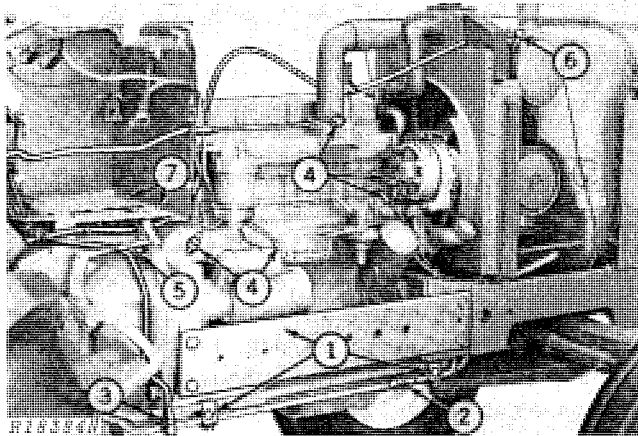


Fig. 1-Right-Hand Separation Procedures

1. Remove clamps securing hydraulic oil pipes (Fig. 1). Remove tool box and side frames (if used).

2. Disconnect hydraulic pump pressure pipe at connector.

3. Remove retaining clamp from pump inlet and reservoir return pipes. Remove power steering pressure pipe.

4. Disconnect battery cable and wiring harness from starter solenoid. Disconnect wiring harness at oil pressure switch, ignition coil, alternator, and fuel gauge sending unit connector. Remove wiring band from harness. Disconnect ether starting aid pipe (diesel).

5. Disconnect tachometer cable, and remove from clutch housing.

6. Disconnect hydraulic oil reservoir vent hose from top of reservoir, and remove hose from support clamp.

7. Remove the two cowl-to-flywheel housing cap screws (Fig. 2).

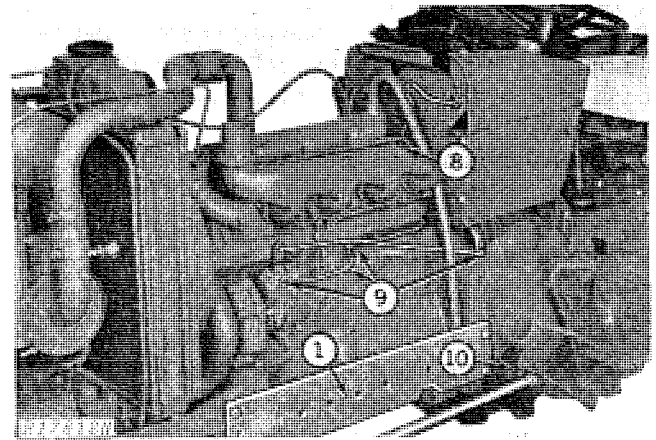


Fig. 2-Left-Hand Separation Procedures

8. Disconnect temperature gauge sensing bulb from engine:

9. Disconnect speed control rod, choke cable, carburetor or injection pump solenoid wire or fuel shut-off rod. Remove wiring bands that fasten wiring to fuel pipe. Disconnect underneath exhaust.

10. Disconnect steering drag link rod from steering arm.

Install JDG-9 support stand (Fig. 3). Place a floor jack under the rear portion of clutch housing.

CAUTION: Install a wood block between front axle and engine front support on both sides of tractor to prevent assembly from tipping.

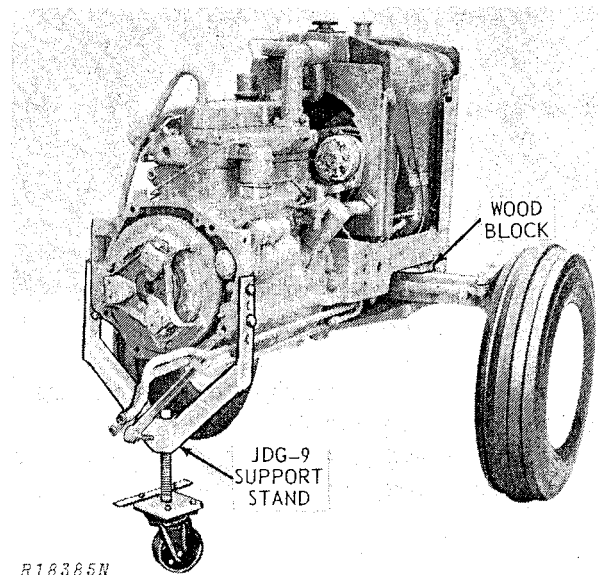


Fig. 3-Engine Separated From Clutch Housing

Place a container under the rear portion of clutch housing to catch the hydraulic oil from the pump inlet pipe and the cooler return pipe, when the tractor is separated.

IMPORTANT: Do not lose check valve assembly (tractors without Hi-Lo or reverser) in end of hydraulic pump inlet pipe when separation is made. Install caplugs on hydraulic pipes and fittings to prevent entry of foreign material.

Remove the cap screws securing the clutch housing to the engine and roll rear portion of tractor away from engine. Place a metal support stand under transmission.

ASSEMBLY

Remove caplugs and join engine and clutch housing. Reverse the numbered removal steps. Remove JDG-9 support stand and floor jack. Tighten cap screws to 170 ft-lbs torque.

Install battery, side grille screens, hood, muffler, and cowl. Start engine, inspect for leaks, and check operation.

SEPARATING CLUTCH HOUSING FROM TRANSMISSION CASE

Drain the transmission (remove both drain plugs). Remove the hydraulic oil filter cover and element.

Remove the drawbar from tractor.

Disconnect the clutch return spring. Remove the left-hand and right-hand footrests. Remove the transmission shield.

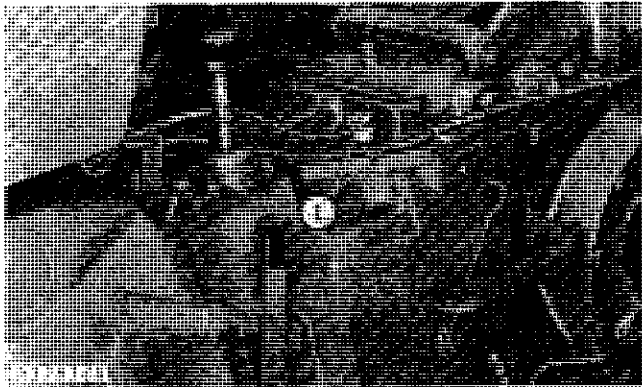


Fig. 4-Left-Hand Separation Procedures

1. Disconnect wiring harness from start-safety switch and light switch (Fig. 4).

2. Disconnect hydraulic oil reservoir vent hose (Fig. 5). Disconnect mid couplers (if equipped).

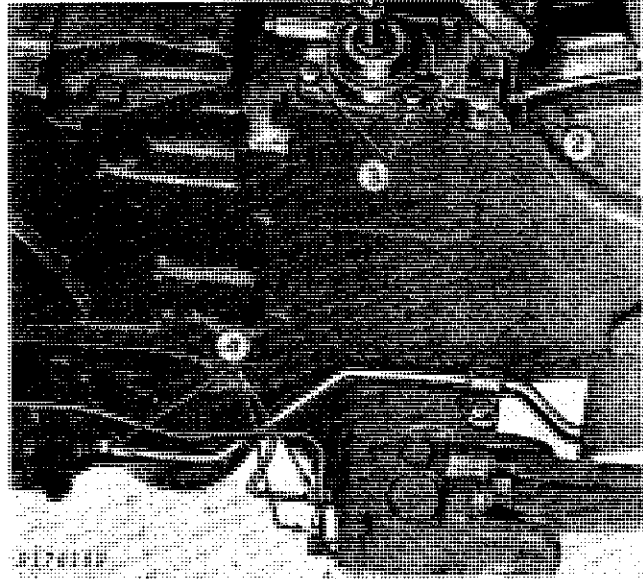


Fig. 5-Right-Hand Separation Procedures

3. Remove control valve cover, and remove shift cover cap screws (tractors with Hi-Lo shift). Remove shift cover from clutch housing. Inside the clutch housing, remove the two clutch housing-to-transmission case cap screws, and the gear shifter lever guide spring.

4. Disconnect brake pipes from brake valve housing, and disconnect pressure pipe at pressure control valve.

Install JDG-9 support stand on flywheel housing.

CAUTION: Install a wood block between front axle and front support on both sides of tractor to prevent assembly from tipping (Fig. 6).

Place floor jack under transmission case.

Remove the clutch housing-to-transmission case cap screws, and separate units. Install caplugs.

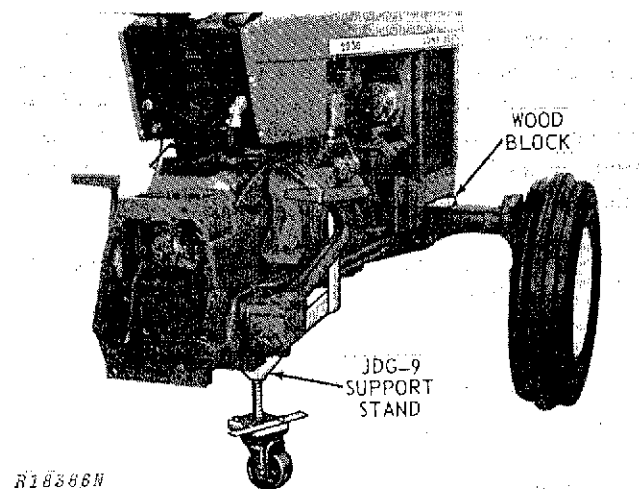


Fig. 6-Clutch Housing Separated From Transmission

ASSEMBLY

Install a new clutch housing-to-transmission case gasket and new rubber packings. Remove caplugs.

IMPORTANT: If tractor has a mid-PTO, be sure spring and ball are inserted in PTO drive shaft before joining units.

Join front and rear units. Reverse the numbered separation steps. Tighten cap screws to specified torque.

Install the transmission shield, footrests, clutch return spring, and drawbar.

Install hydraulic oil filter element and cover. Fill transmission to proper level.

Remove JDG-9 support stand, floor jack, and wood blocks.

SEPARATING TRACTOR FRONT END FROM ENGINE

Remove right-hand cowl. Disconnect battery cable and ground strap. Remove battery, side grille screens, hood, muffler, and front ballast (if used). Drain cooling system. Remove side frames (if equipped).

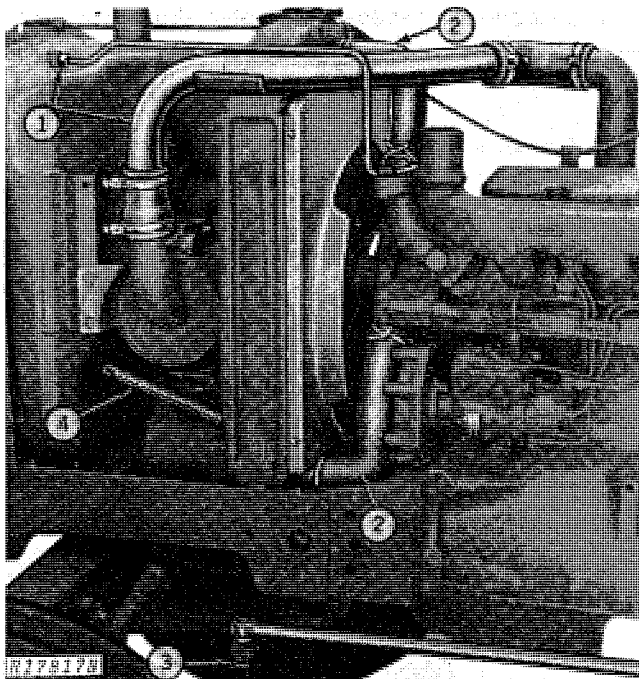


Fig. 7-Left-Hand Removal Procedures

1. Remove the air intake pipe (Fig. 7) and leak-off pipe (diesel).
2. Remove the upper and lower radiator hoses.

Litho in U.S.A.

3. Disconnect drag link and governor spring strap (gasoline).
4. Remove side grille screen springs.

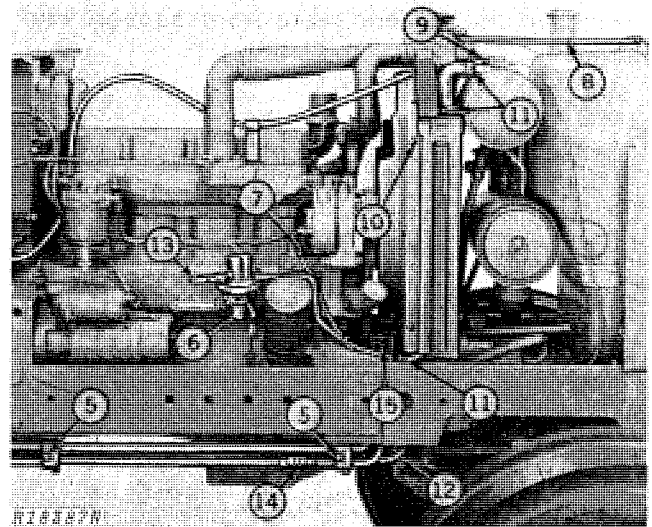


Fig. 8-Right-Hand Removal Procedures

5. Remove hydraulic pipe clamps (Fig. 8).
6. Close fuel tank valve (on bottom of tank), and remove fuel pump and oil filter.
7. Disconnect fuel gauge wire at connector.
8. Remove radiator support rod.
9. Disconnect hydraulic reservoir vent hose.
10. Remove screws fastening fan shroud to radiator, and slide fan shroud toward engine.
11. On tractors with Hi-Lo shift or reverser, disconnect the oil cooler inlet and outlet hoses. Remove radiator by sliding radiator out toward left-hand side of tractor.
12. Remove the hydraulic oil cooler return pipe (tractors with Hi-Lo shift or reverser). On tractors without Hi-Lo shift or reverser, remove the reservoir outlet pipes.
13. Remove fuel pipe.
14. Disconnect hydraulic pump pressure pipe at connector.
15. Disconnect hydraulic pump drive coupling.

CAUTION: Place support stands under front and rear of tractor front end (Fig. 9), to prevent tipping forward or backward. Install a wood block between front support and axle on both sides of tractor to prevent tipping sideways.

Install JD-244 lifting eyes on engine. Using an overhead hoist, attach JDG-1 engine lift sling to JD-244 lifting eyes to support engine (Fig. 12).

Remove the six engine-to-front support cap screws.

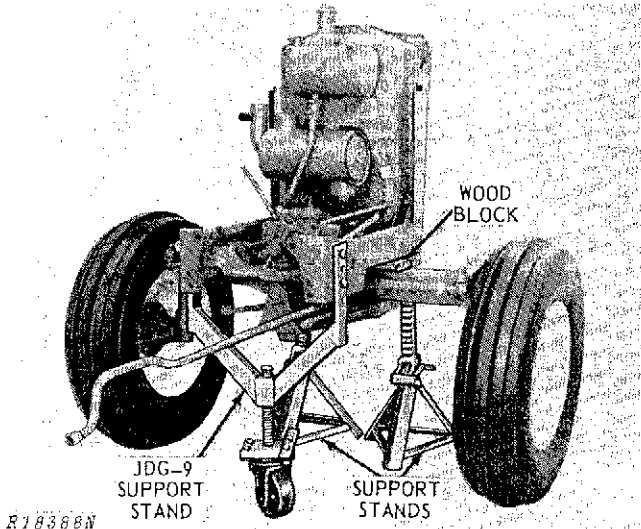


Fig. 9-Tractor Front End Separated From Engine

Carefully separate tractor front end by rolling rear section away from front end (Fig. 9). Place a metal stand under clutch housing. Install caplugs.

ASSEMBLY

IMPORTANT: Be sure hydraulic pump check valve (tractors without Hi-Lo or reverser) is installed in the pump inlet pipe before joining sections. Remove caplugs.

Join sections. Tighten bolts and cap screws to specified torque (Section 10, page 30-1). Remove JDG-1 lift sling, and JD-244 lifting eyes.

Reverse the numbered removal steps. When installing radiator, tighten radiator mounting cap screws until head of cap screw is flush with bottom of front support.

Install battery, side grille screens, hood, muffler, and front ballast (if used). Fill cooling system.

Start engine and check operation.

REMOVING ENGINE

Remove the front end from tractor as explained in SEPARATING TRACTOR FRONT END FROM ENGINE.

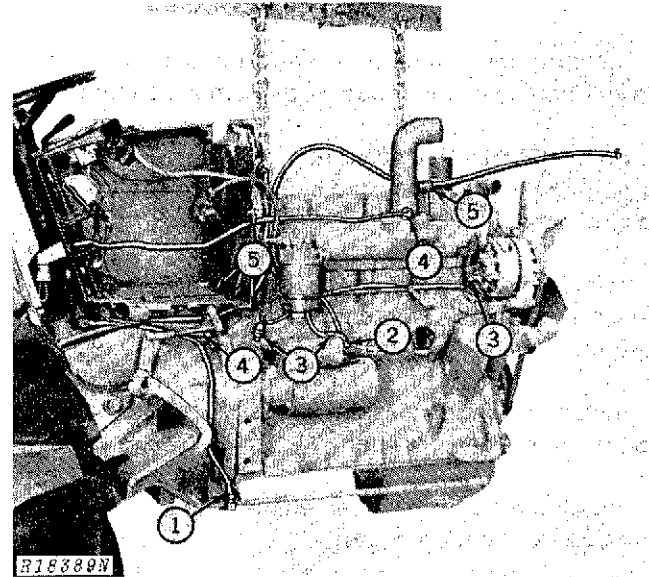


Fig. 10-Right-Hand Removal Procedure

1. Disconnect and remove the power steering pressure pipe (Fig. 10).

2. Disconnect battery cable from starter solenoid.

3. Disconnect the wiring from the oil pressure switch, starter solenoid, alternator, and coil. Remove wiring harness band from fuel pipe.

4. Disconnect speed-hour meter drive from flywheel housing, and disconnect ether starting aid pipe.

5. Remove hydraulic reservoir vent hose from support clamp. Remove cowl-to-flywheel housing cap screws.

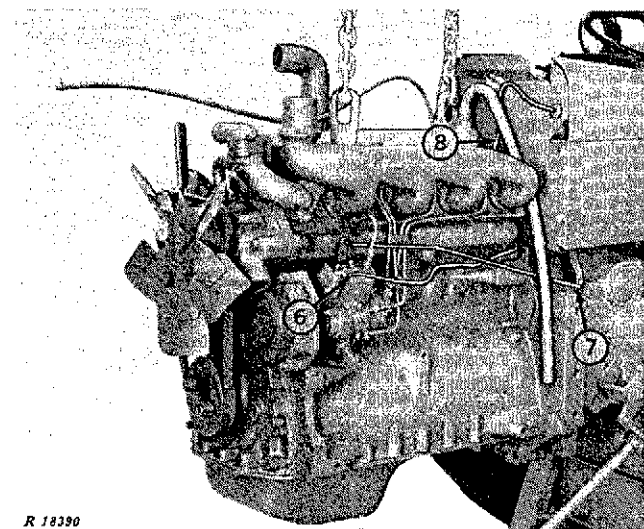


Fig. 11-Left-Hand Removal Procedure



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