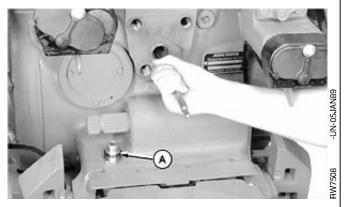
29a. Remove transmission oil pump drive shaft plug (A), and pull pump drive shaft from transmission case.



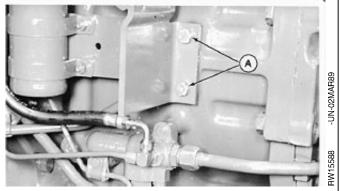
RX14581515,9 -19-19SEP90

For tractor with PST, perform Steps 26b, 27b, 28b, 29b, 30b and 31b.

26b. Drain hydraulic oil from clutch housing.

27b. Loosen right-hand front SOUND-GARD body mounting bolt.

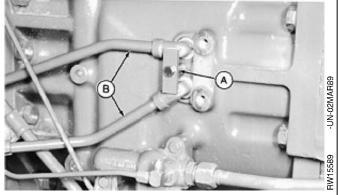
28b. Remove SOUND-GARD body mounting bracket cap screws (A) and swing mounting bracket away from clutch housing.



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29b. Remove clutch oil manifold line clamp (A).

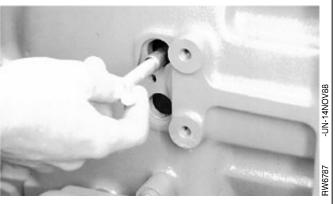
30b. Remove C_1 and C_2 oil lines (B) from tractor.



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NOTE: Use care in removing clutch oil manifold tubes to avoid dropping tubes into clutch housing.

31b. Remove clutch oil manifold tubes from clutch housing using a JDG268 Filter Relief Valve Removal Tool.



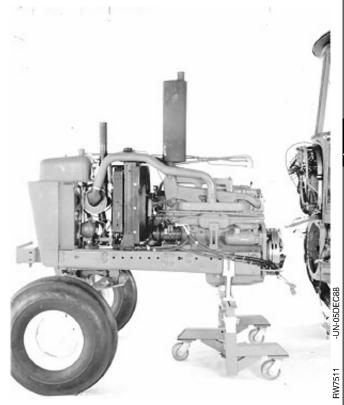
RX14581515,12 -19-19SEP90

SEPARATE FRONT-END AND ENGINE FROM **CLUTCH HOUSING**

- 1. Remove floor mat and control support cover.
- 2. Remove top two clutch housing-to-engine cap screws located under control support using a JDG16A Special Torque Wrench Extension.
- 3. Remove six oil pan-to-clutch housing cap screws and six remaining clutch housing-to-engine cap screws.

IMPORTANT: During separation, clutch shafts can become disengaged and fall out. Take precautions to insure shafts stay with clutch housing.

4. Carefully roll front end and engine away from clutch housing.



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INSTALL FRONT-END AND ENGINE

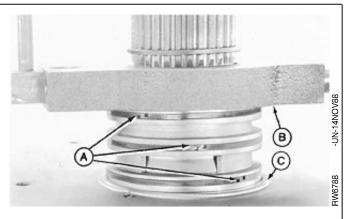
Install front end and engine assembly in reverse order of removal noting the following special instructions:

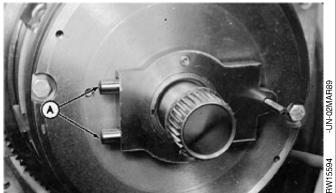
For tractor with PST, perform Steps 1a and 1b.

IMPORTANT: Sealing rings (A) must be interlocked and clutch oil manifold (B) fully seated against traction clutch assembly (C) to prevent damage to rings during clutch housing to engine assembly.

1a. Install clutch oil manifold in traction clutch assembly.

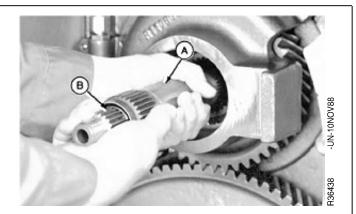
NOTE: Check clutch oil manifold pistons (A) to be sure they are fully seated in manifold.





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1b. Check high (A) and low (B) range shafts to make sure they are properly installed in transmission, by measuring from clutch housing face to end of each shaft with shafts pushed rearward. Low range shaft should be 20.5—23.0 mm (0.80—0.90 in.) from clutch housing face. High range shaft should be 68.8—71.5 mm (2.71—2.82 in.) from clutch housing face.



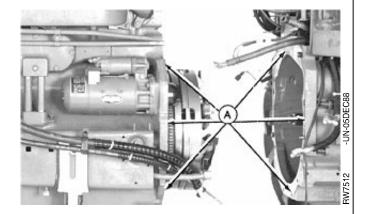
RX14581515,15 -19-19SEP90

For ALL tractors, perform the following steps:

- 2. Roll front end and engine assembly toward clutch housing.
- 3. Measure distance between clutch housing and engine surfaces (A). Adjust tractor support stands for perfect alignment.

IMPORTANT: DO NOT "rock" tractor to install engine to clutch housing. Clutch oil manifold sealing ring damage can result.

4. Carefully roll front end and engine assembly into position with clutch housing using steady rearward pressure.



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IMPORTANT: For tractor with PST, be sure clutch oil manifold pin is engaged in PTO drive gear support hole before rotating engine.

5. Align clutch drive shaft splines with clutch assembly using a JDE81-1 Engine Rotation Tool.

IMPORTANT: Do not use mechanical force to draw engine and clutch housing together.

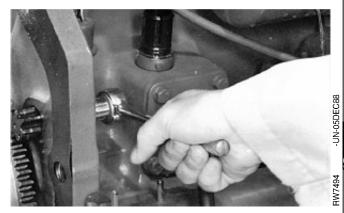
When properly aligned, the unit will slide together.

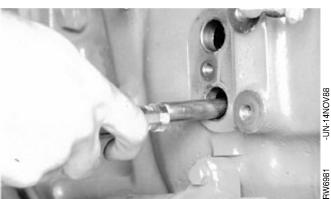
- 6. Tighten clutch housing-to-engine cap screws to 365 N·m (270 lb-ft).
- 7. Tighten oil pan-to-clutch housing cap screws to 163 N·m (120 lb-ft).

IMPORTANT: Be careful not to drop clutch oil manifold tubes in clutch housing.

Tractor must be separated again if this occurs.

- 8. For tractor with PST, use long blade screw driver as guide tool to install clutch oil manifold tubes.
- 9. For tractor with QRT, tighten center link attaching bracket-to-transmission case cap screws to 407 N·m (300 lb-ft).
- 10. For tractor with MFWD, tighten driveshaft-to-front axle yoke cap screws to 68 N⋅m (50 lb-ft).
- 11. Check all hydraulic connections and all fluid levels.
- 12. Test tractor operation.

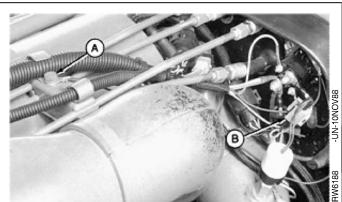




RX14581515,17 -19-01OCT90

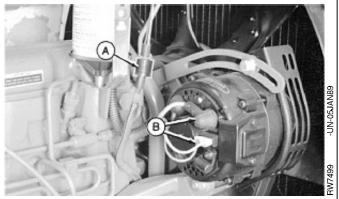
REMOVE ENGINE

- 1. Remove front end. (See Remove Front End, Group 10.)
- 2. Drain hydraulic oil at clutch housing.
- 3. Disconnect starter electrical connections and move wiring rearward to SOUND-GARD body.
- 4. Disconnect heater hoses at engine.
- 5. Disconnect wiring harness ground wires (A), air restriction indicator (B).



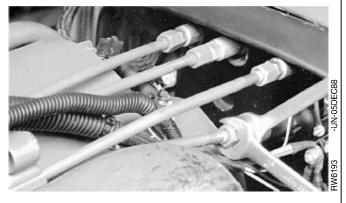
RX14581520,4 -19-12OCT90

- 6. Disconnect tachometer sensor wiring connector (A).
- 7. Disconnect alternator electrical connectors (B).
- 8. Disconnect ether starting air electrical connector and move all wiring harnesses rearward to SOUND-GARD body.



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- 9. Disconnect steering lines at SOUND-GARD body.
- 10. Disconnect engine oil pressure sensor.
- 11. Disconnect throttle control linkage.
- 12. Disconnect fuel shut-off cable.

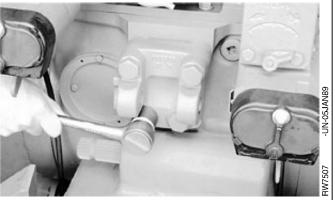


RX14581520,6 -19-02MAY90

For tractor with QRT, perform Steps 13a, 14a, and 15a.

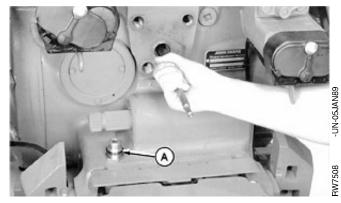
13a. Disconnect center link of hitch from center link attaching bracket.

14a. Remove center link attaching bracket from transmission case.



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15a. Remove transmission oil pump drive shaft plug (A), and pull pump drive shaft from transmission case.



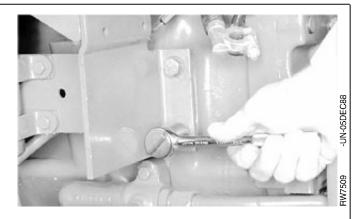
RX14581520,8 -19-02MAY90

For tractor with PST, perform Steps 13b, 14b, 15b, 15c, 15d, and 15e.

13b. Loosen right-hand front SOUND-GARD body mounting bolt.

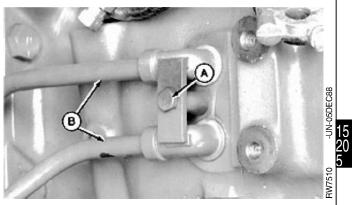
14b. Remove SOUND-GARD body mounting bracket cap screws (A) and swing mounting bracket away from clutch housing.

15b. Disconnect $\mathrm{C_1}$ and $\mathrm{C_2}$ oil lines from power shift control valve.



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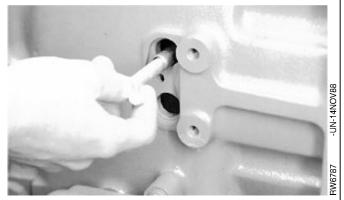
- 15c. Remove clutch oil manifold line clamp (A).
- 15d. Remove $\mathbf{C_1}$ and $\mathbf{C_2}$ oil lines (B) from tractor.



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NOTE: Use care in removing clutch oil manifold tubes to avoid dropping tubes into clutch housing.

15e. Remove clutch oil manifold tubes from clutch housing using a JDG268 Filter Relief Valve Removal Tool.



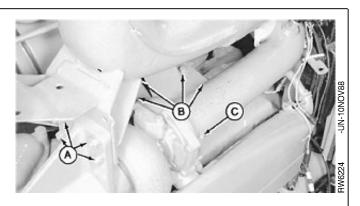
RX14581520,11 -19-02MAY90

- 16. Disconnect air cleaner canister cap screw (A).
- 17. Loosen clamp (A) and remove muffler.



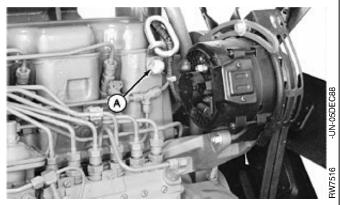
RX14581520,12 -19-02MAY90

- 18. Remove air intake and steering valve bracket-to-exhaust elbow bolts (A).
- 19. Remove air cleaner bracket-to-water manifold fold cap screws (B).
- 20. Disconnect air intake hose (C) from turbocharger.
- 21. Remove air intake and steering valve assembly from engine.



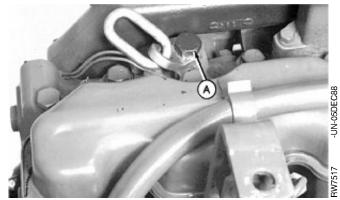
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22. Remove injection pump leak-off line clamp and attach JDG19 Special Mounting Bracket (A) to cylinder head with 5/8 in. x 1-1/2 in. cap screw.



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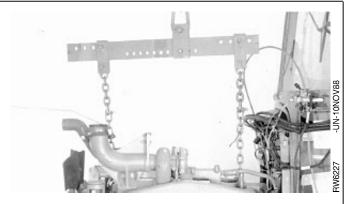
23. Attach JDG19 Special Mounting Bracket (A) with 5/8 in. x 1-1/2 in. cap screw.



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IMPORTANT: DO NOT apply excessive lifting force to support engine. Binding could occur during separation.

24. Connect JDG23 Lift Sling to engine lift brackets and support engine with overhead hoist.



RX14581520,16 -19-04MAY90



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