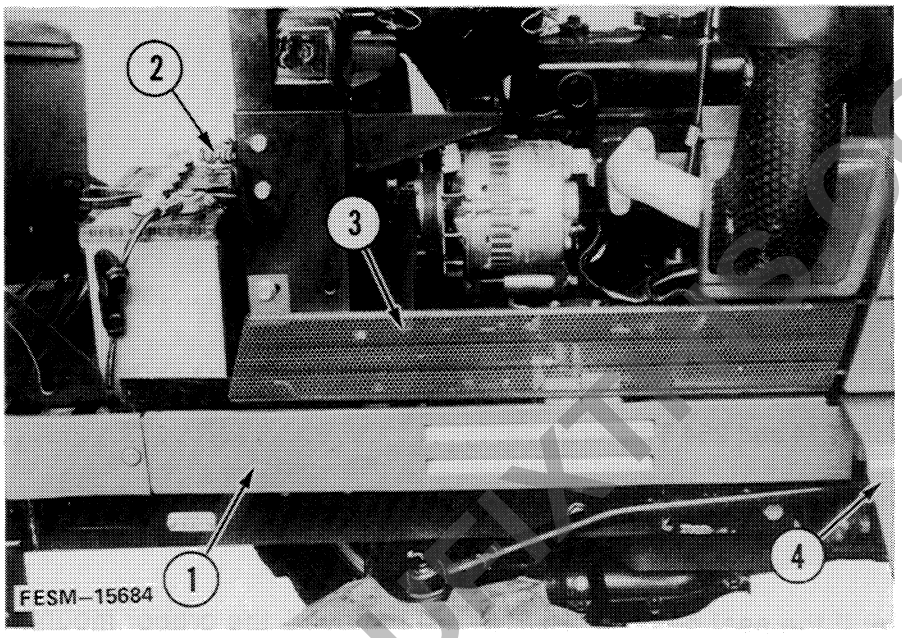
Clutch Split
(234, 244 and 254 Tractors)

(Refer to Section 8 for Clutch Service)



1. Lower side panel
2. Negative battery cable
3. Upper side panel
4. Step plate support

Splitting the Tractor

1. Block the front axle from pivoting.

2. Raise the hood and disconnect the negative battery cable.

3. Remove the upper and lower side panels and step plate supports.

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2 FRONT END, AXLE, AND WHEELS

3 STEERING

4 ENGINE

5 FUEL SYSTEM

6 ELECTRICAL SYSTEM

7 COOLING SYSTEM

8 CLUTCH AND FLYWHEEL

9 TRANSMISSION

10 DIFFERENTIAL

11 REAR AXLE CARRIERS

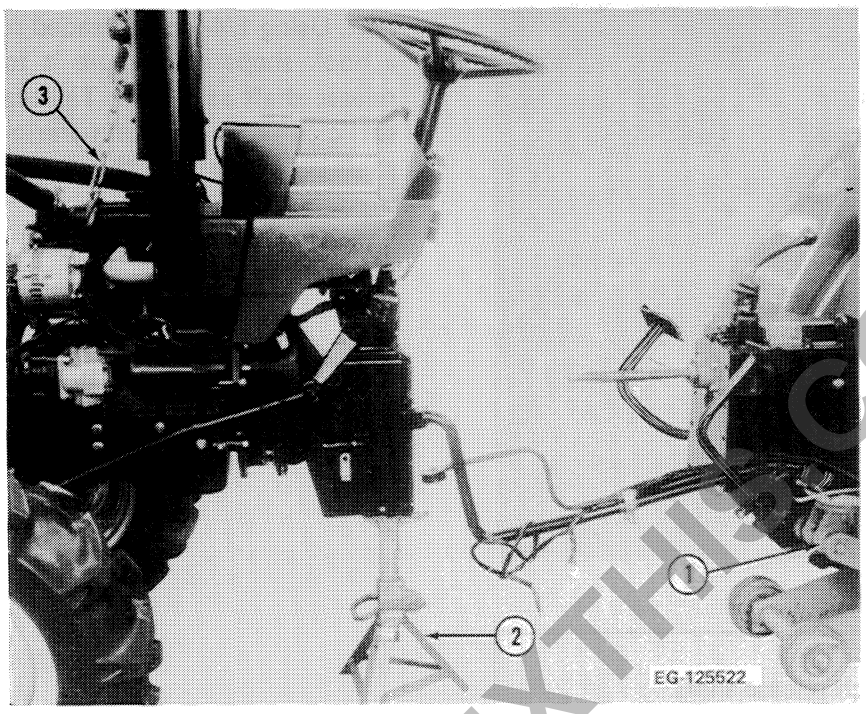
12 BRAKES

13 POWER TAKE-OFF & MOWER

14 HYDRAULIC SYSTEM

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1. Hydraulic floor jack
2. Safety stand
3. Safety lift chain

11. Secure a safety lift chain to the engine brackets and secure to an overhead hoist. Take up the chain slack. DO NOT lift the front wheels off the ground.

12. Position a hydraulic floor jack under the speed transmission housing.

13. Remove the mounting bolts securing the speed transmission to the clutch housing. Pry apart the tractor and roll away the rear frame.

14. Proceed to Section 9 for removal and service of the speed transmission.

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Section 6

ELECTRICAL

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Section 9

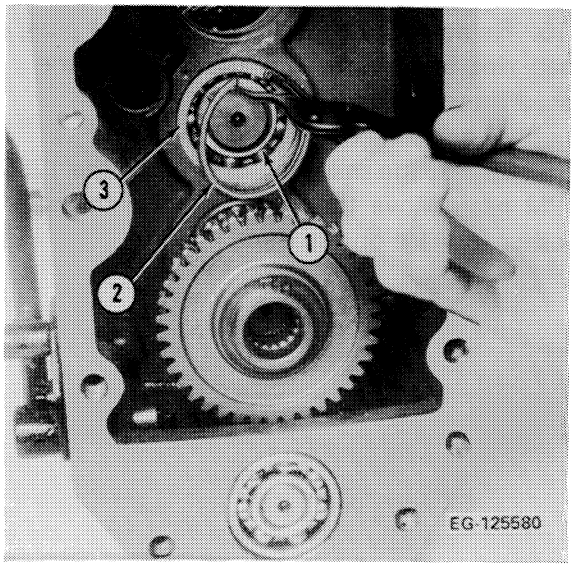
TRANSMISSION

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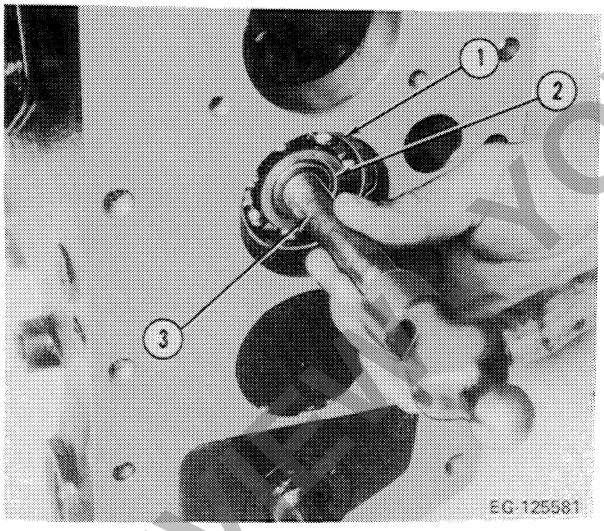
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12. Remove the countershaft seal plug at the front of the transmission.

13. Remove the snap ring and shim from the rear of the transmission.

1. Rear bearing
2. Snap ring
3. Shim



14. Using a brass drift, drive the countershaft out towards the rear of the transmission and remove the shaft parts.

1. Front bearing
2. Countershaft
3. Brass drift

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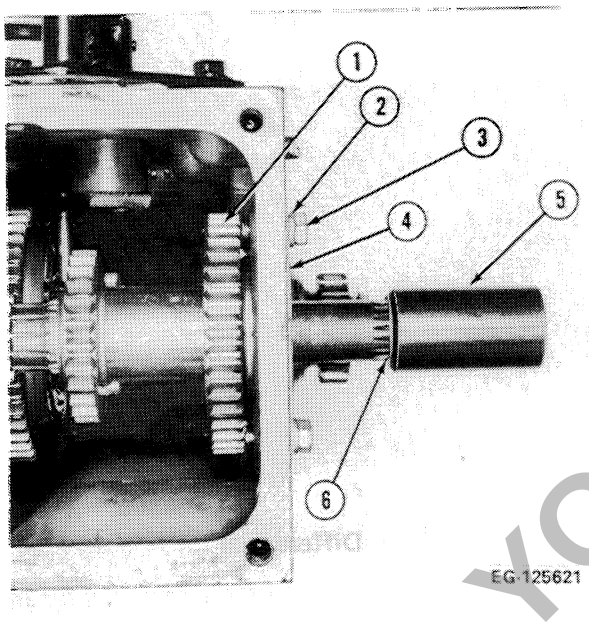
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17. Reassemble and install in the reverse order.

NOTE: The chamfered side of the Hi-range drive gear faces toward the rear of the tractor.

NOTE: Leave out the rear bearing shim when establishing shaft end play.

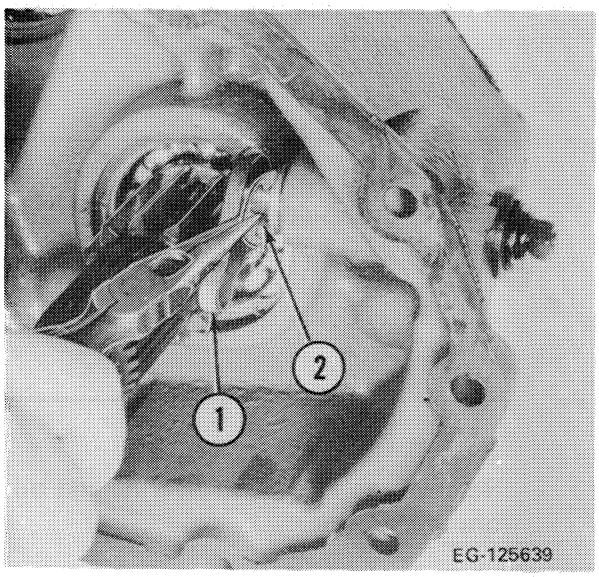
IMPORTANT: Make sure to install the front bearing retaining plate lockwashers. Failure to use lockwashers will extend the length of the bolt resulting in contact with the Hi-range gear.



1. Hi-range gear
2. Lockwasher
3. Mounting bolt
4. Front bearing retaining plate
5. Couple
6. Snap ring

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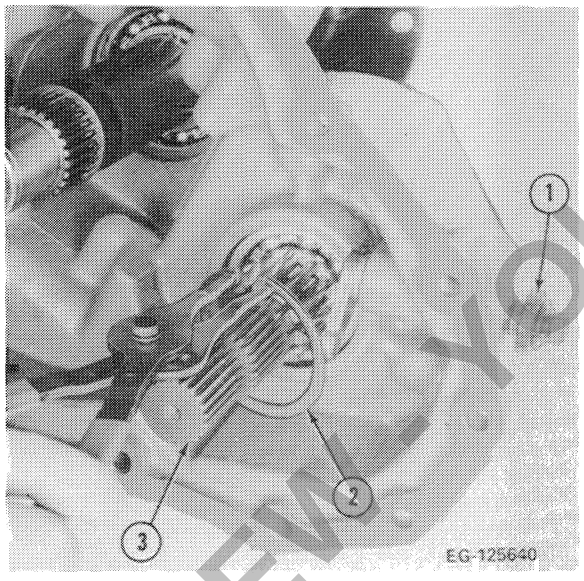
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Differential Lock Shaft

9. Remove the "E" ring from the differential lock shifter.

1. Differential lock shifter
2. "E" ring



10. Move the differential lock shifter against the washers. This will give needed clearance for shaft removal.

11. Remove the differential shaft bearing snap ring.

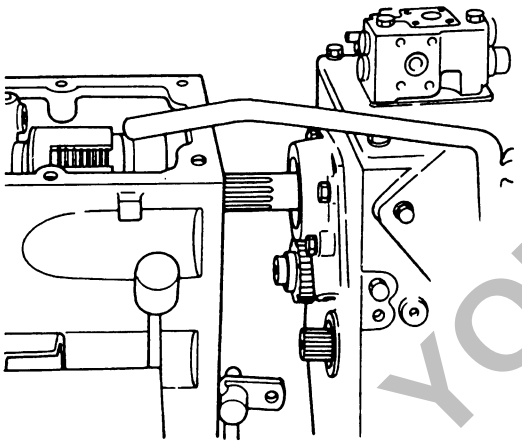
1. Differential shaft shifter
2. Differential shaft bearing snap ring
3. Differential shaft

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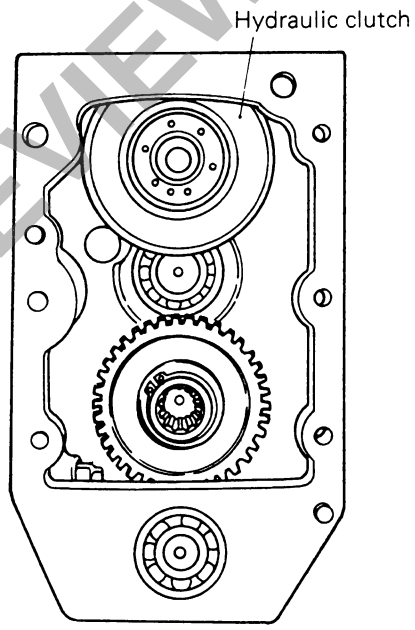
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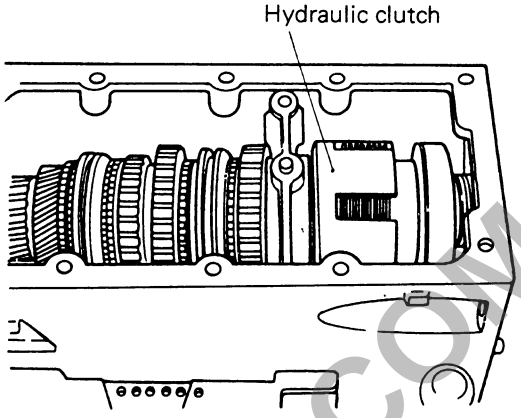
Removing and disassembling the hydraulic clutch.

1) Apply a jack under the diff-housing case. Operate the jack to push up the tractor. Then place a rigid stand under the transmission case.
2) After removing eight tightening bolts between transmission case and diff-housing case, push the diff-housing case slowly backward to detach the diff-housing case from transmission case.



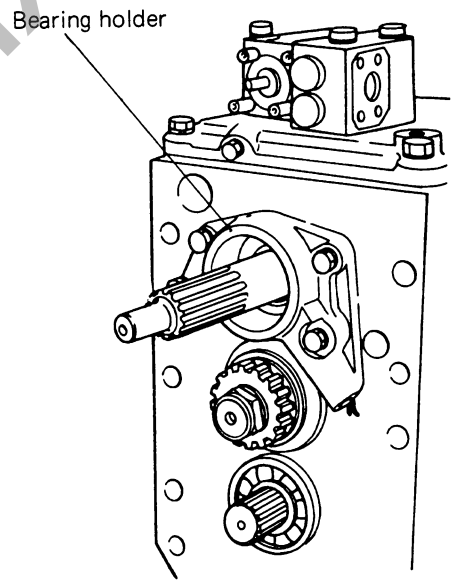
3) Remove the hydraulic clutch ass'y out of the transmission case.





NOTE

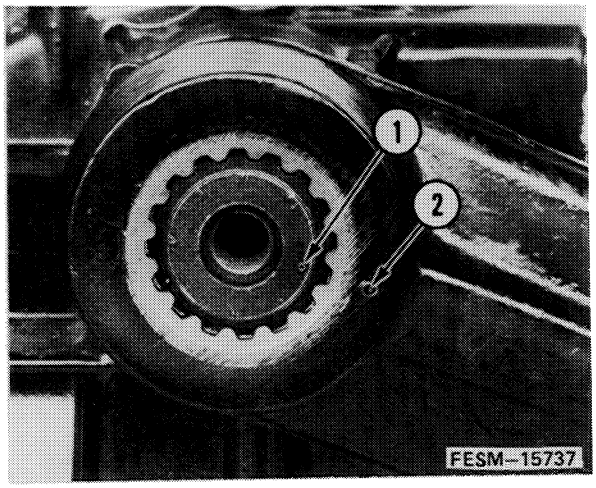
Remove the bearing holder on the diff- housing case , if necessary.



4) Disassemble the hydraulic clutch ass'y using the special tool.

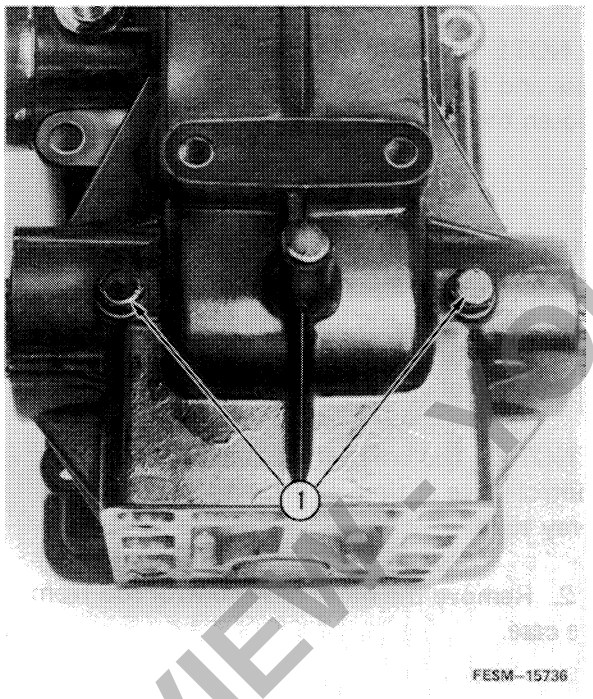
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3. Remove the lift arms from the rockshaft. Note the rockshaft and hitch arms have timing marks for proper reassembly.

1. Rockshaft timing mark
2. Upper lift arm timing mark

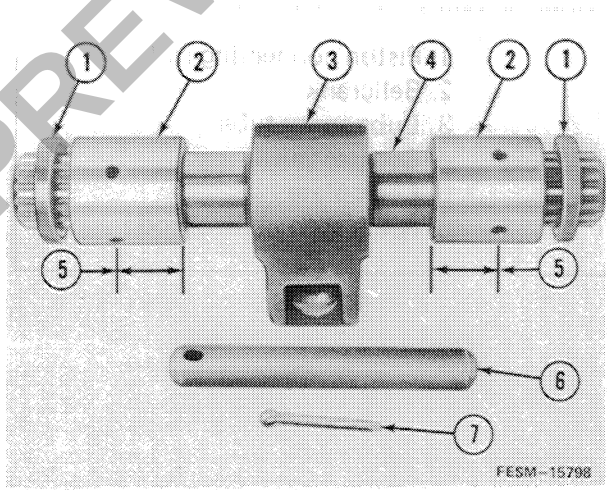


4. Remove the set bolts and lockwashers from the top of the case securing the rockshaft bushings.

1. Set bolts and lockwashers

5. Remove the rockshaft, bushings, oil seals, bellcrank and piston connecting rod.

NOTE: Observe the position of the bushings. Wide end of bushings face inward.



1. Oil seals
2. Bushings
3. Bellcrank
4. Rockshaft
5. Wide end in
6. Connecting rod
7. Cotter pin

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Speed Transmission
(244 and 254 Tractors)

Splitting the Tractor

1. Open the front hood and disconnect the negative battery cable.

2. Drain the transmission hydraulic fluid.

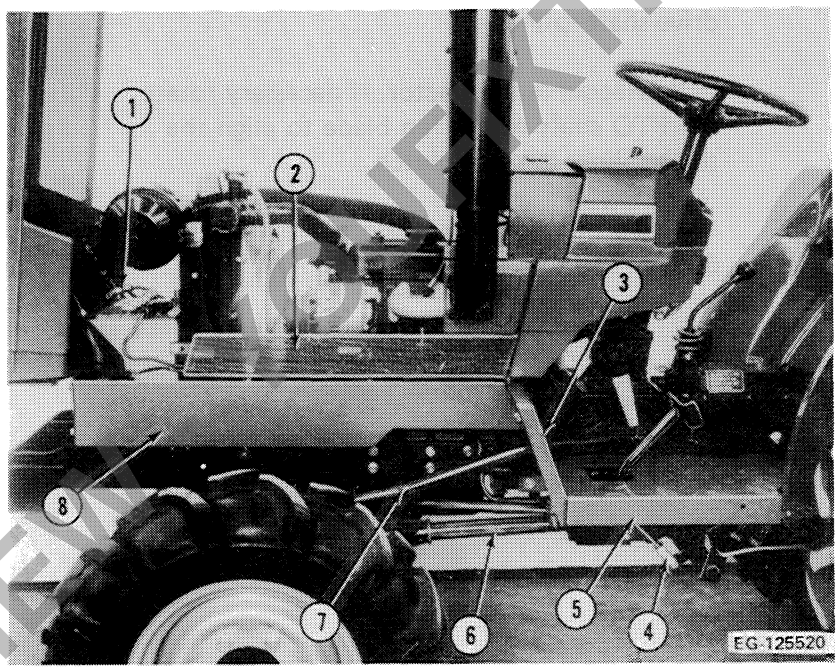
3. Block the front axle from pivoting and disconnect the four-wheel drive shaft (if equipped).

4. Disconnect the steering drag link from the knuckle arm.

5. Remove the upper and lower side panels, step plate supports and step plates.

6. Disconnect the clutch pedal linkage rod.

7. Disconnect the hydraulic suction and supply tube from the pump. Plug and cap open hydraulic ports.



1. Negative battery cable
2. Upper side panel
3. Clutch rod
4. Step plate
5. Step plate support
6. Four-wheel drive shaft
7. Steering drag link
8. Lower side panel

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8. Check for wear of the camshaft front bushing and the camshaft bores in the block, referring to "Camshaft and Tappets". If the camshaft bores in the block are badly worn, the block must be replaced.

9. Check for wear of the tappet (cam follower) bores in the block, referring to "Camshaft and Tappets". If the tappet bores are badly worn, the block must be replaced.

Crankshaft and Main Bearings

The crankshafts for all models are precision ground, fully counterbalanced forgings of carbon steel. Journals, crankpins, and oil seal areas have been induction hardened. These polished crankshafts may be reground undersize.

The shafts are supported by four main bearings, with crankshaft thrust being taken by the No. 3 main bearing. The timing gear train drive gear is carried on the forward end of the crankshaft. The drive gear is keyed to the shaft and is a press fit.

Main bearing caps are stamped with arrows which point toward the front of the engine, and are individually marked to assure installation in the correct locations. Front and rear main caps are stamped "F" and "R" respectively, and both are sealed at the top with sealant and on the sides with rubber seals coated with sealant. Main caps are not replaceable.

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Section 7

COOLING SYSTEM

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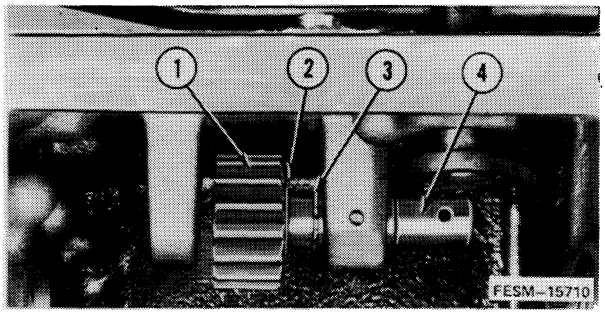
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Installation **7-2**

Radiator (244 and 254 Tractors) **7-3**
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Installation **7-4**

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1. Reverse gear
2. Thrust liner
3. Snap ring
4. Shaft

Reverse Shaft

14. Drive out the roll pin from the reverse shaft. Unseat the snap rings. Push out the reverse shaft.

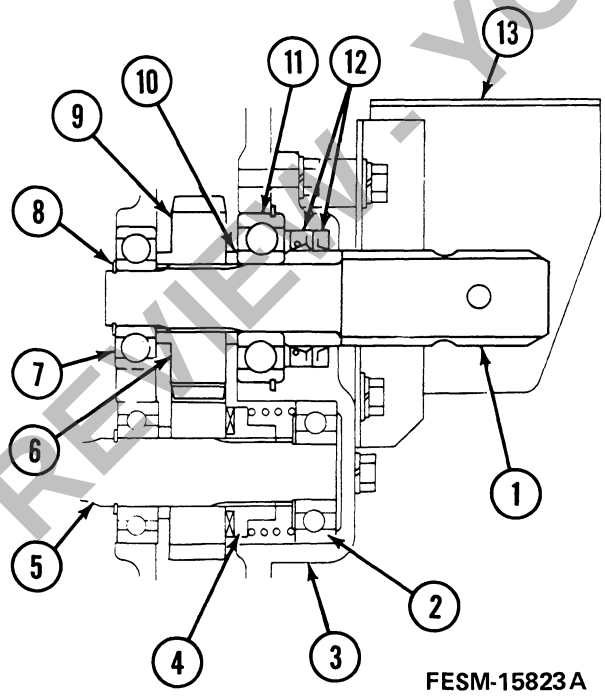
PTO Output Shaft

15. Remove the rear PTO safety shield.

16. Remove the rear PTO bearing holder.

17. Remove the snap ring securing the PTO shaft to the inner ball bearing.

18. Drive out the PTO shaft from the inner bearing and remove shaft components.



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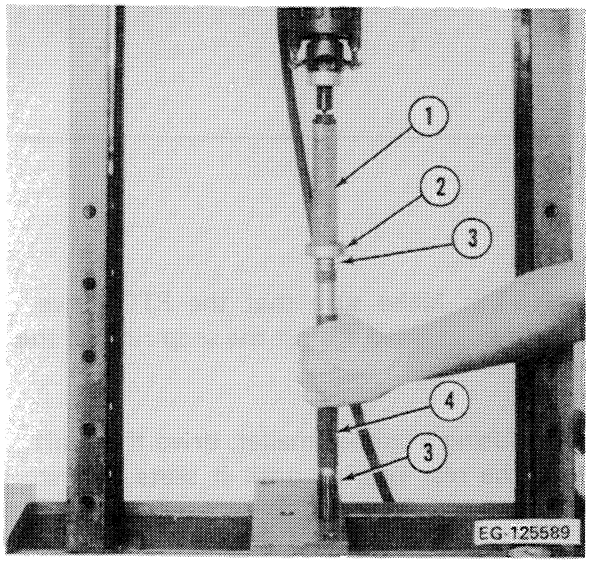
1. PTO output shaft
2. Rear shaft outer bearing
3. Bearing holder
4. Clutch
5. Rear shaft
6. Gear hub
7. Inner ball bearing
8. Snap ring
9. PTO gear
10. Thrust collar
11. Outer ball bearing
12. Oil seals
13. Safety shield

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25. If necessary, drive out the roll pin in the all-wheel drive shift handle. Remove the handle and replace the O-ring seal.

Reassembly



All-Wheel Drive Shaft

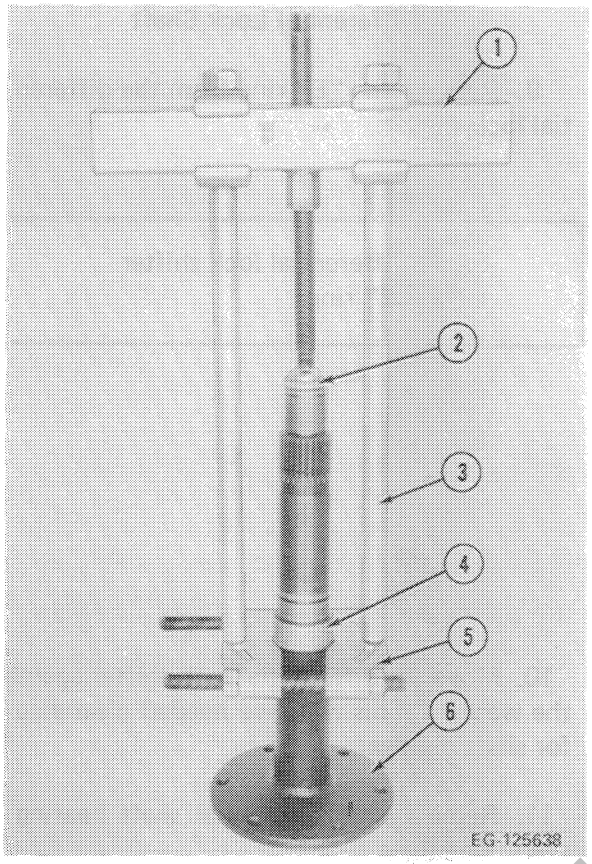
1. Install the snap rings on the shaft.

2. Install the front bearing against the snap ring. DO NOT force the bearings, otherwise the snap rings will be damaged.

1. Pipe
2. Front bearing
3. Snap rings
4. All-wheel drive shaft

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7. If necessary, pull off the oil seal bushing from the axle shaft.

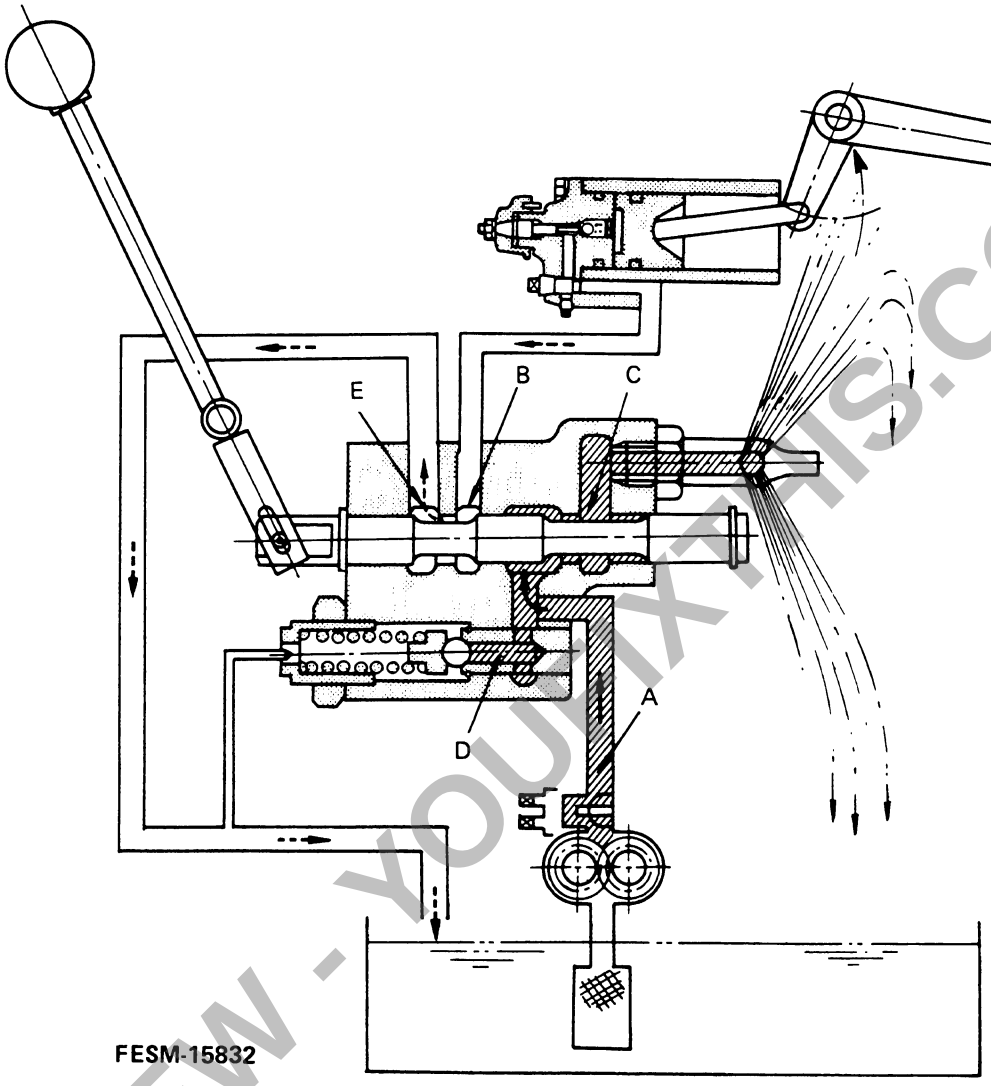
1. OTC 938 bridge
2. Step plate
3. OTC 930-B puller legs
4. Bushing
5. OTC 951 split puller
6. Axle

8. Remove the axle outer bearing and oil seal from the housing.

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Down



FESM-15832

Moving the control lever forward "DOWN" relocates the spool to communicate port B to port E, keeping port C open to allow the discharged oil to return to the sump in the transmission. The oil flows out of the hydraulic cylinder through the flow control valve (acting like a brake) and returns through port E to the sump, so that the hitched implement goes down by its own weight.

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All Models

4. Connect 14-2-48 hydraulic hose to the fitting and to the inlet side of 14-51D Flo-Rater.

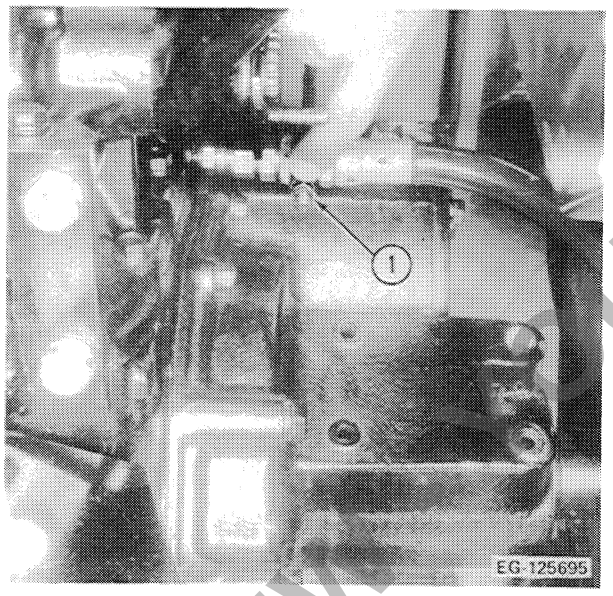
5. Open the restrictor valve on the Flo-Rater.

6. Connect 14-2-48 hydraulic hose to the outlet side of the Flo-Rater.

7. Install 14-53-1 Flo-Rater return nozzle to the outlet hose. Install the outlet hose nozzle in the transmission fill port and secure.

8. Secure the hitch raise control lever on demand.

NOTE: Make sure the hitch raise sensing rod is placed on demand.



1. Hitch raise sensing rod

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