

2000, 2100, 2200, 2300 and 2400 Tractors Technical Manual



JOHN DEERE

TECHNICAL MANUAL 2000, 2100, 2200, 2300 and 2400 Tractors Technical Manual

TM1563 (11MAY94) English

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TM1563 (11MAY94)

LITHO IN U.S.A.
ENGLISH



Introduction

FOREWORD

This manual is written for an experienced technician. Essential tools required in performing certain service work are identified in this manual and are recommended for use.

Live with safety: Read the safety messages in the introduction of this manual and the cautions presented throughout the text of the manual.



This is the safety-alert symbol. When you see this symbol on the machine or in this manual, be alert to the potential for personal injury.

Information is organized in groups for the various components requiring service instruction. At the beginning of each group are summary listings of all

applicable essential tools, service equipment and tools, other materials needed to do the job, service parts kits, specifications, wear tolerances, and torque values.

Technical Manuals are concise guides for specific machines. They are on-the-job guides containing only the vital information needed for diagnosis, analysis, testing, and repair.

Fundamental service information is available from other sources covering basic theory of operation, fundamentals of troubleshooting, general maintenance, and basic type of failures and their causes.

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All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

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Section 05 Safety

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HANDLE FLUIDS SAFELY—AVOID FIRES

When you work around fuel, do not smoke or work near heaters or other fire hazards.

Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.

Make sure machine is clean of trash, grease, and debris.

Do not store oily rags; they can ignite and burn spontaneously.



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PREVENT BATTERY EXPLOSIONS

Keep sparks, lighted matches, and open flame away from the top of battery. Battery gas can explode.

Never check battery charge by placing a metal object across the posts. Use a volt-meter or hydrometer.

Do not charge a frozen battery; it may explode. Warm battery to 16°C (60°F).



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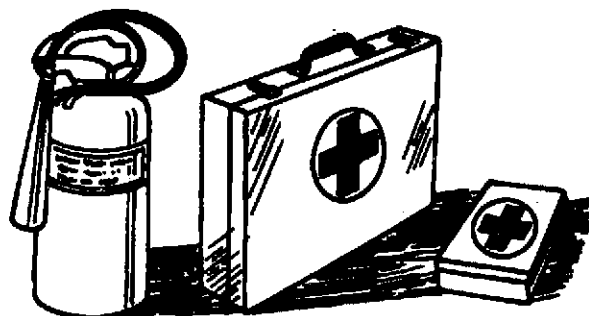
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PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



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DX,FIRE2 -19-03MAR93

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PREVENT ACID BURNS

Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.

Avoid the hazard by:

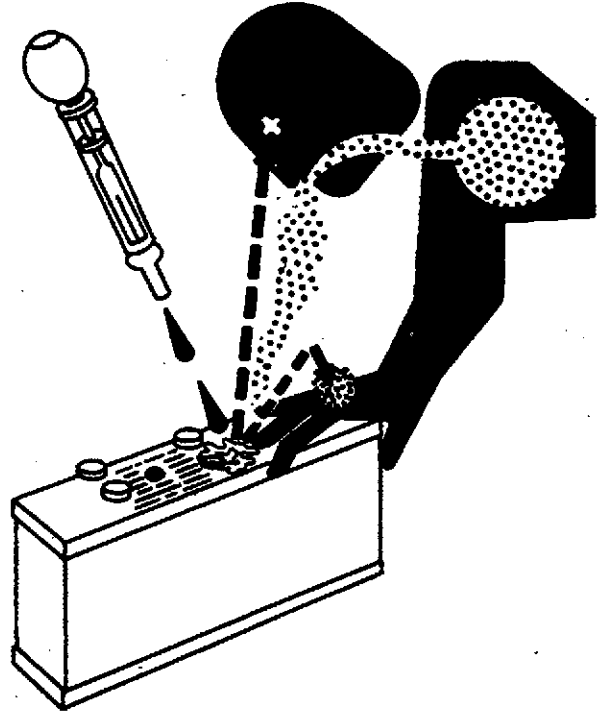
1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Use proper jump start procedure.

If you spill acid on yourself:

1. Flush your skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush your eyes with water for 15—30 minutes. Get medical attention immediately.

If acid is swallowed:

1. Do not induce vomiting.
2. Drink large amounts of water or milk, but do not exceed 2 L (2 quarts).
3. Get medical attention immediately.

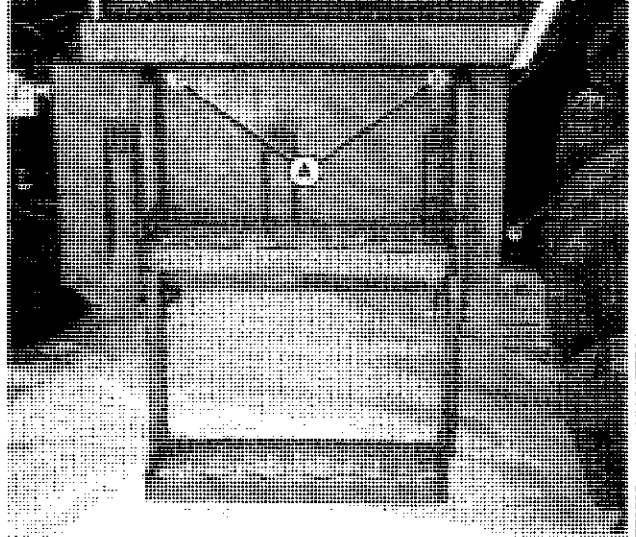


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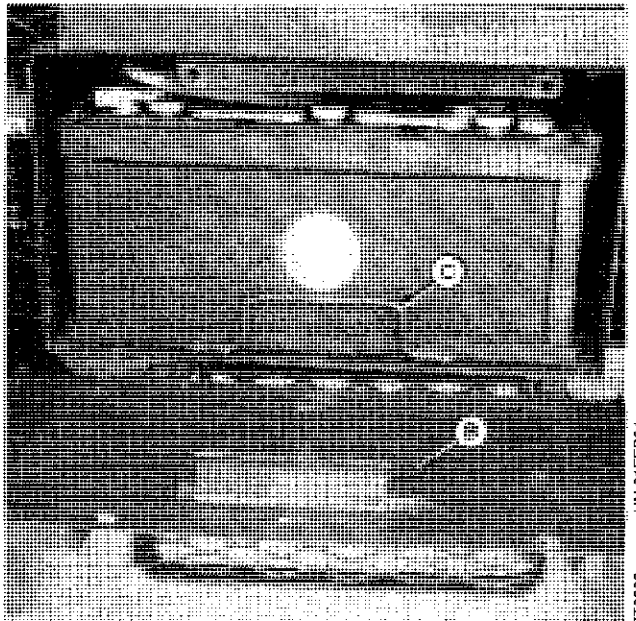
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SEPARATING ENGINE FROM TRANSMISSION

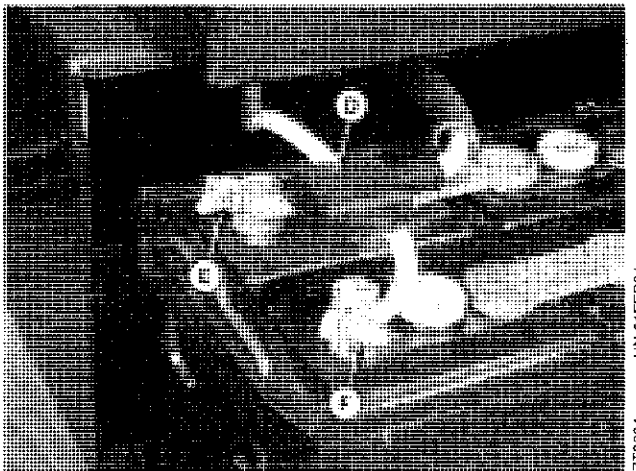
1. Remove bolts (A) from battery access cover.
2. Pull out handle (C) until battery tray is against stop (B).
3. Remove cover (D) from positive cable.
4. Disconnect negative (-) cable (F) from battery and then disconnect the positive (+) cable (E) from battery.



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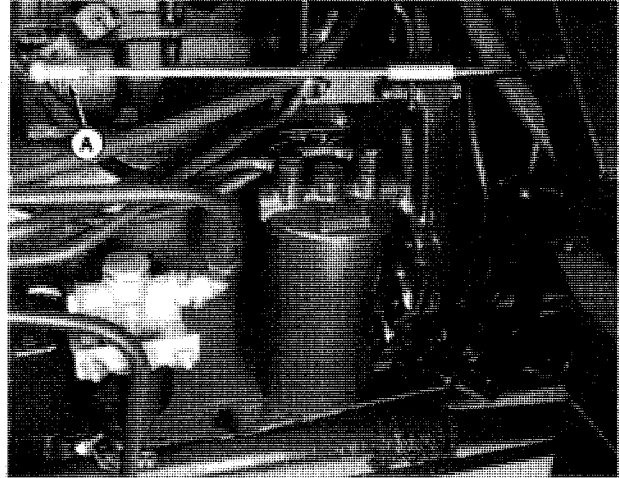
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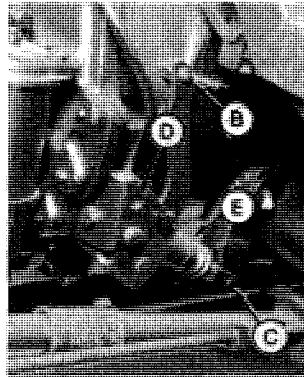
Separating Engine From Transmission/Separating Engine from Transmission

5. Remove throttle rod (A) from injection pump.

6. Remove pins (B and C) from clutch cylinder (E) and remove cylinder from bracket (D).



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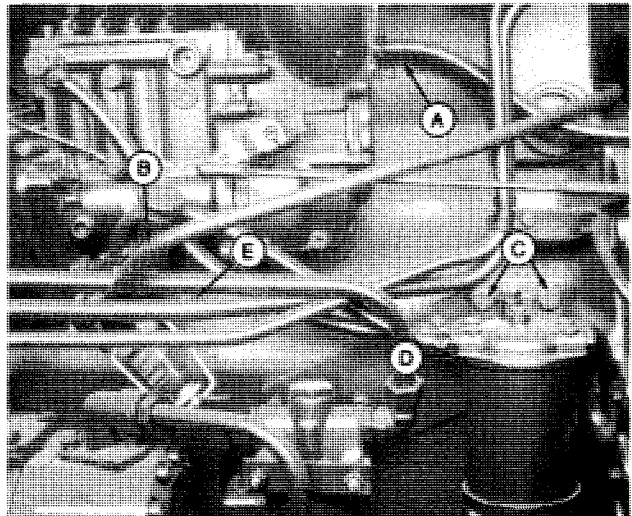


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7. Remove injection pump return hose (A) and inlet hose (B).

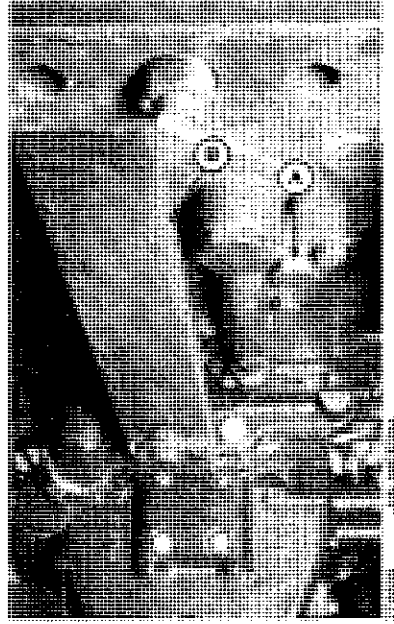
8. Remove two bolts (C) and remove filter assembly (D) from block. Tie filter assembly to lines (E).



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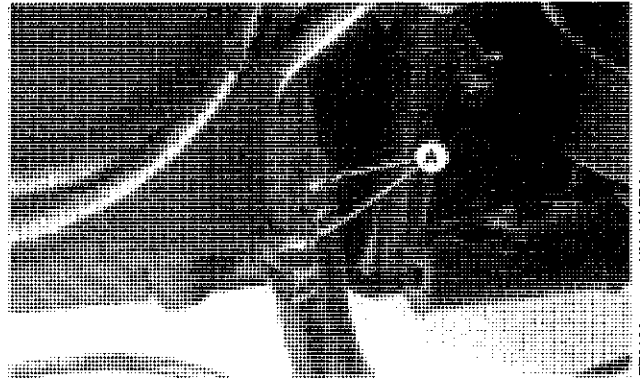
TM1563,1505,C -19-03MAR94

9. Remove plug (A) near drawbar (B) and drain transmission oil.



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10. Disconnect hoses (A) from steering cylinder if tractor is equipped with power steering.



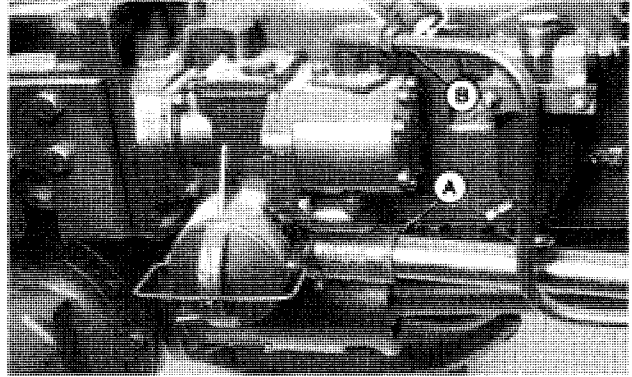
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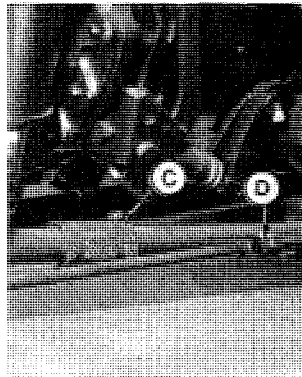
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Separating Engine From Transmission/Separating Engine from Transmission

11. Remove hydraulic pump suction line (A) and pressure line (B) from pump. Separate lines at (C and D).



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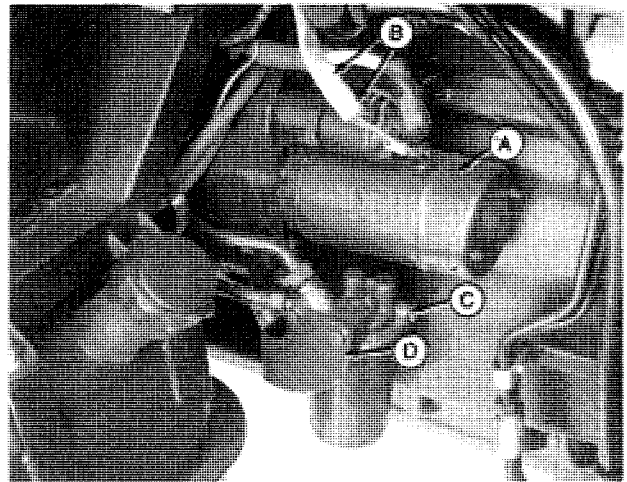


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TM1563,1505,F -19-03MAR94

12. Disconnect harness (B) from starter (A).

13. Remove filter assembly (C) from bracket (D) under starter. Tie filter assembly to operator's station.



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14. If tractor has front wheel drive, remove driveshaft.
(See Section 55, **Remove Driveshaft**)

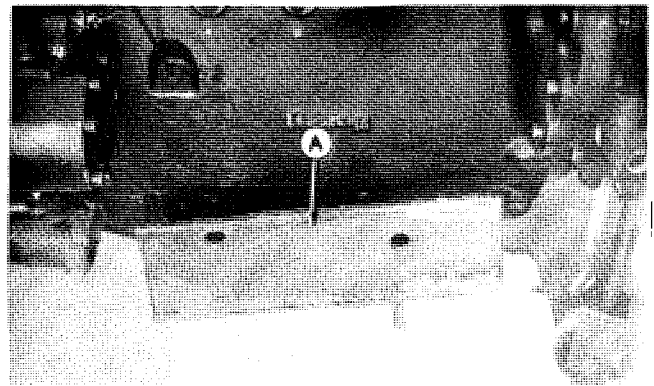
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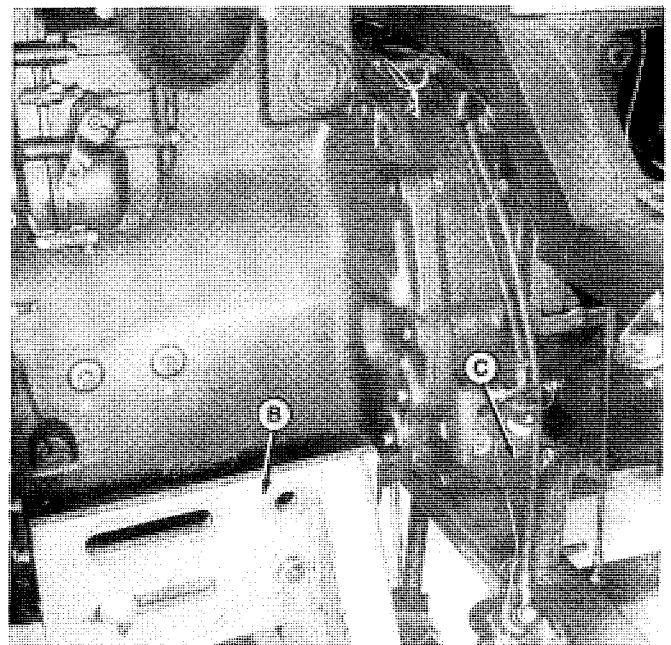
15. Remove four oil pan bolts and lock washers. Install fabricated mounting plate (A) under engine using four M8.8 x 1.37 bolts and flat washers.

NOTE: See end of this group for dimensions of fabricated mounting plate.

16. Install front splitting stand (B) to fabricated mounting plate and rear splitting stand (C) under transmission.



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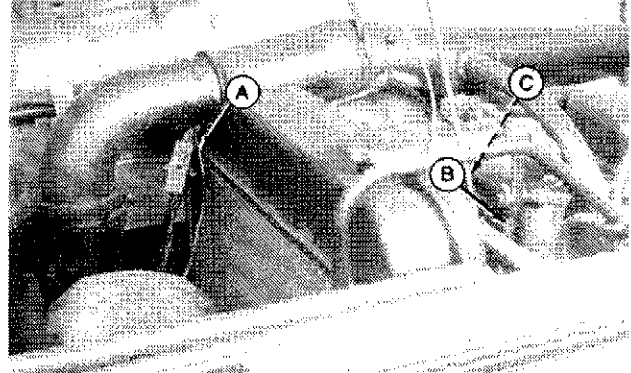
TM1563,1505,K -19-11MAY94

Separating Engine From Transmission/Separating Engine from Transmission

17. Disconnect headlight harness connector (A), coolant temperature connector (B) and ground wire (C).

18. Disconnect engine tachometer wires (D), oil pressure switch wire (E) and alternator harness (F).

19. Remove engine harness from clamps and tie harness to operator's station.



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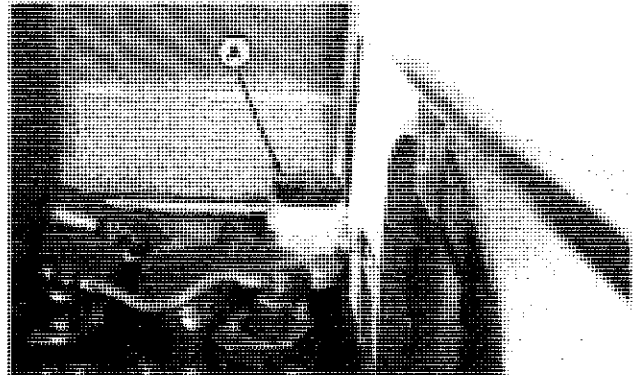


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TM1563,1505,L -19-11MAY94

20. Remove brake fluid reservoir (A) from bracket under engine hood.

21. Tie reservoir to operator's station.



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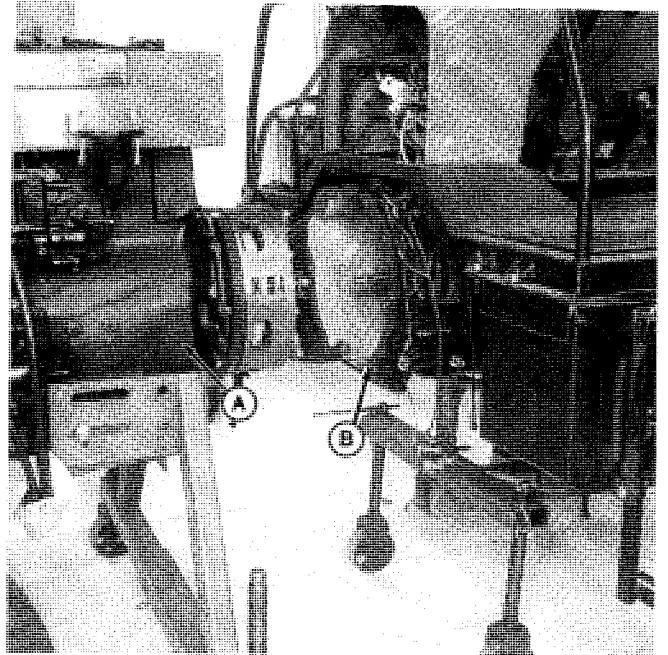
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Separating Engine From Transmission/Connecting Engine to Transmission

22. Remove all bolts from engine bell housing to transmission.

23. Separate engine (A) from transmission (B).



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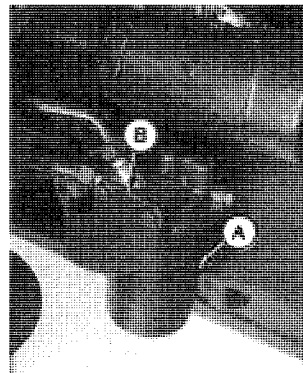
CONNECTING ENGINE TO TRANSMISSION

1. Roll engine assembly to transmission.

NOTE: It will be necessary to remove starter from engine to rotate clutch/flywheel assembly for alignment of transmission splined shaft into clutch assembly.

TM1563,1505,O -19-03MAR94

2. Install filter assembly (A) with bracket (B) to bell housing under starter, with two M12 x 60 bolts and nuts through bell housing.



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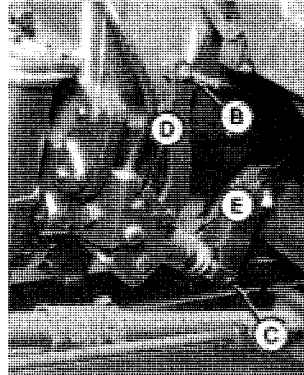
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Separating Engine From Transmission/Connecting Engine to Transmission

3. Install clutch cylinder bracket (D) to left side of bell housing with two M12 x 60 bolts with nuts.

4. Install clutch cylinder (E) to bracket (D). Install pins (B and C).

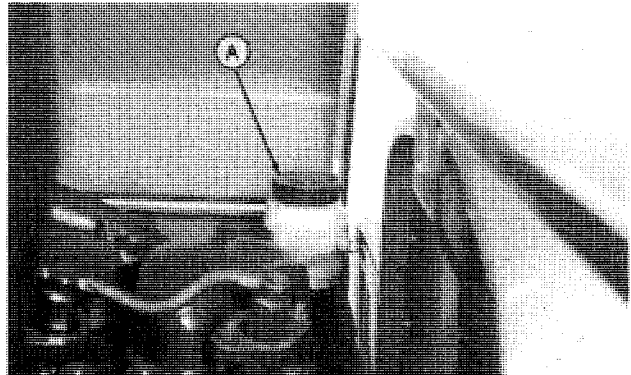
5. Install eleven M12 bolts through transmission bell housing to crankcase.



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6. Remove front and rear splitting stands from tractor.

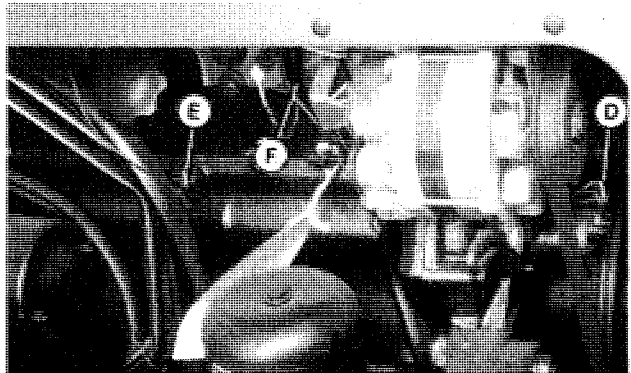
7. Install brake fluid reservoir (A) in bracket under engine hood.



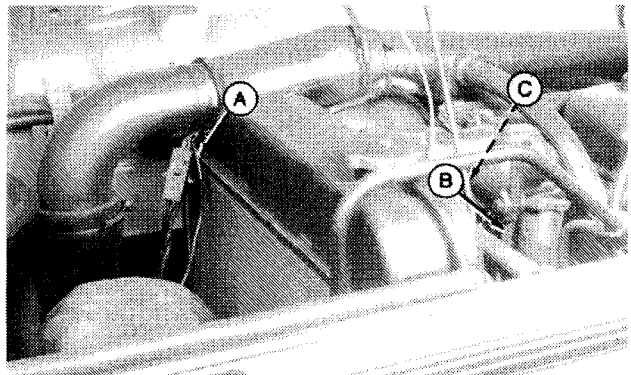
TM1563,1505,R -19-03MAR94

8. Route engine electrical harness to clamps under hood on engine.

9. Connect oil pressure switch (E), alternator harness (F), and engine tachometer wire (D).



10. Connect front harness connector (A), coolant temperature connector (B) and ground wire (C) to water pump.



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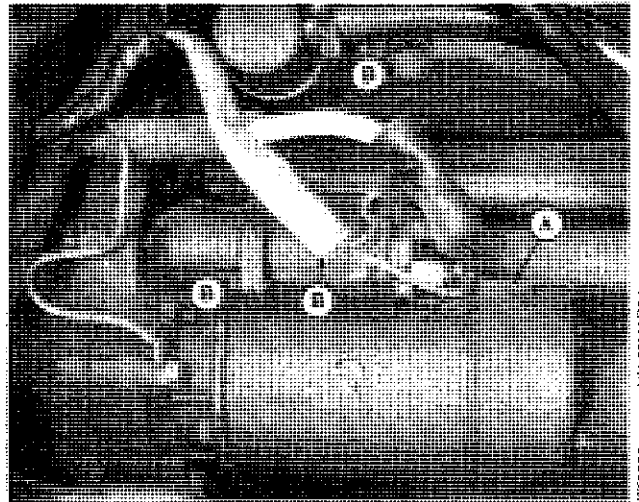
Separating Engine From Transmission/Connecting Engine to Transmission

11. Attach driveshaft for front wheel drive if equipped.
(See Section 55, **Install Driveshaft**)

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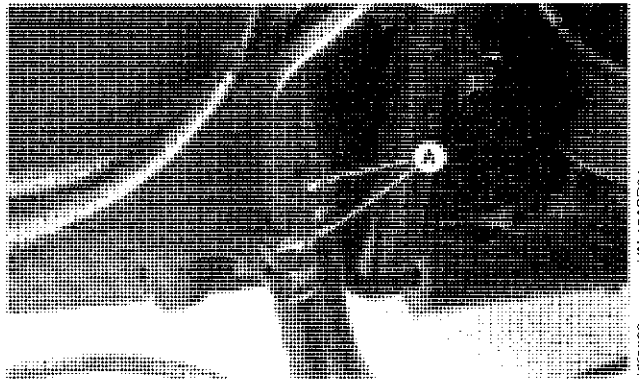
12. Install starter (A) and connect harness (B).



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13. Connect hydraulic hoses (A) from steering cylinder to steel line connections, if tractor is equipped with power steering.

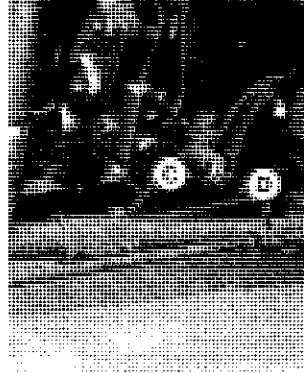


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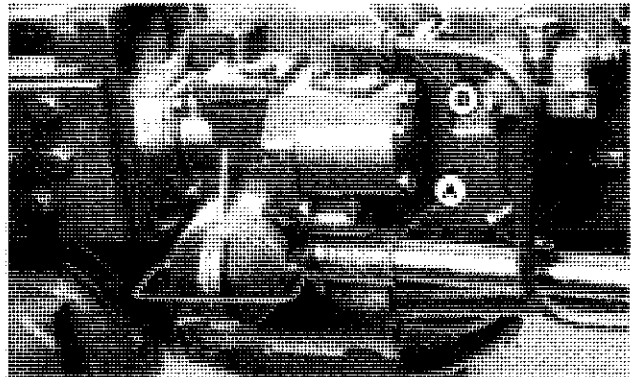
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Separating Engine From Transmission/Connecting Engine to Transmission

14. Connect hydraulic pump pressure line at (D) and (B).

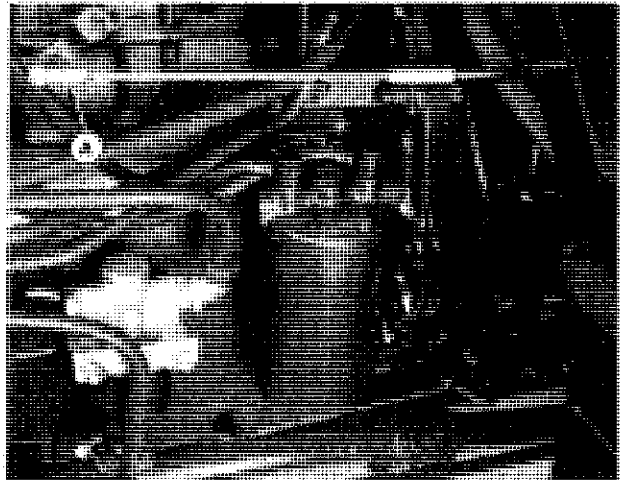


15. Connect hydraulic pump suction line at (C) and (A).



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16. Install throttle rod (A) to injection pump.



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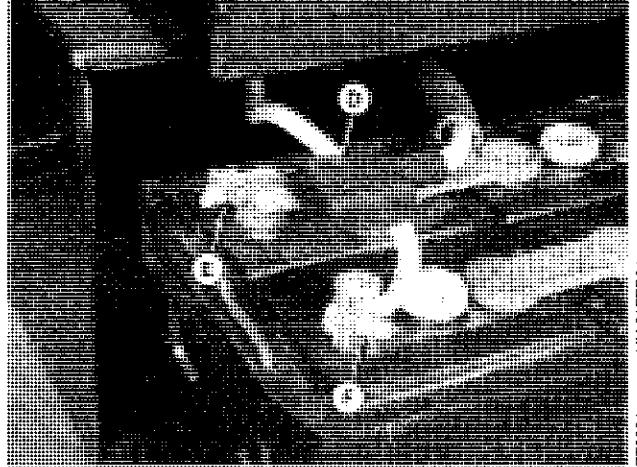
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Separating Engine From Transmission/Connecting Engine to Transmission

17. Connect positive (+) battery cable (E) and then connect negative (-) battery cable (F) to battery and install cover (D) over positive terminal.

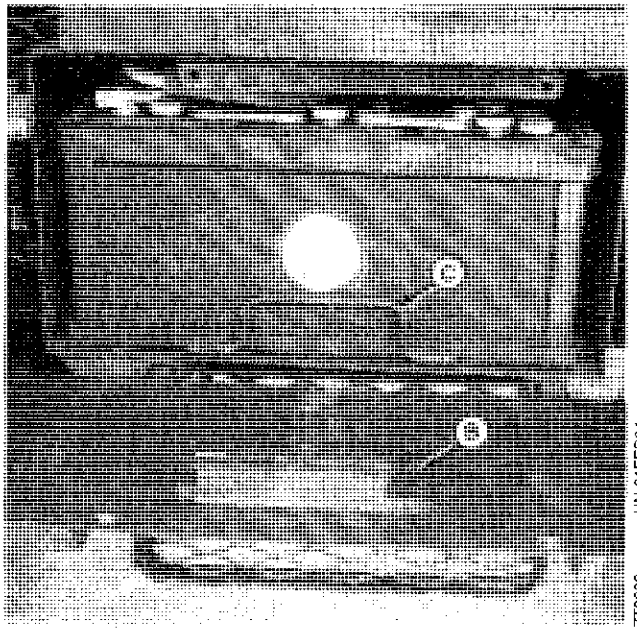
18. Push battery (C) in compartment.

19. Install bolts (A) to battery access cover.

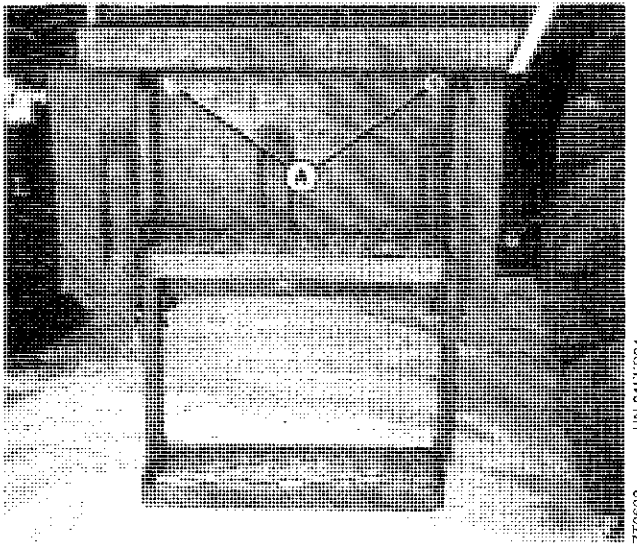


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Separating Engine From Transmission/Connecting Engine to Transmission

20. Refill transmission with hydraulic oil. (See Specifications at beginning of this section for proper quantity of oil.)

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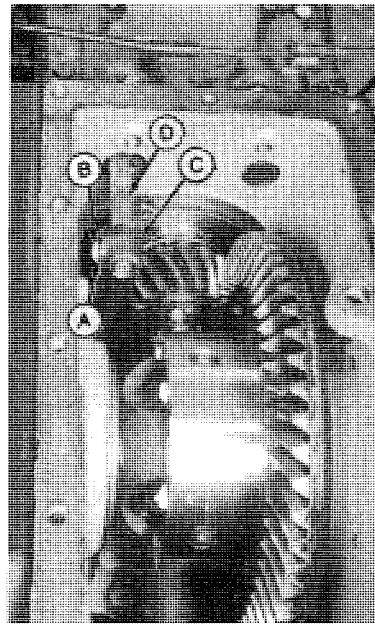
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REMOVE TRANSMISSION

1. Remove operator station. (See Section 90 Group 20 **Remove Operator Station**.)
2. Separate engine from transmission (See Group 05 **Separating Engine From Transmission** in this section.)
3. Remove hydraulic cover. (See Section 70 Group 10 **Remove Hydraulic Cover**.)

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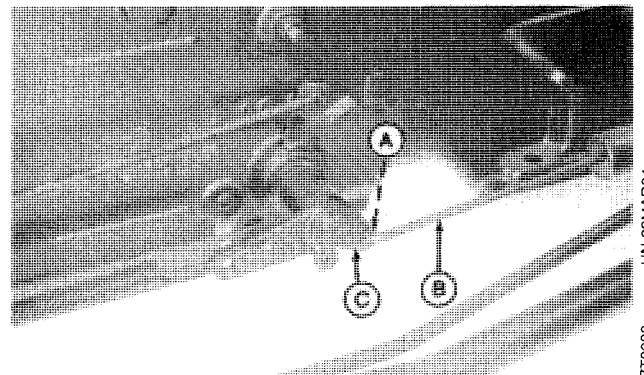
4. Bend up tab on lock washer (A).
5. Remove cap screw (B) from shift fork (C).
6. Remove shift fork (C) from shift rail (D).



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TM1563,1510,B -19-11MAY94

7. Remove snap ring (A) from park brake rod (B) and remove from lever (C).



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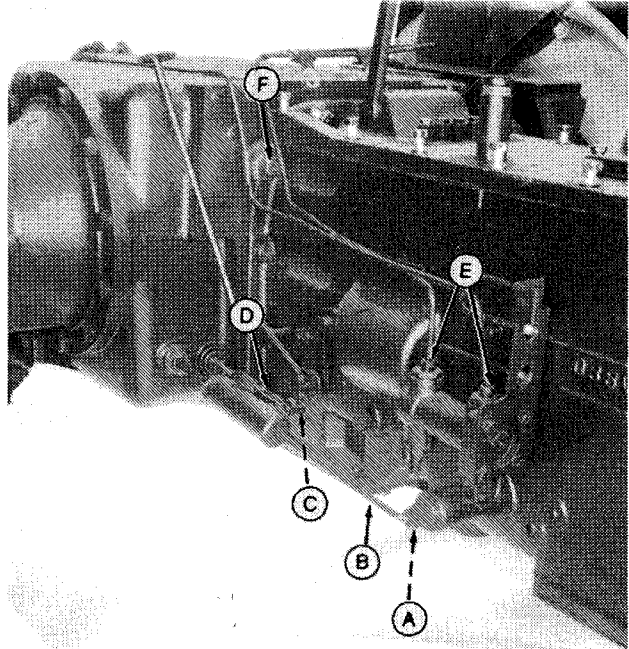
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Transmission/Remove Transmission

8. Remove cotter pin (A) from park brake rod (B) and remove rod from lever.
9. Remove cotter pin (C) from differential lock rod (D). Remove rod from lever.
10. Remove brake lines (E) from proportional valve.
11. Attach hoist or other suitable lifting device to transmission.

CAUTION: Approximate weight of transmission is 455 Kg (1000 lbs.)

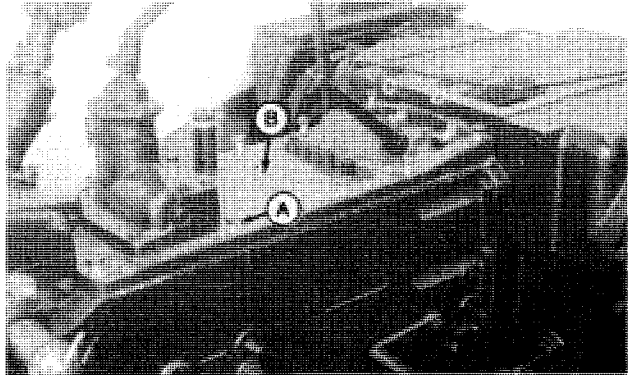
12. Remove twelve cap screws (F) from transmission to rear differential gearcase.



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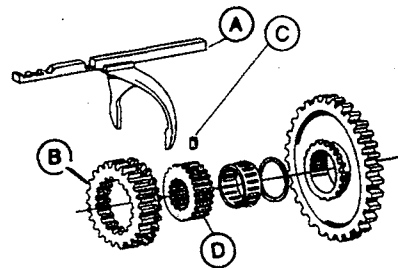
13. (Front-Wheel Drive Models Only) Remove twelve bolts (A) and remove transmission cover (B).



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14. (Front-Wheel Drive Models Only) Remove reduction gear shift fork (A). (Right-hand shift rail with fork)
15. (Front-Wheel Drive Models Only) Slide shift coupling gear (B) forward to access lock pins (C) in drive gear (D).
16. (Front-Wheel Drive Models Only) Remove lock pins (C) with M5 bolts.
17. Remove transmission front gearcase.



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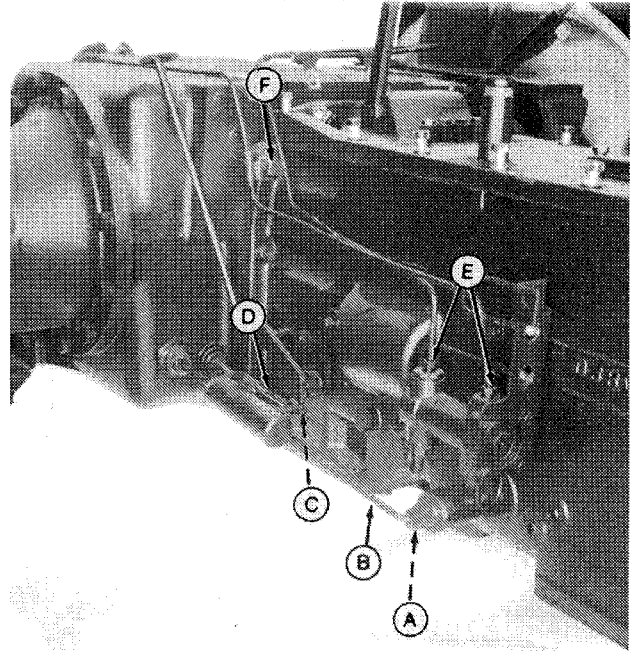
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INSTALL TRANSMISSION

1. Install transmission to gearcase.
2. Install twelve M14 cap screws (F) through transmission into rear differential gearcase. Top two bolts and top right bolt through brake line clips.

NOTE: Apply TY3512 thread lock and sealer to threads.

3. Torque bolts (F) to 120 N·m (88 lb-ft.)
4. Connect differential lock rod (D) to lever with cotter pin (C).
5. Connect park brake rod (B) to lever with cotter pin (A).
6. Connect brake lines (E) to proportional valve.



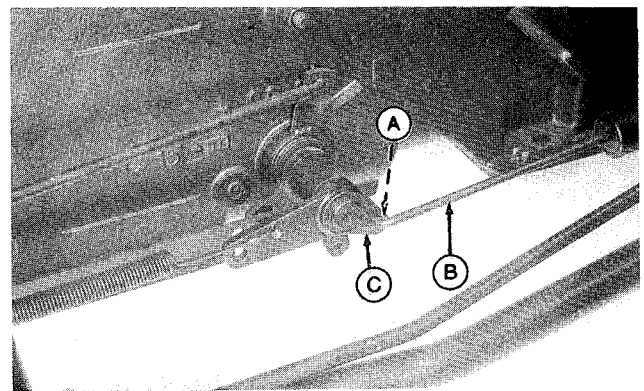
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7. Connect park brake rod (B) to lever (C).
8. Install cotter pin (A) on rod (B).



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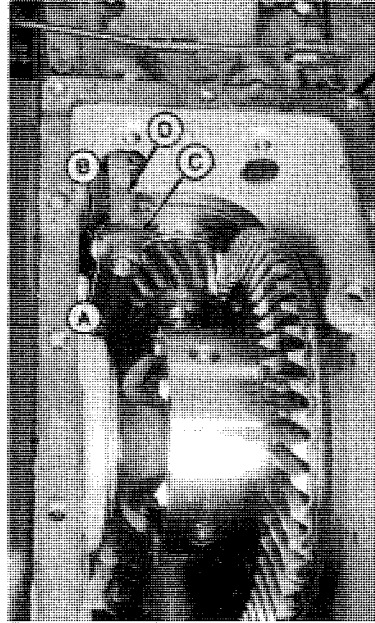
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Transmission/Remove Transmission

9. Install shift fork (C) to shift rail (D).
10. Install cap screw (B) with tab washer (A) in shift fork (C).
11. Bend down tab washer (A).
12. Remove splitting stands from front and rear of tractor.



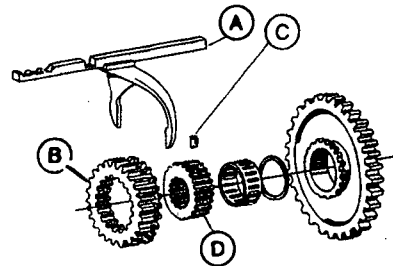
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13. (Front-Wheel Drive Models Only) Install lock pins (C) with M5 bolts.

14. (Front-Wheel Drive Models Only) Slide shift coupling gear (B) rearward to access lock pins (C) in drive gear (D).

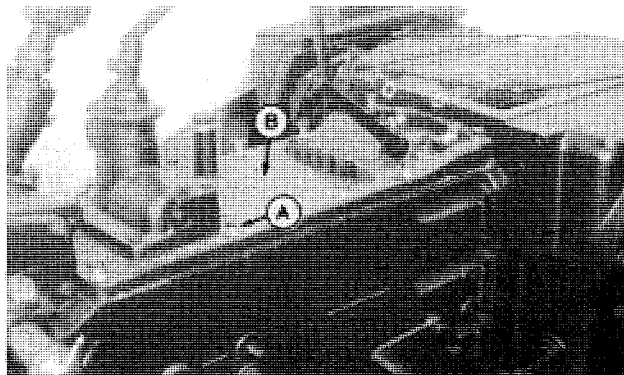
15. (Front-Wheel Drive Models Only) Install reduction gear shift fork (A) (Right-hand shift rail).



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16. (Front-Wheel Drive Models Only) Install transmission cover (B) and install twelve bolts (A).



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