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| ITEM                                      | ABBREVIATION | DESCRIPTION                                                                               |
|-------------------------------------------|--------------|-------------------------------------------------------------------------------------------|
| Electrohydraulic                          | EH           | Hydraulic valve function that is controlled electrically                                  |
| Electrohydraulic Controller               | EHC          | Electronic device used to house various computerized system functions (CCU, HCU, and PTR) |
| Electronic Components Relay               | ELX          | Relay powering most of the electronic components                                          |
| Excess Flow (SCV/Hitch Flow)              | EF           | Reference—SCV/Hitch flow                                                                  |
| Excess Flow Load Sense (SCV/Hitch Flow)   | EFL          | Reference—SCV/Hitch load sense                                                            |
| Forward                                   | FWD          | Direction of movement                                                                     |
| Forward-Neutral-Reverse                   | FNR          | Abbreviation                                                                              |
| Gallons per Minute                        | gpm          | Amount of fluid displaced over a period of one minute                                     |
| Heating, Ventilating and Air Conditioning | HVAC         | Abbreviation                                                                              |
| High-Intensity Discharge Light            | HID          | Abbreviation                                                                              |
| Hitch Control Unit                        | HCU          | Computerized system used to control hitch functions                                       |
| Housing                                   | Hsg          | Abbreviation                                                                              |
| Instrument Cluster Controller             | ICC          | Computerized system used to control instrument cluster functions                          |
| Ignition                                  | IGN          | Control for starting and stopping the tractor                                             |
| Inside Diameter                           | ID           | Abbreviation                                                                              |
| International Standards Organization      | ISO          | Standards organization                                                                    |
| Joint Industry Council Organization       | JIC          | Standards organization                                                                    |
| Left-Hand                                 | LH or L-H    | Abbreviation                                                                              |
| Liquid Crystal Display                    | LCD          | A technology used for displaying information                                              |





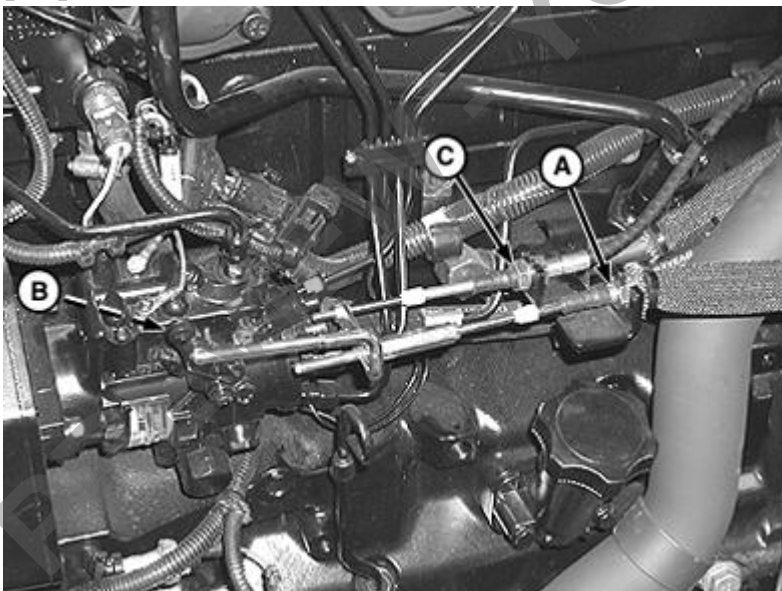
Return Line With Hydraulic Oil Cooler

**LEGEND:**

- A Steering Return Line
- B Line Clamp

Disconnect steering return line (A) and remove line clamp (B).

[19] -



4-Cylinder

**LEGEND:**

- A Nut—PTO Cable
- B Cotter Pin
- C Nut—Throttle Cable

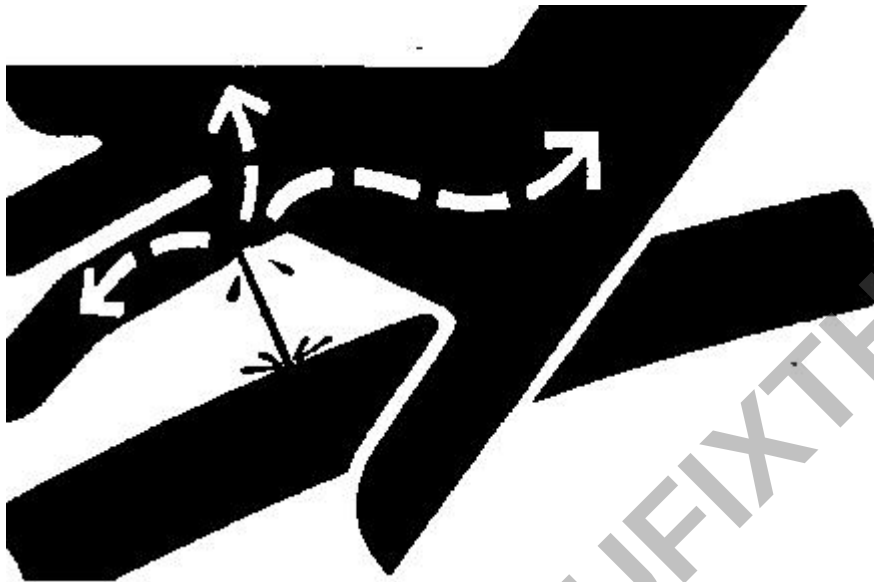
Loosen nut (C), remove cotter pin (B) and route throttle cable away from engine.

[41] - Run engine to circulate coolant. Check coolant level and replenish as necessary.

[42] -

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**⚠ CAUTION:**



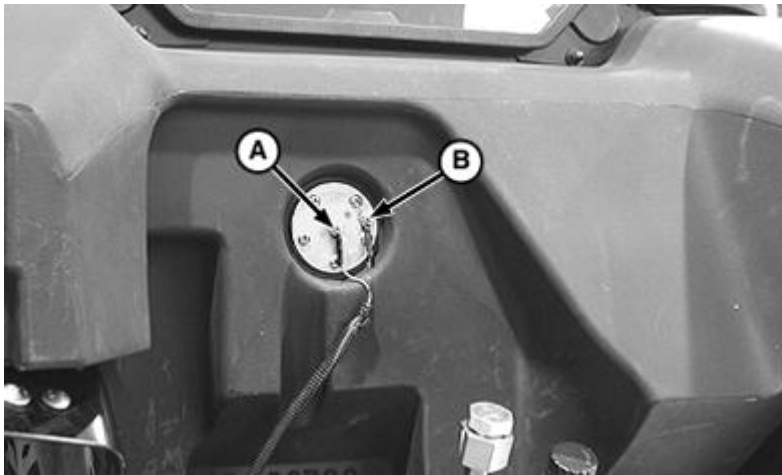
***Escaping Fluid Under Pressure***

***DO NOT use hands to check for leaks with fluid under pressure. Escaping fluid under pressure can penetrate the skin causing serious injury. If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A.***

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With engine running, check for hydraulic leaks. Tighten connections as necessary.

[43] - Adjust fast idle. (See Component Technical Manual—PowerTech 4.5L Diesel Engine Mechanical Fuel System.)



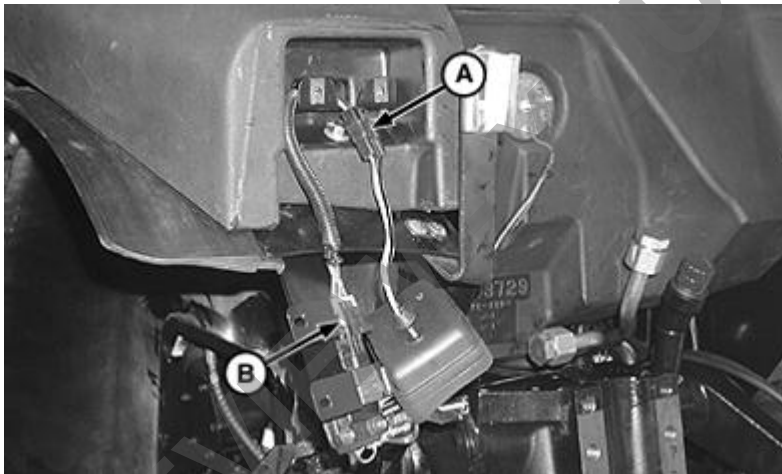
*Sending Unit*

**LEGEND:**

- A Nut (Orange Wire Lead)
- B Nut (Black Wire Lead)

Install orange wire lead and nut (A) and black wire lead and nut (B).

**[19] -**



*Light Connector*

**LEGEND:**

- A Light Connector
- B Hitch Control Switch Connector

Connect hitch control switch connector (B).

**[20] -** Connect light connector (A).

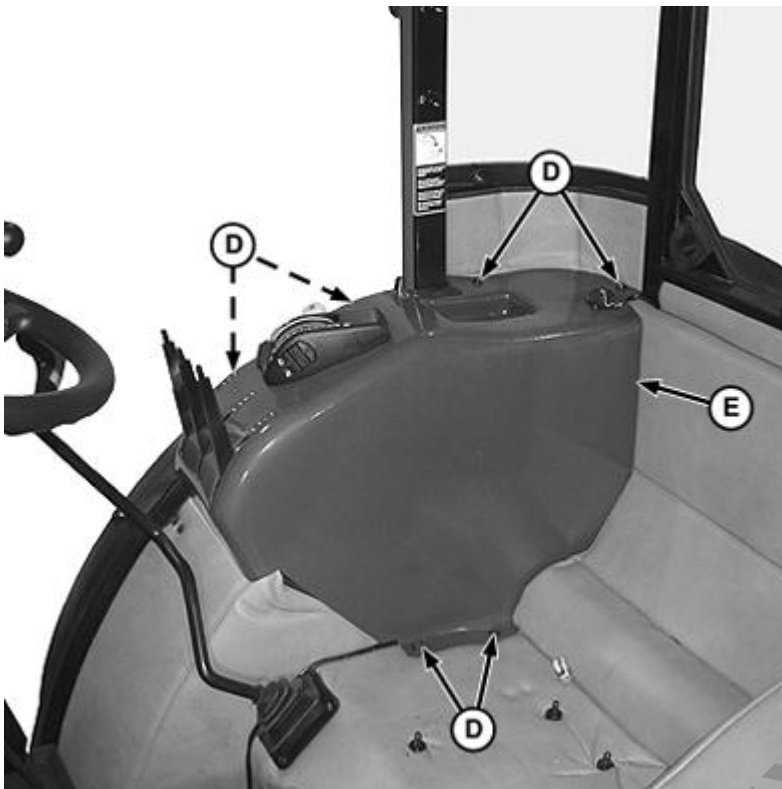
**[4]** - Install battery.

**[5]** - Install hold-down bracket (B) and tighten nuts (A).

**[6]** - Connect positive (+) battery cable first, then negative (—) battery cable.

**[7]** - Apply petroleum jelly to battery terminals to prevent corrosion.

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Remove Right Console Cover

**LEGEND:**

|   |                           |
|---|---------------------------|
| D | Screw and Washer (6 used) |
| E | Console Cover             |
| F | Wire Connector            |
| G | Screw (4 used)            |
| H | Rockshaft Control Module  |

Install rockshaft control module assembly (H) on console using four screws (G).

**[11]** - Connect wire connector (F).

**[12]** - Install console cover (E) and screws (D).

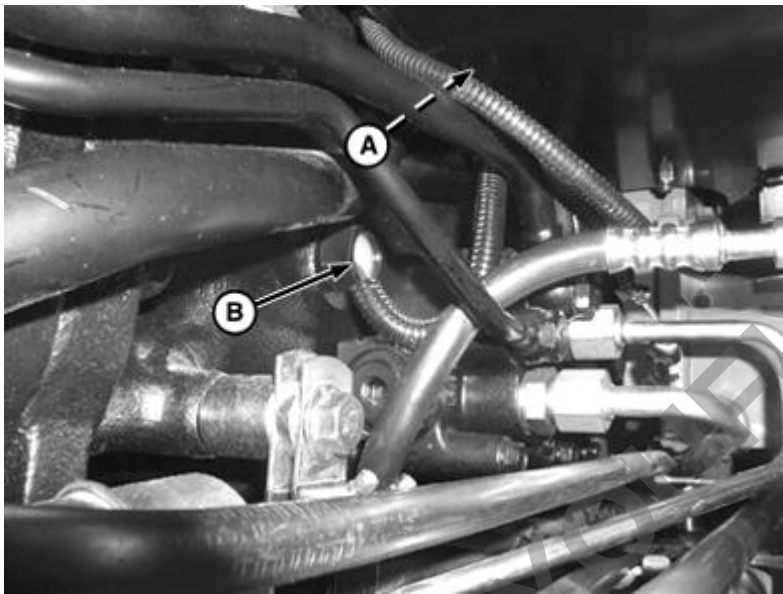
**[13]** -

## Replace Countershaft Speed Sensor

[1] -

→NOTE:

Countershaft speed sensor is located on the right side of the transmission.



*Countershaft Speed Sensor*

**LEGEND:**

A Wire Connector  
B Countershaft Speed Sensor

Disconnect negative (—) battery cable.

[2] - Drain approximately 1—2 gallons of oil from the transmission/hydraulic system.

[3] - Disconnect wire connector (A) and remove countershaft speed sensor (B).

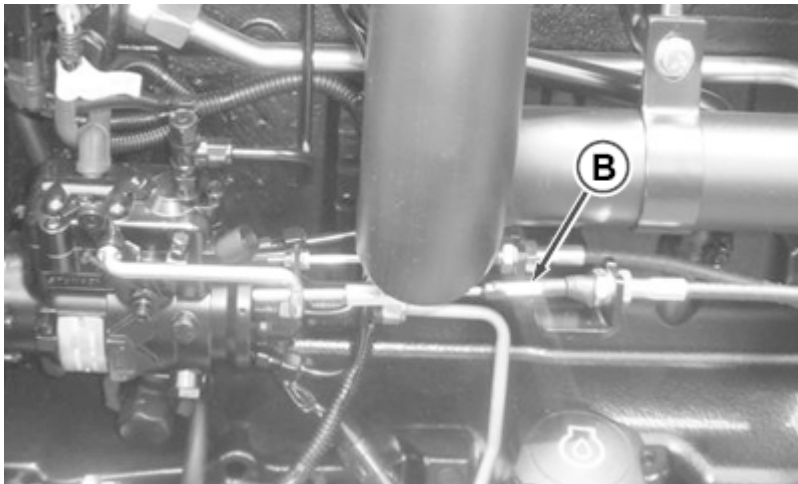
[4] -

- [2]** - Remove cowl cover. (See Remove and Install Cowl Cover in Section 90, Group 06.)
- [3]** - Disconnect the turn signal wire connector (A), and turn the instrument panel (B) over.
- [4]** - Disconnect wire connector (C).
- [5]** - Remove the MFWD switch from the instrument panel, pressing in on the spring-loaded tabs (D) on both sides of the switch.
- [6]** - Install new MFWD switch into the instrument panel.
- [7]** - Connect wire connector (C).
- [8]** - Install the instrument panel (B) and connect the turn signal wire connector (A).
- [9]** - Install cowl cover. (See Remove and Install Cowl Cover in Section 90, Group 06.)
- [10]** - Connect battery negative (—) cable.

## Replace Speakers

- [1]** -





Shiftable PTO Throttle Cable

**LEGEND:**

- A Throttle Linkage Rod
- B Shiftable PTO Throttle Cable

Disconnect throttle linkage rod (A). If equipped with shifttable PTO, disconnect throttle cable (B), loosen only the front nut.

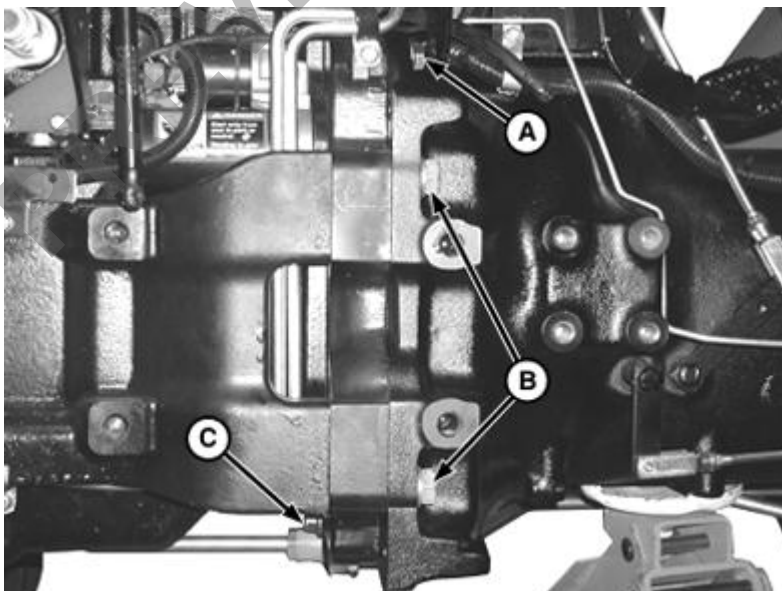
[12] -

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**⚠ CAUTION:**

***If tractor is equipped with optional front weights and support, remove weights and support before removing any engine-to-clutch housing mounting hardware.***

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## PowrReverser™ Control Valve-Exploded View

**LEGEND:**

|    |                         |
|----|-------------------------|
| A  | Plug                    |
| B  | O-Ring                  |
| C  | Spring (2 used)         |
| D  | Piston                  |
| E  | Plug                    |
| F  | Plug (2 used)           |
| G  | Seal (2 used)           |
| H  | Spacer                  |
| I  | Piston                  |
| J  | Sleeve                  |
| K  | Outer Spring            |
| L  | Inner Spring            |
| M  | Shim                    |
| N  | Plug                    |
| O  | O-Ring                  |
| P  | Plug                    |
| Q  | O-Ring                  |
| R  | Spring                  |
| S  | Piston                  |
| T  | Valve Housing           |
| U  | O-Ring                  |
| V  | Solenoid Valve          |
| W  | Retainer                |
| X  | Socket Head Cap Screw   |
| Y  | Solenoid Valve (2 used) |
| Z  | Spool (2 used)          |
| AA | Spring (2 used)         |
| AB | Plug (8 used)           |
| AC | Plug                    |
| AD | O-Ring                  |
| AE | Spring                  |
| AF | Inlet Strainer          |

Remove PowrReverser™ control valve. (See Remove and Install PowrReverser™ Control Valve in Section 50, Group 11.)

**[2]** - Remove parts (A—D) to remove shuttle valve.

**[3]** -

**→NOTE:**

**Shims (M) may have different thicknesses. Record thickness of shim stack for ease of reassembly.**

(AH).

**[42] -**

**→NOTE:**

**Rotating gear (AH) will align disks (P) and allow gear to fully seat into clutch.**

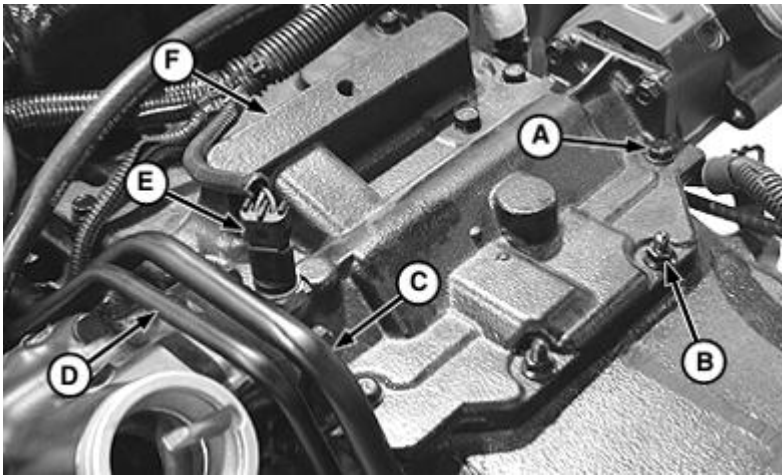
Install gear (AH) onto shaft (C).

**[43] -** Tighten cover screws (AF) in a crisscross pattern to specification.

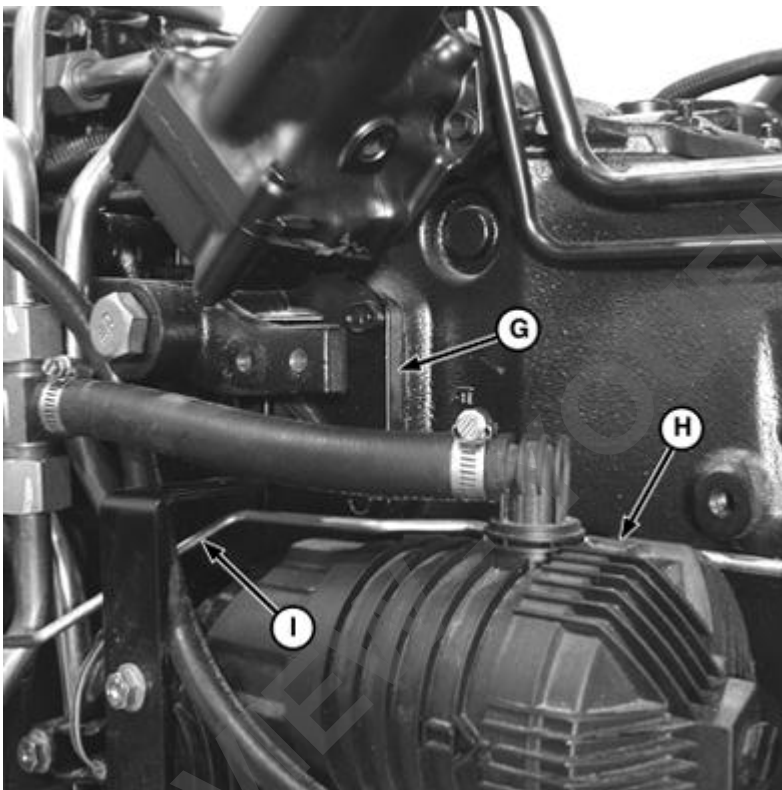
| Item                   | Measurement | Specification       |
|------------------------|-------------|---------------------|
| Lo Clutch Cover Screws | Torque      | 9.8 N·m (87 lb-in.) |

**[44] -** Install spacer (AI) and bearing (AJ).

**[45] -** Install Hi/Lo clutch shaft into clutch housing. (See Remove and Install PowrReverser™—Transmissions With EH Hi/Lo in Section 50, Group 11.)



Transmission Cover Top Plate



Hydraulic Filter Assembly

**LEGEND:**

- |   |                                |
|---|--------------------------------|
| A | Cap Screw (8 used)             |
| B | Nut (2 used)                   |
| C | PTO Clutch Lubrication Line    |
| D | PTO Clutch Engagement Line     |
| E | Park Position Sensor Connector |
| F | Cover                          |
| G | Right-Side Cover               |
| H | Hydraulic Oil Filter Assembly  |
| I | Brake Line                     |

Remove cap screws (A) and nuts (B).



### Range Reduction Shaft

#### LEGEND:

|   |                            |
|---|----------------------------|
| A | Bearing                    |
| B | Range Reduction Drive Gear |
| C | Collar                     |
| D | 2nd Range Drive Gear       |
| E | Collar                     |
| F | Range Reduction Shaft      |
| G | Bearing                    |

Remove bearings (A and G) using a knife-edged puller and a press.

**[2]** - Remove all parts.

**[3]** - Inspect all parts for wear or damage. Replace as necessary.

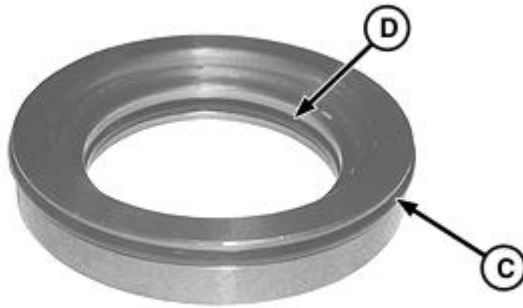
**[4]** -

#### →NOTE:

**Lubricate all parts with clean transmission/hydraulic oil during assembly.**

Install all parts.

Install bearings (A and G) using a bearing, bushing, and seal driver set and a press.



### Piston Seals

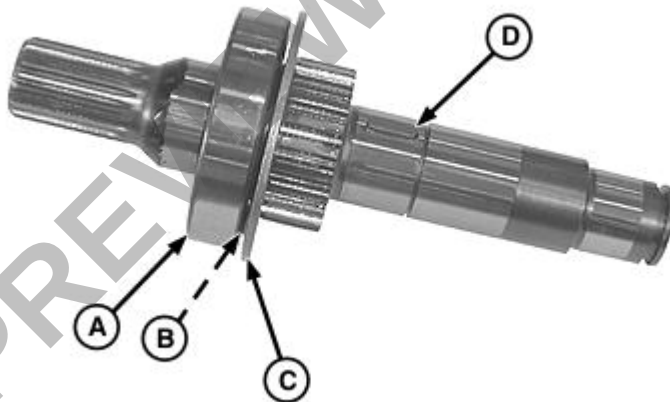
#### LEGEND:

|   |          |
|---|----------|
| A | Piston   |
| B | Cylinder |
| C | Seal     |
| D | Seal     |

Remove piston (A) from cylinder (B).

**[15]** - Replace piston seals (C and D) and install piston into cylinder.

**[16]** -



### Bearing and Shaft

#### LEGEND:

|   |              |
|---|--------------|
| A | Bearing      |
| B | Snap Ring    |
| C | Holder       |
| D | Woodruff Key |

## Exploded View of Differential and Ring Gear Assembly

**LEGEND:**

|   |                                      |
|---|--------------------------------------|
| A | Cap Screw (12 used)                  |
| B | Ring Gear                            |
| C | Roller Bearing                       |
| D | Differential Housing (2 halves used) |
| E | Drive Plate (10 used)                |
| F | Friction Plate (8 used)              |
| G | Inner Thrust Plate (2 used)          |
| H | Bevel Gear (2 used)                  |
| I | Spring Pin                           |
| J | Thrust Washer (2 used)               |
| K | Bevel Pinion (2 used)                |
| L | Pinion Shaft                         |
| M | Roller Bearing                       |

Assemble parts (A—M). Apply thread lock and sealer (medium strength) to threads of cap screws (A) and tighten cap screws to specification.

| Number                                                                                                                      | Name                                     | Use                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• PM37477 (us)</li> <li>• NA (canadian)</li> <li>• 242 LOCTITE™ (loctite)</li> </ul> | Thread Lock and Sealer (Medium Strength) | Apply to differential carrier ring gear-to-housing half cap screws. |

**Item****Measurement****Specification**

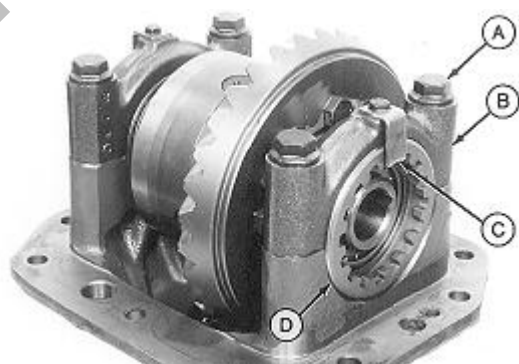
Ring Gear Cap Screw

Torque

78 N·m (58 lb-ft)

**[16] -****→NOTE:**

**When the differential and bevel gear assembly is properly installed in the carrier housing, the ring gear should be to the left of the pinion gear when viewed from the input shaft side of carrier housing and the carrier housing drain hole is at bottom.**

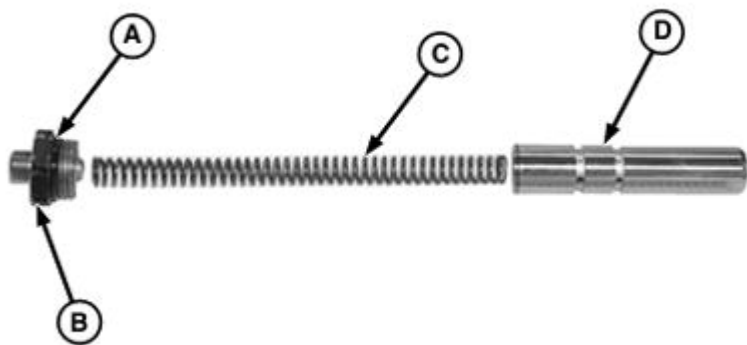


**[9]** - Install boot (K) and tie band (J).

**[10]** - Install cowl cover. (See Remove and Install Cowl Cover in Section 90, Group 06.)

**[11]** - Install items (A—I). Tighten nut (G) to specification.

| Item               | Measurement | Specification     |
|--------------------|-------------|-------------------|
| Steering Wheel Nut | Torque      | 30 N·m (22 lb-ft) |



Brake Valve

LEGEND:

- A O-Ring (2 used)
- B Outlet Check Valve Spring Seat Fitting (2 used)
- C Spring (2 used)
- D Brake Piston (2 used)

Install new O-ring (A).

[9] - Install parts (B—D). Tighten outlet check valve spring seat fitting (B) to specification.

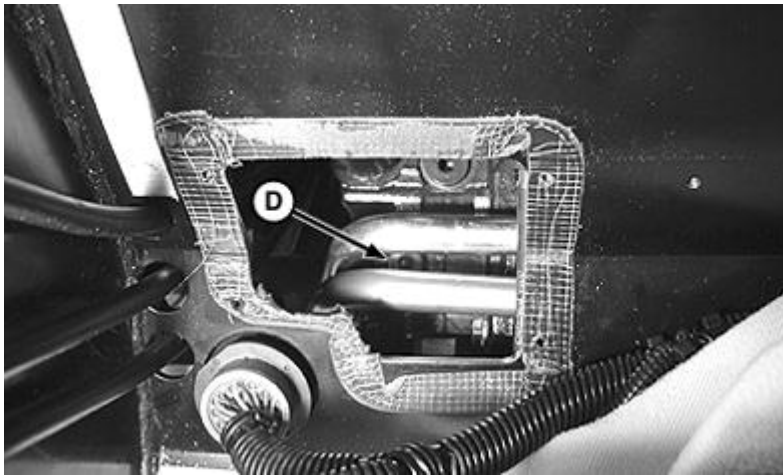
| Item                                   | Measurement | Specification     |
|----------------------------------------|-------------|-------------------|
| Outlet Check Valve Spring Seat Fitting | Torque      | 92 N·m (68 lb-ft) |

[10] - Install brake pedals, pivot shaft, and cotter pin on brake valve.

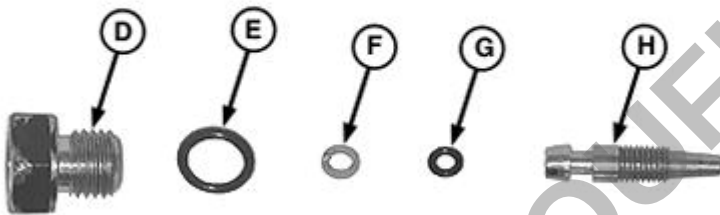
[11] - Install brake valve and pedals. (See Remove and Install Brake Valve and Pedals in Section 60, Group 10.)

[12] - Adjust brake pedals. (See Brake Pedal Adjustment in Diagnostic Technical manual, Section 260.)





Manual Override Valve



Manual Override Valve

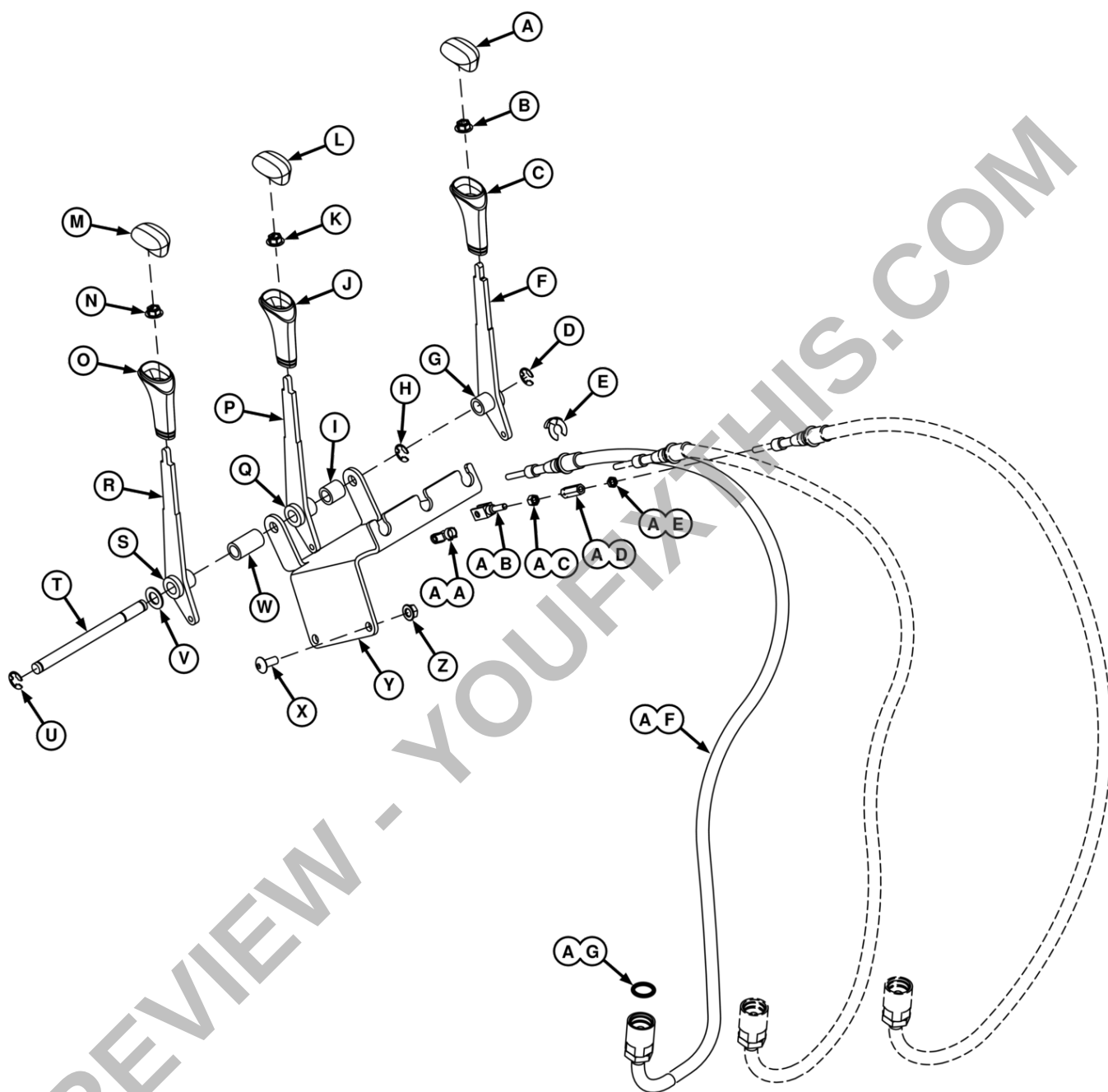
**LEGEND:**

|   |                       |
|---|-----------------------|
| A | Upholstery            |
| B | Screws                |
| C | Screw (4 used)        |
| D | Packing Nut           |
| E | O-Ring                |
| F | Backup Ring           |
| G | O-Ring                |
| H | Manual Override Valve |

Relieve hydraulic system pressure.

**[2]** - Pull upholstery (A) behind operator seat forward to expose harness cover screws (B). Remove screws and cover.

**[3]** - Remove four screws (C) and cover to access manual override packing nut (D).

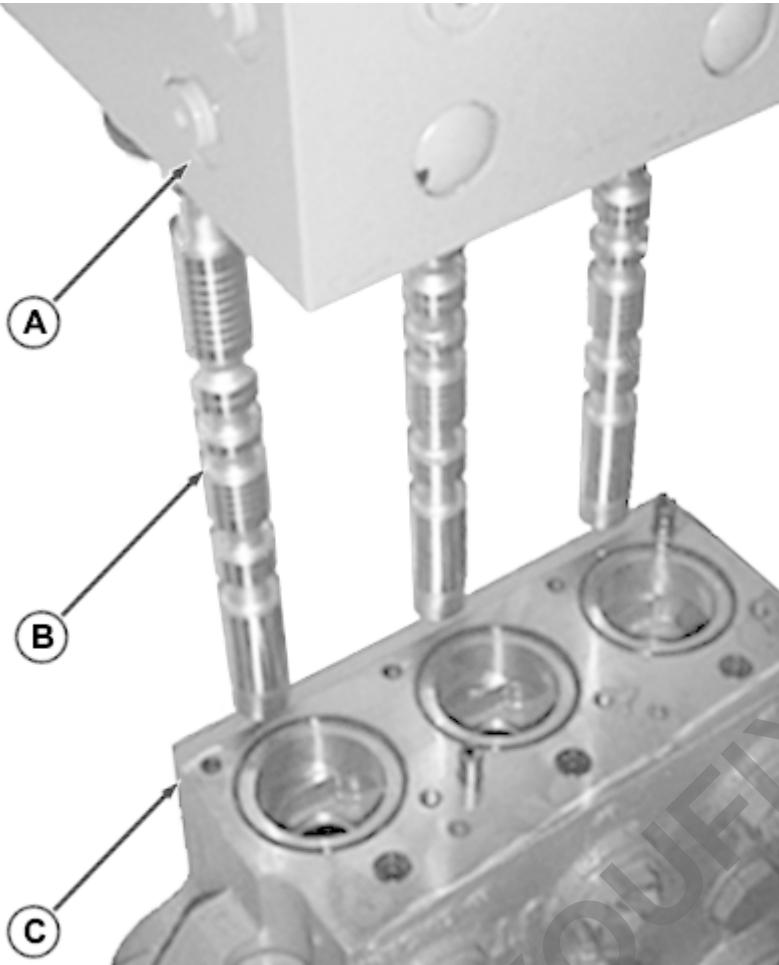


### Rear SCV Levers and Brackets

#### LEGEND:

|   |           |
|---|-----------|
| A | Cap       |
| B | Nut       |
| C | Knob      |
| D | Snap Ring |

[44] -



Assemble Valve Body

**LEGEND:**

- A End Cap Subassembly
- B Spool Assembly
- C Valve Body

Place valve body (C) vertically on bench as shown.

[45] - Install end cap subassembly (A) with spool assembly (B) back onto valve body (C).

[46] -

## Remove and Install Spindle Assembly—2WD Axle

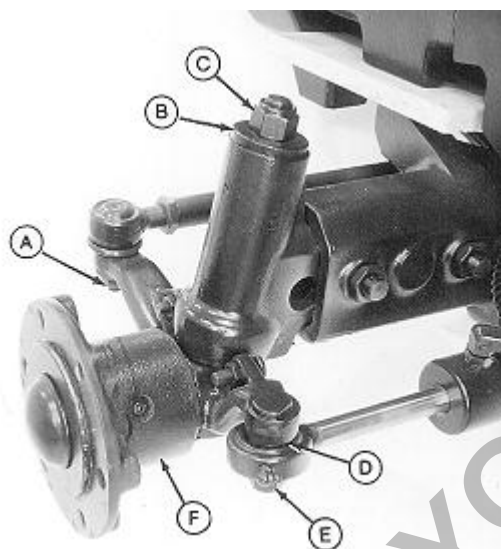
[1] -

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**⚠ CAUTION:**

***Block pivoting front axle to prevent pinching and personal injury.***

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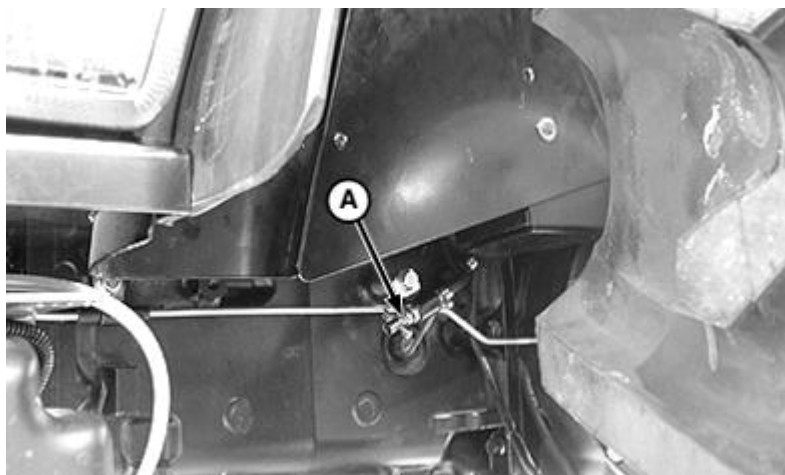
Front 2WD Axle



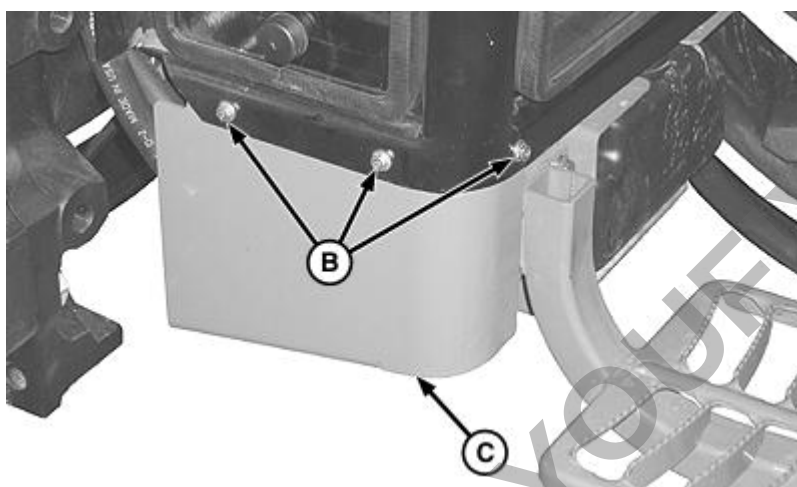
Spindle Assembly

**LEGEND:**

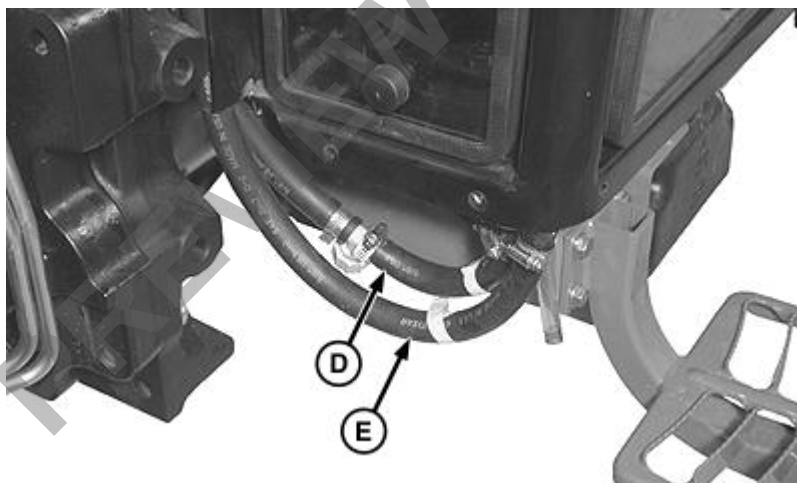
|   |                  |
|---|------------------|
| A | Nylock Nut       |
| B | Washer           |
| C | Nut              |
| D | Spacer           |
| E | Lock Nut         |
| F | Spindle Assembly |
| G | Bearing Race     |



Fuel Drain—In Front of Left Rear Axle



Left-Side Crop Guard



Heater Hoses

**LEGEND:**

- |   |                         |
|---|-------------------------|
| A | Fuel Tank Drain Valve   |
| B | Cap Screw (3 used)      |
| C | Crop Shield (3 used)    |
| D | Heater Core Supply Hose |

Remove rear wiper motor (B), if equipped.

**[2]** - Open rear window and disconnect cylinder (A).

**[3]** - Close rear window and remove one screw (C), if equipped with rear wiper motor. Remove two screws, if not equipped with rear wiper motor.

**[4]** - Replace rear window if necessary.

**[5]** - Position window and install screw (C) and wiper motor (B), if equipped. Do not tighten screw or wiper motor at this time.

**[6]** - Close window. Check or adjust window alignment and tighten screw (C) and rear wiper motor (B), if equipped.

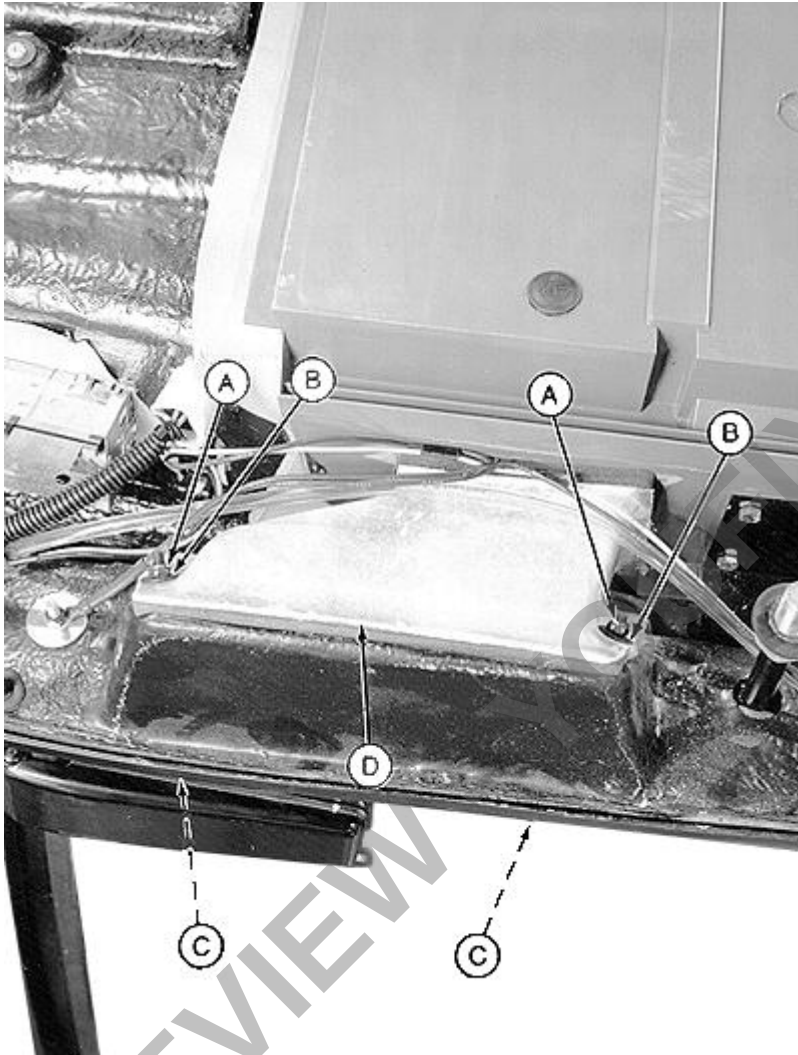
**[7]** - Open window and connect cylinder (A).



[8] - Remove cover (C) to access evaporator drain tube.

[9] - Disconnect evaporator drain tube (D). Repeat for opposite side of cab.

[10] -



*Right Side Shown*

**LEGEND:**

- |   |                      |
|---|----------------------|
| A | Nut (2 used)         |
| B | Flat Washer (4 used) |
| C | Screw (2 used)       |
| D | HVAC Intake Duct     |

Remove nuts (A), washers (B), and screws (C).

[11] - Remove HVAC intake duct (D). Repeat for opposite side of cab.

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