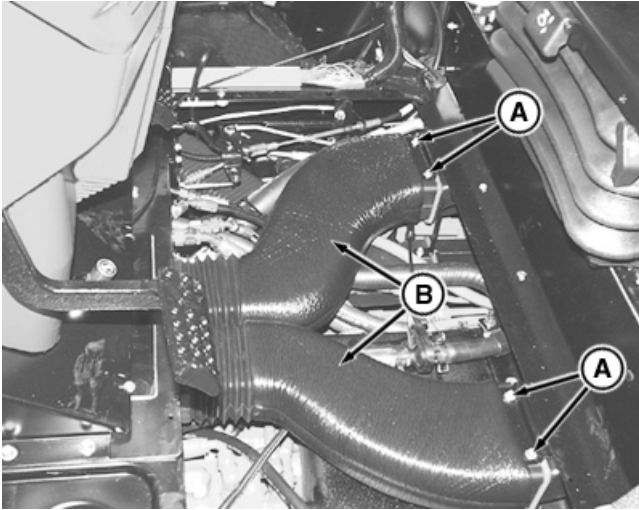


PREVIEW - YOUFIXTHIS.COM

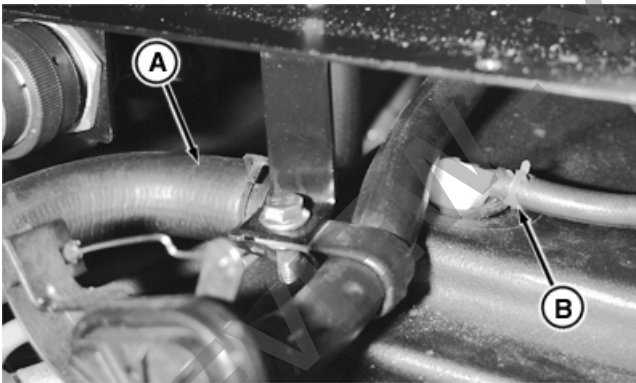
Remove And Install Fuel Tanks

**LEGEND:**

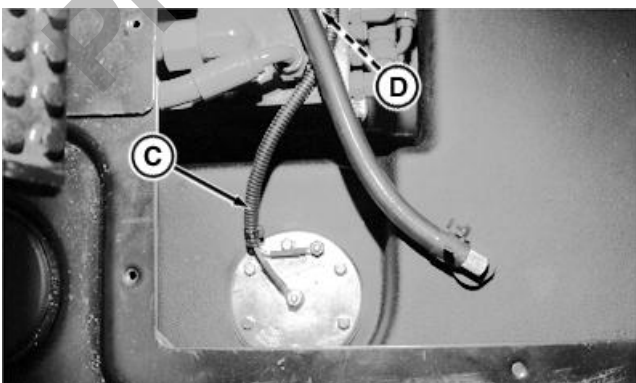
- A Cap Screws
B Air Ducts

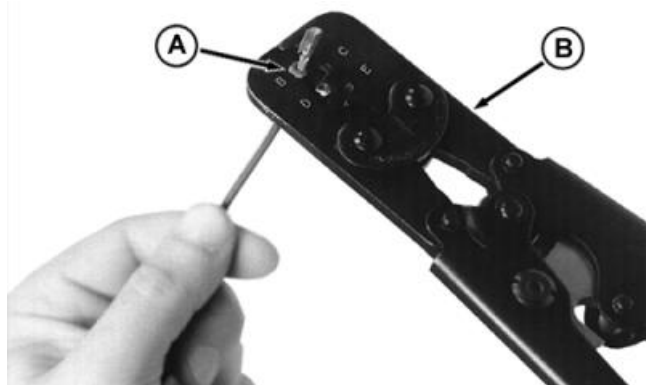
Air Ducts

- [1] - Drain fuel tanks.
- [2] - Remove wheels.
- [3] - Remove floor mat and floor plate from inside cab.
- [4] - Remove cap screws (A), and air ducts (B).
- [5] -

**LEGEND:**

- A Crossover Vent Hose
B Rollover Check/Tank Vent Valve
C Fuel Sender Wires
D Fuel Return Tee

Crossover Vent Hose**Fuel Sender Wires**

**LEGEND:**

A Cable Seal
B Crimping Tool

Metri-Pack Seal Crimp

Crimp cable seal (A) on contact using JDG865 Crimping Tool (B).

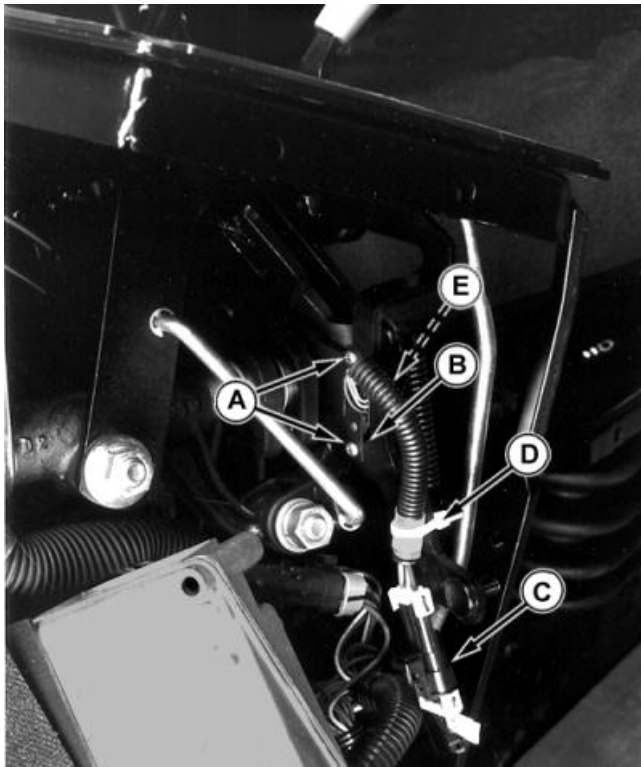
**LEGEND:**

A Locking Tab

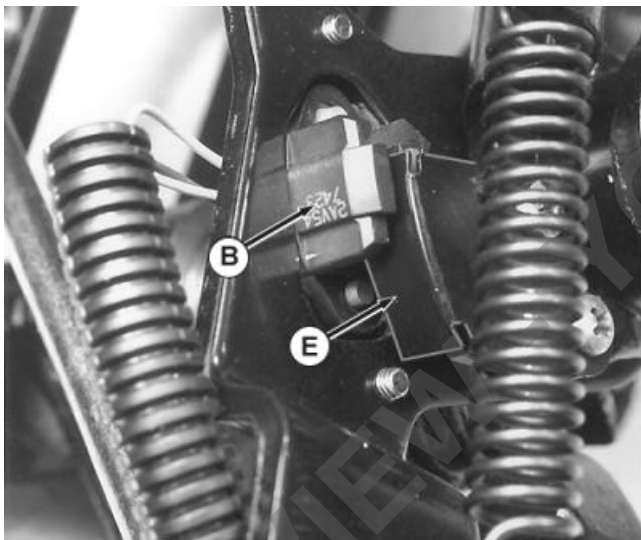
Met Pack Tab

Make sure locking tab (A) on new terminal is in outward position.

Push terminal into connector body socket until terminal locks.

**LEGEND:**

A	Screws
B	Park Enable Switch
C	Connector
D	Tie Band
E	Switch Vane

Connector and Tie Band**Park Enable Switch and Switch Vain**

Remove two screws (A).

Disconnect switch connector (C).

Remove tie band (D) and switch (B).

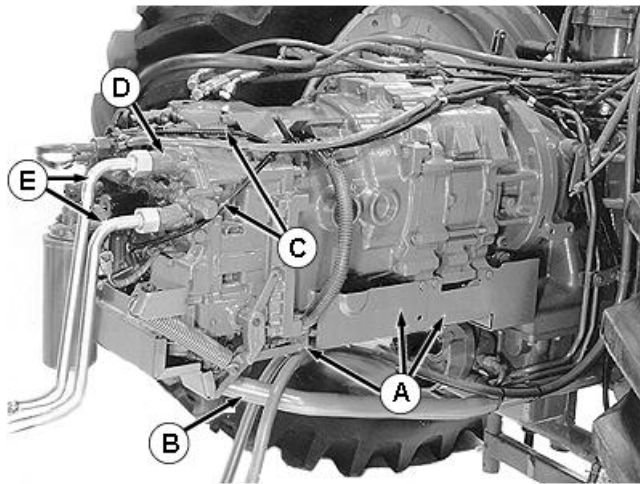
→NOTE:

Make sure switch vane (E) does not interfere with switch (B) when PARK is engaged.

Install in reverse order.

Remove Electrical Switches And Sensors—POWRQUAD Transmission

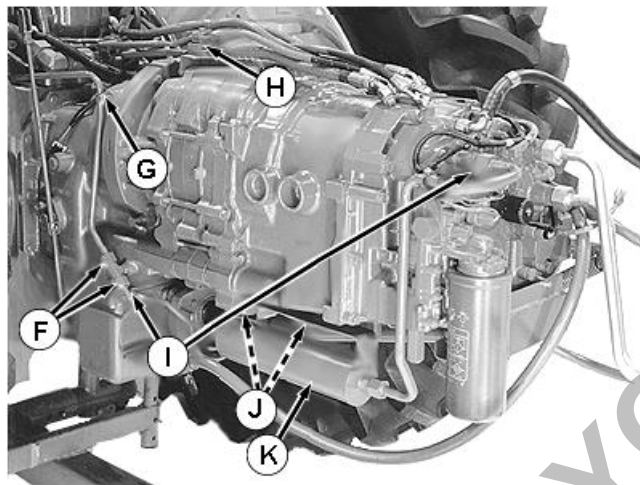
Remove Power Shift Transmission



LEGEND:

A	Shields
B	Suction Tube
C	Wiring Harness
D	Air Pump Inlet Hose
E	Oil Cooler Lines
F	Oil Lines
G	Oil Line Clamp
H	Oil Line Bracket
I	Accumulator Oil Lines
J	Accumulator Cap Screws
K	Accumulator

Power Shift Transmission—Right Side



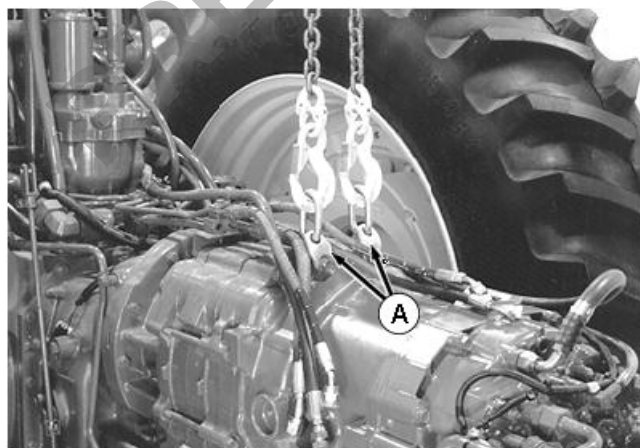
Power Shift Transmission—Left Side

Remove the drive train. (See Remove Drive Train, this group.)

Remove parts (A) and (B).

Disconnect parts (C—I).

Remove two cap screws (J) and remove accumulator (K).



LEGEND:

A	JDG19 Special Mounting Brackets
---	---------------------------------

Special Mounting Brackets

LEGEND:

A

Bushing



Input Shaft Bushing

Remove input shaft bushing (A), if necessary. Install new bushing using JDG763 Bushing Installer.

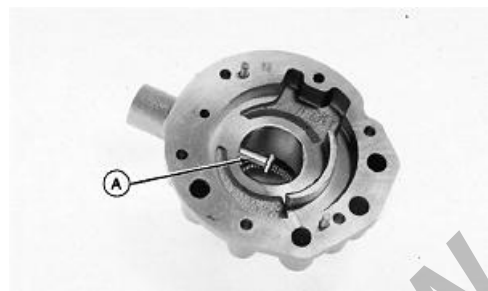
Bushing Installer

JDG763



JDG763

Install bushing in input shaft



LEGEND:

A

Pin

Air Pump Operating Pin

Remove air pump operating pin (A).

LEGEND:

A

Bearing



Bearing

Replace bearing (A) as necessary. Press bearing into manifold using JDG758 Bearing Installer.

Bearing Installer

JDG758

General Repair Procedures—Reduction Gearbox

→NOTE:

Before beginning the repair, review the following guidelines. These are provided to emphasize the need for attention to detail and care when servicing the reduction gearbox.

Thoroughly clean the outside of the reduction gearbox to prevent contamination.

Inspection Before Disassembly:

Inspect the pinion shaft and reduction gear shaft before removal from the reduction gearbox as follows:

- [1] - Wipe the lubricant from the internal working parts and visually inspect the parts for wear and damage.
- [2] - Rotate the gears to check for roughness.
- [3] - Inspect the pinion gear teeth for signs of scoring, abnormal wear or nicks.

Disassembly and Assembly:

- Fasteners must be tightened to the specified torque.
- Lubricate each component part with clean hydraulic oil.
- Needle bearings and thrust washers should be lightly coated with petroleum jelly during assembly.
- Install the correct cone point shim pack.
- Perform specified end play and backlash checks.
- The differential backlash check must be made if rear differential drive shaft bearing is replaced.
- The differential ring gear and drive shaft are replaced as a matched set.

Cleaning and Inspection:

Bearings

IMPORTANT:

Heat bearing cones in a bearing heater. Use a thermometer and do not exceed 150°C (300°F).

- Never dry bearings with compressed air. Spinning a bearing without lubrication can damage the bearing.
- Clean bearings with clean solvent, dry thoroughly, and oil before inspection. Inspect bearings for roughness of rotation, and excessive wear of rollers or balls.
- Inspect bearing cups for excessive wear.
- Bearing assemblies must turn without roughness.
- Both the bearing cone and roller assembly should be replaced if inspection reveals either a worn cup or cone.
- Inspect thrust washers and thrust surfaces for distortion, roughness, scoring, or wear.
- When installing bearing cups and cones, make sure they are fully seated.

Springs

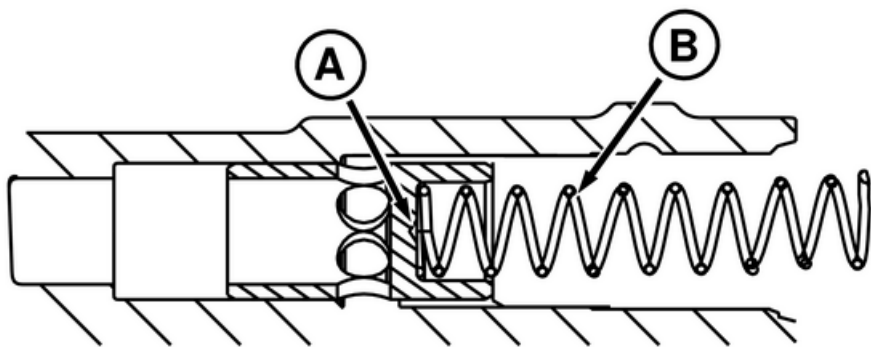
Inspect all springs for wear, damage, or distortion.

Shafts

- Inspect the shaft bearing surfaces for wear or damage.
- Inspect shafts and replace if excessively worn or damaged.

Gears

Repair Hydrostatic Module Control Valve Assembly



Cold Start Valve

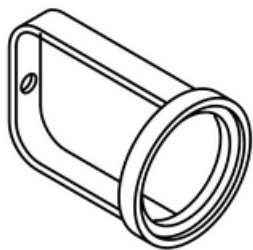
LEGEND:

- A
- B
- Valve Spring

IMPORTANT:

Cold Start Valve must be properly assembled (as shown).

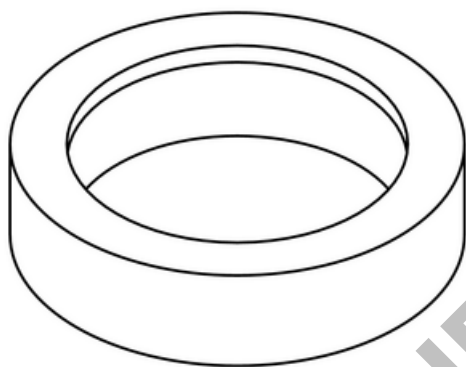
Item	Measurement	Specification
Cold Start Spring	Free Length	65 mm (2.5 in.)
	Test Length	33 mm at 45—55 N (1.30 in. at 10.1—12.4 lb force)
Lube Relief Valve Spring	Free Length	46 mm (1.8 in.)
	Test Length	38 mm at 138—182 N (1.50 in. at 31.0—40.9 lb force)
Filter Relief Valve Spring	Free Length	46 mm (1.8 in.)
	Test Length	38 mm at 138—182 N (1.50 in. at 31.0—40.9 lb force)
Cooler Relief Valve Spring	Free Length	74 mm (2.9 in.)
	Test Length	63 mm at 234—286 N (2.29 in. at 52.6—64.3 lb force)
Pressure Control Valve		
Spring (Outer)	Free Length	110 mm (4.3 in.)
	Test Length	81.5 mm at 325—365 N (3.20 in. 73.1—82.0 lb force)
Spring (Inner)	Free Length	110 mm

**JDG1512**

Compress clutch return spring

Guide

JDG1514

**JDG1514**

Install high-mode compensator piston

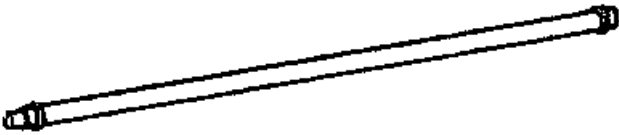
Spanner Socket

JDG10207

**JDG10207**

Use to adjust transmission shafts.

JDG749

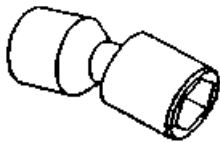


JDG749

Drive train separation

Swivel Socket

JDG750

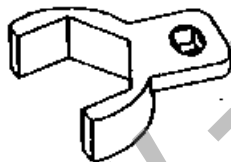


JDG750

Drive train separation

Crowsfoot Wrench

JDG752A

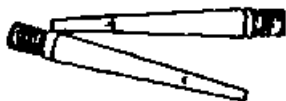


JDG752A

Remove and install hydraulic lines

Pilot Pins

JDG768



JDG768

Component installation

Cab Support Screw Assembly

[JDG809-1 Used with JDG830—Sub for JDG762]

IMPORTANT:

Any change in adjustment of FNR lower linkage or shifter cam neutral alignment will cause required length of FNR upper rod to change.

This adjustment must always be performed LAST, AFTER any adjustment of other FNR linkage.

Shifter cam neutral alignment and FNR lower linkage adjustments must be performed BEFORE doing this procedure.

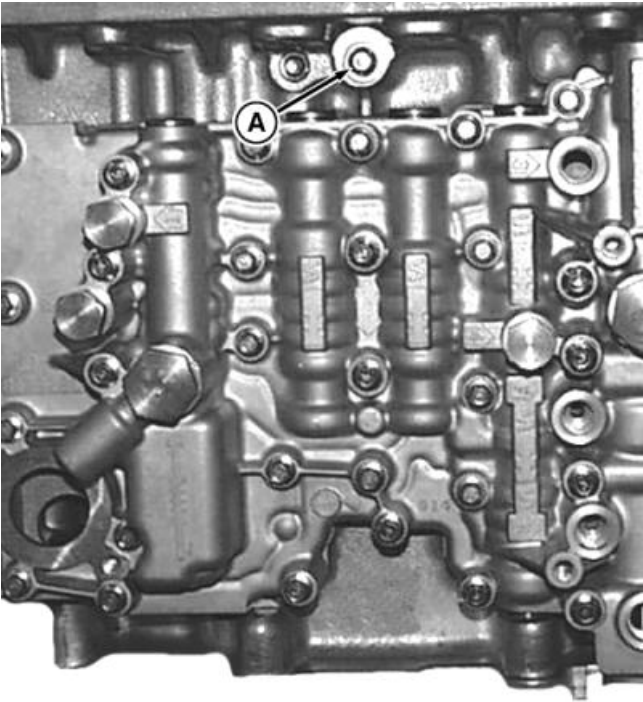
IMPORTANT:

Some tractors use a D- or E-range interlock system attached to crossover shaft in the range box. To verify that the interlock system is used, move range lever to D or E range (as equipped) and move shift lever to reverse. If the lever will not go in reverse the interlock is present.

- [1] - Move range lever to D range, or E range if equipped with interlock system.
- [2] - Wedge a screwdriver behind shift lever to hold lever against front of neutral slot (A).
- [3] - Remove pin from yoke (E).
- [4] - Put FNR arm (F) in neutral (center) detent.
- [5] - Remove shield (B), neutral start switch harness connector and neutral start switch (C).
- [6] - Insert JDG1313
[Part of JD1306 POWRQUAD Shift Repair Kit.]
Locking Tool. Verify that Forward/Reverse lever on shift valve housing will not move.
- [7] - Adjust yoke on end of rod to allow retaining pin to be freely installed in upper hole in arm (F).
- [8] -

Specifications

Item	Measurement	Specification
Cooler and Lube Relief Valve Plugs	Torque	30 N·m (22 lb-ft)
Pressure Regulating Valve Plug	Torque	30 N·m (22 lb-ft)
Clutch Cooling Valve Bore Plug	Torque	30 N·m (22 lb-ft)
Clutch Valve Bore Plug	Torque	25 N·m (221 lb-in.)
Air Pump Manifold-to-Front Cover Cap Screws	Torque	25 N·m (221 lb-in.)
Front Valve Housing-to-Front Cover Cap Screws	Torque	15 N·m (133 lb-in.)
Front Cover-to-Transmission Planetary Housing Cap Screws	Torque	61 N·m (45 lb-ft)
Shift Valve Housing Leaf Spring Cap Screws	Torque	15 N·m (133 lb-in.)
Shift Valve Housing Modulator Valve Plug	Torque	44 N·m (32 lb-ft)
Shift Valve Housing Leaf Spring Cap Screws	Torque	15 N·m (133 lb-in.)
Shift Control Valve Housing-to-Planetary Housing Cap Screws	Torque	15 N·m (133 lb-in.)
Solenoid Coil-to-Valve Nut	Torque	3—4 N·m (24—36 lb-in.)
Forward Clutch Drum-to-Carrier Cap Screws	Torque	50 N·m (37 lb-ft)
Planetary Housing-to-B-1 Brake Housing Cap Screws	Torque	15 N·m (133 lb-in.)
Reverse Housing-to-Planetary Housing Cap Screws	Torque	50 N·m (37 lb-ft)
Planetary Housing-to-Reverse Housing Cap Screws	Torque	50 N·m (37 lb-ft)
Input Ring Gear Shield Cap Screws	Torque	15 N·m (133 lb-in.)
Direct Drive Clutch Cover-to-Drum Cap Screws	Torque	25 N·m (221 lb-in.)
Air Pump Dowel Pin Protrusion Above Pump Face.	Height	5—7 mm (0.20—0.28 in.)
Reverse Brake Disk	Thickness (New)	2.97—3.13 mm (0.117—0.123 in.)
Direct Drive Clutch Disk	Thickness (New)	2.84—3.00 mm (0.112—0.118 in.)
Forward Clutch Disk	Thickness (New)	3.48—3.64 mm (0.137—0.143 in.)
B-3 Brake Disk—Transmission (S.N. -128054)	Thickness (New)	3.22—3.38 mm (0.127—0.133 in.)
B-3 Brake Disk-Transmission (S.N. 128055-)	Thickness	5.06—5.26 mm (0.199—0.207 in.)
B-1—B-2 Brake Disk	Thickness (New)	3.22—3.38 mm (0.127—0.133 in.)



LEGEND:
A Cap Screw with Copper Washer

Planetary Housing-to-B-1 Brake Housing Cap Screw

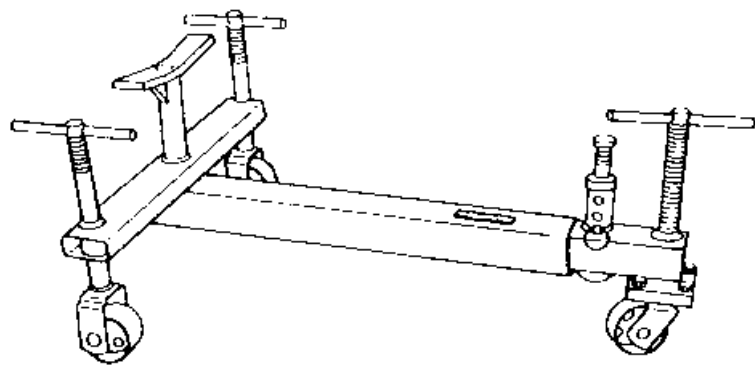
IMPORTANT:

Be sure to install the copper sealing washer on the brake piston housing retaining cap screw to prevent oil leakage.

Install and tighten planetary housing-to-B-1 brake housing cap screw (A) with copper washer.

Item	Measurement	Specification
Planetary Housing to B-1 Brake Housing Cap Screw		
Cap Screw	Torque	15 N·m (133 lb-in.)

D05007ST

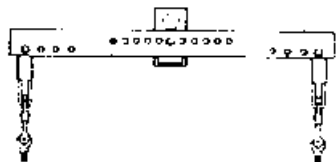


D05007ST

Remove and install MFWD axle

Lifting Sling

JDG23



JDG23

Remove and install components

Crowsfoot Wrench

JDG752A

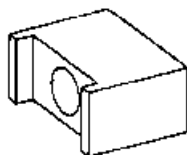


JDG752A

Remove and install hydraulic lines

Cab Lifting Support

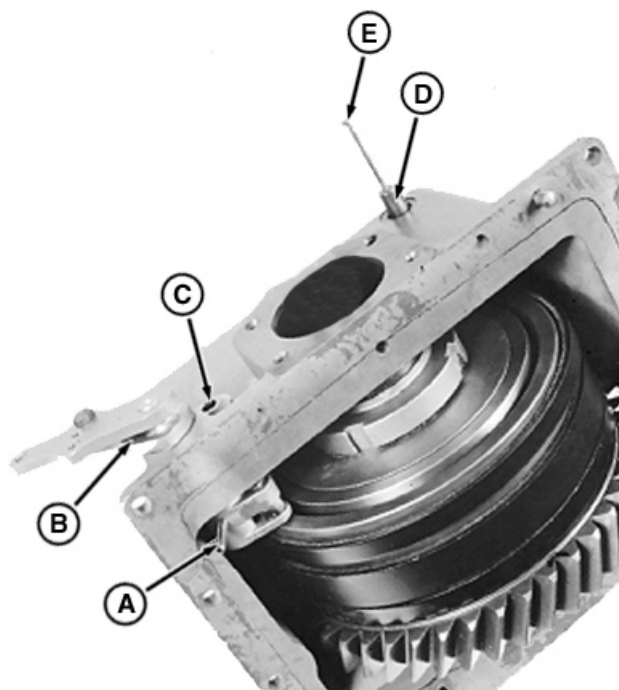
JDG809-1



JDG809-1

[Used with JDG830 —Sub for JDG762]

[-< Go to Section TOC](#)

**LEGEND:**

- A Spring Pin
- B Lever Shaft
- C Swing Link Pivot Shaft
- D Anchor Shaft Plug
- E M6 Cap Screw

Swing Link Pivot Shaft & Spring Pin**For MFWD with SECONDARY BRAKE, perform the following steps:**

Install an M6 cap screw (E) into anchor shaft (D) and install the shaft through the housing and the brake linkage.

Install the anchor shaft plug with O-ring.

Install the swing link pivot shaft with O-ring (C) through the housing and the brake linkage.

Install the lever shaft (B) through the housing and the brake linkage.

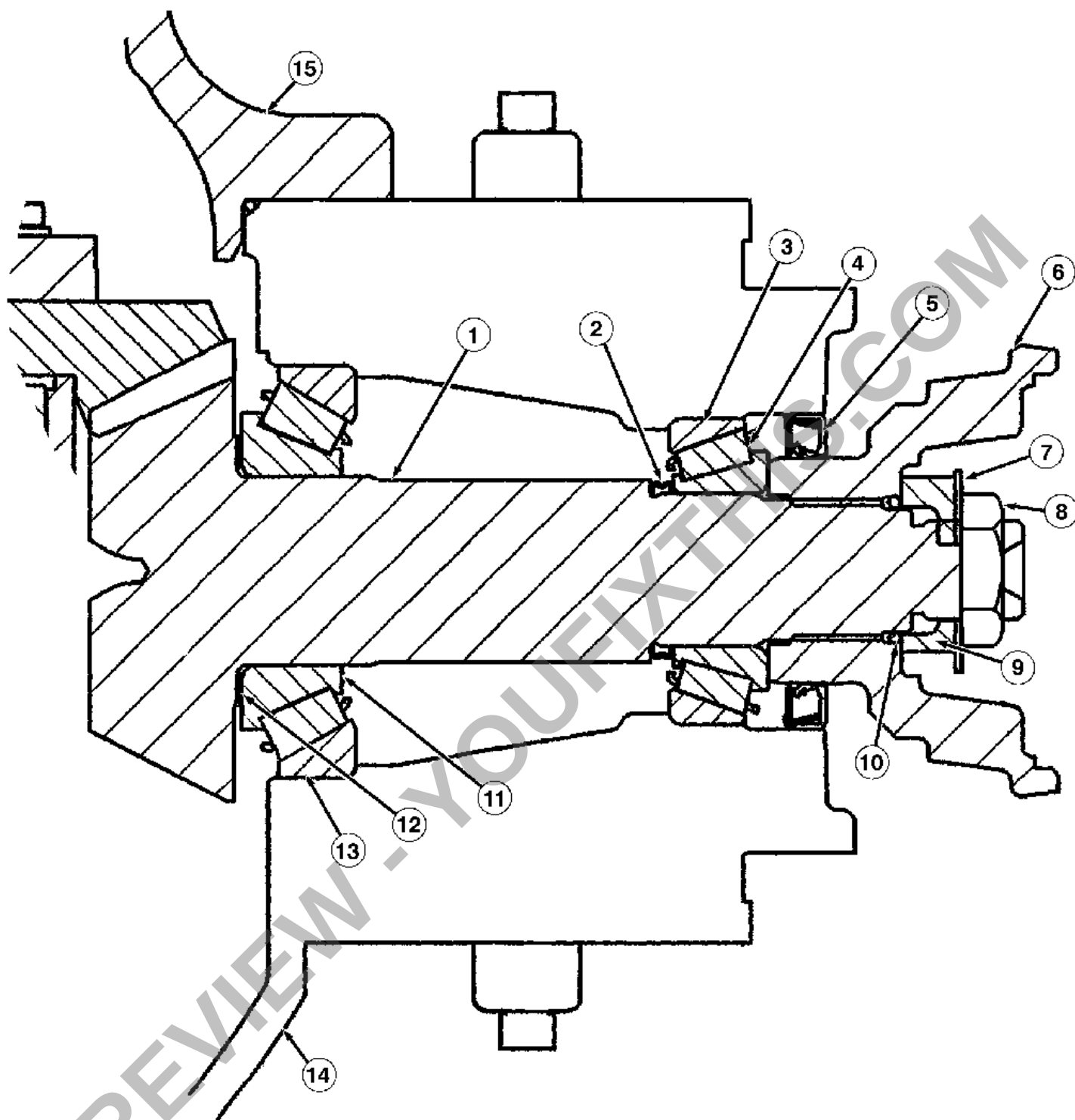
Install the brake band assembly-to-lever shaft spring pin (A).

**LEGEND:**

- A Sealing Rings (2 used)
- B Sealing Rings (2 used)
- C Bearing Cone
- D Speed Sensor Gear

Without Speed Sensor Gear

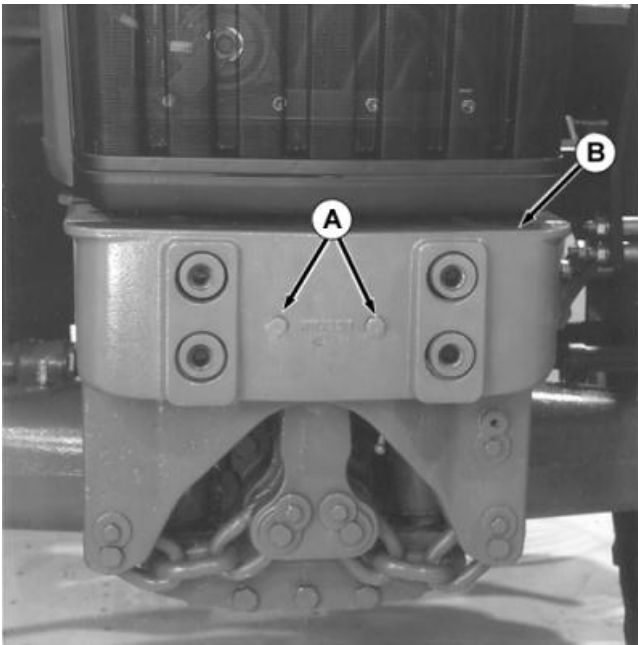
Cross-Sectional View—Differential Drive Shaft and Input Quill



Drive Shaft & Input Quill Cross Section

LEGEND:

- | | |
|----|----------------------------|
| 1 | Differential Drive Shaft |
| 2 | Load Ring |
| 3 | Bearing Cup |
| 4 | Bearing Cone |
| 5 | Oil Seal |
| 6 | Yoke |
| 7 | Lock Plate |
| 8 | Pinion Shaft Retaining Nut |
| 9 | Special Washer |
| 10 | O-Ring |
| 11 | Bearing Cone |
| 12 | Shim Pack |

**LEGEND:**

A	Cap Screws
B	Plate

Plate and Cap Screws

Install plate (B) and cap screws (A), if equipped.

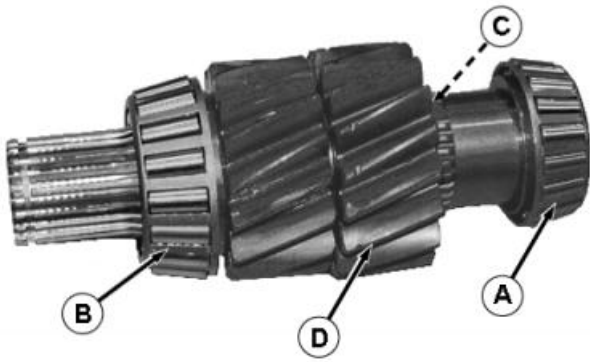
Install front weight bracket and weights, if equipped.

→NOTE:

Calibration procedure should be performed twice to correctly calibrate the suspended MFWD axle system.

Calibrate suspended MFWD axle system. (See Operation and Test TM—Section 256, Group 20.)

D	Thrust Washer
E	Bevel Pinion Gear
F	Anti-Rotation Washer
G	Thrust Washer
H	Bevel Lock Gear
I	Disks (3 used)
J	Separator Plates (3 used)
K	Ring Gear
L	Differential Lock Piston
M	Differential Cover
N	Bearing Cup
O	Bearing Cone
P	Right Bearing Quill
Q	Sealing Rings (2 used)
R	Spherical Thrust Washers (3 used)
S	Bevel Pinion Shafts (3 used)
T	Needle Roller Thrust Washers (3 used)
U	Needle Roller Bearings (69 used)
V	Tanged Thrust Washers (3 used)
W	Snap Rings (3 used)
X	Bevel Pinions (3 used)
Y	Differential Housing

**Snap Ring & 540 rpm Drive Gear**

Remove rear bearing cone (A).

Remove front bearing cone (B).

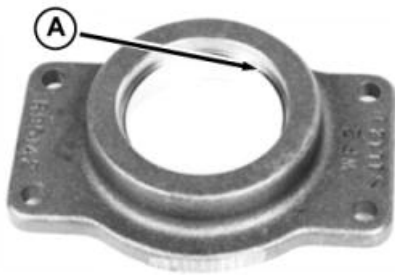
For THREE-SPEED SHIFTABLE PTO, perform the following step:

Remove snap ring (C) and gear (D).

LEGEND:

A

Bearing Cup

**Bearing Cup**

Remove the bearing cup (A) from the quill using a press and a 73 mm or 2-7/8 in. driver disk.

Install new bearing cup using a 67 mm or 2-5/8 in. driver disk and a press.

Remove And Disassemble Pump Drive Gear



LEGEND:

A

Snap Ring

Snap Ring

→NOTE:

Refer to Pump Drive Gears—Cross-Sectional View during removal, disassembly, assembly, and installation.

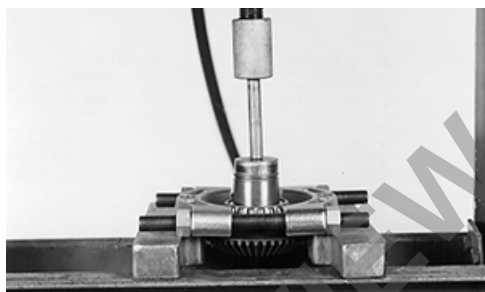
On AQT and PQT, remove range box. (See Remove Range Box—Section 55, Group 00.) On PST, remove reduction gearbox. (See Remove Reduction Gearbox—Section 50, Group 00.) On AutoPowr/IVT, remove differential input quill. (See Disassemble Differential Input Quill—Section 51, Group 35.)

Remove the pump drive pinion gear. (See Remove and Disassemble Pump Drive Pinion Gear, this group.)

Remove the differential. (See Remove Differential, Group 20.)

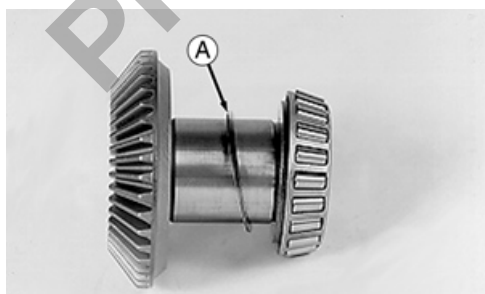
Remove the snap ring (A) from the drive gear shaft.

Remove the drive gear from the differential case and front bearing using a 1-3/4 in. drive disk, 1 in. pilot disk, and handle.



Press and a 45 mm or 1-3/4 in. Disk

Remove the bearing spacer ring. Install a knife-edge puller under the rear bearing and remove the shaft from the bearing using a press and a 45 mm or 1-3/4 in. driver disk.



LEGEND:

A

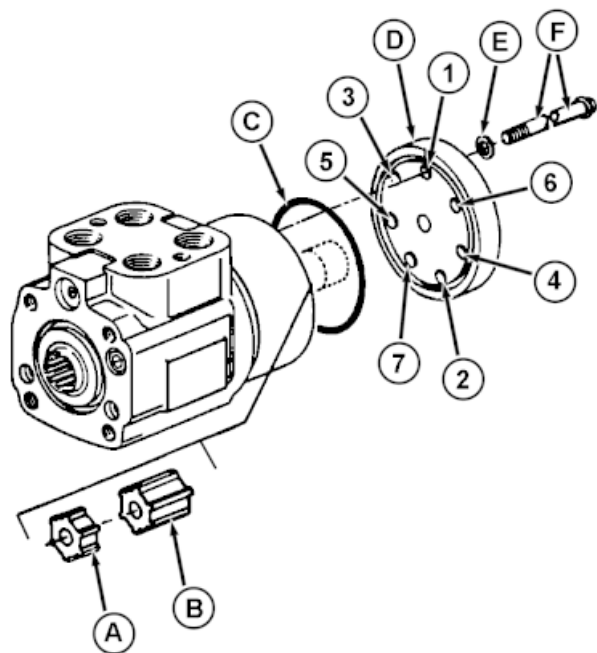
Shims

Shim on Shaft

Remove the shims (A) from the shaft.

LEGEND:

- A Spacer (2WD) (12 mm) (0.5 in.)
- B Spacer (MFWD) (22 mm) (0.9 in.)
- C Seal
- D End Cap
- E Washer
- F Cap Screw



Valve Assembly

- Insert spacer (A) or (B).
- Install parts (C—F).
- Tighten cap screws using sequence (1—7) as illustrated.

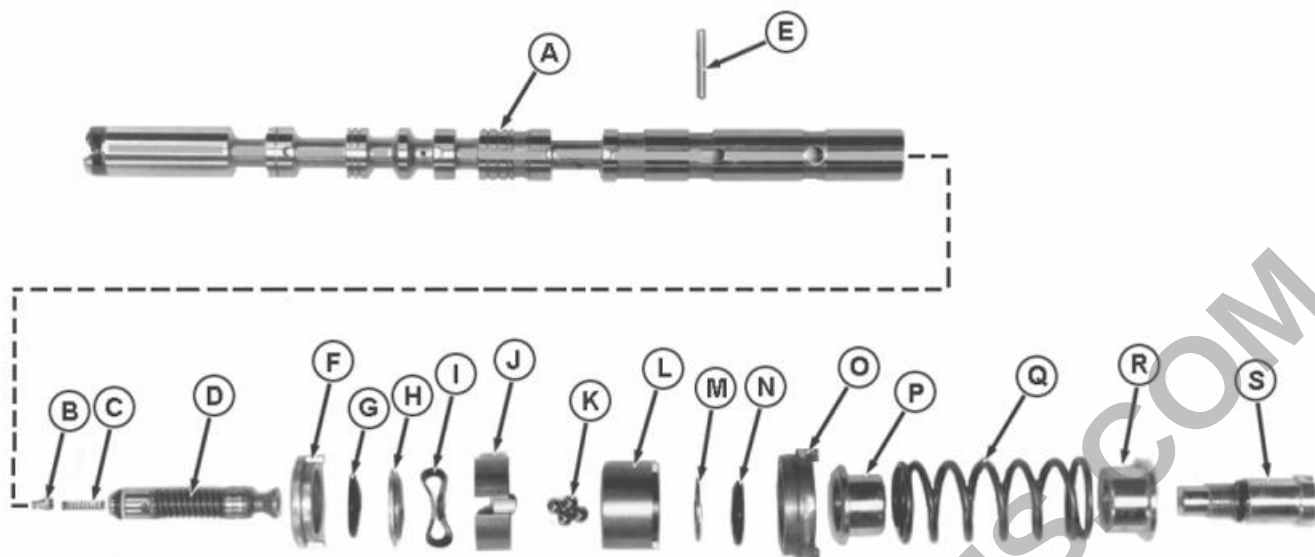
Item	Measurement	Specification
Cap Screw Torque		
Cap Screw	Torque (Initial)	18 N·m (160 lb-in.)
	Torque (Final)	24 N·m (212 lb-in.)

For steering valve WITH DUAL GEROTOR, perform the following steps:

Adjust compensator pressure on the tractor. (See Operation and Test TM—Section 270.)

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Disassemble, Inspect, And Assemble Control Valve—Three-Position SCV



Exploded View—Three-Position SCV

LEGEND:

A	Control Valve
B	Spring Seat
C	Spring
D	Detent Piston Assembly [Design different for cable controlled SCV]
E	Pin
F	Shear Ring
G	O-Ring
H	Retainer
I	Wave Springs (2 used)
J	Float Detent Sleeve
K	Balls (4 used)
L	Detent Sleeve
M	Washer
N	O-Ring
O	Sealing Ring
P	Spring Seat
Q	Spring
R	Spring Seat
S	End Spool

IMPORTANT:

Clean all thread-locking material from threads on end spool (S) and inside the control valve (A) to prevent SCV malfunction.

Disassemble and inspect valve assembly as required.

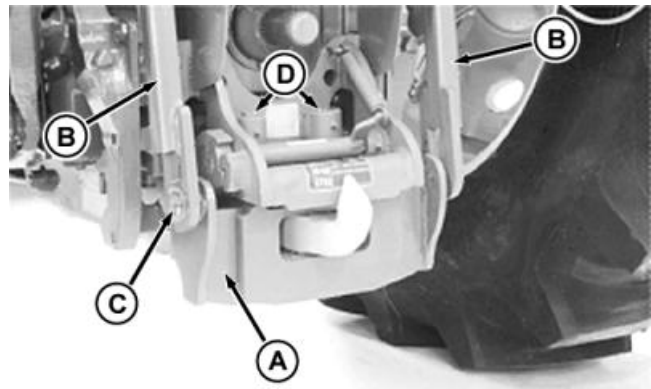
Item	Measurement	Specification
Pick-Up Hitch Frame-to-Frame Cap Screws		
Cap Screw	Torque	450 N·m (330 lb-ft)

Tighten cap screws (B) and (C).

Item	Measurement	Specification
Upper Hitch Frame Cap Screws		
Cap Screw	Final Torque	230 N·m (170 lb-ft)

Lubricate parts as required.

Adjust Pick-Up Hitch



- LEGEND:**
- A Lower Frame
 - B Lift Link Tubes
 - C Pin
 - D Hex-Socket Screws

Hitch—Frame, Tubes, Pin and Screws

Raise hitch. Do not use external raise/lower switch.

Press lower frame (A) using a jack until frame is against stop. Rubber damper must be pressed together.

Turn lift link tubes (B) until aligned with pin (C). Install washer and cotter pin.

**CAUTION:**

Avoid the possibility of personal injury. Check hitch function by opening and closing hitch several times. Hex-socket screws (D) must contact retaining pin when hitch is closed.

Adjust cable by closing hitch and moving cab control lever to the detent position.

Adjust cable until bores of yoke and hook are aligned.

Check A/C system pressures.

[6] - Start JT02145 Recovery/Recycling, and Charging Station or open valve on JT02051 Manifold With Gauges to pressurize evaporator. Close valve or turn off station and watch gauge. Movement of gauge indicates a leak.

Check for leaks with an JT02081 Electronic Leak Detector or spray surface using a 50—50 mixture of liquid soap and water.

Electronic Leak Detector

JT02081



JT02081

Checking A/C system.

Evacuate evaporator after test is complete.

[7] -

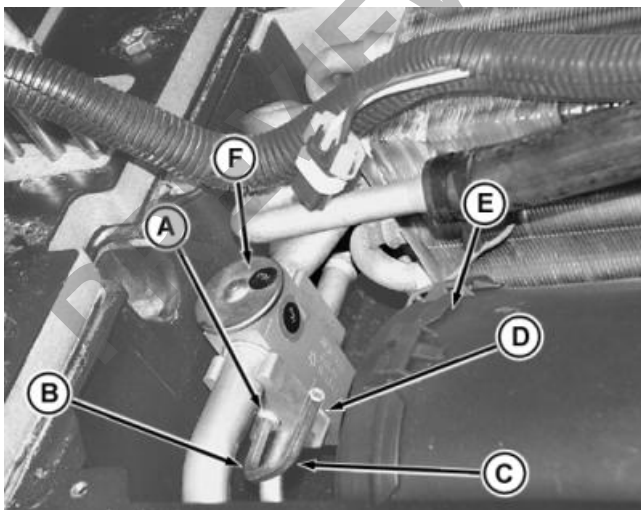
→NOTE:

Minor leaks may be repaired, but evaporator-heater core should be replaced if there is a major leak or restriction.

Repair or replace evaporator-heater core as required.

Remove And Install Expansion Valve

[1] - Discharge system. (See Discharge Air Conditioning System, this group.)



LEGEND:

A	Screw
B	5 mm Allen Wrench
C	20° Bend
D	Wrench Long Arm
E	Fan Housing
F	TEV

Remove Expansion Valve

[2] - Remove seat and suspension. (See Remove Seat and Suspension. Group 20.)

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