Repair specifications

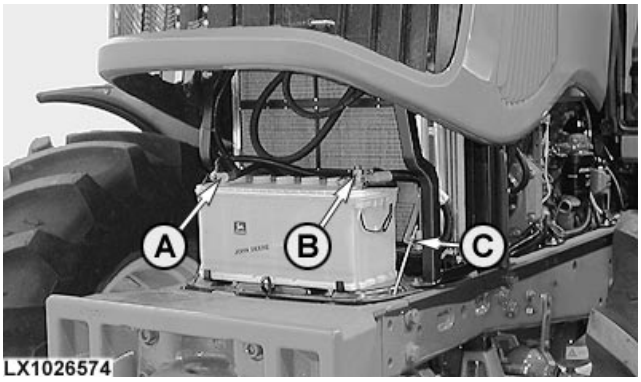
Item	Measurement	Specification
Engine mounting screws	Torque	100 N•m 74 lb-ft
Front engine supports to main frame, cap screws	Torque	95 N•m 70 lb-ft
U.j. shaft to input flange, cap screws	Torque	135 N•m 100 lb-ft
Mounting at rear of front frame, nuts	Torque	55 N•m 40 lb-ft
Mounting at side of front frame, screws	Torque	55 N•m 40 lb-ft
Mounting at front of front frame, screws	Torque	55 N•m 40 lb-ft

OULXBER,0000857 –19–21JAN02–1/1

Removing the engine

IMPORTANT: Before disassembling the engine, mark where the cables and hoses are connected; this will make it easier to reassemble them.

1. Open the hood and disconnect battery terminals (A) and (B).



LX1026574 –UN–20MAR01

CAUTION: Disconnect the negative terminal first. Always reconnect the positive terminal first. Always pay close attention to battery terminals.

Comply with safety instructions on how to handle batteries (see section 05).

Release support bracket (C) and lift off the battery.

Continued on next page

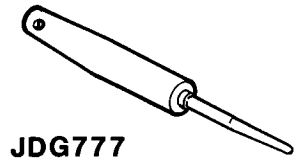
OULXBER,0000866 –19–01FEB02–1/21

Electrical connectors

JDG777 –UN–12OCT94

Extraction tool JDG777

Removing electrical connectors

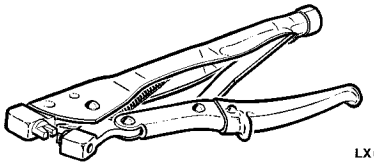


LX23006,0000193 –19–30OCT01–6/11

LX001151 –UN–12OCT94

Crimping pliers FKM10427

Installing a terminal

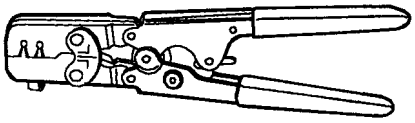


LX23006,0000193 –19–30OCT01–7/11

LX1015908 –UN–28JUL97

Crimping pliers FKM10469

Installing a terminal



LX23006,0000193 –19–30OCT01–8/11

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Wiring harness repair kit. JDG359

Repairing DEUTSCH connectors



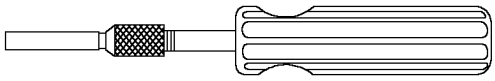
JDG359 –UN–29JUL98

LX23006,0000193 –19–30OCT01–9/11

RG10741 –UN–31MAY00

Terminal puller JDG1369

For pulling terminals off the injection pump connector.



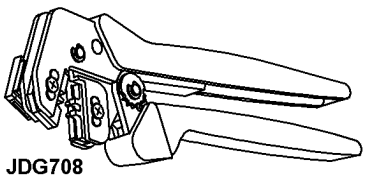
JDG1369

LX23006,0000193 –19–30OCT01–10/11

JDG708 –UN–07NOV01

AMP crimping pliers. JDG708

Installing a terminal



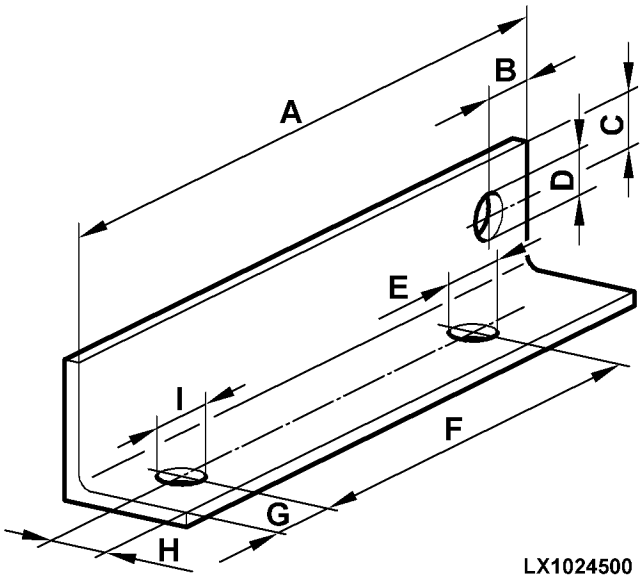
JDG708

LX23006,0000193 –19–30OCT01–11/11

Suspension device . . . . . dealer fabricated

For suspending the AutoPowr/IVT transmission horizontally. **As feedstock, use equal angle steel 35 x 35 x 5 mm (1.4 x 1.4 x 0.2 in.) in accordance with DIN EN 10 025 (or similar norms).**

A—145 mm (5.7 in.)
B—15mm (0.6 in.)
C—15mm (0.6 in.)
D—Bore, 13 mm (1/2”)
E—Bore, 11 mm (7/16”)
F—90 mm (3.54 in.)
G—15 mm (0.6 in.)
H—15 mm (0.6 in.)
I—Bore, 11 mm (7/16”)



LX1024500 –UN–06JUN00

OULXBER,0000898 –19–14FEB02–2/2

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Repair specifications

Item	Measurement	Specification
Cap screws, AutoPowr/IVT transmission to differential housing	Torque	135 N•m (100 lb-ft)
Mounting screws, suction line to input housing	Torque	18 N•m (13.5 lb-ft)
Cap screws, front cab mountings to main frame	Torque	240 N•m 175 lb-ft

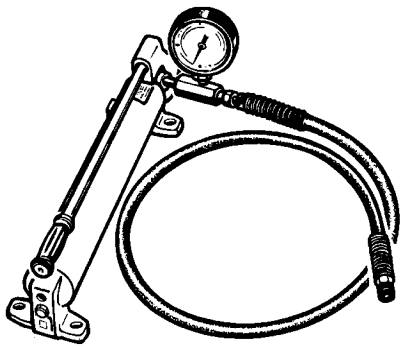
OULXBER,0000897 –19–14FEB02–1/1

Special tools required for repair work							
Steering valve type[a]	A	B	C	D	E	F	G
OSPF 160 LS (Danfoss)	X		X	X	X		
OSPF 200 LS (Danfoss)	X		X	X	X		
OSPQ 125/200 LS (Danfoss)	X		X			X	X
[a]See type plate on steering valve							

LX25458,00000E2 –19–01DEC01–3/5

Manually operated hydraulic pump D01019AA

Shock valve adjustment



LX001059

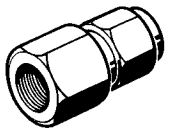
LX001059 –UN–26JUL94

LX25458,00000E2 –19–01DEC01–4/5

LX001060 –UN–25JUL94

Adapter. JT03248

Shock valve adjustment

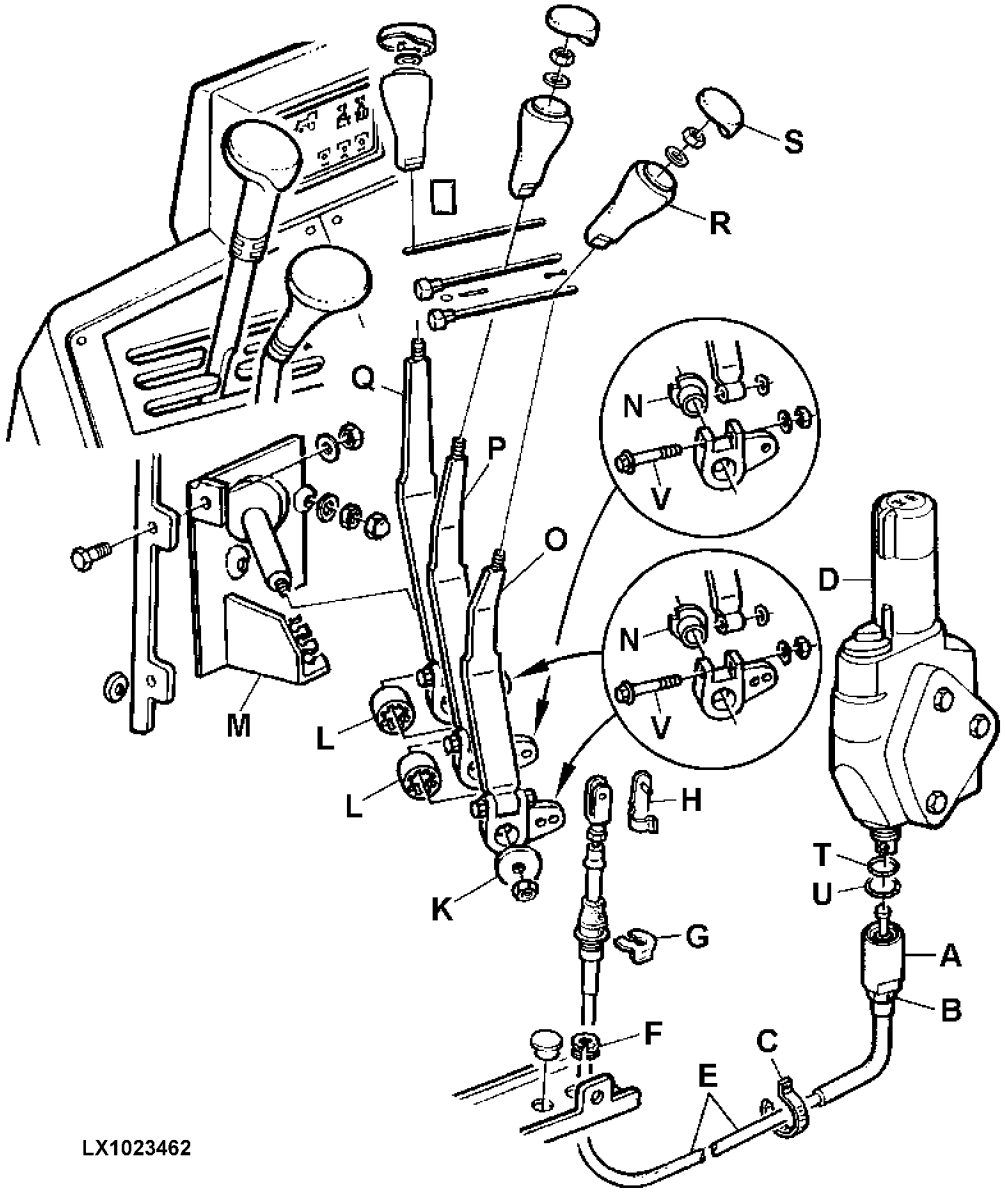


LX001060

LX25458,00000E2 –19–01DEC01–5/5

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Selective Control Valves — Removing and Installing the Actuating Elements



A—Sleeve
B—Locknut
C—Cable binder
D—SCV unit
E—Bowden cable
F—Grommet
G—Clip
H—Retainer
K—Washer
L—Bushing[1]
M—Console
N—Plastic bushing (3 used)
O—Lever, 1st SCV
P—Lever, 2nd SCV
Q—Lever, 3rd SCV
R—Handle
S—Cap
T—O-ring
U—O-ring
V—Cap screw

[1] *If necessary*

Continued on next page

LX24603,00001B9 –19–15MAY01–1/3

Removing Control Unit for the Lighting System

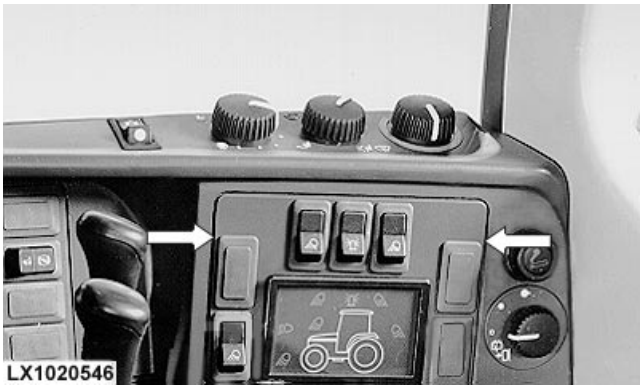
IMPORTANT: Do not use a test lamp when working with electronic control units. When carrying out welding jobs on the tractor disconnect the battery to protect the electronic system.

90
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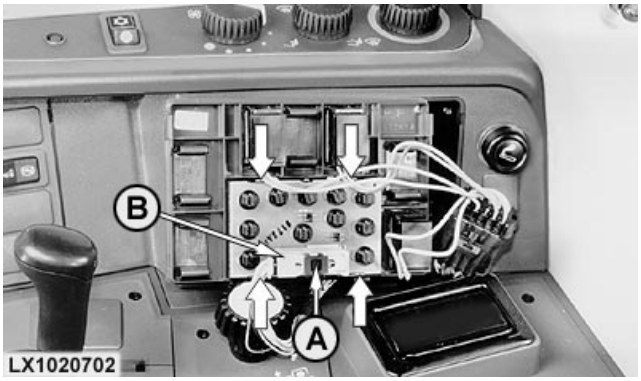
Carefully pry out the console using a screwdriver at the locations indicated (see arrows).

Pull out locking clip (A) at plug (B) and disconnect plug.

Carefully press on areas indicated and push out control unit to the front.



LX1020546 –UN–27MAY98



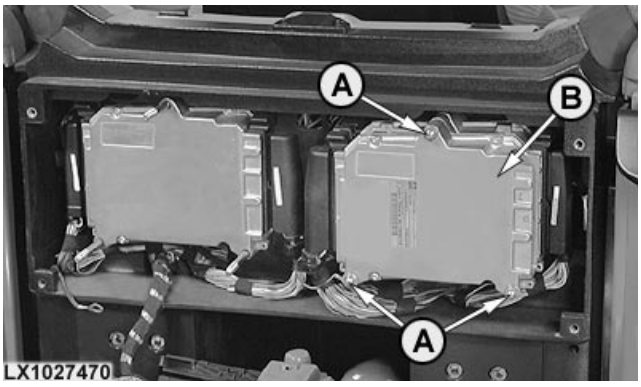
LX1020702 –UN–08JUN98

LX25458,0000060 –19–13AUG01–1/1

Replacing control unit (BCU)

The hitch control unit is located on the right-hand side (seen in the direction of forward travel) below the TCU/EPC control unit (if equipped).

Take out mounting screws (A) and lift off the control unit.



LX1027470 –UN–13AUG01

Continued on next page

LX25458,00000B8 –19–01DEC01–1/2

Group 25—Operator's cab
Group 30—Components of the electronic hitch control

SECTION 99—Special tools (dealer- fabricated)
Group 05—Special tools (dealer- fabricated)

Section 20
Engine

Contents

Page

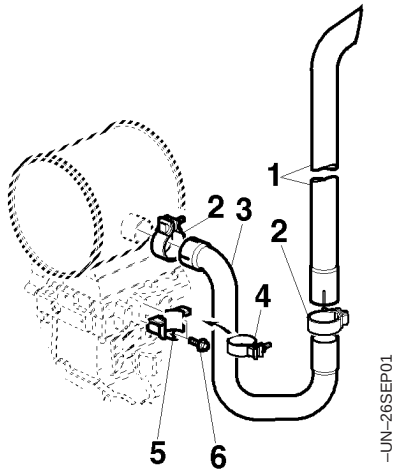
Group 00—Installing and removing components
Special tools 20-00-1
Repair specifications 20-00-2
Removing the engine 20-00-2
Installing the engine 20-00-11

Exhaust pipe or intermediate exhaust pipe —upright

The pipe clamps numbered 2 and 4 must be tightened to the torque values in the following table.

Specification	
Pipe clamp number 2 and 4—	
Torque	48—60 N•m 32—44 lb-ft

1—Exhaust pipe
2—Pipe clamp
3—Intermediate exhaust pipe
4—Pipe clamp
5—Mounting bracket
6—Flanged screw



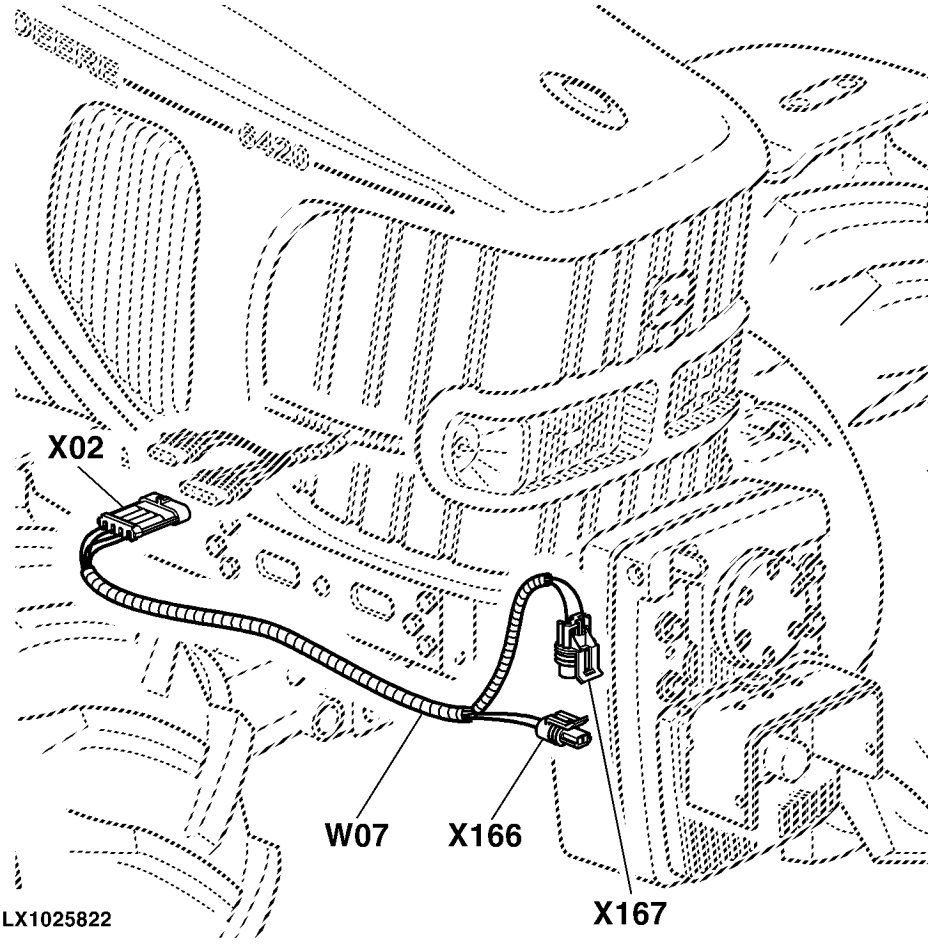
LX1027446

LX1027446 –UN–26SEP01

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LX25458,00000D5 –19–10DEC01–5/5

Removing and Installing Harness W07 — Front PTO



X02—Connecting point — front PTO (W02)

X166—Plug for front PTO solenoid valve

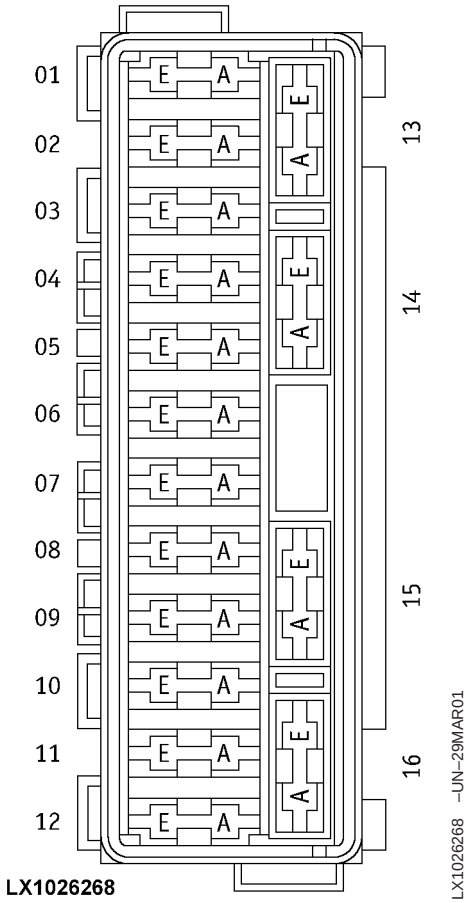
X167—Plug for sending unit (front PTO speed)

LX25599,0000296 –19–01AUG01–1/1

Fuses (fuse box F03)

IMPORTANT: To prevent unnecessary damage to the electrical system, never use a fuse with a higher rating than the one already installed.

F03/01 — 10-amp Basic Control Unit (BCU)
F03/02 — 10-amp Basic Control Unit (BCU)
F03/03 — 20-amp brake light switches
F03/04 — 10-amp hazard warning lights
F03/05 — Not used
F03/06 — Not used
F03/07 — 10-amp hazard warning lights
F03/08 — 10-amp controller for suspended front axle (SFA)
F03/09 — 20-amp LTC coolant pump
F03/10 — 10-amp power supply to E-ICV
F03/11 — 10-amp power supply to E-SCV
F03/12 — 10-amp power supply to E-SCV
F03/13 — 10-amp E-SCV/E-ICV controller (SIC)
F03/14 — 10-amp GVC monitor
F03/15 — 10-amp E-SCV/E-ICV controller (SIC)
F03/16 — 10-amp heated rear window



Continued on next page

LX25599,00002EA –19–01AUG01–5/12

Replacing the transport lock switch

Carefully pry out the console using a screwdriver at the locations indicated (arrows).

Disconnect plug (B).

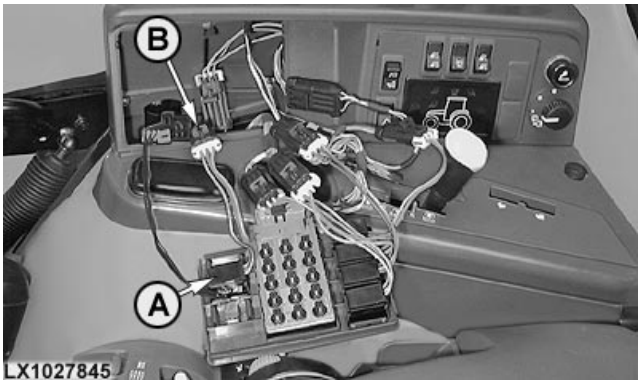
Press out transport lock switch (A) to the front of the console and replace it with a new one.

Assemble in reverse order.

A—Transport lock switch
B—Plug



LX1027844 –UN–07SEP01



LX1027845 –UN–10SEP01

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73

LX25599,00002DF –19–01AUG01–3/3

AutoPowr/IVT transmission, input housing — Repairing (summary of references)

“Installing and removing the vibration damper”

“Removing the clutch control block”

“Repairing the clutch control block”

“Installing the clutch control block”

“Removing and installing the transmission oil filter”

“Removing the system pressure control block”

“Repairing the system pressure control block”

“Installing the system pressure control block”

“Removing the transmission oil pump”

“Repairing the transmission oil pump”

“Installing the transmission oil pump”

“Removing and installing the front plate”

“Replacing the hydrostatic speed sender (B62)”

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4

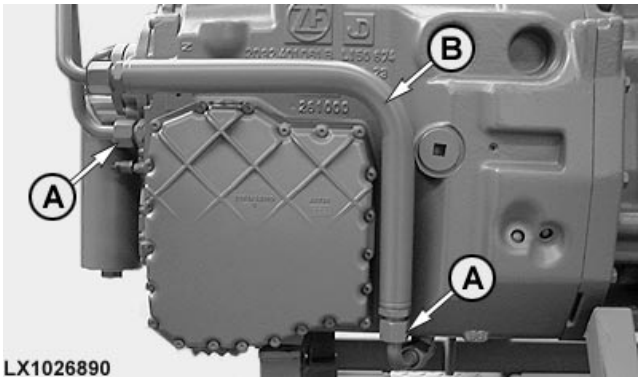
LX25601,00002FD –19–01FEB02–1/1

Installing and removing the vibration damper

1. Loosen the fittings (A) and replace the vibration damper (B).
2. Tighten the fittings (A).

Specification

Fitting, vibration damper—Torque	80 N•m 59 lb-ft



LX1026890 –UN–06JUL01

LX25601,0000308 –19–01FEB02–1/1

15. Move intermediate shaft to and fro to seat the bearings.

16. Measure end play of intermediate shaft.

Specification

Intermediate shaft—Axial play..... 0,01 — 0,08 mm
0.0004 — 0.003 in.

17. Adjust the end play through removal or addition as required. Tighten special nut to specification.

18. Check axial play again.

19. When the end play has been set correctly, the special nut must be locked.



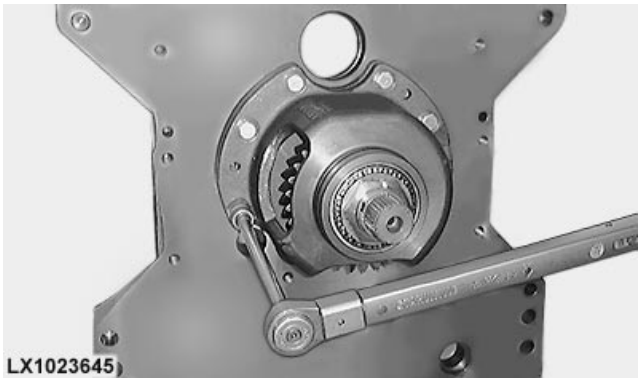
LX1023644 –UN–18AUG99

LX24888,000038B –19–02OCT01–30/32

20. Install intermediate shaft assembly at differential housing. Tighten the cap screws.

Specification

Intermediate shaft assembly at differential housing, cap screws—Torque ..... 90 N•m
65 lb-ft

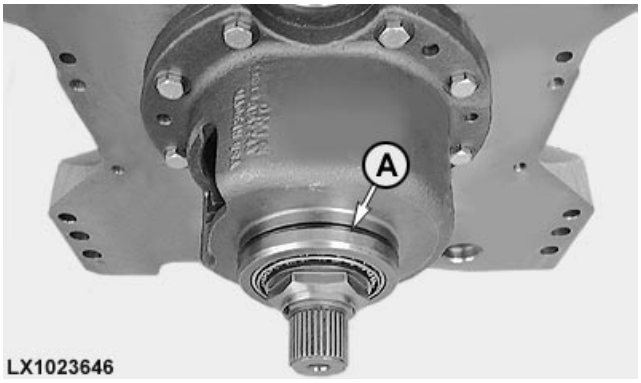


LX1023645 –UN–18AUG99

LX24888,000038B –19–02OCT01–31/32

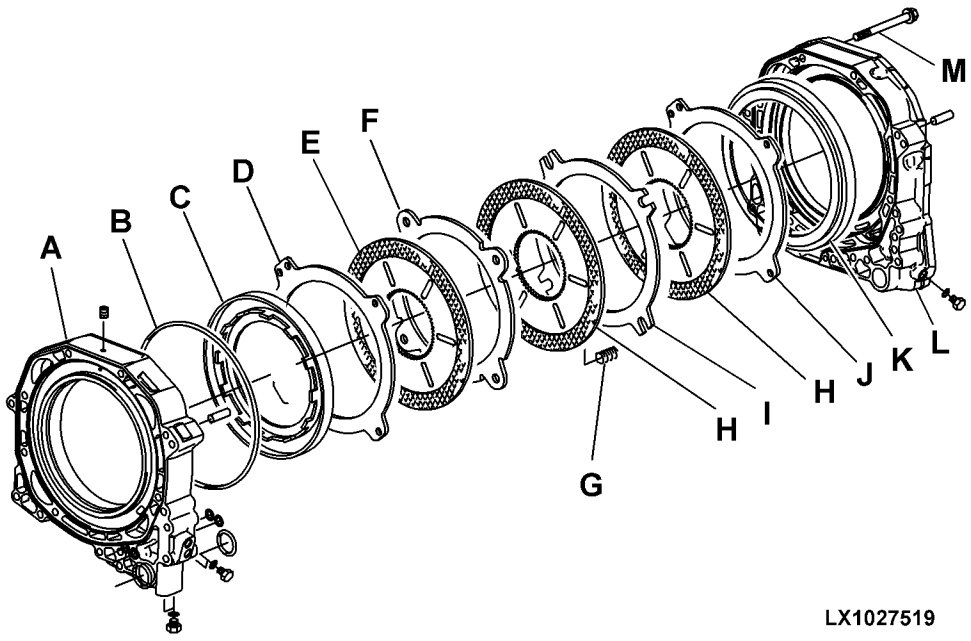
21. Cover O-ring (A) with a thin layer of petroleum jelly and install on housing.

Next step: See “Removing the AutoPowr/IVT transmission”, section 53, group 00.



LX1023646 –UN–18AUG99

LX24888,000038B –19–02OCT01–32/32



LX1027519 –UN–17SEP01

A—B2-B3 brake housing
B—Seal
C—B2 piston
D—B2 piston plate
E—B2 disk
F—B1-B2 separator plate
G—Spring (4 used)
H—B1 disk (2 used)
I—B1 plate
J—B1 piston plate
K—B1 piston
L—B1 brake housing
M—Screw (8 used)

4. Install parts as shown in the illustration.

5. Install the B1 brake housing. See “Installing the B1 Brake Housing” in this Group.

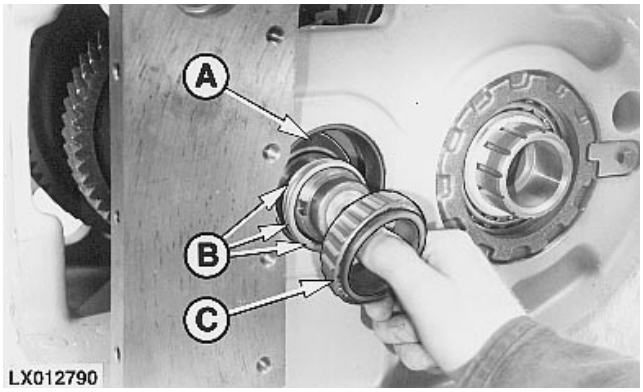
LX25597,0000441 –19–23JUL01–4/4

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9. Install spacer (A) and shims (B).

NOTE: If the intermediate shaft axial play needs to be readjusted, use shims with a thickness of 2 mm (0.078 in.).

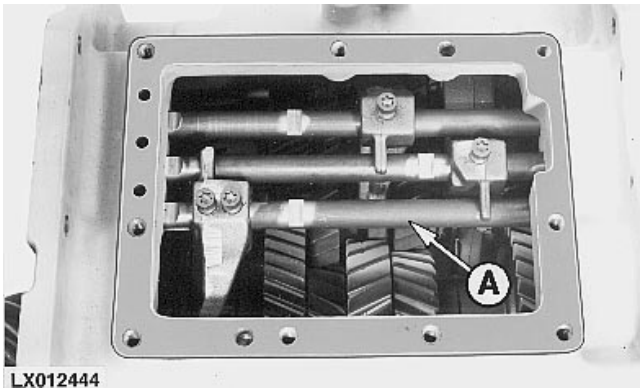
10. Install taper roller bearing cone (C).



LX25601,00003CA –19–01FEB02–40/45

11. Install shift rod (A), ranges A and B.

NOTE: When installing, refer to the sectional and exploded view illustrations of the shifter assembly parts.



LX25601,00003CA –19–01FEB02–41/45

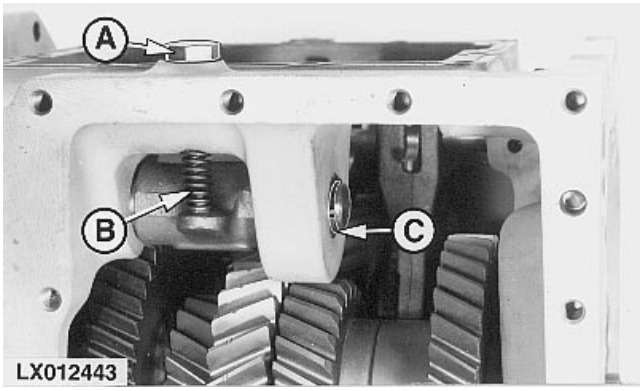
12. Install park lock pawl and snap ring (C).

13. Install spring (B) and plug (A).

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Specification

Park lock pawl, spring—Free length	approx. 62 mm approx. 2.44 in.
Test length	57 mm at 38±9 N 2.2 in. at 8.5±2 lb



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LX25601,00003CA –19–01FEB02–42/45

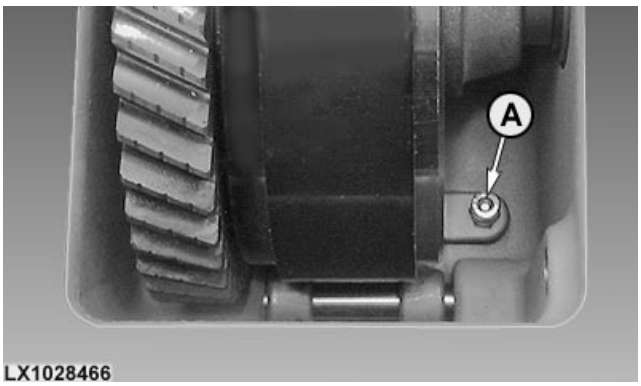
FWD clutch — Final assembly

1. Adjust the brake band at adjusting screw (A). The clutch drum must turn freely without any undue resistance.

2. Tighten adjusting screw lock nut.

Specification

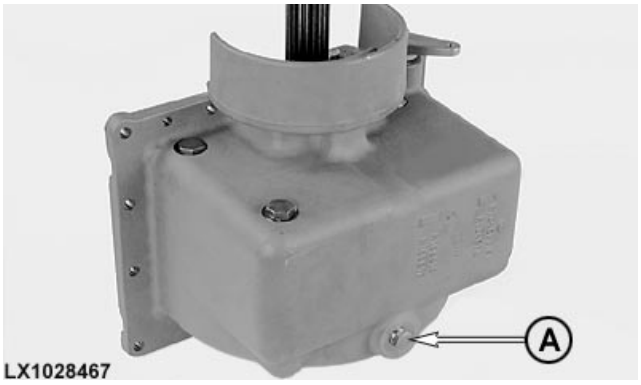
Lock nut—Torque	37 ± 7 N•m 27 ± 5 lb-ft



LX1028466 –UN–12DEC01

LX24603,000029A –19–21NOV01–43/45

3. Install oil drain plug (A).



LX1028467 –UN–12DEC01

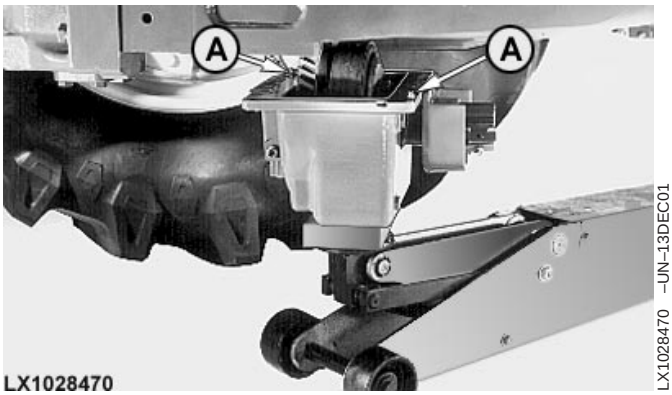
LX24603,000029A –19–21NOV01–44/45

4. Ensure the dowel pins (A) are inserted at the correct depth.

Specification

Dowel pins—Amount of protrusion	12 mm 0.47 in.

5. Install FWD clutch. See “Installing FWD clutch” in group 00 of this section.



LX1028470 –UN–13DEC01

LX24603,000029A –19–21NOV01–45/45

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14. Remove the snap ring (A) and the 540 rpm output gear (B).



RW21703 –UN–10JUL92

AG,LX25597,747 –19–01FEB00–8/9

15. Remove the magnetic speed pickup disk and rear bearing using a press and a knife-edge puller.



RW21707 –UN–10JUL92

AG,LX25597,747 –19–01FEB00–9/9

Assemble and Install PTO Output Shaft

1. Install the magnetic speed pick up disk against the shoulder using a brass drift.
2. Heat the rear bearing cone and install on the shaft. Allow the bearing to cool and seat it against the magnetic speed pickup disk using a brass drift. See “Repair Instructions” in this group.



RW21707 –UN–10JUL92

AG,LX25597,748 –19–01FEB00–1/6

3. Install the 540 rpm output gear (B) and snap ring (A).

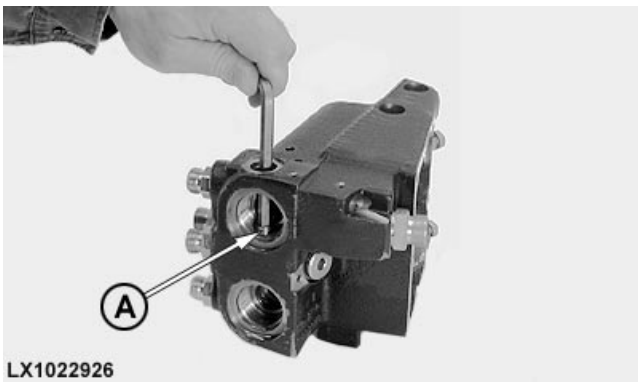


RW21703 –UN–10JUL92

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AG,LX25597,748 –19–01FEB00–2/6

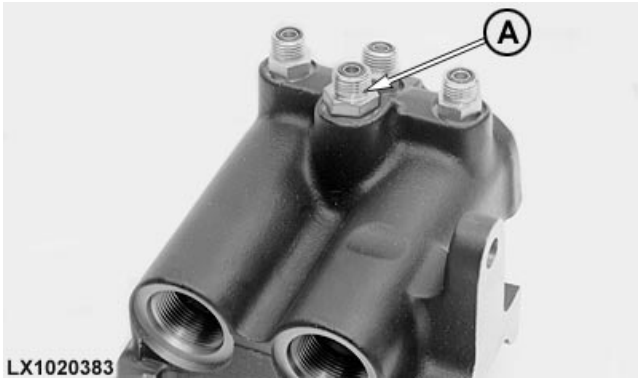
Remove valve (A).



LX1022926 –UN–23JUN99

LX25458,0000027 –19–04JUL01–18/56

Remove fitting (A).



LX1020383 –UN–26MAY98

LX25458,0000027 –19–04JUL01–19/56

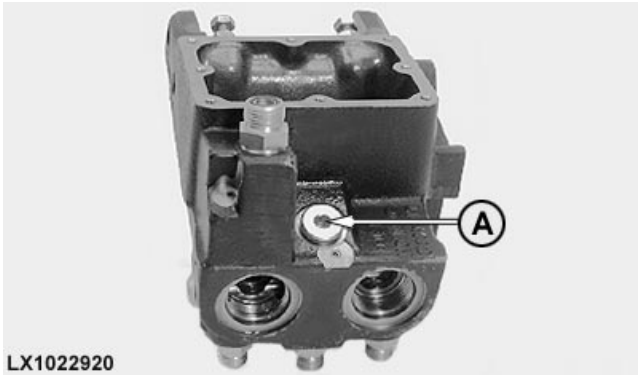
Unscrew the inlet check valve.



LX1022919 –UN–22JUN99

LX25458,0000027 –19–04JUL01–20/56

Remove plug (A).



LX1022920 –UN–22JUN99

Continued on next page

LX25458,0000027 –19–04JUL01–21/56

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4. — If a 2nd SCV is equipped, remove the lift arm. See “Rockshaft — Removing and Installing the Rockshaft”, Section 70, Group 20.

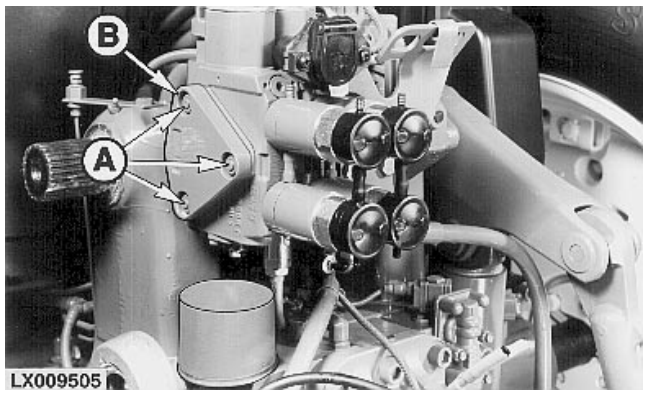
   — If a 4th SCV or special endplate[1] is equipped at position 4, remove the lift arm. See “Rockshaft — Removing and Installing the Rockshaft”, Section 70, Group 20.

5. Place a small container beneath the SCV to trap any oil that escapes.

6. Remove the three hex. nuts (A) or cap screws[2] using the socket wrench insert (see “Special Tools (Dealer Fabricated)” in this Group).

7. Take off endplate (B) and SCV unit.

8. Recondition the SCVs. See “Reconditioning the Selective Control Valves and Couplers — Summary of References” in this Group.



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[1] With independent control valve or endplate with extra connections

[2] With one SCV

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Section 80
Miscellaneous

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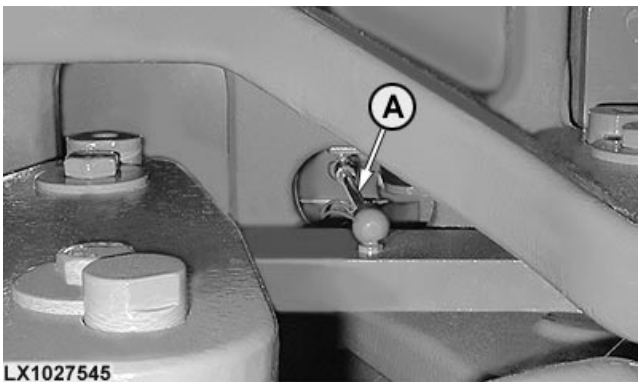
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Removing and installing the sensor rod

CAUTION: The front axle support and front-wheel drive axle must be secured in such a way that no parts of the body are at risk of being trapped.

1. Disconnect the top end of sensor rod (A) from the position sensor and its bottom end from the ball spigot on the Panhard link.
2. Inspect all parts for wear and damage and replace as necessary.
3. Connect the top end of sensor rod (A) to the position sensor and its bottom end to the ball spigot on the Panhard link.
4. Calibrating front axle; see 245-SFA-001, Calibration and input addresses (FWD axle with TLS).



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Hydr. pick-up hitch—Operational check

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CAUTION: Comply with safety instructions. See "Hydraulic pick-up hitch — General instructions on safety and repair" in this group.

1. Check hitch function by opening and closing hitch several times.

2. Make sure that hitch is completely locked. If this is the case, the hitch will not lower when the draft links are lowered and not extend when the selective control valve is operated.

3. In case the hitch does not function without fault: Check or perform the following adjustments; see ref.:

   - "Adjusting the lift links"
   - "Adjusting the locking pin"
   - "Adjusting the guide stop"

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Leak test

Perform a leak test only on systems that are in an operational condition. If the system has already lost some of its refrigerant, top it up with refrigerant before testing for leaks.

Go over the entire system with the probe of the electronic leak detector (also see 290-15-065, “Explanation of checks”, section 290, group 15, at "Leak test".

NOTE: If possible, probe underneath each potential leak, as R134a refrigerant is heavier than air. Dense concentrations of R134a in the air may affect the result of the test.



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Removing the Compressor

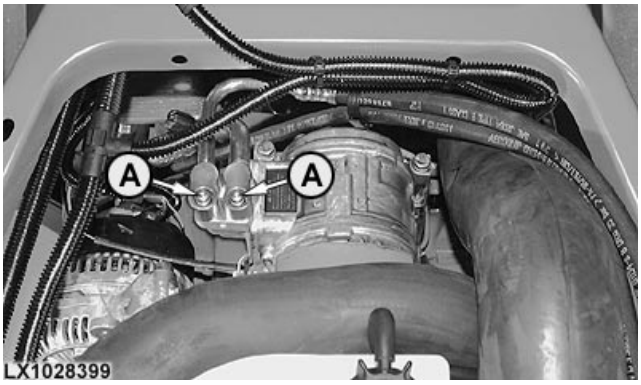
Discharge the system (see “Discharging the Air-Conditioning System” in this Group).

Take off the drive belt. See “Relieving Tension on the Drive Belt” and “Replacing the Drive Belt” in Section 30, Group 20.

Slacken off the retaining screws (A) on the line clamping plate and remove the lines.

Seal all openings and lines so that no dirt can get in.

Remove the compressor.



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