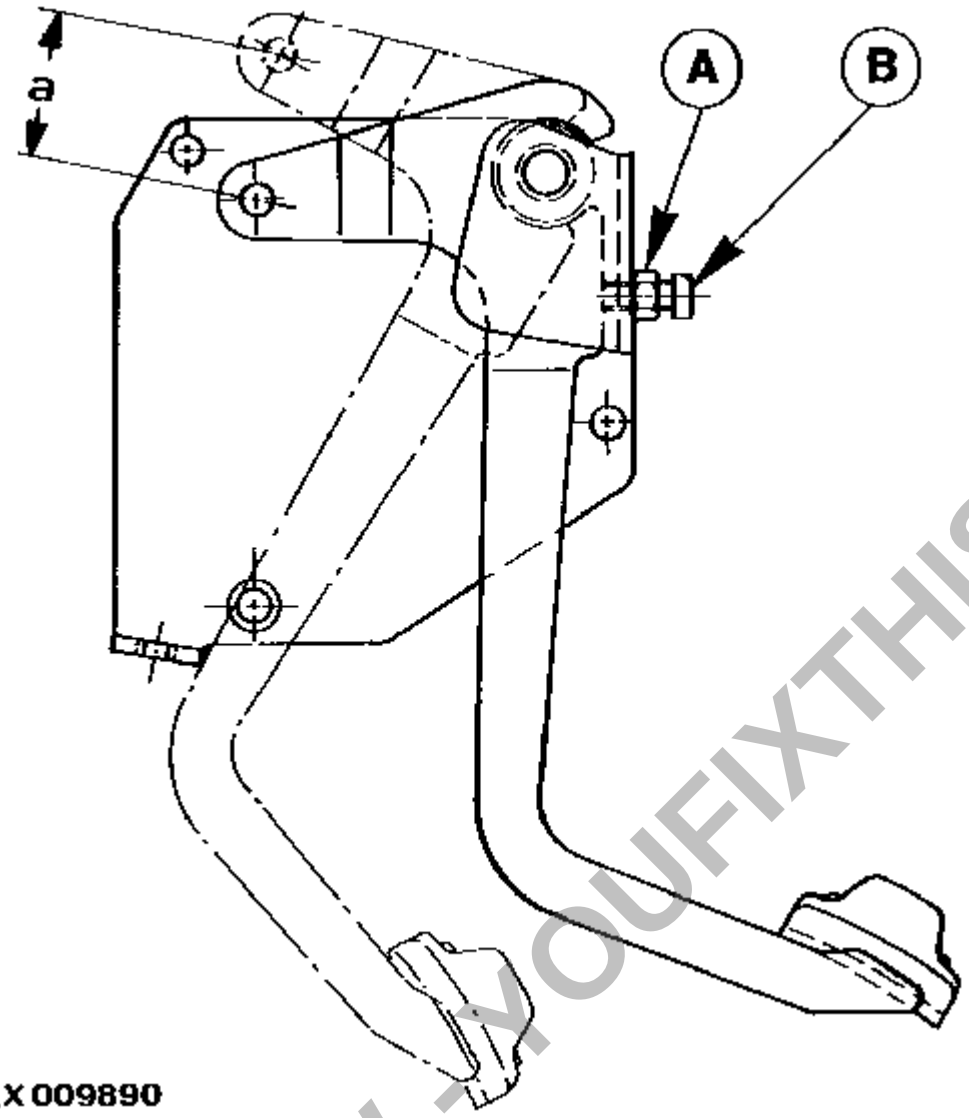


LX009890

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CAUTION:

Disconnect negative (-) cable from battery.

IMPORTANT:

Always relieve tension on drive belt before removing the pulley.

Take the drive belt off the pulley.

Remove pulley using tools (A), (B), (C), (D) and (E).

Tightening torque for installation:

Item	Measurement	Specification
Pulley on alternator shaft	Torque	80 N˙m
		60 lb-ft

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Engine Specifications

Type
- 6225, 6325, 6425, 6525 ..... turbocharged Diesel engine with intercooler

Number of cylinders
- 6225, 6325, 6425 4
- 6525 6

Bore ..... 106 mm (4.19 in.)

Stroke ..... 127 mm (5.00 in.)

Displacement
- 6225, 6325, 6425 ..... 4.5 l (276 cu.in.)
- 6525 ..... 6.8 l (414 cu.in.)

Firing order
- 4-cylinder tractors 1-3-4-2
- 6-cylinder tractors 1-5-3-6-2-4

Compression ratio 17.0:1

Valve clearance (engine hot or cold)
- intake valves ..... 0.36 mm (0.014 in.)
- exhaust valves ..... 0.46 mm (0.018 in.)

Thermostat
- opening temperature ..... 82°C (180°F)
- operating temperature (fully open) ..... 94°C (202°F)

Slow idle
- speed ..... 845 - 855 rpm

Fast idle
- speed ..... 2455 - 2465 rpm

Rated engine speed ..... 2300 rpm

Working speed range
- 6225, 6325, 6425 ..... 1500 - 2300 rpm
- 6525 ..... 1600 - 2300 rpm

Maximum engine power according to 97/68/EC
- 6225 ..... 69 kW (94 hp)
- 6325 ..... 77 kW (104 hp)
- 6425 ..... 85 kW (115 hp)
- 6525 ..... 88 kW (120 hp)

Max. torque
- 6225 at 1600 rpm ..... 393 N˙m (300 lb.-ft.)
- 6325 at 1600 rpm ..... 433 N˙m (319 lb.-ft.)
- 6425 at 1600 rpm ..... 477 N˙m (352 lb.-ft.)
- 6525 at 1600 rpm ..... 485 N˙m (358 lb.-ft.)

Max. PTO power at rated PTO speed (factory measured, with 1000 rpm at PTO)
- 6225 ..... 57 kW (78 hp)
- 6325 ..... 65 kW (88 hp)
- 6425 ..... 72 kW (98 hp)
- 6525 ..... 75 kW (102 hp)

Cooling System

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To determine distance (a), place a ruler at lower pedal stop (arrow) and measure the distance from the lower bore edge (with clutch pedal at lower stop) to the lower bore edge (with clutch pedal at upper stop).

[6] - Adjust distance (a) by means of adjusting screw (B).

Item	Measurement	Specification
Clutch pedal adjustment	Distance (a)	51 mm ± 1 mm
		2 in. ± 0.04 in.

[7] - Tighten lock nut (A). Recheck distance (a).

Item	Measurement	Specification
Lock nut, clutch pedal	Torque	15 N˙m
		11 lb-ft

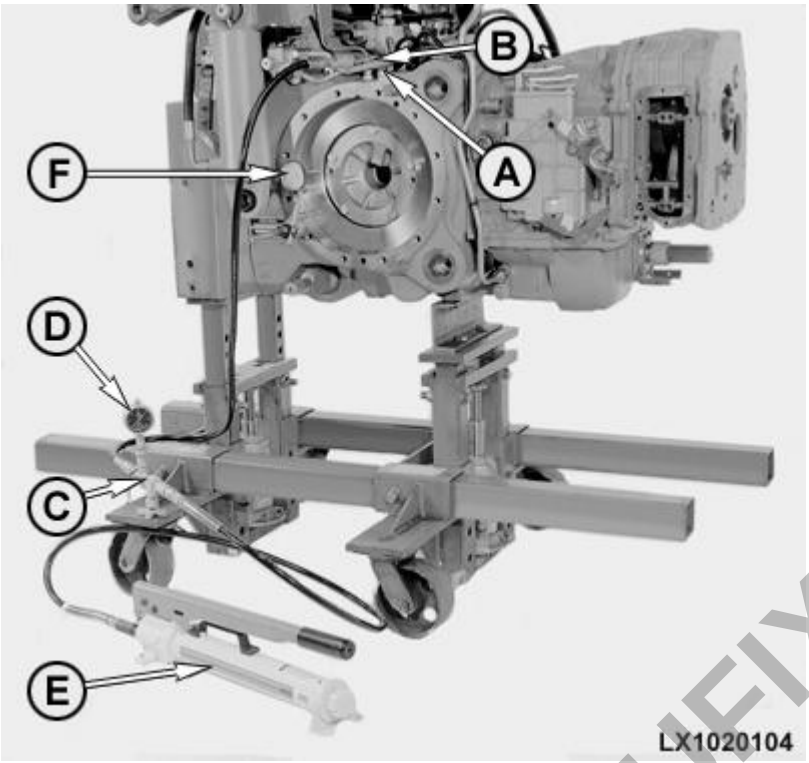
[8] - Push clutch pedal completely up. Turn operating cable yoke until bores of yoke and pedal are aligned.

[9] - Connect and secure yoke.

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Check Brake Pistons for Return Movement and Leakage



LEGEND:

A	Adapter R83489
B	Elbow AT58158
C	Tester JDH43A
D	Pressure gauge JT05472
E	Manually operated hydraulic pump D01019AA
F	Dial gauge

[1] - Remove brake pressure line and connector.

[2] - Install adapterR83489(A) and elbowAT58158(B). Connect testerJDH43A(C), pressure gaugeJT05472(D) and manually operated hydraulic pumpD01019AA(E).

[3] - Attach dial gauge (F).

[4] - Perform leak test on brake piston.

Leak test on brake piston	
Test sequence	Specification
Pressurize brake piston	300 kPa (3 bar; 44 psi)
Max. pressure drop within 10 seconds	10 kPa (0.1 bar; 1.5 psi)

→NOTE:

If the pressure drops too far, check the O-rings of the brake piston and replace, if necessary.

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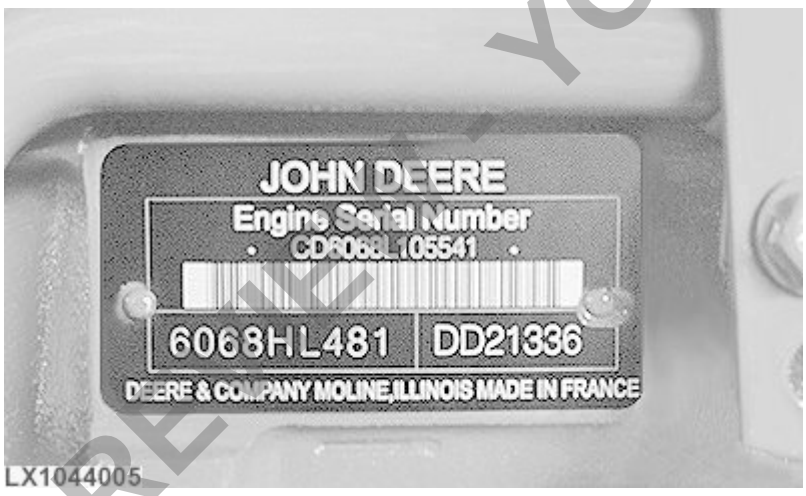
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EN-1	Engine
FA-1	Front axle
FI-1	Front PTO
FI-2	Front hitch
FI-3	Front loader
HY-1	Hydraulic pump
OS-1	Cab
OS-2	Roll-Over Protective Structure (ROPS)
OS-3	Seat
OS-4	Brake valve
OS-5	Steering valve
OS-6	Compressor for air-conditioning
RA-1	Transmission assembly
RA-3	Transmission ratios, differential - front wheel drive
RI-1	Priority valve
RI-2	Pick-up hitch
RI-3	Trailer hitch
RI-4	Drawbar
RI-5	Holder for pick-up hitch
RI-6	Trailer brake valve

Viewed in the direction of travel, the plate bearing the product-identification and component serial numbers is located on the left-hand side (see arrow).

Engine Serial Number



→NOTE:

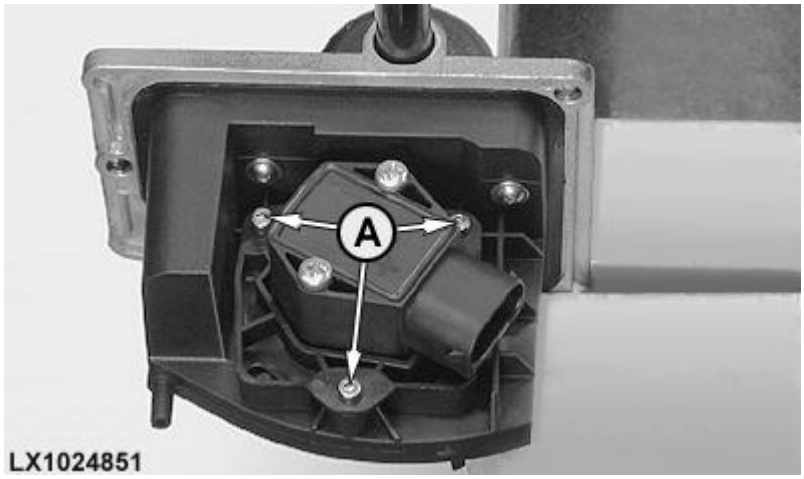
Besides the engine serial number, the plate shows the engine type as well. When ordering spare parts for the engine, please quote all the numbers and letters on this type plate.

The engine serial number plate is located on the right-hand side of engine block.

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[4] -



Install hex. socket screws (A) on the housing.

→NOTE:

Install the stopper on the housing.

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From the back, insert the male terminal into the terminal body.

Put on the locking cap.

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Section 45 - ELECTRONIC CONTROL UNITS

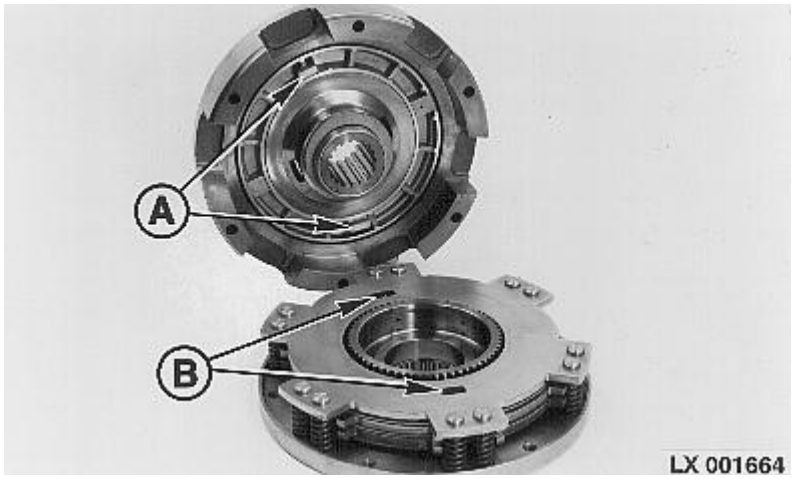
Table of contents

Group 05 - Removal and Installation of Electronic Control Units 1
Electronic Control Units - Summary of References 1
Disconnecting electrical circuits 1
Instructions when Replacing a Control Unit 2
Safety Information 2
Replace ECU Control Unit 2

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[9] - Put clutch drum on disk pack.



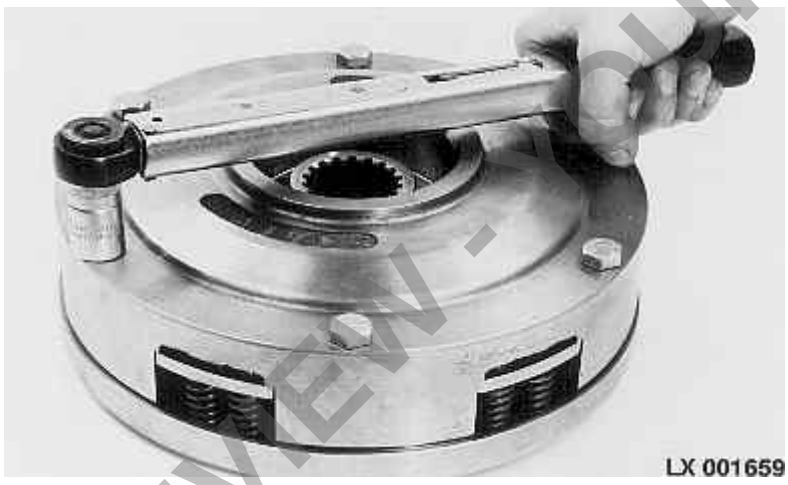
LEGEND:

A	Lug
B	Recesses

→NOTE:

Lugs (A) on the piston must fit into the recesses (B) in the end plate.

[10] - Apply LOCTITE ™ 243 (medium-strength) to the cap screws.

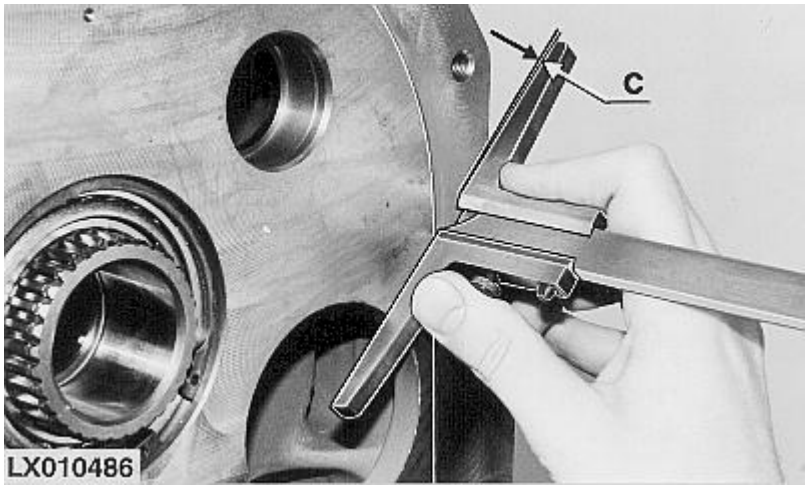


[11] - Tighten the cap screws.

Item	Measurement	Specification
Cap screws, cover to clutch drum	Torque	50 N˙m
		35 lb-ft

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[1] - Measure dimension (a) between the face of the gear transmission and the contact surface of the synchronizer unit.

[2] - On the range transmission, make sure that there is no shim in front of taper roller bearing cone (A).**Measure dimension (b) between the face of the range transmission and the tapered roller bearing cone.**

[3] - Measure the depth of step (c) at the range transmission near the gasket.

[4] - Calculate**shim thickness (d)** .

d = a + b - c - 21.90 mm (0.862 in.)

Add dimensions (a) and (b). Subtract the step depth (c) plus 21.90 mm (0.862 in.) from this sum.

[5] - If none of the shim thicknesses available through parts channels is equal to the calculated dimension, use the next larger size of shim that can be obtained.

Sample calculation for 12-speed transmission without creeper:

Shim thickness (d) = a + b - c - 21.90 mm (0.862 in.)

Dimension (a) = 16.10 mm (0.634 in.)

Dimension (b) = 7.50 mm (0.295 in.)

Dimension (c) = 0.30 mm (0.012 in.)

16.10 mm + 7.50 mm - 0.30 mm - 21.90 mm = 1.40 mm

0.634 in. + 0.295 in. - 0.012 in. - 0.862 in. = 0.055 in.

The result must be rounded up. A 1.5 mm (0.059 in.) shim must be installed.

Measure the dimensions at the connecting ring on 12-speed transmissions with creeper

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Check and Adjust the Shift Mechanisms/Linkages

CAUTION:

Do not perform any adjustments with the engine running, as the tractor could move unexpectedly. Switch off the ignition and remove the key.

Check the shift mechanism/linkage

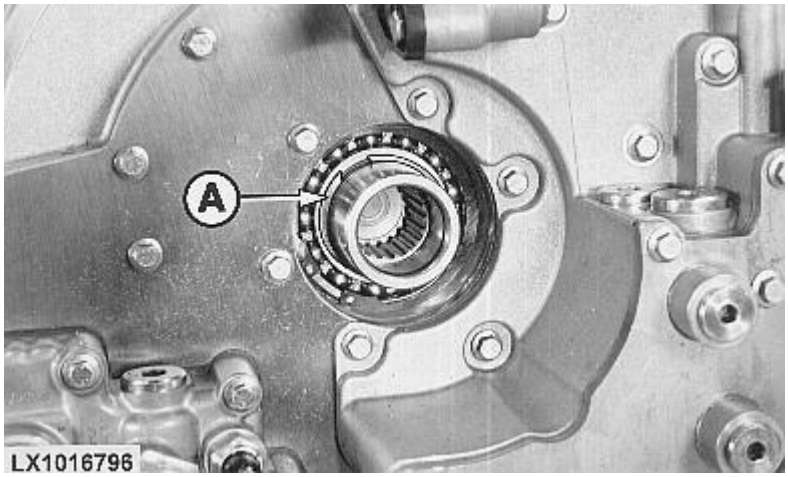
→NOTE:

Note the shift pattern when shifting ranges, gears or park lock.

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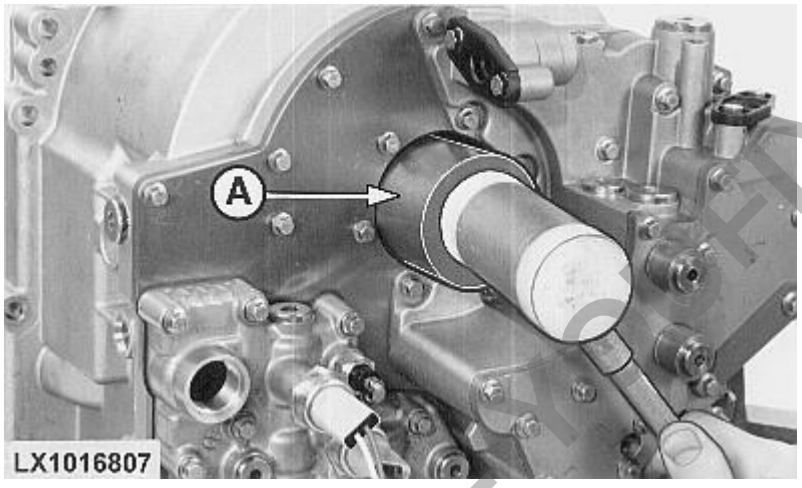
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[4] -



Install snap ring (A).

[5] -



Install seal ring using special toolKJD10177(A).

IMPORTANT:

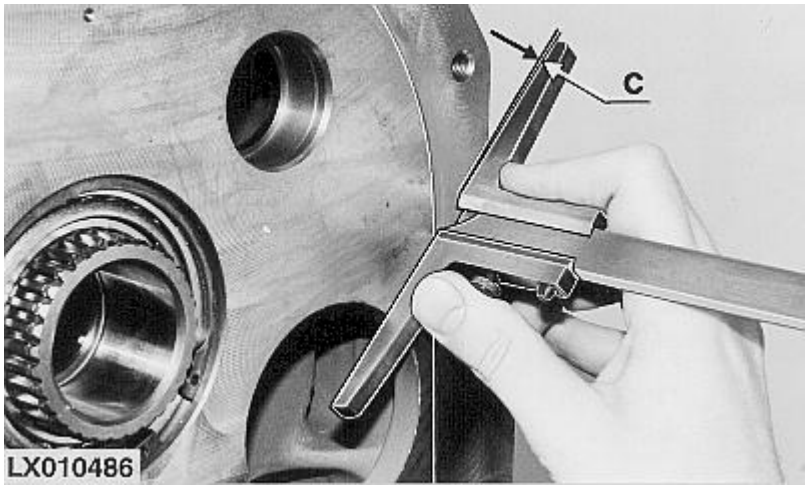
Install the seal ring flush with the housing surface; it must not be more than 2 mm (0.08 inch.) below the surface. The seal ring must be parallel to the housing surface and not seated askew in the housing.

→NOTE:

For transmission versions with externally splined transmission input shaft, use seal installerJDG775.

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[1] - Measure dimension (a) between the face of the gear transmission and the contact surface of the synchronizer unit.

[2] - On the range transmission, make sure that there is no shim in front of tapered roller bearing cone (A).**Measure dimension (b) between the face of the range transmission and the tapered roller bearing cone.**

[3] - Measure the depth of step (c) at the range transmission near the gasket.

[4] - Calculate**shim thickness (d)** .

d = a + b - c - 21.90 mm (0.862 in.)

Add dimensions (a) and (b). Subtract the step depth (c) plus 21.90 mm (0.862 in.) from this sum.

[5] - If none of the shim thicknesses available through parts channels is equal to the calculated dimension, use the next larger size of shim that can be obtained.

Sample calculation

Shim thickness (d) = a + b - c - 21.90 mm (0.862 in.)

Dimension (a) = 16.10 mm (0.634 in.)

Dimension (b) = 7.50 mm (0.295 in.)

Dimension (c) = 0.30 mm (0.012 in.)

16.10 mm + 7.50 mm - 0.30 mm - 21.90 mm = 1.40 mm

0.634 in. + 0.295 in. - 0.012 in. - 0.862 in. = 0.055 in.

The result must be rounded up. A 1.5 mm (0.059 in.) shim must be installed.

Further preparation for installation

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Remove the Front-Wheel Drive Clutch

[1] - Open the hood.



Disconnect the negative terminal (—) on the battery. The version shown here has a negative terminal at the location marked (A).

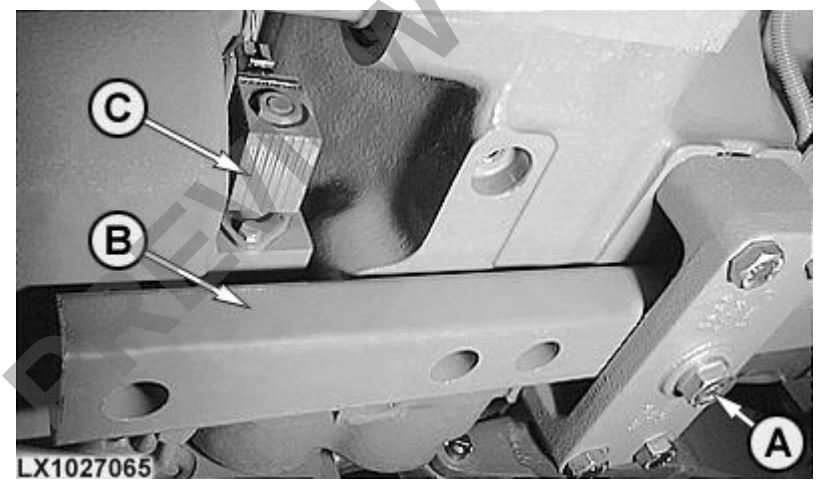
CAUTION:

Always be careful to observe the correct battery terminals.

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

[2] - Remove the u.j. shaft of the front-wheel drive axle; seeRemove U.J. Shaft (Front-Wheel Drive Axle)in Section 56, Group 05.

[3] -



If a swinging drawbar is equipped, take out screw (A) and the pin, and pull out the drawbar to the rear.

Pull the connector out of solenoid coil (C), and take out the coil.

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[14] -

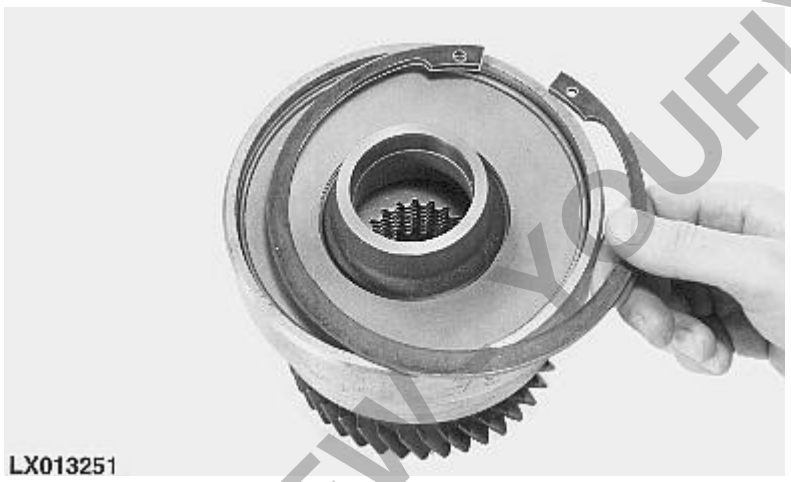


LEGEND:

A	Clutch shaft

Use clutch shaft (A) to align the internally splined disks.

[15] -



Install snap ring.

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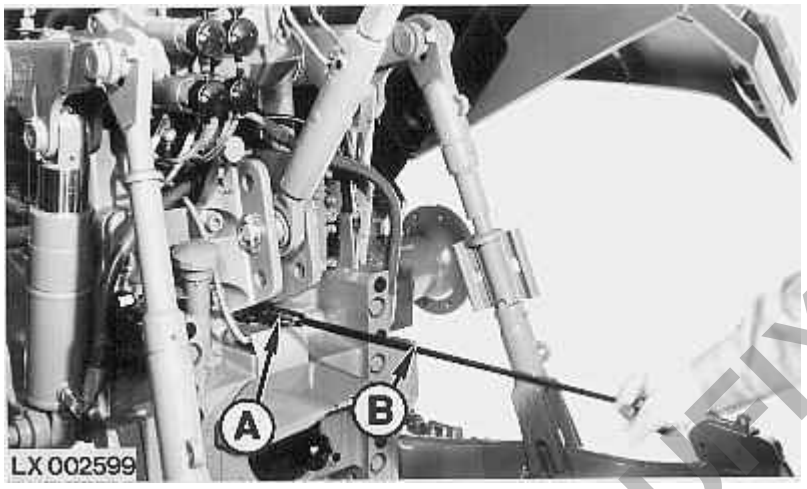
Adjust the Hydraulic Pump Drive

Preliminary work:

Remove the center link support, seeHitch - Center Link, Remove Supportin Section 70.

Remove the mounting plate or the charge pump, see Oil Filter, Charge Pump and Hydraulic Pump - Summary of References in Section 70.

[1] -

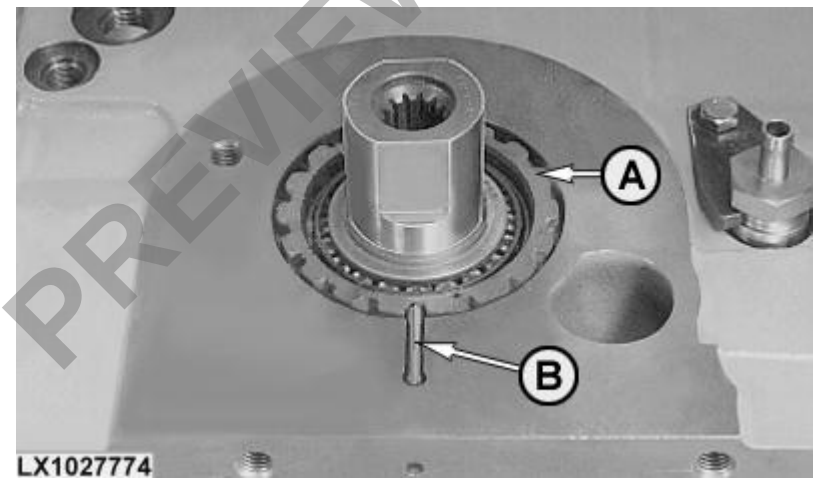


LEGEND:

A	PTO Drive Shaft
B	KJD10173 - Special Tool

Remove the plug. UsingKJD10173special tool (B), first pull PTO drive shaft (A) out of the housing and then the pump drive shaft.

[2] -



LEGEND:

A	Adjusting Ring
B	Pin

Remove pin (B).

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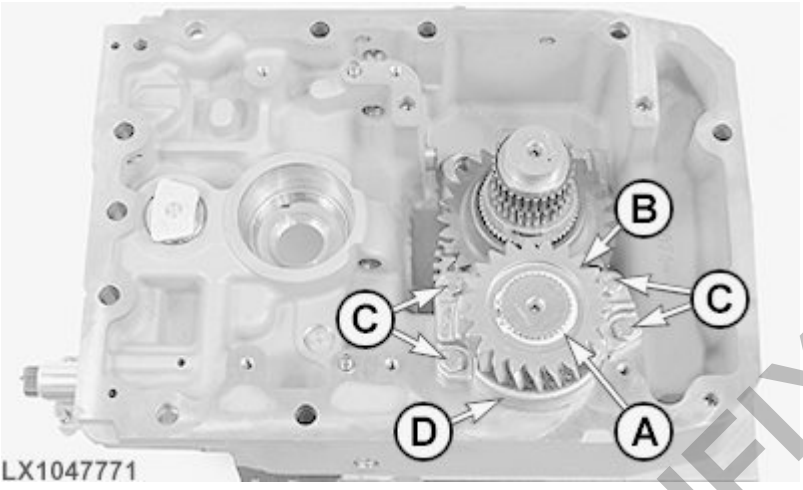
Remove PTO Drive Train (Reversible)

Preliminary work:

SeeRemove the PTO Clutchin Section 56.

SeeReplace the Rear PTO Speed Sensor (B06)in Section 56.

[1] -



LEGEND:

A	Snap ring
B	Gear
C	Screws
D	Bearing housing

Remove snap ring (A) and pull gear (B) off the countershaft.

[2] - Take out screws (C) out of bearing housing (D), and remove the bearing housing.

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[2] - Screw adjusting screws in or out until a pressure of 23500 to 25500 kPa (235 to 255 bar; 3400 to 3700 psi) is obtained.

→NOTE:

Turning adjusting screws clockwise increases pressure. Turning adjusting screws counterclockwise reduces pressure.

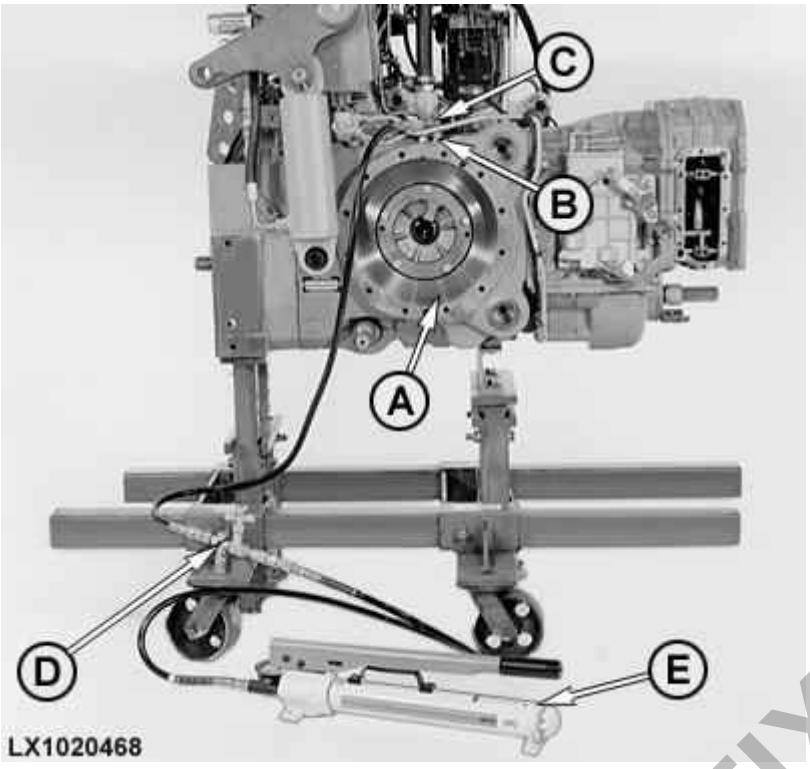
[3] - Tighten the threaded plug to specification.

Item	Measurement	Specification
Threaded plug	Torque	30 N˙m
		23 lb-ft

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[3] -



LEGEND:

A	Brake piston
B	Adapter R83489
C	Elbow AT58158
D	Tester JDH43A
E	Manually operated hydraulic pump D01019AA

Remove brake pressure line and connector.

[4] - Install adapterR83489(B) and elbowAT58158(C). Connect testerJDH43A(D) and manually operated hydraulic pumpD01019AA(E).

[5] - Remove brake piston (A) using the manually operated hydraulic pump.

Next step:

SeeInstall the Rear Brakesin Section 60.

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them for signs of damage.

If the valve is damaged, it must be replaced as a complete assembly. If not damaged, change the seal ring and re-install the valve.

[5] -

→NOTE:

The bore (see arrow) in the spool must face towards the valve housing.



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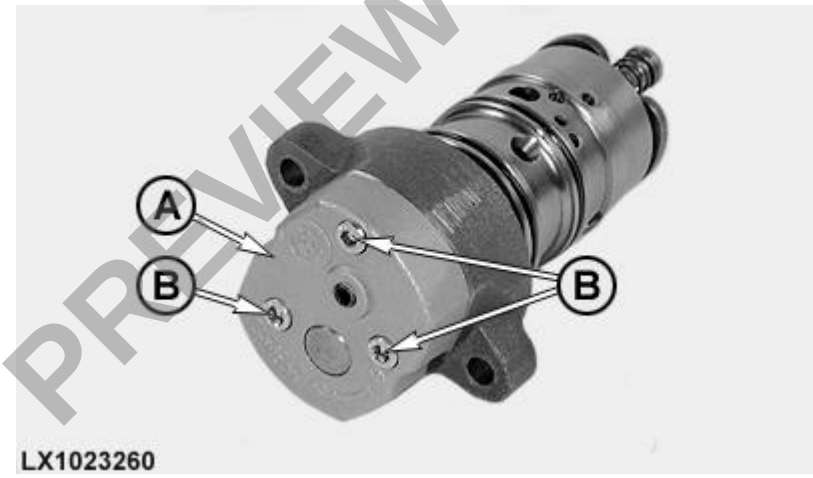
Remove and clean the lowering valve, and inspect it for signs of damage.

If the valve is damaged, it must be replaced as a complete assembly. If not damaged, change the seal rings and re-install the valve.

[6] -

→NOTE:

Coat the inside of the cover with multi-purpose grease.



LX1023260

Use screws (B) to install cover (A) on the control valve housing.

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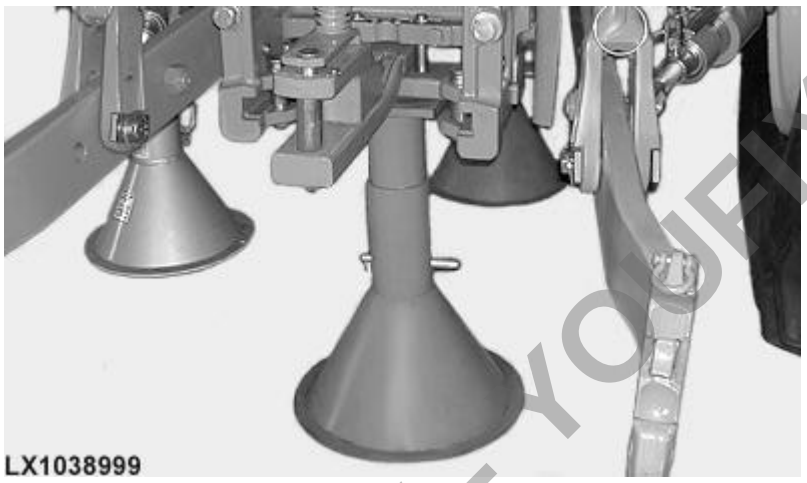
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[3] -


LX1038997

Support front-wheel drive clutch housing SECURELY, using support standJT07211.

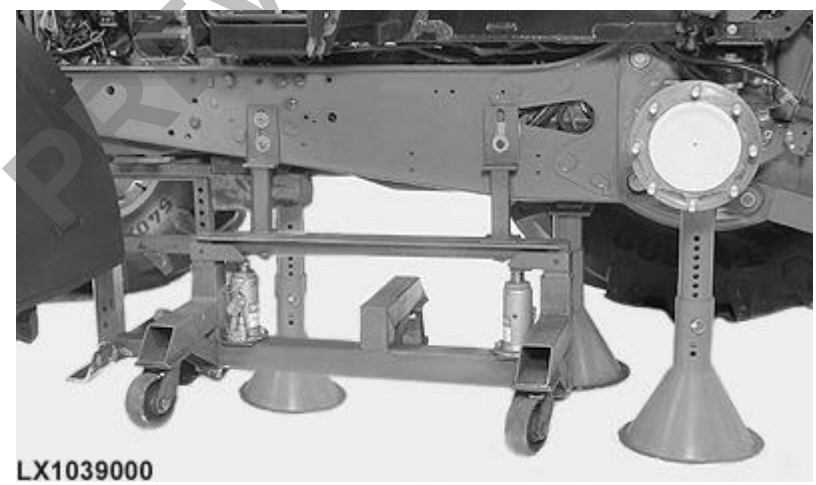
[4] - Support differential housing SECURELY, using support standJT07211.


LX1038999

IMPORTANT:

Make sure that the tractor is safely supported. Wooden blocks and wedges must be firmly seated (without any play).

[5] - Bolt splitting standJT05724to the main frame.


LX1039000

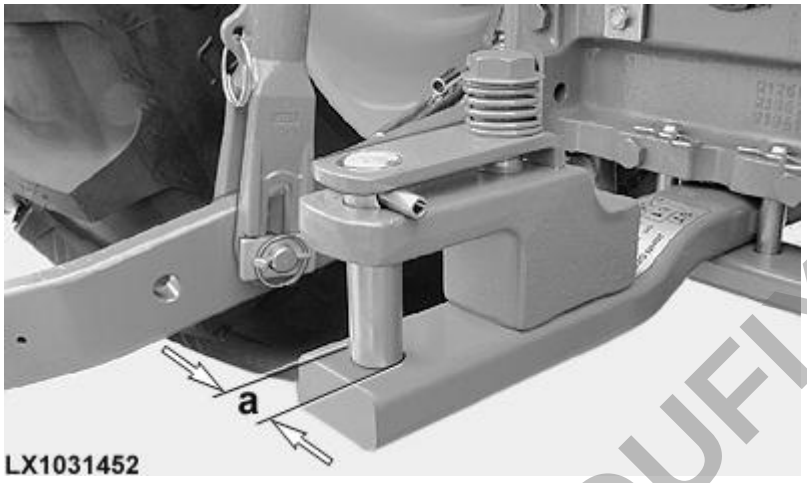
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Checking the Swinging Drawbar for Wear

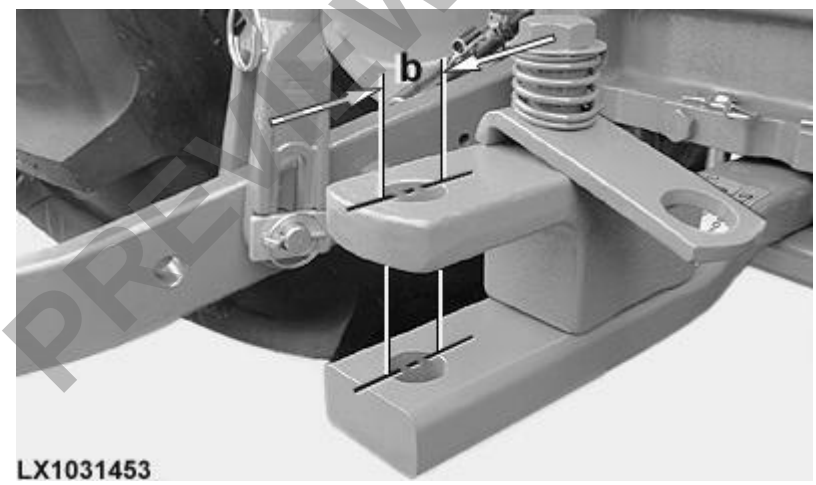
CAUTION:

Parts that have reached or exceeded their wear limit must be replaced with new parts.



Check diameter (a) of the pin.

Item	Measurement	Specification
Swinging drawbar, pin	Wear limit or minimum diameter	29.5 mm 1.16 in.



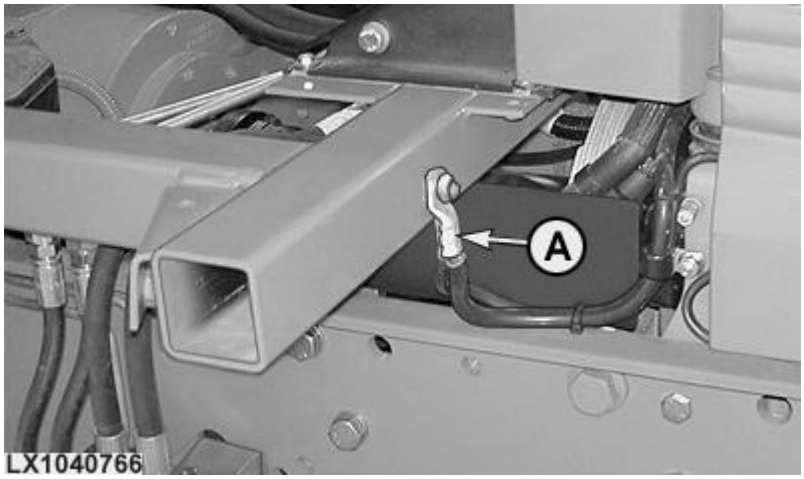
Check diameter (b) of the pin receiver hole.

Item	Measurement	Specification
Top and bottom receiver holes (measured in direction of travel)	Wear limit or maximum permitted diameter	35.0 mm (oval) 1.38 in. (oval)

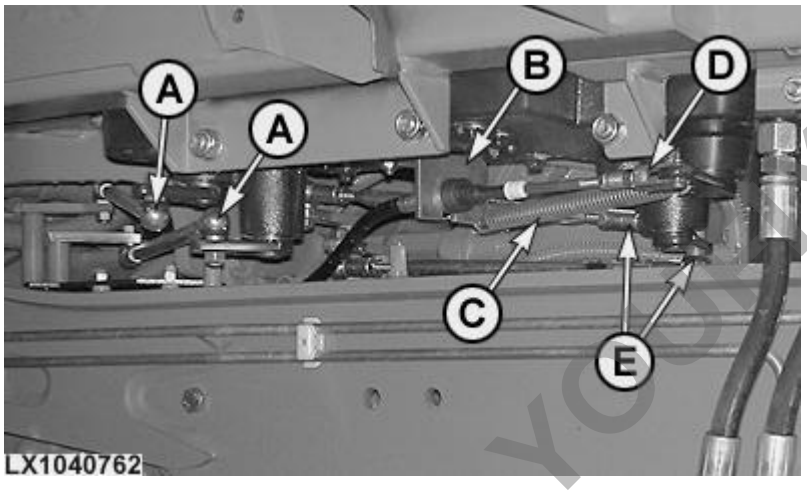
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[8] - Disconnect the ground cable (A) from the open operator's station.



[9] - Disconnect ball ends (A) and (E), yoke (D), counter-bearing (B) and spring (C).



LEGEND:

A	Ball end
B	Counter bearing
C	Spring
D	Yoke
E	Ball end

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