544J Loader Repair

(Serial No. 611800-)

TECHNICAL MANUAL
544J Loader Repair (S.N. 611800—)

TM10244 16JAN08 (ENGLISH)

For complete service information also see:

Worldwide Construction And Forestry Division

LITHO in U.S.A.

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Recognize Safety Information

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

Follow the precautions and safe operating practices highlighted by this symbol.

A signal word — DANGER, WARNING, or CAUTION — is used with the safety alert symbol. DANGER identifies the most serious hazards.

On your machine, DANGER signs are red in color, WARNING signs are orange, and CAUTION signs are yellow. DANGER and WARNING signs are located near specific hazards. General precautions are on CAUTION labels.

T133555 –UN–28AUG00

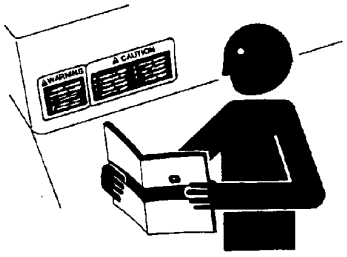
T133588 –19–28AUG00

TX03679,00016CC –19–01OCT07–1/1

Follow Safety Instructions

Read the safety messages in this manual and on the machine. Follow these warnings and instructions carefully. Review them frequently. Keep safety signs in good condition. Replace missing or damaged safety signs. Replacement safety signs are available from your authorized John Deere dealer.

Be sure all operators of this machine understand every safety message. Replace operator's manual and safety labels immediately if missing or damaged.



T133556 –UN–24AUG00

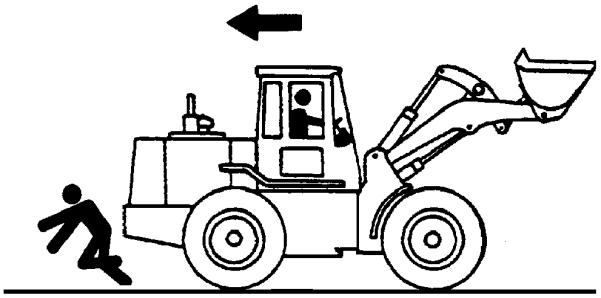
TX03679,00016F9 –19–18OCT07–1/1

Avoid Backover Accidents

Before moving machine, be sure all persons are clear of machine path. Turn around and look directly for best visibility. Use mirrors to assist in checking all around machine. Keep windows and mirrors clean, adjusted, and in good repair.

Be certain reverse warning alarm is working properly.

Use a signal person when backing if view is obstructed or when in close quarters. Keep signal person in view at all times. Use prearranged hand signals to communicate.



T141673 –UN–04MAY01

TX03679,000179C –19–20APR01–1/1

Avoid Machine Tip Over

Use seat belt at all times.

Do not jump if the machine tips. You will be unlikely to jump clear and the machine may crush you.

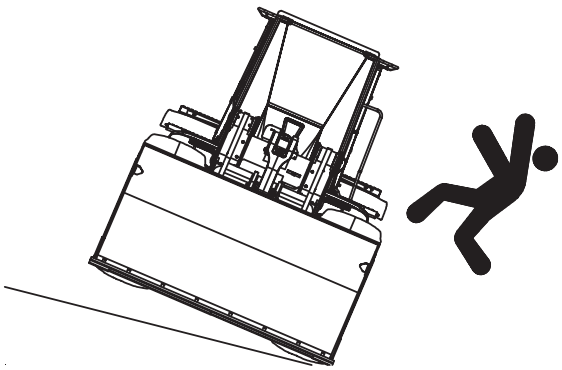
Load and unload from trucks or trailers carefully. Be sure truck is wide enough and on a firm level surface. Use loading ramps and attach them properly to truck bed.

Be careful on slopes. Avoid sharp turns. Balance loads so weight is evenly distributed and load is stable. Carry tools and loads close to the ground to aid visibility and lower center of gravity. Use extra care on soft, rocky or frozen ground.

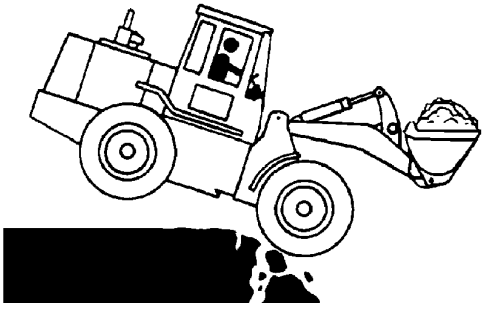
Know the capacity of the machine. Do not overload. Be careful with heavy loads. Using oversize buckets or lifting heavy objects reduces machine stability.

Ensure solid footing. Use extra care in soft ground conditions that may not uniformly support the wheels, especially when raising the boom. Do not operate close to banks or open excavations that may cave in and cause machine to tip or fall.

T133716 –19–14SEP00



T141676 –UN–04MAY01



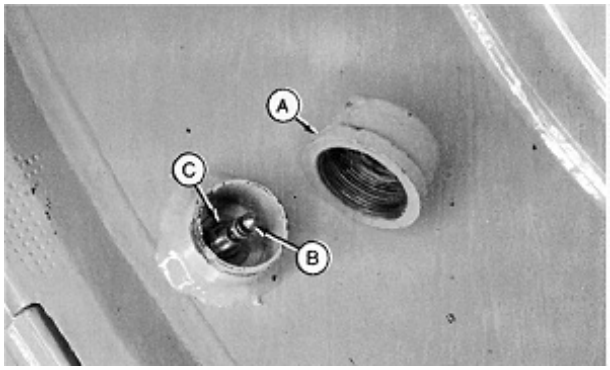
T141672 –UN–04MAY01

TX03679,000179D –19–02MAY01–1/1

Before attempting any demounting operation, always completely deflate tire. Remove protective cap (A) and valve core (B) from valve. Remove valve nut (C).

Inspect all parts for damage. Replace parts as necessary.

A—Protective Cap
B—Valve Core
C—Valve Nut



T7751GU –UN–22OCT92

Wheel Air Valve and Protective Cap

SJ25320,000047C –19–07AUG07–2/2

CAUTION: Prevent possible crushing injury from heavy component. Use appropriate lifting device.

Specification

Machine—Weight (approximate) ..... 13 518 kg
29 802 lb

8. Raise rear of machine using floor jack. Install floor stands under frame on each side and under rear corners of frame.

CAUTION: Prevent possible crushing injury from heavy component. Use appropriate lifting device.

9. Remove wheels. See Wheel Remove and Install. (Group 0110.)

IMPORTANT: Do not reuse drive shaft universal joint cap screws. Replace cap screws to avoid machine damage.

10. Remove cap screws to disconnect drive shaft.

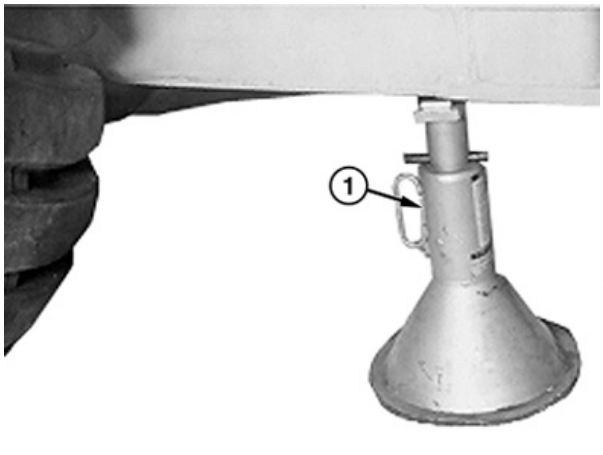
CAUTION: Prevent possible crushing injury from heavy component. Use appropriate lifting device.

Specification

Axle and Differential with Oscillating Supports—Weight (approximate) ..... 953 kg
2100 lb

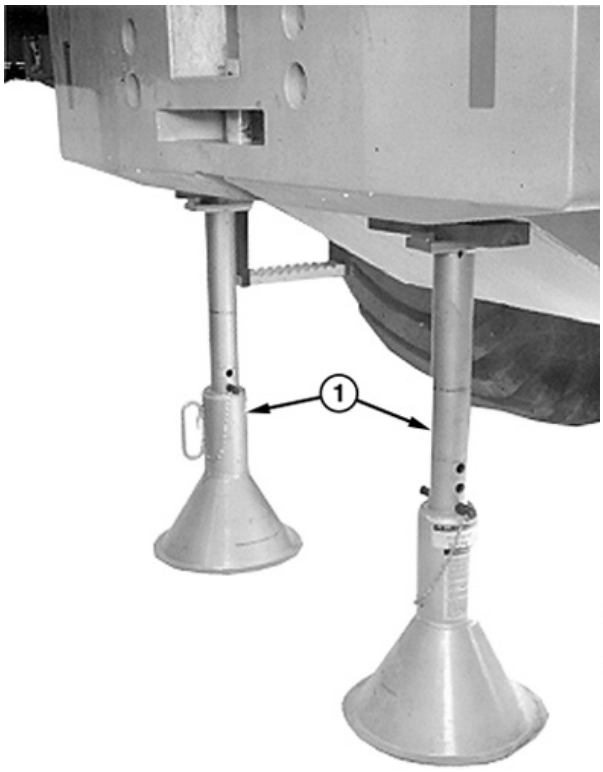
11. Install low-lift jack under axle assmbly.

1—Floor Stand (4 used)



TX1005981A –UN–04APR06

Floor Stand Under Frame



TX1005982A –UN–04APR06

Positioning Floor Stands

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SJ25320,0000442 –19–10JUL07–3/6

1—O-Ring (4 used)
2—Elbow Fitting (4 used)
3—O-Ring (4 used)
4—Hydraulic Hose
5—Hydraulic Hose
6—O-Ring (4 used)
7—O-Ring (2 used)
8—Bracket (2 used)
9—Cap Screw (4 used)
10—Washer (4 used)
11—Washer (2 used)
12—Nut (2 used)
13—Hydraulic Hose
14—Hydraulic Hose
15—Filter (2 used)
16—Elbow Fitting (2 used)
17—O-Ring (2 used)
18—O-Ring
19—O-Ring
20—Hydraulic Hose
21—Hydraulic Hose
22—Tee Fitting (2 used)
23—Hydraulic Hose
24—Hydraulic Hose
25—Elbow Fitting (2 used)
26—O-Ring (4 used)
27—O-Ring (2 used)
28—Pump
29—Cap Screw (2 used)
30—Cover
31—Gasket
32—O-Ring (2 used)
33—Elbow Fitting (2 used)
34—Hydraulic Hose
35—Hydraulic Hose
36—Hydraulic Hose

When repairing pumps tighten valve section cap screws to following specification.

Fan Pump—Specification

Pump Section Cap Screws—
Torque..... 51—58 N.m
38—43 lb-ft

Axle Circulating Pump—Specification

Pump Section Cap Screws—
Torque..... 14—18 N.m
10—13 lb-ft

For more information on axle circulation system, see Power Train Component Location. (Group 9020-15.)

SJ25320,0000447 –19–25JUL07–2/2

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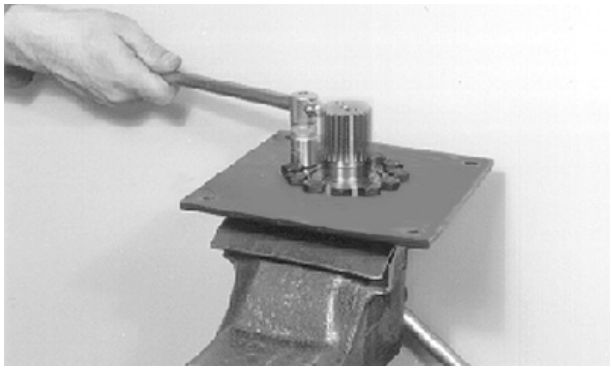
5

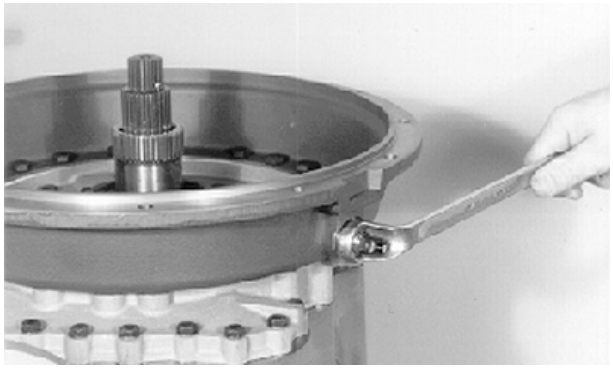
9. Remove cap screws and separate input shaft from drive plate.



T112415 –UN–05DEC97

SJ25320,0000468 –19–18MAY07–8/10

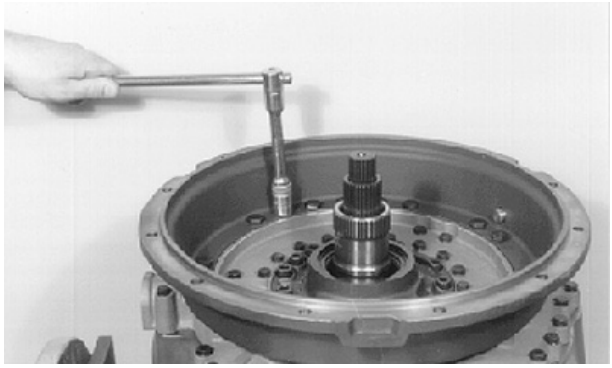
10. Remove speed sensor from converter housing.



T108720 –UN–17APR97

SJ25320,0000468 –19–18MAY07–9/10

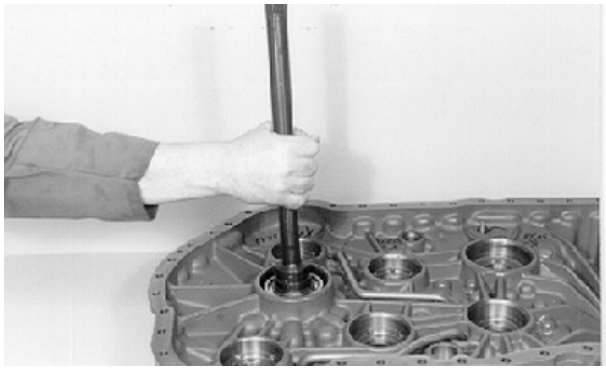
11. Remove cap screws and remove converter lower housing.



T108729 –UN–17APR97

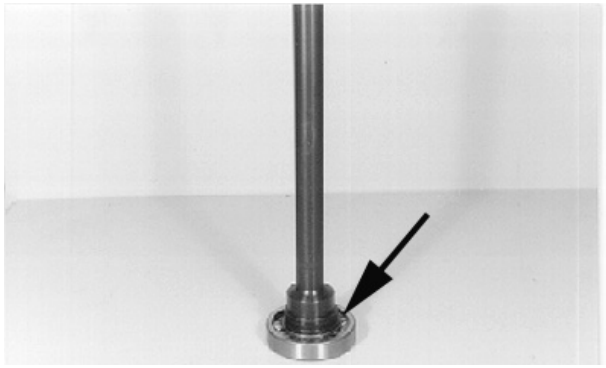
SJ25320,0000468 –19–18MAY07–10/10

23. Remove bearing outer race and pull output shaft out of the housing bore.



MH66O88,00005B5 –19–18MAY07–18/19

24. Remove the snap ring and separate the ball bearing from the shaft.



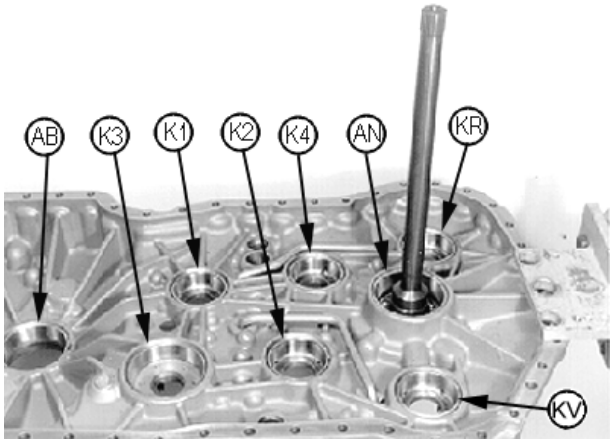
MH66O88,00005B5 –19–18MAY07–19/19

Clutches, Input and Output Shafts Install

IMPORTANT: High tolerance bearings are used in all clutch pack applications. Use only John Deere sourced bearings when replacing.

NOTE: If bearings are reused, they must be assembled in the same bores they were removed from.

1. Install all bearing outer races into the housing cover until contact is obtained.



AB—Output Shaft
AN—Input Shaft
K1—First Speed Clutch
K2—Second Speed Clutch
K3—Third Speed Clutch
K4—High-Range Forward Clutch
KR—Reverse Clutch
KV—Low-Range Forward Clutch

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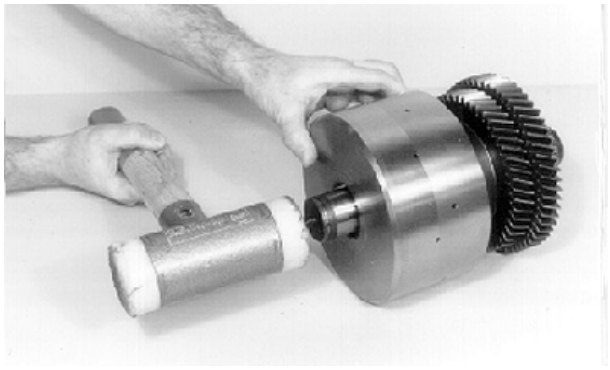
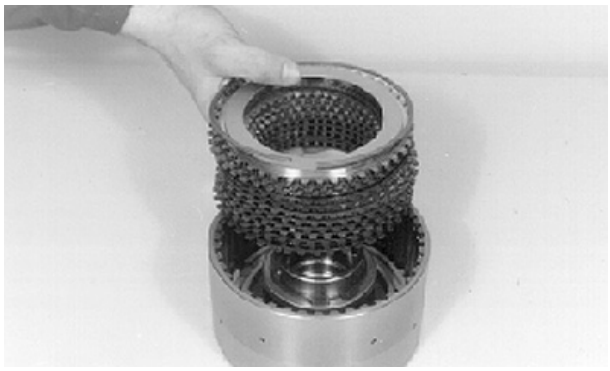
SJ25320,000047F –19–24JUL07–1/31

3. Separate plate carrier from shaft.



SJ25320,000044A –19–18MAY07–3/10

4. Remove clutch pack.



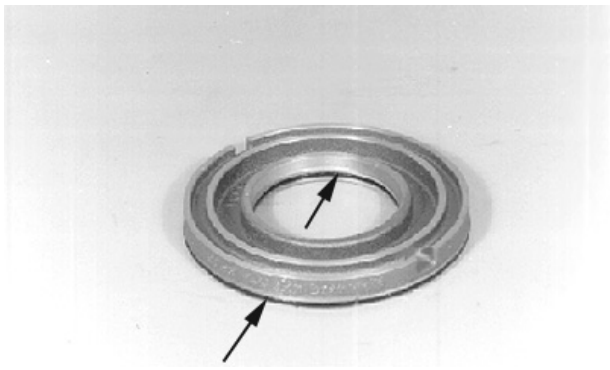
SJ25320,000044A –19–18MAY07–4/10

5. Preload compression spring with DFT1149 Pre-Load Clutch Pack Compression Ring Tool in press and remove snap ring. For instructions to make tool, see DFT1149 Pre-Load Clutch Pack Compression Ring Tool. (Group 9900.)

6. Remove piston from carrier.

SJ25320,000044A –19–18MAY07–5/10

7. Remove O-rings from piston.



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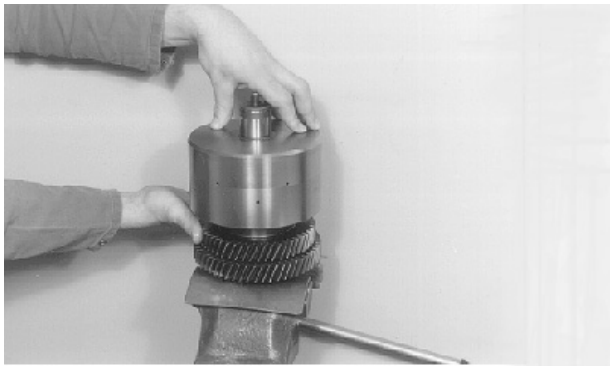
SJ25320,000044A –19–18MAY07–6/10

18. Install pre-assembled plate carrier until all plates are engaged.

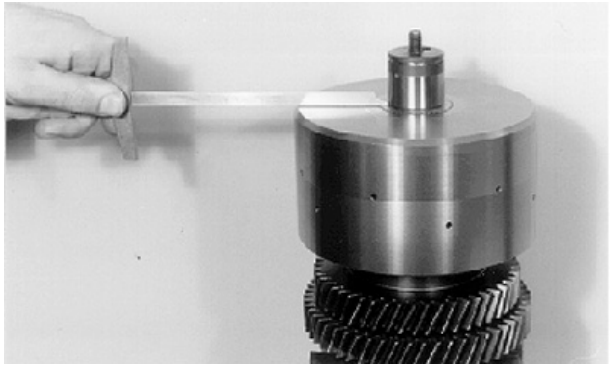


T108675 –UN–10APR97

Assemble Plate Carrier

SJ25320,000044B –19–18MAY07–16/19

19. Ensure carrier face is flush with shaft spline.



T108676 –UN–10APR97

Carrier Face Flush with Shaft Spline

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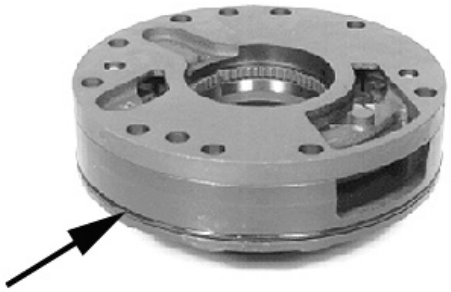
SJ25320,000044B –19–18MAY07–17/19

13. Lubricate and install the O-ring.



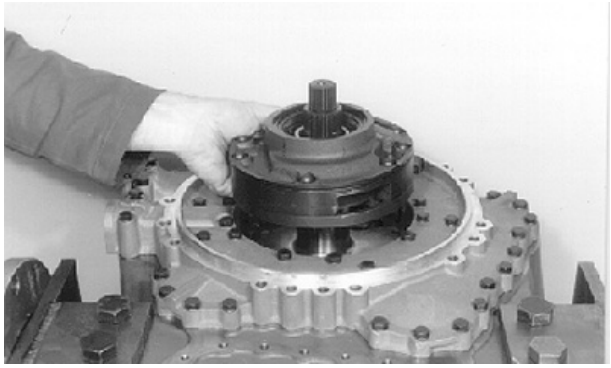
T109088 –UN–29APR97

O-Ring Installation

SJ25320,000046A –19–21JUN07–9/13

IMPORTANT: Tightening the two assembly screws will cause transmission pump failure. Do Not tighten the two assembly screws, they are used to hold pump together for installation and are not to be torqued or removed.

14. Install transmission pump.



T109089 –UN–15APR97

Transmission Pump Installation

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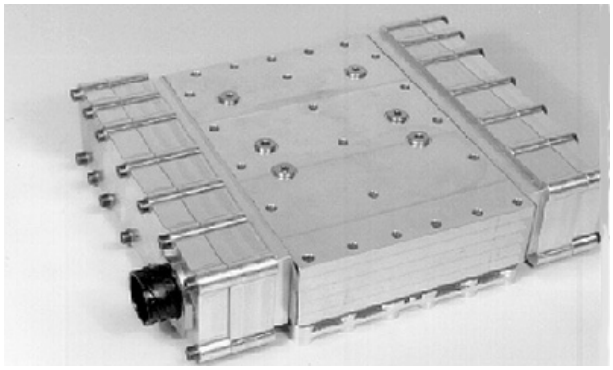
SJ25320,000046A –19–21JUN07–10/13

1—Cap Screw (32 used)
2—Clamp (Clip)
3—Cover
4—Wiring Harness
5—Gasket
6—Solenoid Valve—Proportional (3 used)
7—Cap Screw (3 used)
8—Plate (3 used)
9—Housing
10—Gasket
11—Piston (Dampening Valve) (6 used)
12—Spring (6 used)
13—Spring
14—Piston—System Pressure Reducing Valve
15—Valve Block (Control)
16—O-Ring (8 used)
17—Drain Plug (8 used)
18—Spring
19—Piston (System Pressure Regulating Valve)
20—Gasket
21—Housing
22—Retaining Plate (3 used)
23—Cap Screw (3 used)
24—Gasket
25—Cover
26—Cap Screw (14 used)
27—Solenoid Valve—Proportional (3 used)
28—Cap Screw (18 used)
29—Piston (Pressure Control Valve) (6 used)
30—Spring (6 used)
31—Orifice (6 used)
32—Gasket
33—Plate (Center)
34—Gasket
35—Manifold Plate
36—Cap Screw (18 used)
37—Screen (6 used)

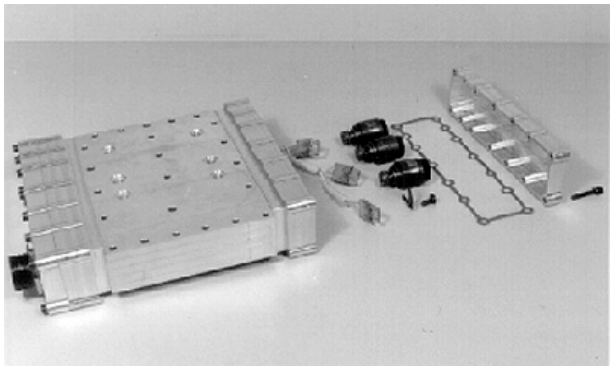
MH66O88,00005BC –19–18MAY07–3/29

1. Remove cap screws (26), and remove cover (25) and gasket (24).
2. Disconnect wiring harness connectors to solenoid valves (27).
3. Remove cap screws (23) and retaining plates (22), and remove three solenoid valves (27).



T108686 –UN–16APR97

Control Valve



T108687 –UN–16APR97

Solenoid Valves Pulled Out

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MH66O88,00005BC –19–18MAY07–4/29

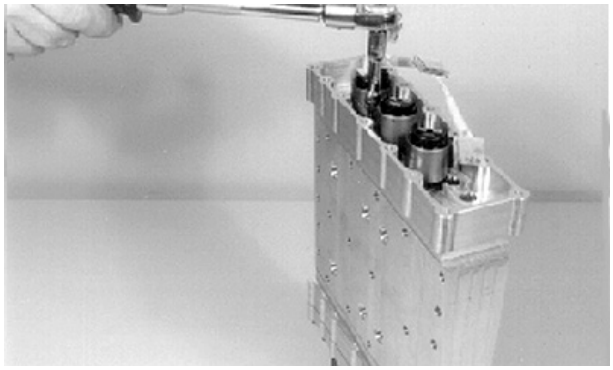
41. Insert three solenoid valves (6) equipped with O-ring, and fasten by means of retaining plate (22) and screw (23).

NOTE: Install retaining plate with the claw facing the housing bottom.

42. Tighten screw to specification.

Specification

Solenoid Valve-to-Retaining Plate Screw—Torque ..... 5 N•m (44 lb-in.)



T108698 –UN–16APR97

Solenoid Valves Tightening

03 0360 25

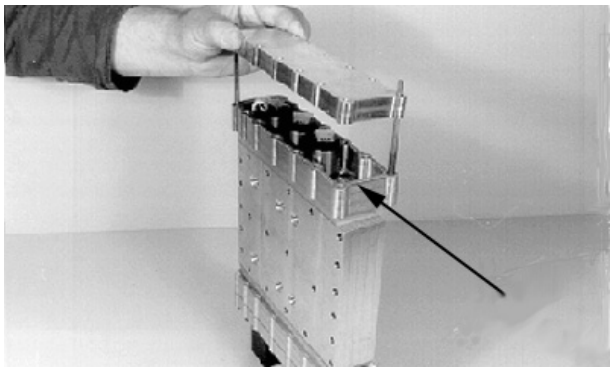
MH66O88,00005BC –19–18MAY07–23/29

43. Fasten harness connectors to solenoid valves.

44. Screw two alignment studs in housing and assemble flat gasket (24) and cover (25). Tighten screw (M341095) (26) to specification.

Specification

Alignment Stud-to-Cover Screw—Torque ..... 5 N•m (44 lb-in.)



T108699 –UN–30APR97

Alignment Studs Placement

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MH66O88,00005BC –19–18MAY07–24/29

Remove & Installing Oil Tubes In Transmission Cover

1. All pipe can be removed by using a small pry bar inside the cover.

Oil Tube Swaging Tool for Tube Installation	
Two Tubes In Transmission Cover	JDG1133 Oil Tube Swaging Tool

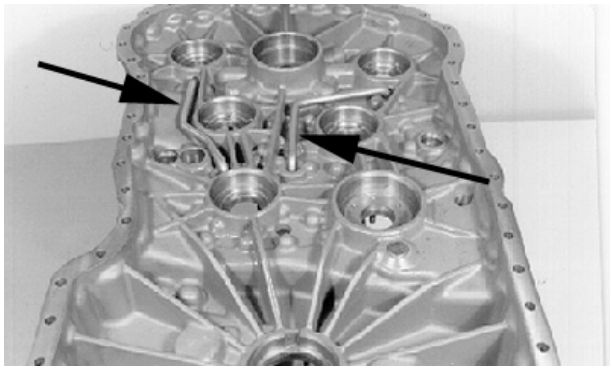
IMPORTANT: Oil tubes must be positioned slightly below housing surface on opposite side.

2. Install two oil tubes in transmission cover using JDG1133 Swaging Tool.

3. Insert swaging tool into oil tube end in bore until seated against tools edge (A).

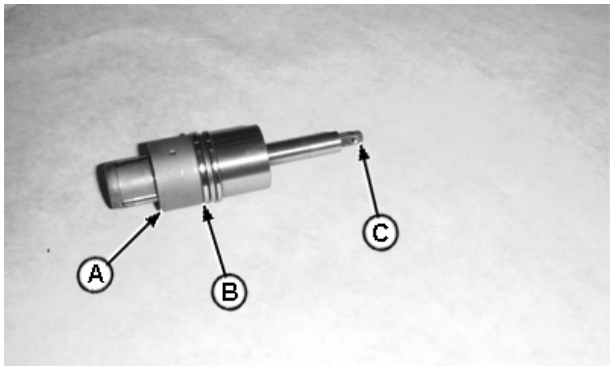
4. Slide rolling pin (C) down until seated. Start turning pin with wrench. Pressure will slowly increase. Turn approximately 10 to 12 full turns.

A—Tool Edge
B—JDG1131 Oil Tube Swaging Tool (used for Suction Tube)
C—Rolling Pin



T108658 –UN–09MAY97

Transmission Cover



T112178B –UN–12NOV97

Similar JDG1131 (used for Suction Tube) Shown

MR50960,000025A –19–14AUG07–5/5

22. Remove positive battery cables (10) and wires E01 WHT (11) from starter.

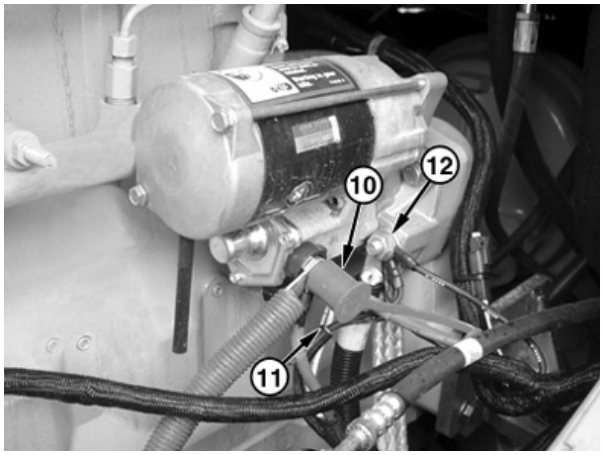
23. Remove ground wire (12) from starter.

NOTE: It is not necessary to disconnect air conditioning hoses from compressor or receiver-dryer when removing compressor.

24. Remove air conditioning compressor. Use tie band to secure compressor aside.

25. Remove fuel return hose from fuel rail on right side of engine. Close all openings using caps and plugs.

10—Positive Battery Cables
11—Wires E01 WHT
12—Ground Wire



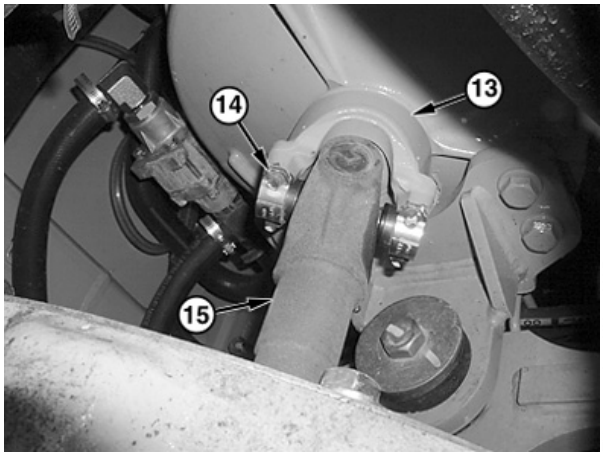
Starter

CS33148,000238B –19–25MAY07–4/10

NOTE: Rotate the engine so the drive shaft U-joint bolts are accessible.

26. Remove four cap screws (14) from the engine-to-torque converter drive shaft (15) U-joints at the torque converter housing (13).

13—Torque Convertor Housing
14—U-Joint Retaining Cap Screw (4 used)
15—Drive Shaft



Drive Shaft Cap Screws

Continued on next page

CS33148,000238B –19–25MAY07–5/10

1. Turn battery disconnect switch to the OFF position.
2. Drain engine coolant into an appropriate container for storage or disposal.

Specification

Engine Coolant—Capacity (approximate)	22 L 5.9 gal

3. Remove power cord (A).
4. Loosen engine coolant heating element nut (C).
5. Remove heating element assembly from block.

CAUTION: Personal injury could occur. Do not plug coolant heater into electrical power unless heating element is immersed in coolant. Sheath could burst.

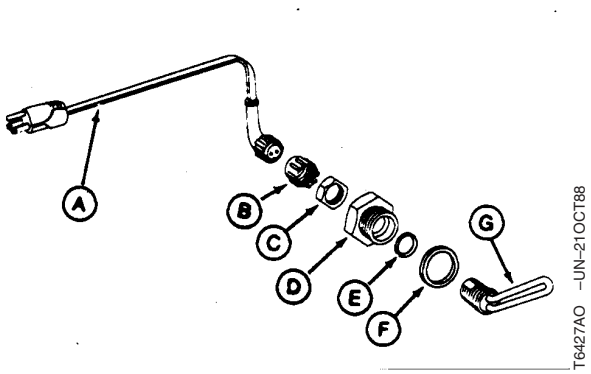
Use a heavy-duty grounded cord to connect coolant heater to electrical power.

6. Disassemble parts (B—G).
7. Repair or replace parts as necessary.
8. Assemble parts (B—G).
9. Install heating element assembly into cylinder block so flats on threaded portion of element are vertical.
10. Turn element clockwise until element contacts casting and then counterclockwise until element contacts casting. Move element to the center position.
11. Hold flats on threaded portion of element using a wrench. Tighten engine coolant heating element nut (C) to specification.

Specification

Engine Coolant Heater Element Nut—Torque	34 N•m 25 lb-ft

12. Install power cord (A).



Heating Element Assembly

A—Power Cord
B—Cap
C—Engine Coolant Heating Element Nut
D—Adapter
E—Gasket
F—O-Ring
G—Heating Element

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0505
3

Continued on next page

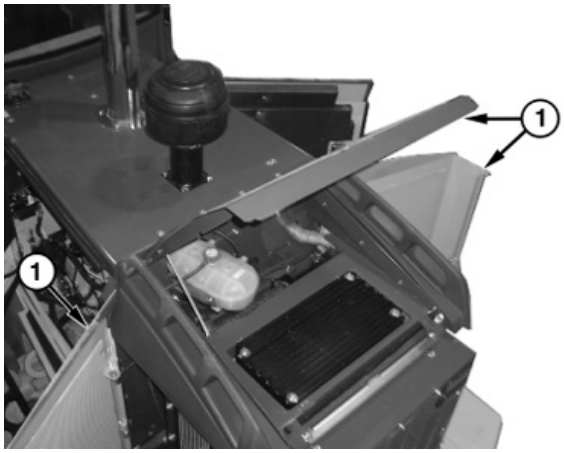
CAUTION: Prevent possible crushing injury from heavy component. Use appropriate lifting device.

4. Remove cooling package access doors (1).

Specification	
Access Door—Weight (approximate)	31 kg 68 lb

5. Remove inspection panels between engine and radiator.

6. Disconnect electrical connector from cooling package plenum below radiator.



TX1021341A –UN–12APR07

Access Doors

1—Cooling Package Access Door (3 used)

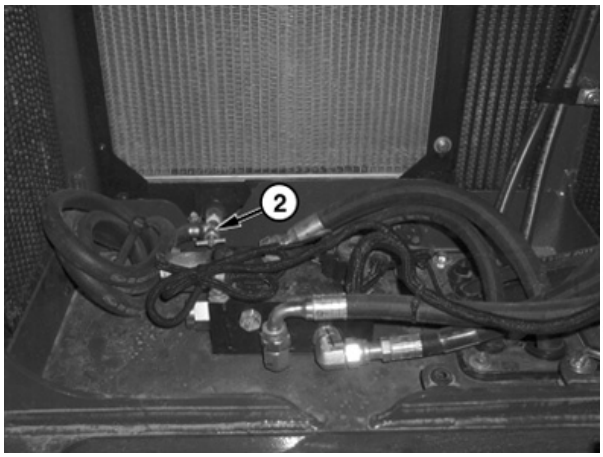
TW70818,000006F –19–18MAY07–2/7

7. Attach hose to radiator drain valve (2). Drain engine coolant. See Drain and Refill Capacities. (Operator's Manual.)

Specification	
Engine Coolant—Capacity (approximate)	22.5 L 5.9 gal

NOTE: For assembly purposes, identify all lines before removing.

8. Remove refrigerant. See R134a System Evacuate. (Group 1830.)



TX1022753A –UN–26APR07

2—Radiator Drain Valve

Continued on next page

TW70818,000006F –19–18MAY07–3/7

Group 0530
External Exhaust System

Section 07
Dampener Drive

Contents

07

1—Isolator
2—Cap Screw (3 used)
3—Lock Nut (3 used)
4—Washer (4 used)
5—Rubber Mount (3 used)
6—Cap Screw (4 used)
7—Washer (4 used)
8—Support Bracket
9—Spacer (4 used)
10—Lower Steering Column
11—Steering Valve

NOTE: Avoid dropping the steering valve. Support steering valve before removing cap screws (2).

7. Support steering valve, and remove cap screws (2), lock nuts (3), washers (4) and rubber mounts (5).
8. Remove steering valve assembly.
9. Remove cap screws (6), washers (7).
10. Remove support bracket (8), spacers (9) and lower steering column (10) from steering valve (11).
11. Repair or replace parts as necessary.
12. Install lower steering column, spacers, and support bracket to steering valve.
13. Install washers and cap screws to support bracket, tighten to specification.

Specification

Bracket-to-Valve Cap Screw—
Torque..... 27 N•m
20 lb-ft

14. Install the rubber mounts to support bracket.
15. Install steering valve assembly into machine.
16. Install washers, cap screws and lock nuts.

NOTE: When installing lower isolator cap screw, align cutout on shaft with isolator.

17. Install lower isolator cap screw. Tighten to specification.

Specification

Lower Isolator Cap Screw—
Torque..... 57 N•m
42 lb-ft

18. Connect hydraulic steering lines. Remove vacuum or fill hydraulic reservoir. See Drain and Refill Capacities. (Operator's Manual.)
19. Install cover to steering column.
20. Install front cab panel.

TW70818,0000054 –19–25OCT07–5/5

Section 10
Service Brakes

Contents

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Section 11
Park Brake

Contents

Park Brake Release Solenoid Valve Remove and Install

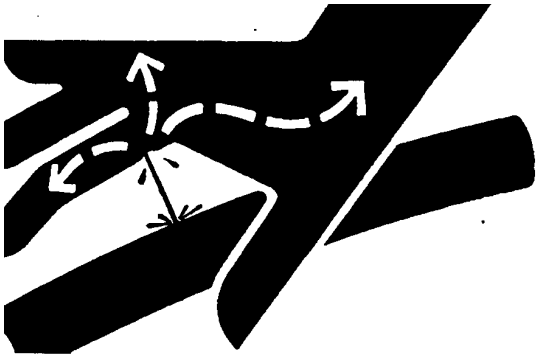
CAUTION: Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

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.

1. Perform Hydraulic System Pressure and Accumulators Discharge. (Group 9025-25.)



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Escaping Fluid Under Pressure

Continued on next page

CS33148,0002308 –19–23MAY07–1/2

5. Press lower seal (I) into seal spacer (H) with lips facing out. The seal must seat against seal spacer shoulder.

6. Install seal spacer (H) in bottom of loader frame bore.

7. Press first bearing cup into bore against seal spacer.

IMPORTANT: Do not apply load to bearing cone when pressing in cup. Use old bearing race to apply load on new bearing cup to prevent bearing damage.

8. Install first bearing cone in cup.

IMPORTANT: Use the same spacer (K) which was removed from the bearing set. Spacer is not interchangeable with other bearings.

9. Install bearing spacer.

10. Press second bearing cup into bore against spacer. Install second bearing cone.

11. Install upper seal (C) into cover with lip facing out. Press seal to cover shoulder.

12. Hold cover in place, measure gap between cover and frame, take readings in three places. Cover must contact top of bearing. Calculate the average of these three reading to determine shim pack required.

13. Install shims to obtain the specified preload of bearings.

Specification

Upper Pivot Bearing—Preload	0.03—0.13 mm 0.001—0.005 in.

14. Apply grease to the top of bearing, fill cavity above bearing to machined surface, to prevent moisture from entering bearing through shims.

15. Tighten cap screws (L) to specification. Rotate inner race of bearing after tightening.

Specification

Upper Pivot Bearing Cover Cap Screw—Torque	128 N•m 95 lb-ft

SJ25320,000057B –19–08MAY07–2/2

Section 18
Operator's Station

Contents

Windowpanes Remove and Install

The adhesive used to hold the windowpanes in place is a urethane adhesive that is used on most automobile windshields. Urethane adhesive manufactured by Loctite Corporation or equivalent is recommended. Do not use any other type of adhesive. It is also recommended that an auto glass dealer install the windowpanes.

IMPORTANT: Windowpanes must have an ultra-violet barrier around the edge of the glass since ultra-violet rays will deteriorate the adhesive. Windowpanes ordered through John Deere Parts have the ultra-violet barrier. If the windowpane is purchased through a glass dealer, the dealer must put an ultra-violet barrier on the glass. Do not apply paint to the border of the glass.

If an auto glass dealer is not installing the windowpanes, use the following procedure:

1. Purchase urethane adhesive from your local auto glass dealer.
2. If window frame is removable, remove frame from cab.
3. Scrape broken glass off existing adhesive. Do not remove adhesive from window frame or cab.

IMPORTANT: Adhesive will not stick to bare metal.

4. If existing adhesive is removed from frame and paint is scraped off window frame, paint window frame. Paint must be fully cured before installing windowpane.
5. Trim existing adhesive so it has a smooth surface.
6. Follow the manufacturer's instructions for using the adhesive.
7. Apply a 6 mm (1/4 in.) bead of adhesive on top of the existing adhesive.
8. Put a new windowpane into position. Use hand pressure to force windowpane down around the edges until even with metal frame.
9. If windowpane is installed directly on cab, use duct tape to hold it in place while adhesive cures.
10. Allow adhesive to cure for 24 hours before operating machine.

T52,1810,C19 –19–05JUN98–1/1

Cab Door Hold-Open Release Adjust

1. Remove door striker cover from left rear side of ROPS.
2. Adjust cable length so door release latch releases door when lever is moved 1/3 of full travel distance.
3. Apply PM37418 Thread Lock and Sealer (Medium Strength) to cable eye retaining nut. Cable eye must remain loose.

SJ25320,00004A0 –19–18MAY07–1/1

R134a Refrigerant Cautions

CAUTION: Do not allow liquid refrigerant to contact eyes or skin. Liquid refrigerant will freeze eyes or skin on contact. Wear goggles, gloves and protective clothing.

If liquid refrigerant contacts eyes or skin, Do not rub the area. Splash large amounts of COOL water on affected area. Go to a physician or hospital immediately for treatment.

Do not allow refrigerant to contact open flames or very hot surfaces such as electric welding arc, electric heating element and lighted smoking materials.

Do not heat refrigerant over 52°C (125°F) in a closed container. Heated refrigerant will develop high pressure which can burst the container.

Keep refrigerant containers away from heat sources. Store refrigerant in a cool place.

Do not handle damp refrigerant container with your bare hands. Skin may freeze to container. Wear gloves.

If skin freezes to container, pour COOL water over container to free the skin. Go to a physician or hospital immediately for treatment.

TX,9031,HH1465 –19–19AUG94–1/1

R134a Compressor Oil Charge Check

Remove compressor if R134a leakage was detected and repaired. See Compressor Remove and Install. (Group 1830.)

Drain oil from the compressor and record the amount. See R134a Compressor Oil Removal. (Group 1830.)

NOTE: Drain oil and save if this is a new compressor.

If the oil drained from a compressor removed from operation is very black or the amount of oil is less than 6 mL (0.2 fl oz), perform the following:

1. Remove and discard the receiver-dryer.
2. Remove, clean, but do not disassemble the flow control hydraulic valve.
3. Flush the complete system with TY16134 air conditioning flushing solvent.
4. If the compressor is serviceable, pour flushing solvent in the manifold ports and internally wash out the old oil.
5. Install the flow control hydraulic valve.
6. Install a new receiver-dryer.
7. Install required amount of TY22025 refrigerant oil in the compressor. See R134a Component Oil Charge. (Group 1830.)
8. Connect all components, evacuate and charge the system.

SJ25320,0000583 –19–18MAY07–1/1

Air Conditioner System Purge

IMPORTANT: Air compressors used for purging systems require a water separator. Purging without a separator adds moisture, creating hydrofluoric acid when combined with refrigerant oil. Acid is corrosive to metal tubing.

1. Connect dry nitrogen hose to gauge manifold center hose.
2. Connect gauge manifold suction hose to compressor suction port. Open valves.
3. Connect gauge manifold discharge hose to compressor discharge post. Open valve. Disconnect discharge hose from gauge manifold to allow purging nitrogen to atmosphere.
4. Open nitrogen tank valve and adjust regulator to 275 kPa (2.75) bar (40 psi). Purge system for two minutes. Disconnect nitrogen supply.
5. Evacuate system. See R134a System Evacuate. (Group 1830.)

CS33148,0002399 –19–18MAY07–1/1

Heater Control Valve Leak Check

1. Connect water pressure hose to control valve inlet and turn the valve arm to the closed position.
2. Check for leakage from the valve outlet.

NOTE: The heater control valve is not serviceable.

3. Replace heater control valve if required.

TX,1830,MM3165 –19–21MAY07–1/1

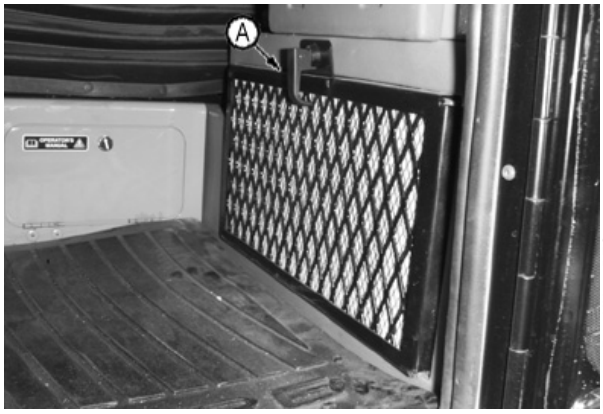
Recirculating Air Filter Remove and Install

NOTE: The cab recirculating air filter is located next to the seat.

1. Turn latch (A) holding grille. Remove grille.
2. Remove filter.

CAUTION: Reduce compressed air to less than 210 kPa (2 bar) (30 psi) when using for cleaning purposes. Clear area of bystanders, guard against flying chips, and wear personal protection equipment, including eye protection.

3. Clean filter in one of these ways:
   - Tap it on a flat surface with the dirty side down.
   - Use compressed air opposite to the normal air flow.
   - Wash the filter in warm, soapy water. Flush the filter and let it dry before using the air conditioner.
4. Install filter.
5. Install grille.

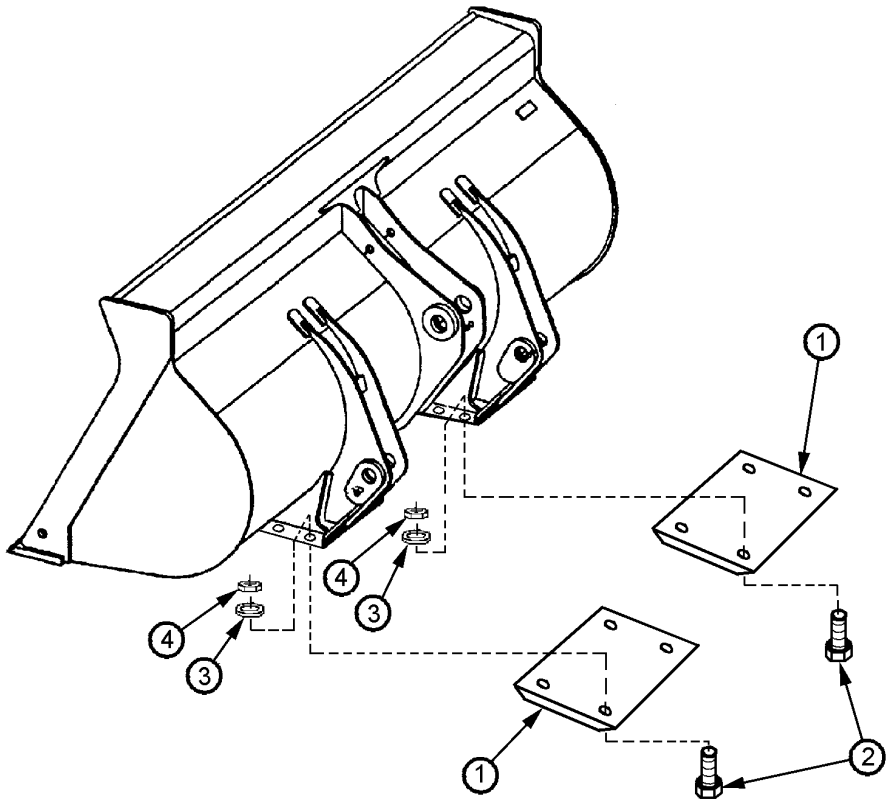


A—Air Filter Latch

TX,18,111480 –19–28SEP98–1/1

Section 31
Loader

Contents



Bolt-On Wear Plates

1—Wear Plate (2 used) **2—Cap Screw (8 used)** **3—Washer (8 used)** **4—Nut (8 used)**

T109256 –UN–29APR97

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3102
9

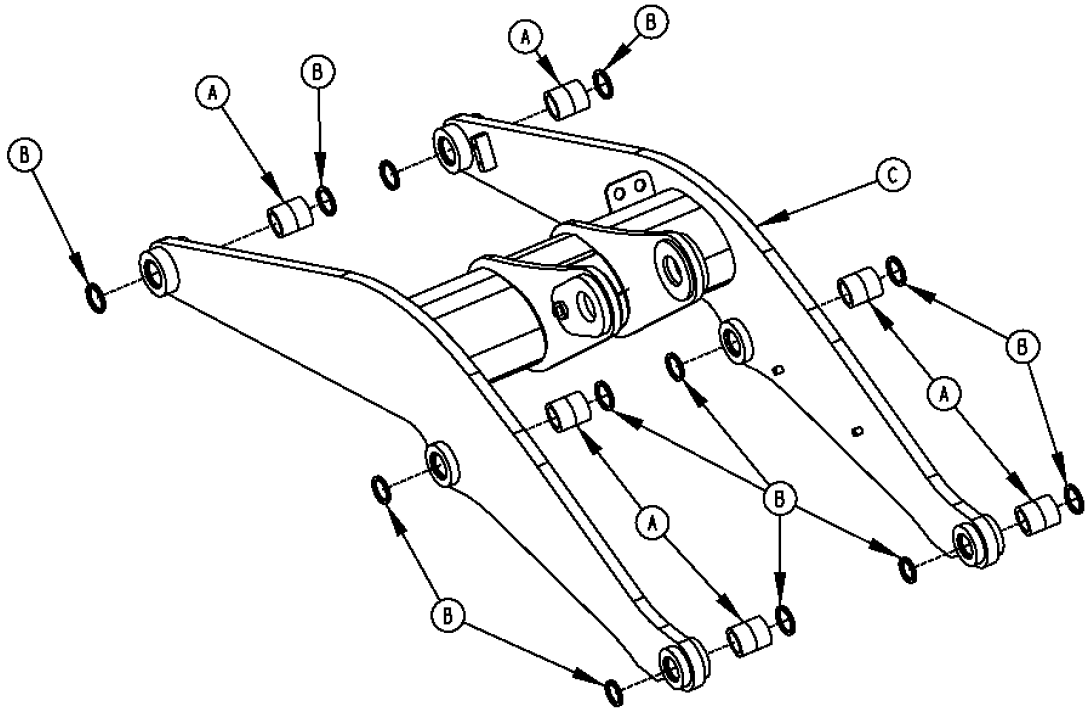
CAUTION: Prevent possible injury from crushing. Heavy component, use appropriate lifting device.

1. Remove cap screws (3) and remove cutting edges (2 and 4) from bucket using appropriate lifting device.
2. Remove cap screws (2) and wear plates (1).
3. Install new wear plates and cap screws. Tighten to specification.
4. Install cutting edge in position using appropriate lifting device and install new cap screws. Tighten to specification.

Specification	
Cutting Edge-to-Bucket Cap Screw—Torque	495 N•m 365 lb-ft
Wear Plates-to-Bucket Cap Screw—Torque	300 N•m 225 lb-ft

SJ25320,0000498 –19–18MAY07–2/2

Loader Boom Bushings and Seals Remove and Install



Boom Bushings Seals and Shims (with standard bushings)

A—Bushing (6 used) **B—Seal (12 used)** **C—Loader Boom**

T108266 –UN–26NOV97

Boom with Standard Bushing Joint

1. Lower bucket to the ground and remove bucket from boom.

CAUTION: Prevent possible injury from crushing. Heavy component, use appropriate lifting device.

2. Remove bucket cylinder and tilt linkage.
3. Disconnect boom cylinder rod ends from boom.
4. Remove boom pivot pins from machine frame and remove boom.
5. Remove bushings from boom using discs from driver set.
6. Apply PM37566 Silver-Grade Anti-Seize lubricant or an equivalent on outer surface of new bushings and bores. Center new bushings in boom bores and press seals against bushings with lips outward.
7. Install boom on machine and install cylinders, linkage and bucket. Install shims in original locations. Adjust shims as required.

Continued on next page

11. Using appropriate lifting device, install Powerllel™ leveling link in position as identified during removal.

12. Install shims in original locations. Measure clearances and adjust shims as required.

Specification	
Powerllel™ Leveling Link-to-Loader Frame—Clearance (maximum)	3 mm 0.12 in.
Powerllel™ Leveling Link-to-Bellcrank—Clearance (maximum)	3 mm 0.12 in.

13. Install pins.

14. Install light brackets if removed.

SJ25320,000048E –19–16MAY07–5/5

21. Install bellcrank-to-Powerllel™ bucket cylinder pin (11).

SJ25320,0000490 –19–16MAY07–7/7

Specification	
Powerllel™ Guide Links-to-Bucket Link—Clearance (maximum)	3 mm 0.12 in.

12. Install upper Powerllel™ guide link-to-bucket link pin.
13. Raise bellcrank using appropriate lifting device.
14. Install lower Powerllel™ guide link-to-loader frame shims in original locations. Measure clearances and adjust shims as required.

Specification	
Powerllel™ Guide Links-to-Loader Frame—Clearance (maximum)	3 mm 0.12 in.

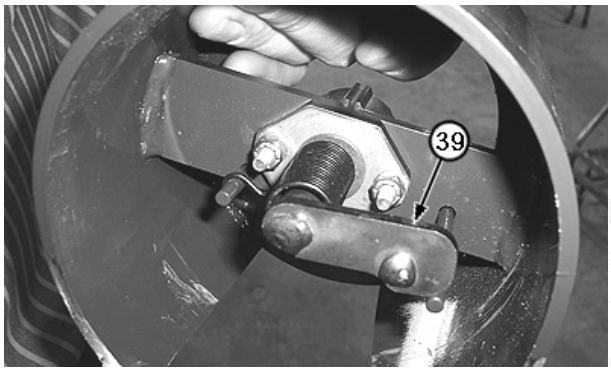
15. Install Powerllel™ guide link-to-loader boom pin.
16. Install plate (22) and return-to-dig bracket (38).

SJ25320,0000492 –19–21MAY07–5/6

NOTE: When installed, return-to-dig arm must be on right side of pin, inside bracket.

17. While holding return-to-dig arm (39) away from return-to-dig arm stop, install return-to-dig guard (32) over bracket (38).
18. Connect return-to-dig harness connector.
19. Install return-to-dig guard plate.
20. Recalibrate return-to-dig. See Return-to-Dig Adjustment-Powerllel™ Linkage. (Group 9015-20.)

39—Return-to-Dig Arm



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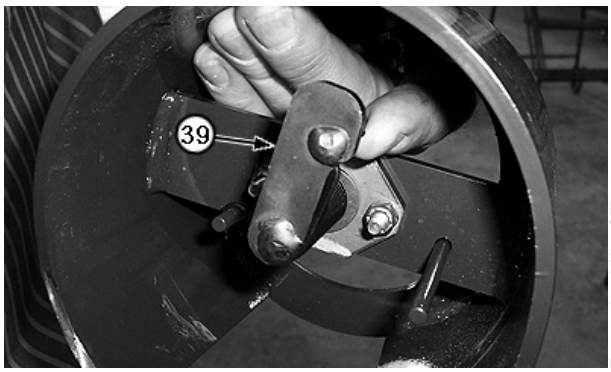
Return-to-Dig Arm



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Return-to-Dig Arm

SJ25320,0000492 –19–21MAY07–6/6

1—Powerllel™ Loader Boom
2—Bushing
3—Bushing
4—Bushing
5—Bushing
6—Seal
7—Seal
8—Seal
9—Seal

19. Remove seals (6—9) from Powerllel™ loader boom.
20. Remove bushings (2—5) from Powerllel™ boom using disks from driver set.
21. Apply PM37566 Silver-Grade Anti-Seize lubricant or an equivalent on outer surface of new bushings and bores.
22. Install Powerllel™ bucket link bushings (2—5) below outer surface of Powerllel™ loader boom using disks from driver set.

Specification

Powerllel™ Bucket Link Bushing—Distance below outer face of boom	9—11 mm 0.355—0.433 in.

23. Install seals (6—9) against bushings (2—5) with lips toward outside of bore.
24. Install boom, cylinders, linkage, and bucket. Install shims in original locations. Adjust shims as required.
25. Connect return-to-dig wire harness and hydraulic lines.

31
3140
49

SJ25320,0000494 –19–21MAY07–7/7

Hydraulic Pump Disassemble and Assemble

1. Perform Hydraulic Pump Remove and Install. (Group 3160.)

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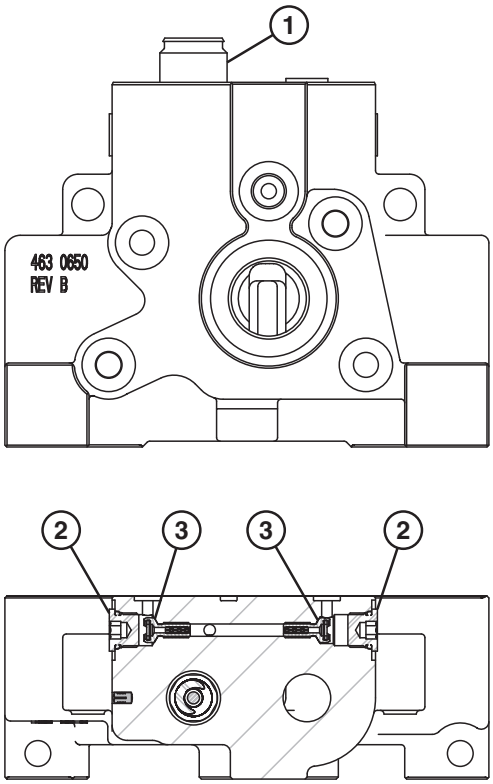
Inlet Valve Section Disassemble and Assemble



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Inlet Valve Section Disassemble and Assemble

1—System Relief Valve **2—Plug (2 used)** **3—Orifice Assembly (2 used)**

Item	Measurement	Specification
System Relief Valve	Torque	59—66 N•m 43—49 lb-ft
Plug	Torque	20—27 N•m 177—240 lb-in.
Orifice Assembly	Torque	3.5—4.5 N•m 30—40 lb-in.

SJ25320,000045B –19–30MAY07–1/1

T201852 –UN–26JUL04

Boom and Bucket Cylinder Repair

To repair 120 Series cylinders, See Disassemble Cylinder. (120 Series Hydraulic Cylinders, TM-H120A, Group 01.)

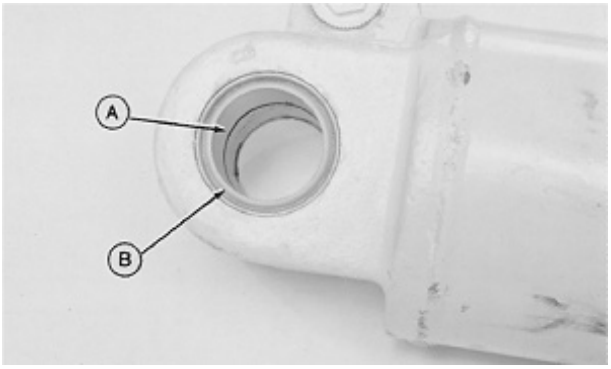
To repair 125 Series cylinders, See Disassemble Cylinder. (125 Series Hydraulic Cylinders, TM-H125A, Group 01.)

DW09104,00000C3 –19–20NOV03–1/1

Boom or Bucket Cylinder Bushings and Seals Remove and Install

Boom and Bucket with Standard Bushings

1. Remove seals (B).
2. Remove bushings (A).
3. Install and center new bushings in bore.
4. Install new seals. Press seals into bore tight against bushing with lip facing outward.
5. For initial lubrication, apply NEVER-SEEZ® Lubricant or an equivalent to bushings and seals.



Cylinder with Standard Bushings and Seals

A—Bushings
B—Seals

Boom and Bucket with NeverGrease™ Pin Joints

IMPORTANT: Replacement of NeverGrease™ Pin Joints option requires special methods for replacement of bushings and shims. If not followed the service life may be decreased.

See NeverGrease™ Pin Joints. (Group 3140.)

1. Remove bushings with hydraulic puller set D01047AA.
2. Install bushings with hydraulic puller. Do not use any lubrication. Make sure alignment is noted. Center bushing in bore.

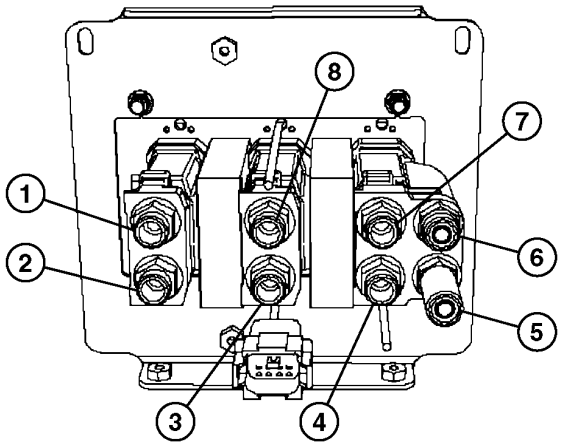
NEVER-SEEZ is a trademark of Emhart Chemical Group.
NeverGrease is a trademark of Deere & Company

TX,31,ME150 –19–11DEC07–1/1

NOTE: Parts shown are for reference only.

2. Disassemble and assemble parts as shown. Not all the parts shown are serviceable individually.

1—Auxiliary
2—Auxiliary
3—Boom Lower Valve
4—Bucket Lower Valve
5—Ride Control Valve
6—Ride Control Valve
7—Bucket Lift Valve
8—Boom Lift Valve



Bottom View of Pilot Control Lever Two Lever with Auxiliary Shown

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CS33148,000230D –19–18MAY07–2/6

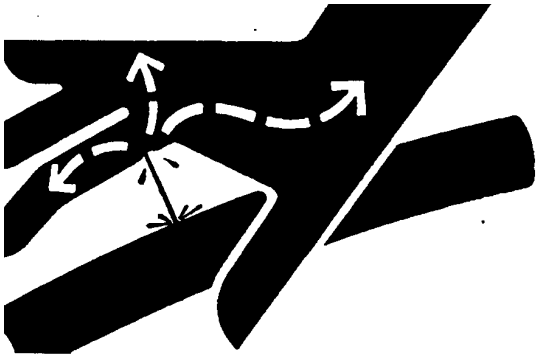
Ride Control Valve Remove and Install

CAUTION: Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

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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Escaping Fluid Under Pressure

1. Perform Hydraulic System Pressure and Accumulators Discharge. (Group 9025-25.)

Continued on next page

MM61211,0001765 –19–18MAY07–1/3

2. Remove the axle circulation pump hydraulic lines (1). Close all openings using caps and plugs.

3. Remove the fan drive pump hydraulic lines (2). Close all openings using caps and plugs.

NOTE: The fan drive and axle circulation pump is removed and installed as a unit.

4. Remove pump retaining cap screws (3).

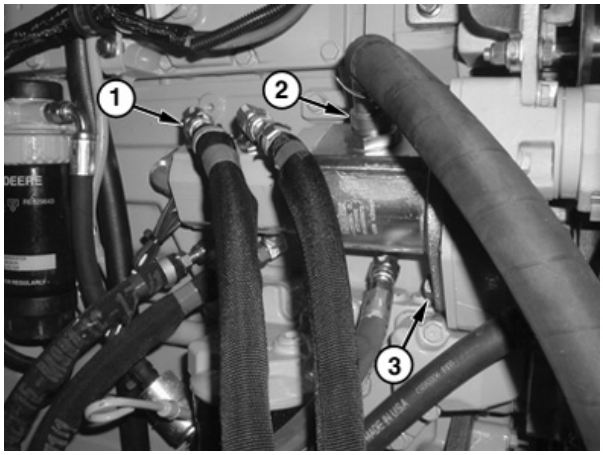
5. Install pump and pump retaining cap screws and tighten to specification.

Specification

Fan Drive and Axle Circulation Pump Mounting Cap Screw—Torque	55 N•m 41 lb-ft

6. Install fan drive pump hydraulic lines.

7. Install axle circulation pump hydraulic lines.



Fan Drive and Axle Circulation Pump

1—Axle Circulation Pump Hydraulic Line (4 used)
2—Fan Drive Pump Hydraulic Line (2 used)
3—Fan Drive and Axle Circulation Pump Retaining Cap Screw (2 used)

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