

444J, 544J, 624J Loader Repair

TECHNICAL MANUAL 444J, 544J, 624J Loader Repair TM2136

TM2136 13DEC04 (ENGLISH)

For complete service information also see:

444J, 544J, 624J Loader Operation and Test	TM2135
Alternators and Starting Motors.....	CTM77
POWERTECH® 4.5L & 6.8L Diesel Engines Base Engine.....	CTM104
TEAMMATE™ III 1000, 1200, and 1400 Series Inboard Planetary Axles	CTM150
POWERTECH® 4.5L and 6.8L Diesel Engines Level 11 Electronic Fuel System with Denso HPCR	CTM220
POWERTECH® 4.5L and 6.8L Diesel Engines Level 12 Electronic Fuel System with DE10 Pump	CTM331
120 Series Hydraulic Cylinders	TM-H120A
125 Series Hydraulic Cylinders	TM-H125A
SERVICE ADVISOR™ System Computer Connection.....	T133991

**Worldwide Construction
And Forestry Division**

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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 -JUN-28AUG00

T133588 -19-28AUG00

TX03679,00016CC -19-21AUG00-1/1

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 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 -JUN-24AUG00

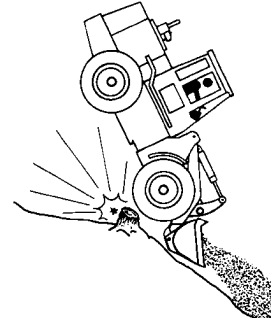
TX03679,00016F9 -19-13OCT03-1/1

Operating on Slopes

Avoid side slope travel whenever possible. Drive up steep slope in forward and down in reverse.

Select low gear speed before starting down slope. The grade of the slope will be limited by ground condition and load being handled.

Use service brakes to control speed. Sudden brake application with a loaded bucket on downhill side could cause machine to tip forward.



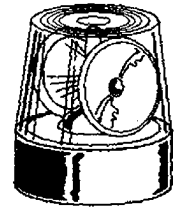
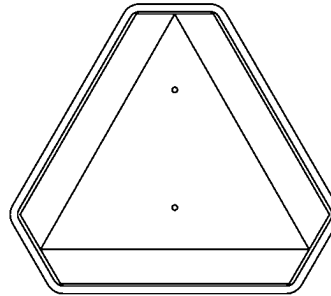
T141681 -JUN-30APR01

TX03679,000179E -19-14MAY01-1/1

Operating Or Traveling On Public Roads

Machines that work near vehicle traffic or travel slower than normal highway speeds must have proper lighting and markings to assure they are visible to other drivers.

Install additional lights, beacons, slow moving vehicle (SMV) emblems, or other devices and use as required to make the machine visible and identify it as a work machine. Check state and local regulations to assure compliance. Keep these devices clean and in working condition.



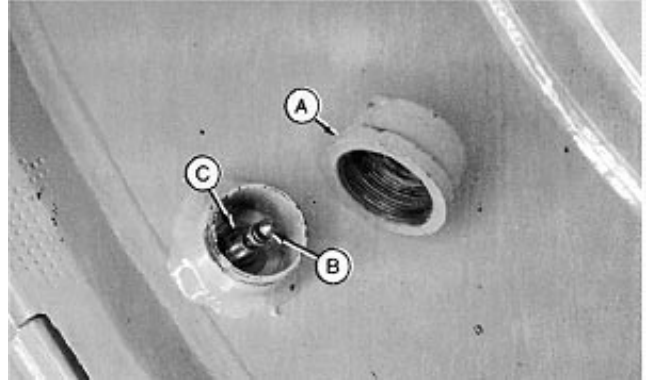
T141891 -JUN-22MAY01

TX03679,00017C8 -19-14JUN01-1/1

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

Inspect all parts for damage. Replace parts as necessary.

- A—Cap
- B—Valve Core
- C—Valve Nut



T7751GU -UN-22OCT92

01
0110
3

TX.01.111686 -19-23OCT98-2/2

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

Specification

444J Machine—Weight—	
Approximate.....	10,254 kg 22,605 lb
544J Machine—Weight—	
Approximate.....	12,330 kg 27,184 lb
624J Machine—Weight—	
Approximate.....	14,304 kg 31,534 lb

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

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

8. Remove wheels.

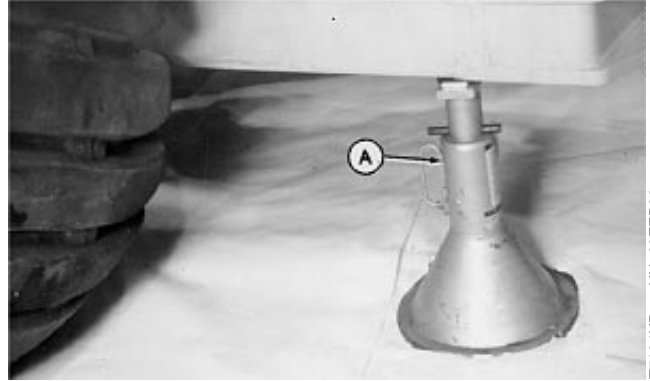
9. Remove caps screws to disconnect drive shaft.

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

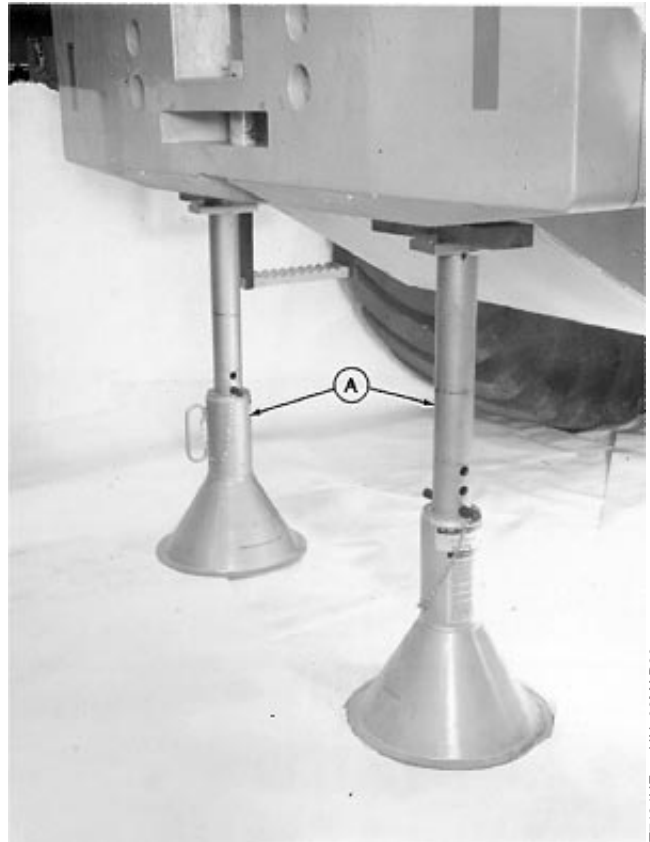
Rear Axle and Differential:—Specification

Axle and Differential with	
Oscillating Supports (444J)—	
Weight—Approximate.....	980 kg 2161 lb
Axle and Differential with	
Oscillating Supports (544J,	
624J)—Weight—Approximate	1080 kg 2381 lb

10. Install low-lift jack under axle and differential.



T7134HD -UN-20FEB90



T7134HE -UN-06MAR90

A—Floor Stand (4 used)

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CED,OUOE006,19 -19-27OCT03-2/5

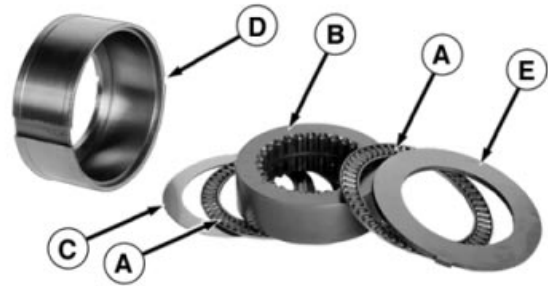
02
0200
7

Remove parts (A—C) from housing (D).

Inspect parts and replace as necessary.

Assemble in reverse order.

- A—Needle Roller Bearing
- B—Shift Collar
- C—Needle Roller Bearing Thrust Washer
- D—Collar Assembly Housing
- E—Collar Assembly Spring Retainer Plate



RW36299 -UN-17MAR97

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TX,02,111677 -19-18DEC98-10/25

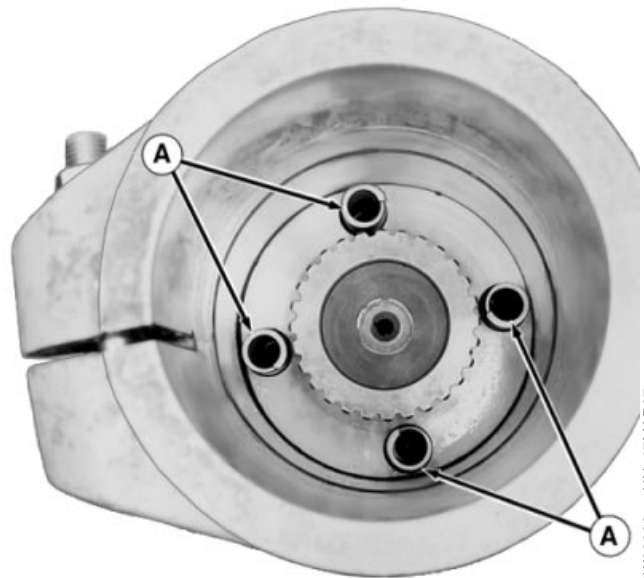
Remove collar engagement springs (A) from housing.

Inspect springs.

Specification

New Spring—Free Length—	
Approximate.....	73 mm
	2.874 in.
Test Length.....	44.45 mm at 352—431 N•m
	1.750 in. at 78—96 lb-force

- A—Collar Engagement Spring (4 used)



RW36300 -UN-17MAR97

Continued on next page

TX,02,111677 -19-18DEC98-11/25

Hydraulic System

1—Elbow Fitting
2—Adapter
3—Elbow Fitting
4—Hydraulic Hose

5—Hydraulic Hose
6—Oil Filter
7—Hydraulic Hose

8—Hydraulic Hose
9—O-Ring
10—O-Ring

11—O-Ring
12—O-Ring
13—O-Ring

CED,OUOE003,2651 -19-13DEC98-2/2

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Remove Torque Converter And Housing

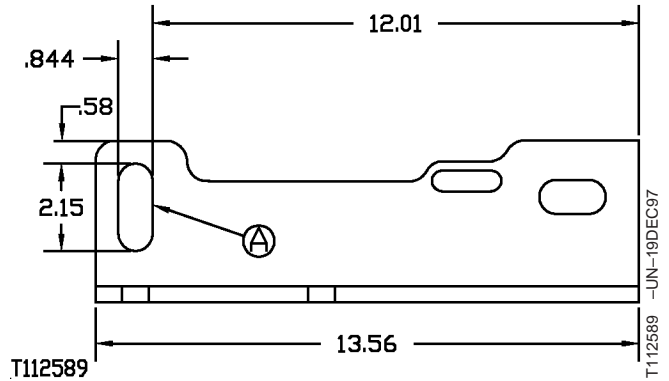
CAUTION: Approximate weight of transmission is 504 kg (1110 lb).

Transmission—Weight.....	Specification
	504 kg—Approximate
	1110 lb—Approximate

NOTE: Earlier JDG1129 Transmission Mounting Brackets require the right side bracket revised. Note bracket sketch showing revised mounting hole (A). Revise hole by elongating the existing hole as required.

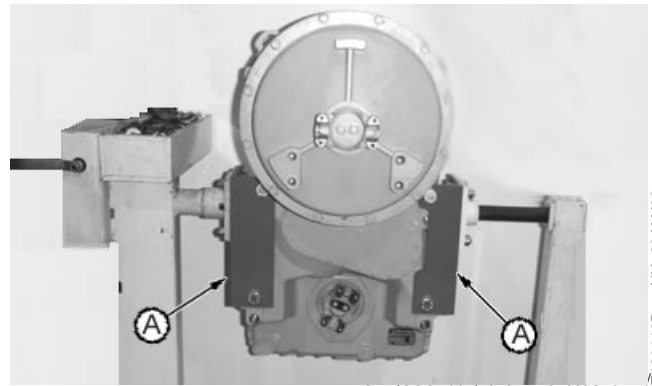
1. Install transmission in repair stand using JDG1129 Mounting Brackets (A).

A—JDG1129 Mounting Bracket (2 used)



Bracket Sketch Showing Revised Mounting Hole (A)

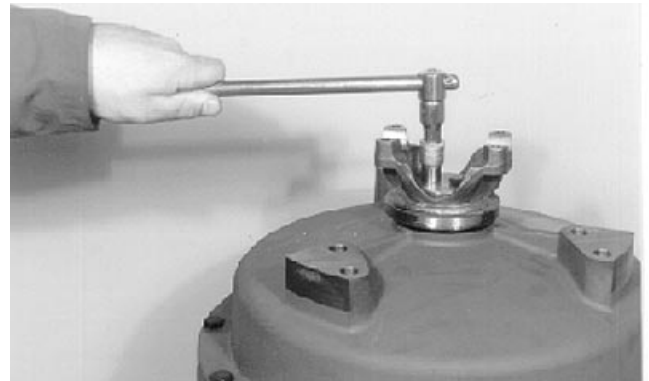
A—Mounting Hole



03
0350
1

T109146B -UN-26JAN98

2. Remove lock plate and hex head screws from input flange washer.
3. Remove washer and pry input flange from the shaft.

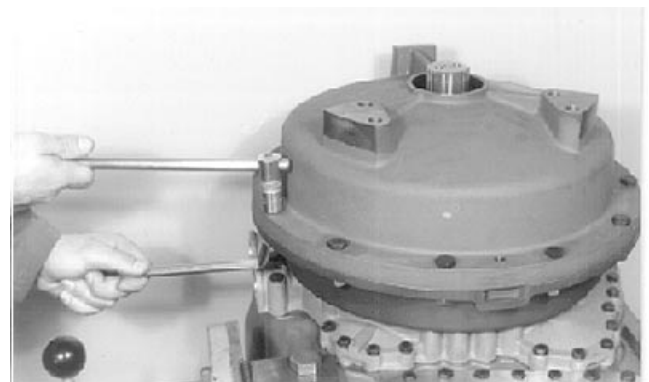


T108721 -UN-17APR97

CED.OUOE002,1543 -19-09JUL02-2/10

4. Remove torque converter housing cap screws.

NOTE: Place a mark on the cover and housing for ease of assembly and proper alignment later.



T108722 -UN-17APR97

Continued on next page

CED.OUOE002,1543 -19-09JUL02-3/10

20. Remove clutch K3.



T108783 -UN-18APR97

TX.0350,ME280 -19-01OCT98-15/19

21. Remove clutch K4, at the same time lift input slightly.



T108784 -UN-18APR97

TX.0350,ME280 -19-01OCT98-16/19

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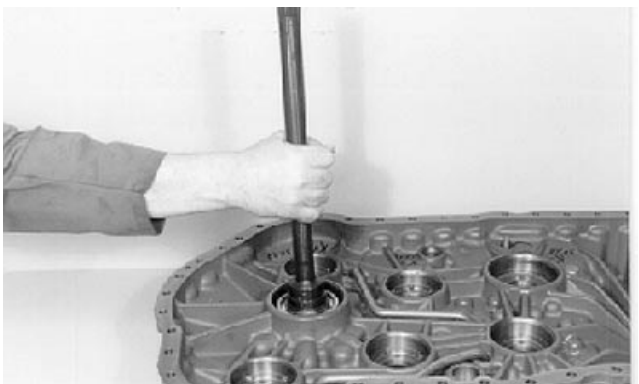
22. Separate clutches KV and KR together with input from the housing cover.



T108785 -UN-18APR97

TX.0350,ME280 -19-01OCT98-17/19

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



T108790 -UN-18APR97

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TX.0350,ME280 -19-01OCT98-18/19

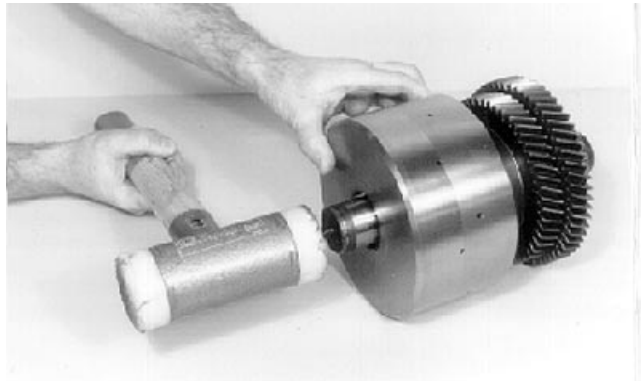
2. Pull tapered roller bearing from the shaft using JDG1134 Bearing Puller and JDG1035 Bearing Puller Mandrel. Remove opposite tapered roller bearing accordingly.



T108793 -UN-18APR97

TX,0350,ME284 -19-12DEC03-2/10

3. Separate plate carrier from shaft.



T108794 -UN-18APR97

TX,0350,ME284 -19-12DEC03-3/10

03
0350
21

4. Remove plates.



T108795 -UN-18APR97

TX,0350,ME284 -19-12DEC03-4/10

5. Preload compression spring with tool in press and remove snap ring. See DFT1149 Pre-Load Clutch Pack Compression Ring Tool. (Group 9900 for instructions to make tool.)
6. Remove piston from carrier.



T108761 -UN-17APR97

Continued on next page

TX,0350,ME284 -19-12DEC03-5/10

Retain idler gear by means of snap ring.



T108674 -UN-10APR97

TX.0350,ME288 -19-02OCT98-17/21

*NOTE: Clutch KR, there is no recess in the shaft.
Assemble snap ring until contact on the bearing
inner race is obtained.*

Assemble pre-assembled plate carrier until all plates are engaged.

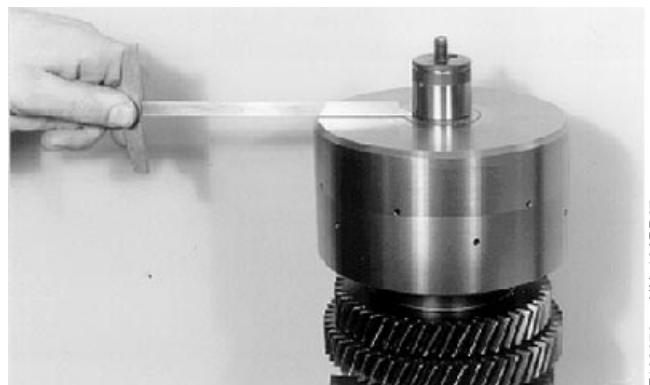


T108675 -UN-10APR97

TX.0350,ME288 -19-02OCT98-18/21

03
0350
31

Make sure carrier face is flush with shaft spline.



T108676 -UN-10APR97

TX.0350,ME288 -19-02OCT98-19/21

Press tapered roller bearing against shoulder.
Install opposite tapered roller bearing with press.



T108677 -UN-10APR97

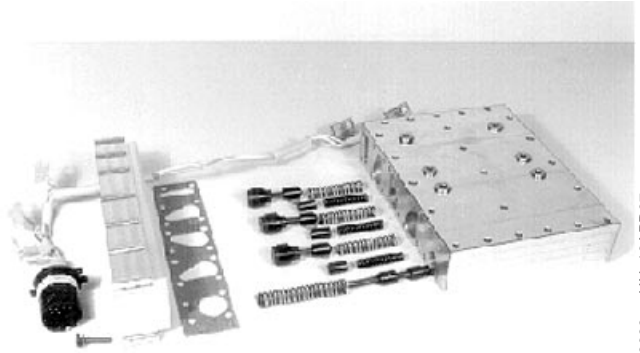
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TX.0350,ME288 -19-02OCT98-20/21

Hydraulic System

03
0360
7

12. Loosen screw (1) to housing (9), remove housing and gasket (10).
13. Remove three pressure control valve pistons (29) and compression springs (27).
14. Remove three damping valve pistons (11) and compression springs (12).
15. Remove pressure reducing valve piston (14) compression spring (13).
16. Inspect and replace parts as necessary.



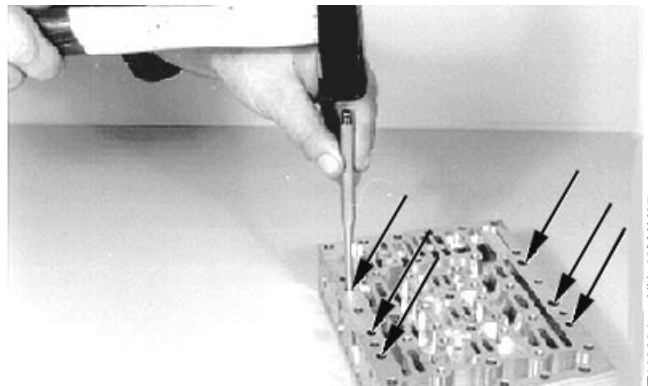
T108683 -JUN-16APR97

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TX,0360,ME274 -19-08DEC03-7/7

Transmission Control Valve Assemble

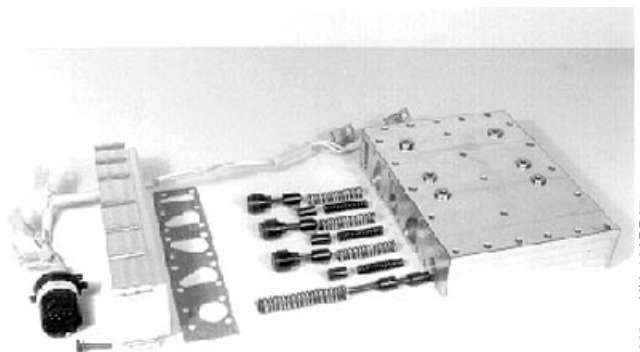
1. Check all components for damage and replace if necessary.
2. Prior to the installation, check free travel of moving parts in the housing.
3. Oil components prior to the reassembly.
4. Insert orifices (31) (if removed) until contact is obtained (6 pieces, see arrows).
5. Install screens (37) if removed.



T108684 -JUN-09MAY97

TX,0360,ME275 -19-08DEC03-1/19

6. Install three pressure control valve pistons (29) and compression springs (27).
7. Install three damping valve pistons (11) and compression springs (12).
8. Install system pressure reducing valve piston (14) compression spring (13).



T108683 -JUN-16APR97

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Section 04 Engine

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Engine Remove and Install	04-0400-3

37. Install two rear mounting cap screws (17). Tighten cap screws to specification.

Specification

Rear Mounting Cap Screw—	
Torque	348—522 N•m 256—384 lb-ft
Front Mounting Cap Screw—	
Torque	256—284 N•m 188—282 lb-ft



T195800A -UN-30OCT03

Rear Engine Mounting Cap Screw

17—M20 x 120 Cap Screw (2 used)

38. Install left front mounting cap screw (18), tighten to specification.
39. Align right front isolator support (26), and install hardware (16).
40. Install four new engine-to-transmission drive shaft U-joint cap screws. Tighten to specification.

Specification

Drive Shaft U-Joint Cap Screw—	
Torque	41 N•m 30 lb-ft

41. Connect engine wiring harness to engine at all locations.
42. Connect positive battery cables and E01 white wires to starter. Connect ground wire to starter mounting hardware.
43. Connect fuel hose to primary fuel filter.
44. Connect heater hoses (8) to left side of engine.
45. Connect crankcase drain hose at bottom left side of crankcase.
46. Install fan hydraulic pump (6) with mounting hardware (7).
47. Install fuel return line.
48. Install air conditioner compressor bracket.
49. Install air conditioner compressor.
50. Charge cooling system. See Charge R134a System. (Group 1830.)

04
0400
9



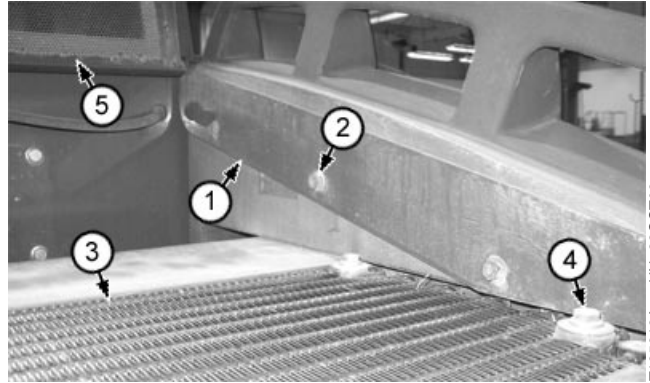
CAUTION: Prevent possible crushing injury from heavy component. Use appropriate lifting device.

- Support rear hood (5), remove right hinge mounting hardware (2), and remove hood.

Specification

Rear Hood Door—Weight 17 kg
37 lb

- 1—Right Hinge Plate
- 2—Hinge Plate Mounting Hardware (3 used)
- 3—Air Conditioning Condenser
- 4—Air Conditioning Condenser Mounting Hardware (4 used)
- 5—Hood



Hood

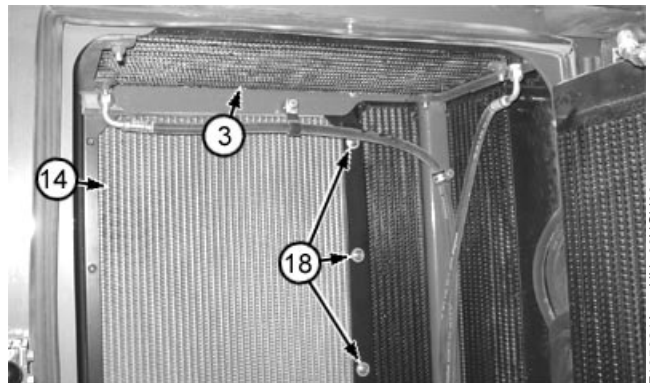
T195618A -UN-22OCT03

TX,0510,JC2022 -19-31AUG04-2/9

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- Remove air conditioning condenser mounting hardware (4).

- 3—Air Conditioning Condenser
- 14—Radiator
- 18—Radiator-to-Hydraulic Oil Cooler Mounting Hardware



Radiator Mounting Hardware

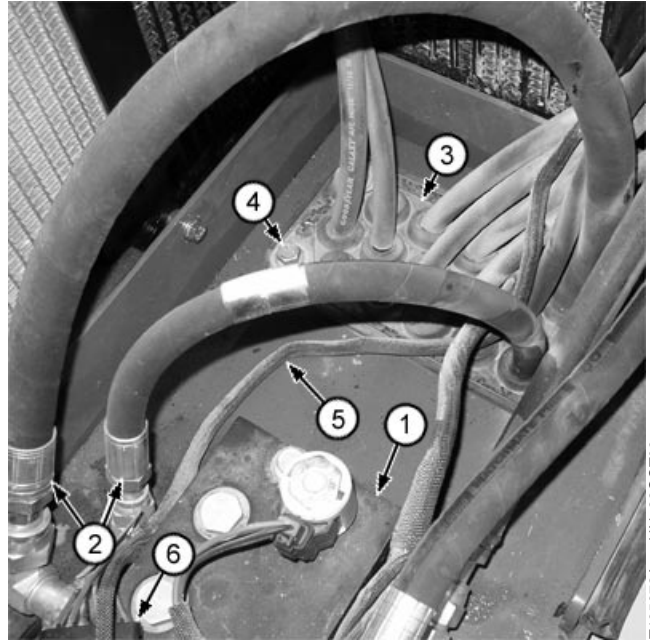
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TX,0510,JC2022 -19-31AUG04-3/9

13. Disconnect hydraulic hoses (2) from fan reversing valve (1) to plenum hose grommet (3).
14. Disconnect wiring harness (5) at reversing valve (1).
15. Disconnect wiring harness (6) to rear door at reversing valve wiring harness.
16. Remove cooling package plenum grommet mounting hardware (4).
17. Disconnect hydraulic hoses at axle coolers.
18. Remove axle cooler mounting hardware and remove axle coolers.

- 1—Fan Reversing Valve
- 2—Hydraulic Hoses to Plenum Grommet
- 3—Plenum Grommet
- 4—Plenum Grommet Mounting Hardware (3 used)
- 5—Wiring Harness to Fan Reversing Valve
- 6—Wiring Harness Connector to Rear Door



T195672A -UN-22OCT03

Reversing Valve Hoses and Harness

Continued on next page

MX10672,000001C -19-06NOV03-5/8

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0510
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Fuel Tank Remove and Install

1. Turn battery disconnect switch OFF.



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

2. Remove Counterweights. See Counterweights Remove and Install. (Group 1749.)

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TX,0560,111289 -19-04NOV03-1/5

05
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1

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Park Brake Remove and Install



CAUTION: Prevent possible injury from unexpected machine movement. Never rely on loader bucket to keep machine from moving. Machine can unexpectedly roll, resulting in death or serious injury. Always block wheels to hold machine when working on park brake.

1. Park machine on level surface.



CAUTION: Prevent possible injury from unexpected machine movement. Install frame locking bar before working in frame hinge area.

2. Install frame locking bar.
3. Lower bucket to ground.
4. Stop engine. This will engage park brake.
5. Place blocks in front and behind tires.

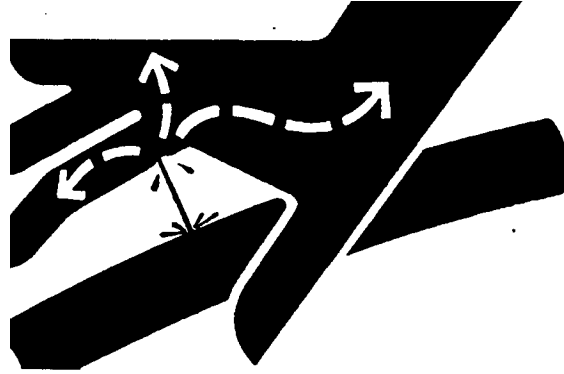
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TX,1111,JC2031 -19-12OCT98-1/3

Park Brake 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. Operate controls to release hydraulic pressure with key on and engine off.



CAUTION: Prevent possible injury from unexpected machine movement. Install frame locking bar before working in frame hinge area.

2. Install frame locking bar.

Continued on next page

TX,1160,RB184 -19-09DEC03-1/4

X9811 -UN-23AUG88

17. Slowly roll loader frame, service jack, and overhead hoist forward and away from rear loader frame.
18. Replace parts as necessary.
19. Attach loader frame to engine frame. Install upper (A) and lower (C) pivot pins.
20. Connect all hydraulic hoses and electrical harnesses.

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

21. Connect drive shafts U-joints. Torque U-joint cap screws to specification.

444J —Specification

Transmission-to-Rear Axle Drive	
Shaft U-Joint—Torque.....	45 N•m 32 lb-ft

544J, 624J—Specification

Transmission-to-Rear Axle Drive	
Shaft U-Joint—Torque.....	78 N•m 58 lb-ft

Specification

Engine-to-Transmission Drive	
Shaft U-Joint—Torque.....	41 N•m 30 lb-ft

22. Connect steering cylinders. Install maximum number of washers between loader frame and steering cylinder rod end. Install equal number above and below rod end.

23. Fill hydraulic oil reservoir. See Drain and Refill Capacities. (Operator's Manual.)

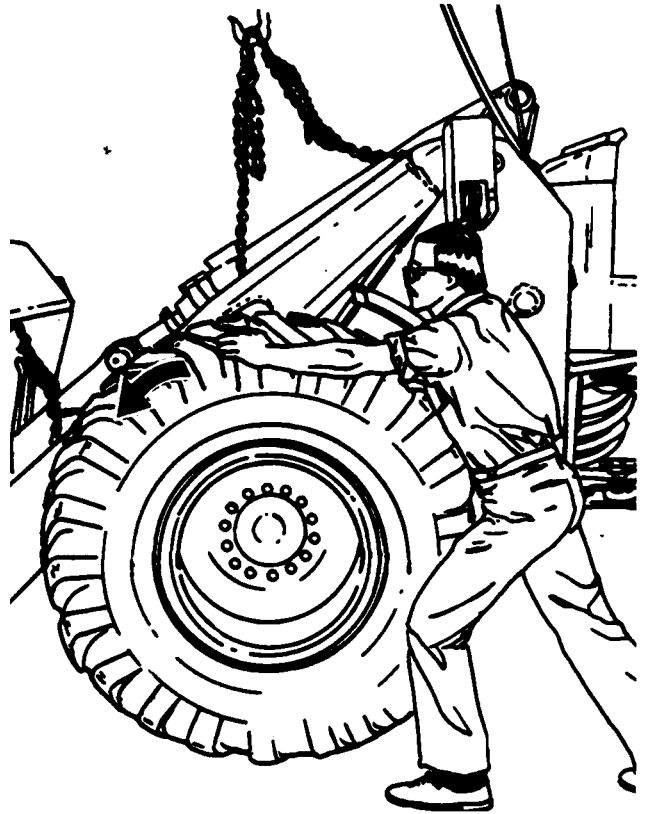
444J Drain and Refill Capacities

544J Drain and Refill Capacities

644J Drain and Refill Capacities

NOTE: Bleeding brakes is not required. Brakes are self bleeding.

24. Start machine and check for leaks.



T77721 -JUN-24OCT88

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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.

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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 thread lock and sealer (medium strength) to cable eye retaining nut. Cable eye must remain loose.

CED,OUOE003,2658 -19-16DEC98-1/1

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.

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TX,9031,HH1465 -19-19AUG94-1/1

R134a Compressor Oil Charge Check

Remove compressor if R134a leakage was detected and repaired. See Remove and Install Compressor in this group.

Drain oil from the compressor and record the amount. See Compressor Oil Removal procedure in this group.

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 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 a new receiver-dryer.
6. Install required amount of TY22025 refrigerant oil in the compressor. (See R134a Component Oil Charge in this group.)
7. Connect all components, evacuate and charge the system.

TX,9031,QQ2366 -19-07MAR95-1/1

Purge Air Conditioner System

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, and open valves.
3. Connect gauge manifold discharge hose to compressor discharge post, and 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 (40 psi) (2.75 bar). Purge system for two minutes. Disconnect nitrogen supply.
5. Evacuate system using procedure in this group.

TX,1830,MM3156 -19-14OCT98-1/1

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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 -19-09JUN98-1/1

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Recirculating Air Filter Remove and Install

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

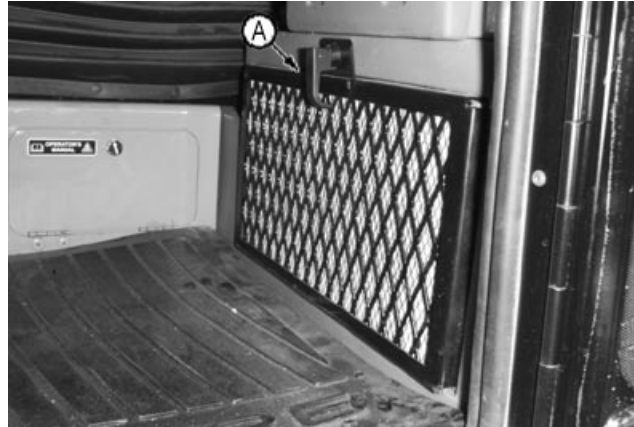
1. Turn latch (A) holding grille. Remove grille.
2. Remove filter.

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

T105499B -UN-12DEC96

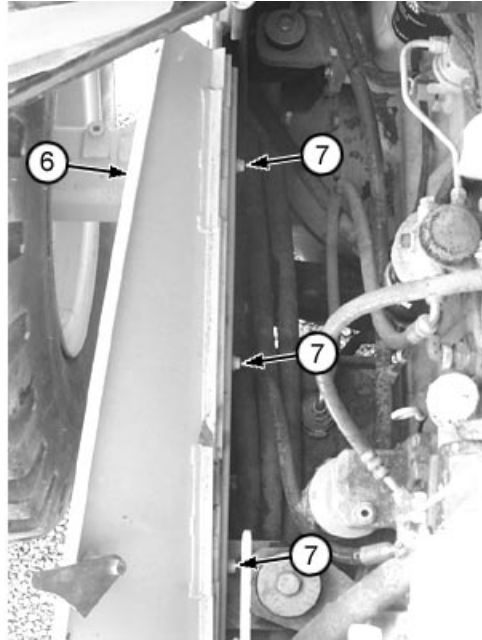
18
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TX,18,111480 -19-28SEP98-1/1

Hood or Engine Enclosure

4. Remove mounting hardware (7) from lower access panel (6) hinge. Remove panel and hinge assembly and repeat procedure for other side of machine.
5. Make necessary repairs.
6. Align lower access panel (6) hinge and install attaching hardware (7). Repeat procedure for other side.
7. Align side shield hinge pins and lower side shield into place using appropriate lifting device. Repeat procedure for other side.
8. Install washer fluid reservoir (4) and coolant overflow reservoir (5) on left side shield (1).
9. Install engine side shield cylinder on to ball stud. Install retaining clip (2).

6—Mounting Hardware
7—Lower Access Panel Hinge



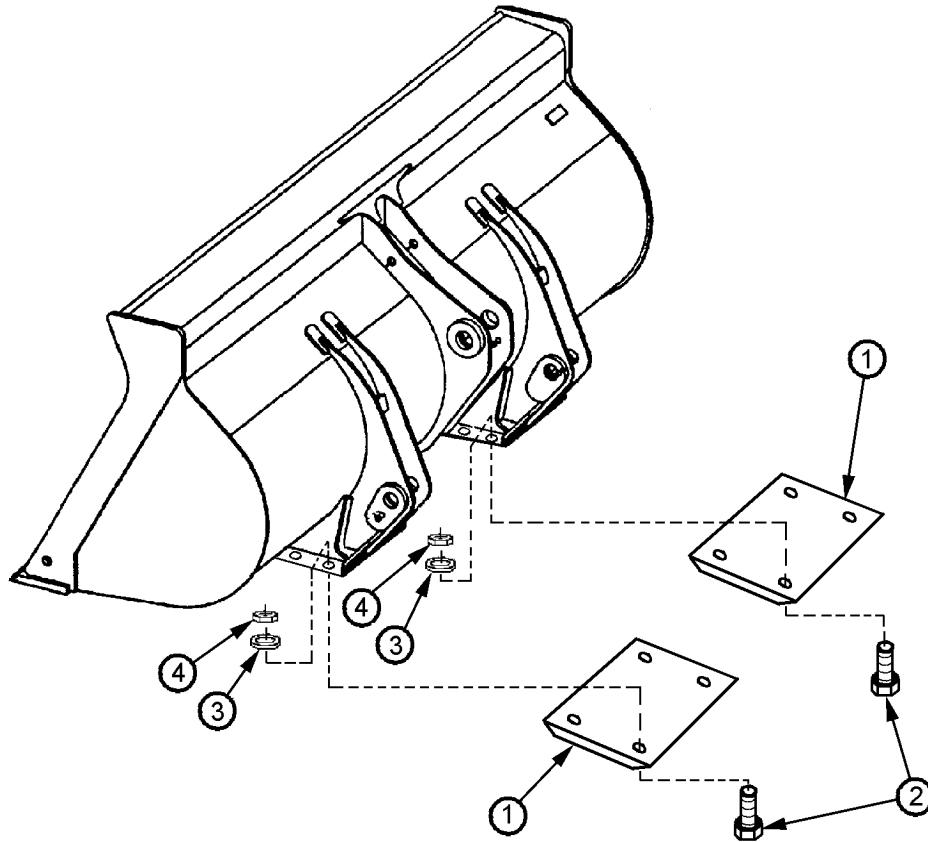
Left Lower Engine Access Panel

T195068A -UN-25SEP03

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TX,1910,111305 -19-11NOV03-2/2

Bucket



T109256

1—Wear Plate (2 used)

2—Cap Screw (8 used)

3—Washer (8 used)

4—Nut (8 used)

Remove hardware and lift cutting edge from bucket.

Remove hardware from wear plates and install new wear plates and hardware.

2. To install, hold cutting edge in position and install new hardware.

Bucket:—Specification

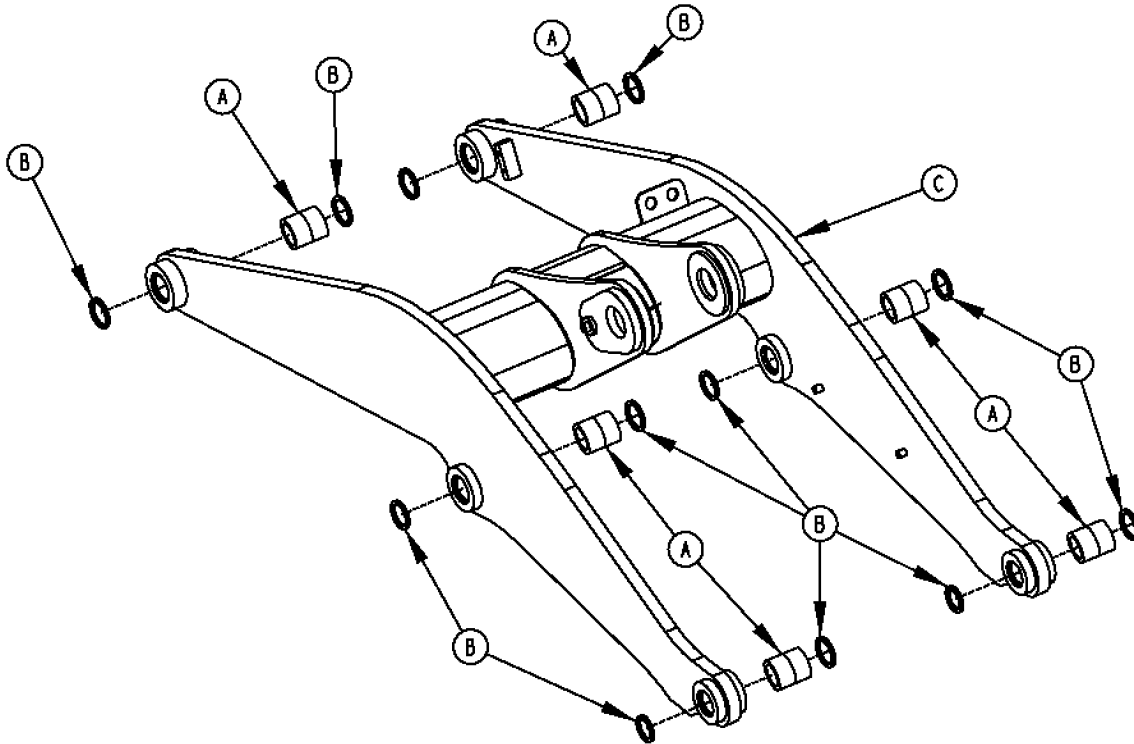
Cutting Edge-to-Bucket Cap	
Screw—Torque	495 N•m 365 lb-ft
Wear Plates-to-Bucket Cap	
Screw—Torque	300 N•m 225 lb-ft

TX,31,RP3077 -19-23SEP98-2/2

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3102
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T109256 -UN-29APR97

Loader Boom Bushings and Seals Remove and Install



T108266

A—Bushing (6 used)

B—Seal (12 used)

C—Loader Boom

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

CAUTION: Use a lifting device for heavy components

5. Remove bushings from boom using discs from driver set.
6. Apply NEVER-SEEZ® 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 replace cylinders, linkage and bucket. Install shims in original locations. Measure clearances and adjust shims as required.

NEVER-SEEZ is a trademark of Emhart Chemical Group.

TX,3140,RP3046 -19-23SEP98-1/1

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T108266 -JUN-26NOV97

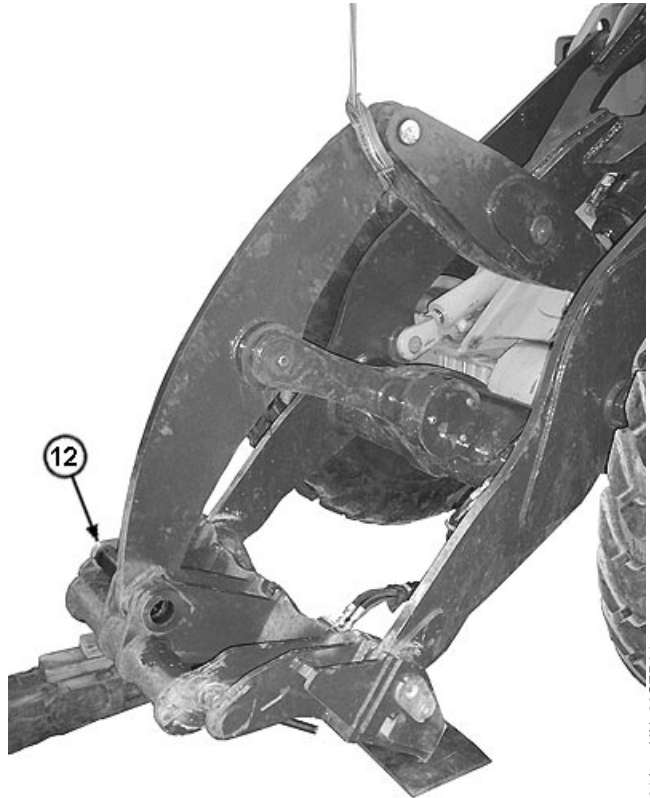
⚠ CAUTION: Avoid injury from sudden linkage movement. Support powerllel bell crank before removing any pins.

11. Support bell crank with hoist.
12. Remove wood block.
13. Remove bell crank-to-bucket link pin (11).

⚠ CAUTION: Powerllel bell crank is heavy and can cause injury if not removed properly. Use adequate lifting device to remove bell crank.

Powerllel Loader—Specification

444J Powerllel Bell Crank—	
Weight.....	162 kg Approximate 357 lb Approximate
544J Powerllel Bell Crank—	
Weight.....	190 kg Approximate 420 lb Approximate
624J Powerllel Bell Crank—	
Weight.....	236 kg Approximate 521 lb Approximate



14. Mark position of bell crank to aid in assembly and remove using hoist.
15. Apply NEVER-SEEZ® Lubricant or an equivalent to bores of bell crank, bucket link, leveling link, bucket cylinder rod end, and corresponding pivot pins.
16. Using hoist, install bell crank (8) in position as marked during removal.
17. Install shims (2) in original locations. Measure clearances and adjust shims as required.

Powerllel Loader—Specification

Bell Crank-to-Bucket Link—	
Clearance—Maximum	3 mm 0.12 in.

18. Install bell crank-to-bucket link pin (11).

T202191A -UN-23SEP04

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Frames

1—Cap Screw (7 used)
2—Shim (as required)
3—Guide Link (2 used)
4—Bucket Link
5—Bushing
6—Bushing

7—Bushing
8—Bell Crank
9—Pin (2 used)
10—Pin
11—Pin (2 used)
12—Leveling Link

13—Bushing (2 used)
14—Bushing
15—Grease Fitting (6 used)
16—Shim (as required)
17—Seal (4 used)
18—Seal (6 used)

19—Shim (as required)
20—Shim (as required)
21—Bushing (5 used)
22—Plate (2 used)
23—Safety Decal (2 used)
24—Seal (2 used)

TE14778.0000046 -19-23JUN04-27

1. Support boom with jack stands. Roll bucket forward until touching ground. If bucket isn't attached to coupler, roll coupler forward and support with jack stand.

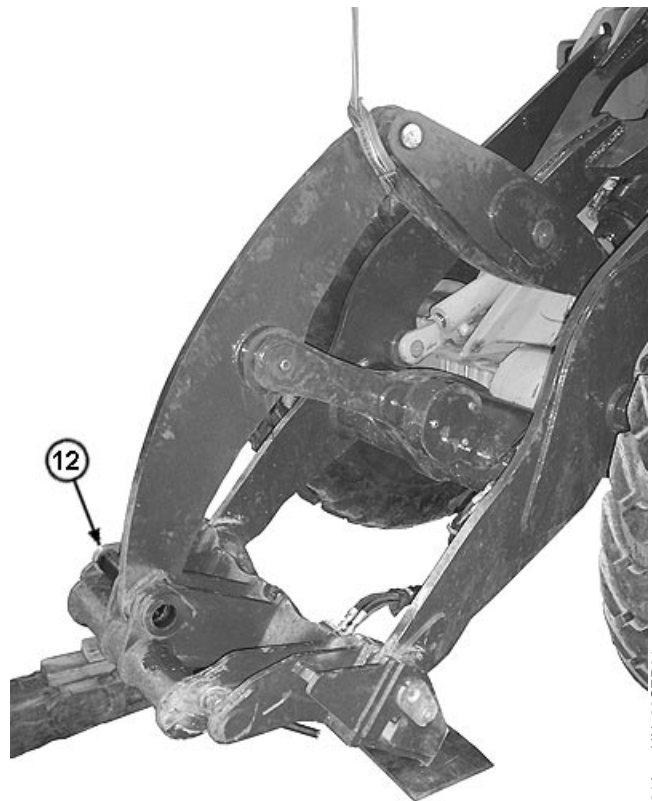


TE14778.0000046 -19-23JUN04-37

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⚠ CAUTION: Avoid injury from sudden linkage movement. Support parallel bell crank before removing any pins.

2. Support bell crank (8) with sling.
3. Remove bell crank-to-bucket link pin (11).
4. Lower bell crank and remove hoist support. Place wood block between bell crank and loader frame.



Continued on next page

TE14778.0000046 -19-23JUN04-47

Frames

- 1—Lock Nut (2 used)
- 2—Cap Screw (3 used)
- 3—Hex Socket Head Cap Screw (2 used)
- 4—Washer (6 used)
- 5—Elbow Fitting

- 6—O-Ring (2 used)
- 7—O-Ring
- 8—Fitting
- 9—O-Ring
- 10—Hydraulic Cylinder
- 11—Coupler

- 12—Pin, Coupler-to-Bucket Link
- 13—Pin, Coupler-to-Boom (2 used)
- 14—Grease Fitting (4 used)
- 15—Shim, Coupler-to-Bucket Link (as required)

- 16—Shim, Coupler-to-Boom (as required)
- 17—Bushing (3 used)
- 18—Pin, Coupler-to-Bucket (2 used)

1. Remove attachment from coupler.

 **CAUTION: Powerllel Coupler is heavy and can cause injury if not moved properly. Use adequate lifting device to move coupler.**

Powerllel Loader—Specification

444J Powerllel Coupler—
 Weight..... 327 kg Approximate
 721 lb Approximate

544J Powerllel Coupler—
 Weight..... 368 kg Approximate
 811 lb Approximate

624J Powerllel Coupler—
 Weight..... 448 kg Approximate
 987 lb Approximate

2. Roll coupler forward and support with wood blocks on floor.

Continued on next page

TE14778,0000054 -19-04OCT04-2/3

Hydraulic Pump Remove and Install

NOTE: Perform Hydraulic Pump Flow Test (Group 9025-25) before removing hydraulic pump for repair.

1. Turn machine to maximum right steering stop for access to hydraulic pump.
2. Stop engine.
3. Lower all equipment to ground.

Continued on next page

TX,31,ME134 -19-17NOV03-1/3

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1

Hydraulic System

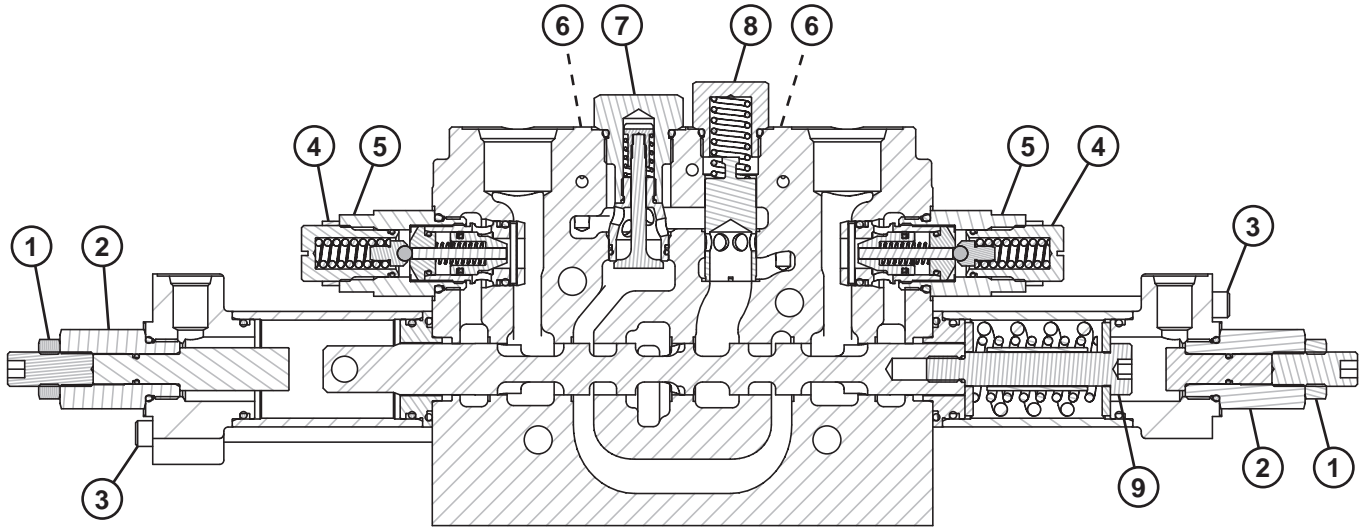
8. Loosen hold-down clamps on bucket and boom cylinder lines.

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DW09104,00000B9 -19-01DEC03-2/4

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Auxiliary Valve Section Disassemble and Assemble (444J, 544J S.N. 594433—)



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T201855 -JUN-27JUL04

T201855

Auxiliary Valve Section Disassemble and Assemble (444J, 544J S.N. 594433—)

- | | | | |
|--------------------------------------|---------------------------------|------------------------|-------------------|
| 1—Nut (2 used) | 4—Nut (2 used) | 6—Check Valve (2 used) | 8—Compensator Cap |
| 2—Cartridge (2 used) | 5—Circuit Relief Valve (2 used) | 7—Load Check Valve | 9—Stripper Bolt |
| 3—Hex Head Socket Cap Screw (4 used) | | | |

1. Disassemble valve.
 2. Replace parts as necessary. Replace all o-rings and backup rings
- IMPORTANT: Coat all internal surfaces with clean hydraulic oil.**
3. Assemble valve. Apply thread lock and sealer (high strength) to threads of hex head socket cap screws and stripper bolt. Tighten parts to specification.

Hex Head Socket Cap Screw—	
Torque.....	10.17—11.3 N•m 90—100 lb-in.
Relief Valve Lock Nut—Torque	17.74—21.8 N•m 157—193 lb-in.
Relief Valve—Torque.....	90.84—112.5 N•m 67—83 lb-ft
Check Valve—Torque.....	8.14—9.94 N•m 72—88 lb-in.
Load Check Valve—Torque	90.84—112.5 N•m 67—83 lb-ft
Compensator Cap—Torque.....	90.84—112.5 N•m 67—83 lb-ft
Stripper Bolt—Torque	17.74—21.8 N•m 157—193 lb-in.

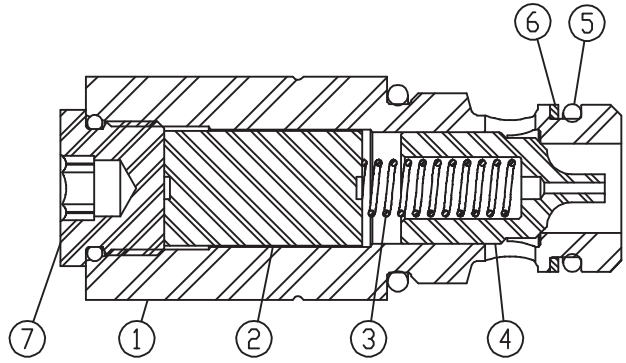
Auxiliary Valve Section—Specification

Stroke Adjuster Nut—Torque	17.74—21.8 N•m 157—193 lb-in.
Stroke Adjuster Cartridge—	
Torque.....	28.9—35.5 N•m 256—314 lb-in.

Boom Anti-Cavitation Valve Disassemble and Assemble

1. Separate poppet and tube from relief valve body.
2. Inspect parts for wear or damage.
3. O-rings, backup ring, and spring are the only repair parts available.

- 1—Relief Valve
- 2—Tube
- 3—Spring
- 4—Poppet
- 5—O-Ring Seal
- 6—Backup Ring
- 7—Plug



T196700 -UN-05DEC03

TX,3100,RP3063 -19-04OCT04-1/1

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Boom Cylinder Remove and Install

NOTE: Boom cylinder may be disassembled on the machine for seal and packing replacement.

1. Install frame locking bar.
- CAUTION:** Prevent possible injury from crushing. Use appropriate lifting device and support boom cylinder before removing cylinder.
2. Raise and support boom using a hoist or support stands.
 3. Perform Ride Control Accumulator Hydraulic Discharge procedure. (Group 9025-20.)

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

4. Connect hoist to cylinder using lifting straps.

Specification

Boom Cylinder—Weight—	
Approximate.....	70 kg 153 lb

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DW09104,00000C1 -19-20NOV03-1/2

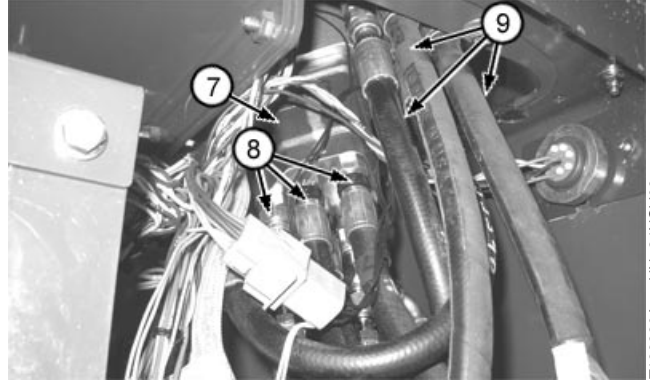
NOTE: For machines equipped with single lever control and auxiliary hydraulics, remove pilot control console to gain access to STC connectors at auxiliary hydraulic valve.

NOTE: STC tool supplied with vehicle and located in operator's manual packet.

10. Remove hydraulic hoses from pilot control valve(s) using JDG1385 STC tool. Cap and plug all openings.

IMPORTANT: Do not twist control lever handle/knobs. Damage may occur to wires.

12. Install pilot controller(s) and connect lines.
13. Remove vacuum or fill hydraulic reservoir.
14. Operate machine and check for leaks at hydraulic connections.



T196380A -UN-24NOV03

Pilot Control Lines (Single Lever with Auxiliary Function Shown)

- 7—Pilot Control Valve
- 8—Pilot Control Valve Lines
- 9—Auxiliary Pilot Control Valve Lines

DW09104.00000CC -19-02DEC03-2/2

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Pilot Control Valve Disassemble and Assemble

Perform Pressure Reducing Valve Pressure Test. (Group 9025-25) before disassembling pilot control valve.

1. Perform Pilot Control Valve Remove and Install procedure in this group.

Continued on next page

DW09104.00000CD -19-02DEC03-1/5

Hydraulic System

- | | | | |
|----------------------|------------------|-------------------|--|
| 1—Label | 12—O-Ring | 22—Hydraulic Hose | 32—Adapter |
| 2—Lock Nut | 13—Elbow Fitting | 23—O-Ring | 33—O-Ring |
| 3—Washer | 14—O-Ring | 24—Hydraulic Line | 34—Adapter |
| 4—Screw | 15—Elbow Fitting | 25—O-Ring | 35—Accumulator |
| 5—Clamp | 16—Elbow Fitting | 26—Hydraulic Hose | 36—Hydraulic Hose |
| 6—Safety Sign | 17—O-Ring | 27—Hydraulic Line | 37—Relay |
| 7—Screw | 18—Switch | 28—Adapter | 38—Rocker Switch (Included
with kit but not standard
on machine) |
| 8—Ride Control Valve | 19—O-Ring | 29—O-Ring | 39—Wiring Harness |
| 9—O-Ring | 20—Adapter | 30—Hydraulic Hose | |
| 10—Cover | 21—Adapter | 31—O-Ring | |
| 11—Fitting | | | |



CAUTION: Present possible injury from crushing when removing ride control accumulator. Use appropriate lifting device.

2. Replace ride control parts as necessary.

Specification

Accumulator—Weight—	
Approximate.....	40 kg 88 lb

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3160
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TX,31,ME161 -19-25NOV03-3/3

Section 9900 Dealer Fabricated Tools

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9900

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