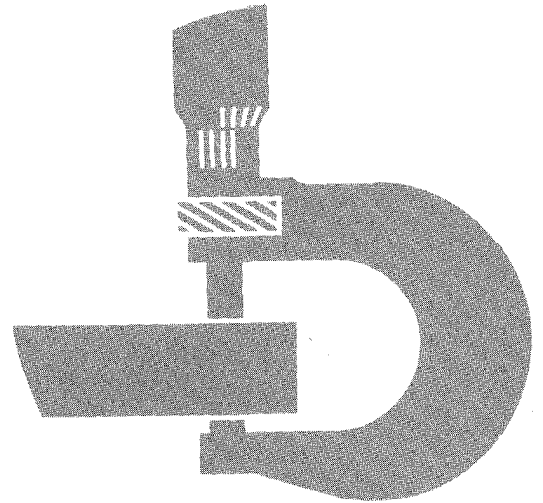


750B and 850B Crawler Bulldozer Repair



TECHNICAL MANUAL

For complete service information also see:

750B and 850B Crawler Bulldozers	
Operation and Test	TM1332
6076 Engine ..	CTM6
6068 Engine ..	CTM8
6414 Engine ..	CTM4
6166 Engine ..	CTM1
Engine Accessories	CTM11
Undercarriage Appraisal Manual	SP326

John Deere Dubuque Works
TM1476 (11MAY94)

LITHO IN U.S.A.
ENGLISH

Introduction

FOREWORD

This manual is written for an experienced technician. Essential tools required in performing certain service work are identified in this manual and are recommended for use.

Live with safety: Read the safety messages in the introduction of this manual and the cautions presented throughout the text of the manual.



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

Technical manuals are divided in two parts: repair and operation and tests. Repair sections tell how to repair the components. Operation and tests sections help you identify the majority of routine failures quickly.

Information is organized in groups for the various components requiring service instruction. At the beginning of each group are summary listings of all applicable essential tools, service equipment and tools, other materials needed to do the job, service parts kits, specifications, wear tolerances, and torque values.

Technical Manuals are concise guides for specific machines. They are on-the-job guides containing only the vital information needed for diagnosis, analysis, testing, and repair.

Fundamental service information is available from other sources covering basic theory of operation, fundamentals of troubleshooting, general maintenance, and basic type of failures and their causes.

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All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

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Section 00

GENERAL INFORMATION

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HANDLE FLUIDS SAFELY—AVOID FIRES

When you work around fuel, do not smoke or work near heaters or other fire hazards.

Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.

Make sure machine is clean of trash, grease, and debris.

Do not store oily rags; they can ignite and burn spontaneously.



DX,FLAME -19-04JUN90

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TS227

PREVENT BATTERY EXPLOSIONS

Keep sparks, lighted matches, and open flame away from the top of battery. Battery gas can explode.

Never check battery charge by placing a metal object across the posts. Use a volt-meter or hydrometer.

Do not charge a frozen battery; it may explode. Warm battery to 16°C (60°F).



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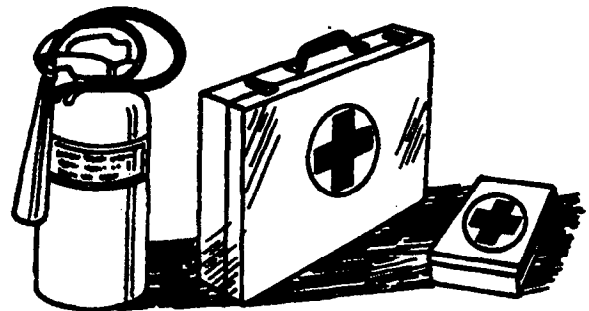
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TS204

PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



DX,FIRE2 -19-03MAR93

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TS291

DISPOSE OF WASTE PROPERLY

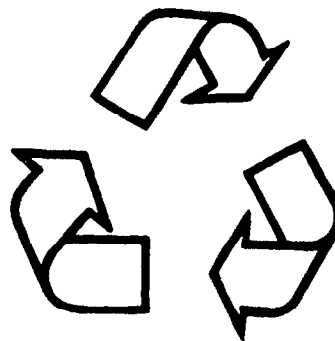
Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.

Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

Do not pour waste onto the ground, down a drain, or into any water source.

Air conditioning refrigerants escaping into the air can damage the Earth's atmosphere. Government regulations may require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.

Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling center, or from your John Deere dealer.



DX,DRAIN -19-03MAR93

TS1133 -UN-26NOV90

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LIVE WITH SAFETY

Before returning machine to customer, make sure machine is functioning properly, especially the safety systems. Install all guards and shields.



DX,LIVE -19-25SEP92

TS231 -19-07OCT88

750B GENERAL SPECIFICATIONS

Engine: John Deere 6068T

Type	4-stroke cycle, turbocharged diesel
Bore and stroke	4.19 X 5 in. (106.4 x 127 mm)
Number of cylinders	6
Displacement	414 cu in. (6.785 L)
Lubrication	Pressure system with full flow filters
Cooling	Pressurized with thermostat and controlled bypass
Fan	Blower
Air Cleaner	Dry
Electrical system	24 volt with a 40 amp alternator
Batteries (2) 12 volt	Reserve capacity: 160 minutes
Power at 2100 engine rpm:	
Net	SAE 89 kW (120 hp)
Gross	SAE 95 kW (128 hp)

Transmission:

Splitter drive: Pressure-lubricated helical gears drive both transmissions, main hydraulic pump, winch drive shaft and auxiliary pump drive.

Speeds:

Infinite from 0-10.5 km/h (0-6.5 mph) forward and reverse

Steering:

Hydrostatic steering eliminates the need for steering clutches and steering brakes.

Parking Brakes:

Wet-disk brakes are automatically applied when engine is stopped, or manually applied with center foot pedal during normal operation.

Hydraulic System (Open Center):

Pressure	13 790 kPa (137.9 bar) (2000 psi)
Filter	10 micron filter in return line with bypass

Tracks:

Track shoes each side	40
Ground contact area	20 903 cm ² (3240 sq in.)
Wide track	39 484 cm ² (6120 sq in.)
Ground pressure:	
6505	66.6 kPa (0.7 bar) (9.66 psi)
6520	62.4 kPa (0.6 bar) (9.05 psi)
6525	61.7 kPa (0.6 bar) (8.95 psi)
Narrow gauge	62.2 kPa (0.6 bar) (9.02 psi)
Wide track	35.2 kPa (0.4 bar) (5.10 psi)
General purpose	(53.2 kPa (0.5 bar) (7.71 psi)
Track gauge	1.88 m (74 in.)
Narrow gauge	1.63 m (64 in.)
Minimum ground clearance	356 mm (14 in.)

NOTE: Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with ICED and SAE standards. Except where otherwise noted, these specifications are based on a unit equipped with 457 mm (18 in.) grousers [864 mm (34 in.) for wide track and low ground pressure], roll-over protective canopy, full fuel tank, 79 kg (175 lb) operator, and standard equipment.

0002
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750B DRAIN AND REFILL CAPACITIES

	English	Metric
Cooling system	7 gal	26.5 L
Fuel tank	73 gal	276 L
Engine crankcase, including filter	20 qt	19 L
Splitter drive	1.5 gal	5.7 L
Inner final drive (each side)	8.5 gal	32.2 L
Inner final drive (narrow gauge) (each side)	5.4 gal	20.3 L
Outer final drive (each side)	3.5 gal	13.2 L
Hydraulic reservoir	27.5 gal	104 L
Transmission reservoir	23 gal	87 L

TX,SECI,FF.301 -19-05AUG93

850B GENERAL SPECIFICATIONS

Engine: John Deere 6466A

Type	Turbocharged and aftercooled diesel
Bore and stroke	4.56 X 4.75 in. (116 x 121 mm)
Displacement	466 cu in. (7.636 L)
Lubrication	Pressure system with full flow filters
Cooling	Pressurized with thermostat and controlled bypass
Fan	Blower
Air Cleaner	Dry
Electrical system	24 volt with a 40 amp alternator
Batteries (2) 12 volt	Reserve capacity: 180 minutes
Power at 1800 engine rpm:	
Net	SAE 123 kW (165 hp)
Gross	SAE 131 kW (175 hp)

Transmission:

Splitter drive: Pressure-lubricated helical gears drive both transmissions, main hydraulic pump, winch drive shaft and auxiliary pump drive. Speeds: Infinite from 0-6.5 mph (0-10.5 km/h) forward and reverse.

Steering:

Hydrostatic steering eliminates the need for steering clutches and steering brakes.

Parking Brakes:

Wet-disk brakes are automatically applied when engine is stopped, or manually applied with center foot pedal during normal operation.

Hydraulic System (Open Center):

Pressure	2250 psi (15 514 kPa) (155 bar)
Filter	10 micron filter in return line with bypass
Pump flow at 2100 rpm	144 L/min (38 gpm)

Tracks:

Track shoes each side	37
Low ground pressure	43
Long track	40
Ground contact area	29 419 cm ² (4560 sq in.)
Low ground pressure	58 352 cm ² (9044 sq in.)
Long track	33 135 cm ² (5 136 sq in.)
Ground pressure:	
6540	57.3 kPa (0.6 bar) (8.3 psi)
6545	56.7 kPa (0.6 bar) (8.2 psi)
Low ground pressure	3.38 kPa (0.3 bar) (4.9 psi)
General purpose	59.1 kPa (0.6 bar) (8.58 psi)
Long track (6540)	53.3 kPa (0.5 bar) (7.7 psi)
Long track (6545)	52.8 kPa (0.5 bar) (7.65 psi)
Track gauge	1.88 m (74 in.)
Low ground pressure	2.24 m (88 in.)
Minimum ground clearance	417 mm (16.4 in.)
Low ground pressure with swamp shoe	490 mm (19.3 in.)

Operating Weight w/ROPS:

850B Standard	17 198 kg (37915 lb)
850B LGP	20 124 kg (44 365 lb)

Drawbar pull at 0.4 km/h (0.25 mph)

29 484 kg (289 kN) (65 000 lb)

NOTE: Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with ICED and SAE standards. Except where otherwise noted, these specifications are based on a unit equipped with 20 in. (508 mm) grousers [965 mm (38 in.) low ground pressure], roll-over protective canopy, full fuel tank, 79 kg (175 lb) operator, and standard equipment.

0002
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850B DRAIN AND REFILL CAPACITIES

	English	Metric
Cooling system	9 gal	34 L
Fuel tank	82 gal	310 L
Engine crankcase, including filter	25 qt	24 L
Splitter drive	1.5 gal	5.7 L
Inner final drive (each side)	5.5 gal	20 L
Inner final drive (LGP) (each side)	10 gal	38 L
Outer final drive (each side)	3.5 gal	13.25 L
Track frame pivot (each side)	1 pt	0.47 L
Hydraulic reservoir	27.5 gal	104 L
Transmission reservoir	29 gal	110 L

TX,SECI,FF,302 -19-05AUG93

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4

CHECKING TRACK SHOE CAP SCREW TORQUE

Track shoe cap screw torque should be periodically checked. If the cap screws do not meet the minimum torque specifications, remove the shoes and clean the mating surfaces of the shoes and links before tightening the cap screws.

If machine is operated with loose track shoes, the cap screw holes in the shoes and links will wear and it may be difficult to keep the track shoes tight. Loose shoes can also cause hardware failure and loss of track shoes.

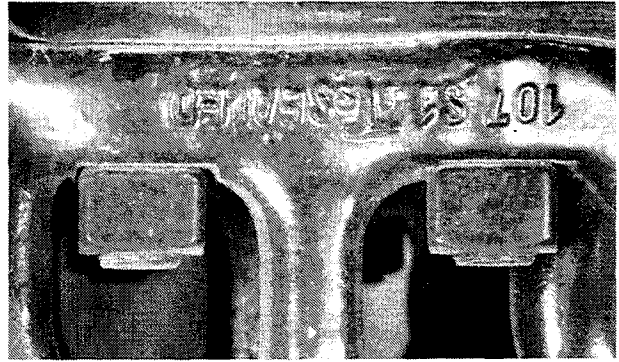
Install all track shoe nuts with rounded edges (A) against the link and chamfered edges (B) away from the link. Be sure nut is properly positioned in the link so there is full contact area between the nut and the link.

TORQUE SPECIFICATION

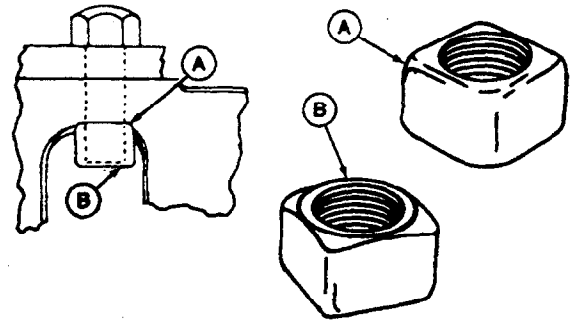
Cap Screw Torque 149 N·m (110 lb-ft)

NOTE: Replacement hardware should be lubricated and tightened to above specification.

- A—Rounded Edge
- B—Chamfered Edge



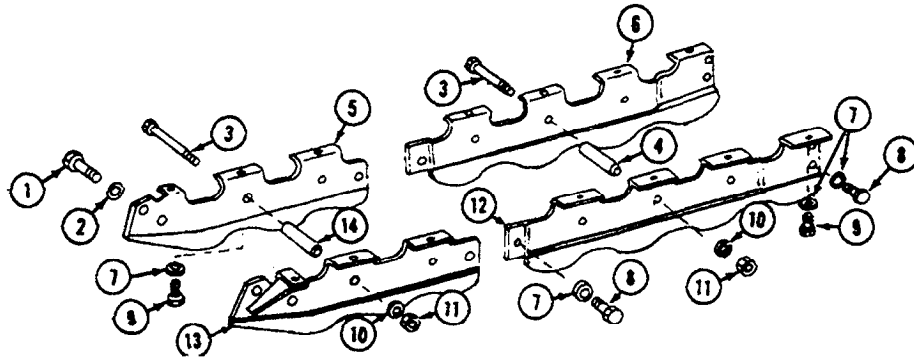
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TX,90,RR2494 -19-03AUG92

REMOVE AND INSTALL ROCK GUARDS AND TRACK GUIDES



1—Cap Screw (4 used)
2—Washer (2 used)
3—Cap Screw (6 used)
4—Spacer (3 used)

5—Track Guide
6—Rock Guard
7—Washer (20 used)
8—Cap Screw (6 used)

9—Cap Screw (12 used)
10—Lock Washer (6 used)
11—Nut (6 used)

12—Rock Guard
13—Track Guide
14—Spacer (3 used)

NOTE: Removal and installation of rock guards and track guides are similar for both 750B and 850B. Majority of cap screws are F grade.

1. Remove parts (1—14).

2. Inspect rock guards (6 and 12) track guides (5 and 13) for wear and damage. Repair or replace parts as necessary.

IMPORTANT: Good welds are important. Have only a qualified welder repair the components. Use E7018 electrodes. Before welding, clean all dirt and paint from the weld areas and turn the battery disconnect switch to "OFF". Connect the welder ground clamp close to each weld area so electrical current does not pass through any bearings.

3. Apply high strength thread lock and sealer to cap screws (1, 3, 8 and 9).

4. Install inner rock guard, guide, washers and cap screws.

5. Put cap screws through inner guide or inner guard spacer, outer guide or outer guard, washer (10) and nut. Tighten the nuts.

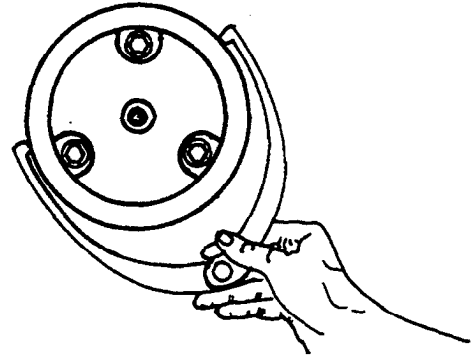
6. Install outer guard and guide cap screws.

7. Install bottom two sprocket shields-to-track guide cap screws and tighten to 325 N·m (240 lb-ft).

TX,0130,DU1295 -19-07APR94

MEASURE CARRIER ROLLER WEAR

1. Position an outside calipers over the most worn area of roller running surface, and close until caliper tips just touch tread surface.
2. Measure caliper tip spread using the scale to the nearest 0.5 mm (0.002 in.)
3. Check for flat spots on carrier roller thread, which indicate roller is not free to turn.



T5819AC -JUN-01NOV88

CARRIER ROLLER WEAR SPECIFICATION

	750B	850B
O.D. of new carrier roller	165 mm (6.5 in.)	165 mm (6.5 in.)
Minimum Recommended O.D.		
100% Worn	148.4 mm (5.84 in.)	145.3 mm (5.72 in.)

NOTE: See Undercarriage Appraisal Manual SP-326 for additional information.

TX,0130,DU1296 -19-11AUG93

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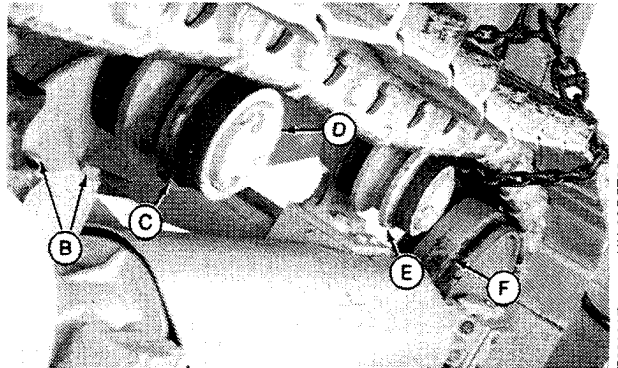
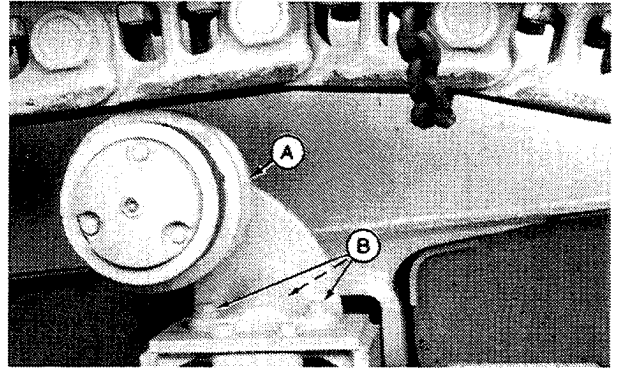
REMOVE AND INSTALL CARRIER ROLLER

⚠ CAUTION: Grease in track adjustment cylinder is under high pressure. Slowly loosen check valve fitting to release grease from track tension adjuster.

1. Slowly turn check valve fitting counterclockwise one turn to release track tension. (See Adjust Track Sag in this group.)
2. Raise and support track chain using a chain and hoist.

⚠ CAUTION: The approximate weight of carrier roller is 40 kg (90 lb).

3. Remove cap screws (B) to remove front (A) or rear (D) carrier rollers.
4. Install carrier roller, washers, and tighten cap screws (B) to 325 N·m (240 lb-ft).
5. If front carrier roller was removed, stretch a string from rear carrier roller flange outside edge (C) to idler flange outside edge (F).
6. Loosen front carrier roller to support cap screws (B) and slide roller in or out until front carrier roller flange outer edge (E) is aligned with string.
7. Make sure center line of roller is perpendicular to track chain and tighten cap screws to 325 N·m (240 lb-ft).
8. Lower track and remove chain.
9. Adjust track tension. (See Adjust Track Sag procedure in this group.)

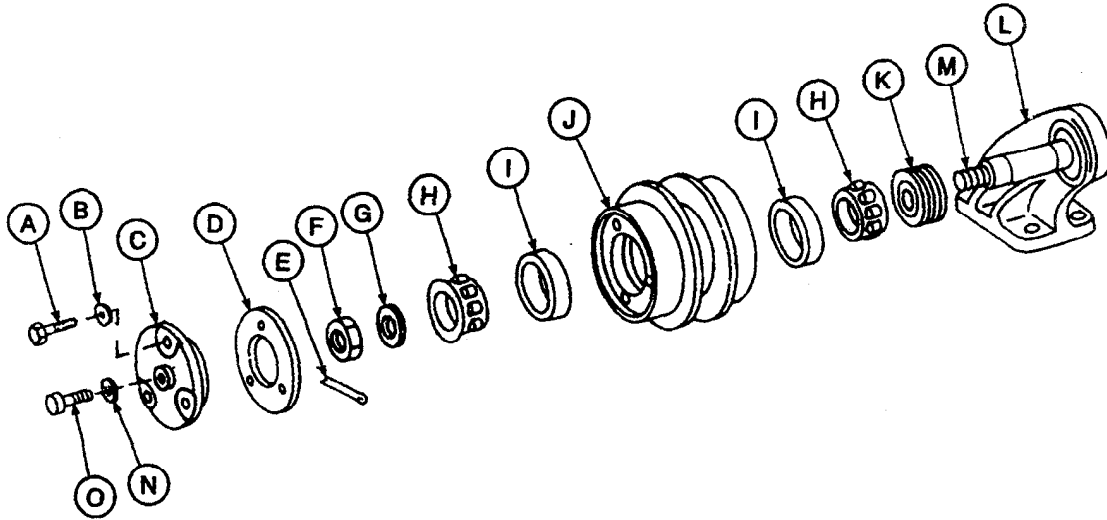


A—Front Carrier Roller
 B—Cap Screw (8 used)
 C—Rear Carrier Flange Outer Edge
 D—Rear Carrier Roller
 E—Rear Carrier Roller Flange Outer Edge
 F—Idler Flange Outer Edge

TX,0130,DU1306 -19-30SEP93

DISASSEMBLE AND ASSEMBLE CARRIER ROLLER

0130
14



T8040AH (C)

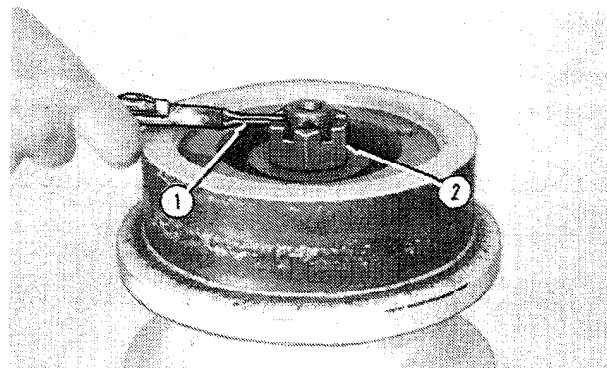
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|------------------------|-------------------------|------------------------|-----------|
| A—Cap Screw (3 used) | E—Cotter Pin | I—Bearing Cup (2 used) | M—Shaft |
| B—Lock Washer (3 used) | F—Nut | J—Roller | N—O-Ring |
| C—Cover | G—Washer | K—Seal Kit | O—Fitting |
| D—Gasket | H—Bearing Cone (2 used) | L—Roller Support | |

TX,0130,DV1762 -19-11AUG93

T8040AH -JUN-27AUG93

1. Remove three cap screws to remove cover, and gasket.

2. Remove cotter pin (1) to loosen nut (2). Do not remove nut at this time.

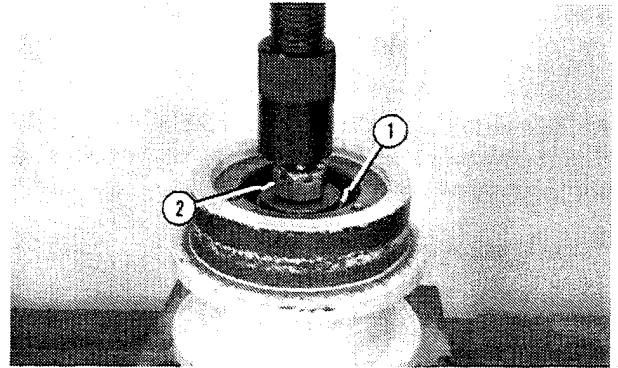


TX,0130,DU1307 -19-11AUG93

T80395 -JUN-26OCT88

Track System/Carrier Roller

3. Press bearing cone (1) from support bracket.
4. Remove nut (2), washer, and roller shell.
5. Inspect roller shell for grooved, burred or galled condition. Replace parts if necessary.



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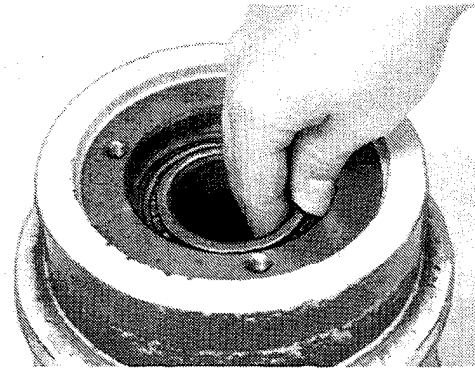
T6077AQ
-UN-26OCT88

6. Remove bearing cones and wash in volatile mineral spirits.

NOTE: Never dry bearings using compressed air. Do not rotate bearings while they are not lubricated.

7. Apply same type of oil used in roller to bearings.

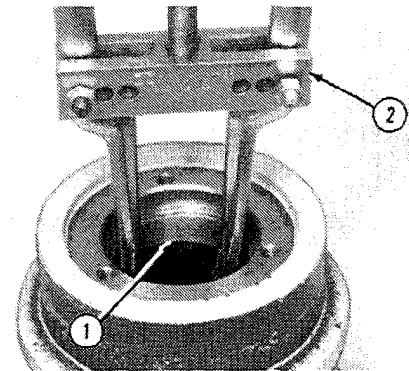
8. Inspect bearings for roughness of rotation, scratched, pitted, scored, cracked or chipped races, and indications of excessive wear. Replace if necessary.



T47,0130,6034EI-19-22APR85

T80400
-UN-26OCT88

9. Inspect bearing cup (1) for being pitted, scratched, cracked or chipped. Replace if necessary. Remove cup using a two-jaw puller (2).



T47,0130,6034EJ-19-22APR85

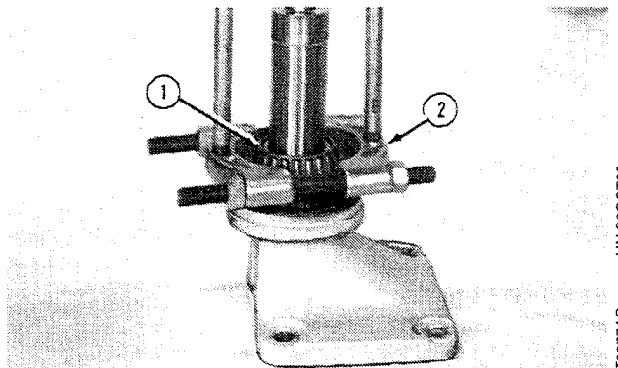
T6077AR
-UN-26OCT88

10. Remove bearing cone (1) using bearing puller attachment (2). Inspect and replace if necessary.

NOTE: Metal face seals are matched sets. Seals are not interchangeable with other seals.

11. Remove and inspect metal face seals. (See Inspect Metal Face Seals in this Group.)

12. Replace parts as necessary.



TX,0130.DU1308 -19-30SEP93

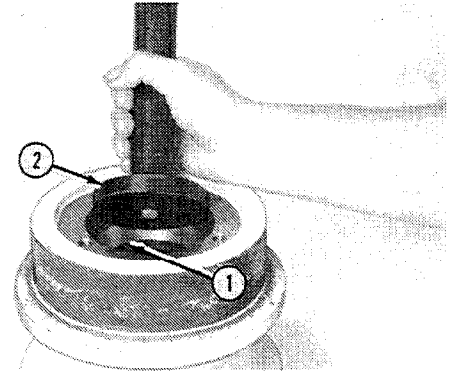
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13. Push bearing cups (1) to bottom of bore using a 81 mm disk.

0130
16

14. Thoroughly clean the seal cavities in roller shell using a volatile, non-petroleum base type solvent. Make sure they are dry and free of oil.

15. Install bearing cone in roller shell.



TX,0130,DU1309 -19-11AUG93

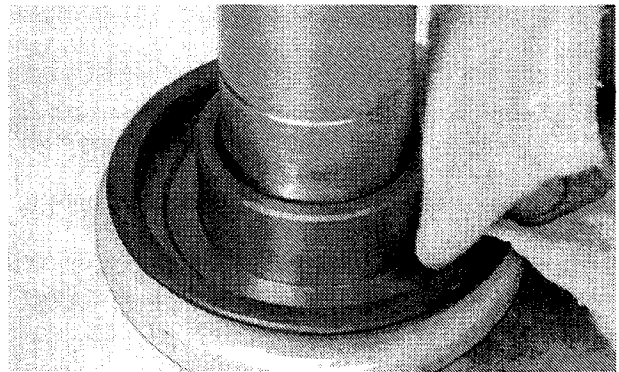
T80404
-UN-26OCT88

16. Thoroughly clean the seal cavity in the support bracket using volatile, non-petroleum base type solvent. Make sure they are dry and oil free.

17. Dry cavity using a lint-free tissue.

If new seals are used, go to step 18.

If new rubber seals and used metal seal rings are used, go to step 22.



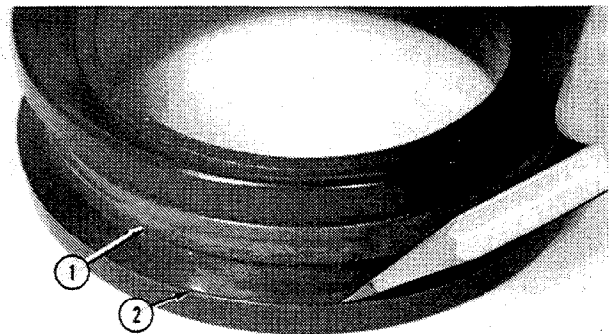
TX,0130,DU1310 -19-11AUG93

T80406
-UN-26OCT88

IMPORTANT: DO NOT remove plastic retainer band (1) from new seal before installation.

18. Find the side of seal that has a retainer lip (2) on the rubber seals.

19. Use the lint-free tissue furnished in new seal package to remove all traces of oil or grease from all surfaces.



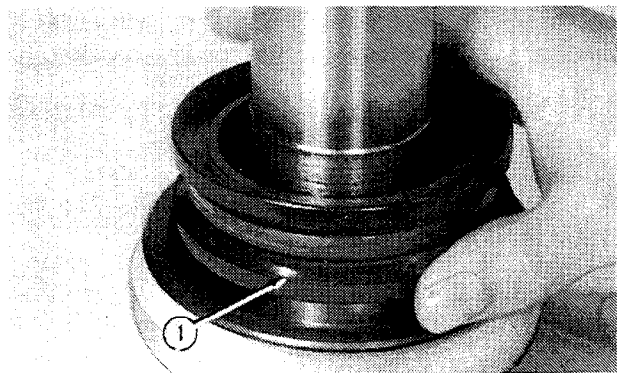
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-UN-26OCT88

20. Install metal face seal, with retainer lip (1), first, into the seal bore of support bracket.

21. Make sure the seal is seated on bottom of bore and sits straight.

Go to Step 26.



TX,0130,DU1312 -19-11AUG93

T80408
-UN-26OCT88

**Thank you very much for
your reading. Please Click
Here. Then Get COMPLETE
MANUAL. NO WAITING**

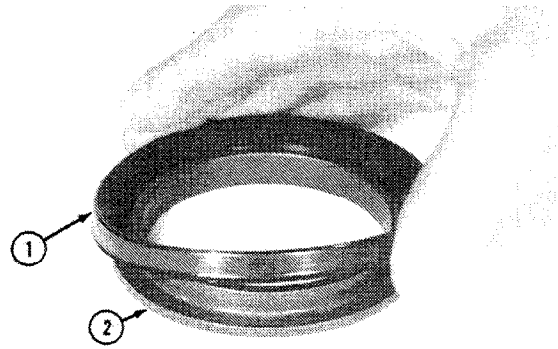


NOTE:

**If there is no response to
click on the link above,
please download the PDF
document first and then
click on it.**

22. Clean metal seal rings (2) in a volatile non-petroleum base type solvent and wipe dry with lint-free tissue.

23. Install new rubber seals (1) onto the metal seal rings. Make sure the rubber seal is tight and straight against the metal seal ring shoulder flange. Make sure the rubber seals are free of oil.



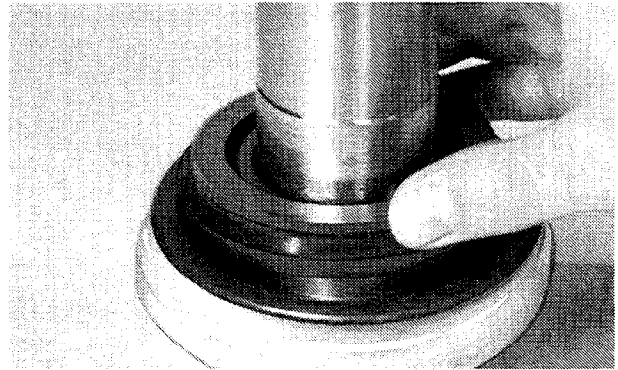
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IMPORTANT: The new rubber seal must have a retainer lip to hold the seal half in the bore before the seal is compressed.

24. Install metal face seal half, with retainer lip first, into the seal bore in the support bracket.

25. Make sure the seal is tight against seal bore and sits straight.



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26. Install metal face seal half, with retainer lip first, into the seal bore in the roller shell.

27. Make sure the seal is tight against seal bore and sits straight.

28. Wipe both metal seal ring faces dry with a lint-free tissue.

29. Apply a thin film of oil, as used in the roller, to the shiny sealing area on both metal seal rings.

30. Make sure the rubber seals are free of oil.



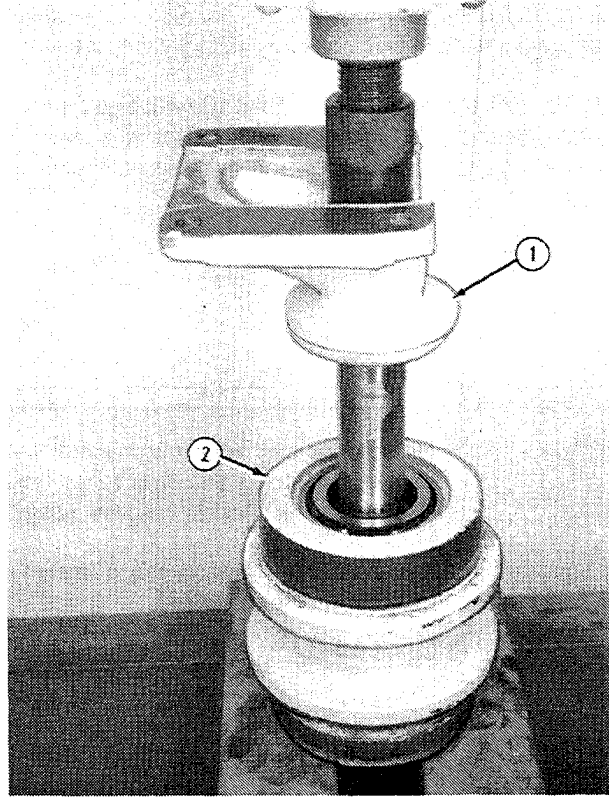
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IMPORTANT: Hold the support bracket (1) to prevent it from falling when the shaft of the support bracket is pressed below the bearing cone.

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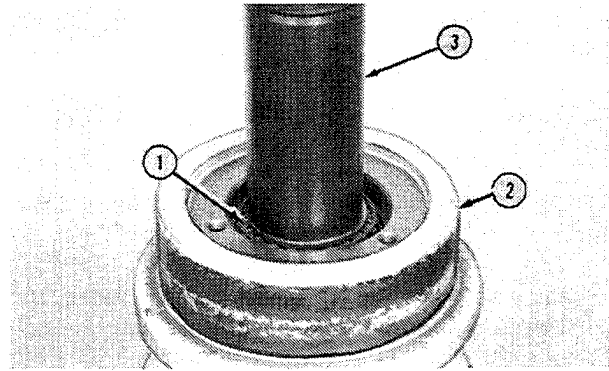
31. Install support bracket into roller shell (2) using a press.



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32. Install bearing cone (1) into the roller shell (2) using a JD357 Driver (3) and press. DO NOT press bearing tight against cup.

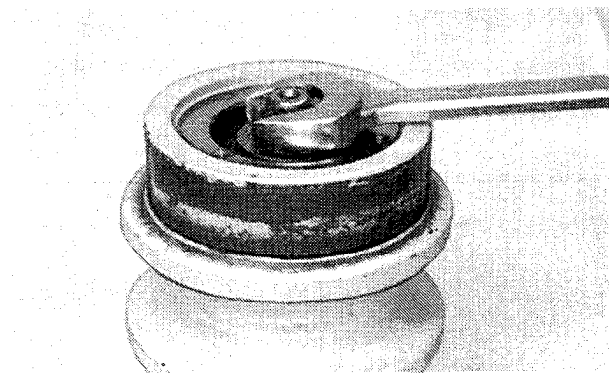


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33. Install washer.

34. Install nut and tighten slightly.



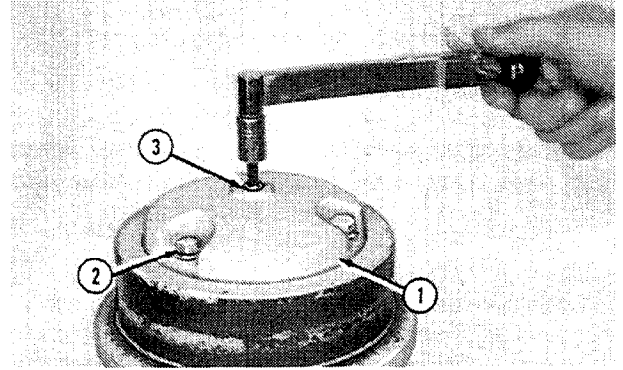
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35. Install cover (1) and cap screws (2).

36. Measure rolling drag torque using fill plug (3) as the turning point. The rolling drag torque of carrier roller must be 7.6—8.2 N·m (67—73 lb-in.). If the rolling drag torque is not correct, remove cover and tighten or loosen nut. Repeat rolling drag torque procedure.

37. Remove cover after rolling drag torque is correct.

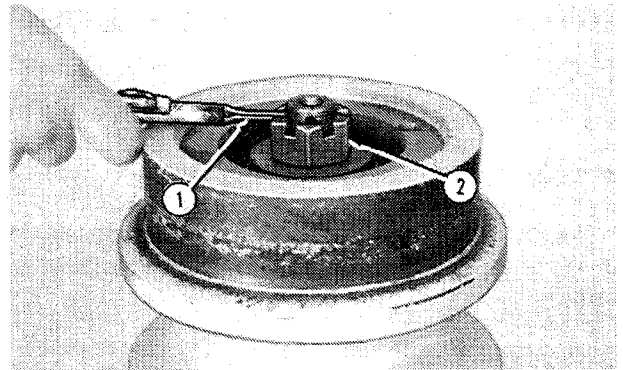


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38. Turn nut (2) counterclockwise 1/4 turn and install cotter pin (1). This should result in 0.00—0.15 mm (0.000—0.0006 in.) end play.

39. Add approximately 491 mL (16.6 oz) of recommended oil to carrier roller cavity. (See Track Rollers, Front Idler, Carrier Roller and Track Frame Pivot, Group 0004.)



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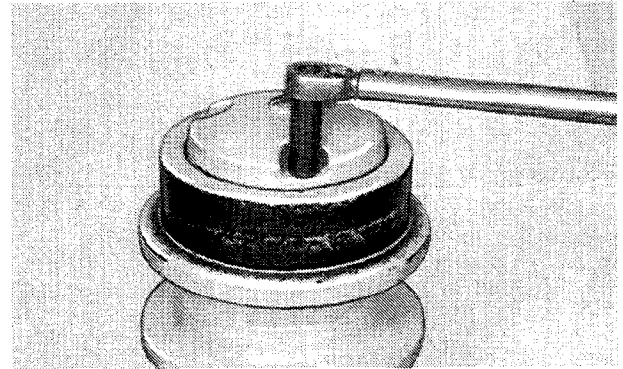
40. Install cover and new gasket.

41. Apply John Deere Gasket Maker or an equivalent to roller cover cap screws and fill plug. Install lock washers and cap screws.

NOTE: Carrier rollers require lubrication only at the time of assembly.

42. Check carrier roller for leakage. (See Carrier Roller Leakage Test in this group.)

43. Install carrier roller. (See Remove and Install Carrier Roller in this group.)

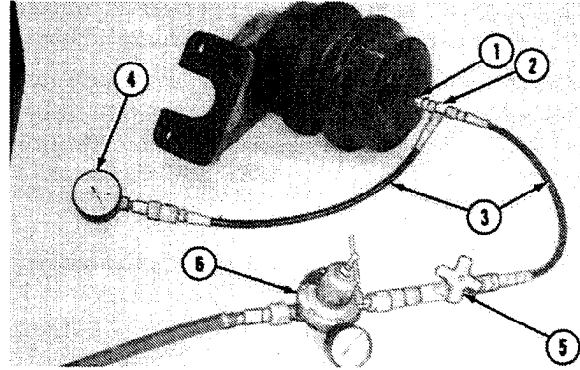


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TEST CARRIER ROLLER FOR OIL LEAKAGE

1. Remove plug from cover.
2. Fill roller with recommended oil. (See Track Rollers, Front Idler, Carrier Roller and Track Frame Pivot, Group 0004.) Carrier roller capacity is approximately 0.492 L (0.13 gal).
3. Turn roller several times to seat metal face seals.
4. Assemble fittings (1 and 2), hoses (3), regulator with gauge (6) and valve (5).
5. Pressurize roller using 117 ± 10 kPa (1 ± 0.2 bar) (17 ± 3 psi) air pressure.
6. Close valve and wait for two minutes. Make sure roller maintains air pressure and oil does not leak past O-ring or metal face seals.
7. If roller leaks oil or does not maintain pressure, check O-ring or seals. Repair as necessary and recheck for leaks.
8. Install and tighten plug.



- 1—0035 Pipe Fitting
- 2—0027 Tee Fitting
- 3—2106 Pressure Hose
- 4—6949 Pressure Gauge
- 5—2495 Snubber Valve
- 6—Regulator with Gauge

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