410E Backhoe Loader Repair

TECHNICAL MANUAL

TM1611 22JUL10 (ENGLISH)

PREVIEW - YOUFIXTHIS.COM

For complete service information also see:

410E Backhoe Loader Repair (Complete)	TM1611
410E Backhoe Loader Operation and Test (Complete).....	TM1610
POWERTECH® 4.5 L (4045) Engine.....	CTM104
Alternators and Starting Motors	CTM77
Front Wheel Drive Axles APL-2025.....	CTM4509

Worldwide Construction And Forestry Division
LITHO IN U.S.A.

Download full manual at youfixthis.com

Contents

Section 00—General Information
- Group 0001—Safety Information
- Group 0002—General Specifications
- Group 0003—Torque Values
- Group 0004—Fuels and Lubricants

Section 01—Wheels
- Group 0110—Powered or Non-Powered Wheels and Fastenings

Section 02—Axles and Suspension Systems
- Group 0225—Input Drive Shafts and U-Joints
- Group 0230—Non-Powered Wheel Axles
- Group 0240—Powered Wheel Axle (MFWD)
- Group 0250—Axle Shaft, Bearings and Reduction Gears
- Group 0299—Dealer Fabricated Tools

Section 03—Transmission
- Group 0300—Removal and Installation
- Group 0315—Controls Linkage
- Group 0325—Input Drive Shafts and U-Joint
- Group 0350—Gears, Shafts, Bearings, and Powershift Clutches
- Group 0360—Hydraulic System
- Group 0399—Dealer Fabricated Tools

Section 04—Engine
- Group 0400—Removal and Installation
- Group 0499—Dealer Fabricated Tools

Section 05—Engine Auxiliary Systems
- Group 0505—Cold Weather Starting Aid
- Group 0510—Cooling Systems
- Group 0515—Speed Controls
- Group 0520—Intake System
- Group 0530—Exhaust System
- Group 0560—External Fuel Supply System

Section 06—Torque Converter
- Group 0651—Turbine, Gears and Shaft

Section 09—Steering System
- Group 0960—Hydraulic System

Section 10—Service Brakes
- Group 1011—Active Elements
- Group 1060—Hydraulic System

Section 11—Park Brake
- Group 1111—Active Elements

Section 16—Electrical Systems
- Group 1671—Batteries, Support, and Cables
- Group 1672—Alternator, Regulator and Charging System Wiring
- Group 1673—Lighting System
- Group 1674—Wiring Harness and Switches
- Group 1675—System Controls
- Group 1676—Instruments and Indicators
- Group 1677—Motors and Actuators

Section 17—Frames, Chassis or Supporting Structure
- Group 1740—Frame Installation
- Group 1749—Chassis Weights

Section 18—Operator's Station
- Group 1800—Removal and Installation
- Group 1810—Operator Enclosure
- Group 1821—Seat and Seat Belt
- Group 1830—Heating and Air Conditioning
- Group 1899—Dealer Fabricated Tools

Section 19—Sheet Metal and Styling
- Group 1910—Hood and Engine Enclosure
- Group 1913—Miscellaneous Shields
- Group 1921—Grille and Grille Housing
- Group 1927—Fenders

Section 20—Safety, Convenience and Miscellaneous
- Group 2001—Radio
- Group 2004—Horn and Warning Devices

Section 21—Main Hydraulic System
- Group 2160—Hydraulic System

Section 31—Loader
- Group 3100—Loader
- Group 3102—Bucket
- Group 3115—Control Linkages
- Group 3160—Hydraulic System

Continued on next page

Original Instructions. 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.

COPYRIGHT © 2002
DEERE & COMPANY
Moline, Illinois
All rights reserved.
A John Deere ILLUSTRUCTION ® Manual
Previous Editions
Copyright © 1997, 1999, 2000

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

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.



TS227 —UN—23AUG88

DX,FLAME -19-29SEP98-1/1

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).



TS204 —UN—23AUG88

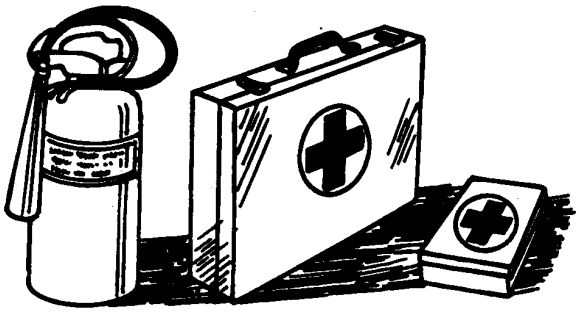
DX,SPARKS -19-03MAR93-1/1

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.



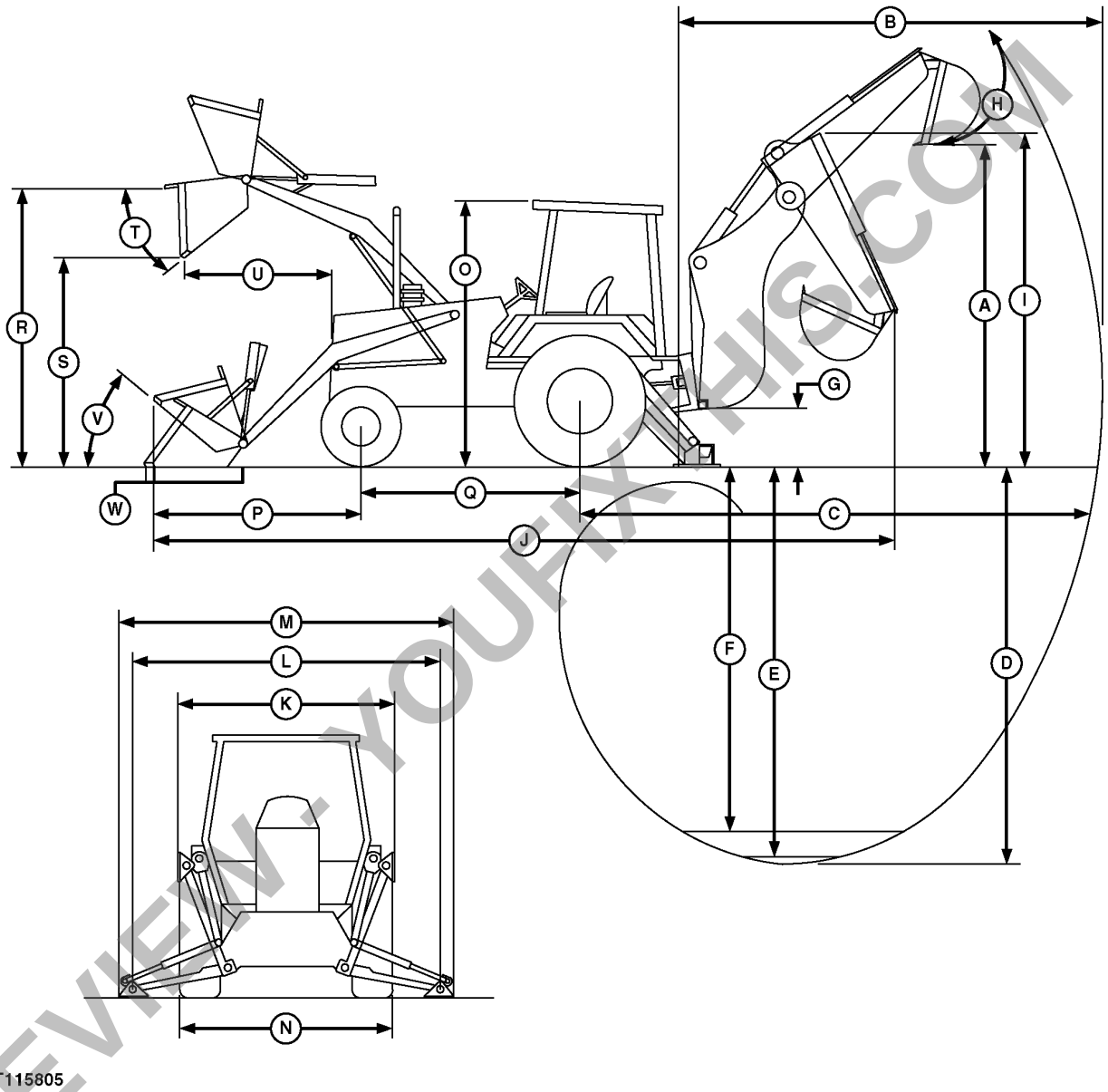
TS291 —UN—23AUG88

DX,FIRE2 -19-03MAR93-1/1

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

410E Backhoe Loader Dimensions



T115805 —UN—11JUN98

NOTE: Specifications and design subject to change without notice. Whenever applicable, specifications are in accordance with SAE Standards unless otherwise noted, these specifications are based on a standard machine with 19.5L-24, 8PR, R4 rear tires; 11L-16, 12PR, F3 front tires; 0.86 m^3 (1.12 cu yd) loader bucket; 610 mm (24 in.) backhoe bucket; ROPS/FOPS; full fuel tank and 79 kg (175 lb) operator.

Item	Measurement	Specification
A—Loading Height, Truck Loading Position		
Backhoe w/o Ext. Dipperstick	Height	3.81 m (12 ft 6 in.)

Continued on next page

TX,110,BD2412 -19-10JUN98-1/5

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

410E Backhoe and Loader Buckets

	Width		Heaped Capacity		Weight	
Loader:	**mm**	**(In.)**	**m^3**	**(Cu Yd)**	**kg**	**lb**
Heavy duty long lip	2340	(92)	1.00	(1.30)	476	(1050)
	2340	(92)	1.15	(1.50)	540	(1190)
Multipurpose	2340	(92)	0.96	(1.25)	703	(1550)

	Width		Heaped Capacity		Weight	
Backhoe:	**mm**	**(In.)**	**m^3**	**(Cu Ft)**	**kg**	**(lb)**
Standard duty	610	(24)	0.21	(7.5)	159	(350)
Heavy duty with lift loops	305	(12)	0.09	(3.3)	134	(295)
	457	(18)	0.14	(5.1)	152	(335)
	610	(24)	0.21	(7.5)	181	(400)
	762	(30)	0.25	(8.8)	191	(420)
	914	(36)	0.35	(12.5)	231	(510)
Extra Heavy Duty	457	(18)	0.14	(5.1)	164	(362)
	610	(24)	0.21	(7.5)	193	(425)
	610	(24)	0.25	(8.8)	206	(455)
	762	(30)	0.28	(10.0)	215	(475)
Ditch cleaning	914	(36)	0.35	(12.5)	231	(510)

TX,110,BD2212 -19-15JUN98-1/1

410E Backhoe Loader Drain and Refill Capacities

Item	Measurement	Specification
Engine Coolant	Capacity	16 L (17 qt)
Engine Oil (including filter)	Capacity	12.8 L (13.5 qt)
Torque Converter and Transmission System	Capacity	14 L (15 qt)
Rear Axle (S.N. —851673)	Capacity	13 L (14 qt)
Rear Axle (S.N. 851674—)	Capacity	16 L (17 qt)
MFWD Front Axle Housing	Capacity	6.5 L (7 qt)
MFWD Front Wheel Planetary Housing (each)	Capacity	1 L (1.1 qt)
Fuel Tank	Capacity	136 L (36 gal)
Hydraulic System Reservoir	Capacity	37 L (39 qt)

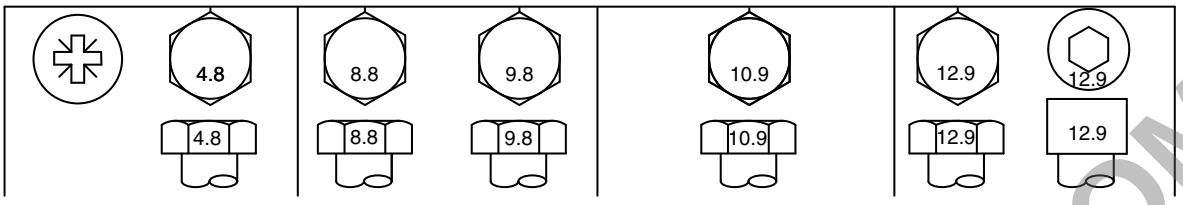
TX,115,BG332 -19-01NOV99-1/1

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Metric Bolt and Screw Torque Values

TS1670 —UN—01MAY03



Bolt or	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
Screw	Lubricated[a]		Dry[b]		Lubricated[a]		Dry[b]		Lubricated[a]		Dry[b]		Lubricated[a]		Dry[b]	
Size	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.	N·m	lb.-in.
M6	4.7	42	6	53	8.9	79	11.3	100	13	115	16.5	146	15.5	137	19.5	172
									N·m	lb.-ft.	N·m	lb.-ft.	N·m	lb.-ft.	N·m	lb.-ft.
M8	11.5	102	14.5	128	22	194	27.5	243	32	23.5	40	29.5	37	27.5	47	35
			N·m	lb.-ft.	N·m	lb.-ft.	N·m	lb.-ft.								
M10	23	204	29	21	43	32	55	40	63	46	80	59	75	55	95	70
	N·m	lb.-ft.														
M12	40	29.5	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	46	80	59	120	88	150	110	175	130	220	165	205	150	260	190
M16	100	74	125	92	190	140	240	175	275	200	350	255	320	235	400	300
M18	135	100	170	125	265	195	330	245	375	275	475	350	440	325	560	410
M20	190	140	245	180	375	275	475	350	530	390	675	500	625	460	790	580
M22	265	195	330	245	510	375	650	480	725	535	920	680	850	625	1080	800
M24	330	245	425	315	650	480	820	600	920	680	1150	850	1080	800	1350	1000
M27	490	360	625	460	950	700	1200	885	1350	1000	1700	1250	1580	1160	2000	1475
M30	660	490	850	625	1290	950	1630	1200	1850	1350	2300	1700	2140	1580	2700	2000
M33	900	665	1150	850	1750	1300	2200	1625	2500	1850	3150	2325	2900	2150	3700	2730
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2770	4750	3500

Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For stainless steel fasteners or for nuts on U-bolts, see the tightening instructions for the specific application. Tighten plastic insert or crimped steel type lock nuts by turning the nut to the dry torque shown in the chart, unless different instructions are given for the specific application.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class. Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original. Make sure fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

[a] *"Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or M20 and larger fasteners with JDM F13C zinc flake coating.*

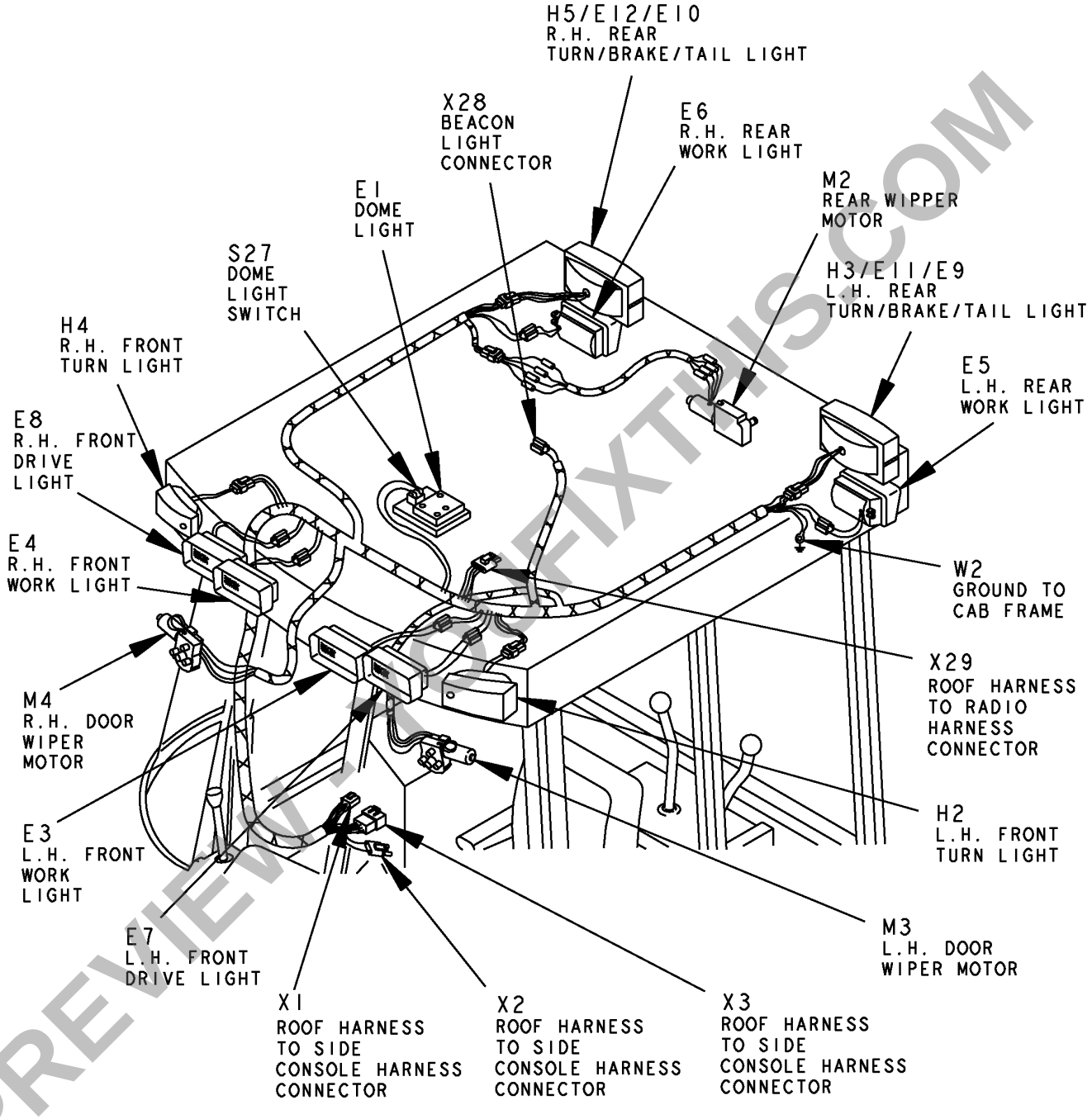
[b] *"Dry" means plain or zinc plated without any lubrication, or M6 to M18 fasteners with JDM F13B zinc flake coating.*

DX,TORQ2 -19-08DEC09-1/1

PREVIEW ONLY YOUFIXTHIS.COM

Download full manual at youfixthis.com

Remove and Install Cab Roof Harness and Components



CAB ROOF HARNESS - COMPONENTS

TI04631

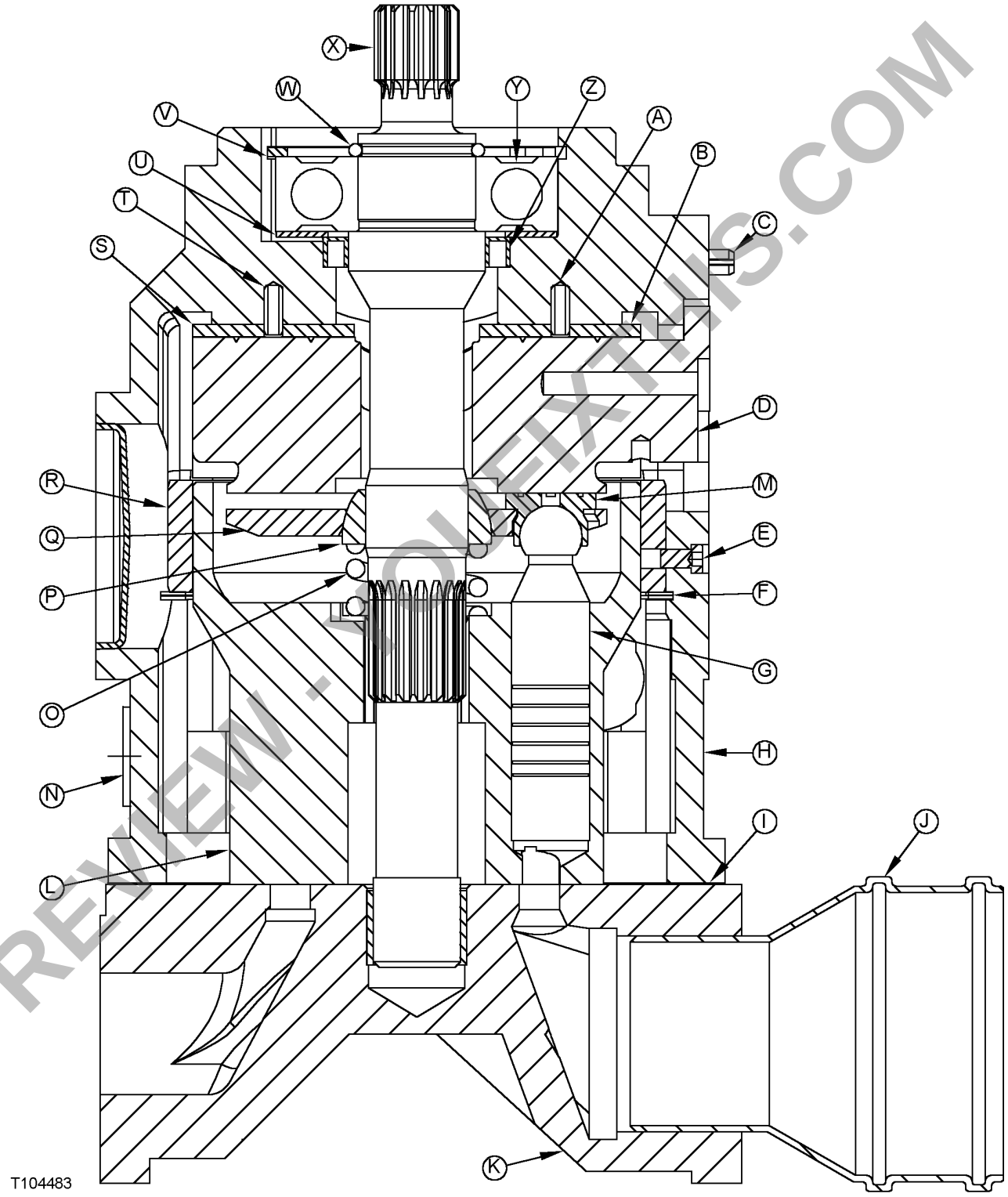
T104631 —19—15JAN97

Continued on next page

TX,16,QQ9330 -19-19NOV98-1/2

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

Hydraulic Pump Cross Section

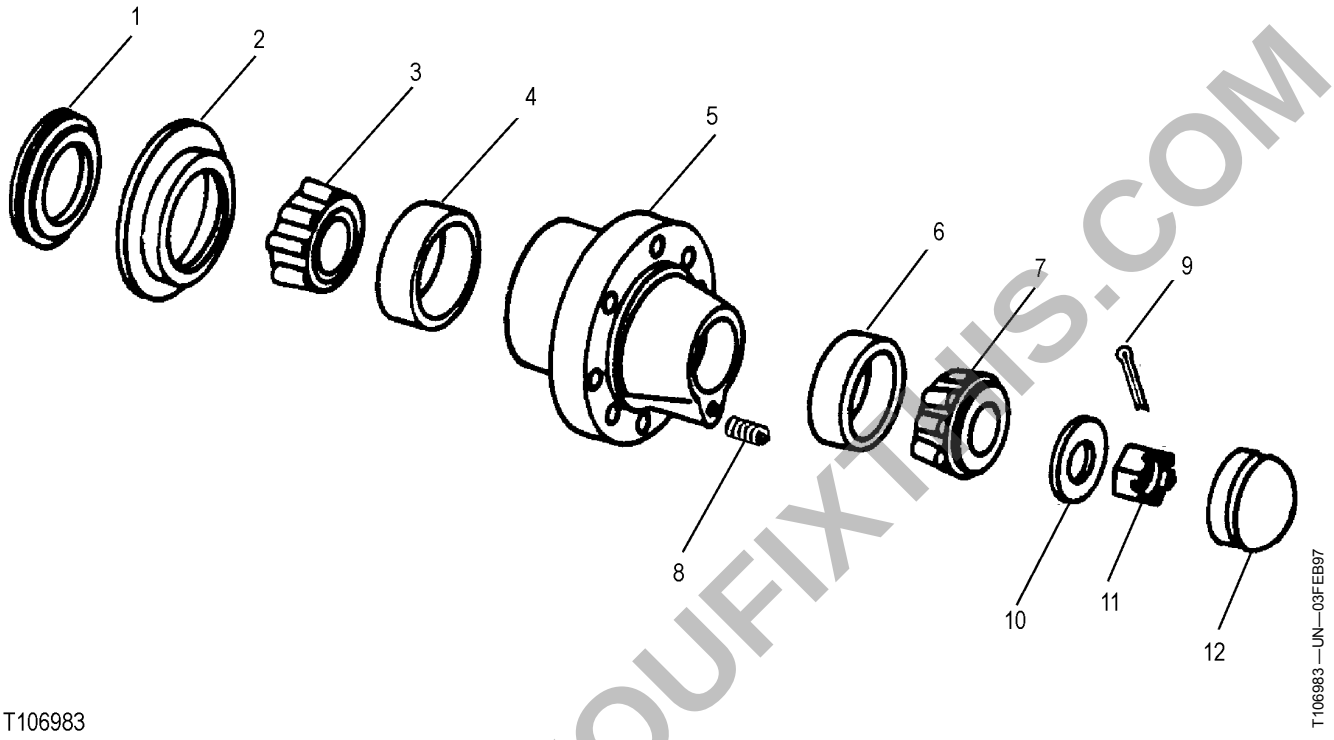


Continued on next page

TX,21,RR7828 -19-21MAR97-1/2

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

Remove and Install Hub Assembly



T106983

1— Seal
2— Seal Cup
3— Inner Bearing Cone
4— Bearing Cup
5— Hub
6— Bearing Cup
7— Outer Bearing Cone
8— Set Screw
9— Cotter Pin
10— Washer
11— Castellated Nut
12— Cap

1. Remove front wheel. (See Remove and Install Front Wheel Assembly in Section 01, Group 0110.)
2. Remove cap (12).
3. Remove cotter pin (9) and nut (11).
4. Remove washer (10), bearing cone (7) and hub (5).
5. Remove bearing cone (3) and seal (1).
6. Remove seal cup (2).
7. Remove all old grease. Clean parts in solvent. Allow to air dry.
8. Inspect bearing cones and cups for pitting, discoloration, or scoring. Check seal for damage or brittleness. Replace parts if necessary.

NOTE: Remove bearing cups only if replacement is necessary.

9. Remove bearing cups (4 and 6) using a brass drift.
10. Install new outer and inner bearing cups using a press. Install cups tight against shoulder in hub.
11. Pack inner and outer bearing cones (3 and 7) with multi-purpose grease.
12. Install inner bearing cone (3).
13. Install seal cup (2) using a press.

NOTE: Use a piece of pipe with the following approximate dimensions to install seal (1).

- *Length—152 mm (6 in.)*
- *OD—70 mm (2-3/4 in.)*
- *ID—63.5 mm (2-1/2 in.)*

14. Install seal (1) until tight against shoulder with flat side of seal facing away from hub.
15. Fill space between inner bearing cone and seal with multi-purpose grease. Apply grease to lips of seal.
16. Install hub (5) onto knuckle spindle.
17. Install outer bearing cone (7), washer (10), and castellated nut (11).
18. Tighten castellated nut to specification.

Specification

Wheel Bearing Castellated Nut—Torque ..... 47 N·m (35 lb-ft)

Continued on next page

TX,0230,SS3067 -19-04DEC98-1/2

Download full manual at youfixthis.com

Remove and Install Rear Wheel Assembly

⚠ CAUTION: Rear wheel weighs approximately 141 kg (310 lb) without fluid; 420 kg (930 lb) with fluid.

1. Loosen cap screws (B) before lifting wheel off ground.
2. Raise machine and put shop stands under main frame.
3. Put wheel lift (A) under wheel. Fasten safety chain around upper portion of tire.

Specification

Rear Wheel—Weight..... 141 kg (310 lb) without fluid
Weight ..... 420 kg (930 lb) with fluid

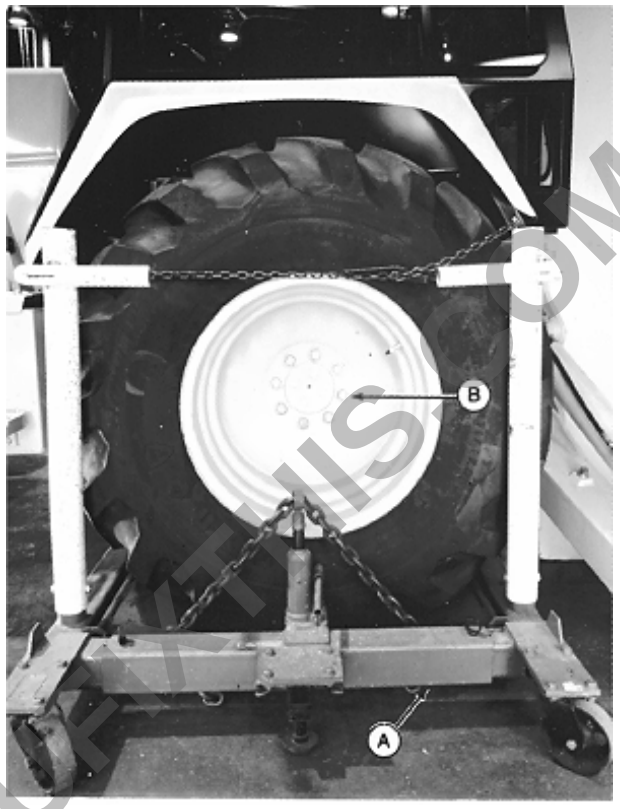
4. Remove cap screws (B). Pull wheel assembly away from axle.
5. Inspect all parts for damage; replace parts as necessary.
6. Thoroughly clean cap screws, washers, mounting surfaces and tapped holes in flanged axle. Use compressed air to dry all parts and tapped holes.
7. Install wheel using wheel lift (A).
8. Install and snug tighten cap screws (B). Lower machine to the ground.

IMPORTANT: If a power wrench is used, be sure that cap screws are engaged to prevent stripping. Operate wrench slowly to prevent thread damage.

9. Tighten cap screws to specification.

Specification

Rear Wheel Cap Screws
(19.5L x 24 or 21L x 24
Tire Size) —Torque..... 495 ± 99 N·m (365 ± 73 lb-ft)



T7527AJ —UN—10MAY91

A—Wheel Lift **B—Cap Screws**

TX,01,YY2157 -19-29NOV99-1/1

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Index

Page

A

A/C freeze switch
Remove and install 18-1830-19
Accumulator, ride control 31-3160-43
Discharge procedure 31-3160-46
Adjustments
Backhoe valve linkage 33-3315-6
Loader bucket level indicator 31-3115-2
Loader valve linkage 31-3115-6
Return-to-dig switch 31-3115-2
Stabilizer valve linkage 33-3315-10
Air cleaner
Remove and install 05-0520-2
Air conditioning
Charge R134a system 18-1830-16
Compressor clutch, disassemble and assemble 18-1830-8
Compressor oil removal 18-1830-7
Compressor, remove and install 18-1830-7
Evacuate R134a system 18-1830-15
Leak testing 18-1830-16
R134a refrigerant operation 18-1830-6
Recover R134a system 18-1830-14
Recovery/recycling and charging R134a 18-1830-13
Refrigerant handling 18-1830-4
Refrigerant R134a caution 18-1830-5
Air ducts
Disassemble and assemble 18-1830-25
Air intake system
Leakage test 05-0520-3
Air seat and suspension
Disassemble and assemble 18-1821-11
Alternator
Remove and install 16-1672-2
Antenna
Remove and install 20-2001-1
Arm rest
Disassemble and assemble 18-1821-2
Auxiliary flow control harness and components
Remove and install 16-1674-19
Auxiliary flow section
Disassemble and assemble 33-3360-19
Auxiliary section, loader
Disassemble and assemble 31-3160-24
Axle
Oil specification 00-0004-5
Axle, front non-powered
Remove and install 02-0230-4
Axle, front, MFWD
Remove and install 02-0240-2
Axle, MFWD
Adjust toe-in 02-0240-4
Axle, non-powered front toe-in
Adjust 02-0230-5

Page

Axle, rear
Assemble 02-0250-32
Disassemble 02-0250-6
Gear tooth contact pattern, check 02-0250-52
Remove and install 02-0250-5

B

Back-up alarm
Remove and install 20-2004-2
Volume adjustment 20-2004-2
Backhoe anti-cav. valve
Cross section 33-3360-12
Backhoe auxiliary flow section
Disassemble and assemble 33-3360-19
Backhoe auxiliary relief valve
Disassemble and assemble 33-3360-16
Backhoe boom
Remove and install 33-3340-4
Backhoe boom cylinder
Cross section 33-3360-46
Remove and install 33-3360-39
Backhoe boom section
Disassemble and assemble 33-3360-23
Backhoe boom swing lock arms
Remove and install 33-3315-4
Backhoe boom swing lock control
Remove and install lever and linkage 33-3315-2
Backhoe boom swing lock locking pin
Remove and install 33-3315-4
Backhoe bucket
Remove and install 33-3302-1
Backhoe bucket cylinder
Cross section 33-3360-43
Remove and install 33-3360-37
Backhoe bucket section
Disassemble and assemble 33-3360-25
Backhoe circuit relief valve
Cross section boom raise 33-3360-13
Cross section bucket dump 33-3360-13
Backhoe circuit relief valves
Disassemble and assemble 33-3360-15
Backhoe control valve inlet section
Disassemble and assemble 33-3360-17
Backhoe control valve relief valves
Remove and install 33-3360-11
Backhoe control valve rings and seals
Replace 33-3360-30
Backhoe control valve section
Disassemble and assemble 33-3360-9
Backhoe crowd cylinder
Remove and install 33-3360-38
Backhoe crowd section
Disassemble and assemble 33-3360-27
Backhoe extendible dipperstick valve
Disassemble and assemble 33-3360-29
Backhoe stabilizer cylinder
Assemble 33-3360-60

Continued on next page

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

Technical Information Feedback Form

We need your help to continually improve our technical publications. Please copy this page and FAX or mail your comments, ideas and improvements.

SEND TO: John Deere Dubuque Works
18600 South John Deere Road
Attn: Publications, Dept. 324
Dubuque, IA 52004-0538
USA

FAX NUMBER: 1-563-589-5800 (USA)

Publication Number:_____

Page Number:_____

Ideas, Comments:_____

Name: _____

Phone: _____

Email Address: _____

THANK YOU!

TX,TM,FAX -19-03JUL01-1/1

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

PREVIEW - YOUFIXTHIS.COM

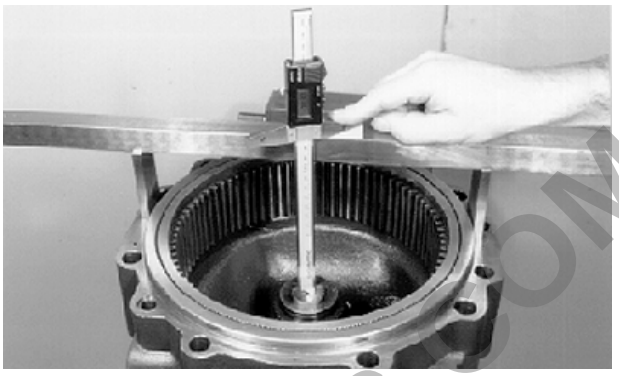
Download full manual at youfixthis.com

48. If stop was not removed, go to step 55. Use the followings steps to determine the number of shims required behind the (brass) stop (if removed) on the end of the sun gear shaft:

NOTE: If necessary, old stop can be removed by drilling and tapping stop. If removed, a new stop must be installed during assembly.

49. Measure and record dimension I.

EXAMPLE OF DIMENSION (I)	
Flange mounting surface-to-shoulder at bottom of axle stop	78.40 mm (3.086 in.)



T106592 —UN—17JAN97

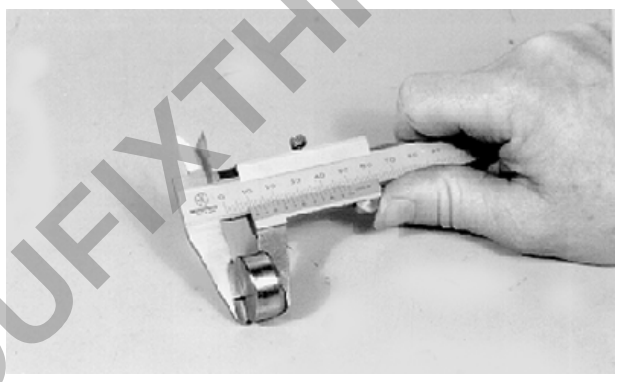
WS68074,00036FC -19-14JUL10-35/49

50. Measure and record height of new stop.

EXAMPLE OF DIMENSION (II)	
Height of stop	11.00 mm (0.433 in.)

51. Record differential dimension.

EXAMPLE F1	
Dimension I	78.40 mm (3.086 in.)
Minus dimension II	— 11.00 mm (0.433 in.)
Equals differential dimension	= 67.40 mm (2.653 in.)



T106593 —UN—17JAN97

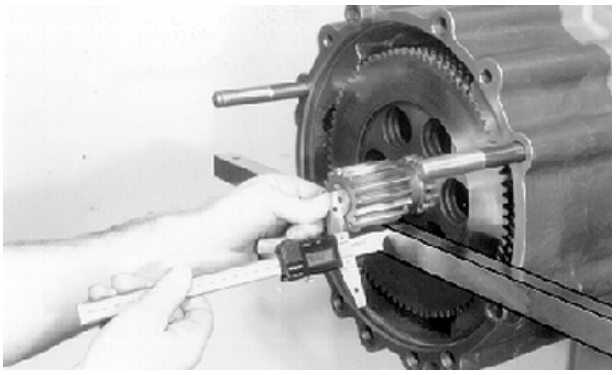
WS68074,00036FC -19-14JUL10-36/49

52. Measure and record dimension III.

EXAMPLE OF DIMENSION (III)	
Sun shaft-to-brake housing flange distance	63.90 (2.516 in.)

53. Record installation dimension.

EXAMPLE F2	
Dimension III	63.90 mm (2.516 in.)
Plus end play of sun gear shaft	+ 1.00 mm (0.039 in.)
Equals installation dimension	= 64.90 mm (2.555 in.)



T106594 —UN—17JAN97

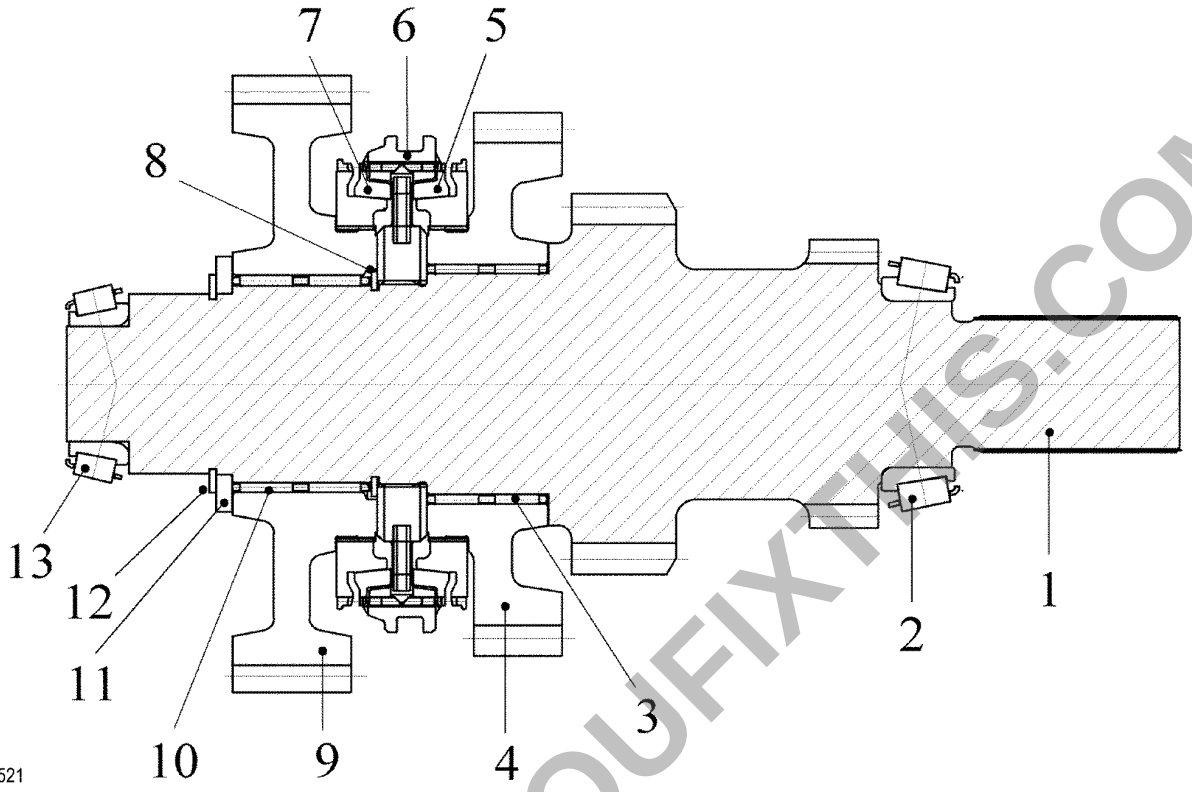
Continued on next page

WS68074,00036FC -19-14JUL10-37/49

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Rear Output Shaft—Cross Section View—Manual Shift



Rear Output Shaft

1— Rear Output Shaft
2— Roller Bearing
3— Needle Bearing
4— Gear (2nd Speed)
5— Synchronizer Ring
6— Collar
7— Synchronizer Ring
8— Snap Ring
9— Gear (1st Speed)
10— Needle Bearing
11— Washer
12— Snap Ring
13— Roller Bearing

Reference this art to identify components when assembling an intermediate shaft.

CED,OUO1032,1329 -19-01SEP06-1/1

PREVIEW - YOUFIXTHIS.COM

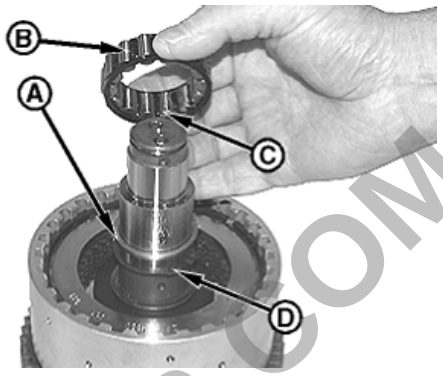
Download full manual at youfixthis.com

23. Install spacer (A) so it rests on snap ring (D).
24. Install bearing (B) making sure bearing is installed with the bottom of rollers (C) on spacer (A).

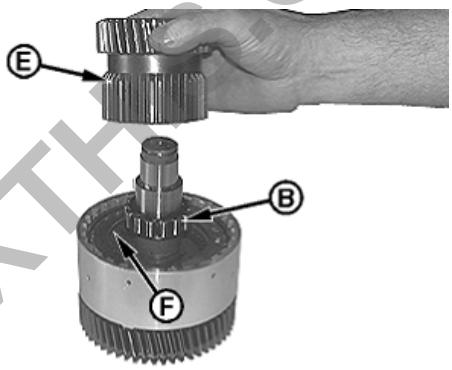
IMPORTANT: If gear hub is not fully engaged into plates and disks, damage to disks will result when installing outer bearings.

25. Install gear hub (E) over bearing (B) by engaging all plates and disks (F). Gear hub is fully engaged into plates and disks when distance (I) (bottom of gear to top of drum) is 7 mm for first speed clutch, 15 mm for second speed clutch, and 19 mm for high range forward clutch.
26. Install upper bearing (G) into gear hub (E) and spacer (H) on top of bearing.

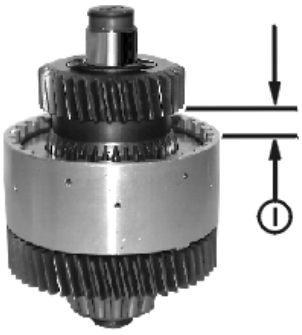
A—Spacer
B—Bearing
C—Rollers
D—Snap Ring
E—Gear Hub
F—Plates and Disks
G—Upper Bearing
H—Spacer
I— Distance from Gear Hub to Drum



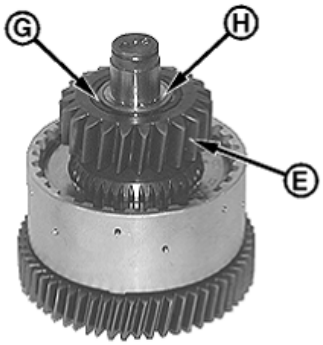
T117293B —UN—24SEP98



T117294B —UN—24SEP98



T118307B —UN—12NOV98



T117295B —UN—24SEP98

Continued on next page
WS68074,00036FF -19-14JUL10-11/12

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

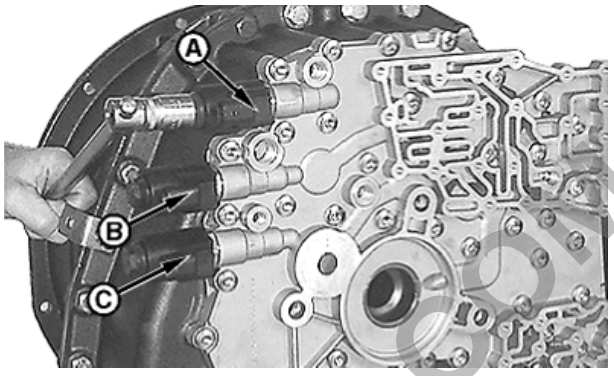
Remove and Install Manifold Plate and Solenoids—Powershift

NOTE: Transmission shown removed for illustration purposes.

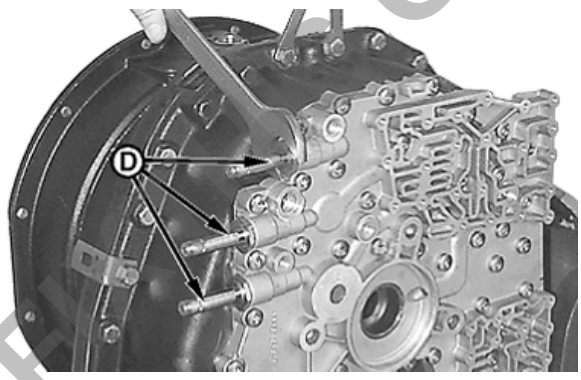
If removing solenoid with transmission installed on machine, remove transmission shift lever and floor plate to access the solenoids.

1. Remove charge pump, control valve, and shift valve. (See procedures in this group.)
2. Loosen screw plugs of solenoid valves (A—C) and pull off solenoid coils with O-rings.
3. Remove valve bodies and O-rings (D).
4. Remove TORX ® head screws (E) and remove manifold plate (F).

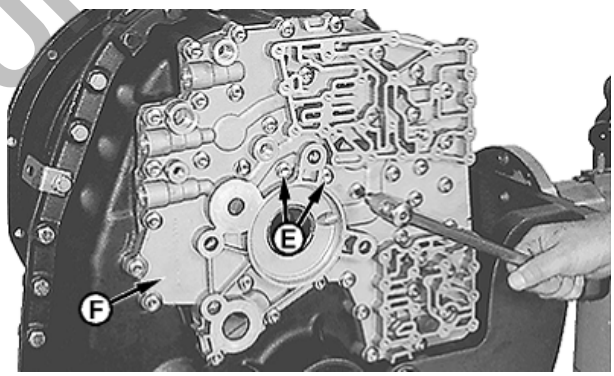
A—Differential Lock Solenoid
B—Park Brake Solenoid
C—MFWD Solenoid (if equipped)
D—Valve Body (3 used)
E—TORX® Screw (43 used)
F—Manifold Plate



T117673 —UN—12OCT98



T117674 —UN—12OCT98



T117676 —UN—12OCT98

TORX is a registered trademark of Camcar/Textron

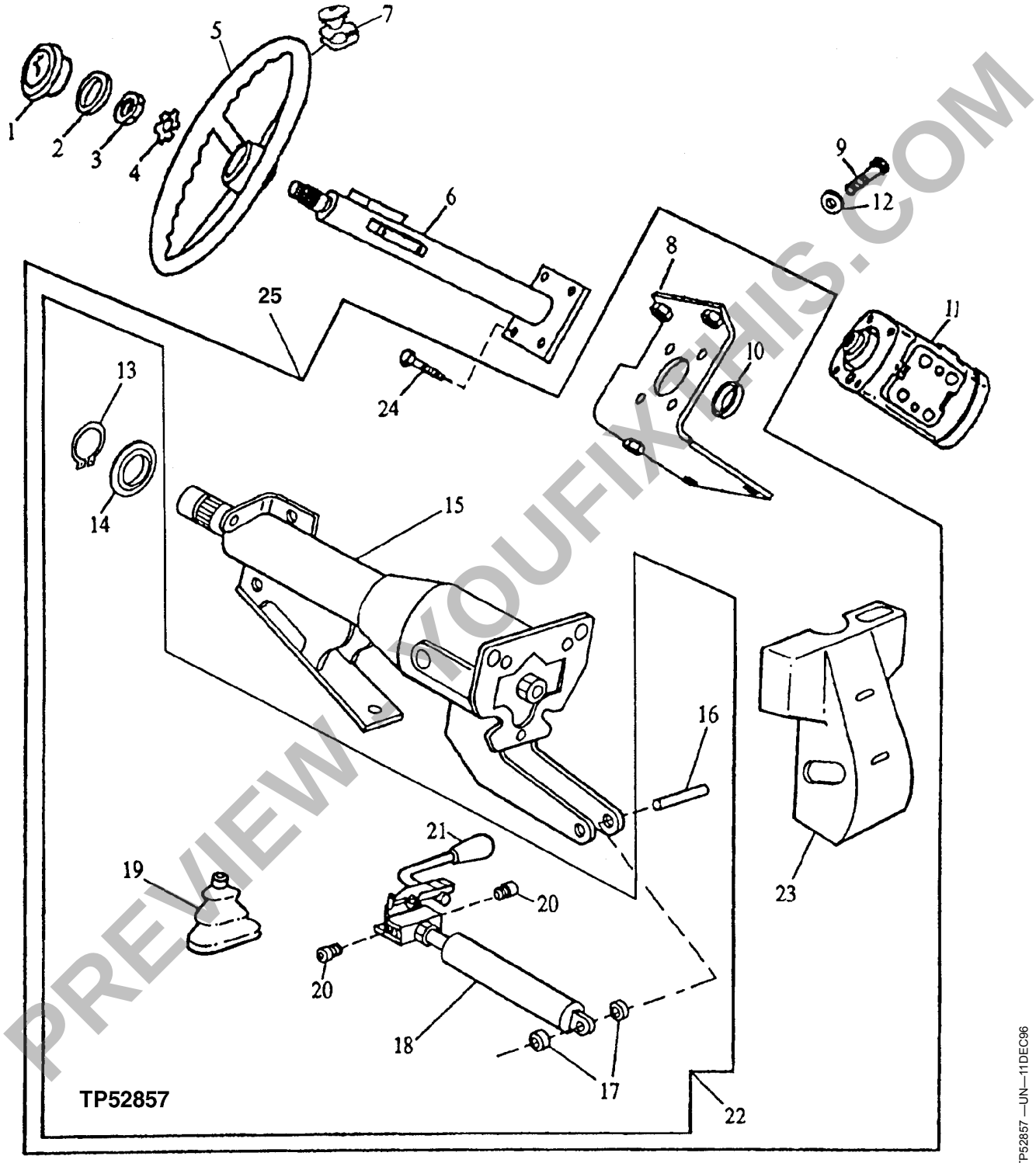
Continued on next page

CED,OUTX782,536 -19-21OCT99-1/3

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Disassemble and Assemble Tilt Steering Wheel and Column



TP52857 —UN—11DEC96

Continued on next page

TX,09,QQ9689 -19-14JAN97-1/2

PREVIEW - YOUFIXTHIS.COM
Download full manual at youfixthis.com

Bleeding Brakes

John Deere Brake Valve (Two hoses connected to top of valve)(S.N.—887378)

CAUTION: Do not operate machine if pedal travel exceeds 133 mm (5.25 in.) while applying 267 N (60 lb-force). Operating machine with excessive brake travel could cause brakes not to stop machine on first application.

NOTE: Air will "gravity bleed" from brake system through brake valve without use of bleed screws. Brake lines must be inclined toward brake valve.

Low ambient temperature or aeration of oil will slow bleed process.

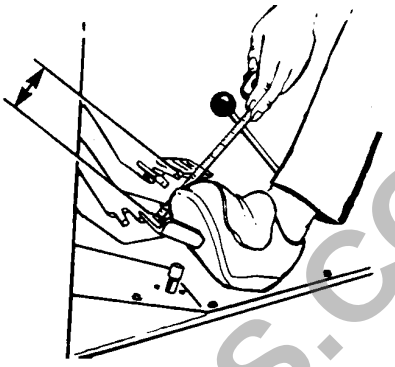
1. Engage park brake. Lock brake pedals together to bleed both brakes.
2. Run engine at high speed and cycle backhoe bucket cylinder to fill brake reservoir.
3. Release brake pedals completely and wait a minimum of 10 seconds.
4. Repeat steps 2 and 3 until a firm pedal is obtained with pedal travel within specification distance of 133 mm (5.25 in.) or less. Brakes will continue to self-bleed as you operate machine and pedal firmness should improve.
5. If unable to obtain firm brake pedal, inspect lines and connections for leakage. If no external leaks, test axle. Do Service Brake Leakage Test. (See procedure in Section 9020, Group 25 in Operation and Test Manual.)

MICO Brake Valve (Five hoses connected to top of valve)(S.N. 887379—)

All fittings must be inspected for leaks and tightened if leaks occur. To manually bleed the brakes, go to “Method One”. If you have a vacuum device, go to “Method Two”.

Air will "gravity bleed" from brake system through brake valve without use of bleed screws. Brake lines must be inclined toward brake valve.

Low ambient temperature or aeration of oil will slow bleed process.



Method One:

1. Engage park brake. Run engine at fast idle. Dump and curl backhoe bucket five times.
2. Run engine at low idle. Pump left-hand brake pedal five times, allowing two seconds between each pump for air to escape.
3. Repeat steps 1 and 2 until the left-hand pedal is solid.
4. Pump right-hand pedal until pedal is solid, then both pedals together until pedals are solid.
5. Check pedal travel.

Specification	
Dual Brake Pedal Travel—Max. Distance	95 mm (3.75 in.)
Single Brake Pedal Travel—Max. Distance	114 mm (4.5 in.)

Method Two:

1. Engage park brake. Connect a vacuum to breather port on hydraulic reservoir. After 10 minutes, disconnect air pressure.
2. Leave hose from breather port to vacuum device connected until brake circuit is filled with oil. Both pedals should become solid.
3. Check pedal travel (use specifications from Method One).

CED,TX03768,2725 -19-11MAY00-1/1

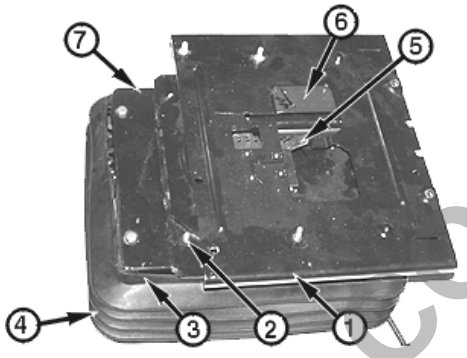
PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

3. While holding latch (5) down, move plate (1) to rearmost position.
4. Remove the two front nuts and washers (2). Push latch (6) and rotate plate (1) to access and remove the two rear nuts and washers (2).
5. Remove the swivel/slide assembly.
6. While holding latch (5) down, move plate (1) forward and remove from swivel/slide assembly.
7. Remove 32 plastic fasteners (3) to remove boot (4).

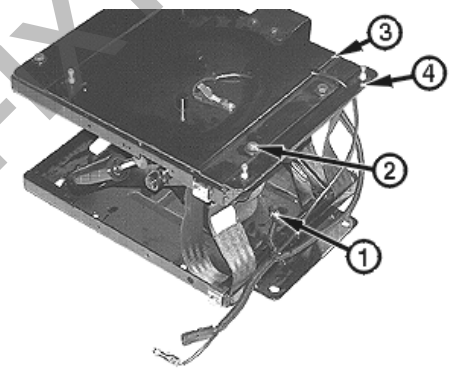


T120002B —UN—14FEB99

1— Slide Plate
2— Nuts and Washers (4 used)
3— Plastic Fasteners (Plugs) (32 used)
4— Boot
5— Slide Latch
6— Swivel Latch
7— Swivel-Stop Plate

TX, -19-02NOV99-2/11

8. Remove wiring connector (1).
9. Remove cap screws (2) and swivel stop plate (3).



T120004B —UN—14FEB99

1— Air Compressor Wiring Connector
2— Cap Screws (4 used)
3— Swivel-Stop Plate
4— Upper Suspension Tray

Continued on next page

TX, -19-02NOV99-3/11

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

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. Turn battery disconnect switch off (if equipped) or disconnect battery ground strap.

4. Drain hydraulic reservoir. Approximate capacity is 37 L (39 qt).
5. Disconnect and cap lines (A, B and D). Also disconnect suction hose and cap.

CAUTION: Approximate weight of hydraulic pump is 37 kg (82 lb)

Specification	
Hydraulic Pump—Weight	37 kg (82 lb) Approximate

6. Remove hydraulic pump mounting cap screws and remove pump (C).
7. Remove hydraulic pump with hoist and strap.
8. Repair and replace parts as necessary.



9. Replace O-ring on pump mounting surface.
10. If load sense-to-pump 90° elbow was removed on the bottom of pump, tighten elbow to specifications.

Specification	
Load Sense-to-Pump 90° Elbow on Bottom of Pump—Torque	34 N·m (25 lb-ft)

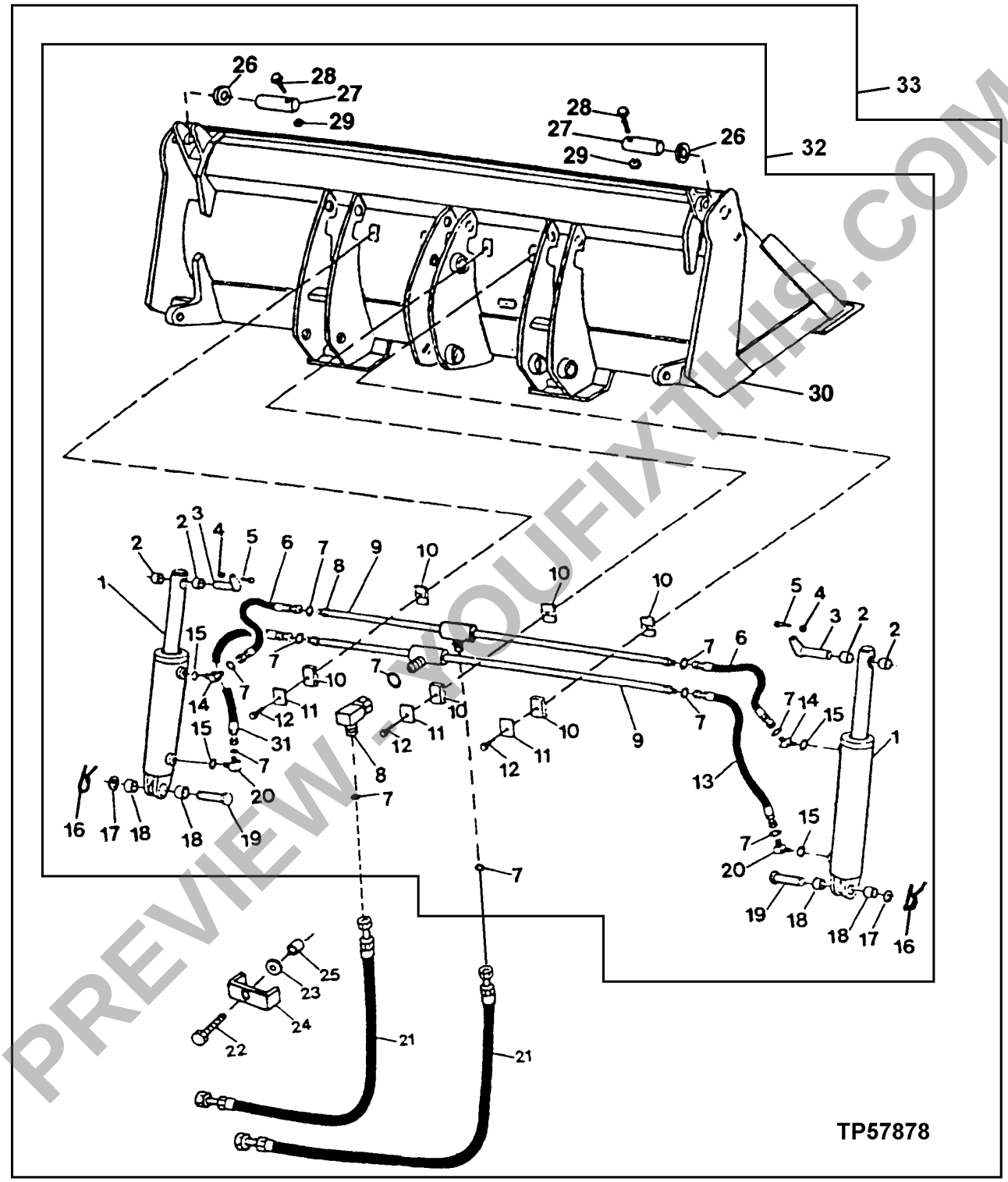
11. Install pump with cap screws.
12. Fill pump body with hydraulic oil to assure lubrication for start-up.
13. Connect hoses and fittings.
14. Fill hydraulic reservoir.
15. Switch battery disconnect on (if equipped) or install battery ground cable.

TX,21,RR7823 -19-02DEC99-2/2

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Disassemble and Assemble Multi-Purpose Bucket and Lines



TP57878 —UN—19JUN98

Continued on next page

CED,TX03399,5610 -19-02DEC99-1/2

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Ride Control Accumulator—Discharge Procedure

CAUTION: Prevent possible injury from unexpected boom or bucket movement when equipped with ride control. Ride control accumulator energy must be discharged when working on hydraulic components. Turn key switch to ON position and move the loader control lever into the float position.

1. Position loader bucket approximately 30 cm (1 ft) off the ground.
2. Make sure area around bucket is clear and move ride control switch to OFF position.
3. Turn key switch to ON position, but do not start engine. Move ride control switch to ON position.
4. Move loader control lever to float position. Bucket should lower to ground.

WS68074,00036F8 -19-14JUL10-1/1

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

7. Clean threads of spool and spool end screw (G) with cure primer. Install parts (E, H and I) on spool. Apply thread lock and sealer (high strength) on spool end screw (G) and spool tang. Tighten to specification.

Specification

Backhoe Swing, Boom, Bucket, Crowd and Extendible Section Spool End Screw—Torque..... 9.5 N·m (84 lb-in.)

8. Install end cap (D) and tighten screws (C) to specification.

Specification

Backhoe Swing, Boom, Bucket, Crowd and Extendible Section End Cap Screws—Torque..... 9.5 N·m (84 lb-in.)

9. Install and tighten screws (L) to specification.

Specification

Backhoe Swing, Boom, Bucket, Crowd and Extendible Section Seal Plate Screws—Torque..... 5.5 N·m (48 lb-in.)

10. Install parts (N—R) and tighten plug (R) to specification.

Specification

Backhoe Boom Crowd and Extendible Section Plug—Torque..... 65 N·m (48 lb-ft)

TX,3360,RR7683 -19-02NOV99-2/2

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

PREVIEW ONLY

You're viewing 25 of 792 pages

The full manual includes:

- All 792 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

John Deere 410E Technical Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual