Table of contents

FOREWORD
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 Wheels And Fastenings
Group 0120 - Non-Powered Wheels And Fastenings
Section 02 - AXLES AND SUSPENSION SYSTEMS
Group 0200 - Removal And Installation
Group 0225 - Input Drive Shafts And U-Joints
Group 0230 - Non-Powered Wheel Axles
Group 0240 - Powered Wheel Axle (MFWD)
Group 0250 - Axles, Bearings And Reduction Gears
Group 0260 - Hydraulic System
Group 0299 - Dealer Fabricated Tools
Section 03 - TRANSMISSION
Group 0300 - Removal And Installation
Group 0315 - Controls Linkage
Group 0325 - Input Drive Shafts And U-Joints
Group 0350 - Gears, Shafts, Bearings And Power Shift Clutch
Group 0360 - Hydraulic System
Group 0399 - Dealer Fabricated Tools
Section 04 - ENGINE
Group 0400 - Removal And Installation
Section 05 - ENGINE AUXILIARY SYSTEMS
Group 0505 - Cold Weather Starting Aids
Group 0510 - Engine Cooling System
Group 0515 - Speed Controls
Group 0520 - Intake System
Group 0560 - External Fuel Supply Systems
Section 06 - TORQUE CONVERTER
Group 0651 - Turbine, Gears And Shafts
Section 09 - STEERING SYSTEM
Group 0960 - Hydraulic System
Section 10 - SERVICE BRAKES
Group 1011 - Active Elements
Group 1060 - Hydraulic System
Group 1099 - Dealer Fabricated Tools
Section 11 - PARK BRAKE
Group 1111 - Active Elements
Group 1160 - Hydraulic System
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

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

410D Backhoe Loader With Standard Dipperstick (SN-801199)

Dipperstick Specifications

	Standard Dipperstick	1.22 m (4 ft) Extendible Dipperstick	
[Key: Backhoe specifications are with 610 mm x 0.21 m{sup}3{/sup} (24 in. x 7.5 ft{sup}3{/sup}) standard bucket. Loader specifications are with 1.5 m{sup}3{/sup} (1.5 yd{sup}3{/sup}) bucket.]		Retracted	Extended
A-Loading height, truck loading position	3.61 m (11 ft 10 in.)	3.51 m (11 ft 6 in.)	4.24 m (13 ft 11 in.)
B-Reach from center of swing mast	5.61 m (18 ft 5 in.)	5.42 m (17 ft 9 in.)	6.53 m (21 ft 5 in.)
C-Reach from center of rear axle	6.76 m (22 ft 2 in.)	6.55 m (21 ft 6 in.)	7.67 m (25 ft 2 in.)
D-Digging depth (SAE):			
(1) 610 mm (2 ft.) flat bottom	4.65 m (15 ft 3 in.)	4.42 m (14 ft 6 in.)	5.61 m (18 ft 5 in.)
(2) 2440 mm (8 ft.) flat bottom	4.32 m (14 ft 2 in.)	4.09 m (13 ft 5 in.)	5.34 m (17 ft 6 in.)
E-Maximum digging depth	4.67 m (15 ft 4 in.)	4.46 m (14 ft 8 in.)	5.62 m (18 ft 5 in.)
F-Ground clearance, minimum	305 mm (12 in.)	305 mm (12 in.)	305 mm (12 in.)
G-Bucket rotation	160° and 180°	160° and 180°	160° and 180°
H-Transport height	3.49 m (11 ft 5 in.)	3.56 m (11 ft 8 in.)	3.56 m (11 ft 8 in.)
I-Overall length, transport	6.99 m (23 ft 5 in.)	7.01 m (23 ft)	7.01 m (23 ft)
J-Stabilizer width-transport	2.34 m (7 ft 8 in.)	2.34 m (7 ft 8 in.)	2.34 m (7 ft 8 in.)
K-Stabilizer spread-operating	3 m (9 ft 10 in.)	3 m (9 ft 10 in.)	3 m (9 ft 10 in.)
L-Width over tires	2.15 m (7 ft 1 in.)	2.16 m (7 ft 1 in.)	2.16 m (7 ft 1 in.)
M-Wheelbase	2100 mm (83 in.)		
N-Dig below ground-bucket level	100 mm (4 in.)	100 mm (4 in.)	100 mm (4 in.)
O-Rollback at ground level	40°	40°	40°
P-Dump clearance, bucket at 40°	2.74 m (9 ft)	2.74 m (9 ft)	2.74 m (9 ft)
Q-Maximum height to bucket hinge pin	3.35 m (11 ft)	3.35 m (11 ft)	3.35 m (11 ft)
R-Maximum bucket dump angle	45°		
S-Reach at full height, bucket at 40°	711 mm (28 in.)	711 mm (28 in.)	711 mm (28 in.)
Backhoe Performance Ratings:			
Digging force, bucket cylinder (power dig position)	52 kN (11 700 lb)	52 kN (11 700 lb)	52 kN (11 700 lb)
Digging force, crowd cylinder	28 kN (6300 lb)	30.3 kN (6800 lb)	20.50 kN (4600 lb)
Swing arc	180°	180°	180°
Operator control	Two levers	Right foot treadle	Right foot treadle
Bucket positions	9° and 18° rollback	8° and 17° rollback	12° and 22° rollback
Stabilizer angle rearward	14.5°	14.5°	14.5°
Lifting capacity, maximum boom @ 65°	1980 kg (4400 lb)	2087 kg (4600 lb)	1310 kg (2900 lb)
Leveling angle	14°	14°	14°

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

410D And 510D Backhoe Loader Drain And Refill Capacities

Drain And Refill Capacities

	Metric	U.S.
Engine coolant	16 L	17 qt
Engine oil (including filter)	8.5 L	9 qt
Torque converter and reverser	13 L	14 qt
Fuel tank	129 L	34 gal
Hydraulic reservoir:		
410D (SN 796855-)		
510D (SN 796891-)	41.5 L	11 gal
Transaxle:		
410D (SN -796854)		
510D (SN -796890)		
Without MFWD	23 L	24 qt
With MFWD	24 L	25 qt
410D (SN 796855-801199)		
510D (SN 796891-801199)		
Without MFWD	18 L	19 qt
With MFWD	19 L	20 qt
410D, 510D (SN 801200-)		
Without MFWD	21 L	22 qt
With MFWD	24 L	25 qt
Front axle	6.5 L	7 qt
Front wheel planetary (MFWD) (per side)	1 L	1 qt

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Group 0003 - Torque Values

Hardware Torque Specifications

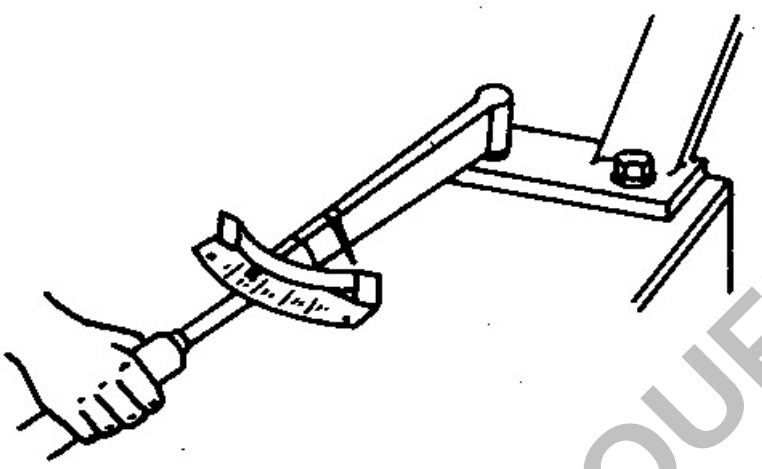
Check cap screws and nuts to be sure they are tight. If hardware is loose, tighten to torque shown on the following charts unless a special torque is specified.

Checking Wheel Fastener Torque

Tighten wheel cap screws and fasteners.

Item	Measurement	Specification
410D/510D Wheel Fastener Torque Values		
Front Standard Axle	Torque	136 ± 20 -27 N·m (100 ± 15 -20 lb-ft)
Front MFWD Axle	Torque	300 ± 110 -115 N·m (221 ± 81 -29 lb-ft)
Rear Axle	Torque	575 ± 170 -115 N·m (425 ± 125 -85 lb-ft)

ROPS Torque Specifications



ROPS Mounting Cap Screws

CAUTION:

Make certain all parts are reinstalled correctly if the roll-over protective structure (ROPS) is loosened or removed for any reason. Tighten mounting bolts to proper torque.

The protection offered by ROPS will be impaired if ROPS is subjected to structural damage, is involved in an overturn incident, or is in any way altered. A damaged ROPS should be replaced, not reused.

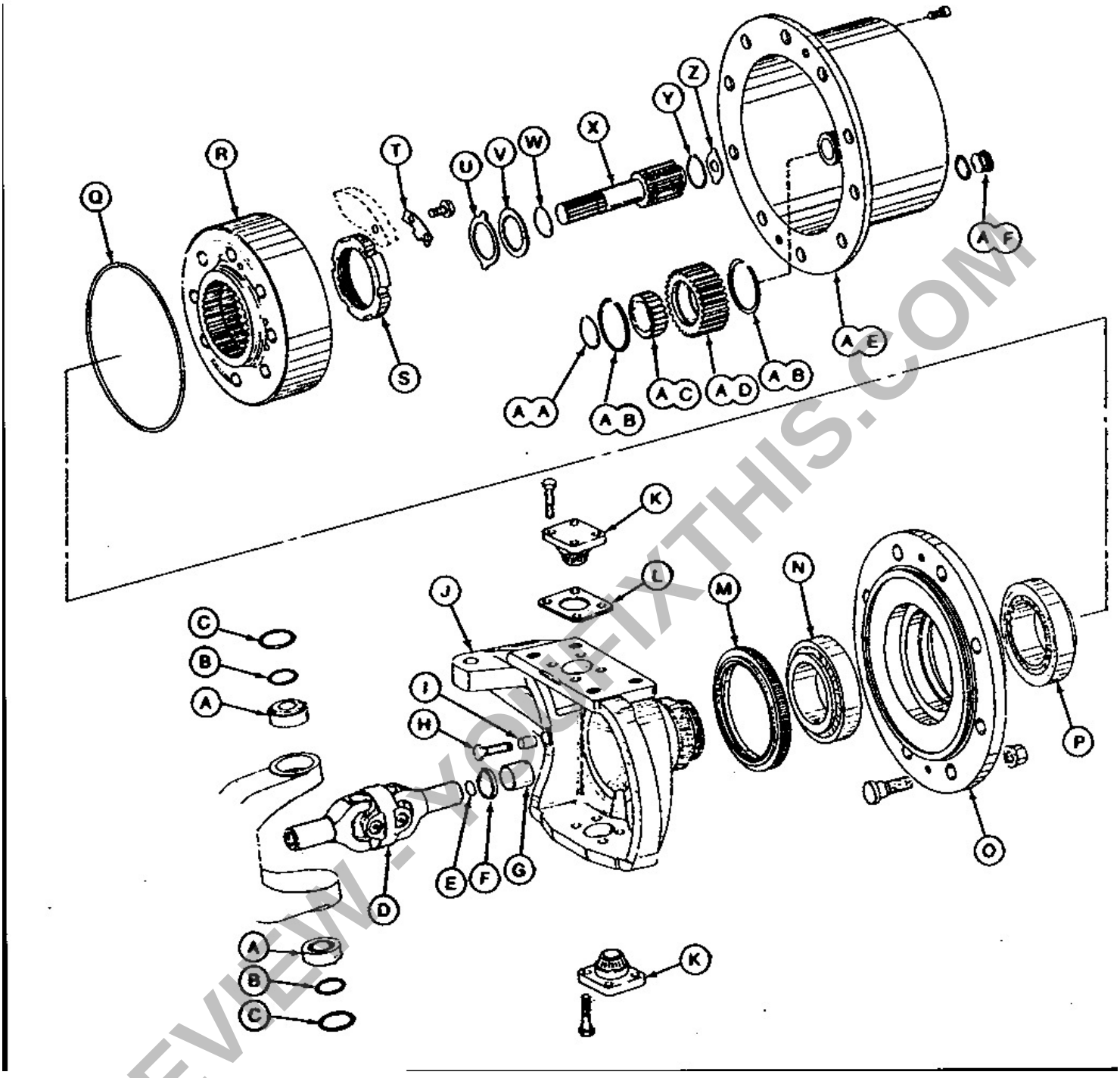
When installation of equipment on a machine necessitates loosening or removing ROPS, mounting bolts must be tightened to 400 ± 64 N·m (295 ± 47 lb-ft).

Item	Measurement	Specification
ROPS Mounting Bolts	Torque	400 ± 64 N·m (295 ± 47 lb-ft)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Knuckle Housing And Wheel Hub With Planetary Drive Exploded View



PREVIEW - YOUFIXTHIS.COM

Serial No. -796033

LEGEND:

A	Tapered Roller Bearing
B	O-Ring
C	O-Ring
D	Universal Joint
E	Snap Ring
F	Seal Ring
G	Bushing
H	Steering Stop Screw
I	Steering Spacer
J	Knuckle Housing
K	King Pin
L	Shim
M	Oil Seal
N	Tapered Roller Bearing
O	Carrier Hub
P	Tapered Roller Bearing

Download full manual at youfixthis.com

Specifications

Item	Measurement	Specification
Wheel-To-Axle Cap Screws		
Front	Torque	300 +100 -40 N·m (221 +81 -29 lb-ft)
Rear	Torque	575 +170 -115 N·m (425 +125 -85 lb-ft)
Rear Wheel Assembly		
Without Fluid	Approximate Weight{ftnoteref sgmlid="TXOUOE0031996072634"}{ftnote}Add 4.6 kg (10.2 lb) to wheel weight for every 1.6 kg (3.5 lb) calcium chloride and 3.8 L (1 gal) water that is added to tire.{/ftnote}{/ftnoteref}	141 kg (310 lb)
Front Wheel Assembly		
Without Fluid	Approximate Weight{ftnoteref sgmlid="TXOUOE0031996072634"}{ftnote}Add 4.6 kg (10.2 lb) to wheel weight for every 1.6 kg (3.5 lb) calcium chloride and 3.8 L (1 gal) water that is added to tire.{/ftnote}{/ftnoteref}	41 kg (90 lb)
Rear Wheel (410D)		
16.9 L x 24 8 PR R4	Operating Pressure	221 ± 13 kPa (2.2 ± 0.13 bar) (32 ± 2 psi)
17.5 L x 24 10 PR R4	Operating Pressure	221 ± 13 kPa (2.2 ± 0.13 bar) (32 ± 2 psi)
19.5 L x 24 8 PR R4	Operating Pressure	165 ± 13 kPa (1.65 ± 0.13 bar) (24 ± 2 psi)
19.5 L x 24 10 PR R4	Operating Pressure	193 ± 13 kPa (1.9 ± 0.13 bar) (28 ± 2 psi)
19.5 L x 24 12 PR R4	Operating Pressure	235 ± 13 kPa (2.35 ± 0.13 bar) (34 ± 2 psi)
21 L x 24 8 PR R4	Operating Pressure	179 ± 13 kPa (1.8 ± 0.13 bar) (26 ± 2 psi)
21 L x 24 10 PR R4	Operating Pressure	179 ± 13 kPa (1.8 ± 0.13 bar) (26 ± 2 psi)
18.4 x 28 12 PR R4	Operating Pressure	250 ± 13 kPa (2.5 ± 0.13 bar) (36 ± 2 psi)
Rear Wheel (510D)		
19.5 L x 24 10 PR R4	Operating Pressure	193 ± 13 kPa (1.9 ± 0.13 bar) (28 ± 2 psi)
19.5 L x 24 12 PR R4	Operating Pressure	193 ± 13 kPa (1.9 ± 0.13 bar) (28 ± 2 psi)
21 L x 24 8 PR R4	Operating Pressure	179 ± 13 kPa (1.8 ± 0.13 bar) (26 ± 2 psi)
21 L x 24 10 PR R4	Operating Pressure	179 ± 13 kPa (1.8 ± 0.13 bar) (26 ± 2 psi)
18.4 x 28 12 PR R4	Operating Pressure	250 ± 13 kPa (2.5 ± 0.13 bar) (36 ± 2 psi)
Front Wheel (410D)		
12 x 16.5 8 PR NHS	Operating Pressure	414 ± 13 kPa (4.1 ± 0.13 bar) (60 ± 2 psi)
12 x 16.5 8 PR NHS	Ballast Fluid Capacity	57 L (15 gal)
12.5 L x 15 8 PR I1	Operating Pressure	276 ± 13 kPa (2.8 ± 0.13 bar) (40 ± 2 psi)
14 x 17.5 8 PR NHS	Operating Pressure	276 ± 13 kPa (2.8 ± 0.13 bar) (40 ± 2 psi)
	Ballast Fluid Capacity	79.5 L (21 gal)
Front Wheel (510D)		
12 x 16.5 8 PR NHS	Operating Pressure	414 ± 13 kPa (4.1 ± 0.13 bar) (60 ± 2 psi)
14 x 17.5 8 PR NHS	Operating Pressure	276 ± 13 kPa (2.8 ± 0.13 bar) (40 ± 2 psi)

Remove And Install Rear Wheel Assembly

CAUTION:

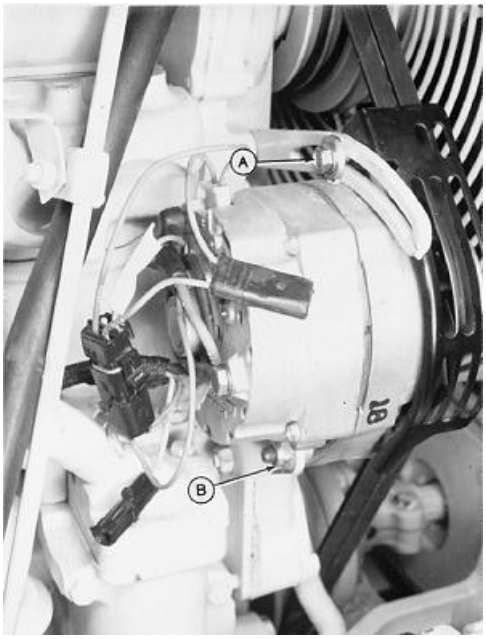
Rear wheel weighs approximately 141 kg (310 lb).

Item	Measurement	Specification
Rear Wheel	Approximate Weight	141 kg (310 lb)

[1] -

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com



Alternator Mounting Cap Screws And Nut

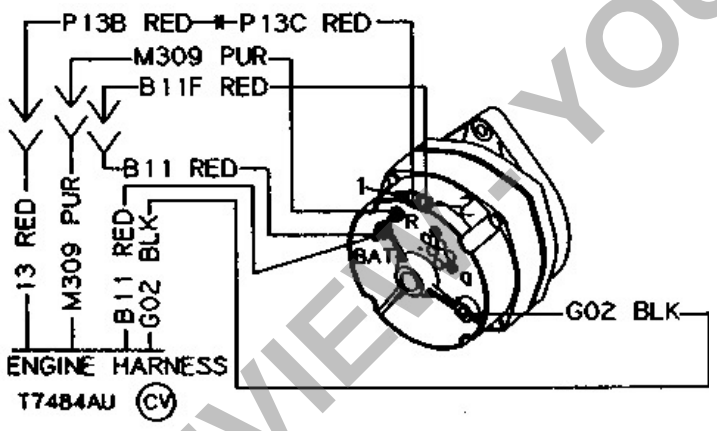
Loosen upper mounting cap screw (A) to release tension on belts and remove belts from alternator. Remove upper mounting cap screw and lower mounting nut (B) to remove alternator.

[6] - Make repairs as necessary. (See procedure in CTM77.)

[7] - Install alternator and belts.

[8] - Install and tighten cap screw and nut. Install lower cap screw so head is on the side of bracket toward fan belts.

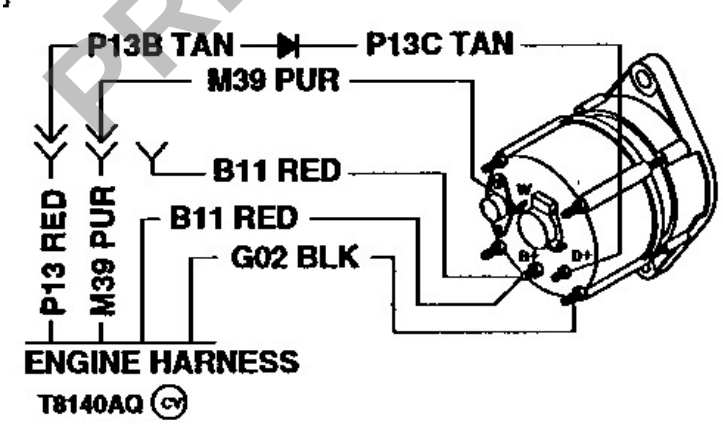
[9] -



LEGEND:

A 410D/510D (Serial No. -778740)
B 410D/510D (Serial No. 778741-787551)
C 410D (Serial No. 787552-796854) 510D (Serial No. 787552-796890)
D 410D (Serial No. 796855-) 510D (Serial No. 796891-)

Harness Connection A

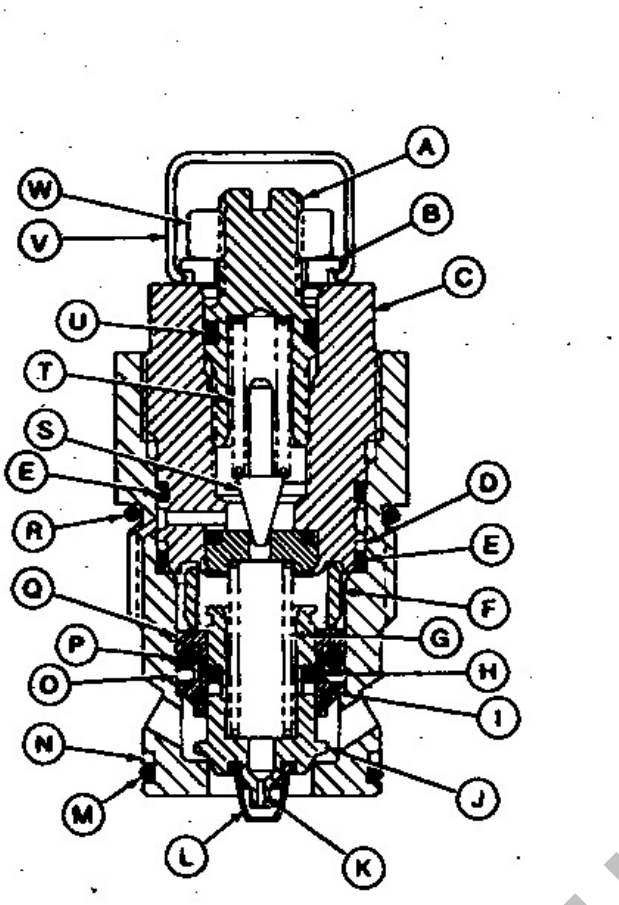


Harness Connection C

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Disassemble And Assemble Circuit Relief Valve (SN -801199)



LEGEND:

A	Adjusting Screw
B	Washer
C	Pilot Body
D	Backup Ring
E	O-Ring (2 used)
F	Spacer
G	Spring
H	O-Ring
I	Backup Ring
J	Relief Poppet
K	Orifice
L	Screen
M	O-Ring
N	Backup Ring
O	Backup Ring
P	O-Ring
Q	Piston
R	O-Ring
S	Pilot Poppet
T	Spring
U	O-Ring
V	Cap
W	Nut

Circuit Relief Valve Cross-Section

Tighten assembly to 24-30 N·m (18-22 lb-ft).

Item	Measurement	Specification
Circuit Relief Valve	Torque	24-30 N·m (18-22 lb-ft)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

PREVIEW - YOUFIXTHIS.COM

Additional Metric Cap Screw Torque Values



T6873AA

T-Bolt



T6873AB

H-Bolt



T6873AC

M-Bolt

CAUTION:

Use only metric tools on metric hardware. Other tools may not fit properly. They may slip and cause injury.

Check tightness of cap screws periodically. Torque values listed are for general use only. Do not use these values if a different torque value or tightening procedure is listed for a specific application.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used, these should only be tightened to the strength of the original.

Make sure fastener threads are clean and you properly start thread engagement. This will prevent them from failing when tightening.

Tighten cap screws having lock nuts to approximately 50 percent of amount shown in chart.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

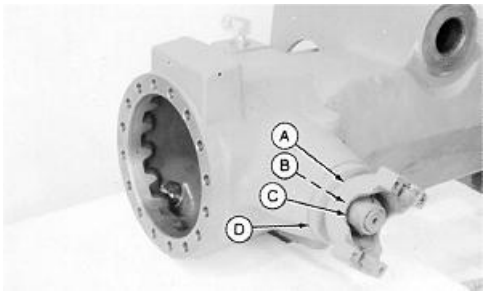
Specifications

Item	Measurement	Specification
MFWD Axle-APL-745Front Wheel Toe-In	Front Tread Width Difference	6 ± 3 mm (0.24 ± 0.12 in.)
Drive Shaft U-Joint Strap-to-Axle Yoke Cap Screw	Torque	47 N·m (35 lb-ft)
King PinCap Screws	Torque	190 N·m (140 lb-ft)
Bearings	Rolling Drag Torque New Bearings	21-28 N·m (186-246 lb-in.)
Bearings	Used Bearings	11-14 N·m (96-126 lb-in.)
Carrier Hub Bearings	Rolling Drag Torque new bearings	12-18 N·m (106-159 lb-in.)
Carrier Hub Bearings	used bearings	9-12 N·m (80-106 lb-in.)
Locking Plate Cap Screws	Torque	96 N·m (71 lb-ft)
Planetary Pinion Carrier-to-Hub Cap Screws	Torque	86 N·m (63 lb-ft)
Sun Gear	End Play	0.30-0.60 mm (0.012-0.024 in.)
Differential Spiral Bevel Pinion Shaft	Rolling Drag Torque with new bearings	2-3 N·m (18-27 lb-in.)
Differential Spiral Bevel Pinion Shaft	with used bearings	1.5-2 N·m (13-18 lb-in.)
Bevel Pinion-to-Side Gear	Backlash	0.20-0.30 mm (0.008-0.012 in.)
Spiral Bevel-to-Ring Gear	Backlash	0.20-0.28 mm (0.008-0.011 in.)
Bevel Pinion Case Cap Screws	Torque	150 N·m (111 lb-ft)
Carrier Housing Cap Screws	Torque	230 N·m (170 lb-ft)
MFWD Axle-APL-2035Front Wheel Toe-In	Front Tread Width Difference	6 ± 3 mm (0.24 ± 0.12 in.)
King PinCap Screws	Torque	115 N·m (85 lb-ft)
Bearings	Rolling Drag Torque	18-20 N·m (160-177 lb-in.)
Carrier-to-Hub Cap Screw	Torque	30 N·m (22 lb-ft)
Tie Rod Self-Locking Nut	Torque	165 N·m (120 lb-ft)
DifferentialInput Shaft	Rolling Drag Torque	1-2 N·m (8.8-17.7 lb-in.)
Input Shaft Locking Nut	Torque	450 N·m (330 lb-ft)
Disk Pack	Axial Free Play	0.2 mm (0.008 in.)
Ring Gear-to-Housing Cap Screws	Torque	70 N·m (52 lb-ft)
Ring Gear	Backlash	0.07-0.22 mm (0.003-0.009 in.)
Bearings Preload	Shim Thickness	0.10 mm (0.0039 in.)
Axle Housings Cap Screws	Torque	185 N·m (135 lb-ft)
Axle Housing Plugs	Torque	150 N·m (110 lb-ft)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

[7] -



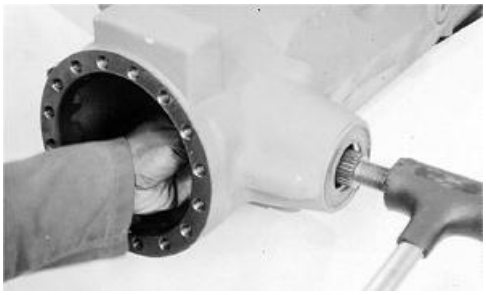
LEGEND:

A	Yoke
B	Washer
C	Nut
D	Dust Shield

Remove Yoke, Washer, Nut, And Dust Shield

Remove self-locking nut (C), washer (B), yoke (A) and dust shield (D).

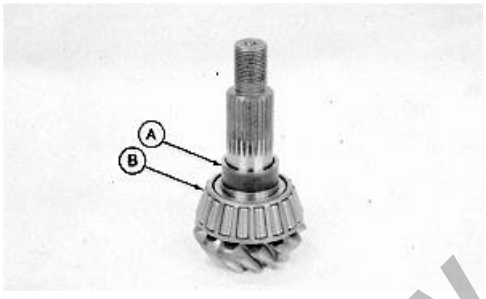
[8] -



Remove Pinion Shaft

Remove pinion shaft using soft faced hammer.

[9] -

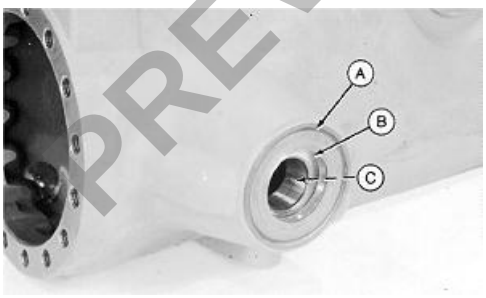


Remove Spacer And Inner Bearing Cone

Remove spacer (A).

[10] - Use a knife edge puller to remove inner bearing cone (B).

[11] -



LEGEND:

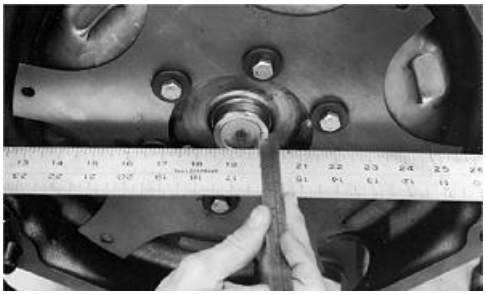
A	Seal
B	Outer Bearing Cone
C	Outer Bearing Cup
D	Inner Bearing Cup
E	Shims (as required)

Remove Seal Outer Bearing Cone/Cup

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Install Reverser With Torque Converter



Distance Measurement

IMPORTANT:

Use care not to push torque converter too far into reverser housing. Damage to transmission input shaft seal may occur.

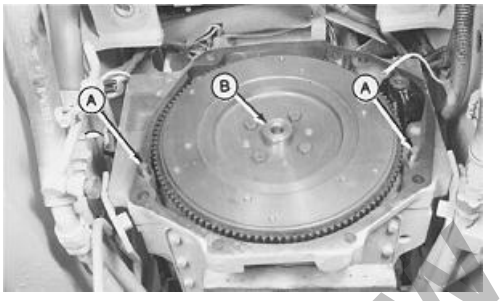
[1] - Apply an equal parts mixture of STP Oil Treatment and hydraulic oil to the hub of the torque converter and the support bushing of the reverser.

Number	Name	Use
	STP ™ Oil Treatment	Apply to torque converter hub and support bushing.

Install torque converter into reverser housing. Be sure drive tangs on torque converter engage drive tangs on reverser oil pump gear.

[2] - The distance from face of reverser housing to torque converter pilot should be approximately 12 mm (0.5 in.).

[3] -



Lift Reverser

Secure reverser to low lift transmission jack. Carefully lift reverser. Do not damage any hydraulic lines or hoses. Lift reverser until reverser and torque converter align with engine flywheel housing dowel pins (A) and torque converter pilot bushing (B).

Low Lift Transmission Jack

Used to remove and install reverser and transaxle.

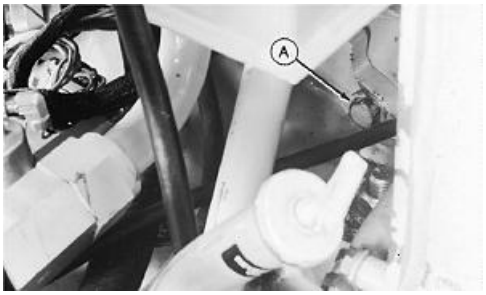
Move reverser forward until it is tight against flywheel housing.

Flywheel Turning Tool

JDE811

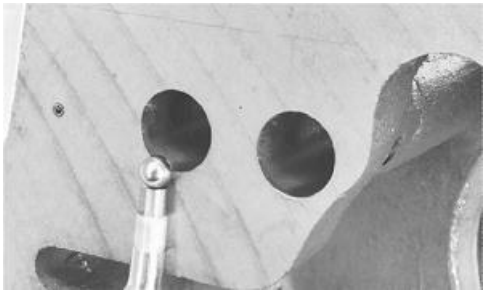
Used to turn flywheel for torque converter removal.

[4] -



PREVIEW - YOUFIXTHIS.COM

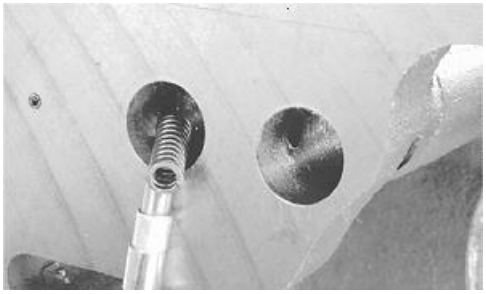
Download full manual at youfixthis.com



Remove Steel Ball

Remove steel ball.

[10] -



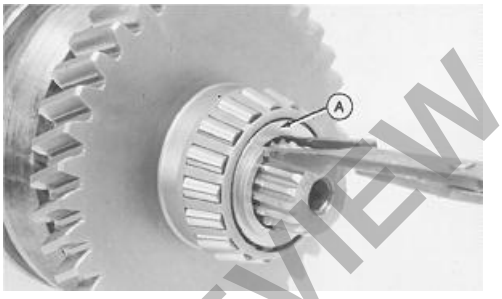
Remove Spring

Remove spring.

Item	Measurement	Specification
New Spring	Free length (approximate)	22 mm (0.87 in.)
New Spring	Test length at 133.5 ± 16 N (30 ± 3.5 lb)	16 mm (0.64 in.)

Remove And Disassemble Transmission Drive Shaft 410D-(SN -796854) 510D-(SN -796890)

[1] -

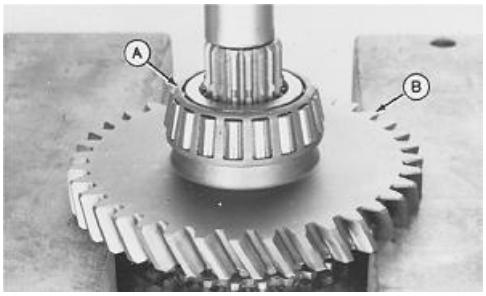


Inside Race

Move bearing cone away from snap ring using a soft steel rod. Care must be taken to be sure the rod touches only the inside race (A) or snap ring.

[2] - Remove snap ring.

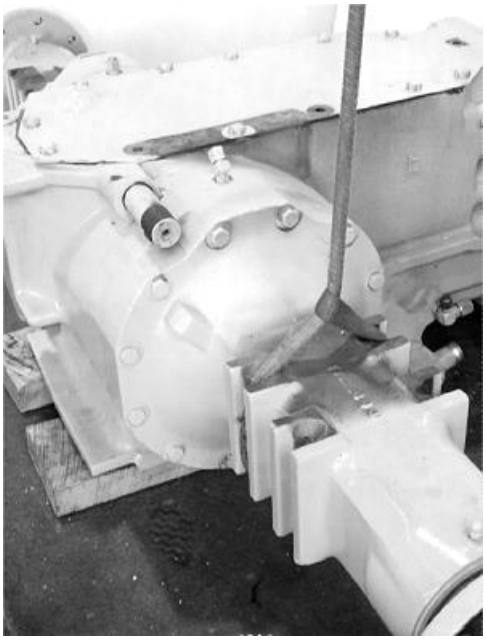
[3] -



Bearing Cone And Speed Gear

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com



Connect Axle Housing To A Hoist

Connect axle housing to a hoist using a lifting strap.

[3] - Remove right and left axles and gaskets.

[4] -



Install Cap Screws

Install two M10-1.5 cap screws in brake piston housing. Alternately tighten both cap screws to remove brake piston housing.

Remove Transaxle Cover 410D-(SN 796855-) 510D-(SN 796891-)

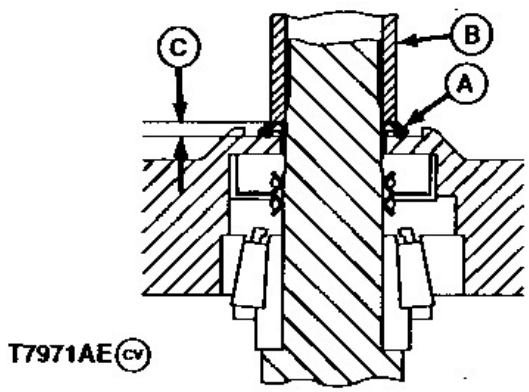


Remove Cap Screws And Transaxle Cover

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

[22] -



LEGEND:

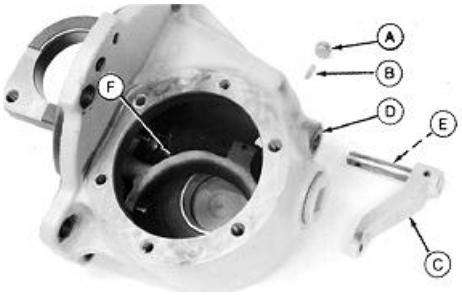
A	External Seal
B	Pipe Driver
C	4.5 ± 0.25 mm (0.18 ± 0.01 in.)

External Seal And Driver Pipe

Use a piece of pipe (B) to install external seal (A) until top of seal is 4.5 ± 0.25 mm (0.18 ± 0.01 in.) (C) above machined surface of output quill.

Item	Measurement	Specification
External Output Shaft Seal	Distance From Seal to Quill	4.5 ± 0.25 mm (0.18 ± 0.01 in.)

[23] -



LEGEND:

A	Plug
B	Grooved Pin
C	Shaft and Arm Assembly
D	Seal
E	Notch
F	Shifter Fork

Install Parts

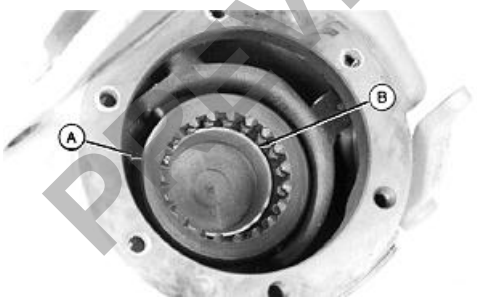
Install seal (D) with seal lips into bore first. Push seal even with MFWD case. Apply multipurpose grease to seal lips.

[24] - Install fork (F) and shaft assembly (C) in case. Notch (E) must be towards the rear of the case and arm of shaft assembly towards the output quill opening.

[25] - Install grooved pin (B) through fork and shaft.

[26] - Install pipe sealant with Teflon on threads of plug (A). Install and tighten plug.

[27] -



Rear Bearing Cup And Shift Collar

If removed, install rear bearing cup (B) to bottom of bore.

[28] - Install shift collar (A). Be sure fork pins fit into groove of collar.

[29] -

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

[1] - Raise loader boom and install boom lock bar.

[2] - Remove both engine side shields and hood.

[3] - Remove four cap screws (A).

[4] - Remove right half of fan guard (B).

[5] - Remove four cap screws (C) and fan (D).

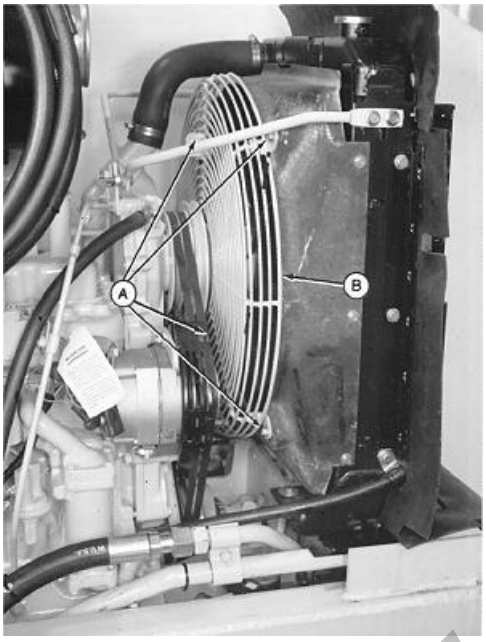
[6] - Install parts (A-D), engine side shields and hood.

Remove And Install Fan Belts

[1] - Raise loader boom and install boom lock bar.

[2] - Remove both engine side shields.

[3] -

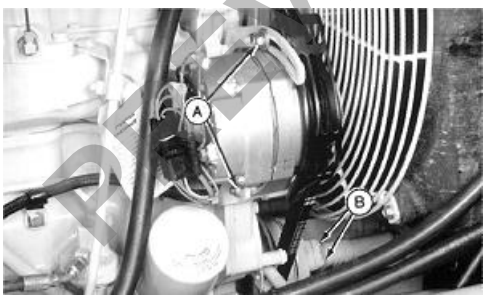


Cap Screws And Fan Guard

Remove four cap screws (A).

[4] - Remove right half of fan guard (B).

[5] -



Cap Screws

Loosen cap screws (A) and tip alternator toward engine.

[6] - Remove four cap screws (B) and slide pump drive yoke toward pump.

[7] - Remove and replace fan belts.

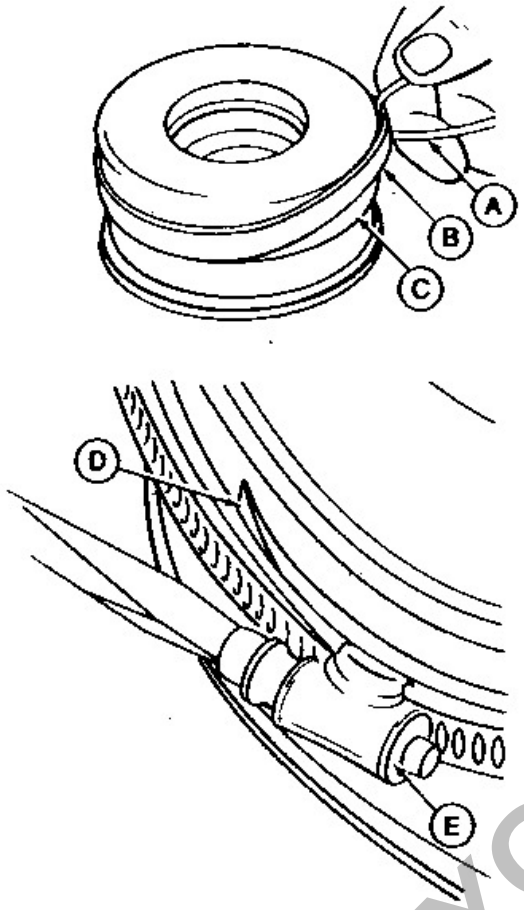
[8] - Apply thread lock and sealer (high strength) to threads of cap screws (B). Install and tighten to 47 N·m (35 lb-ft).

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

→NOTE:

The piston seal can be made more pliable by warming it with your hands or by putting seal in hot water for approximately 5 minutes. Once started, install piston seal as quickly as possible to keep the amount of time the seal is stretched to a minimum.



LEGEND:

A	Tie Band
B	Piston Seal
C	Piston
D	Tapered End
E	Hose Clamp

Piston Seal And Hose Clamp

Install a plastic tie band (A) around piston seal (B) with the smooth side against seal. Position seal over piston (C).

[11] - Shrink piston seal to original size:

a. ring COMPRESSOR METHOD
Install ring compressor with shim stock between piston seal and compressor to protect seal.
Tighten ring compressor to compress cap seal.

→NOTE:

The plastic tie band must be long enough to wrap once around piston and then overlap slightly.

HOSE CLAMP METHOD

Cut the head off a plastic tie band of appropriate length. Grind a taper on the cut end.

Install hose clamp (E) and tie band with taper (D) against piston seal.

Tighten hose clamp to compress cap seal.

→NOTE:

Before tightening hose clamp, make sure tie band is under hose clamp all around piston.

[12] -

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

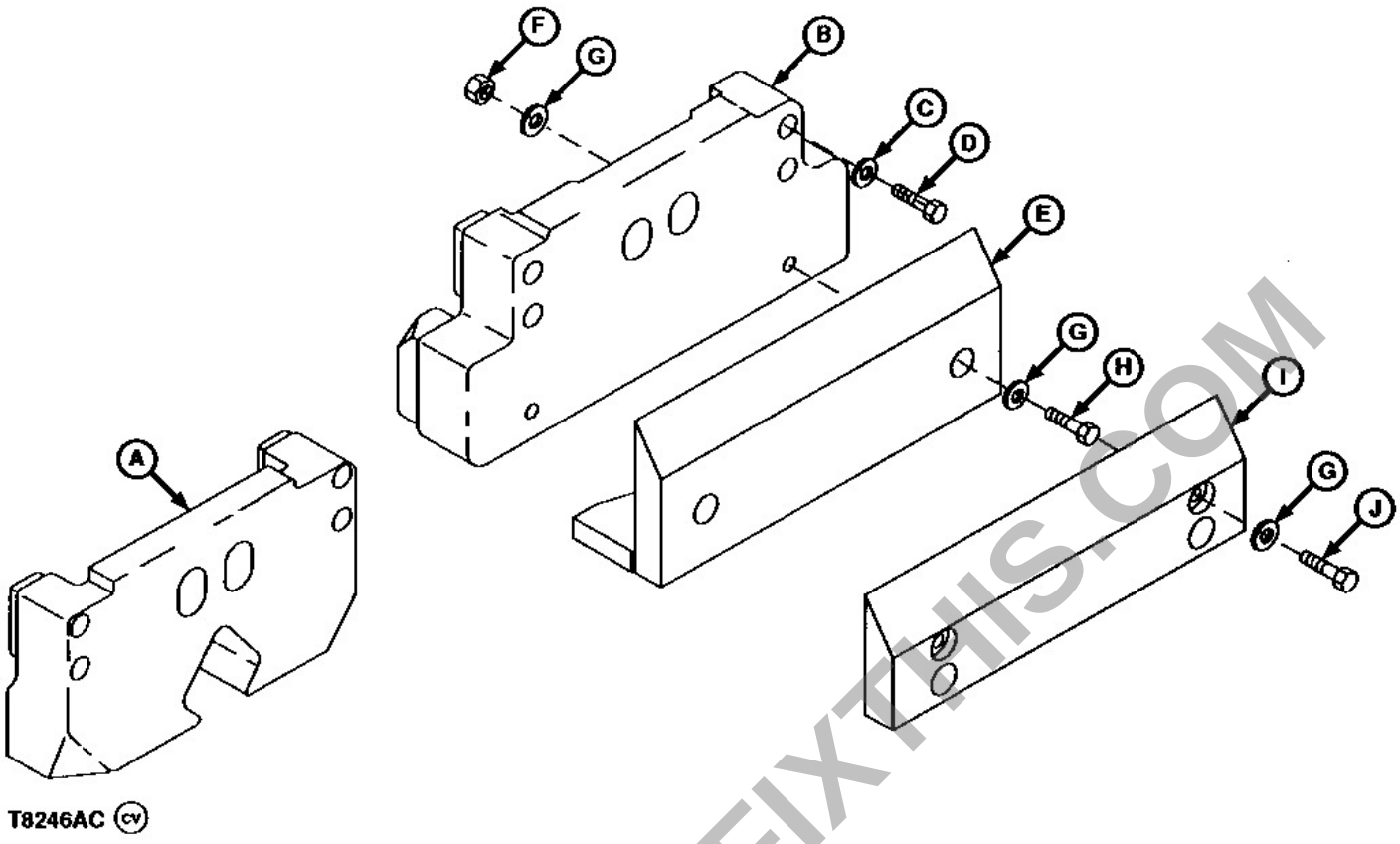
[17] - Adjust park brake . (See procedure in Group 1111.)

[18] - Adjust park brake sensing switch . (See procedure in Group 1674.)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Remove And Install Counterweights (SN 801200-)



Counterweight Assembly

LEGEND:

A	Front Counterweight
B	Heavy Front Counterweight
C	Washer (4 used)
D	Cap Screw (4 used)
E	Heavy Auxiliary Counterweight
F	Nut (2 used)
G	Washer (4 used)
H	Cap Screw (2 used)
I	Auxiliary Counterweight
J	Long Cap Screw (2 used)

CAUTION:

Before working on machine with loader in raised position, install boom lock bar or put support stands under loader boom to prevent lowering of loader.

[1] - Raise loader boom. Install boom lock bar on boom cylinder or put support stands under loader boom.

[2] -

CAUTION:

Counterweights are heavy. Use appropriate lifting device.
Front Counterweight .....181 kg (400 lb)
Heavy Front Counterweight .....340 kg (750 lb)
Heavy Aux. Counterweight .....204 kg (450 lb)
Auxiliary Counterweight .....113 kg (250 lb)

Put a service jack or lifting device under front or auxiliary counterweight (A, B, E or I) depending which weight is to be removed.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

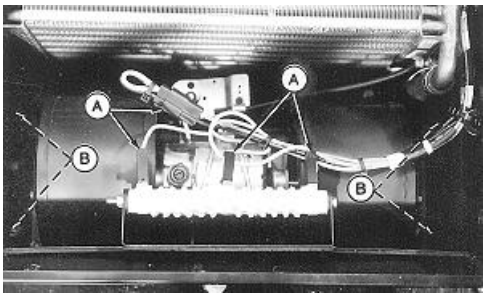
[5] - Connect wire leads to blower motors (B).

[6] - Install seat, seat base, seat belts and heater/blower cover. (See procedure in Group 1821 .)

Remove And Install Heater/Blower Motor (SN 801200-)

[1] - Remove seat, seat base, seat belts and heater/blower cover. (See procedure in Group 1821 .)

[2] -



Heater/Blower Motor Connections

Tag and disconnect wire leads (A) from blower motor and resistor.

[3] - Remove four cap screws (B) to remove heater/blower motor assembly.

[4] - Repair or replace blower motor assembly as necessary.

[5] - Install motor assembly and cap screws.

[6] - Connect wire leads to blower motor and resistor.

[7] - Install seat, seat base, seat belts and heater/blower cover. (See procedure in Group 1821 .)

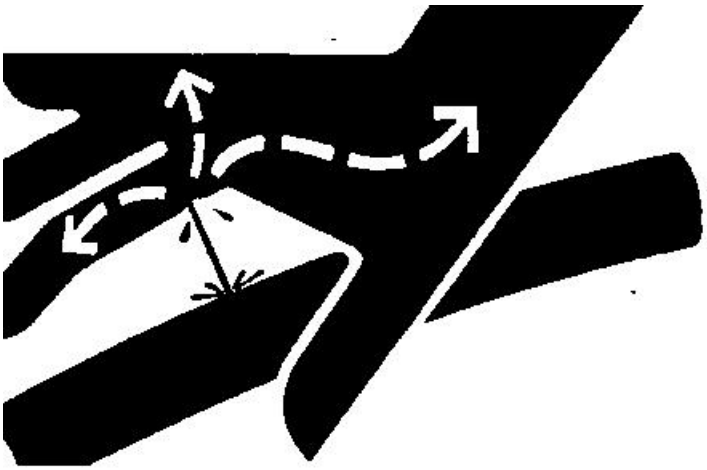
PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Remove And Install Charge Pump

[1] -

CAUTION:



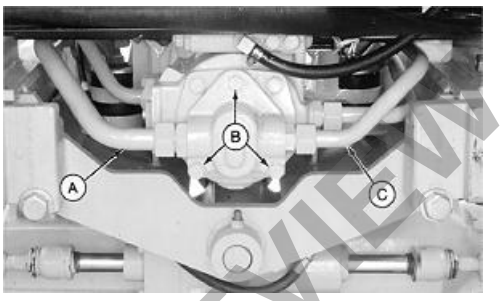
Avoid High-Pressure Fluids

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.

Operate all hydraulic functions to release hydraulic pressure.

[2] -



LEGEND:

A	Transaxle-to-Charge Pump Line 410D-(SN -796854) 510D-(SN -796890) Reservoir-to-Charge Pump Line 410D-(SN 796855-) 510D-(SN 796891-)
B	Cap Screw (3 used)
C	Charge Pump-to-Oil Filter Inlet Junction Line

Charge Pump Connections

Remove side shield, grille (see Group 1910) and counterweight cover or bumper (see Group 1749). Loosen clamp on line (A) at right engine side shield.

[3] -

→NOTE:

Approximate capacity of hydraulic reservoir is 41L (11 gal).

For 410D-(SN 796855-) and 510D-(SN 796891-), drain reservoir or use vacuum pump to hold oil in reservoir.

Disconnect lines (A and C). Cap and plug all openings.

[4] - Remove cap screws (B) and remove charge pump.

[5] - Inspect parts and replace if required.

[6] -

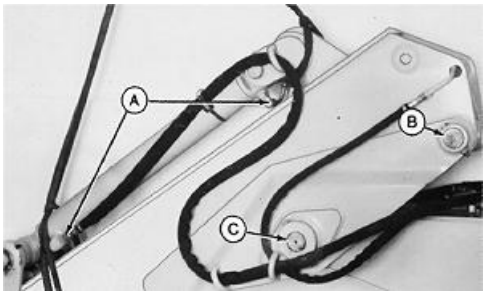
PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Item	Measurement	Specification
27 mm (1-1/16 in.) Threads	Torque	65 ± 7 N·m (48 ± 5 lb-ft)
22.2 mm (7/8 in.)	Torque	45 ± 5 N·m (33 ± 3.5 lb-ft)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com



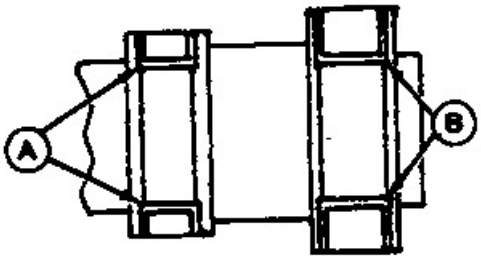
Bucket Cylinder Line Disconnection

Tag and disconnect lines (A) from bucket cylinder. Cap and plug all openings. Remove lines from hose guards.

[7] - Put wooden block between boom and crowd cylinder. Remove pin (B) and lower crowd cylinder to block.

[8] - Remove pin (C) and dipperstick.

[9] -



Bushing Inspection

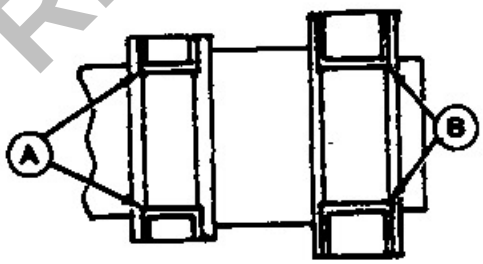
Inspect bushings (A and B).

[10] - Remove bushings (A and B), if replacement is necessary, using E7018 electrodes. Weld three straight beads the inside length of the bushing.

[11] - Allow sufficient time for bushing to cool before removing using a punch.

Install Extendible Dipperstick-(SN -787384)

[1] -



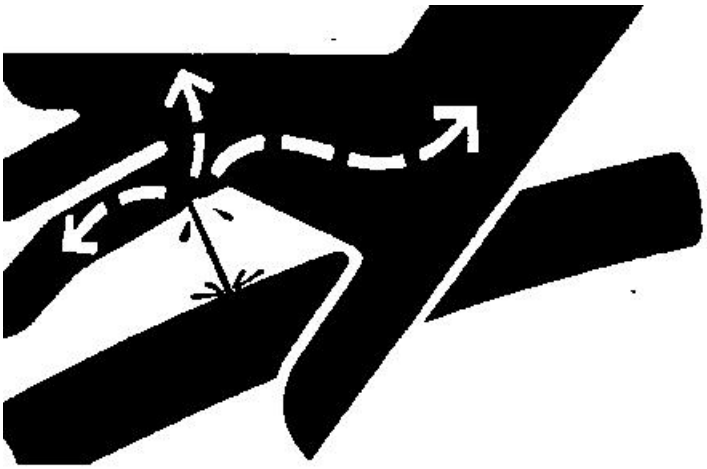
Bushing Installation

Install new bushings (A and B), if removed. Install bushings even with outside edge of bore. Install bushing (A) using a 40 mm and 47 mm drivers and bushing (B) using 44 mm and 53 mm drivers.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

CAUTION:



Avoid High-Pressure Fluids

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.

Operate all hydraulic control valves to release pressure in system.

[2] -

CAUTION:

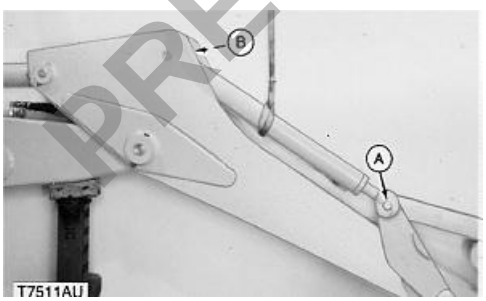
The approximate weight of cylinder is 44 kg (97 lb).

Item	Measurement	Specification
Cylinder	Weight	44 kg (97 lb)

Attach cylinder to a hoist using a lifting strap.

[3] - Tag and disconnect lines to cylinder. Cap and plug all openings. Remove hose clamps on cylinder.

[4] -



Cylinder Pins

Remove pin (A) from bucket linkage.

[5] - Remove pin (B) from head end of cylinder and remove cylinder.

[6] - Install pin (B) at head end of cylinder.

[7] - Install pin (A) through bucket linkage and cylinder rod.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

PREVIEW ONLY

You're viewing 25 of 976 pages

The full manual includes:

- All 976 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

John Deere 410D, 510D Repair Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual