675 and 675B Skid Steer Loaders

TECHNICAL MANUAL

John Deere
Lawn & Grounds Care Division
TM1374 (Sept 94)

Litho in U.S.A

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SAFETY AND YOU

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.



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ENGINE

Make and model	Yanmar 4TN82ESP
Cooling system	Water Cooled
Fuel	Diesel
Cylinders	4
Horsepower (mfg. rating)	@3600 (32.8 kW)
Operating hp at governed rpm	38.8 @ 2800 (28.9 kW)
Bore	3.23 in. (82 mm)
Stroke	3.39 in. (86 mm)
Displacement	110.8 cu. in. (1816 cm^3
RPM speeds:	
Fast (no load)	2915/2975
Slow (no load)	900/1000
Fuel tank capacity	16.1 gal (61 L)
Crankcase capacity	W/O filter 6 qt. (5.7 L)
Regulator	Solid-state

TRANSMISSION

Type	Hydrostatic
Capacity	17 gal (64.4 L)

TRAVEL SPEEDS

(forward/reverse)	(0 to 6.7 mph (0 to 10.8 km/h)

BOOM CYLINDERS

Type	Double acting

PERFORMANCE RATINGS*

Operating load, SAE (per SAEJ818)	1650 lb (748 kg)
Timing load, SAE	3330 lb (1510 kg)
Breakout force, SAE IEMC	2820 lb
Slow (no load)	900/1000
Fuel tank capacity	16.1 gal (61 L)
Crankcase capacity	8.4 qt (8 L)
Regulator	Solid-state

WEIGHTS

Operating weight, SAE	4379 lb (991 kg)
Shipping weight (less tires and attachments)	3530 lb (1605 kg)

CYCLE TIMES (seconds):

Boom raised	4.3
Boom lowered	2.1
Bucket rollback	1.8
Bucket dumping	1.7

HYDRAULIC SYSTEM

Pump Type	Gear
Pump Manufacturer	Cessna
Output	14 gpm (52.9 LPM @2800 rpm)
Displacement	1.24 cu in. per rev (20.3 cm^3)

*Performance ratings taken with 10.00-16.5 tires, 66-inch dirt and foundry bucket, 175 pound operator and full fuel tank.

(Specifications and design subject to change without notice.)

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BOLT TORQUE CHART

Grade of Bolt		SAE-2	SAE-5	SAE-8		
Min. Tensile Strength		64,000 PSI	105,000 PSI	150,000 PSI		
Grade Marking on Bolt					Socket or Wrench Size	
U.S. Standard					U.S. Regular	
Bolt Dia.	U.S. Dec. Equiv.		TORQUE IN FOOT POUNDS		Bolt Head	Nut
1/4	0.250	(8.14 N-m) 6	(13.56 N-m) 10	(18.98 N-m) 14	7/16	7/16
5/16	0.3125	(17.63 N-m) 13	(27.12 N-m) 20	(40.68 N-m) 30	1/2	1/2
3/8	0.375	(31.19 N-m) 23	(47.46 N-m) 35	(67.80 N-m) 50	9/16	9/16
7/16	0.4375	(47.46 N-m) 35	(74.58 N-m) 55	(108.48 N-m) 80	5/8	11/16
1/2	0.500	(74.58 N-m) 55	(115.26 N-m) 85	(162.72 N-m) 120	3/4	3/4
9/16	0.5625	(101.70 N-m) 75	(176.28 N-m) 130	(237.30 N-m) 175	13/16	7/8
5/8	0.625	(142.38 N-m) 105	(230.52 N-m) 170	(325.44 N-m) 240	15/16	15/16
3/4	0.750	(250.86 N-m) 185	(406.80 N-m) 300	(576.30 N-m) 425	1-1/8	1-1/8
7/8	0.875	*(216.96 N-m) 160	(616.98 N-m) 445	(928.86 N-m) 685	1-5/16	1-5/16
1	1.000	(339.00 N-m) 250	(908.52 N-m) 670	(1396.68 N-m) 1030	1-1/2	1-1/2

Multiply readings by 12 for inch-pound values.

** "B" Grade bolts larger than 3/4-inch (19.1 mm) are sometimes formed hot rather than cold, which accounts fo the lower recommended torque.*

NOTE: Allow a tolerance of plus or minus 10 per cent on all torques given in this chart.

SET SCREW SEATING TORQUE CHART

Screw Size	Cup Point	Square Head
	Torque in Inch Pounds	
#5	(1.02 N-m) 9	—
#6	(1.02 N-m) 9	—
#8	(2.26 N-m) 20	—
#10	(3.73 N-m) 33	—
1/4	(9.83 N-m) 87	(23.96 N-m) 212
5/16	(18.65 N-m) 165	(47.46 N-m) 420
3/8	(32.77 N-m) 290	(93.79 N-m) 830
7/16	(48.59 N-m) 430	—
1/2	(70.06 N-m) 620	(237.30 N-m) 2100
9/16	(70.06 N-m) 620	—
5/8	(138.43 N-m) 1225	(480.25 N-m) 4250
3/4	(240.13 N-m) 2125	(870.10 N-m) 7700

Divide readings by 12 for foot-pound values
NOTE: Allow a tolerance of plus or minus 10 per cent on all torques given in this chart.

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REMOVE ENGINE

1. Remove bucket or other lift arm attachment.

2. Raise lift arms. Extend lift arms stops. Lower lift arms onto stops.

3. Stop engine. Engage park brake. Turn key to RUN position. Move control pedals and steering levers to release any hydraulic system pressure. Turn key to OFF position and remove key.

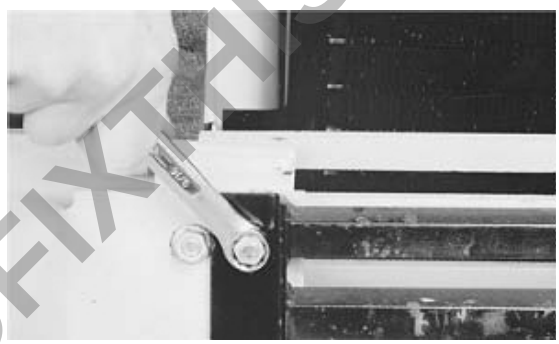


M21,2005X,C -19-02MAY86

4. Remove one engine shield hinge. Remove engine shield for better access to engine area.

5. Remove two battery negative—cables and two positive + cables. Remove two battery hold-down straps and both batteries.

6. Remove radiator. (See Group 10 in this section.)



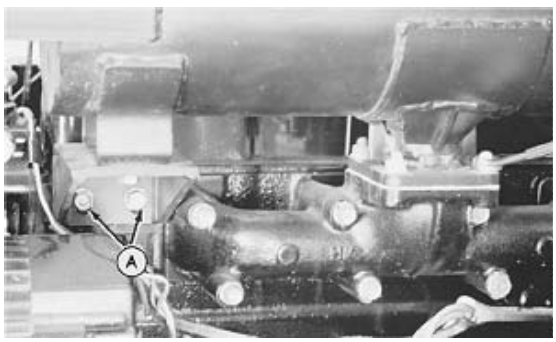
M21,2005X,D -19-27JUN86

7. Loosen hose clamp and remove air cleaner hose.



M21,2005X,E -19-02MAY86

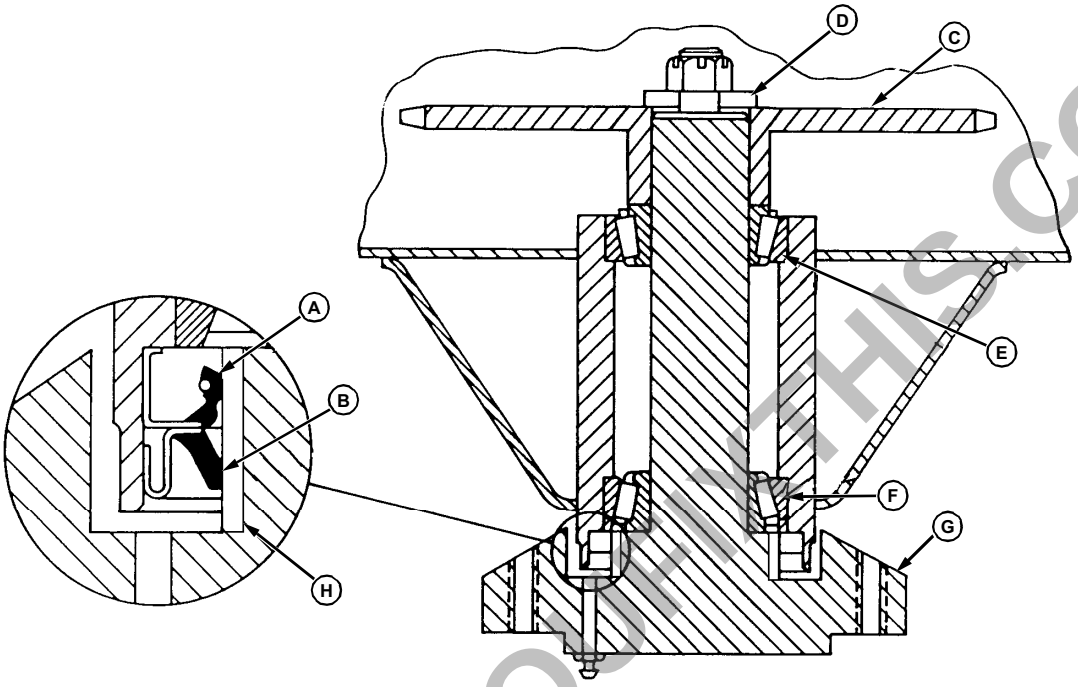
8. Remove four lock nuts and two cap screws (A) to remove muffler.



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INSPECT FRONT AXLE



A-Inner Oil Seal **C-Front Axle Sprocket** **E-Inner Bearing** **G-Front Axle**
B-Outer Dust Seal **D-Special Washer** **F-Outer Bearing** **H-Sleeve**

1. Inspect oil (A) and dust (B) seals for wear or damage. Pry seals out of axle housing and replace if necessary.

2. Inspect inner (E) and outer (F) bearings for wear and smooth rotation. Check bearing races for scoring. Replace bearing races by driving races out of axle housing.

3. Inspect sprocket (C) for worn or broken teeth. Inspect internal splines for wear; replace if necessary.

4. Inspect axle (G) for worn or bent condition. Make sure seal area is clean and smooth. Check spline for wear; replace if necessary.

5. Inspect sleeve (H) for nicks or gouges. Replace as necessary.

AXLE SPECIFICATIONS

Outer diameter . . . . . .44.43 - 44.44 mm.
. . . . . 1.749 - 1.749 in.
Bearing Cone I.D. . . . . .44.45 - 44.46 mm.
. . . . . 1.750 - 1.7505 in.

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BEFORE YOU START

Always perform the system checkout procedure in Group 05 BEFORE making any tests or adjustments in this group. The step-by-step procedures in this group provide you with the detailed diagnostic information you will need to isolate a malfunction. Basic diagnostic equipment is used.

It is assumed that you are familiar with the machine and its engine and fuel system components.

Engine rpm and temperature are critical in most engine tests. Be sure to follow test specifications carefully.

Always start with the first step and follow the sequence from left to right. Read each step completely before performing the tests.

Upon completing a test or adjustment, check to see whether the problem is corrected by performing the checkout procedure in Group 05.

M21,22010W,1 -19-03OCT86

1 ENGINE OPERATING CHECKS	If engine does not operate properly select the appropriate symptom. If engine does not crank, or cranks slowly, see Section 240.	ENGINE WILL NOT START OR STARTS HARD: GO TO A ENGINE SURGES OR STALLS FREQUENTLY: GO TO B ENGINE MISSES: GO TO C ENGINE DOES NOT DEVELOP FULL POWER: GO TO D EXCESSIVE BLACK OR GRAY SMOKE: GO TO E WHITE EXHAUST SMOKE: GO TO F SLOW ACCELERATION: GO TO G ABNORMAL ENGINE NOISE: GO	TO H LOW OIL PRESSURE: GO TO I HIGH OIL PRESSURE: GO TO J OIL IN COOLANT OR COOLANT IN OIL: GO TO K ENGINE OVERHEATS GO TO L ENGINE RUNS COLD: GO TO M

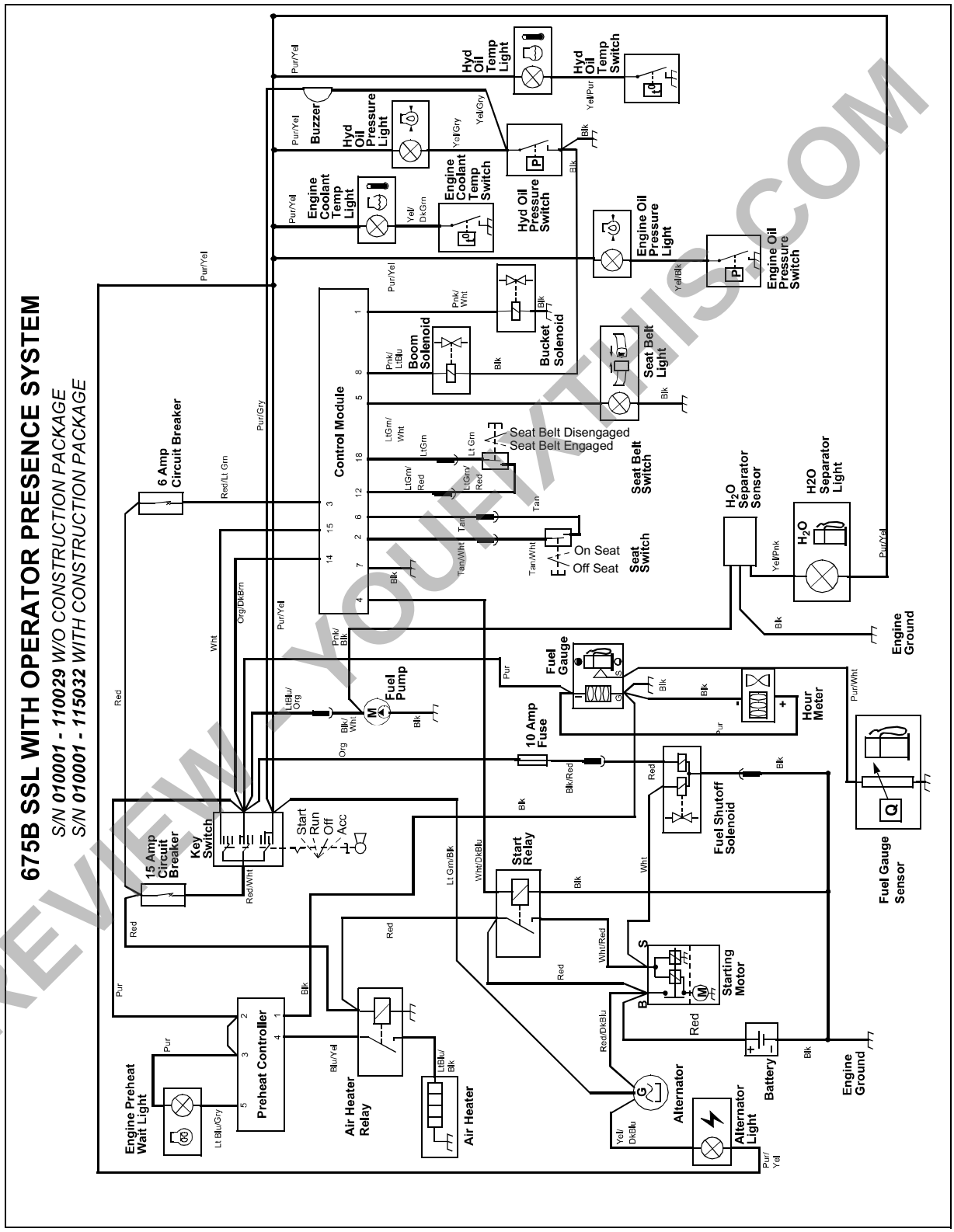
M21,22010U,2 -19-26JAN87

A ENGINE WILL NOT START OR STARTS HARD	Test fuel transfer pump output: GO TO 3 Bleed fuel system: GO TO 4 Test cold start aid controller. See Section 240. Test injection nozzles. See CTM-3.	Check injection pump timing: GO TO 9 Remove fuel injection pump and have it tested. See CTM-3.

M22,22010X,1 -19-07JAN87

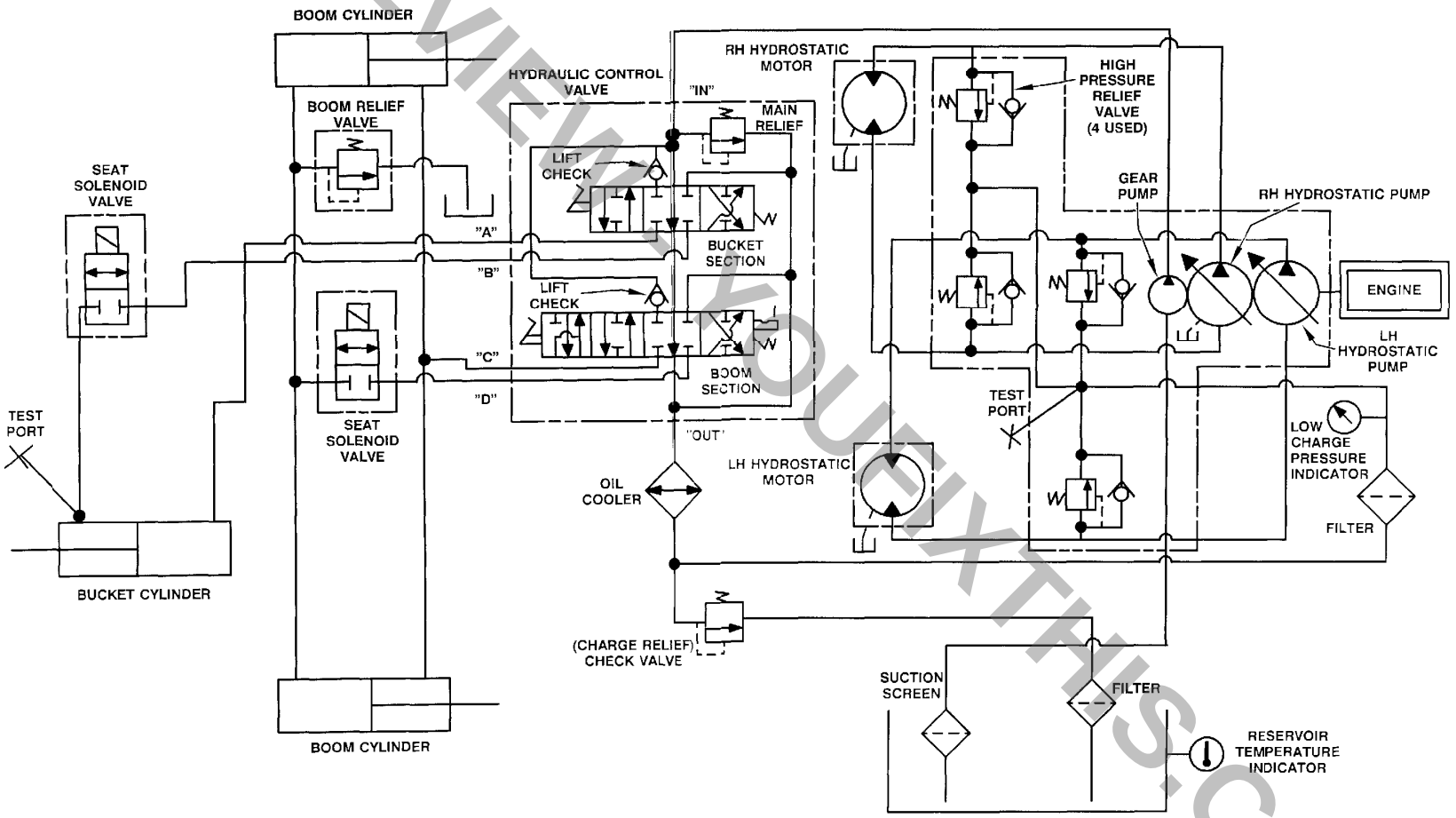
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M45802

675B (S.N. 10001-) HYDRAULIC SCHEMATIC

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ADJUST DRIVE CHAIN TENSION

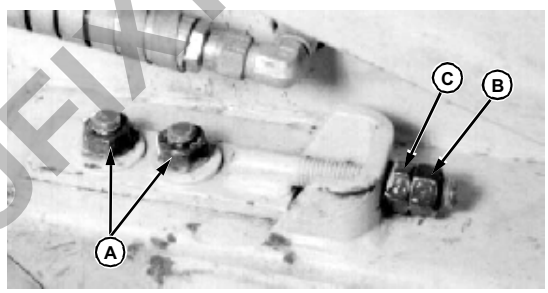


1. Park loader on a level surface. Lower bucket to ground. Do not lock park brake.

CAUTION: Do not work under a raised machine. Use blocks or stands to support machine.

2. Raise one side of loader with a jack. Put blocks or stands under loader.

M76013



3. Completely loosen nuts (A). Tighten to 27 N•m (20 lb-ft.)
4. Loosen nut (B) and tighten nut (C) to remove slack from idler.
5. Back off nut (C) 6 mm (1/4 in.)
6. Start engine and run at slow idle. Slowly move steering lever forward to rotate wheels a minimum of eight revolutions.
7. Stop engine.
8. Tighten nuts (A) to 190 N•m (140 lb-ft.)
9. Tighten nuts (B and C).

IMPORTANT: Bolts must be tightened to specified torque or final drive parts may wear faster, be damaged or fail.

10. Adjust chain tension on other side. If chain tension cannot be adjusted, inspect idler assembly.

M76009

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