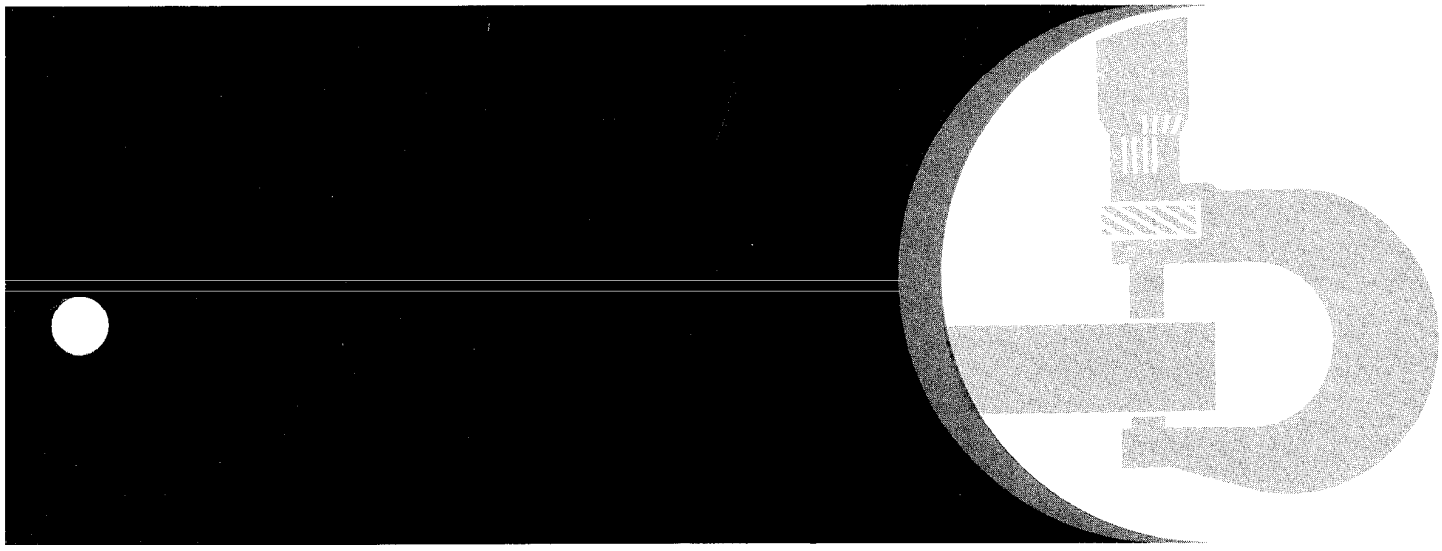
890A
Excavator



TECHNICAL MANUAL

TM1263 (Jun-86)
LITHO IN U.S.A. (REVISED)

890A EXCAVATOR TECHNICAL MANUAL TM-1263 (JUN-86)

SECTION AND GROUP CONTENTS

T28;1263 09 130686

SECTION AND GROUP CONTENTS—CONTINUED

T28;1263 02 160686

INTRODUCTION

This technical manual is part of a twin concept of service.

FOS Manuals - for reference

Technical Manuals - for actual service

The two kinds of manuals work as a team to give you both the general background and technical details of shop service.

Fundamentals of Service (FOS) Manuals cover basic theory of operation, fundamentals of troubleshooting, general maintenance, and basic types of failures and their causes. FOS Manuals are for training new personnel and for reference by experienced technicians.

Technical Manuals are concise service guides for specific machines. Technical manuals are on-the-job guides containing only the vital information needed by an experienced service technician.

30A;T85958, T28;I II01 130582

FEATURES OF THIS TECHNICAL MANUAL

- John Deere ILLUSTRUCTION format emphasizing detailed pictures and fewer words in easy-to-use modules.
- Removal and installation groups preceding some repair groups.
- A section of system diagnostic testing.
- Table of contents of all sections at the front of the manual and a listing of all groups and headings at the front of each section.
- Special tools and specifications listed at the front of each group they are used in.
- Special tools illustrated in numerical order at end of manual.
- Alphabetical listing of all major components, specifications, and special tools.
- Safety rules, general specifications, and lubrication specifications.

This technical manual was planned and written for you - an experienced service technician. Keep it in a permanent binder in the shop where it is handy. Refer to it when you need to know correct service procedures or specifications.

Using the technical manual as a guide will reduce error and costly delay. It will also assure you the best in finished service work.

30A;T85959 T26;I II15 130582

SAFETY AND YOU

CAUTION: This safety symbol is used for important safety messages. When you see this symbol, follow the safety message to avoid personal injury.

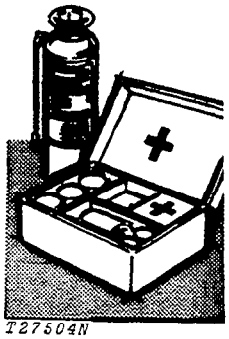
30A;T81389 T28:I 1102 280881

Be prepared for an accident or fire.

Know where the first aid kit and fire extinguisher are.

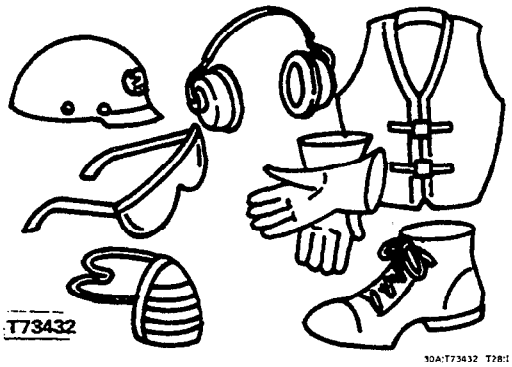
Know how to use them.

Know where to get help.



30A;T27504 N T28:I 1103 280581

Wear safety equipment.



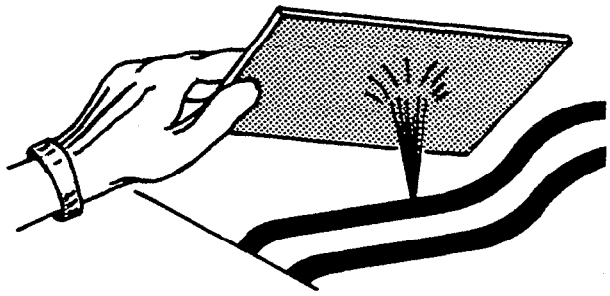
30A;T73432 T28:I 1104 280881

Wear fairly tight clothing.

30A;T45672 T28:I 1105 280581

CAUTION: Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious injury. Before disconnecting lines, be sure connections are tight and lines, pipes and hoses are not damaged. Use a piece of cardboard or wood, rather than hands, to search for leaks.

If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.



30A;T80991 T28;I H06 260881

KEEP SHOP AND STORAGE AREA CLEAN

Maintenance area should be well-ventilated.

Keep maintenance area clean and dry.

Store flammable materials in a cool and well-ventilated area out of reach of unauthorized personnel.

30A;T27508 N T28;I H07 260881

FOLLOW SAFE WORKING CONDITIONS

Do not work on the equipment unless you are approved to do so. Then be sure you know the correct procedure.

Do not work on equipment while it is being operated.

Keep hands away from moving parts.

When the engine is running, do not work on equipment unless the procedure is approved.

If you must work on the machine with the engine running, ALWAYS USE TWO service technicians. One must be at the controls. The other must be within sight of the operator.

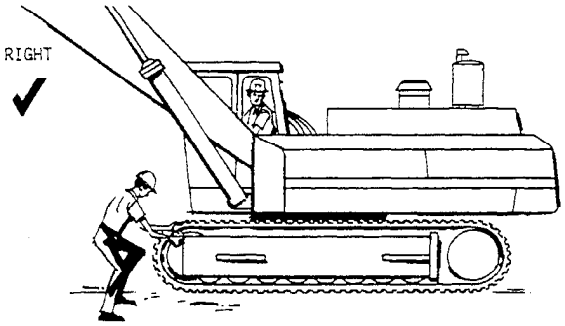
Put a support under all raised equipment.

Park the machine across a slope, or use blocks to hold it in place.

Do not lift heavy parts by yourself. Use a hoist or jack.

TAKE CARE! WATCH OUT FOR OTHER PEOPLE IN THE AREA.

When you drill, grind or hammer metal, wear safety glasses.



30A,T32709 N, 82412 T28:: 1108 260881

OBSERVE SERVICE PRECAUTIONS

Keep ALL equipment free of dirt and oil.

Clean oil, grease, mud, ice or snow from the operator's station, steps and hand rails.

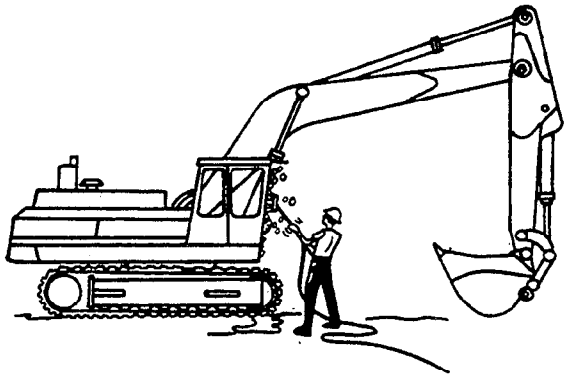
Do not remove the radiator cap unless the engine is cool. First, loosen the cap slowly to the stop. Then release all pressure in the cooling system before you remove the cap.

Check the exhaust system regularly for leaks.

Release hydraulic pressure before you work on the hydraulic system. See page I-II-06.

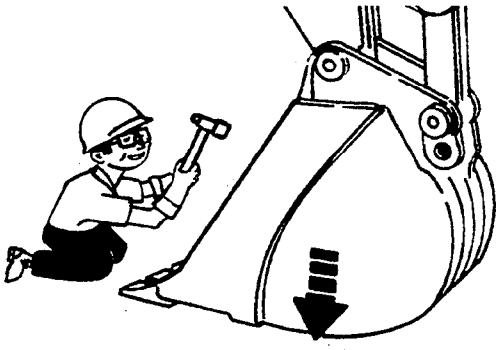
When you check hydraulic pressure, be sure to use the correct test gauge.

Before you work on the fuel system, close the fuel shutoff valve.



30A;T82345 T30;I 1109 091281

Do not work under a raised bucket. Lower the bucket to the ground, or put blocks under the bucket.

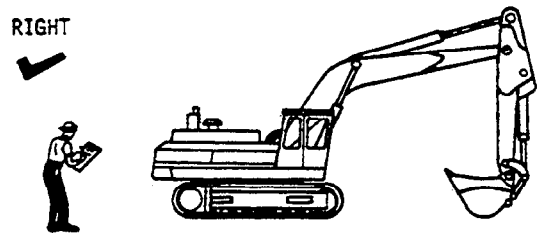


30A;T82343 T28;I 1110 260881

CHECK SAFETY EQUIPMENT ON MACHINE

All protective parts (shields, guards, ROPS, etc.) should be in good condition and fastened in place.

Check for leaks in all systems:
Air intake system
Engine oil system
Hydraulic system
Fuel system
Cooling system



30A;T82323 T28;I 1111 260881

AVOID EXPLOSIONS OR FIRE

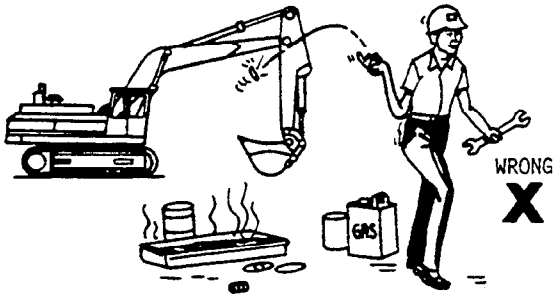
Do not smoke while you fill the fuel tank.

Do not smoke while you work with material that will start on fire easily.

Stop the engine before you fill the fuel tank.

Do not fill fuel tank if engine is hot.

Do not use gasoline or diesel fuel for cleaning parts. Use solvents that will not start on fire.



30A;T82411 T28;I 1112 260881

OBSERVE BATTERY PRECAUTIONS

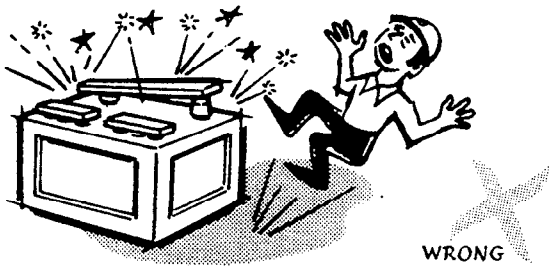
Do not put metal objects across terminals to check the battery charge.

When you charge a battery, be sure there is enough ventilation.

Keep sparks and flames away from batteries.

Do not smoke near battery.

Before you work on the electrical system, or make major repairs, turn off the battery disconnect switch.



30A;T27506 T28;I 1113 260881

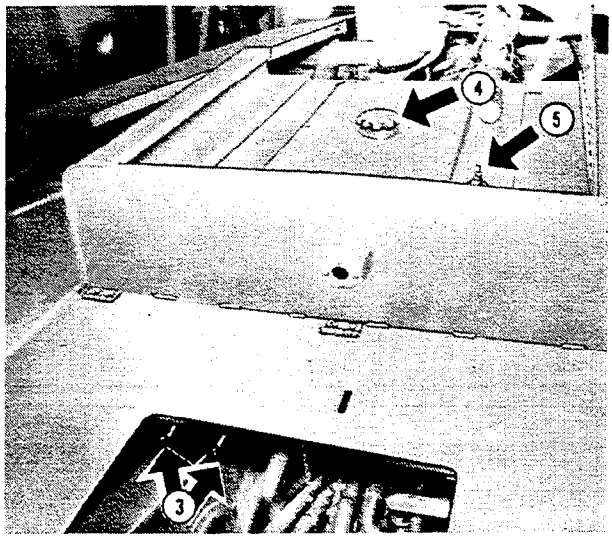
BEFORE YOU WORK ON THE HYDRAULIC SYSTEM

Follow these steps before you work on any part of the hydraulic system:

1. Park the excavator on level ground.
2. Lower hydraulic pressure:
   - •Lower bucket to ground.
   - •Stop engine.
   - •Move control levers until boom and bucket do not move.
3. Push valve levers in all the way to stop oil flow.
4. Loosen the reservoir filler cap slowly to release pressure.
5. Open the diffuser vent. Turn it counterclockwise.

IMPORTANT: After you finish:
- **•Close diffuser vent.**
- **•Pull levers out.**

CAUTION: Do not walk or stand on sloping fenders or other sheet metal to service the excavator.



30A;T82348 T28;I 1114 260881

890A EXCAVATOR

(Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with PCSA and SAE Standards. Except where otherwise noted, these specifications are based on a unit equipped with 107-in. (2.72 m) dipperstick, 39-in. (991 mm) bucket, 30-in. (750 mm) track shoes, and standard equipment.)

Power (@2100 engine rpm):	**SAE**	**DIN**
Gross	225 hp(168 kW)	
Net	210 hp(157 kW)	213 PS

Net engine flywheel power is for an engine equipped with fan, air cleaner, water pump, lubricating oil pump, alternator, and muffler. Gross engine power is without fan. Power ratings are under SAE standard conditions of 500-ft. (150 m) altitude and 85°F (29.5°C) temperature, and DIN 6270 conditions (non-corrected). No derating is required up to 10,000 ft. (3000 m) altitude.

Engine: John Deere turbocharged 6-cylinder, valve-in-head, 4-stroke cycle.

Bore and stroke	5.12 x 5.00 in. (130 x 127 mm)
Piston displacement	619 cu. in. (10.145 L)
Compression ratio	15.2:1
Max. torque @ 1300 rpm	810 lb-ft (1098 N·m) (112 kg-m)
Lubrication	Pressure system w/full-flow filter
Cooling	Pressurized w/thermostat and fixed bypass
Air cleaner	w/restriction indicator, Dry
Electrical system	24 volts w/alternator
Batteries (2) 12-volt	Reserve capacity:180 minutes each

Hydraulic System:

Three open-center pumps mounted in line are coupled directly to the flywheel. The total flow is 163 gpm (10.3 L/s) at rated engine rpm. System operating pressure is 2900 psi (20 000 kPa)(204 kg/cm²) for the propel circuit and 2900 psi (20 000 kPa) (204 kg/cm²) for the digging circuit.

Relief valves:

Boom (2)	3260 psi (22 483 kPa) (229.3 kg/cm²)
Crowd (2)	3260 psi (22 483 kPa) (229.3 kg/cm²)
Bucket (2)	3260 psi (22 483 kPa) (229.3 kg/cm²)

Oil filtration:

Two 149-micron suction screens
Two 10-micron filters in return lines
Three 25-micron high pressure filters

Cylinders:	**Bore**	**Stroke**
Boom (2)	7.0 in. (178 mm)	62.87 in. (1597 mm)
Crowd	7.0 in. (178 mm)	78.17 in. (1986 mm)
Bucket	7.0 in. (178 mm)	40.51 in. (1029 mm)
Boom cylinder rods	3.75 in. (95 mm dia.)	
Crowd and bucket cylinder rods	4.50 in. (114 mm dia.)	

All cylinders have phenolic wear rings. Boom, crowd and bucket cylinders have a built-in hydraulic cushion at each end of the stroke. Full-width hydraulic oil cooler matched with engine coolant radiator.

Operating Information:

Swing speed	6.1 rpm
Gradability	70 percent
Travel	0 to 2.2 mph (3.5 km/h)
Locked in low	0 to 0.95 mph (1.5 km/h)
Optional track shoes	36 in. (0.9 m)

Digging Information:

Bucket rating (SAE heaped)	1½ yd.³ (1.2 m³)
Lift capacity	24,200 lb. (108 kN²) at 20 ft. (6 m)
Bucket penetrating force	38,160 lb. (170 kN)
Arm crowd force	30,310 lb. (135 kN)
Maximum reach at ground level	36.75 ft. (11.2 m)
Maximum dump height	19.75 ft. (6 m)
Digging depth	25 ft. (7.6 m)

T28:1 11105 260382

Swing mechanism:
Swing ..... 360-degree, internal drive, continuous
Turntable bearing ..... Single row, ball
Case-hardened ring and pinion gears run in lubricant.

Undercarriage:
Propel motors (one for each track) .... High-torque, variable-speed, axial-piston hydraulic motors with planetary drive. Multiple-disk brakes automatically release while propelling, and apply when stationary. Independent drive to each track permits counterrotation.

Undercarriage, car body, and track frame .... Each track frame is a formed, reinforced U-channel. Track frames are joined by reinforced boxed car body with swing bearing mount.

Track Chain ..... Sealed track chain

Track Adjustment ..... Hydraulic

Cab:
Steel, with urethane sound-proofing on ceiling and side walls, and cushioned neoprene floor mat. Safety glass on all sides and top. Front and rear windows open. Front window can be stored overhead.

Seat:
Fully adjustable heavy-duty cloth, foam-rubber cushioned seat.

Controls:
Pilot-operated two-lever for boom, crowd, bucket, and swing. Pilot-operated right and left pedals control forward and rearward movement of right and left tracks respectively.

Buckets: High-strength steel, ribbed and plated bottom section.

		Capacity		
Nominal Width	Bite Width	SAE	Struck	Weight
39 in. (991 mm)	42 in. (1067 mm)	1½ cu. yd.(1.15 m³)	1¼ cu. yd. (0.96 m³)	2550 lb. (1157 kg)
45 in. (1143 mm)	47 in. (1194 mm)	1⅞ cu. yd. (1.43 m³)	1½ cu. yd. (1.15 m³)	2670 lb. (1211 kg)
51 in. (1295 mm)	54 in. (1372 mm)	2⅛ cu. yd. (1.62 m³)	1¾ cu. yd. (1.34 m³)	2820 lb. (1279 kg)
Heavy-duty				
33 in. (838 mm)	37 in. (940 mm)	1½ cu. yd. (1.15 m³)	1¼ cu. yd. (0.96 m³)	3050 lb. (1383 kg)
39 in. (991 mm)	44 in. (1118 mm)	1⅞ cu. yd. (1.43 m³)	1½ cu. yd. (1.15 m³)	3575 lb. (1622 kg)
45 in. (1143 mm)	50 in. (1270 mm)	2 cu. yd. (1.53 m³)	1½ cu. yd. (1.15 m³)	3660 lb. (1660 kg)

Track Shoes: Width	Shoes	Ground Contact	Ground Pressure
30 in. (750 mm)	Triple-bar semigrousers	9723 sq. in. (62 731 cm²)	8.92 psi (61.5 kPa) (0.63 kg/cm²)
36 in. (900 mm) (optional)	Triple-bar semigrousers	11,668 sq. in. (75 278 cm²)	7.74 psi (53.4 kPa) (0.54 kg/cm²)

T28:I 11106 260382

Boom and Arm
Internally reinforced tapered box construction with heat-treated steel bushings. Machined and bored after welding for accurate alignment. All pivot points are sealed to allow extended lubrication intervals.

Servicing and Vandal Protection:
Swingaway service doors expose built-in platforms for easy access to engine and hydraulic systems. Cab and access covers to fuel tank, radiator, and hydraulic reservoir lock with switch key.

Capacities:	U.S.	Imp.	Liters
Fuel tank	140 gal.	117 gal.	530
Cooling system	16 gal.	13.3 gal.	61
Engine lubrication, including filter	32 qt.	26.7 qt.	30.3
Hydraulic system	165 gal.	137 gal.	625
Planetary propel drive (each)	21 qt.	17.5 qt.	20.0
Swing drive (each)	8 qt.	6.7 qt.	7.5

Operating Weights (without bucket)

	lb.	(kg)
Total weight—with narrow track	85,059	(38 598)
—with wide track	88,650	(40 210)
Boom	7,450	(3 380)
Arm—108 in. (2.7 m)	5,080	(2 300)
—140 in. (3.6 m)	5,490	(2 490)
Main Counterweight	12,810	(5 810)
Auxiliary Counterweight	3,050	(1 380)

Additional Standard Equipment:
Electric hour meter
Alternator charge indicator light
Hydraulic oil filter pressure warning light
Engine overheating warning light
Gauges (internal illuminated):
- Engine coolant temperature
- Hydraulic oil temperature
- Engine oil pressure
- Fuel

Key switch
Cold weather starting aid
Horn
Positive-position hand throttle
12,810 lb. (5 810 kg) counterweight
Counterweight removal system
Track guides
Cab with heater
Floor mat
Lifting hook
Tinted roof window

Special Equipment:
36-in. (900 mm) triple-bar semigrouser shoes
Bucket side cutters
Fire extinguisher
Engine water heater
Window protection group
Air conditioner
Auxiliary counterweight—3,050 lb. (1 380 kg)
Two electric cab fans
Vandal protection

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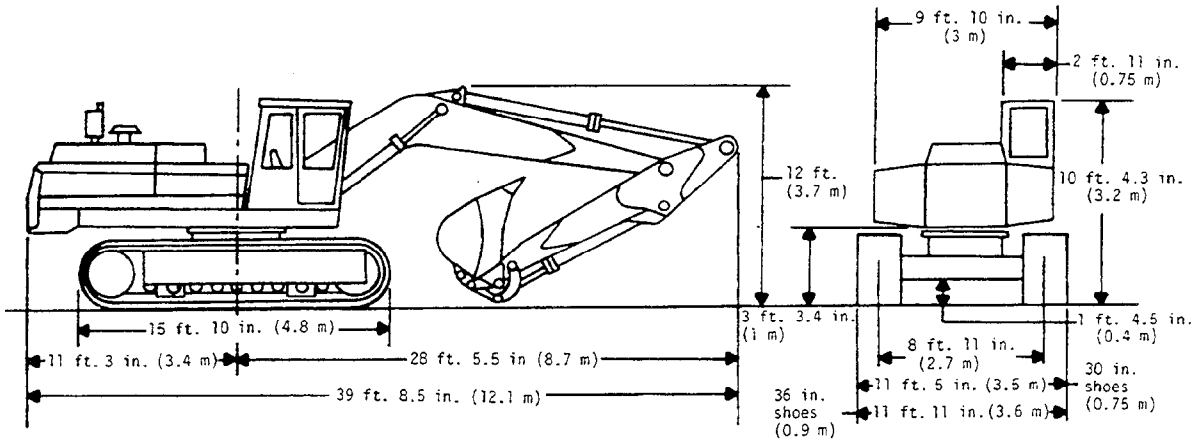
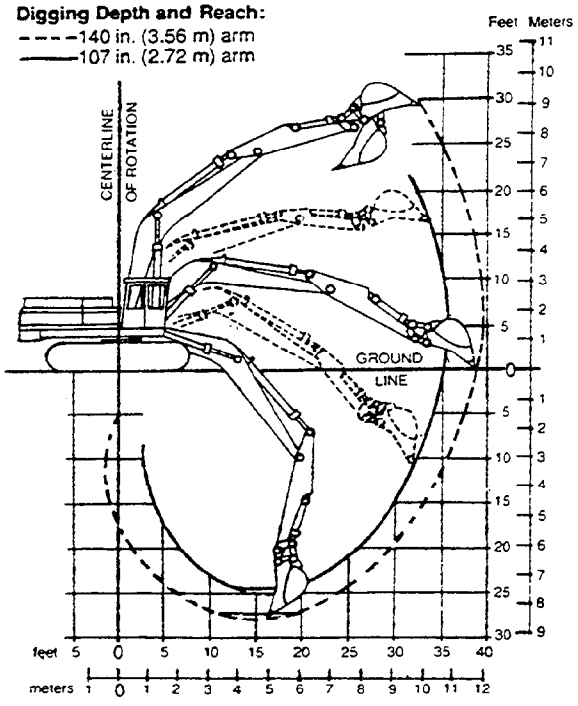


Digging Depth and Reach:
- - - - 140 in. (3.56 m) arm
——— 107 in. (2.72 m) arm



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CAP SCREW TORQUE VALUES

CUSTOMARY TORQUE SPECIFICATIONS

NOTE: Wrench torque tolerance is ± 10%.

Cap Screw	Plain Head*		Three Dashes*		Six Dashes*	
in.	(lb-ft.)	N·m	(lb-ft.)	N·m	(lb-ft.)	N·m
1/4	------	------	(10)	14	(14)	19
5/16	------	------	(20)	27	(30)	41
3/8	------	------	(35)	47	(50)	68
7/16	(35)	47	(55)	75	(80)	108
1/2	(55)	75	(85)	115	(120)	163
9/16	(75)	102	(130)	176	(175)	237
5/8	(105)	142	(170)	230	(240)	325
3/4	(185)	251	(300)	407	(425)	576
7/8	(160)	217	(445)	603	(685)	929
1	(250)	339	(670)	908	(1030)	1396
1-1/8	(330)	447	(910)	1234	(1460)	1979
1-1/4	(480)	651	(1250)	1695	(2060)	2793

All torques are dry torque unless noted.

*Dashes identify the grade of hardware.

T28:I IIIO9 170582

METRIC TORQUE SPECIFICATIONS

NOTE: Wrench torque tolerance is ±10%.

Cap Screw	Property Class 8.8*		Property Class 10.9*	
Diameter	(lb-ft)	N·m	(lb-ft)	N·m
M5	(4.4)	6.0	(6.3)	8.5
M6	(7.4)	10.0	(10.7)	14.5
M8	(18.1)	24.5	(25.8)	35.0
M10	(36.1)	49.0	(51.6)	70.0
M12	(62.7)	85.0	(89.2)	121.0
M16	(154.9)	210.0	(221.2)	300.0
M20	(265.5)	360.0	(368.7)	500.0
M24	(457.2)	620.0	(634.2)	860.0
M30	(885.0)	1200.0	(1224.2)	1660.0
M36	(1541.3)	2090.0		

All torques are dry torque unless noted.

*Numbers identify the grade of hardware.

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GENERAL INFORMATION

When you service the excavator, check the periodic service chart inside the left, front fender. A copy of this chart is below. The 890A Operator's Manual has details for excavator service.

PERIODIC SERVICES

REFER TO OPERATOR'S MANUAL FOR MORE DETAILED INFORMATION

INTERVAL HOURS	ITEM NO	COMPONENTS	SERVICE POINTS	DESCRIPTION OF SERVICE	CAPACITY OR MEASUREMENT	APPROVED SERVICE MATERIAL
10 OR DAILY	1	RADIATOR	1	CHECK COOLANT LEVEL	BOTTOM OF TUBE IN NECK	ANTI-FREEZE OR SUMMER COOLANT
	2	HYDRAULIC RESERVOIR	1	CHECK OIL LEVEL	MIDDLE OF WINDOW WITH CYLINDERS HALFWAY EXTENDED	JD HD (J14C) OR EQUIVALENT
	3	ENGINE CRANKCASE	1	CHECK OIL LEVEL	TOP MARK ON DIPSTICK	SEE CHART BELOW
	4	AIR CLEANER	1	CHECK RESTRICTION INDICATOR	TOP MARK ON DIPSTICK	SEE CHART BELOW JD FILTERS
	5	BUCKET CYLINDER (ROD)	1	GREASE FITTING	2 SHOTS	SAE MPG
	6	BUCKET LINKAGE	8	GREASE FITTINGS	2 SHOTS	SAE MPG
50	7	BOOM TO MAIN FRAME PIN	4	GREASE FITTINGS	2 SHOTS	SAE MPG
	8	BOOM CYLINDER (HEADS)	2	GREASE FITTINGS	2 SHOTS	SAE MPG
	9	BOOM CYLINDER (RODS)	2	GREASE FITTINGS	2 SHOTS	SAE MPG
	10	CROWD CYLINDER (HEAD)	1	GREASE FITTING	2 SHOTS	SAE MPG
	11	CROWD CYLINDER (ROD)	1	GREASE FITTING	2 SHOTS	SAE MPG
	12	BUCKET CYLINDER (HEAD)	1	GREASE FITTING	2 SHOTS	SAE MPG
	13	BOOM TO DIPPERSTICK PIN	4	GREASE FITTINGS	2 SHOTS	SAE MPG
100	14	TRACKS***	2	CHECK SAG	3 in. - 5 in. (76 mm - 127 mm)	
	15	ENGINE BELTS******	2	CHECK TENSION	90 LB. (400 N) BELT TENSION	
	16	HYDRAULIC RESERVOIR	1	CLEAN BREATHER VALVE		KEROSENE OR SOLVENT
	17	HOUSE BRAKES	1	CHECK OIL LEVEL	BOTTOM OF CHECK HOLE	JD HD (J14C) OR EQUIVALENT
	18	SWING GEARBOXES	2	CHECK OIL LEVEL	BOTTOM OF CHECK HOLE	JD GEAR GARD OR EQUIVALENT*
200	19	ENGINE CRANKCASE*****	1	DRAIN AND REFILL	40 QT (38L)	SEE CHART BELOW
	20	CRANKCASE OIL FILTERS*****	3	REPLACE ELEMENTS		JD FILTERS
	21	SWING GEARBOX AND BEARING QUILLS	2	GREASE FITTINGS	2 SHOTS	SAE MPG
	22	TRACK GEARBOXES	2	CHECK OIL LEVEL	BOTTOM OF CHECK HOLE	JD GEAR GARD OR EQUIVALENT*
	23	HYDRAULIC OIL RETURN FILTERS****	4	REPLACE ELEMENT		JD FILTERS
	24	HYDRAULIC OIL HIGH PRESSURE FILTERS****	3	REPLACE ELEMENT		JD FILTERS
	25	HYDRAULIC OIL PILOT CONTROL FILTER	1	REPLACE ELEMENT		JD FILTER
	26	ENGINE COOLANT FILTER*******	1	REPLACE CONDITIONER/FILTER		JD CONDITIONER/FILTER
	27	FUEL TANK SUMP	1	DRAIN WATER AND SEDIMENT		
500	28	AIR CLEANER HOSE	1	CHECK HOSE AND CONNECTIONS		
	29	COOLING SYSTEM (SPRING & FALL)*******	1	DRAIN, FLUSH AND REFILL WITH ANTI-FREEZE OR WATER. REPLACE CONDITIONER/COOLANT FILTER		JD CONDITIONER/FILTER
	30	FUEL FILTERS	2	REPLACE ELEMENTS		JD FILTERS
	31	SWING BEARING	4	GREASE FITTINGS ROTATE 45°, GREASE AGAIN, REPEAT FOR 360°	4 SHOTS EACH	SHELL "ALVANIA EP 2" OR EQUIVALENT
	32	SWINGING GEAR**	1	ADD 1 LB (0.5 kg)	20 LB (9 kg)	TEXACO TEXCLAD 2 OR EQUIVALENT
	33	SWING GEARBOXES	2	DRAIN AND REFILL	8 QT (7.6 L)	JD GEAR GARD OR EQUIVALENT*
	34	TRACK ACCUMULATORS	2	CHECK PRESSURE	SEE CHART BELOW	DRY NITROGEN
1000	35	AIR CLEANER	1	REPLACE ELEMENTS		JD FILTERS
	36	TRACK GEARBOXES	4	DRAIN AND REFILL	31 QT (30 L)	JD GEAR GARD OR EQUIVALENT*
	37	HYDRAULIC RESERVOIR	1	DRAIN, FLUSH, CLEAN SUCTION SCREENS AND REFILL	92 GAL (348 L) RESERVOIR (220 GAL (830 L) TOTAL)	JD HD (J14C) OR EQUIVALENT
	38	ENGINE CRANKCASE VENT TUBE	1	REMOVE AND CLEAN		
	39	ENGINE VALVE LASH	16	CHECK AND ADJUST - SEE JD DEALER		
	40	ENGINE SPEED	1	CHECK AND ADJUST - SEE JD DEALER		
	41	CABLE PULLEY	2	GREASE FITTINGS	2 SHOTS	SAE MPG
	42	BATTERIES	4	ADD WATER AND CHECK TERMINALS		DISTILLED WATER
	43	CAB AIR FILTERS	2	CLEAN OR REPLACE ELEMENTS		JD FILTERS

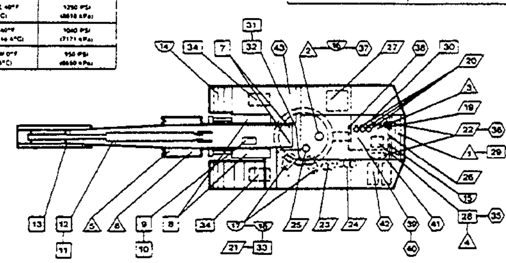
*SAE 80W EP GL-5 MIL-L-2105C
**DRAIN WATER FROM GREASE SUMP WHEN IN WATER ABOVE TRACKS
***MEASURE BETWEEN CENTER ROLLER AND CHAIN
****CHANGE FILTERS AFTER FIRST 50 HOURS AND 50 HOURS AFTER EACH MAJOR HYDRAULIC SYSTEM REPAIR
*****CHANGE OIL AND FILTERS AFTER FIRST 100 ENGINE HOURS
******SEE OPERATORS MANUAL FOR ADJUSTING BELT TENSION
*******CHANGE FILTER AFTER FIRST 100 HOURS OF COOLANT CHANGE

ENGINE OIL

AIR TEMP	JOHN DEERE TORQ GARD SUPREME OIL	SINGLE VISCOSITY OIL API SERVICE CD/SC	MULTI VISCOSITY OIL API SERVICE CC/SE
ABOVE 32°F (0°C)	SAE 30	SAE 30	NOT RECOMMENDED
32°F TO -10°F (0°C TO -23.3°C)	SAE 10W-20	SAE 10W	SAE 10W-20 SAE 10W-30
BELOW -10°F (-23.3°C)	SAE 5W-30	SAE 5W	SAE 5W-20

TRACK ACCUMULATOR

AIR TEMP	DRY NITROGEN PRESSURE
ABOVE 40°F (4°C)	1250 PSI (8618 kPa)
0° to 40°F (-18°C to 4°C)	1040 PSI (7171 kPa)
BELOW 0°F (-18°C)	950 PSI (6550 kPa)



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Engine Oils

Use John Deere TORQ-GARD SUPREME® engine oil in the engine crankcase.

Use John Deere TORQ-GARD SUPREME SAE 10W-20 oil or equivalent during the first 100 hours of operation for break-in.

Oils other than John Deere TORQ-GARD SUPREME must have one of the following specifications:

Single Viscosity Oils	**Multi-Viscosity Oils**
API Service CD/SC	API Service CC/SE
MIL-L-2104C	MIL-L-46152
Series 3	

Oils and Air Temperature

SAE ENGINE OILS			
Air Temperature	John Deere TORQ-GARD SUPREME Oil	Other Oils	
		Single Viscosity Oil	Multi-Viscosity Oil
Above 32°F (0°C)	30	30	Not recommended.
32° to -10°F (0° to -23°C)	10W-20	10W	10W-30
Below -10°F (-23°C)	5W-20	5W	5W-20

If you use SAE 5W-20 or SAE 5W oil, your engine may use more oil. Check the oil level often.

Storing and Handling Lubricants

Store lubricants in clean containers in an area protected from dust, moisture, and other contamination.

When you handle lubricants, use clean containers.

Hydraulic Oils

If you operate excavator at air temperatures above −13°F (25°C), use John Deere Hydauic Oil (J14C) or equivalent.

For air temperatures between −31°F (−35°C) and 77°F (25°C), use SAE 5W-20 engine oil, CC/SE, MIL-L-46152.

NOTE: See your John Deere dealer for special arctic lubricants.

Track Rollers and Idlers, Swing and Track Gearboxes

Use a multi-purpose GL-5 gear oil, SAE 80W-90, MIL-L-2105C.

Greases

Use John Deere Multi-Purpose Grease or an equivalent for all grease fittings except where noted.

Swing Bearing

Use Shell Alvania EP-2 or one of the following or an equivalent:

- Sunoco 742 EP grease
- Esso Unirex EP2 grease
- American Amolith 2EP grease
- Conoco Super Stay Conolith EP2 grease
- Gulf Crown EP2 grease
- Mobil Mobilux EP2 grease
- Phillips Philube EP2 grease
- Texaco Multifax EP2 grease
- Standard Dura-Lith EP2 grease

Swinging Gear

Use Texaco Texclad 2 or equivalent.

Section 01
TRACKS

CONTENTS

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SPECIAL TOOLS

NOTE: Order tools from your SERVICE-GARD™ Catalog, unless otherwise indicated.

Number	Name	Use
D-01031AA	200-Ton Track Press	Disassemble and assemble track chain.
D-01043AA	Load Positioning Sling	Used With Master Pin Pusher to remove master pin.
D-01047AA	17½ and 30-Ton Puller Set	Remove and install bushings, seals and roller end brackets.
D-01063AA	100-Ton Master Pin Pusher	Remove and install master pin.
D-01065AA	Tooling Set for 200-Ton Track Press	Disassemble and assemble track chain.
D-01087AA	Master Accessory Kit for Hydraulic Analyzer	Fittings for adjusting track adjuster relief valve.
D-01168AA	Spring Compression Tester	Test track adjuster relief valve spring.
D-01182AA	20-Ton Floor Stands	Supports the unit.
D-05227ST	Undercarriage Inspection Service Tool	Measure wear on under-carriage components.
D-15028NU	Universal Pressure Test Kit	Test oil leakage of roller and idler.
D-15041NU	Nitrogen Accumulator Charging Kit	To charge accumulator.
JD-342	Idler Bushing Plate	Remove and install bushings in rollers and idlers.
JD-345	Zerk Adapter	To adjust track adjuster relief valve.
JDG-69	Nitrogen Accumulator Holding Tool	Remove and install accumulator.
JDG-127	O-Ring Seal Tool Set	To remove O-rings.
JDG-206	Seal Installation Tool	To install metal face seals.

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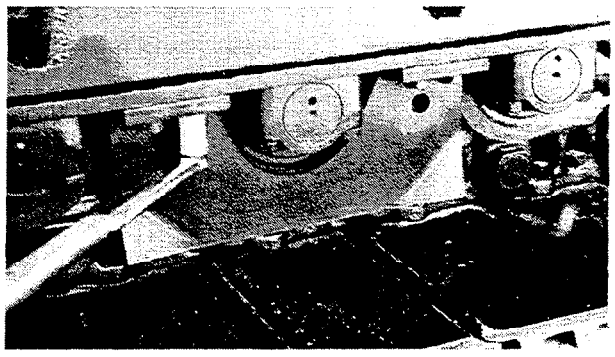
GUIDE SPECIFICATIONS

Cap screws torque .....(407 N·m) 300 lb-ft



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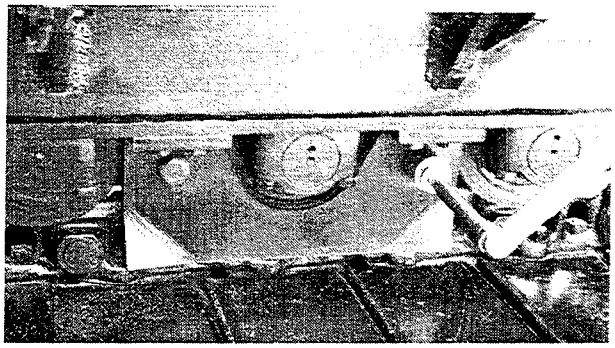
2. Cap screws torque .....(908 N·m) 670 lb-ft



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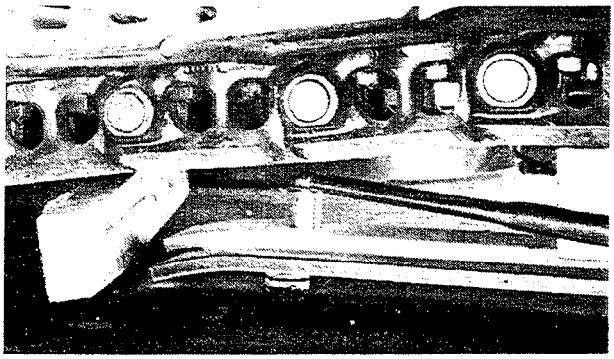
GUIDE AND SLIDE SPECIFICATION

Cap screws torque .....(325 N·m) 240 lb-ft



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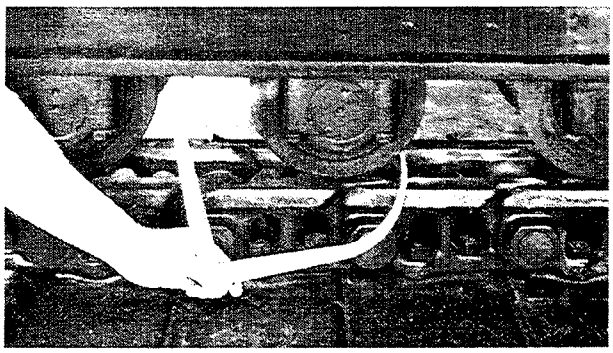
ROLLER SPECIFICATIONS

1. Outside contact surface of new roller .....185 mm (7.28 in.)

Minimum roller outside surface .....175 mm (6.88 in.)



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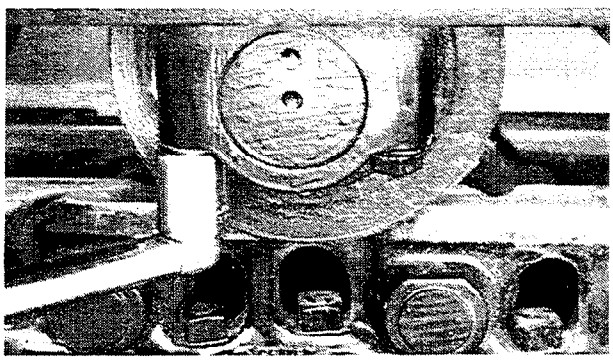
2. Cap screws torque .....(576 N·m) 425 lb-ft



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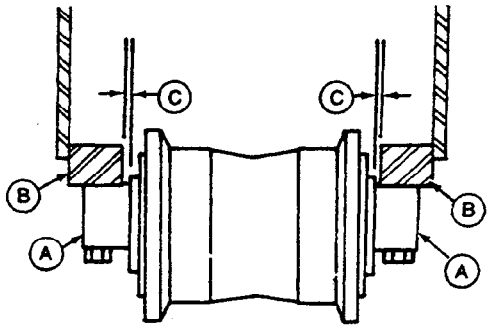
3. Gap between roller bracket and inside of track frame ..... (0.25 mm) 0.010 in.



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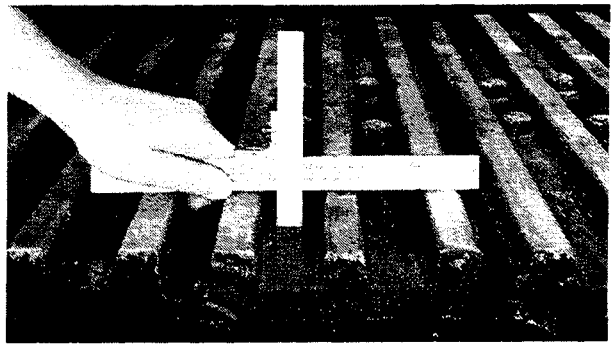
TRACK SHOE SPECIFICATIONS

1. Grouser bar height of new shoe ..... (26.5 mm) 1.04 in.

Minimum grouser bar height ..... (12.5 mm) 0.49 in.



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2. Track shoe cap screws torque (lubricated) ..... (300 ± 30 N·m) 220 ± 22 lb-ft plus an additional 1/3 turn.

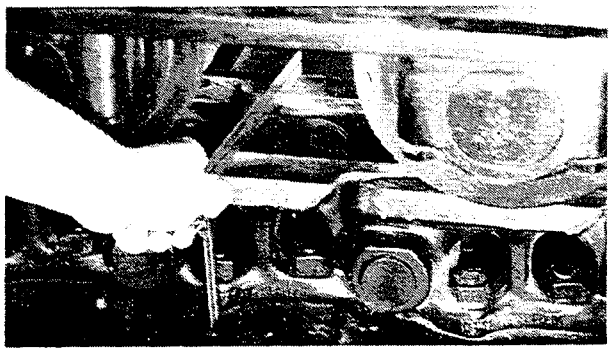
After 75 hours of operation .....(569 N·m) 420 lb-ft minimum

31A;T83549 T28;0130 213 121081

TRACK CHAIN SPECIFICATIONS

1. Track link height of new chain ..... (125.5 mm) 4.94 in.

Minimum link height ..... (114.3 mm) 4.50 in.



31A;T82864 T28;0130 214 121081