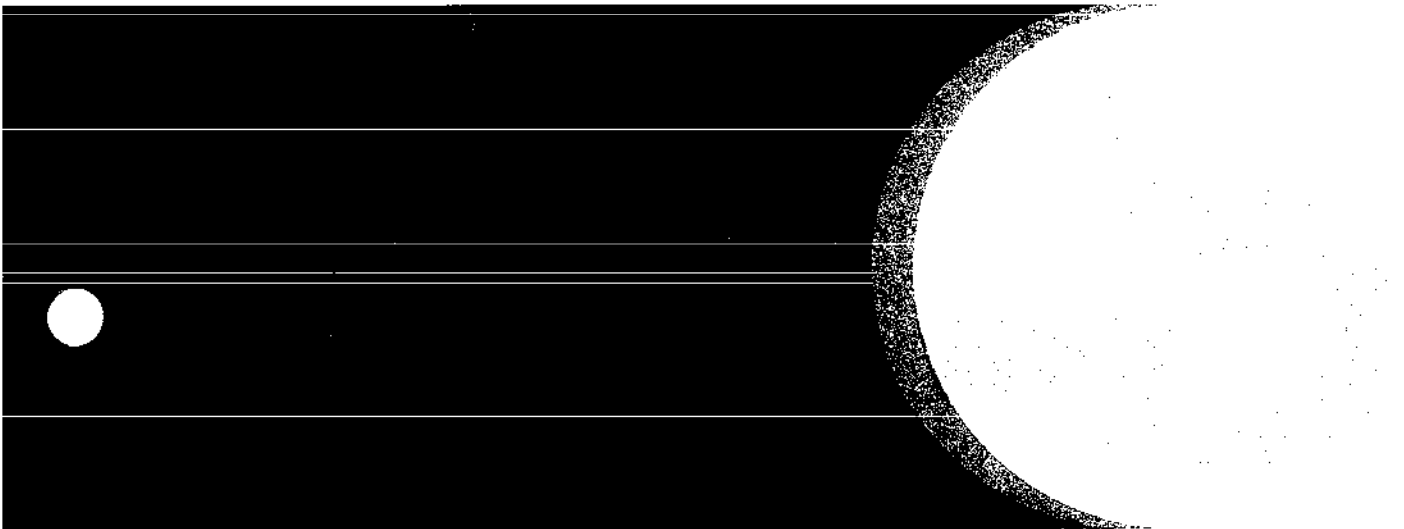


890A  
Excavator



**TECHNICAL MANUAL**

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



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

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*All information, illustrations and specifications contained in this technical 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. Whenever applicable, specifications and design information are in accordance with SAE and ICED standards.*

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**Thanks very much for your reading,  
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## INTRODUCTION AND SAFETY INFORMATION

### 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/T85959 T260 J115 130582

### FEATURES OF THIS TECHNICAL MANUAL

- John Deere ILLUSTRATION 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.



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Introduction and Safety Information

**SAFETY AND YOU**

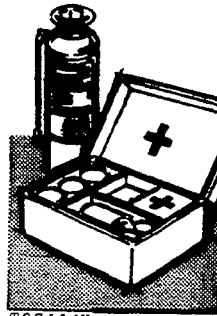


**CAUTION:** This safety symbol is used for important safety messages. When you see this symbol, follow the safety message to avoid personal injury.



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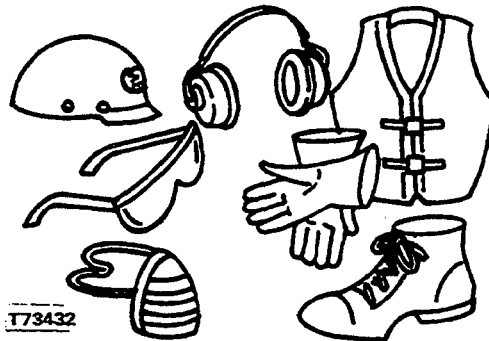
Be prepared for an accident or fire.  
Know where the first aid kit and fire extinguisher are.  
Know how to use them.  
Know where to get help.



T27504N

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Wear safety equipment.



T73432

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Wear fairly tight clothing.



T45671

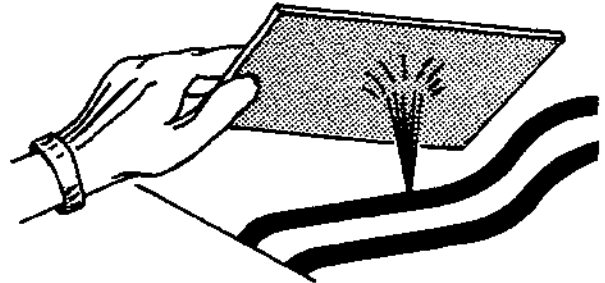
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*Introduction and Safety Information*



**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.



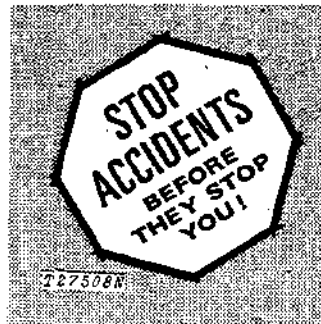
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**KEEP SHOP AND STORAGE AREA CLEAN**

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.



10A-122506 N T281 107 26088



### 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.

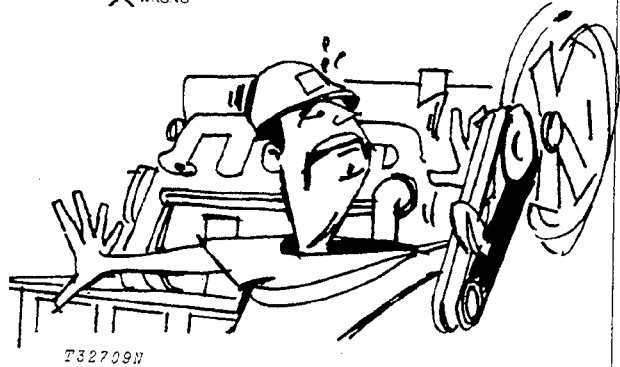
Park the machine across a slope, or use blocks to hold it in place.

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

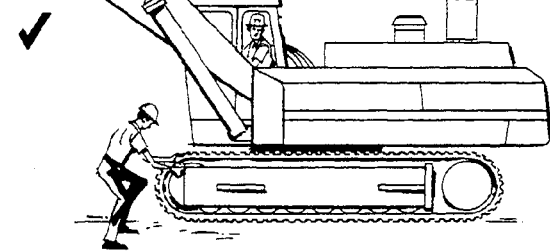
**TAKE CARE! WATCH OUT FOR OTHER PEOPLE IN THE AREA.**

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

X WRONG



RIGHT



### 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.

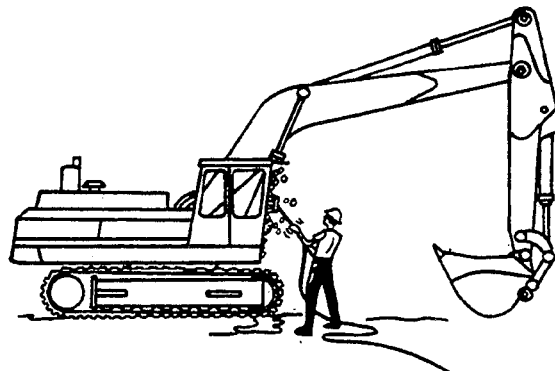
Do not remove the radiator cap unless the engine is cool. First, loosen the cap slowly to the stop. Then release all pressure in the cooling system before you remove the cap.

Check the exhaust system regularly for leaks.

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

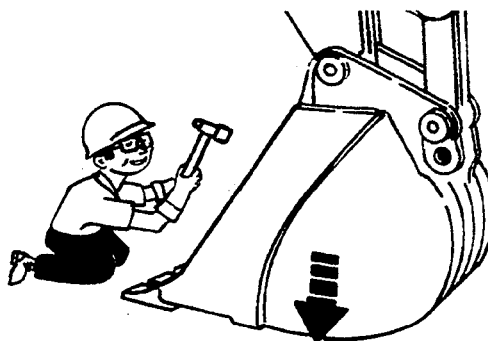
When you check hydraulic pressure, be sure to use the correct test gauge.

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



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



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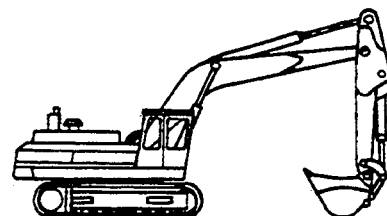
### CHECK SAFETY EQUIPMENT ON MACHINE

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

RIGHT

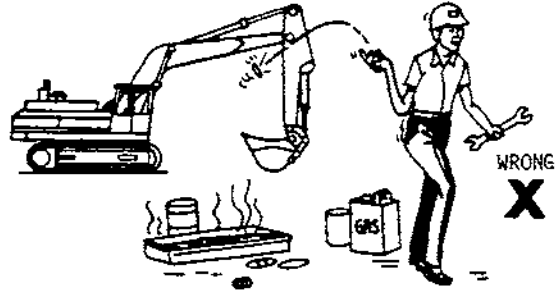


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## Introduction and Safety Information

### AVOID EXPLOSIONS OR FIRE

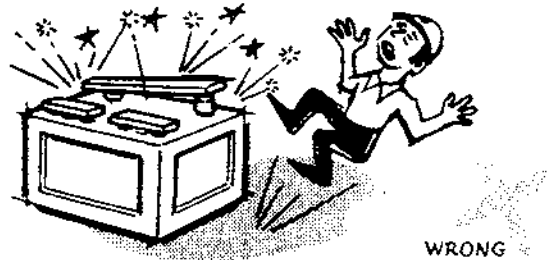
- Do not smoke while you fill the fuel tank.
- Do not smoke while you work with material that will start on fire easily.
- Stop the engine before you fill the fuel tank.
- Do not fill fuel tank if engine is hot.
- Do not use gasoline or diesel fuel for cleaning parts. Use solvents that will not start on fire.



30A782411 7281 113 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.



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### BEFORE YOU WORK ON THE HYDRAULIC SYSTEM

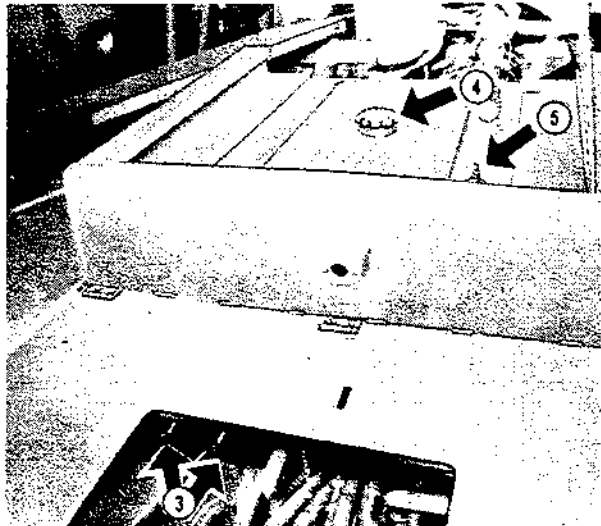
Follow these steps before you work on any part of the hydraulic system:

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.



30A742348 7261 113 260901

**Group II**  
**GENERAL SPECIFICATIONS**

**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.)

<b>Power (@2100 engine rpm):</b>	<b>SAE</b>	<b>DIN</b>
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/cm<sup>2</sup>) for the propel circuit and 2900 psi (20 000 kPa) (204 kg/cm<sup>2</sup>) for the digging circuit.

Relief valves:

Boom (2) ...	3260 psi (22 483 kPa) (229.3 kg/cm <sup>2</sup> )
Crowd (2) ..	3260 psi (22 483 kPa) (229.3 kg/cm <sup>2</sup> )
Bucket (2) ..	3260 psi (22 483 kPa) (229.3 kg/cm <sup>2</sup> )

Oil filtration:

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

<b>Cylinders:</b>	<b>Bore</b>	<b>Stroke</b>
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. <sup>3</sup> (1.2 m <sup>3</sup> )
Lift capacity .....	24,200 lb. (108 kN <sup>2</sup> ) 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

*General Specifications*

**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

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

**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.

Nominal Width	Bite Width	SAE	Capacity	Struck	Weight
39 in. (991 mm)	42 in. (1067 mm)	1½ cu. yd. (1.15 m³)	1½ cu. yd. (1.15 m³)	1¼ cu. yd. (0.96 m³)	2550 lb. (1157 kg)
45 in. (1143 mm)	47 in. (1194 mm)	1¾ cu. yd. (1.43 m³)	1¾ cu. yd. (1.43 m³)	1½ cu. yd. (1.15 m³)	2670 lb. (1211 kg)
51 in. (1295 mm)	54 in. (1372 mm)	2¼ cu. yd. (1.62 m³)	2¼ cu. yd. (1.62 m³)	1¾ cu. yd. (1.34 m³)	2820 lb. (1279 kg)
<b>Heavy-duty</b>					
33 in. (838 mm)	37 in. (940 mm)	1½ cu. yd. (1.15 m³)	1½ cu. yd. (1.15 m³)	1¼ cu. yd. (0.96 m³)	3050 lb. (1383 kg)
39 in. (991 mm)	44 in. (1118 mm)	1¾ cu. yd. (1.43 m³)	1¾ 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)	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 semigrouser	9723 sq. in. (62 731 cm²)	8.92 psi (61.5 kPa) (0.63 kg/cm²)
36 in. (900 mm) (optional)	Triple-bar semigrouser	11,668 sq. in. (75 278 cm²)	7.74 psi (53.4 kPa) (0.54 kg/cm²)

T26.1 11106 260382

*General Specifications*

**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.

<b>Capacities:</b>	<b>U.S.</b>	<b>Imp.</b>	<b>Liters</b>
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)**

	<b>lb.</b>	<b>(kg)</b>
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:**

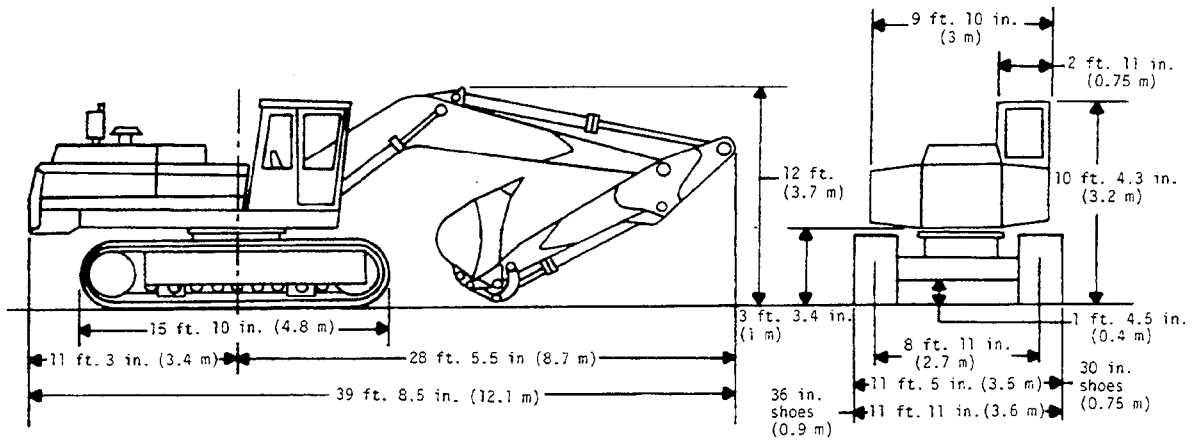
- Electric hour meter
- Alternator charge indicator light
- Hydraulic oil filter pressure warning light
- Engine overheating warning light
- Gauges (internal illuminated):
  - Engine coolant temperature
  - Hydraulic oil temperature
  - Engine oil pressure
  - Fuel
- Key switch
- Cold weather starting 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

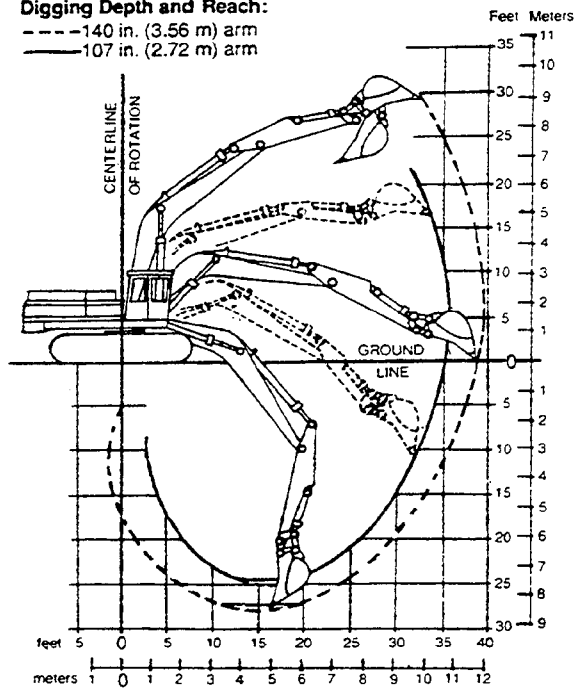
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### General Specifications



#### Digging Depth and Reach:

- 140 in. (3.56 m) arm
- 107 in. (2.72 m) arm



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**Group III**  
**CAP SCREW TORQUE VALUES**

**CUSTOMARY TORQUE SPECIFICATIONS**

*NOTE: Wrench torque tolerance is  $\pm 10\%$ .*

Cap Screw in.	Plain Head*		Three Dashes*		Six Dashes*	
	(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.

T28:1 III09 170582

**METRIC TORQUE SPECIFICATIONS**

*NOTE: Wrench torque tolerance is  $\pm 10\%$ .*

Cap Screw Diameter	Property Class 8.8*		Property Class 10.9*	
	(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.

T28:1 III10 190582



*Cap Screw Torque Values*

## 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
 TO OR DAILY	1	RADIATOR	1	CHECK COOLANT LEVEL	BOTTOM OF TUBE IN BECK	ANTIFREEZE OR SUMMER COOLANT
	2	HYDRAULIC RESERVOIR	1	CHECK OIL LEVEL	MIDDLE OF WINDOW WITH CYLINDERS FULLY EXTENDED	JO #0 UNLCO OR EQUIVALENT
	1	ENGINE CRANKCASE AIR CLEANER	1	CHECK OIL LEVEL	TOP MARK ON DIPSTICK	SEE CHART BELOW
	1	AM CLEANER	1	CHECK RESTRICTION HOSE/ROD	TOP MARK ON DIPSTICK	SEE CHART BELOW
	1	BUCKET CYLINDER (ROD)	1	GREASE FITTINGS	2 SHOTS	SAE MFC
	1	BUCKET LINKAGE	1	GREASE FITTINGS	2 SHOTS	SAE MFC
 50	1	ROOM TO MAIN FRAME PIN	1	GREASE FITTINGS	3 SHOTS	SAE MFC
	1	ROOM CYLINDER HEADS	2	GREASE FITTINGS	2 SHOTS	SAE MFC
	1	ROOM CYLINDER (ROD)	2	GREASE FITTINGS	2 SHOTS	SAE MFC
	1	ROOM CYLINDER HEADS	1	GREASE FITTING	2 SHOTS	SAE MFC
	1	ROOM CYLINDER (ROD)	1	GREASE FITTING	2 SHOTS	SAE MFC
	1	ROOM CYLINDER HEADS	1	GREASE FITTING	2 SHOTS	SAE MFC
 100	1	TRACES**	2	CHECK SAG	3 in. (76 mm) (37 mm)	
	1	ENGINE BELT*****	2	CHECK TENSION	80 LB (36 kg) BELT TENSION	
	1	HYDRAULIC RESERVOIR	1	CLEAN BREATHER VALVE		HYDROSEAL OR SOLVENT
	1	HOUSE BRAKES	1	CHECK OIL LEVEL	BOTTOM OF CHECK HOLE	JO #0 UNLCO OR EQUIVALENT
	1	SWING GEARBOXES	2	CHECK OIL LEVEL	BOTTOM OF CHECK HOLE	JO GEAR OIL OR EQUIVALENT*
	1	ENGINE CRANKCASE*****	1	DRAIN AND REFILL	4 QT (3.8 L)	SEE CHART BELOW
 200	2	CHANGEOIL OIL FILTERS***	3	REPLACE ELEMENTS		JO FILTERS
	2	SWING GEARBOX AND BEARING HOLES	3	GREASE FITTINGS	2 SHOTS	SAE MFC
	2	TRACK GEARBOXES	2	CHECK OIL LEVEL	BOTTOM OF CHECK HOLE	JO GEAR OIL OR EQUIVALENT*
	2	HYDRAULIC OIL RETURN FILTERS****	1	REPLACE ELEMENT		JO FILTERS
	2	HYDRAULIC OIL HIGH PRESSURE FILTERS****	1	REPLACE ELEMENT		JO FILTERS
	2	HYDRAULIC OIL FLOW CONTROL FILTER	1	REPLACE ELEMENT		JO FILTER
 500	2	ENGINE COOLANT FILTER*****	1	REPLACE CONDITIONER FILTER		JO CONDITIONER FILTER
	2	FUEL TANK SUMP	1	DRAIN WATER AND SEDIMENT		
	2	AIR CLEANER HOSE CONNECTION	1	CHECK HOSE AND CONNECTION		
	2	COOLING SYSTEM SPRING & FALL*****	1	DRAIN, FLUSH AND REFILL WITH ANTIFREEZE OR WATER. REPLACE CONDENSER/COOLANT FILTER		JO CONDITIONER FILTER
	2	FUEL FILTERS	2	REPLACE ELEMENTS		JO FILTERS
	2	SWING BEARING	4	GREASE FITTINGS ROTATE 1st. GREASE AGAIN, REPEAT FOR 3RD	4 SHOTS EACH	JO FILTERS
 1000	2	SWINGING CEAR**	1	ADD 1 LB (454 g)	20 LB (9.1 kg)	TERACO TERACO 2 OR EQUIVALENT*
	2	SWING GEARBOXES	2	DRAIN AND REFILL	8 QT (7.6 L)	JO GEAR OIL OR EQUIVALENT*
	2	TRACK ACCUMULATORS	2	CHECK PRESSURE	SEE CHART BELOW	JO UNLCO OR EQUIVALENT*
	2	AIR CLEANER	1	REPLACE ELEMENTS		JO FILTERS
	2	TRACK GEARBOXES	4	DRAIN AND REFILL	31 QT (30 L)	JO GEAR OIL OR EQUIVALENT*
	2	HYDRAULIC RESERVOIR	1	DRAIN, FLUSH, CLEAN SUCTION SCREENS AND REFILL	85 GAL (320 L) RESERVOIR (275 GAL (1040 L) TOTAL)	JO #0 UNLCO OR EQUIVALENT*
 1000	2	ENGINE CRANKCASE VENT TUBE	1	REMOVE AND CLEAN		
	2	ENGINE VALVE LASH	1	CHECK AND ADJUST SEE JO MANUAL		
	2	ENGINE SPEED	1	CHECK AND ADJUST SEE JO MANUAL		
	2	CABLE PULLEY	2	GREASE FITTINGS	2 SHOTS	SAE MFC
	2	BATTERIES	4	ADD WATER AND CHECK TERMINALS		DISTILLED WATER
	2	CAB AIR FILTERS	2	CLEAN OR REPLACE ELEMENTS		JO FILTERS

\*\*\*SEE HOW TO OIL IN 1.2 TORC

\*\*\*DRAIN WATER FROM GREASE SUMP WHEN IN WATER ABOVE TRACKS

\*\*\*MEASURE BETWEEN CENTER ROLLER AND CHAIN

\*\*\*CHANGE FILTERS AFTER FIRST 50 HOURS AND 80 HOURS AFTER EACH

\*\*\*CHANGE OIL AND FILTERS AFTER FIRST 100 ENGINE HOURS

\*\*\*SEE OPERATOR'S MANUAL FOR ADJUSTING BELT TENSION

\*\*\*\*\*CHANGE FILTER AFTER FIRST 100 HOURS OF COOLANT CHANGE

TRACK ACCUMULATOR			
AIR TEMP	DISTRIBUTION PRESSURE	SAE X	RECOMMENDED
ABOVE 40°F (4°C)	120 PSI (8.3 MPa)	SAE X	SAE 10W 30
0°F to 40°F (-18°C to 4°C)	100 PSI (6.9 MPa)	SAE 10W 30	SAE 10W 30
BELOW 0°F (-18°C)	150 PSI (10.3 MPa)	SAE 1W 30	SAE 1W 30

ENGINE OIL			
AIR TEMP	JOHN DEERE SUPPLIES OIL	VELOCITY OIL	RECOMMENDED
ABOVE 32°F (0°C)	SAE 30	SAE 30	SAE 30
32°F TO 10°F (0°C TO 13°C)	SAE 15W 30	SAE 15W 30	SAE 15W 30
BELOW 10°F (13°C)	SAE 1W 30	SAE 1W 30	SAE 1W 30

## Lubrication

### 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

API Service CD/SC  
MIL-L-2104C  
Series 3

#### Multi-Viscosity Oils

API Service CC/SE  
MIL-L-46152

### 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 Hydraulic 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

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