

8850 Tractor



TECHNICAL MANUAL

8850
Tractor

TM1254 (01FEB85) English

John Deere Waterloo Works
TM1254 (01FEB85)

LITHO IN U.S.A.
ENGLISH



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8850 TRACTOR TECHNICAL MANUAL TM-1254 (FEB-85)

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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

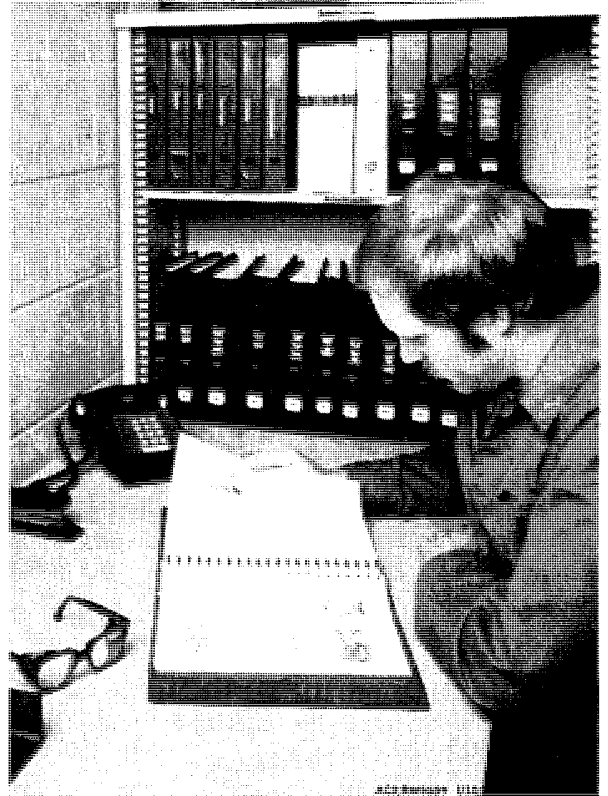
The two kinds of manuals work as a team to give you both the general background and technical details of shop service.

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

Technical Manuals are concise service guides for specific machines. They are on-the-job guides containing the information needed by the service technician.

There are two technical manuals covering these machines:

- The repair manual, identified by green section tabs, and
- The operation and test manual, identified by yellow section tabs. These sections correspond respectively to the 2-digit repair sections.

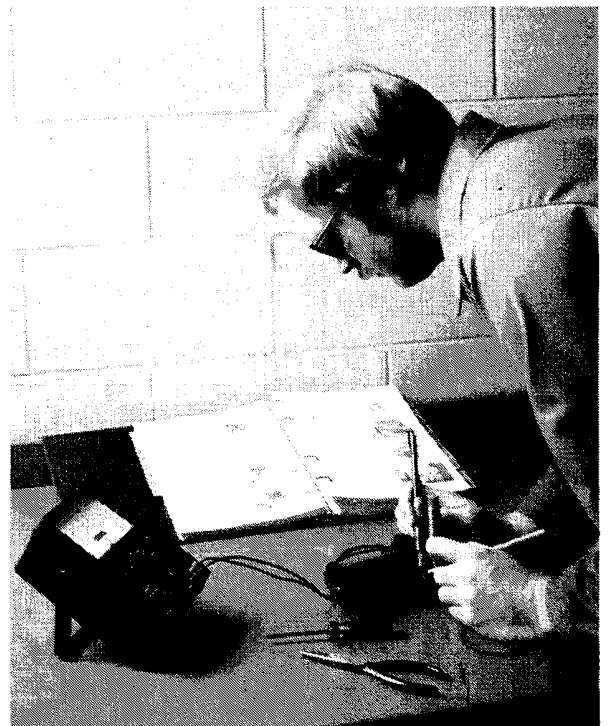


FEATURES OF THIS TECHNICAL MANUAL

- John Deere ILLUSTRATION format emphasizing more detailed pictures and fewer words.
- Instructions and illustrations grouped together in easy-to-use modules.
- Removal and Installation groups preceding some repair groups. These groups show how to remove and install components from the machine rather than from major components. They also show how to acquire access to major components of a machine.
- A section showing how to separate the tractor.

This technical manual was planned and written for you—an experienced service technician. Keep it 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.



AC3:RW5560 U10:010INT B 101281

SAFETY MESSAGES



This safety alert symbol and word **CAUTION** identifies important safety messages in this manual and on tractor. When you see this symbol, be alert to the possibility of personal injury and carefully read message that follows.

U10001001NT C 101281

IMPORTANT

The **IMPORTANT** message identifies potential problems which may cause consequential damage to tractor. Following recommended procedure will instruct technician how to avoid problem.

U10001001NT D 101281

NOTES

The word *NOTE* is followed by a statement that identifies a qualification or exception to a previous statement. A "NOTE" may also identify nice-to-know information pertinent to, but not directly related to previous statement.

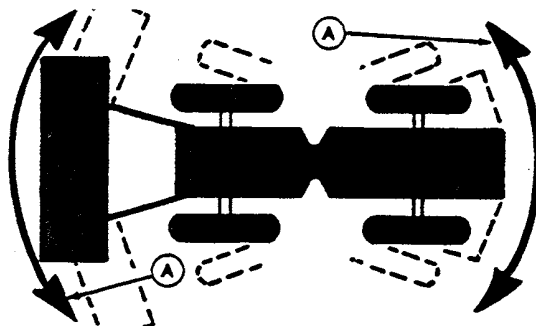
U10001001NT E 101281

STAY CLEAR OF MOVING TRACTOR

Be sure everyone is clear of tractor and attached equipment before starting engine or moving steering wheel. Tractor and equipment move (A), even with transmission in PARK. Some steering movement often occurs as engine starts.

Never try to get on or off a moving tractor.

Before dismounting, place the transmission in PARK and lower implements to the ground. If tractor is to be left unattended, stop the engine and remove the key.



AC3;RW8078 U10;010INT F 250285

PREVENT MACHINE RUNAWAY

Avoid possible injury or death from machinery runaway.

Do not start engine by shorting across starter terminals. Machine will start in gear if normal circuitry is by passed.

NEVER start engine while standing on ground. Start engine only from operator's seat, with transmission in neutral or park.



AB6;TS177 U01;BYPAS1 040385

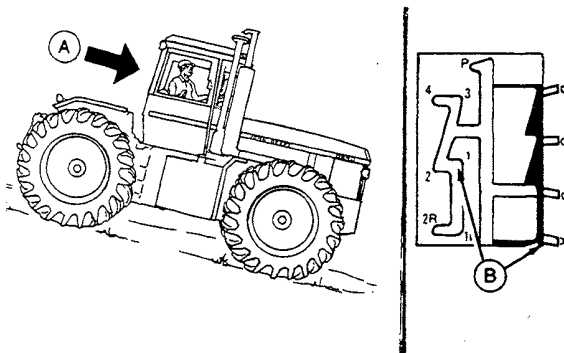
TRANSPORT TRACTOR SAFELY

Before descending a steep hill (A), shift to a low gear (B) to control the tractor with little or no braking. Never coast downhill.

When transporting on icy or graveled surfaces, be alert for skids which could result in loss of steering control. To decrease chance of skids, reduce speed and be sure tractor is properly ballasted.

Never tow tractor faster than 8 km/h (5 mph) with all wheels on the ground. With rear wheels raised, never tow tractor faster than 16 km/h (10 mph).

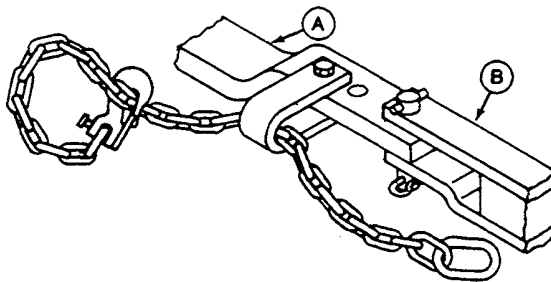
Use of radial ply tires require special precautions, see Operator Manual.



AC3;RW4421 U10;010INT G 030484

USE A SAFETY CHAIN

A safety chain will help control drawn equipment (B) should it accidentally separate from the drawbar (A) while transporting. Using the appropriate adapter parts, attach the chain to the tractor drawbar support or other specified anchor location. Provide only enough slack in the chain to permit turning. See your John Deere dealer for a chain with a strength rating equal to or greater than the gross weight of the towed machine.



AB6;TS163 053;CHAIN 310884

TOW EQUIPMENT PROPERLY

Use caution when towing loads at transport speeds. Reduce speed if towed load weighs more than the tractor and is not equipped with brakes. Avoid hard braking applications. (Consult implement operator's manual for recommended transport speeds.)

Use additional caution when transporting towed loads under adverse surface conditions, when turning, or on inclines.

U01;TOW 061284

USE ADEQUATE SERVICE FACILITIES

Keep the service area clean and dry. Wet or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment.

Make sure the service area is adequately vented.

Periodically check the shop exhaust system for leakage. Engine exhaust gas is dangerous.

Be sure all electrical outlets and tools are properly grounded.

Use adequate light for the job at hand.

Use lifting equipment and safety stands which have adequate strength for the job being performed.

Wear fairly tight clothing.

Know where the first aid kit and fire extinguishers are located, and know how to use them.

U10;010INT 1 210183

SERVICE TRACTOR SAFELY

Do not service the tractor while it is in motion or while the engine is running.

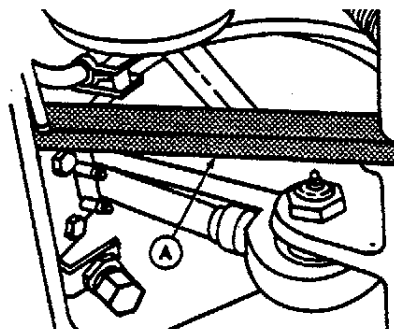
Stay clear of hinge area when engine is running. Stop engine and remove key before working near hinge.

Drive shaft does not turn at engine start-up until clutch pedal is depressed and released. Be aware of sudden rotation of drive shaft as clutch is actuated.

Install lock bars (A) on tractor hinge before performing service work in hinge area. Be sure lock bars are removed before operating tractor.

Disconnect the battery ground cable before working on the electrical system or working in any area when you might accidentally contact electrical components. A short circuit could cause burns as well as damaging the electrical system.

Reinstall all shields removed during service.



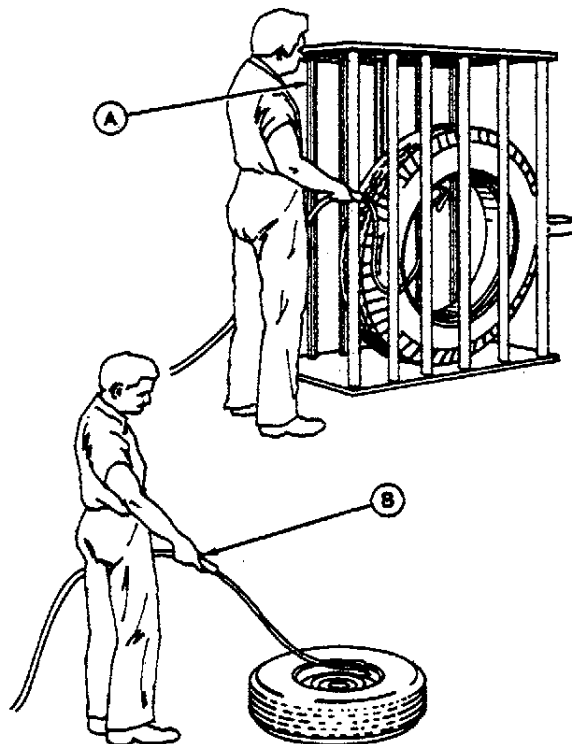
AC3;RW8506 U10;0101NT AX2 2101B3

SERVICE TIRES SAFELY

Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death. Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.

When sealing tire beads on rims, never exceed 240 kPa (2.4 bar) (35 psi) or maximum inflation pressures specified by tire manufacturers for mounting tires. Inflation beyond this maximum pressure may break the bead, or even the rim, with dangerous explosive force. If both beads are not seated when the maximum recommended pressure is reached, deflate, reposition tire, relubricate bead, and reinflate.

Detailed agricultural tire mounting instructions, including necessary safety precautions, are contained in John Deere Fundamentals of Service (FOS) Manual 55. Such information is also available from the Rubber Manufacturers Association and from tire manufacturers.

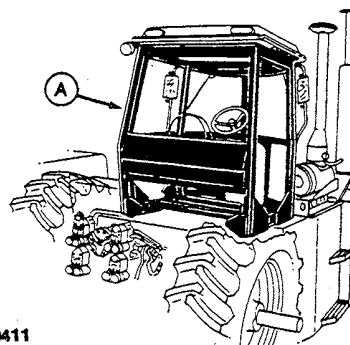


AC3;TS0123 U10;0101NT L 0304B4

DO NOT MODIFY TRACTOR

Unauthorized modification to the machine may impair the function and/or safety and affect machine life.

Never modify structural members of SOUND-GARD body (A) by welding, bending, drilling or cutting as this might weaken the structure. If any structural member is damaged, replace the entire structure. Do not attempt repairs.



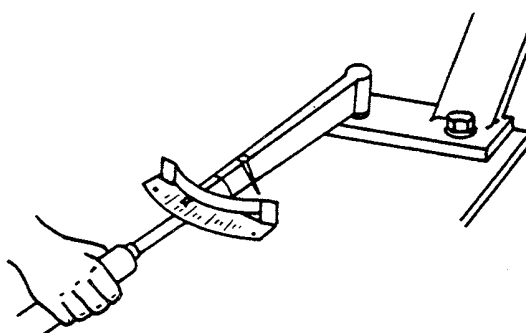
RW10411

AJ7:RW1041 1 U01;MODIFY 4WD 250585

KEEP ROPS INSTALLED PROPERLY

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.

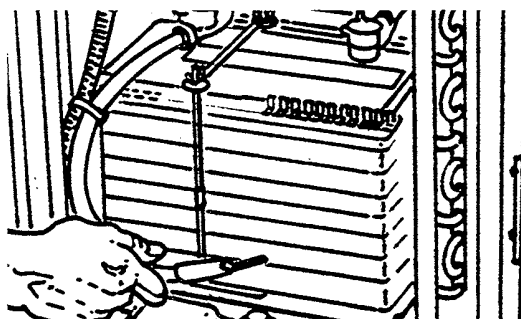


AB6;TS176 053;ROPS3 261184

OBSERVE ELECTRICAL SERVICE PRECAUTIONS

Keep all sparks and flames away from batteries, as gas given off by electrolyte is explosive. To avoid sparks, connect ground cable last and disconnect it first. When using a booster battery, follow instructions in Operator's Manual.

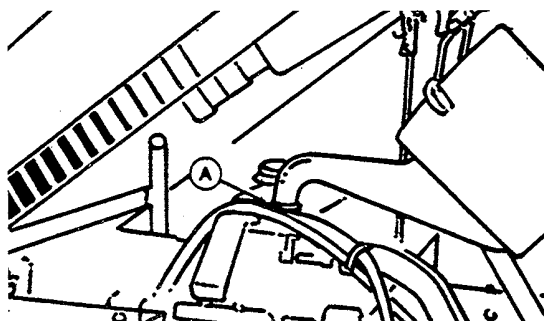
To avoid shocks and burns, disconnect battery ground cable before servicing any part of electrical system.



AC3;RW8074 U10;010INT BX2 061282

SERVICE COOLING SYSTEM SAFELY

If radiator cap (A) must be removed, do not remove it when engine is hot. Shut the engine off and wait until it cools. Then turn the cap to the first stop to relieve pressure before removing it completely.



AC3;RW8076 U10;010INT SX2 061282

AVOID HIGH-PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks.

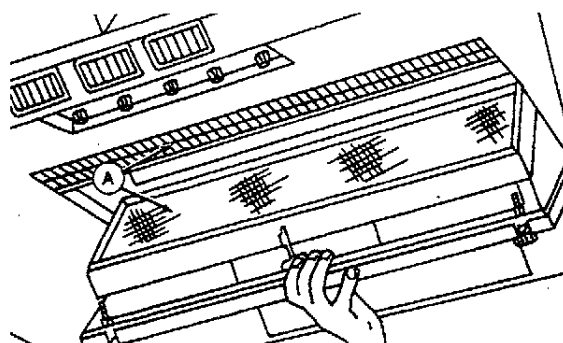
If ANY fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type injury or gangrene may result.



AB6;X9811 053;FLUID 100584

HANDLE CHEMICALS PROPERLY

SOUND-GARD body air filters (A) are not designed to filter out harmful chemicals. Follow instructions given in the implement operator's manual and those given by the chemical manufacturer when using agricultural chemicals.

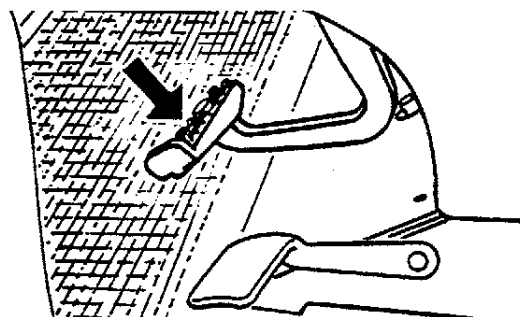


AJ7;RW5704L U01;HANDLE 2 311084

SERVICE BRAKE ACCUMULATOR SAFELY

Relieve all pressure from accumulator before disconnecting brake accumulator or brake valve. To do so open bleed screws and pump brake pedal with engine stopped, until pedal easily goes all way down.

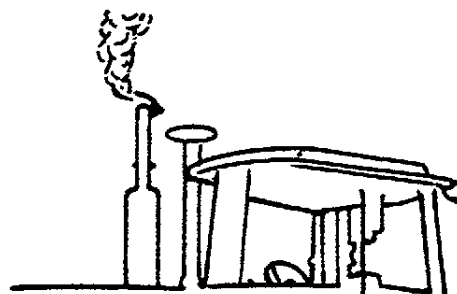
The accumulator is charged with dry nitrogen to a pressure of 500 psi (3450 kPa) (35 bar). If it needs recharging, have job done only by a qualified service person and only with dry nitrogen.



AC3;RW8103 U10;POINT FX1 220283

AVOID EXHAUST FUMES

Never run engine in a closed building. Make sure service area is adequately ventilated.



AJ7;RW8075 U01;FUMES 1 250285

AVOID EXPLOSIONS OR FIRE

Batteries produce explosive gas. Before using booster batteries, read instructions in operator's manual.

Before connecting or disconnecting battery charger, turn the charger off to avoid sparks. See instructions in operator's manual.

Be careful with starting fluid or any type fuel.

Never smoke while handling fuel.



AC3;RW5895 U10;AVOID FIRE 250285

PROTECT AGAINST NOISE

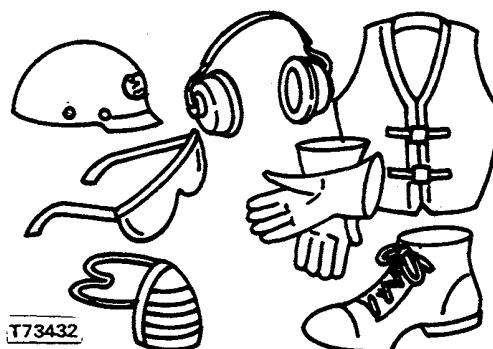
Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs (A) or earplugs (B) to protect against objectionable or uncomfortable, loud noises.



AC3;RW213 U10;OJOINT Q 100682

WEAR SAFETY EQUIPMENT



AC3;T73432 U10;SAFETY EQUIP 250285

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GENERAL TRACTOR SPECIFICATIONS

ENGINE

Power (Factory observed PTO at 2100 rpm)	300 hp (224 kw)
Type	8-cylinder, V-8, dual valve in head, diesel, turbocharged and intercooled
Slow idle speed	800 rpm
Working speed range	1500 to 2100 rpm
Bore and stroke	5.51 X 5.00 in. (140 X 127 mm)
Displacement	955 cu. in. (15.6 L ³)
Compression ratio	14.2 to 1
Firing Order	1L-4R-2R-2L-3R-3L-4L-1R
Valve clearance	
Intake	0.016 in. (0.40 mm)
Exhaust	0.023 in. (0.060 mm)
Crosshead clearance	0.000 to 0.001 in. (0.000 to 0.025 mm)
Injection pump timing	TDC
Lubrication system	forced-feed, pressurized with full-flow and bypass filters

CAPACITIES

Fuel tank	240 U.S. gal. (908 L)
Cooling system	78 U.S. qts. (74 L)
Crankcase (with filter change)	51 U.S. qts. (48 L)
Transmission-hydraulic system	45.5 U.S. gal. (172.2 L)

TIRES AND TREADS See Section 80

GENERAL DIMENSIONS

Wheelbase	133 in. (3.38 m)
Overall length	258 in. (6.55 m)
Height to muffler cover*	157 in. (3.96 m)
Height to top of SOUND-GARD body*	129 in. (3.25 m)
Overall width	127.5 in. (3.24 m)
Width at roof	55 in. (1.38 m)
Turning radius	19 ft. (5.79 m)

SHIPPING WEIGHT** 36,074 lbs. (16,360 kg)

*Tractor equipped with 20.8 to 38 dual

**Equipped for average field service, without fuel and ballast

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