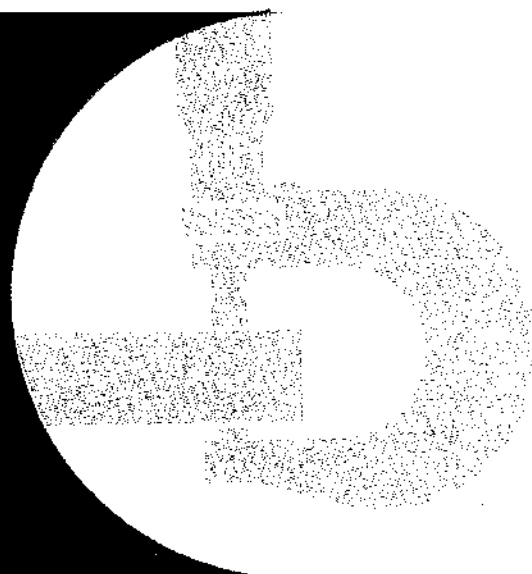


**John Deere
JD862
Scraper**



TECHNICAL MANUAL

TM-1212

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JD862 SCRAPER
Technical Manual
TM-1212 (Sep-84)

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The specifications and design information contained in this manual were correct at the time it was printed. It is John Deere's policy to continually improve and update our machines. Therefore, the specifications and design information are subject to change without notice. Wherever applicable, specifications and design information are in accordance with SAE and ICED standards.

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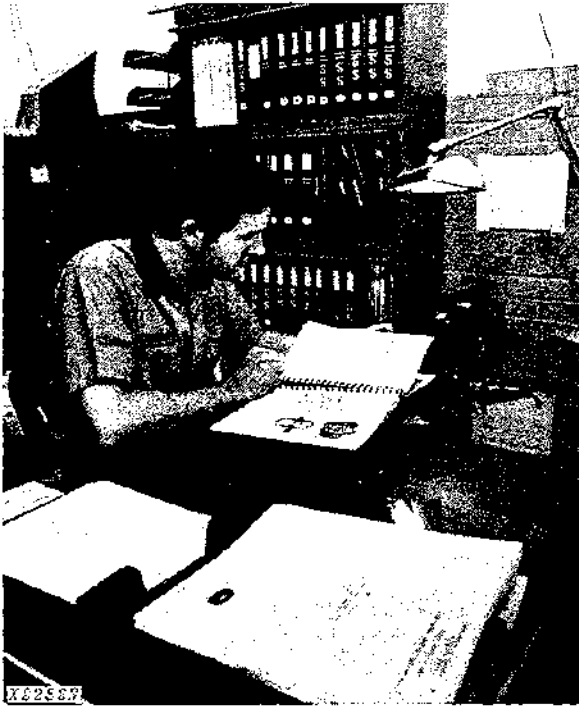
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Group II INTRODUCTION AND SAFETY INFORMATION INTRODUCTION



Use FOS Manuals for Reference

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

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

•FOS Manuals—for reference

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



When a service technician should refer to a FOS Manual for more information, a FOS symbol like the one at the left is used in the technical manual.

•Technical Manuals—for actual service

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.

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Use Technical Manuals for Actual Service

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


Some features of this manual:

- Inside front cover - "Table of Contents".
- Section 1 - Contents, safety information, general specifications, general services and fuels and lubricants.
- Sections 1 through 42 - Removal, repair, testing (components removed), installation, and adjustment.
- Section 90 - Detailed explanation of system operation, diagnosis, visual inspection, testing, and adjustments.
- Specifications are listed and illustrated at the end of each section.

MAINTENANCE WITHOUT ACCIDENT WORK SAFELY



T27988N

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

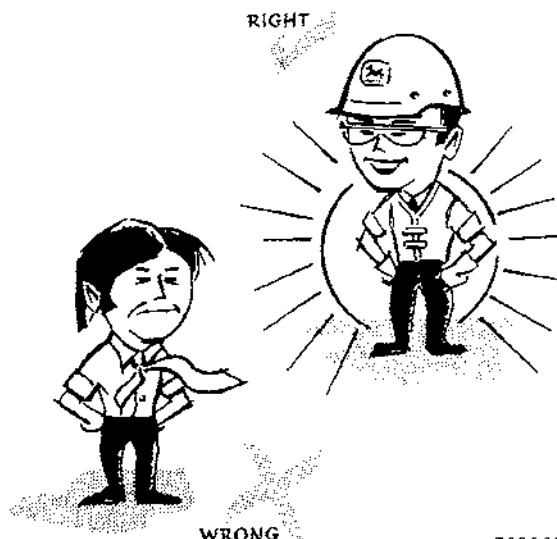
EVERY EMPLOYER HAS A SAFETY PROGRAM. KNOW WHAT IT IS!



T27501N

See your shop supervisor for specific instructions on a job, and the safety equipment required.

For instance, you may need: Hard hat, safety shoes, safety goggles, heavy gloves, reflector vests, ear protectors, respirator.



WRONG

T27502N

BE ALERT!

Plan ahead — work safely — know how to use a first aid kit and a fire extinguisher — and where to get assistance.



T27504N

Maintenance Area

Make sure the maintenance area has enough ventilation.

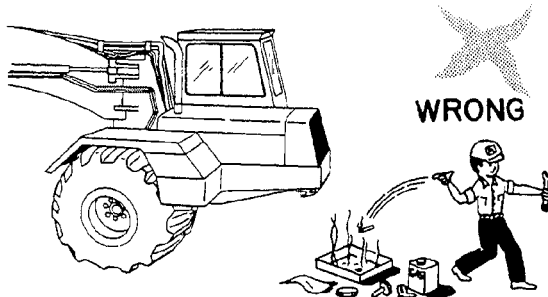
Keep the maintenance area **CLEAN AND DRY**. Oily and wet floors are slippery. Greasy rags are a fire hazard. Wet spots are dangerous when working with electrical equipment.

Keep starting aids in a cool, well-ventilated place, out of reach of unauthorized personnel.

MAINTENANCE WITHOUT ACCIDENT

AVOID FIRE HAZARDS

Fuel Is Dangerous!



T71141

- Do not smoke while putting fuel in the fuel tank.
- Do not smoke while working with material that will start on fire easily.
- Stop the engine before filling the fuel tank.
- Do not use gasoline or diesel fuel for cleaning parts. Use solvents that will not start on fire.

Battery Gas Is Highly Flammable!

When charging batteries, be sure there is enough ventilation.



T27506N

- Do not check the battery charge by putting metal objects across the terminals.
- Do not let sparks or open flame near batteries.
- Do not smoke near battery.

Flame Is Not a Flashlight!

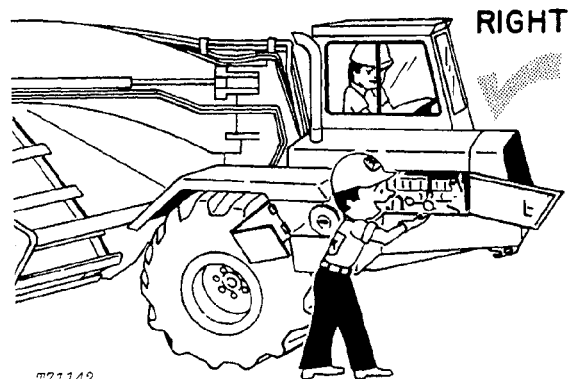
NEVER USE OPEN FLAME AROUND THE MACHINE.

KNOW WHERE FIRE EXTINGUISHERS ARE KEPT!

UNDER ALL MAINTENANCE CONDITIONS

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

Never work on equipment while it is being operated.



T71142

When the engine is running, avoid working on equipment.

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.

KEEP HANDS AWAY FROM MOVING PARTS

- Put a support under all raised equipment.
- Never work under a raised bowl.
- Lower the bowl to the ground.

If the machine is on a slope, use blocks to hold it in place.

Do not lift heavy parts by yourself. Use hoisting equipment for this.

TAKE CARE! WATCH OUT FOR OTHER PEOPLE IN THE AREA

When drilling, grinding, or hammering metal, wear safety glasses.

BE CAREFUL DURING SERVICE AND REPAIR



T71143

T71143

Keep ALL equipment free of dirt and oil.

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

When getting the engine ready for storage, remember that inhibitor changes easily into gas and is dangerous. After adding the inhibitor, seal and tape openings. When you are not using the inhibitor, keep the can tightly closed.

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 removing the cap.

Check the exhaust system regularly for leaks.

Release hydraulic pressure before working on the hydraulic system. Lower the bowl to the ground. Stop the engine. Move the steering wheel until the bowl does not move.

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

Before working on the fuel system, close the fuel shutoff valve.

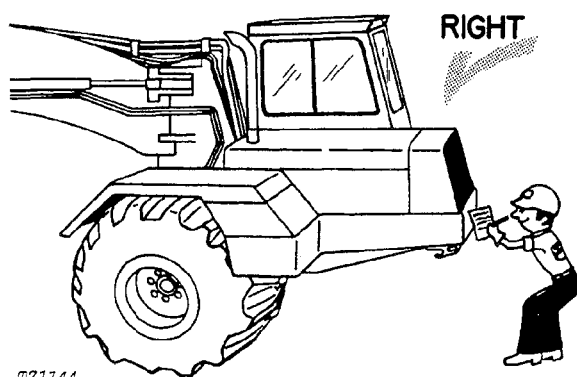
Before working on the electrical system, or making a major overhaul, disconnect the batteries.

KNOW EQUIPMENT IS READY!

All parts should be in good condition and fastened in place.

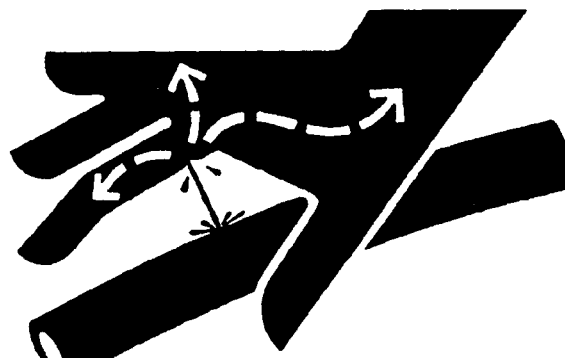
CHECK IT OUT!

- ROLL-OVER PROTECTIVE STRUCTURE
- SEAT BELT, ETC.



T71144

T71144



X9811

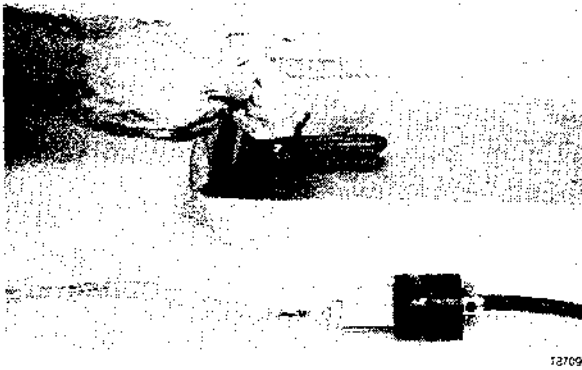
Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks. Do not use your hand.

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.

Avoid possible injury or death from machinery runaway.

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

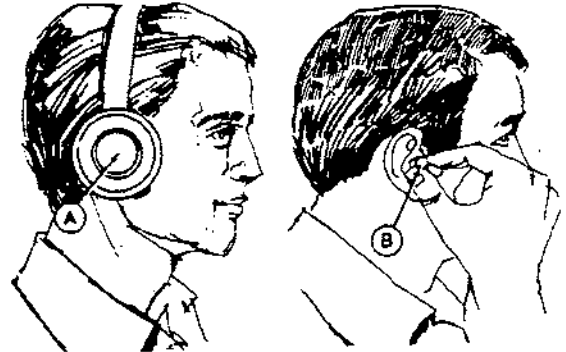
NEVER start engine while standing on ground. Start engine only from operator's seat, with transmission in neutral, direction selector lever in neutral, and park brake applied.



Test coolant heater in liquid only.

Use a heavy-duty grounded cord to connect coolant heater to electrical power.

Do not plug into electrical power unless heating element is immersed in coolant. Sheath could burst and result in personal injury.



X7662

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 noise.

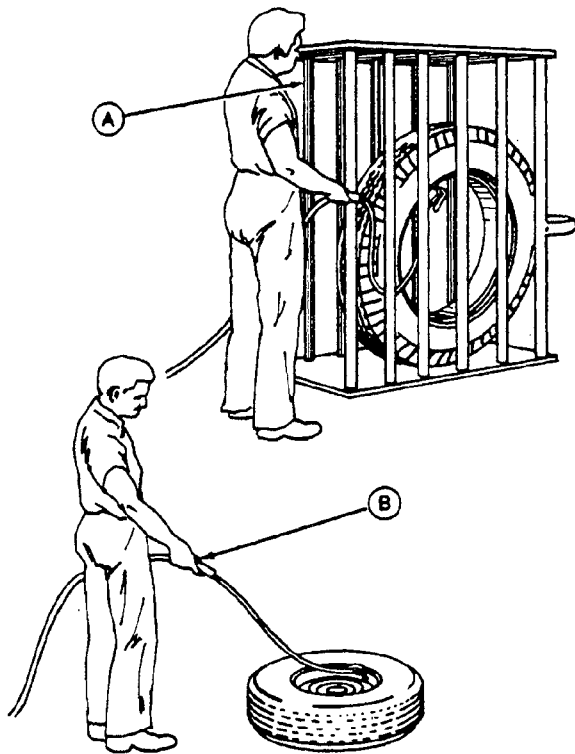
If your machine is equipped with a starting fluid starting aid, remember starting fluid is highly flammable. **DO NOT** incinerate or puncture a starting fluid container. **DO NOT** store a starting fluid container in a high-temperature area.



184925

If your machine has a roll-over protective structure, **USE A SEAT BELT.**

If your machine does not have a roll-over protective structure, **DO NOT USE A SEAT BELT.**



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. Have it done by your John Deere dealer or a qualified tire repair service.

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

- A—Use a Safety Cage if Available
- B—DO NOT Stand Over Tire. Use a Clip-On Chuck and Extension Hose.

TS0123

Group III GENERAL SPECIFICATIONS

(Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with ICED and SAE Standards. Except where otherwise noted, these specifications are based on a unit equipped with 26.5-25, 24 ply rating tires, ROPS canopy, full fuel tank, 175 lb. (80 kg) operator, and all standard equipment.)

Capacity (SAE heaped):

Volume 16 cu. yd. (12.23 m³)
 Total weight of payload @ 2500 lb./yd.³
 (1483 kg/m³) 40,000 lb. (18 144 kg)

Power (@ 2100 engine rpm):

	SAE	DIN
Gross	270 hp (201 kW*)	
Net	250 hp (186 kW)	253.5 PS

Net engine flywheel power is for an engine equipped with fan, air cleaner, water pump, lubricating oil pump, fuel pump, alternator, and muffler. Gross engine power is without fan. Flywheel power ratings are under SAE standard conditions of 500 ft. altitude and 85°F temperature and DIN 70 020 standard conditions of 760 mm Hg barometer (sea level) and 20°C temperature. Engine maintains rated horsepower up to 7500 feet (2 290 m) altitude.

**In the International System of Units (SI), power is expressed in kilowatts (kW).*

Engine: John Deere turbocharged and intercooled diesel, 6-cylinder, 4-stroke cycle

Bore and stroke 5.12x5 in. (130x127 mm)
 Piston displacement 619 cu. in. (10 144 cm³)
 Compression ratio 15.2 to 1
 Maximum torque @
 1400 rpm 813 lb-ft (1102 N·m) (112.4 kg·m)
 NACC or AMA (U.S. Tax) horsepower 62.9
 Main bearings 7
 Lubrication Pressure system w/full-flow filter
 Cooling Pressurized w/thermostat and
 fixed bypass
 Fan Suction
 Air cleaner w/restriction indicator Dry
 Electrical system 24 volt w/alternator
 Batteries (two 12 volt) Reserve capacity:
 310 minutes

Transmission: Planetary Power-Shift, 6 speeds forward, 1 reverse. Micro-processor controlled, fully automatic shift with complete modulation

Torque Converter: Two phase, single stage with a 2.84 to 1 multiplication ratio, free-wheeling stator lock-up clutch and automatic control

Differential Lock Foot-operated, hydraulically actuated

Drive Axle . . Differential drive; over-all ratio 22.22 to 1; planetary final drives with 4.4 gpm (0.28 L/s) for lubrication and differential lock actuation

Brakes: Hydraulic, power actuated. An accumulator provides several brake applications after engine is stopped.

Tractor Wet-disk between differential and planetaries. No adjustment needed.

Scraper Expanding shoe, self-adjusting in wheels.

Parking Manually controlled, mechanical, on axle input shaft.

Power Steering: Position-responsive
 Articulated frame hydraulically actuated by dual cylinders.

Turning circle
 (180 deg. turn) 32 ft. 9.9 in. (10.0 m)

Articulation 180 deg.

Tractor Oscillation (total) 40 deg.

Hydraulic System:

Main tractor system: Closed-center
 System pressure 2350 psi (16 203 kPa)
 (165.2 kg/cm²)

Operates steering, brakes, and all scraper functions except elevator drive.

Main pump . . . Variable displacement, constant pressure; delivers 63 gpm (3.97 L/s) @ 2100 engine rpm.
 Main charge pump delivers 20.3 gpm (1.28 L/s) @ 2100 engine rpm.

Elevator system . . . Engine-driven, 5.43 cu. in. (89 cm³) variable displacement, reversible hydrostatic pump delivers 53.5 gpm (3.38 L/s) @ 2100 engine rpm.
 System pressure 5000 psi (34 475 kPa)
 (351 kg/cm²)

Filtration . . . All systems are protected by replaceable filters.

Main hydraulic system 10-micron filters

Elevator system 10-micron filters

Transmission 10-micron filters

Hydraulic Cylinders:	Bore	Stroke
Lift (2)	5 in. (127 mm)	20 in. (508 mm)
Sliding floor (1)	5.25 in. (133 mm)	38.8 in. (986 mm)
Ejector gate (2)	3 in. (76 mm)	49.0 in. (1.24 m)
Steering (2)	4 in. (102 mm)	25.9 in. (658 mm)
Piston rods	Ground, heat-treated, chrome-plated, polished	
Lift and steering cylinders	2 in. (51 mm) dia.	
Sliding floor cylinder	2.5 in. (64 mm) dia.	
Ejector gate cylinders	1.75 in. (44 mm) dia.	

Elevator: Reversible, hydrostatic drive with heavy-duty planetary reduction
 Number of flights 23
 Spacing of flights 12.52 in. (318 mm)
 Width of flights 6 ft. 6 in. (1.98 m)
 Speed (@ 2100 engine rpm) 0-240 fpm (73 m/min)
 Length (top to bottom) 12 ft. (3.66 m)

Bowl: . . . Heavy-gauge steel with reinforcing and box construction. Sliding floor rides on heat-treated rails. Cutting edge retracts. Independent axles are vertically adjustable.

Cutting Edge: . . . 8 ft. 9.9 in. (2.69 m) wide; 3 sections, reversible and replaceable, high-carbon steel. Each section is adjustable vertically 2 in. (51 mm).
 Center section 1x13x77.9 in. (25x330x1979 mm)
 End sections 1x13x14 in. (25x330x356 mm)

Tires:
 26.5-29, steel-cord radials
 26.5-25, 24 ply rating, E2
 26.5-29, 26 ply rating, E3
 26.5-29, steel-cord radials

Capacities:	U.S.	IMP.	Liters
Cooling system	15 gal.	12.5 gal.	56.8
Fuel tank	113 gal.	94.4 gal.	429
Engine lubrication, including filter	31 qt.	25.8 qt.	29.3
Transmission case and filter	19 gal.	15.8 gal.	71.9
Differential case	7.5 gal.	6.2 gal.	28.4
Hydraulic reservoir	24 gal.	20.0 gal.	90.8
Elevator gear case	8 qt.	6.7 qt.	7.6

Weight Distribution:	lb.	kg
Empty: Drive axle	32,050	14 538
Scrapper axle	17,139	7 774
Total	49,189	22 312
Loaded: Drive axle	44,400	20 140
Scrapper axle	44,789	20 316
Total	89,189	40 456

JD862 SCRAPER DIMENSIONS

