

# John Deere 670A and 672A Motor Grader Repair



## TECHNICAL MANUAL

TM-1188 (Dee-87)

LITHO IN U.S.A.

# JD670-A AND JD672-A MOTOR GRADERS

Technical Manual  
TM-1188 (Dec-87)

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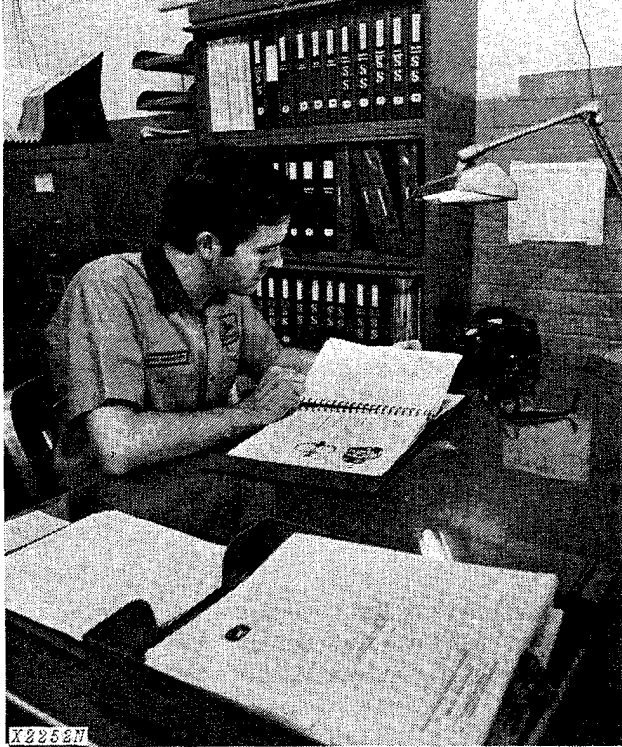
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## Group II

# 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 troubleshooting, general maintenance, and basic types of failure 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.



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 I - General specifications and services.
- Sections 1 through 46 - 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.

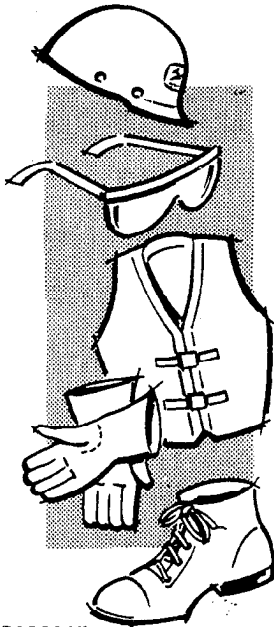
# MAINTENANCE WITHOUT ACCIDENT WORK SAFELY



T27999N

 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

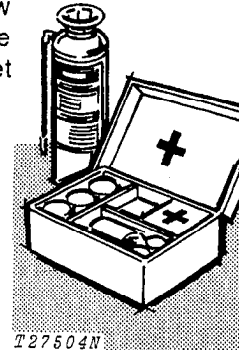
See your shop supervisor for specific instructions on a job, and the safety equipment required.

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



## BE ALERT!

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



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## Maintenance Area

Make sure the maintenance area has enough ventilation.

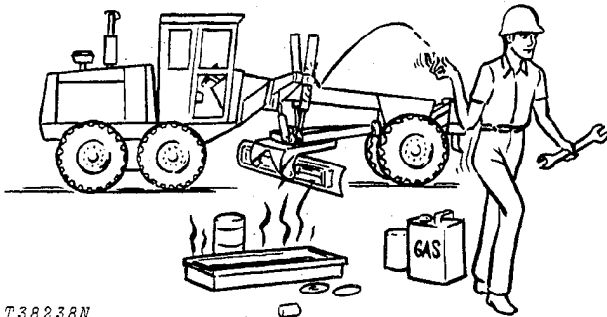
Keep the maintenance area **CLEAN AND DRY**. Oily and wet floors are slippery. Greasy rags are a fire hazard. Wet spots are dangerous when working with electrical equipment.

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

## MAINTENANCE WITHOUT ACCIDENT

### AVOID FIRE HAZARDS—

#### Fuel Is Dangerous!



T38238N

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.

If the engine is hot, use care when putting fuel in 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 posts.

Do not let sparks or open flame near batteries.

Do not smoke near battery.

#### Flame Is Not a Flashlight!

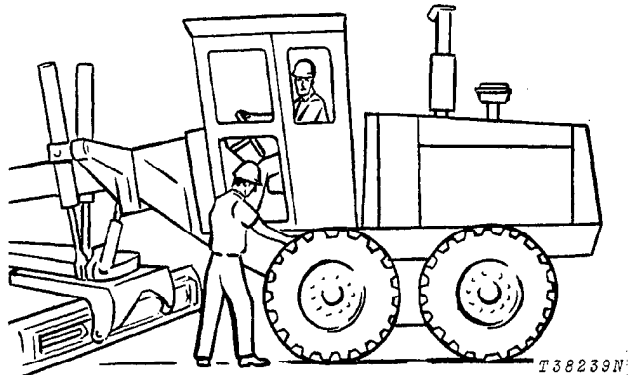
**NEVER USE OPEN FLAME AROUND THE MACHINE.**

**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.



T38239N

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 blade, ripper, or scarifier.

Lower all equipment to the ground.

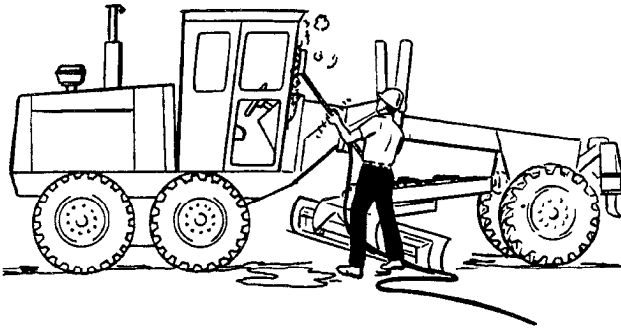
If the machine is on a slope, use blocks to hold it in place.

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



T38242N

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 you can hold your hand on the radiator tank. 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. Stop the engine. Lower all equipment to the ground. Move the control levers until the equipment 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.

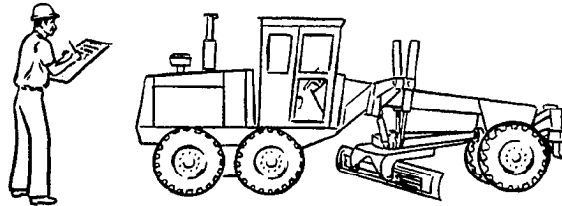
Before working on the electrical system, or making a major overhaul, disconnect the batteries.

## KNOW EQUIPMENT IS READY!

Check all guards, shields, and safety bars. Every one must be in place and tight.

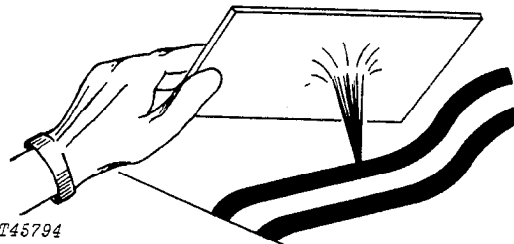
### CHECK IT OUT!

- GUARDS
- SHIELDS
- SAFETY BARS
- ROLL-OVER PROTECTIVE STRUCTURES
- SEAT BELTS, ETC.



T38243N

Carefully inspect all systems for leaks.



T45794

Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

Escaping fluid under pressure can penetrate the skin.

If injured by escaping fluid, see a doctor at once.

## 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 13.00-24, 12 ply rating, tubeless tires, 12 ft. (3.66 m) moldboard, and standard equipment. Weights include lubricants, coolants, full fuel tank and 175 lb. (79 kg) operator.)

### Power

(at 2300 engine rpm):	<b>SAE</b>	<b>DIN</b>
Gross	135 hp (100.7 kW)	
Net	125 hp (93.2 kW)	126.7 PS

Net engine flywheel power is for an engine equipped with fan, air cleaner, water pump, lubricating oil pump, fuel pump, alternator, and muffler. The 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 conditions (non-corrected). No derating is required up to 10,000 ft. (3000 m) altitude.

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

Bore and stroke . . . . . 4.19x5 in. (106.5x127 mm)

Piston displacement . . . . . 414 cu. in. (6784 cm<sup>3</sup>)

Compression ratio . . . . . 16.2 to 1

Maximum torque @ 1300 rpm . . 372 lb.-ft. (504 Nm)  
 (51.4 kg/m)

NACC or AMA (U.S. Tax) horsepower . . . . . 42.1

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 (2) 12 volt . Reserve capacity: 180 minutes

**Transmission** . . . . . Direct drive full Power Shift with planetary gear reductions. Foot inching pedal.

### Travel Speeds (2300 engine rpm, no tire slip):

Shift Lever Position	Forward		Reverse	
	mph	km/h	mph	km/h
1	2.3	3.6	2.8	4.5
2	3.2	5.1	3.9	6.3
3	4.8	7.8	5.9	9.5
4	6.3	10.1	7.6	12.3
5	8.2	13.2		
6	10.5	17.0		
7	14.1	22.8		
8	23.9	38.4		

**Differential Lock** . . . . . Foot-operated, hydraulically actuated

### Front Drive: (JD672-A only)

Hydrostatic motor in each wheel controlled through a flow divider to provide optimum traction. Free-wheeling in gears 5 through 8. Switch controlled for two modes of operation.

Pump . . . . . 5.43 cu. in. (89 cm<sup>3</sup>) variable displacement pump driving a 2.03 cu. in. (33 cm<sup>3</sup>) reversible motor in each wheel.





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