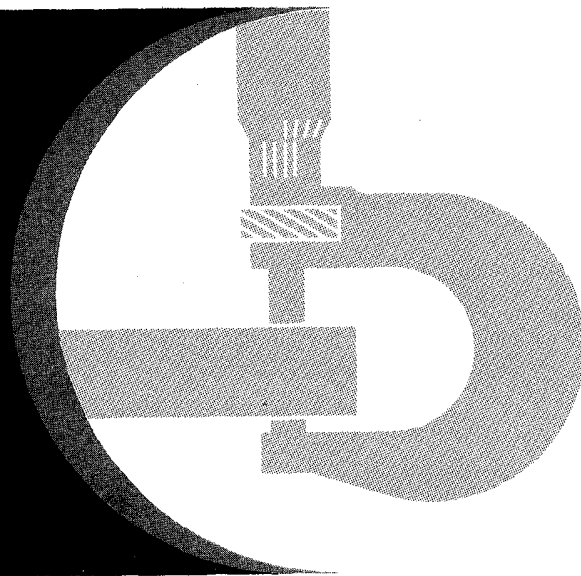


JD 550 Crawler Bulldozer



TECHNICAL MANUAL

John Deere Dubuque Works
TM-1108 (Nov-86)

SECTION AND GROUP CONTENTS OF THIS MANUAL

SECTION I - GENERAL INFORMATION

- Group I - Contents
- Group II - Introduction and Safety Information
- Group III - General Specifications
- Group IV - Predelivery, Delivery Services
- Group V - Lubrication

SECTION 1 - TRACKS

- Group 0130 - Track Systems
- Group 0199 - Specifications and Special Tools

SECTION 2 - AXLES AND SUSPENSION SYSTEMS

- Group 0201 - Drive Axle Housing
- Group 0210 - Bevel Drive
- Group 0225 - Input Drive Shafts
- Group 0250 - Axle Shaft, Bearings and Reduction Gears
- Group 0299 - Specifications and Special Tools

SECTION 3 - TRANSMISSION

- Group 0315 - Controls
- Group 0341 - Housings and Covers
- Group 0350 - Gears, Shafts, Bearings and Power Shift Clutch
- Group 0360 - Transmission Hydraulics
- Group 0399 - Specifications and Special Tools

SECTION 4 - ENGINE

- Group 0400 - Removal and Installation
- Group 0401 - Crankshaft and Main Bearings
- Group 0402 - Camshaft and Valve Actuating Means
- Group 0403 - Connecting Rods and Pistons
- Group 0404 - Cylinder Block (Liners)
- Group 0407 - Engine Oiling System
- Group 0408 - Ventilating System
- Group 0409 - Cylinder Head and Valves
- Group 0410 - Exhaust Manifold
- Group 0413 - Fuel Injection System
- Group 0415 - Engine Balancer
- Group 0416 - Turbocharger
- Group 0417 - Water Pump
- Group 0418 - Thermostats, Housing and Piping
- Group 0419 - Engine Oil Cooler
- Group 0420 - Fuel Filter
- Group 0421 - Fuel Transfer Pump
- Group 0422 - Starting System
- Group 0433 - Flywheel, Housing and Fasteners
- Group 0499 - Specifications and Special Tools

SECTION 5 - ENGINE AUXILIARY SYSTEMS

- Group 0505 - Cold Weather Starting Aids
- Group 0510 - Engine Cooling Systems
- Group 0515 - Speed Controls
- Group 0520 - Intake System
- Group 0560 - External Fuel Supply Systems
- Group 0599 - Specifications and Special Tools

SECTION 6 - TORQUE CONVERTER

- Group 0641 - Converter Housing and Cover
- Group 0651 - Converter Turbine, Gears and Shafts
- Group 0660 - Converter Hydraulics
- Group 0699 - Specifications and Special Tools

SECTION 9 - STEERING SYSTEMS

- Group 0960 - Power Steering
- Group 0999 - Specifications and Special Tools

SECTION 15 - EQUIPMENT ATTACHING

- Group 1511 - Drawbar

SECTION 16 - ELECTRICAL SYSTEMS

- Group 1671 - Batteries, Support and Cables
- Group 1672 - Alternator, Regulator and Charging System Wiring
- Group 1673 - Lighting System
- Group 1674 - Wiring Harness and Switches
- Group 1676 - Instruments and Indicators
- Group 1699 - Specifications and Special Tools

SECTION 17 - FRAME, CHASSIS OR SUPPORTING STRUCTURE

- Group 1740 - Frame Installation
- Group 1746 - Frame Bottom Guard
- Group 1749 - Chassis Weights

SECTION AND GROUP CONTENTS OF THIS MANUAL (Continued)

SECTION 18 - OPERATOR'S STATION

- Group 1806 - Safety Equipment
- Group 1808 - Comfort and Convenience Items
- Group 1810 - Operator Enclosure
- Group 1821 - Seat
- Group 1899 - Specifications and Special Tools

SECTION 19 - SHEET METAL

- Group 1910 - Hood or Engine Enclosure
- Group 1921 - Grille and Grille Housing

SECTION 21 - MAIN HYDRAULIC SYSTEM

- Group 2160 - Hydraulic System
- Group 2199 - Specifications and Special Tools

SECTION 30 - WINCH

- Group 3015 - Controls Linkage
- Group 3041 - Winch Housing and Mounting Structure
- Group 3050 - Winch Drive and Clutches
- Group 3060 - Winch Hydraulic System
- Group 3099 - Specifications and Special Tools

SECTION 32 - DOZER

- Group 3201 - Blade
- Group 3215 - Controls Linkage
- Group 3241 - Main Frame
- Group 3243 - Moveable Frames
- Group 3260 - Hydraulic System
- Group 3299 - Specifications and Special Tools

SECTION 33 - BACKHOE 9300

- Group 3302 - Bucket
- Group 3315 - Controls Linkage
- Group 3340 - Frames
- Group 3360 - Hydraulic System
- Group 3399 - Specifications and Special Tools

SECTION 33A - BACKHOE 9550

- Group 3302 - Bucket
- Group 3315 - Controls Linkage
- Group 3340 - Frames
- Group 3360 - Hydraulic System
- Group 3399 - Specifications and Special Tools

SECTION 37 - LOG ARCH

- Group 3740 - Arch Frames

SECTION 40 - WINCH DRIVE

- Group 4051 - Gears, Shafts and Bearings

SECTION 42 - GROUND CONDITIONING TOOL

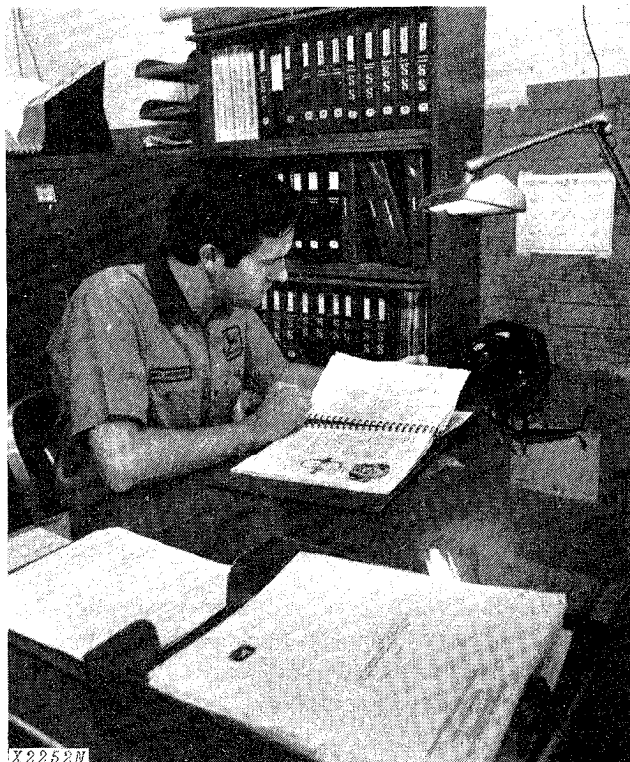
- Group 4201 - Teeth and Shanks
- Group 4240 - Frame
- Group 4260 - Hydraulic System
- Group 4299 - Specifications and Special Tools

SECTION 90 - SYSTEM TESTING

- Group 9005 - General Information - Seven Basic Steps of Testing and Diagnosis
- Group 9010 - Engine
- Group 9015 - Electrical System
- Group 9020 - Power Train
- Group 9025 - Hydraulic System
- Group 9025A - Hydraulic System (Analyzer)
- Group 9030 - Miscellaneous Components
- Group 9035 - Specifications and Special Tools

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 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 TM to identify the reference.

•Technical Manuals—for actual service

Technical Manuals are concise service guides for a *specific* machine. 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 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 whenever in doubt about correct service procedures or specifications.


Some features of this manual:

- Inside front cover - "Table of Contents".
- Section 1 - Contents, safety information, general specifications and general services.
- 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 grouped and illustrated at the end of each section.

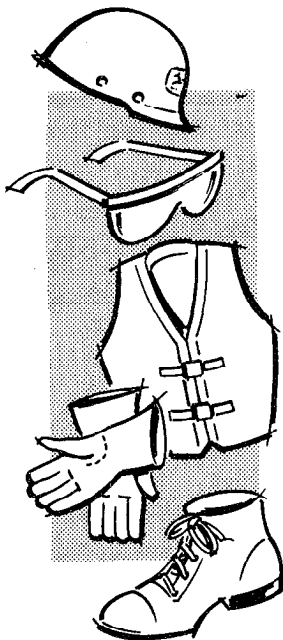
MAINTENANCE WITHOUT ACCIDENT WORK SAFELY



T27999N

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

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



T27501

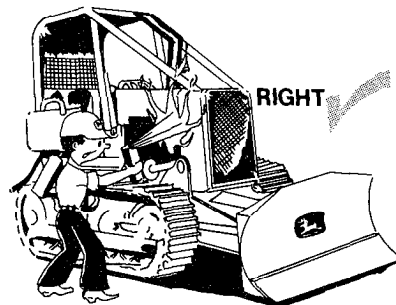
Consult your shop supervisor for specific instructions on a job, and the safety equipment required.

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



T27502

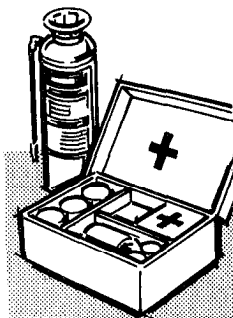
ALWAYS AVOID loose clothing or any accessory—flopping cuffs, dangling neckties and scarves, or rings and wrist watches—that can catch in moving parts and put you out of work.



T43517

BE ALERT!

Plan ahead—work safely—avoid accidental damage and injury. If a careless moment does cause an accident or fire, react quickly with the tools and skills at hand—know how to use a first aid kit and a fire extinguisher—and where to get aid and assistance. In an emergency, split-second action is the key to safety.



T27504N

MAINTENANCE WITHOUT ACCIDENT

Specific safety procedures should always be observed, whether servicing the equipment or making the repairs. Remembering these—in time!—can prevent an injury...or save your life....

AVOID FIRE HAZARDS—

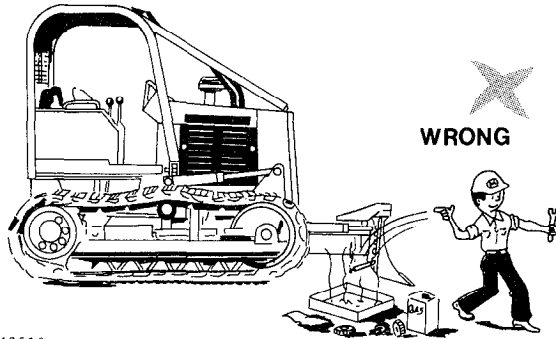
Fuel Is Dangerous!

Don't smoke while refueling.

Don't smoke while handling highly flammable material.

Engine should be shut off when refueling.

Use care in refueling if the engine is hot.



T43518

Don't use open pans of gasoline or diesel fuel for cleaning parts. Good commercial, nonflammable solvents are preferred.

Battery Gas Is Highly Flammable!

Provide adequate ventilation when charging batteries.



T27506N

Don't check battery charge by placing metal objects across the posts.

Don't allow sparks or open flame near batteries.

Don't smoke near battery.

Flame Is Not a Flashlight!

Never check fuel, battery electrolyte or coolant levels with an open flame.

Never use an open flame to look for leaks anywhere on the equipment.

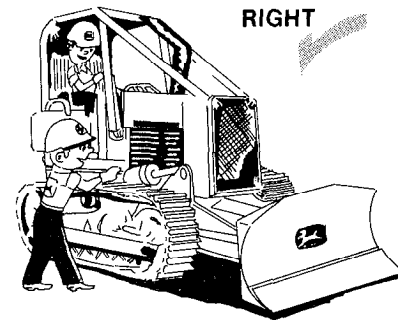
Never use an open flame as a light anywhere on or around the equipment.

KNOW WHERE FIRE EXTINGUISHERS ARE KEPT!

UNDER ALL MAINTENANCE CONDITIONS—

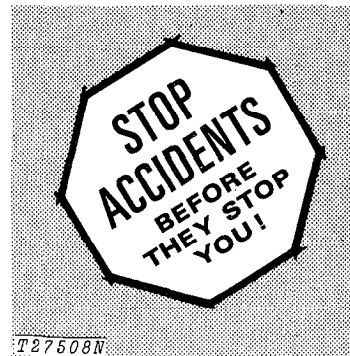
Do not perform any work on the equipment unless authorized to do so. Then be sure you know what you're doing. Follow recommended procedures.

Never service the equipment while it is being operated.



T43519

Avoid working on equipment with the engine running. If it is necessary to make checks with the engine running **ALWAYS USE TWO SERVICE TECHNICIANS**—one, the operator, at the controls, the other checking in view of the operator. Also, put the transmission in neutral, set the parking brake, and apply any safety locks provided. **KEEP HANDS AWAY FROM MOVING PARTS.**

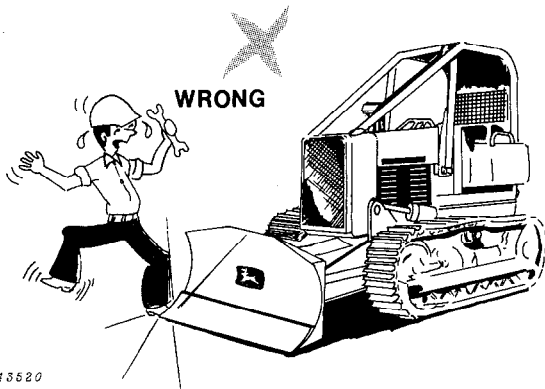


T27508N

MAINTENANCE WITHOUT ACCIDENT

Before servicing, adjusting, or repairing crawlers which have attachments such as blades, etc.—**LOWER** attachments to the ground—or, if necessary to raise them for access to certain parts, **SECURELY SUPPORT** by external means. **DO NOT** rely on controls to support or position attachments for maintenance.

Never allow **ANYONE** to walk under equipment that is raised and not properly blocked.

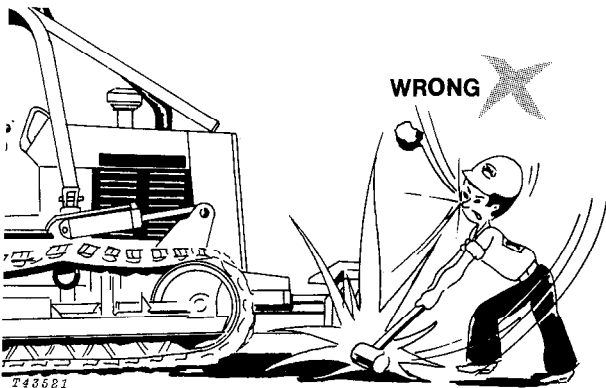


Avoid working directly under raised and blocked equipment unless absolutely necessary.

If the machine is on an incline, block it securely.

Use hoisting equipment for lifting heavy parts. **TAKE CARE! WATCH OUT FOR OTHER PEOPLE IN THE VICINITY.**

Use extreme caution in removing radiator caps, drain plugs, grease fittings, or hydraulic pressure caps.



Wear safety glasses when drilling, grinding, or hammering metal.

Make sure the maintenance area is adequately vented.

Keep 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.

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

SERVICING PRECAUTIONS

Stop the engine before cleaning or lubricating the equipment.

Lower mounted equipment and tools to the ground *carefully*.



Engine coolant gets hot! Don't remove the radiator cap until coolant temperature is below the boiling point. Then turn cap slightly to relieve pressure before removing.

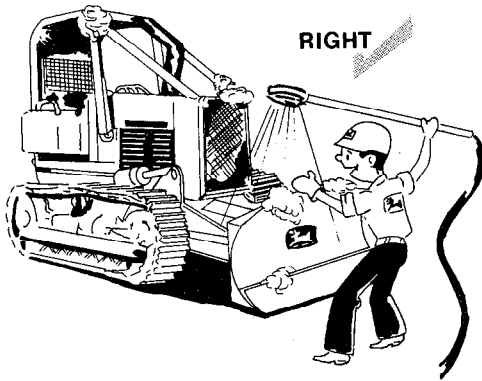
Exhaust gases are dangerous! Periodically check exhaust system for excessive leakage.

Don't forget a hydraulic system may be pressurized! To relieve pressure, shut off engine and move control levers until hydraulic functions do not respond.

When checking hydraulic pressure, be sure to use the correct test gauge for the pressure in the particular system.

MAINTENANCE WITHOUT ACCIDENT

When preparing engine for storage, remember that inhibitor is volatile and therefore dangerous. Seal and tape openings after adding the inhibitor. Keep container tightly closed when not in use.



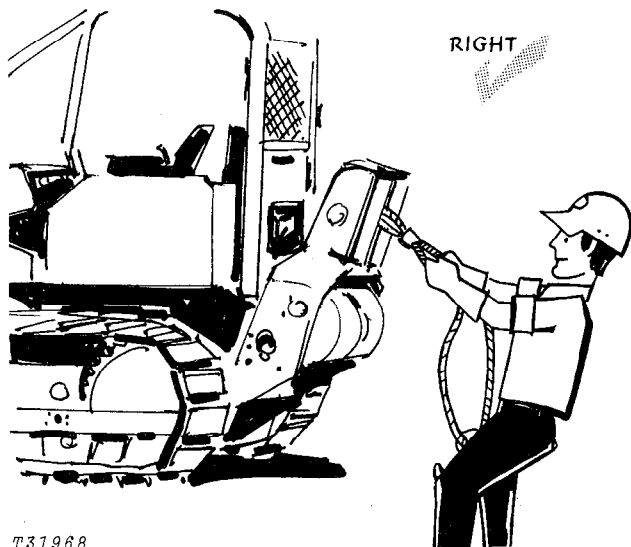
T43523

Keep ALL equipment free of dirt and oil. This attention will minimize fire hazards and facilitate spotting of loose or defective parts.

ADJUSTING PRECAUTIONS

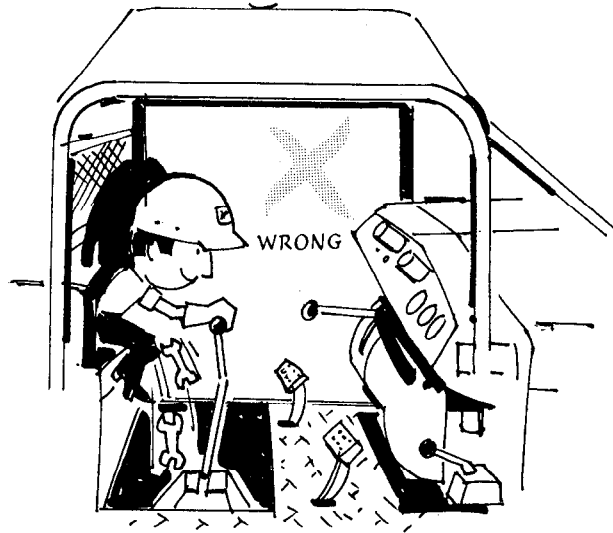
... for Operating Adjustments

Keep clutch and brake control units properly adjusted at all times. Before making adjustments, stop engine.



T31968

Always Wear Gloves When Handling Cable

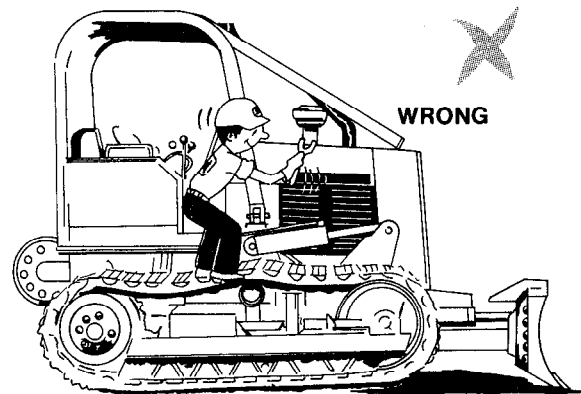


T31969

Before removing any housing covers, stop engine. Take all objects from your pockets which could fall into the opened housings. Don't let adjusting wrenches fall into opened housings.

... for Maintenance Adjustments

Don't attempt to check belt tension while the engine is running.



T43524

Don't adjust the fuel system while the machine is in motion.

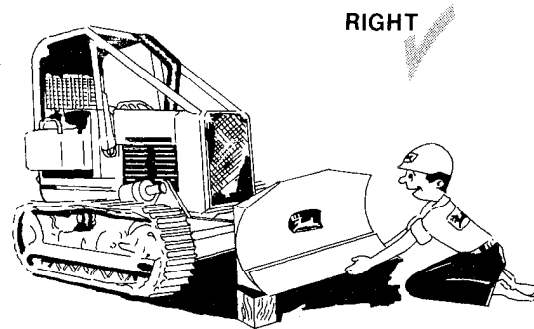
MAINTENANCE WITHOUT ACCIDENT

PRECAUTIONS DURING REPAIR

Before working on the engine fuel system—close fuel shutoff valve.

Before working on hydraulic system—make sure engine is not running and the system pressure is relieved by working the control levers in all directions with the engine shut off.

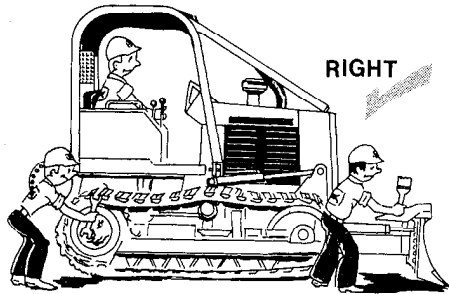
Before repairing the electrical system, or performing a major overhaul, make sure the batteries are disconnected.



T43526

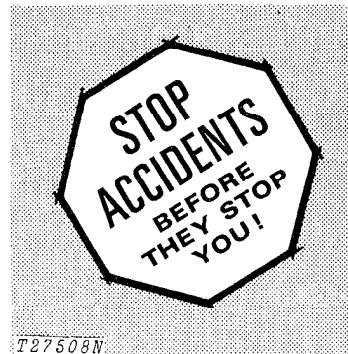
When changing cutting edges on the blade, stop the engine and securely block the blade.

Never let your bare hands come in contact with the sharp edges. WEAR GLOVES.



T43525

Keep all equipment free of dirt and oil. This attention will minimize fire hazards and facilitate spotting of loose or defective parts.



T27508N

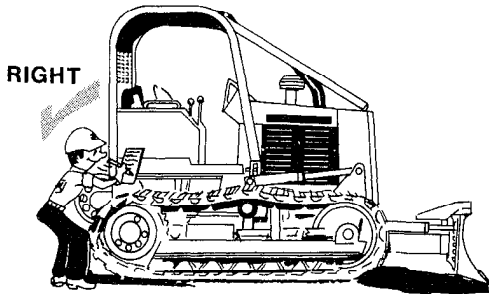
MAINTENANCE WITHOUT ACCIDENT

KNOW EQUIPMENT IS READY!

Check guards, ROPS, safety bars—all protective devices installed on the crawler. Every one should be in place and secure.

CHECK IT OUT!

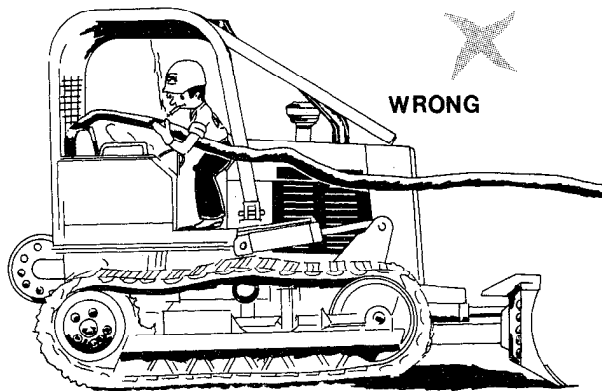
- GUARDS
- SHIELDS
- PROTECTIVE DEVICES
- ROLL-OVER PROTECTIVE STRUCTURES
- SEAT BELTS, ETC.



T43527

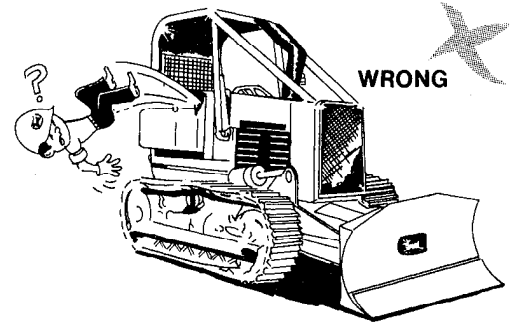
Carefully inspect equipment for visual defects—leaks in fuel, lubrication, and hydraulic systems. Do not search for pressurized fluid leaks with your hands. Use cardboard or wood to search for leaks.

Check and secure all caps and filler plugs for fuel, oils, radiator, etc.



T43528

Check levels of fuel, coolant, hydraulic fluid, and lubricating oil. If fuel must be added—**FIRST, PUT OUT THAT CIGARET.**



T43529

Be sure to clean any oil, grease or mud accumulation from floor of operator's compartment, stepping points, and grab rails to minimize the danger of slipping.

In freezing weather beware of snow or ice deposits on stepping points, grab rails, and floor.

Remove loose bolts, tools, or other objects from floor of operator's compartment.

Although it is impractical to try to cover every possible maintenance situation, the safety precautions recommended here should serve to develop and promote safe maintenance procedures.

The information contained in this manual is not intended to replace safety codes, insurance requirements, federal, state, and local laws, rules and regulations. In particular, your service area or jobsite activities may be subject to state safety rules and/or federal regulation under the Occupational Safety and Health Act (OSHA). Familiarize yourself with all regulations applicable to your situation in order to avoid possible safety violations.

Illustrations and copy reproduced in part by permission of Construction Industry Manufacturers' association (CIMA).

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 roll-over protective structure and standard equipment.)

Power

(@ 2,200 engine rpm):	SAE	DIN
Gross	80 hp (59.7 kW*)	
Net	72 hp (53.7 kW)	73 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. (152 m) altitude and 85°F (29°C) temperature and DIN 70 020 conditions (non-corrected). No derating is required up to 10,000 ft. (3 048 m) altitude.

*In the international system of units (SI), power is expressed in kilowatts (kW).

ENGINE:

John Deere, 4-cylinder, turbocharged diesel, 4-stroke cycle

Bore and stroke	4.19 x 5.00 in. (106.4 x 127 mm)
Piston displacement	276 cu. in. (4 523 cm ³)
Compression ratio	16.2 to 1
Maximum torque @ 1,200 rpm	230 lb-ft (312 Nm)
NACC or AMA (U.S. Tax) horsepower	28
Lubrication	Pressure system with full-flow filter and cooler
Main bearings	5
Cooling	Pressurized with dual thermostat and controlled bypass
Fan	Blower
Air cleaner with restriction indicator	Dry
Electrical system	12-volt (12 v)
Battery	Reserve capacity: 180 minutes

TRANSMISSION:

Converter-driven, 3-speed forward and reverse, Power Shift.

STEERING

Steering clutches and brakes are controlled by a single lever for each track (pedal steering optional). A pedal provides braking and lockdown for parking.

Clutches . . . Oil-cooled, hydraulically-actuated, multiple-disk, 11-in. (279 mm) disks; 16 friction surfaces per clutch.

Brakes . . . Self-adjusting, self-energizing, oil-cooled contracting band with bonded lining.

TRAVEL SPEEDS:

	Forward		Reverse		Max. Drawbar Pull Forward (with adequate weight and traction)	
	mph	km/h	mph	km/h	lb.	kg
1st	0-2.05	0-3.30	0-2.44	0-3.93	37,000	16 780
2nd	0-3.34	0-5.37	0-3.96	0-6.37	21,300	9 660
3rd	0-5.73	0-9.22	0-6.80	0-10.94	11,200	5 080

HYDRAULIC SYSTEM:

Control	Single-lever, double hydraulic valve (6410 and 6415) Single "T-bar" lever, triple hydraulic valve (6405)
Pump	Gear, 15 or 23 gpm (57 or 87 Lpm)
Pressure	(6415) 2250 psi (155 bar) (6405, 6410) 1750 psi (121 bar)

HYDRAULIC CYLINDERS:

	Bore	Stroke
Angle, two	3.5 in. (89 mm)	13.375 in. (343 mm)
Double-Acting, two	3.5 in. (89 mm)	15 in. (381 mm)
Lift, two	3.5 in. (89 mm)	15 in. (381 mm)
Tilt, one	4.5 in. (114 mm)	3 in. (76 mm)
Cylinders	Ground, heat-treated, chrome-plated, polished	
Cylinder pivot pins	Hardened steel (replaceable bushings)	



Download the full PDF manual instantly.

Our customer service e-mail:

aservicemanualpdf@yahoo.com