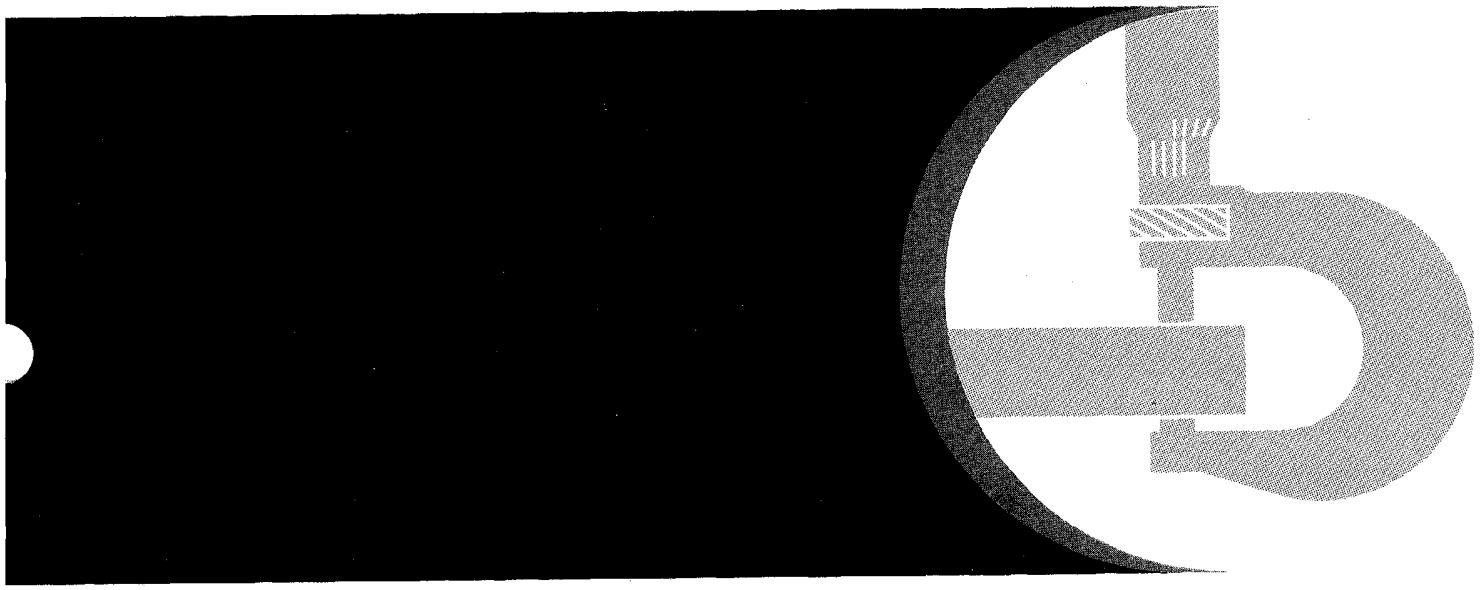
JD 550
Crawler Bulldozer



TECHNICAL MANUAL

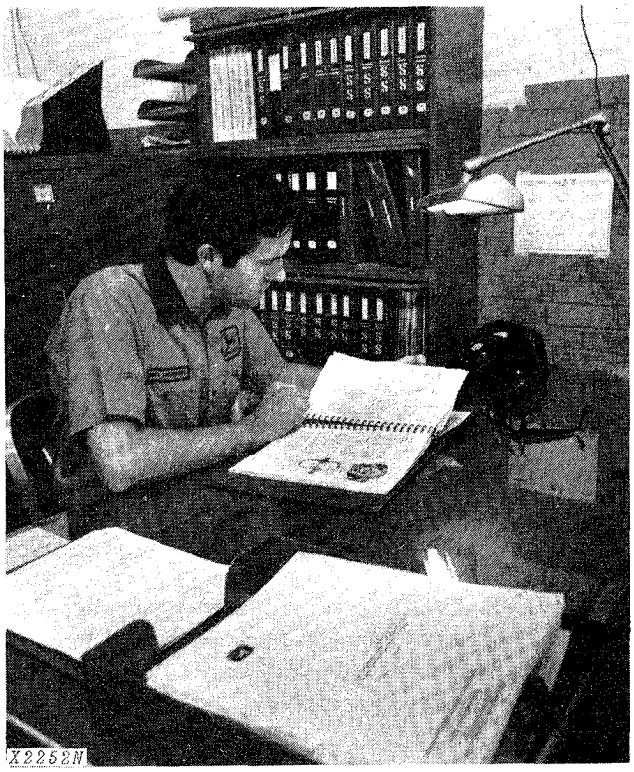
John Deere Dubuque Works
TM-1108 (Nov-86)

SECTION AND GROUP CONTENTS OF THIS MANUAL

SECTION AND GROUP CONTENTS OF THIS MANUAL (Continued)

Group II

INTRODUCTION AND SAFETY INFORMATION
INTRODUCTION



Use FOS Manuals for Reference

Use Technical Manuals for Actual Service

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.

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.

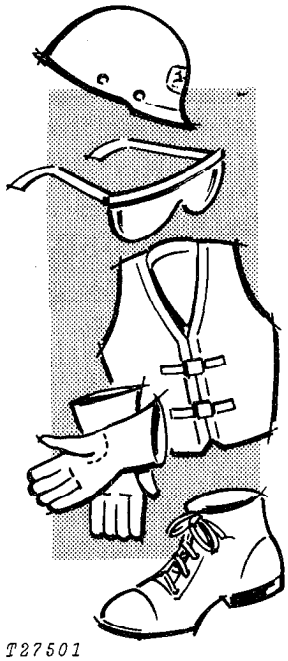
Litho in U.S.A.

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!



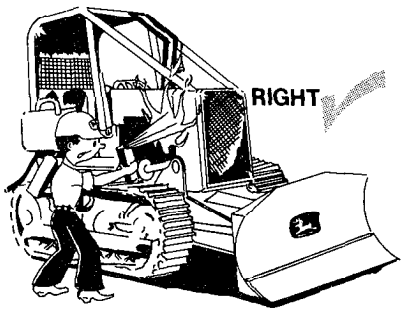
T27501

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

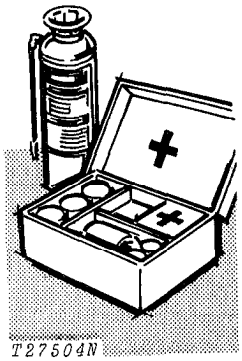
ALWAYS AVOID loose clothing or any accessory—flopping cuffs, dangling neckties and scarves, or rings and wrist watches—that can catch in moving parts and put you out of work.



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—

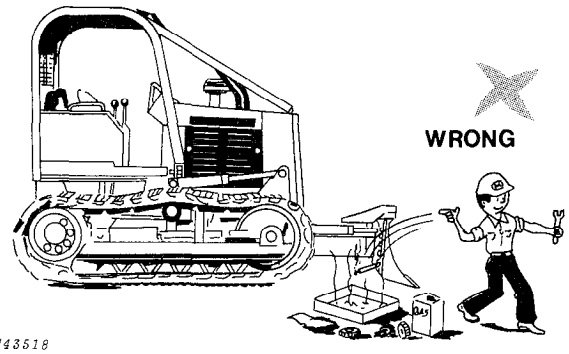
Fuel Is Dangerous!

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.

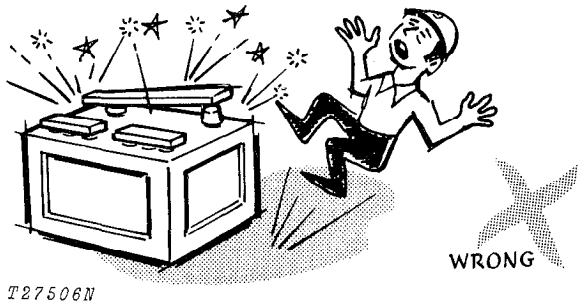


T43518

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.

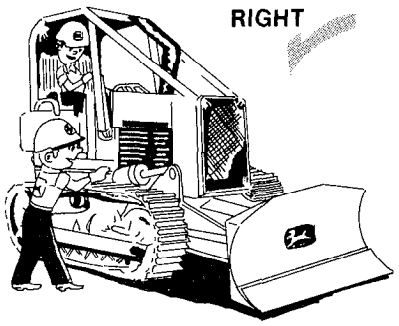
Never use an open flame as a light anywhere on or around the equipment.

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

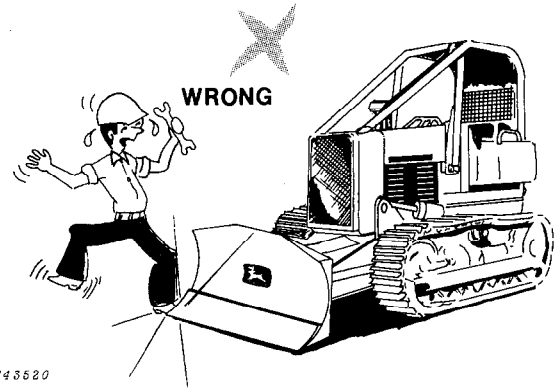
Avoid working on equipment with the engine running. If it is necessary to make checks with the engine running **ALWAYS USE TWO SERVICE TECHNICIANS**—one, the operator, at the controls, the other checking in view of the operator. Also, put the transmission in neutral, set the parking brake, and apply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

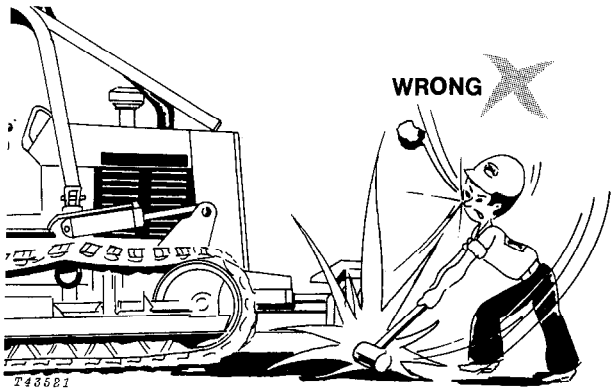


Avoid working directly under raised and blocked equipment unless absolutely necessary.

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.

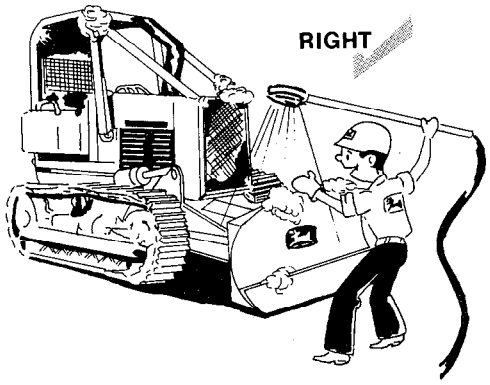
Exhaust gases are dangerous! Periodically check exhaust system for excessive leakage.

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.



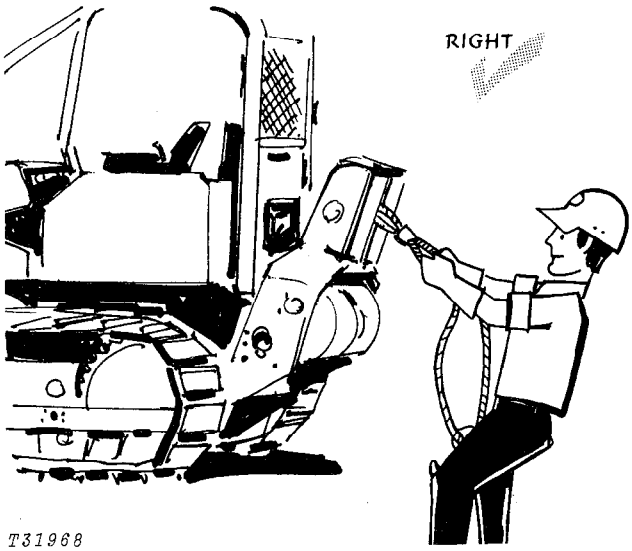
T43523

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

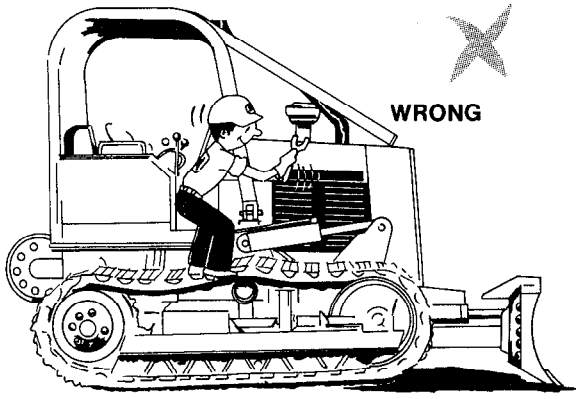
Always Wear Gloves When Handling Cable

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.

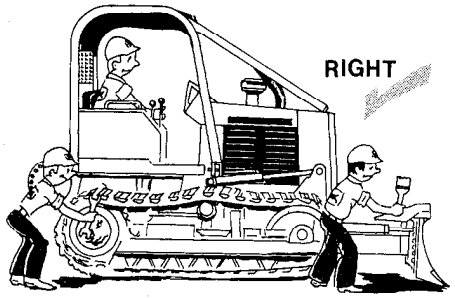
MAINTENANCE WITHOUT ACCIDENT

PRECAUTIONS DURING REPAIR

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

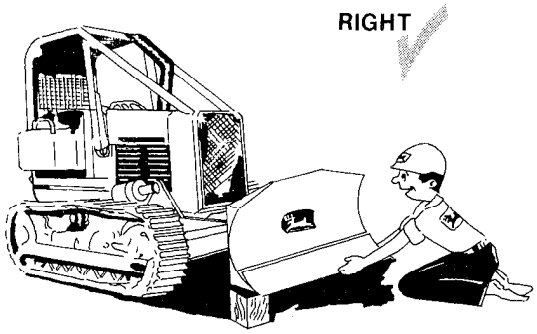
Before working on hydraulic system—make sure engine is not running and the system pressure is relieved by working the control levers in all directions with the engine shut off.

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



T43525

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



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.

T27508N

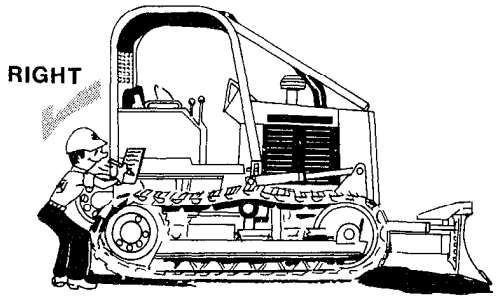
MAINTENANCE WITHOUT ACCIDENT

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!

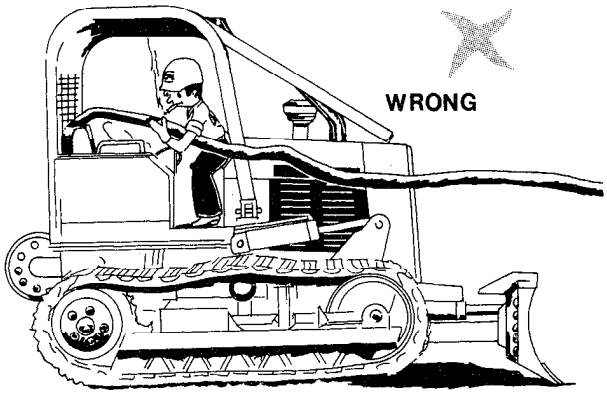
- ☐ GUARDS
- ☐ SHIELDS
- ☐ PROTECTIVE DEVICES
- ☐ ROLL-OVER PROTECTIVE STRUCTURES
- ☐ SEAT BELTS, ETC.



T43527

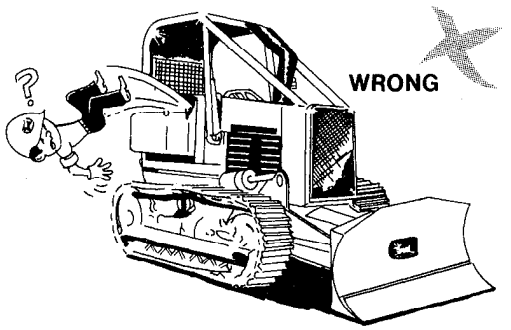
Carefully inspect equipment for visual defects—leaks in fuel, lubrication, and hydraulic systems. Do not search for pressurized fluid leaks with your hands. Use cardboard or wood to search for leaks.

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.

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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 cm³)
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)

TRACKS (5-roller track frames with rock guards):
Grouser ..... 16-in. (406 mm)
Track shoes each side 36
Ground contact area .... 2,328 sq. in. (15 019 cm²)
Ground pressure (6405)..... 6.6 psi (0.45 bar)
Ground pressure (6410)..... 6.7 psi (0.46 bar)
Ground pressure (6415)..... 6.5 psi (0.45 bar)
Length of track on ground ..... 72.75 in. (1.85 m)
Track gauge..... 52 in. (1.32 m)
Carrier roller..... 1
Adjustment..... Hydraulic
Clearance at rear crossbar ..... 14.25 in. (362 mm)

Blade: Reinforced, box-welded
Cutting edge ..... 3-piece, reversible, replaceable
Center section ..... 0.625 in. (16 mm)
End bits, cast steel ..... 0.75 in. (19 mm)

C-Frame ..... Reinforced, box-welded

CAPACITIES:

	U.S.	Liters
Cooling system	5 gal.	18.9
Fuel tank	36 gal.	136.3
Crankcase including filter	15 qt.	14.2
Transmission (approx. 9.5 gals. [35.96 L] at oil change)	13.5 gal.	51.1
Final drive (each)	6.25 qt.	5.9
Hydraulic reservoir	6.4 gal.	24.5
Hydraulic system (6410 and 6415)	10 gal.	37.8
Hydraulic system (6405)	12.25 gal.	46.4
Steering clutch housing (each side)	28 qt.	26.4
Winch reservoir	9 qt.	8.5

SAE operating weight with ROPS (6415)..... 15,750 lb. (7 144 kg)
SAE operating weight (6410)..... 15,340 lb. (6 958 kg)
SAE operating weight (6405)..... 15,480 lb. (7 022 kg)

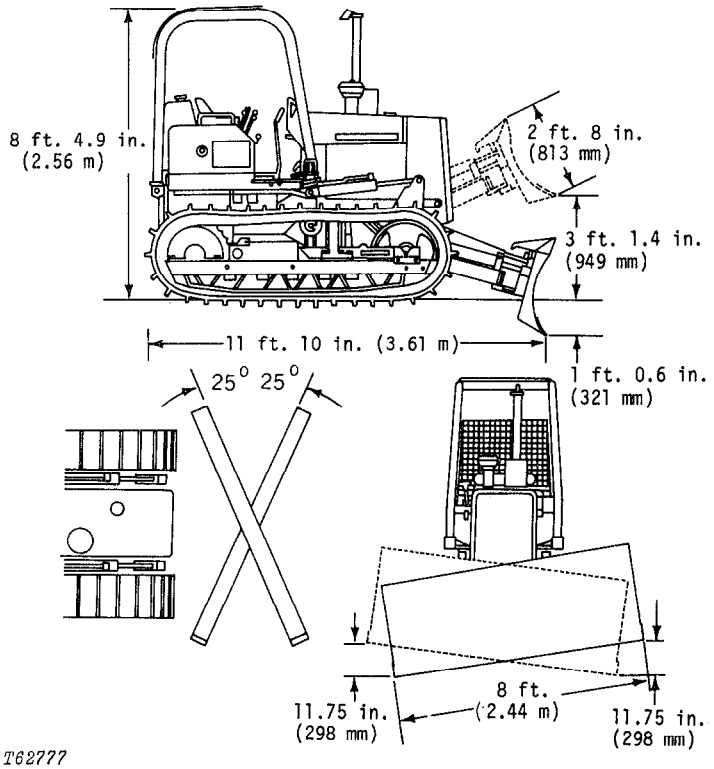
ADDITIONAL STANDARD EQUIPMENT:

Front and rear bottom guard
Front hitch
Deluxe cushion seat with arm rests
Key switch
Push-button start switch
Pre-cleaner
Electric hour meter
Cigar lighter
Vandal protection
Lights
Enclosed alternator with solid state regulator
Engine side shields
Cold weather starting aid
Outer sprocket shields
Trash resistant radiator
Master electrical disconnect switch
Rubber-mounted ROPS with seat belt
Decelerator
Horn
Bottom guard trash shield

SPECIAL EQUIPMENT:

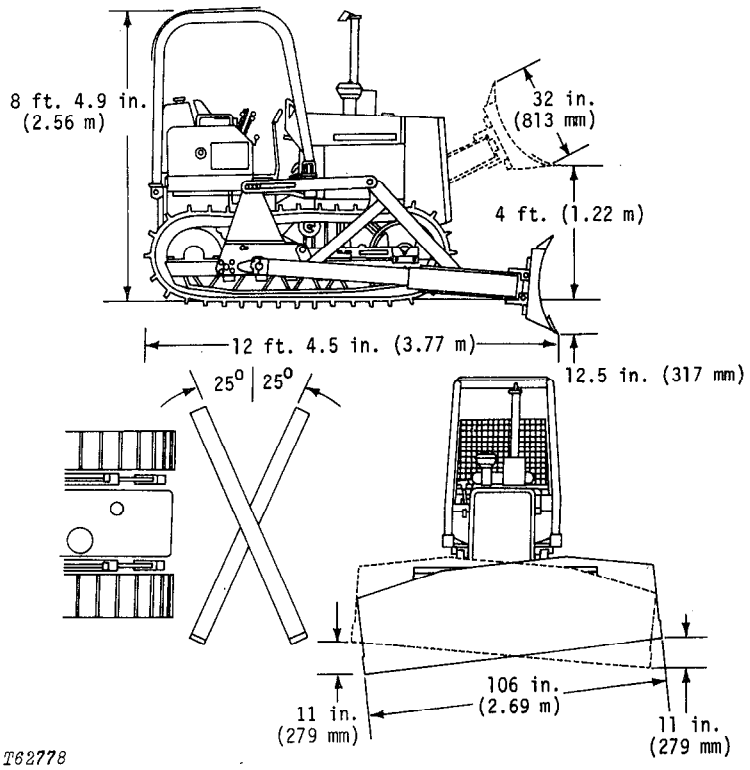
Upper and lower front idler shields
18 in. (457 mm) or 16-in. (406 mm) open-center grouser shoes
18-in. (457 mm) grouser shoes
Auxiliary hydraulic system with or without breakaway couplings
Swinging drawbar
Cab (includes ROPS) with seat belt
Winch drive
Pedal steering
360-minute reserve capacity battery
3 in. (76 mm) seat belt
Limb risers and overheat exhaust
Two batteries
Ripper
Sucker fan
Radiator sand shield
Front idler shields
Cast steel end bits

6405 BULLDOZER OPERATING DIMENSIONS



T62777

6410 BULLDOZER OPERATING DIMENSIONS



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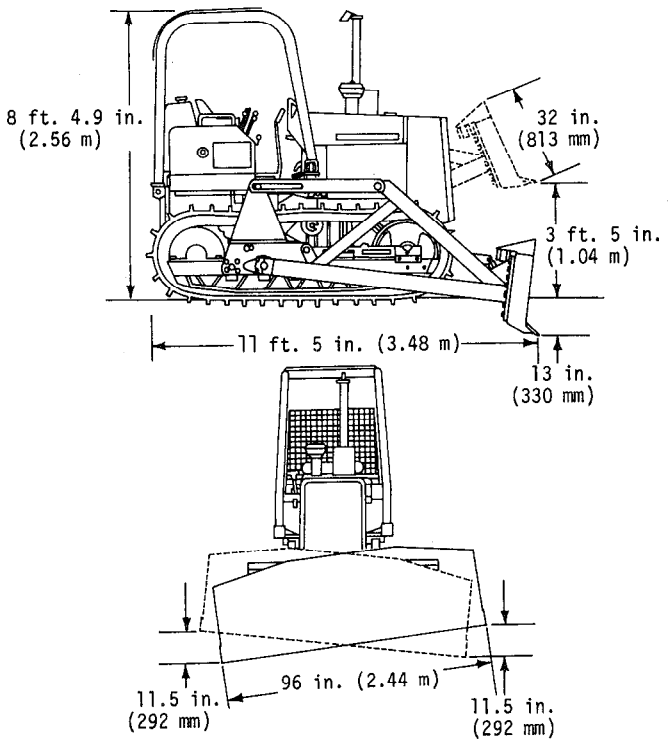
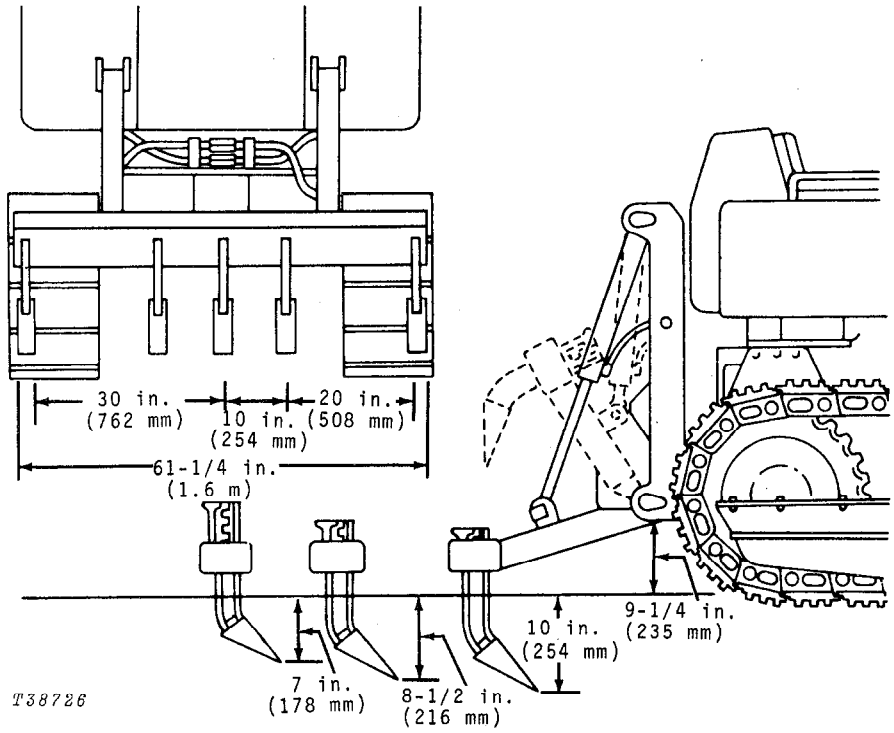
6415 BULLDOZER OPERATING DIMENSIONS



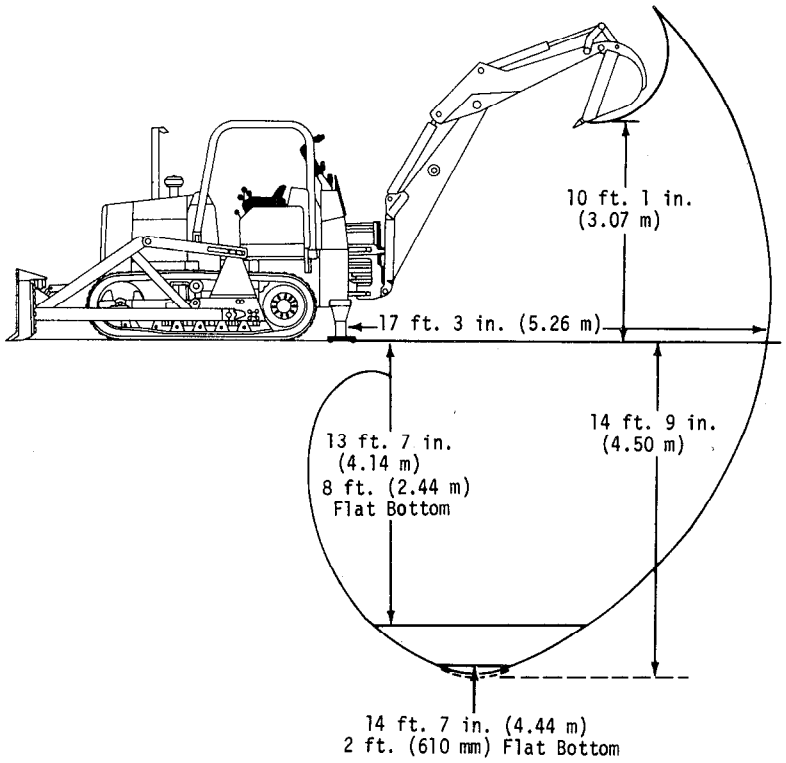
T62779

3110 RIPPER DIMENSIONS



Width (overall)	66 inches (1.7 m)
Working width (max.)	61-1/4 inches (1.6 m)
Penetration (Adjustable)	7, 8-1/2, 10 inches (178, 216 and 254 mm)
Cylinders	Double-Acting
Bore	2-1/2 inches (63.5 mm)
Stroke	15 inches (381 mm)
Weight with three teeth	685 pounds (311 kg)
Ground clearance at frame	9-1/4 inches (235 mm)

9300 BACKHOE SPECIFICATIONS



T62780

Operating Information:

Digging Depth (ICED):

Maximum	14 ft. 9 in. (4.50 m)
2-ft. (610 mm) flat bottom	14 ft. 7 in. (4.44 m)
8-ft. (2.44 m) flat bottom	13 ft. 7 in. (4.14 m)
Swing arc	180 deg.
Digging force (bucket cylinder), ICED	9226 lb. (41.35 kN) (4 185 kg)
Digging force, crowd cylinder	5835 lb. (26.15 kN) (2 647 kg)
Reach from center of swing mast, ICED	17 ft. 3 in. (5.26 m)
Loading height, ICED	10 ft. 1 in. (3.07 m)
Transport height	11 ft. 1 in. (3.38 m)

Hydraulic System

Pressure	2250 psi (155.1 bar) (158.2 kg/cm²)
Pump	28 gpm (106 L/min) @ 2500 engine rpm

Hydraulic Cylinders:

	Bore	Stroke	Rod Diameter
Boom	4.5-in. (114 mm)	34-in. (864 mm)	2.25-in. (57 mm)
Crowd	4-in. (102 mm)	33-in. (838 mm)	2-in. (51 mm)
Bucket	3.5-in. (89 mm)	27.37-in. (695 mm)	2.25-in. (57 mm)
Stabilizer	4-in. (102 mm)	16.62-in. (422 mm)	2-in. (51 mm)

Swing cylinder...Rotary vane-type; built-in automatic swing cushion
Cylinder rods...Ground, heat-treated, chrome-plated, polished

Stabilizer Width:

Transport position	7 ft. 3 in. (2.21 m)
Operating position (overall)	10 ft. 6 in. (3.20 m)
Operating position (ICED)	9 ft. 1 in. (2.77 m)

Buckets:	Width		Stuck Capacity	
	in.	mm	cu. ft.	m³
Standard	12	305	2.5	0.071
	16	406	3.6	0.102
	18	457	4.4	0.125
	24	610	6.0	0.170
	30	762	7.6	0.215
	36	914	7.2	0.204
Heavy-duty	18	457	4.4	0.125
	24	610	6.0	0.170
	30	762	7.6	0.215
Ejector	24	610	4.2	0.119

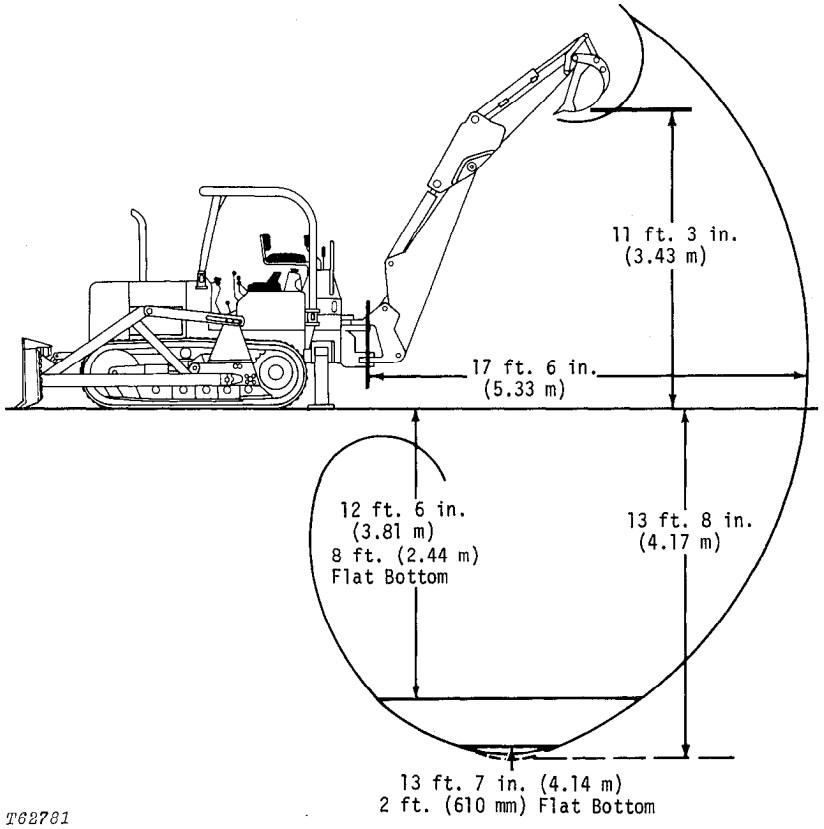
Attachments:

Ripper tooth replaces backhoe bucket. Cast steel, 225 lb. (102 kg) tooth has hardened replaceable tip. Bolt-on rubber street pads for stabilizer pads.

Shipping Weight:

Exclusive of mounting parts, bucket, and front counterweights	3200 lb. (1 452 kg)

9550 BACKHOE SPECIFICATIONS



T62781

Operating Information:

Digging Depth (ICED):

Maximum	13 ft. 8 in. (4.17 m)
2-ft. (610 mm) flat bottom	13 ft. 7 in. (4.14 m)
8-ft. (2.44 m) flat bottm	12 ft. 6 in. (3.81 m)
Swing arc	180 deg.
Digging force, ICED	7093 lb. (31.79 kN) (3 217 kg)
Digging force, crowd cylinder	4019 lb. (18.01 kN) (1 823 kg)
Reach from center of swing mast, ICED	17 ft. 6 in. (5.33 m)
Loading height, ICED	11 ft. 3 in. (3.43 m)
Transport height	10 ft. 11 in. (3.32 m)

Hydraulic System: Open-Center

Max. pressure ..... 2250 psi (155.1 bar) (165.2 kg/cm²)

Pump ..... 23 gpm (87 L/min) @ 2500 engine rpm

Hydraulic Cylinders:

	Bore	Stroke	Rod Diameter
Boom	4-in. (102 mm)	32.28-in. (822 mm)	2-in. (51 mm)
Crowd	3.5-in. (89 mm)	31.25-in. (794 mm)	1.75-in. (44 mm)
Bucket	3-in. (76 mm)	26.5-in. (673 mm)	1.75-in. (44 mm)
Swing	3.5-in. (89 mm)	8.88-in. (226 mm)	1.75-in. (44 mm)
Stabilizer	3.5-in. (89 mm)	15.5-in. (394 mm)	1.75-in. (44 mm)

Cylinder rods ... Ground, heat-treated, chrome-plated, polished

Stabilizer Width:

Transport position	6 ft. 8 in. (2.03 m)
Operating position (overall)	9 ft. 8 in. (2.95 m)
Operating position (ICED)	8 ft. 6 in. (2.59 m)

Buckets:	Width in.	Width mm	Stuck Capacity cu. ft.	Stuck Capacity m³
Standard	12	305	1.6	0.045
	16	406	2.6	0.074
	18	457	3.6	0.102
	24	610	4.8	0.136
	30	762	6.0	0.170
	36	914	7.2	0.204
Heavy-duty	18	457	3.6	0.102
	24	610	4.8	0.136
Cemetery special	36	914	7.2	0.204
Ejector	24	610	4.2	0.119

Attachments:

Ripper tooth replaces backhoe bucket. Cast steel, 225 lb. (102 kg) tooth has hardened replaceable tip. Bolt-on rubber street pads for stabilizer pads.

Shipping Weight:

W/mounting parts, w/o bucket ..... 2683 lb. (1 217 kg)

Group IV
PREDELIVERY, DELIVERY, AND AFTER-SALE SERVICES

TEMPORARY STORAGE

After receiving your crawler from the factory and before putting the crawler into temporary storage, perform the following checks:

1. Check battery electrolyte level and charge the battery, if necessary.

2. Check the level of coolant in the radiator. The coolant should be maintained at a level midway between the radiator core and filler neck.

3. Fill the fuel tank.

4. Check crankcase oil level. Oil should be at top mark of dipstick after crawler has been shut down for 10 minutes.

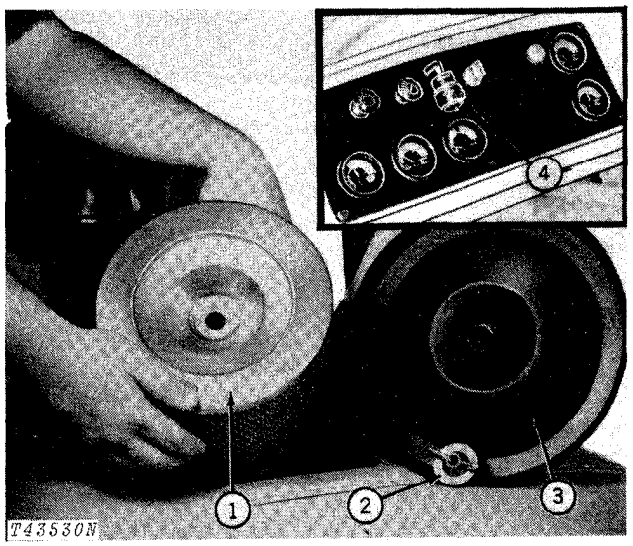
5. Relieve hydraulic pressure by stopping engine, lowering all equipment and operating control levers until system fails to respond.

PREDELIVERY SERVICE

Because of the shipping factors involved, plus extra finishing touches that are necessary to promote customer satisfaction, proper predelivery service is of prime importance to the dealer and the customer.

Use the following list when preparing a crawler for delivery to the customer.

1. Air Cleaner



1—Primary Filter
2—Gasket and Wing Nut
3—Air Cleaner Cover
4—Restriction Indicator

Fig. 1-Air Cleaner Primary Element

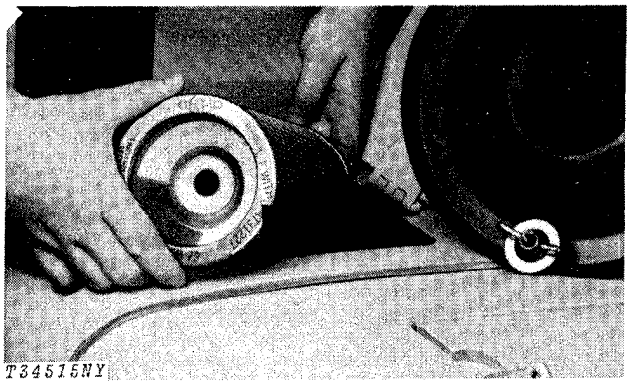


Fig. 2-Air Cleaner Safety Element

Check air filter restriction indicator. If red signal locks in full view, remove primary element and clean.

Air cleaner element checked *Yes* *No*

2. Pre-Cleaner

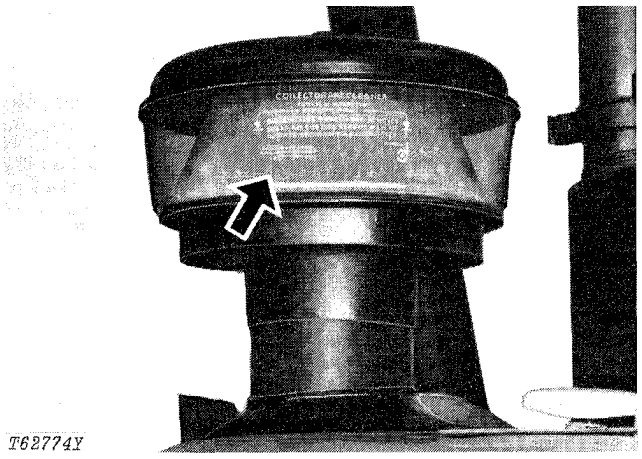


Fig. 3-Pre-Cleaner Attachment

Check the pre-cleaner and empty if necessary.

Pre-cleaner cleaned out *Yes* *No*

3. Fuel Filter

Fig. 4-Fuel Filter Drain Plug

Check fuel filter for sediment and drain, if necessary. Bleed fuel system after draining. See page I-IV-33.

Sediment present in filter *Yes* *No*

4. Battery

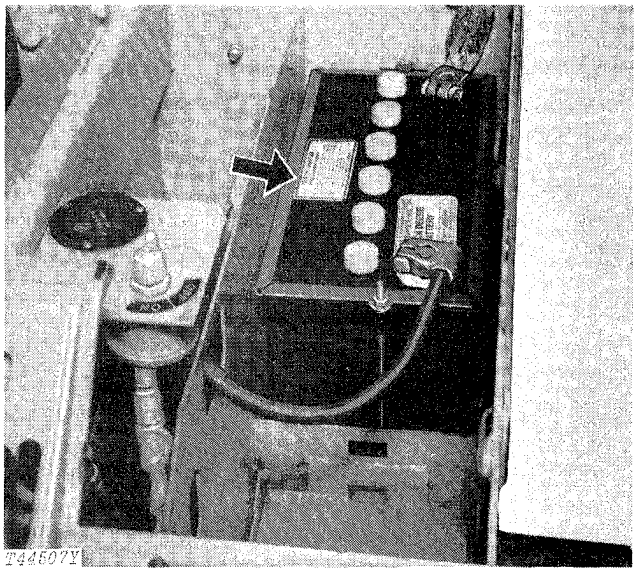


Fig. 5-Battery

Check battery electrolyte level. If distilled water is not available, use clean soft water. Avoid use of hard water. Remove foreign material from top of battery and coat terminals with petroleum jelly. Check vent holes in battery caps.

IMPORTANT: Never add water to battery in freezing weather unless engine is to be run 2 or 3 hours to assure mixing of water and electrolyte.

Check battery connections.

Punch date code on battery.

Water added	*Yes*	*No*
Battery connections checked	*Yes*	*No*

5. Fuel Tank

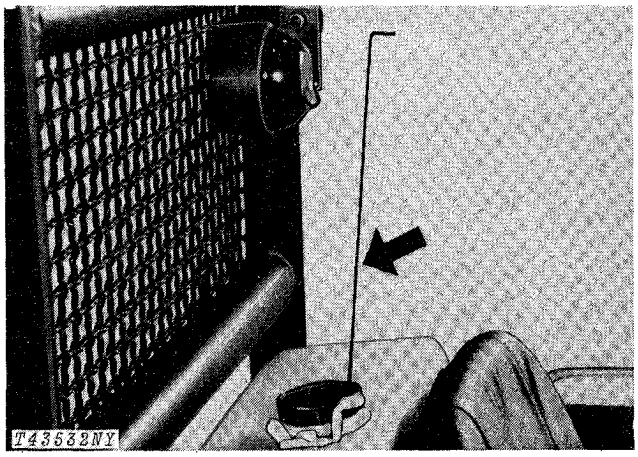


Fig. 6-Fuel Tank

Check the fuel tank level. If fuel level is low, add sufficient fuel to fill the fuel tank. Fuel tank capacity is 31 gals. (117.3 L).

Fuel tank level	*Full*	*1/2-Full*	*Empty*

6. Radiator

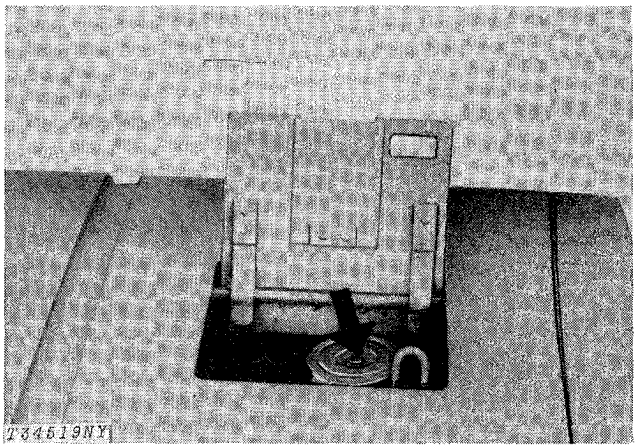


Fig. 7-Radiator Filler Cap

CAUTION: Do not remove radiator filler cap until the coolant temperature is below its boiling point. Then loosen cap slowly to the stop to relieve any excess pressure before removing cap completely.

Check the level of coolant in the radiator. Coolant should be maintained at a level midway between the radiator core and filler neck. Add permanent type antifreeze if cold weather is expected.

Radiator coolant level checked	*Yes*	*No*
Coolant or antifreeze added	*Yes*	*No*

7. Alternator Belt Tension

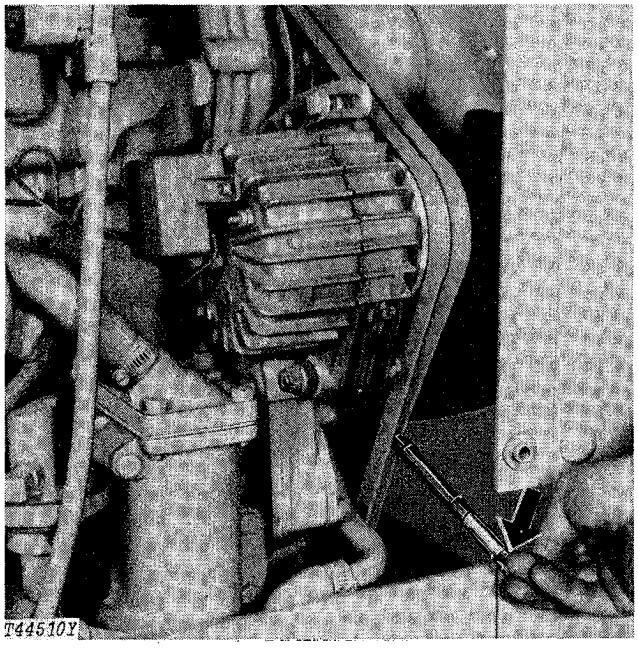


Fig. 8-Alternator Belt Tension (Tension Tester)

Check alternator belt tension. If tension tester is used, a force of 20 pound (89 N) on the belt midway between the pulleys should deflect the belt 3/4 inch (19 mm). If strand tension gauge is used, tighten fan belt to 90 lb. (400 N) strand tension. Loosen the alternator bracket and adjusting cap screws and apply outward force to the FRONT alternator frame.

IMPORTANT: Apply outward force on FRONT of alternator housing only.

NOTE: Recheck belt tension after adjustment. DO NOT OVERTIGHTEN.

Belt tension	_____*lbs (N) tension*
	_____*inch (mm) flex*

8. Air Intake Hose

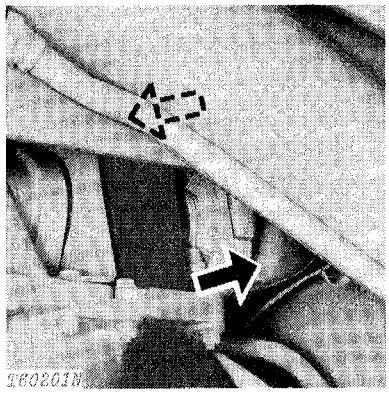
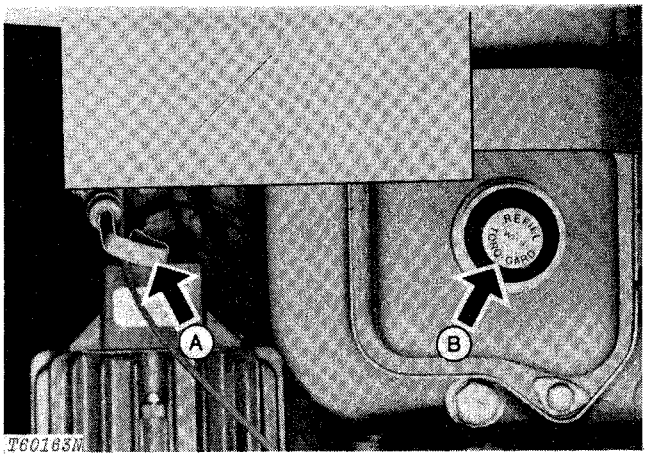


Fig. 9-Hose Clamps

Check clamps on hose which connects air cleaner and engine. Tighten hose clamps where necessary. Inspect hose for cracks.

Air intake hose checked	*Yes*	*No*
Loose connections	*Yes*	*No*

9. Crankcase Oil Level



A—Dipstick **B—Oil Filler Cap**

Fig. 10-Crankcase Oil Level

NOTE: Access to the crankcase dipstick and oil filler cap is obtained through a cover in the hood.

Check crankcase oil level with unit on level ground and engine off. If oil level is at or below bottom mark on dipstick, add sufficient oil of the proper viscosity and type specified on page I-V-2 to bring oil level to between marks on dipstick. Do not operate engine with oil level below the bottom mark.

Crankcase oil level checked	*Yes*	*No*
Oil added, if any	_____*qts. (L)*	

10. Hydraulic Reservoir Oil Level

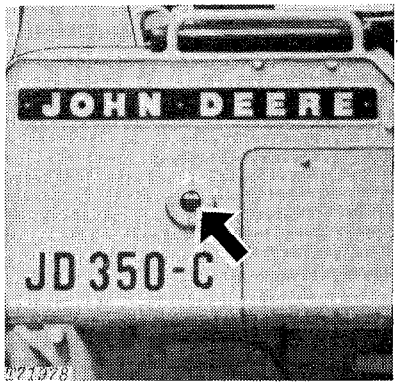


Fig. 11-Oil Level Window

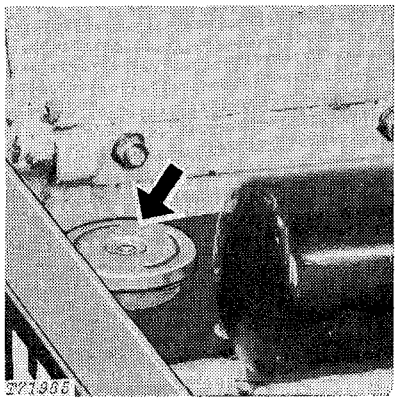


Fig. 11a-Reservoir Filler Cap

Check oil level with crawler on level surface with blade on ground, ripper or backhoe in transport position. Maintain level halfway up on oil level window.

If oil level is low, add oil specified on page I-V-2.

IMPORTANT: The hydraulic reservoir is completely closed and pressurized. Slowly remove the filler cap to relieve the reservoir pressure. When replacing the filler cap be sure it is screwed down tight and the gasket is in good condition.

Oil level checked	*Yes*	*No*
Oil added, if any	_____*qts. (L)*	

11. Transmission Oil Level

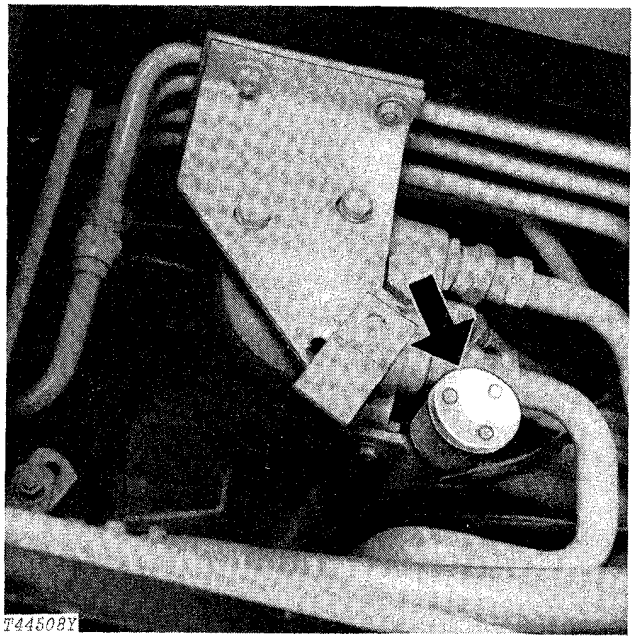


Fig. 12-Transmission Oil Dipstick

The transmission dipstick is accessible by lifting the seat cushion up. The correct oil level check is made with the dipstick resting on the filler tube.

Perform both of the following transmission oil level checks:

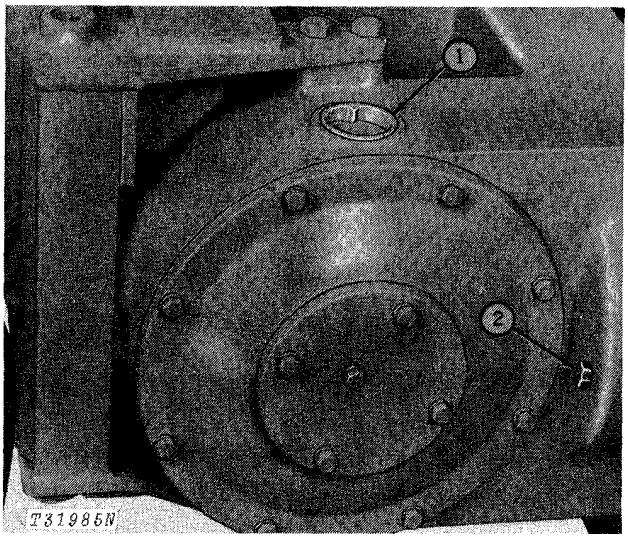
(a) Before starting the engine, check the oil level with dipstick. If the oil level is at or near the upper (FULL) mark, there is sufficient oil in the system to permit starting the engine. If oil level is low, add transmission oil of the type specified on page I-V-2. Replace dipstick.

(b) Operate crawler until the transmission reaches normal operating temperature-transmission temperature gauge needle a minimum of 1/4 way up in light green zone. With the engine idling, transmission locked in neutral and the parking brake set, check the transmission oil level.

Oil level should now be at or above the lower (ADD) mark and not above the upper (FULL) mark on the dipstick. If necessary, add fluid of the type specified on page I-V-2. Do not overfill.

Oil level checked *Yes* *No*
Oil added, if any _____*qts. (L)*

12. Winch Housing Oil Level



1—Filler Plug **2—Oil Level Plug**

Fig. 13-Winch Oil Level

Check oil level of winch housing by removing the oil level plug. If necessary, remove the filler plug and add oil as specified on page I-V-2 until oil is to level of oil level hole.

Oil level checked *Yes* *No*
Oil added, if any _____*qts. (L)*

13. Fuel Tank Sump

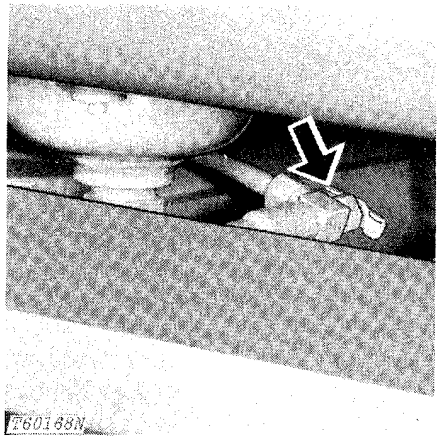


Fig. 14-Fuel Tank Sump Drain Cock

Drain sump after crawler has been shut down 3-4 hours. Open drain cock under seat. Drain fuel until it is clear of water, dirt, etc. Close drain cock.

Fuel sump drained *Yes* *No*