John Deere
JD444
Loader

TECHNICAL MANUAL

TM1162
LITHO IN U.S.A. (REVISED)

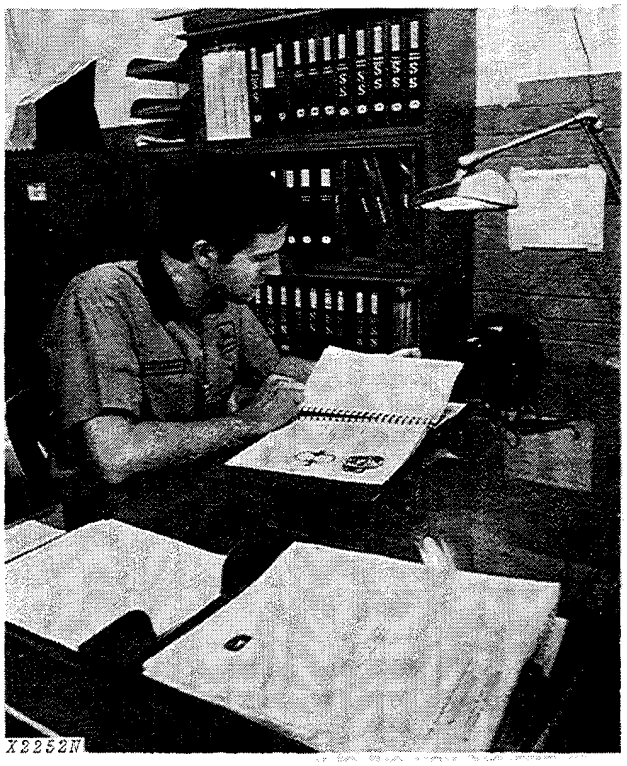
SECTION AND GROUP CONTENTS OF THIS MANUAL

Litho in U.S.A.

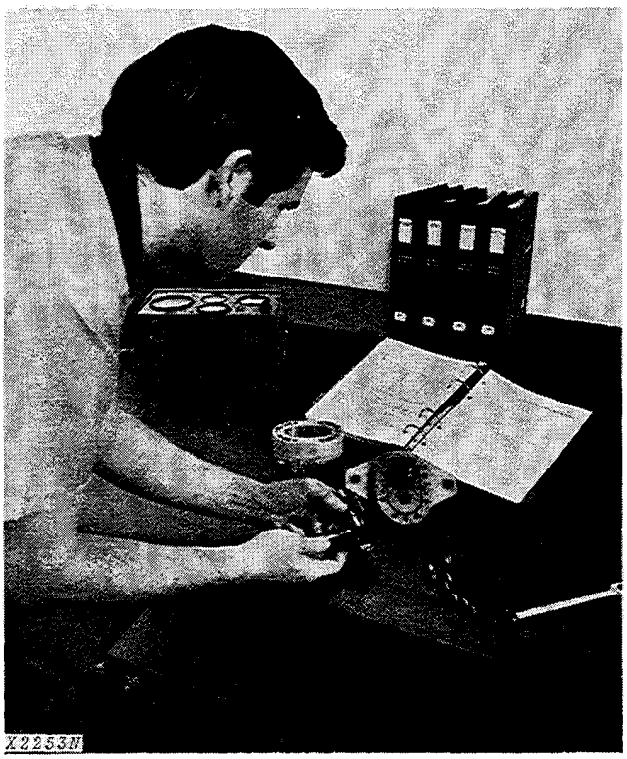
SECTION AND GROUP CONTENTS OF THIS MANUAL - Continued

Litho in U.S.A.

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:

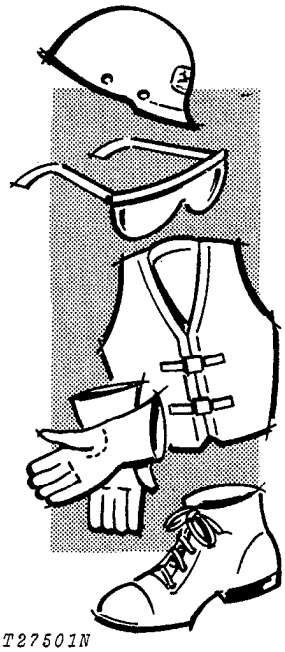
- Inside front cover - "Table of Contents".
- Section 1 - Contents, safety information, general specifications and general services.
- Sections 1 through 33 - Removal, repair, testing (components removed), installation, and adjustment.
- Section 90 - Detailed explanation of system operation, diagnosis, 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 is used for important safety messages. When you see this symbol, the possibility of personal injury exists if safety message is not followed.

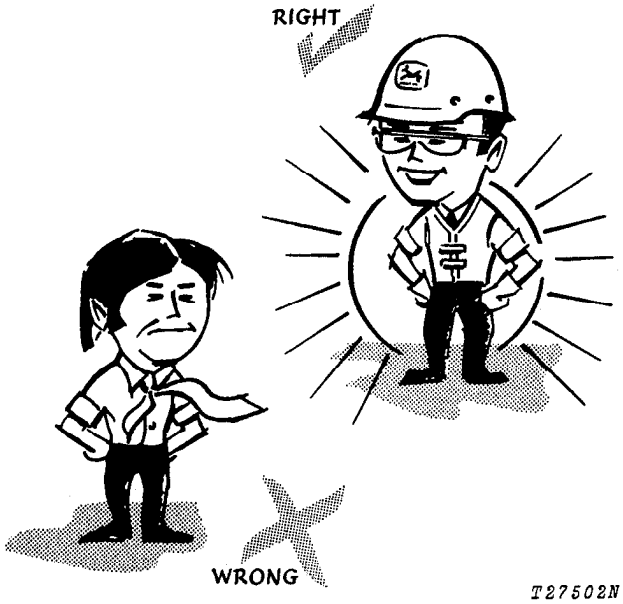
EVERY EMPLOYER HAS A SAFETY PROGRAM. KNOW WHAT IT IS!



T27501N

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.



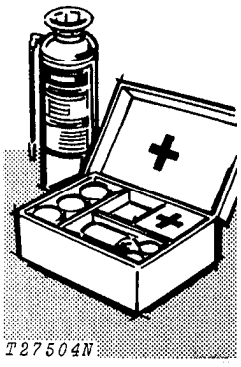
T27502N

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.

T49037N

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 or making repairs on the loader. Remember these—in time!—can prevent an injury...or save your life....

AVOID FIRE HAZARDS—

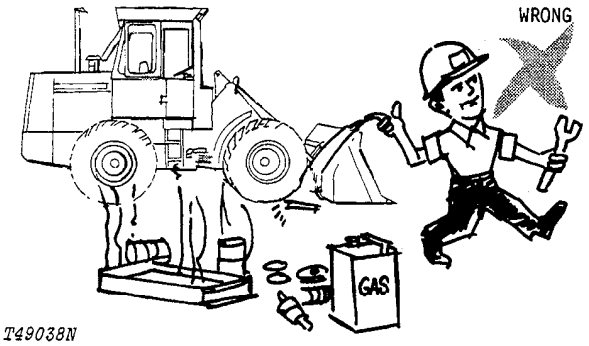
Fuel Is Dangerous!

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.

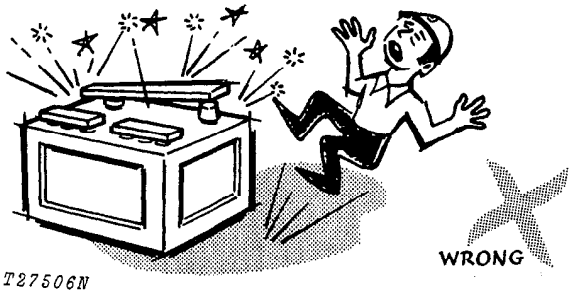


T49038N

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.

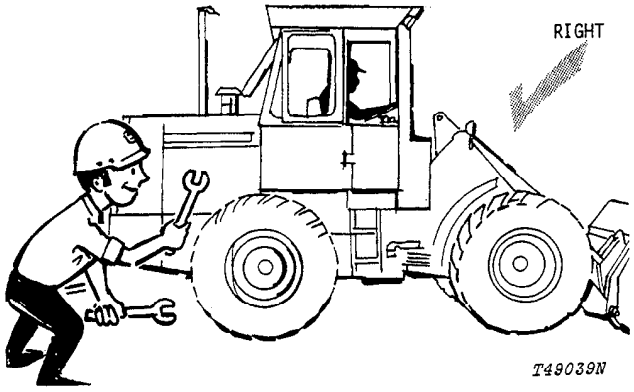
Never use an open flame as a light anywhere on or around the equipment.

KNOW WHERE FIRE EXTINGUISHERS ARE KEPT!

UNDER ALL MAINTENANCE CONDITIONS—

Do not perform any work on the loader unless authorized to do so. Then be sure you understand the services required. Follow recommended procedures.

Never service the equipment while it is being operated.



T49039N

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 brake, and apply any safety locks provided. **KEEP HANDS AWAY FROM MOVING PARTS.**

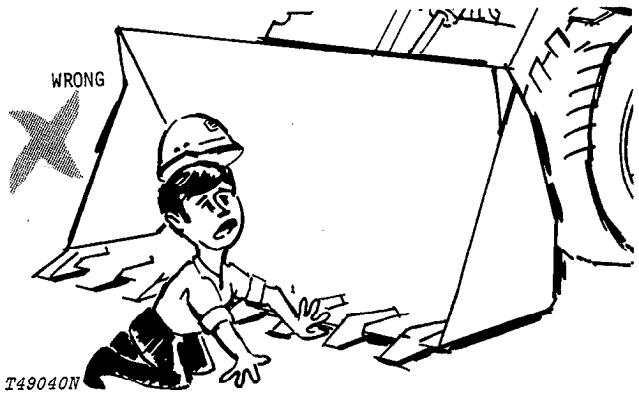
T27508N

Litho in U.S.A.

MAINTENANCE WITHOUT ACCIDENT

Before servicing, adjusting, or repairing loaders which have attachments such as log and lumber forks, buckets, 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.

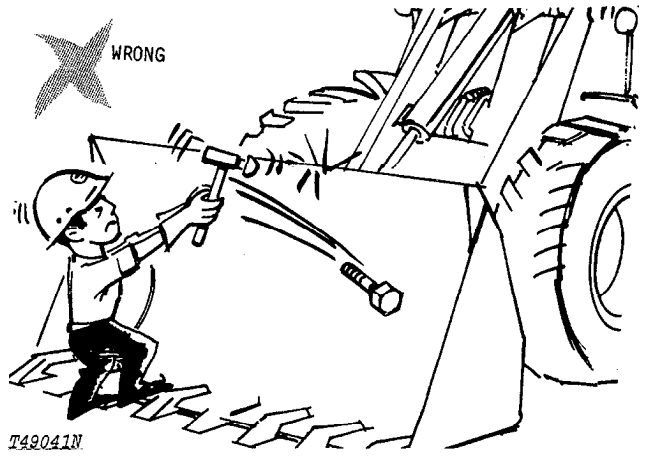


Avoid working directly under raised and blocked equipment unless absolutely necessary.

If the loader 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.

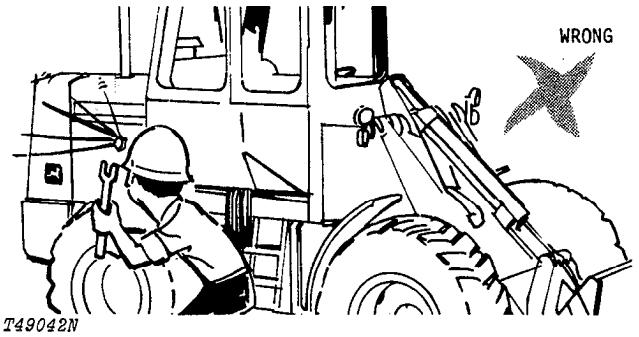
Keep maintenance area CLEAN AND DRY. Oily and wet floors are slippery; greasy rags are a fire hazard; wet spots are dangerous when working with electrical equipment.

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 loader.

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 system pressure, stop engine, lower bucket and operate loader or backhoe control levers and steering wheel and brake pedals until system fails to respond.

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

The loader is equipped with brake and steering accumulators—recharge by using only dry nitrogen. To discharge brake accumulator apply the brake pedal about 30 times.

Litho in U.S.A.

MAINTENANCE WITHOUT ACCIDENT

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

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

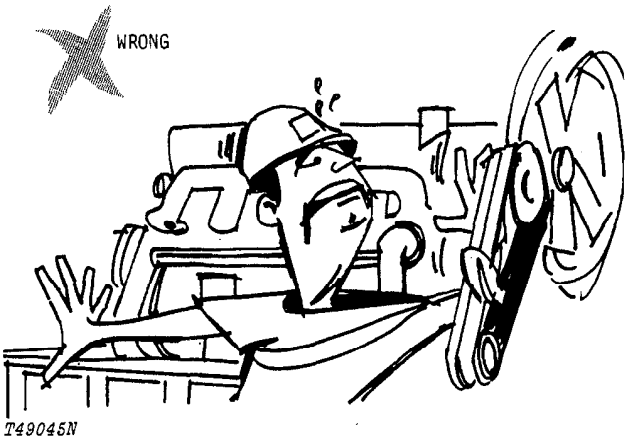
ADJUSTING PRECAUTIONS

....for Operating Adjustments

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

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.

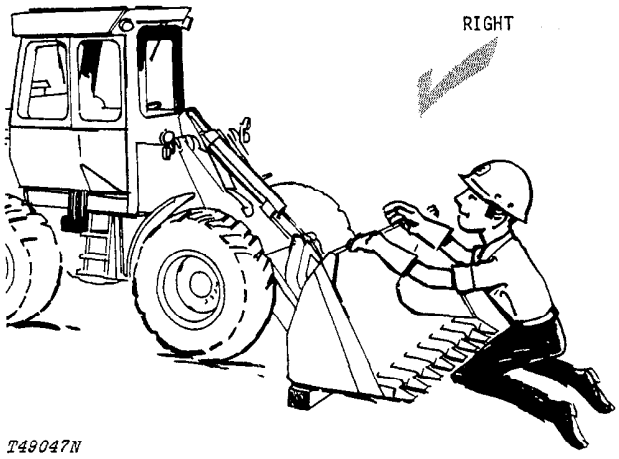
Don't adjust the fuel system while the machine is in motion.

MAINTENANCE WITHOUT ACCIDENT

PRECAUTIONS DURING REPAIR

T49046N

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



T49047N

When changing cutting edges on bucket—

Stop the engine and securely block the bucket.

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

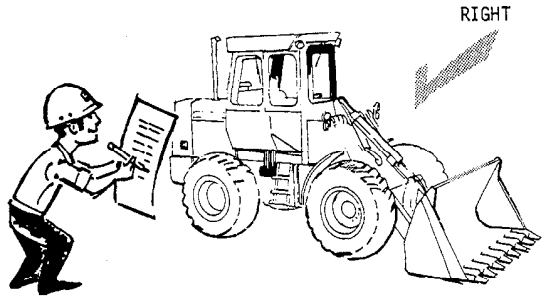
MAINTENANCE WITHOUT ACCIDENT

KNOW EQUIPMENT IS READY!

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

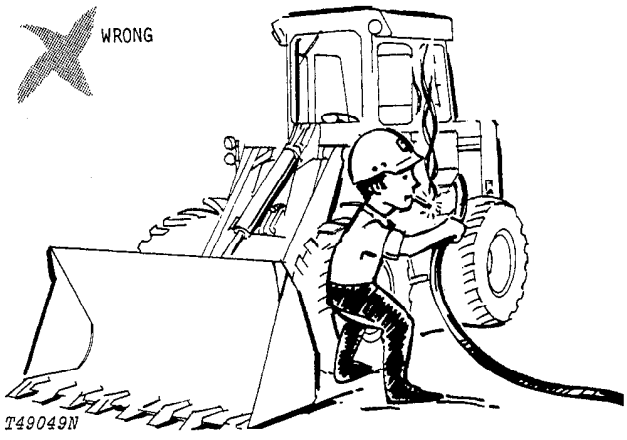
CHECK IT OUT!

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



T49048N

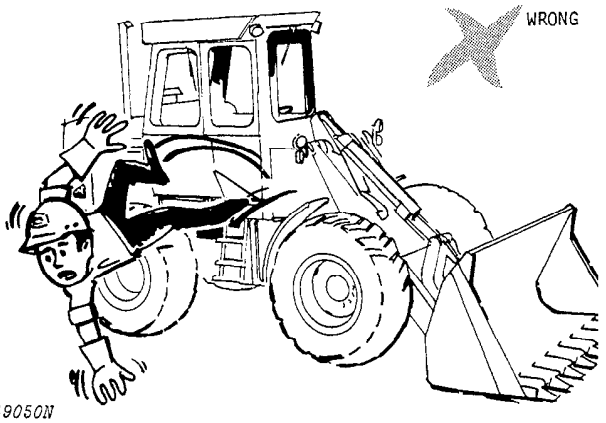
Carefully inspect equipment for visual defects—leaks in fuel, lubrication, and hydraulic systems. Do not search for pressurized fluid leaks with your hands. Use cardboard or wood to search for leaks.



T49049N

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

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



T49050N

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).

Litho in U.S.A.

I

Litho in U.S.A.

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, specifications are based on a machine equipped with all standard equipment. 15.5-25, 8-ply loader-tread tires, ROPS cab, full fuel tank, and 175 lb. (79.4 kg) operator.)

Power (@ 2400 engine rpm):

	SAE	DIN
Gross	95 hp (70.8 kW*)	
Net	85 hp (63.4 kW)	90.4 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. No derating is required up to 5000 ft. (1524 m) altitude.

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

Engine: John Deere diesel, vertical 6-cylinder, 4-stroke

Bore and stroke ..... 4.02x4.33 in. (102x110 mm)
Piston displacement ..... 329 cu. in. (5391 cm^3)
Compression ratio ..... 16.7 to 1
Maximum torque @ 1400 rpm: ... 228 lb-ft (309 Nm) (31.5 kg-m)
NACC or AMA (U.S. Tax) horsepower 38.6
Lubrication ..... Pressure system with full-flow filter
Cooling ..... Pressurized with thermostat and controlled bypass
Fan ..... Blower
Air cleaner with restriction indicator ..... Dry
Electrical system ..... 12-volt with alternator
Batteries (two 6-volt) ..... Reserve capacity: 420 minutes

Torque Converter

Type ..... Twin-turbine
Torque multiplication ..... 5.44 to 1

Transmission ..... Power Shift planetary

Forward Speeds	mph	km/h
1	0-2.8	0-4.5
2	2.8-6.5	4.5-10.5
3	0-10.7	0-17.2
4	10.7-22.5	17.2-36.2

Reverse Speeds		
1	0.3-8	0-6.1
2	3.8-8.5	6.1-13.7

Note: Shift from 1st to 2nd and 3rd to 4th is automatic.

Differentials:
Front and rear ..... Standard

Drive Axles ... Inboard-mounted planetary gears to each wheel. Front axle fixed. Rear axle oscillates 22-degree total (13.5 inches [343 mm] vertical travel at center of tire).

Brakes:
Service ..... Power actuated. 4-wheel, inboard-mounted wet disk. Foot-operated by either right or left pedal.
Parking ..... 10x1.5 inch (254x38 mm) expanding shoe on transmission output shaft. Adjustable, hand-operated, with warning light and buzzer.

Steering ..... Full power steering. Frame articulated 80 degrees by two hydraulic cylinders. Turning radius of 13 feet 10 inches (4.22 m).

Litho in U.S.A.

Hydraulic Systems:

Loader functions..... Independent engine-driven vane pump delivers 39.5 gpm (149.5 L/min) at 600 psi (41.4 bar) (42.2 kg/cm²) and 2400 engine rpm. 2250 psi (155 bar) (158.2 kg/cm²) relief valve pressure setting.
Control .....Single-lever, dual hydraulic valve Optional triple hydraulic valve with separate lever.
Steering and brakes ..... Engine-driven, 8-piston, variable-displacement pump delivers 26.0 gpm (98.4 L/min) at 2200 engine rpm and 2000 psi (137.9 bar) (140.6 kg/cm²). Maximum system pressure is 2400 psi (165.5 bar) (168.7 kg/cm²).

Hydraulic Cylinders:

	Bore	Stroke
Boom,		
two	5.25 in. (133 mm)	22.26 in. (565 mm)
Bucket,		
one	5.25 in. (133 mm)	25.28 in. (642 mm)

Cylinder rods..... Ground, heat-treated, chrome-nickel-plated, polished
Boom and bucket cylinder rods 2.25 in. (57 mm) dia.

Tires:

15.5-25, 8-ply-rating, loader tread*
15.5-25, 12-ply-rating, loader tread
17.5-25, 12-ply-rating, loader tread*
13.00-24, 8-ply-rating, grader tread
**Use with lumber forks*

Wheel Treads:

Front and rear ..... 70 in. (1.78 m)

Capacities

	U.S.	Liters
Cooling system	32 qt.	30.3
Fuel tank	40 gal.	151.4
Crankcase	11 qt.	10.4
Crankcase, including filter	12 qt.	11.4
Transmission case and filters	40 qt.	37.9
Front and rear differential	17 qt.	16.1
Loader hydraulic sump	52 qt.	49.2

Additional Standard Equipment:

Adjustable cushioned seat
Front fenders
Gauges:
- Transmission oil temperature
- Transmission oil pressure
- Fuel
- Coolant temperature
- Engine oil pressure
- Electric hour meter
- Voltmeter

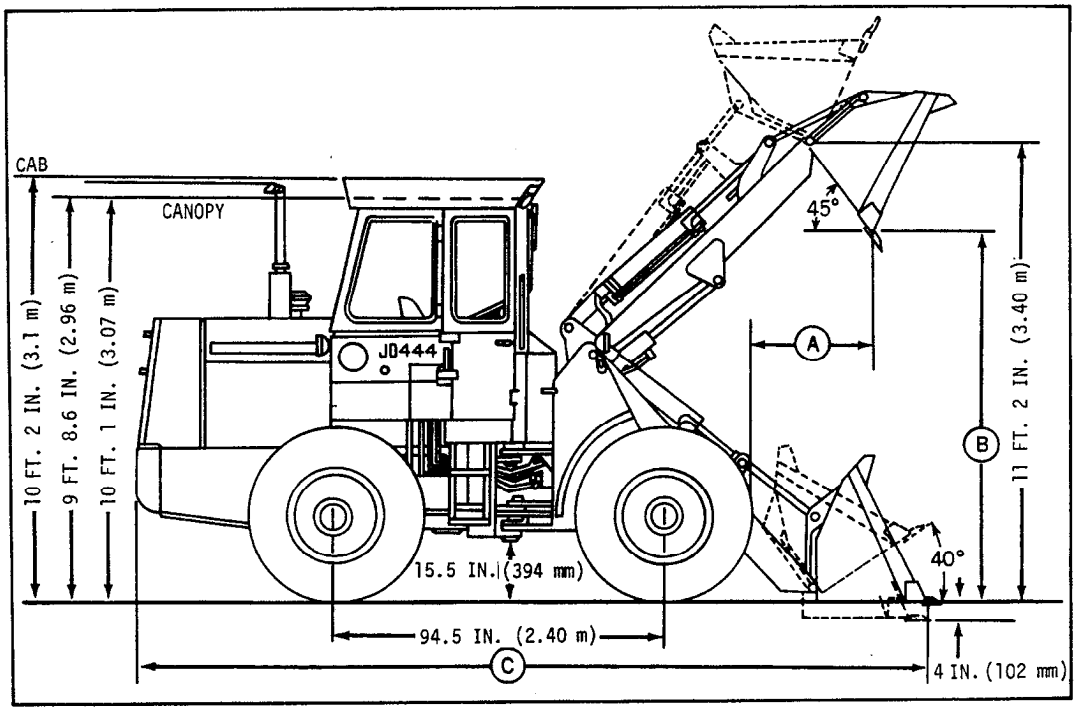
Loader hydraulic system indicator
Key switch
Pushbutton safety start
Cigar lighter
Parking brake warning light and buzzer
Transistorized voltage regulator
Instrument panel cover with lock
Driving lights
Horn
Fuel filter
Automatic return-to-dig
Vertical muffler with rain cap
Rear bottom guard
Hand grips
Fixed drawbar
ROPS canopy and seat belt
Antifreeze
Pre-cleaner
Cold weather starting aid
Deluxe suspension seat

Special Equipment:

ROPS cab and seat belt
ROPS quiet cab
Work lights
Reverse warning alarm
Triple loader hydraulic valve
Bucket teeth
Engine coolant heater
Splash guard for fenders
Center and front bottom guard
License plate bracket
Defroster fan
Automatic boom height control
SMV emblem
Auxiliary cutting edges
Engine side shields
Heater
Flashing and turn signal lights
Rear axle disconnect
No-Spin front differential
Auxiliary spill guard
Multi-purpose bucket
Lumber forks
Air conditioner

Litho in U.S.A.

LOADER DIMENSIONS



T49034N

BUCKETS		DIMENSIONS	
	A	B	C
1-1/2 cu. yd.	35.2 in. (894 mm)	8 ft. 11 in. (2.72 m)	19 ft. (5.80 m)
3 cu. yd.	44.1 in. (1 120 mm)	8 ft. 2.1 in. (2.49 m)	20 ft. 1 in. (6.12 m)
1-1/2 cu. yd. multipurpose	35.15 in. (893 mm)	8 ft. 3 in. (2.51 m)	19 ft. 11.3 in. (6.08 m)

LOADER OPERATING INFORMATION

OPERATING INFORMATION	BUCKET		
	General purpose	Light materials	Multipurpose
Capacity, heaped, SAE	1-1/2 cu. yd. (1.15 m³)	3 cu. yd. (2.29 m³)	1-1/2 cu. yd. (1.15 m³)
Capacity, struck, SAE	1.22 cu. yd. (0.93 m³)	2.49 cu. yd. (1.9 m³)	1.22 cu. yd. (0.93 m³)
Bucket width	88 in. (2.23 m)	96 in. (2.44 m)	88 in. (2.23 m)
Bucket weight	1200 lb. (544 kg)	1920 lb. (871 kg)	2295 lb. (1041 kg)
Breakout force, J732C SAE Standard using bucket hinge pin as pivot point	17,735 lb. (79.49 kN) (8045 kg)	11,770 lb. (52.26 kN) (5339 kg)	15,100 lb. (67.68 kN) (6849 kg)
Tipping load, straight	12,835 lb. (5822 kg)	12,095 lb. (5486 kg)	10,690 lb. (4849 kg)
Tipping load, 40-deg. full turn, SAE	11,145 lb. (5055 kg)	10,405 lb. (4720 kg)	9140 lb. (4146 kg)
Turning clearance, outside bucket	32 ft. (9.76 m)	32 ft. 10 in. (10.02 m)	32 ft. (9.76 m)
Loader operating weight	18,560 lb. (8419 kg)	19,280 lb. (8745 kg)	19,655 lb. (8916 kg)

Maximum recommended material weight, lb. per cu. yd. (kg/m³)			
All standard equipment and 15.5-25, 8-ply-rating tires	**1-1/2 cu. yd. (1.15 m³) General purpose**	**3 cu. yd. (2.29 m³) Light materials**	**1-1/2 cu. yd. (1.15 m³) Multipurpose**
Loader less cab or canopy	3040 (1803)	1410 (836)	2469 (1464)
Loader with canopy	3190 (1891)	1485 (881)	2605 (1545)
Loader with cab	3270 (1940)	1525 (904)	2680 (1590)

Adjustments to operating weights and tipping loads:			
Add (+) or deduct (−) lb. (kg) as indicated for loader equipped with:	**Loader Operating Weight**	**Tipping Load Straight**	**Tipping Load, 40-deg. Full Turn,** SAE
Less ROPS cab	−950 lb. (431 kg)	−850 lb. (386 kg)	−785 lb. (356 kg)
ROPS canopy in lieu of ROPS cab	−320 lb. (145 kg)	−310 lb. (141 kg)	−280 lb. (127 kg)
13.00-24, 8-ply-rating, grader tread tires	−380 lb. (172 kg)	−245 lb. (111 kg)	−215 lb. (98 kg)

Litho in U.S.A.

Group IV
PREDELIVERY, DELIVERY, AND AFTER-SALE SERVICES

TEMPORARY STORAGE

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

For long term storage information, consult your JD444 operator's manual.

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

2. Check radiator coolant level. Maintain coolant level midway between radiator core and filler neck.

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

4. Relieve hydraulic pressure by stopping engine, lowering bucket and operate loader or backhoe control levers and steering and brakes until system fails to respond.

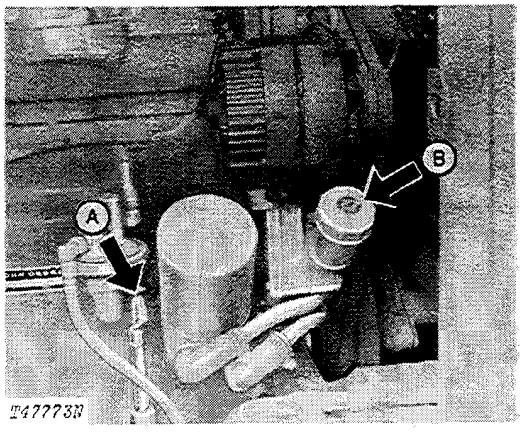
PREDELIVERY SERVICE

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.

If adjustments are required, procedures are found in the After-Sale section.

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

1. Crankcase Oil Level



A—Dipstick **B—Oil Filler Cap**

Fig. 1-Crankcase Oil Level

Check crankcase oil level with loader on level ground. (Allow a minimum of 10 minutes for the oil to drain down before checking.) If oil level is at or below bottom mark on dipstick, add sufficient oil of the proper viscosity and type specified 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)*

2. Transmission Oil Level

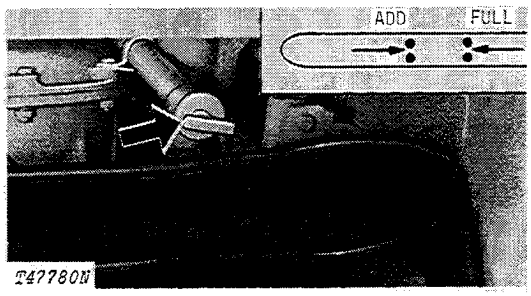


Fig. 2-Transmission Oil Filler and Dipstick

1 - Operate loader until transmission reaches normal operating temperature.

2 - Idle engine.

3 - Shift through all range positions slowly.

4 - Shift to neutral and apply neutral lock.

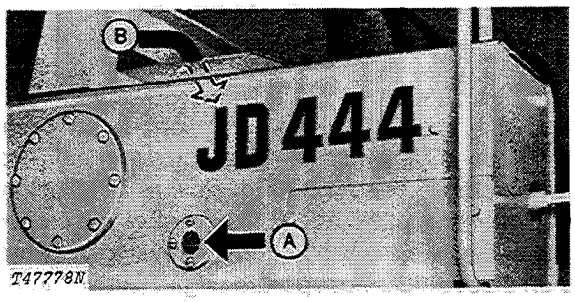
5 - Apply brakes.

6 - Check oil level with loader on level ground.

Oil level should be between marks on dipstick while resting on filler tube. If low, add John Deere Torque-Converter Fluid (Type C-2) or equivalent.

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

3. Loader Hydraulic System



A—Oil Level Window **B—Filler (Inside top hinged cover)**

Fig. 3-Loader Hydraulic System

Run engine two to three minutes.

Check oil level with:

1 - Loader on level ground.

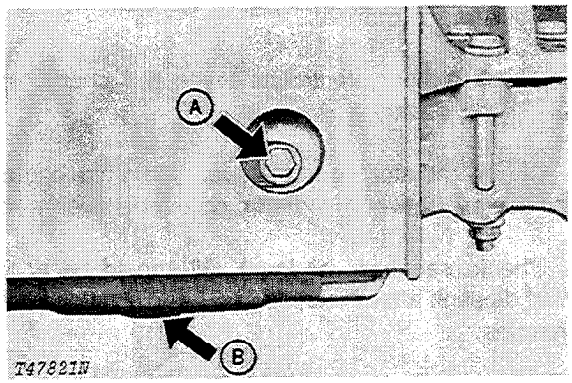
2 - Bucket resting on ground.

3 - Engine stopped.

Oil level should be halfway up window on reservoir. If low, add John Deere Hy-GARD Oil or equivalent.

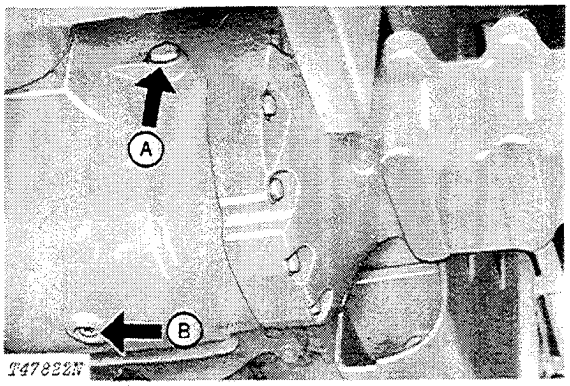
Oil level checked *Yes* *No*
Oil added, if any _____*qts (l)*

4. Front and Rear Differential Oil Level



A—Level-Filler Plug **B—Drain Plug**

Fig. 4-Front Differential Housing



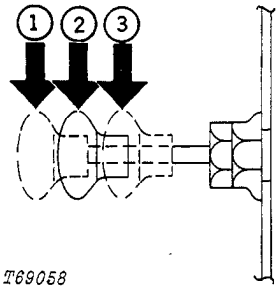
A—Level-Filler Plug **B—Drain Plug**

Fig. 5-Rear Differential Housing

Check oil level in front and rear differential housings. If oil level is below oil level plug, add John Deere Hy-GARD Oil or equivalent.

Differential housings oil levels checked *Yes* *No*
Oil added, if any _____*qts (l)*

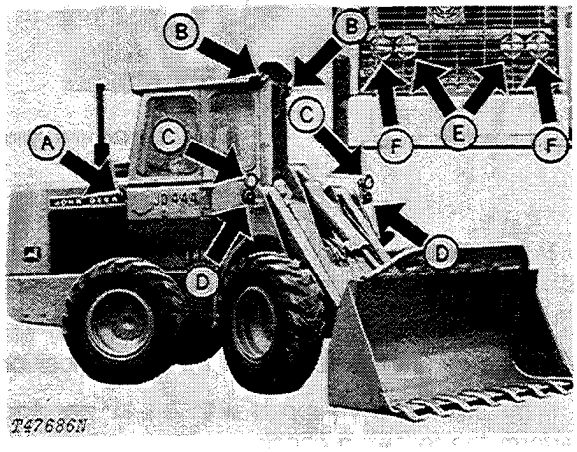
5. Lights



Switch Position	Lights on
1	A, B, C, and E
2	C and E
3	All lights off

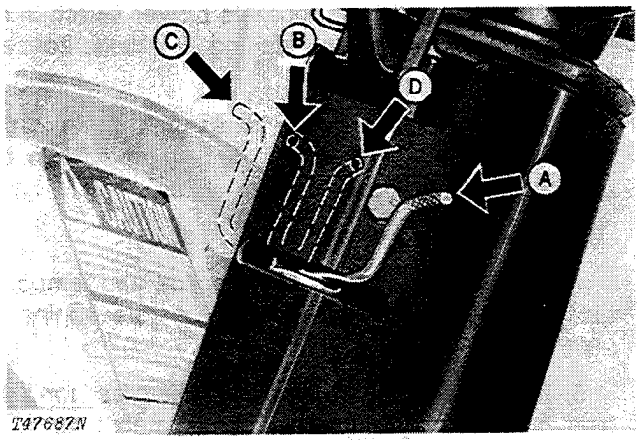
Fig. 6-Light Switch

The headlights, tail lights, and work lights are controlled by the light switch located on the right side of the instrument panel. The light switch has three positions.



A—Rear Work Light
B—Front Work Lights
C—Headlights
D—Turn Signals and Warning Lights
E—Tail lights
F—Turn Signals and Warning Lights

Fig. 7-Loader Lights



A—Left Turn Signal
B—Right Turn Signal
C—Flashing Warning Lights on
D—Off

Fig. 8-Turn Signal and Warning Light Switch

The turn signal and flashing warning lights are controlled by the light switch located on the left side of the steering column. The light switch has four positions:

Switch Position	Lights On
A	D (left side)
B	D (right side)
C	D, F
D	All lights off

All lights checked *Yes* *No*

6. Check Seat Operation

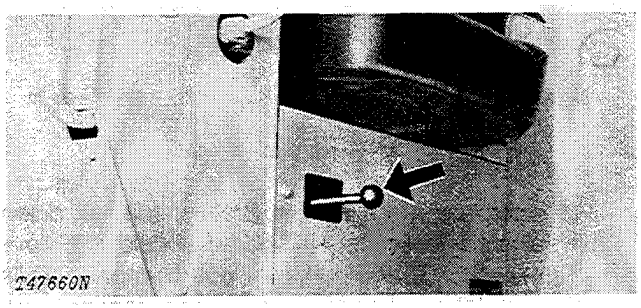
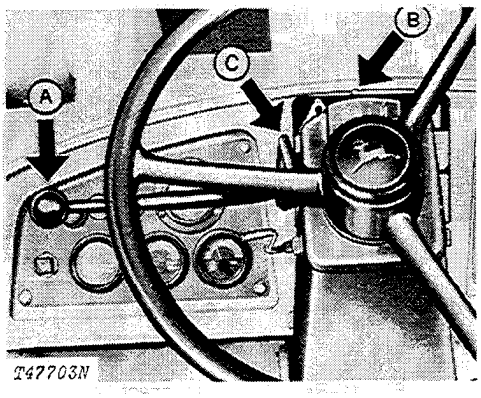


Fig. 9-Seat Adjustment Lever

Operate seat adjustment lever. Press lever toward center of loader. Slide seat to desired position. Release lever.

Seat operation checked *Yes* *No*

7. Transmission Operation



A—Shift Lever
B—Range Indicator
C—Neutral Lock

Fig. 10-Transmission Shift Lever

Check operation of loader in all gears.

Transmission checked *Yes* *No*

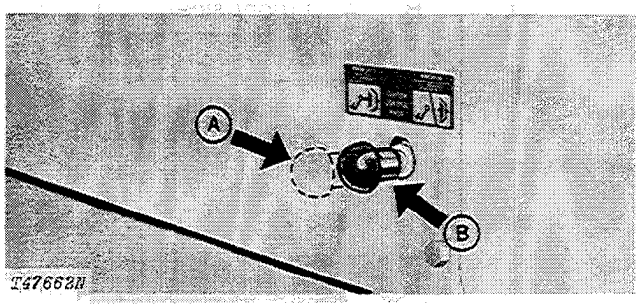
8. Power Steering

Turn steering wheel back and forth. Loader should turn to left and right with ease.

Check lines and cylinders for leakage.

Power steering checked *Yes* *No*

9. Clutch Control Operation



A—Knob Out **B—Knob In**

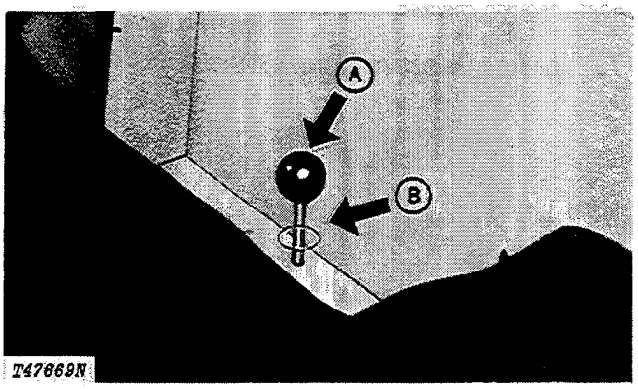
Fig. 11-Clutch Control Knob

Pull clutch control knob out. Brake pedal will disengage transmission clutches. Loader should not move.

Push knob in. Brake pedal will not disengage transmission clutches. Loader may creep forward with brakes applied.

Clutch control checked *Yes* *No*

10. Rear Axle Disconnect Operation



A—Rear Axle Disengaged **B—Rear Axle Engaged**

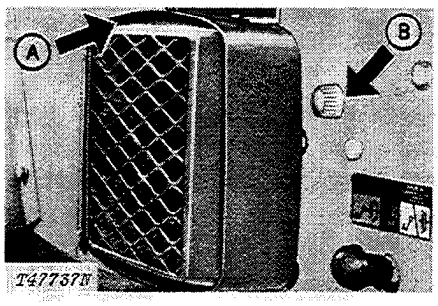
Fig. 12-Rear Axle Disconnect Lever

Check rear axle disconnect operation as follows:

1 - Raise the front wheels off the ground with the bucket.
2 - Pull the rear axle disconnect knob up.
3 - Loader should not move when transmission shift lever is placed in forward or reverse.
4 - Push the rear axle disconnect knob down.
5 - Loader should move when transmission shift lever is placed in forward or reverse.

Rear axle disconnect *Yes* *No*

11. Heater/Air Conditioner Operation (if equipped)



A—Heater **B—Heater Control Knob**

Fig. 13-Heater

Turn heater control knob to "on" position. This position should provide maximum heat.

Turn knob past "on" position. Heat should gradually decrease as knob is turned to the "stop" position.

If the loader is equipped with an air conditioner, perform the following check:

NOTE: Check for proper refrigerant charge before using air conditioner.

NOTE: Ambient air temperature must be at least 60°F (16°C).

1. With key switch on, operate blower switch in all positions. Observe fan speeds and air volume from air ducts.

2. With key and blower switches on, turn temperature switch toward maximum cooling and listen for audible "click" from compressor clutch.

3. Turn heater valve to closed position.

4. With blower switch at high speed and temperature switch at maximum cooling, operate engine at 2000 rpm.

5. After three minutes, observe sight glass for bubbles. Bubbles may be present immediately after compressor cycles on. If occasional bubbles or a constant stream of bubbles are observed under any other condition, refer to Group 9031 of this manual.

6. Check temperature of discharge air from air ducts. Hold thermometer in air duct until lowest reading is obtained.

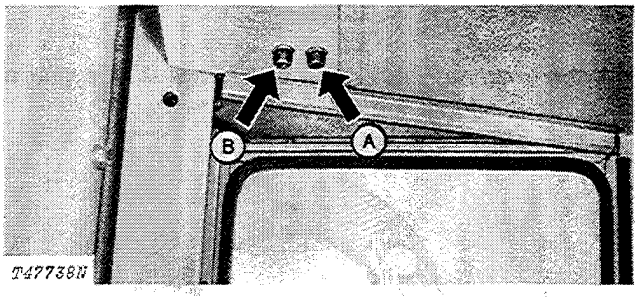
a. If ambient temperature is above 80°F (27°C), the duct air temperature must be 25 to 30°F (14 to 17°C) below ambient temperature.

b. If ambient temperature is below 80°F (27°C), the duct air temperature must be less than 50°F (10°C).

7. If unit does not operate as described, refer to Group 9031 of this manual.

Heater operation checked *Yes* *No*
Air conditioner operation checked *Yes* *No*

12. Windshield Wiper Operation (if equipped)



A—Front Wiper Switch **B—Rear Wiper Switch**

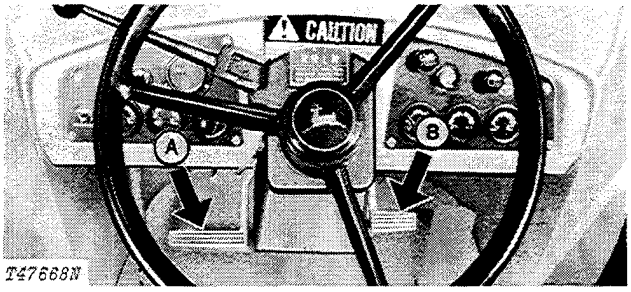
Fig. 14-Wiper Switches

Turn knob on front wiper switch to HI, LO, and OFF positions. Wiper should operate at given speeds.

Turn knob on rear wiper switch to ON and OFF positions. Wiper should operate in ON position.

Windshield wipers checked *Yes* *No*

13. Hydraulic Brakes



A—Left Brake Pedal **B—Right Brake Pedal**

Fig. 15-Brake Pedals

Check brake system for leaks or improper operation.

Put loader in gear and depress brake pedals. Moderate pedal force should hold loader in place.

If pedal force does not hold loader in place, pedal feels spongy or bottoms out, repair is required, or system may require bleeding (Page I-IV-30).

Brakes operational *Yes* *No*

14. Indicator Lights and Gauges

When operating your loader, check the following gauges for correct operation.

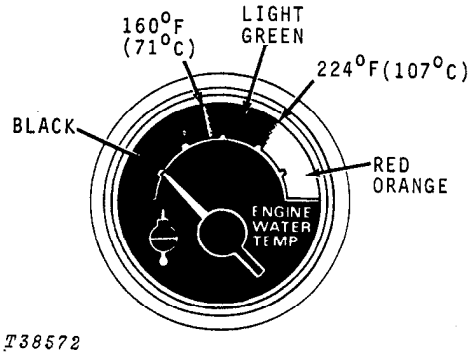


Fig. 16-Engine Coolant Temperature Gauge

Normal operating range is indicated by the light green area on the gauge face - 135°F to 224°F (57°C to 107°C).

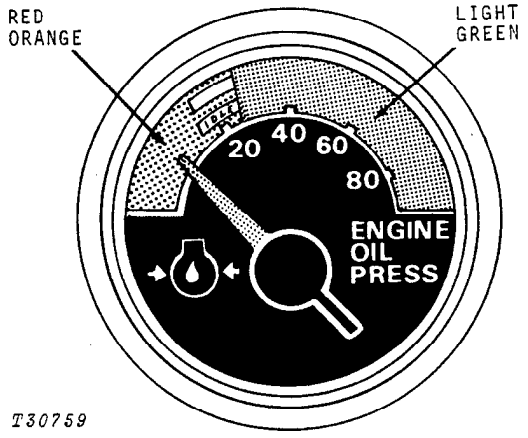
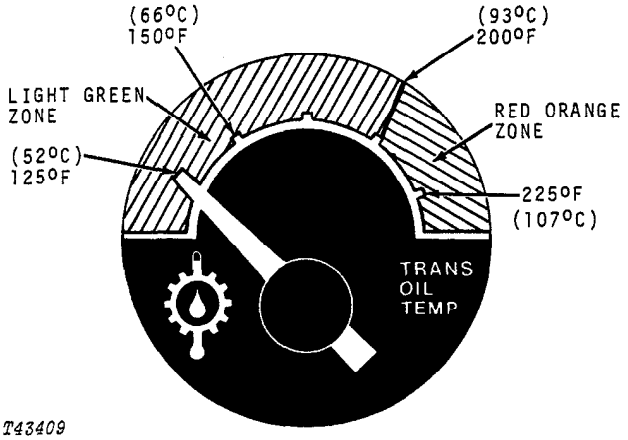


Fig. 17-Engine Oil Pressure Gauge

Normal operating range is indicated by the green zone on the gauge face.

If engine oil pressure indicator hand is not in the green zone, stop engine and check oil level.

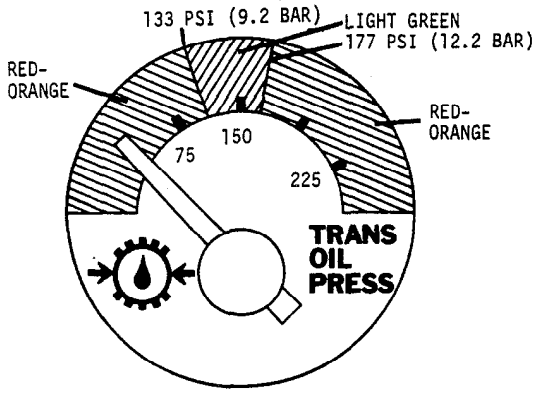


T43409

Fig. 18-Transmission Oil Temperature Gauge

Normal operating range is indicated by the green zone on the gauge face.

If the transmission oil temperature indicator hand is not in the green zone, stop engine and check oil level.

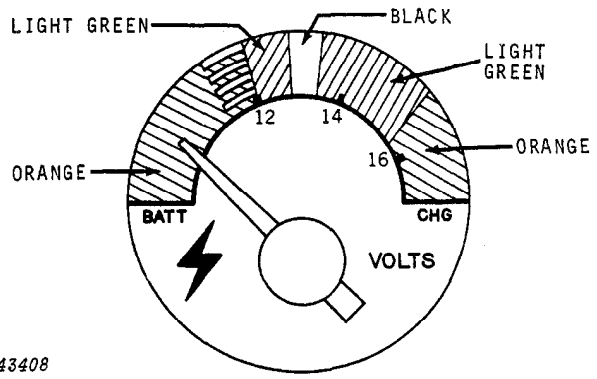


T49987N

Fig. 19-Transmission Oil Pressure Gauge

Normal operating range is indicated by the green zone on the gauge face.

If the transmission oil pressure indicator hand is not in the green zone, stop engine and check oil level. If oil is at proper level, troubleshoot the transmission system.

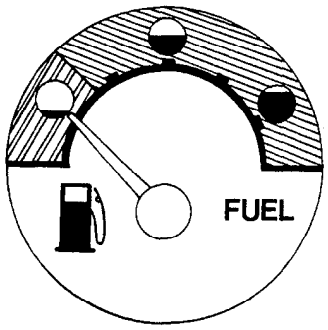


T43408

Fig. 20-Voltmeter

Normal operating range is indicated by the right green zone on the gauge face.

If the voltmeter indicator hand is not in this green zone, troubleshoot the electrical system.



T40227N

Fig. 21-Fuel Level Gauge

The fuel gauge indicates the amount of fuel remaining in the fuel tank.

Gauges and indicator lights operational *Yes* *no*