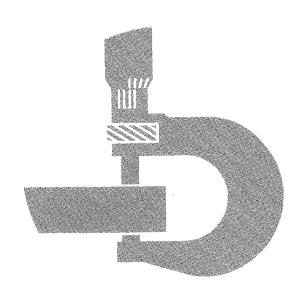
John Deere JD544B Loader



TECHNICAL MANUAL

John Deere Dubuque Works TM-1094 (Jan-80)

LITHO IN U.S.A.

JD544-B LOADER

Technical Manual TM-1094 (Jan-80)

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

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MAINTENANCE WITHOUT ACCIDENT WORK SAFELY



This safety alert symbol identifies important safety messages in this manual and on the loader. 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!



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.



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.



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.



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.



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



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.

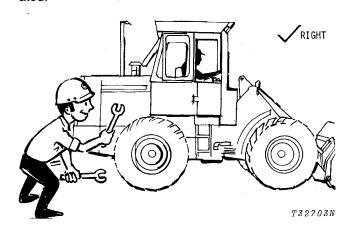
KNOW WHERE FIRE EXTINGUISHERS ARE KEPT!

Litho in U.S.A.

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.

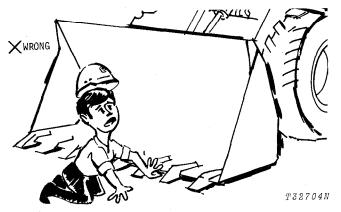


Avoid working on equipment with the engine running. If it is necessary to make checks with the engine running, ALWAYS USE TWO SERVICE TECHNICIANS—one, the operator, at the controls, the other checking within sight of the operator. Also, put the transmission in neutral, set the parking brake, and apply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



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.

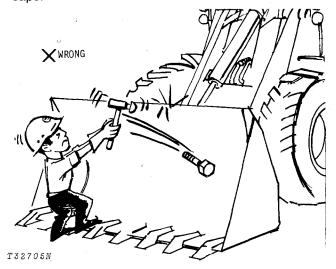


Avoid working directly under raised and blocked equipment unless absolutely necessary.

If the 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.

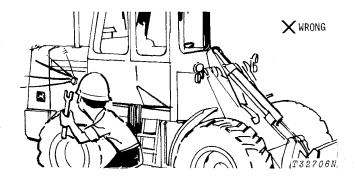
Store starting aids in a cool and well-ventilated place, out of the reach of unauthorized personnel.

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, follow the technical manual.

The loader is equipped with a hydraulic accumulator—recharge by using only dry nitrogen. Again follow the technical manual for procedure.

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



Keep ALL equipment 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 the 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.



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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



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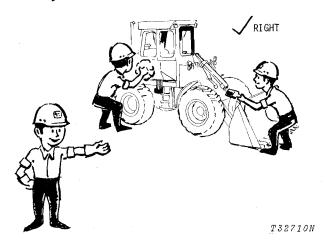
Don't attempt to check belt tension while the engine is running.

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

PRECAUTIONS DURING REPAIR

CAUTION: Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious personal injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to the system, be sure all connections are tight and that lines, pipes and hoses are not damaged. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

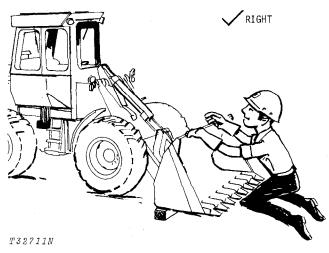
If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.



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

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. When changing cutting edges on bucket—
Stop the engine and securely block the bucket.



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



KNOW EQUIPMENT IS READY!

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

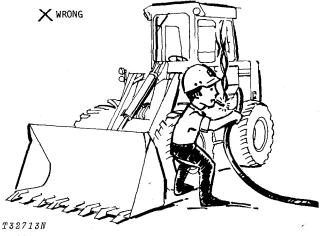
CHECK IT OUT!

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



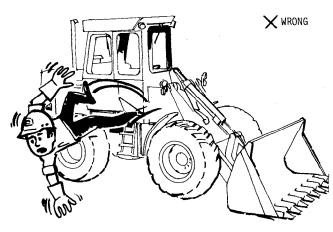
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Carefully inspect equipment for visual defects—leaks in fuel, lubrication, and hydraulic systems. Do not search for pressurized fluid leaks with your hands. Use cardboard or wood to search for leaks.



Check 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.



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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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Section 10 GENERAL

CONTENTS OF THIS SECTION

Page	Page
GROUP 5 - SPECIFICATIONS General Machine Specifications	GROUP 15 - LUBRICATION General Information
Predelivery Serivce	Greases

Group 5 GENERAL MACHINE SPECIFICATIONS

(Specifications and design are 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 and 17.5-25, 12-ply loader-tread tires with 1180 lbs (535.2 kg) CaCl₂ solution in rear tires, ROPS cab, side counterweights, full fuel tank, and 175 lb. (79.4 kg) operator.)

Power (at 2,200 engine rpm): SAE Gross
*Net engine flywheel horsepower 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. (150 m) altitude and 85°F (29°C) temperature and DIN 70 020 conditions (non-corrected). No derating is required up to 10,000 feet (3000 m) altitude. **In the International System of Units (SI), power is expressed in kilowatts (kW).
Engine: John Deere turbocharged diesel, vertical 6-cylinder, 4-stroke cycle. Bore and stroke 4.19 x 5 in. (106.5 x 127 mm) Piston displacement 414 cu. in. (6784 cm³) Compression ratio 16.2 to 1 Maximum torque @ 1,400 rpm 325 lb-ft (44.9 kg-m)
NACC or AMA (U.S. Tax) horsepower
Fan

Torque Converter:		
Type		. Twin-turbine
Torque Multiplication.		5.15 to 1
Transmission	Power	Shift planetary
Forward Speeds:		km/h
1	0-3	0-4.8
2	3-7.7	4.8-12
3	0-11.2	0-18
4	11.2-25	18.40
Reverse Speeds:		
1	0.4	0-6.4
2	4-10	6.4-16

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

Differentials:	
Front No	-Spin
Rear Star	

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).

each battery

Brakes:

Service ... Power actuated, 4-wheel, inboard-mounted wet disk. Foot-operated by either right or left pedal. Parking 10 x 1.5-inch (254 mm x 38 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). Turning clearance is 32 feet 9 inches (9.98 m) for 2 yd³.

Hydraulic Systems:

Loader functions....... Independent engine-driven, vane pump delivers 44.5 gpm (168.4 Lpm) at 600 psi (42 kg/cm²) and 2,200 engine rpm. 2,500 psi (175.8 kg/cm²) relief valve pressure setting.

Control Single-lever, dual hydraulic valve. Optional triple hydraulic valve for fork or multipurpose bucket.

Steering and brakes Engine-drive, eight-piston, variable-displacement pump delivers 26 gpm (98.4 Lpm) at 2,200 engine rpm and 2,000 psi (140.6 kg/cm²). Maximum system pressure is 2,400 psi (169 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) 27.22 in. (691 mm)
Cylinder rods . . Ground, heat-treated, chrome-plated,

Boom and bucket cylinder rods 2.25 in. (57 mm) dia.

Tires:

14-24, 12-ply-rating, grader tread, G2 17.5-25, 12-ply-rating, loader tread, L2 17.5-25, 16-ply-rating, loader tread, L2 17.5-25, 12-ply-rating, rock tread, L3 23.1-26*, 10-ply *Use with log loader

Wheel Treads:

Capacities:	U.S.	Liters
Cooling	32 qt.	30.3
Fuel tank 40	0 gal.	151.4
Crankcase with filter	20 qt.	19.6
Crankcase without filter	18 qt.	17.1
Transmission case and filters	39 qt.	36.9
Front differential: No-Spin	24 qt.	22.7
Rear differential	25 qt.	23.7
Loader hydraulic sump	48 qt.	45.4

Additional Standard Equipment:

Adjustable cushioned seat Engine side shields 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

Push button safety start

Cigaret lighter

Parking brake warning light and buzzer

Transistorized voltage regulator

Vandal protection

Lights

Horn

Fuel filter

Automatic return-to-dig

Vertical muffler with rain cap

Rear bottom guard

Hand grips

Fixed drawbar

ROPS cab and seat belt

Heater

Antifreeze

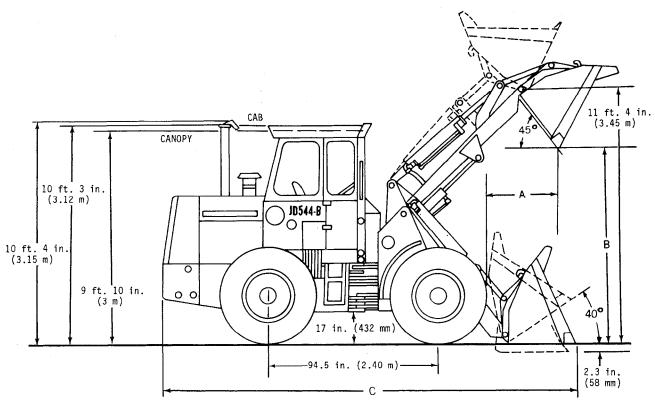
Aspirated air cleaner with integral pre-cleaner

Cold weather starting aid

Special Equipment:

Rear axle disconnect ROPS canopy and seat belt Instrument panel cover with lock Flashing and turning lights Reverse warning alarm Triple loader hydraulic valve Side counterweights Front bottom guard License plate bracket Defroster fan Engine coolant heater SMV emblem Automatic boom height control ROPS quiet cab Auxiliary cutting edges Suspension seat Sucker fan

DIMENSIONS



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	DIMENSIONS		
BUCKET CAPACITIES	Α	В	С
1-3/4 cu. yd. bucket	35 in.	8 ft. 11 in.	19 ft. 1 in.
	(889 mm)	(2.72 m)	(5.82 m)
2 cu. yd. bucket	35.9 in.	8 ft. 10 in.	19 ft. 2 in.
	(912 mm)	(2.69 m)	(5.84 m)
3 cu. yd. bucket	42.5 in.	8 ft. 4 in.	20 ft.
	(1079 mm)	(2.54 m)	(6.10 m)
1-3/4 cu. yd. multipurpose	35.2 in.	8 ft. 3 in.	20 ft. 1 in.
	(894 mm)	(2.51 m)	(6.12 m)

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