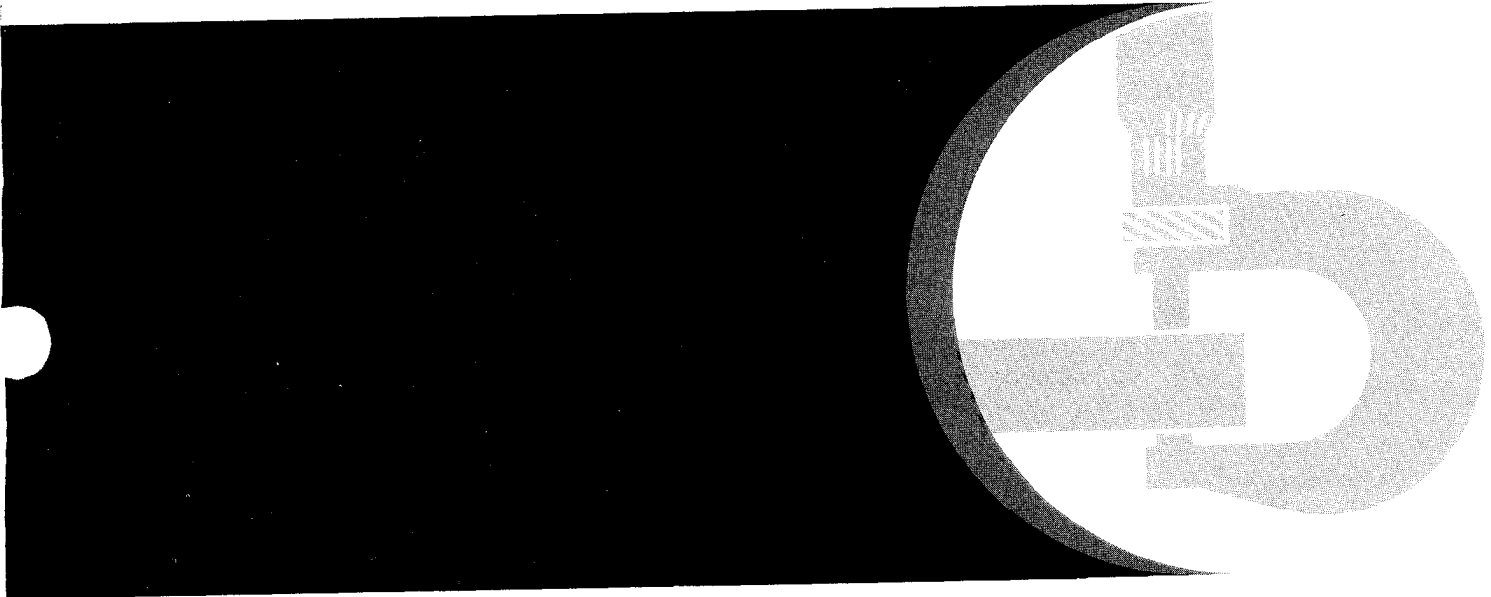


**John Deere
544C
Loader**



TECHNICAL MANUAL

**John Deere Dubuque Works
TM-1228 (Feb-84)**



LITHO IN U.S.A.

544C LOADER TECHNICAL MANUAL TM-1228 (FEB-84)

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SAFETY AND YOU

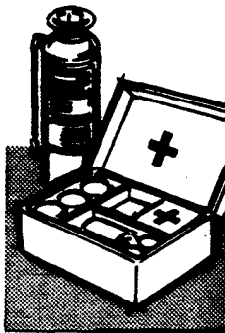
CAUTION: This safety symbol followed by the word "caution" identifies important safety messages in this manual and on the loader or compactor. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.



T27999N

02A:T27999 N T09:1102 160181

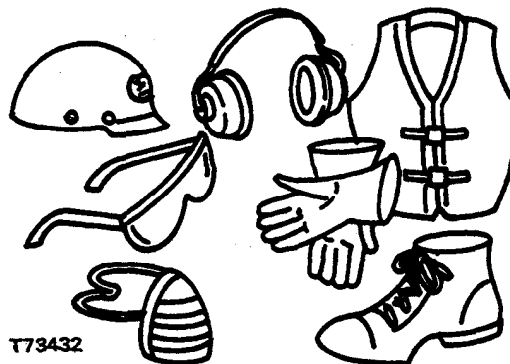
Be prepared if an accident or fire should occur. Know where the first aid kit and the fire extinguishers are located - know how to use them.



T27504N

02A:T27504 N T09:1103 160181

Wear safety equipment.



T73432

02A:T73432 T09:1104 160181

Wear fairly tight clothing.



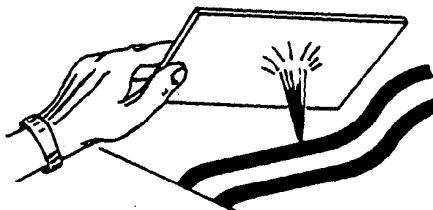
T45672

02A:T45672 R T09:1105 160181



CAUTION: Escaping fluid under pressure can have sufficient force to penetrate the skin, causing serious injury. Before disconnecting lines, be sure to relieve pressure. Before applying pressure, be sure connections are tight and lines, pipes and hoses are not damaged. Use a piece of cardboard or wood, rather than hands, to search for 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.



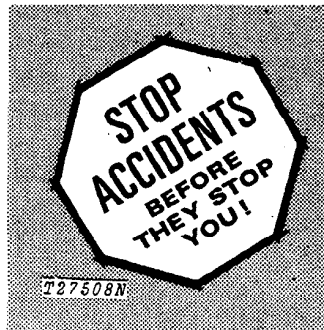
02A:T45794 T09:1117 050281

KEEP SHOP AND STORAGE AREA CLEAN

Maintenance area should be adequately vented.

Keep maintenance area clean and dry.

Store flammable materials in a cool and well-vented area out of reach of unauthorized personnel.



02A:T27508 N T09:1107 160181

FOLLOW SAFE WORKING CONDITIONS

Perform work on equipment only if authorized to do so.

Follow recommended procedures.

Do not service equipment while it is being operated or engine is running.

Always use two service technicians - one, the operator at the controls, the other checking within sight of the operator.

Keep hands away from moving parts.

Support all raised equipment.

Do not work under raised bucket.

Always lower bucket before working on it.

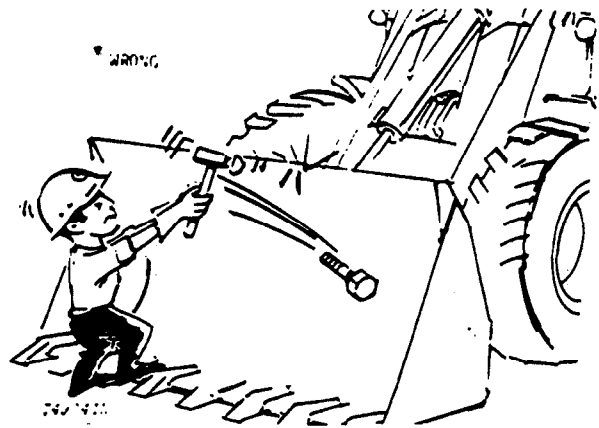
If machine is on an incline, block it securely.

Use hoisting equipment for lifting heavy parts.

Wear safety glasses when drilling, grinding or hammering metal.

Do not use open flame around machine.

X WRONG



02A:T32709 N, T49041 N T09:1108 190181

OBSERVE SERVICE PRECAUTIONS

Keep all equipment free of dirt and oil.

Remove oil, grease, mud, ice, or snow from floor of operator's compartment or steps.

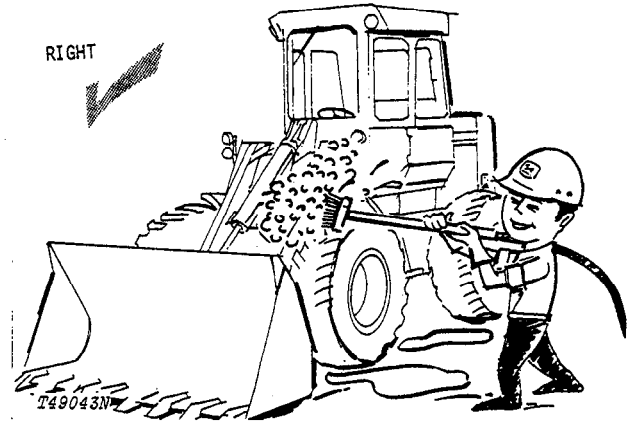
Do not remove radiator filler cap until coolant temperature is below the boiling point. Then loosen cap slowly to relieve pressure before removing.

Check exhaust system periodically for excessive leakage.

Relieve hydraulic pressure before working on hydraulic system.

Use the correct test group when checking hydraulic pressure.

Discharge accumulators completely before recharging or servicing.



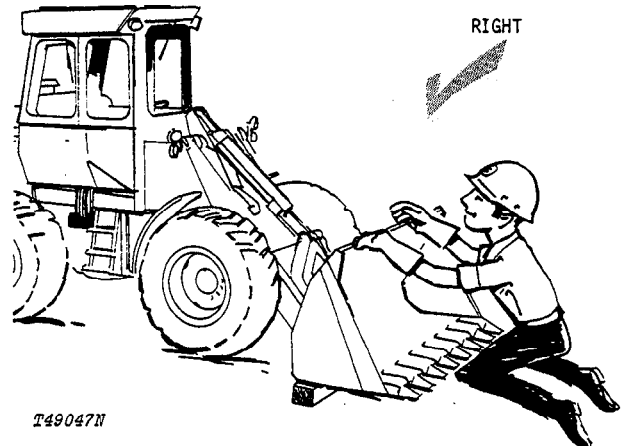
02A:T49043N T09:1114 090281

OBSERVE REPAIR PRECAUTIONS

Relieve hydraulic pressure before working on hydraulic system.

Disconnect batteries before repairing the electrical system or performing a major overhaul.

Securely block bucket before changing cutting edges. Wear gloves when working with sharp edges.



02A:T49047 N T09:1115 090281

CHECK SAFETY EQUIPMENT ON MACHINE

Check that all protective devices (guards, canopies, shields, ROPS, seat belts, etc.) are installed and secured on machine.

Inspect machine carefully for leakage from lines, hoses and fittings.

X WRONG



T32708N

02A:T32708 N T09:III:1 190181

AVOID EXPLOSIONS OR FIRE

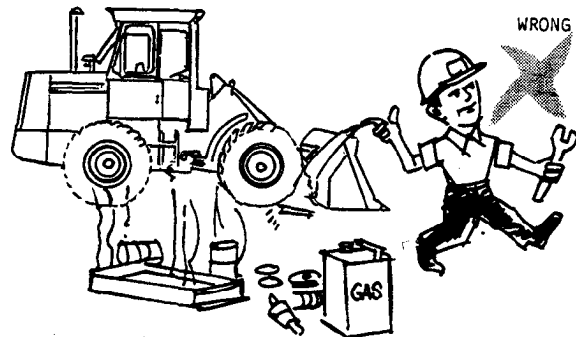
Do not smoke while refueling.

Do not smoke while handling highly flammable materials.

Shut off engine when refueling.

Use care in refueling if engine is hot.

Use good commercial, nonflammable solvents for cleaning parts.



02A:T49038 N T09:III:2 190181

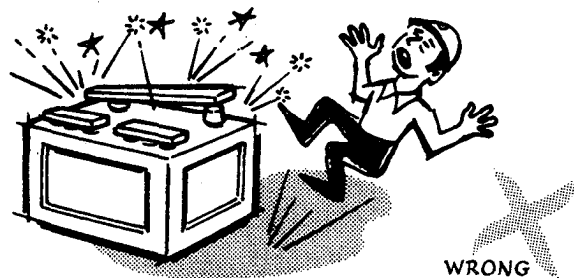
OBSERVE BATTERY PRECAUTIONS

Provide adequate ventilation when charging batteries.

Do not place metal objects across posts to check charge.

Do not smoke near battery.

Do not allow sparks or open flame near battery.



02A:T27506 N T09:III:3 190181

544C LOADER

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

Power (@2200 engine rpm): SAE DIN

Gross 120 hp (89.5 kW)
Net 110 hp (82 kW) 111.5

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 SAE standard conditions of 500-ft altitude and 85°F temperature and DIN 70 020 conditions (non-corrected). No derating is required up to 10,000 ft. (3000 m) altitude.

Engine: John Deere turbocharged diesel, 6-cylinder, 4-stroke cycle.
Bore and stroke 4.19 x 5 in. (106.5 x 127 mm)
Piston displacement 414 cu. in. (6.785 L)
Compression ratio 16.2 to 1
Maximum torque @ 1300 rpm 342 lb-ft (464 N·m)(47.9 kg·m)
Torque rise 30 percent
NACC or AMA (U.S. Tax) horsepower 42
Lubrication Pressure system w/full-flow filter
Cooling Pressurized w/thermostat and controlled bypass
Fan: w/air conditioner Suction
 w/o air conditioner Blower
Aspirated air cleaner w/restriction indicator Dry
Electrical system 12-volt w/alternator
Batteries (2-12 volt)
 25 amps at 80°F (27°C) Reserve capacity: 170 min. ea.
Alternator 62 amps

Torque Converter:

Type Twin turbine
Torque multiplication 5.19 to 1

Transmission Power Shift planetary

Forward Speeds	mph	km/h
1	0-3.1	0-5.0
2	3.1-7.9	5.0-11.9
3	0-11.9	0-19.2
4	11.9-26.8	19.2-43.1

Reverse Speeds	mph	km/h
1	0-4.2	0-6.8
2	4.2-10.1	6.8-16.3

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

Differentials:

Front and rear Standard
Front hydraulic differential lock Optional

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 pedal. Left pedal also disconnects transmission.

Parking 10 x 1.5 in. (254 x 38 mm) expanding shoe on transmission output shaft, foot-operated. Includes transmission disconnect.
Warning light on instrument panel. Warning buzzer.

Steering Full power steering. Frame articulated 80° by two hydraulic cylinders.

Turning radius measured to center line of outside tire 14 ft. 7 in. (4.44 m)

Cylinder Size: Stroke 15.75 in. (400 mm)
Bore 3 in. (76 mm)
Rod diameter 1.5 in. (38 mm)

Hydraulic Systems:

Loader functions Independent transmission driven gear-type pump delivers 49.75 gpm (3.14 L/s) at 600 psi (4137 kPa)(42.2 kg/cm²) and 2200 engine rpm

2625 psi (18 099 kPa)(184.6 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-driven, 8-piston, variable-displacement pump delivers 20.6 gpm (1.3 L/s) at 1800 engine rpm and 2000 psi (13 790 kPa)(140.6 kg/cm²). Maximum system pressure is 2400 psi (16 548 kPa)(168.7 kg/cm²)

Loader hydraulic operating cycle times at full throttle.

Raise 56 sec.
Dump 1.8 sec.
Lowering: float 4.5 sec.
 power 4.0 sec.

Maximum lift capacity w/standard operating equipment:

Maximum height 10,325 lb. (4683 kg)
Ground level 25,130 lb. (11 399 kg)

Capacities	U.S.	Imp.	Liters
Cooling system	... 27 qt.	22.5 qt.	25.5
Fuel tank	... 40 gal.	33.3 gal.	151.4
Engine	... 18 qt.	15.0 qt.	17.0
Engine, including filter	... 20 qt.	16.7 qt.	18.9
Transmission Case	... 8.5 gal.	7.1 gal.	32.3
Front differential	... 24 qt.	20 qt.	22.7
Rear differential	... 24 qt.	20 qt.	22.7
Hydraulic system	... 14 gal.	11.7 gal.	53.0

General Specifications

OPERATING INFORMATION	BUCKET		
	General purpose	Loose materials	Multi-purpose
Capacity, heaped, SAE	2 cu. yd. (1.53 m ³)	3 cu. yd. (2.29 m ³)	1¾ cu. yd. (1.34 m ³)
Capacity, struck, SAE	1.64 cu. yd. (1.25 m ³)	2.52 cu. yd. (1.93 m ³)	1.4 cu. yd. (1.07 m ³)
Bucket width	96 in. (2.44 m)	104.24 in. (2.65 m)	94.5 in. (2.40 m)
Bucket weight	1625 lb. (737 kg)	2040 lb. (925 kg)	2320 lb. (1052 kg)
Breakout force, J732C SAE Standard using bucket hinge pin as pivot	20,525 lb. (91.29 kN) (9310 kg)	16,815 lb. (74.79 kN) (7627 kg)	18,445 lb. (82.04 kN) (8367 kg)
Tipping load, straight	16,390 lb. (7435 kg)	16,170 lb. (7335 kg)	15,155 lb. (6874 kg)
*Tipping load, 40-deg. Full Turn, SAE	14,380 lb. (6522 kg)	14,135 lb. (6412 kg)	13,185 lb. (5981 kg)
Tipping load 35-deg. turn	14,840 lb. (6731 kg)	14,598 lb. (6622 kg)	13,635 lb. (6185 kg)
Circle diameter or turning clearance outside the bucket	34 ft. 4 in. (10.47 m)	35 ft. 4 in. (10.71 m)	34 ft. 8 in. (10.57 m)
Loader operating weight	22,764 lb. (10 326 kg)	23,175 lb. (10 512 kg)	23,970 lb. (10 813 kg)

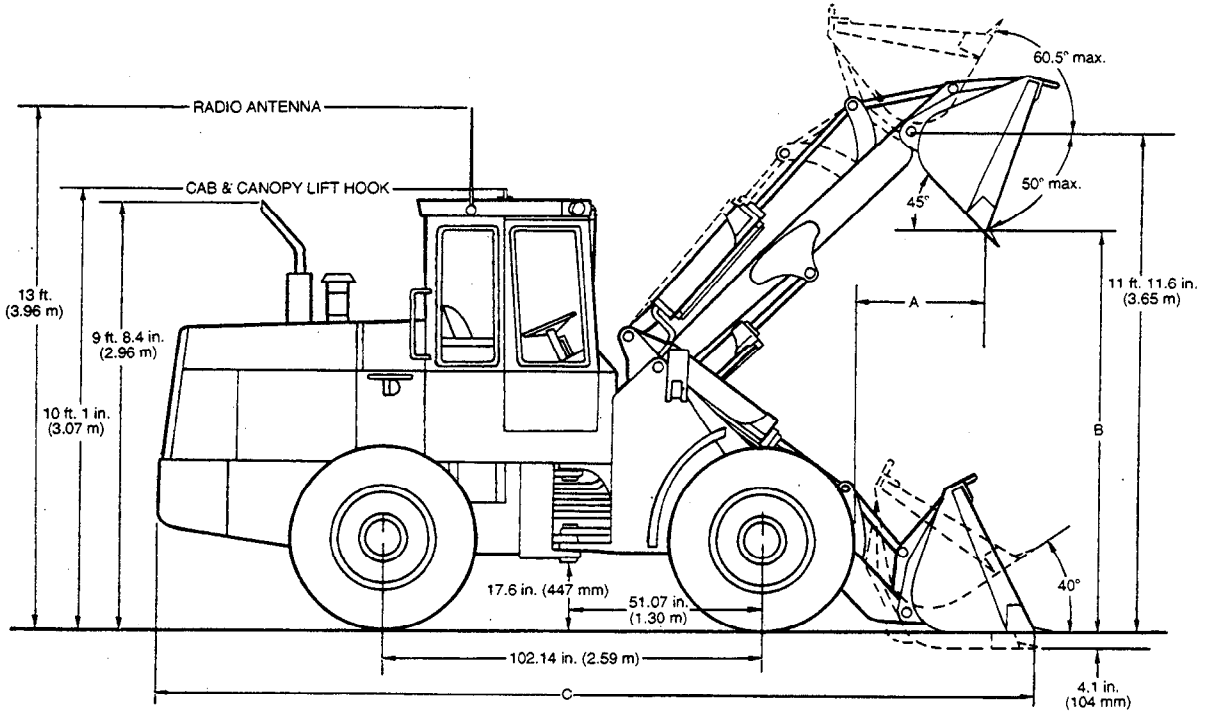
*SAE operating load specifications for wheel loaders will not exceed 50% of the SAE full turn tipping load.

Adjustments to operating weights and tipping loads for General Purpose Bucket

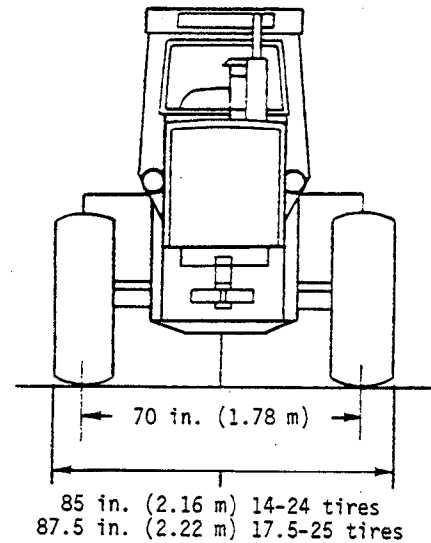
Add (+) or deduct (-) lb. (kg) as indicated for loader equipped with:	Loader Operating Weight	Tipping Load, Straight	Tipping Load, 40-deg. Full Turn, SAE
Less ROPS cab	-715 lb. (324 kg)	-655 lb. (297 kg)	-615 lb. (279 kg)
ROPS canopy in lieu of ROPS cab	-275 lb. (125 kg)	-250 lb. (113 kg)	-235 lb. (106 kg)
1 set of counterweights	+460 lb. (209 kg)	-920 lb. (417 kg)	+775 lb. (351 kg)
14-24, 12-ply-rating, grader tread tires, w/CaCl ₂	-585 lb. (265 kg)	-550 lb. (249 kg)	-485 lb. (220 kg)
Less CaCl ₂ in rear tires	-1180 lb. (535 kg)	-1590 lb. (721 kg)	-1405 lb. (637 kg)
Bucket Teeth	+125 lb. (57 kg)	-173 lb. (78 kg)	-173 lb. (78 kg)
Air Conditioning	+72 lb. (33 kg)	+128 lb. (58 kg)	+109 lb. (49 kg)
Auxiliary cutting edge	+200 lb. (91 kg)	-256 lb. (116 kg)	-256 lb. (116 kg)
Emergency Steering	+51 lb. (23 kg)	+61 lb. (28 kg)	+55 lb. (25 kg)
Auxiliary spill guard	+90 lb. (41 kg)	-63 lb. (285 kg)	-63 lb. (28 kg)

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General Specifications



BUCKET CAPACITIES	DIMENSIONS		
	A	B	C
2 cu. yd. (153 m³) bucket	35.22 in. (894 mm)	9 ft. 6 in. (2.90 m)	20 ft. 3.1 in. (6.17 m)
3 cu. yd. (2.29 m³) bucket	39.6 in. (1006 mm)	9 ft. 1.6 in. (2.78 m)	20 ft. 9.3 in. (6.33 m)
1¼ cu. yd. (1.34 m³) multipurpose	35.96 in. (913 mm) @ 44° max.	9 ft. 1.2 in. (2.77 m) @ 44° max.	20 ft. 10 in. (6.35 m)



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