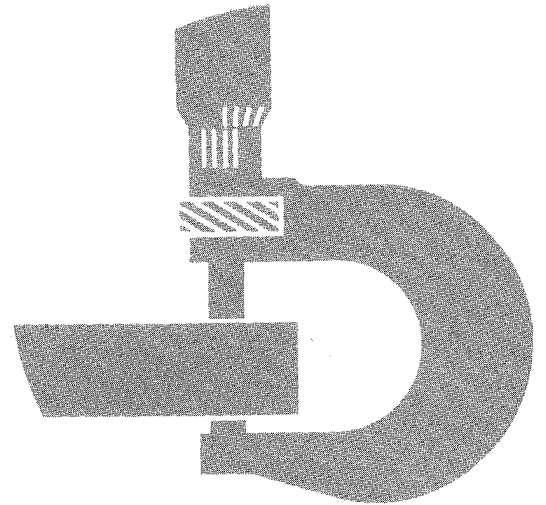


# 655 Crawler Loader



## TECHNICAL MANUAL

TM-(1250) (Apr-87)

LITHO IN U.S.A.

**655 CRAWLER LOADER  
Technical Manual  
TM-1250 (Apr-81)**

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

## MAINTENANCE WITHOUT ACCIDENT

### SAFETY AND YOU



T27999N

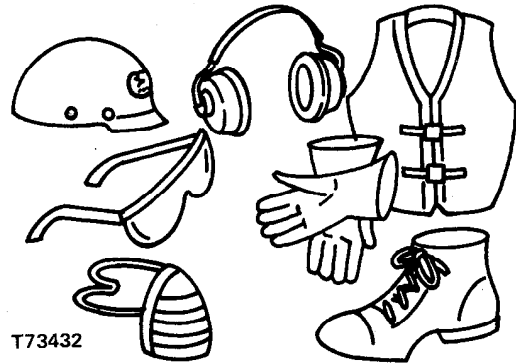
**⚠ CAUTION:** This safety symbol followed by the word "caution" identifies important safety messages in this manual and on the crawler loader. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.



T73433

T73433

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.



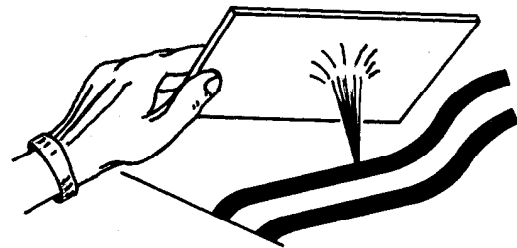
T73432

Wear safety equipment.



T45672

Wear fairly tight clothing.



T45794

**⚠ 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.

## MAINTENANCE WITHOUT ACCIDENT

### KEEP SHOP AND STORAGE AREA CLEAN



Maintenance area should be adequately vented.

Keep maintenance area clean and dry.

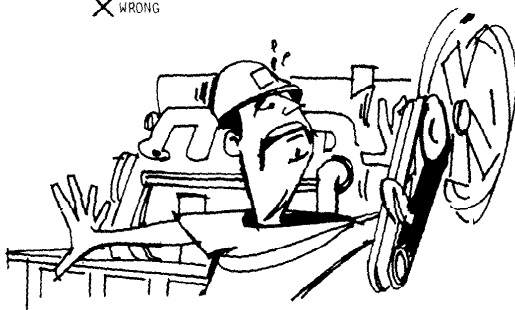
Store flammable materials in a cool and well-vented area out of reach of unauthorized personnel.

### FOLLOW SAFE WORKING CONDITIONS

Perform work on equipment only if authorized to do so.

Follow recommended procedures.

X WRONG



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

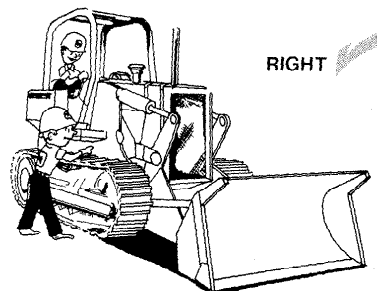
Keep hands away from moving parts.

Do not use open flame around machine.

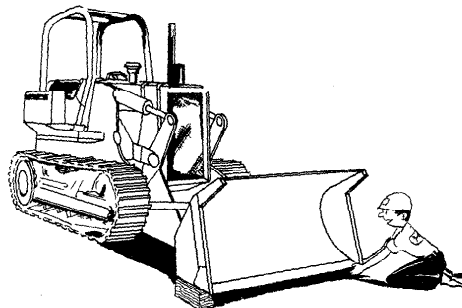
If machine is on an incline, block it securely.

Use hoisting equipment for lifting heavy parts.

Litho in U.S.A.



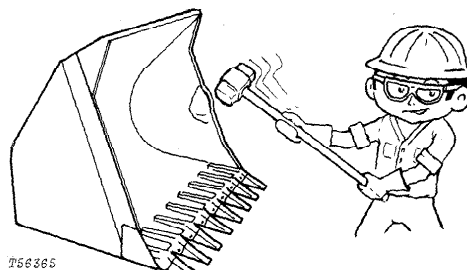
If it is necessary to make checks with the engine running, always use two service technicians - one, the operator at the controls, the other checking within sight of the operator.



Support all raised equipment.

Do not work under raised bucket.

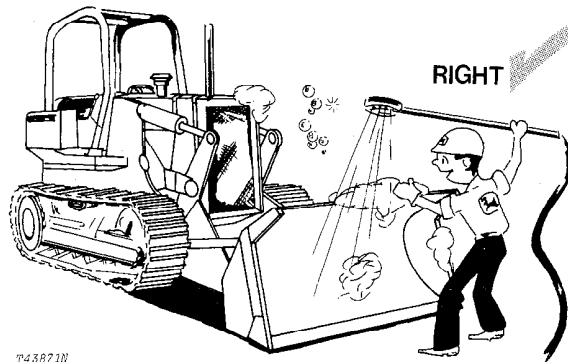
Always lower bucket before working on it.



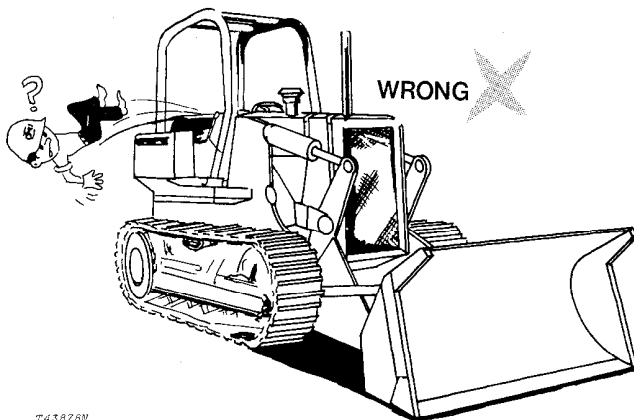
Wear safety glasses when drilling, grinding or hammering metal.

## MAINTENANCE WITHOUT ACCIDENT

### 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 unless engine is cool. Then loosen cap slowly to the stop. Release pressure before you remove cap.

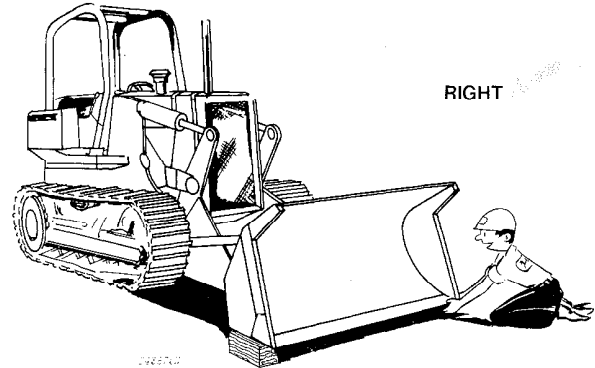
Check exhaust system periodically for excessive leakage.

Relieve hydraulic pressure before working on hydraulic system.

Use the correct test group when checking hydraulic pressure.

Discharge accumulators completely before recharging or servicing.

### OBSERVE REPAIR PRECAUTIONS



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

Relieve hydraulic pressure before working on hydraulic system.

Turn off battery disconnect switch before repairing the electrical system or performing a major overhaul.

Install lift arm locking pin before working in engine area.

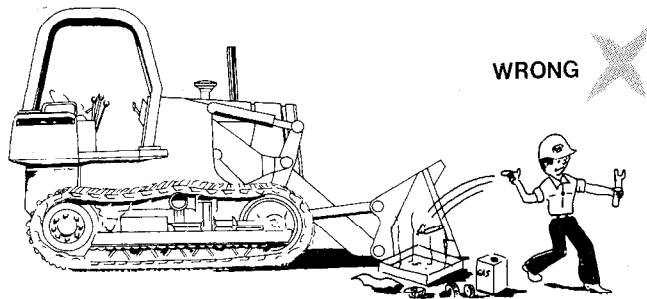
### CHECK SAFETY EQUIPMENT ON MACHINE

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.

## MAINTENANCE WITHOUT ACCIDENT

### AVOID EXPLOSIONS OR FIRE



T43866N

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.

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.

### OBSERVE BATTERY PRECAUTIONS



T27506N

Do not place metal objects across posts to check charge.

Do not smoke near battery.

Do not allow sparks or open flame near battery.

Provide adequate ventilation when charging batteries.

## 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 2 cu. yd. (1.53 m<sup>3</sup>) bucket with teeth, roll-over protective canopy, four counterweights, and standard equipment.)

Power (@ 2100 rpm):	SAE	DIN
Gross .....	122 hp (91 kW)	
Net .....	110 hp (97 kW)	111.5 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. altitude and 85°F. temperature, and DIN 6270 conditions (non-corrected). No derating is required up to 10,000 feet (3000 m) altitude.

**Engine:** John Deere 6-cylinder turbocharged diesel, valve-in-head, 4-stroke cycle.

Bore and stroke .... 4.19 × 5 in. (106.4 × 127 mm)  
Piston displacement ..... 414 cu. in. (6.785 L)  
Compression ratio ..... 16.2 to 1  
Maximum torque @ 1300 rpm .. 345 lb-ft (468 N·m)  
(47.7 kg-m)

NACC or AMA (U.S. Tax) horsepower ..... 42  
Lubrication ..... Pressure system with full flow filters  
Main bearings ..... 7  
Cooling ..... Pressurized with thermostat and controlled bypass  
Fan ..... Blower  
Dual-stage aspirated air cleaner  
with restriction indicator ..... Dry  
Electrical system ..... 24 volt with alternator  
Batteries (two 12-volt) ..... Reserve capacity:  
180 minutes each

### Transmission:

Cold weather starting ..... Disconnect clutch completely disengages hydrostatic drive and all hydraulics.  
Splitter drive ..... Pressure-lubricated helical gears drive both hydrostatic transmissions, main hydraulic pump, winch drive shaft and auxiliary pump drive.  
Drive .... Dual-Path, fully automatic, infinitely variable hydrostatic transmissions.  
Speeds ..... Infinite from 0 to 6.5 mph (0 to 10.5 km/h) forward or reverse.  
Control ..... Single-lever, variable speed, forward and reverse.

### Steering:

Fully modulated, infinitely variable pedal steering for live power turns and counterrotation. No need for steering clutches or steering brakes.

### Brakes:

Service ..... Hydrostatic  
Parking ... Wet-disk brakes are automatically applied when engine is stopped, or manually applied with center foot pedal during normal operation.

### Hydraulic System: Open-center

Control ..... Single-lever bucket control with automatic bucket positioner and float position. Three-function valve.

Pump ..... Vane, 55 gpm (3.47 L/s) @ rated engine speed

Pressure ..... 2500 psi (15 514 kPa) (158.2 kg/cm<sup>2</sup>)

Oil lines ..... Seamless steel tubing; double-wire-braid hose

Filter ..... 10 micron filter in return line w/bypass

### Hydraulic Cylinders: Bore Stroke

Boom (2) ..... 5.50 in. (140 mm) 32 in. (813 mm)

Bucket (2) ..... 4.50 in. (114 mm) 21.52 in. (547 mm)

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

Boom cylinder rods ..... 3.75 in. (95 mm) dia.

Bucket cylinder rods ..... 2.25 in. (57 mm) dia.

**Tracks** (6-roller track frame with front and rear track guides and sprocket guard):

Two bar grouser ..... 15 in. (381 mm)

Track shoes, each side ..... 40

Ground contact area ..... 2724 sq. in. (17 575 cm<sup>2</sup>)

Ground pressure .. 11.8 psi (81.4 kPa) (0.830 kg/cm<sup>2</sup>)

Length of track on ground ..... 90.8 in. (2.31 m)

Track gauge ..... 64 in. (1.63 m)

Carrier roller ..... 1 each side

Adjustment ..... Hydraulic

Minimum ground clearance ..... 15.3 in. (389 mm)



**SAE Operating Weight w/ROPS** ..... 32,005 lb.  
(14 517 kg)

<b>Capacities:</b>	<b>U.S.</b>	<b>Imp.</b>	<b>Liters</b>
Cooling system .....	7 gal.	5.8 gal.	26.5
Fuel tank .....	73 gal.	60.8 gal.	276.3
Crankcase .....	18 qt.	15.0 qt.	17.0
Crankcase, including filter .....	20 qt.	16.7 qt.	18.9
Splitter drive .....	1.5 gal.	1.3 gal.	5.7
Final drive each: 1st reduction .....	5.375 gal.	4.5 gal.	20.3
2nd reduction .....	3.5 gal.	2.9 gal.	13.2
Loader hydraulic system .....	37 gal.	30.8 gal.	140.1
Hydrostatic drives .....	33 gal.	27.5 gal.	124.9

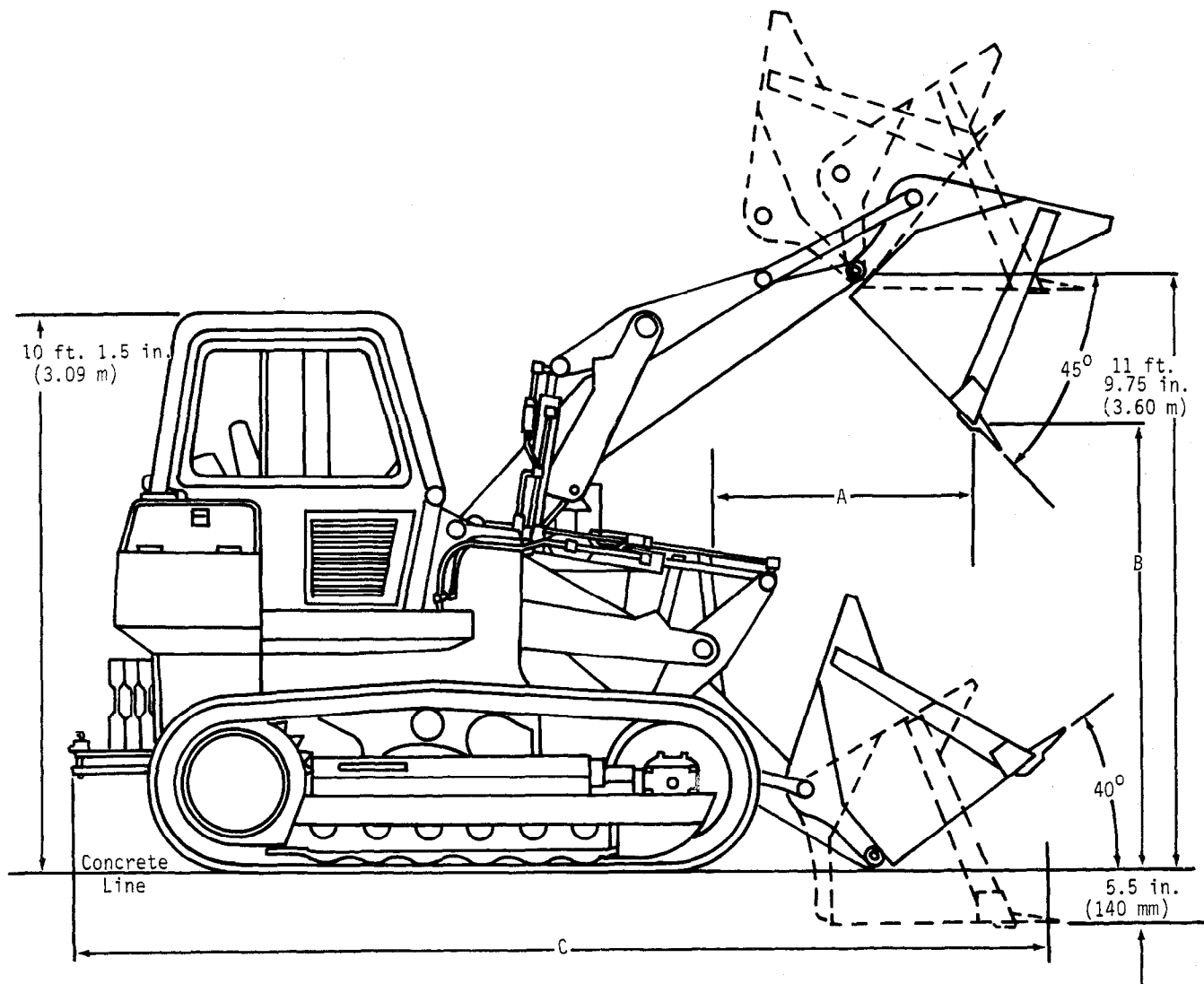
**Additional Standard Equipment:**

Enclosed alternator with solid-state regulator  
Bottom guards  
Suspension seat with armrests  
Key switch  
Pushbutton starting  
Electric hour meter  
Cigar lighter  
Vandal protection  
Boom safety lock pin  
Muffler  
Cold weather starting aid  
Front idler shields  
Master electrical disconnect switch  
Toolbox  
Transmission neutral lock with starter safety switch  
Horn  
Air cleaner restriction indicator  
ROPS canopy with seat belt  
Radiator sand shield

**Special Equipment:**

Oil sampling test kit  
Bucket teeth, bolt-on or flush-mount weld-on  
Hydraulics for rear-mounted equipment  
Hydraulics for front-mounted equipment  
Selector valve for ripper and multipurpose bucket  
Protection package:  
    Limb risers for ROPS canopy  
    Brush screens for operator's compartment  
    Rear bumper  
    Tank guards  
Fire extinguisher  
Front pull hook  
Cab with windshield wipers, pressurizer and heater  
Air conditioner  
Windshield washer  
Engine coolant heater  
Backup alarm  
Lexan® windshield with wiper  
Lexan® windows for cab  
Rock guard, center section

## LOADER DIMENSIONS



BUCKET CAPACITIES	DIMENSIONS		
	A	B	C
2 cu. yd. bucket (1.68 m <sup>3</sup> )	47.5 in. (1207 mm)	9 ft. 3 in. (2.82 m)	18 ft. 3 in. (5.56 m)
1-3/4 cu. yd. (1.34 m <sup>3</sup> ) multipurpose	53 in. (1.35 m)	9 ft. 4.5 in. (2.86 m)	18 ft. 6.75 in. (5.66 m)

T79498