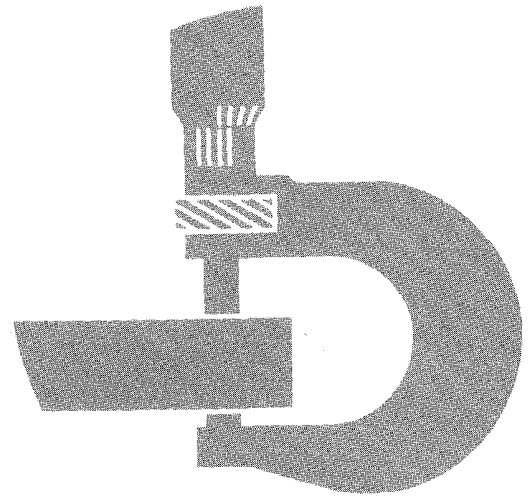


# **646B Compactor**



## **TECHNICAL MANUAL**

**John Deere Dubuque Works**

**TM-1116**

LITHO IN U.S.A.

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II INDEX

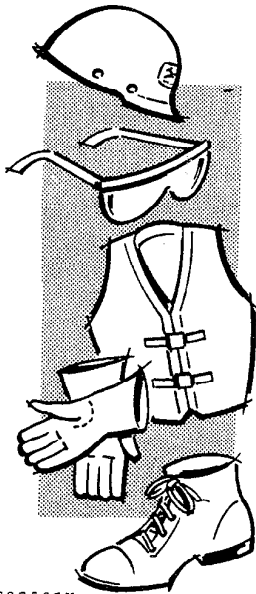
## MAINTENANCE WITHOUT ACCIDENT WORK SAFELY



T27999

 This safety alert symbol identifies important safety messages in this manual and on the compactor. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

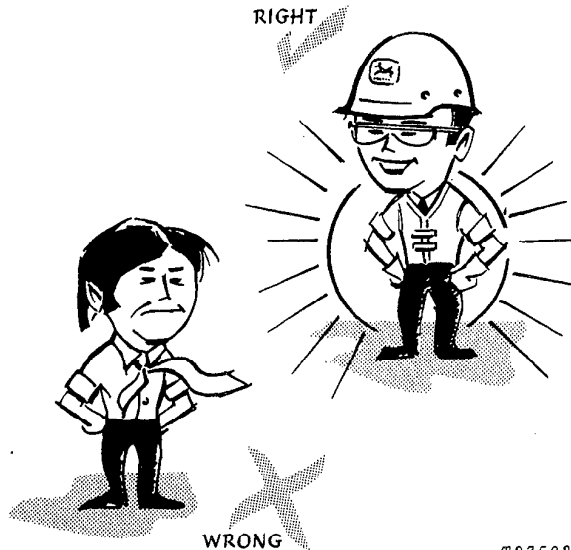
**EVERY EMPLOYER HAS A  
SAFETY PROGRAM. KNOW  
WHAT IT IS!**



T27501N

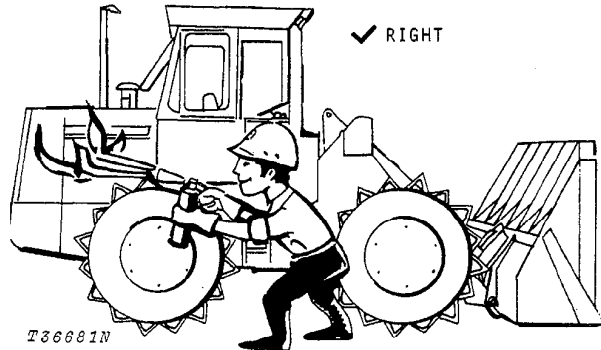
Consult your shop foreman for specific instructions on a job, and the safety equipment required.

For instance, you may need: Hard hat, safety shoes, safety goggles, heavy gloves, reflector vests, ear protectors, respirators.



T27502N

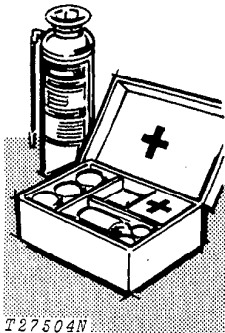
**ALWAYS AVOID** loose clothing or any accessory—flopping cuffs, dangling neckties and scarves, or rings and wrist watches—that can catch in moving parts and put you out of work.



T36681N

### 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.



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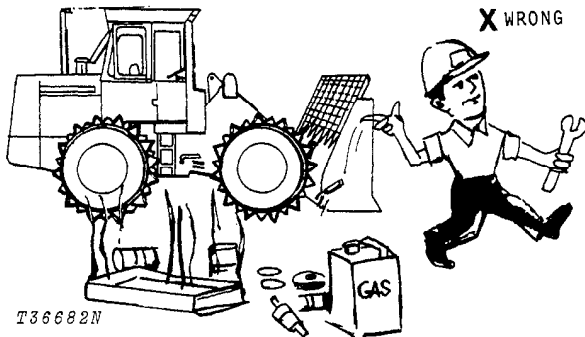
## MAINTENANCE WITHOUT ACCIDENT

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.



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.

#### Know Where Fire Extinguishers Are Kept!

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#### Flame Is Not a Flashlight!

Never check fuel, battery electrolyte or coolant levels with an open flame.

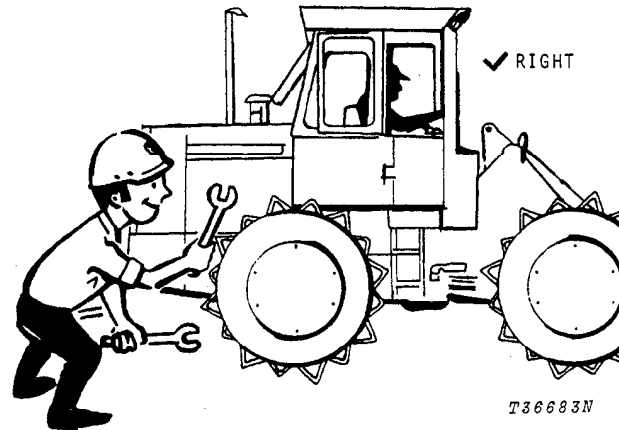
Never use an open flame to look for leaks anywhere on the equipment.

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

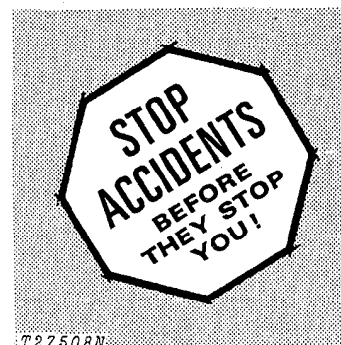
### UNDER ALL MAINTENANCE CONDITIONS—

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.



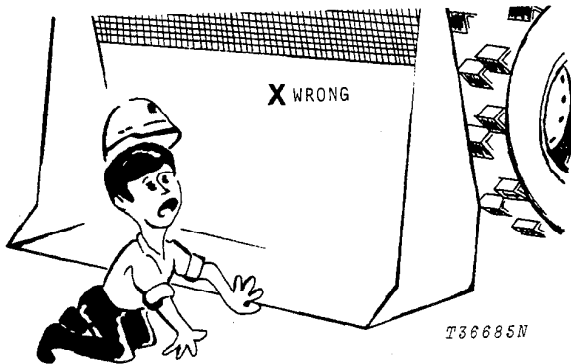
Avoid working on equipment with the engine running. If it is necessary to make checks with the engine running, **ALWAYS USE TWO SERVICE TECHNICIANS**—one, the operator, at the controls, the other checking within sight of the operator. Also, put the transmission in neutral, set the parking brake, and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



## MAINTENANCE WITHOUT ACCIDENT

Before servicing, adjusting, or repairing compactors—**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.

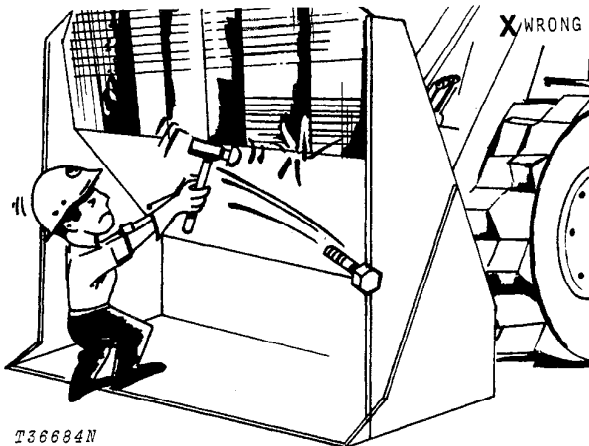


Avoid working directly under raised and blocked equipment unless absolutely necessary.

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.

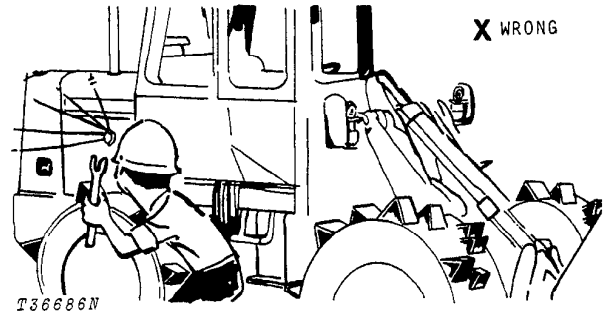
Keep maintenance area **CLEAN AND DRY**. Oily and wet floors are slippery; greasy rags are a fire hazard; wet spots are dangerous when working with electrical equipment.

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.

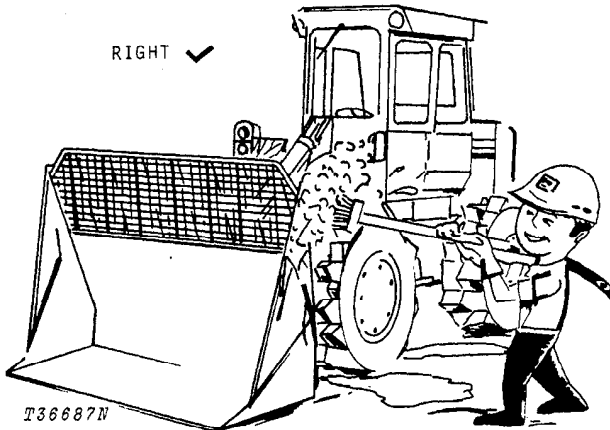
Don't forget a hydraulic system may be pressurized! To relieve pressure, stop engine and lower boom. Operate steering wheel, brake pedals and control levers until system fails to respond.

The compactor is equipped with hydraulic accumulators—recharge by using only dry nitrogen. See page 0960-46 or 1060-10.

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

## MAINTENANCE WITHOUT ACCIDENT

RIGHT ✓



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.

✗ WRONG



T32708N

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 adjust the fuel system while the machine is in motion.

✗ WRONG



T32709N

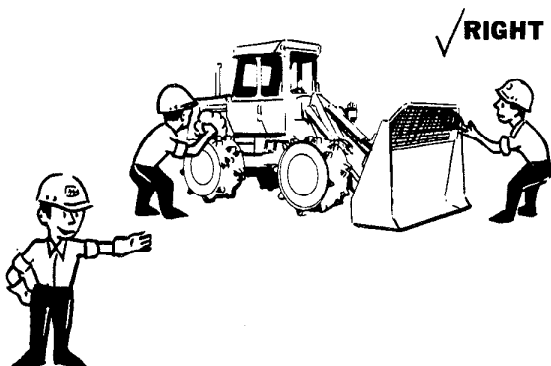
Don't attempt to check belt tension while the engine is running.

## MAINTENANCE WITHOUT ACCIDENT

### PRECAUTIONS DURING REPAIR

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

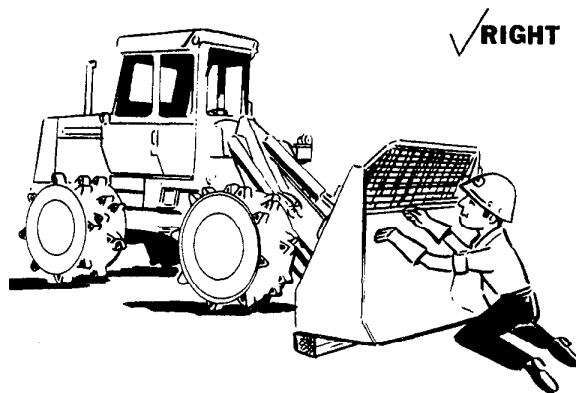
Before repairing the electrical system, or performing a major overhaul, make sure the batteries are disconnected.



T36688N

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

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



T36689N

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



## Group III

# GENERAL SPECIFICATIONS

<b>Power (at 2,200 engine rpm):</b>	<b>SAE</b>	<b>DIN</b>
Gross .....	160 hp (119.3 kW**)	
Net .....	145 hp (108.1 kW**)	147.5 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 (152 m) altitude and 85°F (29.4°C) temperature and DIN 70 020 (non-corrected). No derating is required up to 10,000 ft. (3000 m) altitude.

\*\*In the international system of units, power is expressed in Kilowatts (kW).

<b>Engine:</b> John Deere turbocharged diesel, vertical 6-cylinder, valve-in-head, 4-stroke cycle.	
Bore and stroke .....	4.75 x 5 in. (120.5 mm x 127 mm)
Piston displacement .....	531 cu. in. (8702 cm <sup>3</sup> )
Compression ratio .....	15.8 to 1
Maximum torque @ 1500 rpm .....	432 lb-ft (59.7 kg-m)
NACC or AMA (U.S. Tax) horsepower .....	54.0
Lubrication .....	Pressure system with full-flow filter
Cooling .....	Pressurized with thermostat and controlled bypass
Fan .....	Suction
Air cleaner w/restriction indicator .....	Dry
Electrical system .....	12 volt (12-V) w/alternator
Batteries (2) .....	Reserve capacity: 310 minutes each battery

<b>Torque Converter:</b>	
Type .....	Twin-turbine
Torque multiplication .....	3.34 to 1
Transmission .....	Power Shift planetary

<b>Recommended Travel Speeds</b>	
Forward and reverse .....	4.5 mph (7.2 km/h) maximum

<b>Differentials:</b>	
Front .....	No-Spin
Rear .....	Standard

**Drive Axles** ... Inboard-mounted planetary gears to each wheel. Front axle fixed. Rear axle oscillates 22-degree total. 15.8 inches (401 mm) vertical travel at center of tire.

<b>Brakes:</b>	
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 on dash.

**Steering** .... Full power steering. Frame articulated 80 degrees by two hydraulic cylinders. Turning radius of 15 feet 6.7 inches (4.74 m). Turning clearance is 36 ft 10.8 inches (11.25 m).

<b>Hydraulic Systems:</b>	
Loader functions .....	independent engine driven, vane pump delivers 44.5 gpm (168.4 L/min) at 600 psi (42.2 kg/cm <sup>2</sup> ) and 2,200 engine rpm.
	2,250 psi (158.2 kg/cm <sup>2</sup> ) relief valve pressure setting.
Control .....	Two lever triple hydraulic valve for use with refuse bucket or special multipurpose bucket.
Steering and brakes .....	Engine-driven, eight-piston, variable-displacement pump delivers 26 gpm (98.4 L/min) at 2,200 engine rpm and 2,000 psi (140.6 kg/cm <sup>2</sup> ). Maximum system pressure is 2,400 psi (168.7 kg/cm <sup>2</sup> )

<b>Compactor Wheels (Cepeco):</b>	
Width .....	23 in. (584 mm)
Diameter .....	56.75 in. (1 442 mm)
60° cleats, 32/wheel .....	5 in. (127 mm)
Encased General tires .....	13-24, 12 ply L-G
Compaction .....	Up to 3,223 psi (226.6 kg/cm <sup>2</sup> )

<b>Compactor Wheels (Caron):</b>	
Width .....	23 in. (584 mm)
Diameter .....	60 in. (1 524 mm)
20 tractor cleats .....	5.5 in. (140 mm) long @ tip
10 contour cleats .....	3 in. (76 mm) long @ tip
Compaction .....	Up to 3640 psi (25 097 kPa)

**Landfill Buckets:**

	<b>Capacity</b>	<b>Width</b>
Refuse ..... Dirt:	2-3/4 cu. yd. (2.1 m <sup>3</sup> )	110.8 in. (2.81 m)
..... Refuse:	4-1/2 cu. yd. (3.44 m <sup>3</sup> )	
Light materials .....	4-1/2 cu. yd. (3.44 m <sup>3</sup> )	110.7 in. (2.81 m)
Multipurpose ... Dirt:	2-1/2 cu. yd. (1.91 m <sup>3</sup> )	104.75 in. (2.66 m)
..... Refuse:	3-3/4 cu. yd. (2.87 m <sup>3</sup> )	

**Wheel Treads:**

Front and rear .....	81.5 in. (2.07 m)
Width outside wheels .....	104.5 in. (2.65 m)

**Capacities:**

	<b>U.S.</b>	<b>Litres</b>
Cooling system .....	49 qt.	46.4
Fuel tank .....	56 gal.	211.9
Crankcase .....	20 qt.	18.9
Crankcase, includes filter .....	22 qt.	20.8
Transmission case and filters .....	39 qt.	36.9
Front differential .....	24 qt.	22.7
Rear differential .....	25 qt.	23.7
Hydraulic sump .....	70 qt.	66.2

**Special Equipment:**

- Refuse bucket
- Multipurpose landfill bucket
- Light-materials bucket
- Reverse warning system switch
- Automatic boom height control
- 3-inch seat belt
- Multipurpose bucket teeth
- Suspension seat
- ROPS quiet cab
- Air conditioning
- Side weights
- Muffler
- Reverse warning alarm

**Additional Standard Equipment:**

- Adjustable cushioned seat
- Engine side shields
- Key switch
- Push button safety start
- Cigar lighter
- Parking brake
- Vandal protection
- Horn
- Lights
- Working lights
- Fixed drawbar
- Vertical exhaust w/rain cap
- Hand grips
- ROPS with cab and seat belt
- Cab heater
- Cold weather starting aid
- Radiator guard and screen
- Fire extinguisher
- Electric hour meter
- Defroster fan
- Front and rear windshield wipers
- Instrument panel cover with locks
- Park brake warning buzzer  
with light
- Precleaner

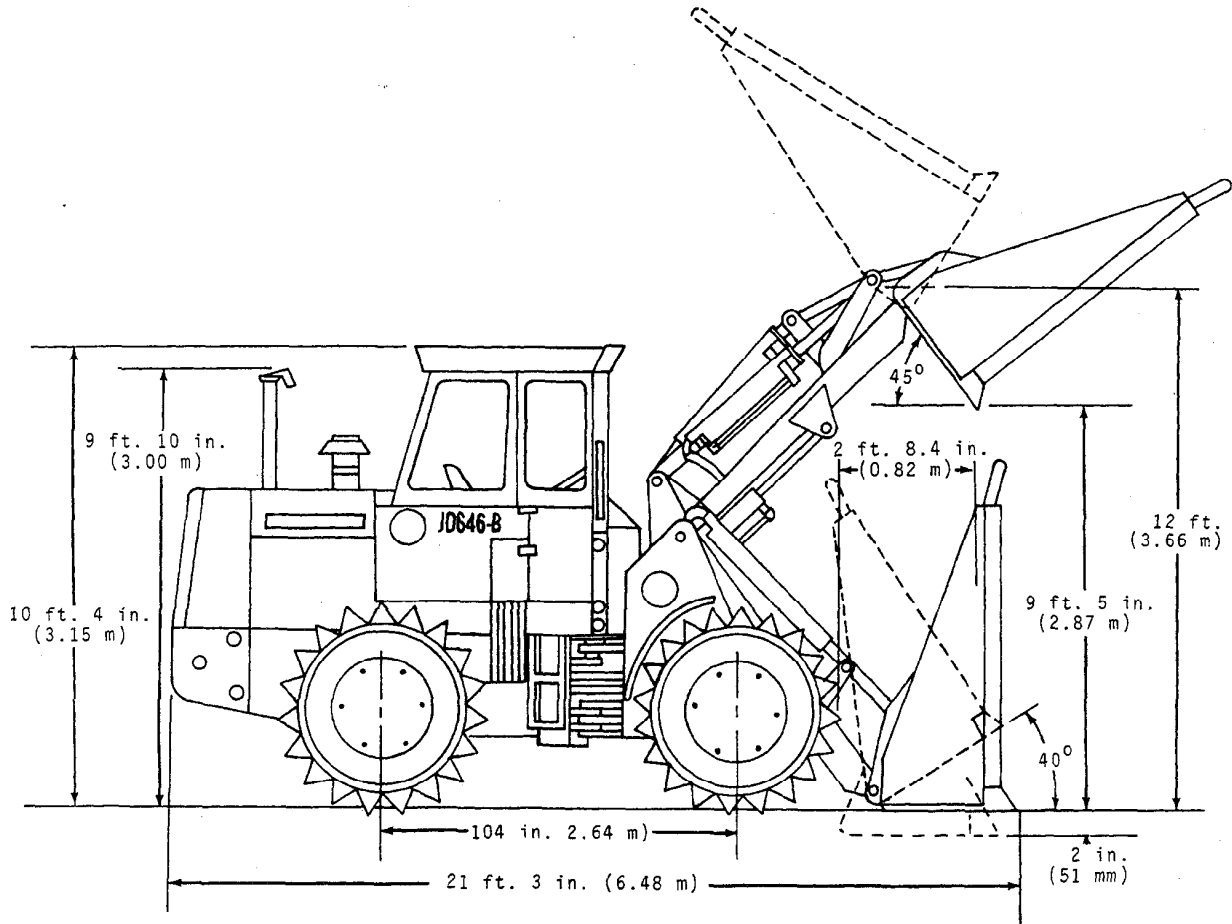
**SAE Operating Weight**

	<b>lb.</b>	<b>kg</b>
(with Cepeco wheels):		
With refuse bucket .....	31,450 lb.	(14,266 kg)
With multi-purpose bucket ..	32,230 lb.	(14,620 kg)

**SAE Operating Weight (with Caron wheels):**

With refuse bucket .....	31,986 lb.	(14,508 kg)
With multi-purpose bucket ..	32,766 lb.	(14,862 kg)

### DIMENSIONS



T36693N

(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 standard equipment, refuse bucket, Cepeco wheels, full fuel tank and 175 lb. (79.4 kg) operator.)

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Thank you very much!**