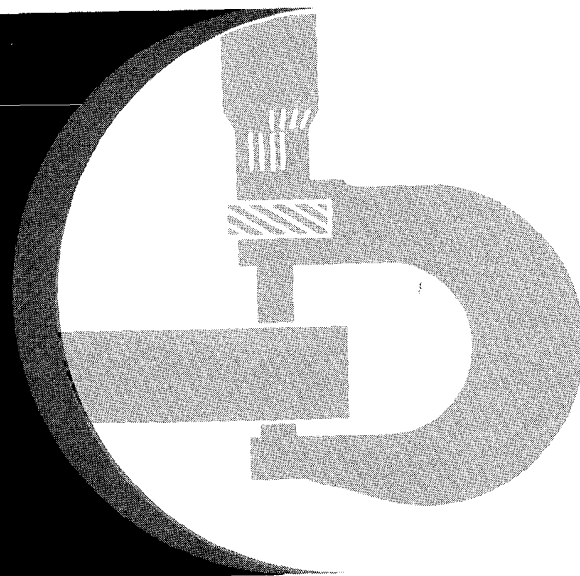


# John Deere JD440-C Skidder- Grapple Skidder



## TECHNICAL MANUAL

John Deere Dubuque Works  
TM-1138 (Sep-82)



LITHO IN U.S.A.

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# 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.



RIGHT

WRONG

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.

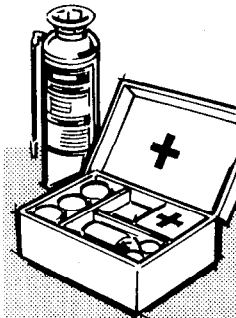


RIGHT

T27503

## 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

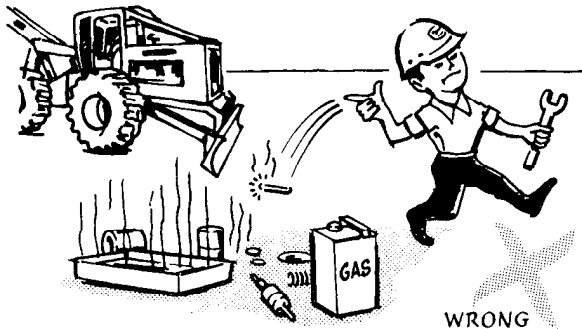
## MAINTENANCE WITHOUT ACCIDENT

Specific safety procedures should always be observed, whether servicing or making repairs on the skidder. 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.



T33257N

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.

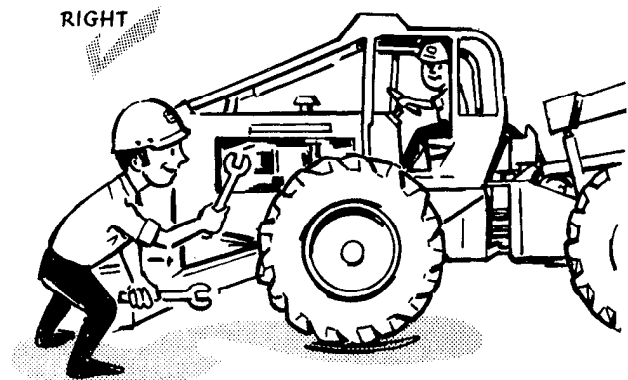
### KNOW WHERE FIRE EXTINGUISHERS ARE KEPT!

Litho in U.S.A.

### UNDER ALL MAINTENANCE CONDITIONS—

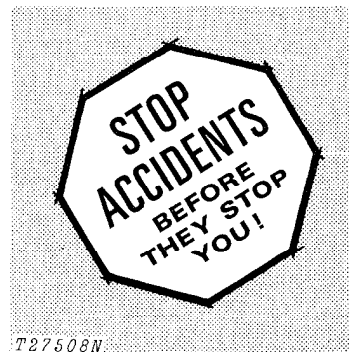
Do not perform any work on the skidder unless authorized to do so. Then be sure you understand the services required. Follow recommended procedures.

Never service the equipment while it is being operated.



T33258N

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.**





**Tires:**

- 18.4-26, 10-ply-rating, logging, LS2
- 16.9-30, 10-ply-rating, logging, LS2
- 23.1-26, 10-ply-rating, logging, LS2

Capacities:	U.S.	Liters
Fuel tank	26 gal.	98.4
Cooling system	8 gal.	30.3
Engine lubrication, including filter	15 qt.	14.2
Transmission case (includes hydraulic system)	8 gal.	30.3
Front differential	9 gal.	34.1
Rear differential	4.5 gal.	17.0
Winch	2.5 gal.	9.5

SAE Operating Weight . . . . . 14,175 lb. (6430 kg)

**Winch:**

Live mechanical drive; hydraulically actuated clutch and brake.

Single-lever control.

Cable capacities\*:

- 1/2-in. (12.7 mm) cable . . . . . 217 ft. (66.1 m)
- 5/8-in. (15.8 mm) cable . . . . . 142 ft. (43.3 m)
- 3/4-in. (19.1 mm) cable . . . . . 100 ft. (30.5 m)

\*Calculated: No allowance made for loose or uneven spooling.

Line pull (maximum engine torque):

- Bare drum . . . . . 23,906 lb. (107.2 kN) (10844 kg)
- Full drum . . . . . 14,711 lb. (66.0 kN) (6673 kg)

Line speed (2200 rpm):

- Bare drum . . . . . 120 fpm (36.6 m/min)
- Full drum . . . . . 194 fpm (59.1 m/min)

**Blade:** Hydraulic control

- Width . . . . . 6 ft. (1.83 m)
- Height (ends) . . . . . 1 ft. 8 in. (508 mm)
- Height (center) . . . . . 2 ft. 3 in. (686 mm)
- Max. lift above ground level . . . . . 4 ft. (1.22 m)
- Max. drop below ground level . . . . . 9.5 in. (241 mm)

**Arch:**

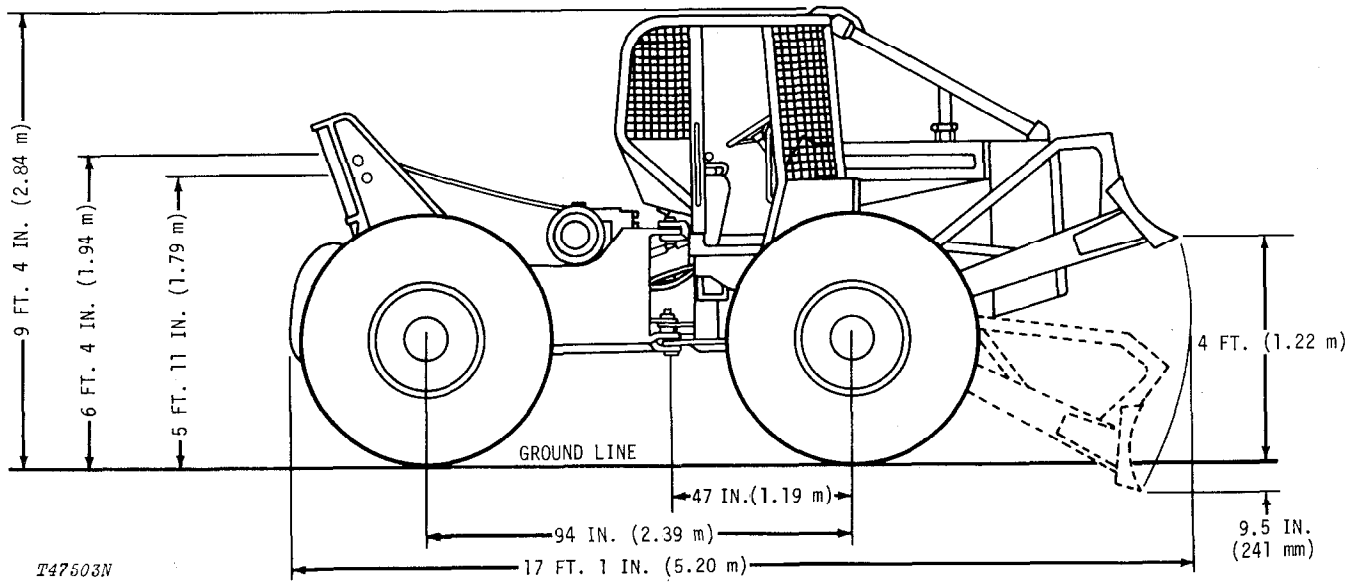
- Horizontal roller . . . . . 6 in. dia. (152 mm)
- Vertical rollers (through-hardened steel) . . . . . 4.5 in. dia. (114 mm)
- Working height (top of horizontal roller to ground):  
Settings: Lower—5 ft. 11 in. (1.79 m)  
Upper—6 ft. 4 in. (1.94 m)

**Additional Standard Equipment:**

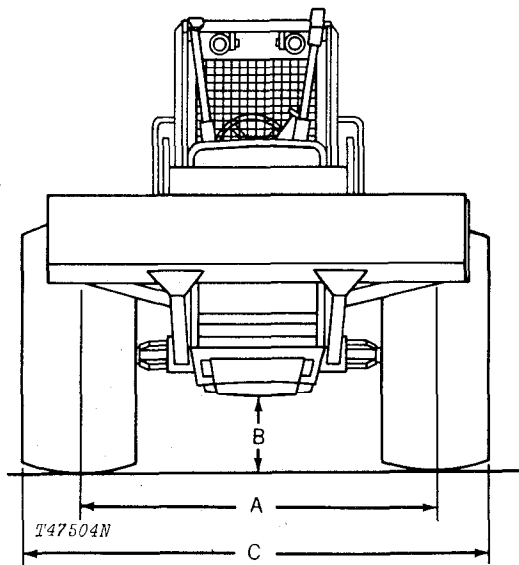
- Flanged axles
- Muffler
- Fuel gauge
- Engine oil pressure gauge
- Alternator charge warning light
- Water temperature gauge
- Parking brake warning light and buzzer
- Front axle differential lock
- Electric hour meter
- Key switch with push-button safety start
- Cigar lighter
- Horn
- Lights
- John Deere winch
- Heavy-duty starter
- Reinforced bottom guards
- Fire extinguisher
- Log arch
- Front throttle
- Hand throttle
- Front blade
- Cold weather starting aid
- Engine side shields
- Deluxe seat with suspension
- Roll-over protective structure (ROPS) with canopy, seat belt, brush screens, and limb risers
- Transistorized voltage regulator
- Vandal protection
- Altitude compensator

**Special Equipment:**

- Wheel weights
- Steering accumulator
- Engine coolant heater
- Cab with heater and noise treatment
- Windshield with wiper
- Seat belt, 3.00 in. (76 mm)
- Log arch with adjustable rollers
- Automatic fire suppression system



Side view dimensions are for skidder equipped with 18.4-26 tires and adjustable arch.



TIRE SIZE	A WHEEL TREAD	B GROUND CLEARANCE	C OVERALL WIDTH
16.9-30	74 in. (1.88 m)	1 ft. 7 in. (483 mm)	7 ft. 7 in. (2.31 m)
18.4-26	74 in. (1.88 m)	1 ft. 6 in. (457 mm)	7 ft. 8.4 in. (2.35 m)
23.1-26	74 in. (1.88 m)	1 ft. 9 in. (533 mm)	8 ft. 7.9 in. (2.64 m)



## GRAPPLE SKIDDER

(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 Syncro-Range transmission, 18.4-26, 10-ply logging tires and standard equipment.)

**Power** ( $\alpha$  2200 engine rpm):

	<b>SAE</b>	<b>DIN</b>
Gross .....	76 hp (56.7 kW*)	
Net .....	70 hp (52.2 kW)	71.0 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 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 4-cylinder-diesel, 4-stroke cycle

Bore and stroke .....	4.19x5.00 in. (106.4x127 mm)
Piston displacement .....	276 cu. in. (4523 cm <sup>3</sup> )
Compression ratio .....	16.7 to 1
Maximum torque ( $\alpha$ 1200 rpm ..)	220 lb-ft (298 Nm) (30.4 kg-m)
NACC or AMA (U.S. Tax) horsepower .....	28
Lubrication .....	Pressure system with full-flow filter
Cooling .....	Pressurized with thermostat and fixed bypass
Fan .....	Blower
Air cleaner with restriction indicator .....	Dry
Electrical system .....	12-volt with alternator
Batteries (2) ..	Reserve capacity: 170 minutes each

**Differentials:**

Front .....	Full differential with hydraulic lock
Rear .....	Solid axle with no differential action

**Transmission:** Syncro-Range

Constant mesh with 6 speeds forward, 3 reverse. Three forward speed ranges with synchronized shifting between low and high within each range. Incorporates a brake lock for service brakes. Clutch is 11 in. (280 mm), dry, feramic-faced, foot-pedal-operated.

**Travel Speeds** (2200 engine rpm, no tire slip):

Forward:	2 mph (3.2 km/h) to 15 mph (24.1 km/h)
Reverse:	2 mph (3.2 km/h) to 10 mph (16.1 km/h)

**Brakes:**

Hydraulic power actuated, wet-disk service brakes on output shaft. Hand-operated mechanical brake for parking.

**Drive Axles:**

Four-wheel drive with inboard planetary gears on all axles.  
 Front axle oscillates 15 degrees above and below horizontal.  
 18 in. (457 mm) total travel at tire center line.

**Power Steering:**

Articulated frame hydraulically actuated by dual cylinders.  
 Turning radius .....
 17 ft. 8 in. (5.38 m) || Turning clearance ..... | 37 ft. 1 in. (11.30 m) |

**Hydraulic System:**

Closed-center, constant-pressure. Variable-displacement pump driven from crankshaft .....
 25 gpm (95 L/min), 2000 psi (137.9 bar) (140.6 kg/cm<sup>2</sup>) ( $\alpha$  2200 engine rpm. Full flow filtration. Oil to air cooler. |

**Hydraulic Cylinders:**

	<b>Bore</b>	<b>Stroke</b>
Lift (2) .....	4.0 in. (102 mm)	30 in. (762 mm)
Grapple (1) ...	5.25 in. (133 mm)	17 in. (432 mm)
Cylinder rods .....	Ground, heat-treated, chrome-plated, polished	
Lift cylinder rods .....	2-in. (51 mm) dia.	
Grapple cylinder rod .....	2.25 in. (57 mm) dia.	

**Tires:**

18.4-26, 10-ply-rating, logging, LS2  
16.9-30, 10-ply-rating, logging, LS2

**Capacities:**

	U.S.	Liters
Fuel tank	42 gal.	159.0
Cooling system	8 gal.	30.3
Engine lubrication, including filter	15 qt.	14.2
Transmission case (includes hydraulic system)	8 gal.	30.3
Front differential	9 gal.	34.1
Rear differential	4.5 gal.	17.0
Winch	2.5 gal.	9.5

**SAE Operating Weight** . . . . . 16,525 lb. (7 496 kg)

**Winch:**

Live mechanical drive; hydraulically actuated clutch and brake.

Single-lever control.

Cable capacities\*:

1/2-in. (12.7 mm) cable	217 ft. (66.1 m)
5/8-in. (15.8 mm) cable	142 ft. (43.3 m)
3/4-in. (19.1 mm) cable	100 ft. (30.5 m)

\*Calculated: No allowance made for loose or uneven spooling.

Line pull (maximum engine torque)

Bare drum	23,906 lb. (107.2 kN) (10 844 kg)
Full drum	14,711 lb. (66.0 kN) (6 673 kg)

Line speed (2200 rpm):

Bare drum	120 fpm (36.3 m/min)
Full drum	194 fpm (59.1 m/min)

**Blade:** Hydraulic control

Width	6 ft. (1.83 m)
Height (ends)	1 ft. 8 in. (508 mm)
Height (center)	2 ft. 3 in. (686 mm)
Max. lift above ground level	4 ft. (1.22 m)
Max. drop below ground level	9.5 in. (241 mm)

**Additional Standard Equipment:**

Flanged axles  
Muffler  
Fuel gauge  
Engine oil pressure gauge  
Alternator charge warning light  
Water temperature gauge  
Parking brake warning light and buzzer  
Front axle differential lock  
Electric hour meter  
Key switch with push-button safety start  
Cigar lighter  
Horn  
Lights  
John Deere winch  
Heavy-duty starter  
Reinforced bottom guards  
Fire extinguisher  
Foot throttle  
Hand throttle  
Front blade  
Cold weather starting aid  
Engine side shields  
Deluxe seat with suspension  
Roll-over protective structure (ROPS) with canopy, seat belt, brush screens, & limb risers  
Transistorized voltage regulator  
Vandal protection  
Altitude compensator

**Special Equipment:**

Wheel weights  
Steering accumulator  
Engine coolant heater  
Cab with heater and noise treatment  
Windshield with wiper  
Seat belt, 3 in. (76 mm)  
Log arch with adjustable rollers  
Automatic fire suppression system

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