

# John Deere JD300-A and JD400-A Backhoe Loaders



JOHN DEERE

## OPERATORS MANUAL

John Deere JD300-A and JD400-A  
Backhoe Loaders

OML27245 Issue A1 English

John Deere Dubuque Works  
OML27245 Issue A1

LITHO IN U.S.A. (REVISED)  
ENGLISH





**CAUTION!**

Before driving on public roads, operators should observe the following safety precautions:

Close the front loader bucket and engage the boom cylinder lock (the bucket is then secured at a safe distance above the road surface).

Install protection covers on upper and lower bucket edges.

Secure bucket control lever mechanically.

When operating without a backhoe, remove front axle weight and ensure that the recommended rear axle counterweights are installed (min. rear axle load should be 4180 lbs = 1900 kg).

Secure swivel seat mechanically in driving position.

**When driving loader with backhoe installed:**

Move backhoe in transport position with boom fully raised and bucket closed. Lock boom in position with boom locking pin.

Attach counterweight to front axle.

Retract stabilizers completely and remove pads.

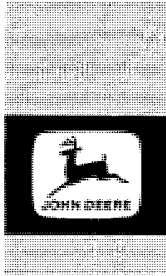
Install tail light bracket assembly and connect power plug.

Do not use working lights when travelling on public roads.

**TRAVEL SLOWLY OVER ROUGH TERRAIN!**

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# TO THE PURCHASER

The versatile JD 300 A or JD 400 A Loader Backhoe meets the exacting requirements of modern industry today. Operating ease and comfort, hydraulic power when and where you need it, the ability to match engine power and transmission speed to any job, outstanding economy and dependability, modern styling, and simplicity of lubrication and service are all special features of this.

At the time the machine was delivered, the John Deere dealer discussed with you its safe operation and proper care. However, before putting the machine to work, read this manual. It contains complete instructions for operating the tractor, caring for it, and taking full advantage of its many time- and labour-saving features. After reading the manual, keep it in a convenient place for quick and easy reference if questions arise concerning operation, lubrication, or service.

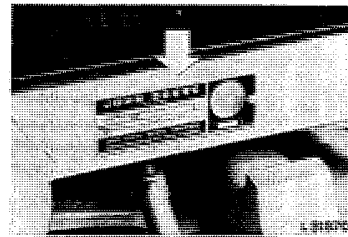
References to right and left sides of the machine are made throughout this manual. The left and right sides are determined when facing forward in the operator's seat.

The service policy which you received with your new machine certifies that the Loader Backhoe was properly inspected and prepared for delivery by your John Deere dealer.

Your John Deere dealer wants to help you get the most value from your machine. His skilled servicemen can handle every job efficiently. These men are trained in modern service methods; they have all necessary tools and equipment. If new parts are needed, only genuine John Deere parts will be installed. These parts are exact duplicates of the originals, made from the same patterns and of the same high-quality materials.

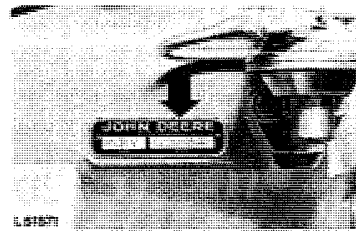
When ordering new parts, only state the 6-digit number group - without letters - of the loader and engine serial numbers.\*

For ready reference, locate and record these numbers in the spaces provided under the following illustrations.



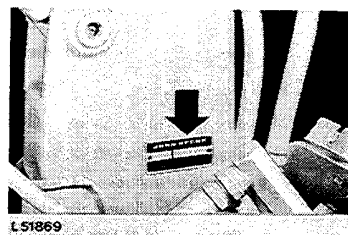
Chassis Serial Number

Record here



Engine Serial Number

Record here

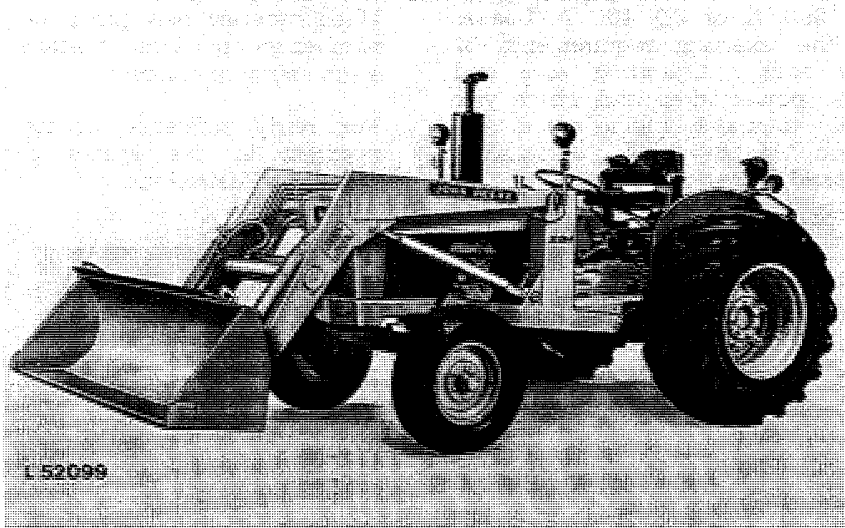


Loader Serial Number

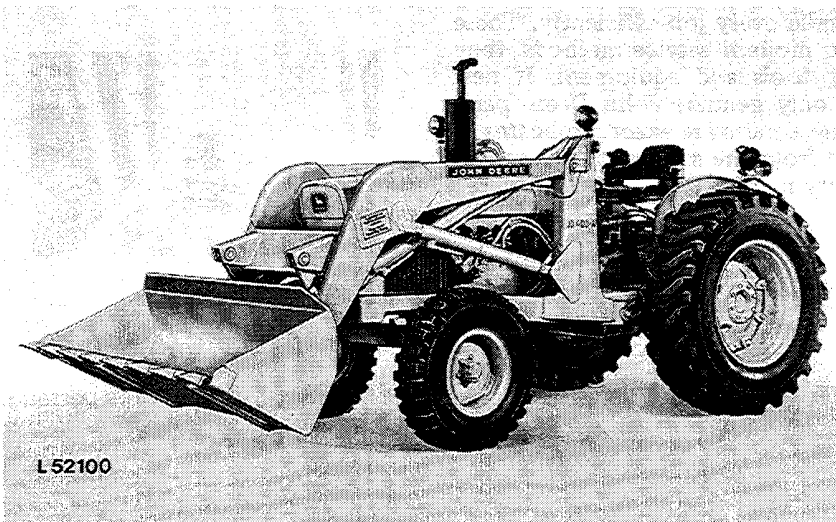
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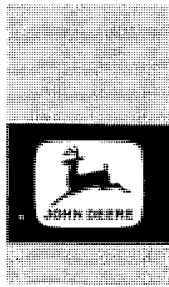
\* Whenever serial numbers are required on all warranty claims or correspondence pertaining to this machine, it is extremely important that the complete number groups together with all letters be furnished. This point cannot be overemphasized.

### JD 300 - A



### JD 400 - A





# SPECIFICATIONS

## ENGINE

|  | JD 300 A                    | JD 400 A                    |
|--|-----------------------------|-----------------------------|
| Maximum horsepower, measured at flywheel |                             |                             |
| a) incl. accessories*                    | 43 HP (44 PS)               | 59 HP (60 PS)               |
| b) without accessories                   | 46 HP (47 PS)               | 63 HP (64 PS)               |
| Maximum torque at 1300 rpm               | 110 ft/lbs (15,2 mkg)       | 145 ft/lbs (20 mkg)         |
| Number of cylinders                      | 3                           | 4                           |
| Bore diameter                            | 3.86 in. (98 mm)            | 3.86 in. (98 mm)            |
| Stroke                                   | 4.33 in. (110 mm)           | 4.33 in. (110 mm)           |
| Displacement in cu.in.                   | 152 (2490 cm <sup>3</sup> ) | 202 (3320 cm <sup>3</sup> ) |
| Compression ratio                        | 16.7 : 1                    | 16.7 : 1                    |
| Firing order                             | 1 - 2 - 3                   | 1 - 3 - 4 - 2               |
| Intake valve clearance                   | 0.014 in (0,35 mm)          | 0.014 in (0,35 mm)          |
| Exhaust valve clearance                  | 0.018 in (0,45 mm)          | 0.018 in (0,45 mm)          |
| Slow-idle                                | 650 rpm                     | 650 rpm                     |
| Fast-idle                                | 2650 rpm                    | 2650 rpm                    |
| Working speed range                      | 1500 - 2500 rpm             | 1500 - 2500 rpm             |

\* Water pump, Fan, Generator, Air cleaner and Muffler

## ELECTRICAL SYSTEM

|   |                   |                   |
|---|-------------------|-------------------|
| Batteries                                 | 2 x 12 Volt 55 Ah | 2 x 12 Volt 55 Ah |
| Battery specific gravity at 80°F (+ 27°C) | 1.26              | 1.26              |
| Battery terminal grounded                 | negative          | negative          |

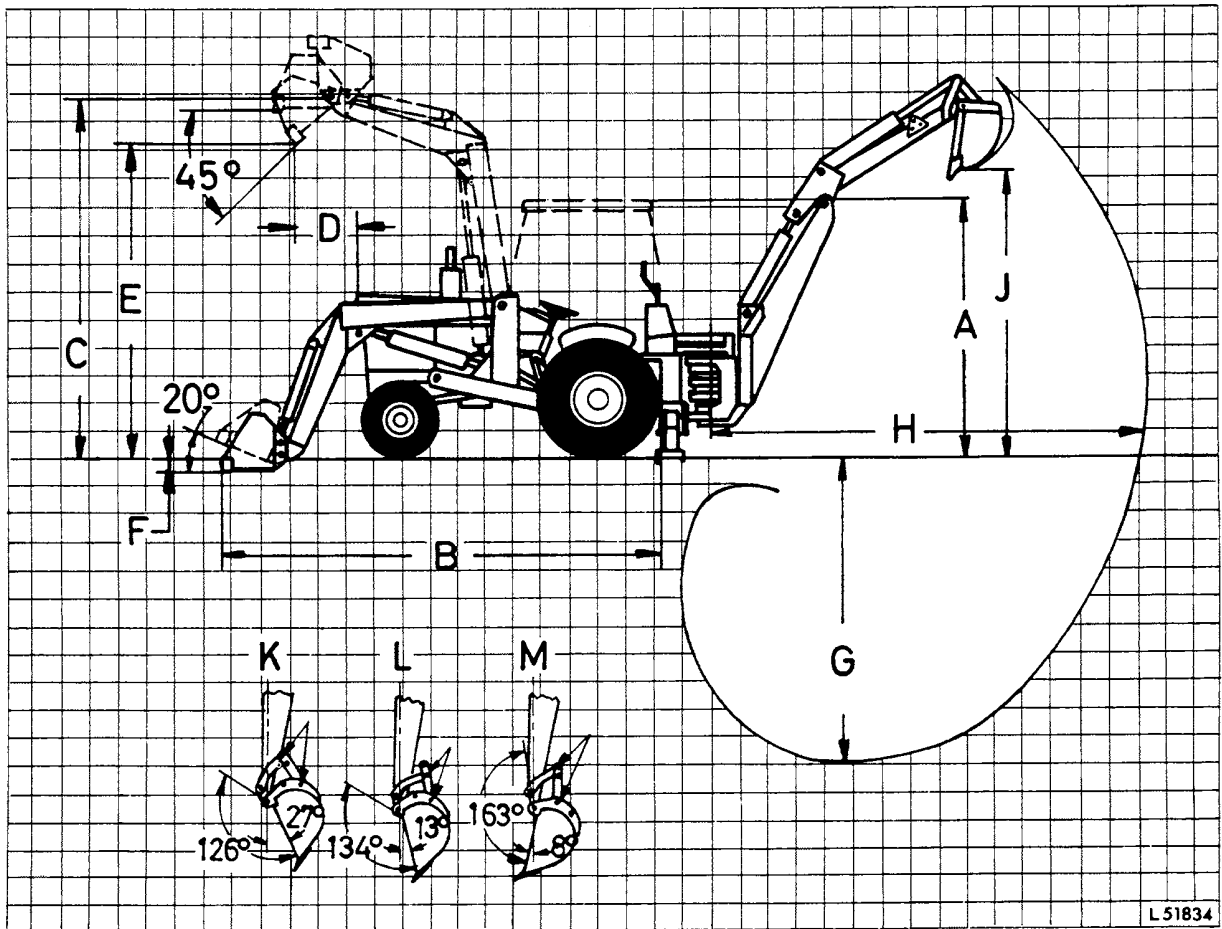
## CAPACITIES

|  | Liters | US Gals. | Imp.Gals. | Liters | US Gals. | Imp.Gals. |
|--|--------|----------|-----------|--------|----------|-----------|
| Fuel tank                                    | 62.50  | 16.50    | 13.75     | 73.80  | 19.50    | 16.20     |
| Cooling system                               | 10.40  | 2.75     | 2.30      | 11.40  | 3.00     | 2.50      |
| Engine crankcase (including filter)          | 5.70   | 1.50     | 1.25      | 5.70   | 1.50     | 1.25      |
| Transmission-Hydraulic system (incl. loader) | 45.50  | 12.00    | 10.00     | 46.50  | 12.25    | 10.25     |
| Belt pulley housing (optional equipment)     | 1.10   | 0,30     | 0.25      | 1.10   | 0.30     | 0.25      |

4 Specifications

|   | JD 300 A  | JD 400 A                                 |
|---|---|--|
| <b>CLUTCH</b> . . . . .                                   | Single or dual stage, dry disc type   |  |
| <b>TRAVEL SPEEDS</b> . . . . .                            | see table on page 14  |  |
| <b>DIRECTION REVERSER UNIT</b> . . . . .                  | Hydraulically operated, planetary type reverser unit, with wet multiple disk clutches. Can be shifted under load. |  |
| <b>TRANSMISSION</b> . . . . .                             | Collar shift-type with helical gears in constant mesh.  |  |
| <b>DIFFERENTIAL</b><br>Number of pinions . . . . .        | 2   | 4  |
| <b>FINAL DRIVES</b> . . . . .                             | Planetary-type reduction drive in each rear axle housing  |  |
| <b>DIFFERENTIAL LOCK</b> . . . . .                        | Foot operated mechanical lock disengages automatically by spring action   |  |
| <b>POWER TAKE OFF (PTO)</b><br>Rear PTO . . . . .         | 540 and 1000 rpm  |  |
| <b>HYDRAULIC SYSTEM</b> . . . . .                         | Closed center, operating at constant pressure of 2250 psi (158 kg/cm <sup>2</sup> )                               |  |
| <b>FOOT BRAKE</b> . . . . .                               | Hydraulically actuated wet-disk types, at rear wheels   |  |
| <b>PARKING BRAKE (Optional)</b> . . . . .                 | Contracting band type, acting on differential   |  |
| <b>TIRES</b>  |   |  |
| Front wheels . . . . .                                    | 7.50 - 16: 8PR  | 9.00-16: 8 PR                            |
| Rear wheels . . . . .                                     | 16.9/14-24: 8 PR<br>14.9/13-24: 8 PR  | 16.9/14-28: 10 ply<br>16.9/14-28: 10 ply |
| <b>PERFORMANCE DATA</b>                                   |   |  |
| Hydraulic pump capacity<br>(at 2500 engine rpm) . . . . . | 91 liters (24 U.S.<br>20 Imp. gals)   | 106 liters (28 U.S.<br>23 Imp.gals)      |
| Operating pressure . . . . .                              | 2050 psi (144 kg/cm <sup>2</sup> )  | 2050 psi (144 kg/cm <sup>2</sup> )       |
| Ripping power . . . . .                                   | 3000 lbs (1362 kg)  | 4000 lbs (1816 kg)                       |
| Lifting power (full height) . . . . .                     | 2000 lbs (908 kg)   | 2500 lbs (1132 kg)                       |
| Raising time . . . . .                                    | 3.6 sec.  | 3.9 sec.                                 |
| Lowering time . . . . .                                   | 3.0 sec.  | 2.5 sec.                                 |
| Dumping time . . . . .                                    | 1.7 sec.  | 1.4 sec.                                 |

SPECIFICATIONS JD 300 A

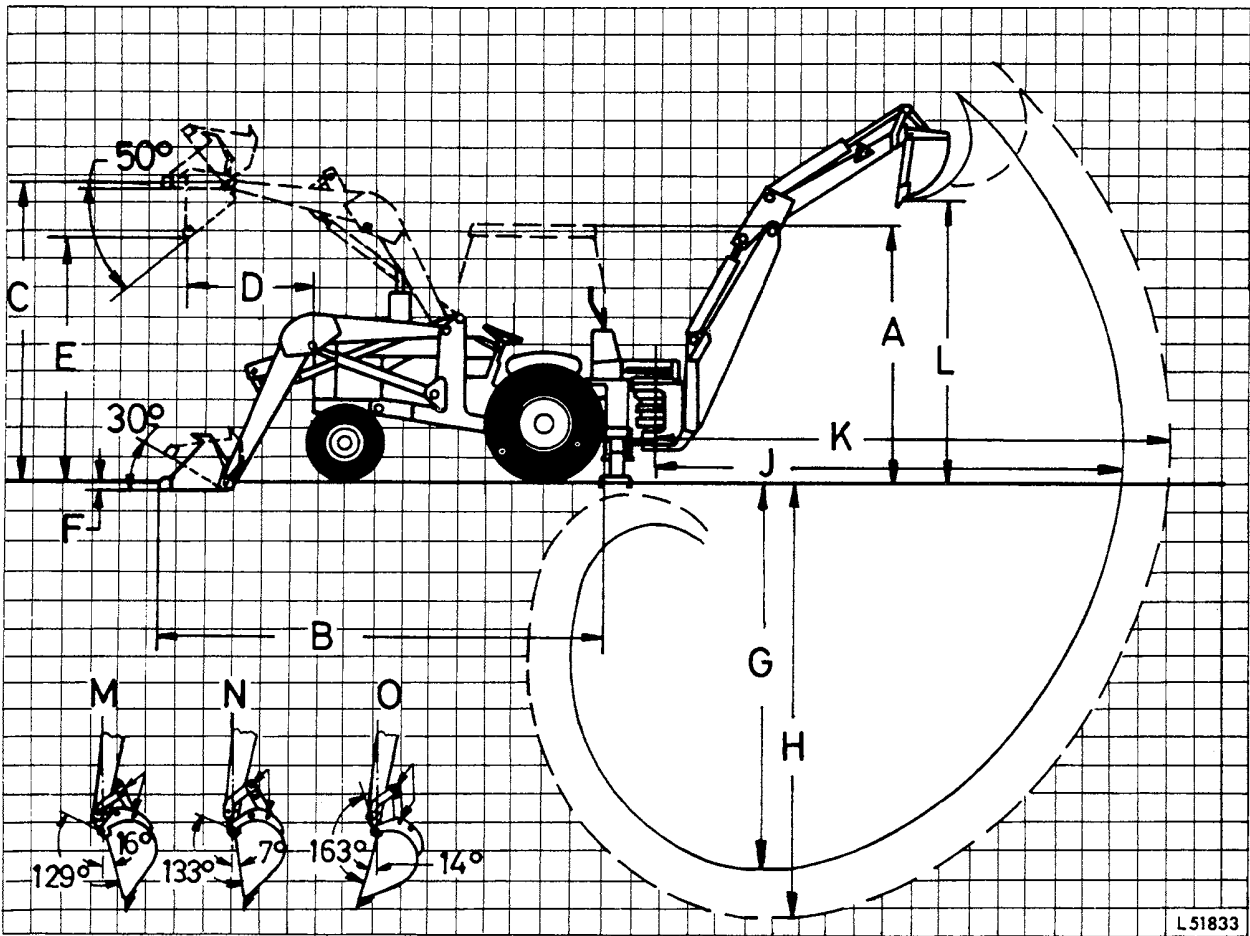


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|         | A     | B    | C    | D   | E    | F   | G     | H     | J      |
|---------|-------|------|------|-----|------|-----|-------|-------|--------|
| mm      | 2450  | 4500 | 2972 | 635 | 2490 | 102 | 3760  | 4900  | 3086   |
| ft / in | 96.5" | 177" | 117" | 25" | 98"  | 4"  | 12'4" | 16'1" | 10'1½" |

|   |       |      |
|---|-------|------|
| Height to top of hood                                   | 54    | 1370 |
| Height to top of muffler                                | 80    | 2030 |
| Height to top of cab                                    | 96.5  | 2450 |
| Over-all height to top of backhoe (transport position)  | 126   | 3200 |
| Over-all width  | 79.5  | 2020 |
| Length (cutting edge of bucket to rear of tire)         | 177   | 4500 |
| Over-all length to rear of backhoe (transport position) | 279.5 | 7100 |
| Ground clearance — front axle counterweight             | 15.3  | 390  |
| Turning clearance circle                                | 363   | 9220 |
| Wheelbase   | 77    | 1955 |
| Turning radius  | 127   | 3220 |

SPECIFICATIONS JD 400 A



|       | A      | B      | C     | D   | E    | F  | G     | H     | J      | K      | L    |
|-------|--------|--------|-------|-----|------|----|-------|-------|--------|--------|------|
| mm    | 2550   | 4700   | 3150  | 737 | 2565 | 51 | 4140  | 4674  | 5118   | 5650   | 2972 |
| ft/in | 100.4" | 185.1" | 10'4" | 29" | 8'5" | 2" | 13'7" | 15'4" | 16'9½" | 18'6½" | 9'9" |

|   |     |       |    |      |
|---|-----|-------|----|------|
| Height to top of hood                                   | in. | 57.3  | mm | 1455 |
| Height to top of muffler                                |     | 83.5  |    | 2120 |
| Height to top of cab                                    |     | 100.4 |    | 2550 |
| Over-all height to top of backhoe (transport position)  |     | 133.9 |    | 3400 |
| Over-all width  |     | 81.1  |    | 2060 |
| Length (cutting edge of bucket to rear of tire)         |     | 185.1 |    | 4700 |
| Over-all length to rear of backhoe (transport position) |     | 295.3 |    | 7500 |
| Ground clearance — front axle counterweight             |     | 15.4  |    | 390  |
| Turning clearance circle                                |     | 382.0 |    | 9700 |
| Wheelbase   |     | 82.0  |    | 2083 |
| Turning radius  |     | 138.0 |    | 3500 |

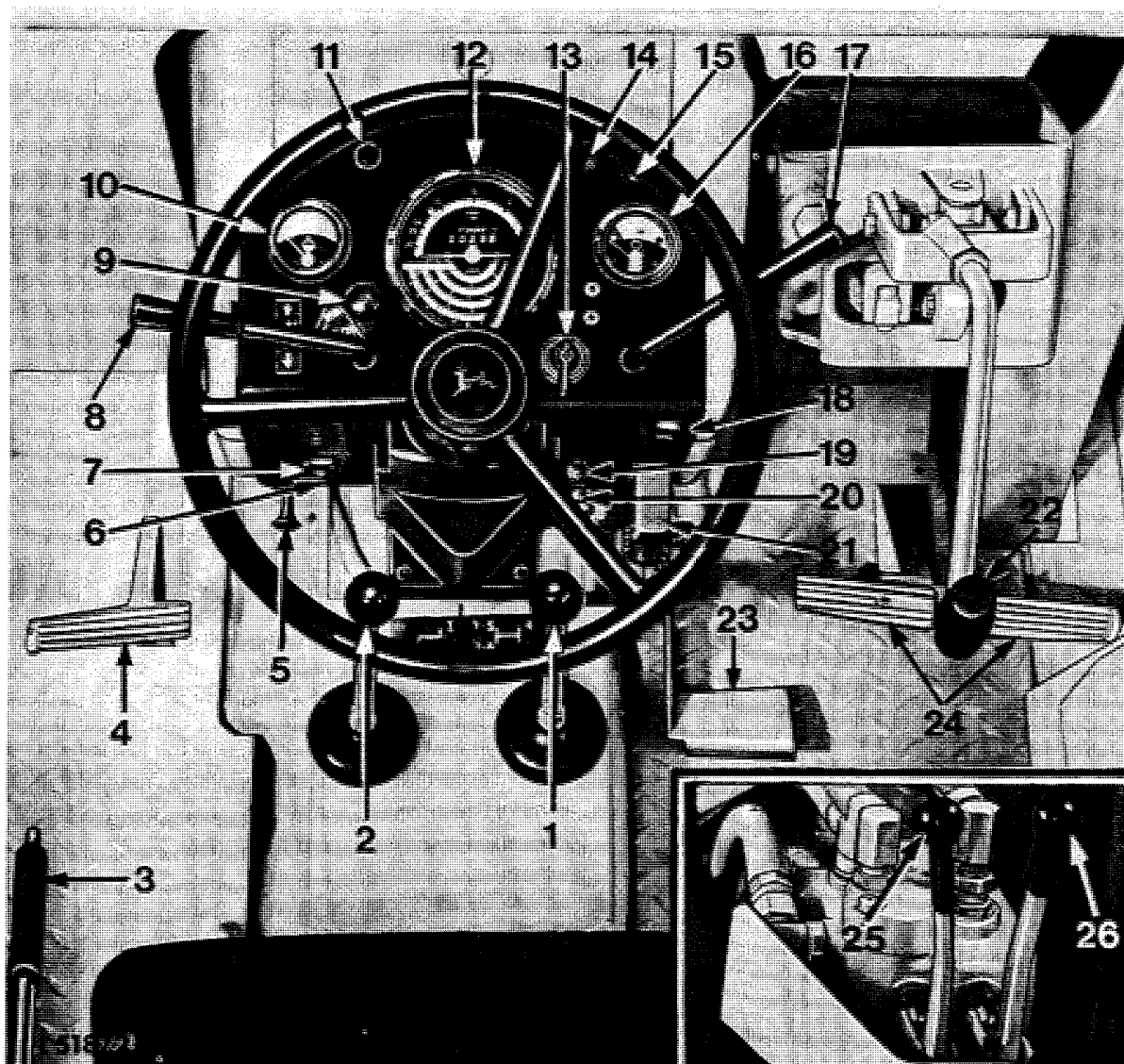




# CONTROLS AND INSTRUMENTS

Before attempting to operate the wheel loader, become familiar with the location and purpose of the instruments and controls with the aid of

the following illustrations and instructions. Follow all instructions given, regardless of any previous experience you may have!



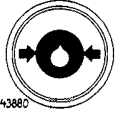
- 1 = Gear shift lever
- 2 = Range shift lever
- 3 = Parking brake
- 4 = Clutch pedal
- 5 = Engine shut-off knob
- 6 = Starter button
- 7 = Main switch
- 8 = Reverser lever
- 9 = Warning flash light switch

- 10 = Coolant temp. gauge
- 11 = Alternator warning light
- 12 = Speed-hour meter
- 13 = Turn signal switch
- 14 = Oil pressure warning light
- 15 = Full beam indicator light
- 16 = Fuel gauge
- 17 = Hand throttle
- 18 = Horn button

- 19 = Socket for handlamp
- 20 = Cigar lighter
- 21 = Starting aid adapter
- 22 = Boom control lever (JD 400 A)
- 23 = Foot throttle
- 24 = Brake pedals
- 25 = Boom control lever (JD 300 A)
- 26 = Bucket control lever (JD 300 A)

# INSTRUMENTS

## Oil pressure warning light



The oil pressure warning light is identified by the „drop of oil” symbol. The light will go on as soon as the key is inserted in the main switch of the electrical system. The light should go out after engine has started. If it does not go out or if it goes on during engine operation, shut off engine at once. Check oil pressure and oil level.

## Alternator warning light

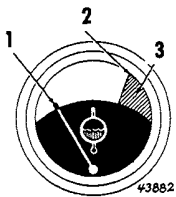


A „bolt of lightning” identifies the alternator warning light. The light goes on when the engine is being started; it must go out as soon as the engine is running. If the light fails to go out or if it goes on during engine operation, the alternator is not charging. Stop the engine to eliminate the trouble. Check for loose generator connections, slackness of V-belt or defective alternator.

## Full-beam warning light

As soon as full-beam is turned on, the blue full-beam warning light will go on. Dim the lights in case of oncoming traffic or when driving through populated areas.

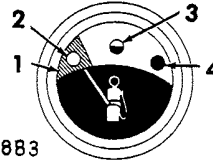
## Coolant temperature gauge



- 1 = 100°F (38°C)
- 2 = 219°F (104°C)
- 3 = Red warning zone

The coolant temperature gauge is located on the upper left of the instrument panel. If the gauge needle is in the red warning zone, the engine is overheating and must be stopped at once. Check coolant level in radiator and check cooling system for leaks.

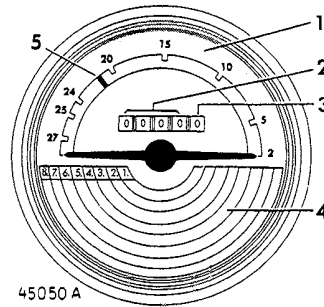
## Fuel gauge



- 1 = Red warning zone
- 2 = Empty tank
- 3 = Half-full tank
- 4 = Full tank

The fuel gauge is identified by the „fuel pump” symbol and is located on the upper right of the instrument panel. The red warning zone indicates that the tank is empty. There are also a half-full mark and a full mark on the gauge.

## Speed-hour meter

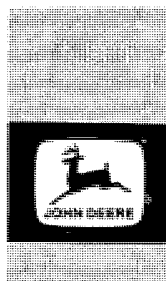


- 1 = Engine speed in hundreds of rpm
- 2 = Hours of operation (full hours)
- 3 = Hours of operation (tenths of hours)
- 4 = Travel speed indicator
- 5 = Setting mark for engine speed with PTO operation

The speed-hour meter facilitates the economical utilization of the unit under all operating conditions. It also facilitates selecting the most favorable of the many available gears.

The speed-hour meter indicates:

1. Engine speeds on upper half of dial. The figure indicated, multiplied by 100 gives the actual engine speed (needle moves from right to left).
2. Hours of operation in full and tenths of hours. The hourmeter facilitates close observation of recommended service intervals.
3. The travel speed in the gear engaged, is shown on lower half of dial (needle moves from left to right).
4. The green mark shows the required engine speed when using the PTO.



# OPERATION

## PRE-STARTING INSPECTION

**IMPORTANT!** Prior to starting the engine for the first time, connect wires to alternator. See page 53 "Alternator".

*NOTE: Do not discard three-way bridge as it will be required if starting the tractor by means of a slave battery.*

If the Loader-Backhoe is to be operated without battery (using a slave battery for starting), pull out three way plug and connect terminals among themselves by means of three-way bridge before starting engine.

With the engine operating, do not - even for a moment - disconnect the battery terminals or the wires between regulator, alternator and battery. Interrupting the circuit for even less than a second will immediately destroy the rectifier diodes. See also "Caution" label on underside of battery cover.

Perform the following checks and services before starting the engine for the first time each day:

Check the engine crankcase oil level, see page 39.

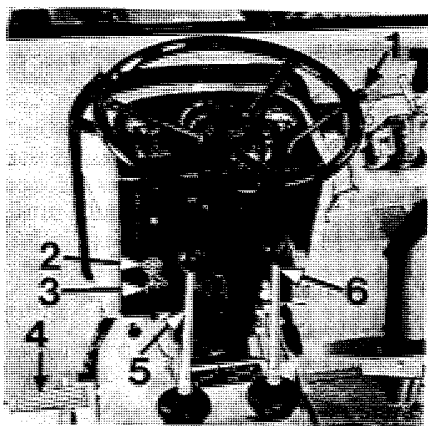
Check the radiator coolant level, see page 39.

Inspect air cleaner, see page 36.

Drain any sediment from the fuel filter sediment bowls, see page 47.

Make sure the fuel shut-off valve at the fuel tank is open.

## STARTING THE ENGINE



1 = Hand throttle  
2 = Main switch  
3 = Starter button

4 = Clutch pedal  
5 = Range shift lever  
6 = Gear shift lever

1. The tractor is equipped with a starter safety switch. When starting the engine, the range shift lever must be in neutral position. If the tractor is provided with a parking lock, this lever can be put in park (P) position. Depress clutch pedal to decrease drag on engine.
2. Place hand throttle in halfway open position.
3. At temperatures below + 32°F (0°C), use cold weather starting aids (see "Cold Weather Starting Aids" on next page).
4. Insert switch key into main switch.
5. Depress starter button. As soon as engine starts, release this button. Do not crank engine for more than 30 seconds at a time otherwise the starter gets overheated. Wait a minute or two before trying again.

As soon as the main switch is operated, the engine oil pressure indicator light and the generator indicator light should light up. If the lights do not go out after the engine has been running for 10 seconds, the engine should be shut off at once and the fault be determined and eliminated.

6. Release clutch pedal. In cold weather, warm engine and transmission for five minutes by operating engine at half throttle. Do not allow engine to operate at slow idle speed during engine warm-up. Observe gauges.

*NOTE: If engine fails to start, refer to trouble shooting charts on page 63.*

**CAUTION:** Never attempt to start a loader with HIGH-LOW shift unit by towing as the power train between transmission and engine is interrupted with stationary engine.

Loader without HIGH-LOW shift unit may be started by towing or pushing. Tow the machine for starting only in 6th, 7th, or 8th gear. Never tow at a speed greater than normal for the gear in which the machine is being towed.

## 10 Operation

### COLD WEATHER STARTING AIDS

To facilitate cold weather starting, several aids are available. These aids are effective only when the engine is otherwise operating satisfactorily. They will not correct such faults as low battery charge, crankcase oil of too heavy viscosity or high electrical resistance, any of which may prevent the engine from starting.

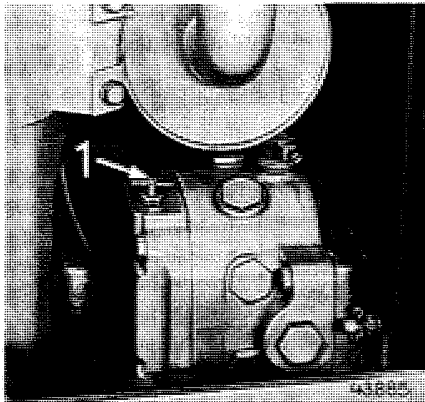
#### Booster battery

Cold weather starting can be facilitated by connecting an auxiliary 12-volt battery in parallel with the 12-volt battery on the unit.

Use jumper cables to connect the positive(+) terminal of the booster battery to the positive (+) terminal of the loader battery and the negative (-) terminal of the booster battery to negative (-) terminal of the loader battery.

**CAUTION!** The batteries on your loader are negative grounded only. Reversed polarity in battery or generator connections will result in damage to electrical system.

#### Hydraulic pump shut-off screw



1 = Hydraulic pump shut-off screw

In cold weather the engine will start easier when the hydraulic pump is disconnected. Disconnect the hydraulic pump by turning the shut-off screw clockwise until resistance is felt, then turn screw in one more turn.

After the engine has started, back the shut-off screw all the way out.

**IMPORTANT:** It is absolutely necessary to back the screw all the way out; if this is not observed, oil will leak past the thread of screw.

#### Diesel starting fluid adapter

The unit may be equipped with a John Deere starting fluid adapter. This attachment is used to inject starting fluid into the engine air intake system when starting the engine in freezing weather (below + 32°F; - 0°C).



**CAUTION!** Starting fluid is highly flammable!

#### Injecting starting fluid



To use starting fluid, remove the safety cap and plastic spray button from the can. Remove protective cap from adapter and position can under adapter as shown above. To inject fluid, push up on can.



**CAUTION!** To prevent damage, only inject starting fluid after the engine has been turned one or two revolutions.

Inject starting fluid only while engine is being cranked; inject intermittently, not continuously.

Relax pressure on can between „shots”. Stop injecting as soon as the engine starts. If the engine stalls during the first few minutes of operation, inject another „shot” of starting fluid until engine runs regularly. When engine runs regularly remove can from adapter and replace protective cap on can.

Do not forget to replace the cap on the adapter when not in use. This prevents dust from being drawn into the engine.

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