OM

Operator's Manual

John Deere
JD 450
Crawler Loader

John Deere Dubuque Works
OM-T23810 Issue F5

LITHO IN U.S.A.

TO THE PURCHASER

Your versatile crawler loader meets today's exacting requirements. 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 in this great crawler loader.

The JD450 Crawler Loader can be used for a variety of jobs including digging, loading, grading and leveling. The large capacity pump and regenerating control valve make rapid movement of large loads possible.

At the time this crawler loader was delivered, the John Deere industrial 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 crawler loader, maintaining it, and taking full advantage of its many time- and labor-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.

The service policy which you received with your new unit certifies that it was properly inspected and prepared for delivery by your John Deere industrial dealer. Keep this policy in a safe place and present it to the dealer whenever services which it authorizes are required.

Your John Deere industrial dealer wants to help you get the most value from your new crawler loader. 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 in need of new parts, be prepared to furnish the serial and model numbers found on both the crawler and the loader. **Be sure to record all 14 characters appearing on the applicable serial number plate.**

CONTENTS

SAFETY MESSAGE

This revised procedure supercedes all instructions in your Operator's Manual for stopping the crawler.

1. Place gear shift lever in the neutral detent.
2. Place HLR lever in neutral detent and lock.
3. Lower all equipment to the ground.
4. Apply and lock foot brake.
5. Shut off engine.

NOTE: Difficulty in getting the HLR in low or reverse gear is an indication of severely worn or misadjusted linkage. See your John Deere dealer immediately.

Engine Overhaul
7900 hrs

SPECIFICATIONS

ENGINE	Diesel	Gasoline
Flywheel horsepower (observed)	57.0	57.0
Maximum torque (ft-lbs) at 1300 rpm (observed) (nominal)	145.0	145.0
Number of cylinders	4	4
Bore and stroke (inches)	3.86 x 4.33	3.86 x 3.86
Displacement in cubic inches	202.0	180.0
Compression ratio	16.7 to 1	7.5 to 1
N.A.C.C. or A.M.A. horsepower rating for tax purposes	23.84	23.84
Intake valve clearance	0.014	0.014
Exhaust valve clearance	0.018	0.022
Idle for engine shut off (rpm)	- - -	375
Normal slow-idle (rpm)	800	800
Fast-idle (rpm)	2650	2770
Working speed range (rpm)	1500-2500	1500-2500

Engine clutch: 11-inch, spring-loaded disk, foot operated.

ELECTRICAL SYSTEM

Battery voltage (nominal)	12 volts
Battery specific gravity at full charge (corrected to 80° F.)	1.260 (plus or minus .010)
Battery terminal grounded	negative
Alternator regulation	voltage regulator

IGNITION SYSTEM (Gasoline)

Type	Battery-distributor
Distributor point gap	0.020-inch
Spark Plugs	
Size	14 mm
Gap	0.025-inch

CAPACITIES (U.S. Standard Measures)

Fuel tank	31 gal.
Cooling system	4 gal.
Engine lubrication (including filter)	9 qts.
Transmission case	8 gals.
Final drive case (each)	7 qts.
Loader hydraulic system (including reservoir)	13 gals.

TRANSMISSION

High, low, and reverse gears grouped to shift (under full load with a hydraulic assist) in series with 4 shift stations to give 8 forward speeds and 4 reverse speeds.

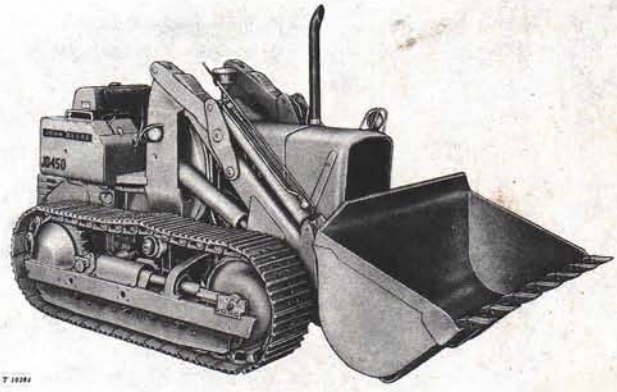
TRAVEL SPEEDS, MPH (No Slip)

Range	Engine Speed 1500 rpm	Engine Speed 2500 rpm
No. 1		
Hi Gear	1.1	1.8
Lo Gear	.8	1.3
Rev. Gear	1.0	1.7
No. 2		
Hi Gear	1.7	2.8
Lo Gear	1.2	2.0
Rev. Gear	1.6	2.7
No. 3		
Hi Gear	2.6	4.3
Lo Gear	1.8	3.0
Rev. Gear	2.5	4.1
No. 4		
Hi Gear	4.0	6.7
Lo Gear	2.8	4.7
Rev. Gear	3.8	6.4

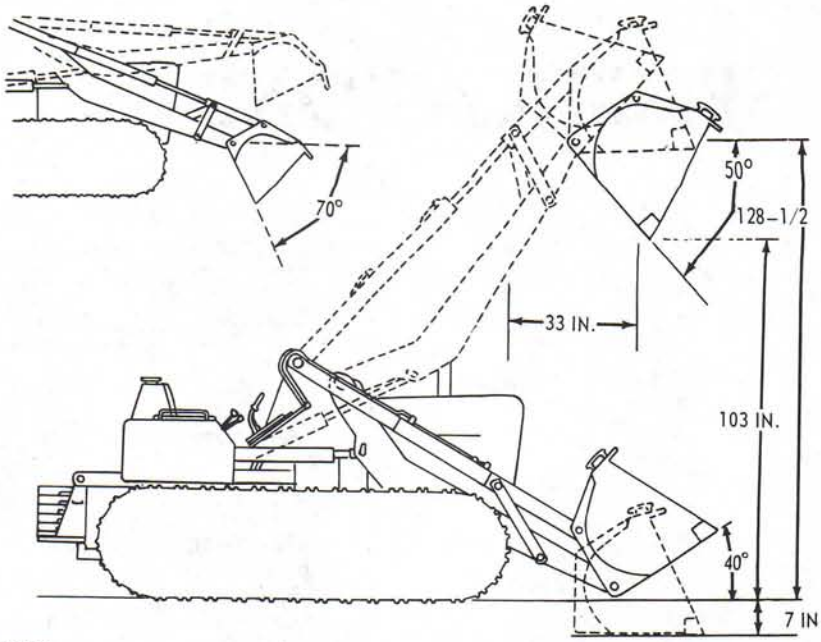
WINCH

Drum speed (at 2200 rpm engine speed)	58-1/2 rpm
Drum diameter	6 in.
Drum capacities:*	
(with 1/2-inch cable)	185 ft.
(with 5/8-inch cable)	115 ft.
(with 3/4-inch cable)	90 ft.
Cable speed (at 2200 rpm engine speed with 5/8-inch cable)	
(with bare drum)	100 fpm
(with full drum)	159 fpm
Cable pull (at 2200 rpm engine speed)	
(with bare drum)	15,000 lbs.
(with full drum)	9,600 lbs.

*Calculated capacities — allowance must be made for loose or uneven spooling.



JD450 Crawler Loader



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STEERING

Clutches	11 in. dry multiple disk
Brakes	contracting band
Number of friction surfaces (each clutch)	16
Turning clearance circle	253 inches

FINAL DRIVES

Gear reduction ratio in first gear (engine to axle)	144 to 1
Gear reduction ratio in eighth gear (engine to axle)	27.2 to 1

TRACK EQUIPMENT

Track frame	5 roller
Track shoes (types and sizes)	
Triple semi-grouser	12, 13, or 14 in.
Track gauge (center to center)	52 in. (fixed)
Number of track shoes (each side)	36
Total ground contact area (sq. in.)	
12-inch shoes	1711
13-inch shoes	1857
14-inch shoes	2032
Ground pressure (lbs. per sq. inch) with 12-inch shoes	8.8
Length of track on ground (inches)	72-3/4

DIMENSIONS

Over-all length	171 in.
Over-all height (without stack ext.)	76 in.
Over-all width (minimum) (with 12-in. shoes)	65-3/8 in.
Ground clearance (at rear crossbar)	14-1/4 in.
Dumping reach (full height)	33 in.
Dumping clearance (full height)	103 in.
Dumping height (center of hinge pin to ground)	128-1/2 in.
Digging depth below ground (bucket level)	7 in.
Bucket width (1-1/8 yd. bucket)	72 in.
Dump angle	
Full height	50° from horizontal
Ground level	70° from horizontal
Bucket roll-back (ground level)	40°
Total weight (with bucket and counterweights)	
Gasoline	15319 lbs.
Diesel	15385 lbs.

LOADER OPERATING INFORMATION

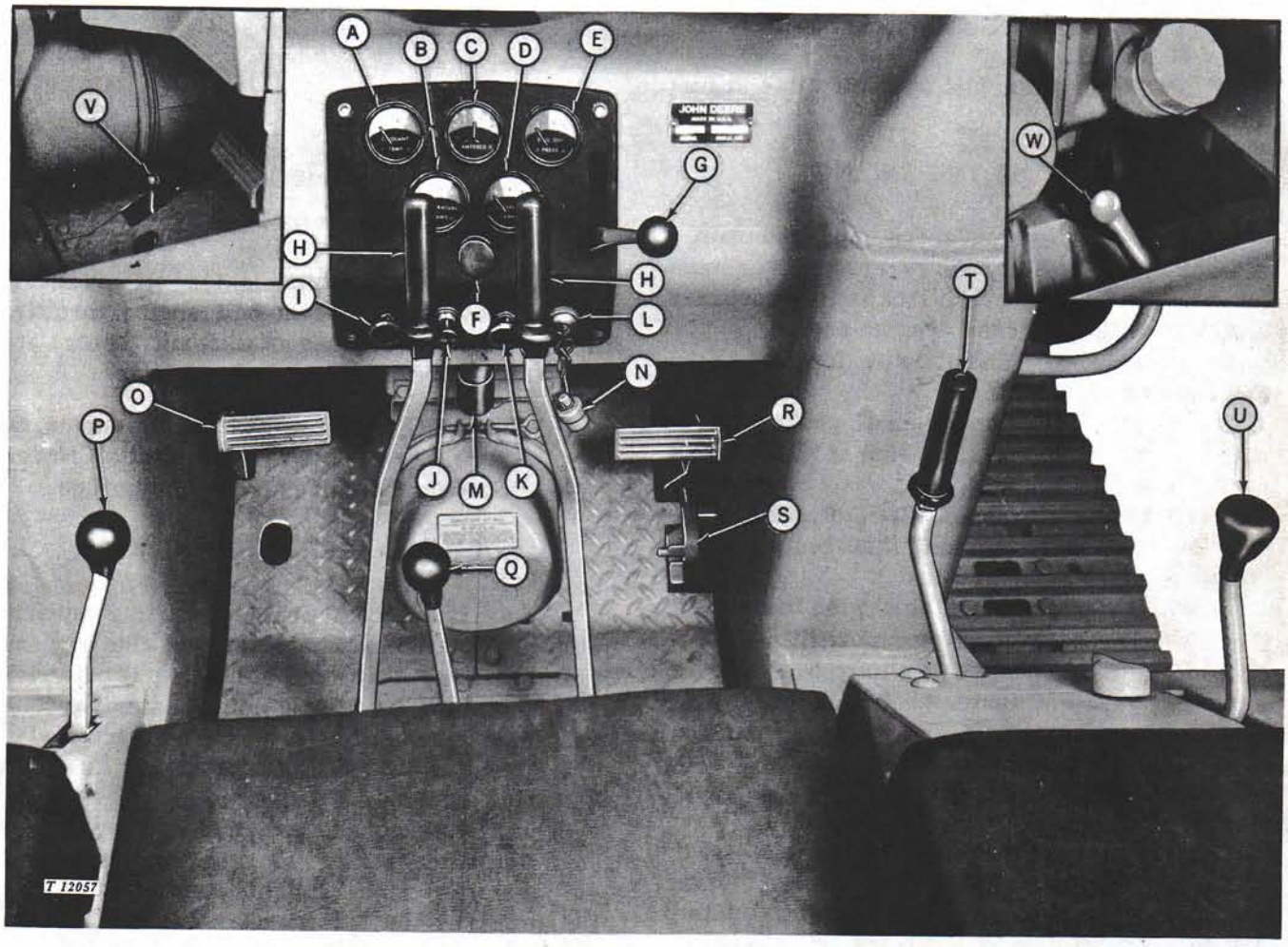
System pressure at 2500 engine rpm	2000 psi
Bucket capacities	1-1/8 or 1-3/4 cu. yd.
Breakout force	12000 lbs.
Hydraulic lift capacity (full height)	5500 lbs.
Raising time	6.6 sec.
Lowering time	4 sec.
Dumping time	1.7 sec.

(Specifications and design subject to change without notice.)

OPERATION

CONTROLS AND INSTRUMENTS

Most of the controls listed below are explained later in this manual. Refer to the page number listed after each control.



A – Engine Coolant Temperature Gauge
B – Transmission Oil Temperature Gauge (8)
C – Ammeter (4)
D – Transmission Oil Pressure Gauge (4)
E – Engine Oil Pressure Gauge (4)
F – Dash Lamp (17)
G – Hand Throttle (6)
H – Steering Levers (16)
I – Choke (Gasoline) (4)
J – Cigar Lighter (67)
K – Light Switch (17)
L – Key Starter Switch (4)
M – Air Cleaner Restriction Indicator (27)
N – Starting Fluid Adapter (Diesel) (5)
O – Engine Clutch Pedal (8)
P – Shift Lever (8)
Q – Reverser Lever (8)
R – Brake Pedal (16)
S – Brake Lock (16)
T – Loader Control Lever (9)
U – Attachment Control Lever (10)
V – Winch Drive or PTO Control Lever (18)
W – Hydraulic Pump Disconnect Lever (5)

OPERATING THE ENGINE

PRE-STARTING INSPECTION

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

(a) Check the engine crankcase oil level — see page 28.

(b) Check the radiator coolant level — see page 29.

(c) Inspect air cleaner. Service the air cleaner cup if necessary. See page 28.

(d) Check pre-cleaner — see page 29.

(e) Check the fuel sediment bowls — see pages 40 and 42.

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

STARTING THE ENGINE

1. The crawler loader is equipped with a starter safety switch, so reverser lever must be in neutral. Apply brake lock and fully depress clutch pedal to decrease drag on engine.

2. Advance the hand throttle forward to the halfway open position.

3. On gasoline engines, pull choke control outward full distance. (If engine is warm, start engine without choking.)

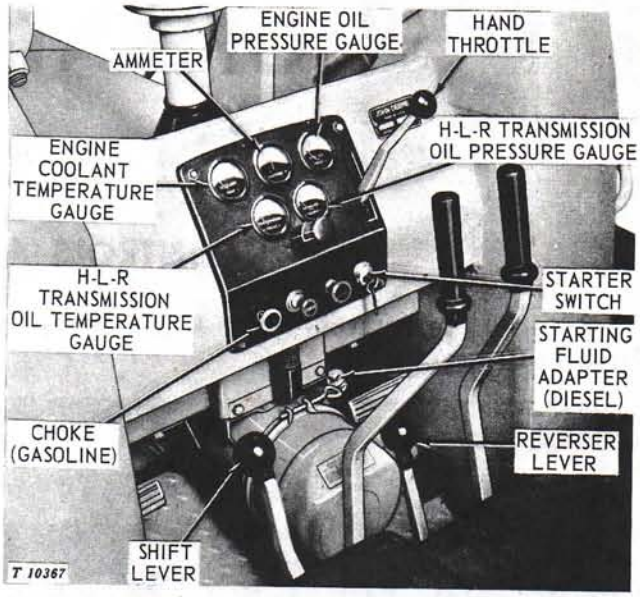
4. At temperatures of 32°F. or below, use cold weather starting aids, if so equipped (see "Cold Weather Starting Aids").

5. Turn starter switch clockwise to start engine. (Do not crank engine for more than 30 seconds at a time. To do so may overheat the starter. Wait a minute or two before trying again.)

6. On gasoline engines, push choke all the way in after engine has turned a few revolutions. During cold weather it may be necessary to leave choke out part way the first few minutes.

7. As soon as engine starts, release starter switch and adjust engine speed to approximately half throttle. The oil pressure gauge should now indicate pressure and the ammeter should indicate the electrical system is charging. If no oil pressure is indicated and/or the ammeter is discharging after the engine has been running for 10 seconds, the engine should be shut off at once and the cause of difficulty determined.

8. 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.



Engine Starting Controls

Make sure the transmission oil pressure gauge shows pressure at half engine throttle. If not, determine cause of difficulty before attempting to operate the crawler loader.

CAUTION: Before starting the engine, be sure there is plenty of ventilation. Never operate the unit in a shed or garage.

COLD WEATHER STARTING AIDS

To assist in cold weather starting several aids are available. These optional aids are explained below. Additional or heavy duty batteries are available. For diesel units, a starting fluid adapter can be used. A crankcase heater is also available. See your John Deere dealer for extra batteries and other starting aids.

These aids are effective at low temperatures only when the engine is otherwise operating satisfactorily. They will not correct such deficiencies as low battery charge, crankcase oil of too heavy viscosity, and high electrical resistance, which may prevent the engine from starting.

ADDITIONAL BATTERIES

Starting the engine in cold weather can be made easier by connecting an additional 12-volt battery in parallel with the 12-volt battery or batteries on the crawler loader.

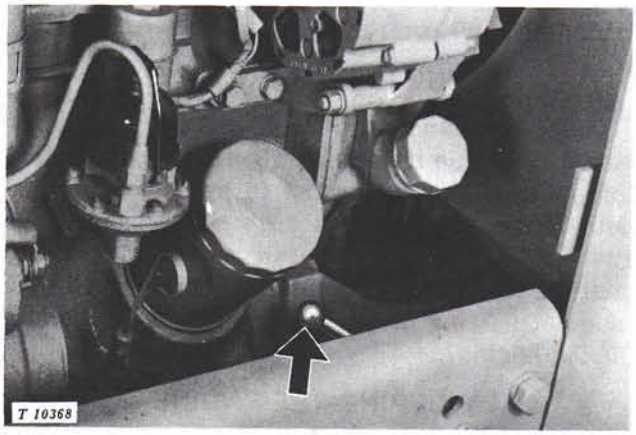
Use jumper cables to connect the positive (+) terminals of the booster battery to the positive (+) terminals of the crawler loader batteries and the negative (-) terminal of the booster battery to the negative (-) terminal of the crawler loader battery or batteries. See your John Deere dealer for booster batteries.

CAUTION: Batteries in your crawler loader are NEGATIVE grounded only. Reversed polarity in battery or alternator connections will result in permanent damage to electrical system.

CRANKCASE OIL HEATER

To facilitate cold weather starting, a 240-watt, 115-volt electrical crankcase heater can be installed in the side of the engine oil pan. To use the heater, remove the grille and plug a cord from any 115-volt electrical source into the heater outlet.

HYDRAULIC PUMP DISCONNECT LEVER



Hydraulic Pump Disconnect Lever

The engine will start easier at low temperatures if the hydraulic pump is disengaged.

To disengage the hydraulic pump during cold weather starting, move the lever forward and toward the front of the crawler loader. This will prevent the hydraulic pump from rotating while the engine is being cranked.

After the engine has started and warmed up sufficiently, pull the hand throttle rearward to the slow idle position. Then engage the hydraulic pump by moving the lever to the rearward detent.

DIESEL STARTING FLUID ADAPTER

Your diesel crawler loader may be equipped with a John Deere starting fluid adapter. This attachment is used to inject atomized starting fluid into the engine air intake systems when starting the engine at temperatures at or below 32°F.

CAUTION: Diesel starting fluid is highly flammable.

Injecting Diesel Starting Fluid at Adapter

To use, remove the safety cap and plastic spray button from the can. Remove the cap from the adapter and position can under the adapter. To inject starting fluid, push up on can while cranking engine.

CAUTION: To avoid damage, turn engine with starter one or two revolutions before injecting starting fluid. Inject starting fluid only while engine is turning.

Relax pressure on the can between "shots" of fluid. Stop injecting fluid as soon as the engine starts. If engine begins to die during the first few minutes of operation, inject another "shot" of fluid. When the engine operates satisfactorily, remove the can from the adapter and replace the safety cap on the can.

Be sure to put the cap back onto the adapter when not in use. This prevents dust from being drawn into the engine.

Store starting fluid cans where they will not be subject to extreme cold or heat. For best results, store fluid at room temperature.

CAUTION: Puncture empty cans for safety.