2120
Tractor

JOHN DEERE

OPERATORS MANUAL

2120
Tractor

OML25883 Issue F8 English

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LITHO IN U.S.A.
ENGLISH

TO THE PURCHASER

Your versatile new John Deere Tractor meets the exacting requirements of modern farming.

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 tractor.

At the time the tractor was delivered, the John Deere dealer discussed with you its safe operation and proper care. However, before putting the tractor 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 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.

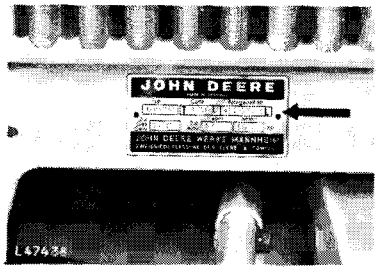
References to right and left sides of the tractor are made throughout this manual. The left and right sides are determined when facing forward in the operator's seat.

The service policy which you received with your new tractor certifies that the tractor 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 tractor. 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.

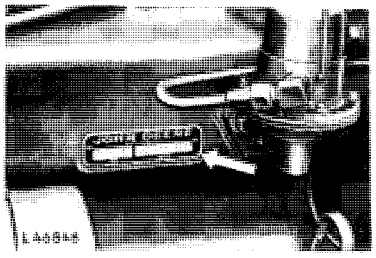
When ordering new parts, only state the 6-digit number group — without letters — of the tractor and engine serial numbers. *

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



Tractor Serial Number

Record here



Engine Serial Number

Record here

* 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.

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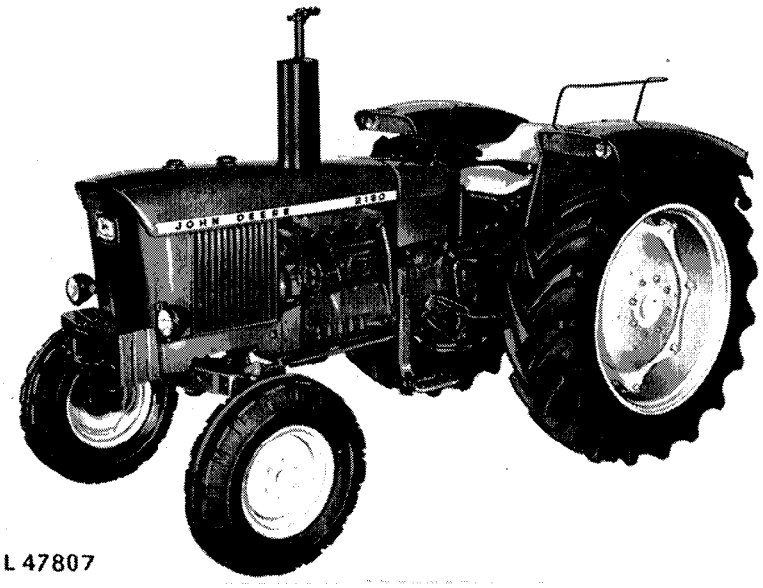

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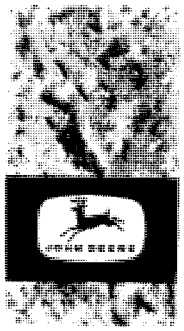


SPECIFICATIONS

ENGINE

Maximum horsepower * measured at the flywheel	
a) incl. Accessories **	67 HP (68 PS)
b) without Accessories **	71 HP (72 PS)
PTO horsepower at 2500 rpm engine speed	61 HP (62 PS)
Maximum torque at 1500 rpm	170 ft.lbs. (23,5 mkg)
Number of cylinders	4
Bore	4.02 in (102 mm)
Stroke	4.33 in (110 mm)
Displacement	219 cu. in (3590 cm^3)
Compression ratio	16.7 : 1
Firing order	1 - 3 - 4 - 2
Intake valve clearance	0.014 in (0.35 mm)
Exhaust valve clearance	0.018 in (0.45 mm)
Slow idle	650 rpm
Fast idle	2650 rpm
Full engine power at	2500 rpm
Working speed range	1500 to 2500 rpm

* 1 PS = 0.736 KW
** Waterpump, Fan, Generator, Air Cleaner and Muffler

ELECTRICAL SYSTEM

Battery voltage	12 Volt
Battery specific gravity at full charge (at 80° F = +27° C)	1.26
Battery terminal grounded	negative

CAPACITIES

	Imp. Gals	(US Gals)	(Litres)
Fuel tank	16.25	(19.50)	(73.80)
Cooling System	2.50	(3.00)	(11.40)
Crankcase (including filter)	1.25	(1.50)	(5.70)
Transmission — hydraulic system	8.40	(10.00)	(38.00)
Air Cleaner (oil bath type)	0.22	(0.26)	(1.00)
Belt pulley	0.25	(0.30)	(1.10)

CLUTCH	Dual stage
Transmission	Collar Shift
Optional equipment	Hi-Lo and Collar Shift

FINAL DRIVE	Planetary reduction drive,
Differential Lock	Hand or foot operated mechanical lock, spring-loaded out of engagement

POWER TAKE-OFF (continous running)

Rear	.540 rpm single 540 and 1000 rpm dual
Front	.1000 rpm
HYDRAULIC SYSTEM	.closed center, constant pressure of 2200 psi (155 kg/cm²)

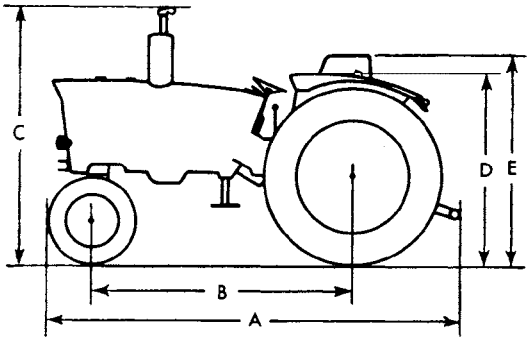
BRAKES

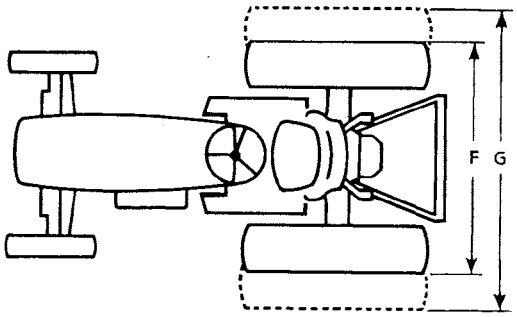
Foot operated	.Hydraulically actuated, wet-disk type, one each per rear wheel
Handbrake	.Band-type brake, acting on differential

TIRES

	Tire Size	Ply
Rear Tires	14,9/13-36	6
	18,4/15-30	6
	15,5-38	6
Front Tires	6,50 - 16	6
	7,50 - 16	6

DIMENSIONS





	Tire size		
	14,9/13-36	18,4/15-30	15,5-38
A = Overall length (with 3-point hitch)	3600 mm (141.73 in.)	3600 mm (141.73 in.)	3600 mm (141.73 in.)
B = Wheelbase	2180 mm (85.83 in.)	2180 mm (85.83 in.)	2180 mm (85.83 in.)
C = Overall height (vertical exhaust)	2145 mm (84.45 in.)	2145 mm (84.45 in.)	2145 mm (84.45 in.)
D = Height up to fender	1615 mm (63.58 in.)	1595 mm (62.80 in.)	1605 mm (63.20 in.)
E = Height up to back-rest for co-driver	1815 mm (71.45 in.)	1795 mm (70.67 in.)	1805 mm (71.06 in.)

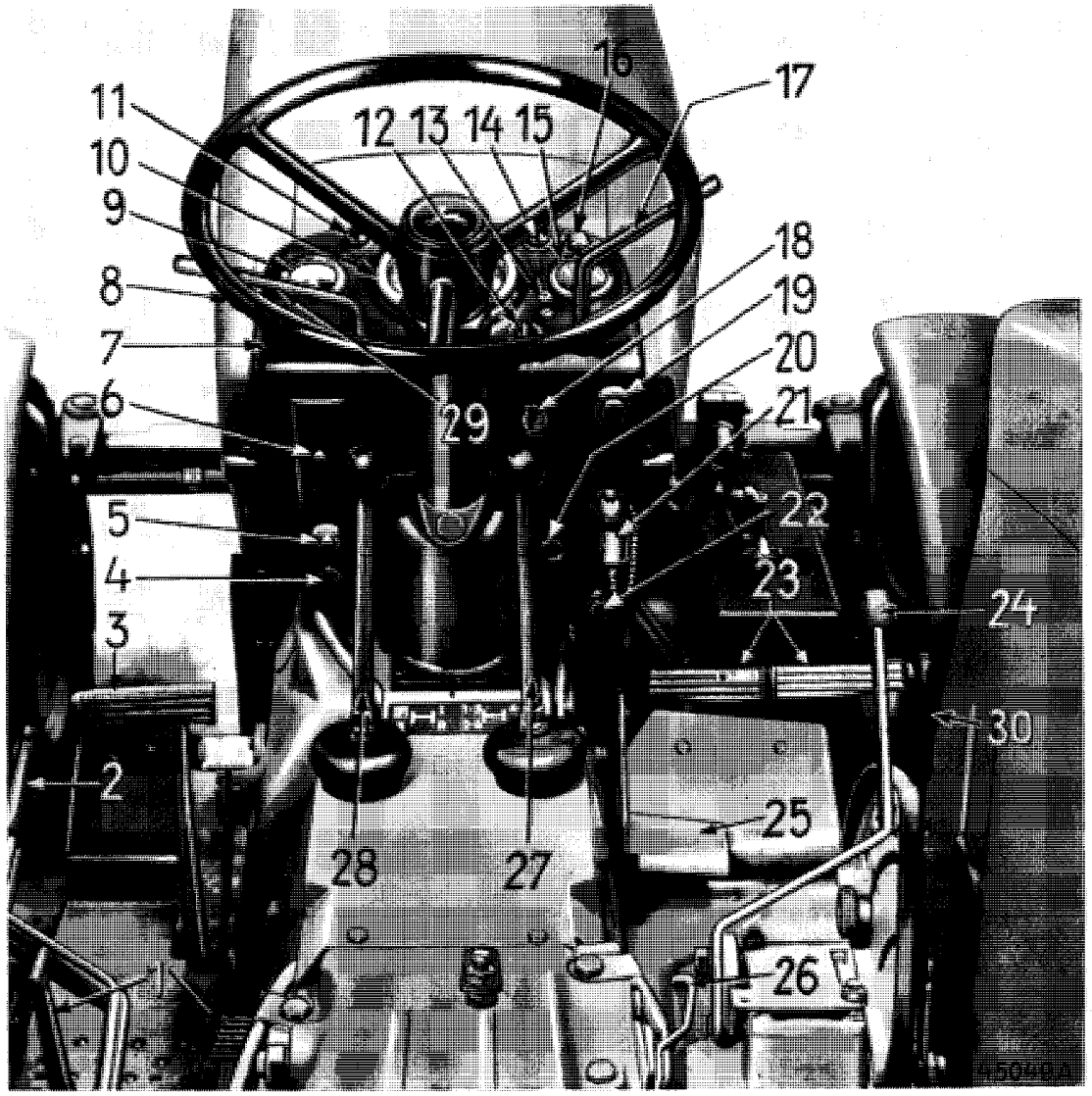
	Tire size		
	14,9/13-36	18,4/15-30	15,5-38
F = Overall width with smallest tread width	1940 mm (76.38 in.)	2006 mm (78.98 in.)	1945 mm (76.57 in.)
G = with largest tread width	2296 mm (90.40 in.)	2406 mm (94.72 in.)	2344 mm (92.28 in.)

Turning radius, with steering brake . . . . . 3160 (124 in.) mm
without steering brake . . . . . 3700 (146 in.) mm

(Specifications and design subject to change without notice)

CONTROLS AND INSTRUMENTS

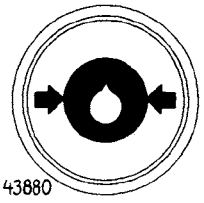
Before attempting to operate your new tractor, become familiar with the location and purpose of its controls and instruments. Study the next few pages carefully, regardless of your previous tractor experience.



1 = Differential Lock (Lever and Pedal)
2 = Handbrake Lever
3 = Clutch Pedal
4 = Starter Button
5 = Main Switch (Electrical System)
6 = Fuse Box
7 = Instrument Panel
8 = Steering Wheel
9 = Water Temperature Gauge
10 = Tachometer
11 = Generator Indicator Light
12 = Turn Signal Switch
13 = Turn Signal Switch for trailer
14 = Engine Oil Pressure Indicator Light
15 = Fuel Gauge
16 = Full Beam Indicator Light
17 = Hand Throttle
18 = Socket for Handlamp
19 = Horn Button
20 = Cigar Lighter
21 = Starting Fluid Adapter
22 = Engine Shut-Off Knob
23 = Brake Pedal
24 = Selective Control Lever
25 = Foot Throttle
26 = Rockshaft System Lever
27 = Gear Shift Lever
28 = Range Shift Lever
29 = Hi-Lo Shift Lever
30 = Rockshaft Control Lever

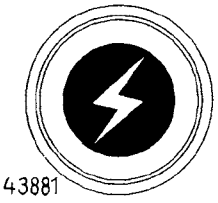
GAUGES

ENGINE OIL PRESSURE INDICATOR LIGHT



The oil pressure indicator light is identified by the "drop of oil" design. 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 the engine is running. If it does not or if the light goes on during operation, shut off the engine at once. Check oil pressure and oil level.

GENERATOR INDICATOR LIGHT

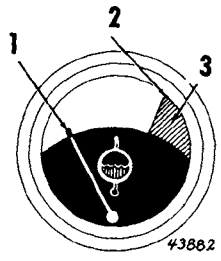


A "bolt of lightning" identifies the generator indicator light (above). The lightning bolt can be seen when the light is on. The light will go on when the engine is being started (this is normal). If the engine is running and the light goes on, the generator is not charging. In this case, shut off the engine and determine the cause. Check for loose generator cable, slackness of V-Belt or for defective generator.

FULL BEAM INDICATOR LIGHT

As soon as full beam is turned on, this blue indicator light will go on. Dim the lights in case of oncoming traffic or when driving through villages.

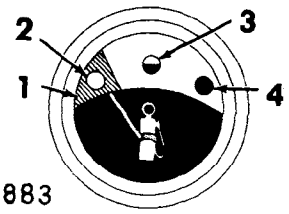
WATER TEMPERATURE GAUGE



1 = 100° F (38° C)
2 = 219° F (104° C)
3 = Red Warning Zone

The water temperature gauge (above) is located on the left side of the instrument panel. The red-orange zone indicates overheating. If engine overheats, shut it off and check cooling system.

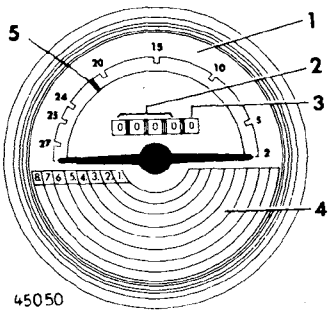
FUEL GAUGE



1 = Red Warning Zone
2 = Empty Tank
3 = Half-Full Tank
4 = Full Tank

The fuel gauge (above) is identified by the "pumping station" on the face of the gauge. The red-orange zone indicates that the tank is empty. There are also a half full mark (half circle) and a full mark (full circle).
The gauge is located in the upper right half of the instrument panel.

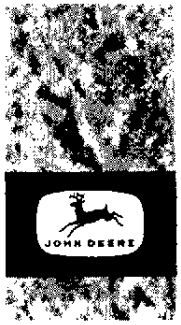
TACHOMETER



1 = RPM × 100
2 = Hours of operation in full hours
3 = Hours of operation in tenths of hours
4 = Tractor speed
5 = Mark showing rated engine speed for PTO operation

The tachometer facilitates the economical utilization of the tractor under all its working conditions. It makes it possible to choose the right gear.
The tachometer shows the following:

1. The RPM's on the upper half of the dial.
   The figure to which the needle points (the needle moves from the right side to the left) multiplied by 100 gives you the actual number of engine revolutions.
2. Hours of operation in full hours and tenths of hours.
   The counter of operation hours facilitates close observation of the proper service intervals.
3. The tractor speed (for the gear engaged) in the lower half of the dial (needle moves from the left side to the right).



OPERATION

Complete instructions for operating your tractor safely and efficiently are given on the following pages. By following these directions carefully, you can be sure that you are taking full advantage of the many features built into your tractor.

OPERATING THE ENGINE

PRE-STARTING INSPECTION

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

Check the engine crankcase oil level—see page 51

Check the radiator coolant level — see page 52

Inspect air cleaner — see page 50 or 51.
(If equipped with a pre-cleaner, drain it — see page 52).

Check the fuel sediment bowls at the fuel pump and fuel filter — see page 59.

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

STARTING THE ENGINE

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 has no 2nd brake (handbrake) this lever can be put in park (P) position. Depress clutch pedal to decrease drag on engine.

2. With Bosch injection pump, place hand throttle in halfway open position; with Roto-Diesel injection pump in fully open position.

3. At temperatures below 0° C (+ 32° F), use cold weather starting aids (see "Cold Weather Starting Aids" on next page).

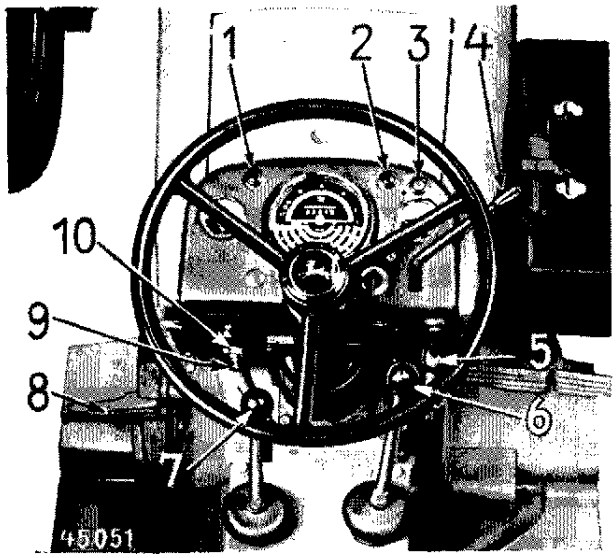
4. Insert switch key into main switch.

5. Depress Starter Button. As soon as engine starts, release this button at once. Do not crank engine for mor than 30 seconds at a time otherwise the Starter gets overheated. Wait a minute or two before trying again.

6. As soon as the engine (equipped with Roto-Diesel injection pump) starts, put hand throttle in halfway open position.

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 cause of difficulty be determined and eliminated.

7. 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.



1 = Generator Indicator Light
2 = Engine Oil Pressure Indicator Light
3 = Full Beam Indicator Light
4 = Hand Throttle
5 = Starting Fluid Adapter
6 = Gear Shift Lever
7 = Range Shift Lever
8 = Clutch Pedal
9 = Starter Button
10 = Main Switch

NOTE: If engine fails to start, refer to "Trouble Shooting".

CAUTION: Never attempt to start a tractor with Hi-Lo shift unit by towing as the power train between transmission and engine is interrupted with stationary engine.

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

COLD WEATHER STARTING AIDS

To assist in cold weather starting, several aids are available. These optional aids are explained below. Auxiliary batteries can be used. For diesel tractors, a starting fluid adapter can be used. See your John Deere dealer for auxiliary 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, or high electrical resistance, any of which may prevent the engine from starting.

AUXILIARY 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 tractor.

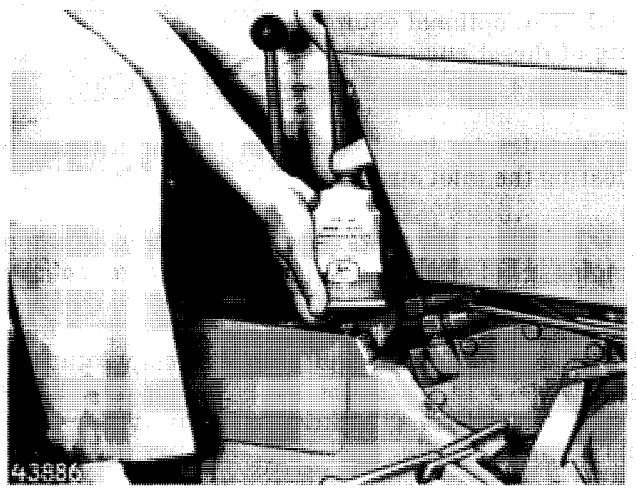
Use jumper cables to connect the positive (+) terminal of the booster battery to the positive (+) terminal of the tractor battery and the negative (—) terminal of the booster battery to negative (—) terminal of the tractor battery. See your John Deere dealer for booster batteries.

CAUTION: The batteries on your tractor are NEGATIVE grounded only. Reversed polarity in battery or generator connections will result in damage to electrical system.

DIESEL STARTING FLUID ADAPTER

Your diesel tractor may be equipped with a John Deere Starting Fluid Adapter. This attachment is used to inject atomized starting fluid into the engine air intake system when starting the engine at temperatures below 32° F.

CAUTION: Starting fluid is highly flammable.



Injecting Diesel Starting Fluid

To use starting fluid, remove the safety cap and plastic spray button from the can. Remove the cap from the adapter and position the can under the adapter as shown with the tube in the adapter hole. To inject fluid, push up on can; then release it, 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. Inject starting fluid intermittently, not continuously.

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 is running smoothly, remove the can from the adapter and replace the safety cap on the can.

Be sure to put the cap back on 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: Before throwing away used up starting fluid containers, remove the remaining fluid at a place that is well aired and free of fire hazards.

THERMOSTART STARTING AID

The "Thermostart" starting aid device can be supplied as an optional equipment for assisting the starting of diesel engines at low ambient temperatures between *5° F (— 15° C)* and *45° F (+ 7° C)*.

It operates by burning fuel in the air intake, so heating the inlet air.

NOTE: Never use "Thermostart" starting aid when engine is hot or when ambient temperature is above + 45° F (+ 7° C).

When engine is cold and ambient temperature is below 45° F (+ 7° C), use the following procedure: Push "Thermostart" switch button firmly for 15 to 20 seconds.

Crank engine with starter while pressing the "Thermostart" switch button.

If engine does not begin to fire within 15 seconds, switch off starter but continue to press "Thermostart" switch button for a further 10 seconds before cranking again.

When firing commences, switch off starter but continue to press "Thermostart" switch button for a further 15 seconds.

TRACTOR WARM-UP PERIOD

Before putting your tractor under full load or into high gear, be sure it is warmed up sufficiently. Oil will then circulate freely, preventing excessive wear on piston rings, cylinders and bearings. Do not race engine or idle it during warm-up period.

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

ENGINE IDLING

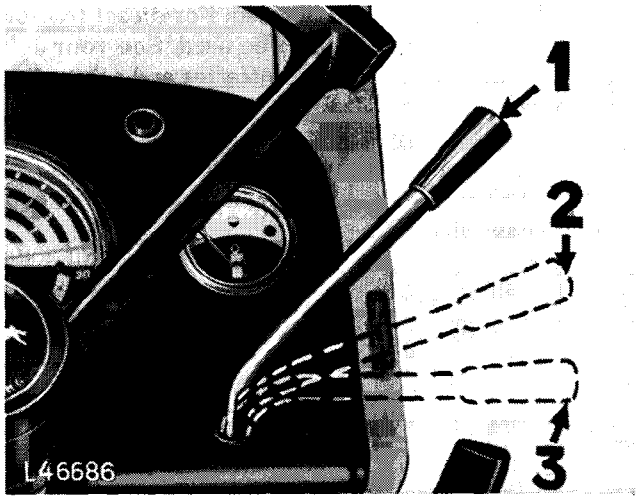
Avoid unnecessary engine idling. Prolonged engine idling may cause the engine coolant temperature to fall belows its normal range. This in turn causes crankcase oil dilution, due to incomplete fuel combustion, and permits formation of lacquer or gummy deposits on valves, pistons, and piston rings. It also promotes rapid accumulation of engine sludge.

ENGINE SPEEDS

The engine is designed to operate under load at speeds ranging from 1500 to 2500 rpm. These are variable governed speeds, and the engine can be operated at any speed between the two extremes to meet various working conditions. Maximum continuous power at full load is obtained at 2500 rpm. Operate the engine at 2100 rpm to obtain SAE standard PTO speeds. Use this speed when operating the power take-off.

For PTO operation, adjust hand throttle so that tachometer needle points to green mark.

USING HAND THROTTLE

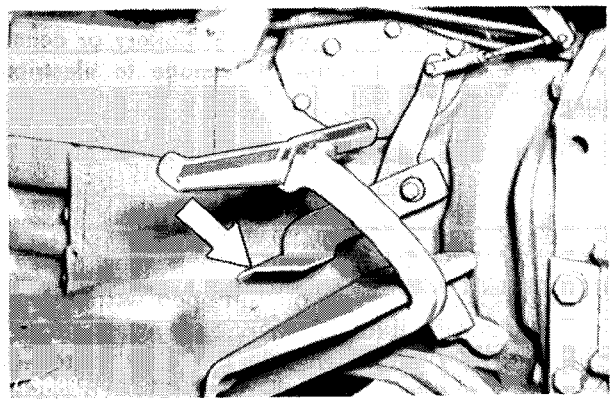


Range of Hand Throttle Positions

1 = Slow Idle
2 = PTO Speed
3 = Fast Idle

Use hand throttle to select any of the variable engine speeds between slow idle and fast idle. Move lever counterclockwise to slow down engine; move lever clockwise to speed up engine.

USING FOOT THROTTLE



Use the foot throttle to speed up the engine quickly, as during transport. The foot throttle is also a handy control during loader operation when the hands are busy with levers. When the pedal is released, the engine speed returns to the hand throttle setting.

When driving on the road, move hand throttle to "Slow Idle" position and use foot throttle as *required.*

STOPPING THE ENGINE

If the tractor has a 2nd brake (handbrake), move the gear shift lever into neutral position and pull the hand brake. If it is not equipped with a 2nd brake, move the gear shift lever into any gear position. Then place the range shift lever in park (P) position. This will lock the gears and hold the tractor in place.

Run the engine at 1500 rpm for a short time before stopping it. Sudden stopping of a hot engine may allow some parts to overheat momentarily and possibly cause damage.

To shut off the engine, pull engine shut-off knob on lower right of instrument panel. After engine has stopped, push back shut-off knob all the way.

CAUTION: Never attempt to stop the diesel engine by turning off the fuel supply. This will cause the fuel injection pump to run dry and damage internal parts.

IMPORTANT: Remove switch key to prevent accidents and battery discharge if the switch is accidentally left in the "on" position.

BREAK-IN PERIOD

Before your new tractor was shipped from the factory, all bearings and friction surfaces were correctly fitted, and the crankcase was filled with fresh oil.

We recommend that you ask your John Deere dealer to carry out a general inspection of the tractor after the first 100 operating hours.

IMPORTANT: It is a common fact that after approximatively the first 20 hours of operation the torque of the cylinder head cap screws has decreased below 110 ft. lbs. (15 mkg). For this reason, retorque the cylinder head cap screws to 110 ft. lbs. (15 mkg) after the first 20 hours of operation on a new tractor or after a new gasket has been installed. Also adjust the valve clearance.

Valve clearance, intake 0.014 in. (0,35 mm).

Valve clearance, exhaust 0.018 in. (0,45 mm).

After the first 4 hours and 8 hours of operation retighten all wheel retainers and front axle bolts. Check tightness of retainers and axle bolts frequently for the first 100 hours of operation.

Recommended torques are as follows:

1. REAR WHEELS
   (Steel Disk)
   Wheel disk-to-axle flange 195 ft. lbs. (27 mkg)
   Rim-to-wheel disk 145 ft. lbs. (20 mkg)
   (Cast Disk)
   Wheel disk-to-axle flange 130 ft. lbs. (18 mkg)
   Rim-to-wheel disk 170 ft. lbs. (23.5 mkg)
   (Rack-and-pinion axle)
   Wheel-to-axle flange 85 ft. lbs. (12 mkg)
   Rim-to-wheel disk 170 ft. lbs. (23.5 mkg)
2. FRONT WHEELS
   Wheel-to-axle flange 85 ft. lbs. (12 mkg)
3. FRONT AXLE
   Axle bolts 300 ft. lbs. (41.5 mkg)

Thereafter check tightness of bolts and screws periodically.

Every engine has to be broken in before the normal performance is obtained. The duration of the break-in period varies from engine to engine depending on the conditions of operation during this period of time.

The tractor should be operated under normal load during the first hours of operation.

IMPORTANT: AVOID LIGHT LOADS OR EXCESSIVE ENGINE IDLING.

Ideal conditions for breaking in a tractor engine would be if the tractor operated at full engine speed under 75% of full load. Under such operating conditions an engine would be broken in after approximatively the first 100 hours.

In most cases, however, it is practically impossible to operate the tractors under these conditions during the first hours.

This is the reason why, in many cases, the duration of the break-in period is considerably longer than 100 hours.

Under very light load conditions some engines may never break-in which results in glazed cylinder liners.

During the break-in period an higher than usual oil consumption should be considered as normal.

Check periodically to be sure that an adequate supply of oil is maintained in the crankcase. If it becomes necessary to add oil during the first 20 hours, use new oil as recommended on page 44.

At the end of this 20-hour period, drain oil, replace filter element, and fill the crankcase with new oil as recommended on page 44. Thereafter, drain and refill crankcase at the end of every 250 hours of operation.

At the end of the first 50 hours of operation, replace the transmission-hydraulic system oil filter.

Replace the transmission-hydraulic system filter after the first 500 hours of operation and thereafter every 500 hours. (see page55)

After the first 100 hours, retighten the front axle tie rod and steering drag link end nuts to 105 ft-lbs (14,5 mkg).

DRIVING THE TRACTOR

SELECTING TRAVEL SPEEDS

The tractor has eight forward gears and four reverse gears. These gears, together with the engine speeds that may be selected, allow the operator to balance load and speed for maximum economy, and give him flexibility to meet varying work conditions. For example, for a given travel speed the operator may choose to work in a low gear at a high engine speed or in a higher gear at a lower engine speed. Engine working speeds may be varied anywhere between 1500 and 2500 rpm. Tractor travel speeds in various gears are given in the charts on the following pages.

Decals near the range shift lever and gear shift lever show range positions and gear positions permitting selection of the proper speed for the work to be performed.

TRAVEL SPEEDS

Model	2120											
Full Engine Power in rpm.	2500											
Tire Sizes	14,9 / 13-36				18,4 / 15 - 30				15,5 - 38			
Speed Limit	over 25 km/h (15.5 mph)		upto 25 km/h (15.5 mph)		over 25 km/h (15.5 mph)		upto 25 km/h (15.5 mph)		over 25 km/h (15.5 mph)		upto 25 km/h (15.5 mph)	
Gear	km/h (mph)		km/h (mph)		km/h (mph)		km/h (mph)		km/h (mph)		km/h (mph)	
1 Lo	1,7 (1.1)	*	1,6 (1.0)	*	1,7 (1.0)	*	1,6 (1.0)	*	1,7 (1.1)	*	1,6 (1.0)	*
Hi	2,3 (1.4)	2,3 (1.4)	2,1 (1.3)	2,1 (1.3)	2,2 (1.4)	2,2 (1.4)	2,1 (1.3)	2,1 (1.3)	2,3 (1.4)	2,3 (1.4)	2,1 (1.3)	2,1 (1.3)
2 Lo	2,4 (1.5)		2,3 (1.4)		2,4 (1.5)		2,2 (1.4)		2,4 (1.5)		2,3 (1.4)	
Hi	3,2 (2.0)	3,2 (2.0)	3,0 (1.9)	3,0 (1.9)	3,2 (2.0)	3,2 (2.0)	3,0 (1.9)	3,0 (1.9)	3,3 (2.0)	3,3 (2.0)	3,0 (1.9)	3,0 (1.9)
3 Lo	3,6 (2.2)		3,3 (2.1)		3,5 (2.2)		3,3 (2.0)		3,6 (2.2)		3,4 (2.1)	
Hi	4,8 (3.0)	4,8 (3.0)	4,5 (2.8)	4,5 (2.8)	4,7 (2.9)	4,7 (2.9)	4,5 (2.8)	4,5 (2.8)	4,8 (3.0)	4,8 (3.0)	4,5 (2.8)	4,5 (2.8)
4 Lo	5,0 (3.1)		4,7 (2.9)		4,9 (3.1)		4,6 (2.9)		5,0 (3.1)		4,7 (2.9)	
Hi	6,7 (4.2)	6,7 (4.2)	6,3 (3.9)	6,3 (3.9)	6,6 (4.1)	6,6 (4.1)	6,2 (3.9)	6,2 (3.9)	6,8 (4.3)	6,8 (4.3)	6,3 (3.9)	6,3 (3.9)
5 Lo	6,6 (4.1)		6,2 (3.8)		6,5 (4.1)		6,1 (3.8)		6,6 (4.1)		6,2 (3.9)	
Hi	8,9 (5.5)	8,9 (5.5)	8,3 (5.2)	8,3 (5.2)	8,8 (5.5)	8,8 (5.5)	8,2 (5.1)	8,2 (5.1)	8,9 (5.5)	8,9 (5.5)	8,4 (5.2)	8,4 (5.2)
6 Lo	9,4 (5.8)		8,8 (5.5)		9,3 (5.8)		8,7 (5.4)		9,5 (5.9)		8,9 (5.5)	
Hi	12,7 (7.9)	12,7 (7.9)	11,8 (7.3)	11,8 (7.3)	12,6 (7.8)	12,6 (7.8)	11,7 (7.3)	11,7 (7.3)	12,8 (8.0)	12,8 (8.0)	11,9 (7.4)	11,9 (7.4)
7 Lo	14,0 (8.7)		13,1 (8.1)		13,8 (8.6)		13,0 (8.1)		14,1 (8.8)		13,1 (8.1)	
Hi	18,8 (11.7)	18,8 (11.7)	17,6 (10.9)	17,6 (10.9)	18,7 (11.6)	18,7 (11.6)	17,4 (10.8)	17,4 (10.8)	18,9 (11.7)	18,9 (11.7)	17,7 (11.0)	17,7 (11.0)
8 Lo	19,5 (12.1)		18,2 (11.3)		19,4 (12.1)		18,1 (11.2)		19,6 (12.2)		18,4 (11.4)	
Hi	26,3 (16.3)	26,3 (16.3)	24,6 (15.3)	24,6 (15.3)	26,1 (16.2)	26,1 (16.2)	24,4 (15.2)	24,4 (15.2)	26,5 (16.5)	26,5 (16.5)	24,8 (15.4)	24,8 (15.4)
R 1 Lo	1,9 (1.2)		1,8 (1.1)		1,9 (1.2)		1,8 (1.1)		2,0 (1.2)		1,8 (1.1)	
Hi	2,6 (1.6)	2,6 (1.6)	2,5 (1.5)	2,5 (1.5)	2,6 (1.6)	2,6 (1.6)	2,4 (1.5)	2,4 (1.5)	2,7 (1.7)	2,7 (1.7)	2,5 (1.5)	2,5 (1.5)
R 2 Lo	2,8 (1.7)		2,6 (1.6)		2,8 (1.7)		2,6 (1.6)		2,8 (1.8)		2,6 (1.6)	
Hi	3,7 (2.3)	3,7 (2.3)	3,5 (2.2)	3,5 (2.2)	3,7 (2.3)	3,7 (2.3)	3,5 (2.2)	3,5 (2.2)	3,8 (2.4)	3,8 (2.4)	3,5 (2.2)	3,5 (2.2)
R 3 Lo	4,1 (2.6)		3,9 (2.4)		4,1 (2.5)		3,8 (2.4)		4,2 (2.6)		3,9 (2.4)	
Hi	5,6 (3.5)	5,6 (3.5)	5,2 (3.2)	5,2 (3.2)	5,5 (3.4)	5,5 (3.4)	5,2 (3.2)	5,2 (3.2)	5,6 (3.5)	5,6 (3.5)	5,2 (3.3)	5,2 (3.3)
R 4 Lo	5,8 (3.6)		5,4 (3.4)		5,7 (3.6)		5,4 (3.3)		5,8 (3.6)		5,4 (3.4)	
Hi	7,8 (4.8)	7,8 (4.8)	7,3 (4.5)	7,3 (4.5)	7,7 (4.8)	7,7 (4.8)	7,2 (4.5)	7,2 (4.5)	7,8 (4.8)	7,8 (4.8)	7,3 (4.5)	7,3 (4.5)

* These columns show travel speeds for tractors without Hi-Lo shift unit.
The columns headed "over 25 km (15.5 mph)" also show travel speeds for tractors with max. speed up to 20 km (12.4 mph). On these tractors the 8th gear is blocked.

TRAVEL SPEEDS

Model	2120											
Engine Speed in rpm.	2100 (for PTO operation)											
Tire Sizes	14,9 / 13-36				18,4 / 15 - 30				15,5 - 38			
Speed Limit	over 25 km/h (15.5 mph)		upto 25 km/h (15.5 mph)		over 25 km/h (15.5 mph)		upto 25 km/h (15.5 mph)		over 25 km/h (15.5 mph)		upto 25 km/h (15.5 mph)	
Gear	km/h (mph)		km/h (mph)		km/h (mph)		km/h (mph)		km/h (mph)		km/h (mph)	
1 Lo	1,4 (0.9)	*	1,3 (0.8)	*	1,4 (0.9)	*	1,3 (0.8)	*	1,4 (0.9)	*	1,3 (0.8)	*
Hi	1,9 (1.2)	1,9 (1.2)	1,8 (1.1)	1,8 (1.1)	1,8 (1.1)	1,8 (1.1)	1,8 (1.1)	1,8 (1.1)	1,9 (1.2)	1,9 (1.2)	1,8 (1.1)	1,8 (1.1)
2 Lo	2,0 (1.2)		1,9 (1.2)		2,0 (1.2)		1,8 (1.1)		2,0 (1.2)		1,9 (1.2)	
Hi	2,7 (1.7)	2,7 (1.7)	2,5 (1.6)	2,5 (1.6)	2,7 (1.7)	2,7 (1.7)	2,5 (1.6)	2,5 (1.6)	2,8 (1.7)	2,8 (1.7)	2,5 (1.6)	2,5 (1.6)
3 Lo	3,0 (1.9)		2,8 (1.7)		2,9 (1.8)		2,8 (1.7)		3,0 (1.9)		2,9 (1.8)	
Hi	4,0 (2.5)	4,0 (2.5)	3,8 (2.4)	3,8 (2.4)	3,9 (2.4)	3,9 (2.4)	3,8 (2.4)	3,8 (2.4)	4,1 (2.5)	4,1 (2.5)	3,8 (2.4)	3,8 (2.4)
4 Lo	4,2 (2.6)		3,9 (2.4)		4,1 (2.5)		3,9 (2.4)		4,3 (2.7)		3,9 (2.4)	
Hi	5,6 (3.5)	5,6 (3.5)	5,3 (3.3)	5,3 (3.3)	5,5 (3.4)	5,5 (3.4)	5,2 (3.2)	5,2 (3.2)	5,7 (3.5)	5,7 (3.5)	5,3 (3.3)	5,3 (3.3)
5 Lo	5,5 (3.4)		5,2 (3.2)		5,5 (3.4)		5,1 (3.2)		5,6 (3.5)		5,2 (3,2)	
Hi	7,5 (4.7)	7,5 (4.7)	7,0 (4.3)	7,0 (4.3)	7,4 (4.6)	7,4 (4.6)	6,9 (4.3)	6,9 (4.3)	7,5 (4.7)	7,5 (4.7)	7,1 (4.4)	7,1 (4.4)
6 Lo	7,9 (4.9)		7,4 (4.6)		7,8 (4.3)		7,3 (4.5)		8,0 (5.0)		7,5 (4.7)	
Hi	10,7 (6.6)	10,7 (6.6)	9,9 (6.2)	9,9 (6.2)	10,6 (6.7)	10,6 (6.7	9,8 (6.1)	9,8 (6.1)	10,8 (6.7)	10,8 (6.7)	10,0 (6.2)	10,0 (6.2)
7 Lo	11,7 (7.3)		11,0 (6.8)		11,6 (7.2)		10,9 (6.8)		11,8 (7.3)		11,0 (6.8)	
Hi	15,8 (9.8)	15,8 (19.8)	14,8 (9.2)	14,8 (9.2)	15,7 (9.8)	15,7 (9.8)	14,6 (9.1)	14,6 (9.1)	15,9 (9.9)	15,9 (9.9)	14,9 (9.3)	14,9 (9.3)
8 Lo	16,4 (10.2)		15,3 (9.5)		16,3 (10.1)		15,2 (9.4)		16,5 (10.3)		15,5 (9.6)	
Hi	22,1 (13.7)	22,1 (13.7)	20,6 (12.8)	20,6 (12.8)	21,9 (13.6)	21,9 (13.6)	20,5 (12.7)	20,5 (12.7)	22,3 (13.9)	22,3 (13.9)	20,8 (12.9)	20,8 (12.9)
R 1 Lo	1,6 (1.0)		1,5 (0.9)		1,6 (1.0)		1,5 (0.9)		1,7 (1.1)		1,5 (0.9)	
Hi	2,2 (1.4)	2,2 (1.4)	2,1 (1.3)	2,1 (1.3)	2,2 (1.4)	2,2 (1.4)	2,0 (1.2)	2,0 (1.2)	2,3 (1.4)	2,3 (1.4)	2,1 (1.3)	2,1 (1.3)
R 2 Lo	2,4 (1.5)		2,2 (1.4)		2,4 (1.5)		2,2 (1.4)		2,4 (1.5)		2,2 (1.4)	
Hi	3,1 (1.9)	3,1 (1.9)	2,9 (1.8)	2,9 (1.8)	3,1 (1.9)	3,1 (1.9)	2,9 (1.8)	2,9 (1.8)	3,2 (2.0)	3,2 (2.0)	2,9 (1.8)	2,9 (1.8)
R 3 Lo	3,4 (2.1)		3,3 (2.1)		3,4 (2.1)		3,2 (2.0)		3,5 (2.2)		3,3 (2.1)	
Hi	4,7 (2.9)	4,7 (2.9)	4,4 (2.7)	4,4 (2.7)	4,6 (2.9)	4,6 (2.9)	4,4 (2.7)	4,4 (2.7)	4,8 (3.0)	4,8 (3.0)	4,4 (2.7)	4,4 (2.7)
R 4 Lo	4,9 (3.0)		4,5 (2.8)		4,6 (2.9)		4,5 (2.8)		5,0 (3.1)		4,5 (2.8)	
Hi	6,6 (4.1)	6,6 (4.1)	6,1 (3.8)	6,1 (3.8)	6,4 (4.0)	6,4 (4.0)	6,1 (3.8)	6,1 (3.8)	6,6 (4.1)	6,6 (4.1)	6,1 (3.8)	6,1 (3.8)

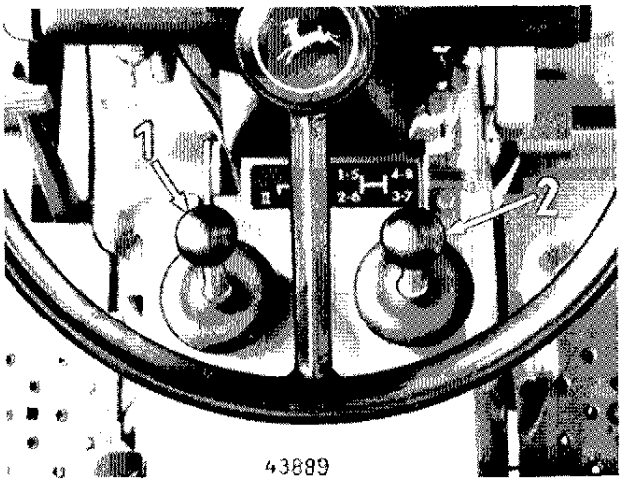
* These columns show travel speeds for tractors without Hi-Lo shift unit.
The columns headed "over 25 km (15.5 mph)" also show travel speeds for tractors with max. speed up to 20 km (12.4 mph). On these tractors the 8th gear is blocked.

OVERLOADING

This tractor will handle economically and efficiently all jobs within its range of power. Using tractor on loads beyond its power range places excessive strain on all parts and will eventually result in unnecessary repair expense and impaired operating efficiency.

An overloaded tractor can usually be detected by gradual slowing down in travel speed and slowing down and laboring of engine.

SHIFTING GEARS



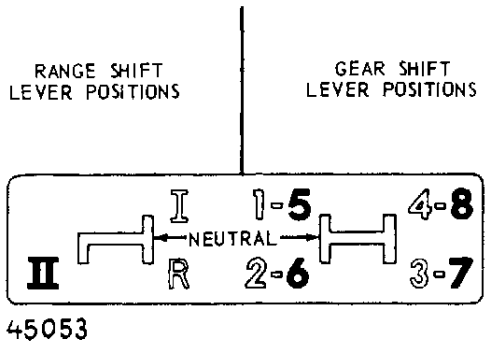
1 = Range Shift Lever (left-hand lever)
2 = Gear Shift Lever (right-hand lever)

Gear shifting is controlled by a range shift lever and a gear shift lever.

The range shift lever shifts between low, high and reverse ranges. A park (P) position is also provided on tractors without a 2nd brake.

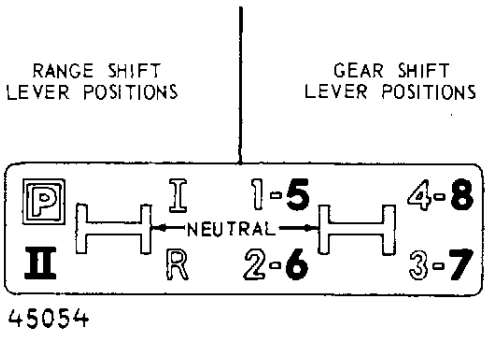
The gear shift lever can be used to select 1st, 2nd, 3rd, and 4th gears when the range shift lever is in low range position; it can be used to select 5th, 6th, 7th, and 8th gears when the range shift lever is in high range position. When the range shift lever is in reverse range, reverse gears comparable to 1st, 2nd, 3rd, and 4th can be obtained.

The following decal applies to tractors equipped with a 2nd brake.



1 = Low Range
2 = High Range
3 = Reverse Range

The following decal applies to tractors without a 2nd brake.



1 = Low Range
2 = High Range

P = Park Position
R = Reverse Range

SHIFTING FROM NEUTRAL

1. Fully depress clutch pedal.

2. Move gear shift lever from neutral into gear desired. Then move range shift lever into high, low, or reverse range as desired.

3. Gradually release clutch pedal to take up load smoothly.

To shift from a low to a high gear, run engine at high speed and depress clutch pedal. Decrease engine speed and shift into higher gear. Then slowly release clutch pedal and increase engine speed. To smoothly shift from a high to a low gear, decrease engine speed and depress clutch pedal. Shift range shift lever into neutral position, release clutch pedal for a moment and increase engine speed. Depress clutch pedal, shift to lower gear and slowly release clutch pedal.

SHIFTING TO ANOTHER RANGE

To shift to another range, fully stop the tractor and disengage the clutch before attempting to change the range.

HIGH SPEED DRIVING

Use high speed (8th) gear to save time in transport over highways and other smooth roads. But-BE CAREFUL! Fast driving is the cause of many accidents. On rough ground, shift to a lower gear for safety and decrease speed.

PARKING THE TRACTOR

Completely stop the tractor. Move the gear shift lever into any gear position. Then move the range shift lever to park (P) position. This applies to tractors without a 2nd brake.

If the tractor has a 2nd brake (hand brake), it should be well applied when the tractor is parked or when it operates stationary.

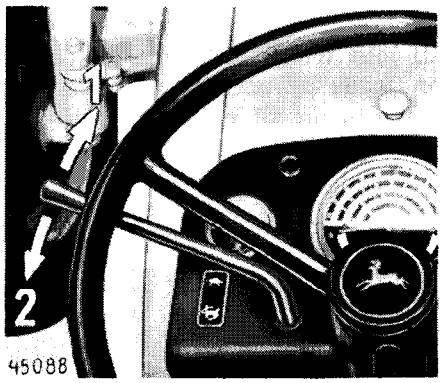
CAUTION: On tractors equipped with Hi-Lo shift unit, engine and rear axle are disconnected with engine shut off.
Therefore, apply handbrake firmly since engaging a gear provides no safety.
On tractors equipped with parking brake first engage a gear before moving range shift lever in park (P) position. In this position the transmission is blocked and acts as a brake on the rear wheels.

TOWING THE TRACTOR

When towing the tractor, move both the range and gear shift levers to the neutral position. This will prevent undue wear on transmission parts during towing.

CAUTION: Never tow the tractor at a speed greater than 15 miles per hour (25 km/h).

Hi-Lo Shift Unit



Hi-Lo Shift Lever

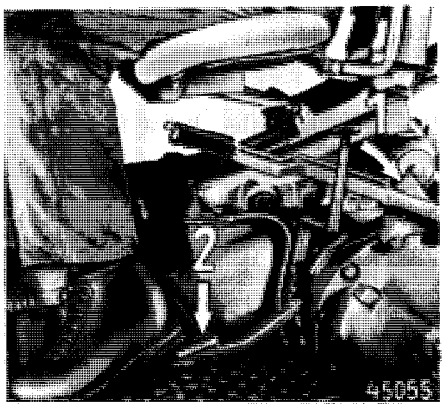
1 = Low speed
2 = High speed

If the tractor has a Hi-Lo shift unit, the driver can decrease or increase tractor speed without using the clutch.

Shifting from Hi to Lo decreases the ground travel speed by 25.8 % and provides up to 35 % increase in pull power in any of the transmission speeds. Shifting from Hi to Lo provides approximately the same speed and pull power change as manually down-shifting one gear on the transmission.

DIFFERENTIAL LOCK

Your tractor may be equipped with a differential lock, used to direct power equally to both rear wheels. This prevents the usual loss of traction when one wheel is slipping.



1 = Hand Lever for Differential Lock
2 = Pedal for Differential Lock

Suggest:

If the above button click is invalid.

Please download this document

first, and then click the above link

to download the complete manual.

Thank you so much for reading

The differential lock can be operated by hand or by foot.

When slippery conditions are anticipated or encountered, engage the differential lock. To engage the differential lock "on the go", push out on the lever (or down on the pedal). Unequal traction will keep the lock engaged. When traction is equalized, the pedal or lever will disengage itself by spring action.

You may have to hold the lever or pedal engaged if unequal traction is not continuous.

CAUTION: Do not attempt to turn the tractor with the differential lock engaged.

POWER STEERING

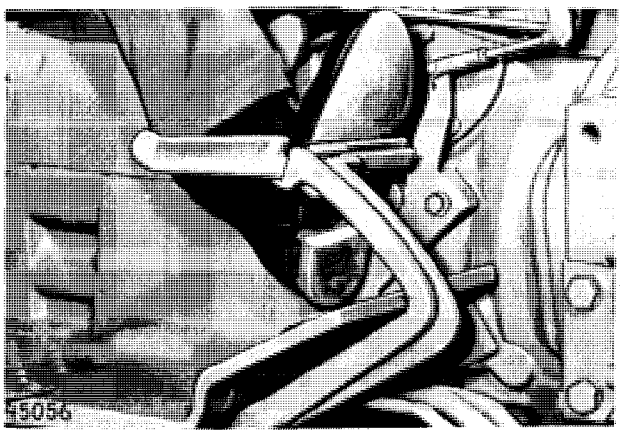
The tractor may be equipped with power steering to make steering and control of the tractor easier for the operator. In case of oil pressure failure, the tractor can be steered manually.

HYDRAULIC BRAKES

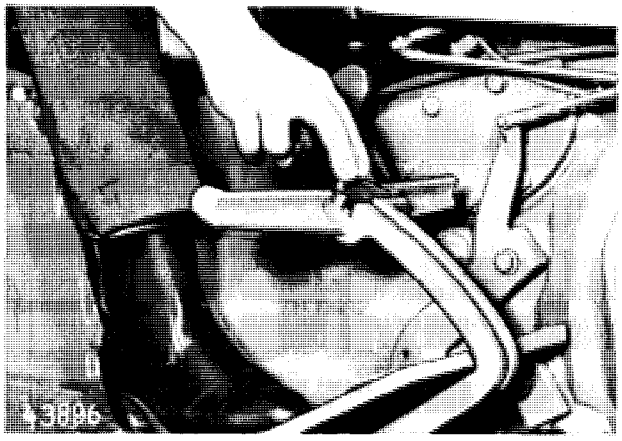
When turning the tractor, press down on a single brake pedal; use the left pedal to turn left, and the right pedal to turn right. To negotiate sharp turns, turn steering wheel hard over and press brake pedal down completely.

Use brake for steering purposes at low speed only!

When stopping the tractor, press down on both brake pedals. When travelling at high speeds on the road, couple the pedals together as shown and use a light pressure on the pedals.



Using Brake to Make a Sharp Left-Hand Turn



Coupling Brake Pedals Together

Couple the brake pedals together for road travel, and always drive at a safe speed.

To drive safely, keep the brakes always in good condition. If they become weak, fix them right away!

CAUTION: Do not allow tractor to coast with clutch disengaged with transmission in gear, especially in low range. This may result in overspeeding and damage to the clutch.

CAUTION: Fast driving causes many accidents. Adjust your speed always to the terrain features and to the extent of traffic.

HYDRAULIC OIL SUPPLY

The transmission oil pump supplies oil for the main hydraulic pump. Therefore, avoid prolonged disengagement of the engine or PTO clutch, which controls oil pump operation. Disengaging the clutch for long periods reduces supply of pressure oil for hydraulic functions.