4010 ROW-CROP AND STANDARD TRACTORS

JOHN DEERE

OPERATORS MANUAL

4010 ROW-CROP AND STANDARD TRACTORS

OMR32129 A9 English

JOHN DEERE TRACTOR WORKS
OMR32129 A9

LITHO IN THE 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 great tractor.

We are confident this modern tractor, combined with equally advanced John Deere tools and implements, will help you to farm better, easier, and more profitably.

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.

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. Keep this policy in a safe place and present it to the dealer whenever services which it authorizes are required.

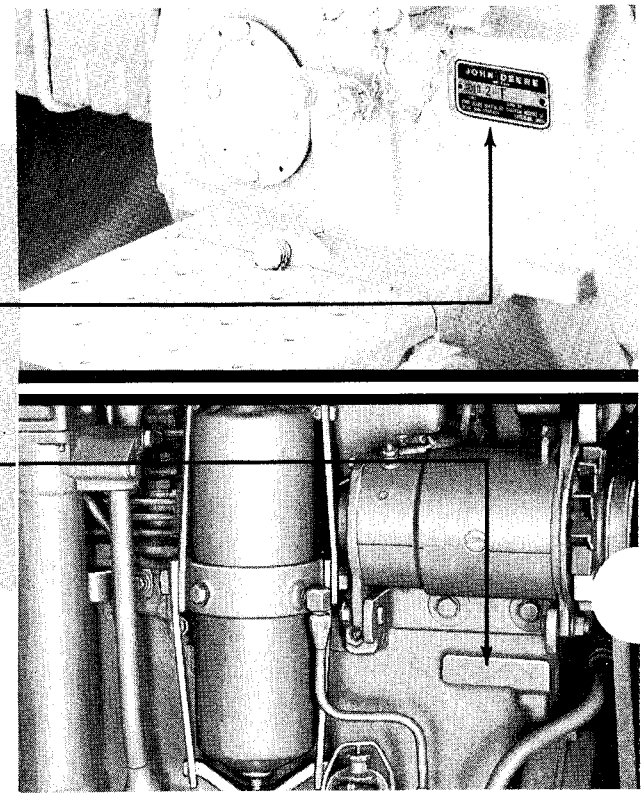
Your John Deere dealer wants to help you get the most value from your tractor. His skilled servicemen can handle every job efficiently. These men are trained in modern service methods; they have all necessary tools and equipment. If new parts are needed, only genuine John Deere parts will be installed.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

When in need of new parts, be prepared to furnish your dealer with the engine serial number, the tractor chassis serial number, and the tractor model number. The location of the serial numbers is illustrated below. For ready reference, record the numbers in the spaces provided.

FILL IN THESE SPACES

CHASSIS SERIAL NUMBER

ENGINE SERIAL NUMBER



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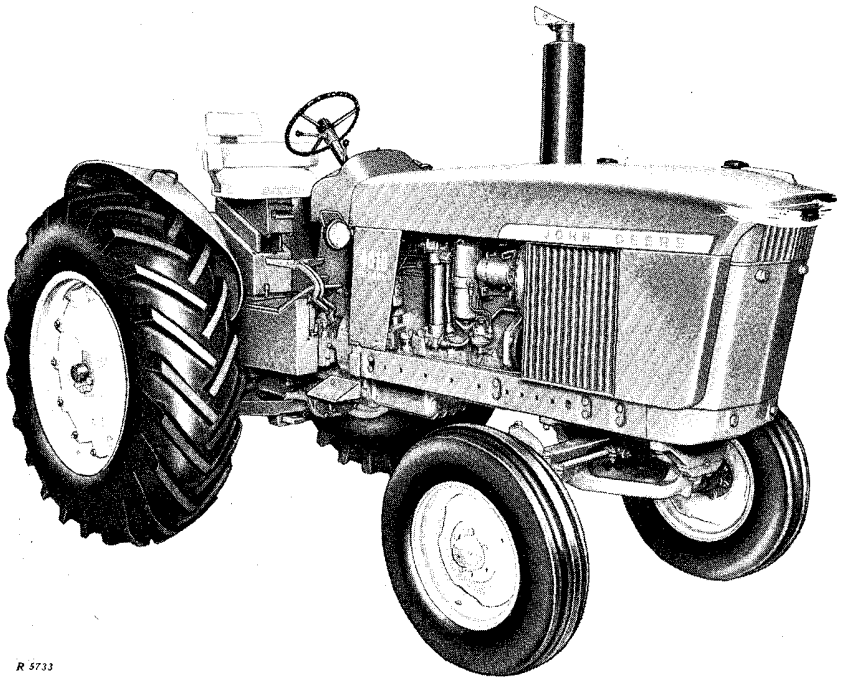


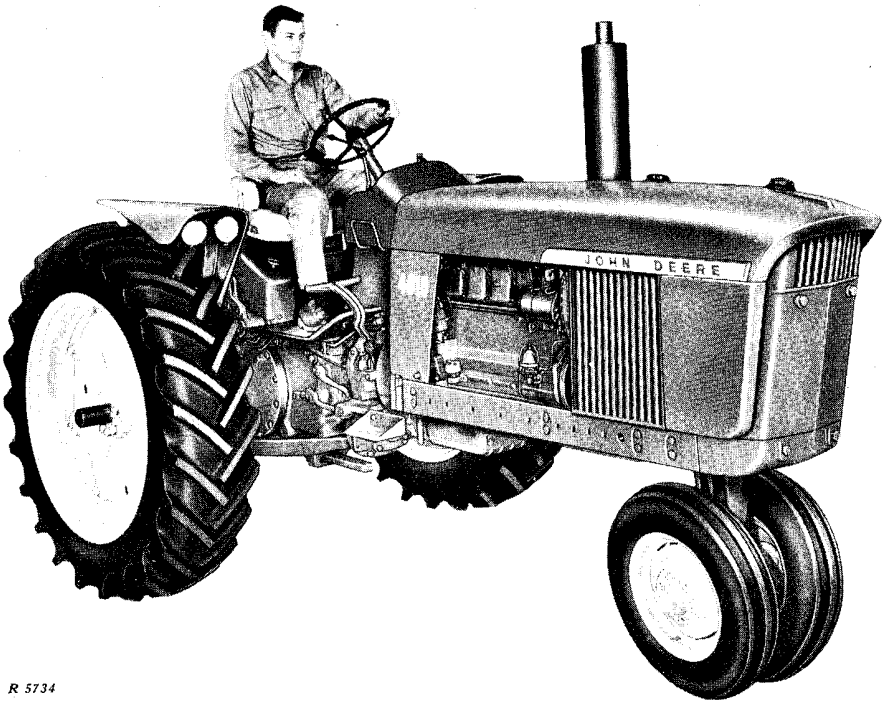
R 5733

John Deere 4010 Standard Diesel Tractor

specifications

	Diesel	Gasoline	LP-Gas
HORSEPOWER:*			
PTO	84 h.p.	80.96 h.p.	80.60 h.p.
Drawbar	73.65 h.p.	72.53 h.p.	72.13 h.p.
ENGINE:			
Type	6-cylinder, in-line, valve-in-head		
Engine speeds:			
Idle for engine shutoff	.....	420 rpm	500 rpm
Normal slow idle	600 rpm	650 rpm	650 rpm
Working range	1500 to 2200 rpm	1500 to 2200 rpm	1500 to 2200 rpm
Maximum transport speed	2500 rpm	2500 rpm	2500 rpm
Bore and stroke	4-1/8 in. x 4-3/4 in.	4 in. x 4 in.	4 in. x 4 in.
Displacement	380 cu. in.	302 cu. in.	302 cu. in.
Compression ratio	16.5 to 1	7.5 to 1	9.0 to 1
Firing order	1-5-3-6-2-4	1-5-3-6-2-4	1-5-3-6-2-4
Intake valve clearance	0.018 in.	0.015 in.	0.015 in.
Exhaust valve clearance	0.018 in.	0.028 in.	0.028 in.
Injection pump timing	14° BTDC	.....	.....
Distributor timing	.....	20° BTDC	25° BTDC
Distributor point gap	.....	See page 57	See page 57
Spark plug gap	.....	0.025 in.	0.015 in.
ELECTRICAL SYSTEM:			
Starter and generator voltage	24 volts	12 volts	12 volts
Lights and accessory voltage	12 volts	12 volts	12 volts
12-volt battery, 78-plate, 75 amp-hour	Two (connected in series)	One	One

**Maximum observed horsepower at 2200 engine rpm (Nebraska Test Nos. 761 for diesel, 759 for gasoline, 760 for LP-Gas)*



R 5734

John Deere 4010 Row-Crop Gasoline Tractor

COOLING SYSTEM:
- Type . . . . . Pressurized with centrifugal pump
- Engine temperature control . . . Heavy-duty thermostat

LUBRICATION SYSTEM: . . . . . Force-feed pressurized type with full-flow oil filter

CAPACITIES:
- Fuel tank . . . . . Diesel and gasoline—34 U.S. gals. LP-Gas—(80% full) 39 U.S. gals.
- Crankcase (Dry measurement) . . . . . 9 U.S. qts.
- Hydraulic system (Dry measurement) . . 12-3/4 U.S. gals.
- Air cleaner . . . . . Diesel—4-3/4 U.S. pints Gasoline, LP-Gas—2-3/4 U.S. pints
- Cooling system . . . . . Diesel—23 U.S. qts. Gasoline, LP-Gas—24 U.S. qts.
- Belt pulley . . . . . 2-1/2 U.S. pints

TRANSMISSION:
- Type . . . . . Syncro-Range, constant mesh
- Gear selections . . . . . 8 forward and 3 reverse
- Shifting . . . . . 4 stations, synchronized shifting within stations

POWER TAKE-OFF:
- Type . . . . . Independent dual speed PTO with front and rear power take-off. Rear stub shafts used for PTO speed conversion
- Speed (1900 engine rpm) . Front—1000 rpm (see page 32) Rear—540 or 1000 rpm

HYDRAULIC SYSTEM:
- Type . . . . . Closed center, constant pressure. Includes power steering, power brakes, implement control, and transmission-differential lubrication
- Maximum pressure . . . . . 2250 psi

BRAKES: . . . . . Hydraulically power actuated, disk-type, operating in oil

Specifications and design subject to change without notice.

GROUND SPEEDS:**

1st	1-1/2 mph
2nd	2-1/2 mph
3rd	3-1/4 mph
4th	4-1/4 mph
5th	5-1/4 mph
6th	6-3/4 mph
7th	8-3/4 mph
8th	14-1/4 mph
3rd reverse	3-1/4 mph
5th reverse	5 mph
7th reverse	8-1/2 mph

FRONT TIRES***

Row-crop	6.00 - 16, 6-ply
Standard	7.50 - 18, 6-ply

REAR TIRES:***

Row-crop	15.5 - 38, 6-ply
Standard	18.4 - 34, 6-ply

FRONT WHEEL TREAD: . . . . . See pages 12 and 13

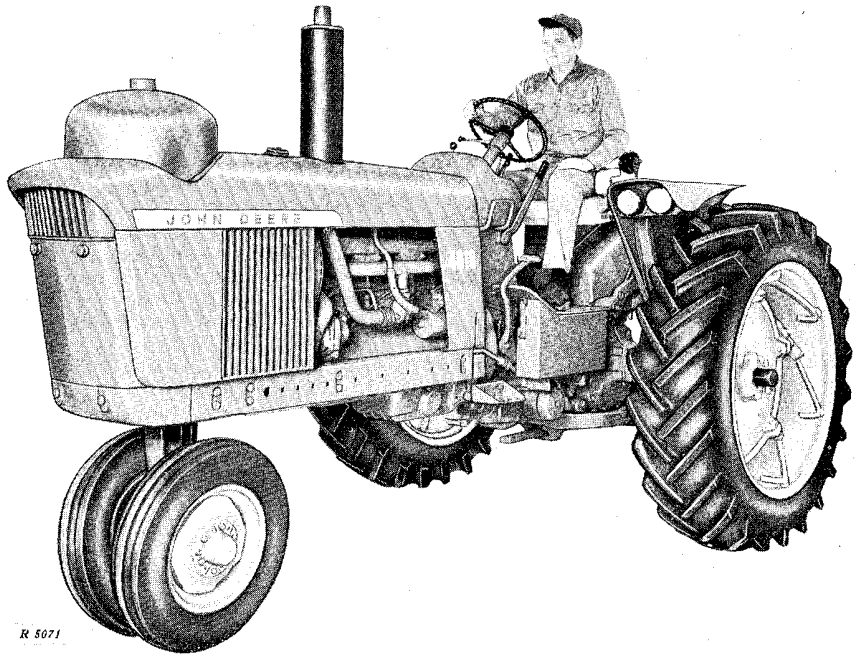
REAR WHEEL TREAD:
- Regular and offset wheels . . . . . See page 14
- Power adjusted wheels . . . . . See page 16

DIMENSIONS:	Row-Crop	Standard
Wheelbase	96-1/2 in.	88 or 99-1/4 in.
Over-all length	150 in.	149-1/8 in.
Over-all height	88-3/4 in.	88-1/4 in.
Height to steering wheel	77-7/8 in.	78-1/2 in.
Width (regular axle)	89-5/8 in.	89-5/8 in.
Turning radius	117 in.	129 in.

SHIPPING WEIGHT (With equipment for average field service, less fuel and ballast):

	Row-Crop	Standard
Diesel	8081 lbs.	7954 lbs.
Gasoline	7652 lbs.	7651 lbs.
LP-Gas	8004 lbs.	7770 lbs.

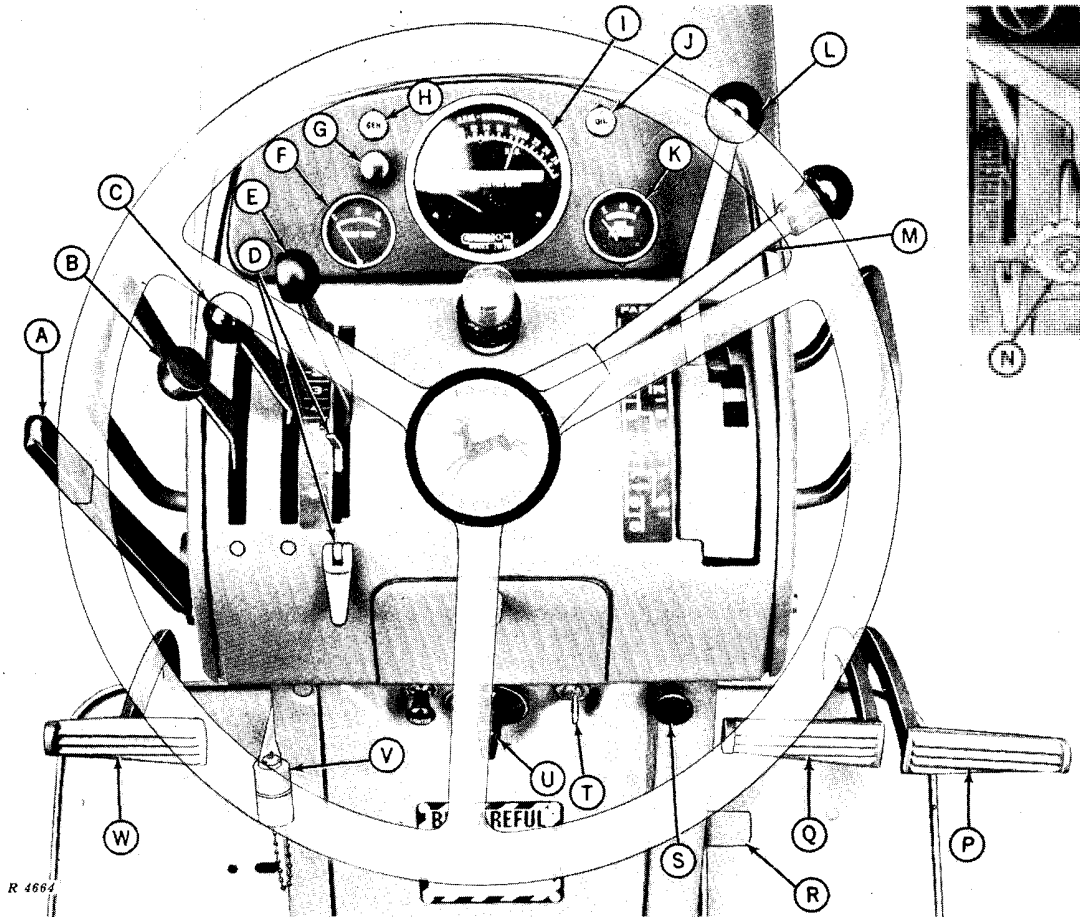
***Calculated at 1900 rpm engine speed only. For ground speeds at 1500 through 2500 rpm engine speeds, see page 11.*
****Additional tires available for special purposes.*

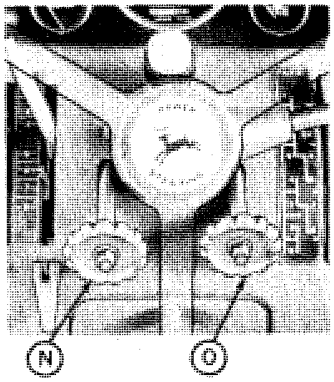


John Deere 4010 Row-Crop LP-Gas Tractor

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.





A – Power take-off clutch lever (page 32)
B – Left-hand remote cylinder operating lever (page 27)
C – Right-hand remote cylinder operating lever (page 27)
D – Rockshaft control lever stop and lock (page 21)
E – Rockshaft control lever (page 21)
F – Water temperature gauge
G – Speed indicator knob (page 11)
H – Generator indicator light (page 6)
I – Speed-hour meter (pages 11 and 42)
J – Oil pressure indicator light (page 6)
K – Fuel gauge
L – Shift lever (page 11)
M – Hand throttle (page 9)
N – Liquid withdrawal valve (LP-Gas tractors) (page 7)
O – Vapor withdrawal valve (LP-Gas tractors) (page 7)
P – Right-hand brake pedal (page 10)
Q – Left-hand brake pedal (page 10)
R – Foot throttle (page 10)
S – Engine stop knob (diesel tractors) (page 10)
Engine choke knob (gasoline and LP-Gas tractors) (page 7)
T – Key switch (page 6)
U – Light switch (page 19)
V – Cold weather ether starting fluid adapter (diesel tractors) (page 8)
W – Clutch pedal (page 11)

Seats

Your tractor may be equipped with either the regular seat or an optional deluxe seat. The regular seat is cushioned by no-sag springs and foam padding, while the deluxe seat uses a steel compression spring and shock absorber to provide "Float-Ride" suspension. The deluxe seat is also equipped with a flexibly-mounted padded backrest and semi-circular foam padding which surrounds the operator.

Use only warm water and mild soap to clean the seat cushions. NEVER USE SOLVENTS.

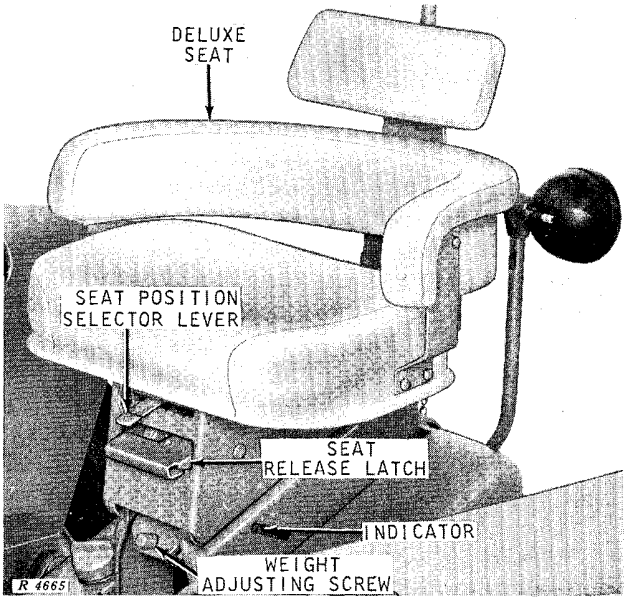
Moving seat to upper, rear position

To move the deluxe seat up and back, stand up and lift the seat release latch. The seat will move automatically to the upper, rear position. Sit down to return the seat to normal, preset operating position.

To move the regular seat out of the way for standing, lift the seat release latch and push the seat to the upper, rear position where it will latch. To return the seat to normal, preset operating position, lift the latch and allow the seat to move forward.

Adjusting for height of operator

The normal operating position of the seat can be suited to the height of the individual operator. To make this adjustment, first move the seat to the upper, rear position. Then shift the seat position selector lever between "short" and "tall" until the pedals and levers can be operated comfortably when you are seated. The seat will always return to this position when you sit down after having moved the seat up and to the rear for standing.

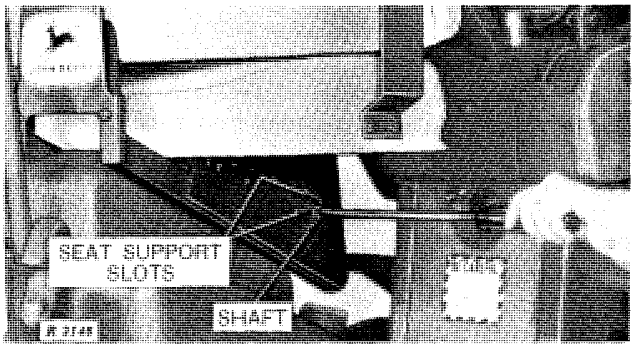


Seat Controls

Adjusting for weight of operator (deluxe seat)

You can adjust the tension of the steel compression spring of the deluxe seat to conform to your weight. This enables the seat to "float" when the tractor is driven over rough ground. To make this adjustment, turn the weight-adjusting screw clockwise or counter-clockwise until the indicator on the left-hand side of the seat conforms to your weight.

Adjusting counterbalance spring (deluxe seat)



Turning Counterbalance Shaft

If the deluxe seat does not move fully to the rear when unlatched, adjust the counterbalance spring as follows. Push the seat to the upper, rear position. Insert a screwdriver in the slot in the counterbalance shaft and push in on the screwdriver to unlatch the shaft. Turn the shaft counter-clockwise until seat action is satisfactory. Line up the latch across the end of the shaft with one of the pairs of slots in the side of the seat support and release pressure on the screwdriver.

Adjusting the back (regular seat)

The position of the back of the regular seat can be adjusted to suit the individual operator. To move the back up or down, remove the seat back attaching screws, and move the back to the desired position.

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.

Prestarting checks

(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 45.

(b) Check the radiator coolant level - see page 45.

(c) Change the air cleaner oil when the dirt level exceeds 3/8-inch - see page 45. If tractor has a precleaner, check the collector bowl - see page 45.

(d) If tractor has a fuel pump, check the sediment bowl - see page 46.

(e) Grease the Roll-O-Matic or wide front axle pivot pins and steering spindles - see page 46.

(f) Grease the front wheel bearings if the tractor has been operated in extremely wet or muddy conditions - see page 46.

Starting the diesel engine

NOTE: If the prevailing temperature is 40 degrees Fahrenheit or lower, it may be necessary to use a cold weather starting aid to start the engine (page 8).

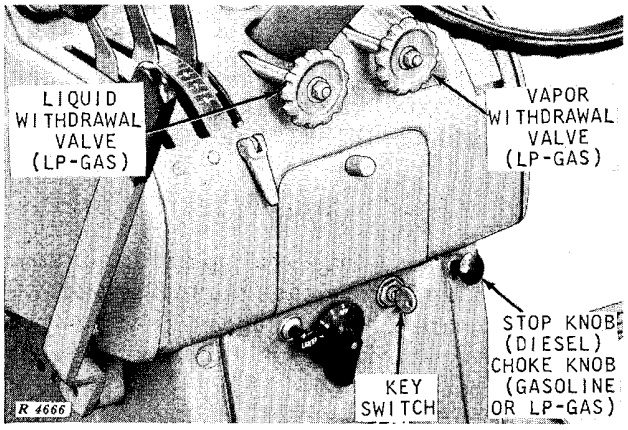
(2) Make sure the fuel shut-off valve on the bottom of the fuel tank is open - see page 52.

(3) See that the shift lever is in the "PARK" position. Depress the clutch pedal to decrease drag on the engine.

(4) PLACE THE HAND THROTTLE IN THE 1200 RPM POSITION, approximately one-third of its travel downward. Push the engine stop knob in.

(5) Turn the key switch clockwise to the first position. Both indicator lights should glow. If either light fails to glow, turn off the key switch and determine the cause.

(6) Turn the key switch all the way to the right to start the engine. Do not hold the key switch in start position for more than 30 seconds at a time. To do so may overheat the starter. If the engine does not start the first time, wait for a minute or two before trying again. If it does not start after four such attempts, refer to "Trouble Shooting" (page 70).



Starting Controls

If the key switch is released before the engine starts, wait until the starter stops before turning the switch again. This will prevent possible damage to the starter.

(7) After the engine starts, the generator and the oil pressure indicator lights should go out. If either light continues to glow when the engine is running faster than 800 rpm, stop the engine and determine the cause.

CAUTION: When engine is running, leave the key switch in the on position so that the indicator lights will function.

Starting the gasoline engine

(1) Perform the Prestarting checks on this page.

(2) Make sure the fuel shut-off valve on the bottom of the fuel tank is open - see page 52.

(3) See that the shift lever is in "PARK" position. Depress the clutch pedal to decrease drag on the engine.

(4) PLACE THE HAND THROTTLE IN THE 650 RPM POSITION, all the way up with the knob in.

(5) When the prevailing temperature is below 60 degrees Fahrenheit and the engine is cold, pull out on the engine choke knob.

NOTE: At extremely low temperatures it may be necessary to use a cold weather starting aid (page 8).

(6) Turn the key switch clockwise to the first position. The generator and oil pressure indicator lights should glow. If either light fails to glow, turn the key switch off and determine the cause.

(7) Turn the key switch all the way to the right to start the engine. Do not hold the key switch in start position for more than 30 seconds at a time. To do so may overheat the starter. If the engine does not start the first time, pull the hand throttle down SLIGHTLY and wait a minute or two before trying again. If it does not start after four such attempts, refer to "Trouble Shooting" (page 70).

If the key switch is released before the engine starts, wait until the starter stops before turning the switch again. This will prevent possible damage to the starter.

(8) As soon as the engine starts, push the choke knob in. During cold weather, it may be necessary to leave the choke partially on for the first few minutes.

(9) As the engine begins to run, check to see that the oil pressure and generator indicator lights go out. If either light continues to glow when the engine is running faster than 700 rpm, stop the engine and determine the cause.

Starting the LP-Gas engine

(1) Perform the Prestarting checks on page 6.

(2) See that the shift lever is in "PARK" position. Depress the clutch pedal to decrease drag on the engine.

(3) PLACE THE HAND THROTTLE IN THE 650 RPM POSITION, all the way up with the knob in.

(4) Open the vapor withdrawal valve slowly. If the valve is opened too fast, it may cause the excess flow valve (inside the withdrawal valve) to close and prevent normal flow of vapor. If this happens, close the vapor withdrawal valve and open it more slowly.

(5) Turn the key switch clockwise to the first position. The generator and oil pressure indicator lights should glow. If either light fails to glow, turn off the key switch and determine the cause.

(6) Turn the key switch all the way to the right to start the engine.

(7) In cold weather, if the engine does not start immediately, PLACE THE HAND THROTTLE IN THE 500 RPM POSITION (page 9). While the starter is cranking the engine, pull the choke knob out slowly until the engine fires regularly. Leave the choke in this position and slowly advance the hand throttle. Gradually push the choke knob in. DO NOT OVER-CHOKE.

NOTE: At low temperatures, it may be necessary to use a cold weather starting aid (page 8).

Do not hold the key switch in the start position for more than 30 seconds at a time. To do so may overheat the starter. If the engine does not start the first time, wait for a minute or two before trying again to allow the starter to cool. If the engine does not start after four such attempts, refer to "Trouble Shooting" (page 70).

If the key switch is released before the engine starts, wait until the starter stops before turning the switch again. This will prevent possible damage to the starter.

(8) As the engine begins to run, check to see that the oil pressure indicator light and generator indicator light go out. If either light continues to glow when the engine is running faster than 700 rpm, stop the engine and determine the cause.

(9) Operate the engine on vapor until the cooling system is warm. Then slowly open the liquid withdrawal valve and close the vapor valve. Opening the liquid withdrawal valve too fast may cause the excess flow valve to close and prevent normal flow of liquid. If this happens, close the withdrawal valve and open it more slowly.

R 2206

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

Cold weather starting aids

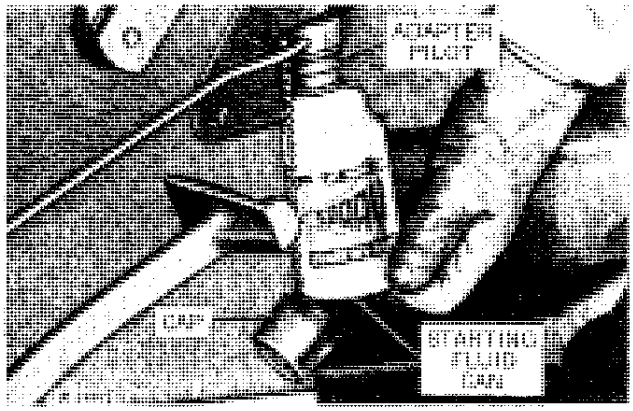
For cold weather starting, the diesel tractor is equipped with an ether starting fluid adapter. Other starting aids are available from your John Deere dealer for diesel, gasoline, or LP-Gas tractors.

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 heavy viscosity, and high electrical resistance which may prevent the engine from starting.

Ether starting fluid adapter (diesel tractors)

The diesel tractor is equipped with this adapter which is used to inject atomized starting fluid into the engine air intake system. Pressurized cans of starting fluid are available from your John Deere dealer.

To use the can of 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.



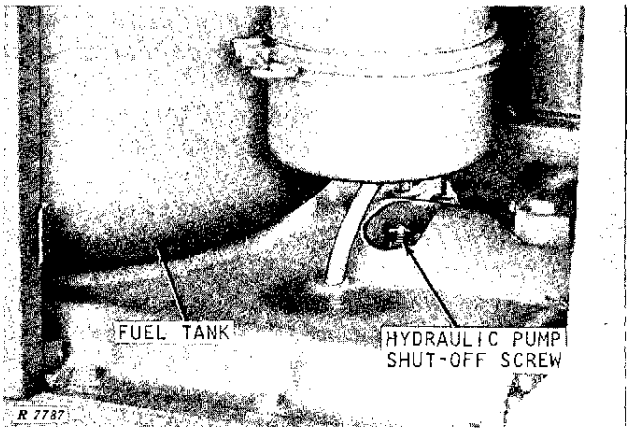
Injecting Starting Fluid

To inject starting fluid, push up on the can WHILE OPERATING THE STARTER. Relax pressure on the can between "shots" of starting fluid. Stop injecting the fluid after the engine starts. If the engine begins to die during the first few minutes of operation, inject another "shot" of starting fluid. When the engine is operating satisfactorily, remove the can from the adapter and replace the safety cap on the can.

Be sure to install the cap on the adapter when it is not in use. This will prevent dust from being drawn into the engine.

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

Shutting off hydraulic pump



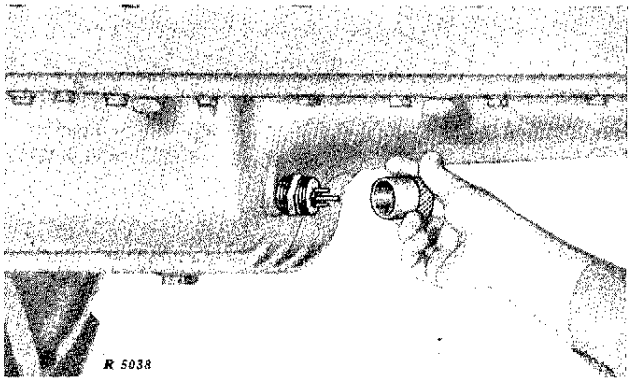
Hydraulic Pump Shut-Off Screw

During cold weather the starter speed may be increased by shutting off the hydraulic pump. To do so, turn the shut-off screw in one turn with a screwdriver. Then turn the screw in by hand until resistance is felt. With a screwdriver, turn the screw in one more turn. On some tractors, the shut-off screw may be on the bottom of the hydraulic pump.

After the engine has started, use a screwdriver to back the shut-off screw all the way out (turn the screw counter-clockwise). The pump will now build up pressure.

NOTE: Oil will leak past the shut-off screw if it is not backed all the way out against the internal stop.

Crankcase oil heater



Removing Cap from Crankcase Oil Heater

To facilitate cold weather starting, a 240-watt, 115-volt electrical crankcase oil heater may be installed in the engine oil pan. To remove the electrical connector from the heater, press the release lever in the connector.

Additional batteries

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

Use jumper cables to connect the positive (+) terminals of the booster batteries to the positive (+) terminals of the tractor batteries and the negative (-) terminals of the booster batteries to the negative (-) terminals of the tractor batteries. See your John Deere dealer for tractor-mounted booster batteries.

Battery warmer

This warmer is used to warm the battery, permitting it to furnish electrical current to the starter efficiently in cold weather.

Place the battery warmer under the battery in the battery compartment and plug the cord from the warmer into any convenient 115-volt electrical source. If it was necessary to disconnect the battery, be sure to connect the battery cables properly (page 62).

Tractor warm-up period

Always be sure the tractor is warmed up properly before operating under a full load.

A good way to do this is first to idle the engine at about 1500 rpm for 5 minutes and then operate it at about 1900 rpm for another 5 minutes.

It is good practice to operate the tractor for the first 30 minutes in a lower gear than is normally required for the load. This gives the oil a chance to circulate freely and prevents undue wear on engine or transmission parts.

Engine idling

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

When the tractor is to remain idle for a considerable length of time, stop the engine.

Engine speeds

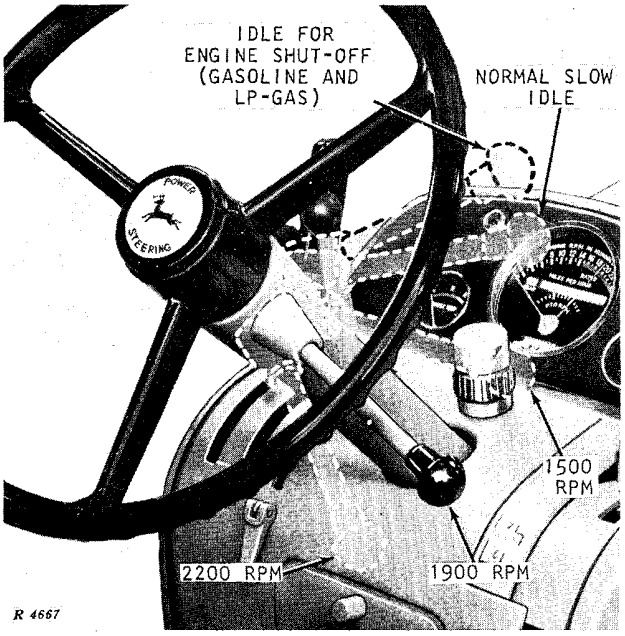
The tractor engine is designed to operate at working speeds ranging from 1500 to 2200 rpm. The engine can be operated at any speed in the working range to meet various operating conditions. Operate the engine at 1900 rpm to obtain the SAE rated PTO speeds.

Normal slow idle is approximately 600 rpm. On a gasoline tractor, a 420 rpm idle speed is provided for engine shut-off. The engine shut-off idle speed is 500 rpm on an LP-Gas tractor.

In addition, engine speeds may be varied up to 2500 rpm to save you time when traveling on highways or on smooth-surfaced roads.

To check engine speeds, see page 49.

Using hand throttle



Range of Hand Throttle Positions

Use the hand throttle to select slow idle or any of the variable governed speeds from 1500 to 2200 rpm.

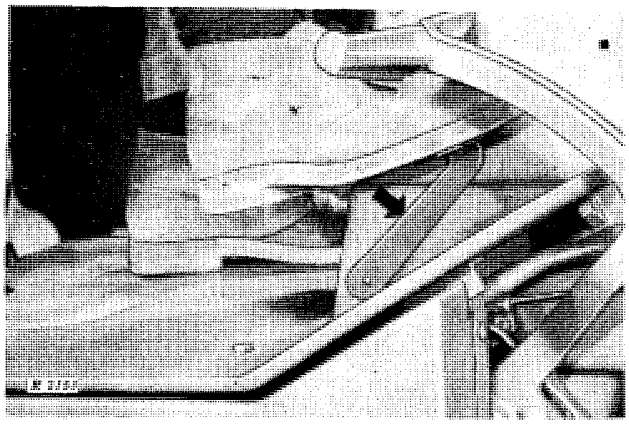
Push the throttle upward as far as it will go to obtain the normal slow idle speed (600 rpm for diesel tractors and 650 rpm for gasoline or LP-Gas tractors). To obtain the idle speed for engine shut-off on gasoline or LP-Gas tractors, pull out on the knob on the hand throttle and push the throttle upward as far as it will go. To obtain 1900 rpm load speed, pull the throttle downward to the first stop. Placing the throttle halfway between slow idle and 1900 rpm gives the 1500 rpm speed. Engine speeds between 1500 and 1900 rpm may be selected by moving the lever between these two positions.

To obtain working speeds above 1900 rpm, pull out on the knob at the end of the hand throttle. With the knob pulled out, pull the throttle downward as far as it will go. This is the 2200 rpm position. Engine speeds between 1900 and 2200 rpm may be selected by moving the lever between these two positions.

Using foot throttle

The foot throttle is used to obtain engine transport speeds or to raise engine speed momentarily. When the foot throttle is pushed all the way downward, the engine operates at 2500 rpm.

NOTE: The foot throttle should not be used to increase the normal engine working speed.



Operating the Foot Throttle

Stopping the engine

Place the shift lever in "PARK" and allow the engine to idle a few minutes. Sudden stopping of a hot engine may allow some parts to overheat momentarily and cause possible damage.

Diesel engines

With the hand throttle in the 600 rpm position, pull out the stop knob to stop the engine.

Gasoline engines

Pull out on the hand throttle knob and push the throttle up into the idle position for engine shut-off. Stop the engine by turning the key switch off.

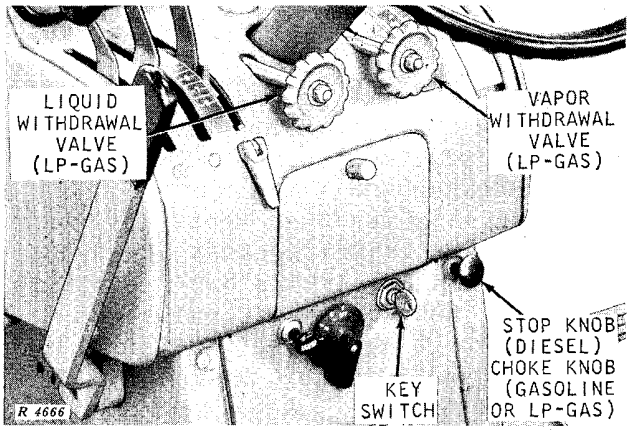
LP-Gas engines

Close withdrawal valves and run engine until fuel is exhausted and engine stops. Turn the key switch off.

CAUTION: NEVER leave liquid fuel in the lines with the withdrawal valves closed. To do so can damage the fuel system. Never leave the tractor with the valves open.

After stopping the engine, remove the key from the switch to prevent tampering and unauthorized operation. Removing the key also prevents battery discharge in the event that the switch was accidently left in the on or the accessory position (counter-clockwise from off).

A hook for a spare key is provided in the service card compartment.



Stopping Controls

Breaking in the engine

To break in the engine properly, operate it with the hand throttle in the 1900 rpm position and at half load during the first 20 hours of service. With the throttle in this position, the engine speed at half load will be approximately 2050 rpm for diesel engines or 2100 rpm for gasoline or LP-Gas engines. Do not use the foot throttle during the engine break-in period.

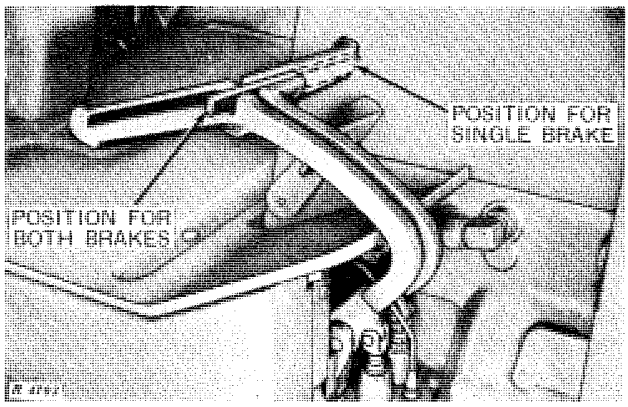
After 20 hours, drain the special engine breaking-in oil and replace the engine oil filter. Fill the crankcase with the proper oil. Your tractor is then ready for normal operation.

NOTE: If the water temperature rises above the "N" range, shift to a lower gear to reduce the load.

Power steering and brakes

The tractor is equipped with full hydraulic power steering and power brakes so that a minimum of effort will operate the tractor.

To assist in making sharp turns, apply the brakes individually or, to stop the tractor, apply both brakes simultaneously. When traveling at high speeds, couple the pedals together as shown and use a light pressure on the pedals.



Brake Pedals Coupled Together

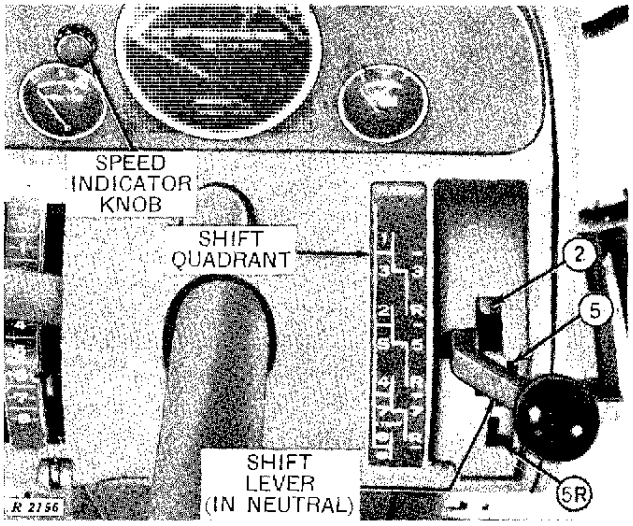
Selecting ground speed

The tractor has 8 forward speeds and 3 reverse speeds for each of the throttle positions that may be used. These combinations enable the operator to balance speed and power for maximum economy and allow him flexibility to meet varying working conditions. For example, for a given ground speed the operator may choose to work in a low gear at high engine speed for maximum reserve power or in a higher gear at a lower engine speed for maximum fuel economy.

Examples of the ground speeds at which the tractor will travel are shown below. Engine working speeds may be varied between 1500 rpm and 2200 rpm, and engine transport speeds may be varied up to 2500 rpm. Tractor ground speeds shown in the chart are only for engine speeds of 1500, 1900, 2200, and 2500 rpm.

Gates in the shift quadrant permit selection of the proper gear for the work to be done, as shown in the illustration. Turn the speed indicator knob on the instrument panel so that the speed-hour meter will show the correct tractor ground speed in miles per hour for the gear selected.

Avoid overloading the tractor. If the indicator hand drops below the engine speed established by the position of the hand throttle, the tractor is overloaded. When this occurs, shift to a lower gear. Overloading causes undue strain on parts, eventually resulting in poor operation and unnecessary repair expense.



Shift Lever, Shift Quadrant, and Speed Indicator Knob

Shifting between stations

The shift quadrant has four shift stations. Stations No. 1, 2, and 3 have two forward speeds and one reverse speed. Station No. 4 has two forward speeds only. See page 12.

With the tractor stopped and the clutch pedal depressed, move the shift lever to a neutral position at the left side of the quadrant. Then move the shift lever to the station that has the desired speed. Move the lever to the right and into the speed desired.

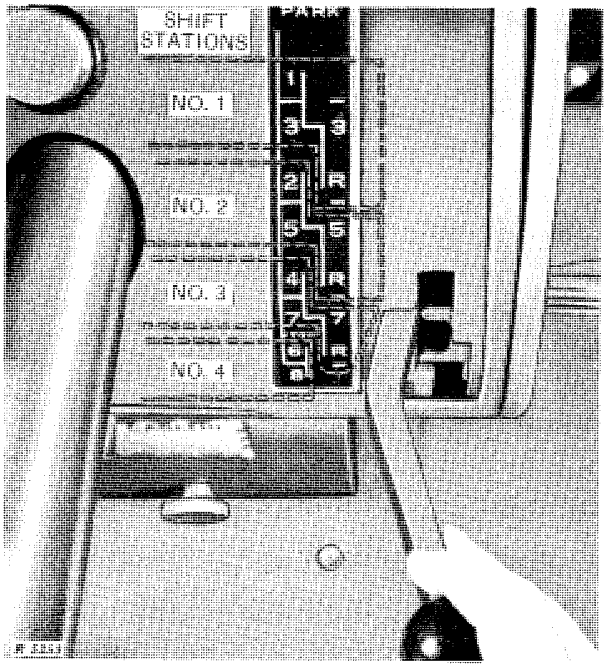
Gradually release the clutch pedal to take up the load smoothly.

TRACTOR GROUND SPEEDS

NOTE: The ground speeds shown in this chart are for a tractor equipped with 15.5-38 rear tires with a loaded radius of 28-1/2 inches.

Gear	Hand throttle operating range			Maximum foot throttle speed
	1500 rpm	* 1900 rpm	2200 rpm	2500 rpm
1st	1-1/4 mph	1-1/2 mph	1-3/4 mph	2 mph
2nd	2 mph	2-1/2 mph	2-3/4 mph	3-1/4 mph
3rd	2-1/2 mph	3-1/4 mph	3-3/4 mph	4-1/4 mph
4th	3-1/4 mph	4-1/4 mph	4-3/4 mph	5-1/2 mph
5th	4 mph	5-1/4 mph	6 mph	6-3/4 mph
6th	5-1/4 mph	6-3/4 mph	7-3/4 mph	9 mph
7th	7 mph	8-3/4 mph	10 mph	11-1/2 mph
8th	11-1/4 mph	14-1/4 mph	16-1/2 mph	18-3/4 mph
3rd reverse	2-1/2 mph	3-1/4 mph	. . . . .	. . . . .
5th reverse	4 mph	5 mph	. . . . .	. . . . .
7th reverse	6-3/4 mph	8-1/2 mph	. . . . .	. . . . .

**1900 rpm engine speed gives 540 or 1000 rpm PTO speed which is the proper PTO speed for most implements. Some PTO-driven implements are operated at other engine speeds. For detailed instructions, see the implement operator's manual.*



Shift Quadrant with Shift Lever in "TOW" Position

Shifting within stations

With the clutch pedal depressed, the transmission can be shifted from one forward speed to the other forward speed within the same station while the tractor is in motion. For instance, you can shift between 1st and 3rd gears, 2nd and 5th gears, 4th and 7th gears, and 6th and 8th gears without stopping the tractor.

You can also shift from a forward speed to the reverse speed within the same station without stopping the tractor. However, to avoid injury and damage to the tractor, do so only at slow ground speed.

Gradually release the clutch pedal to engage the clutch.

Parking the tractor

Shifting into "PARK"

When the tractor is stopped for parking, for holding it on an incline, or for holding it during PTO or belt work, move the shift lever as far as it will go forward from neutral to the "PARK" position.

Be sure the tractor is stopped before placing the shift lever in "PARK" position.

Shifting from "PARK"

Unless the tractor is parked on a steep incline, simply move the shift lever rearward to the station desired. When the tractor is parked on a steep incline, it may be necessary to do the following to relieve load on the transmission park lock. Depress the clutch pedal and pull the shift lever back against spring pressure into the No. 1 shift station. Then shift into a forward or reverse gear that will move the tractor UP THE INCLINE. VERY SLOWLY engage the clutch and the transmission will shift out of "PARK."

Towing the tractor

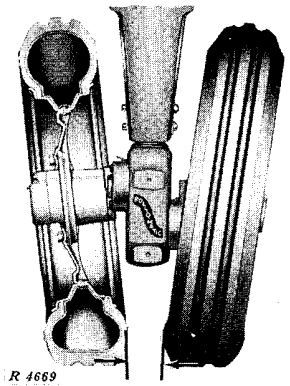
The shift quadrant on your tractor also has a "TOW" position. Whenever the tractor is to be towed, move the shift lever to this position.

CAUTION: Never tow the tractor at high speed. Always attach a tow bar or chain to the tractor frame.

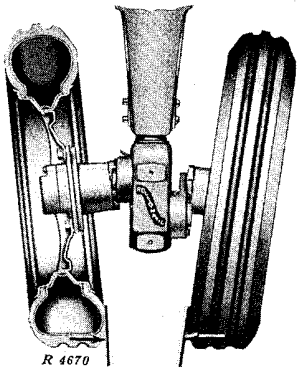
Front wheel tread

Double front wheels

The double front wheel tread may be set at the narrow spacing or at the wide spacing by reversing the dish of the front wheels.



Double Front Wheels at Narrow Spacing



Double Front Wheels at Wide Spacing

For ease in steering and clearance for front-mounted implements, dish the wheels inward as shown in the illustration. For listed crops where the front wheels are operated on a ridge or for muddy operating conditions where mud has a tendency to "ball up" between the wheels, set the wheels to the wide spacing.

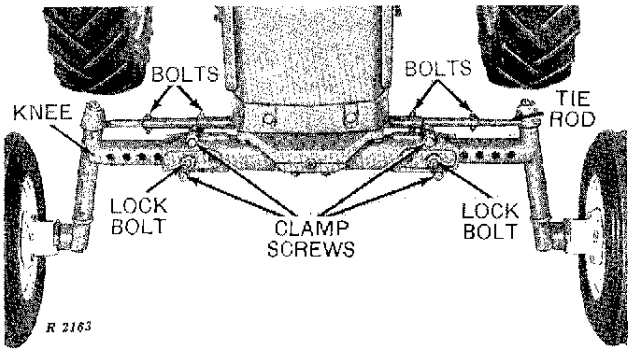
To change the double front wheel spacing, unbolt the wheels from the hubs, reverse the wheels and install them.

Wide front axles

Adjustable-tread front axle

The adjustable-tread front axle is adjustable in 2-inch steps. The following table lists the tread ranges available. For instructions on reversing the wheel "dish," see page 12.

Tractor and tire	Wheels dished in	Wheels dished out
Row-crop:		
6.00-16	48-1/2" to 72-1/2"	58-1/4" to 82-1/4"
7.50-15	50-3/4" to 74-3/4"	55-7/8" to 79-7/8"
Standard	50" to 74"	55-1/4" to 79-1/4"



Front Wheel Tread Adjustment (Row-Crop Tractor Illustrated)

To adjust the tread width, jack up the front end of the tractor.

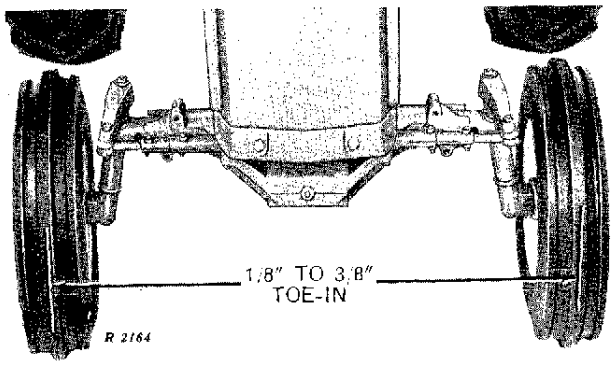
CAUTION: Do not place jack under engine oil pan.

Loosen the clamp screws and remove the lock bolts from the front axle housing. Remove the bolts from the tie rods and move the front axle knees in or out to give the desired tread width. Install the bolts in the tie rods and axle housing. Tighten the clamp screws securely (to 300 foot-pounds torque). Coat unpainted surfaces with rust preventive or heavy grease. Check toe-in.

Fixed-tread front axle (Standard tractor)

The front wheel tread width on a standard tractor with fixed-tread front axle is 55-1/2 inches with the wheels "dished" inward. When the wheels are dished outward, the tread width is 60-3/4 inches. For instructions on reversing the wheel "dish," see page 12.

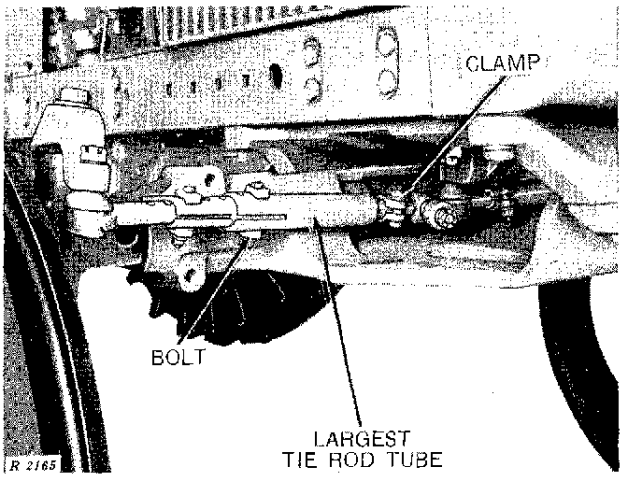
Toe-in adjustment



Correct Toe-in (Standard Tractor Illustrated)

Toe-in of the front wheels on a tractor with wide front axle should be 1/8 to 3/8 inch.

To check toe-in, turn the steering wheel until the front wheels point straight ahead, parallel to the center line of the tractor. Measure the distance from tire to tire, first at the front of the tires and then at the rear. Front measurement should be 1/8 to 3/8 inch less than rear measurement.



Toe-in Adjustment (Standard Tractor Illustrated)

To adjust toe-in on adjustable tread axles, remove the bolts from the largest tie rod tubes and loosen the clamps on the inner end of the tie rods. On fixed tread axles, loosen the tie rod clamps.

Turn the tie rod tubes in or out until toe-in is correct. Replace the bolts and tighten the clamps. Do not overtighten the clamps. Both wheels must have equal toe-in.

Rear wheel tread

Regular and offset wheels

Range of adjustment

The tread ranges listed in the following charts are obtained by moving the wheel on the axle by the rack and pinion, by reversing the wheel on the axle, or by changing the rim position on the wheel.

ROW-CROP TRACTORS

Wheel type	Axle type	Possible tread widths
Regular	Regular	60" to 91"
	Long	66" to 97"
	Extra Long	67" to 105"
Offset	Regular	60" to 97"
	Long	60" to 103"
	Extra Long	60" to 111"

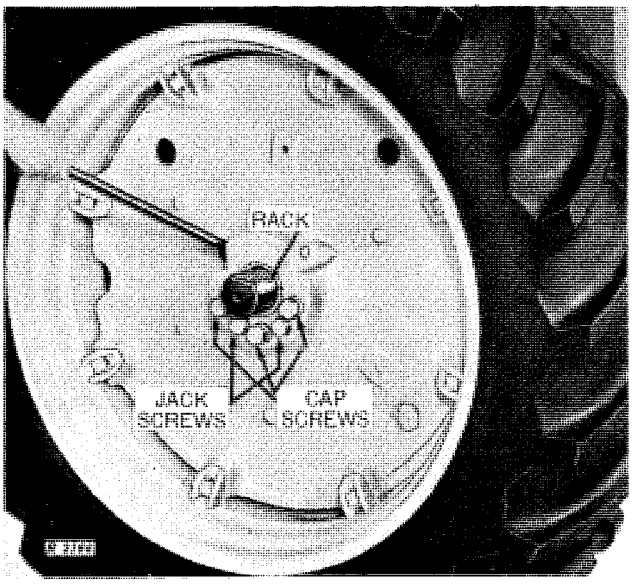
STANDARD TRACTORS

Rim type	Axle type	Possible tread widths
Double Rim Ring	Regular	63" to 91"
	Long	66" to 97"
Deep Well	Regular	66" to 96"
	Long	66" to 102"

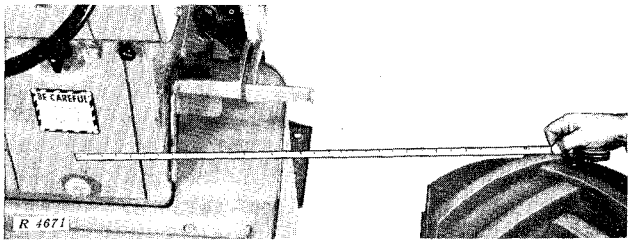
Rack and pinion method

This method of rear wheel tread adjustment is accomplished by turning a pinion gear in the wheel hub. The pinion engages a rack on the axle to move the wheel in or out on the axle.

The rack and pinion adjustment may be made with up to two wheel weights installed. Additional weights will interfere with turning of the pinion.



Rack and Pinion Adjustment



Measuring Distance from Center of Tractor to Center of Tire

Rotate the wheel until the rack on the axle is up. Loosen the three cap screws 1/4 to 3/8 inch. To loosen the tapered sleeve, turn the two jack screws clockwise until the outer groove in each screw is flush with the wheel hub surface.

Jack up the tractor and turn the pinion gear to slide the wheel in or out on the axle. Measure the distance from the center of the tractor to be sure the rear wheels are correctly spaced.

After the desired tread is obtained, back out the jack screws until the inner groove of each jack screw is flush with the face of the hub. Lubricate cap screw threads and tighten cap screws securely (300 foot-pounds torque).

CAUTION: Adjusting the wheel too close to the rear axle housing may damage the pinion when the hub is tightened. Also, be sure that the tire or weights will not rub the tractor. The jack screws must be free to turn after the hub is tightened.

Adjust the other wheel in the same manner. Normally, both wheels are set the same distance from the tractor center line. After a few hours of service, RETIGHTEN cap screws and keep them tight.

Reversing wheel on the axle

On tractors with offset wheels or wheels for deep well rims, the rear wheel tread may be changed by reversing the "dish" of the wheel.

To change the wheel "dish," jack up the tractor and move the wheel outward. See "Rack and pinion method." Remove the wheel and tire, reverse the "dish," and install the wheel on the axle. To maintain proper direction of tire rotation, it will be necessary to install the wheel and tire on the other axle.

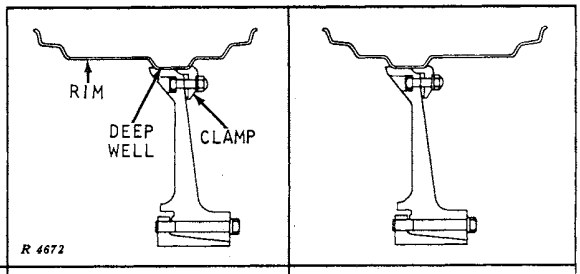
Changing rim position on wheel

The rim is held to the wheel by clamps that engage a raised ring or deep well around the inside of the rim. Tread adjustment may be accomplished by changing the rim position on the wheel.

On rims that have a double rim ring, the clamps may be bolted to either side of the wheel

and can engage either one of the two raised rings on the rim. This gives four possible rim positions on the wheel as shown.

On deep well rims (23.1-26 tires), the clamps are bolted to only one side of the wheel and engage the offset deep well of the rim. Two possible rim positions are obtained by reversing the rim on the wheel as illustrated. It may be necessary to install the tire and rim on the other wheel to obtain proper direction of tire rotation.



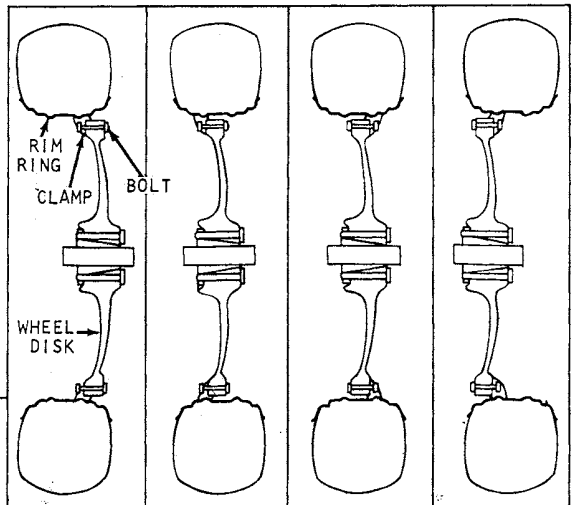
REGULAR AXLE	REGULAR WHEEL POSITION	66"-71"	71"-87"
	WHEEL REVERSED	68"-80"	84"-96"
LONG AXLE	REGULAR WHEEL POSITION	66"-77"	77"-93"
	WHEEL REVERSED	74"-86"	90"-102"

Tread Chart for Tractors with Deep Well Rims

To change the position of the rim on the wheel, jack up the tractor until there is little or no weight on the tire. Remove the rim clamps and shift the rim or wheel to the desired position. Install the clamps and tighten evenly.

Hammer each bolt head to seat the bolts. Retighten the clamps securely. Adjust both rear wheels in the same manner.

After a few hours service, RETIGHTEN the clamps.



WHEEL TYPE	AXLE TYPE	DISK POSITION				
REGULAR WHEEL	REGULAR AXLE	.....	*60"-76"	68"-84"	67"-83"	75"-91"
	LONG AXLE	.....	66"-82"	74"-90"	72"-89"	80"-97"
	EXTRA LONG AXLE	.....	67"-91"	75"-98"	73"-97"	81"-105"
OFFSET WHEEL	REGULAR AXLE	DISH IN	60"-70"	62"-78"	61"-77"	69"-85"
		DISH OUT	71"-82"	79"-90"	78"-89"	86"-97"
	LONG AXLE	DISH IN	60"-76"	67"-84"	66"-83"	74"-91"
		DISH OUT	76"-88"	84"-96"	83"-95"	91"-103"
	EXTRA LONG AXLE	DISH IN	60"-84"	68"-92"	67"-91"	75"-99"
		DISH OUT	77"-96"	85"-104"	84"-103"	92"-111"

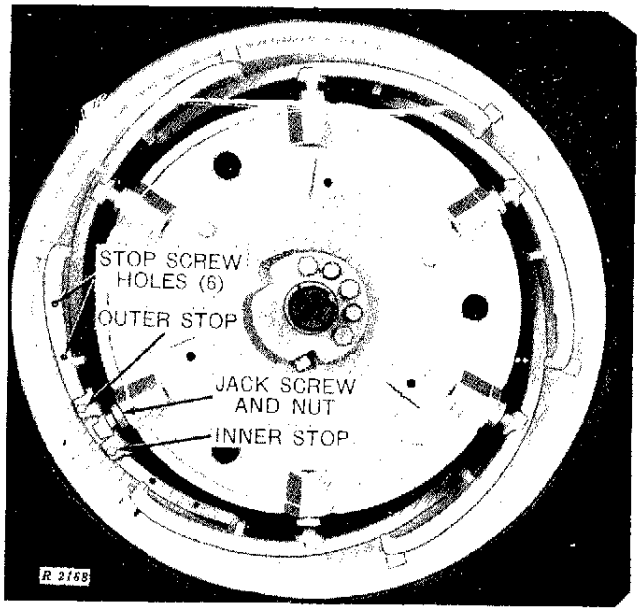
R 4673 *MINIMUM TREAD ON STANDARD TRACTOR IS 63 INCHES

Tread Chart for Tractors with Regular Rims (Double-Bevel)

Power adjusted wheels
(Row-Crop Tractors only)

Power-adjusted wheels use engine power to change rear wheel tread without jacking up the tractor. 24 inches of tread adjustment in 4-inch increments is obtained by power adjustment. Additional tread adjustment may be made by shifting the hub on the axle with the rack and pinion (page 14). Possible tread widths are as follows:

Wheel type	Axle type	Possible tread widths
Power-adjusted	Regular	60" to 97"
Power-adjusted	Long	63" to 104"
Power-adjusted	Extra long	64" to 112"



Power-Adjusted Rear Wheel

NOTE: When decreasing the tread, make sure tire will not contact fender.

To change tread, one wheel at a time, remove set screw and move stop to desired hole in rail.

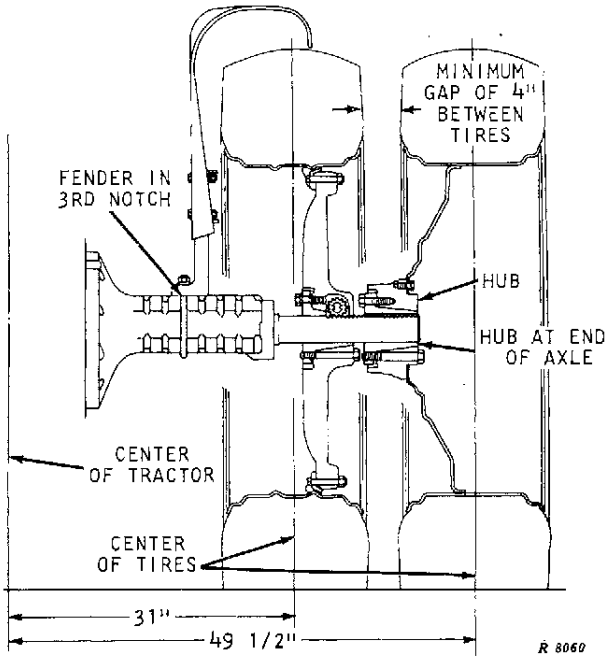
Loosen the three uppermost adjacent jack screws, shift to lowest speed gear of proper direction and apply brake for opposite wheel. Slowly engage clutch to rotate wheel disk until jack screw contacts stop. Move stop to hole in rail against jack screw and install set screw. *NOTE: When adjusting to either extreme position, only one stop is used.*

Tighten the three loosened jack screw nuts to 250 foot-pounds torque (160-pound pull at hole in special wrench). Do not lubricate jack screw nuts. Adjust other wheel in same manner.

After a few hours service, RETIGHTEN jack screw nuts. It is very important to keep rim centered around wheel disk.

Dual wheels
(Row-Crop Tractors only)

A row-crop tractor can be equipped with dual rear wheels. The inner wheel (regular or heavy-duty) may have 13.6-38 or 15.5-38 tires. The outer steel rim and disk wheels have 13.6-38 tires and are bolted to a cast hub on the axle.



Dual Wheels

Position each fender and dual wheel as shown, with outer dual hub at end of axle; never beyond end of axle. With proper rear wheel treads the gap between the tires will be 4 inches with a 15.5-38 inner tire or 5 inches with a 13.6-38 inner tire. Insufficient gap may damage tires.

On tractors with axles measuring 86-5/8 inches from end to end, set fender in 2nd notch and set tire treads to 59 inches and 96 inches.

It is very important that inner wheel rim clamp nuts and hub cap screws be securely tightened because outer wheel must be removed to retighten them. Tighten the outer steel wheel retaining bolts to 80 foot-pounds torque.

CAUTION: NEVER operate tractor with a loose wheel, rim, or hub.

Tires

Properly inflated tires are important to the operation of your tractor. The amount of air pressure to be carried in the front and rear tires depends upon the implement used with the tractor and the amount of ballast employed.

Keep the tires inflated according to the recommendations shown below. Under-inflated tires break and wear out rapidly. Over-inflated tires reduce traction and increase wheel slippage.

INFLATION CHARTS

Front tires			
Tire size	Ply	Inflation pressure	
		With towed or rear-mounted implement	With front-mounted implement
6.00-16	6	36 lbs.	48 lbs.
7.50-15	6	28 lbs.	36 lbs.
7.50-16	10	48 lbs.	60 lbs.
7.50-18	6	28 lbs.	36 lbs.
11.00-12	12	36 lbs.	56 lbs.

Rear tires			
Tire size	Ply	Inflation pressure	
		With little or no added ballast	With max. ballast or heavy rear-mounted implement
13.6-38	6	16 lbs.	20 lbs.
15.5-38	6	14 lbs.	18 lbs.
16.9-34	6	16 lbs.	16 lbs.
18.4-30	6	16 lbs.	16 lbs.
18.4-34	6	16 lbs.	16 lbs.
23.1-26	8	16 lbs.	16 lbs.
23.1-26	8 (Low profile)	12 lbs.	16 lbs.

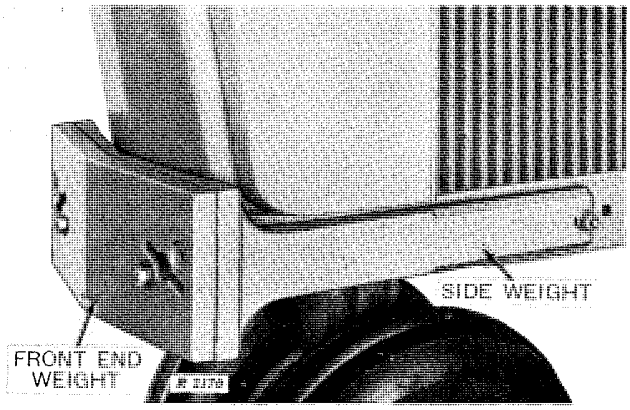
NOTE: For maximum ballast per rear wheel, see page 18.

Ballast

The performance of your tractor can be improved under certain conditions by adding or reducing the ballast at the front end or at the rear wheels.

Front end and side weights

When operating with a heavy rear-mounted implement or when operating on hilly terrain, install front end and side weights for adequate stability.



Front End and Side Weight Installed

Two side weights, and up to eight front end weights may be added. Each of the weights, available from your John Deere dealer, weighs 85 pounds.

The side weights are installed first. The front end weights stack on the front portions of the two side weights. Rotate each weight 180 degrees with respect to the preceding weight to line up the mounting holes.

Front end ballast cannot always maintain the required stability if the tractor is driven too fast over rough ground with heavy rear-mounted tools in the raised position. Play safe and drive slowly under these conditions.

Rear wheel weights

Power can be wasted and tire life cut drastically by excessive rear wheel slippage. Wheel slippage can be reduced to a minimum by weighting the rear wheels with a liquid solution in the tires or with cast-iron wheel weights.

Ballast should not be added to the point where all wheel slippage is eliminated. To do so will hinder maximum performance of the engine. The ideal amount of ballast is enough so that the soil between the tire lugs is broken or shifted when the tractor is pulling its rated load. When too much weight is used, the tread marks will be clear and distinct. When too little weight is used, the tread marks will be entirely obliterated.

Liquid weight

Water and calcium chloride solution is an economical means of adding weight to the rear wheels. This solution, added in the tire inner tubes, will not damage the inner tube or tire if used in the proper proportions. The addition of calcium chloride is recommended to prevent the water from freezing.

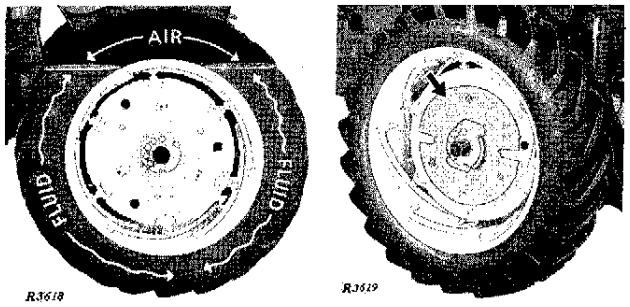
Use of this method of weighting the rear wheels has the full approval of the tire compan-

ies. See your John Deere dealer for this service. The following chart lists the liquid weight each tire will hold when 75 percent full (filled to valve level).

LIQUID WEIGHT PER TIRE
(75 PER CENT FILLED)

Tire size	Water only	Slush-free at 13° F.; solid at -23° F. (Approx. 2 lbs. $CaCl_2$ per gal. water)	Slush-free at -12° F.; solid at -52° F. (Approx. 3.5 lbs. $CaCl_2$ per gal. water)
13.6-38	427 lbs.*	480 lbs.*	520 lbs.*
15.5-38	558 lbs.*	611 lbs.*	646 lbs.*
16.9-34	592 lbs.*	672 lbs.*	722 lbs.*
18.4-30	705 lbs.*	800 lbs.*	859 lbs.*
18.4-34	769 lbs.*	874 lbs.*	936 lbs.*
23.1-26	1060 lbs.*	1205 lbs.*	1290 lbs.*

**See maximum ballast with integral equipment.*



Liquid Weight *Cast-iron Weight*

Cast-iron weights

Cast-iron weights should be bolted to the rear wheels of your tractor when weight is required in addition to or in place of liquid weight. On standard tractors, three weights may be installed on the inside of the rear wheel disk.

The removable weights are available from your John Deere dealer in two sizes—120 pounds and 140 pounds. The small weights are used next to the wheel on tractors with 26 or 30-inch rims where interference may exist between the weight and the rim. The larger weights are used on tractors with 34 or 38-inch rims or as additional weights where no interference exists between the weight and the rim.

When plowing, best results are generally obtained by placing more weight on the land wheel than on the furrow wheel.

Maximum ballast

When maximum ballast is added, adjust tire pressures as shown in the charts on page 17. The maximum ballast that may be added with safety to each rear wheel is shown below:

MAXIMUM BALLAST PER REAR WHEEL

Tractors	With integral implement	With towed implement
Row-Crop	350 lbs.	950 lbs.
Standard	800 lbs.	1600 lbs.

If excessive tire slippage occurs with integral implements, weight up to that specified for towed implements can be added to reduce tire slippage to an acceptable amount in 3rd speed or faster. Be sure to remove additional weight when it is no longer required.

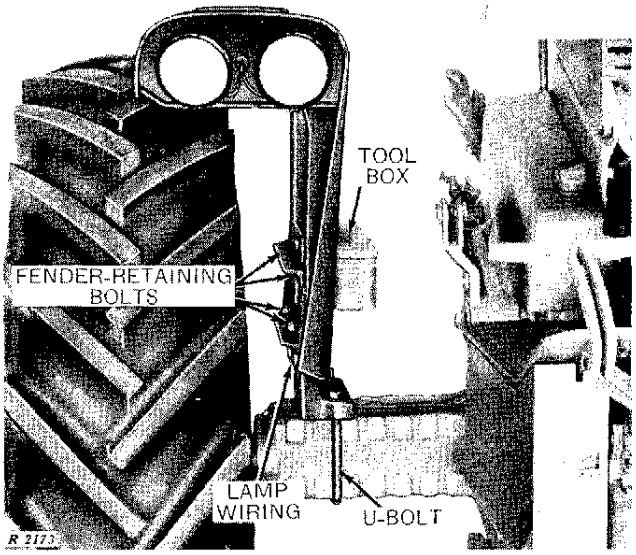
Fenders

The fenders may be moved in or out on the rear axle housing. Fenders with built-in dual headlights may also be moved up or down.

To move the fenders in or out along the axle housing, remove the U-bolts. Move each fender and U-bolt to the new position, install the U-bolt, and tighten the retaining nuts securely.

To adjust the height of a fender with dual headlights, remove the fender-retaining bolts. Then slide the fender up or down on the support. When the fender is in the desired position replace the tool box and install and tighten the four fender-retaining bolts.

NOTE: When moving the fenders, be careful not to damage the lamp wiring.



Fender Adjustment (Row-Crop Tractor Illustrated)

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

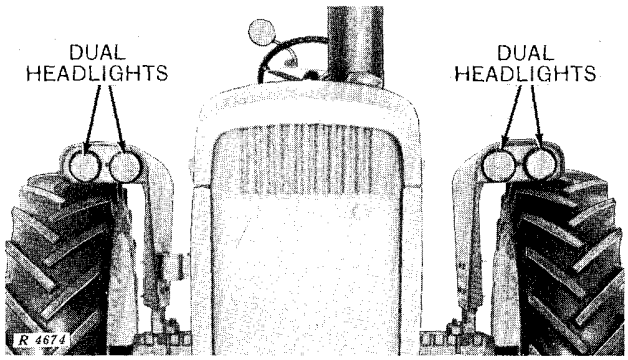
Lights

The lights on your tractor are designed to give the maximum amount of safety and convenience when operating at night or during other periods of low visibility.

Headlights

A row-crop tractor without fenders or a standard tractor is equipped with two side-mounted, sealed-beam headlights. One headlight is attached to each bracket extending to either side of the tractor.

Fenders with dual sealed-beam headlights are available for row-crop tractors. The two inner lamps throw strong beams ahead of the tractor. The outer flood lamps illuminate the ground on both sides as well as ahead of the tractor.



Fenders with Built-in Dual Headlights

Taillight

The combination red-white taillight is mounted on a mast behind the seat. It illuminates implements at the rear of the tractor or glows red for night highway travel.

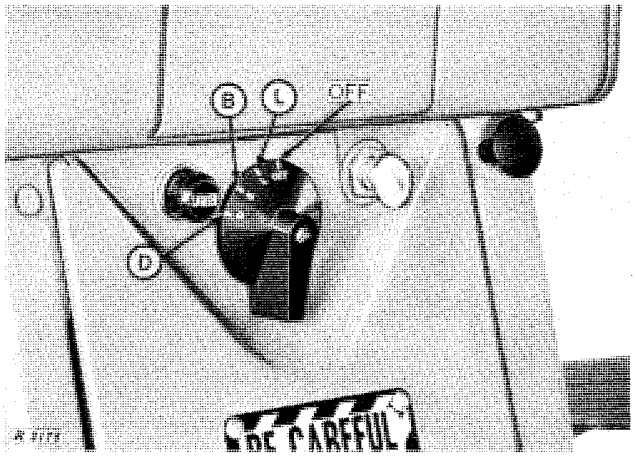
Dash lamp

The dash lamp, which has an adjustable opening illuminates the tractor instrument panel.

Light switch

When the key switch is turned clockwise to the "ON" position, or counter-clockwise to the accessory position (gasoline and LP-Gas tractors only), the light switch will turn on all tractor lights. The switch has four positions.

On a row-crop or standard tractor equipped with two sealed-beam headlights, use the four switch positions as follows:



Light Switch

"OFF" - To turn off all lights.

"L" - To turn on bright headlights and white taillight.

"B" - To turn on bright headlights, red taillight, and red-amber tractor warning lamp (optional).

"D" - To dim the headlights with red taillight and red-amber tractor warning lamp (optional) turned on.

On a row-crop tractor equipped with four sealed-beam headlights (two in each fender), use the four switch positions as follows:

"OFF" - To turn off all lights.

"L" - To turn on all four headlights and white taillight.

"B" - To turn on all four headlights, red taillight, and red-amber tractor warning lamp (optional).

"D" - To dim the headlights, by turning off the inner headlights. The outer headlights, red taillight, and red-amber tractor warning lamp (optional) are turned on.

The dash lamp is turned on when the light switch is placed in any of the three operating positions.

Adjusting the headlights

The headlights on your tractor should be adjusted to illuminate the desired working area at the front and sides of the tractor.

When driving on the highway at night, readjust the headlights sufficiently downward so that they will not blind the driver of an oncoming vehicle.