JOHN DEERE
5020
ROW CROP AND
STANDARD TRACTORS

JOHN DEERE

OPERATORS MANUAL

JOHN DEERE 5020 ROW CROP AND
STANDARD TRACTORS

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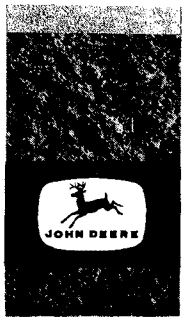
ENGLISH



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 new tractor.

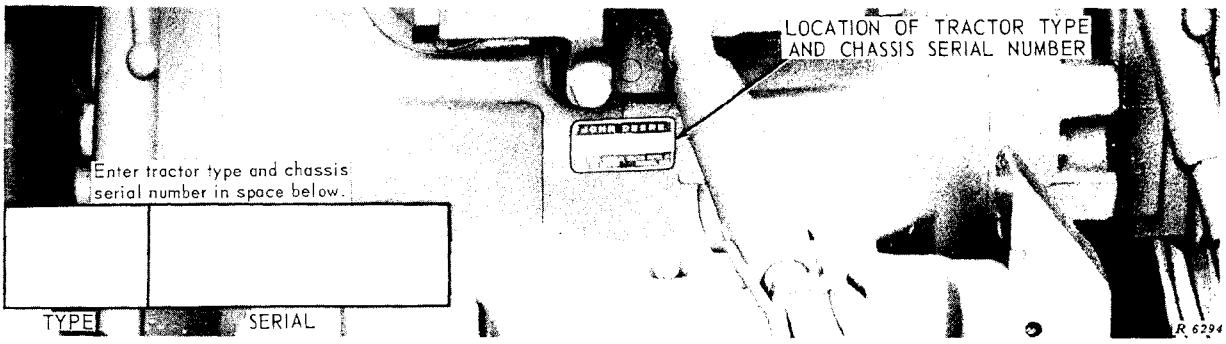
We are confident this modern tractor, combined with equally advanced John Deere tools and implements, will help you to farm better, easier, and more profitably.

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.

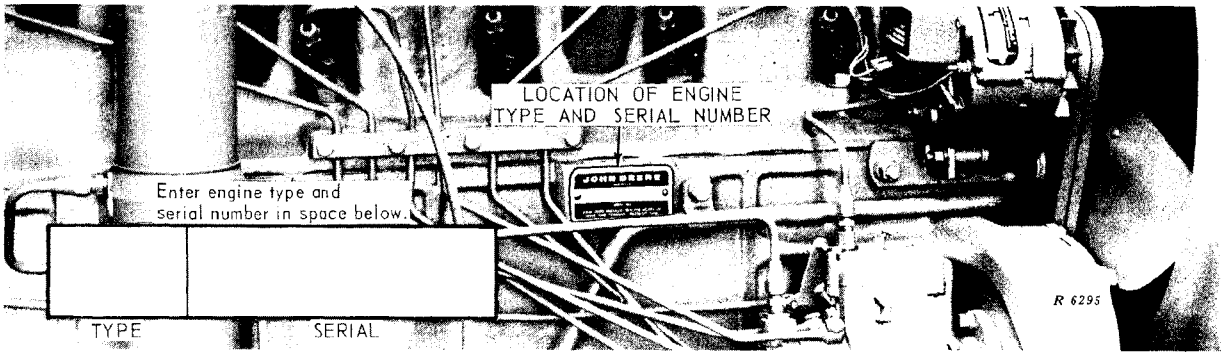
Information concerning warranty on this tractor appears on your copy of the delivery receipt which you should have received from your dealer when the tractor was delivered to you.

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 tractor type, the complete tractor chassis serial number, the engine type and complete engine serial number. For ready reference, locate and record this information in the spaces provided in the following illustrations.



Tractor Chassis Serial Number



Engine Serial Number

CONTENTS

R 6296

John Deere 5020 Row-Crop Diesel Tractor with Double Rear Wheels

SPECIFICATIONS

*HORSEPOWER:
- Measured at the PTO ..... 132 hp.

ENGINE:
- Type ... 6-cylinder, in-line, valve-in-head
- Engine Speeds:
  - Slow idle ..... 800 rpm
  - Working range ..... 1500 to 2200 rpm
  - Maximum transport speed .... 2500 rpm
- Bore and stroke ..... 4-3/4 in. x 5 in.
- Displacement ..... 531 cu. in.
- Compression ratio ..... 16.5 to 1
- Firing order 1-5-3-6-2-4
- Valve clearance ..... intake 0.018 in.
  exhaust 0.028 in.
- Injection pump timing ..... TDC

CAPACITIES:
- Fuel tank ..... 68 U.S. gals.
- Crankcase (with filter change). 20 U.S. qts.
- Transmission-hydraulic system 16 U.S. gals.
- Cooling system ..... 33 U.S. qts.

**Above horsepower figures are factory observed at 2200 engine rpm.*

GROUND SPEEDS:**
- 1st ..... 1.7 mph
- 2nd ..... 2.6 mph
- 3rd ..... 3.5 mph
- 4th ..... 4.5 mph
- 5th ..... 5.6 mph
- 6th ..... 7.3 mph
- 7th ..... 9.4 mph
- 8th ..... 15.4 mph
- 1st reverse ..... 3.4 mph
- 2nd reverse ..... 5.4 mph

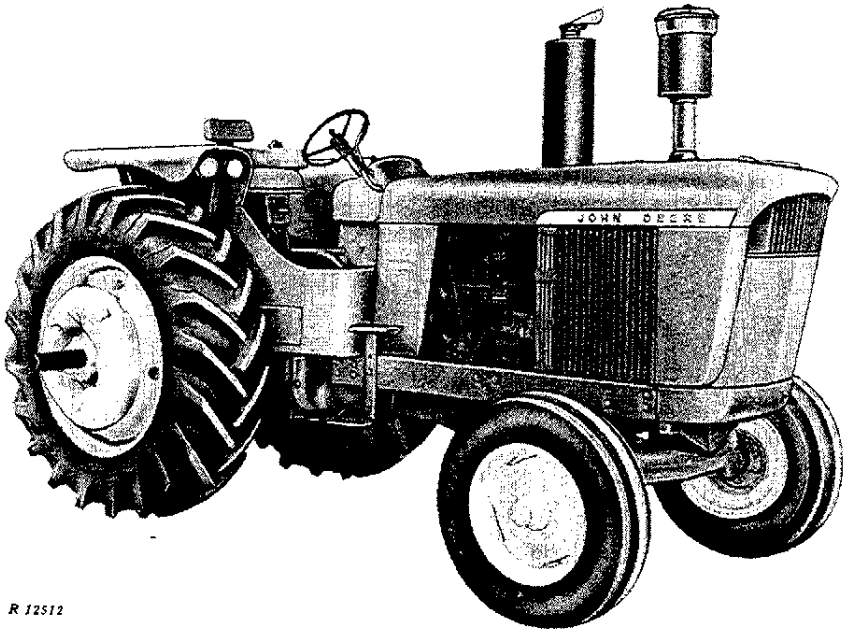
CLUTCH: .... Heavy-duty, two 12-in. plates, foot operated

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

FUEL SYSTEM:
- Type ..... Direct injection
- Injection pump type ..... Inlet metering, distributing type
- Air cleaner ..... Dry type

COOLING SYSTEM:
- Type ... Pressurized with centrifugal pump
- Engine temperature control ... Two heavy-duty thermostats

***Calculated at 1900 rpm engine speed with 24.5-32 tires.*



R 12512

John Deere 5020 Row-Crop Diesel Tractor

ELECTRICAL SYSTEM:
- Type . . . . . 24-volt, split-load system
- Starter and alternator voltage . . . . 24 volts
- Lights and accessory voltage . . . . 12 volts
- Batteries . . Four 6-volt, 51 plate, 115 ampere-hour, tractor-type, connected in series

TRANSMISSION:
- Type . . . . . Syncro-Range, constant-mesh
- Gear selections . . . 8 forward and 2 reverse
- Shifting . . . . . 4 stations, synchronized shifting within stations

POWER TAKE-OFF:
- Type . . . . . Independent
- Speed (1900 engine rpm) . . . . . 1010 rpm
- PTO ahead of drawbar hitch point . . 16 in.
- PTO shaft above ground . . . . . 25-1/2 in.

PTO CLUTCH . . . . . Hydraulically power actuated, hand-operated

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

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

FRONT TIRES:***
- Standard 11.00-16, 8-ply
- Row-Crop 9.50-20, 8-ply

REAR TIRES***
- Standard 24.5-32, 10-ply
- Row-Crop 18.4-38, 12-ply

FRONT WHEEL TREAD . . . . . See page 11

REAR WHEEL TREAD . . . . . See page 13

DIMENSIONS:

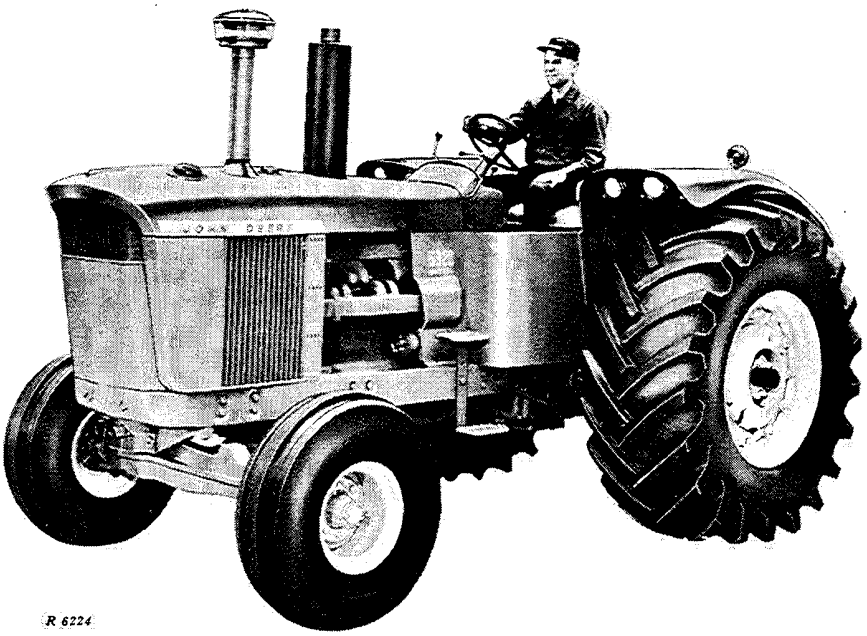
Standard (Fixed tread front axle):
- Wheel base . . . . . 104 in.
- Over-all length . . . . . 172.3 in.
- Over-all height . . . . . 98.3 in.
- Height to steering wheel . . . . . 82.4 in.
- Width . . . . . Regular wheel, 95.8 in.
- Clearance . . . . . 16 in.
- Turning radius . . . . . 12 ft. 6 in.

Row-Crop (81.5-inch tread front axle):
- Wheel base . . . . . 102 to 106 in.
- Over-all length . . . . . 172.3 in.
- Over-all height . . . . . 98.3 in.
- Height to steering wheel . . . . . 82.4 in.
- Over-all width . . . . . 108.4 in.
- Turning radius . . . . . 13 ft.

SHIPPING WEIGHT (With equipment for average field service):
- Standard . . . . . 16,180 lbs.
- Row-Crop . . . . . 14,510 lbs.

****Additional tire sizes available.*

(Specifications and design subject to change without notice.)

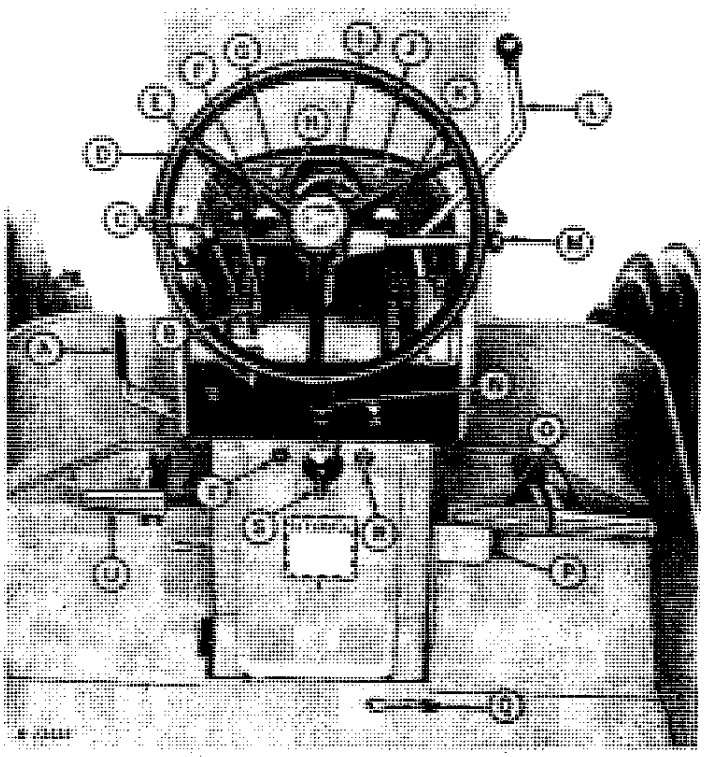


R 6224

John Deere 5020 Standard Diesel 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 – PTO Clutch Operating Lever (Page 27)
B – Rockshaft Control Lever Stop and Lock (Page 21)
C – Remote Cylinder Operating Levers (Page 18)
D – Steering Wheel
E – Rockshaft Control Lever (Page 21)
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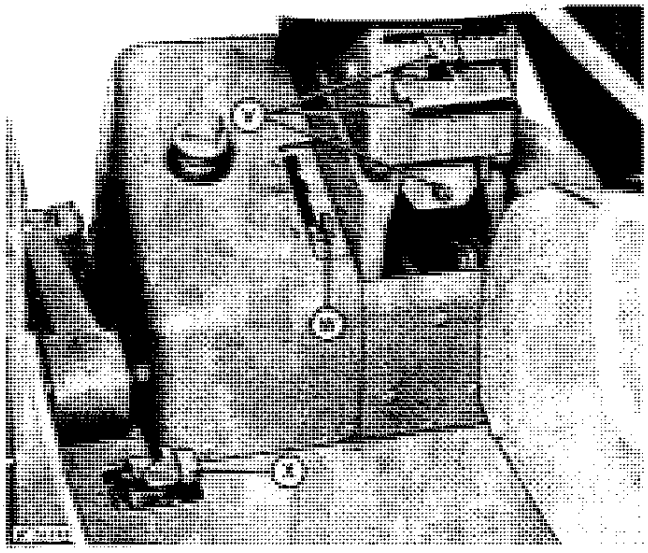


V – Seat Controls (Page 5)
W – Rockshaft Selector Lever (Page 21)
X – Differential Lock Operating Pedal (Page 11)

SEATS

The deluxe tractor seat has a steel compression spring and shock absorber to provide "float ride" suspension. The seat is also equipped with a flexibly mounted padded backrest and semi-circular foam padding which surrounds the operator.

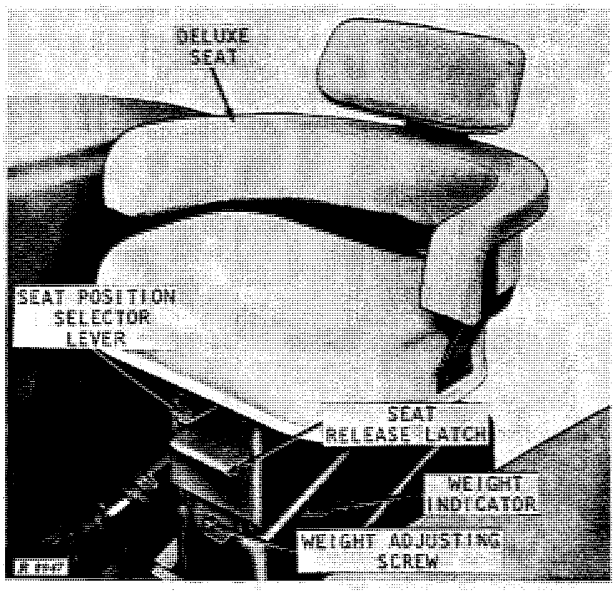
Use only warm water and mild soap to clean the seat cushions. NEVER USE SOLVENTS.

MOVE SEAT TO UPPER, REAR POSITION

To move the 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 the normal preset operating position.

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.

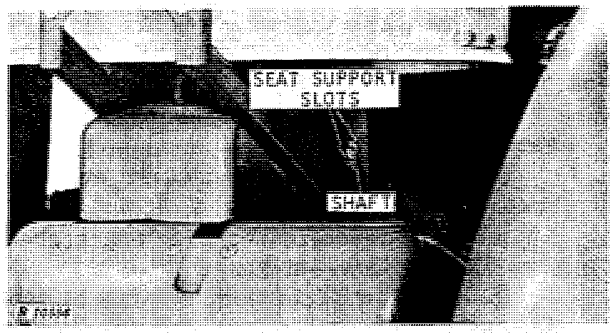


Seat Controls

ADJUSTING FOR WEIGHT OF OPERATOR

You can adjust the tension of the steel compression spring of the 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



Counterbalance Shaft

If the 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 counterclockwise 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.

ROLL-GARD AND SEAT BELT

A protective Roll-Gard is available as special equipment for your tractor. A canopy that fits on the top of the Roll-Gard, and seat belts are also available. See page 52 for additional information.

CAUTION: Under almost all operating conditions:

1. The use of a seat belt with the optional John Deere Roll-Gard is recommended.

2. Its use without roll-over protective equipment is not recommended.

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

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 36.

(b) Check the radiator coolant level—see page 36.

(c) If the tractor has a precleaner, check the collector bowl—see page 37.

(d) Check the fuel pump sediment bowl—see page 37.

(e) Lubricate the wide-swing drawbar rollers, the front axle pivot pins, steering knuckle pins, steering bellcrank, and steering cylinder end fittings—see page 37.

STARTING THE ENGINE

NOTE: If the prevailing temperature is 40° F. or lower, it may be necessary to use a cold weather starting aid to start the engine—see next column.

(2) Make sure that the fuel shut-off valve at the bottom of the fuel tank is open—see page 41.

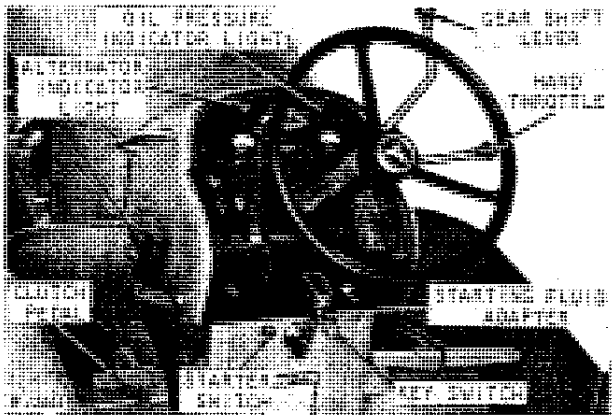
(3) See that the shift lever is in the "PARK" position. Depress the clutch pedal to decrease drag on the engine.

(4) Set the hand throttle approximately 1/3 of its travel downward to the first stop.

(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 and determine the cause.

(6) Press firmly on the starter switch to start the engine. To prevent overheating the starter, do not operate the starter for more than 30 seconds at a time. If engine does not start the first time, wait for two minutes before trying again. If it does not start after four attempts, see "Trouble Shooting."

If starter is activated but not allowed to attain speed (bumping or jogging), the contact point life will be shortened (due to high amperage load when separating).



Starting Controls

If the starter switch is released before the engine starts, wait until the starter and the engine stop before trying again. This will prevent possible damage to the starter.

(7) After the engine starts, both indicator lights should go out. If either light continues to glow when the engine is running, stop the engine and determine the cause.

CAUTION: Always leave key switch on while the engine is running so the indicator lights will function.

COLD WEATHER STARTING AIDS

For cold weather starting, the tractor is equipped with an ether starting fluid adapter. Other starting aids are available from your John Deere dealer.

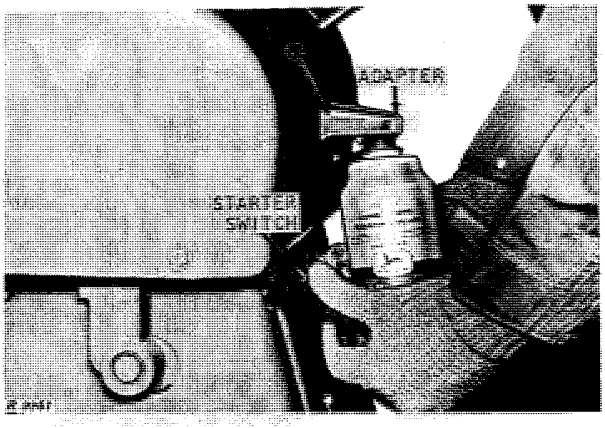
These aids are effective at low temperatures, only when the engine is otherwise operating satisfactorily. They will not correct such deficiencies as low battery charge, crankcase oil of heavy viscosity, and high electrical resistance which may prevent the engine from starting.

Always use No. 1 diesel fuel at temperatures below 0°F.

STARTING FLUID ADAPTER

This adapter 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 a "shot" of starting fluid, momentarily push up on the can.

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

Relax pressure on the can between "shots" of starting fluid. Stop injecting fluid after the engine starts. If the engine begins to die during the first few minutes of operation, inject another "shot" of 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.

CAUTION: Ether starting fluid is highly flammable.

SHUTTING OFF HYDRAULIC PUMP

If the hydraulic pump has a shut-off screw (available from your dealer), the starter speed may be increased during cold weather by shutting off the hydraulic pump so it will not build up pressure. To do so, turn the shut-off screw located on top of the pump in (clockwise) one turn with a screwdriver. Then turn the screw in by hand until resistance is felt. Turn the screw in one more turn.

After the engine has started, use a screwdriver to back the shut-off screw out against the internal stop (turn the screw counterclockwise). The pump will now build up pressure.

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

CRANKCASE OIL HEATER

To facilitate cold weather starting, a 240-watt, 115-volt electrical crankcase oil heater can be installed in the engine oil pan. To use the heater, remove the cap, connect the cord to the heater and connect to any 115-volt electrical source. To remove the electrical connector from the heater, press release lever in the connector.

TANK-TYPE COOLANT HEATER

A thermostatically controlled tank-type coolant heater (available from your dealer) will improve cold weather starting. This attachment will keep the coolant warm, reducing oil drag and shortening the engine warm-up period.

ADDITIONAL BATTERIES

Cold weather starting can be made easier by connecting additional 12-volt batteries in parallel with the tractor batteries.

CAUTION: Gas given off by batteries is explosive. To prevent injury or battery damage, avoid sparks near the batteries.

Make sure all electrical switches or accessories are turned off and make the last connection or the first disconnection at some point away from the batteries.

Use two 12-volt booster batteries and four jumper cables. Connect the first jumper cable

to the positive (+) post of the first booster battery and to the positive (+) post of the second from front tractor battery. Connect the second jumper cable from the negative post of the second booster battery and to the negative post of the second from rear tractor battery. Connect one end of the third jumper cable to the negative post of the first booster battery. Connect one end of the fourth jumper cable to the positive (+) post of the second booster battery. To make the last connection away from the batteries, connect the other ends of the third and fourth jumper cables.

NOTE: To prevent damage to the light gauge ground wire, never connect a booster battery to the tractor frame. Tractor is equipped with an ALTERNATOR. To prevent damage to alternator or electrical system, be sure to connect batteries in proper polarity.

See your John Deere dealer for additional booster battery information.

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 temperature 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 speed.

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

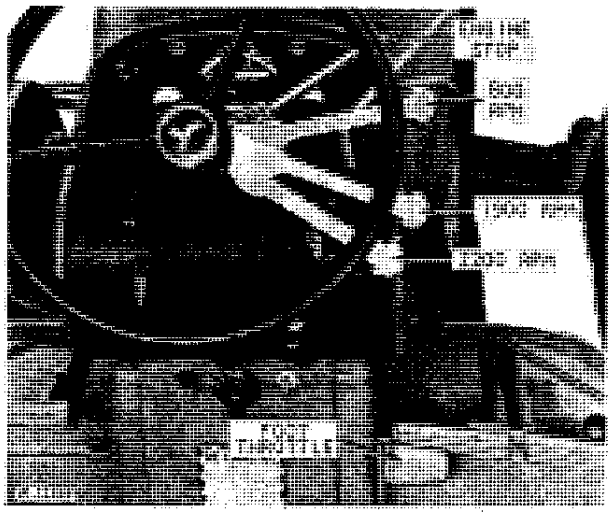
Slow idle speed is approximately 800 rpm.

To check engine speeds, see page 39.

USING HAND THROTTLE

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

Move the hand throttle counter-clockwise as far as it will go with the knob in to obtain normal slow idle speed of 800 rpm.



Range of Hand Throttle Positions

To obtain 1900 rpm load speed, move the throttle clockwise 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, move the throttle clockwise as far as it will go. This is the 2200 rpm load speed 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 load speed.

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

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.

With the hand throttle in the 800 rpm position, pull out on the knob at the end of the throttle lever and move lever counter-clockwise as far as it will go. This stops fuel injection. After a few revolutions the engine will stop.

After stopping the engine, shut the key switch off and remove the key from the switch to prevent tampering and unauthorized operation. Removing the key also prevents the switch from being accidentally left in the on position and causing battery discharge.

BREAKING IN THE ENGINE

During the first 100 hours of tractor service avoid prolonged periods of engine idling.

If the coolant temperature rises above the "N" range on the gauge, shift to a lower gear to reduce the load on the engine.

Be sure to follow the special break-in lubrication instructions on page 33.

OPERATING THE TRACTOR

SELECTING GROUND SPEED

The tractor has 8 forward speeds and 2 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.

NOTE: The ground speeds shown in the chart below are for a tractor equipped with 18.4-38 or 24.5-32 rear tires with a loaded radius of 31.6 inches.

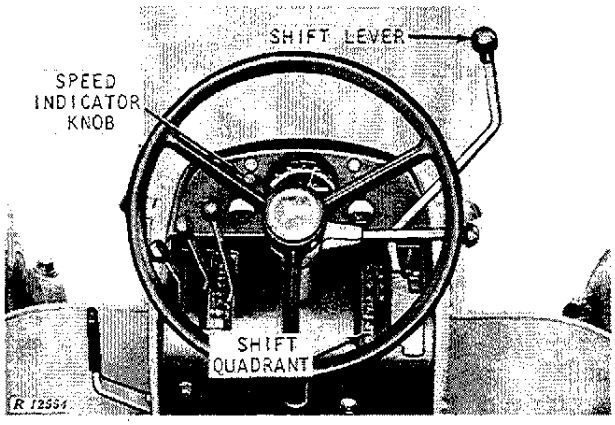
TRACTOR GROUND SPEEDS

Gear	Hand Throttle Operating Range			Maximum Foot Throttle Speed 2500 rpm
	1500 rpm	*1900 rpm	2200 rpm	
1st	1.3 mph	1.7 mph	1.9 mph	2.2 mph
2nd	2.1 mph	2.6 mph	3.0 mph	3.5 mph
3rd	2.7 mph	3.5 mph	4.0 mph	4.6 mph
4th	3.5 mph	4.5 mph	5.2 mph	5.9 mph
5th	4.4 mph	5.6 mph	6.5 mph	7.3 mph
6th	5.8 mph	7.3 mph	8.5 mph	9.6 mph
7th	7.5 mph	9.4 mph	10.9 mph	12.4 mph
8th	12.2 mph	15.4 mph	17.9 mph	20.3 mph
1st reverse	2.7 mph	3.4 mph	. . . . .	. . . . .
2nd reverse	4.3 mph	5.4 mph	. . . . .	. . . . .

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

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. When this occurs, operate in 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

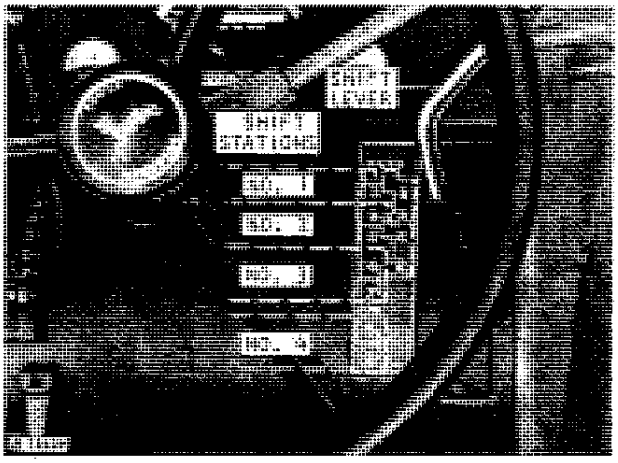
The shift quadrant has four shift stations. Stations No. 1 and 2 have two forward speeds and one reverse speed. Stations No. 3 and 4 have two forward speeds.

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.

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.



Gear Shift Stations

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.

NOTE: To prevent unnecessary wear, never "ride" the clutch or brake pedals by resting the feet on the pedals.

PARKING THE TRACTOR

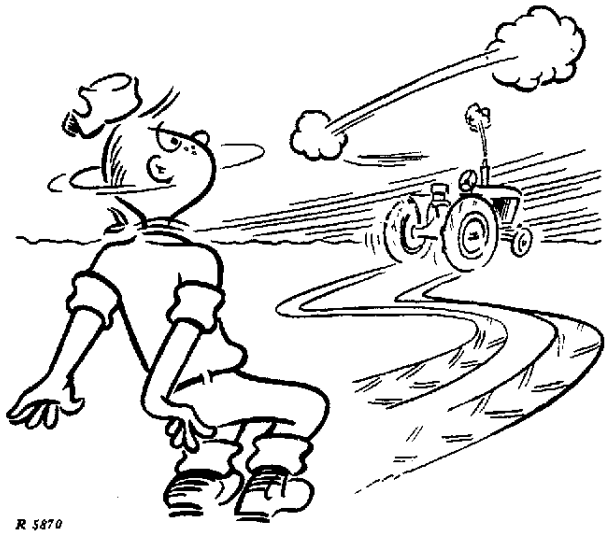
When the tractor is stopped for parking, for holding it on an incline, or for holding it during PTO work, move the shift lever as far as it will go forward from neutral to the "PARK" position. To shift from "PARK," move the shift lever rearward to the station desired.

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

TOWING THE TRACTOR

When towing the tractor, place the shift lever in "TOW" and have an operator steer the tractor. When possible, run the engine to maintain hydraulic pressure for power operation of steering and brakes. Be sure transmission-hydraulic system oil level is at the "FULL" mark when on level ground.

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

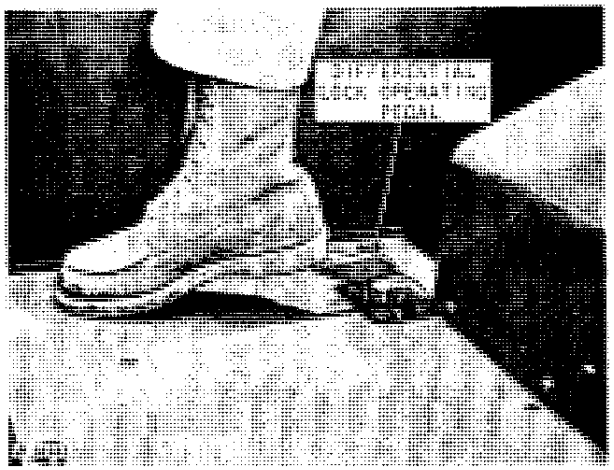


R 5870

CAUTION: Whenever the tractor is stopped, place the shift lever in the "PARK" position BEFORE DISMOUNTING. Never dismount from the tractor when it is in motion.

DIFFERENTIAL LOCK

Your tractor may be equipped with a differential lock that will turn both rear wheels at the same speed. This prevents the usual loss of power when one wheel is slipping.

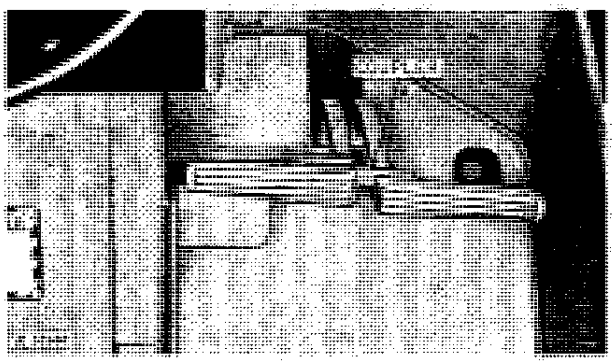


Differential Lock Operating Pedal

When one wheel starts to slip or whenever desired, engage the differential lock by depressing the operating pedal located at the right-rear side of the platform. When no longer required and before turning the tractor, disengage the differential lock by depressing one or both brake pedals. The front wheels should be in the straight ahead position when engaging or disengaging the differential lock.

CAUTION: Do not operate the tractor at high speeds or attempt to turn the tractor with the differential lock engaged.

POWER STEERING AND BRAKES



Brake Pedals Coupled Together

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

The brake system is equipped with an accumulator which provides force for several brake applications after the tractor engine is stopped.

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

FRONT AXLES

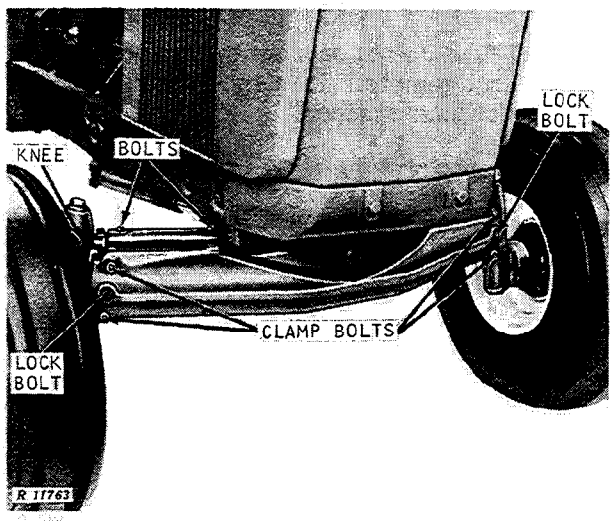
FRONT AXLE TREAD

The tractor front axle may be adjusted to the following front wheel treads:

Fixed thread - 69 or 71 in. (Standard only)

Adjustable tread:
- 18.4-16A tire - 74, 78, 82, or 86 in.
- 11.00-16 tire - 68, 72, 76, or 80 in.
- 9.50-20 tire (81-1/2 in. tread front axle):
  - Wheel dish in - 64-1/2, 68-1/2, 72-1/2, or 76-1/2 in.
  - Wheel dish out - 69-1/2, 73-1/2, 77-1/2, or 81-1/2 in.
- 9.50-20 tire (88 in. tread front axle):
  - Wheel dish in - 71, 75, 79, or 83 in.
  - Wheel dish out - 76, 80, 84, or 88 in.

TREAD ADJUSTMENT



Front Axle Tread Adjustment

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

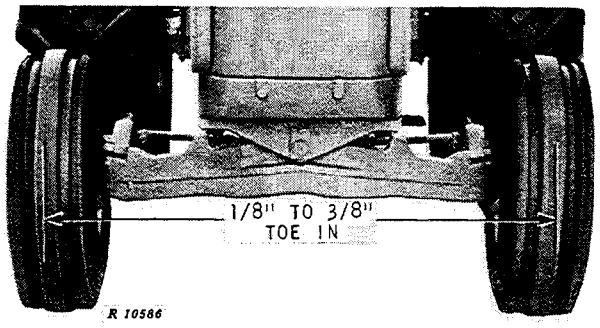
CAUTION: Do not place jack under engine oil pan.

To change the adjustable front axle tread, remove the tie rod lock bolts and tie rod tube halves. Clean tie rod threads. Loosen the clamp bolts and drive the lock bolts from the front axle housing. Move the front axle knees in or out to the desired tread width. Install lock bolts and tighten clamp bolts to 300 ft-lbs torque. Install bolts in tie rods with the nuts down. Coat unpainted surfaces with rust preventative. Check toe-in.

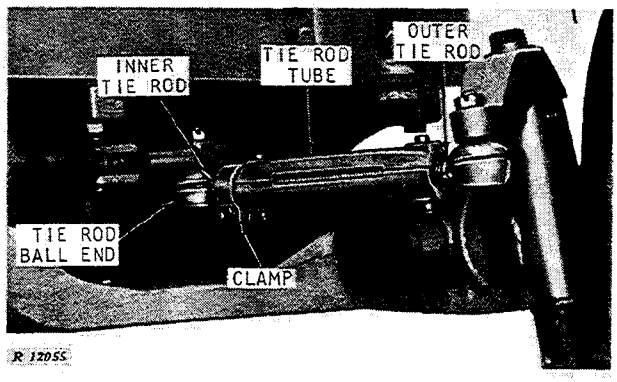
To change the tread on a fixed tread front axle or to reverse the dish of the front wheels, unbolt the wheels from the hubs, reverse the wheels and install them.

TOE-IN ADJUSTMENT

With the front wheels in the straight ahead position and the steering bellcrank in the centered position, measure the toe-in. At axle height, the front measurement between the tires should be 1/8 to 3/8 inch less than the rear measurement.



Correct Toe-In



Toe-In Adjustment

To adjust toe-in on adjustable tread axles, loosen inner tie rod lock bolt and the tie rod clamp bolt. Remove outer tie rod lock bolt. Turn the tie rod tube to adjust the inner tie rod on the inner tie rod ball end. One turn should adjust toe-in approximately 3/8 inch. Separate the tie rod tube halves to realign the tie rod lock bolt holes. Install tie rod lock bolts with the nuts down. Recheck toe-in and if it is correct, tighten the lock bolts. Tighten the clamp in the downward position.

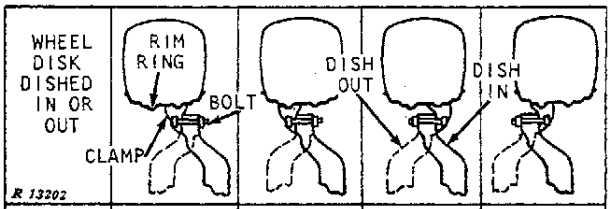
On fixed tread axles, loosen the tie rod clamps. Turn the tie rod tubes in or out until the toe-in is correct. Tighten the clamps in the downward position.

Tighten tie rod clamps to 35 ft-lbs torque. With properly adjusted tie rods, the tractor will turn as sharp to the left as it will to the right.

REAR WHEEL TREAD

CAUTION: Do not operate a row-crop tractor with operator's shield removed. Row-crop tractor operator's shield is designed to protect operator from tire when tire is in narrow tread position.

SINGLE REAR WHEEL ADJUSTMENT



DISH IN	60"-82"	68"-90"	67"-89"	75"-97"
DISH OUT	88"-105"	96"-*113"	95"-*112"	103"-*120"

Tread Range for Row-Crop Tractors with 18.4-38 Single Tires

Tire Size	Possible Tread Widths	
	Standard Tractor	Row-Crop Tractor
24.5-32	70" to 82"	70" to *112"

Tread Range for Tractors with 24.5-32 Single Tire

**Limit rear wheel tread of a single tire to 110 inches or less when pulling heavy loads in 1st, 2nd, or 3rd gear.*

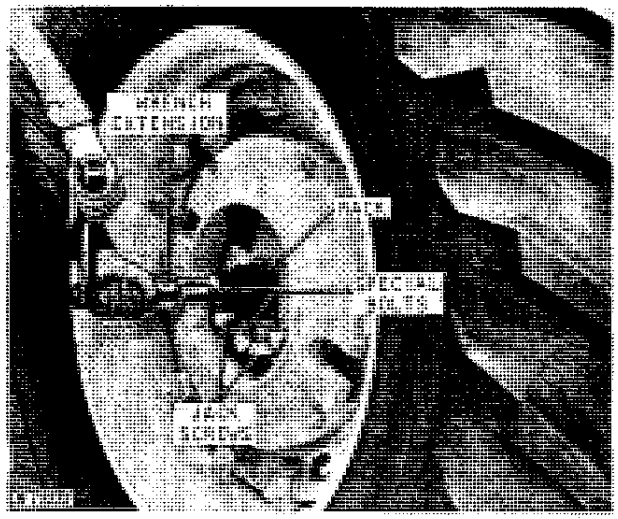
Minimum rear wheel tread on tractors with a Crenlo Cab is 64-1/2 inches with 18.4 tires or 70-1/2 inches with 24.5 tires.

The rear wheel tread may be adjusted by one or more of the following methods: by moving the wheel on the axle with the rack and pinion, by reversing the dish of an offset wheel on the axle, or by changing the position of the rim on the wheel.

RACK AND PINION METHOD

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

This adjustment can be made with up to two outside wheel weights installed. Additional weights will interfere with the turning of the pinion.



Rack and Pinion Adjustment

Jack up the tractor and rotate the wheel until the rack on the axle is up. Loosen the three special bolts 1/4 to 3/8-inch. To loosen the tapered sleeve, turn the two jack screws clockwise until the notches in the hex. surface are even with the wheel hub.

Turn the pinion gear to move the wheel in or out on the axle. Measure the amount the axle protrudes from the hub to maintain the same distance from the wheels to the tractor centerline. BE SURE that the tire or wheel weight will not rub the tractor.

After the desired tread is obtained, back out the jack screws until the ENTIRE HEX. SURFACE is exposed. Remove the special bolts, oil the threads, and install the bolts. Tighten them securely (300 ft-lbs torque). After a few hours service, RETIGHTEN the bolts and keep them tight.

CAUTION: Avoid adjusting wheels too close to the rear axle housing. This can damage the pinion when the hub is tightened. To avoid this, adjust the wheel to the innermost position until the pinion contacts the end of the rack. Then back up until the wheel has moved outward at least 1/4-inch. The jack screws MUST BE FREE TO TURN after the hub is tightened. If necessary, back the jack screws out a little further and retighten special bolts.

REVERSING OFFSET WHEEL ON AXLE
(18.4-38 Tires Only)

On tractors with offset wheels, the rear wheel tread may be changed by reversing the "dish" of the wheel. To do so, jack up the tractor and remove the wheel. Reverse the "dish" and install the wheel. Be sure to maintain the proper direc-

tion of tire rotation. Another way is to install wheel and tire on other axle. After a few hours service, retighten the special bolts and keep them tight.

CHANGING RIM POSITION ON WHEEL

On tractors with 18.4-38 tires 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 in the tread chart on page 13.

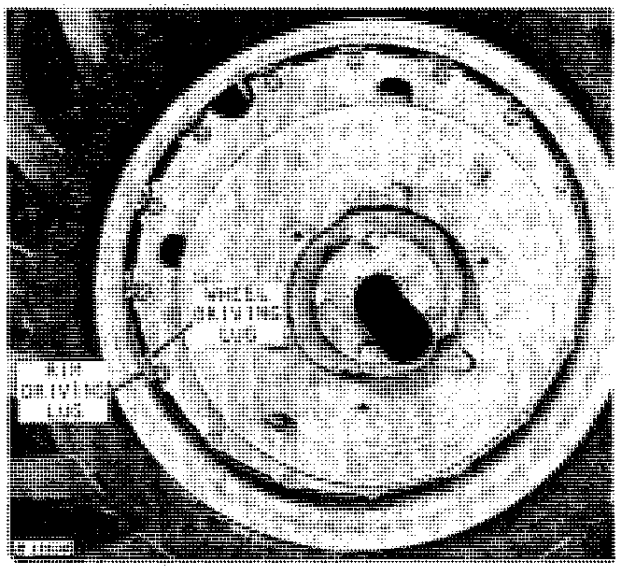
On offset deep well rims (18.4-34 and 24.5-32 tires), two possible rim positions are obtained by reversing the offset deep well. To maintain proper direction of tire rotation, install rim and tire on other wheel. On standard tractors with single 24.5-32 tires, the offset rim must always be mounted in the narrow tread position.

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. Be sure that each of the seven rim driving lugs engages a clamp that has a wheel driving lug as shown in the illustration.

Hammer each bolt head to seat the bolts. Retighten the clamps to 170 ft-lbs torque. Adjust both rear wheels in the same manner.

After a few hours service, RETIGHTEN the clamps and keep them tight.

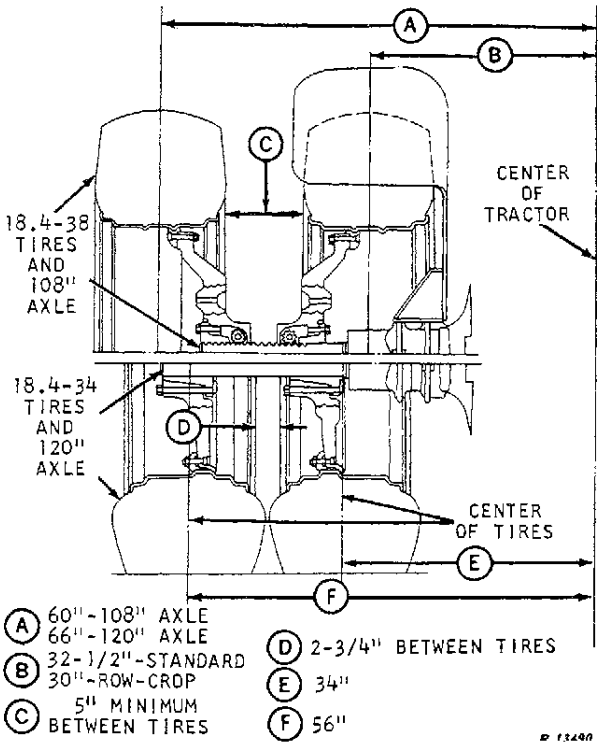
CAUTION: Never operate the tractor when the rim clamp nuts or hub cap screws are loose.



Rim Driving Lug and Wheel Driving Lug

DOUBLE REAR WHEEL ADJUSTMENT

If the tractor has 18.4-38 double rear tires, the minimum inner tire tread is 65 inches on standard tractors or 60 inches on row-crop tractors (64 inches if equipped with a cab). The maximum outer tire tread is 120 inches with 108 inch axles or 132 inches with 120 inch axles. The distance between tires should be at least 5 inches. See the wheel and tire position shown in the upper half of the illustration.



Double Rear Wheel Tread

If tractor is equipped with 18.4-34 double rear tires, set the inner tire 34 inches from center of tractor. Set the outer tire 56 inches from center of the tractor. See the wheel and tire position in the lower half of the illustration.

If equipped with 24.5-32 double rear tires, set the inner tire 35 inches from the center of the tractor and the outer tire to 65 inches. If equipped with 24.5-32 and 18.4-38 double rear tires, set the inner tire to 35 inches from the center of the tractor and the outer tire between 62 and 66 inches from the center of the tractor.

Tighten inner wheel clamps and bolts securely because the outer wheel usually must be removed to retighten them.

NOTE: When installing first outer double wheel, tractor will tip if jack is under drawbar support.

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to download the complete manual.

Thank you so much for reading

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.

Check the tire pressure with an accurate tire gauge having 1-pound graduations. If tires contain liquid ballast, position valve stem at the top and use a special air-water gauge.

INFLATION CHARTS

FRONT TIRES		
Tire Size	Ply	Inflation Pressure
9.50-20	8	44 psi
11.00-16	8	36 psi
18.4-16A	6	16 psi

REAR TIRES			
		Inflation Pressure	
Tire Size	Ply	With Little or No Added Ballast	With Max. Ballast or Heavy Rear-Mounted Implement
18.4-34*	8	16 psi	20 psi
18.4-38*	8	16 psi	20 psi
18.4-38	12	16 psi	32 psi
24.5-32	10	16 psi	18 psi

**Double tires only. Operating with single 8-ply tires will usually cause a severe overload on the tires and may cause a hazardous tire failure.*

BALLAST

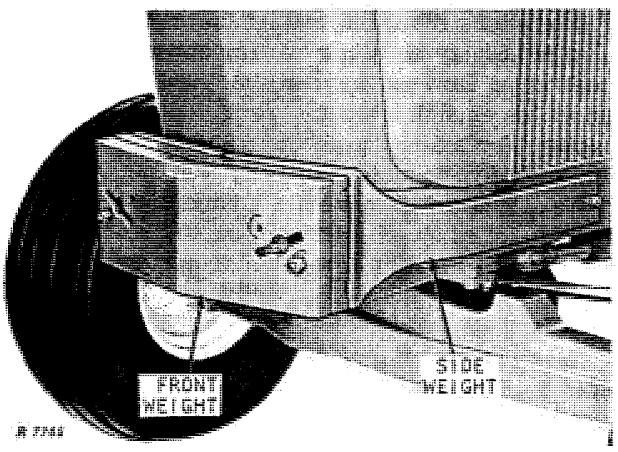
The performance of your tractor can be improved under certain conditions by adding or reducing the ballast at the front end or at the rear wheels.

FRONT END WEIGHTS

When using heavy rear-mounted implements or when operating on hilly terrain, install side weights and front weights for increased stability and steering control.

With heavy rear-mounted implements in the raised position, drive slowly to maintain adequate stability; especially over rough ground.

When the field load of towed or hitch-mounted implements exceeds the pull available in 4th gear,



Front End Weight

additional front end weight is usually required for proper control while working.

Install the side weights first. Then attach the front weights as shown. Rotate each front weight 180 degrees from the preceding front weight to align the mounting holes.

Two side weights and up to eight front weights may be used. Each weight, available from your John Deere dealer, weighs 85 pounds.

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.

When the tractor is pulling its rated load, ballast should not be added to the point where all wheel slippage is eliminated. 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 obliterated.

Maximum Ballast

When the ballast given in the following chart is added, the single rear tire will be carrying its rated load.

MAXIMUM ADDED BALLAST PER SINGLE REAR TIRE* TO REACH TIRE CARRYING CAPACITY

Tractor Equipment	24.5-32		18.4-38 12-Ply
	Standard	Row-Crop	
With Rockshaft	4100 lbs.	4344 lbs.	3295 lbs.
Without Rockshaft	4690 lbs.	4935 lbs.	3885 lbs.

**Ballast for tires on double rear wheels is limited by the 3rd gear operating capacity of the tractor.*