

# JOHN DEERE 2630 TRACTOR



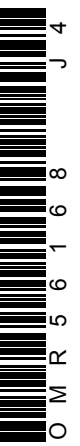
JOHN DEERE

## OPERATORS MANUAL JOHN DEERE 2630 TRACTOR

OMR56168 J4 English

JOHN DEERE WATERLOO WORKS  
OMR56168 J4

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





## To the Purchaser

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This new tractor was carefully designed and manufactured to give years of dependable service. To keep it running efficiently, read the instructions in this operator's manual. Each section is clearly identified so you can easily find the information you need—whether it is operation, lubrication and periodic service, or trouble shooting. Check the Contents to learn where each section is located. Use the alphabetical index for fast reference.



Worldwide graphic symbols are used to assist identification and operation. In this manual, an identifying symbol (like the symbol at left for engine coolant temperature) is placed by the instructions. The waves signify water or coolant and the thermometer indicates temperature. Regardless of the language used in a nation, and without translation, this symbol means water or coolant temperature.

Record your tractor serial numbers in the spaces provided on page 72. Your dealer needs this information to give you prompt, efficient service and parts. If your tractor requires replacement parts, go to your John Deere dealer where you can obtain genuine John Deere parts—accept no substitutes.

The warranty on this tractor appears on your copy of the purchase order which you should have received from your dealer when you purchased the tractor.

The references in this manual to the "right-hand" and the "left-hand" sides of the tractor are determined by facing in the direction of tractor forward travel.



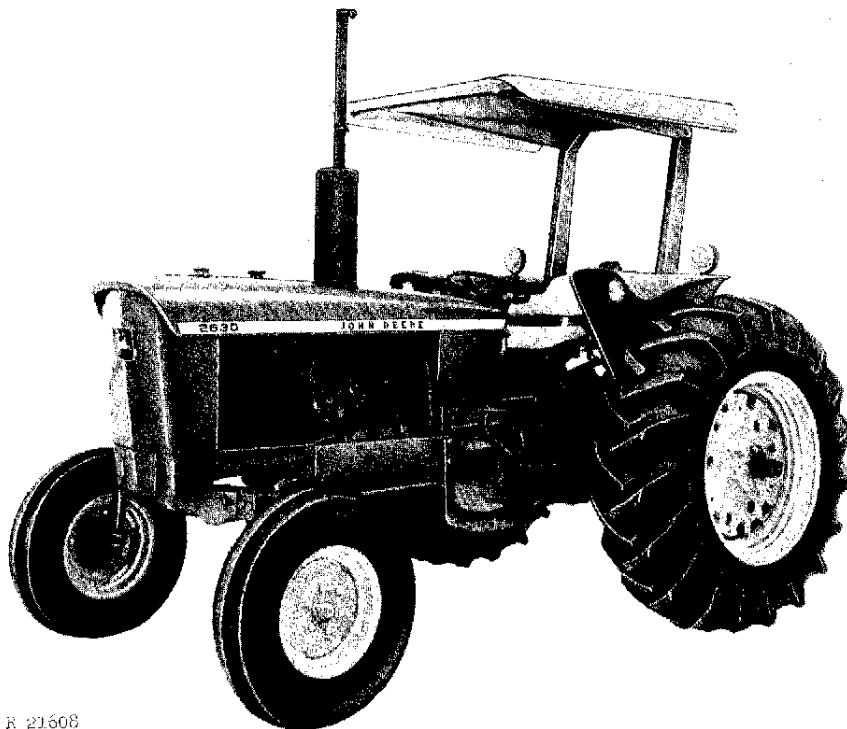
This safety alert symbol indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.



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*John Deere 2630 Tractor*

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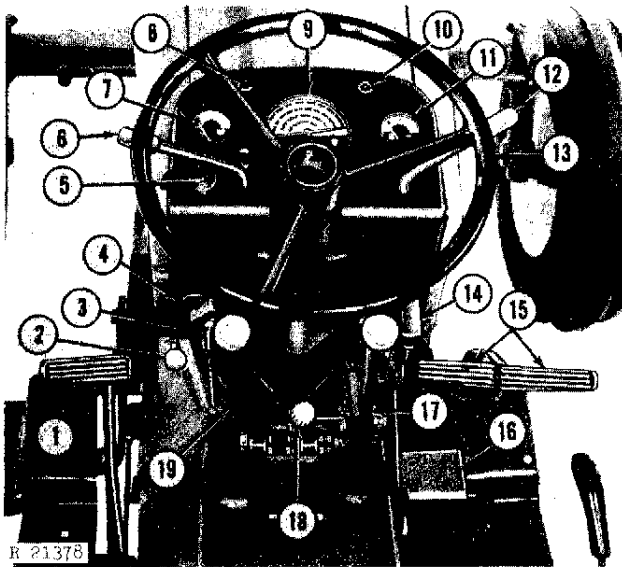
The full manual is available for immediate download.

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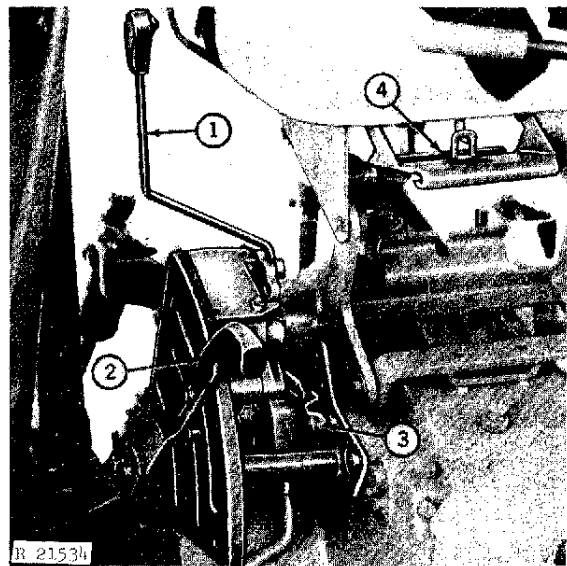
# Controls and Instruments

Before attempting to operate your new tractor, become familiar with the location and purpose of its controls and instruments. Additional information will be found on the page number following the control or instrument. Worldwide graphic symbols are used to assist identification and operation.

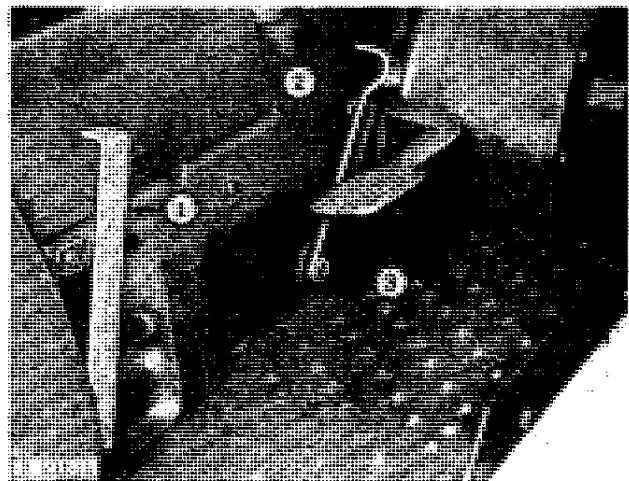


*Tractor With Hi-Lo Shift*

- 1—Clutch Pedal (Page 10)
- 2—Engine Stop Knob (Pages 3 and 7)
- 3—Key Switch (Page 3)
- 4—Light Switch (Page 22)
- 5—Turn Signal Lever (Page 21)
- 6—Hi-Lo or Reverser Lever (Page 10)
- 7—Coolant Temperature Gauge (Page 7)
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- 11—Fuel Gauge
- 12—Hand Throttle (Page 6)
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- 1—Remote Cylinder Operating Levers (Page 29)
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- 3—Differential Lock Pedal (Page 11)
- 4—Seat Latch (Page 8)



- 1—Mid PTO Lever (Page 35)
- 2—Rear PTO Lever (Page 35)
- 3—Differential Lock Pedal (Page 11)



# 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

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

Check the engine crankcase oil level—see page 48.

Check the radiator coolant level—see page 48.

Drain sediment from fuel filter. See page 54.

Inspect air pre-cleaner (if equipped).

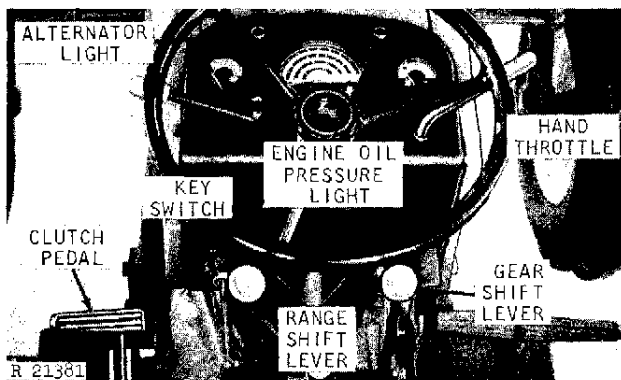
Make sure the fuel shut-off valve on the fuel tank is open. See page 54.

Lubricate front axle. See page 48.

**CAUTION:** Before starting the tractor engine, be sure there is plenty of ventilation. Never operate the tractor in a closed building.

## OPERATING THE ENGINE

### STARTING THE ENGINE



Engine Starting Controls

**NOTE:** If the prevailing temperature is 32°F. or lower, it may be necessary to use a cold weather starting aid to start the engine (page 4).

Perform the Prestarting Checks listed above.



(1) See that the transmission is in PARK (see worldwide symbol at left), the PTO is disengaged, the rockshaft control lever is in lowered position, the remote cylinder operating levers in neutral, and the engine stop knob is all the way in.

Before the starter will operate the range shift lever must be in park or neutral.

(2) Place the hand throttle in the 1200 rpm position, approximately one-third of its travel downward. Depress the clutch pedal.

(3) Turn the key switch clockwise to the first position.



The alternator indicator light and the oil pressure indicator light should glow. If any light fails to glow, turn off the key switch and determine the cause.

#### 4 Operation - Engine



**CAUTION:** Before starting the engine, make sure there is plenty of ventilation. Never operate the engine in a closed building.

(4) Turn the key switch all the way to the right to start the engine. Do not operate the starter 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 attempts, see "Trouble Shooting."

If the key 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.

**IMPORTANT:** Never attempt to start a tractor with Hi-Lo Shift or reverser by towing or pushing, or you may damage the clutches.

Before starting a tractor by towing, see page 11.

(5) As soon as engine starts, release key switch. The engine or pressure indicator light and the alternator indicator light should go out. If the lights do not go out after the engine has been running for 10 seconds, the engine should be shut off at once and the cause of difficulty determined.

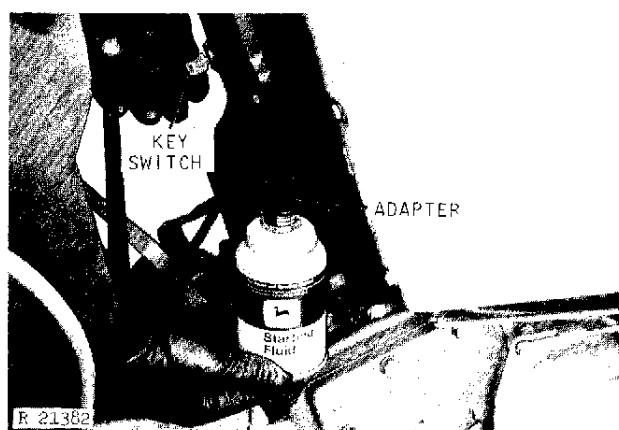
(6) Release clutch pedal. In cold weather, warm engine and transmission for 5 minutes by operating engine at half throttle. Do not allow engine to operate at slow idle speed during engine warm-up. Observe gauges.

### COLD WEATHER STARTING AIDS

For cold weather starting, the tractor may be equipped with an ether starting fluid adapter, additional battery, engine coolant heater, or a hydraulic pump shut-off screw.

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

#### Ether Starting Fluid Adapter



*Injecting Starting Fluid*

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.

**CAUTION:** Ether starting fluid is highly flammable. Do not use near fire, sparks, or flames. Read the cautionary information on the container.

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.

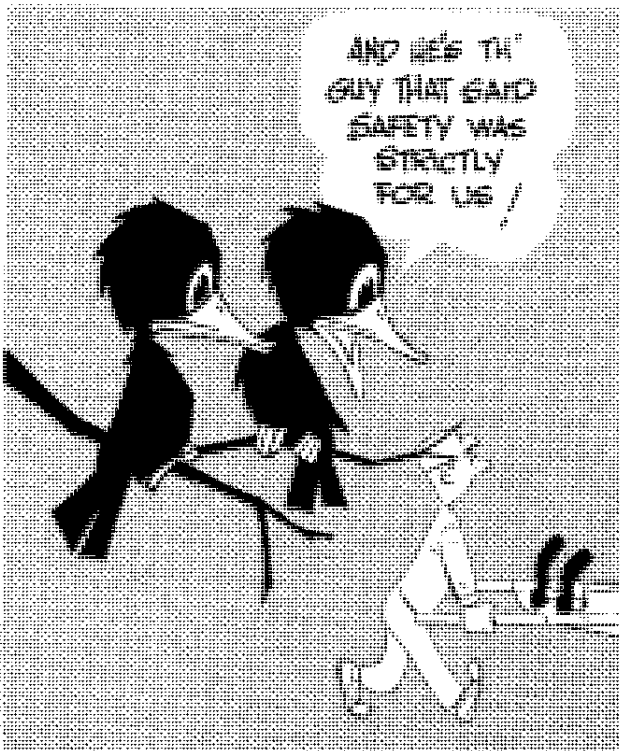
To inject a shot of starting fluid, momentarily push up on the can.

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

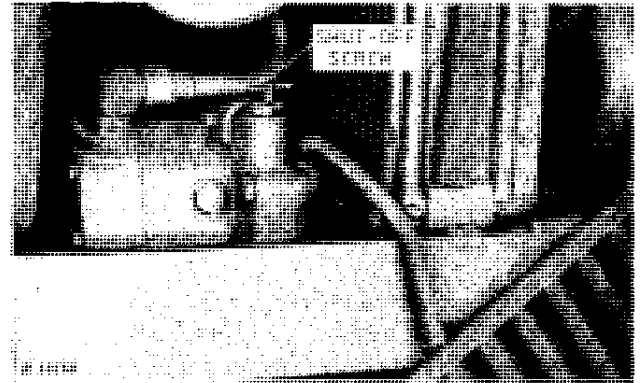
Relax pressure on the can between shots of starting fluid. Stop injecting fluid after the engine starts. If the engine begins to die during the first few minutes of operation, inject another shot of fluid. When the engine is operating satisfactorily, remove the can from the adapter and replace the safety cap on the can to avoid accidental discharge.

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 in a cool, dry, and protected area to prevent accidental discharge. Keep the starting fluid away from extreme heat or cold.



## Hydraulic Pump Shut-Off



Hydraulic Pump Shut-Off Screw

If the tractor has a hydraulic pump shut-off screw (available from your John Deere dealer), the cranking speed may be increased during cold weather by destroying the hydraulic pump so it will not build up pressure. To do so, turn the shut-off screw in (clockwise) until resistance is felt. Turn screw in one more turn.

After the engine has started, back the shut-off screw out all the way (turn the screw counterclockwise). The pump will now build up pressure.

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

## Electric Coolant Heater

A 1000-watt, 115-volt electrical coolant heater can be installed on the engine. See your dealer for additional information.

**CAUTION:** To avoid shock or hazardous operation, always use a three-wire heavy-duty electrical cord equipped with three-wire connectors. If a two-to-three contact adapter is used at the wall receptacle, always connect the green wire to a good ground.

## Additional Battery

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

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

Connect a jumper cable to the POSITIVE (+) post of a 12-volt booster battery and to the POSITIVE (+) post of the tractor battery. Connect one end of the other jumper cable to the negative post of the booster battery and to a good ground on the tractor frame away from the battery. Never connect jumper cables to pipes or thin sheet metal.

**IMPORTANT:** Reversed polarity booster battery connections may damage the alternator or electrical wiring.

See your John Deere dealer for booster batteries.

## 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 to first 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.

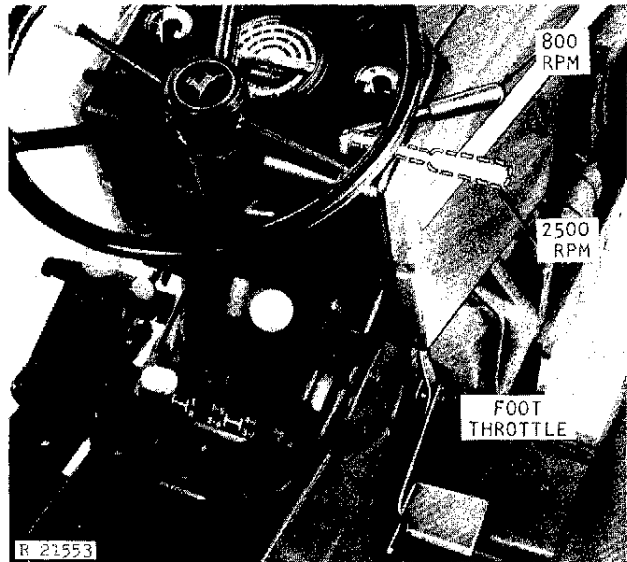
## ENGINE SPEEDS

The tractor engine is designed to operate at working speeds ranging from 1500 to 2500 rpm. The engine can be operated at any speed in the working range to meet various operating conditions. Operate the engine at 2100 rpm to obtain the ASAE Standard PTO speeds.

Normal slow idle speed is approximately 800 rpm.

The engine speed of 2500 rpm is the speed when under full load. At light or no load condition the speed may rise to approximately 2650 rpm. See page 50 for no load engine speeds.

## Hand Throttle



Hand Throttle and Foot Throttle

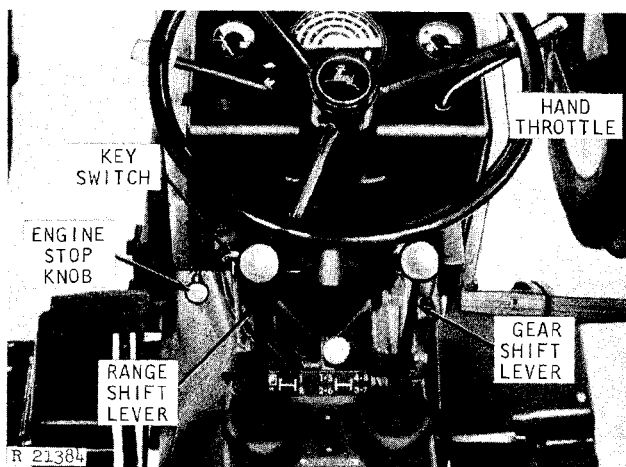
Use the hand throttle to select any desired engine speed between slow idle and fast idle. Push hand throttle lever upward to reduce engine speed; pull lever downward to increase engine speed.

## 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 2800 rpm fast idle speed.

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

## STOPPING THE ENGINE



Engine Stopping Controls

Stop the engine as follows:

Move the gear shift lever into any gear position. Then place the range shift lever in park (P) position. This will lock the gears and hold the tractor in place.

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

After idling the engine for a few minutes, move the hand throttle to the slow idle position and pull the engine stop knob all the way out. After the engine stops, release the stop knob and turn the key switch off.

After stopping the engine, 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" or the "accessory" position and causing battery discharge.

Before dismantling, be sure all equipment is lowered to the ground, the light switch and other accessory switches are off, and the transmission is in park.

## BREAKING IN THE ENGINE



*If the coolant temperature rises to the warning zone 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 given on page 42.*

With the following exceptions, the engine is ready for normal operation:

During the first 20 hours, do not use the foot throttle or place the hand throttle in speeds above the 2100 rpm load speed position. To facilitate break-in, avoid prolonged periods of engine idling for the first 100 hours of service.



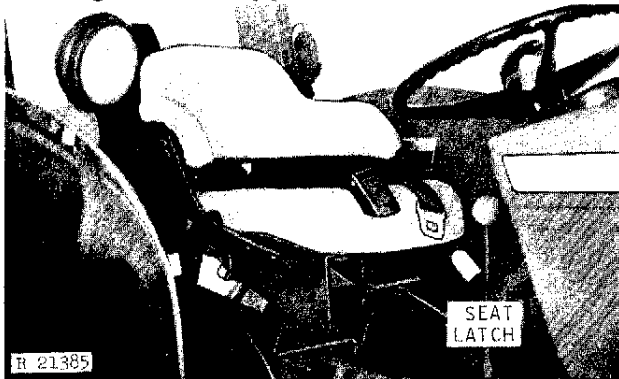
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## OPERATING THE TRACTOR

### SEAT

Your tractor may be equipped with a regular seat, or a deluxe cushioned seat. Both seats are adjustable for the operator's height, and fold back for standing. The deluxe seat also is adjustable for the operator's weight.

#### Moving Seat to Upper Rear Position



*Deluxe Seat*

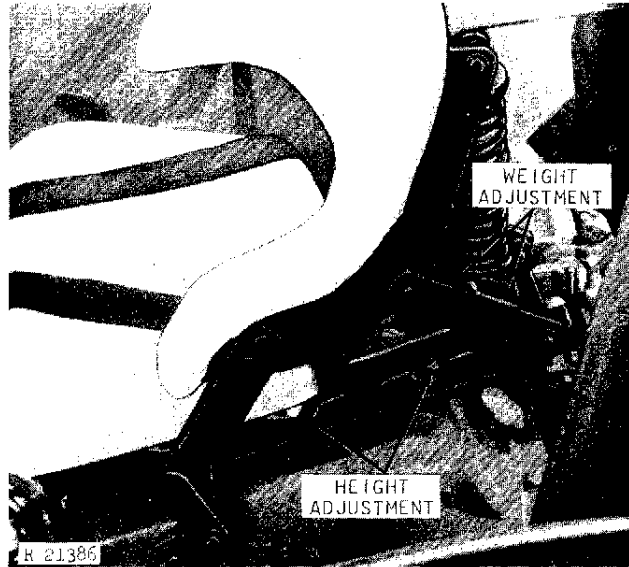
**Deluxe Seat.** Lift the release latch (shown). Stand up and lift the seat to the upper rear. To return the seat to the normal position, pull the seat forward. Sit down on the seat to lock it in place.

**Regular Seat.** Lift back of seat and push seat to rear. To return the seat to the normal position, lift the front of the seat and move it forward.

#### Adjusting for Height and Weight of Operator

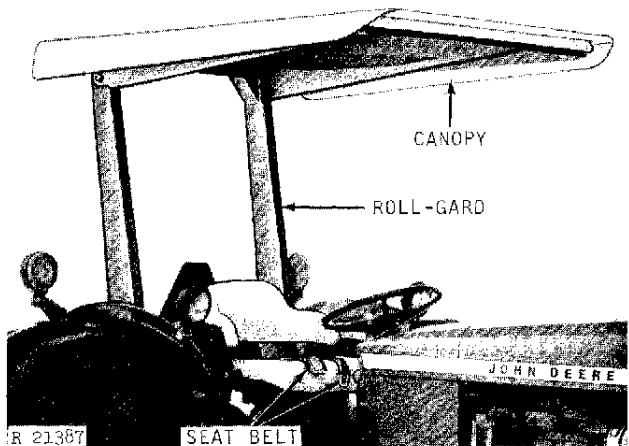
To adjust the seat for operator's height, loosen the cap screws securing the seat to the rockshaft housing or seat support base and slide seat to desired position. Then securely tighten cap screws.

The deluxe seat is adjustable for operators weighing from 100 to 300 pounds. To adjust, move the seat to the upper rear position to take tension off the spring. Loosen the wing nuts under the weight adjustment link, and move slide to desired weight position. Tighten wing nuts and return seat to the normal position.



*Adjusting Seat for Operator's Weight and Height  
(Deluxe Seat Shown)*

### ROLL-GARD, SEAT BELT, AND CANOPY



*Roll-Gard, Seat Belt, and Canopy*

A protective Roll-Gard with seat belt is available for your tractor. A canopy that fits on top of the Roll-Gard is also available.

See pages 58 and 64 for additional information.

**CAUTION:** Under almost all operating conditions:

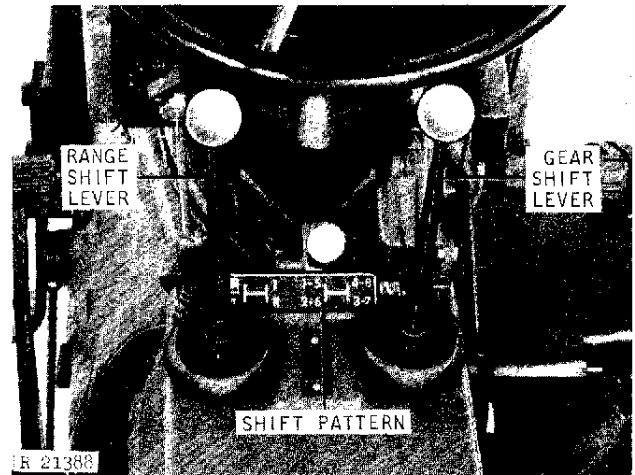
1. Use of the seat belt with the optional John Deere Roll-Gard is recommended.
2. Use of a seat belt without roll-over protective equipment is not recommended.

### SELECTING GROUND SPEED

The tractor has eight forward speeds and four reverse speeds (sixteen forward and eight reverse speeds if tractor has the Hi-Lo shift option). The wide range of speeds, together with the variable speed engine, allow the operator to balance load and speed for maximum economy, and give him flexibility to meet varying work conditions. For example, for a given travel speed the operator may choose to work in a low gear at a high engine speed or in a higher gear at a lower engine speed. Engine working speeds may be varied anywhere between 1500 and 2500 rpm.

Avoid overloading the tractor. When this occurs, operate in a lower gear. If moving the throttle slightly will change engine speed, the engine is not overloaded or lugging. Overloading causes undue strain on parts, eventually resulting in poor operation and unnecessary repair and expense.

### SHIFTING GEARS



Range and Gear Shift Levers

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

The range shift lever shifts between low, high, and reverse ranges. A park (P) position is also provided.

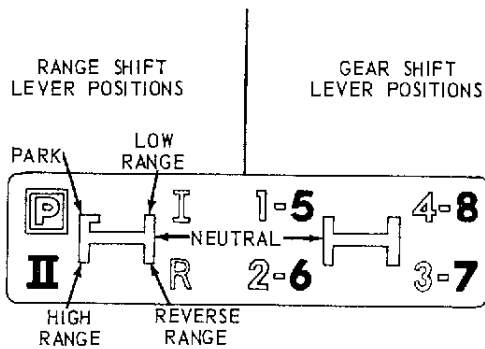
### TRACTOR GROUND SPEED IN MILES PER HOUR

*NOTE: The travel speeds shown are for tractors with 16.9-28 or 18.4-30 rear tires. Travel speeds for tractors with 13.6-38 rear tires are 4% faster; 15.5-38 tires, 3% faster; 16.9-24 tires, 9% slower; 16.9-30 tires, 5% slower; and 18.4-26 tires, 2% faster.*

Gear	Lo of Hi-Lo Shift Option			Collar Shift Transmission; Hi of Hi-Lo Shift Option; Reverser Option		
	1500 rpm	2100 rpm	2500 rpm	1500 rpm	2100 rpm	2500 rpm
1st	0.8	1.1	1.3	0.9	1.3	1.6
2nd	1.1	1.5	1.8	1.3	1.9	2.2
3rd	1.6	2.2	2.6	2.0	2.8	3.3
4th	2.2	3.1	3.6	2.8	3.9	4.6
5th	2.6	3.6	4.3	3.3	4.6	5.5
6th	3.7	5.2	6.1	4.7	6.6	7.9
7th	5.5	7.7	9.1	7.0	9.8	11.6
8th	7.7	10.7	12.8	9.8	13.7	16.3
R1	0.9	1.2	1.4	1.1	1.5	1.8
R2	1.2	1.7	2.0	1.6	2.2	2.6
R3	1.8	2.5	3.0	2.3	3.2	3.8
R4	2.5	3.5	4.2	3.2	4.5	5.4

Maximum travel speed at 2800 engine rpm (tractor with foot throttle) is 18.2 mph.  
2100 engine rpm gives the ASAE 540 or 1000 rpm PTO speed.

The gear shift lever can be used to select 1st, 2nd, 3rd, and 4th gears when the range shift lever is in low range position; it can be used to select 5th, 6th, 7th, and 8th gears when the range shift lever is in high range position. When the range shift lever is in reverse range, reverse gears comparable to 1st, 2nd, 3rd, and 4th can be obtained. On tractors with a reverser, the range shift lever does not have an R position.



R 17126

Transmission Shifting Pattern

The shift patterns are marked by a decal on the transmission case shield.

With the tractor stopped and the clutch pedal depressed, move the gear shift lever into the gear desired. Then move the range shift lever into the range desired. Shift levers must be placed fully into position.

When shifting from one gear to another or one range to another, fully stop the tractor before moving the shift lever.

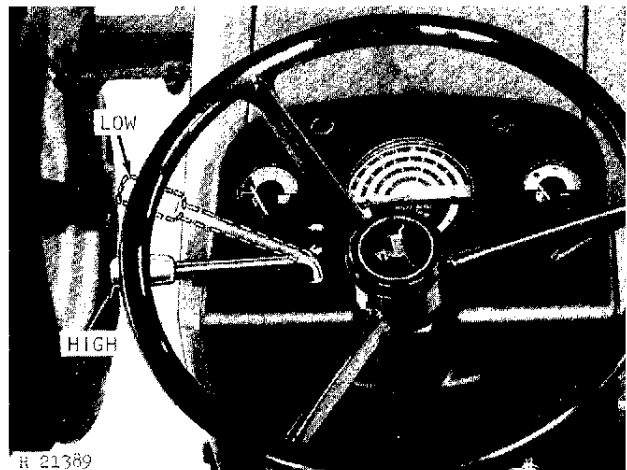
Gradually release the clutch pedal to take up the load smoothly.

To prevent unnecessary wear, never "ride" (resting the feet on) the clutch or brake pedals.

### HI-LO SHIFT

The optional Hi-Lo Shift allows the operator to increase or decrease his ground speed and pull power "on the go" without clutching.

Shifting from Hi to Lo decreases the ground travel speed 21.4 percent and provides up to 27.3 percent increase in pull power in any of the transmission speeds. Shifting from Hi to Lo provides approximately the same speed and pull power change as manually down-shifting one gear on the transmission.

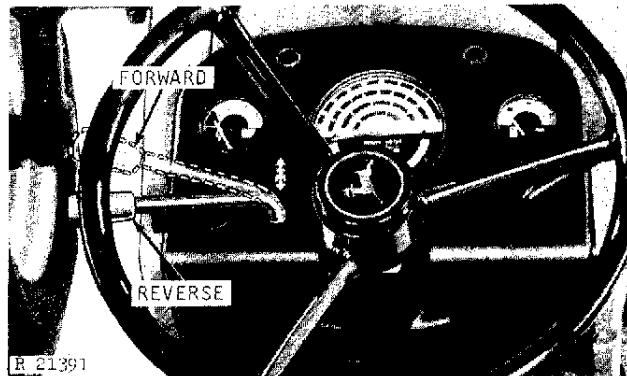


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Hi-Lo Shift Lever

### REVERSER

The reverser allows the operator to change the direction of travel "on the go" without clutching or shifting gears.



R 21391

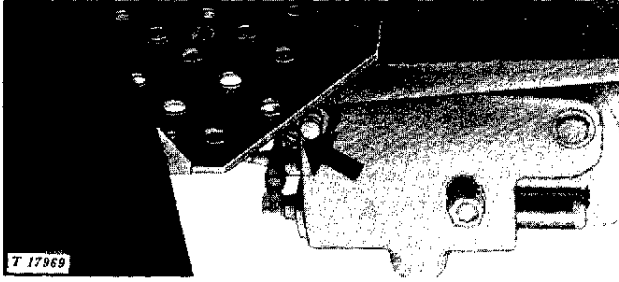
Reverser Control Lever

The reverser control lever is located at the left side of the instrument panel. When the lever is in the forward position, the tractor is in direct drive. When the lever is pulled rearward, the tractor is in reverse drive. It is not necessary to disengage clutch or to shift gears when using the reverser lever.

**CAUTION:** The reverser gear ratio is such that reverse speeds are higher than their respective forward speeds. Therefore, use care when changing direction.

**CAUTION:** Release clutch pedal slowly to prevent rapid engagement of hydraulically controlled forward or reverse clutch.

## Reverser Speed-Of-Shift Adjustment



Reverser Speed-Of-Shift Adjusting Screw

The reverser may be adjusted for a firm rapid shift or for a slower shift.

The reverser speed-of-shift adjusting screw is located on the rear of the reverser control housing under the right footrest. Turn the adjusting screw clockwise to slow down the shift. Turn the screw counter-clockwise to speed up the shift.

*NOTE: When the speed-of-shift screw is adjusted properly, the time to complete the shift should be 3/4 to 1-1/4 seconds.*

## HIGH SPEED DRIVING

Use 8th gear to save time when driving on highways or other smooth roads. But - BE CAREFUL! On rough ground, shift to a lower gear for safety.

**CAUTION:** Fast driving causes many accidents. Couple the brake pedals together and always drive at a safe speed. Do not coast downhill. Keep clutch engaged and transmission in gear at all times.

## PARKING THE TRACTOR

To park the tractor, completely stop the tractor. Move the gear shift lever into any gear position. Then move the range shift lever into park (P) position.

To shift from park, first move the range shift lever slightly to the left, and then pull the lever back into neutral.

If the tractor is parked on a steep incline, place the gear shift lever in the 1-5 gear position to facilitate shifting out of park.

## TOWING THE TRACTOR

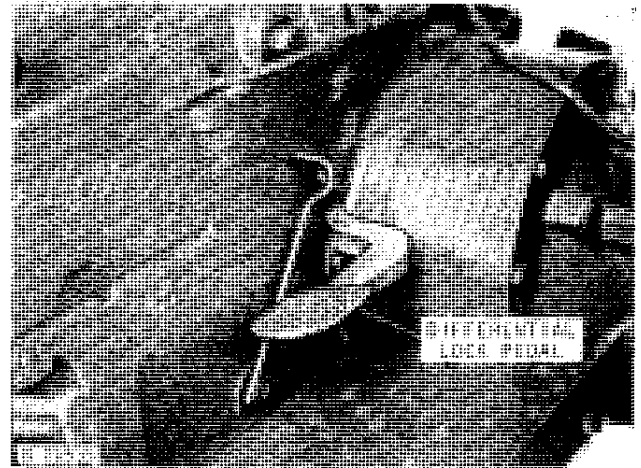
**CAUTION:** Never tow the tractor at a speed greater than 15 miles per hour.

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

Tow tractors (without Hi-Lo or Reverser) for starting in 6th, 7th, or 8th gear only.

**IMPORTANT:** Do not attempt to start a tractor with Hi-Lo shift or Reverser by towing. Doing so may damage the Hi-Lo or Reverser clutches in a very short distance.

## DIFFERENTIAL LOCK



Differential Lock Pedal

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.

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

To engage the differential lock, depress the operating pedal located on the left side of transmission case. Unequal traction will keep the lock engaged. When traction is equalized, the pedal will disengage itself by spring action.

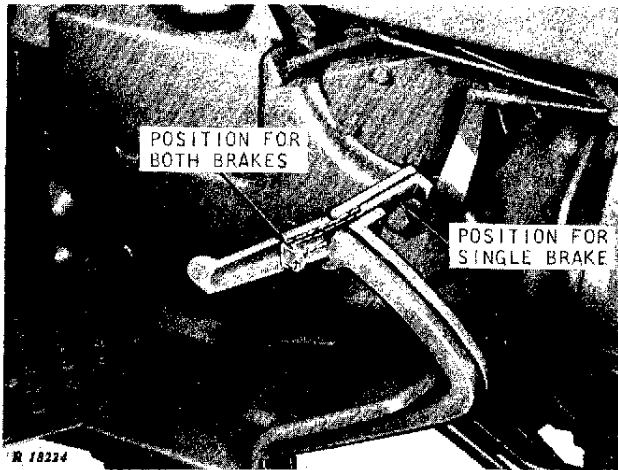
If rear wheels slip, then get traction, then slip again, hold the pedal in the engaged position.

### POWER STEERING

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

### HYDRAULIC BRAKES

The tractor is equipped with full hydraulic brakes.



Brake Pedals

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 and use a light pressure on the pedals.

**CAUTION:** Fast driving causes many accidents. Couple the brake pedals together and always drive at a safe speed.

### TOWED LOADS

**CAUTION:** Towed loads that weigh more than twice the weight of tractor should have brakes. If not, reduce speed and avoid inclines.

### HYDRAULIC OIL SUPPLY

On tractors without independent PTO avoid prolonged disengagement of the transmission or PTO clutch, which controls transmission oil pump operation. Disengaging the clutch for longer periods reduces the supply of pressure oil for hydraulic functions.

### FRONT WHEEL TREAD

Your tractor may be equipped with a heavy duty, straight, or sweptback adjustable front axle. The following chart lists the wheel tread ranges for different types of front axles.

Axle Type	Tire Size	Wheel Treads
Swept-back	6.00-16	49 to 74 inches*
	7.5L-15	79 inches maximum
	7.50-16	with wheels reversed
	27/9.5-15	50 to 75 inches*
Straight	6.00-16	49 to 75 inches* *
	7.5L-15	81 inches maximum
	7.50-16	with wheels reversed
Extra wide straight	6.00-16	60 to 88 inches* *
	7.5L-15	93 inches maximum
	7.50-16	with wheels reversed
Heavy Duty Adjustable	7.5L-15	53 to 73 inches* *
	7.50-16	
	9.5L-15	
	11L-15	55 to 75 inches* *

\* Adjustable in 1.89-inch steps.

\* \* Adjustable in 2-inch steps.

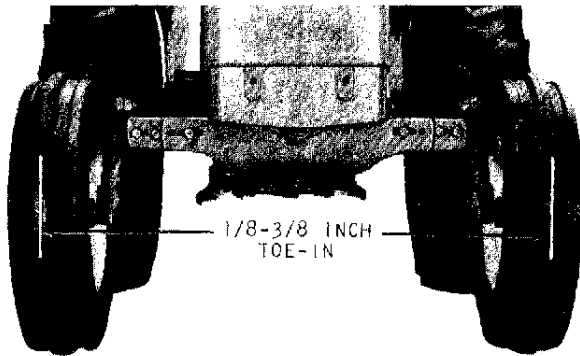
To adjust the front axle tread, raise the front end of tractor just enough to remove the tractor weight from tires. Remove the axle bolts and the outside tie rod clamp bolts.

Slide the axle knees in or out to desired position. Be sure that axle knee and tie rod end are moved the same distance to keep the wheels in correct position. The outside tie rod clamp bolt can only be installed in clamp when "half-circle" notches on bottom side of tie rod end are in line with hole in clamp. The half-circle notches are spaced 1-inch apart to correspond with the 1-inch bolt hole spacing in axle. Normally, both axle knees should be positioned an equal distance from the center line of tractor.

After axle knees have been moved to the desired position, install axle bolts. Use a 6-inch bolt spacing except with maximum tread width, which requires a 4-inch bolt spacing. Tighten axle bolts to 300 ft-lbs torque, and tighten the outside tie rod clamp bolts to 60 ft-lbs torque. Check toe-in adjustment.

**IMPORTANT:** Do not separate axle knees beyond limits given in tread chart on previous page. Do not unscrew threaded portion of tie rod tube beyond second hole. Tractors being operated with heavy front end loads (such as a loader) should not have front wheels reversed.

### Toe-In Adjustment



R 21561

Correct Toe-In

Toe-in of the front wheels 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.

To adjust, loosen both clamps on each tie rod tube. Turn both tie rod tubes an equal amount until toe-in is correct. Both front wheels must have equal toe-in. Tighten inner and outer tie rod clamps to 55 ft-lbs. torque.

### Front Wheel Retainers

Periodically check the tightness of the front wheel hub cap screws. If necessary, retighten wheel-to-hub screws evenly to 100 ft-lbs.

**IMPORTANT:** During break-in, retighten all front wheel retainers evenly after the first 4 hours and again after 8 hours of operation. Check tightness of retainers frequently during the first 100 hours of operation.

### REAR WHEEL TREAD

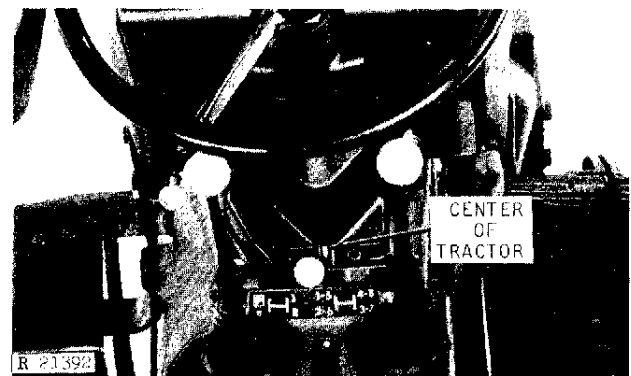
**CAUTION:** NEVER operate tractor with a loose wheel, rim, or hub.

Rear wheel tread may be varied by changing the rim or wheel position. The method used for changing the wheel tread will depend upon whether the tractor has a rack and pinion or a flanged axle; demountable rim, steel disk, cast, or power adjusted wheels.

The tread ranges also vary with the type of wheel and axle used. Use the charts on the following pages for rear wheel tread specifications.



**CAUTION:** Do not remove fenders to obtain narrower tread settings.

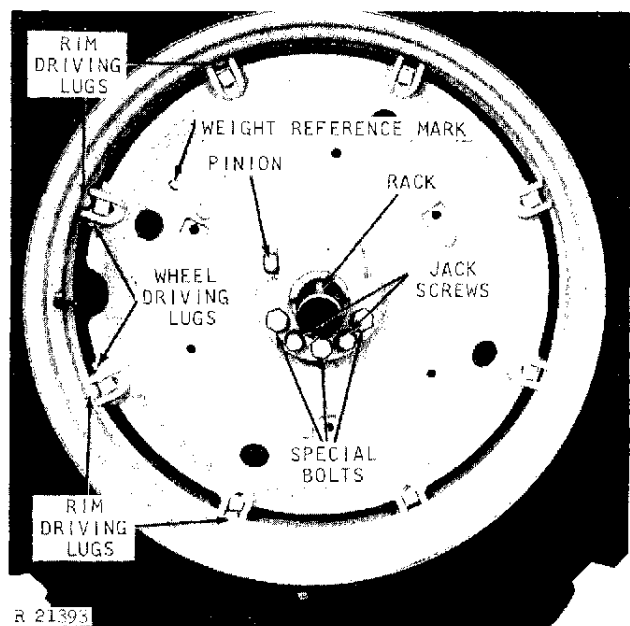


R 21392

Center of Tractor

Measure the distance from the center of the tractor to the center of the rear tire. This distance should be the same for both sides of the tractor.

### Adjusting Wheel on Rack and Pinion Axle



R 21393

Rack and Pinion Adjustment

This method of adjustment is accomplished by turning a pinion gear in the wheel hub that engages a rack on the axle. See the illustration. This adjustment may be made with one or two wheel weights installed.

Clean the axle surface with a steel brush to aid in retightening of sleeves.

With the rack on top of the axle, loosen the three special bolts 3/8 inch. Loosen the tapered sleeve by turning the two jack screws clockwise until the inner edge of the hex. surface is flush with the hub surface. Jack up the tractor and turn the pinion gear to slide the wheel in or out on the axle.

If the sleeve does not break loose with a normal amount of pressure (approximately 200 ft-lbs.), strike the end of the axle several times with an 8 to 10 pound hammer. Then evenly retighten the jack screws. Continue this procedure until the sleeve loosens. Do not strike the end of the axle after the sleeve has loosened.

**IMPORTANT:** Tires or weights should have at least one inch clearance with the fenders. Setting the wheels too close to the rear axle housing may 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 1/8-inch or more if needed for fender clearance. Rack on axle must be up.

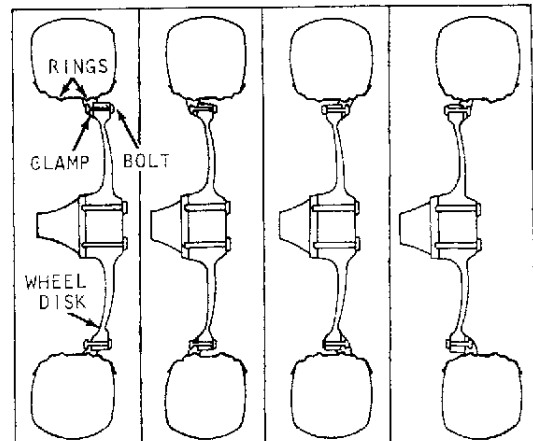
After the desired tread is obtained, back the jack screws all the way out against the stop. Do not force. Lubricate the threads and tighten the special bolts to 300 ft-lbs. torque. Retighten bolts several times until all three bolts stay tightened to 300 ft-lbs. torque. The jack screws must be free to turn after the hub is tightened. If necessary, back the jack screws out a little further and retighten special bolts.

Adjust the other wheel in the same manner. Normally, both wheels are set the same distance from the tractor center line. AFTER driving tractor for approximately 20 revolutions of the wheel and BEFORE working, retighten the special bolts to 300 ft-lbs. torque. After working tractor for approximately 3 hours and again at 10 hours, retighten the special bolts and keep them tight.

### Changing Rim Position on Cast Wheel (Tractors with Rack and Pinion or Flanged Axle)

The rim is held to the wheel by clamps that engage one of the two raised rings around the inside of the rim. Tread adjustment is varied by bolting the clamps to either side of the wheel or by engaging the clamps to either one of the two raised rings on the rim. This gives four possible rim positions on the wheel.

To adjust rim position on the wheel, jack up the tractor to relieve weight on the tire. Remove clamps and shift rim or wheel to the desired position. Install the clamps and tighten evenly (170 ft-lbs. torque). Be sure the clamps on the wheel driving lugs engage the rim driving lugs (see illustration).



R 21394

DISH IN (Flanged)	50"	58"	54"	62"
DISH IN (Rack & Pin)	50" - 68"	56" - 76"	55" - 75"	63" - 83"
DISH OUT (Flanged)	66"	74"	70"	78"
DISH OUT (Rack & Pin)	65" - 81"	73" - 89"	72" - 88"	80" - 96"

Adjusting Rim Position on Cast Wheel (Flanged Axle Shown)

**NOTE:** To prevent interference with the fenders, minimum tread is 54 inches for 13.6-38 and 15.5 tires, and 58 inches for 16.9 and 18.4 tires. With a Roll-Gard installed, minimum tread widths are 4 inches more.

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, **RE-TIGHTEN** the clamps and keep them tight (170 ft-lbs).

### Reversing Cast Wheel on Axle

Rear wheel tread may be varied by reversing the dish of the wheels.

Jack up the tractor and remove the complete wheel assembly. Install wheel on opposite axle. This will reverse the dish of the wheel and maintain the proper direction of tire rotation.

On a flanged axle, tighten the wheel-to-axle screws to 130 ft-lbs torque. After a few hours of service, retighten the wheels and keep them tight.

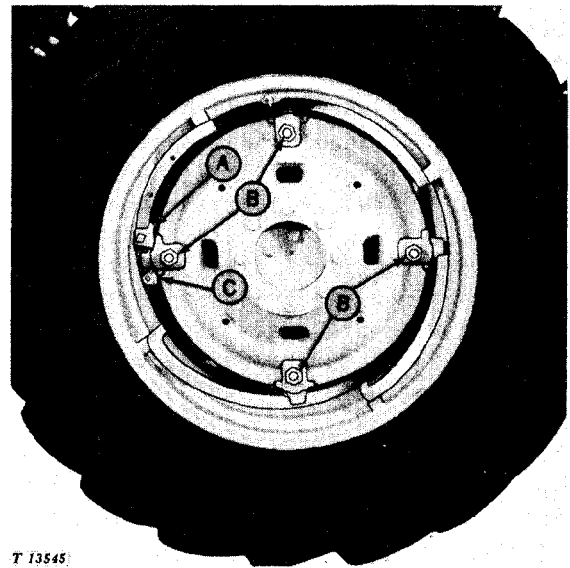
On a rack and pinion axle, tighten the special bolts to 300 ft-lbs torque using the same tightening and retightening procedure given on page 14.

### Power Adjusted Rear Wheels

Power adjusted rear wheels make it possible to change rear wheel treads by engine power without jacking up the tractor. Power adjusted tread settings of 52 to 77 inches with 16.9-28 rear tires are available in 4-inch steps. Rear wheel treads up to 80 inches are available by reversing the wheel on the axle as described above for cast wheels or on page 16 for steel wheels.

To decrease the rear wheel tread, use the following steps:

1. Move stop (A) to desired position.
2. Loosen nuts (B) on wheel clamps.
3. Start tractor and shift into forward or reverse gear (to get correct wheel rotation). Brake opposite side and turn wheel until disk spirals on rail and engages stop (A).
4. Move stop (C) against wheel clamp and tighten it securely.



T 13545

Power Adjusted Rear Wheels

5. Tighten nuts (B) on wheel clamps evenly to 85 ft-lbs torque.

6. Adjust tread on second wheel in the same way as above.

**IMPORTANT: Retighten wheel clamps to 85 ft-lbs torque after 8 hours of operation.**



whatever you do -  
**WATCH WHERE  
 YOU'RE GOING!**

R 2247

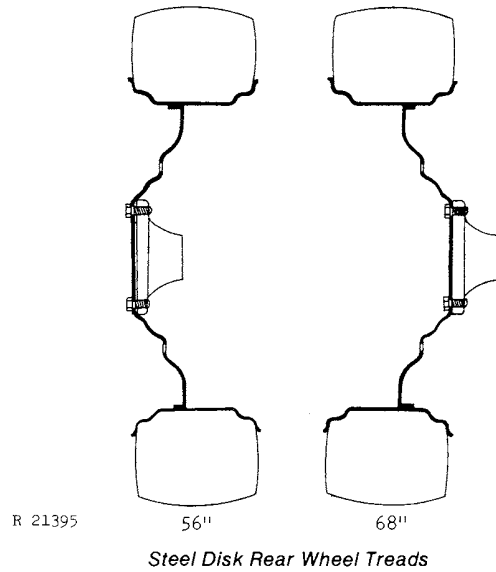
### Demountable Rims on Steel Disk Rear Wheels

Tread settings in 4-inch steps are obtained by three methods: (1) By dishing the wheel disk inward or outward on the hub, (2) by placing the rim inside or outside the wheel disk, or (3) by reversing the rim.

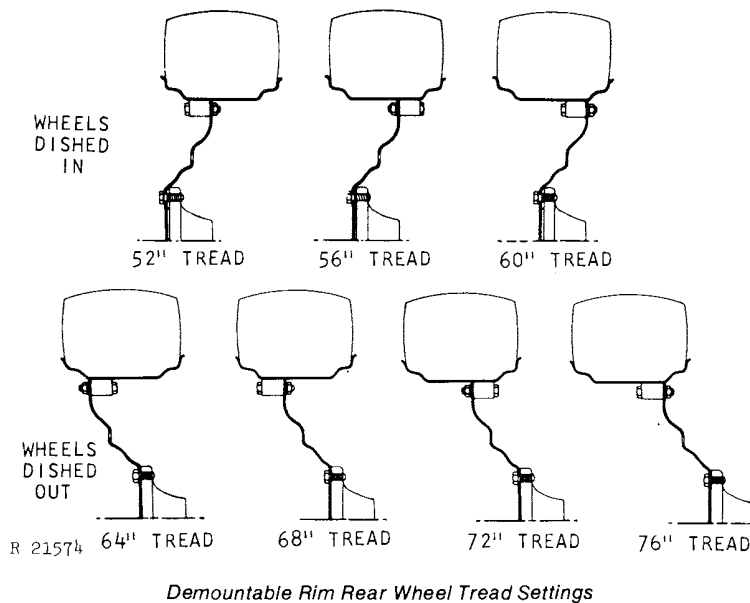
When reversing the wheel rims, the rims must be changed from one side of the tractor to the other. Tighten the wheel disk-to-axle hub bolts to 100 ft-lb torque, and the rim-to-wheel disk bolts to 170 ft-lb torque.

The relationship of the rear wheel disk and rim in obtaining the different tread settings is shown in the following drawings. Studying these drawings before attempting to change tread settings will save time and unnecessary labor.

### Steel Disk Rear Wheels



Tread settings of 56 or 68 inches can be obtained by reversing the wheels. Change the wheels from one side of the tractor to the other to maintain proper tire rotation. Tighten wheel disk-to-axle bolts evenly to 100 ft-lbs torque.





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## 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 in the charts. Under-inflated tires break and wear out rapidly. Over-inflated tires reduce traction and increase wheel slippage.

### INFLATION CHARTS

Front Tires			
Tire Size	Ply Rating	Inflation Pressure	
		With Towed or Rear-Mounted Implement	With Max. Ballast or Front-Mounted Implement
6.00-16	4	24 psi.	32 psi.
7.5L-15	6	28 psi.	40 psi.
7.50-16	6	28 psi.	40 psi.
9.5L-15	6	28 psi.	32 psi.
11L-15	6	24 psi.	28 psi.
27/9.5-15	4	25 psi.	25 psi.

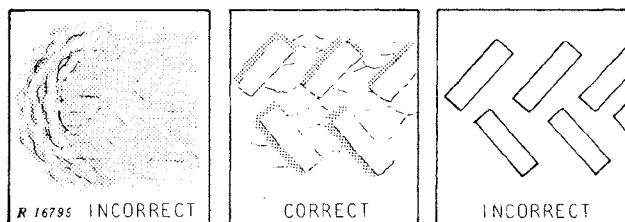
Rear Tires			
Tire Size	Ply Rating	Inflation Pressure	
		With Little or No Added Ballast	With Max. Ballast or Heavy Rear-Mounted Implement
13.6-38	4	14 psi.	14 psi.
15.5-38	6	18 psi.	20 psi.
16.9-24	6	16 psi.	18 psi.
16.9-28	6	16 psi.	18 psi.
16.9-30	6	16 psi.	18 psi.
18.4-26	6	16 psi.	16 psi.
18.4-30	6	16 psi.	16 psi.

## BALLAST

The performance of your tractor will be improved if the correct amount of front or rear ballast is used to obtain the proper amount of rear wheel slippage. Front ballast will help maintain stability and steering control when front weight is transferred to the rear wheels.

### Rear Ballast

The amount of rear ballast should permit operation with approximately 10 to 15 percent slip of the rear wheels. Field tests show that under normal field conditions maximum drawbar horsepower is available when operating in this range.



Tire Tread Patterns

If too much rear ballast is used, the tread marks will be clear and distinct. Overballasting results in less power available to pull the implement because more power is required to overcome tractor rolling resistance. It will result in unnecessary soil compaction, and may overload the tires. With too little rear wheel ballast, the tread marks will be obliterated by excessive slippage which also results in horsepower loss and excessive tire wear.

A compromise in ballasting may be necessary when the tractor is used to pull loads having different draft requirements. If the tractor is used most of the time pulling high draft loads (such as plowing), ballast the tractor for this operation. However, if a large amount of time is spent on light load work or in the higher gears, more consideration should be given to ballasting for the light operating condition and permitting the slip to increase for the small amount of time spent on high draft work.

### Measuring Slippage

The following method may be used to measure rear wheel slip.

1. Mark a reference line on the side of the tire. Walk along side of the tractor while it is working and drop a marker where the chalk mark comes down to the ground.

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