John Deere 6030 Tractor

JOHN DEERE

OPERATORS MANUAL

John Deere 6030
Tractor

OMR55943 K2 English

John Deere Tractor Works
OMR55943 K2

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

To the Purchaser

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.

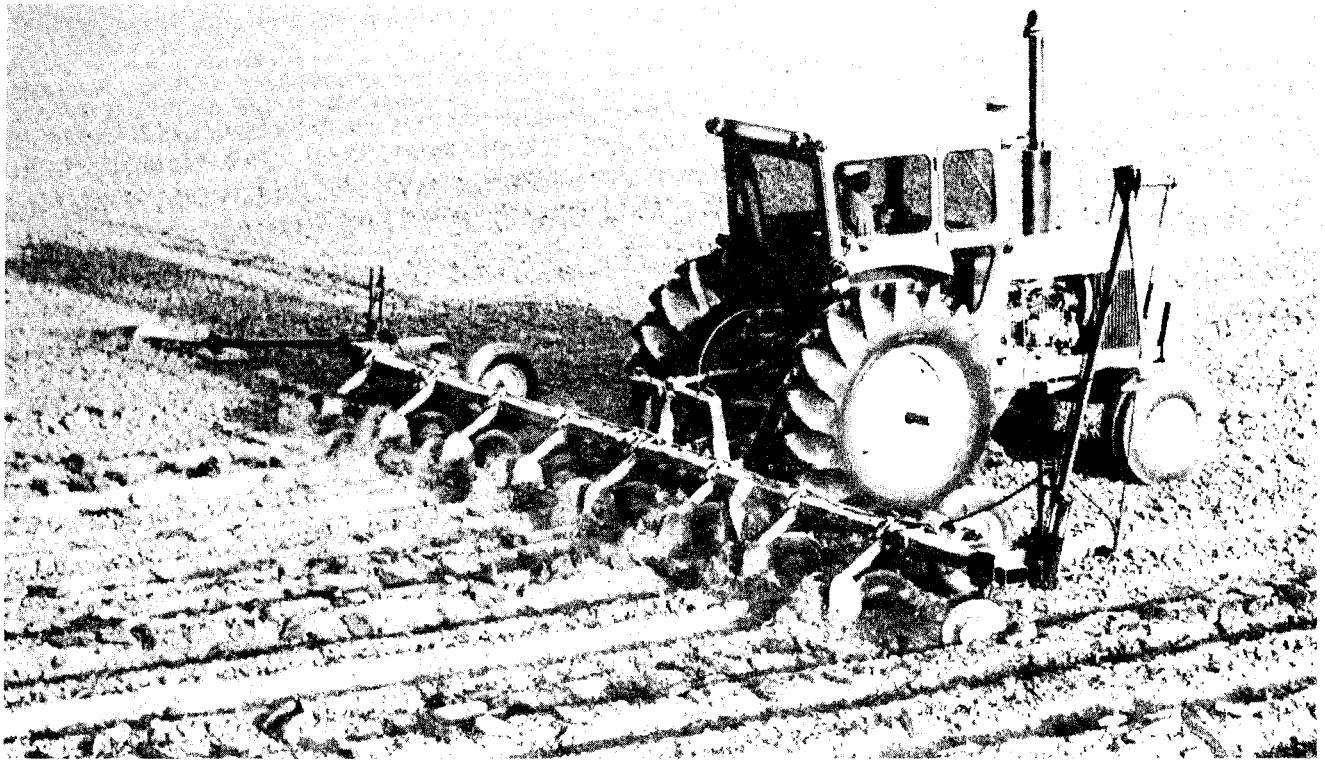
Worldwide graphic symbols are used to assist identification and operation. In this manual, an identifying symbol is placed by the instructions like the example at left for the symbol on the engine oil pressure gauge. The cylinder block in the symbol represents the engine, the drop signifies oil, and the arrows indicate pressure. Regardless of the language used in a nation, this symbol means engine oil pressure without translation.

Record your tractor serial numbers in the spaces provided on page 75. 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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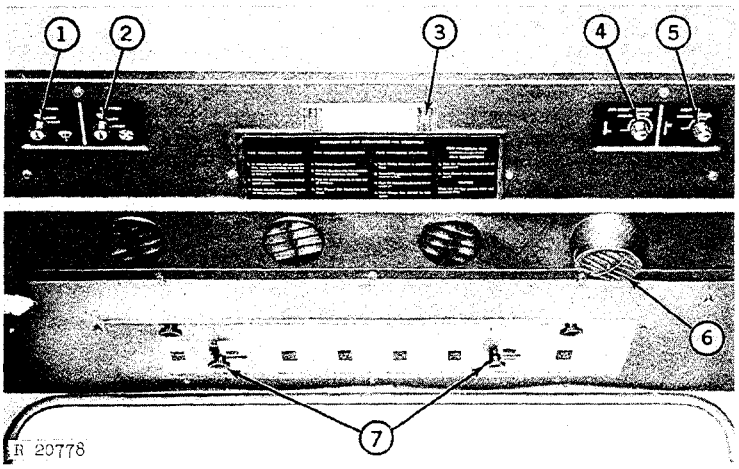
Controls and Instruments

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 idenfification and operation.



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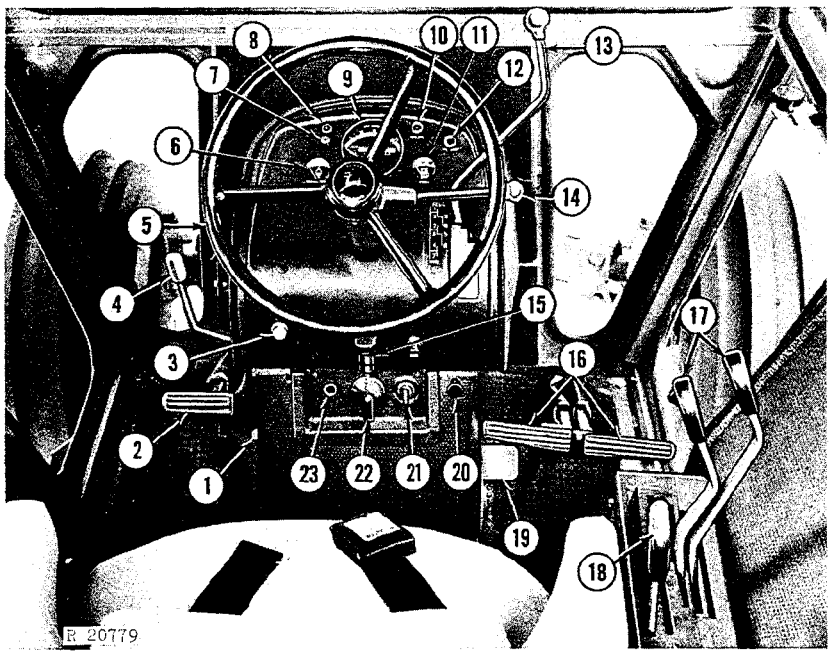

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22—Light Switch (Pages 20 and 21)
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Operation

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 for the first time each day—see pages 43 and 44 for additional information.

(a) Check the engine crankcase oil level.
(b) Check the radiator coolant level.
(c) Check and if present, remove water or sediment from fuel pump sediment bowl or the fuel filter.
(d) Lubricate the wide swing drawbar rollers, the front axle pivot pins, steering knuckle pins, steering bell crank and steering cylinder end fittings.
(e) Grease the front wheel bearings and rear axle bearings if the tractor has been operated in extremely wet or muddy conditions.
(f) Make sure the fuel shut-off valve on the fuel tank is open.

OPERATING THE ENGINE

STARTING THE ENGINE

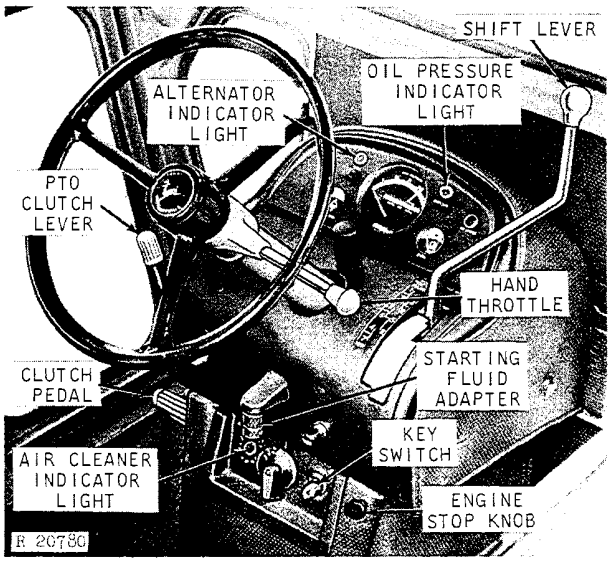
NOTE: If the prevailing temperature is 40°F. or lower, it may be necessary to use a cold weather starting aid to start the engine—see next page.

(1) See that the shift lever is in "park" position, the PTO clutch is disengaged, the rockshaft control lever is in the lowered position, and the remote cylinder operating levers are in neutral.

(2) Set the hand throttle approximately 1/3 of its travel downward (1000) rpm position. If the engine is turbocharged, the engine stop knob should be all the way in.

(3) Turn the key switch clockwise to the first position. The alternator (see worldwide symbol at left) and oil pressure indicator lights should glow.

Turning the key switch further to the start position should cause the air cleaner (see symbol) indicator light to glow and cause the alternator indicator light to go out. If any light fails to glow, turn off the key switch and determine the cause.



Starting Controls

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

(4) Depress the clutch pedal to decrease drag on the engine and 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."

Before the starter will operate, the shift lever must be in neutral or "PARK."

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.

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

Turbocharged Engine

To insure turbocharger lubrication after starting the engine, do not exceed 1000 rpm or do not accelerate the engine until after the engine oil pressure indicator light goes out.

Should the engine be killed when operating under load, immediately restart the engine to prevent overheating of turbocharger parts, caused when the flow of oil for cooling and lubrication is stopped.

To obtain prompt starting of a turbocharged engine after the engine is killed or starts and then stops, repeat the engine stop and start cycle. (a) Pull the engine stop knob out and push it all the way in. (b) Move the hand throttle to the 1000 rpm position.

When starting the engine after the tractor has been in storage, pull the engine stop knob all the way out. Crank the engine with the starter until the engine oil pressure indicator light goes out. Do not operate the starter more than 30 seconds at a time. After the indicator light goes out, start the engine.

COLD WEATHER STARTING AIDS

For cold weather starting, the tractor may be equipped with starting aids, either factory-installed or available from your John Deere dealer.

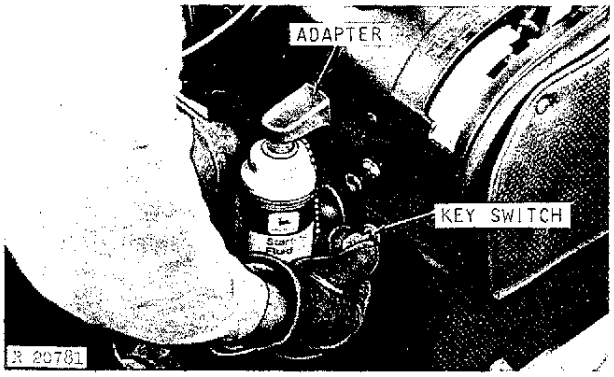
These aids are effective at low temperatures, only when the engine is otherwise operating satisfactorily. They will not correct such deficiencies as low battery charge, crankcase oil of heavy viscosity, and high electrical resistance which may prevent the engine from starting.

Always use No. 1 diesel fuel at temperatures below 40°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.

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



Injecting Starting Fluid

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.

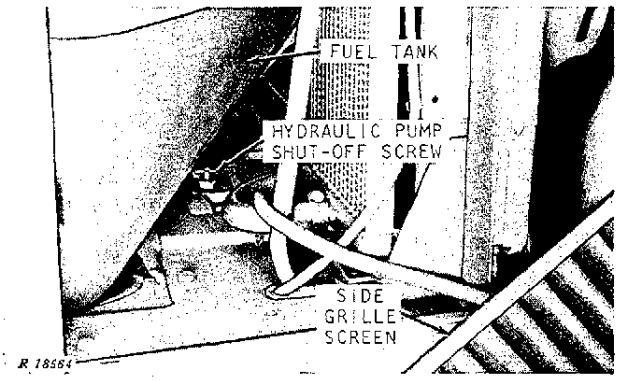
IMPORTANT: To avoid damage, turn engine with starter one or two revolutions before injecting starting fluid. Inject starting fluid only while the engine is turning.

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. Replace the safety cap on the can to avoid accidental discharge.

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



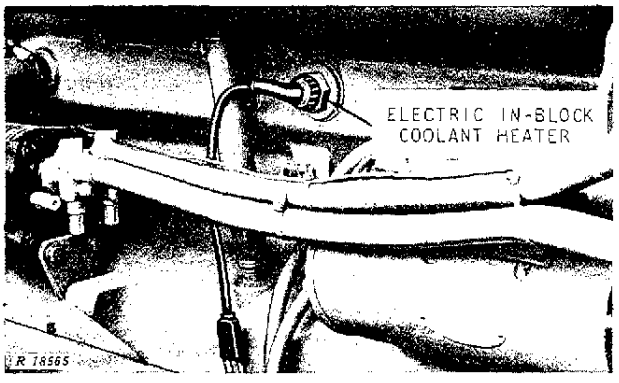
Hydraulic Pump Shut-Off Screw

If the 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 if it is not backed all the way out against the internal stop.

Electric Coolant Heater



Electric In-Block Coolant Heater

To facilitate cold weather starting, a 115-volt electrical in-block coolant heater is available from your John Deere dealer.

The in-block coolant heater is a 1000-watt unit that is on the left-hand side of the engine.

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.

The use of the heater will reduce drag on the engine to improve starting.

Under normal conditions, up to 5 hours may be required at temperatures between 0°F. and 20°F. or up to 8 hours for temperatures below 0°F.

Additional Battery

Cold weather starting can be made easier by connecting an additional 12-volt battery in parallel with the two 6-volt batteries on the tractor.

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

Make sure all electrical switches or accessories are turned off. Make the last connection or the first disconnection at the starter end frame terminal.

IMPORTANT: To prevent damage to the electrical system ground wire, never connect a booster battery to the tractor frame. To prevent damage to the alternator or electrical system, be sure to connect the batteries in proper polarity.

Connect a jumper cable of 000 size to the positive (+) post of a 12-volt booster battery and to the tractor battery POSITIVE (+) post that is connected to the starter. Connect one end of the other jumper cable to the negative post of the booster battery and the other end to the terminal on the starter end frame. Do not connect jumper cables to tractor frame.

TRACTOR WARM-UP PERIOD

Always be sure that 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 1200 rpm for 5 minutes and then operate it at about 1500 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.

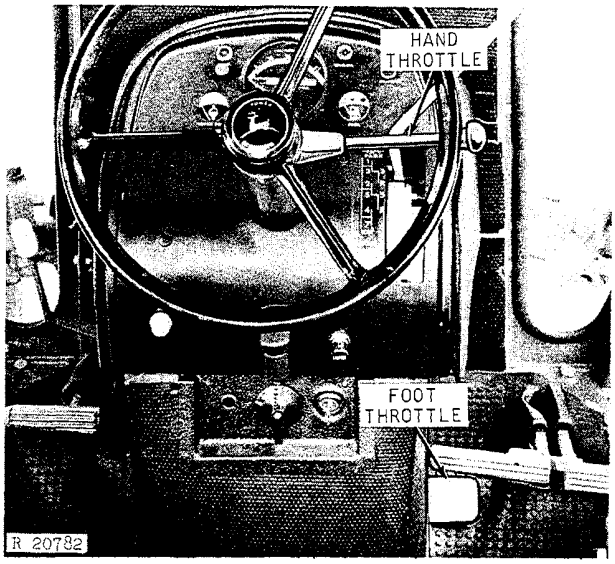
When the tractor is to remain idle for a considerable length of time, stop the engine.

ENGINE SPEEDS

The turbocharged engine is designed to operate at working speeds ranging from 1500 to 2100 rpm. The naturally aspirated 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 2100 rpm to obtain the 1000 rpm PTO speed.

Slow idle speed is approximately 800 rpm. To check engine no load speed, see page 47.

Using Hand Throttle



Hand Throttle and Foot Throttle

Use the hand throttle to select slow idle or any of the variable governed speeds in the engine working range.

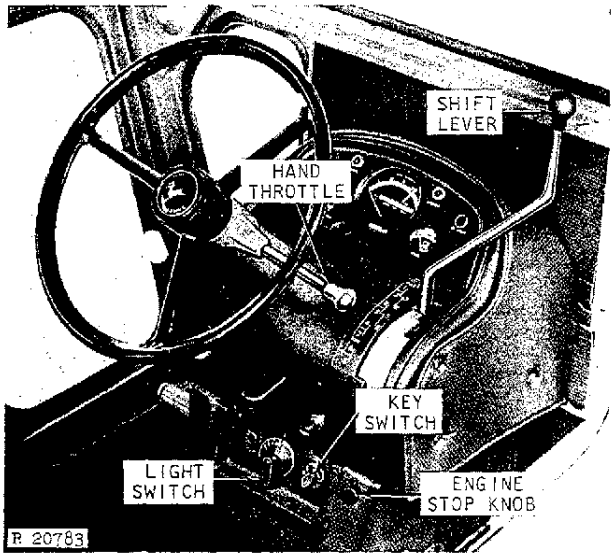
Move the hand throttle counterclockwise as far as it will go to obtain normal slow idle speed of 800 rpm.

Pull the hand throttle all the way downward to obtain a 2100 rpm load speed position for a turbocharged engine or 2200 rpm load speed position for the naturally aspirated engine.

Using Foot Throttle

The foot throttle is used to raise engine speed momentarily above the speed selected by the hand throttle. Maximum engine speed obtained by the foot throttle is the same as that obtained by the hand throttle.

STOPPING THE ENGINE



Stopping Controls

Place the shift lever in "PARK" and allow the engine to idle from 3 to 5 minues to cool the engine and turbocharger.

Lubrication and cooling of the turbocharger and some engine parts is provided by the engine lubricating oil. Therefore, sudden stopping of a hot engine may allow some parts to overheat and cause possible damage.

Turbocharged Engines

After idling the turbocharged engine at 800 rpm for a few minutes, pull the engine stop knob all the way out. After the engine stops, release the knob and allow it to go all the way back in. Turn the key switch off.

Naturally Aspirated Engines

After idling the engine for a few minutes, turn the key counterclockwise to the off position and stop the engine.

All Engines

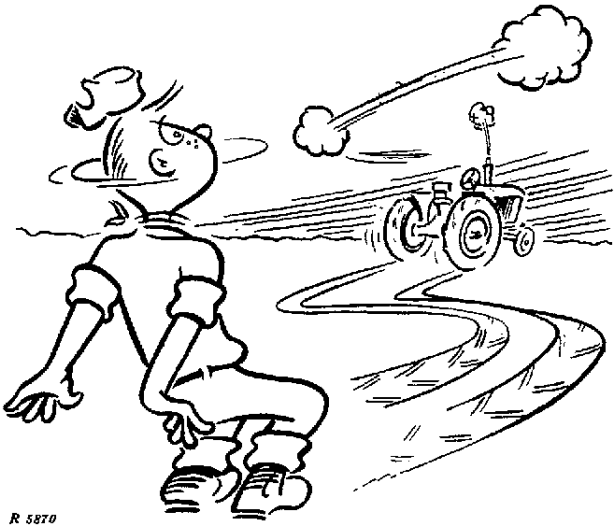
After stopping the engine, remove the key from the switch to prevent tampering and unauthorized operation. Removing the key also prevents the switch from being accidentally left in the "on" or the "accessory" position and causing battery discharge.

Before dismounting, 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

To facilitate break-in, avoid prolonged periods of engine idling for the first 100 hours of service.

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 38.

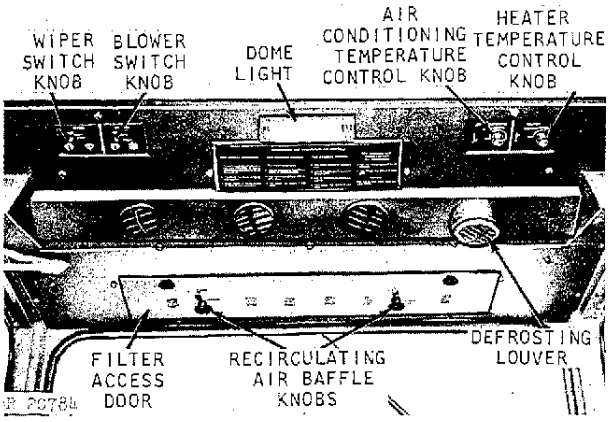


CAUTION: Whenever the tractor is stopped, place the shift lever in the "PARK" position BEFORE DISMOUNTING. Never dismount from the tractor when it is in motion.

OPERATING THE TRACTOR

CAUTION: The cab air filters are not designed to filter out harmful chemicals. When using agricultural chemicals, follow the instructions given in the implement operator's manual and those given by the chemical manufacturer.

CAB CONTROLS



Air Conditioned Cab Controls

Recirculating Air Baffle

When the recirculating air baffle is moved to the left, filtered outside air enters the blower to provide maximum pressurization of the cab. This is the normal operating position.

Loosening the knobs and moving them to the right opens the recirculating air baffle allowing the air inside the cab to recirculate and mix with a small amount of incoming outside air. In the recirculating position, the air conditioner will maintain a lower cab temperature or the heater will maintain a higher cab temperature.

Blower Switch

To maintain a clean atmosphere within the cab when operating the tractor, run the blower continuously with the doors and windows closed. To obtain low fan speed, turn the blower switch knob clockwise to the first position. For high fan speed, turn the switch clockwise as far as it will go. Turn the switch counterclockwise to shut off the fan.

For dusty conditions, move the baffle to the left for maximum outside air and turn blower switch all the way clockwise for high fan speed.

Rotate the louvers to control the direction of air flow. The right-hand louver can be adjusted to defrost the windshield.

Heater Temperature Control Knob

The cab may have a heater that is connected to the tractor engine cooling system. Coolant flow through the heater core is controlled by the heater temperature control knob. Adjust the volume of air flow with the blower switch.

To obtain maximum heat, turn the heater control knob all the way clockwise. Turn the knob counterclockwise to reduce the temperature. Turning the knob all the way counterclockwise shuts the heater off.

Air Conditioning Temperature Control Knob

On a cab with air conditioning, the air conditioning temperature control knob turns the air conditioning system on and controls the cooling temperature in the cab. For maximum cooling, turn the knob all the way clockwise. For less cooling, turn the knob counterclockwise.

Normal Cooling

Under normal conditions, move the air baffle control knob to the left for outside air. Turn the blower switch all the way clockwise for maximum blower speed and regulate the cab temperature by turning the temperature control knob.

Maximum Cooling

For high humidity, high temperature operating conditions, maximum cooling can be obtained by setting the air control knob to the right to recirculate the air in the cab.

Humidity Control

Turning the heater on when operating the air conditioner will help control humidity. However, under normal conditions the heater temperature knob should be turned off when operating the air conditioner.

The blower switch must be turned on before the air conditioning system will operate.

Wiper Switch

To obtain low wiper speed, turn the knob clockwise to the first position. For fast wiper speed, turn the knob all the way clockwise. The wiper blade returns to a "PARK" position when the switch is turned counterclockwise to the off position.

ROLL-GARD AND SEAT BELT

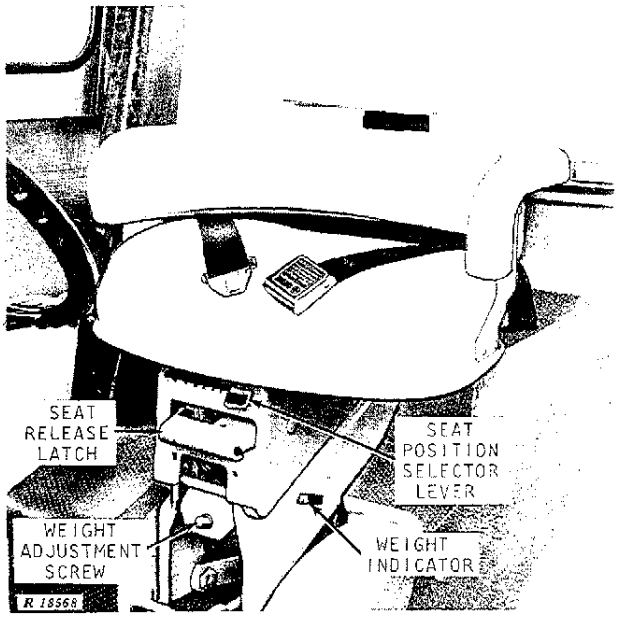
You tractor may be equipped with a protective Roll-Gard, a Roll-Gard with canopy, or a Roll-Gard cab. Seat belts are furnished with a Roll-Gard assembly. See page 63 for additional information.

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.

SEAT



Seat Controls

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

Use only warm water and mild soap to clean the seat cushions. Never use stronger solvents.

Moving 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.

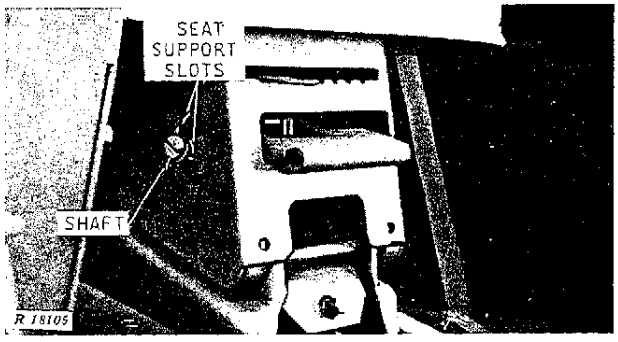
Adjusting For Weight Of Operator

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 counterclockwise until the indicator on the left-hand side of the seat conforms to your weight.

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.

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.

SELECTING GROUND SPEED

The tractor has eight forward speeds and two 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 a tractor will travel are shown below. The working speed of a turbocharged engine may varied between 1500 rpm and 2100 rpm. The working speed of a naturally aspirated engine may be varied between 1500 and 2200 rpm. Tractor ground speeds shown in the chart are only for engine speeds of 1500, 2100, and 2200 rpm.

Turn the speed indicator knob on the instrument panel until the gear selected shows on the speed indicator. The speed-hour meter pointer will now indicate the tractor ground speed in miles per hour.

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.

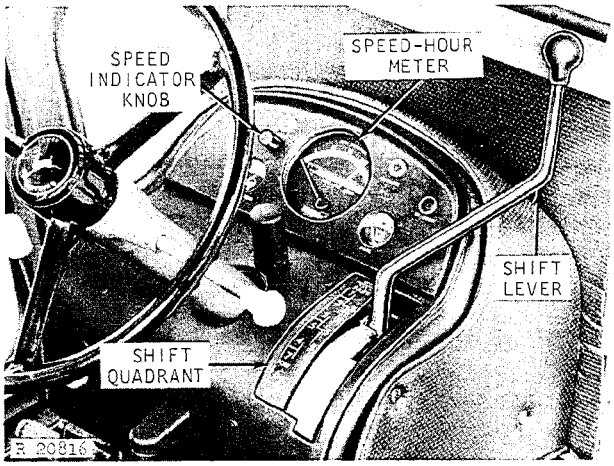
NOTE: The ground speeds are for 18.4-38 or 24.5-32 rear tires with a loaded radius of 31.6 inches. The 20.8-38 tires are 4 percent faster and 30.5-32 tires are 3 percent faster.

TRACTOR GROUND SPEED IN MILES PER HOUR

Gear	1500 rpm	* 2100 rpm	* * 2200 rpm
1st	1.4	2.0	2.1
2nd	2.2	3.1	3.3
3rd	3.1	4.3	4.5
4th	3.8	5.3	5.5
5th	4.7	6.6	6.9
6th	6.2	8.7	9.2
7th	8.0	11.2	11.7
8th	13.2	18.5	19.4
1st reverse	3.4	4.7	4.9
2nd reverse	5.2	7.3	7.6

* Maximum load speed for a turbocharged engine. 2100 engine rpm also gives the ASAE standard 1000 rpm PTO speed.

* * Maximum load speed for a naturally aspirated engine.



Speed Indicator Knob and Shift Lever

SYNCRO-RANGE TRANSMISSION

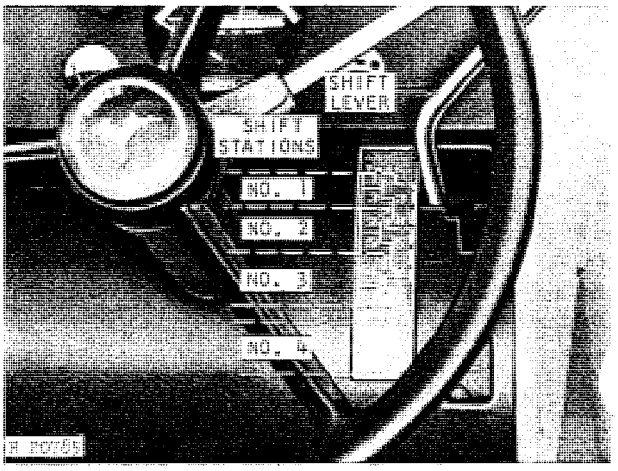
Shifting Between Stations

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 only.

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.

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



Gear Shift Stations

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.

The tractor may be shifted into a reverse gear in the No. 1 and the No. 2 shift stations.

IMPORTANT: Stop tractor before shifting from a forward speed to a reverse speed to prevent damage to the transmission.

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.

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

TOWING THE TRACTOR

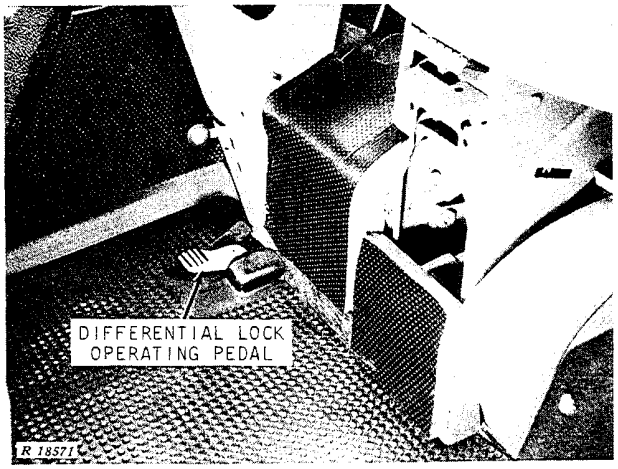
⚠ CAUTION: Never tow the tractor at high speeds. Tow the tractor with the engine running to maintain power operation of steering and brakes.

When towing the tractor, the transmission-hydraulic system should be at the "FULL" mark. If the front end is raised, add one gallon of oil for each six inches the front end is raised. Be sure differential lock is disengaged.

IMPORTANT: Always place the shift lever in "TOW." Do not attach towing means to front wheel knuckles or steering mechanism.

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.

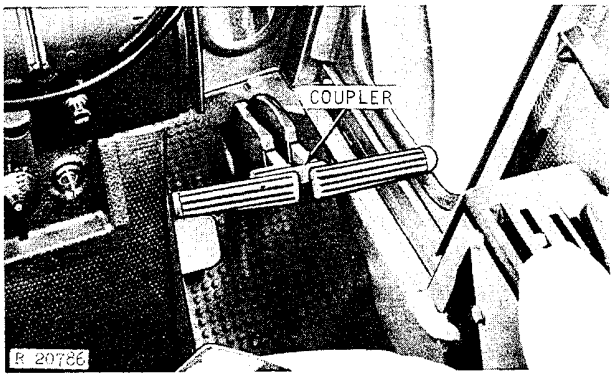


Differential Lock Operating Pedal

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 accumulator provides pressure oil to the brakes 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.

TOWED LOADS

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

FRONT AXLES

Tread Range

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

Fixed tread (Standard only)
11.00-16 tire - 69 or 71 in.

Adjustable tread:
18.4-16.1 tire - 74, 78, 82, or 86 in.
14L-16.1 tire - 69-1/2, 73-1/2, 77-1/2, or 81-1/2 in.
11.00-16 tire - 68, 72, 76, or 80 in.
9.50-20 tire:
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.

Wide adjustable tread:
14L-16.1 tire - 76, 80, 84, or 88 in.
11.00-16 tire - 74-1/2, 78-1/2, 82-1/2, or 86-1/2 in.
9.50-20 tire:
Wheel dish in - 71, 75, 79, or 83 in.
Wheel dish out - 76, 80, 84, or 88 in.

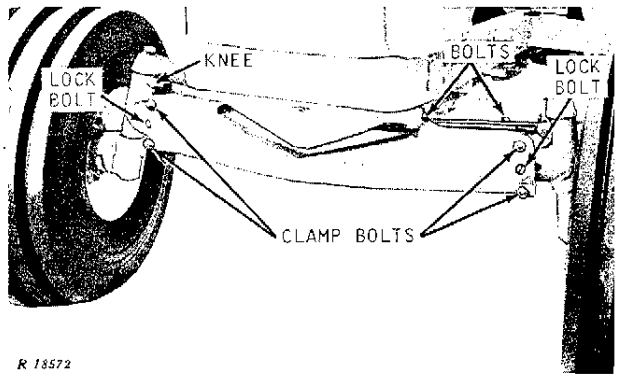
Tread Adjustment

Adjustable-Tread Front Axle

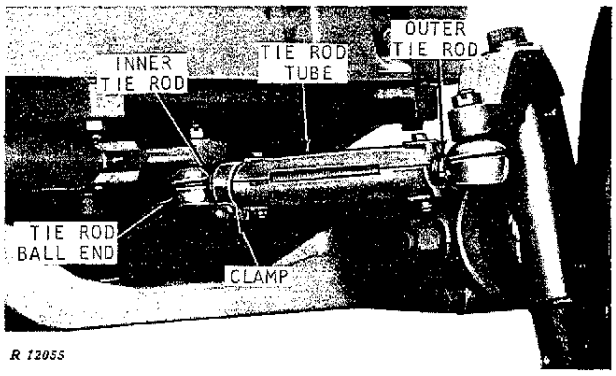
To adjust the tread width, jack up the front end of the tractor.

IMPORTANT: 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.



Front Axle

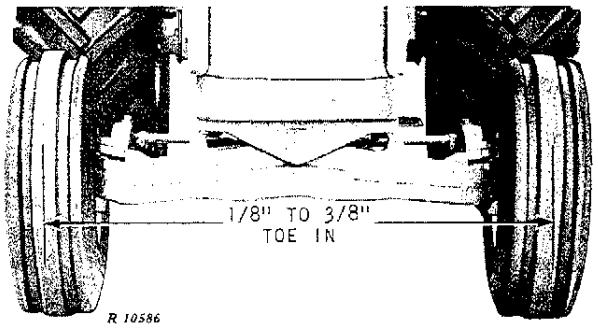


Tie Rod

Fixed-Tread Front Axle

To change the tread on fixed-tread front axle or to reverse the dish of the front wheels, unbolt the wheels from the hubs, reverse the wheels, install them, and tighten to 100 ft-lbs torque.

Toe-in Adjustment



Correct Toe-In

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.

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.

Regular and Offset Wheels

The tread can be changed 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.

IMPORTANT: When using single rear tires limit tread to 110 inches or less when pulling heavy loads in 1st, 2nd, or 3rd gear.

R 20931 AXLE TYPE	TRACTOR	OVERALL AXLE LENGTH	POSSIBLE TREAD WIDTHS 24.5-32 TIRE	30.5-32 TIRE
REGULAR	STANDARD	96"	70"-99"	76"-105"
	ROW-CROP	108"	70"-111"	76"-117"
LONG	BOTH	120"	70"-123"	----
EXTRA LONG	BOTH	125"	70"-129"	76"-135"

Tread Range for 24.5-32 or 30.5-32 Tires

AXLE TYPE	WHEEL DISK DISHED IN OR OUT	RIM RING / BOLT / CLAMP	DISH OUT	DISH IN	
REGULAR AXLE STANDARD TRACTOR	DISH IN	65"-69"	68"-77"	67"-76"	75"-84"
	DISH OUT	88"-92"	96"-100"	95"-99"	103"-107"
REGULAR AXLE ROW-CROP TRACTOR	DISH IN	60"-81"	68"-89"	67"-88"	75"-96"
	DISH OUT	88"-104"	96"-112"	95"-111"	103"-119"
LONG AXLE	DISH IN	60"-93"	68"-101"	67"-100"	75"-108"
	DISH OUT	88"-116"	96"-124"	95"-123"	103"-131"
EXTRA LONG AXLE	DISH IN	60"-99"	68"-107"	67"-106"	75"-114"
	DISH OUT	88"-122"	96"-130"	95"-129"	103"-137"

R 20932

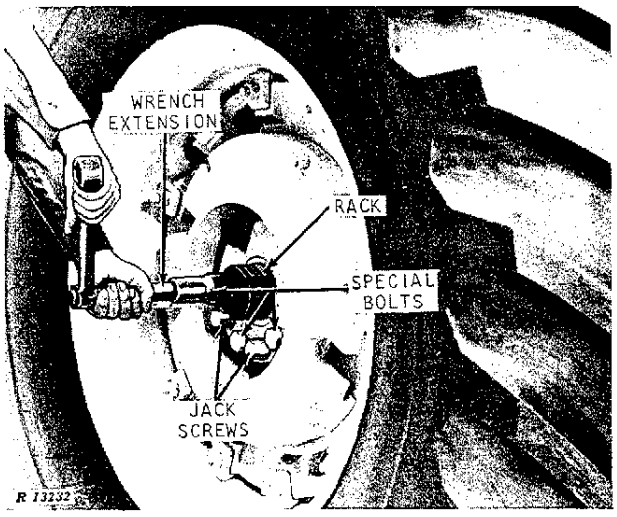
Tread Range for 18.4-38 or 20.8-38 Tires (20.8-38 Tire Minimum Tread is 63" on a Row-Crop Tractor or 66" on a Standard Tractor)

Rack and Pinion Method

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.

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.



Rack and Pinion Adjustment

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 bolt to 300 ft-lbs torque. Retighten bolts several times until all three bolts stay tightened at 300 ft-lbs torque.

IMPORTANT: Avoid setting wheel 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. Special bolts MUST be kept tight.

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 the tractor, 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.

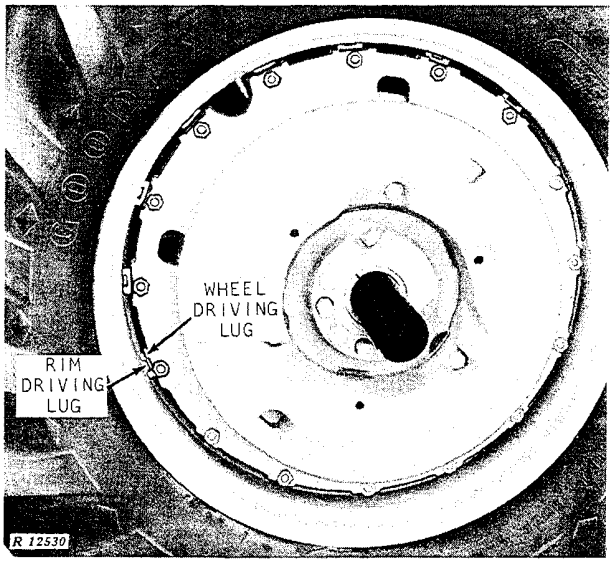
Reversing Wheel on the Axle

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 direction 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 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 offset deep well rims (24.5-32 and 30.5-32 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.



Rim Driving Lug and Wheel Driving Lug

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.

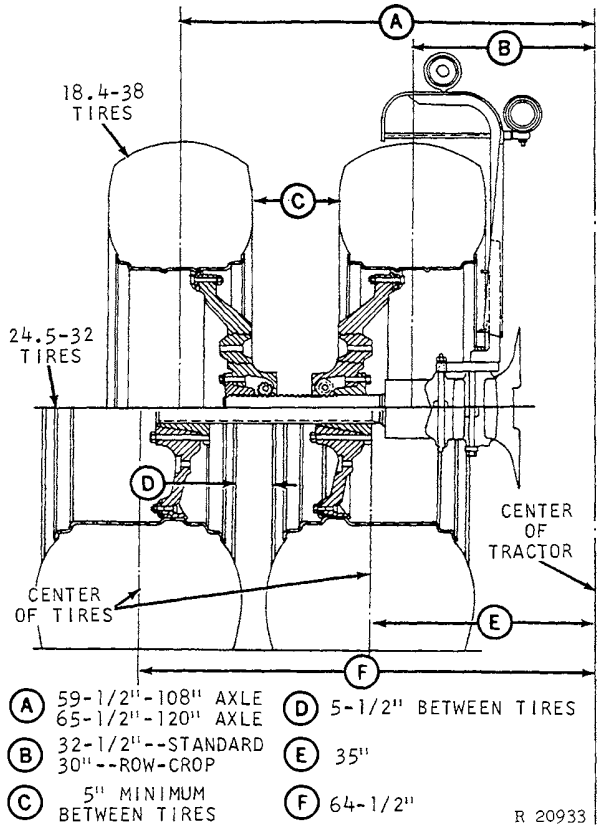
Hammer each bolt head to seat the bolts. Retighten the clamps to 170 ft-lbs torque. Adjust both rear wheels in the same manner.

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

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

Double Rear Wheels

With 18.4-38 tires, the minimum inner tire tread is 65 inches on standard tractors or 60 inches on row-crop tractors. With 20.8-38 tires, the minimum tread is 67 inches on standard tractors or 63 inches on row-crop tractors. Maximum outer tire tread is 119 inches with 108-inch axles or 131 inches with 120-inch axles. The distance between tires should be at least 5 inches. See the upper half of the illustration, next page.



18.4-38 and 24.5-32 Double Rear Wheel Tread

If tractor is equipped with 24.5-32 double rear tires, set the inner tire 34 inches from the center of the tractor and the outer tire to 64-1/2 inches. See the wheel and tire position in the lower half of the illustration.

If tractor is 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 65-1/2 inches from the center of the tractor.

Tighten inner wheel clamps to 170 ft-lbs torque and bolts to 300 ft-lbs torque. The outer wheel usually must be removed to retighten these bolts. Tighten steel disk retaining nuts to 300 ft-lbs torque and retighten them at the same intervals as the special bolts (page 14).

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

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 bottom and use a special air-water gauge.

INFLATION CHARTS

FRONT TIRES

Tire Size	Ply Rating	Inflation Pressure
9.50-20	8	40 psi
11.00-16	8	36 psi
14L-16.1	6	24 psi
18.4-16.1	6	16 psi

REAR TIRES

Tire Size	Ply Rating	Inflation Pressure: With Little or No Added Ballast	Inflation Pressure: With Max. Ballast or Heavy Rear-Mounted Implement
18.4-34*	6	16 psi	16 psi
18.4-38*	8	16 psi	20 psi
18.4-38	10	16 psi	26 psi
18.4-38	12	16 psi	32 psi
20.8-38	10	16 psi	22 psi
24.5-32	10	16 psi	20 psi
30.5-32	10	16 psi	20 psi

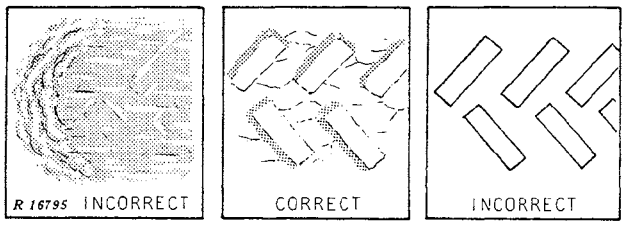
** Double tires only. Operating with single 6-ply or 8-ply tires will usually cause a severe overload on the tires and may cause a hazardous tire failure.*

BALLAST

To obtain the most satisfactory performance from your tractor, it may be necessary to add or remove ballast at the tractor front end, the rear wheels, or both, to obtain the proper amount of rear wheel slippage.

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 or chiseling), 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.

The power weight-transfer hitch is available for operation with heavy draft loads or with a wide variation of draft loads on tractors having relatively light rear ballast.

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.

2. Continue along side, count off 10 wheel revolutions, and again mark the spot where the chalk mark comes down to the ground.

3. With the implement out of the ground, drive the tractor between the marked spots, remarking the tire beside the marker on the ground. Count the wheel revolutions between the markers on the ground, estimating the last revolution as close as possible.

4. Determine the percent of slip from the revolutions obtained in Step 3.

Revolutions	Percent of Slip	Revolutions	Percent of Slip
10	0	8	20
9-1/2	5	7-1/2	25
9	10	7	30
8-1/2	15		

Add or remove ballast as required to obtain approximately 10 to 15 percent slip for the desired field operating condition.

Cast-Iron Weights

On tractors with single 24.5-32 or 30.5-32 tires, large 1600-pound or 300-pound cast-iron weights are attached to the inside of the wheel. Smaller 120-pound weights may be attached to the outside of each rear wheel. After the first few hours of service, retighten 1600-pound weight-attaching screws (300 ft-lb torque) and keep them tight.

With 18.4-38 or 20.8-38 rear tires, a 500-pound weight may be attached to the concave or inside surface of the rear wheel. If additional 500-pound weights will be used on outside of wheel, attach inside weight with special screws that have threads in the head of the screw to receive the outside weight-attaching bolts.

Suggest:

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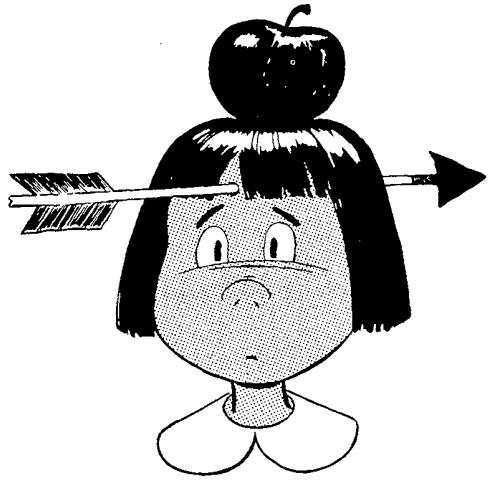
Liquid Weight

Water and calcium chloride solution is an economical means of adding weight to the front and 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 wheels has the full approval of the tire companies. 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 PERCENT FILLED)

Tire Size	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)	Slush-Free at -53°F.; Solid at -62°F. (Approx. 5 Lbs. $CaCl_2$ Per Gal. Water)
9.50-20	165 lbs.	178 lbs.	190 lbs.
11.00-16	217 lbs.	237 lbs.	253 lbs.
14L-16.1	251 lbs.	269 lbs.	286 lbs.
18.4-16.1	414 lbs.	439 lbs.	467 lbs.
18.4-34	874 lbs.	936 lbs.	988 lbs.
18.4-38	1034 lbs.	1113 lbs.	1174 lbs.
20.8-38	1228 lbs.	1311 lbs.	1480 lbs.
24.5-32	1620 lbs.	1742 lbs.	1850 lbs.
30.5-32	2047 lbs.	2202 lbs.	2334 lbs.



Accidents don't just happen
They are CAUSED!

R 2380

Front Ballast

Front ballast may be required for stability and steering control when weight on the front wheels is transferred to the rear wheels by implement action through the hitch or power weight-transfer coupler. To prevent difficult steering, be sure to remove front ballast when it is no longer needed.

Ballasting for Field Operation

The approximate total weight on tractor front end for normal field operation should be as follows:

1. Approximately 1/3 of total tractor weight for operation of integral implements, semi-integral implements, or towed implements hitched to the power weight transfer coupler.
2. Approximately 1/4 of the total tractor weight for operation of towed implements hitched to the tractor drawbar.

Ballasting for Transport

Add additional ballast if necessary for stability and safety during transport of heavy integral implements. Front end ballast may not always maintain the required stability if the tractor is driven too fast over rough ground with heavy rear-mounted tools in the raised position. Be safe and drive slowly under these conditions.

Determining Ballast From Implement Code System

John Deere engineers have developed an implement code system which shows the tractor operator how much front ballast is needed to provide adequate stability when transporting rear hitch-mounted implements. This coding system is applicable to all John Deere tractors (using John Deere weights mounted in standard location and without liquid weight in front tires) and implements currently being manufactured.

To use the new coding system, refer to the ballast section in the implement operator's manual to obtain the special ballast code number which applies to the implement (and its attachments) being used. Determine the number of weights required corresponding to the code number from the chart on page 18. For example, the total implement code number from the implement operator's manual is 275. If the tractor has a fixed tread front axle and liquid weight in the front tires, add 14 to the code number for the front axle and subtract 25 for the liquid weight. The adjusted implement code for determining front ballast from the chart is now 264. If single-row front weights are selected, the side weights and 7 front weights should be used. If double-row front weights are selected, use the weight supports, a double front weight, and 5 front weight. If Quik-Tatch front weights are used, install the cast weight support or the welded bracket with two weight supports and 6 Quik-Tatch front weights.