7520
TRACTOR

JOHN DEERE

OPERATORS MANUAL

7520
TRACTOR

OMR51902 K3 English

OMR51902 K3

LITHO IN THE U.S.A.
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.

Record your tractor serial numbers in the spaces provided on page 65. 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.

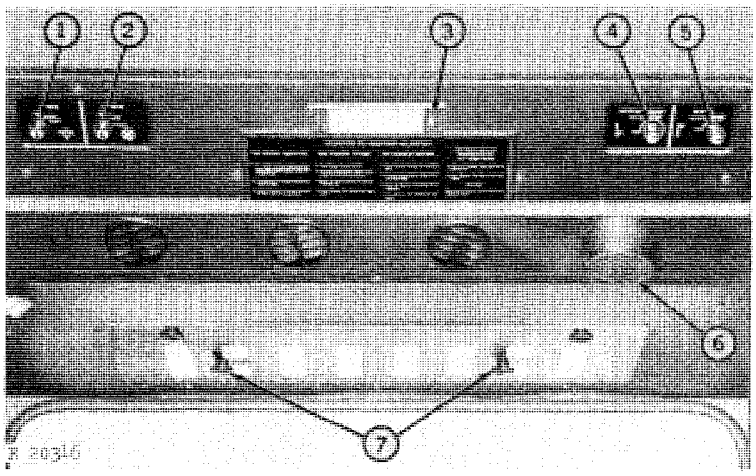
The references in this manual to the "right-hand" and the "left-hand" sides of the tractor are determined by facing in the direction of tractor forward travel.

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.

Contents

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.



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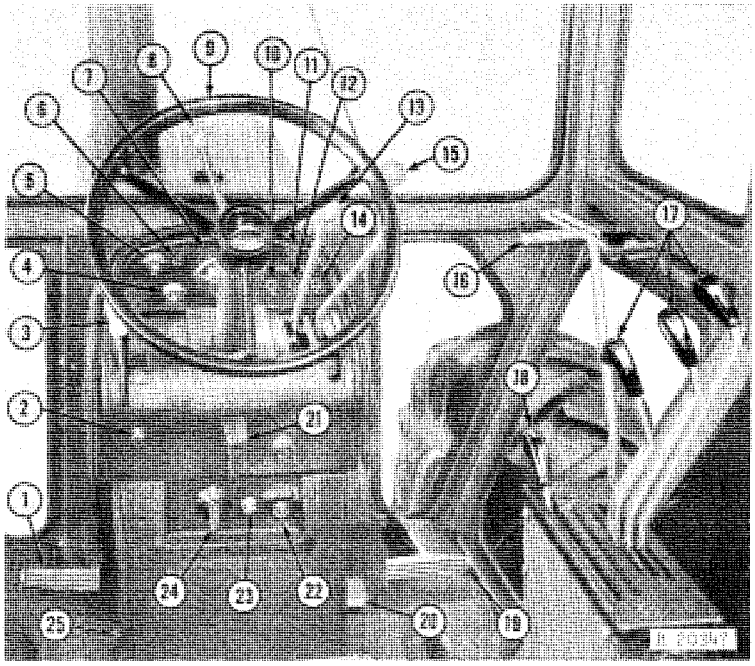

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Operation

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 39 and 40 for additional information.

(a) Check the engine crankcase oil level.

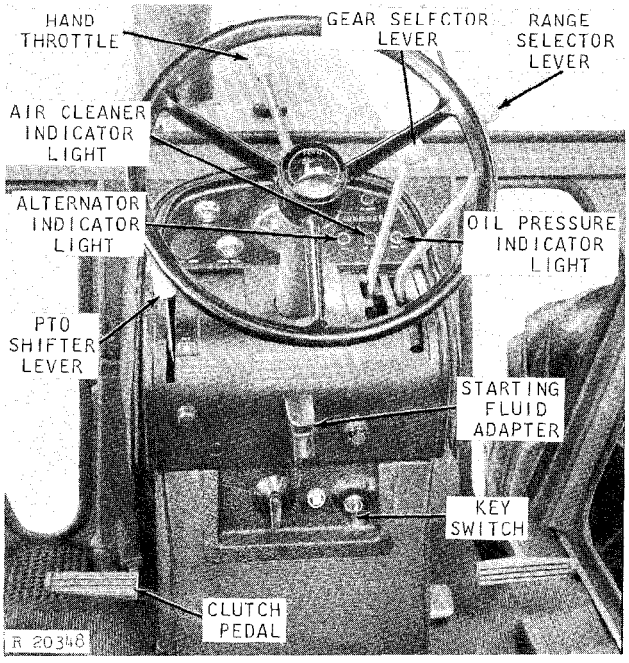
(b) Check the radiator coolant level.

(c) Check and, if present, remove water or sediment from fuel pump sediment bowl or the fuel filter.

(d) Lubricate hinge pivot pins, front axle pivot pin, steering cylinder pivot pins, and wide-swing drawbar rollers, or draft link support roller.

OPERATING THE ENGINE

STARTING THE ENGINE



Starting Controls

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) First, place the range selector lever in neutral (N) and the gear selector lever in "PARK." If so equipped, the "hi-lo" speed selector lever should be in either "hi" or "lo." Depress the clutch pedal to decrease drag on the engine.

The PTO shifter lever should be disengaged, the remote cylinder control lever should be in neutral, and the rockshaft control lever should be in the lowered position.

(2) Make sure engine stop knob is pushed all the way in.

(3) Set the hand throttle approximately 1/2 of its travel clockwise.

(4) Turn the key switch clockwise to the first position. The alternator and oil pressure indicator lights should glow. Turning the key switch further to the start position should cause the air cleaner 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.

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

(5) 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," page 59.

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.

Before the starter will operate, the range selector lever must be in neutral (N).

(6) 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.

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.

After starting the engine, do not accelerate or apply a load until the engine oil pressure indicator light goes out. Idle the engine for several minutes at speeds below 1000 rpm to insure turbocharger lubrication before accelerating or applying a load.

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 engine starting after engine is killed or starts and then stops, it may be necessary to pull the engine stop knob out and push it all the way in. This sets the injection pump for retarded timing and starting fuel.

When restarting a hot engine, the following steps will avoid the black puff of exhaust smoke. Move the hand throttle all the way clockwise and then move it half way back to the 1200 rpm position.

When starting the engine after the tractor has been idle for an extended period, pull the engine stop knob all the way out, and 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, move the hand throttle clockwise about 1/2 of its travel. Make sure the engine stop knob is all the way in and 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 Adapters

The tractor may be equipped with an electrically operated ether starting aid or with a manually operated ether starting fluid adapter.

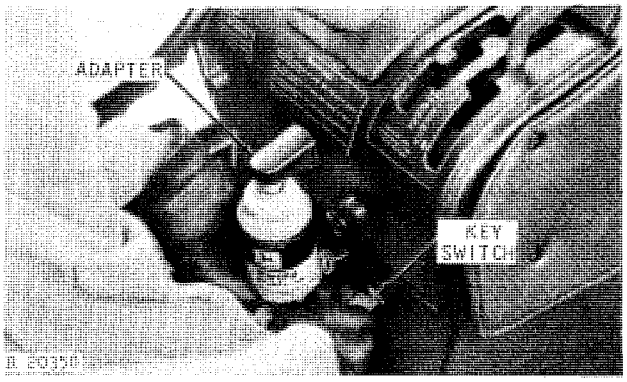
These adapters are used to inject atomized starting fluid into the engine air intake system. Pressurized cans of starting fluid are available from your John Deere dealer.

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

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

Manually Operated Adapter

To use the can of starting fluid, remove the safety cap and plastic spray button from the can. Remove the cap from the adapter and position the can under the adapter.



Injecting Starting Fluid

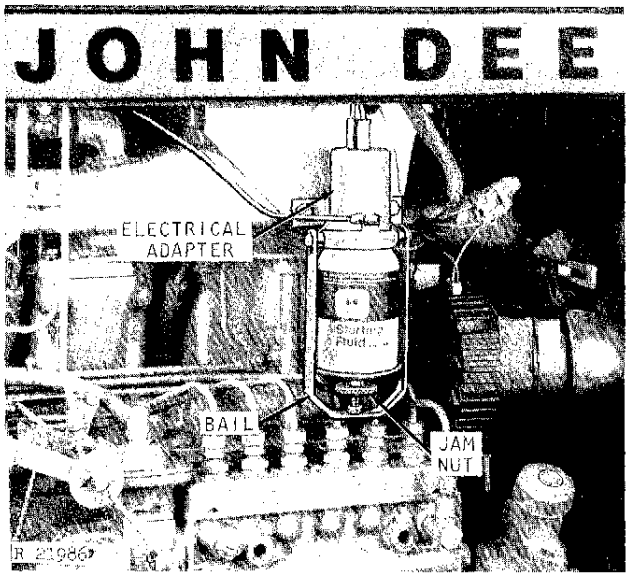
IMPORTANT: To avoid damage, turn engine with starter one or two revolutions before injecting starting fluid. Inject starting fluid only while the engine is turning.

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

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.

Electrically Operated Starting Aid



Electrically Operated Ether Starting Aid

To install the can of starting fluid, remove the safety cap and plastic spray button from the can. Loosen the jam nut on the bail and remove the empty can from the adapter. Install the new can of starting fluid on the adapter as shown in the illustration above. Tighten the jam nut securely to hold the can in position. To prevent dust from being drawn into the engine, ALWAYS leave a can in place on the adapter.

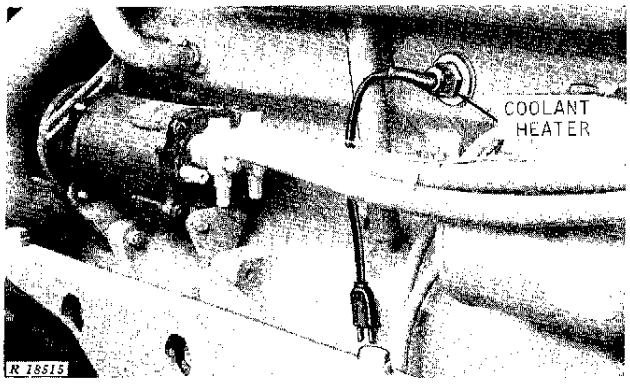
The electrically operated starting aid button is located in the center of the tractor dash.

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.

To inject starting fluid, momentarily depress the ether starting aid button, using short "bursts" while cranking the engine at the same time.

Stop injecting the fluid after the engine starts. If the engine begins to die during the first few minutes of operation, inject another "shot" of fluid.

In-Block Coolant Heater



Coolant Heater

A 1000-watt, 115-volt coolant heater (available from your dealer) mounts in the frost plug opening on the left-hand side of the engine block. This attachment will keep the coolant warm, reduce oil drag and shorten the warm-up period.

⚠ CAUTION: To avoid shock or hazardous operation, always use a three wire heavy-duty electrical cord equipped with 3-wire connectors. If a 2- to 3-contact adapter is used at the wall receptacle, always connect the green wire to good ground.

Additional Battery

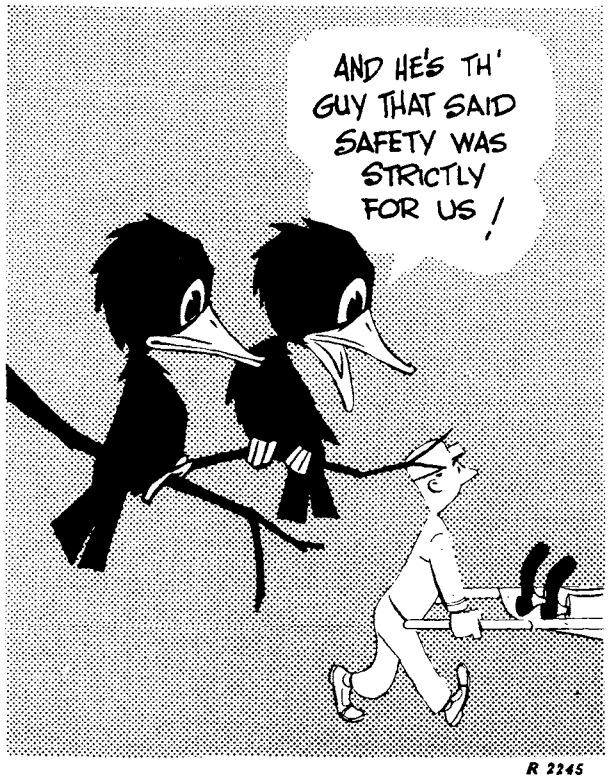
Cold weather starting can be made easier by connecting an additional 12-volt battery in parallel with the tractor batteries.

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

Connect a jumper cable to the POSITIVE (+) post of a 12-volt booster battery and to the POSITIVE (+) post of the tractor battery that is connected to the starter. Connect one end of the other jumper cable to the negative post of the booster battery. Connect the other end to the starter frame terminal.

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

See your John Deere dealer for additional booster battery information.



TRACTOR WARM-UP PERIOD

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

A good way to do this is first to idle the engine at about 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 tractor engine is designed to operate at working speeds ranging from 1500 to 2100 rpm. The engine can be operated at any speed in the working range to meet various operating conditions.

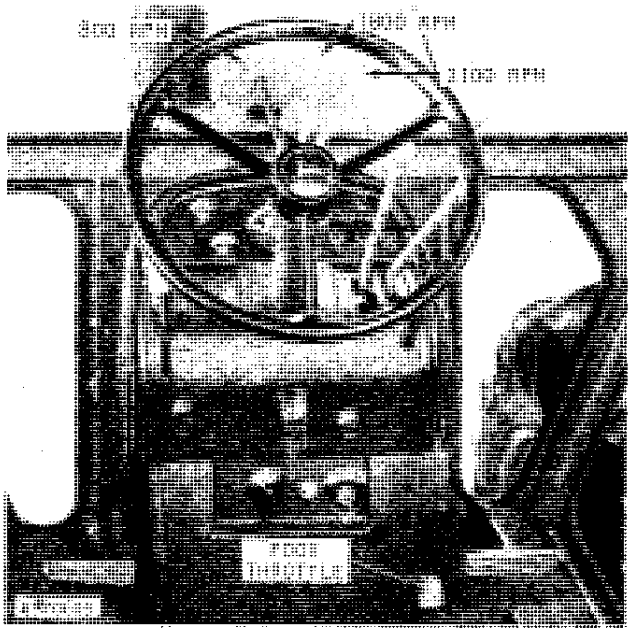
To obtain the 1000-rpm PTO speed, operate the engine at 2100 rpm if not equipped with a "Hi-Lo" speed selector. If equipped with the "Hi-Lo" speed selector, the 1000-rpm PTO speed can be obtained at 1800 rpm with the "Hi-Lo" lever in the "Hi" position or at 2100 rpm with the lever in the "Lo" position.

Slow idle speed is approximately 800 rpm. To check engine speeds, see page 43.

Using Hand Throttle

Use the hand throttle to select slow idle or any of the variable governed speeds from 1500 to 2100 rpm.

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



Hand Throttle and Foot Throttle

To obtain 1800 rpm load speed, move the throttle clockwise to the first stop. Placing the throttle halfway between slow idle and 1800 rpm gives the 1500 rpm speed. Engine speeds between 1500 and 1800 rpm may be selected by moving the lever between these two positions.

To obtain working speeds above 1800 rpm, pull out the knob at the end of the hand throttle. With the knob pulled out, move the throttle clockwise as far as it will go. This is the 2100 rpm load speed position. Engine speeds between 1800 and 2100 rpm may be selected by moving the lever between these two positions.

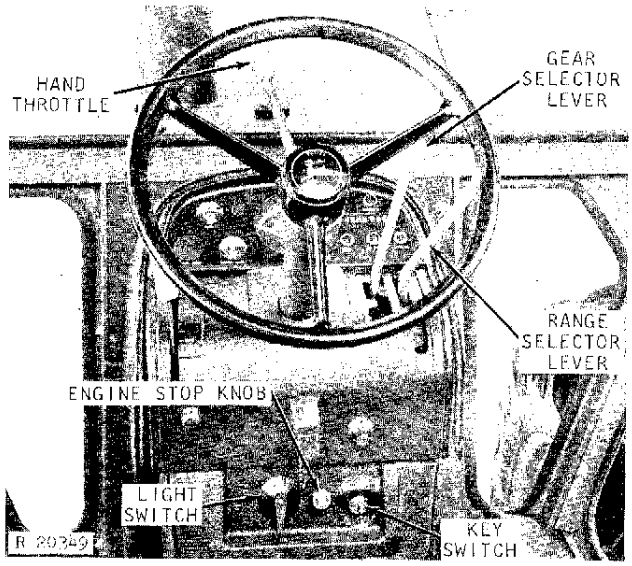
Using Foot Throttle

The foot throttle is used to raise engine speed momentarily. When the foot throttle is pushed all the way downward, the engine operates at 2300 rpm fast idle, which is the same as the maximum fast idle speed obtained by the hand throttle.

STOPPING THE ENGINE

Place the range selector lever in neutral (N) and the gear selector lever in "PARK."

Allow the engine to idle a few minutes 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.)



Stopping Controls

After idling the engine for a few minutes, move the hand throttle counterclockwise to slow idle position, and pull out the engine stop knob to shut off the engine. Then 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.

⚠ CAUTION: Whenever the tractor is stopped, place the range selector lever in neutral (N) and the gear selector lever in "PARK" BEFORE DISMOUNTING. Never dismount from a moving tractor.

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

⚠ CAUTION: Never use the steering wheel as a hand hold when dismounting. Moving steering wheel can cause rapid movement of the hinge area.

BREAKING IN THE ENGINE

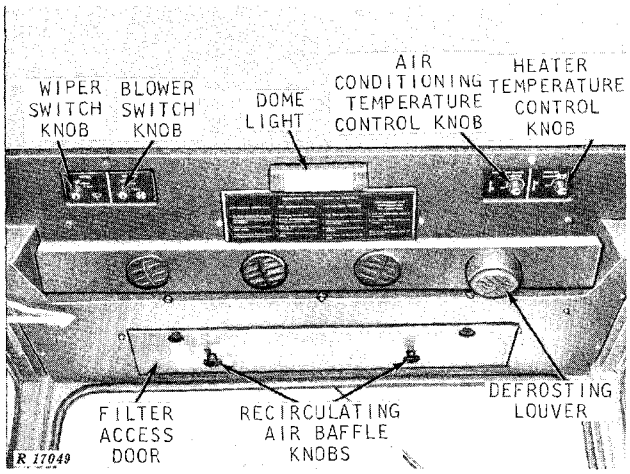
The engine is ready for normal operation. However, to facilitate break-in, avoid prolonged periods of engine idling for the first 100 hours of service.

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 34.

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.

The baffle may be opened to an intermediate position to mix more outside air with inside air and maintain more cab pressure.

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 the fan off.

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 cab 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 cabs 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

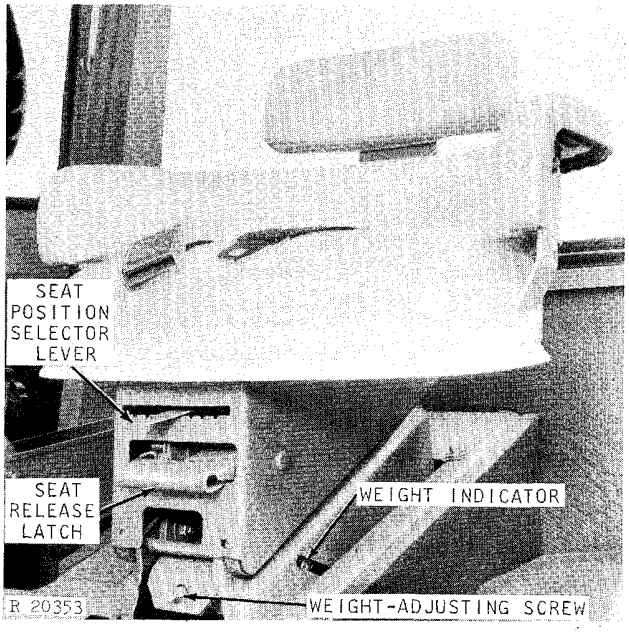
Turning the heater on when operating the air conditioner will help control humidity. However, under normal conditions the heater temperature knob should be turned off when operating the air conditioner.

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.

SEAT



Seat Controls

The deluxe tractor seat has a steel compression spring and shock absorber to provide "float ride" suspension. The seat is also equipped with a flexibly mounted padded backrest and 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.

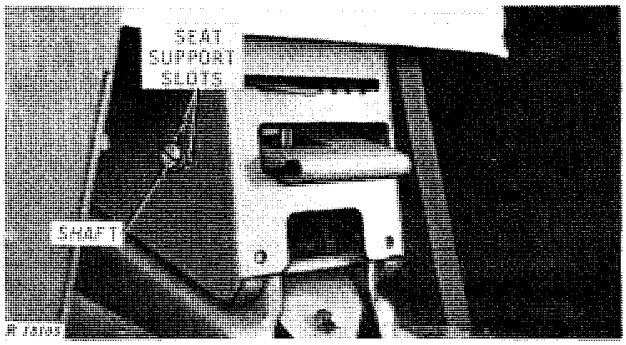
Adjusting For Weight Of Operator

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.

ROLL-GARD

A protective Roll-Gard is incorporated in the cab.

CAUTION: Under almost all operating conditions use of the seat belt with the John Deere Roll-Gard is recommended.

CAUTION: A tractor rollover may place a severe stress on the Roll-Gard structure. Therefore, reuse of the Roll-Gard is not recommended if its structural members have been bent, buckled or stretched.

SELECTING GROUND SPEED

The syncro-range transmission has 8 forward speeds and 2 reverse speeds. If the tractor has the optional "Hi-Lo," an additional 8 forward and 2 reverse speeds, that are faster, raise the available speeds to 16 forward and 4 reverse speeds. The various combinations of engine speed and transmission speed enable the operator to balance speed and power for maximum economy and allow him flexibility to meet varying working conditions.

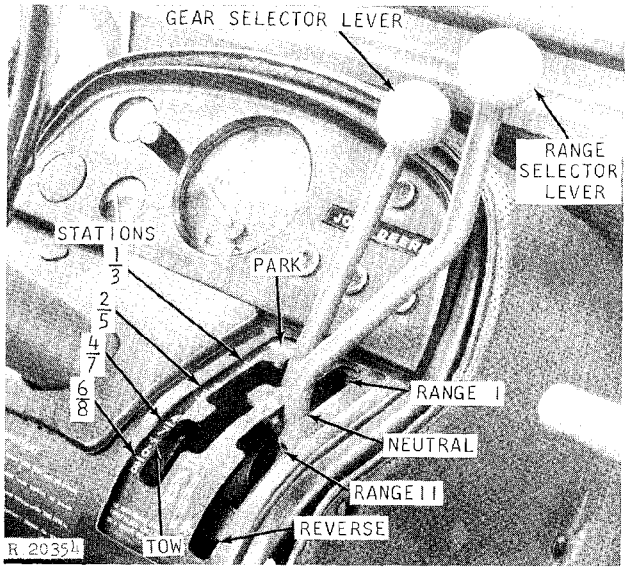
Examples of the ground speeds at which a tractor with 23.1-30 tires will travel at engine speeds of 1500, 1800 and 2100 rpm are shown in the following charts. If equipped with 18.4-34 tires, the ground speed will be 1 percent slower; with 20.8-34 tires, 1 percent faster; with 24.5-32 tires, 6 percent faster; and with 30.5-32 tires, 10 percent faster.

GROUND SPEEDS IN MILES PER HOUR WITH 8 SPEED TRANSMISSION (Without Hi-Lo Speed Selector)

Gear	Engine Speed		
	1500 rpm	1800 rpm	* 2100 rpm
1st	1.49	1.78	2.08
2nd	2.38	2.85	3.33
3rd	3.12	3.76	4.39
4th	4.03	4.83	5.64
5th	5.02	6.02	7.02
6th	6.57	7.88	9.20
7th	8.50	10.21	11.91
8th	13.90	16.66	19.44
1st reverse	3.05	3.66	4.27
2nd reverse	4.88	5.86	6.84

** 2100 rpm engine speed gives the ASAE 1000 rpm PTO speed.*

SHIFTING THE TRANSMISSION



Gear and Range Selector Levers

Shifting is accomplished by the gear selector lever (left-hand lever) and the range selector lever (right-hand lever). The gear selector lever is used to select one of four stations—1-3, 2-5, 4-7, or 6-8—and "PARK." The range selector lever controls shifts between range I, neutral (N), range II, and reverse (R).

When the range selector lever is in range I position, gear speed 1, 2, 4 or 6 is provided. Range II position provides gear speed 3, 5, 7, or 8.

Shifting From Station to Station

With the tractor stopped and clutch pedal depressed, move the gear selector lever to the desired gear speed station (1-3, 2-5, 4-7 or 6-8). Then move the range selector lever to range I, range II or reverse.

GROUND SPEEDS IN MILES PER HOUR WITH OPTIONAL HI-LO SPEED SELECTOR

Gear	Engine Speed					
	1500 rpm		1800 rpm		2100 rpm	
	"Lo"	"Hi"	"Lo"	* * "Hi"	* * "Lo"	"Hi"
1st	1.49	1.71	1.78	2.05	2.08	2.39
2nd	2.38	2.66	2.85	3.27	3.33	3.82
3rd	3.12	3.60	3.76	4.32	4.39	5.04
4th	4.03	4.63	4.83	5.55	5.64	6.48
5th	5.02	5.76	6.02	6.92	7.02	8.07
6th	6.57	7.56	7.88	9.07	9.20	10.58
7th	8.50	9.78	10.21	11.74	11.91	13.70
8th	13.90	15.95	16.66	19.16	19.44	22.35
1st reverse	3.05	3.51	3.66	4.21	4.27	4.91
2nd reverse	4.88	5.62	5.86	6.74	6.84	7.86

** * With the optional "Hi-Lo" speed selector, the ASAE 1000 rpm PTO speed is obtained at 1800 rpm in "Hi" position or 2100 rpm in "Lo" position.*

Gradually release the clutch to take up the load smoothly.

NOTE: To prevent unnecessary wear, never "ride" (resting your feet on) the clutch or brake pedal.

Shifting from Range to Range

Shifting from range I to range II or II to I can be done "on-the-go." Depress the clutch pedal and move the range selector lever with a smooth motion, to range I or range II as desired.

Before moving the range selector lever into the reverse range, completely stop the tractor. The transmission is not synchronized to allow shifting from a forward to a reverse range while the tractor is moving.

NOTE: Range selector lever can not be placed in reverse (R) position when the gear selector lever is in 4-7 or 6-8 gear stations.

The first reverse speed as shown in the chart (page 10) is obtained by placing the gear selector lever in the 1-3 gear speed station and the range selector lever in reverse (R).

Second reverse speed is provided when the gear selector lever is in the 2-5 gear speed station.

Shifting to and from "Park"

To park the tractor, hold it on an incline, or hold it for PTO work, depress the clutch pedal and FIRST move the range selector lever to neutral (N) and then move the gear selector lever to "PARK."

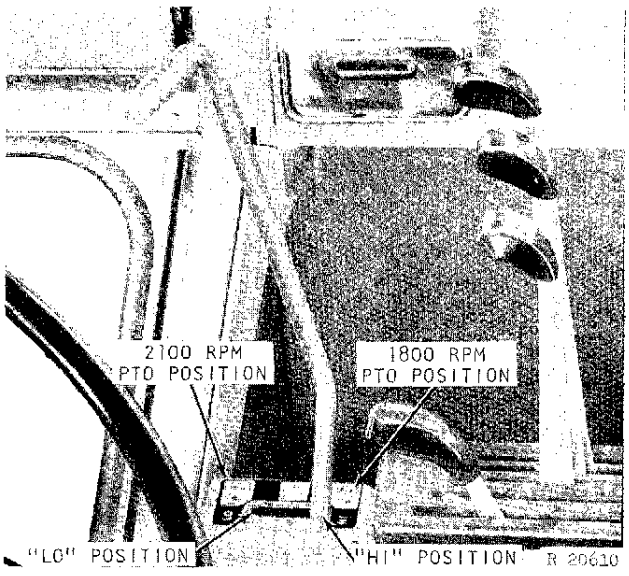
IMPORTANT: Be sure the tractor is stopped before placing the shift lever in the "PARK" position.

To shift FROM a parked position, start the engine, depress the clutch pedal and move the gear selector lever to desired position FIRST. Then place the range selector lever in the desired position.

When the tractor is parked on a steep incline, it may be necessary to do the following to relieve the load on the transmission park lock. Depress the clutch pedal and pull the gear selector lever rearward against spring pressure and to the left into the 1-3 shift station. Then move the range selector lever to "Range 1" or "Reverse," whichever will move the tractor UP THE INCLINE. Very slowly engage the clutch and the transmission will shift out of "PARK."

⚠ CAUTION: Whenever the tractor is stopped, place the transmission in PARK BEFORE DISMOUNTING. Never dismount from the tractor when it is in motion.

"Hi-Lo" Selector Lever Shifting



"Hi-Lo" Speed Selector Lever

The operating lever for the "Hi-Lo" speed selector is mounted on the right-hand side of the tractor cab.

To shift from "Hi" to "Lo" or "Lo" to "Hi", depress the clutch pedal and place the lever in "Lo" or "Hi".

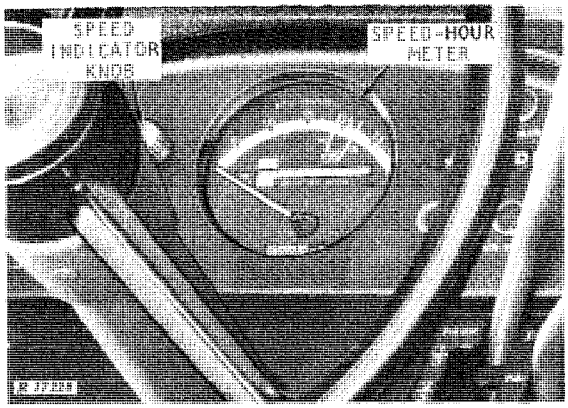
IMPORTANT: NEVER operate the engine with the lever in a neutral position between "Lo" and "Hi".

OVERLOADING

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

SPEED-HOUR METER

The speed-hour meter shows engine rpm speed in hundreds, tractor speed in miles per hour, the accumulated hours of engine operation, and the engine speeds necessary to obtain the ASAE 1000 rpm PTO speed.



Speed-Hour Meter

To obtain tractor ground speed, turn the speed indicator knob on the instrument panel until the gear selected shows in the speed indicator. The speed-hour meter pointer will now indicate both engine speed and tractor ground speed.

If your tractor is equipped with the optional "Hi-Lo", the dot on the right-hand side of the number indicates the tractor speed in "Lo" and the dot on the left-hand side indicates tractor speed in "Hi". For example, with the tractor in 4th gear and "Hi", the tractor speed will be 6 mph when the speed-hour meter pointer is on the left-hand dot by the number 6. In 4th gear and "Lo", 6 mph will be obtained when the pointer is at the dot on the right-hand side of the number 6.

On tractors without the Hi-Lo speed selector, only the right-hand or "Lo" dot is used to indicate tractor speed.

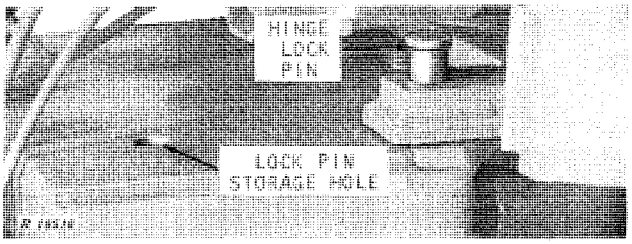
With the optional "Hi-Lo", the ASAE 1000 rpm PTO speed can be obtained at two engine speeds. In "Hi", 1000 rpm PTO speed is obtained at 1800 engine rpm as indicated by the line and the word "Hi" at 1800 rpm. In "Lo", 1000 rpm PTO speed is obtained at 2100 engine rpm as indicated by a line and word "Lo" at 2100 rpm.

If your tractor does not have the optional "Hi-Lo," operate the engine at 2100 rpm (or the "Lo" line) to obtain the ASAE 1000 rpm PTO speed.

TRANSPORTING OR TOWING

IMPORTANT: Never tow the tractor in an attempt to start the engine.

The best possible way to move a disabled tractor is on a flatbed carrier. Be sure to install the hinge lock pin to prevent the tractor from pivoting in the hinge area. When pin is not in use to lock the hinge, keep the pin in the storage hole.



Hinge Lock Pin Installed

CAUTION: Work in the hinge area of the tractor only with the engine off, the key removed, and no one in the cab.

Cover exhaust stack to prevent turbocharger rotation when the engine will not run. Turbocharger shaft rotation without proper lubrication will damage sleeve bearings.

If it is necessary to tow the tractor, select one of the following procedures.

Towing with Rear Wheels Off the Ground

It is best to tow the tractor with the rear wheels off the ground. Do not tow in excess of 20 mph.

Remove the front axle drive shaft. Do not separate the front drive shaft at the slip joint.

Install the hinge lock pin. Cover the exhaust stack. Place the tractor in PARK and chain the tractor drawbar with the slack required for turning corners.

Towing with All Four Wheels on the Ground

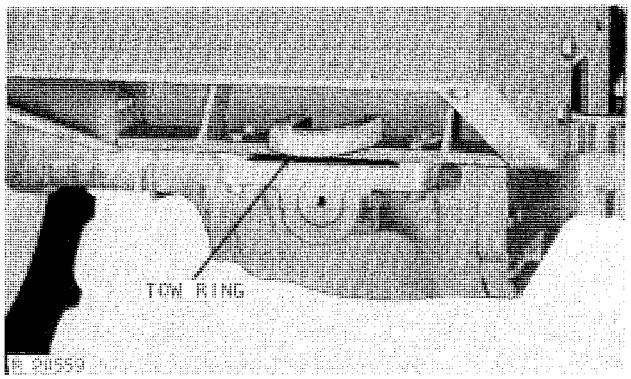
CAUTION: Never tow the tractor faster than 5 mph.

Place the gear selector lever in "Tow" and the range selector lever in neutral (N).

If possible, run the engine to activate power steering and brakes and lubricate the transmission. Have an operator to steer and brake the tractor. If using a tow bar, connect it to the tractor drawbar and tow the tractor backwards.

A tow chain can be used only if the brakes and steering are still operative. Connect chain to drawbar or to tow ring on front axle support. Do not use a tow chain if the brakes have failed.

If engine operation is not possible, connect towing tractor to the tractor drawbar. Connect a second tractor to the 7520 front axle tow ring with a chain and



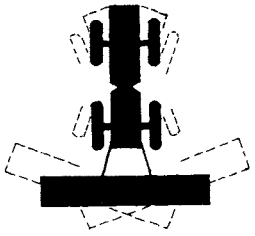
Tow Ring

use the second tractor for braking. Operate the second tractor in a gear of comparable speed and at part throttle. Have an operator in the 7520 Tractor to turn the steering wheel to open the steering valves and permit the tractor to turn. (Do not force steering wheel.) Steering is improved by reducing the throttle setting of second tractor to increase its drag.

POWER STEERING AND BRAKES

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.



R 18205

CAUTION: Do not move steering wheel until everyone is clear of equipment and hinged area. Moving steering wheel can swing equipment as pictured.

CAUTION: Extreme uphill turns should be avoided on slopes, in rough terrain, in ditches or at high travel speeds. If the engine or power steering should fail, STOP the tractor immediately.

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.

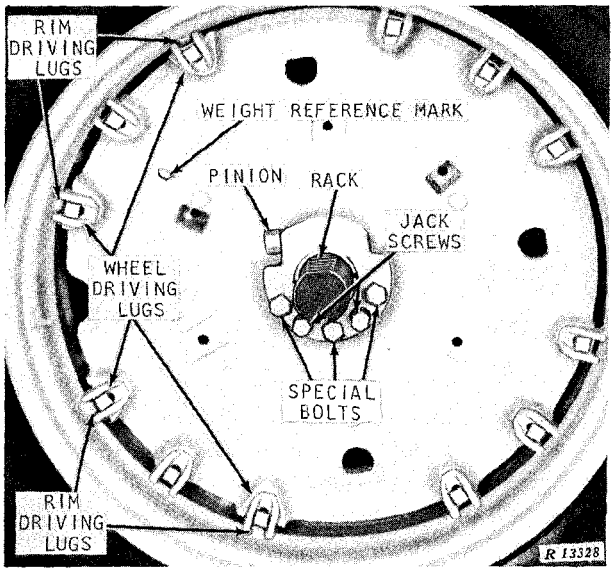
WHEELS AND TIRES

CAUTION: For hillside operations use only double wheels front and rear.

Wheel Tread

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

Rack and Pinion Method



Rack and Pinion Adjustment

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

This adjustment may be made with one or two wheel weights installed.

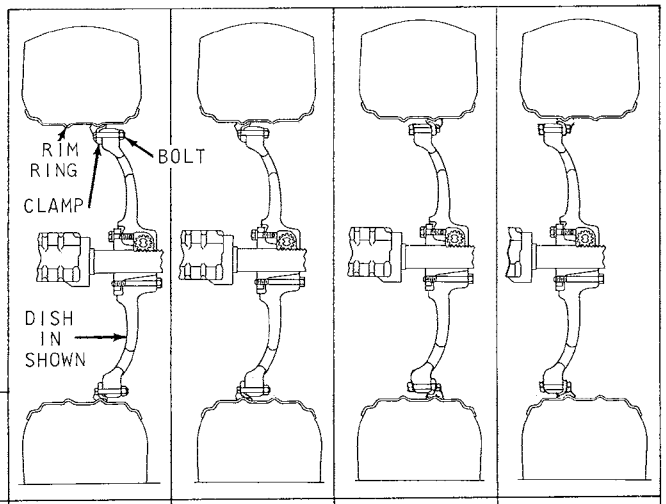
With the rack on the axle up, loosen the three special bolts 3/8 inch. Loosen the tapered sleeve by turning the two jack screws clockwise evenly until the inner edge of the hex. surface is flush with the hub surface. Jack up the tractor and turn the pinion gear to slide the wheel in or out on the axle.

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.

Rack and Pinion Method—Continued

CAUTION: * Single wheel tread settings of less than 80 inches are provided ONLY to conform to highway and transport regulations. For single wheel operation, tread settings of 80 inches or more with 1000 pounds ballast on each wheel must be used.

With single wheels, limit tread to not more than 110 inches when pulling heavy loads in 1st, 2nd, or 3rd gears.



WHEEL TYPE	AXLE TYPE	OVERALL AXLE LENGTH	DISK POSITION				
OFFSET WHEEL	REGULAR AXLE	95½"	DISH IN	*60"-75"	*68"-83"	*66½"-81½"	*74½"-89½"
			DISH OUT	*77"-86"	85"-94"	83½"-92½"	91½"-100½"
	LONG AXLE	114"	DISH IN	*60"-93"	*67½"-101"	*66½"-100"	*74½"-108"
			DISH OUT	*76½"-104"	84½"-112½"	83"-111"	91"-119"

R 20357

**See CAUTION above. Minimum tread with 20.8-34 tires is 61 inches.*

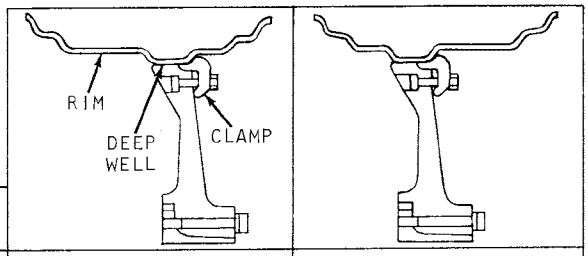
Tread Chart for Tractors with Regular Rims (Double Rim Ring) and Axle Stops

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.

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 Wheel

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



AXLE TYPE	TIRE SIZE		
REGULAR AXLE	23.1-30	*72"-77"	*78"-93"
	24.5-32	*73"-79"	86"-97"
	30.5-32	DO NOT USE	92"-103"
LONG AXLE	23.1-30	*72"-96"	*78"-112"
	24.5-32	*73"-97½"	86"-115"
	30.5-32	DO NOT USE	92"-121"

R 21982

Tread Chart for Tractors with Deep Well Rims and Axle Stops

** See CAUTION above.*

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

On offset deep well rims, two possible rim positions are obtained by reversing the offset deep well. Install tire and rim on other wheel for proper direction of tire rotation.

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 the clamps on the wheel driving lugs engage the rim driving lugs as shown in the illustration.

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

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

Reversing Wheel on the Axle

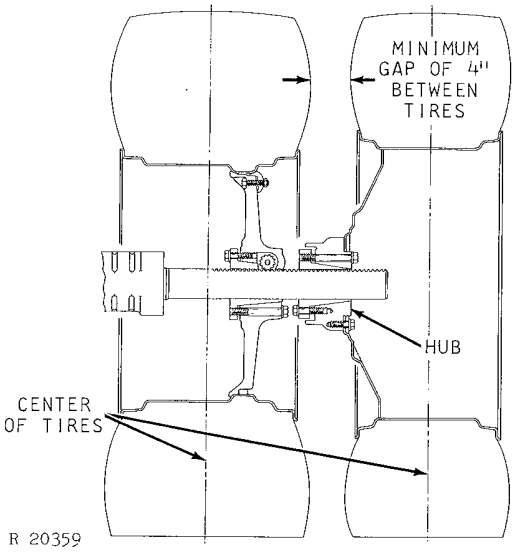
On tractors with offset wheels or wheels for deep well rims the rear wheel tread may be changed by reversing the "dish" of the wheel. To do so, jack up the tractor, remove the snap ring at the end of the axle, move the wheel outward and remove the wheel and tire. Reverse the "dish" and install the wheel and tire on the other axle. Install the snap ring. Be sure to maintain proper direction of tire rotation.

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

Double Wheels

On double wheels with a steel disk rim, use the tread chart above, right. The minimum gap between wheels should be 4 inches. Insufficient gap may damage tires.

When a wheel must be repositioned or removed, it is very important that the inner wheel rim clamp nuts and hub special bolts be securely tightened. The outer steel disk wheel retaining cap screws should be tightened to 150 ft-lbs torque. After driving tractor for about 20 revolutions of the wheel, and BEFORE working tractor, retighten the wheel retaining cap screws to 150 ft-lbs torque. After working tractor for about 3 hours and again at 10 hours, retighten wheel retaining cap screws and keep them tight.



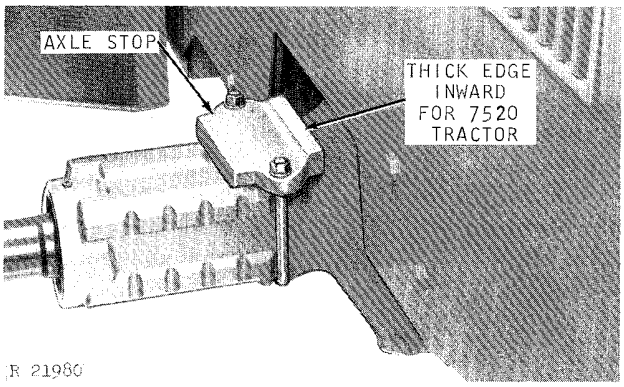
WHEEL TYPE	TIRE SIZE	AXLE TYPE	TREAD RANGE	
			INNER	OUTER
CAST AND STEEL DISK	18.4-34	REGULAR	60"-67"	112"
		LONG	60"-86"	112"-131"
	20.8-34	LONG	61"-77"	109"-127"
	23.1-30, 18.4-34	LONG	72"-80"	122"-131"
R 21979	23.1-30	LONG	72"	126"-128"

Tread for Double Wheel with Steel Disk Rim

When removing a double wheel for single wheel operation, always remove the steel disk wheel and operate tractor on the cast disk wheel. Be sure to operate within the single wheel tread limitations.

Axle Stops

When it is necessary to adjust the front wheel tread below the setting shown in the following chart, install



Axle Stop

Suggest:

If the above button click is invalid.

Please download this document

first, and then click the above link

to download the complete manual.

Thank you so much for reading

Axle Stops—Continued

the axle stops. This will limit front axle oscillation and prevent interference between the front tires and the tractor.

Tire Size	Minimum Tread Without Axle Stops
18.4	63 in.
20.8	67 in.
23.1	68 in.
24.5	70 in.
30.5	76 in.

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 CHART

Tire Size	Ply Rating	Inflation Pressure	
		* With Little or No Added Ballast	With Max. Ballast or Heavy Rear-Mounted Implement
18.4-34	6	16 psi	16 psi
18.4-34	8	16 psi	20 psi
20.8-34	6	14 psi	14 psi
20.8-34	8	16 psi	18 psi
23.1-30	8	16 psi	16 psi
24.5-32	10	16 psi	20 psi
30.5-32	10	16 psi	16 psi

** Minimum inflation pressure for single tires. Minimum inflation pressure for double tires is 12 psi. 16 psi is usually the maximum inflation pressure for double tires.*

BALLAST

The safety and performance of your tractor will be improved by the correct amount of ballast. The amount of ballast should permit operation with approximately 10 to 15 percent slip of wheels. Field tests show that under normal field conditions maximum drawbar horsepower is available when operating in this range.

If too much 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 wheel ballast, the tread marks will be obliterated by excessive slippage which also results in horsepower loss and excessive tire wear.

Measuring Slippage

The following method may be used to measure 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.

Maximum Ballast

Maximum ballast used should be limited to the tire carrying capacity or the tractor operating capacity. Avoid ballasting to pull heavy loads in the lower gears (1st, 2nd, or 3rd gear "Lo") over long periods of time. Tractor and tire life can be extended if the draft load for continuous operation does not exceed 3rd gear "Hi" capacity of the tractor. Be sure to remove the additional ballast when it is no longer needed.