JOHN DEERE
7020
TRACTOR

JOHN DEERE

OPERATORS MANUAL

JOHN DEERE 7020
TRACTOR

OMR51158 F1 English

JOHN DEERE TRACTOR WORKS
OMR51158 F1

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 63. 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.

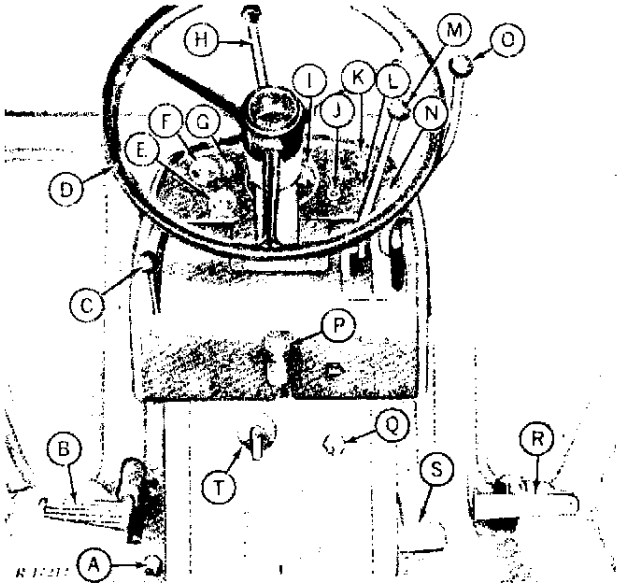
The references in this manual to the "right-hand" and the "left-hand" sides of the tractor are determined by facing in the direction of tractor forward travel.

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. Worldwide graphic symbols (see inside back cover) are used to assist identification and operation.



A-Foot Dimmer Switch (Page 17)
B-Clutch Pedal (Page 3)
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D-Steering Wheel
E-Coolant Temperature Gauge (Page 7)
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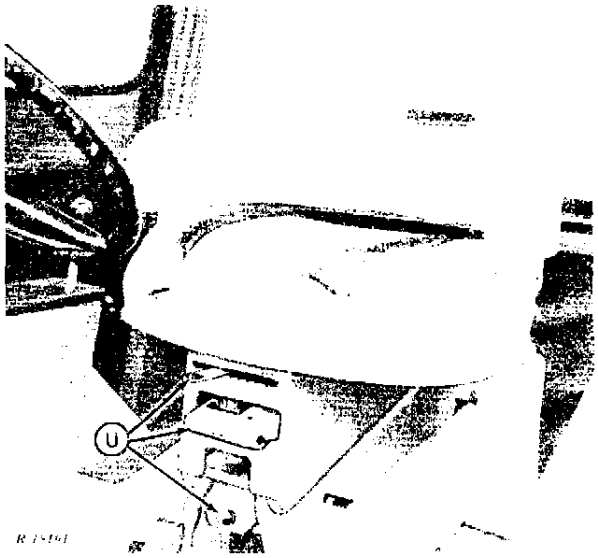
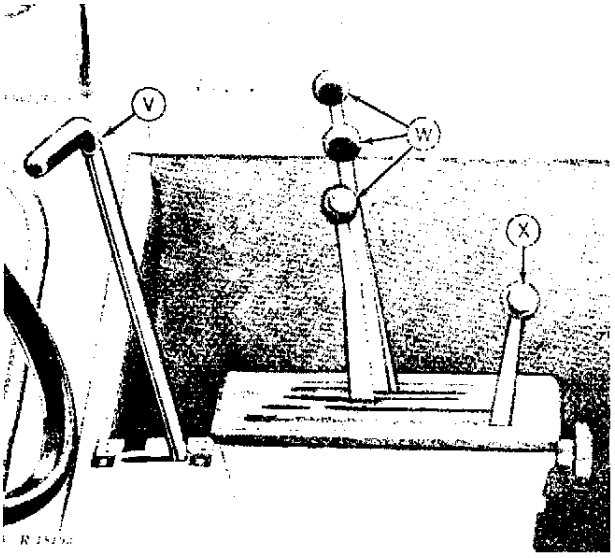


U-Seat Controls (Page 9)



V-Hi-Lo Speed Selector Lever (Pages 10 and 11)
W-Remote Cylinder Operating Levers (page 22)
X-Rockshaft Control Lever (Page 18)

Operation

Complete instructions for operating your tractor safely and efficiently are given on the following pages. By following these directions carefully, you can be sure that you are taking full advantage of the many features built into your tractor.

OPERATING THE ENGINE

PRESTARTING CHECKS

Perform the following checks and services before starting the engine for the first time each day—see page 33 for additional information.

(a) Check the engine crankcase oil level.

(b) Check the radiator coolant level.

(c) Check fuel filter for water or sediment. If present, drain (water or sediment) from the filter.

(d) Lubricate hinge pivot pins, front axle pivot pins, steering cylinder pivot pins, and wide-swing drawbar rollers.

(e) Check hydraulic oil lines in the hinge area for rubbing, chafing, or scraping.

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.

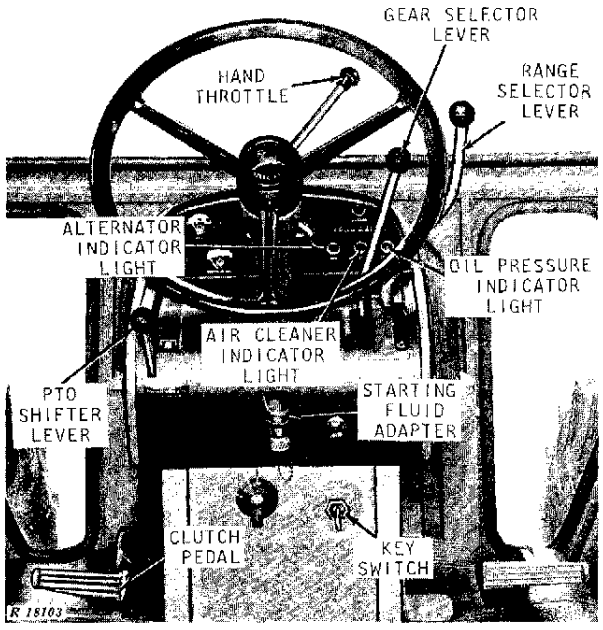
(1) Make sure that the fuel shut-off valve at the bottom of the fuel tank is open—see page 44.

(2) 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.

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

(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.



Starting Controls

(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 57.

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.

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.

When starting the engine after the tractor has been idle for an extended period, disconnect the injection pump electrical shut-off solenoid wire, 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, reconnect the injection pump electrical shut-off solenoid wire and start the engine.

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

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.

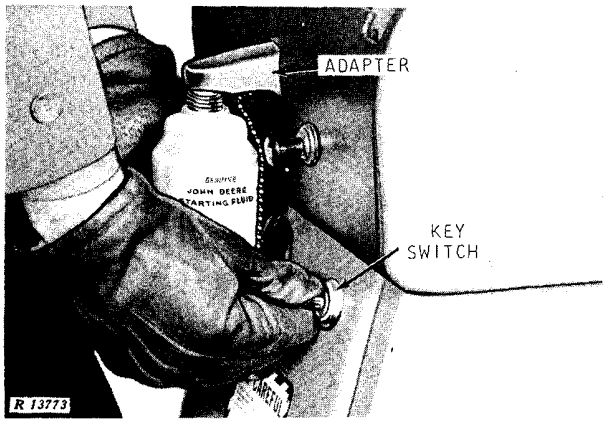
Always use No. 1 diesel fuel at temperatures below 40°F.

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.

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



Injecting Starting Fluid

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

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.

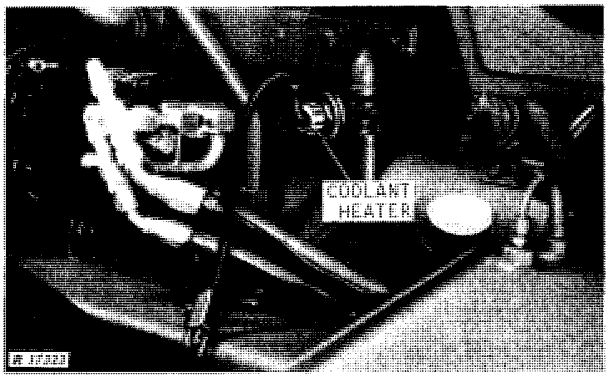
Relax pressure on the can between "shots" of starting fluid. Stop injecting fluid after the engine starts. If the engine begins to die during the first few minutes of operation, inject another "shot" of fluid. When the engine is operating satisfactorily, remove the can from the adapter. Replace the safety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

Crankcase Oil And In-Block Coolant Heaters

To facilitate cold weather starting, a 240-watt, 115-volt electrical crankcase oil heater may be installed in the engine oil pan at the lower front right-hand corner.



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 a good ground.

Additional Battery

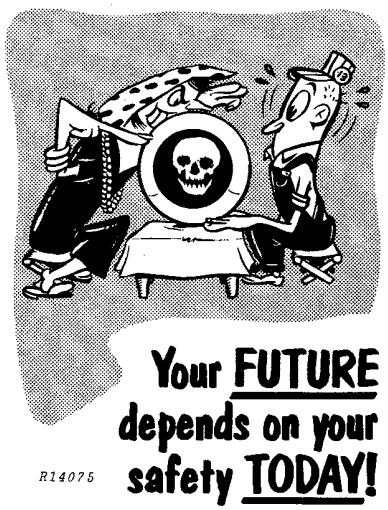
Cold weather starting can be made easier by connecting an additional 12-volt battery in parallel with the tractor batteries.

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 and to a good ground on the tractor frame away from the battery. Never connect jumper cables to pipes or thin sheet metal.

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

See your John Deere dealer for additional booster battery information.



TRACTOR WARM-UP PERIOD

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

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

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

ENGINE IDLING

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

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

ENGINE SPEEDS

The tractor engine is designed to operate at working speeds ranging from 1500 to 2200 rpm. The engine can be operated at any speed in the working range to meet various operating conditions. Operate the engine at 2200 rpm to obtain the 1000 rpm PTO speed.

NOTE: If the tractor is equipped with the optional "Hi-Lo" speed selector, 1000 rpm PTO speed can be obtained at 1900 rpm with the "Hi-Lo" lever in the "Hi" position or at 2200 rpm with the lever in "Lo" position.

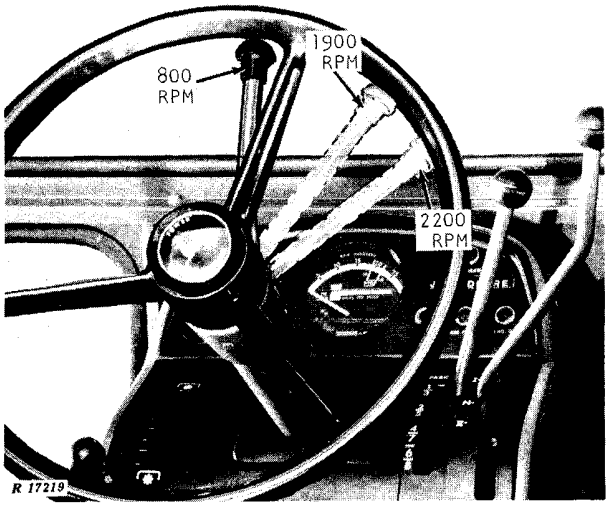
In addition, engine speeds can be varied up to 2500 rpm to save time when traveling on highways or smooth-surfaced roads.

Slow idle speed is approximately 800 rpm. To check engine speeds, see page 41.

Using Hand Throttle

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

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



Range of Hand Throttle Positions

To obtain 1900 rpm load speed, move the throttle clockwise to the first stop. Placing the throttle halfway between slow idle and 1900 rpm gives the 1500 rpm speed. Engine speeds between 1500 and 1900 rpm may be selected by moving the lever between these two positions.

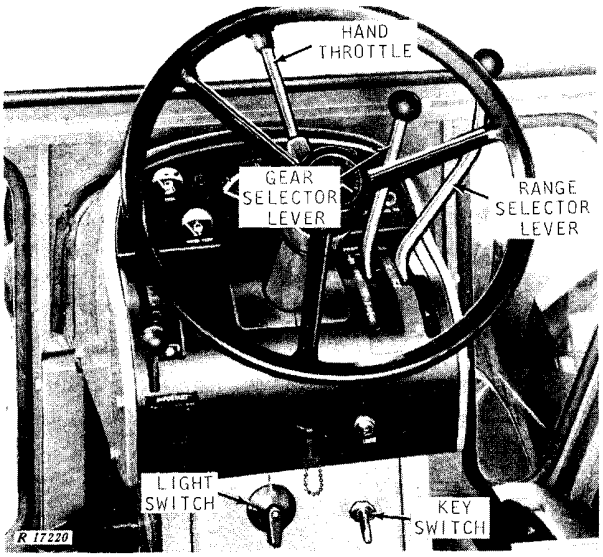
To obtain working speeds above 1900 rpm, pull out the knob at the end of the hand throttle. With the knob pulled out, move the throttle clockwise as far as it will go. This is the 2200 rpm load speed position. Engine speeds between 1900 and 2200 rpm may be selected by moving the lever between these two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

Using Foot Throttle

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

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

STOPPING THE ENGINE



Stopping Controls

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.

After idling the engine for a few minutes, move the hand throttle up to the slow idle position and turn the key switch off.

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

⚠ 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, 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

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 32.

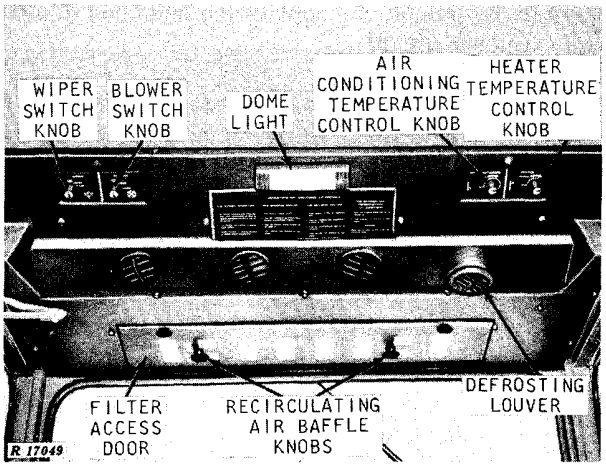
With the following exceptions, the engine is ready for normal operation:

During the first 20 hours, do not use the foot throttle. To facilitate break-in, avoid prolonged periods of engine idling for the first 100 hours of service.

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, only 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.

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

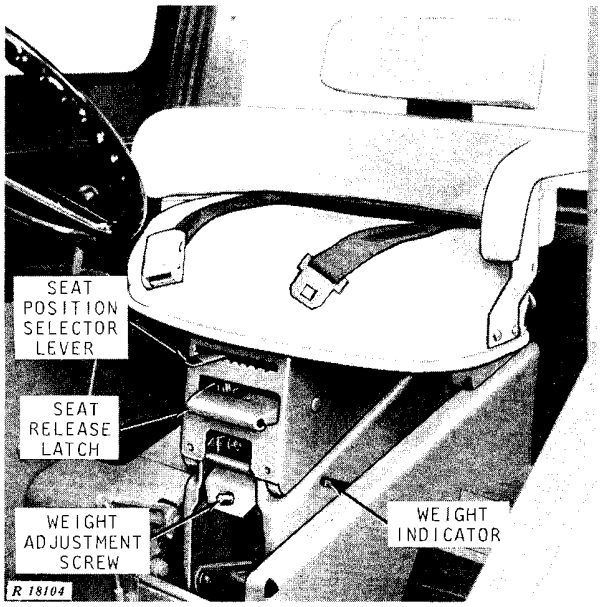
Turning the heater on when operating the air conditioner will help control humidity. However, under normal conditions the heater temperature knob should be turned off when operating the air conditioner.

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.

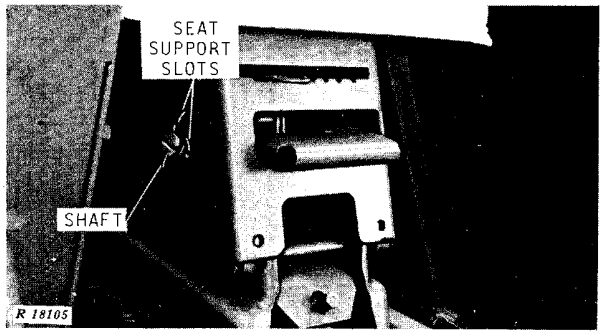
Adjusting For Weight Of Operator

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.

SELECTING GROUND SPEED

NOTE: The ground speeds shown in the two charts below are for a tractor equipped with 18.4-34 tires with a loaded radius of 29.5 inches.

TRACTOR GROUND SPEEDS IN MILES PER HOUR				
	Hand Throttle Operating Range			Maximum Foot Throttle Speed
Gear	1500 rpm	1900 rpm	* 2200 rpm	2500 rpm
1st	1.36	1.71	1.99	2.26
2nd	2.17	2.75	3.18	3.61
3rd	2.85	3.63	4.20	4.77
4th	3.68	4.66	5.39	6.13
5th	4.58	5.66	6.71	7.63
6th	6.00	7.60	8.80	10.00
7th	7.77	9.76	11.30	12.84
8th	12.68	16.05	18.59	21.13
1st reverse	2.79	3.81	4.09	4.69
2nd reverse	4.46	5.65	6.54	7.38

** 2200 rpm engine speed gives the 1000 rpm standard PTO speed.*

The tractor has 8 forward speeds and 2 reverse speeds for each of the throttle positions that may be used. These combinations enable the operator to balance speed and power for maximum economy and allow him flexibility to meet varying working conditions. For example, for a given ground speed the operator may choose to work in a low gear at high engine speed for maximum reserve power or in a higher gear at a lower engine speed for maximum fuel economy.

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

"Hi-Lo" Speed Selector Ground Speeds

The tractor may be equipped with the "Hi-Lo" speed selector. In the "Hi" position, ground speed for each gear is increased for a total of 16 forward and 4 reverse ground speeds. The chart in the next column lists the increased speed in "Hi" position. In "Lo" position, each ground speed is the same as listed in the chart above for the standard 8 forward and 2 reverse speeds.

OPTIONAL "HI-LO" SPEED SELECTOR TRACTOR GROUND SPEEDS IN MILES PER HOUR ("Hi" Position)				
	Hand Throttle Operating Speed			Maximum Foot Throttle Speed
Gear	1500 rpm	* * 1900 rpm	2200 rpm	2500 rpm
1st	1.56	1.97	2.29	2.60
2nd	2.50	3.16	3.66	4.16
3rd	3.29	4.17	4.83	5.49
4th	4.23	5.36	6.21	7.06
5th	5.27	6.68	7.73	8.82
6th	6.91	8.75	10.13	11.51
7th	8.94	11.32	13.11	14.90
8th	14.59	18.48	21.40	24.32
1st Rev.	3.21	4.07	4.70	5.34
2nd Rev.	5.31	6.50	7.53	8.56

** * With the optional "Hi-Lo" speed selector, 1000 rpm PTO speed is obtained at 1900 rpm in "Hi" position or 2200 rpm in "Lo" position.*

SHIFTING THE TRANSMISSION

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).

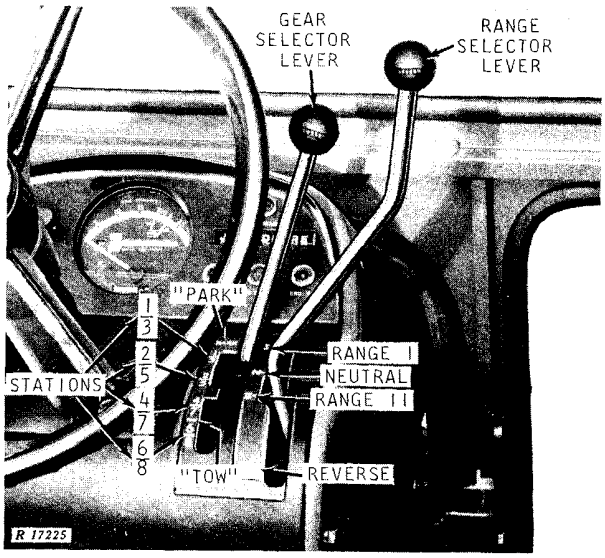
When the range selector lever is in range I position, gear speed 1, 2, 4 or 6 is provided. Range II position provides gear speed 3, 5, 7, or 8.

Shifting From Station to Station

With the tractor stopped and clutch pedal depressed, move the gear selector lever to the desired gear speed station. Move the range selector lever to range I, range II, or reverse (R) as desired.

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.



Gear and Range Selector Levers

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 range selector lever in reverse (R) and the gear selector lever in the 1-3 gear speed station. Second reverse speed is provided when the gear selector lever is in the 2-5 gear speed station.

Shifting to and from "Park"

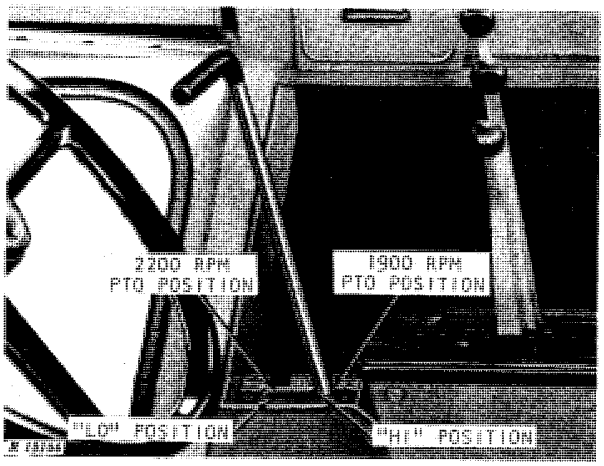
To park the tractor, hold it on an incline, or hold it for PTO work, depress the clutch pedal and FIRST move the range selector lever to neutral (N) and then move the gear selector lever to "PARK."

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."

"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 in front of the two selective control valves.

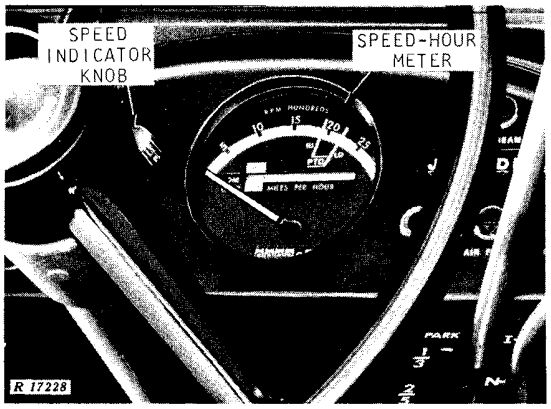
To shift from "Hi" to "Lo" or "Lo" to "Hi", depress the clutch pedal and place the lever in "Lo" or "Hi".

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



Speed-Hour Meter

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

If your tractor is equipped with the optional Hi-Lo speed selector, miles per hour are indicated by a dot on either side of each number on the tractor speed indicator. The dot on the right-hand side of the number indicates 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 would be 6 mph when the speed-hour meter pointer was on the left-hand dot by the number 6. In 4th gear and "Lo" 6 mph would be obtained when the pointer was on the right-hand side of number 6.

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

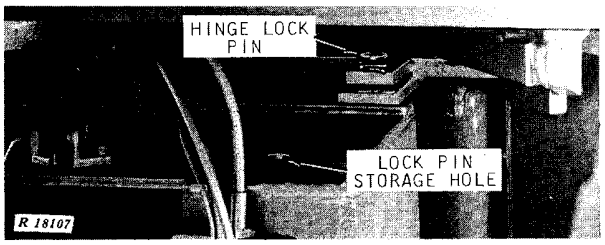
Hours of accumulated engine operation are based on an average engine operating speed of 1900 rpm.

On a Hi-Lo speed selector equipped tractor, 1000 rpm PTO speed can be obtained at two engine speeds. In "Hi," PTO speed can be obtained at 1900 rpm as indicated by the line and word "Hi" at 1900 rpm on the engine speed indicator. In "Lo," PTO speed is obtained at 2200 rpm, as indicated by a line and word "Lo" at 2200 rpm on the engine speed indicator. 1000 rpm PTO speed can only be obtained at 2200 rpm (or the "Lo" line) on tractors without the Hi-Lo speed selector.

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 at high speed.

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 place around each front axle housing at the inner end near the tractor frame. Do not use a tow chain if the brakes have failed.

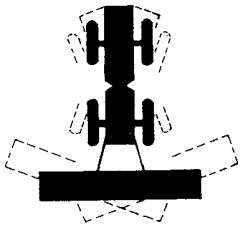
If engine operation is not possible, connect towing tractor to the tractor drawbar. Connect a second tractor to the 7020 front axle housing with a chain and use the second tractor for braking. Operate the second tractor in a gear of comparable speed and at part throttle. Have an operator in the 7020 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.

Do not tow in excess of 5 mph.

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.

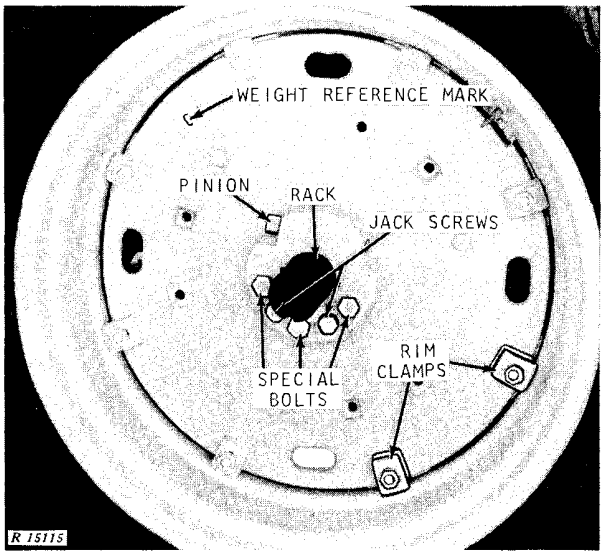
WHEELS AND TIRES

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 wheels 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 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 securely to 300 ft-lbs torque.

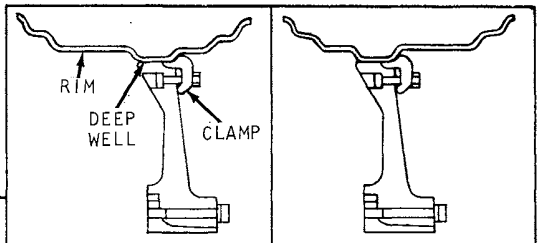
IMPORTANT: Setting the wheel too close to the axle housing may damage the pinion when the hub is tightened. Also, be sure that the tire or weights will not rub on the tractor. The jack screws must be free to turn after the hub is tightened.

Adjust the other wheels in the same manner. Normally, all four wheels are set the same distance from the tractor center line. After a few hours of service, RETIGHTEN the special bolts to required torque and keep them tight.

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

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



AXLE TYPE	TIRE SIZE		
REGULAR AXLE	18.4-34	*72"-82"	*75"-90"
	23.1-30	*72"-78"	*79"-94"
LONG AXLE	18.4-34	*72"-100"	*75"-108"
	23.1-30	*72"-97"	*79"-113"

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Tread Chart for Tractors with Deep Well Rims

Changing Rim Position on Wheel

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.

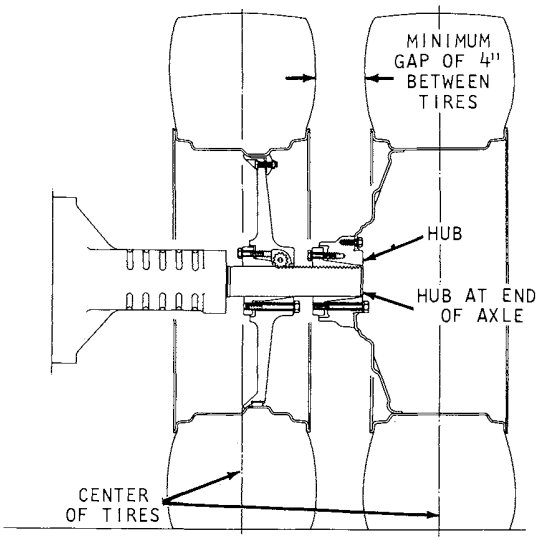
Hammer each bolt head to seat the bolts. Retighten the clamps securely (170 ft-lbs torque). Adjust both rear wheels in the same manner.

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

Double Wheels

On double wheels with a steel disk rim, use the tread chart below. 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 100 ft-lbs torque.



R 17867

WHEEL TYPE	TIRE SIZE	AXLE TYPE	TREAD RANGE	
			INNER	OUTER
CAST AND STEEL DISK	18.4-34	REGULAR	67"	111"
		LONG	67"-86"	111"-130"
	23.1-30, 18.4-34	LONG	72"-80"	122"-130"

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.

Suggest:

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first, and then click the above link

to download the complete manual.

Thank you so much for reading

TIRES

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

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

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

INFLATION CHART

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.
18.4-34	8	16 psi.	20 psi.
23.1-30	8	16 psi.	16 psi.

NOTE: Usual inflation for double wheel equipped tractors is 12 psi.

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 the 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 or 2nd) over long periods of time. Tractor and tire life can be extended if the draft load for continuous operation does not exceed 3rd gear "Lo" capacity of the tractor. Be sure to remove the additional ballast when it is no longer needed.

The following charts list the maximum tire carrying capacity (at 20 miles per hour). These capacities should not be exceeded.

TIRE CARRYING CAPACITY

Tire Size	Ply Rating	Weight	Tire Size	Ply Rating	Weight
18.4-34	6	4940 lbs.	23.1-30	8	7040 lbs.
18.4-34	8	5650 lbs.			

Adding Weight

When additional weight is required, cast-iron weights, liquid weight, or a combination of both may be added to each wheel equally.

Cast-Iron Weights

Weights of 120 to 140 pounds (available from your John Deere dealer) may be bolted to the inside or outside of the wheel. The 140-pound weights are used on wheels with 34-inch rims or as additional weights on 30-inch rims when no interference exists between the weight and the rim.