JD 700
Tractors

JOHN DEERE

OPERATORS MANUAL

JD 700
Tractors

OMR40068 Issue L4 English

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ENGLISH

TO THE PURCHASER

Your new John Deere JD700 Tractor is an entirely new concept of power. Built to the traditionally high standards of John Deere, this versatile tractor meets today's exacting requirements.

Outstanding ease of operation, the ability to match engine power and speed to the job, operating comfort, hydraulic power when and where you need it, simplicity of lubrication and service, modern styling, and economical, dependable service are all features of this great tractor.

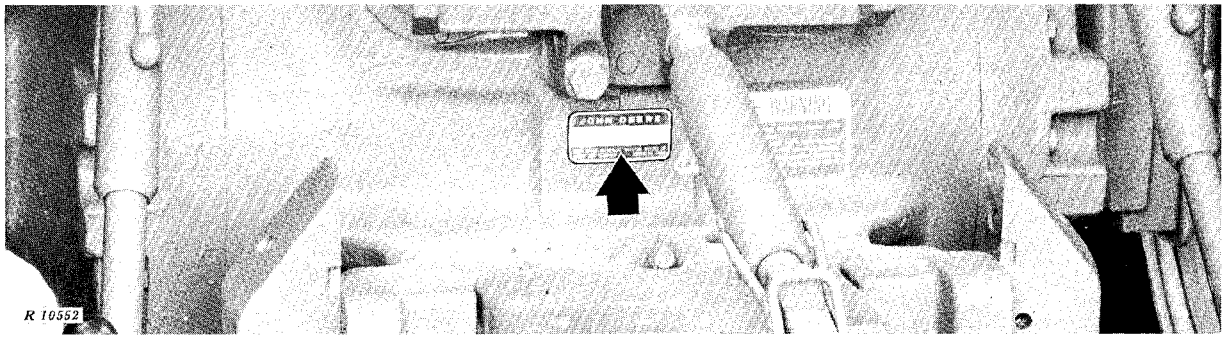
At the time the tractor was delivered, the John Deere dealer discussed with you its safe operation and proper care. However, before putting the tractor to work, read this manual. It contains complete instructions for operating the tractor, caring for it, and taking advantage of its many time- and labor-saving features. After reading this manual, keep it in a convenient place together with the tractor parts list and any equipment operator's manual and parts list that are used with the tractor. This will assure you quick and easy reference if questions arise concerning operation, lubrication, or service.

References to the right or left side of the tractor are as viewed from behind the tractor.

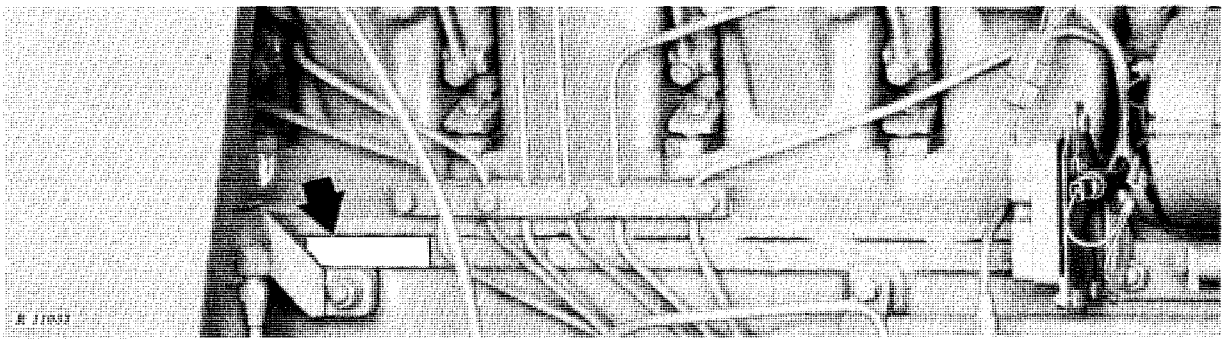
The service policy which you received with your tractor certifies that the tractor was properly inspected and prepared for delivery by your John Deere dealer. Keep this policy in a safe place and present it to the dealer whenever services which it authorizes are required.

Your John Deere dealer wants to help you get the most value from your tractor. His skilled servicemen can handle every job efficiently. These men are trained in modern service methods; they have all necessary tools and equipment. If new parts are needed, only genuine John Deere parts will be installed. These parts are exact duplicates of the originals, made from the same patterns and of the same high-quality materials.

When in need of new parts, be prepared to furnish your dealer with the engine serial number, the tractor chassis serial number, and the tractor series number. For ready reference, locate and record the serial numbers in the spaces provided in the following illustrations.



Record Tractor Chassis Serial Number



Record Engine Serial Number

CONTENTS

SPECIFICATIONS

HORSEPOWER (at 2200 rpm):
- Observed net engine flywheel . . . . 129 h.p.

ENGINE:
- Type . . . 6-cylinder, in-line, valve-in-head
- Engine Speeds:
  - Slow idle . . . . . 600 rpm
  - Working range . . . . . 1500 to 2200 rpm
  - Maximum transport speed . . . 2500 rpm
- Bore and stroke . . . . . 4-3/4 in. x 5 in.
- Displacement . . . . . 531 cu. in.
- Compression ratio . . . . . 16 to 1
- Firing order 1-5-3-6-2-4
- Valve clearance . . . . . intake 0.015 in.
  exhaust 0.022 in.
- Injection pump timing . . . . . TDC

CAPACITIES:
- Fuel tank . . . . . 48 U.S. gals.
- Crankcase:
  - When lubrication system is dry . . . . . 13-1/2 U.S. qts.
  - At service intervals . . . . . 12 U.S. qts.
- Transmission-hydraulic system:
  - When system is dry . . . . . 17 U.S. gals.
  - At service intervals . . . . . 16 U.S. gals.
- Cooling system . . . . . 34 U.S. qts.

GROUND SPEEDS:*

1st	2 mph
2nd	3 mph
3rd	4 mph
4th	5-1/4 mph
5th	6-1/2 mph
6th	8-1/2 mph
7th	11 mph
8th	17-3/4 mph
1st reverse	4 mph
2nd reverse	6-1/4 mph

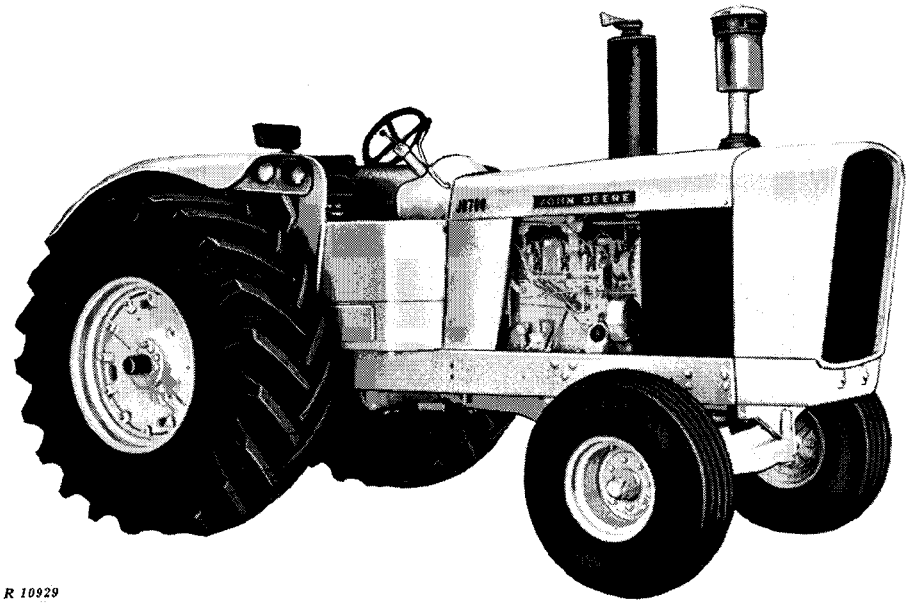
CLUTCH . . . Two 11-inch dry plates, hydraulic assist, foot-operated

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

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

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

**Calculated at 2200 rpm engine speed with 24.5-32 tires.*



R 10929

John Deere JD700 Diesel Tractor

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

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

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

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

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

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

	Size	Ply
FRONT TIRES	11.00-16	8
REAR TIRES**	24.5-32	10

FRONT WHEEL TREAD . . . . . 67 in.

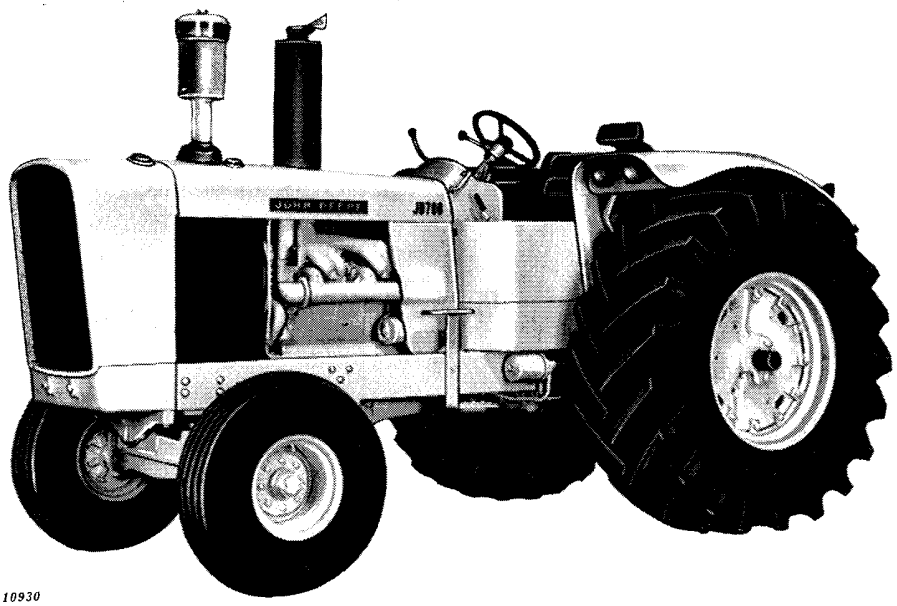
REAR WHEEL TREAD . . . . . See page 11

DIMENSIONS:
- Wheel base . . . . . 104 in.
- Over-all length . . . . . 172-1/4 in.
- Over-all height . . . . . 96-7/8 in.
- Height to steering wheel . . . . . 81-1/2 in.
- Width . . . . . Regular wheel, 95-3/4 in. Dual wheel, 130-1/2 in.
- Clearance . . . . . 16 in.
- Turning radius . . . . . 12 ft. 6 in.

SHIPPING WEIGHT (Less fuel and extra ballast) . . . . . 13,525 lbs.

***Additional tire sizes available.*

(Specifications and design subject to change without notice.)



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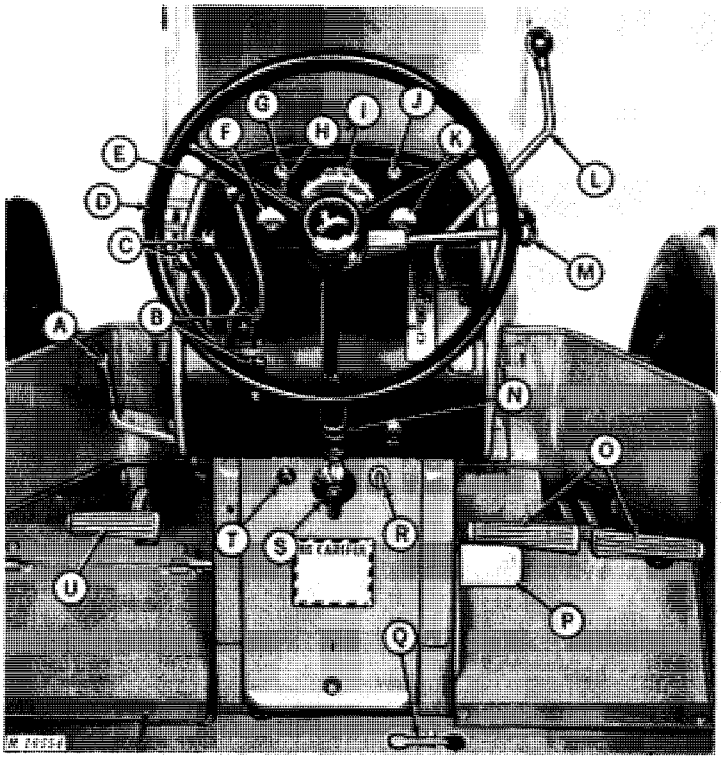
John Deere JD700 Diesel Tractor

CONTROLS AND INSTRUMENTS

Before attempting to operate your new tractor, become familiar with the location and purpose of its controls and instruments. Study the next few pages carefully, regardless of your previous tractor experience.



A – PTO Clutch Operating Lever (Page 24)
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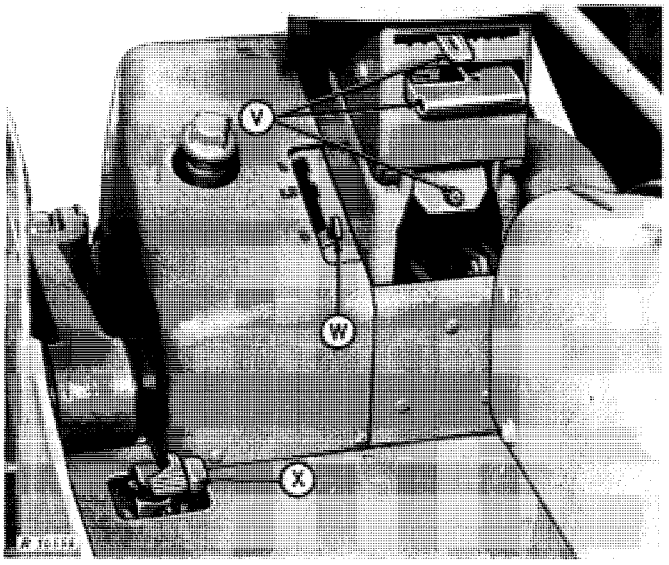
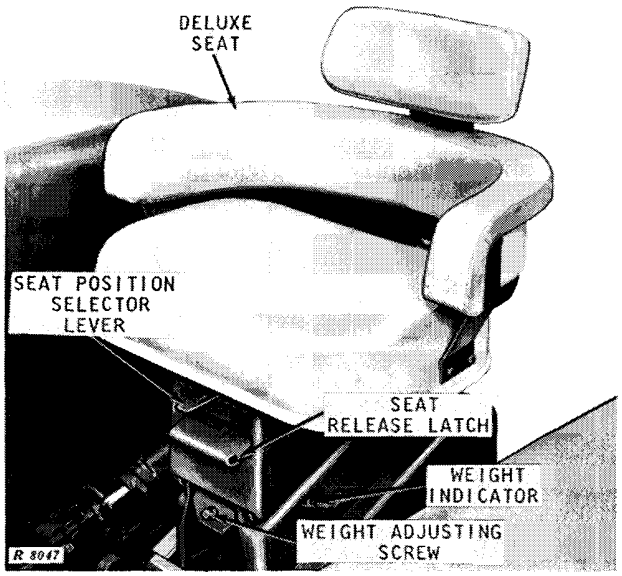


V – Seat Controls (Page 5)
W – Rockshaft Selector Lever (Page 18)
X – Differential Lock Operating Pedal (Page 11)

SEAT



Seat Controls

The deluxe, foam-padded suspension seat is equipped with a steel compression spring and shock absorber to provide "Float-Ride" comfort. The semi-circular lower backrest and flexibly mounted upper backrest add to the operator's comfort and safety.

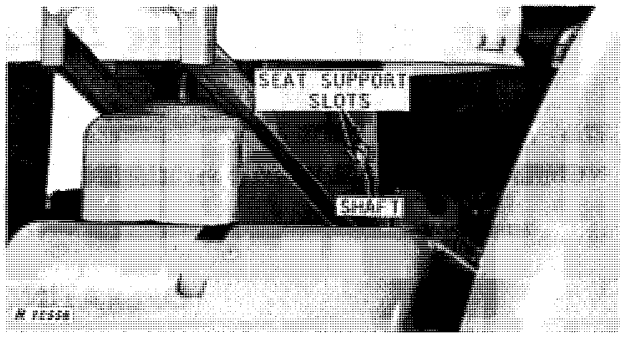
Use only warm water and mild soap to clean the seat cushions. NEVER USE SOLVENTS.

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 HEIGHT OF OPERATOR

The normal operating position of the seat can be suited to the height of the individual operator. To make this adjustment, first move the seat to the upper, rear position. Then shift the seat position selector lever between "short" and "tall" until the pedals and levers can be operated comfortably when you are seated. The seat will always return to this position when you sit down after having moved the seat up and to the rear for standing.



Seat Counterbalance Shaft

ADJUSTING FOR WEIGHT OF OPERATOR

You can adjust the tension of the steel compression spring to conform to your weight. This results in the proper amount of comfort and enables the seat to "float" when traveling over rough ground. To make this adjustment, turn the weight-adjusting screw clockwise or counter-clockwise until the indicator on the left-hand side of the seat conforms to your weight.

ADJUSTING COUNTERBALANCE SPRING

If the seat does not move fully to the rear when unlatched, adjust the counterbalance spring as follows. Move the seat to the upper rear position. Insert a screwdriver in the slot in the counterbalance shaft, push in to unlatch the shaft, and turn the shaft counter-clockwise. Align the latch in the end of the shaft with one of the pairs of slots in the side of the seat support and pull the screwdriver outward to latch the shaft.

OPERATION

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

OPERATING THE ENGINE

PRESTARTING CHECKS

(1) Perform the following checks and services before starting the engine for the first time each day:

(a) Check the engine crankcase oil level—see page 34.

(b) Check the radiator coolant level—see page 34.

(c) If the tractor has a precleaner, check the collector bowl—see page 35.

(d) Check the fuel pump sediment bowl—see page 40.

(e) Lubricate the front axle pivot pins, steering knuckle pins, steering bellcrank, and steering cylinder end fittings—see page 35.

STARTING THE ENGINE

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

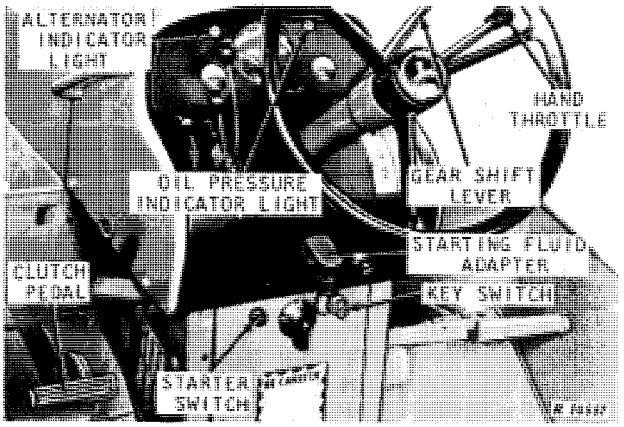
(2) Make sure that the fuel shut-off valve at the bottom of the fuel tank is open - see page 40.

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

(4) Set the hand throttle approximately one-third of its travel downward to the first stop.

(5) Turn the key switch clockwise to the on position. Both indicator lights should glow. If either light fails to glow, turn off the key and determine the cause.

(6) Press on the starter switch to start the engine. Do not press on the starter switch 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 52).



Starting Controls

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

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

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

COLD WEATHER STARTING AIDS

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

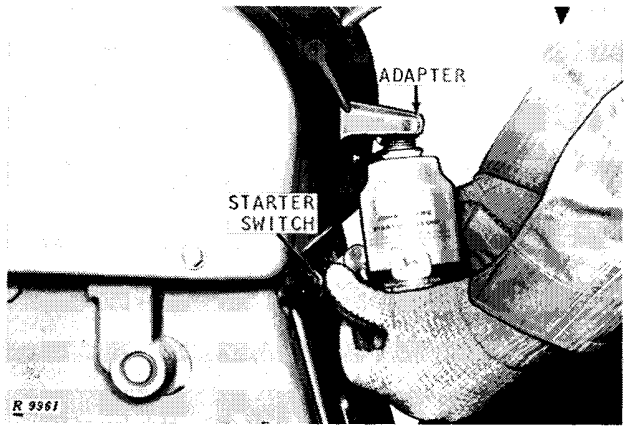
These aids are effective at low temperatures, only when the engine is otherwise operating satisfactorily. They will not correct such deficiencies as low battery charge, crankcase oil of heavy viscosity, and high electrical resistance which may prevent the engine from starting.

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

STARTING FLUID ADAPTER

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

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



Injecting Starting Fluid

To inject starting fluid, push up on the can.

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

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

Be sure to install the cap on the adapter when it is not in use. This will prevent dust from being drawn into the engine.

Store starting fluid cans where they will not be subject to extreme cold or warm temperatures. For best results, store fluid at room temperature.

CAUTION: Ether starting fluid is highly flammable.

SHUTTING OFF HYDRAULIC PUMP

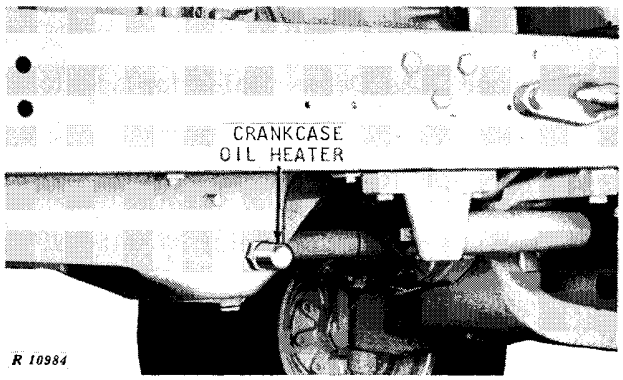
If the tractor has a hydraulic pump shut-off screw located on top of the hydraulic pump, the starter speed may be increased during cold weather by shutting off the hydraulic pump so it will not build up pressure. To do so, turn the shut-off screw in (clockwise) one turn with a screwdriver. Then turn 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.

The hydraulic pump shut-off screw is available from your John Deere dealer.

CRANKCASE OIL HEATER



Crankcase Oil Heater

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

ADDITIONAL BATTERIES

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

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

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

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

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

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

See your John Deere dealer for additional booster battery information.

TRACTOR WARM-UP PERIOD

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

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

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

ENGINE IDLING

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

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

ENGINE SPEEDS

The tractor engine is designed to operate at working speeds ranging from 1500 to 2200 rpm. The engine can be operated at any speed in the working range to meet various operating conditions. Operate the engine at 1900 rpm to obtain the SAE rated PTO speed.

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

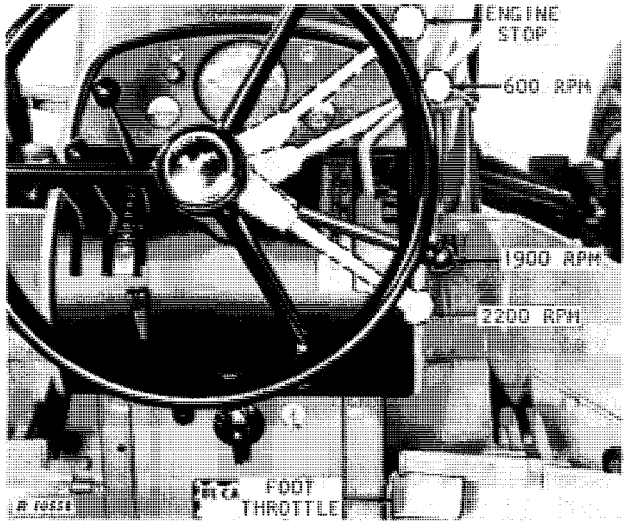
Slow idle speed is approximately 600 rpm.

To check engine speeds, see page 38.

USING HAND THROTTLE

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

Move the hand throttle counter-clockwise as far as it will go to obtain normal slow idle speed of 600 rpm.



Range of Hand Throttle Positions

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

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

USING FOOT THROTTLE

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

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

STOPPING THE ENGINE

Place the shift lever in "PARK" and allow the engine to idle a few minutes. Sudden stopping of a hot engine may allow some parts to overheat momentarily and cause possible damage.

With the hand throttle in the 600 rpm position, pull out on the knob at the end of the throttle lever and move lever counter-clockwise as far as it will go. This stops fuel injection. After a few revolutions the engine will stop.

After stopping the engine, shut the key switch off and remove the key from the switch to prevent tampering or unauthorized operation. Removing the key also prevents battery discharge in the event that the switch was accidentally left in the "ON" position.

BREAKING IN THE ENGINE

With the following exceptions, the engine is ready for normal operation. To facilitate break-in, avoid prolonged periods of engine idling, particularly for the first 100 hours of service.

Change the engine oil and the engine oil filter after the first 100 hours of service. See page 36. Thereafter the oil should normally be changed at the 200-hour service interval.

NOTE: If the coolant temperature rises above the "N" range, shift to a lower gear to reduce the load.

OPERATING THE TRACTOR

SELECTING GROUND SPEED

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

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

TRACTOR GROUND SPEEDS

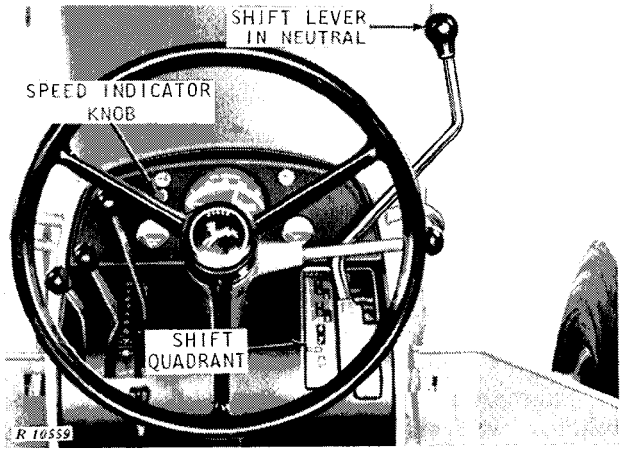
NOTE: The ground speeds shown in this chart are for a tractor equipped with 24.5-32 rear tires with a loaded radius of 31.6 inches.

Gear	Hand Throttle Operating Range			Maximum Foot Throttle Speed
	1500 rpm	*1900 rpm	2200 rpm	2500 rpm
1st	1-1/4 mph	1-3/4 mph	2 mph	. . . . .
2nd	2 mph	2-1/2 mph	3 mph	. . . . .
3rd	2-3/4 mph	3-1/2 mph	4 mph	. . . . .
4th	3-1/2 mph	4-1/2 mph	5-1/4 mph	. . . . .
5th	4-1/2 mph	5-1/2 mph	6-1/2 mph	. . . . .
6th	5-3/4 mph	7-1/4 mph	8-1/2 mph	. . . . .
7th	7-1/2 mph	9-1/2 mph	11 mph	12-1/2 mph Transport
8th	12-1/4 mph	15-1/2 mph	17-3/4 mph	20-1/4 mph Only
1st reverse	2-3/4 mph	3-1/2 mph	4 mph	4-1/2 mph
2nd reverse	4-1/4 mph	5-1/2 mph	6-1/4 mph	7 mph

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

Gates in the shift quadrant permit selection of the proper gear for the work to be done, as shown in the illustration. Turn the speed indicator knob on the instrument panel so that the speed-hour meter will show the correct tractor ground speed in miles per hour for the gear selected.

Avoid overloading the tractor. When this occurs, operate in a lower gear. Overloading causes undue strain on parts, eventually resulting in poor operation and unnecessary repair expense.



Shift Lever, Shift Quadrant, and Speed Indicator Knob

SHIFTING BETWEEN STATIONS

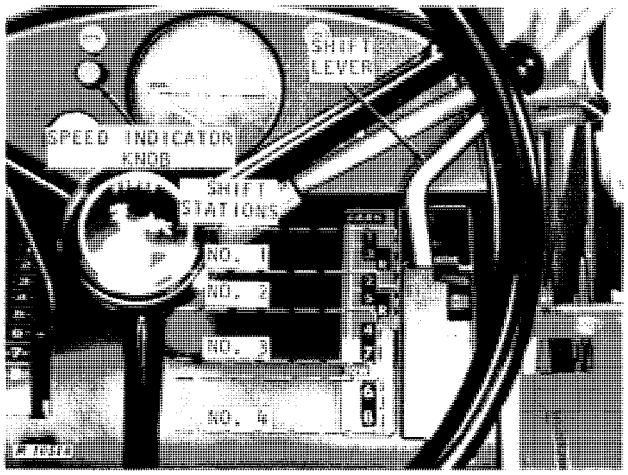
The shift quadrant has four shift stations. Stations No. 1 and 2 have two forward speeds and one reverse speed. Stations No. 3 and 4 have two forward speeds.

With the tractor stopped and the clutch pedal depressed, move the shift lever to a neutral position at the left side of the quadrant. Then move the shift lever to the station that has the desired speed. Move the lever to the right and into the speed desired.

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

SHIFTING WITHIN STATIONS

With the clutch pedal depressed, the transmission can be shifted from one forward speed to the other forward speed within the same station while the tractor is in motion. For instance, you can shift between 1st and 3rd gears, 2nd and 5th gears, 4th and 7th gears, and 6th and 8th gears without stopping the tractor.



Gear Shift Stations

You can also shift from a forward speed to the reverse speed within the same station without stopping the tractor. However, to avoid injury and damage to the tractor, do so only at slow ground speed.

Gradually release the clutch pedal to engage the clutch.

PARKING THE TRACTOR

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

To shift from "PARK," move the shift lever rearward to the station desired.

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

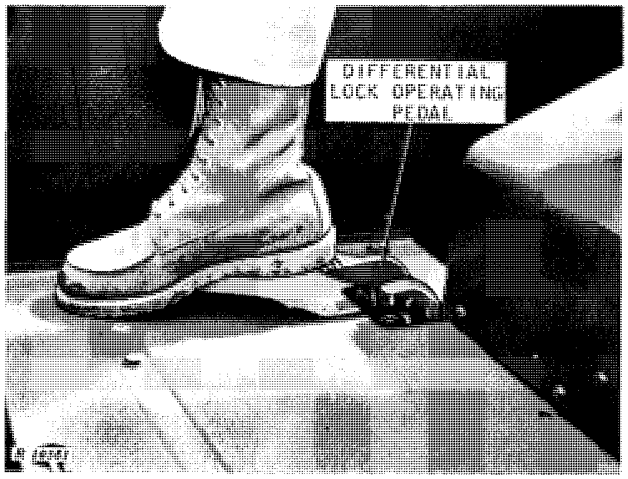
TOWING THE TRACTOR

When towing the tractor, place the shift lever in "TOW" and have an operator steer the tractor.

CAUTION: Never tow the tractor at high speeds. Always attach a tow bar or chain to the tractor frame. When possible, run the engine to maintain hydraulic pressure for power operation of steering and brakes.

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.

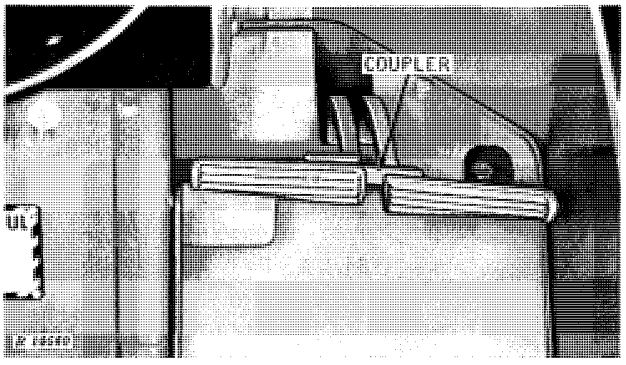


Differential Lock Operating Pedal

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 disengaging the differential lock.

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

POWER STEERING AND BRAKES



Brake Pedals Coupled Together

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

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

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

REAR WHEEL TREAD

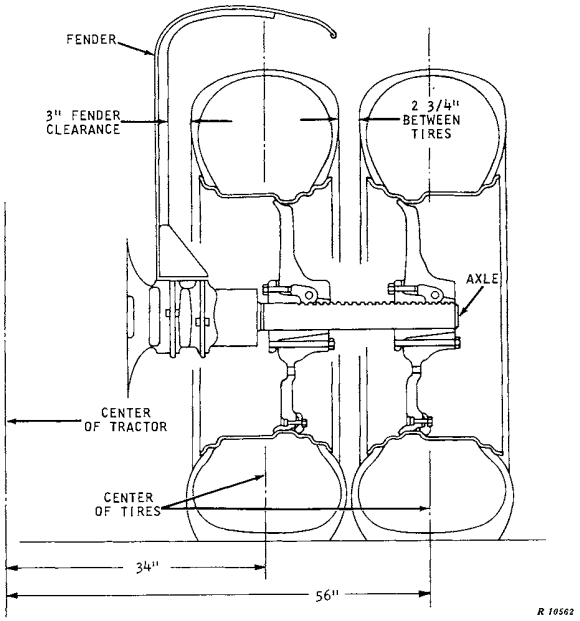
ADJUSTMENT RANGE (Single Rear Wheels)

With 24.5-32 tires, the tread may be adjusted between 70 to 82 inches by moving the wheel with the rack and pinion. With 23.5-25 tires, the tread is 72 inches. Always mount the rims in the narrow tread position.

ADJUSTMENT (Dual Rear Wheels)

If your tractor is equipped with 18.4-34 dual rear tires, be sure the wheels are positioned with 3 inches fender-to-tire clearance and 2-3/4 inches tire-to-tire clearance. It is very important that the inner wheel rim clamp nuts and hub cap screws be securely tightened because the outer wheel must be removed to retighten them.

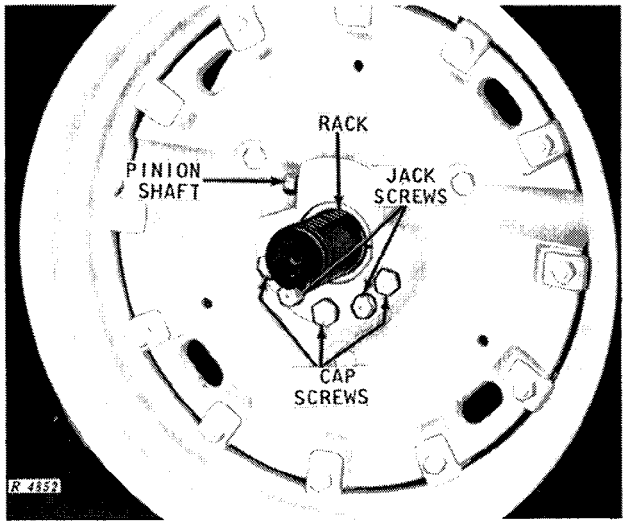
CAUTION: Never operate the tractor when the rim clamp nuts or hub cap screws are loose.



Dual Rear Wheel Tread Adjustment

RACK AND PINION METHOD

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



Rack and Pinion Adjustment

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

Rotate the wheel until the rack on the axle is up. Loosen the three cap screws 3/8 inch. To loosen the tapered sleeve, turn 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 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.

CAUTION: Avoid adjusting wheels too close to the rear axle housing. This can damage the pinion when the hub is tightened. To avoid this, adjust the wheel to the innermost position until the pinion contacts the end of the rack. Then back up until the wheel has moved outward at least 1/4 inch.

Be sure that the tire or wheel weights do not rub the tractor.

After the desired tread is obtained, back the jack screws all the way out against the stop. Do not force. Lubricate cap screw threads and tighten cap screws securely (300 ft-lbs torque).

CAUTION: The jack screws MUST BE FREE TO TURN after the hub is tightened.

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

INSTALLING RIMS

When installing a rim with an 18.4-34 or a 24.5-32 tire, tighten the clamps evenly to 150 ft-lbs torque. Hammer each bolt head and retorque them to 150 ft-lbs. On 23.5-25 tires, tighten the rim nuts to 400 ft-lbs torque. After a few hours service, RETIGHTEN retaining nuts on all rims and keep them tight.

INSTALLING WHEEL RETAINERS

On NEW tractors or whenever the wheel is installed on tractors with 23.5-25 rear tires, tighten the wheel retainer to 300 ft-lbs torque. Rap retainer with a heavy hammer and retorque the cap screws. Repeat this three times. Then AT 50 HOUR INTERVALS, check and retorque the screws until they stay tightened at 300 ft-lbs torque.

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 equipment 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.

INFLATION CHARTS

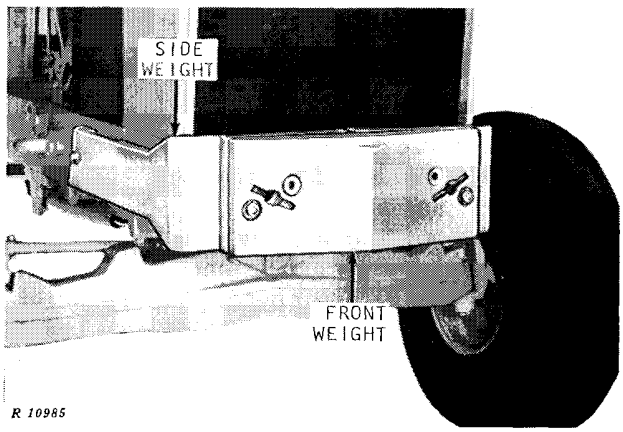
FRONT TIRES		
Tire Size	Ply	Inflation Pressure
11.00-15	12	45 lbs.
11.00-16	8	36 lbs.
11.00-16	12	52 lbs.

REAR TIRES			
		Inflation Pressure	
Tire Size	Ply	With Little or No Added Ballast	With Max. Ballast or Heavy Rear-Mounted Equipment
18.4-34	8	16 lbs.	20 lbs.
23.5-25	12	25 lbs.	25 lbs.
24.5-32	10	16 lbs.	18 lbs.

BALLAST

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

FRONT END WEIGHTS



Front End Weight

When using heavy rear-mounted equipment or when operating on hilly terrain, install side weights and front weights for increased stability and steering control. Drive slowly to maintain adequate stability with heavy rear-mounted equipment in the raised position.

Two side weights and up to six front weights may be used. The front weights weigh 85 pounds each, and the side weights weigh 125 pounds each. The weights are available from your John Deere dealer.

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

REAR WHEEL WEIGHTS

Power can be wasted and tire life cut drastically by excessive rear wheel slippage. Wheel slippage can be reduced to a minimum by weighting the rear wheels with a liquid solution in the tires or with cast-iron wheel weights.

When the tractor is pulling its rated load, ballast should not be added to the point where all wheel slippage is eliminated. When too much weight is used, the tread marks will be clear and distinct. When too little weight is used, the tread marks will be obliterated.

Maximum Ballast

When the ballast given in the following chart is added, the 24.5-32 tire will be carrying its rated load. Ballast for 18.4-34 and 23.5-25 tire is limited by the 3rd gear operating capacity of the tractor. When ballast is added, adjust the tire pressure as shown in the inflation charts.

Variations from the ballast shown in the chart may be required to meet various traction conditions. However, rear wheel ballast should never exceed the weight required to provide traction for loads within the 3rd gear operating capacity of the tractor.

24-5-32 TIRE CARRYING CAPACITY

Maximum Added Ballast Per Rear Tire	
With Rockshaft	4290 lbs.
Without Rockshaft	4880 lbs.

Be sure to remove the additional weight when it is no longer required.

Cast-Iron Weights

Large 1600-pound (24.5-32 tires only) 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); then periodically check them to be sure they are tight.

Liquid Weight

Water and calcium chloride solution is an economical means of adding weight to 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 rear 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 per cent full (filled to valve level).

LIQUID WEIGHT PER TIRE (75 PERCENT FILLED)

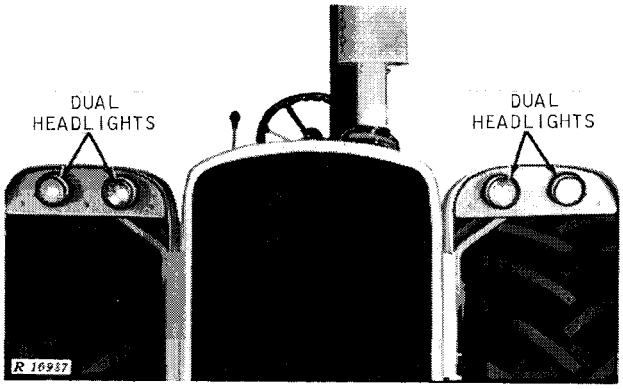
Tire Size	Slush-Free at 13°F.; Solid at -23°F. (Approx. 2 Lbs. CaCl2 Per Gal. Water)	Slush-Free at -12°F.; Solid at -52°F. (Approx. 3.5 Lbs. CaCl2 Per Gal. Water)	Slush-Free at -53°F.; Solid at -62°F. (Approx. 5 Lbs. CaCl2 Per Gal. Water)
18.4-34	874 lbs.	936 lbs.	988 lbs.
23.5-25	1197 lbs.	1290 lbs.	1360 lbs.
24.5-32	1620 lbs.	1742 lbs.	1850 lbs.

LIGHTS

The lights on your tractor are designed to give the maximum amount of safety and convenience when operating at night or during other periods of low visibility.

HEADLIGHTS

Dual sealed-beam headlights are mounted in the front of each fender. The two inner lights



Build-In Dual Headlights

throw strong beams ahead of the tractor. The outer flood lights illuminate the ground at both sides as well as ahead of the tractor.

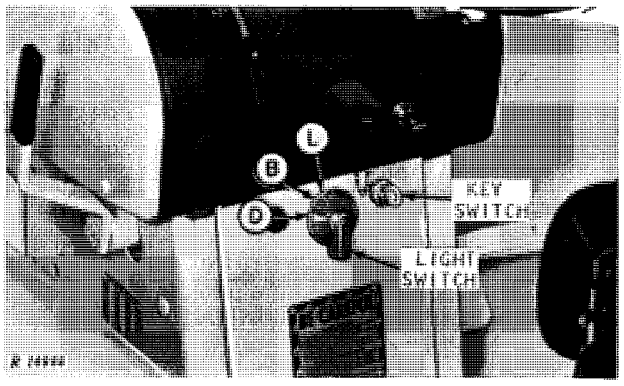
TAILLIGHT

The combination red-white taillight is mounted on the left fender. It illuminates equipment at the rear of the tractor or glows red for night highway travel.

FLOOD LAMP

A flood lamp is mounted at the rear of the right-hand fender. It illuminates equipment at the rear of the tractor in addition to the combination taillight.

LIGHT SWITCH



Light Switch

When the key switch is in the "ON" position, the light switch will turn on the tractor lights. The light switch has four positions:

"OFF" - To turn off all lights.

"L" - To turn on all four headlights and both rear white flood lamps.

"B" - To turn on all four headlights and red taillight.

"D" - To dim the headlights by turning off the inner headlights. The outer headlights and red taillight are turned on.

ADJUSTING THE HEADLIGHTS

The headlights on your tractor should be adjusted to illuminate the desired working area at the front and sides of the tractor.

When driving on the highway at night, readjust the headlights sufficiently downward so that they will not blind the driver of an oncoming vehicle.

Always dim the tractor headlights when meeting a vehicle at night by turning the light switch to "D."

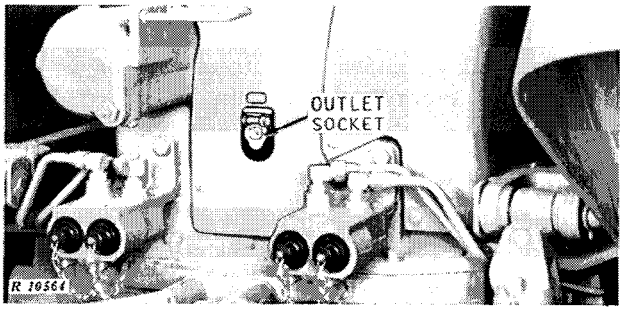
TRACTOR AND EQUIPMENT WARNING LAMP

This lamp (which is amber to the front and red to the rear) is mounted on a bracket on the left rear fender. When desired, the lamp can be equipped with a flasher, available from your John Deere dealer.

The lamp is easily detachable and can be used as a warning lamp on towed equipment.

The lamp is connected to the electrical outlet socket and is lighted as long as it is connected.

ELECTRICAL OUTLET SOCKET



Electrical Outlet Socket

The socket, a source of 12-volt, DC electrical power, is used for plugging in the equipment warning lamp, auxiliary lights, or other electrical equipment.

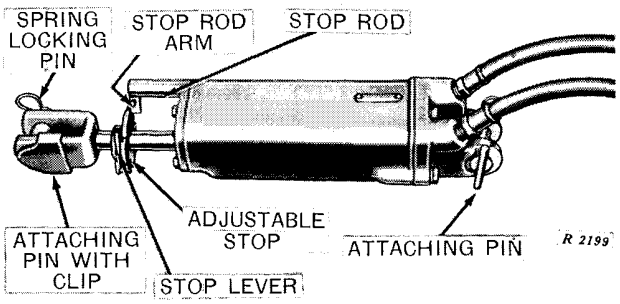
HIGHWAY DRIVING

When transporting (or driving) the tractor on a road or highway at night or during the day, use accessory lights and devices for adequate warning to the operators of other vehicles. In this regard, check local governmental regulations. Various safety lights and devices are available from your John Deere dealer.

EQUIPMENT HITCH AND CONTROL SYSTEM

The equipment hitch and control system on your tractor provides a quick and easy method of attaching and lifting various equipment and controlling its operation. The system can include one or two remote cylinders, a rockshaft and 3-point hitch, a drawbar, or a power take-off to operate power-shaft driven equipment.

REMOTE HYDRAULIC CYLINDERS

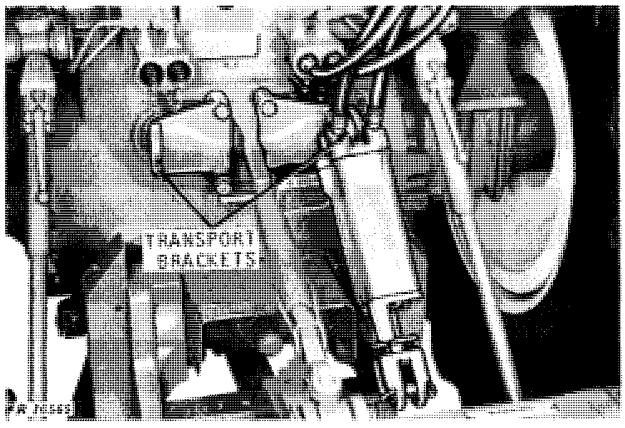


Hydraulic Stop Remote Hydraulic Cylinder

Your tractor can be equipped to operate one or two single-acting or double-acting remote hydraulic cylinders. The cylinders are connected by hoses to breakaway couplers at the rear of the tractor and are operated by oil from the main hydraulic pump. Pressure oil from the pump is directed by selective control valves, located under the hood, through the breakaway couplers and hoses to the cylinders. The valves are operated by levers located at the left side of the tractor dash. The two remote cylinders can be operated individually or simultaneously.

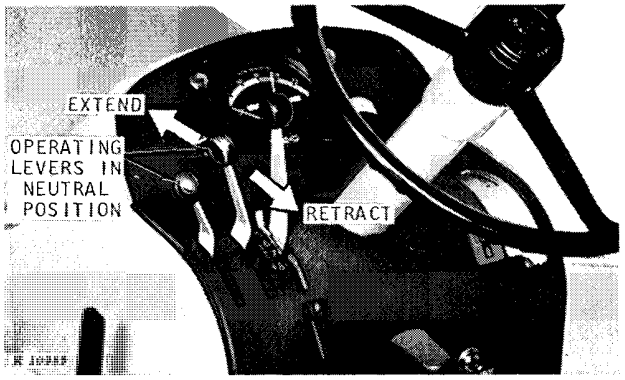
When not in use, the cylinders can be stored on transport brackets located at the rear of the tractor.

CAUTION: Before placing remote cylinder on transport bracket, fully retract the cylinder. Then, rotate breakaway coupler operating levers to the straight rearward position to lock the cylinders in the retracted position.



Remote Cylinder on Transport Brackets

USING REMOTE CYLINDER OPERATING LEVERS



Remote Cylinder Operating Levers

Tractors equipped to operate one remote cylinder have an operating lever at the left side of the dash. Tractors equipped to operate two remote cylinders have two operating levers side by side. The inner lever operates the remote cylinder attached to the right-hand breakaway coupler; and the outer lever operates the cylinder attached to the left-hand coupler. Each lever has six operating positions:

(1) Neutral. Move lever to center position in the quadrant.

(2) Slow Extend. Move lever slightly forward from neutral. The lever must be held until the desired adjustment is reached. In most applications, this will raise the equipment.

(3) Fast Extend. Move lever all the way to the front. The lever will remain in this position until the end of the piston stroke when it will automatically return to the neutral position.

(4) Slow Retract. Move lever slightly toward the rear from neutral. The lever must be held until the desired adjustment is reached. In most applications, this will lower the equipment.

(5) Fast Retract. Move lever rearward to the first lock position. The lever will remain in this position until the end of the piston stroke when it will automatically return to the neutral position.

(6) Float. In addition, after making a simple adjustment, each lever can be moved all the way rearward in the quadrant to a float position to

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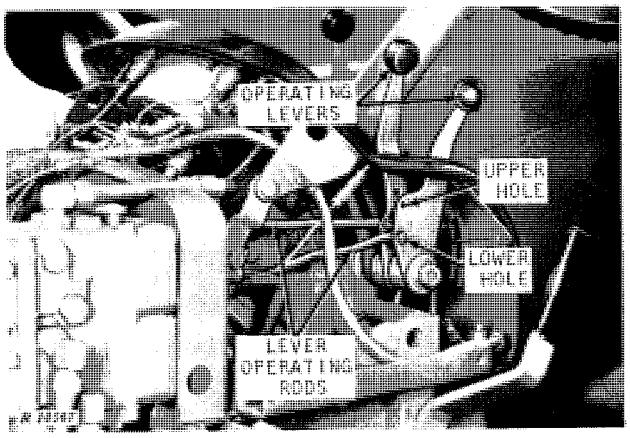
permit the equipment to follow the ground contour. The lever will lock in the float position until pushed forward to a new position.

It is necessary to change the position of the lever operating rod before an operating lever can be moved to the float position. To do so remove the cowl (page 40). Then move the lever operating rod from the lower hole in the lever to the upper one and replace the cowl. The operating rod can be moved back to the lower hole when the float position is not desired.

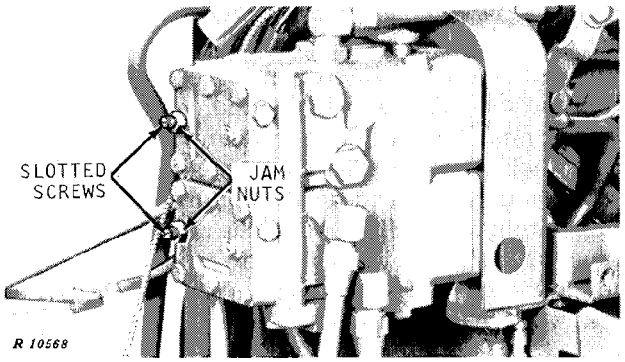


Lever Adjustment for Float Position

ADJUSTING RATE OF OPERATION

The rate of operation of each remote hydraulic cylinder can be increased or decreased by adjusting the selective control valve. This adjustment increases or decreases the maximum flow of oil to the remote cylinders. The adjustment also affects the speed with which the equipment will be raised.

To make the adjustment, remove the left-hand side shield (page 40), reach up under the hood, loosen the jam nut, and turn the slotted screw on the selective control valve clockwise to decrease the rate of operation or counter-clockwise to increase it.



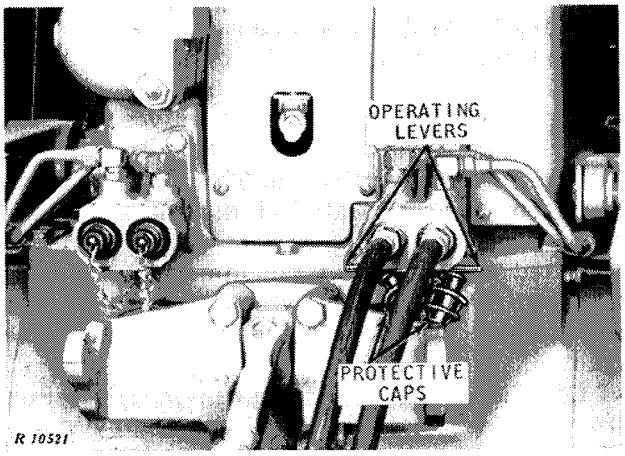
Selective Control Valves

CAUTION: Full extension or retraction of a 3-1/2 x 8-inch remote cylinder should require at least 2 to 2-1/2 seconds. Faster speeds may cause damage.

The upper selective control valve operates the remote cylinder connected to the right-hand breakaway coupler. The lower valve operates the remote cylinder connected to the left-hand breakaway coupler.

CONNECTING HOSES TO BREAKAWAY COUPLERS

Breakaway couplers at the rear of the tractor are used to couple or uncouple remote cylinder hoses under pressure without loss of oil, regardless of whether or not the tractor engine is running. They also safeguard the hoses by permitting them to be pulled loose from the tractor without damage or loss of oil if drawn equipment should become disconnected from the tractor.



Remote Cylinder Hoses

Remove the dust plugs and store them on the spring clips under the breakaway coupler. Remove the dust covers from the hose ends and store them on the coupler dust plugs. Always be sure the hose ends and the coupler receptacles are free from dirt before connecting the hoses.

Insert the hose from the stop rod side of the cylinder into the right-hand receptacle of the coupler. After the hoses are properly attached, move the coupler operating levers until they are at a right angle to the hoses. This lifts the valves in the hose end and the receptacle off their seats and permits oil to flow.