

4430 TRACTOR



JOHN DEERE

OPERATORS MANUAL

4430
TRACTOR

OMR65532 A7 English

JOHN DEERE TRACTOR WORKS
OMR65532 A7

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.



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

Record your tractor serial numbers in the spaces provided on page 85. 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.



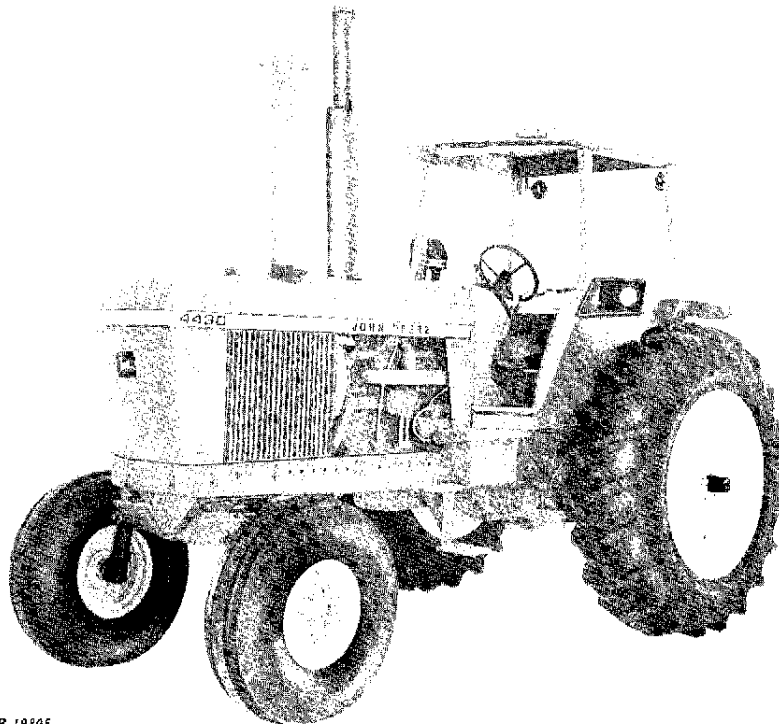
This safety alert symbol indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

Your operator's manual contains SI Metric equivalents which follow immediately after the U.S. customary units of measure.



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Safety

⚠ Most machinery accidents are caused by careless or improper use. Guards, shields, and other safety features are built into the tractor, but it still takes caution to prevent accidents.

Keep a first-aid kit and a fire extinguisher handy in case of emergencies. Know how to use them, and see that they are properly maintained.

Keep sleeves and other clothing snug-fitting. Loose clothing can easily catch in moving parts.

SOUND-GARD BODY, ROLL-GARD, AND SEAT BELT

A protective Roll-Gard is built into every Sound-Gard Body. A tractor without cab may be equipped with either a two-post Roll-Gard or a four-post Roll-Gard with canopy.

Under almost all operating conditions, you should use a seat belt if the tractor has a Roll-Gard. **DO NOT** use a seat belt if tractor does not have rollover protection.

For an emergency exit, Sound-Gard Body windows can be opened. Remove the quik-lock pins and headed pins from window latches, and push window wide open.

Sound-Gard Body 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.

OPERATION

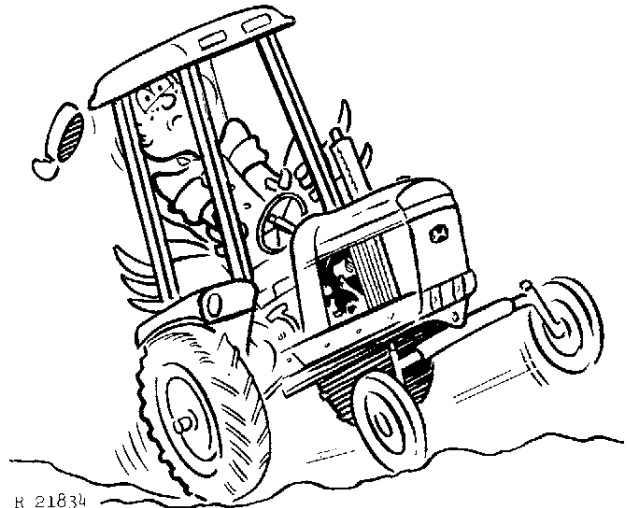
Never attempt to start or operate the tractor except from the operator's station.

Never allow riders on the tractor.

To avoid exhaust gas hazards, never run the engine in a closed building.

Before descending a steep hill, shift to a low gear to control the tractor with little or no braking. Never coast downhill.

Avoid holes, ditches, etc. which may cause the tractor to tip, especially on hillsides.



Slow down for hillsides, rough ground, and sharp turns. Couple the brake pedals together before driving at transport speeds.

A towed load of more than 20,000 lbs. (9000 kg) should have brakes. If it does not, drive slowly and avoid hills. Avoid hard applications of the brakes when pulling heavy loads.

Hitch heavy towed loads only to the drawbar. When using a chain, take up the slack slowly.

Never drive near the edge of a gully or steep embankment—it might cave in.

Don't drive forward out of a ditch or up a steep slope. Drive backward out of these situations if at all possible.

Before dismounting, place the transmission in park, lower implements to the ground, and stop the engine.

Never try to get on or off a moving tractor.

Never tow the tractor faster than 20 mph (32 km/h).

POWER TAKE-OFF

Stop the engine and be sure the PTO has stopped before:

- Connecting or disconnecting a PTO shaft
- Making any adjustment to PTO drive train or hitch
- Cleaning out PTO driven equipment.



PTO master shield should be in place at all times except when connecting a PTO drive line or for special applications as directed in the operator's manual.

The PTO shaft guard should be in place when the PTO is not being used.

LIGHTS

When operating the tractor on a road, turn the light switch to the "H" position. This turns on headlights, taillights, and warning lights. Be sure the SMV emblem is visible and clean.

If flashing lights are prohibited by local regulations, be sure the flasher for warning lamps is disconnected.

See your John Deere dealer if additional safety devices are needed for towed or mounted equipment.

Always dim the headlights before meeting another vehicle. Keep the lights adjusted so they will not blind another driver.

SERVICING

Do not service the tractor or implement while it is in motion or while the engine is running unless specifically recommended.

Keep all equipment properly serviced to prevent safety hazards. Keep all bolts tight, and replace worn or damaged parts.

Do not remove the radiator cap when the engine is hot. Shut the engine off and wait until it cools. Then turn the cap to the first stop to relieve pressure before removing it completely.

Be careful with starting fluid or any type of fuel. Do not refuel the tractor when the engine is hot or running. Never smoke while handling fuel or servicing the fuel system.

Disconnect the battery ground cable before working on the electrical system or working in any area where you might accidentally contact electrical components. This minimizes the risk of sparks, burns, accidental starter operation, or damage to the system.

Before using booster batteries, read the instructions on page 8. Before connecting or disconnecting a battery charger, turn the charger off to avoid sparks.

HYDRAULICS

Hydraulic oil or diesel fuel escaping under pressure can penetrate the skin, causing serious injury. Before disconnecting lines, be sure to relieve all pressure. Before applying pressure, be sure all connections are tight and all components are in good condition.

Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands, to search for suspected leaks.

If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

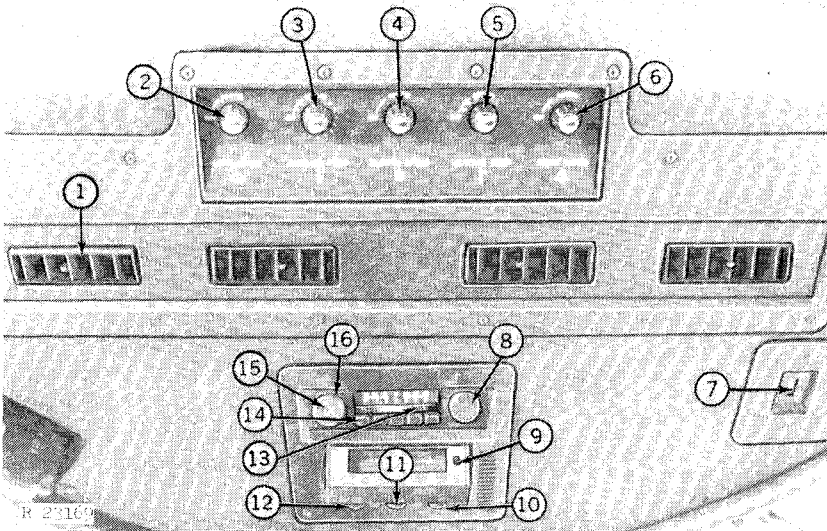
Before disconnecting the brake accumulator or brake valve, relieve all pressure in the accumulator. With the engine stopped, pump the brake pedals at least 50 strokes.

The accumulator is charged with dry nitrogen at a pressure of 500 psi (35 bar). If it needs to be recharged, have the job done only by a qualified serviceman and only with dry nitrogen.

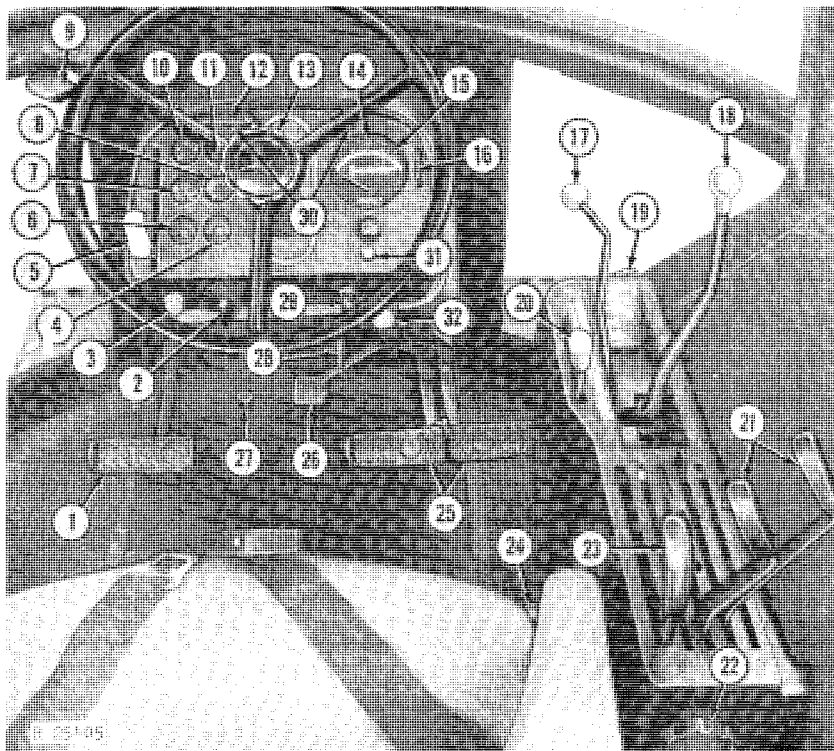


Controls and Instruments

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 function description.



- 1—Air Louver (page 10)
- 2—Left Wiper Switch (page 10)
- 3—Air Conditioning Temperature Control Knob (page 10)
- 4—Blower Switch Knob (page 10)
- 5—Heater Temperature Control Knob (page 10)
- 6—Right Wiper Switch (page 10)
- 7—Console Lamp
- 8—Radio Station Selector (page 10)
- 9—Tape Player Channel Selector Button (page 11)
- 10—Tape Player Tone Control (page 11)
- 11—Tape Player Stereo Balance Control (page 11)
- 12—Tape Player Volume Control (page 11)
- 13—AM-FM Selector Switch (page 11)
- 14—Radio Tuning Push Button (page 11)
- 15—Radio Off-On and Volume Control Knob (page 10)
- 16—Radio Tone Control Ring (page 10)



- 4—Air Cleaner Indicator Light (page 6)
- 5—Power Take-Off Clutch Lever (page 47)
- 6—Transmission Oil Indicator Light (page 5)
- 7—Engine Oil Pressure Gauge (page 6)
- 8—Voltmeter (page 5)
- 9—Door Latch
- 10—Fuel Gauge
- 11—Water Temperature Gauge (page 9)
- 12—Turn Signal Lever (page 30)
- 13—Steering Shaft Adjusting Knob (page 13)
- 14—Hi-Beam Indicator Light (page 30)
- 15—Speed-Hour Meter (page 15)
- 16—Speed Indicator Wheel (page 15)
- 17—Creeper Control Shift Lever (page 17)
- 18—Shift Lever (page 16)
- 19—Right-Hand Service Door Handle
- 20—Hand Throttle (page 9)
- 21—Remote Cylinder Operating Levers (page 42)
- 22—Rockshaft Depth Stop Adjusting Knob (page 33)
- 23—Rockshaft Control Lever (page 33)
- 24—Rockshaft Selector Lever (page 34)
- 25—Brake Pedals (page 14)
- 26—Differential Lock Pedal (page 20)
- 27—Dimmer Switch (page 30)
- 28—Steering Tilt Lock (page 13)
- 29—Key Switch (page 5)
- 30—Turn Signal Indicator Lamp
- 31—Horn Button
- 32—Engine Stop Knob (page 9)

- 1—Clutch Pedal (page 16)
- Inching Pedal (page 15)

- 2—Light Switch (page 3)
- 3—Ether Starting Aid Button (page 7)



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 page 56 for additional information.

- (a) Check the engine crankcase oil level.
- (b) Check the radiator coolant level.
- (c) Check fuel pump sediment bowl and fuel filters. If water or sediment is present, remove it. See page 62.
- (d) Lubricate the wide swing drawbar rollers, the front axle pivot pins, steering knuckle pins, and tie rod ends.
- (e) Grease the front wheel bearings and rear axle bearings if the tractor has been operated in extremely wet or muddy conditions.
- (f) Make sure the fuel shut-off valve on the fuel tank is open.

OPERATING THE ENGINE

STARTING THE DIESEL ENGINE

NOTE: If the prevailing temperature is 40°F (5°C) or lower, it may be necessary to use a cold weather starting aid to start the engine (page 6).

Perform the Prestarting Checks listed above.

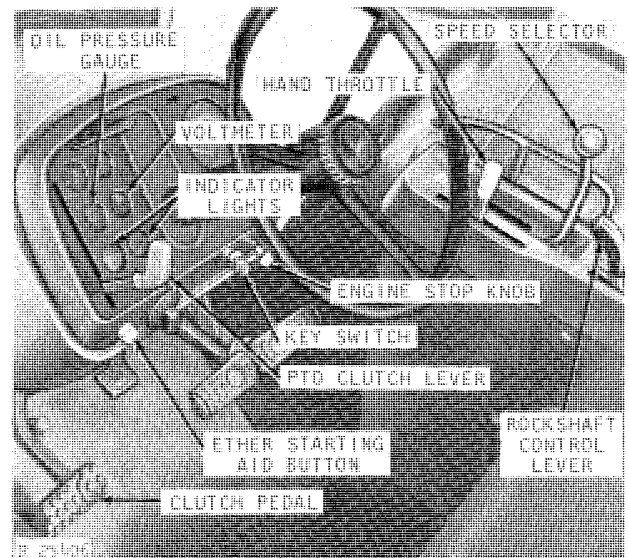
The gauge pointers for the fuel gauge, engine water temperature gauge and engine oil pressure gauge will be in approximately the same position they were in when the key switch was turned off.

P (1) See that the transmission is in park (see worldwide symbol at left), the PTO clutch is disengaged, the rockshaft control lever is in lowered position, and the remote cylinder operating levers in neutral. Depress the clutch pedal or inching pedal.


Before the starter will operate, the transmission must be in park or neutral.


(2) See that the engine stop knob is pushed all the way in. Move the throttle approximately 1/3 of the way forward (1200 rpm position).

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



Starting Controls

 The voltmeter hand should rise to the green band for battery condition. If it does not, the battery voltage is low and the engine may be difficult to start. See "Trouble Shooting" for possible causes of low voltage.

 Unless the tractor has a Power Shift transmission, the transmission oil indicator lamp should flash. If it does not flash, turn off key switch and determine the cause.

STARTING THE DIESEL ENGINE—Continued

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

(4) Turn the key switch all the way to the right to start the engine.



When the key switch is in the start position, the air cleaner indicator lamp should glow. If the tractor has a Power Shift transmission, the transmission oil indicator lamp should also glow. If a light fails to glow, turn off the key switch and determine the cause.

Do not operate the starter more than 30 seconds at a time. To do so may overheat the starter. If the engine does not start the first time, wait at least two minutes before trying again. If it does not start after four attempts, see "Trouble Shooting."

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



(5) After the engine starts, release the key switch. The engine oil pressure gauge pointer should rise above the warning zone to indicate satisfactory oil pressure. The indicator lamps should go out. The voltmeter pointer should rise into the green band for charging. If an indicator lamp or gauge indicates some difficulty, stop the engine and determine the cause.

(6) After starting, operate the engine at approximately 1000 rpm. Do not accelerate or apply a load until the engine oil pressure gauge pointer is approximately straight up. In cold weather or after the engine has been idle for several weeks, 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, restart it immediately 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, pull the engine shut-off knob out, and crank the engine with the starter until the engine oil pressure gauge pointer rises out of the red range. Then push the stop knob in so the engine will start. Do not operate the starter more than 30 seconds at a time.

Always leave key switch in the "ON" position while the engine is running, so the instruments and indicator lights will function.

COLD WEATHER STARTING AIDS

For cold weather starting, the tractor may be equipped with either an electrically or manually operated ether starting fluid adapter. Other starting aids are also available from your John Deere dealer.

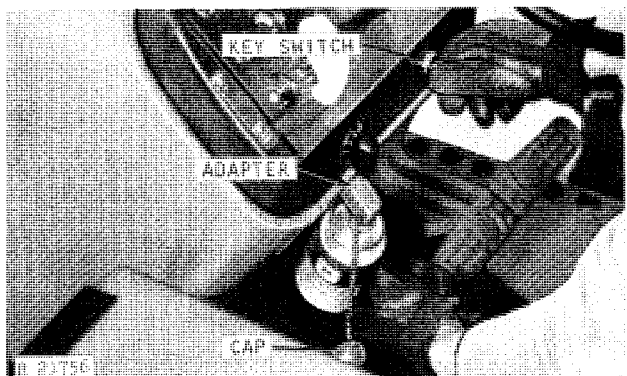
These aids are effective only when the engine is otherwise operating satisfactorily. They will not correct such deficiencies as low battery charge or crankcase oil of heavy viscosity which may prevent the engine from starting.

Ether Starting Fluid Adapters

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

Manually Operated

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.



Manually Injecting Starting Fluid 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.

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

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

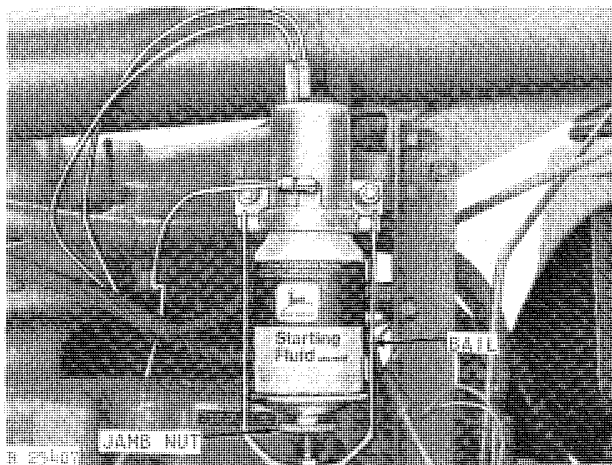
Relax pressure on the can between shots of starting fluid. Stop injecting fluid after the engine starts. If the engine begins to die during the first few minutes of operation, inject another shot of fluid. When the engine is operating satisfactorily, remove the can from the adapter and replace the safety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

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

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

Electrically Operated

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.



Electrically Operated Ether Starting Aid

To install a can of starting fluid, remove the safety cap and plastic spray button from the can. Loosen the jam nut on the bail sufficiently to permit installation of the can into the adapter as shown

in the illustration. 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.

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.

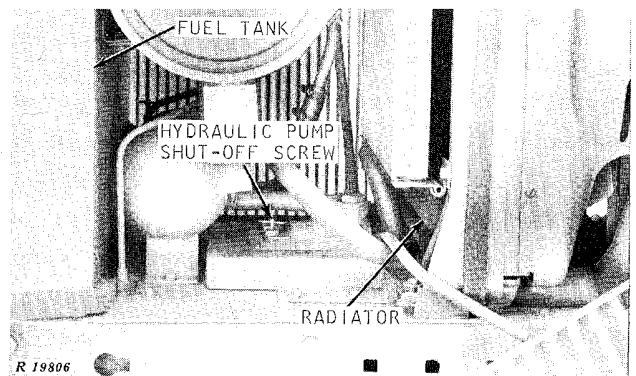
To inject starting fluid, momentarily depress the ether starting aid button on dash (page 4), using short bursts while cranking the engine at the same time.

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

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

Hydraulic Pump Shut-Off

If the tractor has a hydraulic pump shut-off screw, the starter speed may be increased during cold weather by shutting off the hydraulic pump so it will not build up pressure. This will also prevent inadvertent operation of the Power Front-Wheel Drive.



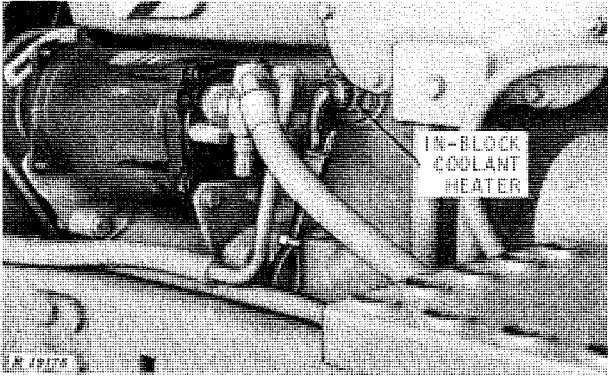
After turning the shut-off screw in (clockwise) one turn to unseat it, turn the screw in further until resistance is felt. Then turn the screw in one more turn.

CAUTION: On Power Front-Wheel Drive tractors, stop engine before backing out shut-off screw.

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

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

Electric Coolant Heater



Electric In-Block Coolant Heater

The optional coolant heater has a 1000-watt, 115-volt heating element. It mounts in the frost plug opening in the left-hand side of the engine block. By warming the engine, the heater reduces oil drag, eases starting, and shortens warm-up time.

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

Time required to sufficiently heat the coolant depends on how cold the weather is. As much as 5 hours may be required at temperatures above 0°F (-18°C). Even lower temperatures may require up to 8 hours.

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 avoid 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 battery.

Connect a jumper cable of 000 size to the positive (+) post of a 12-volt booster battery and to the POSITIVE (+) post of the left-hand 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 will 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.

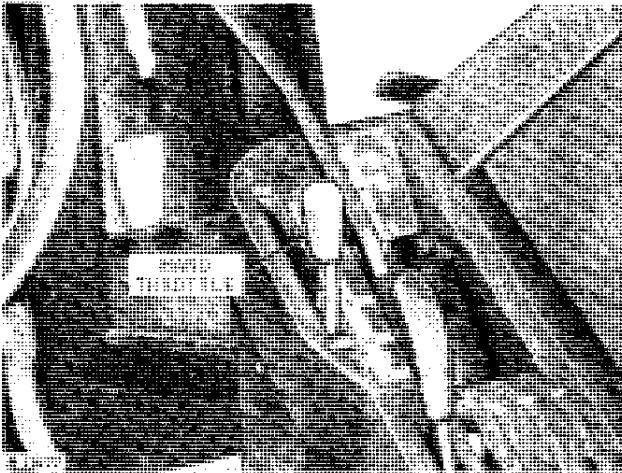
When the tractor is to remain idle longer than 10 minutes, it is usually best to stop the engine.

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 ASAE Standard PTO speeds.

Normal slow idle speed is approximately 800 rpm.

The engine speed of 2200 rpm is the speed when under full load. At light or no-load condition the speed may rise to approximately 2400 rpm. See page 60 for no-load engine speeds.



Hand Throttle

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



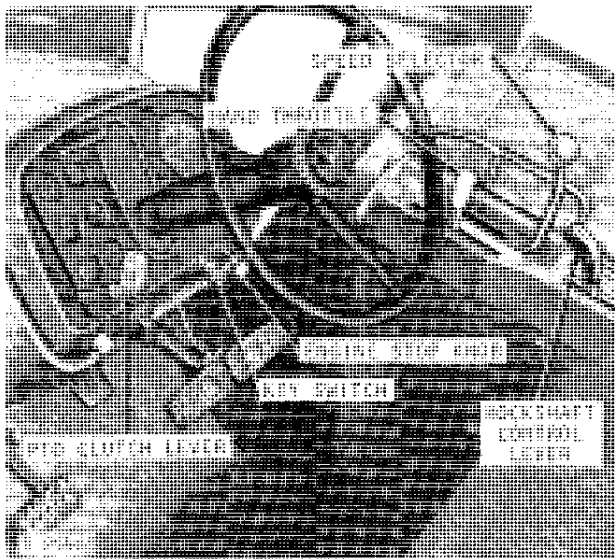
Pull the throttle rearward to obtain the slow idle speed of 800 rpm.



Push the throttle all the way forward to obtain the 2200 rpm load speed position.

The foot throttle may be used to temporarily increase engine speed above the hand throttle setting. This is especially convenient for work requiring frequent changes in engine speed. Full throttle speed is the same as for the hand throttle.

STOPPING THE ENGINE



Stopping Controls

Place the shift lever or speed selector in park and allow the engine to idle 3 to 5 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 at 800 rpm for a few minutes, pull the engine stop knob all the way out. After the engine stops, push the engine stop knob in and turn the key switch off.

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

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

BREAKING IN THE ENGINE



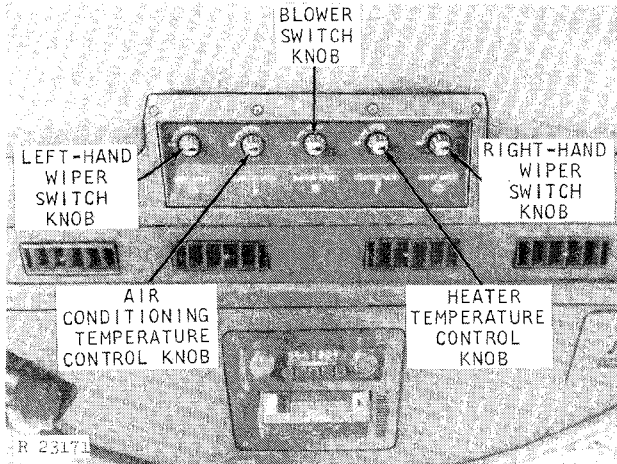
If the coolant temperature rises to the warning zone on the gauge, shift to a lower gear to reduce the load on the engine. Be sure to follow the special break-in lubrication instructions given on page 51.

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.

OPERATING THE TRACTOR

CAUTION: The Sound-Gard Body 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.

SOUND-GARD BODY CONTROLS



Blower



To maintain a clean atmosphere in the Sound-Gard Body 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.

Adjust the louvers to control the direction of air flow forward or rearward and right or left.

Heater Temperature Control



The Sound-Gard Body heater 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 off the heater.

Air Conditioning Temperature Control



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

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

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.

Wipers

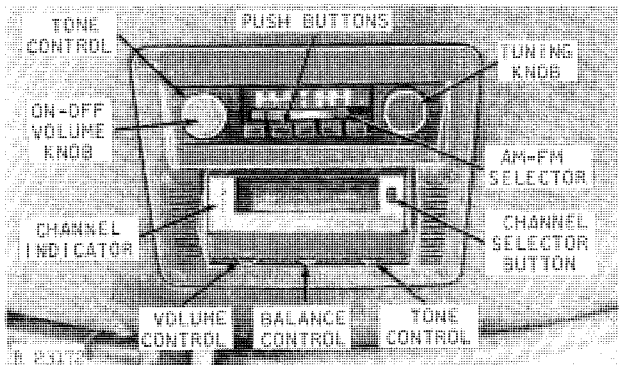


The left-hand and right-hand windshield wipers have separate switches. To obtain low wiper speed, turn the knob clockwise to the first position. For fast wiper speed, turn the knob all the way clockwise. The wiper blade returns to a park position when the switch is turned counterclockwise to the off position.

To avoid scratching windshield, never operate wipers when windshield is dry.

Both a windshield washer and a rear window wiper are available from your John Deere dealer.

Radio and Tape Player



AM-FM Radio and Tape Player

Your tractor may be equipped with either AM or AM-FM radio. A stereo tape player can be incorporated with either radio.

The AM radio has a combination on-off and volume knob to the left of the dial and a tuning knob to the right. Tone is controlled by a ring behind the volume knob.

The AM-FM radio has two additional controls. Stereo speaker balance is controlled by a ring behind the tuning knob. Selection of AM or FM reception is controlled by a slider bar below the radio dial. Slide the bar to the right for AM or to the left for FM reception.

If an FM stereo signal is weak, the radio automatically switches to monaural reception.

Both radios feature push-button tuning. To adjust a button, pull it out to the stop. Use the tuning knob to tune in the desired station. Then push the button all the way in and release it.

To operate the tape player, insert an eight-track tape cartridge, label side up and open end first, into the tape slot. Push the cartridge into the slot until it is firmly seated. This automatically turns on the tape player. To stop the player, remove the tape cartridge.

The radio and tape player are two separate units, and each has its own controls. Tape player controls are three thumb wheels on the bottom, front edge of the player. The left wheel controls volume; the center wheel, stereo balance; and the right wheel, tone.

The tape player automatically plays all four channels in order. An indicator light at the left end of the tape slot shows which channel is playing. If you want a different channel, push the channel selector button at the right end of the tape slot. The unit advances one channel each time the button is pushed.

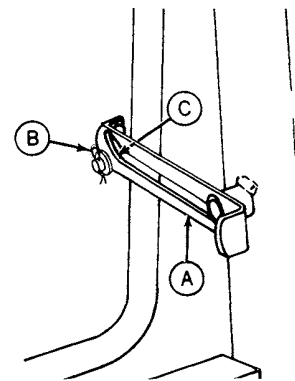
Protect the open end of tape cartridges from damage and dirt. It helps to use a tape storage box to prevent dust accumulation on tapes.

Windows

Side and rear windows of the Sound-Gard Body can be opened. To open a window, lift and push BOTH sliding latches (A) out to the notched detents.

IMPORTANT: For an emergency exit, windows can be opened wider. Remove the quik-lock pins (B) and headed pins (C) from sliding latches, and push window open wide.

When operating the tractor with the windows open, be careful to prevent damage to the windows from mounted equipment, tree limbs, etc.

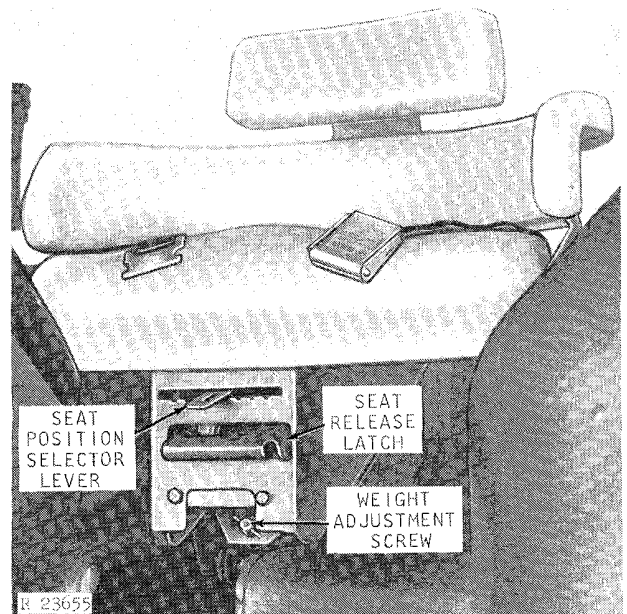


R 26738

A—Sliding Latch
B—Quik-Lock Pin

C—Headed Pin

SEAT



R 23655

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.

Adjusting for Height of Operator

The seat position can be adjusted to suit operators of various heights. First, move the seat to the upper, rear position. To do so, stand up and lift the seat release lever. The seat should move automatically to the upper, rear position.

12 Operation - Tractor

Then move the height adjustment lever to the desired position between "short" and "tall". Sit down and see if the pedals can be reached comfortably. If not, repeat the procedure.

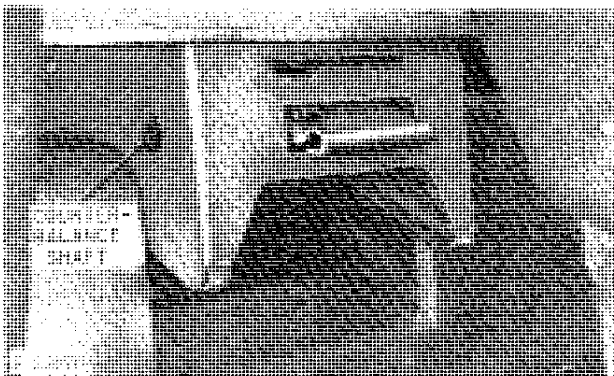
Adjusting for Weight of Operator

The seat should "float" between its upper and lower positions when the operator is seated. If the seat hits bottom, or if the suspension seems too hard, the steel compression spring can easily be adjusted.

To increase spring tension for a heavy operator, turn the weight adjusting screw clockwise. Turn the screw counterclockwise to adjust for a light operator.

Adjusting Counterbalance Spring

If the seat does not move fully to the rear when the seat release latch is lifted, the counterbalance spring needs to be tightened.



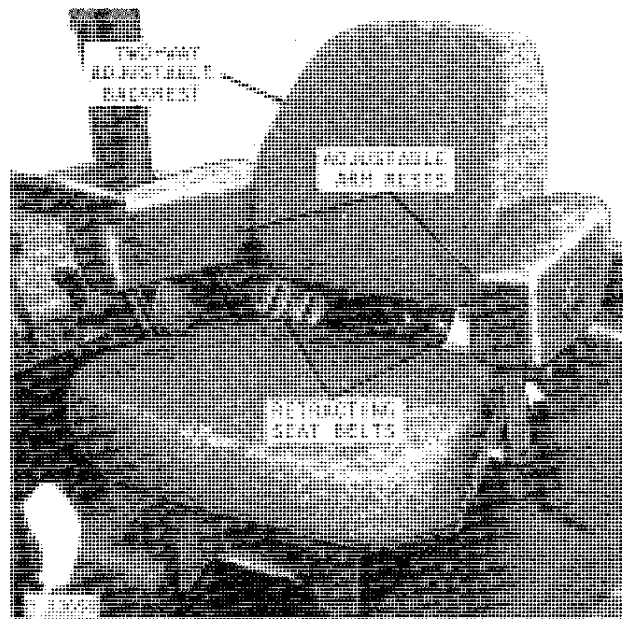
Counterbalance Shaft

Before adjusting the spring, push the seat to the upper, rear position. Insert a screwdriver in the slotted end of the counterbalance shaft and press inward to release the shaft. Turn the shaft counterclockwise two or three turns, and be sure it engages the locking slots as you release pressure on the screwdriver.

If the seat still does not move fully to the rear, repeat the procedure.

PERSONAL POSTURE SEAT

The personal posture seat is available as optional equipment only with a Sound-Gard Body. It is adjustable in six different respects and is upholstered in durable cloth fabric for operator comfort.



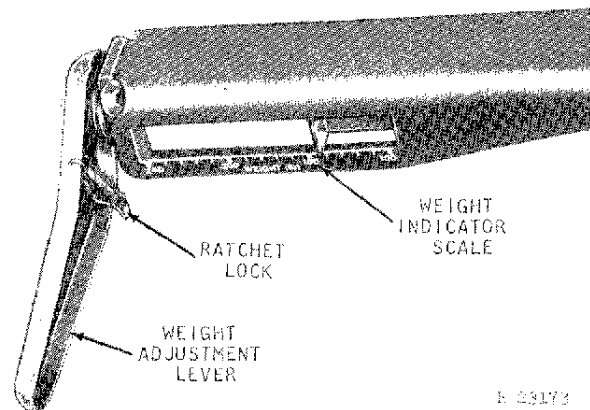
Personal Posture Seat

Seat fabric and arm rests should be vacuum cleaned or brushed with a soft bristle brush frequently to remove loose dirt and dust. Fabric cleaners may be used to clean normal soilage on fabric. A mild soap solution in warm water may be used to clean arm rests.

Grease or oil stains on fabric may be cleaned with commercially available, solvent type spot removers. Follow label directions carefully.

The procedures are the same as previously described for moving the seat to its upper rear position, adjusting for height of operator, and adjusting counterbalance spring.

Adjusting for Weight of Operator

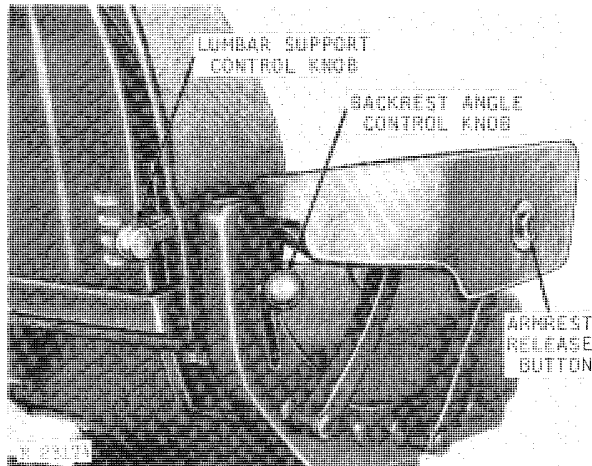


Weight Adjusting Lever

E 63173

The weight adjusting lever operates a ratchet assembly to provide a firmer or softer ride. Move the lever up and down repeatedly to adjust for your weight, as shown on the weight indicator scale. The seat is adjustable for operator weights from 100 to 250 pounds (45 to 115 kg).

To adjust for a firmer ride, flip the ratchet lock to its rear position before operating the weight adjusting lever. For a softer ride, flip the ratchet lock forward.



Armrest and Backrest Controls

Adjusting Armrest Height

Armrest height is adjustable to five different positions. To change the height, simply press the armrest release button and move the armrest to the desired position.

Avoid sitting on armrest. If you do sit on it, do so only when it is fully lowered.

Adjusting Backrest Angle

The backrest is adjustable through a 10° angle. To change the angle, raise or lower the backrest angle control knob to a position which makes the backrest comfortable.

Adjusting Lumbar Support

A lumbar support mechanism is built into the backrest. You can choose from five different pressures against your low back. For more pressure push the lumbar support control knob down to a lower position.

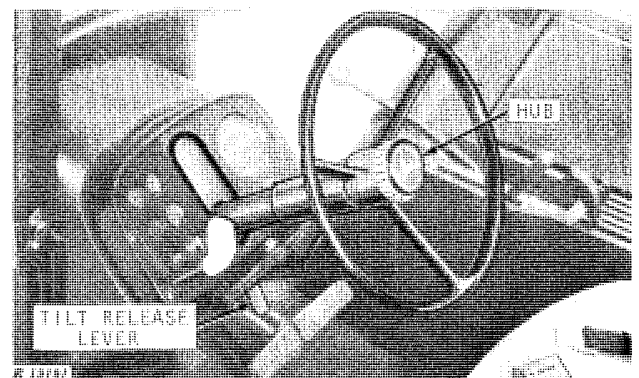
ROLL-GARD AND SEAT BELT

A protective four-post Roll-Gard is incorporated in each Sound-Gard Body. Your tractor may be equipped with a separate four-post Roll-Gard. Otherwise, a protective two-post Roll-Gard with seat belt is available for your tractor. See page 70 for more information.

CAUTION: Under almost all operating conditions:

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

POWER STEERING



Tilt-Telescope Steering Wheel

The tractor is equipped with full hydraulic power steering and a Tilt-Telescope steering wheel.

To adjust the tilt of the steering wheel, pull upward on the tilt release lever and move the wheel to the new position. Release the lever and move the steering wheel slightly until the lever locks into position.

To move the steering wheel in or out on the shaft, loosen the hub at the center of the steering wheel by turning it counterclockwise. Move the steering wheel to the new position and tighten the hub.

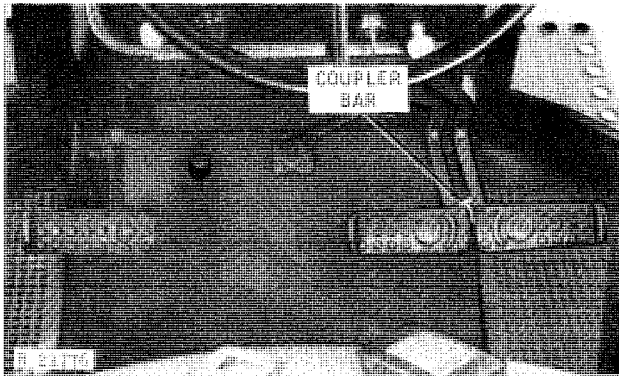
If the engine dies or power steering fails, it is possible to steer the tractor manually, but steering effort is greatly increased.

POWER BRAKES



The tractor is equipped with full hydraulic power brakes so that a minimum of effort will operate the tractor brakes.

The brake accumulator provides oil to the brakes for several brake applications after the tractor engine is stopped.



Brake Pedals Coupled Together

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

NOTE: To prevent unnecessary wear or excessive fuel consumption, never "ride" the brake pedals by resting a foot on the pedals.

TOWED LOADS



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

GROUND SPEEDS

A tractor with a syncro-range transmission has 8 forward and 2 reverse speeds. With a Power Shift transmission 8 forward and 4 reverse speeds are available. A Quad-Range transmission has 16 forward and 6 reverse speeds. The gear selected and the throttle setting enable the operator to balance speed and power for maximum economy and allow flexibility to meet varying working conditions.

Following are ground speed charts for the 4430 Tractor. Speeds are shown in miles per hour, with kilometres per hour in parentheses.

Speeds are for a tractor with 18.4-38 tires. If equipped with 15.5-38 tires, ground speed will be 9% slower; with 16.9-38 tires, 4% slower; 18.4-34 tires, 7% slower; 20.8-34 tires, 3% slower; 23.1-30 tires, 6% slower; 23.1-34, 1% faster; and 20.8-38, 4% faster.

Ground speeds are 5% faster for Hi-Crop tractors and 0-5% faster for cane and rice (R-2-O) tires.

SYNCRO-RANGE TRANSMISSION GROUND SPEEDS

Gear	1500 Engine rpm	2200 Engine rpm
1st	1.4 (2.3)	2.0 (3.2)
2nd	2.2 (3.5)	3.2 (5.1)
3rd	2.9 (4.7)	4.2 (6.8)
4th	3.7 (6.0)	5.4 (8.7)
5th	4.6 (7.4)	6.8 (10.9)
6th	6.1 (9.8)	8.9 (14.3)
7th	7.8 (12.6)	11.5 (18.5)
8th	12.8 (20.6)	18.8 (30.3)
1st reverse	2.8 (4.5)	4.1 (6.6)
2nd reverse	4.5 (7.2)	6.6 (10.6)
With optional Creeper engaged:		
1st	0.3 (0.5)	0.4 (0.6)
2nd	0.5 (0.8)	0.7 (1.1)
3rd	0.6 (1.0)	0.9 (1.4)
4th	0.8 (1.3)	1.1 (1.8)
5th	1.0 (1.6)	1.4 (2.3)
1st reverse	0.6 (1.0)	0.8 (1.3)
2nd reverse	0.9 (1.4)	1.3 (2.1)

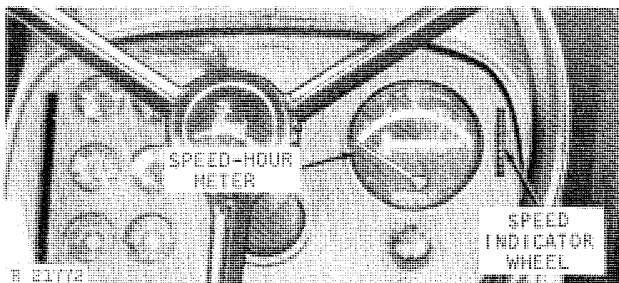
POWER SHIFT TRANSMISSION GROUND SPEEDS

Gear	1500 Engine RPM	2200 Engine RPM
1st	1.2 (1.9)	1.8 (2.9)
2nd	1.7 (2.7)	2.5 (4.0)
3rd	2.6 (4.2)	3.8 (6.1)
4th	3.4 (5.5)	4.9 (7.9)
5th	4.4 (7.1)	6.5 (10.5)
6th	5.7 (9.2)	8.3 (13.4)
7th	7.6 (12.2)	11.2 (18.0)
8th	12.9 (20.8)	18.9 (30.4)
1st rev.	1.5 (2.4)	2.2 (3.5)
2nd rev.	2.1 (3.4)	3.1 (5.0)
3rd rev.	3.2 (5.1)	4.7 (7.6)
4th rev.	4.1 (6.6)	6.0 (9.7)

QUAD-RANGE TRANSMISSION GROUND SPEEDS

Range	Speed	1500 Engine RPM	2200 Engine RPM
A	1	1.4 (2.3)	2.0 (3.2)
	2	1.8 (2.9)	2.6 (4.2)
	3	2.3 (3.7)	3.4 (5.5)
	4	2.9 (4.7)	4.3 (6.9)
	1R	2.2 (3.5)	3.2 (5.1)
	2R	2.8 (4.5)	4.1 (6.6)
B	1	3.2 (5.1)	4.7 (7.6)
	2	4.0 (6.4)	5.9 (9.5)
	3	5.3 (8.5)	7.7 (12.4)
	4	6.7 (10.8)	9.8 (15.8)
	1R	5.1 (8.2)	7.5 (12.1)
	2R	6.5 (10.5)	9.5 (15.3)
C	1	3.8 (6.1)	5.5 (8.9)
	2	4.8 (7.7)	7.0 (11.3)
	3	6.2 (10.0)	9.1 (14.6)
	4	7.9 (12.7)	11.6 (18.7)
	1R	6.0 (9.7)	8.8 (14.2)
	2R	7.7 (12.4)	11.2 (18.0)
D	1	5.8 (9.3)	8.5 (13.7)
	2	7.3 (11.7)	10.8 (17.4)
	3	9.6 (15.4)	14.0 (22.5)
	4	12.2 (19.6)	17.8 (28.6)

SPEED-HOUR METER



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

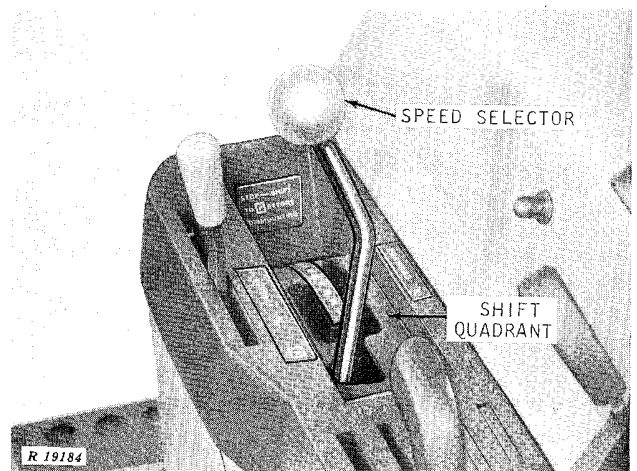
To obtain tractor ground speed, turn the speed indicator wheel on the instrument panel until the gear selected shows in the speed indicator. The speed-hour meter pointer will now indicate both engine speed and tractor ground speed.

CHOOSING A GEAR

Avoid overloading the engine. Overloading causes undue strain on parts, eventually resulting in poor operation and unnecessary repair expense. The engine is not overloaded if slight movement of the throttle causes a change in engine speed.

When pulling only light loads, you achieve better fuel economy by shifting to a higher gear and reducing engine speed. Just don't overload the engine.

POWER SHIFT TRANSMISSION



Shifting

The Power Shift transmission can be shifted "on the go" or when the tractor is stopped by moving the speed selector to the desired gear. It is not necessary to use the inching pedal when starting out or when shifting.

To move the tractor forward, move the speed selector from neutral to the desired gear in the right-hand or forward side of the quadrant. Progressive shifting (one gear at a time) will result in smoother speed change.

To reverse the tractor, move the speed selector rearward progressively to neutral. Then, move the lever to first gear in the left-hand or reverse side of the quadrant. A hand rail beside the speed selector may be used as an aid to shifting when traveling over rough ground.



Use the inching pedal when making emergency stops, when hitching to an implement, or whenever slower clutch engagement is required.

Reduce engine speed prior to making extreme speed changes.



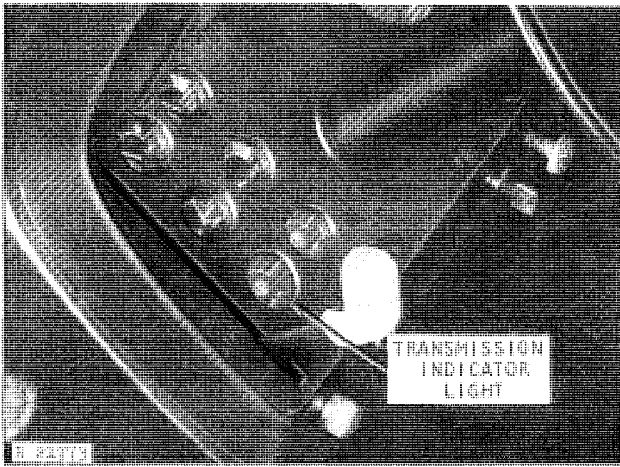
Suggest:

If the above button click is invalid.

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Operation



Transmission Oil Indicator Light

When operating a tractor with the Power Shift transmission, check the transmission oil indicator light frequently for overheating of transmission oil. After glowing for approximately one minute, the light will start flashing.

Should the transmission oil temperature indicator light glow, stop the tractor and clean all dirt and trash from the grille screens and the transmission-hydraulic oil cooler core. See page 66. Also check for proper transmission hydraulic oil level. If necessary, fill the system to the proper level. See page 57. A clogged filter can also cause overheating. If this does not correct the difficulty, call your John Deere dealer. Do not continue tractor operation when the indicator light is glowing.

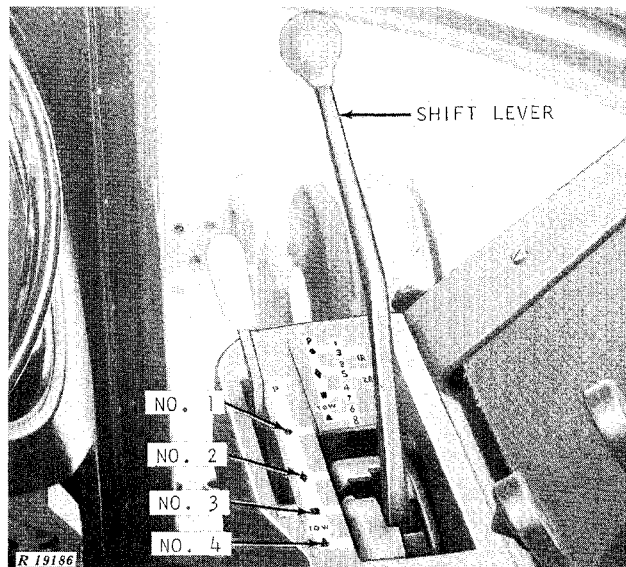
See your John Deere dealer whenever the transmission in your tractor first shows signs of not operating satisfactorily.

IMPORTANT: Never attempt to start your tractor by towing or pushing.

SYNCRO-RANGE TRANSMISSION

Shifting Between Stations

The shift quadrant has four shift stations. Stations No. 1 (circle) and 2 (diamond) have two forward speeds and one reverse speed. Stations No. 3 (square) and 4 (triangle) have two forward speeds only.



Syncro-Range Transmission Shift Quadrant with Shift Lever in 5th Gear

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 in the same station while the tractor is in motion. That is, 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.

When shifting from a forward speed to a reverse speed, stop the tractor before shifting to avoid damage to the transmission.

Gradually release the clutch pedal to engage the clutch.

Operation

NOTE: To prevent unnecessary wear or clutch damage never "ride" the clutch pedal by resting your foot on the pedal.

Check the transmission oil indicator light frequently. If the light flashes, stop the tractor and check for proper transmission-hydraulic system oil level. Keep the oil level within the safe operating range.

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