John Deere 4230 Tractor (Serial No. 13,000-)

JOHN DEERE

OPERATORS MANUAL

John Deere 4230 Tractor (Serial No. 13,000-)

OMR65347 Issue J6 English

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ENGLISH

To the Purchaser

This new tractor was carefully designed and manufactured to give years of dependable service. To keep it running efficiently, read the instructions in this operator's manual. Each section is clearly identified so you can easily find the information you need—whether it is operation, lubrication and periodic service, or trouble shooting. Check the Contents to learn where each section is located. Use the alphabetical index for fast reference.

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

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

Contents

John Deere 4230 Tractor

Safety Suggestions

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

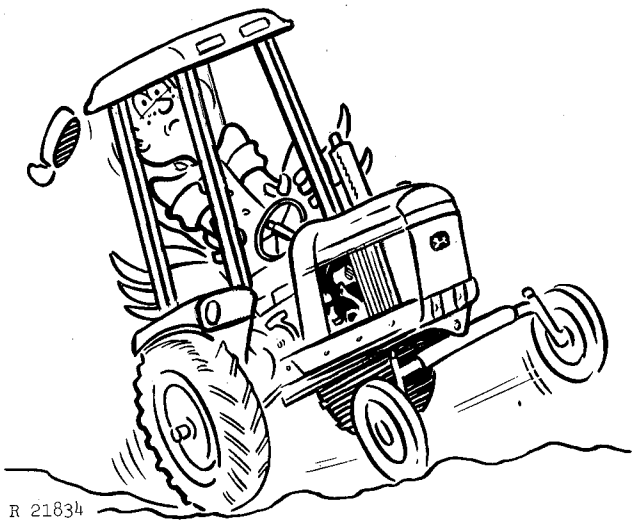
Never attempt to start or operate the tractor except from the operator's station.

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 16,000 lbs. (7000 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.

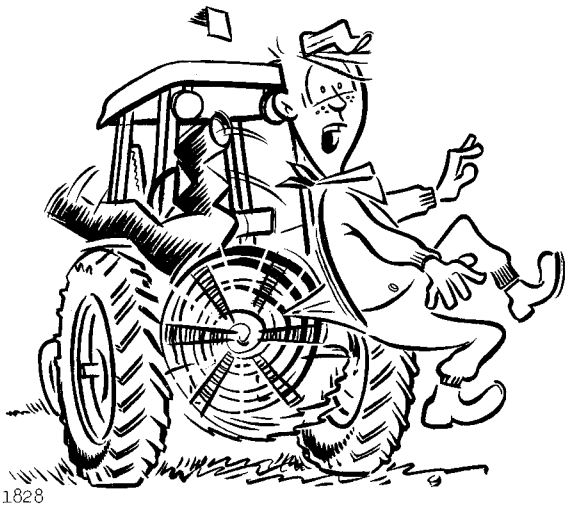
Never try to get on or off a moving tractor.

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.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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.

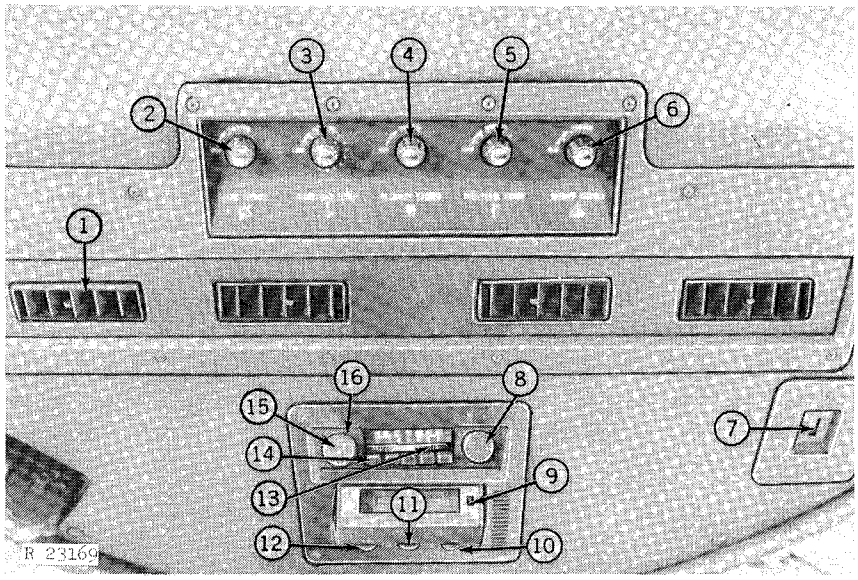
If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

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.

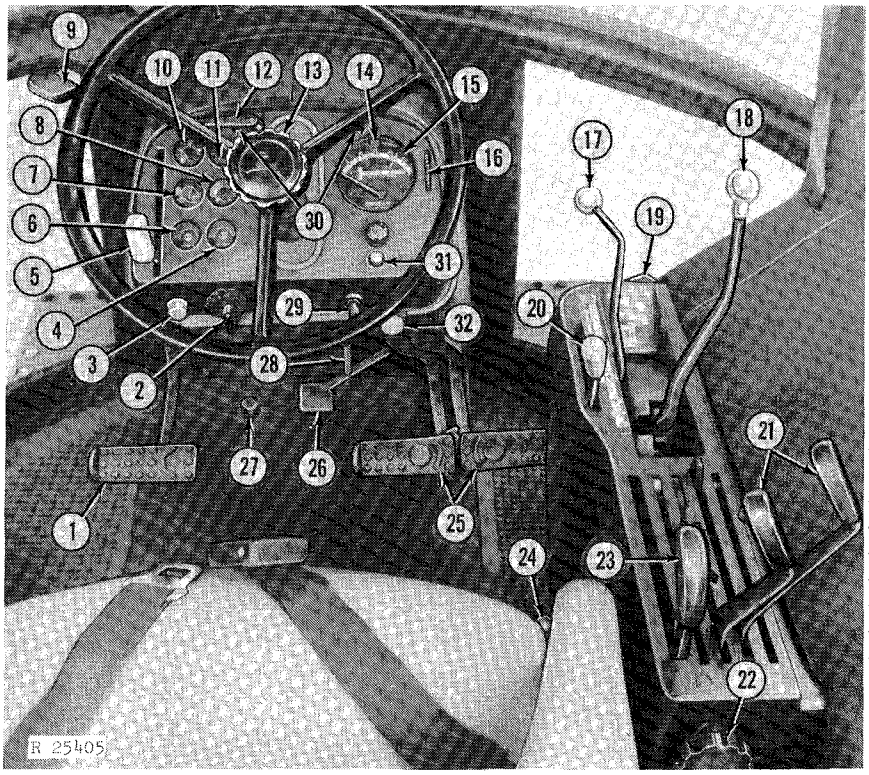
The accumulator is charged with dry nitrogen at a pressure of 35 bar (500 psi). If it needs to be recharged, have the job done only by a qualified serviceman and only with dry nitrogen.

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)



1—Clutch Pedal (page 16)
Inching Pedal (page 15)
2—Light Switch (page 31)
3—Ether Starting Aid Button (page 7)
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)
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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)

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.

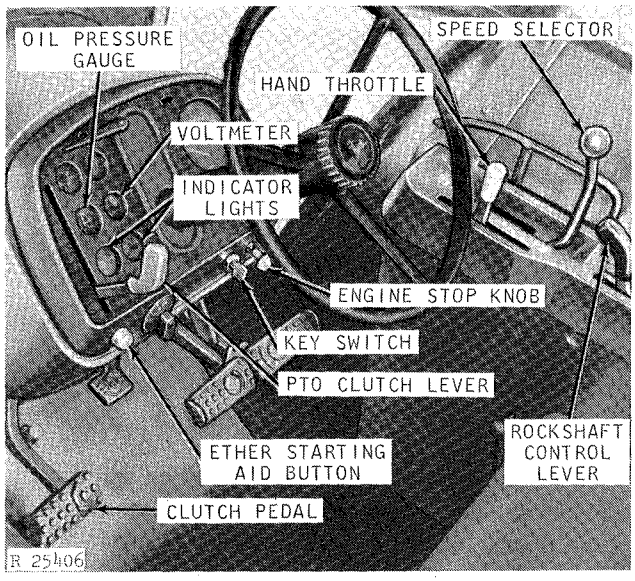
The gauge pointers for the fuel gauge, engine water temperature gauge and engine oil pressure gauge will be in approximately the same position they were in when the key switch was turned off.

(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 several minutes at speeds below 1000 rpm to insure uniform warm-up before accelerating or applying a load.

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.

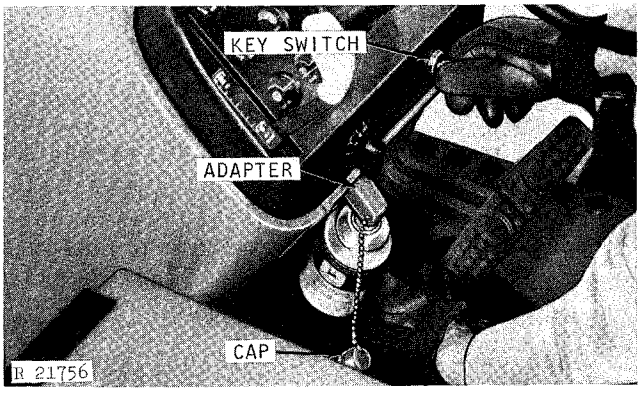
These aids are effective only when the engine is otherwise operating satisfactorily. They will not correct such deficiencies as low battery charge or crankcase oil of heavy viscosity which may prevent the engine from starting.

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.

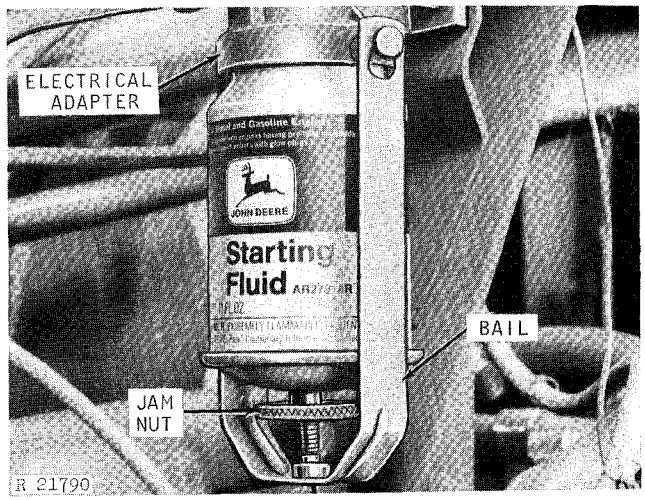
Relax pressure on the can between shots of starting fluid. Stop injecting fluid after the engine starts. If the engine begins to die during the first few minutes of operation, inject another shot of fluid. When the engine is operating satisfactorily, remove the can from the adapter and replace the safety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

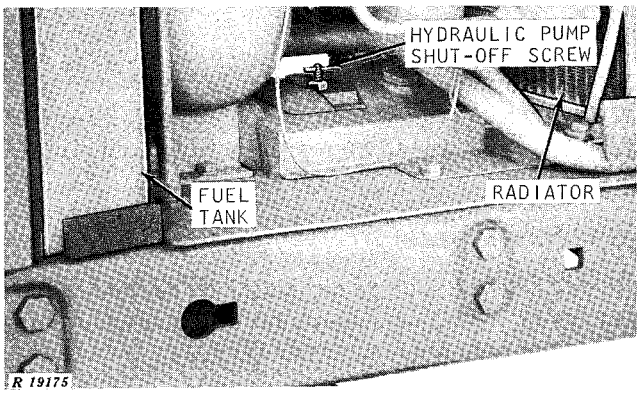
To inject starting fluid, momentarily depress the ether starting aid button on dash (page 4), using short bursts while cranking the engine at the same time.

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.



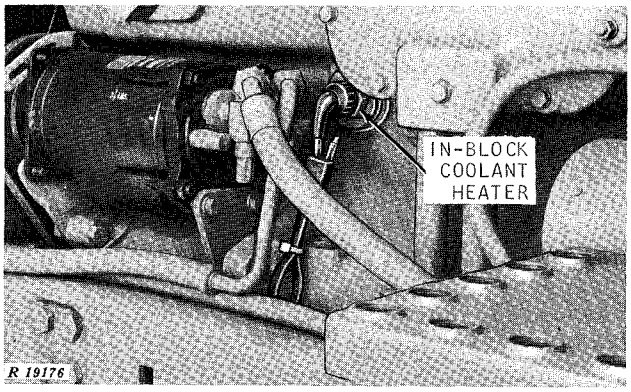
After turning the shut-off screw in (clockwise) one turn to unseat it, turn the screw in further until resistance is felt. Then turn the screw in one more turn.

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.