



# 4030 Tractor



JOHN DEERE

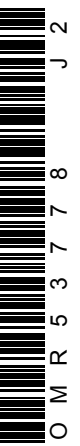
## OPERATORS MANUAL

4030  
Tractor

OMR53778 J2 English

John Deere Tractor Works  
OMR53778 J2

LITHO IN U.S.A.  
ENGLISH





## To the Purchaser

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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.

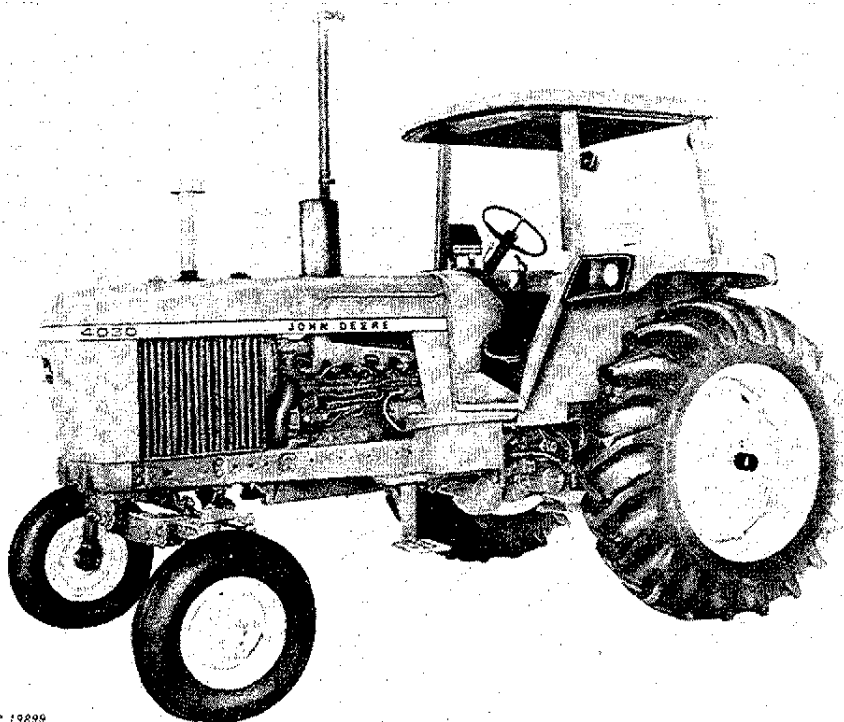
 This safety alert symbol indicates important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.



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John Deere 4030 Tractor

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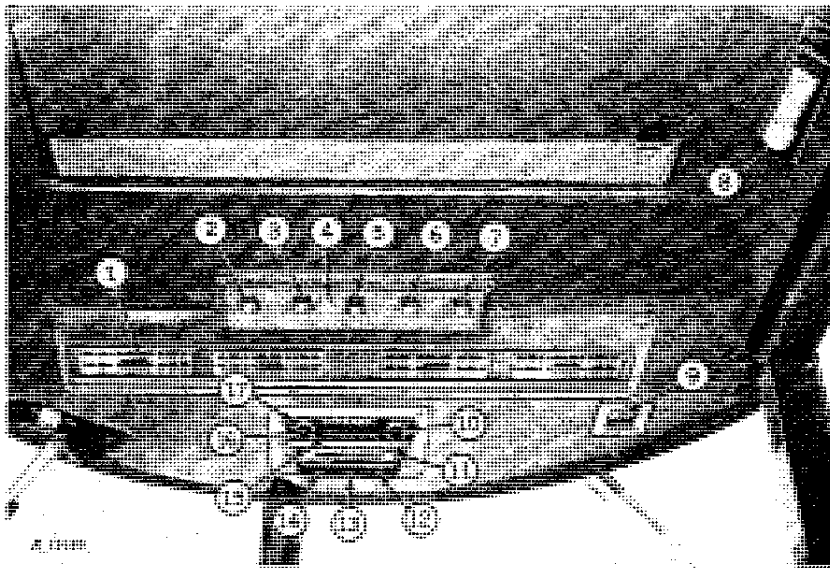
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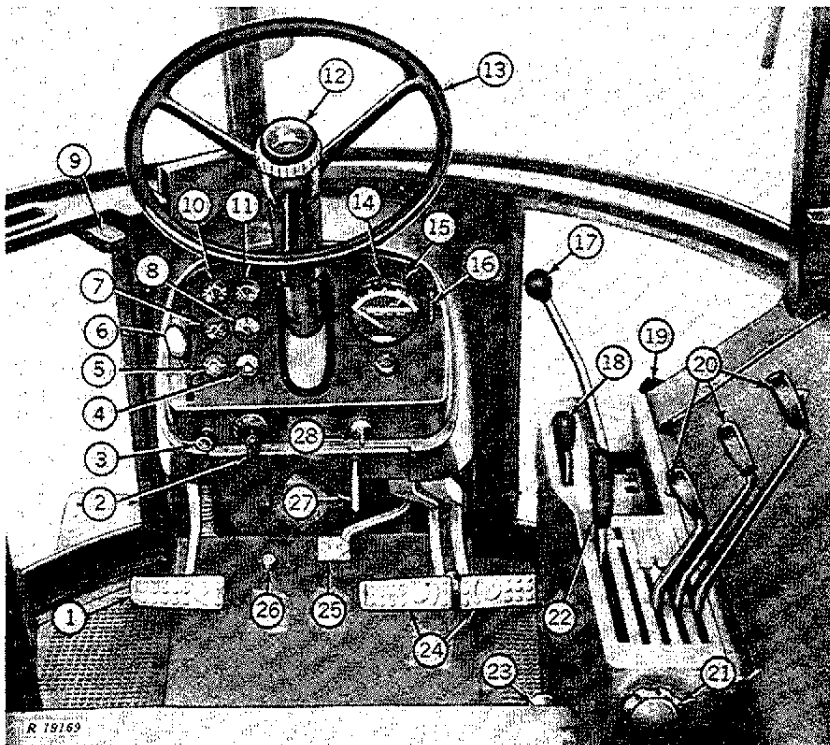


# Controls and Instruments

Before attempting to operate your new tractor, become familiar with the location and purpose of its controls and instruments. Additional information will be found on the page number following the control or instrument.



- 1—Air Louver (page 8)
- 2—Left Wiper Switch (page 8)
- 3—Air Conditioning Temperature Control Knob (page 8)
- 4—Plugged Condenser Indicator Light (page 8)
- 5—Blower Switch Knob (page 8)
- 6—Heater Temperature Control Knob (page 8)
- 7—Right Wiper Switch (page 8)
- 8—Dome Light Switch
- 9—Console Lamp
- 10—Radio Station Selector (page 8)
- 11—Tape Player Channel Selector Button (page 8)
- 12—Tape Player Tone Control (page 8)
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- 14—Tape Player Volume Control (page 8)
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- 16—Radio Off-On and Volume Control Knob (page 8)
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- 1—Clutch Pedal (page 12)
- 2—Light Switch (page 26)
- 3—Engine Shut-Off Knob (page 3)  
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- 4—Air Cleaner Indicator Light (page 4)
- 5—Transmission Oil Indicator Light (page 3)
- 6—Power Take-Off Clutch Lever (page 40)
- 7—Engine Oil Pressure Gauge (page 4)
- 8—Voltmeter (page 3)
- 9—Door Latch
- 10—Fuel Gauge
- 11—Water Temperature Gauge (page 7)
- 12—Steering Shaft Adjusting Knob (page 16)
- 13—Steering Wheel (page 16)
- 14—Hi-Beam Indicator Light (page 25)
- 15—Speed-Hour Meter (page 10)
- 16—Speed Indicator Wheel (page 10)
- 17—Shift Lever (page 12)
- 18—Hand Throttle (page 7)
- 19—Right-Hand Service Door Handle
- 20—Remote Cylinder Operating Levers (page 36)
- 21—Rockshaft Depth Stop Adjusting Knob (page 27)
- 22—Rockshaft Control Lever (page 27)
- 23—Rockshaft Selector Lever (page 28)
- 24—Brake Pedals (page 15)
- 25—Differential Lock Pedal (page 15)
- 26—Dimmer Switch (page 25)
- 27—Steering Till Lock (page 25)
- 28—Key Switch (page 3)



# Operation

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

## PRESTARTING CHECKS

Perform the following checks and services before starting the engine for the first time each day—see pages 52 and 53 for additional information.

- (a) Check the engine crankcase oil level.
- (b) Check the radiator coolant level.
- (c) Drain contaminants from fuel filter.

(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. or lower, it may be necessary to use a cold weather starting aid to start the engine (page 5).

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.

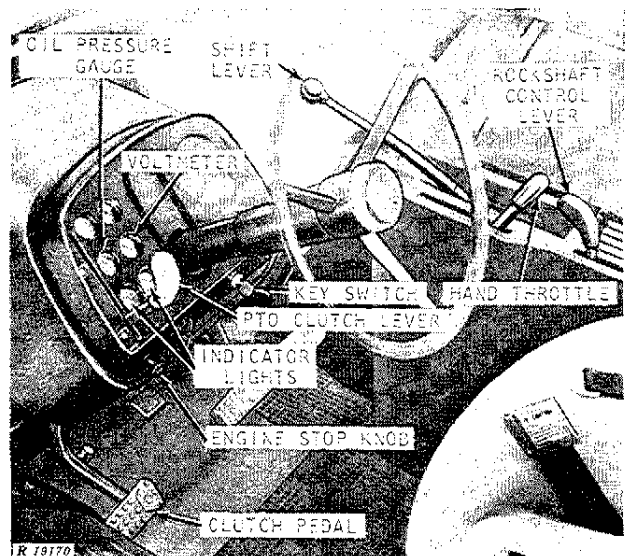


(1) See that the transmission is in PARK (see worldwide symbol at left), the rockshaft control lever is in lowered position and the remote cylinder operating levers in neutral. Depress the clutch pedal.

Before the starter will operate, the syncro-range shift lever must be in PARK or neutral. The Quad-Range transmission speed selector must be in neutral.

(2) Place the hand throttle in the 1200 rpm position (approximately 1/3 of its travel forward).

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



Starting Controls



The voltmeter (see symbol) 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.



If the tractor has a Perma-Clutch, the transmission oil indicator lamp should glow. If it does not glow, turn off key switch and determine the cause.

#### 4 Operation - Engine

(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 light fails to glow, turn off the key switch and determine the cause.

Do not operate the starter for more than 30 seconds at a time. To do so may overheat the starter. If the engine does not start the first time, wait a minute or two 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 before trying again, to prevent possible damage.

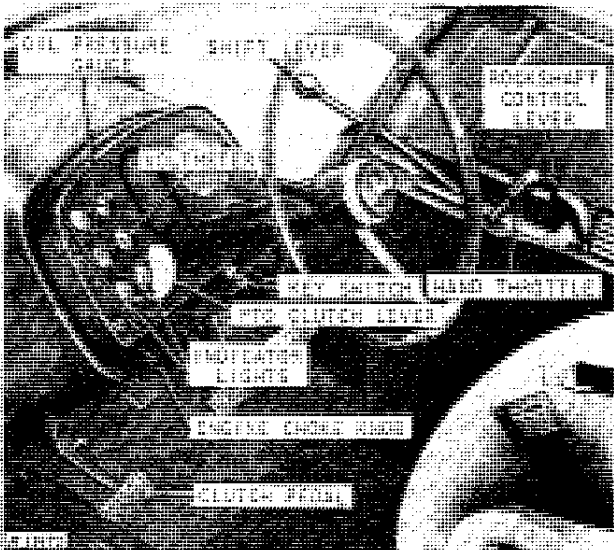


(5) After the engine starts, release the key switch. The engine oil pressure gauge pointer should rise above the warning zone to indicate satisfactory oil pressure. The indicator lamps should go out. The voltmeter pointer should rise into the green band for charging. If an indicator lamp or gauge indicates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

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

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

### STARTING THE GASOLINE ENGINE



Gasoline Engine Starting Controls

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 the PARK (see worldwide symbol at left) position, the rockshaft control lever is in the lowered position, and the remote cylinder operating levers in neutral. Depress the clutch pedal.

Before the starter will operate the syncro-range shift lever must be in PARK or neutral. The Quad-Range transmission speed selector must be in neutral.



(2) With the hand throttle forward, pull the engine choke knob (see symbol) all the way out.

3. Pull the hand throttle all the way rearward.

*NOTE: At low temperatures it may be necessary to use a cold weather starting aid (page 5).*

4. Turn the key switch clockwise to the first position.



The voltmeter hand should rise into 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.



If the tractor has a Perma-Clutch, the transmission oil indicator lamp should glow. If it does not glow, turn off the key switch and determine the cause.

5. 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 light fails to glow, turn off the key switch and determine the cause.

If the engine is warm, push the choke knob in after a few revolutions. To prevent overheating the starter, do not operate the starter for more than 30 seconds at a time. Then wait a minute or two before trying again. If the engine does not start after four attempts, see "Trouble Shooting."

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

6. After the engine starts, release the key switch. If the engine is cold, push the choke knob in after the engine starts. In cold weather it may be necessary to leave the choke partially on for the first few minutes.



7. 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.

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

### COLD WEATHER STARTING AIDS

For cold weather starting, the diesel tractor may be equipped with an ether starting fluid adapter. Other starting aids are 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, crank-case oil of heavy viscosity, and high electrical resistance which may prevent the engine from starting.

#### Ether Starting Fluid Adapter

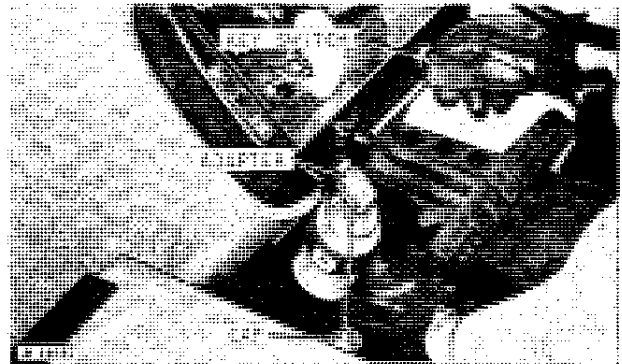
This adapter is used to inject atomized starting fluid into the engine air intake system. Pressurized cans of starting fluid are available from your John Deere dealer.

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

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

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.



Injecting Starting Fluid

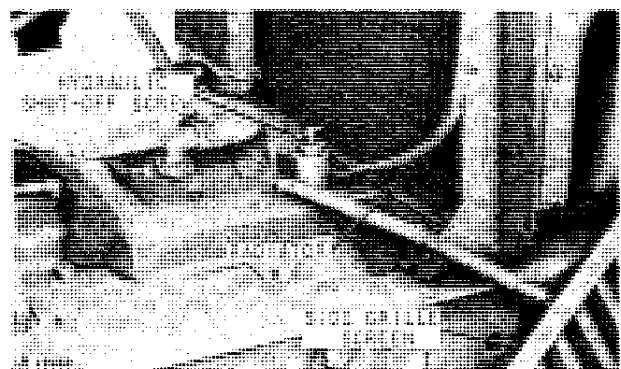
Relax pressure on the can between "shots" of starting fluid. Stop injecting fluid after the engine starts. If the engine begins to die during the first few minutes of operation, inject another "shot" of fluid. When the engine is operating satisfactorily, remove the can from the adapter and replace the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

#### Shutting Off Hydraulic Pump

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.



Hydraulic Pump Shut-Off Screw

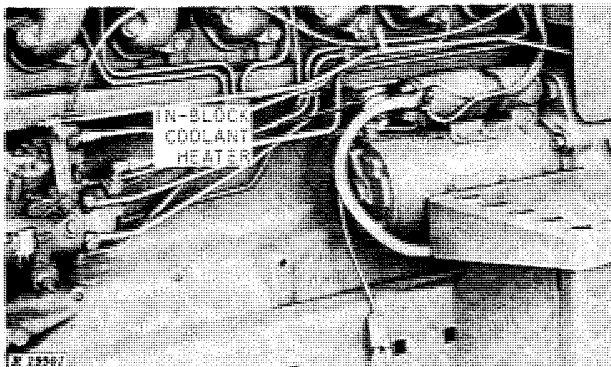
## 6 Operation - Engine

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

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*

To facilitate cold weather starting, a 115-volt electrical in-block coolant heater is available from your John Deere dealer.

The in-block coolant heater is a 1000-watt unit that is on the left-hand side of the engine. The use of this heater will reduce drag on the engine to improve starting.

**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.

Under normal conditions, up to 5 hours may be required at temperatures between 0°F. and 20°F. or up to 8 hours for temperatures below 0°F.

### 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 1200 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 crank-case 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.

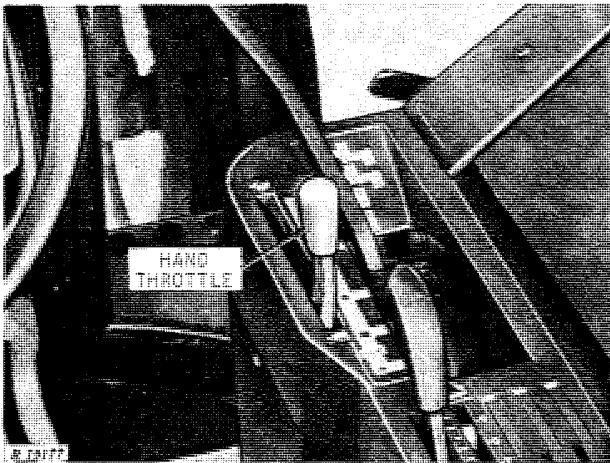
## ENGINE SPEEDS

The tractor engine is designed to operate at working speeds ranging from 1500 to 2500 rpm. The engine can be operated at any speed in the working range to meet various operating conditions. Operate the engine at 2100 rpm to obtain the ASAE Standard PTO speeds.

Normal slow idle speed is approximately 800 rpm.

The engine speed of 2500 rpm is the speed when under full load. At light or no load condition the speed may rise to approximately 2660 rpm. See page 56 for no load engine speeds.

### Hand Throttle



Hand Throttle

Use the hand throttle to select slow idle or any of the variable governed speeds from 1500 to 2500 rpm.



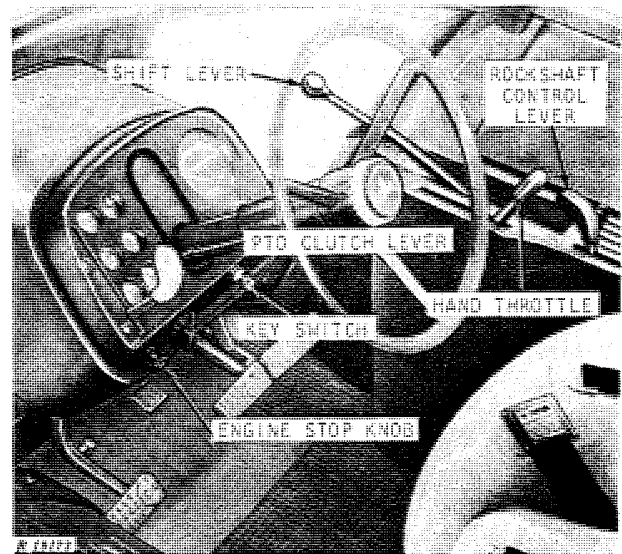
Pull the throttle rearward to obtain the slow idle speed of 800 rpm.



Push the throttle all the way forward to obtain the 2500 rpm load speed position.

## STOPPING THE ENGINE

Place the shift lever or range selector 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.



Stopping Controls

### Diesel Engines



After idling the engine 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.

### Gasoline Engines

With the engine running at approximately 1200 rpm, turn the key switch off to stop the gasoline engine.

### All Engines

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



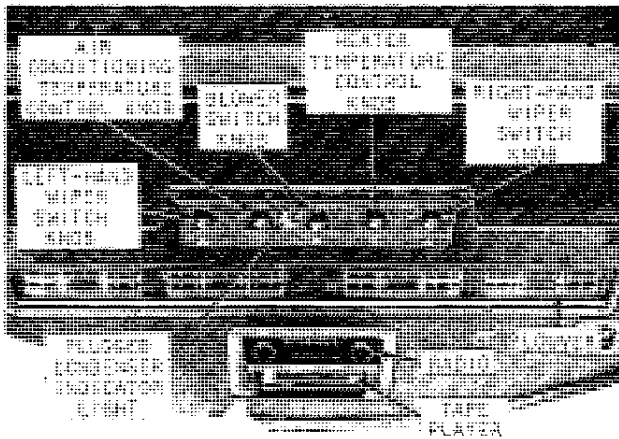
If the coolant temperature rises to the warning zone on the gauge, shift to a lower gear to reduce the load on the engine. Be sure to follow the special break-in lubrication instructions given on page 47.

During the first 20 hours, do not operate the engine at speeds greater than 2100 rpm. To facilitate break-in, avoid prolonged periods of engine idling for the first 100 hours of service.

## OPERATING THE TRACTOR

**CAUTION:** The 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



R 19175

Sound-Gard Body Controls

#### Blower Switch



To maintain a clean atmosphere within 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 off the fan.

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

#### Heater Temperature Control Knob



The Sound-Gard Body may have a heater that is connected to the tractor engine cooling system. Coolant flow through the heater core is controlled by the heater temperature control knob. Adjust the volume of air flow with the blower switch.

To obtain maximum heat, turn the heater control knob all the way clockwise. Turn the knob counterclockwise to reduce the temperature. Turning the knob all the way counterclockwise shuts the heater off.

#### Air Conditioning Temperature Control Knob



On 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.

#### Plugged Condenser Indicator Light

When this indicator lamp glows, the condenser core or side grille screen is plugged and needs cleaning. Stop the tractor, release the left-hand side grille screen and clean the condenser core and side grille screen. See page 66.

#### Wiper Switches



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.

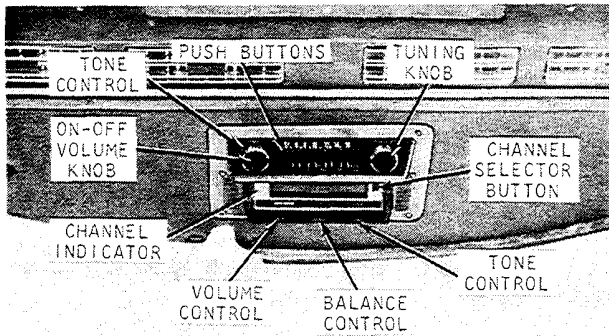
#### Radio

The radio tuning knob is at the right side of the radio dial. A combination on-off and volume control knob is at the left of the dial. A ring-type tone control is located behind the volume control knob. A head-phone jack is available from your dealer.

To adjust the push buttons, pull the selector button straight out until it stops. Tune in the desired station. Then push the selector button straight in until it stops. Then release it.

#### Tape Player

To operate the tape player, select a four track or eight track tape cartridge and insert it, label side up



**Radio and Tape Player**

and open end first, into the tape slot. Push the cartridge into the tape slot until it is firmly seated. This automatically turns the tape player on. If the radio was turned on, a relay will disconnect the radio to prevent radio operation while the tape is playing.

To stop the player, remove the tape cartridge.

Protect the open end of the tape cartridge from damage and dirt. It is recommended that a tape storage box be used to prevent dust accumulation on the tape.

The tape player will play all four channels automatically and in order. An indicator light at the left of the tape slot indicates which channel is playing. If a different channel is desired, push the channel selector button at the right of the tape slot. The unit will step to the next channel each time the button is pushed.

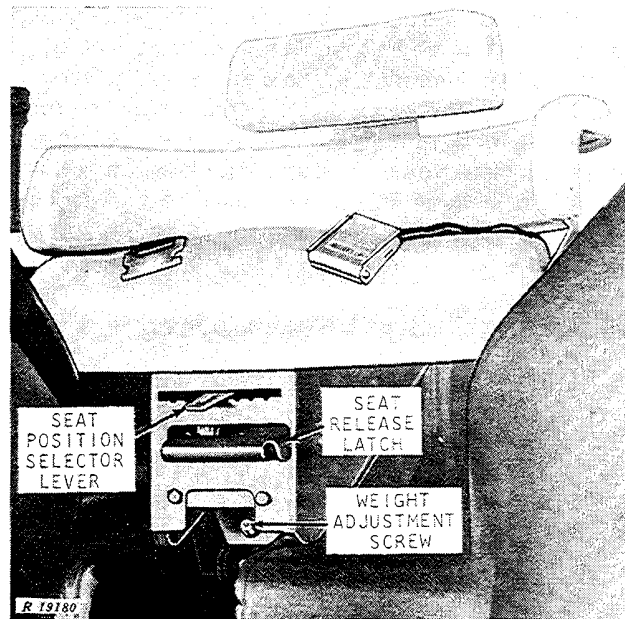
The tape player volume, balance and tone controls are at the bottom front edge of the tape player.

Moving the stereo balance control to the left decreases the volume of the left-hand speaker and increases the volume of the right-hand speaker, while moving the control to the right does just the opposite. Adjust the stereo balance control until you hear equal volume from both speakers.

### Windows

When operating the tractor with the windows open, be careful to prevent damage to windows from rear-mounted implements, other mounted equipment, or from driving too close to some object.

### SEAT



**Seat Controls**

The deluxe tractor seat has a steel compression spring and shock absorber to provide "float ride" suspension. The seat is also equipped with a flexibly mounted padded backrest and semicircular foam padding which surrounds the operator.

Use only warm water and mild soap to clean the seat cushions. Never use stronger solvents.

### Moving Seat to Upper, Rear Position

To move the seat up and back, stand up and lift the seat release latch. The seat will move automatically to the upper rear position. Sit down to return the seat to the normal preset operating position.

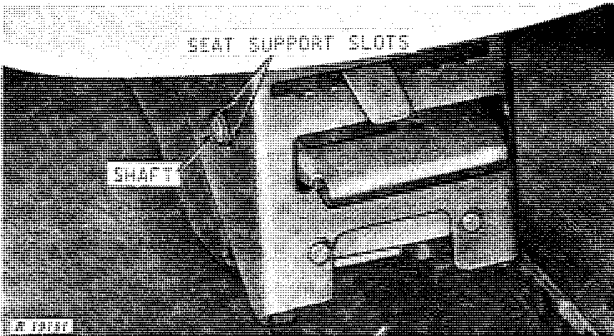
### Adjusting For Weight Of Operator

The tension of the steel compression spring can be adjusted to conform to your weight. This enables the seat to "float" when you are traveling over rough ground. To make this adjustment, turn the weight adjusting screw clockwise to increase tension if the seat hits bottom or counterclockwise to decrease spring tension if the suspension seems too hard.

### Adjusting For Height Of Operator

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

### Adjusting Counterbalance Spring



Counterbalance Shaft

If the seat does not move fully to the rear when unlatched, adjust the counterbalance spring as follows. Push the seat to the upper, rear position. Insert a screwdriver in the slot in the counterbalance shaft and push in on the screwdriver to unlatch the shaft. Turn the shaft counterclockwise until seat action is satisfactory. Line up the latch across the end of the shaft with one of the pairs of slots in the side of the seat support and release pressure on the screwdriver.

### ROLL-GARD 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 73 for more information.

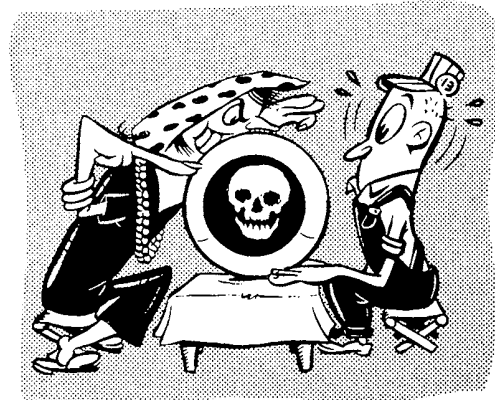


**CAUTION:** Under almost all operating conditions:

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

### GROUND SPEEDS

A tractor with a syncro-range transmission has 8 forward and 2 reverse speeds. With a Quad-Range transmission, the tractor 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.

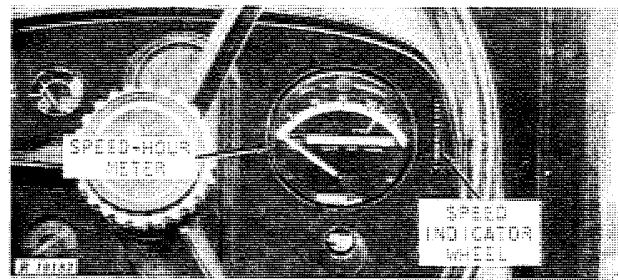


Your FUTURE  
depends on your  
safety TODAY!

Examples of the ground speeds at which a tractor with 13.6-38 or 16.9-34 rear tires will travel at engine speeds of 1500, 2100, and 2500 rpm are shown below. If equipped with 15.5-38 tires, ground speed will be 2% faster; with 16.9-30 tires, 6.4% slower; with 18.4-30 tires, 2.5% slower; and with 18.4-34 tires, 4.2% faster.

**SYNCO-RANGE TRANSMISSION GROUND SPEEDS**

| Gear        | 1500 rpm | 2100 rpm | 2500 rpm |
|-------------|----------|----------|----------|
| 1st         | 1.2      | 1.7      | 2.0      |
| 2nd         | 1.9      | 2.6      | 3.1      |
| 3rd         | 2.4      | 3.4      | 4.0      |
| 4th         | 3.1      | 4.4      | 5.2      |
| 5th         | 3.8      | 5.3      | 6.3      |
| 6th         | 5.1      | 7.1      | 8.5      |
| 7th         | 6.4      | 8.9      | 10.6     |
| 8th         | 10.5     | 14.6     | 17.4     |
| 1st reverse | 2.4      | 3.3      | ....     |
| 2nd reverse | 3.7      | 5.2      | ....     |



Speed Indicator Wheel

Turn the speed indicator wheel on the instrument panel until the gear selected shows on the speed indicator. The speed-hour meter pointer will now indicate the tractor ground speed in miles per hour.

Avoid overloading the tractor. When this occurs, operate in a lower gear. If moving the throttle slightly will change engine speed, the engine is not overloaded or lugging. Overloading causes undue strain on parts, eventually resulting in poor operation and unnecessary repair and expense.

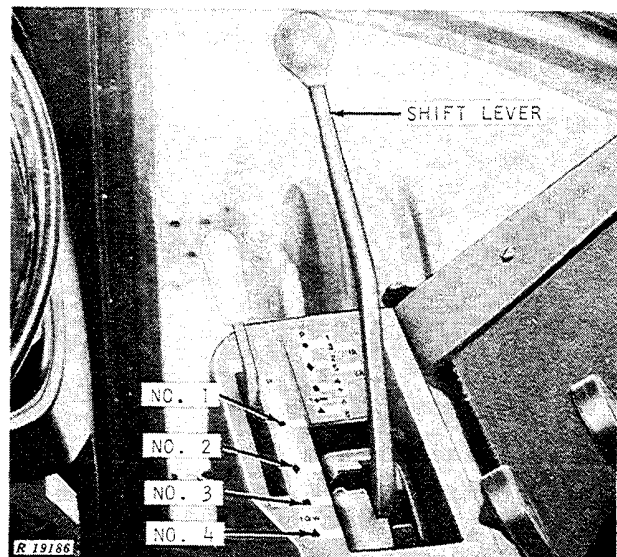
**SYNCO-RANGE TRANSMISSION**

**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.

**QUAD-RANGE TRANSMISSION GROUND SPEEDS**

| Range | Speed     | 1500 rpm | 2100 rpm | 2500 rpm |
|-------|-----------|----------|----------|----------|
| A     | 1         | 1.1      | 1.6      | 1.9      |
|       | 2         | 1.5      | 2.0      | 2.4      |
|       | 3         | 1.9      | 2.7      | 3.2      |
|       | 4         | 2.4      | 3.4      | 4.0      |
| B     | 1         | 2.6      | 3.7      | 4.4      |
|       | 2         | 3.3      | 4.6      | 5.5      |
|       | 3         | 4.4      | 6.1      | 7.3      |
|       | 4         | 5.5      | 7.7      | 9.2      |
| C     | 1         | 3.0      | 4.2      | 5.0      |
|       | 2         | 3.8      | 5.4      | 6.4      |
|       | 3         | 5.0      | 7.0      | 8.4      |
|       | 4         | 6.4      | 8.9      | 10.6     |
| D     | 1         | 4.6      | 6.5      | 7.7      |
|       | 2         | 5.9      | 8.2      | 9.8      |
|       | 3         | 7.7      | 10.8     | 12.9     |
|       | 4         | 9.8      | 13.8     | 16.4     |
| A     | 1 reverse | 1.9      | 2.6      | 3.1      |
|       | 2 reverse | 2.4      | 3.3      | 3.9      |
| B     | 1 reverse | 4.2      | 5.9      | 7.1      |
|       | 2 reverse | 5.4      | 7.5      | 9.0      |
| C     | 1 reverse | 4.9      | 6.8      | 8.1      |
|       | 2 reverse | 6.2      | 8.7      | 10.4     |



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 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.

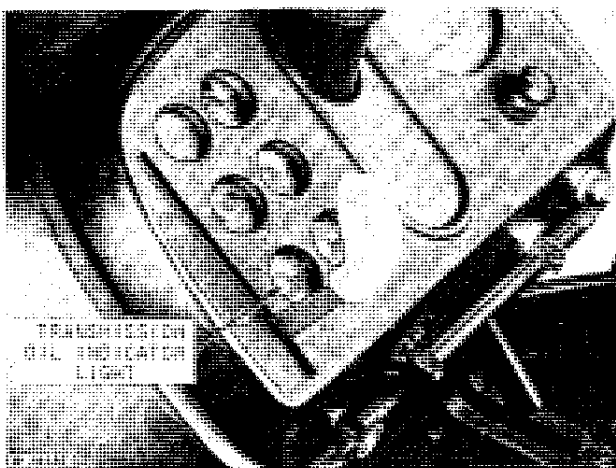
When shifting from a forward speed to a reverse speed, stop the tractor before shifting to avoid damage to the tractor.

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.*

Tractors equipped with a Perma Clutch have a transmission oil indicator light that will glow when transmission oil pressure is low.



Transmission Oil Indicator Light

If the transmission oil indicator light glows, stop the tractor and check for proper transmission hydraulic system oil level. If the level is correct, change the transmission hydraulic system oil filter element. At engine speeds above 1500 rpm, the transmission oil indicator light should not glow. However, at engine speeds below 1500 rpm, the light may flicker on briefly when releasing the clutch pedal. The length of time the light remains on is an indication of filter condition or transmission hydraulic system oil level. If the light remains on for more than 3 seconds, with the tractor at operating temperature and the transmission hydraulic system oil at the proper level, change the filter at the next refueling and servicing.

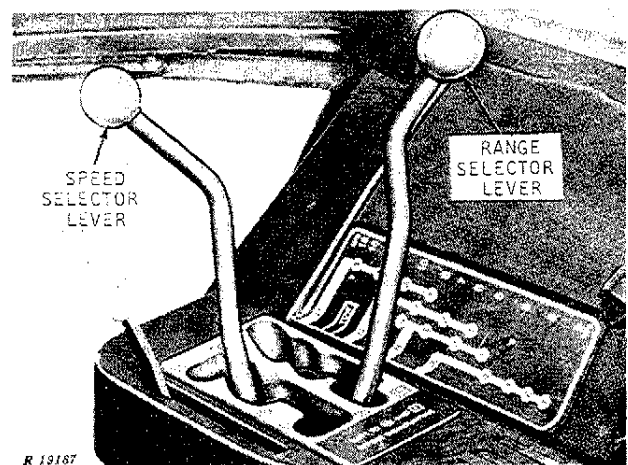
If the tractor is equipped with an optional transmission oil temperature switch, the light will also indicate high transmission oil temperature that is caused by clogged side grille screens or oil cooler core.

*NOTE: In cold weather, when making the first few shifts after starting a tractor with a Perma-Clutch, hold the clutch pedal down for 10 to 15 seconds with an engine speed of 1500 rpm or more before shifting. Then move the shift lever to the desired station and hold a steady pressure forward or rearward on the lever until the lever moves into the desired gear. Do not apply excessive force to the shift lever.*

## QUAD-RANGE TRANSMISSION

### Shifting with Range Selector Lever

The shift quadrant has four shift stations. Stations "A", "B" and "C" have four forward speeds and two reverse speeds. Station "D" has four forward speeds only.



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Quad-Range Transmission Selector Levers

Using the chart by the selector lever, select a station having speeds so that most of the shifting with the speed selector lever will use the "on the go" power shifting available between 1 and 2 or between 3 and 4.



With the tractor stopped and the clutch pedal depressed, move the range selector lever to the station that has the desired speed shown on the chart.

## Shifting with Speed Selector Lever

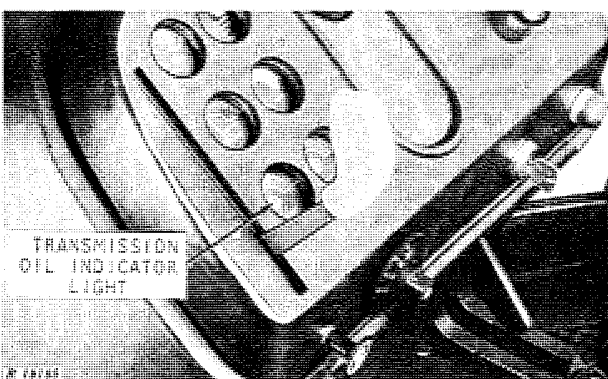
Moving the speed selector lever sideways shifts the two-speed power shift planetary transmission between 1 and 2, 3 and 4, or 1R and 2R. The speed selector lever may be moved sideways without using clutch pedal, to shift "on the go" or when the tractor is stopped.

Moving the lever forward or rearward of neutral "N" shifts the eight-speed syncro-range transmission. Shifting the lever rearward permits engagement of the 1-2 forward speed station or the 1R-2R reverse speed station. Moving the lever forward shifts the transmission into the 3-4 forward speed station. With the clutch pedal depressed, the speed selector may be shifted forward or rearward into a forward speed station while the tractor is in motion.

When moving the speed selector lever from a forward speed to a reverse speed, stop the tractor before shifting into the 1R-2R station.

Gradually release the clutch pedal to engage the clutch.

## Operation



Quad-Range Transmission Oil Indicator Light

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

When operating a tractor with a Quad-Range transmission, check the transmission oil indicator light for satisfactory transmission operation.

If the transmission oil indicator light glows, stop the tractor and check for proper transmission-hydraulic system oil level. If the level is correct, change the transmission-hydraulic system oil filter element. At engine speeds above 1500 rpm, the transmission oil indicator light should not glow. However, at engine speeds below 1500 rpm, the light may flicker on briefly when releasing the clutch pedal or when making a power shift with the speed selector. The length of time the light remains on is an indication of filter condition or transmission oil level. If the light remains on for as much as 3 seconds with the tractor at operating temperature, at speeds below 1500 rpm, and with the transmission oil at the proper level, change the filter at the next refueling and servicing. Clean the oil cooler and side grille screens if they are clogged.

**NOTE:** In cold weather, when making the first few shifts after starting the tractor, hold the clutch pedal down for 10 to 15 seconds with an engine speed of 1500 rpm or more before shifting. Then move the range selector to the desired range. After shifting into a range, hold a steady pressure forward or rearward on the speed selector until the lever moves into the desired speed. Do not apply excessive force to the shift lever.

## PARKING THE TRACTOR

**IMPORTANT:** Be sure the tractor is stopped before placing the transmission in PARK.

### Syncro-Range Tractors

On syncro-range tractors, move the shift lever to a neutral position at the left side of the quadrant. Then push the shift lever all the way forward into PARK.

To shift from PARK when the tractor is not parked on a steep incline, simply move the shift lever rearward to the station desired. When the tractor is parked on a steep incline it may be necessary to do the following to relieve the load on the transmission park lock. Depress the clutch pedal and pull the shift lever rearward against spring pressure into the No. 1 shift station. Then shift into a forward or reverse gear that will move the tractor UP THE INCLINE. Very SLOWLY engage the clutch and the transmission will shift out of PARK.



**Suggest:**

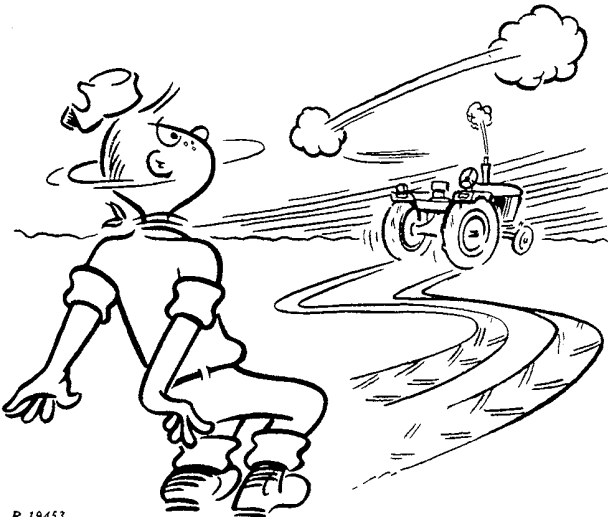
**If the above button click is invalid.**

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

### Quad-Range Tractors

On Quad-Range tractors, move the speed selector lever to neutral "N". Then pull the range selector lever all the way rearward into PARK.

To shift from PARK when the tractor is not parked on a steep incline, first depress the clutch pedal and move the range selector lever forward to the station desired. When the tractor is parked on a steep incline, it may be necessary to do the following to relieve the load on the transmission park lock. Depress the clutch pedal and push the range selector lever forward against spring pressure into "A" shift station. Then move the speed selector lever into a forward or reverse gear that will move the tractor **UP THE INCLINE**. Very slowly engage the clutch and the transmission will shift out of park.

### TOWING THE TRACTOR

**CAUTION:** Never tow the tractor at high speeds. Tow tractor with the engine running to maintain power operation of steering and brakes.

When towing the tractor, the transmission-hydraulic system should be at the full mark. If the front end is raised, add one gallon of oil for each six inches the front end is raised. Be sure differential lock is disengaged.

**IMPORTANT:** To prevent transmission damage, always place the shift lever in "TOW" position. Do not attach towing means to front wheel knuckles or steering mechanism.

### Syncro-Range Tractors

The shift quadrant for the syncro-range transmission has a "TOW" position. Whenever a syncro-range tractor is to be towed, move the shift lever to this position.

The engine can not be started by towing the tractor.

### Quad-Range Tractors

The shift quadrant for Quad-Range transmission has a "TOW" position. Whenever the tractor is to be towed, move the speed selector lever to neutral "N" and the range selector lever to the "TOW" position.

The engine can not be started by towing the tractor.

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