

JOHN DEERE 2520 TRACTOR (22,001-



OPERATORS MANUAL JOHN DEERE 2520 TRACTOR (22,001-

OMR38620 H0 English

OMR38620 H0

LITHO IN THE U.S.A. (REVISED)
ENGLISH



TO THE PURCHASER

Your versatile new John Deere Tractor meets the exacting requirements of modern farming.

Operating ease and comfort, hydraulic power when and where you need it, the ability to match engine power and transmission speed to any job, outstanding economy and dependability, modern styling, and simplicity of lubrication and service are all special features of this great tractor.

We are confident this modern tractor, combined with equally advanced John Deere tools and implements, will help you to farm better, easier, and more profitably.

! This safety alert symbol identifies 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.

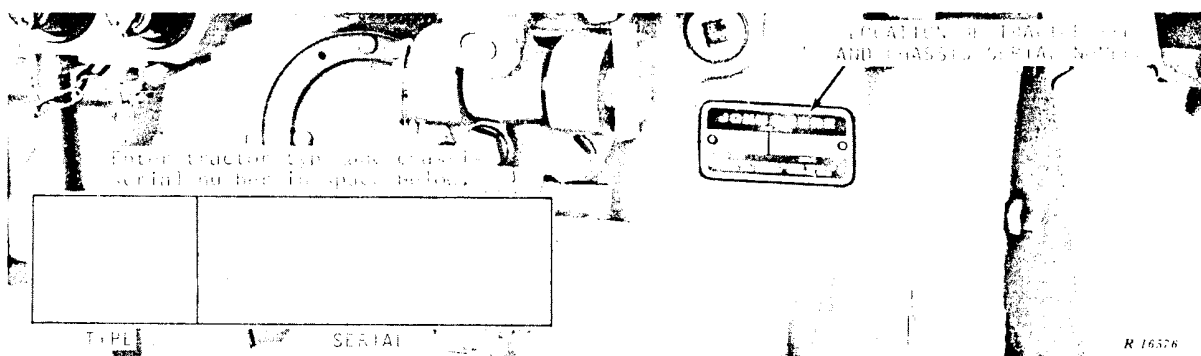
At the time the tractor was delivered, the John Deere dealer discussed with you its safe operation and proper care. However, before putting the tractor to work, read this manual. It contains complete instructions for operating the tractor, caring for it, and taking full advantage of its many time- and labor-saving features. After

reading the manual, keep it in a convenient place for quick and easy reference if questions arise concerning operation, lubrication, or service.

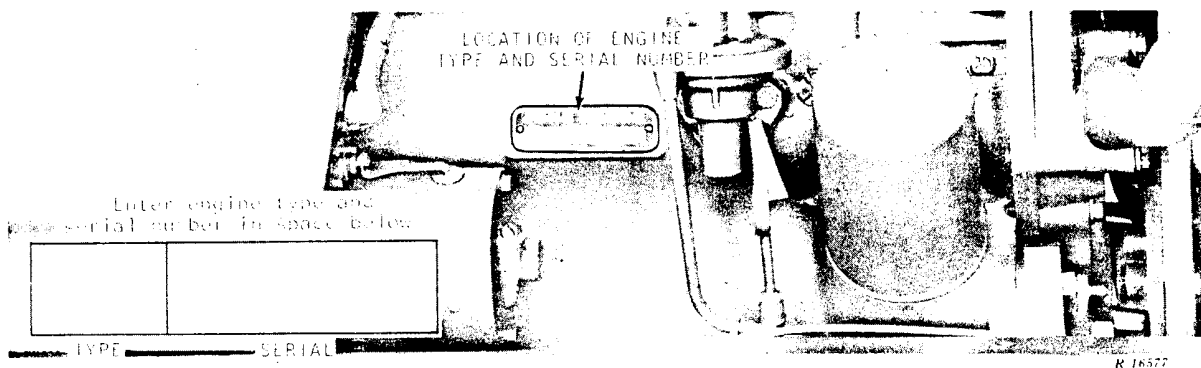
The warranty on this tractor appears on your copy of the purchase order which you should have received from your dealer when the equipment was purchased.

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

When in need of new parts, be prepared to furnish your dealer with the tractor type, complete tractor chassis serial number, engine type, and complete engine serial number. For ready reference, locate and record the above information in the spaces provided in the illustrations below.



Record Tractor Chassis Serial Number

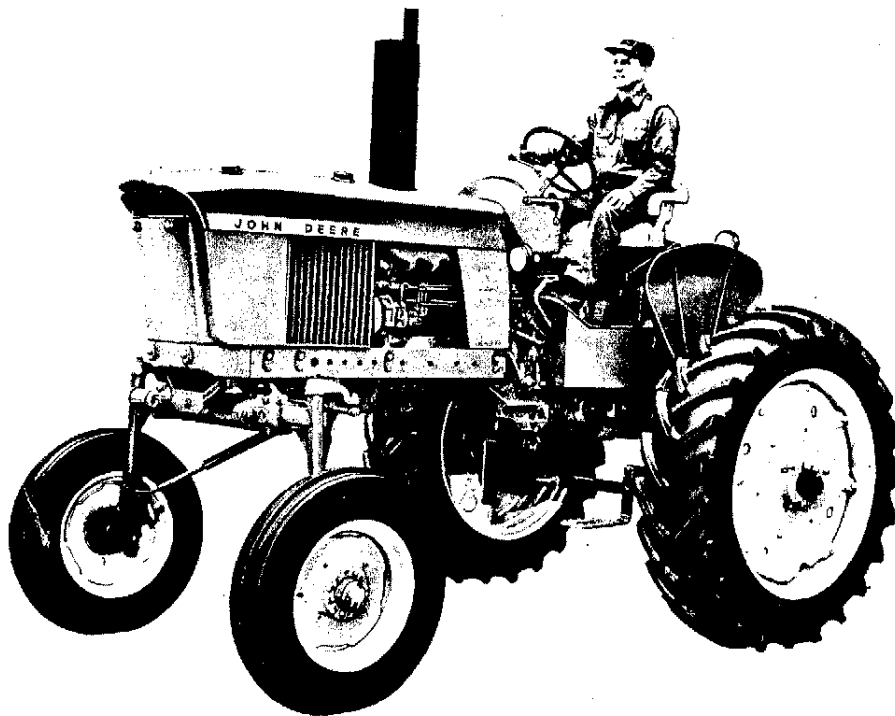


Record Engine Serial Number



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R 16578

*John Deere 2520 Hi-Crop Tractor with Diesel Engine and
Power Shift Transmission*

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Thank you very much for reading.

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The full manual is available for immediate download.

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SPECIFICATIONS

HORSEPOWER:*

	Diesel	Gasoline
Observed at PTO (Syncro-Range)	61.29 h.p.	60.16 h.p.
Observed at PTO (Power Shift)	56.28 h.p.	56.98 h.p.

ENGINE:

Type	4-cylinder, in-line, valve-in-head	
Engine speeds:		
Normal slow idle	800 rpm	800 rpm
Working range	1500 to 2500 rpm	1500 to 2500 rpm
Bore and stroke	4.02 in. x 4.33 in.	3.86 in. x 4.33 in.
Displacement	219.4 cu. in.	202.7 cu. in.
Compression ratio	16.3 to 1	7.8 to 1
Firing order	1-3-4-2	1-3-4-2
Intake valve clearance	0.014 in.	0.014 in.
Exhaust valve clearance	0.018 in.	0.022 in.
Injection pump timing	TDC	.....
Distributor timing (2500 rpm engine speed) .....	.....	"S" mark
Distributor point gap .....	.....	0.020 in.
Spark plug gap .....	.....	0.025 in.

ELECTRICAL SYSTEM:

Electrical system voltage	12 volts	12 volts
12-volt battery, 78-plate, 78 amp-hour .....	.....	One
6-volt battery, 75-plate, 172 amp-hour	Two	.....

*Maximum at 2500 engine rpm (official test).



R 16444

John Deere 2520 Row-Crop Tractor with Gasoline Engine and
Syncro-Range Transmission, Equipped with Roll-Gard and Canopy

COOLING SYSTEM:

Type Pressurized with centrifugal pump

Engine temperature control ... Heavy-duty thermostat

LUBRICATION SYSTEM Force-feed pressurized type with full-flow oil filter

CAPACITIES:

Fuel tank Diesel and gasoline -- 26 U.S. gals.

Crankcase (includes filter) -- 6 U.S. qts.

Transmission-hydraulic system:

 Syncro-Range Dry system -- 11 U.S. gals.

 At service intervals -- 8 U.S. gals.

 Power Shift Dry system -- 14 U.S. gals.

 At service intervals -- 11 U.S. gals.

Cooling system -- 14 U.S. qts.

Hi-crop final drive housings -- 1-3/4 U.S. qts.

Belt pulley -- 2-1/2 U.S. pints

SYNCRO-RANGE TRANSMISSION:

Type Syncro-Range, constant mesh

Gear selections 8 forward and 2 reverse

Shifting 4 stations, synchronized shifting within stations

POWER SHIFT TRANSMISSION:

Type Planetary gears, hydraulically actuated wet disk clutches and brakes

Gear selections 8 forward and 4 reverse

Shifting Hydraulic, powershifting controlled by speed selector

POWER TAKE-OFF:

Type Independent PTO with front and rear power take-off. Stub shafts used for rear PTO speed conversion on dual speed PTO.

Speed (2100 engine rpm) Front—1000 rpm
Dual speed rear—540 or 1000 rpm

HYDRAULIC SYSTEM:

Type Closed center, constant pressure. Includes power steering, power brakes, and implement control

Standby pressure 2250 psi

BRAKES Hydraulically power actuated,

GROUND SPEEDS See page 13

FRONT TIRES**

Row-crop 6.00 - 16, 6-ply

Hi-crop 7.50 - 20, 6-ply

REAR TIRES**

Row-crop 13.6 - 38, 6-ply

Hi-crop 13.6 - 38, 6-ply

FRONT WHEEL TREAD See page 17

REAR WHEEL TREAD:

Regular and offset wheels See page 19

DIMENSIONS

	Row-Crop	Hi-Crop
Wheel base	90 in.	92.8 in.
Over-all length	140 in.	140 in.
Height to steering wheel	74.4 in.	89.9 in.
Width (regular axle)	86.2 in.	95.4 in.
Turning radius	108 in.	148 in.

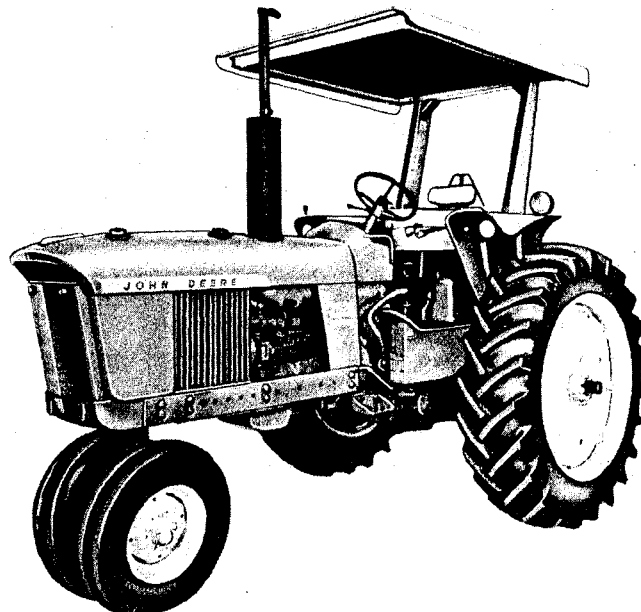
SHIPPING WEIGHT (With equipment for average field service, less fuel and ballast.) Subtract 255 lbs. if tractor has Syncro-Range transmission:

	Row-Crop	Hi-Crop
Diesel	6350 lbs.	7380 lbs.
Gasoline	6200 lbs.	7230 lbs.

**Additional tires available for special purposes.

Specifications and design subject to change without notice.

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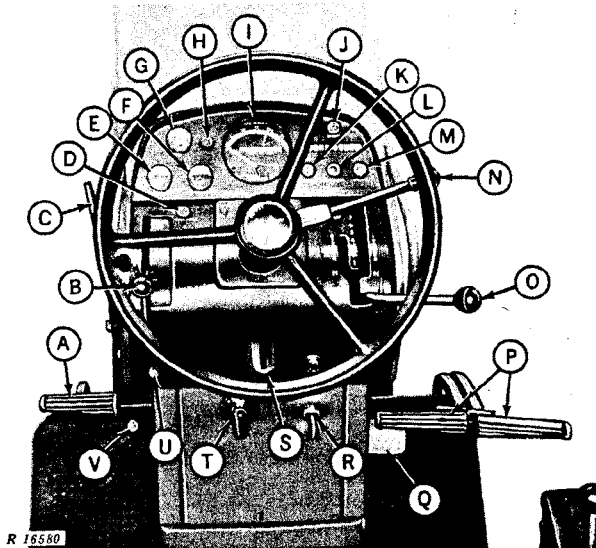


John Deere 2520 Row-Crop Tractor with Diesel Engine, Syncro-Range Transmission, Roll-O-Matic, and Roll-Gard

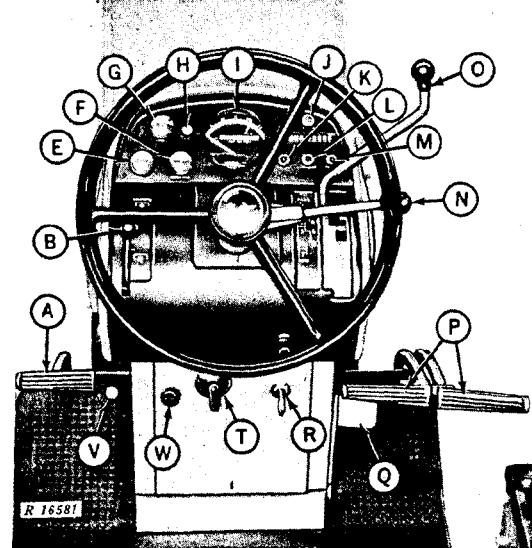


CONTROLS AND INSTRUMENTS

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

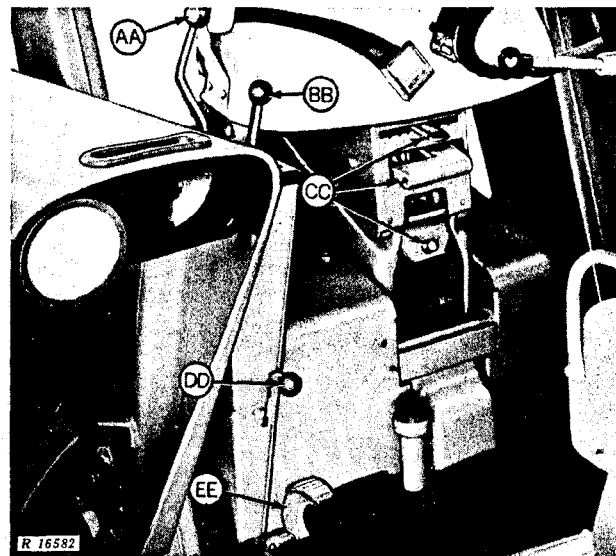


Tractor with Diesel Engine and Power Shift Transmission



Tractor with Gasoline Engine and Syncro-Range Transmission

- A – Clutch Pedal (Syncro-Range Tractors, page 14)
Inching Pedal (Power Shift Tractors, page 12)
- B – Power Take-Off Clutch Lever (page 40)
- C – Engine Disconnect Clutch Lever (Power Shift Tractors, page 8)
- D – Transmission Oil Filter Indicator Light (Power Shift Tractors, page 13)
- E – Transmission Oil Temperature Gauge (pages 13 and 14)
- F – Coolant Temperature Gauge
- G – Fuel Gauge
- H – Speed Indicator Knob (page 12)
- I – Speed-Hour Meter (pages 12 and 47)
- J – Hi-Beam Indicator Light (page 24)
- K – Alternator Indicator Light (pages 5 and 6)
- L – Air Cleaner Indicator Light (pages 5 and 6)
- M – Oil Pressure Indicator Light (pages 5 and 6)
- N – Hand Throttle (page 9)
- O – Shift Lever (Syncro-Range Tractors, page 14)
Speed Selector (Power Shift Tractors, page 12)
- P – Brake Pedals (page 16)
- Q – Foot Throttle (page 9)
- R – Key Switch (pages 5, 6, and 10)
- S – Ether Starting Fluid Adapter (Diesel Tractors, page 7)
- T – Light Switch (page 24)
- U – Disconnect Lever Latch (Power Shift Tractors, page 8)
- V – Headlight Dimmer Switch (page 23)
- W – Engine Choke Knob (page 6)



- AA – Remote Cylinder Operating Levers (page 35)
- BB – Rockshaft Control Lever (page 26)
- CC – Seat Controls (page 11)
- DD – Rockshaft Selector Lever (page 27)
- EE – Differential Lock Pedal (page 15)



OPERATION

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

OPERATING THE ENGINE

PRESTARTING CHECKS

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

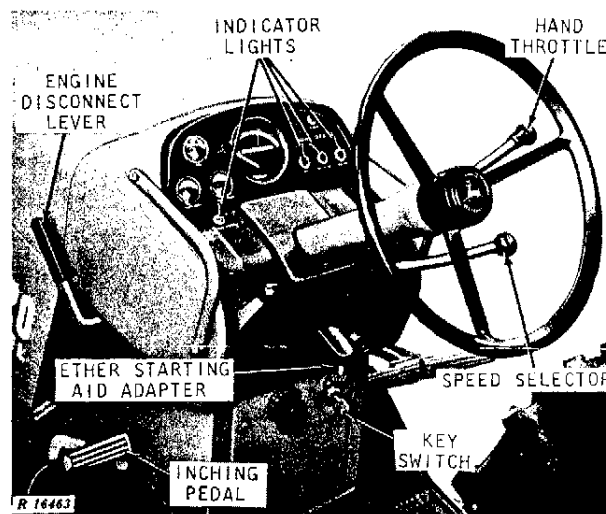
- (1) Check the engine crankcase oil level—see page 52.
- (2) Check the radiator coolant level—see page 52.
- (3) Drain sediment from fuel filter on diesel tractors - see page 52.
- (4) Grease the wide-swing drawbar rollers, Hi-Crop rear axles, and the Roll-O-Matic or wide front axle grease fittings—see page 52.
- (5) Grease the front wheel bearing if the tractor has been operated in extremely wet or muddy conditions—see page 53.
- (6) Make sure the fuel shut-off valve on the bottom of the fuel tank is open—see page 60.

STARTING THE DIESEL ENGINE

NOTE: If the prevailing temperature is 40 degrees Fahrenheit or lower, it may be necessary to use a cold weather starting aid to start the engine (page 8).

Perform the Prestarting checks listed above.

- (1) If your tractor has a Syncro-Range transmission, move the shift lever to "PARK" position and depress the clutch pedal. If your tractor has a Power Shift transmission, move the selector lever into "PARK" position and depress the inching pedal.



Diesel Starting Controls

- (2) PLACE THE HAND THROTTLE IN THE 1200 RPM POSITION, approximately one-third of its travel downward.

(3) Turn the key switch clockwise to the first position. The alternator and oil pressure indicator lights should glow. Turning the key switch further to the start position should cause the air cleaner indicator light and on Power Shift tractors, the transmission oil indicator light to glow. If any light fails to glow, turn off the key switch and determine the cause.

- (4) Turn the key switch all the way to the right to start the engine. Do not operate the starter for more than 30 seconds at a time. To do so may overheat the starter. If the engine does not start the first time, wait for a minute or two before trying again. If it does not start after four attempts, see "Trouble Shooting."

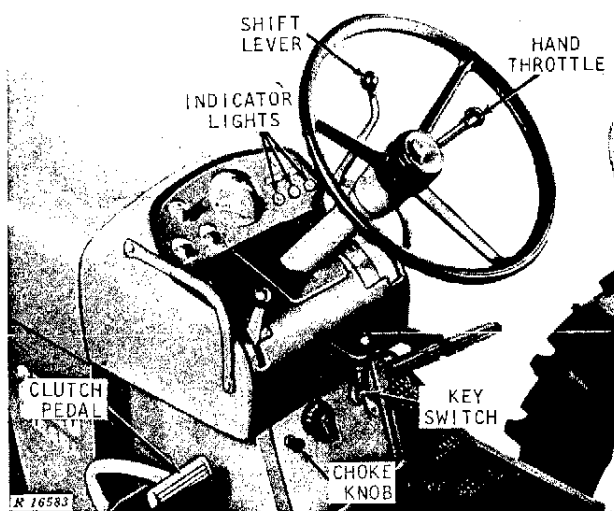
6 Operation - Engine

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

(5) After the engine starts, the indicator lights should go out. The transmission oil filter indicator light may continue to glow when the oil is cold. If any other light continues to glow after the engine has been running 10 seconds, stop the engine and determine the cause.

If the Power Shift transmission engine disconnect clutch was disengaged, engage the clutch immediately after starting the engine. This will prevent damage to the tractor.

STARTING THE GASOLINE ENGINE



Starting Controls on Gasoline Tractors with Syncro-Range Transmission

NOTE: At extremely low temperatures it may be necessary to use a cold weather starting aid (page 8).

Perform the Prestarting checks listed on page 5.

(1) If your tractor has a Syncro-Range transmission, move the shift lever into "PARK" position and depress the clutch pedal. If your tractor has a Power Shift transmission, move the selector lever into "PARK" position and depress the inching pedal.

(2) Pull the hand throttle down, pull the choke knob out, and push the hand throttle all the way up.

(3) Turn the key switch clockwise to the first position. The alternator and oil pressure indicator lights should glow. Turning the key switch further to the start position should cause the air cleaner indicator light and on Power Shift tractors the transmission oil filter indicator light to glow. If any light fails to glow, turn off the key switch and determine the cause.

(4) Turn the key switch all the way to the right to start the engine. 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 such 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. This will prevent possible damage to the starter.

(5) 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.



R 2206

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

(6) After the engine starts, the indicator lights should go out. The transmission oil filter indicator light may continue to glow when the oil is cold. If any other light continues to glow after the engine has been running 10 seconds, stop the engine and determine the cause.

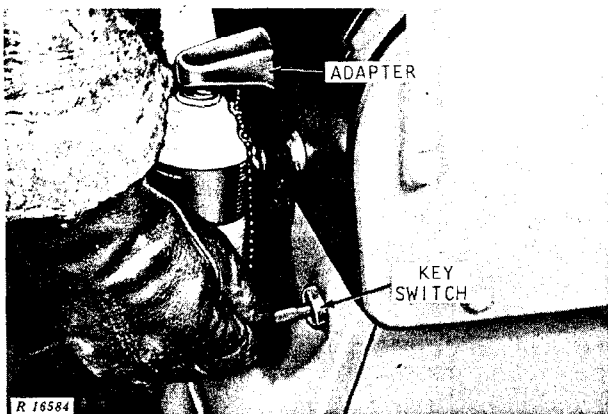
If the Power Shift transmission engine disconnect clutch was disengaged, engage the clutch immediately after starting the engine. This will prevent damage to the tractor.

COLD WEATHER STARTING AIDS

For cold weather starting, the diesel tractor may be equipped with an ether starting fluid adapter. The Power Shift transmission tractor may be equipped with an engine disconnect clutch. Other starting aids are available from your John Deere dealer.

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

ETHER STARTING FLUID ADAPTER (Diesel Tractors)



Injecting Starting Fluid

The diesel tractor may be equipped with an adapter which is used to inject atomized ether starting fluid into the engine air intake system. Pressurized cans of starting fluid are available from your John Deere dealer.

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

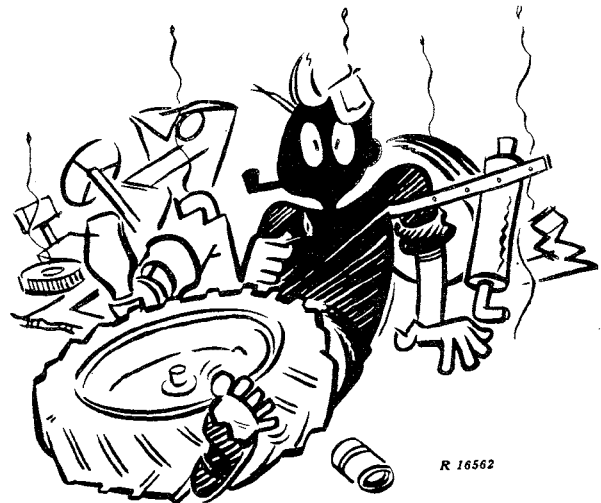
To inject a "shot" of starting fluid, momentarily push up on the can.

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

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

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

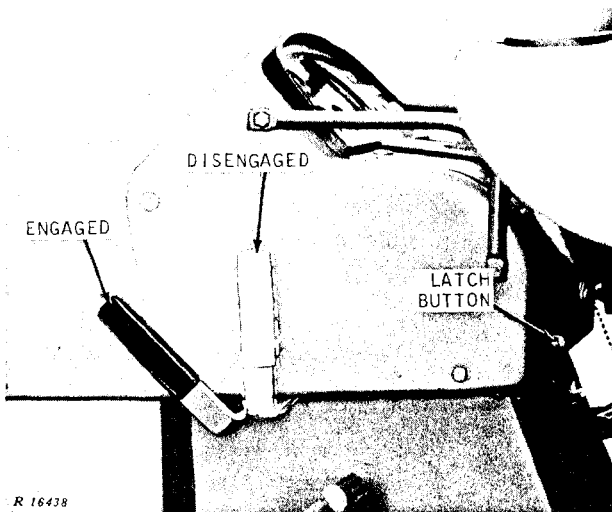
Store starting fluid cans where they will not be subject to extreme cold or warm temperatures. For best results, store fluid at room temperature.



CAUTION: Ether starting fluid is highly flammable.

8 Operation - Engine

ENGINE DISCONNECT CLUTCH (Power Shift Tractors)



Engine Disconnect Clutch Control Lever

During cold weather, the starter speed on Power Shift tractors may be increased by disengaging the engine disconnect clutch so that the transmission will not turn. To do so, pull the control lever rearward until it is latched in the disengaged position.

Immediately after starting the engine, engage the control lever by pulling it slightly rearward. Push in on the latch button and allow the control lever to move forward to the engaged position.

IMPORTANT: Operating the engine with the engine disconnect clutch control lever disengaged will damage the tractor. Be sure to engage it as soon as the engine starts. Never attempt to start the engine of a Power Shift tractor by towing or pushing the tractor.

SHUTTING OFF HYDRAULIC PUMP

Starter speed may be increased during cold weather by shutting off the hydraulic pump so it will not build up pressure. The hydraulic pump shut-off screw assembly is available from your John Deere dealer and it is installed on top of the hydraulic pump which is to the rear of the fuel tank.

To shut the pump off, turn the shut-off screw in (clockwise) one turn with a screwdriver. Then turn the screw in by hand until resistance is felt. Turn the screw in one more turn.

After the engine has started, use a screwdriver to back the shut-off screw out against the internal stop (turn the screw counterclockwise).

The pump will now build up pressure.

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

ELECTRIC COOLANT HEATER

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

The coolant heater is thermostatically controlled and mounts on the right side of the engine block.

Using a heater will reduce drag on the engine, thereby improving 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.

ADDITIONAL BATTERY

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

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

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

Connect a jumper cable to the POSITIVE (+) post of a 12-volt booster battery and to the POSITIVE (+) post of the tractor battery that is connected to the starter. Connect one end of the other jumper cable to the negative post of the booster battery and to a good ground on the tractor frame away from the battery. Never connect jumper cables to pipes or thin sheet metal.

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

TRACTOR WARM-UP PERIOD

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

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

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

ENGINE IDLING

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

ENGINE SPEEDS

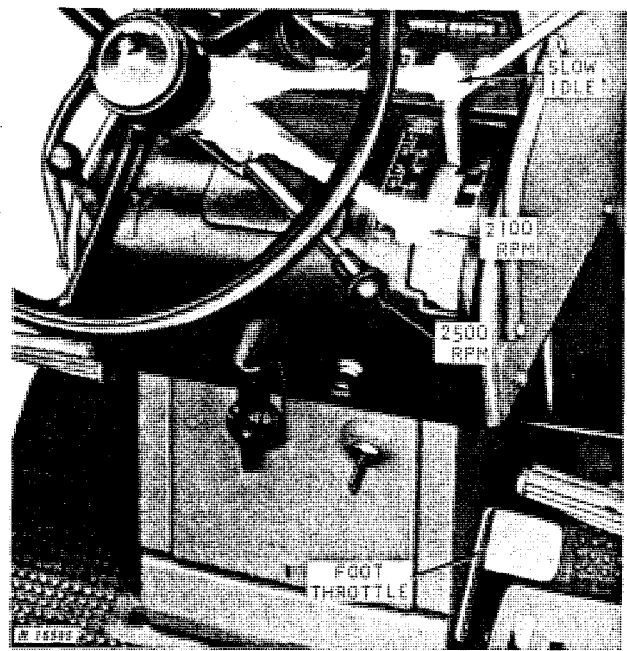
The tractor engine is designed to operate at working speeds ranging from 1500 to 2500 rpm. The engine can be operated at any speed in the working range to meet various operating conditions. Operate the engine at 2100 rpm to obtain the ASAE standard PTO speeds.

Normal slow idle speed is approximately 800 rpm.

See page 56 to check engine idle speeds.

USING HAND THROTTLE

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



Range of Hand Throttle Positions

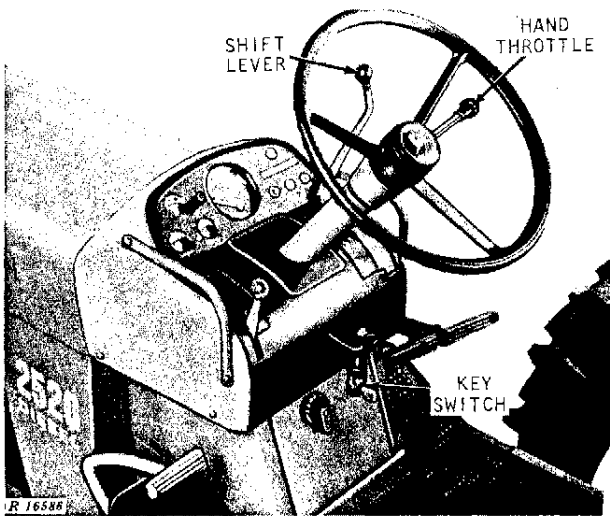
Push the throttle upward to obtain the slow idle speed of 800 rpm. To obtain the 2100 rpm load speed, pull the throttle downward to the first stop. Placing the throttle half way between slow idle and 2100 rpm gives the 1500 rpm speed. Engine speeds between 1500 rpm and 2100 rpm may be selected by moving the lever between these two positions.

To obtain working speeds above 2100 rpm, pull out on the knob at the end of the hand throttle. With the knob pulled out, pull the throttle downward as far as it will go. This is the 2500 rpm load speed position. Engine speeds between 2100 and 2500 rpm may be selected by moving the lever between these two positions.

USING FOOT THROTTLE

The foot throttle is used to increase engine speed momentarily. When the foot throttle is pushed all the way downward, the engine operates at 2500 rpm load speed.

STOPPING THE ENGINE



Stopping Controls

Place the shift lever or speed selector 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.

DIESEL ENGINES

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

GASOLINE ENGINES

After idling the engine for a few minutes, run the engine at approximately 1200 rpm. Stop the engine by turning the key switch off.

BOTH 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" position, or in 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 range 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.

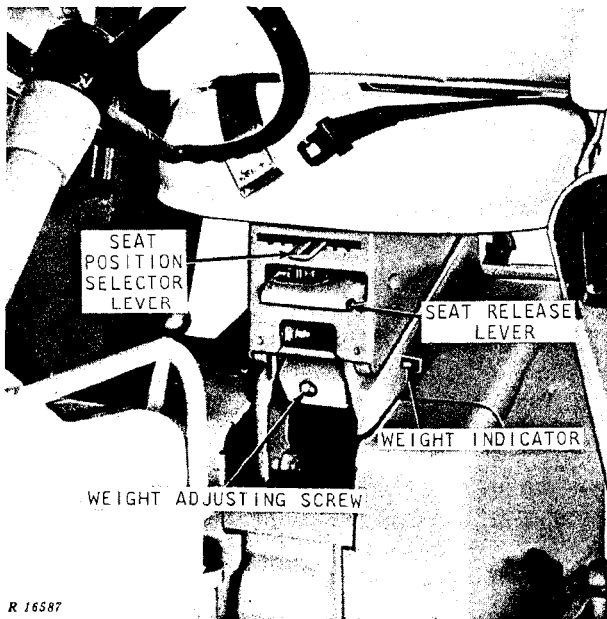
With the following exceptions, the engine is ready for normal operation:

During the first 20 hours, do not use the foot throttle or place the hand throttle in speeds above the 2100 rpm load speed position (page 9). To facilitate break-in, avoid prolonged periods of engine idling for the first 100 hours of service.



OPERATING THE TRACTOR

SEAT



Seat Controls

The deluxe foam-padded suspension seat contains a steel compression spring and shock absorber to provide "Float-Ride" comfort.

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

MOVING SEAT TO UPPER REAR POSITION

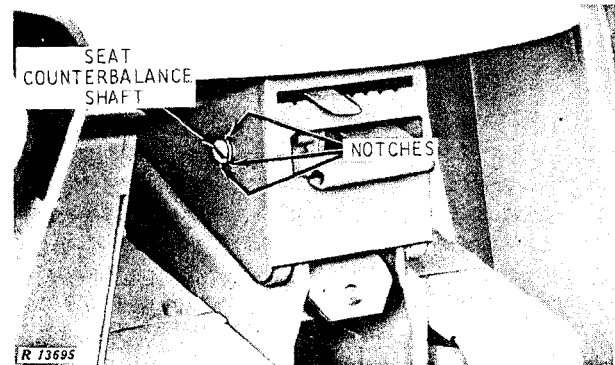
To move the seat up and back, stand up and lift the seat release latch. A counterbalance spring will move the seat to the upper rear position. Sit down to return the seat to the normal preset operating position.

ADJUSTING FOR HEIGHT AND WEIGHT OF OPERATOR

The seat can be adjusted to the height of the operator. With the seat in the upper rear position, shift the seat position selector lever between "short" and "tall" until the controls can be operated comfortably when you are seated.

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 or counterclockwise until the indicator in the left-hand side of the seat conforms to your weight.

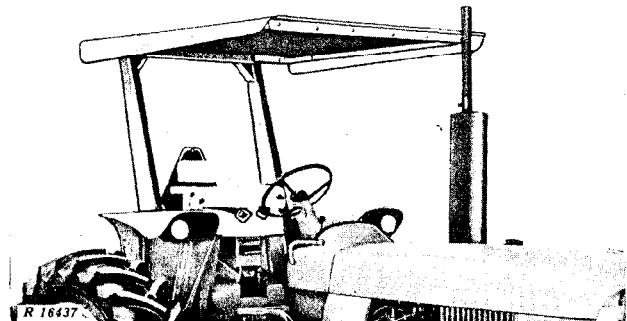
ADJUSTING COUNTERBALANCE SPRING



Seat Counterbalance Shaft

If the seat does not move fully to the rear when unlatched, adjust the counterbalance spring. With the seat in the upper rear position, insert a screwdriver in the counterbalance shaft slot. Push in to unlatch the shaft and turn the shaft counterclockwise. Align the latch in the end of the shaft with one of the pair of notches. Pull the screwdriver outward so the latch will engage the notches.

ROLL-GARD, SEAT BELT, AND CANOPY



Roll-Gard, Seat Belt, and Canopy

A protective Roll-Gard with seat belt may be ordered for your tractor. A canopy that fits on top of the Roll-Gard and a weather enclosure are also available. 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.

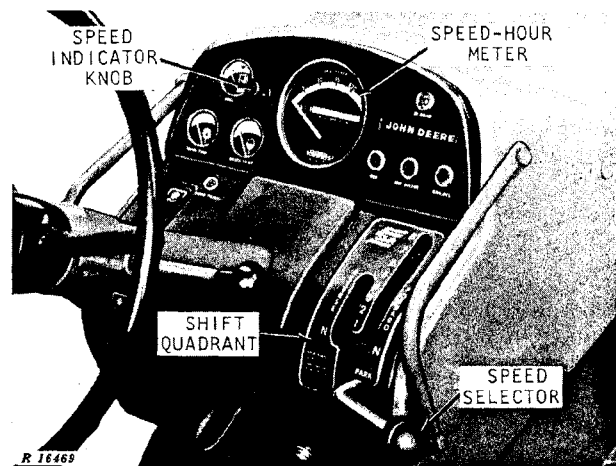
SELECTING GROUND SPEED

Both transmissions provide eight forward speeds for each of the throttle positions that may be used. The Syncro-Range transmission has two reverse speeds, and the Power Shift transmission has four. These combinations enable the operator to balance speed and power for maximum economy and allow him flexibility to meet varying working conditions. For example, at a given ground speed the operator may choose to work in a low gear at high engine speed for maximum reserve power or in a higher gear at a lower engine speed for maximum fuel economy.

Examples of the ground speeds at which the tractor will travel are shown below. Engine working speeds may be varied between 1500 rpm and 2500 rpm. Tractor ground speeds shown in the chart are only for engine speeds of 1500, 2100, and 2500 rpm.

Turn the speed indicator knob on the instrument panel until the gear selected shows on the speed indicator. The speed-hour meter needle 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 en-



Speed Indicator Knob and Speed Selector

gine is not overloaded or lugging. Overloading causes undue strain on parts eventually resulting in poor operation and unnecessary repair expense.

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.

TRACTOR GROUND SPEEDS IN MILES PER HOUR

NOTE: The ground speeds shown in the chart below are for Row-Crop tractors with 13.6-38 rear tires that have a loaded radius of 28.5 inches. Hi-Crop tractors have similar ground speeds.

Gear	1500 Rpm		*2100 Rpm		2500 Rpm	
	Syncro-Range	Power Shift	Syncro-Range	Power Shift	Syncro-Range	Power Shift
1st	1.1	1.0	1.5	1.4	1.8	1.7
2nd	1.7	1.4	2.4	2.0	2.8	2.4
3rd	2.2	2.2	3.1	3.1	3.6	3.7
4th	2.8	2.9	3.9	4.0	4.7	4.8
5th	3.5	3.7	4.8	5.1	5.7	6.1
6th	4.6	4.7	6.5	6.7	7.7	7.9
7th	5.8	6.3	8.1	8.8	9.6	10.5
8th	9.5	10.5	13.2	14.7	15.8	17.5
1st reverse	2.1	1.2	3.0	1.6	.....	.....
2nd reverse	3.3	1.7	4.7	2.3	.....	.....
3rd reverse	....	2.6	.....	3.6	.....	.....
4th reverse	....	3.3	.....	4.7	.....	.....

*2100 engine rpm gives the ASAE standard 540 or 1000 rpm PTO speed. Some PTO-driven implements are operated at other speeds. See the implement operator's manual for detailed instructions.

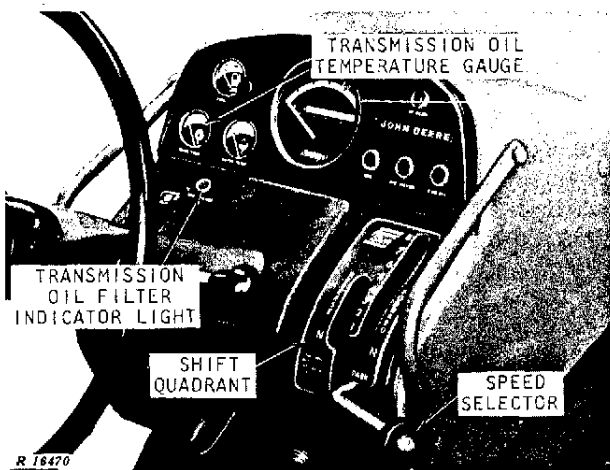
To move the tractor forward, move the speed selector from neutral to the desired gear in the right-hand or forward side of the quadrant. Progressive shifting (one gear at a time) will result in smoother speed change.

To reverse the tractor, move the speed selector rearward progressively (one gear at a time) 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 sudden extreme speed changes.

OPERATION



Speed Selector and Transmission Instruments

When operating a tractor with the Power Shift transmission, check the transmission oil tem-

perature gauge and the transmission oil filter indicator light for satisfactory transmission operation.

If the pointer on the temperature gauge goes into the red zone, stop the tractor and clean all dirt and trash from the grille screens and the transmission hydraulic oil cooler core. See page 68. Also check for proper transmission-hydraulic oil level. If necessary, fill the system to the proper level. See page 54. A clogged filter can also cause overheating. See page 56. If this does not correct the difficulty, call your John Deere dealer. Do not operate the tractor when the temperature indicator hand is in the red zone.

Should the transmission oil filter indicator light flicker on and off when using a hydraulic function at engine speeds above 2200 rpm, change the transmission oil filter element (front element) at the earliest opportunity. Under normal conditions, change the filter at the next refueling and servicing. The amount of safe operating time with the light flickering depends on how fast the filter is clogging.

Change the filter IMMEDIATELY if any of the following symptoms are noted: the indicator lamp glows continuously, high transmission oil temperature, slipping of the transmission, or slow hydraulic function response particularly with single-acting cylinders. DO NOT allow the transmission to slip.

If the light goes out after being on for a while at normal temperatures, change the filter because it may have ruptured.

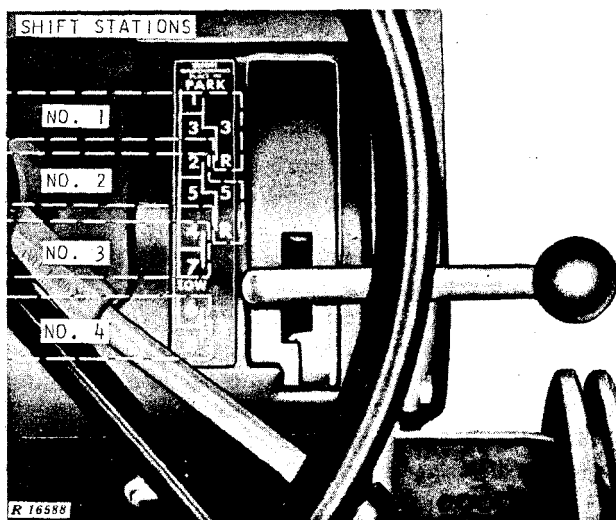
SYNCRO-RANGE TRANSMISSION

Do not operate the tractor when the transmission oil temperature is too high. See page 13.

NOTE: To prevent unnecessary wear, never "ride" the clutch or brake pedals by resting the feet on the pedals.

SHIFTING BETWEEN STATIONS

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



Syncro-Range Transmission Shift Lever in TOW Position

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 shift 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.

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

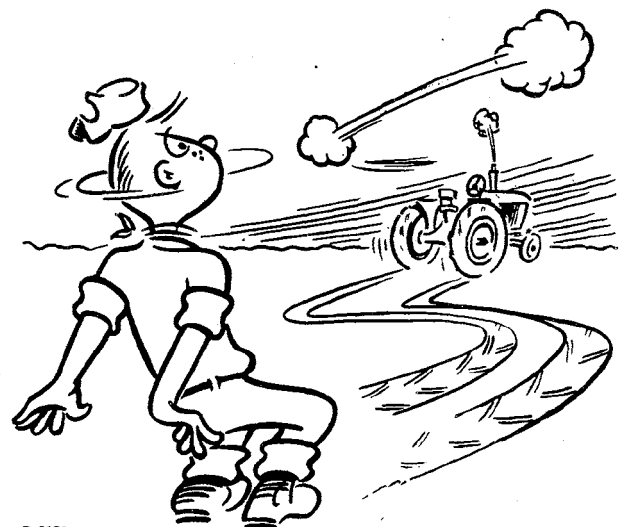
PARKING THE TRACTOR

IMPORTANT: Be sure the tractor is stopped before placing the shift lever or speed selector in the "PARK" position.

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."



CAUTION: Whenever the tractor is stopped, place the shift lever or speed selector in the "PARK" position BEFORE DISMOUNTING. Never dismount from the tractor when it is in motion.



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POWER SHIFT TRACTORS

On Power Shift tractors, move the speed selector rearward and to the right into the "PARK" position shown in the illustration on page 13. Shifting from "PARK" to neutral usually releases the parklocking action. If tractor is parked on a steep incline, it may be necessary to move the speed selector to the 1st speed forward or reverse to move the tractor up the incline.

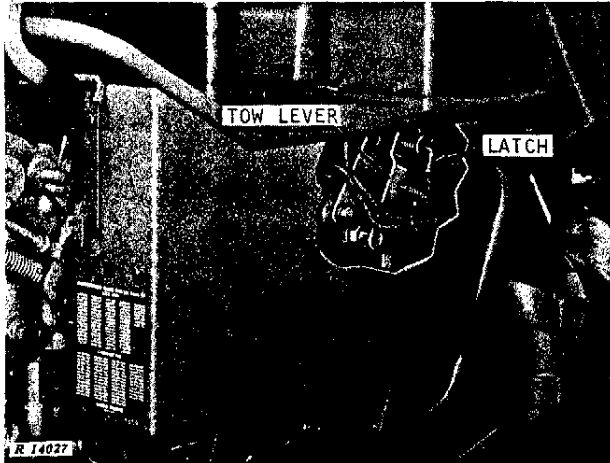
TOWING THE TRACTOR

CAUTION: Never tow the tractor at high speeds. Tow the 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: Always place the tow lever or shift lever in "TOW." Do not attach towing means to front wheel knuckles or steering mechanism.

POWER SHIFT TRACTORS



Tow Lever on Power Shift Tractor
(Battery Compartment Removed)

When towing a tractor with a Power Shift transmission, pull out on the tow lever latch and move the lever forward until the latch will hold

the lever in the "TOW" position. Place the speed selector lever in neutral to tow the tractor.

To operate the tractor after towing, place the speed selector in "PARK." Pull out on the tow lever latch and allow the spring to move the lever rearward. If the lever does not latch in the rearward position, attempt to move the tractor slowly and the spring will move the lever rearward.

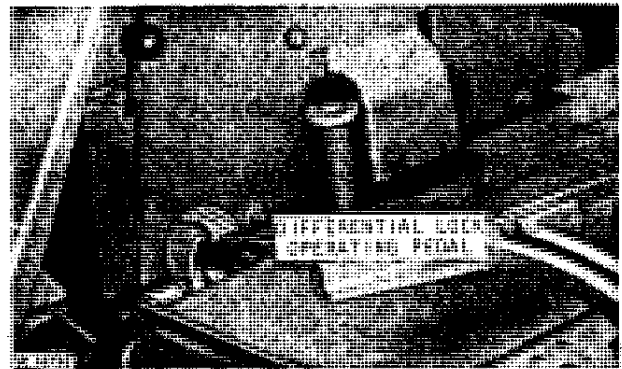
IMPORTANT: To prevent transmission damage, do not attempt to start the engine by towing a Power Shift tractor.

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.

DIFFERENTIAL LOCK

Your tractor may be equipped with a differential lock that will turn both rear wheels at the same speed. This prevents the usual loss of power when one wheel is slipping.



Differential Lock Operating Pedal

When one wheel starts to slip or whenever desired, engage the differential lock by depressing the operating pedal located at the right-rear side of the platform. When no longer required and before turning the tractor, disengage the differential lock by depressing one or both brake pedals. The front wheels should be in the straight ahead position when disengaging the differential lock.

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

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