

# 720 TRACTOR DIESEL WITH GASOLINE CRANKING ENGINE (SERIAL NO. 7214900-UP)



JOHN DEERE

## OPERATORS MANUAL

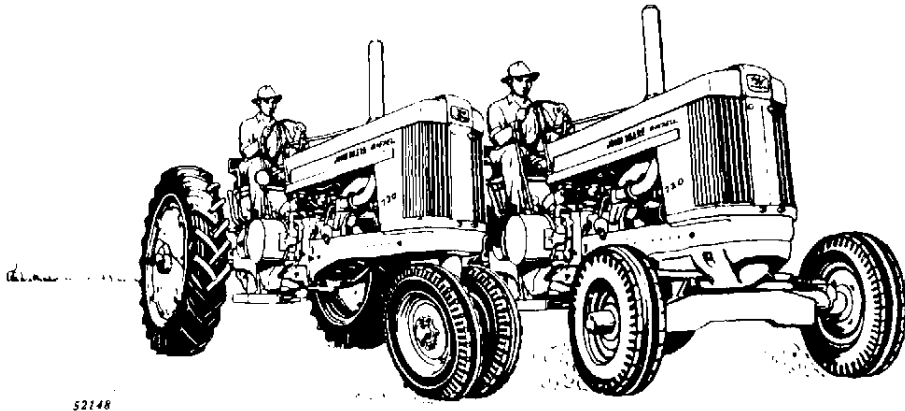
720 TRACTOR DIESEL WITH GASOLINE  
CRANKING ENGINE (SERIAL NO.  
7214900-UP)

OMR2086 F7 English

**OMR2086 F7**

LITHO IN THE U.S.A.  
ENGLISH





52148

## *To the Purchaser*

We welcome you to our ever-growing family of John Deere Tractor owners. We are confident that the dependable and economical performance of your John Deere Tractor will prove that you made a wise choice.

The purpose of this manual is to acquaint you with your new tractor. The manual explains how to operate and service your tractor, and how to maintain its high operating efficiency. Instructions are given clearly with the intention of making these operations as easy as possible.

Keep this manual in a convenient place for quick and easy reference. Use it as a guide whenever questions arise. You have purchased a dependable, sturdy tractor, but only by operating and caring for it properly can you expect to receive the service and long life for which it was designed.

If in the future you need new parts to replace those that may be worn, insist on genuine John Deere parts. They are exact duplicates of the originals, made from the same patterns and of the same high-quality materials.

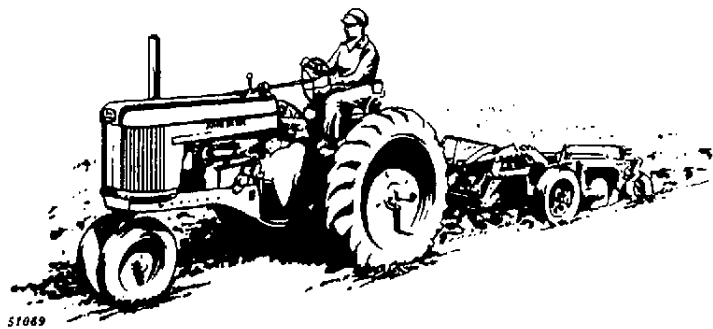
When in need of parts, give your John Deere dealer the serial number of your tractor, cranking engine, distributor, or hydraulic system (Powr-Trol), depending on the parts you need. The illustration below shows you where to find these serial numbers. Obtain them from your tractor- NOW - and insert them in the spaces provided in the illustrations below.

TRACTOR	CRANKING ENGINE	DISTRIBUTOR	HYDRAULIC SYSTEM
<input type="text"/>			
Owner	<input type="text"/>		
Date Purchased	<input type="text"/>		

60538

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## *John Deere Tractor Service Policy*

**JOHN DEERE  
TRACTOR  
SERVICE POLICY**

OWNER'S NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_ STATE \_\_\_\_\_

TOWN \_\_\_\_\_

TRACTOR SERIAL No. \_\_\_\_\_

TRACTOR SERIAL No. \_\_\_\_\_

CRANKING ENGINE SERIAL No. \_\_\_\_\_

CRANKING ENGINE DISTRIBUTOR SERIAL No. \_\_\_\_\_


POWER-TWO SERIAL No. \_\_\_\_\_

ISSUED BY: \_\_\_\_\_

JOHN DEERE DEALER \_\_\_\_\_ STATE \_\_\_\_\_

TOWN \_\_\_\_\_

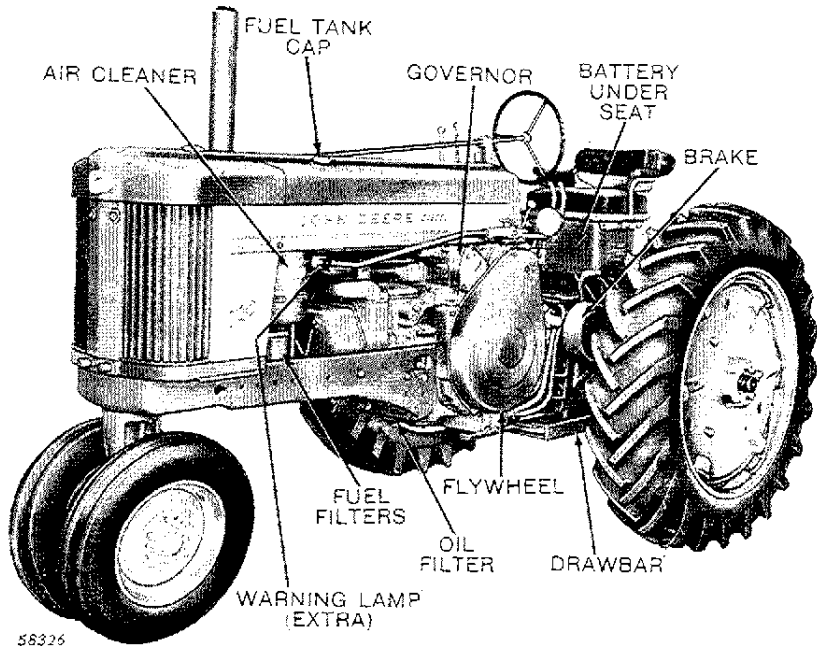
DEALER'S SIGNATURE \_\_\_\_\_

  
DIESEL ENGINE TRACTORS **A**

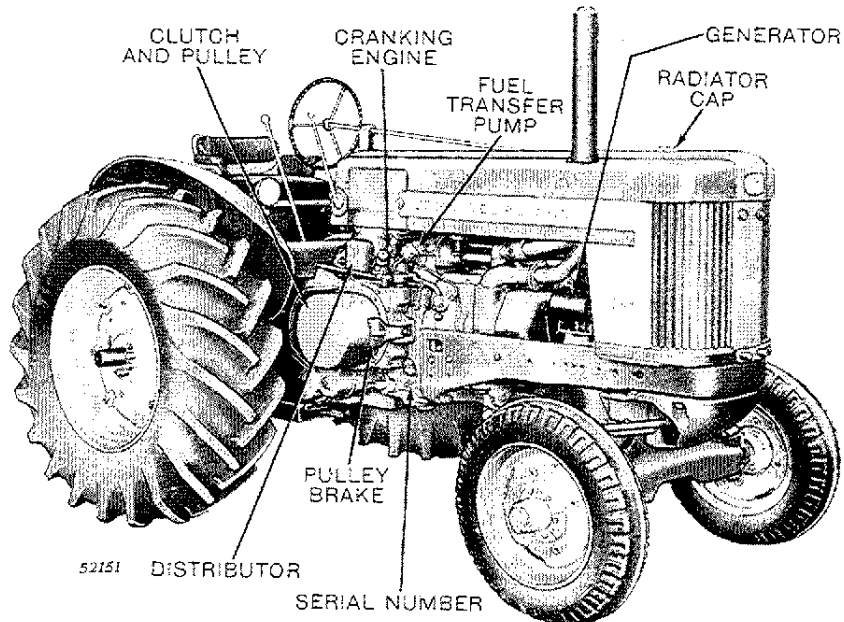
When your new tractor was delivered the John Deere dealer presented to you a copy of the Tractor Service Policy illustrated above. This policy certifies that your new John Deere Tractor was properly inspected and prepared for delivery by the dealer before he released it to you.

Present the policy to the dealer whenever any services which it authorizes are required. Keep the policy in a safe place for ready reference at all times.

# This is Your New John Deere Tractor



58326  
 John Deere "720" Series General-Purpose Diesel Tractor—Flywheel Side  
 (Serial No. 7214900—)



52151  
 John Deere "720" Series Standard Diesel Tractor—Pulley Side  
 (Serial No. 7214900—)

# SPECIFICATIONS

## PERFORMANCE:

### Capacity for Work:

Five 14-inch plow bottoms or the equivalent under most soil conditions.

### \*Maximum Horsepower:

Belt..... 58.84  
Drawbar..... 53.66

## CAPACITIES (U. S. MEASUREMENTS):

Fuel Tank..... 20 Gals  
Gasoline Tank..... 1 Qt.  
Crankcase (Diesel)..... 9 Qts.  
Transmission (Diesel)..... 8 Gals.  
Crankcase (Cranking Engine) 1-1/2 Qts.  
Transmission (Cranking Engine)..... 1/2 Pt.  
Hydraulic System (Powr-Trol) 13 Qts.  
Remote Cylinder..... 1 Qt.  
Powershaft Clutch..... 4-1/2 Qts.  
Cooling System..... 7 Gals.  
First Reduction Gear Cover. 1-1/2 Qts.  
Power Steering Reservoir..... 5 Qts.

## SPEEDS:

Gear	13.6-38 Tires	15-30 Tires
1	1-1/3 mph	1-1/3 mph
2	2-1/4 mph	2-1/4 mph
3	3-1/2 mph	3-1/2 mph
4	4-1/3 mph	4-1/3 mph
5	5-3/4 mph	5-1/2 mph
6	11-1/4 mph	11 mph
Reverse	3-1/3 mph	3-1/4 mph

## DIESEL ENGINE:

Type..... Two-cylinder, cast-in-block, valves-in-head.

### Engine Speeds:

Load..... 1125 rpm  
Fast Idle..... 1250 rpm  
Slow Idle..... 700 rpm  
Bore and Stroke..... 6-1/8" x 6-3/8"  
Displacement..... 376 cubic inches  
Compression Ratio..... 16 to 1

## CRANKING ENGINE:

Type..... Four-cylinder V-type valves-in-head

### Engine Speeds:

Load..... 4500 rpm  
Slow Idle..... 4000 rpm  
Fast Idle..... 5000 rpm  
Bore and Stroke..... 2" x 1-1/2"  
Displacement..... 18.85 cu. in.

## LUBRICATION SYSTEM:

Type..... Force-feed pressure system with full-flow oil filter.

## FUEL SYSTEM:

Type..... Gravity to sediment bowl. Transfer pump to filters.

Air Cleaners... Oil-wash type.

## COOLING SYSTEM:

Type.... Pressure system—centrifugal pump with engine temperature controlled by heavy-duty thermostat.

## IGNITION SYSTEM (CRANKING ENGINE):

Type..... Battery-Distributor  
Distributor Point Gap..... .020"  
Spark Plugs:  
Size..... 14 mm  
Spark Plug Gap..... .025"

## ELECTRICAL SYSTEM:

Battery Voltage..... 6 Volts  
Generator Regulation.. Voltage Regulator  
Battery..... Group I

## CLUTCH:

Type..... Hand-operated, six 10-inch dry disks.

## BELT PULLEY:

Diameter..... 12-7/8"  
Width..... 7-3/8"  
Rpm (Load)..... 1125  
Belt Speed (fpm)..... 3790

## TRANSMISSION:

Type..... Six speeds forward and one in reverse.  
Gears..... Selective-type, straight spur-cut gears, forged and heat-treated.  
Bearings... Shafts operate on five roller bearings, six tapered roller bearings, and four ball bearings.

## REAR AXLES:

Diameter..... 3-1/8"  
Bearings..... Four tapered roller bearings.  
Types Available... Regular, long, and extra long.

\*Maximum h.p. corrected to 60°F. and 29.92 in. hg. (Nebraska Test No. 594)

# SPECIFICATIONS

## REAR WHEELS AND TIRES:

**General-Purpose.** 13.6-38, 6-ply tires on cast disk wheels. 15.5-38, 6-ply tires also available.

**Standard.** 14-30, 6-ply tires mounted on cast disk wheels. 15-30, 6-ply and 18-26, 8-ply tires also available.

## REAR WHEEL BRAKES:

**Type.** Two automotive-type internal-expanding rear wheel brakes.

## FRONT WHEELS AND TIRES:

### General-Purpose

**Double and Adjustable Type:**

Reversible for added clearance.

**Bearings.** Four tapered roller bearings.

**Tires.** 6.00 x 16", 4-ply.

6.00 x 16", 6-ply also available.

### Single Type:

**Bearings.** Two tapered roller bearings.

**Tires.** 7.50 x 16", 10-ply.

### Standard

**Bearings.** Four tapered roller bearings.

**Tires.** 6.50 x 18", 4-ply;

7.50 x 18", 4-ply;

7.50 x 18", 6-ply.

	General-Purpose			Standard
	Double Front Wheel	Single Front Wheel	Adjustable Tread Front Axle	
<b>POWER TAKE-OFF:</b>				
Shaft Diameter.....	1-3/8"	1-3/8"	1-3/8"	1-3/8"
Shaft rpm.....	547	547	547	547
Splined End Ahead of Hitch....	14"	14"	14"	14"
Splined Shaft Above Ground....	25"	25"	25"	22-5/8"
<b>DIMENSIONS:</b>				
Wheel-Base.....	91-3/8"	90-5/8"	93-7/8"	82-3/8"
Over-All Length.....	135-1/4"	135-1/4"	135-1/4"	130-1/4"
Over-All Height.....	88-1/4"	88-1/4"	88-1/4"	87-3/8"
Height to Top of Steering Wheel	81-1/4"	81-1/4"	81-1/4"	81"
Width Over Axles.....	86-5/8"	86-5/8"	86-5/8"	86-5/8"
<b>Tread Adjustment:</b>				
Regular Rear Wheels.....	60-88"*	60-88"*	60-88"*	62-80"
Power Adjusted Rear Wheels.....	60-94"**	60-94"**	60-94"**	.....
Clearance.....	26"	26"	Front 23" Rear 26"	Front 13" Rear 25-1/4"
Turning Radius.....	9' 6"	9' 6"	14' 9"	14'
<b>SHIPPING WEIGHT.....</b>	7105 Lbs.	7095 Lbs.	7415 Lbs.	7790 Lbs.

(Weights are for Tractors dry and with wheel equipment as shown under "Front Wheels" and "Rear Wheels.")

\*Available with long axles providing tread of 62-1/2" to 97-1/4" and, with offset wheels, a tread of 60" to 104" is provided. Extra long axles provide a tread of 66-1/2" to 105-1/4" and, with offset wheels, a tread of 60" to 112".

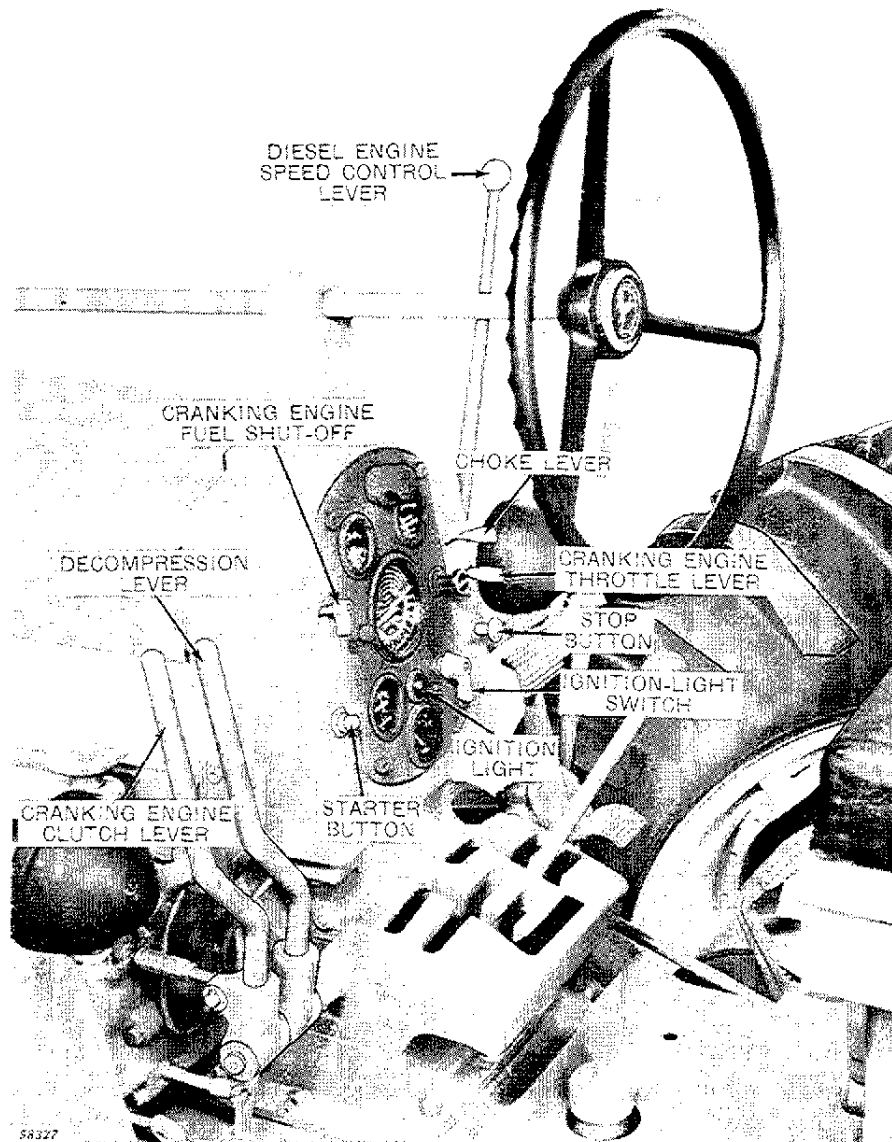
\*\*Power-Adjusted Rear Wheels on long axles provide tread of 63" to 104"; on extra long axles provide a tread of 63" to 112".

(Specifications and design subject to change without notice.)

# CONTROLS

Familiarize yourself with all the controls provided for safe and easy operation of your new tractor. Regardless of your previous tractor experience, study this section covering controls carefully before you operate your tractor.

## • STARTING CONTROLS •



## ● STARTING CONTROLS ●

### IGNITION-LIGHT SWITCH.

A combination ignition-light switch is located on the instrument panel. Turning the switch to the "I" position turns on the cranking engine ignition. At the same time the red light under the switch comes on.

The red light indicates that the ignition is on and the oil pressure is at zero. As cranking engine is cranked and oil pressure is developed, the red light is cut off. If, after the diesel engine has been started, the operator fails to shut off the cranking engine, the entire gas supply will be consumed, the engine will stop and, with the drop in oil pressure, the red light will re-appear.

The lights on your tractor are designed to provide maximum use and convenience both for night work in the field and night travel on the highway. The combination rear lamp has a bright white light for illuminating drawn implements and a red light for highway travel.

All lights are controlled by the combination ignition-light switch. The switch has five positions as follows:

- "OFF"—Both ignition and lights off.
- "I" —Ignition only.
- "L" —Bright front lights and white rear light.
- "B" —Bright front lights and red rear light.
- "D" —Dim front lights and red rear light.

### CRANKING ENGINE FUEL SHUT-OFF VALVE.

The cranking engine fuel system is provided with a fuel shut-off valve to stop the cranking engine and prevent flow of fuel when the engine is not running. The valve is operated by a shut-off lever on the dash. Turning the shut-off lever two or three turns counter-clockwise opens the valve.

### CRANKING ENGINE CHOKE LEVER.

Moving the choke lever to the left provides a rich mixture for starting. When released the lever returns to the "off" position.

### CRANKING ENGINE THROTTLE LEVER.

The cranking engine throttle lever has two positions: "Start," to the right, and "run," to the left.

### STARTER BUTTON.

The starter button is used to actuate the cranking motor for starting the cranking engine.

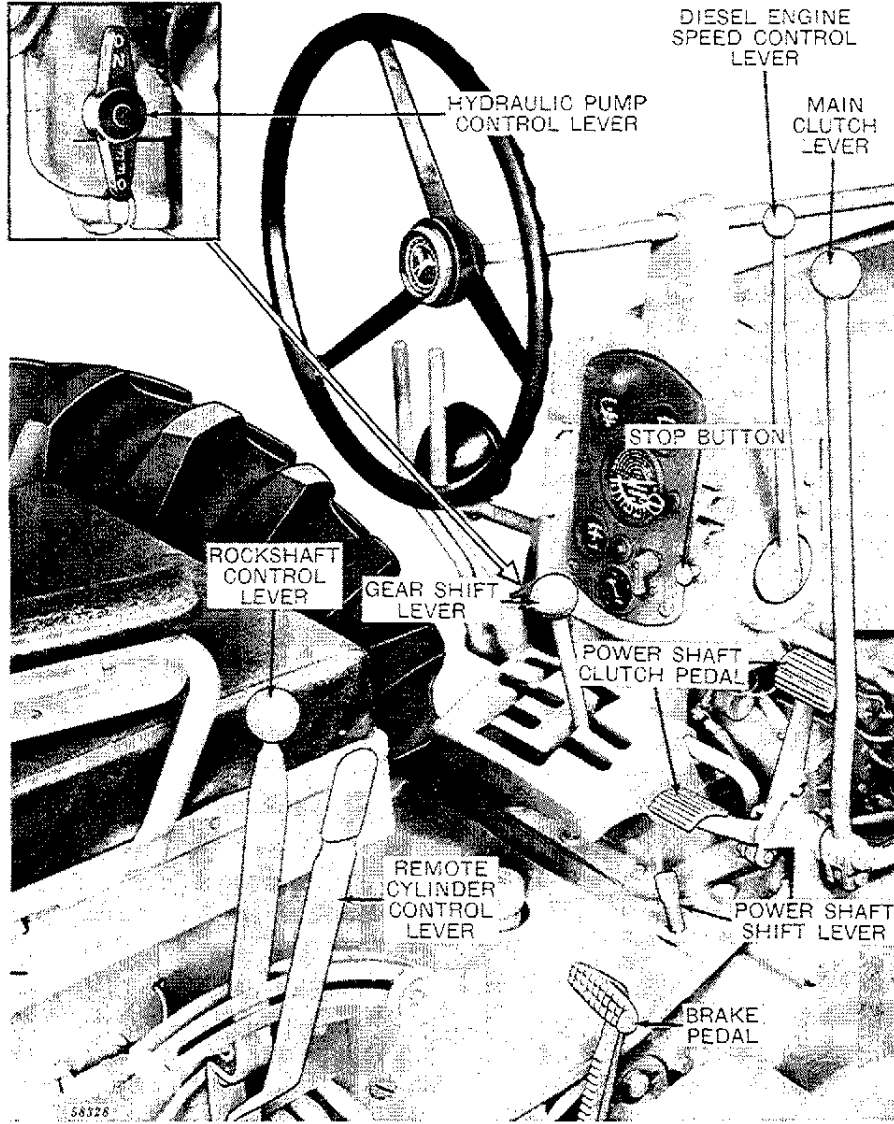
### DECOMPRESSION LEVER.

Pulling the decompression lever to the rear relieves compression in the diesel engine for starting purposes.

### CRANKING ENGINE CLUTCH LEVER.

The cranking engine clutch lever has two functions. During the first half of its travel as it is pulled to the rear it engages the cranking engine transmission pinion with the diesel engine flywheel. During the remainder of the lever travel the cranking engine clutch is engaged.

● OPERATING CONTROLS ●

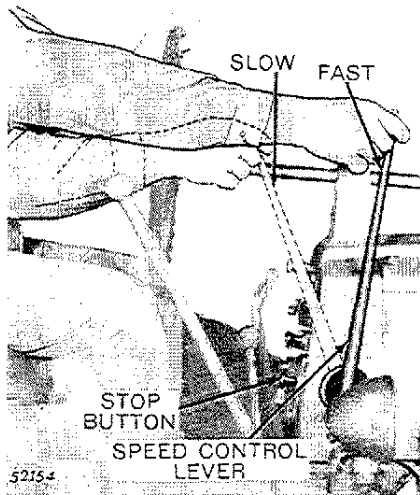


*Operating Controls*

## ● OPERATING CONTROLS ●

### SPEED CONTROL LEVER.

The lever mounted on the right-hand side of the hood support regulates the speed of the Diesel engine. Pushing it forward increases the speed and pulling it back decreases the speed. *NOTE: It is good practice to operate the engine with speed control lever in full forward position.*



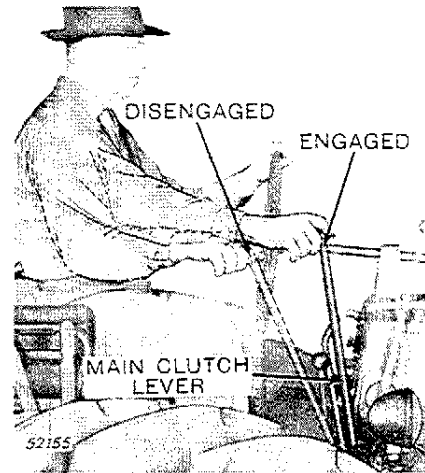
*Speed Control Lever Stop Button*

### SPEED CONTROL LEVER STOP BUTTON.

The diesel engine speed control lever stop button, located on the right-hand side of the dash, enables the operator to slow the diesel engine quickly to idle speed without danger of the engine stopping. When the button is pulled out, it allows the diesel engine speed control lever to be moved to the "stop" position which cuts off delivery of fuel to the engine by the injection pumps causing the engine to stop.

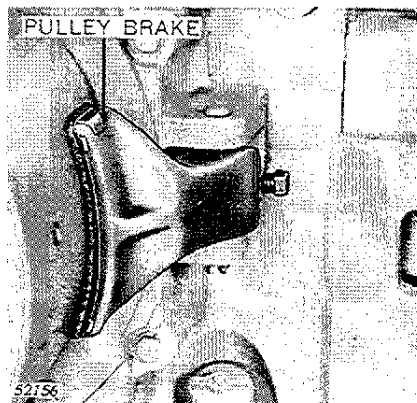
### CLUTCH LEVER AND PULLEY BRAKE.

Power is applied gradually and smoothly to the drive system by slowly pushing the clutch lever forward. When the tractor picks up speed, a quick forward thrust on the lever snaps the clutch into engagement. Pull back on lever to disengage the clutch.



*Clutch Lever*

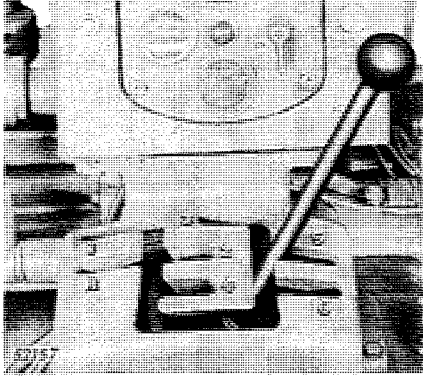
A pulley brake, which is applied when the clutch lever is pulled back, stops the pulley from rotating, permitting easy shifting of the transmission gears. *NOTE: Do not use pulley brake to stop the tractor.*



*Pulley Brake*

### GEAR SHIFT LEVER.

The gear shift lever is used to select the proper gear depending upon the load and speed. Familiarize yourself with the shifting before attempting to operate the tractor.



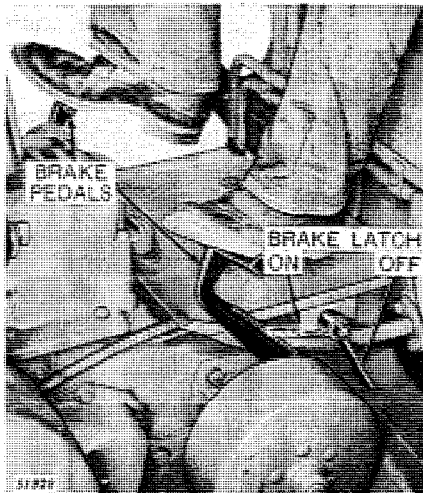
*Gear Shift Lever Positions*

### BRAKES.

Individual, foot-operated brakes make possible short turns.

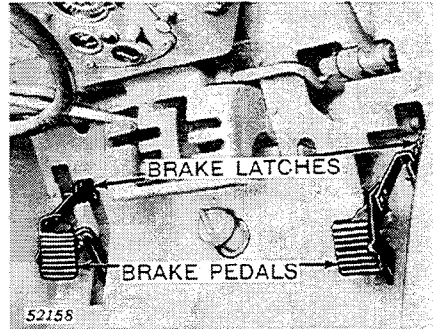
For safe stopping at high transport speeds, apply the brakes **evenly** to avoid drawing the tractor to one side.

A brake latch is conveniently located for locking each brake when doing belt work or when holding the tractor on a hill or incline.



*Brake Pedals and Latches on General-Purpose Tractors*

On Standard Tractors, the brakes are locked by tipping the top of the pedal forward to engage the latch. The brakes are released by pressing on the heel of the pedals.

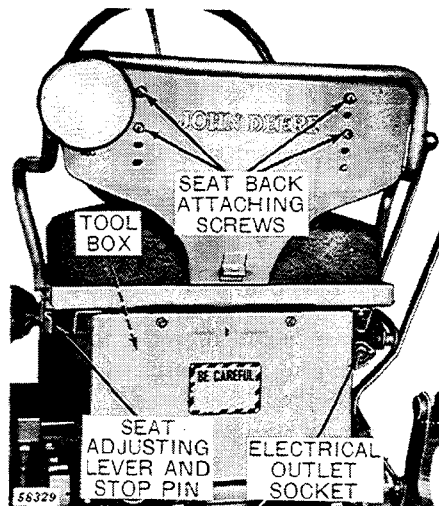


*Brake Pedal and Latch on Standard Tractors*

### SEAT, BATTERY COMPARTMENT, ELECTRICAL OUTLET SOCKET AND TOOL BOX.

#### Standard Seat.

The roomy seat adds much to operator comfort and lessens fatigue. There is an adjustment on the left-hand side for moving the seat forward and backward to suit the convenience of the operator. The back of the seat can be adjusted up or



*Standard Seat, Electrical Outlet Socket, Battery Compartment and Tool Box*

down by means of the attaching screws.

#### Battery Compartment.

The battery is located in a compartment under the seat where it is readily accessible for periodic checking and service.

#### Electrical Outlet Socket.

A convenient electrical outlet socket is located on the right-hand side of the battery box.

#### Special Float Ride Seat.

A special float ride seat having rubber torsion springs and a shock absorber is available as optional equipment. This seat has the same forward and backward adjustment and seat back adjustment as the regular seat but, in addition, the tension on the rubber springs can be adjusted to suit each rider. Adjustment is made by turning the handle located at the back of the seat. An

instruction plate above the handle tells how to make the adjustment.

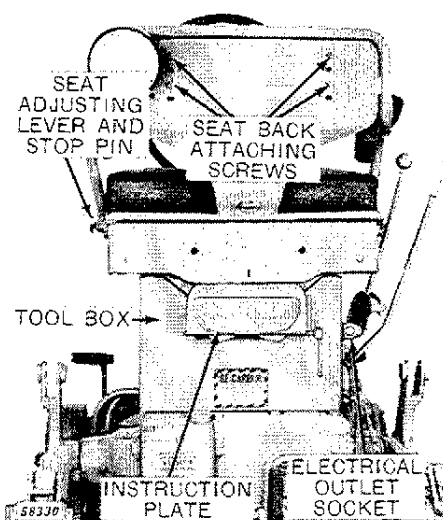
**CAUTION: Do not adjust the rubber torsion springs while a rider is on the seat.**

#### Tool Box.

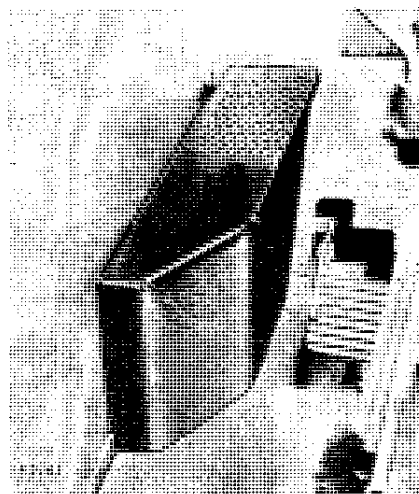
A tool box is conveniently located to provide space for storing tools and other articles.

On general-purpose tractors the tool box is located under the seat.

On Standard Tractors the tool box is located on the platform beside the left fender. A lid prevents loss of articles stored in the tool box.



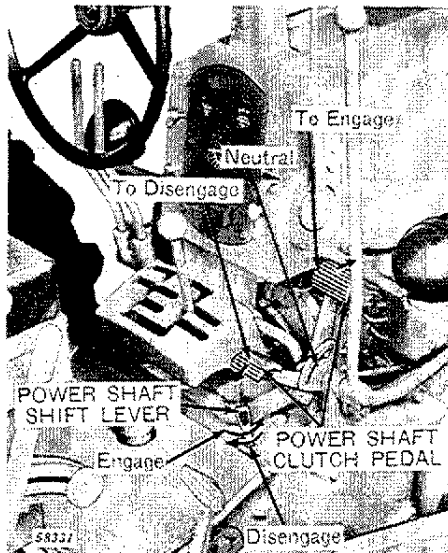
*Float Ride Seat, Electrical Outlet Socket, Battery Compartment and Tool Box*



*Tool Box on Standard Tractor*

### POWERSHAFT SHIFT LEVER.

The powershaft is engaged by the powershaft shift lever located to the right of the gear shift lever. Turn the lever counter-clockwise to engage the powershaft and clockwise to disengage the shaft. **CAUTION: Do not engage the powershaft shift lever while the engine is running. Before engaging the lever, read the operating instructions on page 34.**



*Powershaft Shift Lever and Clutch Pedal*

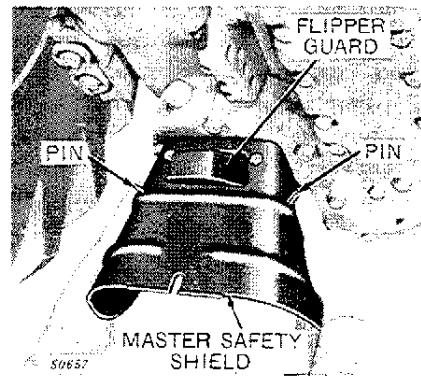
### POWERSHAFT CLUTCH PEDAL.

A powershaft clutch makes it easy and convenient to start or to stop the powershaft.

The clutch is operated by a double pedal located to the right of the gear shift lever. Pushing forward on the upper pad of the double pedal engages the clutch. Pushing down on the lower pad disengages the clutch and applies a brake to keep the shaft from turning when not in use. For further information see page 34.

### POWERSHAFT MASTER SAFETY SHIELD.

A master safety shield is mounted over the powershaft to protect the operator. This master shield should be removed only when it might interfere with operation of mounted integral equipment. To remove the shield, press up on the two pins protruding from the sides and lift the shield from the tractor. Replace the master shield immediately upon removal of the equipment. Install the master safety shield any time the powershaft is used.



*Powershaft Master Safety Shield and Flipper Guard*

### POWERSHAFT FLIPPER GUARD.

Never remove the powershaft flipper guard from the tractor. Do not operate the tractor with the end of the powershaft exposed. If the flipper guard is damaged, repair or replace it immediately.

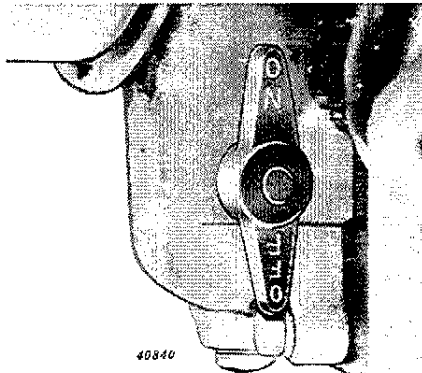
**CAUTION: Make it a rule never to dismount from the tractor without first disengaging the powershaft.**

### POWR-TROL PUMP CONTROL LEVER.

The Powr-Trol pump is engaged by a control lever located below the flywheel housing.

**CAUTION:** Do not engage the Powr-Trol pump while the engine is running. Read operating instructions on page 35.

To engage the pump turn the control lever counter-clockwise until the word "ON" is on top, then start the Diesel engine. The pump can be disengaged while the Diesel engine is running at slow idle.



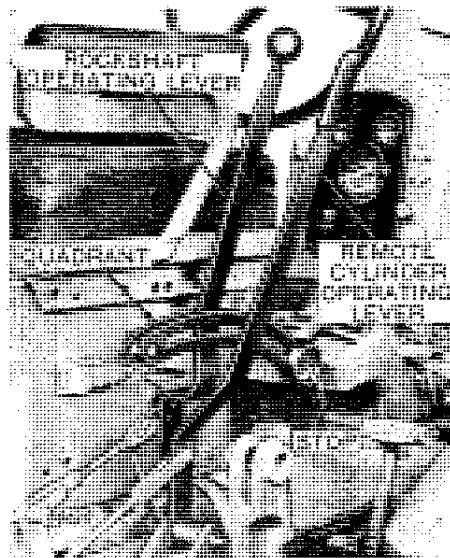
*Powr-Trol Pump Control Lever*

### POWR-TROL OPERATING LEVERS.

#### Rockshaft Operating Lever.

The rockshaft is operated by a lever located to the right of the seat. Moving the lever rearward raises the implement while moving

the lever forward lowers the implement. A depth-control stop on the quadrant can be set so that the implement always returns to the same working depth after it has been raised. For further information see page 36.

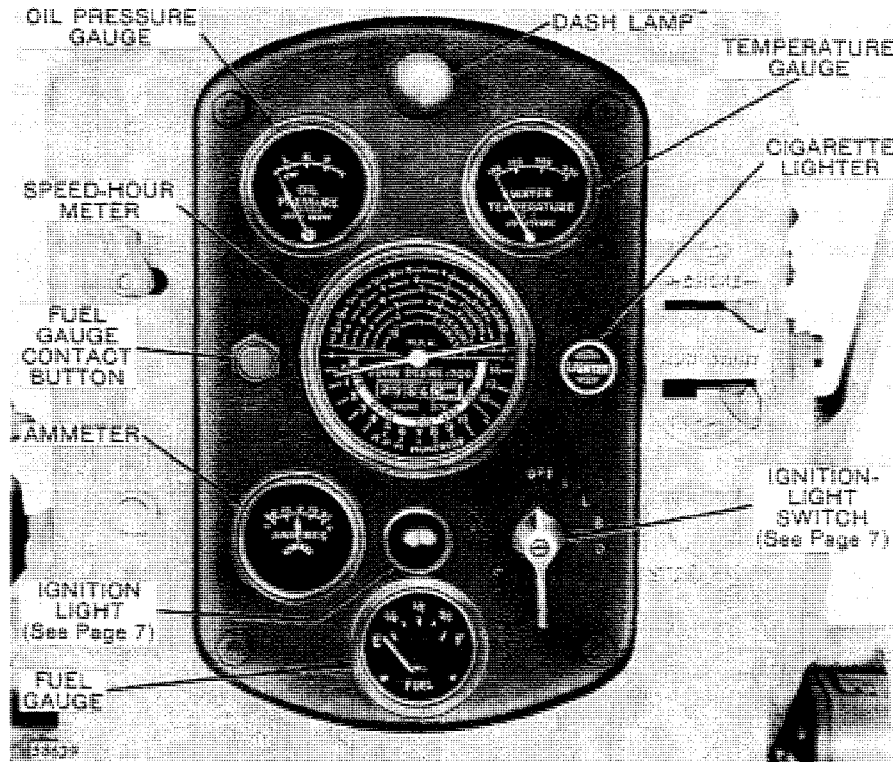


*Powr-Trol System Operating Levers*

#### Remote Cylinder Operating Levers.

Your tractor can be equipped to operate either one or two remote hydraulic cylinders. The cylinders are operated by the outer lever or levers located to the right of the seat. Implements are lowered by moving the proper lever forward and raised by moving the lever to the rear. For further information see page 48.

## ● INSTRUMENT PANEL ●



*Instrument Panel*

### TEMPERATURE GAUGE.

The temperature gauge indicates the temperature of the coolant in the cooling system. Engine temperatures are controlled by a thermostat in each cylinder water outlet.

### DIESEL OIL PRESSURE GAUGE.

The oil pressure gauge indicates whether or not the diesel engine oil pump is working. The indicator hand on the gauge should rest between the letters "M" and "H" when the engine is hot and operating at fast idle.

**If gauge does not indicate pressure, stop the engine immediately.**

### CRANKING ENGINE IGNITION AND OIL PRESSURE INDICATOR LIGHT.

When ignition-light switch is turned "on," the oil indicator red light comes on. After the engine starts and oil pump is working the red light goes out.

When ignition-light switch is turned "off," the oil indicator light is cut off.

**If red light stays "on" while cranking engine is running, stop engine immediately.**

### AMMETER

The ammeter indicates whether or not the generator is charging the batteries.



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**FUEL GAUGE.**

The electric fuel gauge indicates the amount of fuel in the main fuel tank. The fuel gauge does not register with the engine stopped until the contact button to the left of the speed-hour meter is pushed.

**DASH LAMP.**

A small lamp is provided to illumi-

nate the dash at night. It is turned on by the ignition-light switch when the main lights are turned on.

**CIGARETTE LIGHTER.**

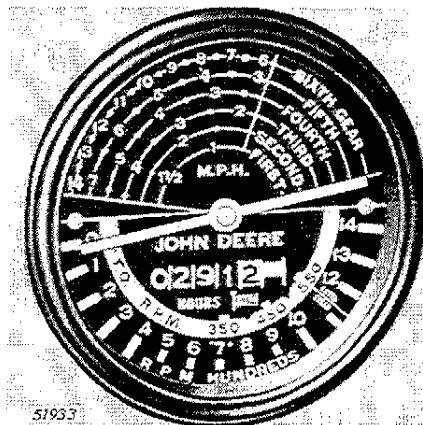
A cigarette lighter (special attachment) is provided for your convenience on the instrument panel.

**SPEED-HOUR METER.**

The speed-hour meter (special attachment), located in the center of the instrument panel, can be used to determine the following:

Shown on

- (1) Ground Travel Speed in All Gears... Top Half of Dial
- (2) Power Take-Off Shaft Speed (rpm)... White Section of Lower Dial
- (3) Engine Speed (rpm)..... Bottom Portion of Lower Dial
- (4) Accumulated Hours of Service..... Center Portion of Lower Dial



*Speed-Hour Meter Dial*

**CAUTION!**  
 Be sure gear shift lever is in neutral before starting engine.  
 Never refuel tractor while engine is running or extremely hot. Do not smoke or use an oil lantern when working around inflammable fuels, especially when refueling the tractor.

25389

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