

# 99 Two-Row Self-Propelled Cotton Picker



## OPERATORS MANUAL 99 Two-Row Self-Propelled Cotton Picker

OMN63160 A0 English

**OMN63160 A0**

LITHO IN U.S.A.  
ENGLISH



## TO THE PURCHASER

Your new cotton picker was built to rigid manufacturing standards. Material and workmanship are the best. It will serve you in direct proportion to the care you give it. Depreciation, in a machine of this kind, is an item of expense that must be considered. How long it will last and continue its good work is a matter entirely in your hands.

The way you operate your cotton picker and the care you give it have much to do with the service and satisfaction you will get from it. This manual has been carefully prepared and illustrated to show you what to do and when to do it. It explains the adjustments that are built into the machine and gives instructions on when and how to make these adjustments. The information given in this Manual will afford a clear understanding of the fundamentals of cotton picker harvesting. The best use of these fundamentals to suit the conditions in which the machine is operating is a responsibility that is completely up to the operator.

If you find you need information not covered in this manual or if your cotton picker requires special servicing, take advantage of the facilities offered by your John Deere dealer. He has trained mechanics, who are kept informed on the best methods of servicing and can give you prompt, "know-how" service in the field or in his shop.

**Location References.** "Right" and "Left," "Front" and "Rear" refer to the operator's "Right" or "Left" and "Front" or "Rear" when facing the same direction machine is headed or traveling.

"Clockwise" refers to a shaft, screw, or similar part turning to the operator's "Right," or like the hands of a clock. "Counter-clockwise" refers to the operator's "Left."

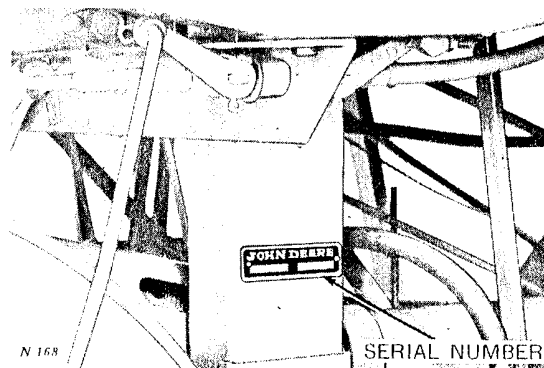
### SERIAL NUMBER

You will find the serial number of your cotton picker stamped on a plate located on the left-hand platform post. The engine serial number is stamped on a plate located just forward of the engine flywheel housing. Write these serial numbers in the space provided below for ready reference later.

PICKER SERIAL No.....

ENGINE SERIAL No.....

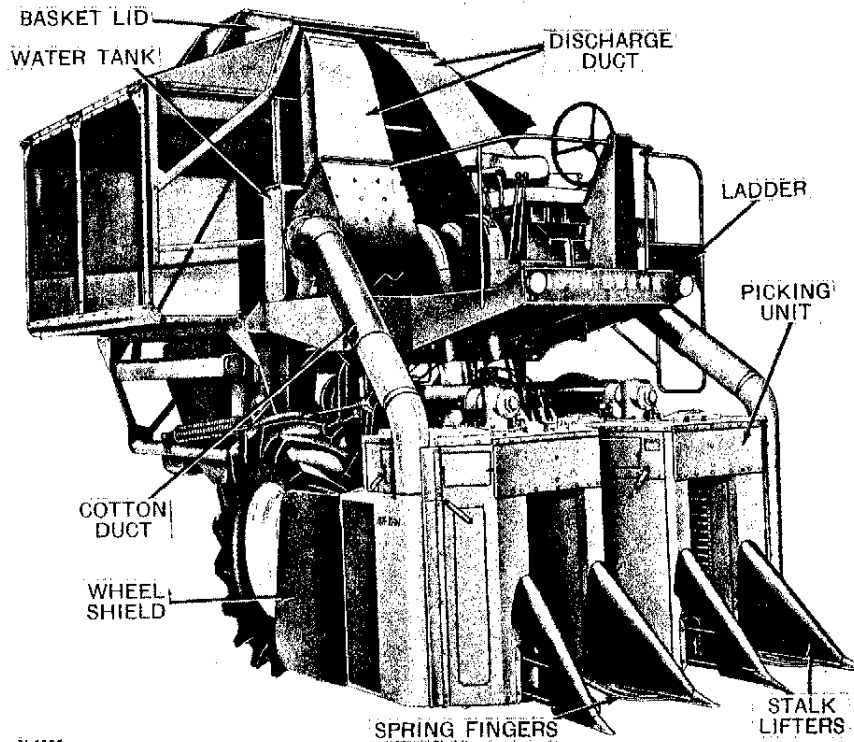
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## DESCRIPTION AND SPECIFICATIONS



N 1335

### *Facts And Figures*

#### Row Width

Will Pick . . . 38- or 40-in. rows  
Shipped set for 40-in. rows

#### Ground Speeds

Picking Speeds 2.1 and 2.7 mph  
Transport  
Speed . . . . . 8.3 to 11.0 mph  
Reverse Speed . . . . . 3.2 mph

#### Capacities

Cotton Basket 1600  
lbs. Seed Cotton; with  
Extension . . . . . 2100 lbs.  
Gasoline Tank . . . 33 U.S. gals.  
LP-Gas Tank  
(85% Full) . . . . 41 U.S. gals.  
Cooling System . . . 6 U.S. gals.  
Water Tank . . . . 67 U.S. gals.  
Crankcase and Oil  
Filter . . . . . 5 U.S. gals.

#### Shipping Weight

High Drum . . . . . 11,950 lbs.  
Low Drum . . . . . 11,250 lbs.

#### Tires

Front Drive Wheels 15x26, 6- or  
10-ply Bar or Low Profile  
Tread  
Rear Guide Wheel 7.50x20, 10-  
ply Triple Rib

#### Ground Clearance Under

Main Axle . . . . . 34 in.

#### Dimensions

Length, Over-All . . . 19 ft. 8 in.  
Width, Over-All . . . 9 ft. 11 in.  
Height:  
(Regular) . . . . . 13 ft. 2 in.  
(With Basket Ext.) 14 ft. 5 in.

**Dimensions—Continued****Tread, Center-to-**

Center of Tires... 79-1/8-in.

Wheel Base..... 109 in.

**Engine**

Make..... John Deere  
                   NA217G (Gasoline)  
                   NA217L (LP-Gas)

No. of Cylinders..... 6

Bore..... 3-5/8 in.

Stroke..... 3-1/2 in.

Displacement..... 217 cu. in.

**Horsepower:**

Gasoline..... 77 hp

LP-Gas..... 77 hp

**Tappet Clearance:**

Intake..... .015 (cold)

Exhaust..... .015 (cold)

Firing Order..... 1-5-3-6-2-4

Valve Location... Valve-in-head

**Speeds:**

Rated Load..... 2500 rpm

Idle..... 600 rpm

Carburetor... Marvel-Schebler  
                   (Single Up Draft)

Type of Fuel. Regular Gasoline  
                   (except LP-Gas engines)

Oil Filter. Regular Equipment

Clutch..... Borg and Beck  
                   (Single Plate)

**Cooling**

System..... Water,  
                   Pressure-Type

Ignition System.... Battery—  
                           12-Volt Distributor

Air Cleaner..... Heavy-duty  
                           oil bath with pre-cleaner screen

**Picking Units**

No. of Units..... 2

No. of Picking Drums..... 4

**No. of Picking Bars:**

Front Drum..... 16

Rear Drum..... 12

**No. of Spindles:****Per Picker Bar:**

Low Drum..... 14

High Drum..... 20

**Total Spindles on Picker:**

Low Drum..... 784

High Drum..... 1120

**Optional Equipment**

Manual or Power Steering

Gasoline or LP-Gas Engine

Low or High Lift Basket

Low Profile Tires (15 x 26, 6- or 10-ply)

Bar Tread Tires (15x26, 6- or 10-ply)

**Extra Equipment**

Tunnel Grids

Pressure Plate Ribs

Basket Extension

High-Lift Basket (Field Conversion)

Power Steering (Field Conversion)

Safety Lamp

Fan Drive Belt Shield

Picking Unit Pressure Trip  
                   Clutch

*(Specifications and design subject to change without notice.)*

## *Get Acquainted With Your New Picker*

The 99 is a practical two-row cotton picker. The operating costs are low. It is easy to handle and transports fast.

The picker consists of four basic elements.

1. Picking Units.
2. Operator's Platform and Controls.
3. Fan Delivery System and Basket.
4. Propelling Mechanism.

These basic components are mounted in such a way that the cotton picker is well balanced and the picking operation is very efficient.

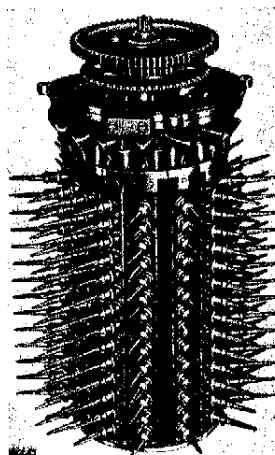
### **PICKING UNITS.**

The heart of the picker is the highly efficient spindle-type picking unit. There are two drums of spindles per picking unit. The front drum consists of 16 cam-controlled picker bars and the rear drum consists of 12 cam-controlled picker bars. On each picker bar there are 14 spindles in a low drum unit or 20 spindles in a high drum unit. In all there are 784 barbed spindles for the low drum units or 1120 barbed spindles for the high drum units picking cotton from the plants.

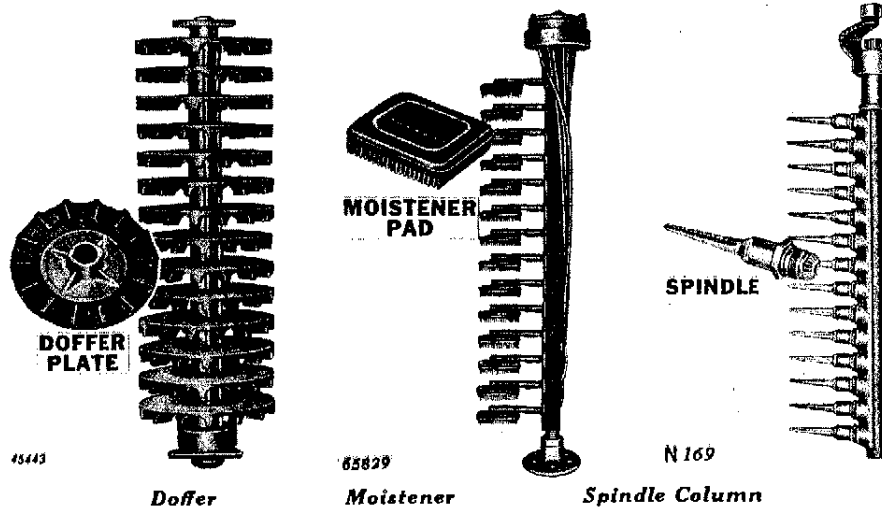
There is a doffer assembly for each spindle drum to unwind the cotton from the spindles and deliver it to a chute in the door. Each assembly consists of a shaft with 14 or 20 aluminum alloy doffer plates that have the rubber doffers molded to the plate.

There is also a spindle moistener column for each spindle drum that wipes each spindle with water to keep it clean for a better job of picking cotton.

The stalk lifters guide the cotton plant into the picking zone of the unit where the grid bars and pressure plates take over to hold the plant in position for picking.



**Front Picking Drum**



### HOW THE PICKING UNIT WORKS.

Knowing what is going on inside the picking unit will be a great help to you. It will give you a better understanding of the capabilities and limitations of a mechanical cotton picker. You will also know why certain adjustments are necessary and when to make the adjustments.

The illustration on the next page shows what happens during the picking cycle. At "A" the spindles go under the moisteners and are cleaned of lint, plant sap and stain by a film of water.

Next the cleaned spindles start through the grid bars at "B." The speed of the spindle drums is synchronized with the picker ground speed (2.1 or 2.7 miles per hour) so the spindles have no forward or backward motion in relation to the cotton plant. The rotating spindles simply poke straight into the cotton plant and then pull straight back. Because of this, the spindles can brush past unopened bolls and the stalks, leaving them undamaged.

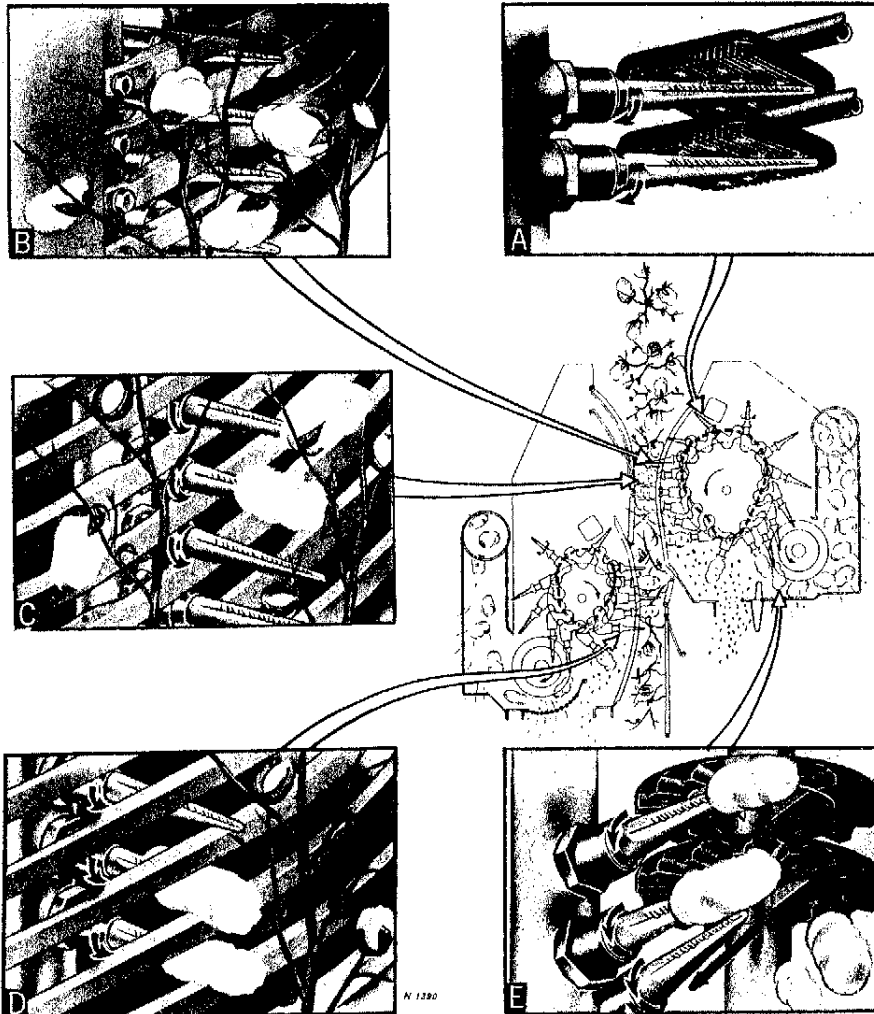
At "C" the spindles are all the way out and wrap the cotton fibre onto the spindle barbs. Then the spindles move back through the grid bars, pulling the cotton out of the open bolls and through the grid bars as shown at "D."

At "E" the cotton is being removed from the spindles by the doffer. The spindles move backwards under the doffer so the doffer pads can unwind the cotton from the spindles.

### PLATFORM AND CONTROLS.

You are right on top of the picking operation when at the controls of the 99 Cotton Picker. You are up high out of the dust and dirt and have maximum visibility of everything that is going on.

All controls are within easy reach. Just make a couple of trips up and down a field and you will be perfectly at home on this cotton picker.



*What Happens Inside the Picking Unit*

#### **FAN DELIVERY SYSTEM AND BASKET.**

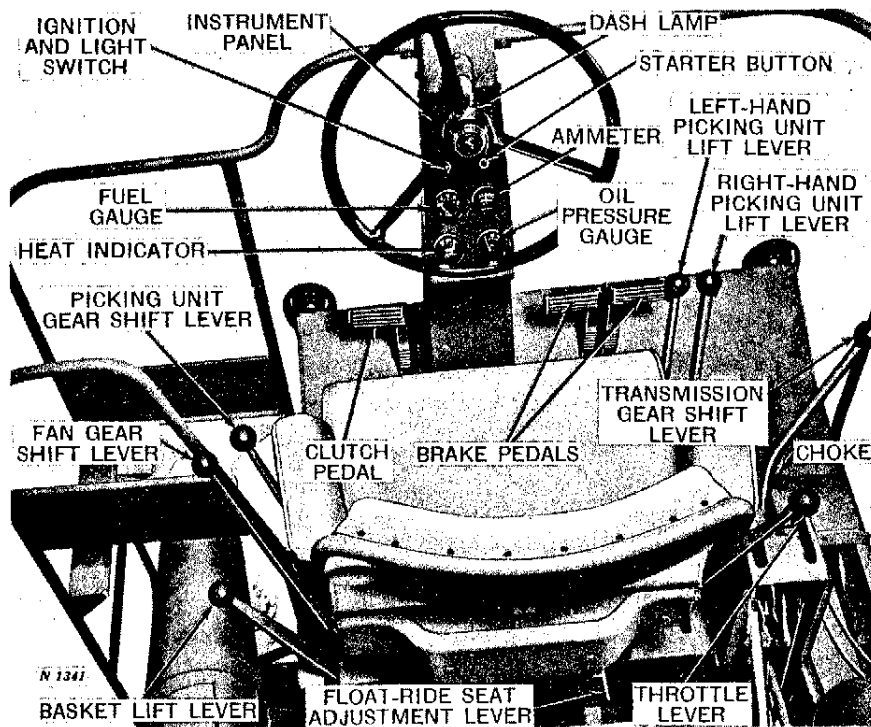
A powerful double-rotor fan provides individual suction for each picking drum. The cotton is sucked out of the picking unit through metal suction ducts to the fan and then is blown into the basket.

The fan has spiral-shaped blades so the cotton is handled with the least amount of damage to the seed.

The big-capacity basket will hold 1600 pounds of seed cotton or with the basket extension, the basket will hold 2100 pounds so you will have to dump it fewer times during a day. Two powerful double-acting hydraulic cylinders raise and lower the basket for dumping. The lid opens and closes automatically as the basket is raised and lowered.



## CONTROLS



All controls for the operation of the cotton picker are located on the operator's platform. The high, roomy platform provides a good view of both picking units.

### INSTRUMENT PANEL.

The instrument panel contains the ammeter, oil pressure gauge, heat indicator, ignition switch, light switch, starter button, fuel gauge (gasoline only) and dash lamp.

**Ammeter**—Right-hand upper gauge on instrument panel, indicates rate of electric current flow being applied to battery by generator, or rate of discharge from battery.

**Heat Indicator**—Left-hand lower gauge on the instrument panel indicates temperature of water in cooling system. If temperature gauge needle raises above its normal operating position, stop engine and determine cause.

**Oil Pressure Gauge**—Right-hand lower gauge on instrument panel indicates pressure of engine lubricating oil. Pressure reading may vary according to operating conditions. If pressure drops to zero at any time engine is running, stop engine immediately and determine cause. This gauge does not indicate amount of oil in crankcase.

**Fuel Gauge**—Left-hand upper gauge indicates the amount of fuel in the fuel tank if picker has a gasoline engine.

*NOTE: If picker is equipped for LP-Gas, a blank button plug replaces the instrument panel fuel gauge. A gauge on the fuel tank is used instead. See page 10.*

### **BRAKES.**

The efficient mechanical-type brakes can be applied individually or simultaneously. The individual pedals have latches so the brakes can be locked to hold the picker on a hill or incline.

### **CLUTCH PEDAL.**

Depressing the clutch pedal will disconnect the flow of power from the engine to the transmission and also the picking units and fan drives.

### **CHOKE.**

The choke is operated to draw extra gasoline into the engine for starting. Pull button out to choke engine; push in for normal operations.

### **THROTTLE LEVER.**

The throttle lever controls engine speed by regulating the governor. Move lever forward to increase speed.

### **BASKET LIFT LEVER.**

This lever controls the unloading of the basket. Move it to the rear to raise the basket and forward to lower the basket. Two hydraulic lift cylinders raise the basket so it can be emptied in a trailer to the left of the picker.

### **FAN GEARSHIFT LEVER.**

This lever engages and disengages the suction fans and the water shut-off valve. To engage, depress clutch pedal and move the lever forward.

### **TRANSMISSION GEARSHIFT LEVER.**

The transmission has four speeds forward and one speed in reverse (two locations) with two neutral positions. The positions of the gearshift lever for the various transmission speeds are shown on the gearshift plate.

### **PICKING UNIT LIFT LEVERS.**

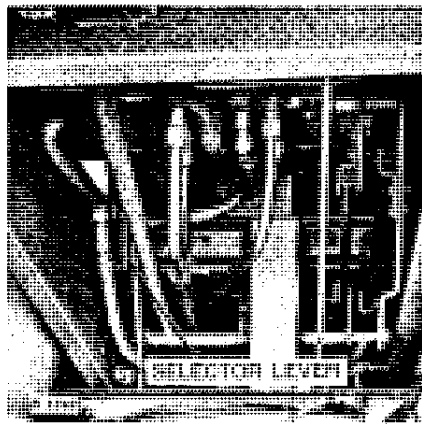
These levers, located at the right of the operator's platform, control the height of the picking units individually or simultaneously through the hydraulic lift cylinders. (Also see Picking Unit Lift Selector on the next page.) The picking units can be set "on the go" at any desired height above the ground. At maximum height, the rear of the picking unit is 14 inches above the ground.

**PICKING UNIT STOP CRANKS.**

Individual stop cranks for each picking unit are located in front of each suction fan, in easy reach of the operator. By using the cranks, the best minimum picking unit height for a particular field can be set. After the picking units are raised at the end of the field, just lower them as far as the stops permit when re-entering the rows and they will be right back at the desired minimum working height.

**PICKING UNIT GEARSHIFT LEVER.**

This lever engages and disengages the picking units. To engage, depress clutch pedal and move lever forward for low range operation, or rearward for high range. Neutral is the middle position.

**PICKING UNIT LIFT SELECTOR.**

The picking unit lift selector lever on the hydraulic valve, located beneath the operator's platform directly below the seat, controls the hydraulic circuits for individual or simultaneous lift of the picking units. See page 69.

**Individual Operation.**

*NOTE: Be sure upper and lower unit tie brackets and the lift arm spacer and tie bolt have been removed. Turn the selector lever to the vertical position. The picking units can now be raised and lowered individually.*

**Simultaneous Operation.**

Turn selector lever to the horizontal position and install lift arm tie bolt and spacer. Now either lift lever will raise both units simultaneously. For best simultaneous operation, connect the units together with upper and lower unit tie brackets.

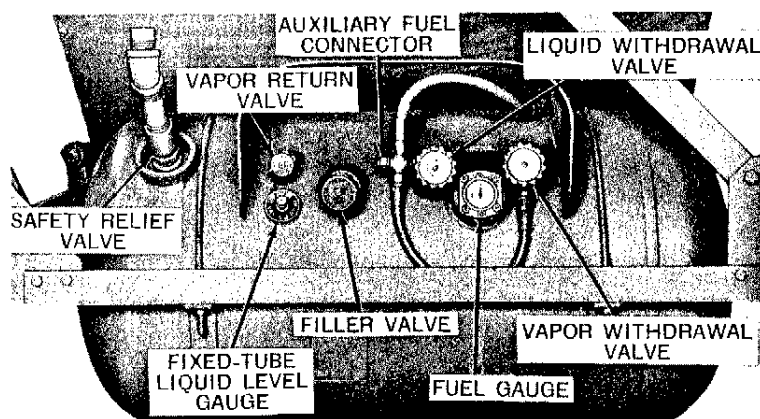
**FLOAT-RIDE SEAT.**

The float-ride seat has rubber torsion springs and a shock absorber. This seat has forward and backward adjustments and a seat back adjustment. 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 on side of seat tells how to make the adjustment.

## LP-GAS ENGINE CONTROLS

A cotton picker that has an LP-Gas engine, has controls peculiar to LP-Gas operations in addition to those previously described.

**CAUTION:** Before attempting to use the LP-Gas engine see page 21 for information on LP-Gas and page 22 for instructions on how to fill the fuel tank.



N 1343

### FUEL TANK.

The fuel tank is of heavy welded steel construction with a fuel capacity of 41 gallons.

**CAUTION:** The tank has a total volume of 49 gallons but it must never be filled with more than 41 gallons, which is 85% of its total volume, because LP-Gas expands as the temperature rises. A tank 85% full of fuel will be 100% full after a temperature increase of 80°F. Complete instructions for filling the fuel tank are given on pages 22 and 23.

### FILLER VALVE.

The FILLER valve is used for filling the tank. A double check valve, built into the filler valve, automatically prevents any fuel withdrawal or escape.

### VAPOR-RETURN VALVE.

The VAPOR-RETURN valve is also used when filling the tank. This valve permits vapor to return to the storage tank as the cotton picker fuel tank is being filled with liquid, thus equalizing the pressures between the two tanks and permitting easier filling. A built-in excess-flow valve automatically closes if flow through the vapor-return valve becomes excessive. This is a safety device designed to stop flow of vapor if the vapor-return line is broken or disconnected.

**LP-GAS ENGINE CONTROLS—Continued****FIXED-TUBE LIQUID-LEVEL GAUGE.**

This gauge is used when the tank is being filled. Opening the gauge, when the tank is partially full, releases a fog or mist of fuel from the outlet. When the tank is 85% full, the fog or mist will change to a spray of liquid fuel. During the filling process the gauge should be opened only momentarily at frequent intervals. It should never be left open to let vapor escape while liquid is being pumped into the tank. To do so is extremely hazardous and violates all fire and safety codes. Use the vapor-return valve to reduce the pressure in the cotton picker fuel tank while it is being filled.

**SAFETY RELIEF VALVE.**

The safety relief valve will open and permit vapor to escape if the pressure in the tank becomes too great. The valve is set to open at 312 pounds per square inch pressure. If the safety relief valve continually opens in hot weather, see your John Deere dealer and consult your fuel dealer who may be able to supply a different blend of fuel, especially prepared for use in hot weather.

**FUEL GAUGE.**

The fuel gauge indicates the liquid level in the fuel tank. It is calibrated to show the percentage of liquid fuel in the tank.

**LIQUID AND VAPOR WITHDRAWAL VALVES.**

These valves control the flow of fuel to the engine. The VAPOR valve, when opened, supplies vapor from the top of the fuel tank for starting the engine.

The LIQUID valve permits withdrawal of liquid fuel from the tank for normal operation.

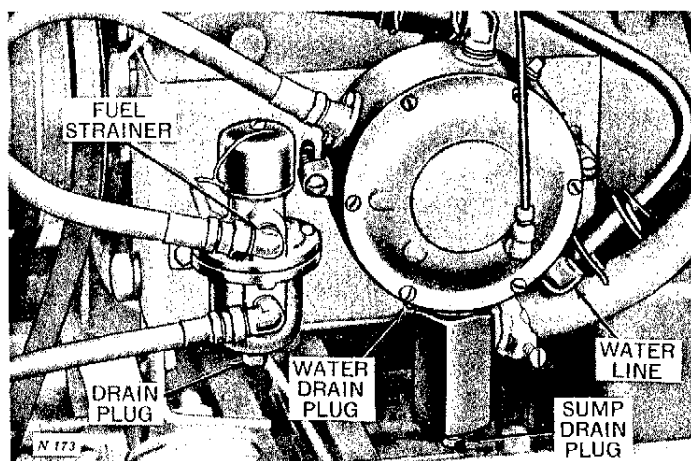
Both valves are equipped with excess-flow valves which automatically close whenever the flow exceeds the normal amount used to operate the cotton picker. These valves must be opened slowly to prevent closing the excess-flow valves. If a fuel line is accidentally broken, the excess-flow valve instantly trips and permits only a small amount of gas to flow; the excess-flow valves do not shut off the flow completely. If one of the excess-flow valves closes, it can be reset by closing the withdrawal valve manually.

**AUXILIARY FUEL CONNECTOR.**

The cross connector on the liquid valve connection provides a handy means of attaching a portable pressure tank of LP-Gas fuel if the cotton picker fuel tank is empty and it is necessary to run the cotton picker to the fuel storage tank.

## LP-GAS ENGINE CONTROLS—Continued

## CONVERTER



From the fuel strainer the fuel passes through the automatic shut-off valve and enters a converter which converts the liquid fuel into a gas and reduces the pressure until it is just right for efficient operation of the engine.

Heat must be applied to vaporize the fuel and to prevent freezing of the converter parts which get extremely cold due to heat being absorbed by the fuel as it expands from a liquid into a gas. This heat for vaporizing the fuel is supplied from the cotton picker cooling system. Coolant is taken from the water outlet manifold and flows through passages in the converter. The outgoing coolant is piped to the water pump for recirculation.

Because the engine is started on vapor from the top of the fuel tank, no initial heat is required.

Since the coolant in the cotton picker cooling system circulates through the converter it is important to use only clean, soft water in the cooling system. Hard water, which might cause formation of scale in the converter, should be avoided. Use of a rust inhibitor is recommended.

If the engine cooling system is drained to prevent freezing during cold weather, drain the converter by removing drain plug on the bottom of the converter. Also drain the sump at the bottom of the converter and the fuel strainer.

Be sure both vapor and liquid withdrawal valves are closed, ignition switch is turned off and engine is cold before removing plugs. See page 15.

**CAUTION:** Do not attempt to repair or adjust the converter. Service work should be performed only by qualified servicemen. See your John Deere dealer.

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