JOHN DEERE
699
COTTON PICKER

JOHN DEERE

OPERATORS MANUAL

JOHN DEERE 699
COTTON PICKER

OMN159322 A3 English

JOHN DEERE DES MOINES WORKS
OMN159322 A3

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

To the Purchaser

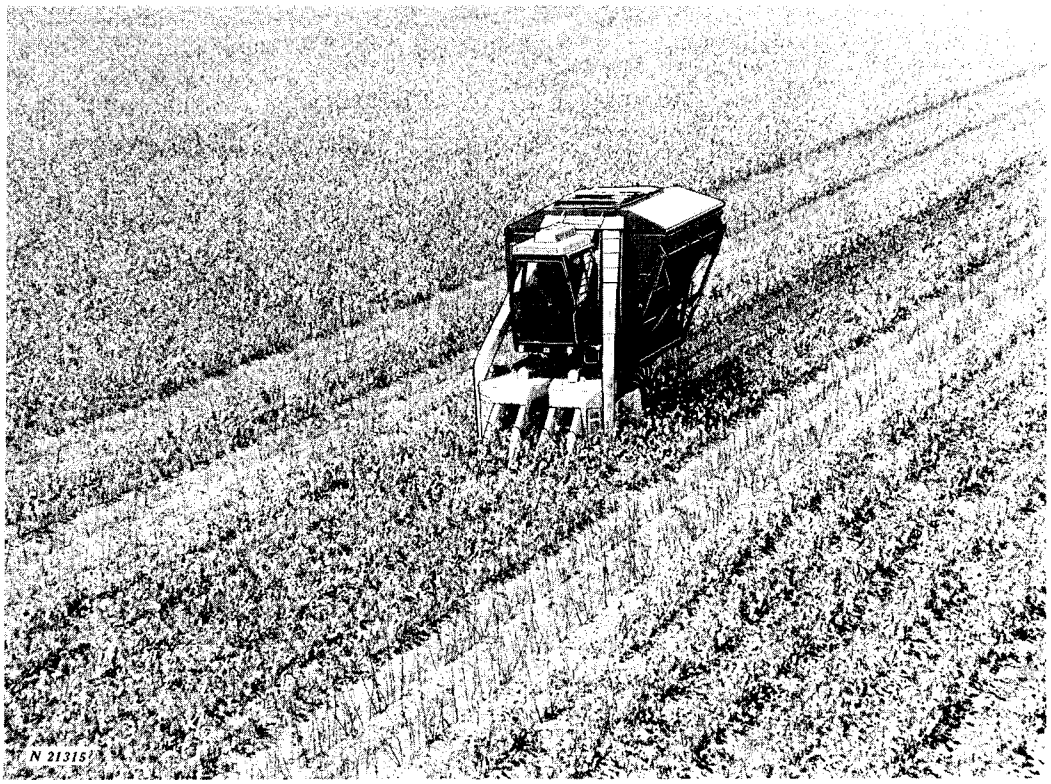
This new cotton picker was carefully designed and manufactured to give years of dependable service. To keep it running efficiently, read the instructions in this operator's manual. Each section is clearly identified so you can easily find the information you need—whether it is description, controls and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

"Right-hand" and "left-hand" side is determined by facing the direction the cotton picker will travel when in use.

Record the serial numbers in the space provided on page 109. Your dealer needs this information to give you prompt, efficient service when you order parts or attachments. If your cotton picker requires replacement parts, go to your John Deere dealer where you can obtain Genuine John Deere parts—accept no substitutes.

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

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.



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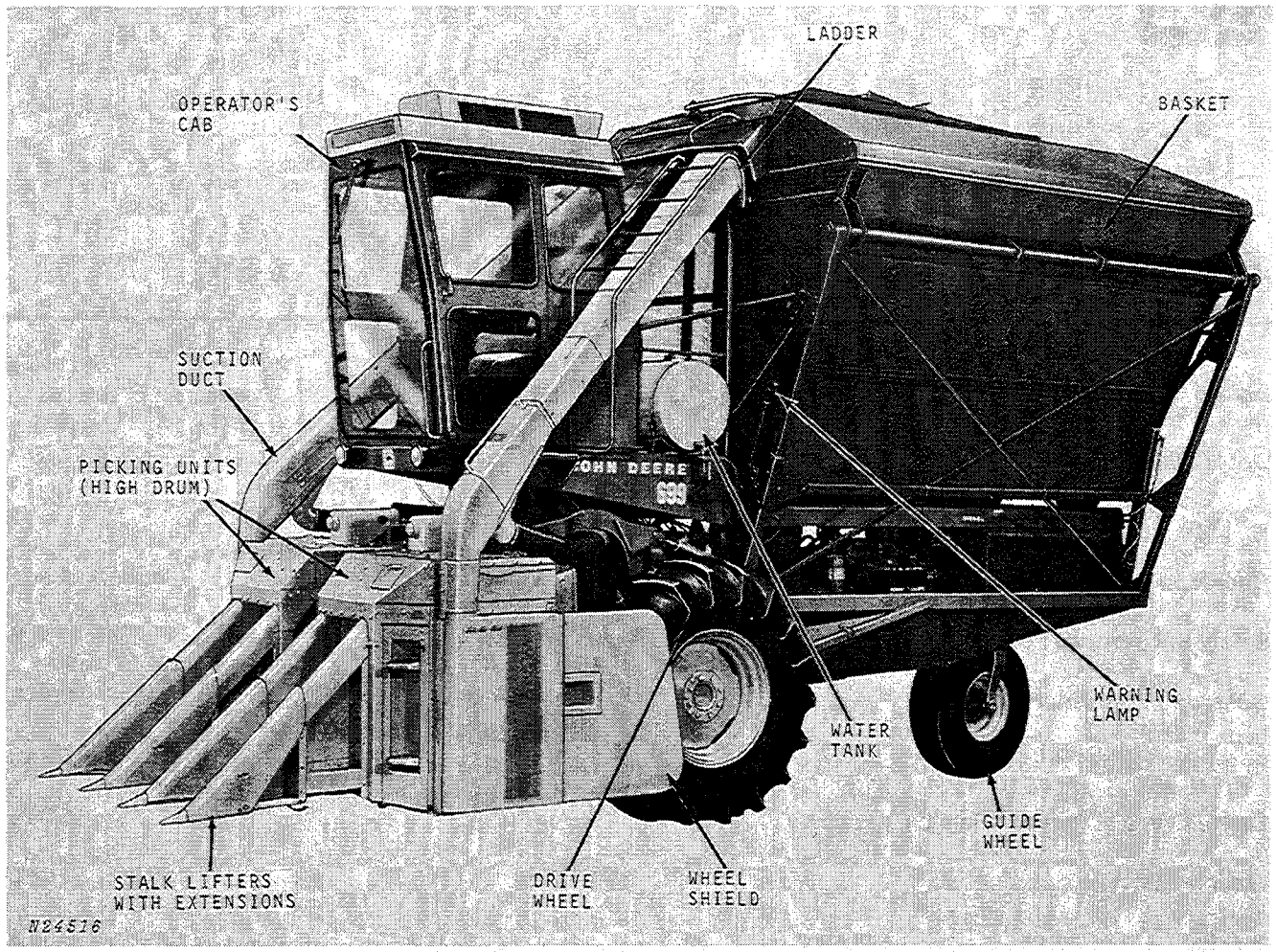
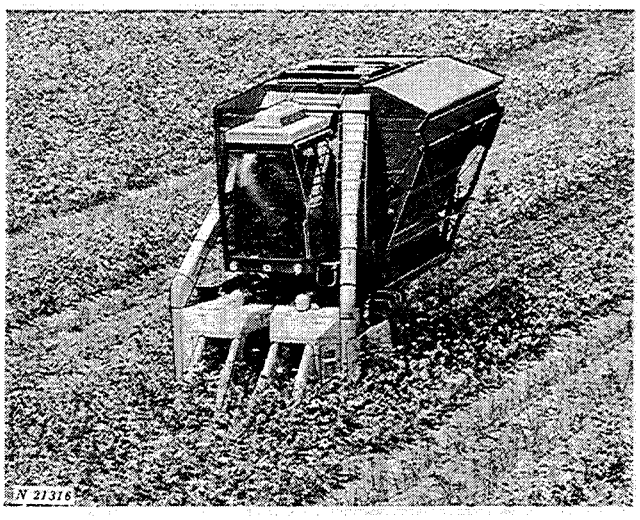


John Deere 699 Cotton Picker with Operator's Cab

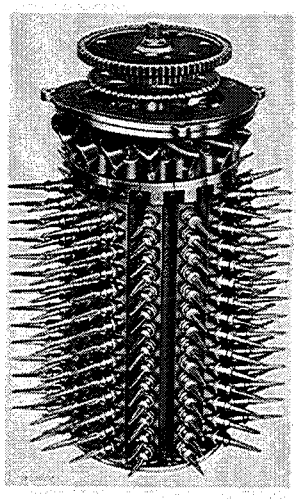
Description



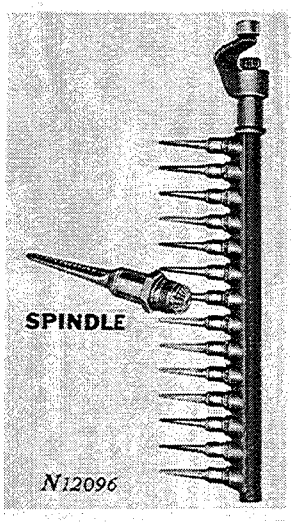
The 699 is a two-row self-propelled cotton picker. The machine has four basic components:

1 - Picking units.
2 - Suction jet conveying system and basket.
3 - Operator's platform and controls.
4 - Propelling mechanism.

PICKING UNITS

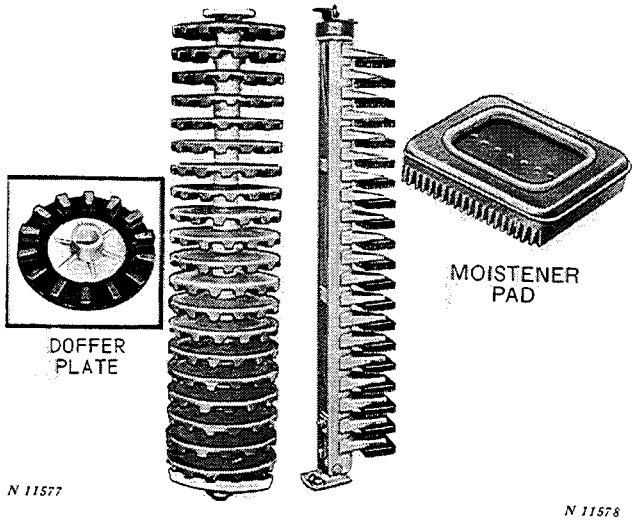


Low-Drum Front Picking Drum



Picker Bar

The heart of the picker is the two spindle-type picking units. 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. Each picker bar, has 14 spindles (low drum unit) or 20 spindles (high drum unit). Thus the low drum unit has 784 and the high drum unit has 1120 individual barbed spindles that pick cotton from the plants.



Doffer *Moistener*

A doffer assembly on each picking drum, unwinds the cotton from the spindles and delivers it to the chute in the door. Each assembly consists of a shaft with 14 (low drum unit) or 20 (high drum unit) aluminum alloy doffer plates with rubber doffers molded to each plate.

A moistener column for each picking drum wipes each spindle with water, to keep it clean.

Stalk lifters guide the cotton plant into the picking zone where grid bars and pressure plates hold the plant in position for picking.

How the Picking Units Work

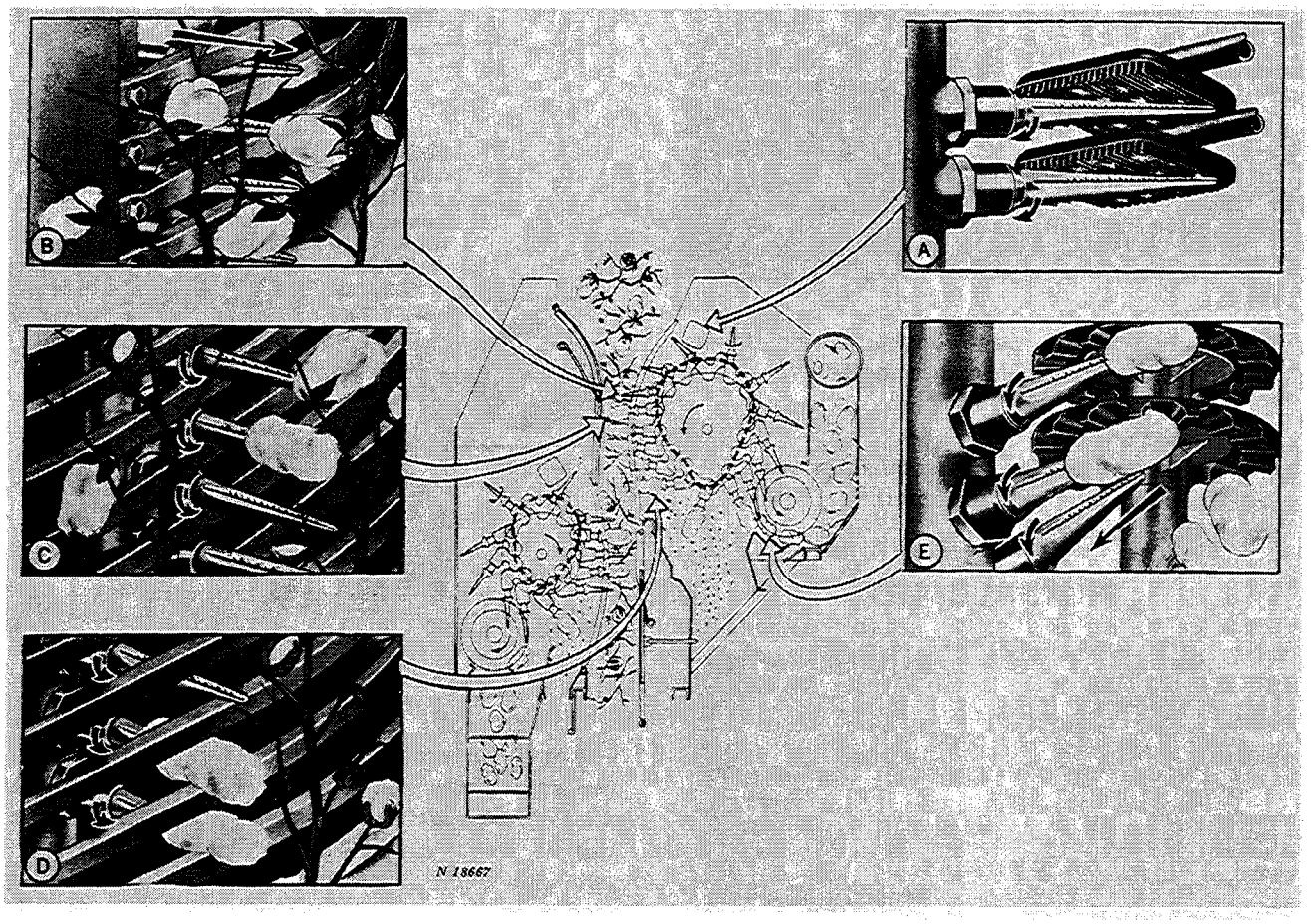
Knowing what is going on inside the picking units will give you a better understanding of the capabilities and limitations of a mechanical cotton picker. You will also know why certain adjustments are necessary and when to make the adjustments.

The illustration below shows what happens during the picking cycle. At "A," the spindles go under the moisteners and are cleaned of lint, plant sap, and stain.

The cleaned spindles start through the grid bars at "B." The speed of the spindle drums is synchronized with the picker ground speed or 2.06 miles per hour with engine running 2500 rpm under field load so the spindles will not have forward or backward motion in relation to the cotton plant. The rotating spindles poke straight into the cotton plant and pull straight back. Because of this, the spindles can brush past unopened bolls and stalks, leaving them undamaged.

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

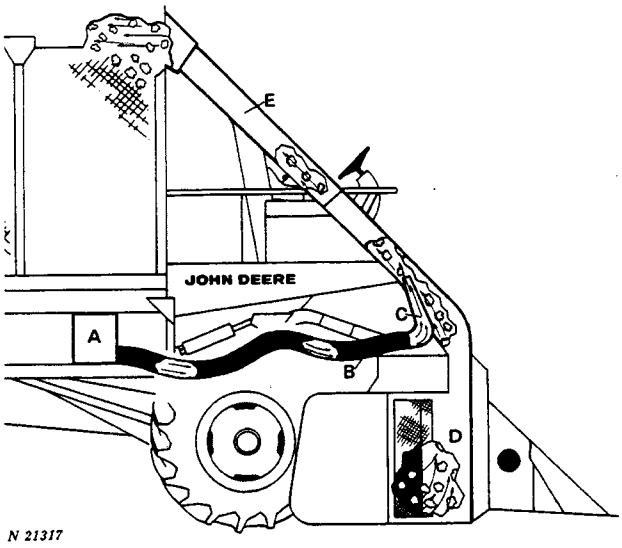
At "E," the cotton is being removed from the spindles by the doffer. The spindles move under the doffer so the doffer pads can unwind the cotton from the spindles.



Automatic Height Control (Optional)

A dual-rate hydraulic height control unit is used with the cotton picker. The primary circuit provides precise gauging of picking unit ground clearance; the secondary circuit provides a rapid and positive rate of response for severe changes in ground contour. This combination results in fast and accurate height control with minimum ground clearance.

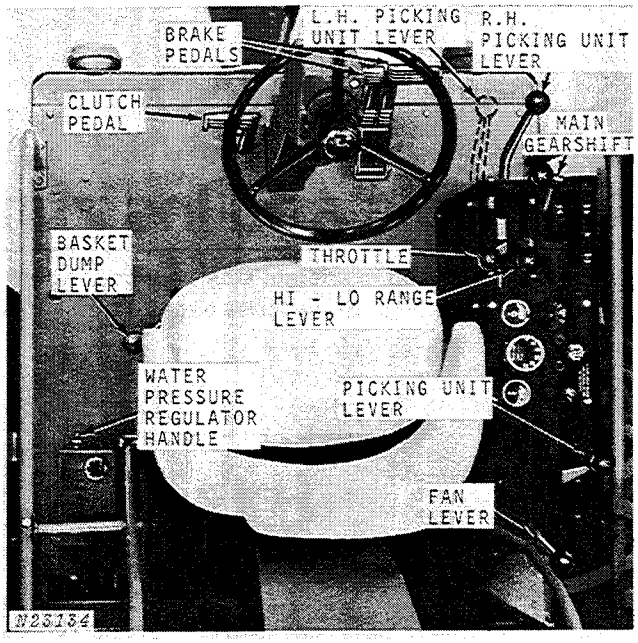
JET-AIR-TROL CONVEYING SYSTEM AND BASKET



The jet air cotton conveying system consists of a single centrifugal fan "A," located in the engine area. This fan has a single rotor with radial blades on each side. It blows air through hose "B," to cotton conveyor ducts "C," creating suction which lifts the cotton out of the suction doors "D," and blows it through the ducts "E," into the basket. Thus from the field to the gin, cotton comes into contact with only two moving parts—spindles and doffers. Seed cotton and lint damage is kept at a minimum.

The cotton picker basket will hold 3,000 lbs. of cotton. Two double-acting hydraulic cylinders, activated by a lever to the left of the operator, raise and lower the basket for dumping. The lid opens and closes automatically as the basket is raised and lowered.

PLATFORM AND CONTROLS



The operating position is immediately above and behind the picking units. The padded posture seat is adjustable to both the height and weight of the operator; the steering wheel height and pitch are easily adjusted for operator comfort.

All necessary operating controls are conveniently located within easy reach from the seat. A few trips through the field will enable the operator to become familiar with all the controls necessary to operate the cotton picker.

The instruments are located immediately to the right of the operator on the instrument panel. Each gauge is clearly identified for readability of the vital machine functions. A panel light is provided for night operation.

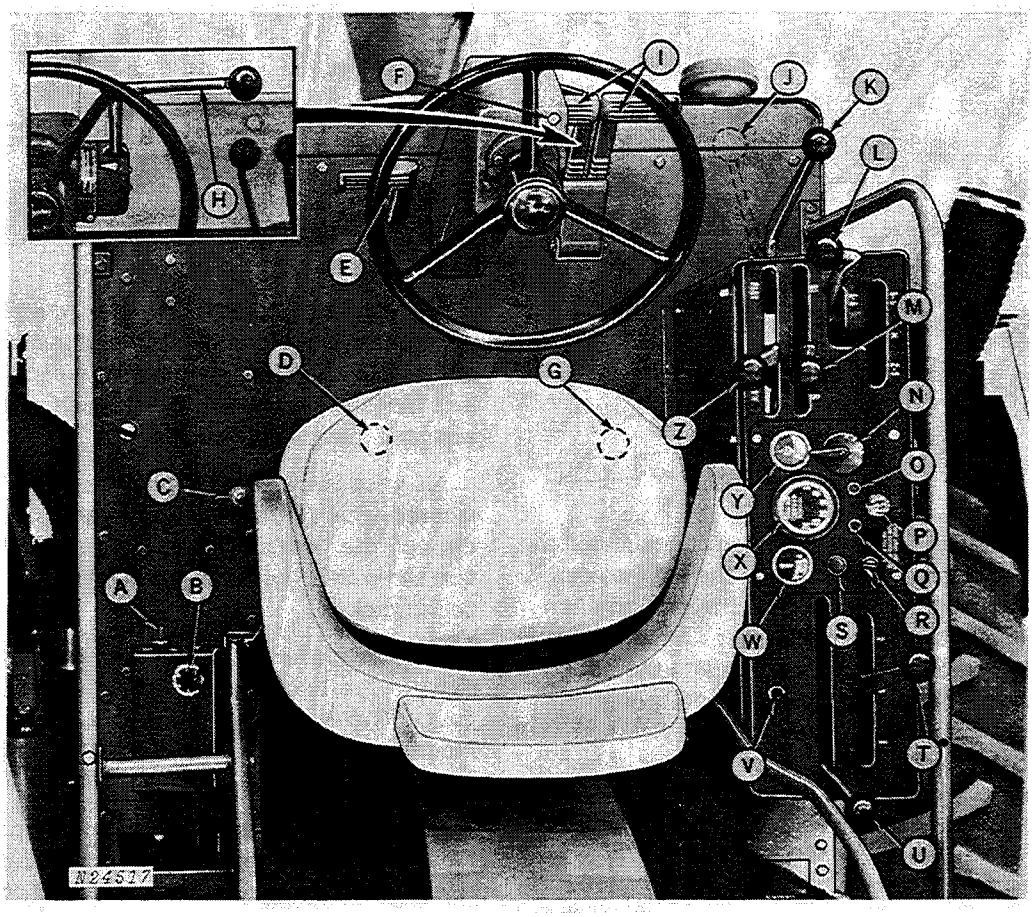
For added operator comfort and efficiency, a pressurized or air conditioned cab is available (optional). A heater and/or windshield wiper equipment (optional attachments) are also available.

PROPELLING MECHANISM

The cotton picker is powered by a 6-cylinder gasoline, LP-Gas or diesel engine. Power is transmitted through a drive shaft to the transmission and final drives, thus propelling the drive wheels. On the hydrostatic cotton picker the power is transmitted through the hydrostatic pump and motor, to the transmission and final drives, thus propelling the drive wheels.

Controls and Instruments

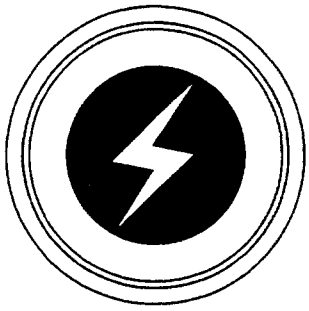
Before attempting to operate your new cotton picker, become familiar with the location and purpose of its controls and instruments. Study these pages carefully, regardless of your previous picker experience.



A-Water Pressure Regulator Handle
B-Water Pressure Gauge
C-Basket Lift Lever
D-L.H. Picking Unit Stop Control (Pickers Without Automatic Height Control)
E-Clutch Pedal
F-Guide Wheel Indicator Lamp
G-R.H. Picking Unit Stop (Pickers Without Automatic Height Control)
H-Hydrostatic Drive Control
I-Brake Pedals
J-L.H. Picking Unit Lever (Pickers Without Automatic Height Control)
K-R.H. Picking Unit Lever
L-Main Gearshift Lever
M-Hi-Lo Range Lever
N-Light Switch
O-Oil Pressure Light
P-Panel Light
Q-Alternator Warning Light
R-Master Switch
S-Starter Button
T-Picking Unit Gearshift Lever
U-Fan Clutch Lever
V-Choke
W-Fuel Gauge
X-Engine Tach-Hour Meter
Y-Engine Water Temperature Gauge
Z-Throttle Lever

INSTRUMENTS

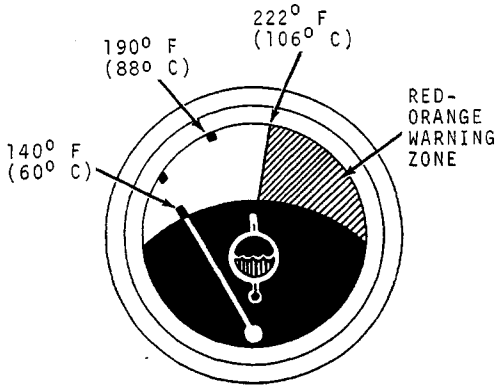
Alternator Warning Light



T 11762

A "bolt of lightning" identifies the alternator warning light. The bolt of lightning can be seen when the light is on. The light will go on when the engine is being started (this is normal). If the engine is running and the light goes on, the alternator is not charging. In this case, shut off the engine and trouble-shoot the electrical system (pages 89-90).

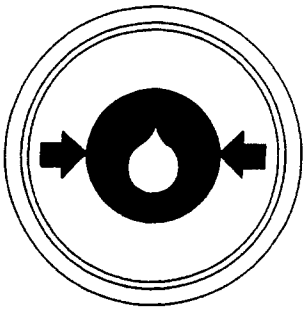
Water Temperature Gauge



N 21320

This gauge indicates the coolant temperature in the cooling system - not the quantity. Normal operating temperature is 180 to 210°F. (indicated by the white band on the dial). If indicator reaches red band on dial, stop engine and determine cause.

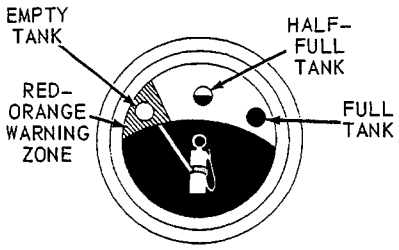
Oil Pressure Indicator Light



T 11763

The oil pressure indicator light is identified by the "drop of oil" design, visible when the light is on. The light will go on if the crankcase oil level is low or if the oil pressure is low. If light goes on, shut off the engine and check engine oil level (page 61). If oil level is not low, check for low oil level pressure caused by restrictions or incorrect type of oil. See page 61 for details.

Fuel Gauge



T 11760

The fuel gauge is identified by the "pumping station" on the face of the gauge. The red-orange zone indicates that the tank is empty. There is also a half full mark (half circle) and a full mark (full circle).

INSTRUMENTS—Continued

Light Switch

Controls the lighting circuits when the master switch is on. The three active positions of the switch are explained below.

L - Headlights on bright, taillight lit, warning lamps not lit.

B - Headlights on bright, taillight and warning lamps lit.

D - Headlights on dim, taillight and warning lamps lit.

Engine Tach-Hour Meter

Registers engine rpm in hundreds and indicates the hours engine has been operated at 2500 rpm. Use the meter to operate at rated engine speeds and to determine proper lubrication, service, and adjustment intervals.

Panel Light

The panel light illuminates the instrument panel at night. It is turned on by the light switch when the main lights are turned on.

Starter Button

Activates the starter when the ignition switch is on and the clutch pedal is depressed (standard transmission) or the speed range lever is in neutral (hydrostatic transmission).

Master Switch

Controls engine ignition, light switching circuit, and starter electrical circuit.

Hydrostatic Oil Temperature Gauge

Indicates hydrostatic oil temperature. If temperature rises unusually high, stop engine and determine cause.

Precision Moistener Control Pressure Gauge

The pressure gauge is located on top of the precision moistener control box to the left of the operator's seat. This gauge gives the operating pressure of the moistener system. The normal operating pressure is between 15 to 25 psi.

Guide Wheel Indicator Lamp

The guide wheel indicator lamp is located on the steering column. When illuminated, the lamp indicates the guide wheel is straight.

CONTROLS - STANDARD TRANSMISSION AND HYDROSTATIC DRIVE

Brakes

The mechanical-type brakes can be applied individually or can be linked together, using the brake tie latch, for simultaneous braking.

Use the brake lock to hold the picker when parking.

Choke (Gasoline Engines)

The choke provides a rich mixture of fuel for starting. Pull button to choke engine; push in for normal operation.

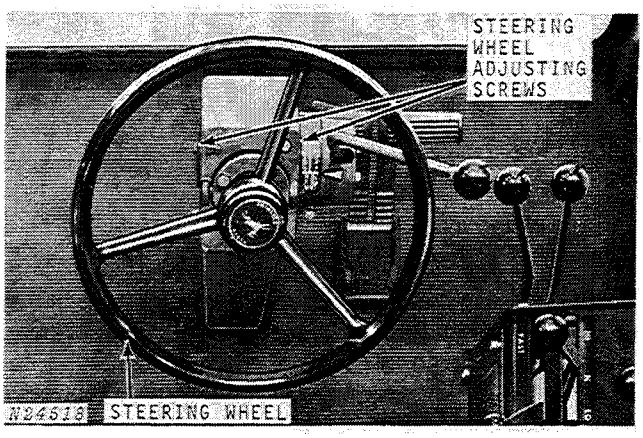
Fan Clutch Lever

The fan clutch lever is located on the right-hand side of the operator's seat and to the rear of the instrument panel. This lever engages and disengages the centrifugal fan. To engage fan, move the lever forward; to disengage, move lever rearward.

Basket Lift Lever

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

Steering Wheel Adjusting Screws



To adjust steering wheel tilt, loosen adjusting screws on either side of pedestal. Tilt wheel to desired position; then tighten screws.

Picking Unit Lift Levers

The picking unit lift levers or lever are located at the right of the operator's seat and in front of the control panel. The cotton picker without Automatic Height Control uses two levers; the right-hand lever controls the right unit and the left-hand lever controls the left unit. The cotton picker with Automatic Height Control has one lever to control both units.

These levers control the height of the picking units, individually or simultaneously on pickers without Automatic Height Control. On pickers with Automatic Height Control, the lever aids in controlling the height of the units. See "Picking Unit Lift Selector" for individual or simultaneous lift.

To lower the units, push lever forward. When the units reach their lowest position, as set by the picking unit stops or the Automatic Height Control shoes, you will feel pressure on your hand and the lever or levers will return to neutral position. The unit stops can be overridden; see "Picking Unit Stop Controls."

To raise the picking units, move the levers rearward.

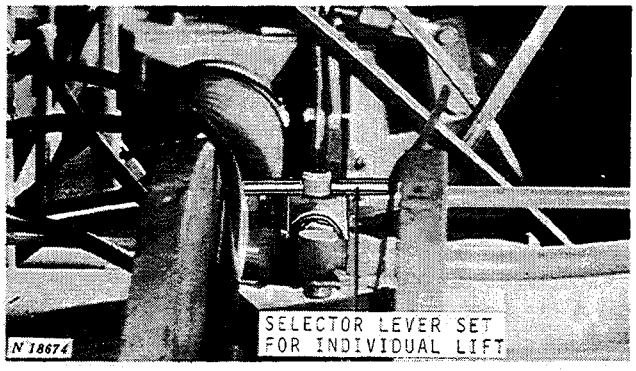
Picking Unit Stop Controls (Pickers Without Automatic Height Control)

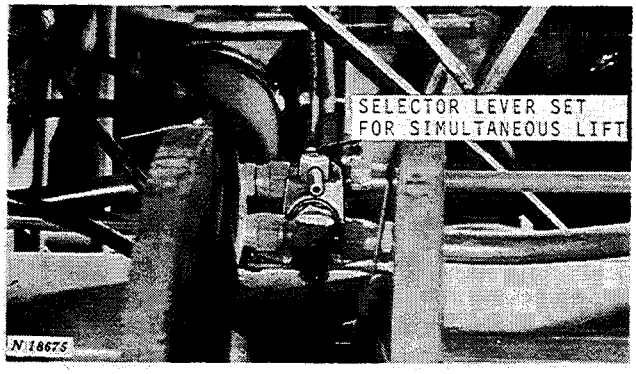
The picking unit stops are located on the right- and left-hand side of the seat and are part of the hydraulic system and the unit lift control. The stops control the lowest position to which the picking units can be lowered by the picking unit lift levers.

IMPORTANT: When the picking units are set for simultaneous lift; make sure the left-hand stop control has been removed and the left-hand unit lift lever has been disconnected or removed. See pages 40 and 41.

To raise the height of the picking units, turn the controls clockwise; to lower the height of picking unit stops, turn the controls counterclockwise.

Picking Unit Lift Selector (Pickers Without Automatic Height Control)

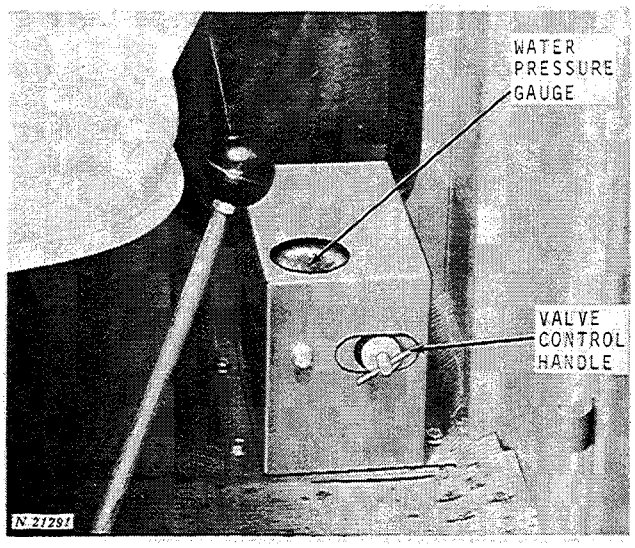




The picking unit lift selector on the hydraulic valve, located on the main frame underneath the platform, controls the hydraulic circuit for individual or simultaneous unit lift.

With the selector lever facing the direction of travel the units are set for simultaneous lift. With the selector lever crossways to the direction of travel the units are set for individual lift. For detailed instructions see pages 40 and 41.

Precision Moistener Control



CONTROLS - STANDARD TRANSMISSION AND HYDROSTATIC DRIVE—Continued

Precision Moistener Controls—Continued

The precision moistener system water pressure is controlled by the valve control handle to the left of the operator.

To lower the water pressure, turn the handle out; to raise the pressure, turn the handle in. The normal operating pressure is from 15 to 25 psi. The moistener can be controlled "on the go".

CONTROLS - STANDARD TRANSMISSION

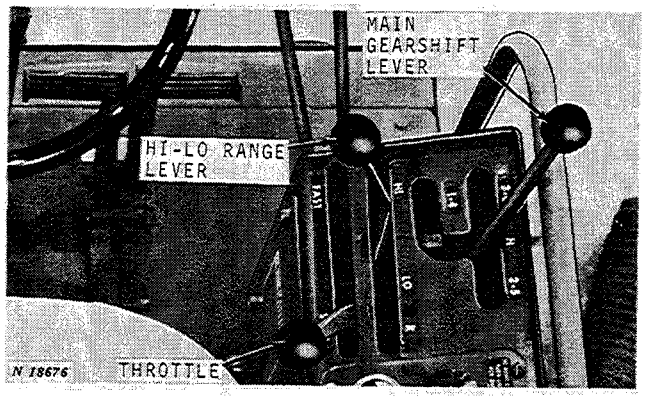
Clutch Pedal

Depressing the clutch pedal will disconnect the flow of power from the engine to the transmission, picking units and fan drives. Also the clutch pedal must be depressed to operate the starter safety switch, located beneath the clutch pedal.

Throttle Lever

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

Main Gearshift and Hi-Lo Range Levers

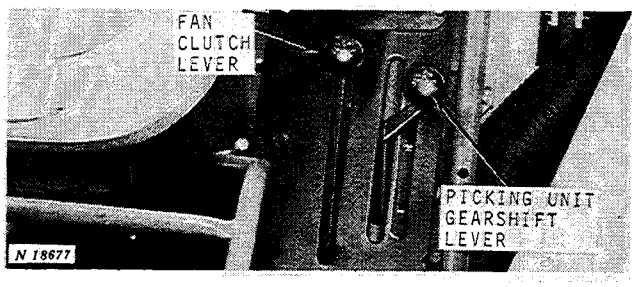


The transmission has six speeds forward. The positions of the gearshift lever for various transmission speeds are shown on the instrument panel.

The hi-lo range lever has three positions, hi range, lo range, and reverse. This lever is used in conjunction with the gearshift lever. When positioning the gearshift in 1st gear the hi-lo range is positioned in low range and the gearshift lever is placed in 1st gear. When positioning the transmission in reverse, position the hi-lo range lever in reverse and place the gearshift lever in neutral.

Gear	Hi-Lo Range Lever Location	Type of Operation
1	Lo	Picking
2	Lo	Picking
3	Lo	Scrapping
4	Hi	Transporting
5	Hi	Transporting
6	Hi	Transporting
Neutral	Reverse	Backing

Picking Unit Gearshift Lever



This lever engages and disengages the picking units and moistener system water pump. To engage, depress clutch pedal and move lever rearward to position no. 1 (low range position), or forward to position no. 2 (high range position). The middle position is neutral. To disengage, depress clutch pedal and move lever to neutral (N) position.

The ground speed in each gear with engine operating at 2500 rpm under field load is shown in the chart.

Gear	MPH	Type of Operation	Picking Unit Lever Location
1st	2.06	Picking	1 (Low Range)
2nd	2.65	Picking	2 (High Range)
3rd	3.12	Scrapping	2 (High Range)
4th	8.12	Transporting	Neutral
5th	10.46	Transporting	Neutral
6th	12.32	Transporting	Neutral
Reverse	3.25	Backing	Neutral

CONTROLS - HYDROSTATIC DRIVE

Throttle Lever

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

Speed Range Lever

The speed range lever controls both the rate and direction of travel within one of the four transmission gears. The transmission gearshift lever is used to select the gear desired. Shifting is accomplished by moving the speed range lever to neutral and shifting to one of the four gear ranges.

With the gearshift lever positioned in the desired gear range, move speed range lever to the right and forward from its neutral position to move the picker forward.

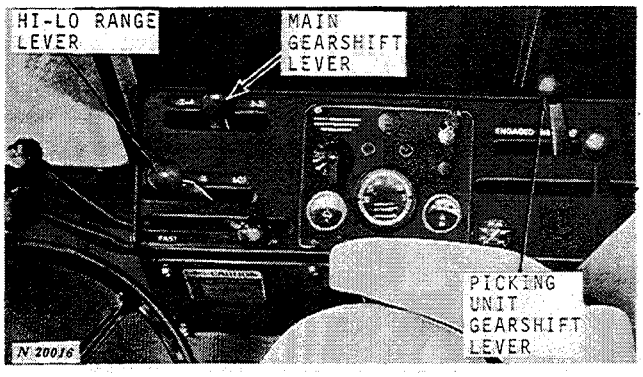
Stop the picker by returning the speed range lever to neutral. A stop is provided to assist in finding this position. Also, place the gearshift lever in its neutral position.

To operate in reverse, position gearshift lever in desired gear range and pull the speed range lever to the right and rearward.

The speed of the picker, within a selected gear, is determined by the position of the speed range lever.

The speed range lever must be in neutral to start the engine.

Main Gearshift and Hi-Lo Range Lever



The transmission has four forward and four reverse speeds. The positions of the gearshift lever for the various transmission speeds are shown on the instrument panel.

The hi-lo range lever has two positions, hi range, and lo range. This lever is used in conjunction with the gearshift lever. Example: When positioning transmission in 1st gear, place hi-lo range lever in low and gearshift lever in 1st gear. When positioning transmission in 3rd gear place hi-lo range lever in hi and gearshift lever in 3rd.

To reverse the picker, position hi-lo range lever gearshift in desired gear and move the speed range lever to the right and rearward.

Picking Unit Gearshift Lever

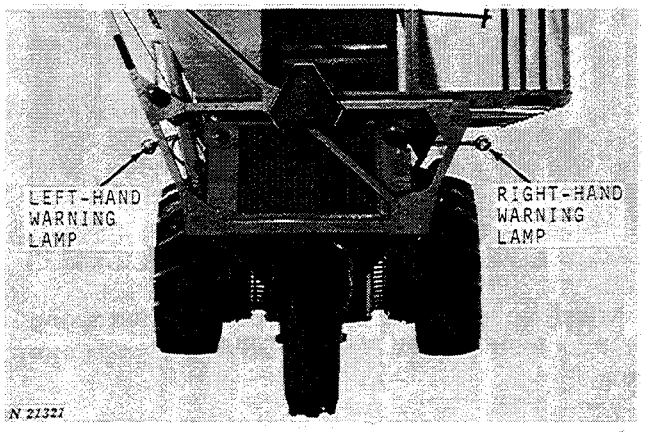
To engage the picking units place lever in "engage" position.

There is just one picking unit range with hydrostatic drive.

The ground speed in each gear with engine operating at 2500 rpm under field load is shown in the chart.

Gear	MPH	Type of Operation	Picking Unit Lever Location
1st	2.65	Picking	Engage
2nd	3.12	Scrapping	Engage
3rd	10.46	Transporting	Disengage
4th	12.32	Transporting	Disengage
Rev.	6.16	Backing	Disengage

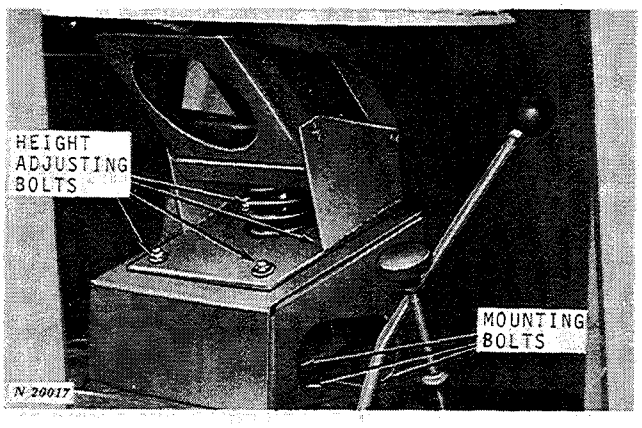
WARNING LAMPS



The warning lamps are located on the left and right-hand basket support frame. In these positions they can be seen by oncoming traffic and traffic approaching from the rear. For wagon clearance in the field, rotate the left-hand lamp up.

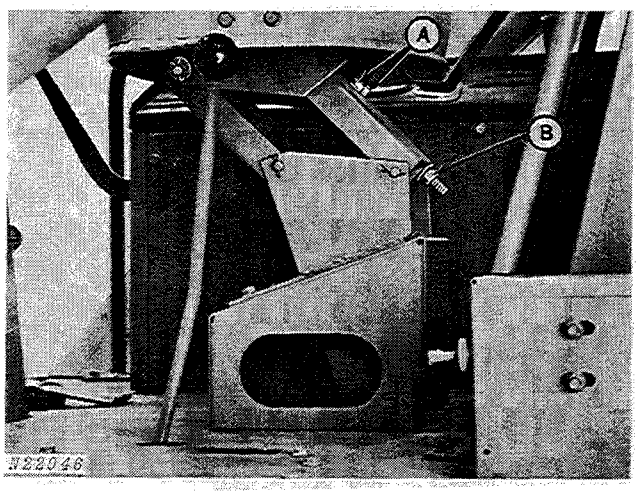
SEAT

Adjusting for Height of Operator



Loosen the four nuts at the seat base and adjust the seat forward or rearward until the pedals and levers can be operated easily. Tighten the four adjusting bolts. If the seat needs further adjustment, loosen the four mounting bolts and adjust seat box toward the front or rear. Tighten bolts.

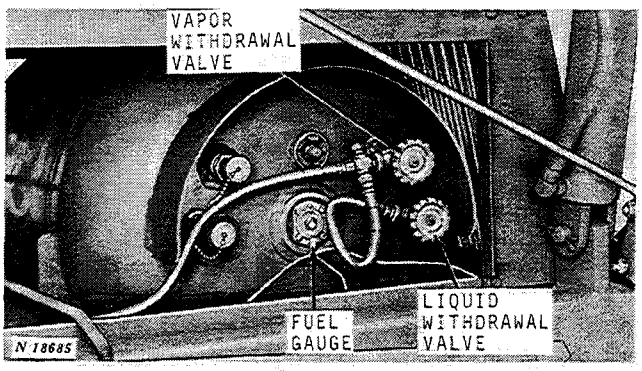
Adjusting for Weight of Operator



Adjust the tension of the seat compression spring for maximum "float," when driving over rough ground.

To adjust, loosen the nuts "A" and tighten or loosen nut "B." For lighter weight, more bolt should be exposed beyond nut "B."

LP-GAS ENGINE CONTROLS



A cotton picker with an LP-Gas engine, has controls for LP-Gas operation in addition to those previously described.

⚠ CAUTION: Before attempting to use the LP-Gas engine, see page 51 for information on LP-Gas and instructions on how to fill the fuel tank.

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 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.

Dust Cap

Make sure the dust cap is in place on top of the safety relief valve.

Operation

FUNDAMENTALS OF COTTON HARVESTING

Successful cotton harvesting requires a thorough understanding of the fundamentals of cotton harvesting and intelligent use of the cotton picker to meet the conditions in the field being picked.

These fundamentals in brief are:

When to Pick

The ideal time to pick cotton is when the cotton bolls are well open, clean, and fluffy. Since cotton bolls seldom ripen and open all at one time, a field is normally picked two or three times before the entire crop is harvested.

Preparing the Field

Defoliation is recommended to get greater picking efficiency, cleaner cotton, fewer leaves, and less trash, resulting in a better grade of cotton.

Fields should be kept clean and free of roots, stones, bricks, and other foreign material.

Do a good job of controlling weeds. Weeds and grass do not affect operation of the cotton picker but will cause more trash and foreign material to be mixed with the cotton in the basket, making it more difficult to gin, usually resulting in a lower grade of cotton.

Picking

Lubricate your cotton picker as instructed on pages 54-76.

Prepare and adjust cotton picker to meet crop conditions.

When picking, select ground speed and picking unit speed according to crop conditions. (See page 18).

Allow ground and cotton to dry before picking. Wet cotton is difficult to gin and wet ground will cause wheel slippage, destroying the synchronization between picking speed and ground speed, which can cause stripping of unopened green bolls and excessive plant mutilation.

Use of a spindle cleaner or wetting agent in the water will distribute the water more evenly on the spindle, and less water will be required.

CAUTION: Petroleum moistening agents are flammable. Follow the manufacturer's recommendations carefully when handling and mixing such materials to avoid fire hazards.

NOTE: We recommend the use of John Deere wetting agent. It contains a dispersing additive. By preventing the wetting agent from settling to the bottom of the tank, this additive maintains an evenly concentrated mix throughout the water tank. It is available in 5-gallon cans (AL1112) and 1-gallon cans (AN30975). If other wetting agents are used, watch for spindle corrosion. If corrosion is detected, use a different wetting agent or operate picker without a wetting agent.

KNOW YOUR COTTON PICKER

Before starting to pick cotton, read this manual. The information in it is the result of years of experience in the design and operation of cotton pickers. We want you to be happy with your new John Deere Cotton Picker. We know it will do a good job for a long time if operated and adjusted properly. This manual tells you how to get the performance and life that has been designed and built into the cotton picker.

COTTON PICKER AND ENGINE BREAK-IN

Run-in the engine under full load to promote good ring seating and to prevent cylinder wall glazing. Do not run the engine at idle speed during break-in period.

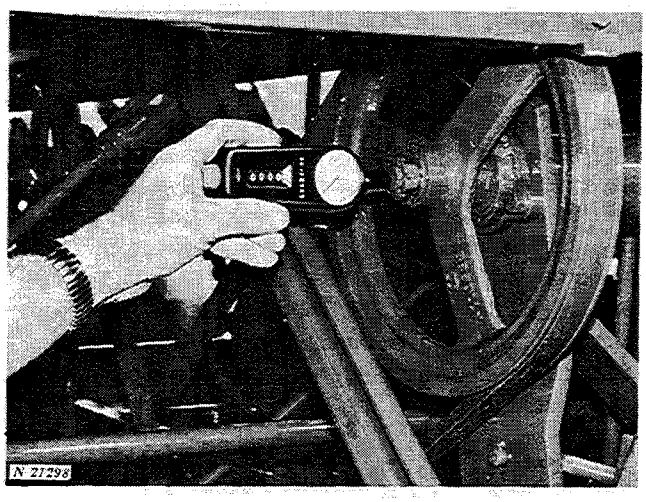
NOTE: Always fill water tank before running-in picker.

First 4 Hours

It has been recommended that the dealer run-in your new cotton picker for four hours prior to delivery. If the four hour run-in has not been completed, it should be done as follows.

1. Lubricate entire machine regardless of lubrication interval.

2. Standard Transmission: With the engine running at slow idle, start picking units in low gear and engage fan lever. Run at this speed for the first five minutes (this may vary depending on the ambient temperature). Slowly increase the engine to 1000 rpm and run for another five minutes. Then gradually increase the rpm until the units are running at full rpm.



Hydrostatic Drive

Hydrostatic Drive: Use a hand tachometer on the picking unit countershaft as shown above. With the engine running at slow idle engage the picking unit and fan levers. Engage throttle to full. Advance the hydrostatic speed range lever slowly until the tachometer reads 250 rpm. Run at this speed for approximately five minutes then gradually increase the unit speed until the tachometer on the picking unit countershaft reads approximately 800 rpm in low gear. Continue at this speed for the four hour run-in period.

3. Every hour, drive the picker for 5 to 10 minutes. This will recirculate the lubricant in the transmission housing and keep all bearings and gears lubricated.

4. Listen for any unusual noises in the picking units. If any noises occur, stop the picker immediately and determine cause.

5. Periodically check the engine oil pressure, temperature, and battery charging rate.

6. After the four-hour break-in period has been completed, check the entire machine for loose bolts, belts, etc.

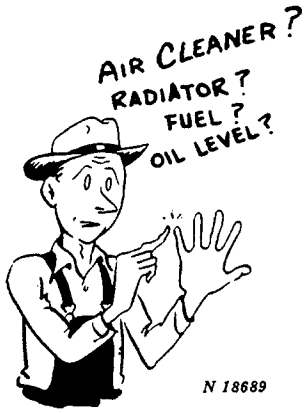
After 4 Hours

From 4 to 100 hours, lubricate machine according to lubrication chart on pages 54 to 57. Avoid light loads or excessive engine idling. Check periodically to be sure adequate supply of oil is maintained in the crankcase. If it becomes necessary to add oil during the first 100 hours, use new oil recommended on pages 52-53.

After 100 Hours

At the end of this 100-hour break-in period, drain oil, replace filter element, and fill the crankcase with new John Deere Torq-Gard or Torq-Gard Supreme oil or an equivalent oil as recommended on page 53. Thereafter, change the oil and filter every 100 hours of operation.

PRE-STARTING ENGINE CHECKS



Before starting the engine, perform the following checks and services as required.

1. Check engine crankcase oil level. See page 61.

2. Check radiator coolant level. See page 62.

3. Inspect and clean air cleaner. See page 60.

4. Fill the fuel tank. See pages 50-51 and be sure fuel shut-off valve is open.

NOTE: If the engine (gasoline or diesel) has not been operated for a long period of time, or if the fuel tank is dry, remove the fuel tank drain plug. Drain and flush the tank with clean, fresh fuel. On diesel engines, it may be necessary to bleed the entire fuel system. See page 97.

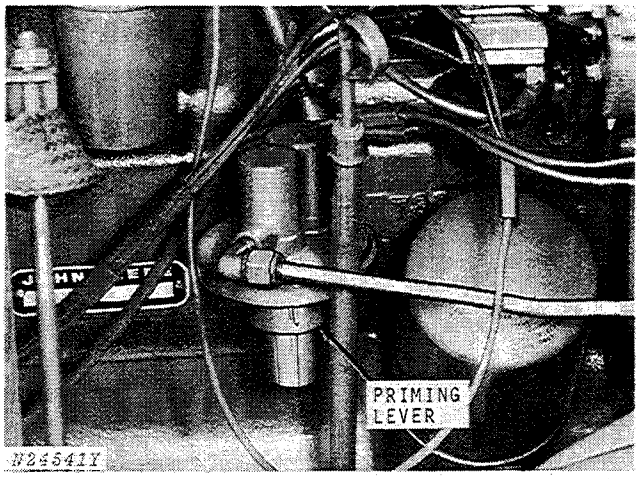
CAUTION: Before starting the engine, be sure there is plenty of ventilation. Never operate engine in a closed shed or garage.

STARTING THE GASOLINE ENGINE

1. Set the picker brakes and position standard transmission main gearshift or hydrostatic transmission speed range lever in neutral.

2. Disengage picking unit control lever.

IMPORTANT: Turn headlight and accessory switches off before attempting to start engine.



3. If engine has not been operated for a period of time and gasoline tank has been dry, and fuel pump is equipped with priming lever, work priming lever up and down to force gasoline into carburetor.

IMPORTANT: Leave lever down so that pump will remain operative.

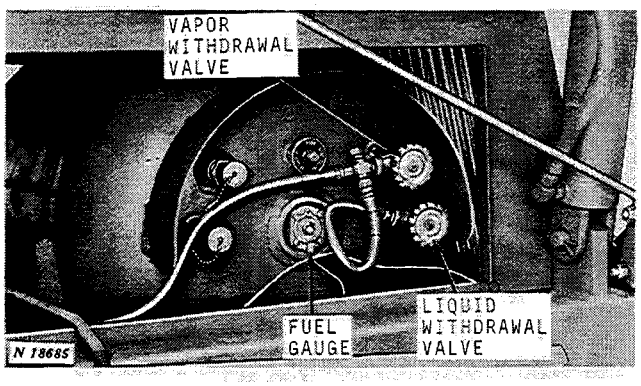
4. Advance throttle lever approximately 1/4 open. Turn ignition switch on and pull choke control knob all the way out. Depress clutch pedal, and at the same time press starter button. As soon as the engine starts, push choke knob in. Release clutch pedal.

5. Check oil pressure light to see if it is off. If not, stop engine and determine cause.

6. Do not place engine under load until heat indicator gauge shows that temperature of water in cooling system is rising.

See instructions on page 17 for stopping the engine.

STARTING THE LP-GAS ENGINE



1. Open the VAPOR withdrawal valve slowly. If valve is opened too fast, it may cause the excess-flow check valve to close and prevent normal flow of vapor. If this happens, close the vapor withdrawal valve to reset the check valve; then, open the vapor withdrawal valve slowly.

2. Set picker brakes and position transmission gearshift lever in neutral. If equipped with hydrostatic drive transmission, position speed range lever in neutral.

3. Disengage picking unit gearshift and fan levers.

IMPORTANT: Turn headlight and accessory switches off before attempting to start engine.

4. Place throttle in slow position and turn master switch on. Depress clutch pedal, and at the same time press starter button. As soon as the engine starts, advance throttle lever and release clutch pedal.

5. Check oil pressure light to see that it goes out after the engine starts. If not, stop engine and determine cause.

6. After engine starts, operate it on vapor until the cooling system is warm as indicated by the water temperature gauge.

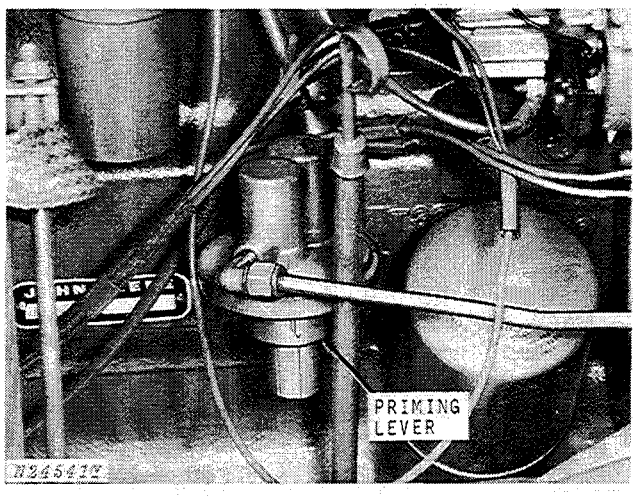
7. Slowly open the LIQUID withdrawal valve. After valve is completely open, close the VAPOR withdrawal valve.

NOTE: See instructions on page 17 for stopping the engine.

STARTING THE DIESEL ENGINE

1. Set picker brakes and position transmission gearshift lever in neutral. If equipped with hydrostatic drive transmission, position speed range lever in neutral.

2. Disengage picking unit gearshift and fan levers.



3. If the picker has been idle for a long period of time, or if the fuel tank is dry, remove the fuel tank drain plug and drain any moisture from tank. Bleed the entire fuel system to remove air from the lines. Refer to page 97 for bleeding procedure. Avoid running fuel tank dry.

IMPORTANT: Turn headlight and accessory switches off before attempting to start engine.

4. Advance throttle lever to full open, then bring it back about halfway. Depress clutch pedal and turn master switch on, then press starter button.

5. Release starter button when the engine starts. If engine does not begin firing after 15 to 30 seconds of cranking, wait a minute before cranking again. Release clutch pedal after engine starts.

6. Check oil pressure light to see that it goes out after the engine starts. If not, stop engine and determine cause.

7. Warm up the engine for about five minutes with the throttle about one third open. Do not place engine under load until heat indicator gauge shows that engine has begun to warm up.

NOTE: See instructions on page 17 for stopping the engine.

STOPPING GASOLINE ENGINE

Run the engine at 1500 rpm for a short time before stopping it. Sudden stopping of a hot engine may allow some parts to overheat momentarily and cause damage.

Turn the master switch to the vertical "OFF" position.

After stopping the engine, remove the key from the master switch to prevent tampering and unauthorized operation. Removing the key also prevents battery discharge if the switch is accidentally left in the "on" position.

Sudden cooling of hot engines causes extreme contraction of heated metal parts. In freezing weather, never drain water immediately after stopping. First allow engine to cool off gradually.

STOPPING THE LP-GAS ENGINE

Before stopping the engine, allow it to idle for a minute or so; then close the withdrawal valves and let the engine run until fuel in converter is exhausted and engine dies. Then turn master switch to the "off" position. With the fuel lines partially empty, there is no chance of damage due to changes in temperature and pressure of the fuel. Also, liquid fuel left in the lines may cause hard starting.

CAUTION: Close both withdrawal valves tightly, to prevent loss of gas and flooding of fuel lines and engine cylinders while cotton picker is idle.

Sudden cooling of hot engines causes extreme contraction of heated metal parts. In freezing weather, never drain water immediately after stopping. First allow engine to cool off gradually.

STOPPING THE DIESEL ENGINE

Set throttle at half throttle and allow engine to run at this speed for a few minutes before stopping. Turn the master switch to the "off" position.

IMPORTANT: Do not attempt to stop the diesel engine by turning off the fuel supply at shutoff valve. Doing so will cause injection pump to run dry and damage internal parts.

Sudden cooling of hot engines causes extreme contraction of heated metal parts. In freezing weather, never drain water immediately after stopping. First allow engine to cool off gradually.

IDLING THE ENGINE

Avoid unnecessary engine idling. Prolonged idling may cause crankcase oil dilution due to incomplete fuel combustion. It also may cause formation of deposits on valves, pistons, piston rings and fuel injectors.

BEFORE-OPERATION CHECKS AND ADJUSTMENT

Careful inspection of the cotton picker before starting work each day will prevent needless delays and breakdowns in the field. Make the following checks and adjustments.

1. Fill fuel tank as described on pages 51 and 52.

2. Check coolant level in radiator. Add coolant as necessary. See pages 61-62. Do not use water containing alkali. Check for hose leaks.

3. Check tire inflation. See chart on page 23.

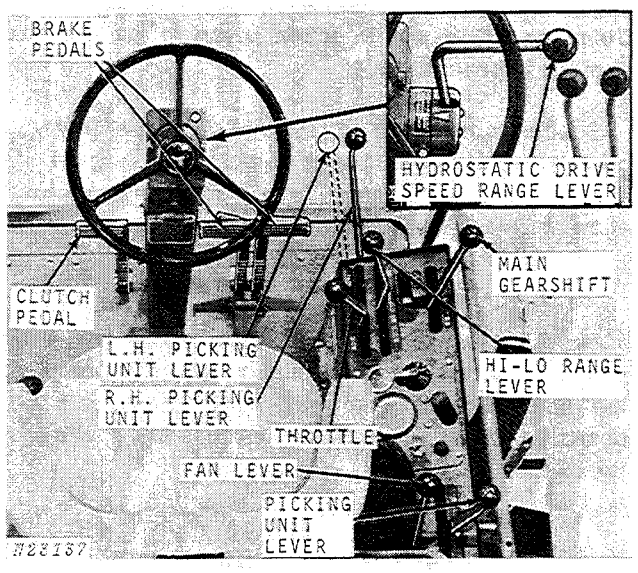
4. Clean out the area around the doffers and moisteners. Wash out the screened area of all suction doors and doffer grates. See page 59.

5. Perform necessary lubrication services. See pages 54-76. Check for oil leaks.

6. Check water level in the water supply tank. See page 37.

7. Inspect belts and chains for proper tension and alignment. Be sure there are no loose bolts or cotter pins.

OPERATIONAL CHECKS



Test the raising and lowering of the picking units.

Test the sensing of the units with automatic height control. See page 42.

Test dumping of the basket. See page 20.

Check operation of the fan and picking units, as follows:

1. Standard Transmission only: disengage the engine clutch.
2. Engage the fan lever.
3. Standard Transmission: Select the picking unit speed range. If picking in first gear, move the picking unit gearshift lever to position No. 1. If picking in second gear, move lever to position No. 2. Be sure to match ground travel speed with picking unit speed. Hydrostatic Drive: Engage the picking units by moving unit gearshift lever to position "engage". Be sure to match ground speed with picking unit speed, unless scrapping.
4. Set throttle one-third open and slowly engage clutch (Standard Transmission). Listen for unusual sounds while slowly bringing engine up to full speed. Run the units at half speed for a few minutes to warm them up.

STARTING THE PICKER

Standard Transmission

Reduce engine speed to slow idle, and disengage clutch. Then shift into desired transmission speed. Release brakes, and slowly engage clutch. Select transmission speed to match picking unit speed. For position 1 picking unit speed, use first gear (2.06 mph). For position 2 picking unit speed, use second gear (2.65 mph) or third gear (3.12 mph). Ground speeds indicated here are based on the engine operating at 2500 rpm under load. Fourth, fifth and sixth gears are transport speeds.

Hydrostatic Drive

Reduce engine speed to a slow idle. Shift into the desired transmission speed and release brakes. Select transmission speed to match picking unit speed. For picking use first gear (2.65 mph). For scrapping use second gear (3.12 mph). Ground speeds are based on the engine operating at 2500 rpm and the speed range lever fully advanced. Third and fourth gears are transport speeds.

STOPPING THE PICKER

Standard Transmission

Pull the throttle back to decrease engine speed. When the engine has slowed down the picker, depress the clutch pedal and apply the brakes evenly to bring the picker to a full stop. Shift transmission, picking unit gearshift and fan lever to neutral. Release clutch pedal.

If you are going to get off the picker, stop the engine (see page 17) and engage the brake latches.

Hydrostatic Drive

Stop the picker by returning the speed range lever SLOWLY to neutral against a stop that is provided to assist in locating this position. Place the transmission and fan levers in neutral. Disengage the picking unit gearshift.

If your are going to get off the picker, stop the engine (see page 17) and engage the brake lock. (See page 20.)