90 AND 100 ORCHARD AND GROVE AIR SPRAYERS

JOHN DEERE

OPERATORS MANUAL

90 AND 100 ORCHARD AND GROVE
AIR SPRAYERS

OMB25217 D5 English

OMB25217 D5

LITHO IN THE U.S.A.
ENGLISH

TO THE PURCHASER

Your new sprayer has been carefully designed and manufactured to provide years of dependable, economical service if given proper care and operation.

To insure trouble-free service, follow closely all instructions concerning operation, lubrication, adjustments and service. Preventive maintenance has proved to be much more economical than corrective maintenance. Should you require information not covered in this manual, consult your John Deere dealer.

KEEP YOUR SPRAYER A JOHN DEERE SPRAYER

Genuine John Deere parts fit properly and insure satisfactory service because they are made from the original patterns and from the same materials as used in new machines. Should your sprayer require replacement parts, go to your John Deere dealer where you can obtain genuine John Deere parts—accept no substitutes.

LOCATION REFERENCE

"Right-hand" and "left-hand" sides are determined by facing in the direction the sprayer will travel when in use.

Cooling fan end of the engine is referred to as the "front"; flywheel end as the "rear."

SERIAL NUMBERS

Your sprayer and engine have serial numbers.

When ordering parts, be prepared to furnish the model and serial numbers as given on the serial number plates. By doing so, you will assist your John Deere dealer in giving you prompt, efficient service.

The sprayer serial number is located on a plate on the front panel below the radiator grill.

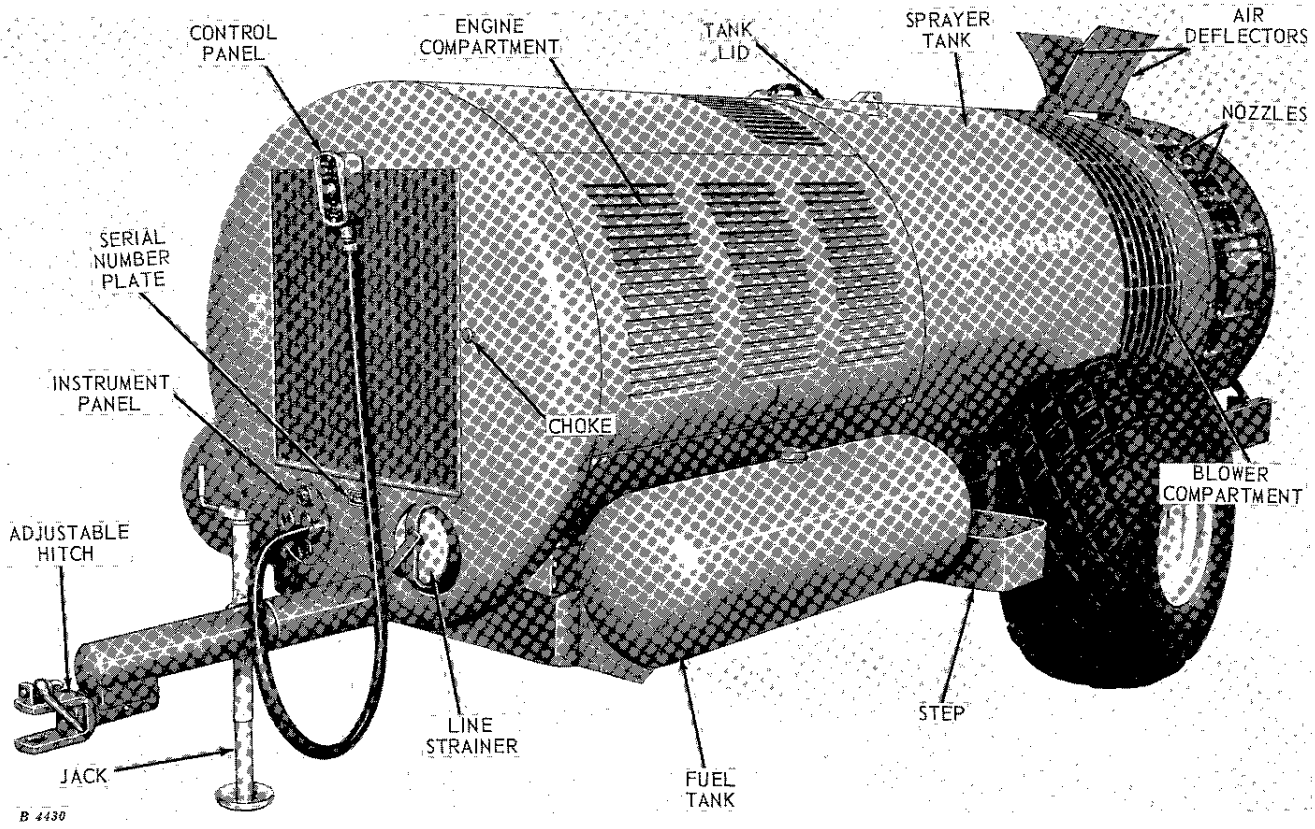
The engine serial number for the Chrysler gasoline or LP-Gas engine is located on a plate on the top left rear of the engine block. The engine serial number (unit number) for General Motors diesel engine is located on a plate on the top side of the left-hand valve cover.

Blanks have been provided below for recording serial numbers and purchase date so they will be readily available for future reference.

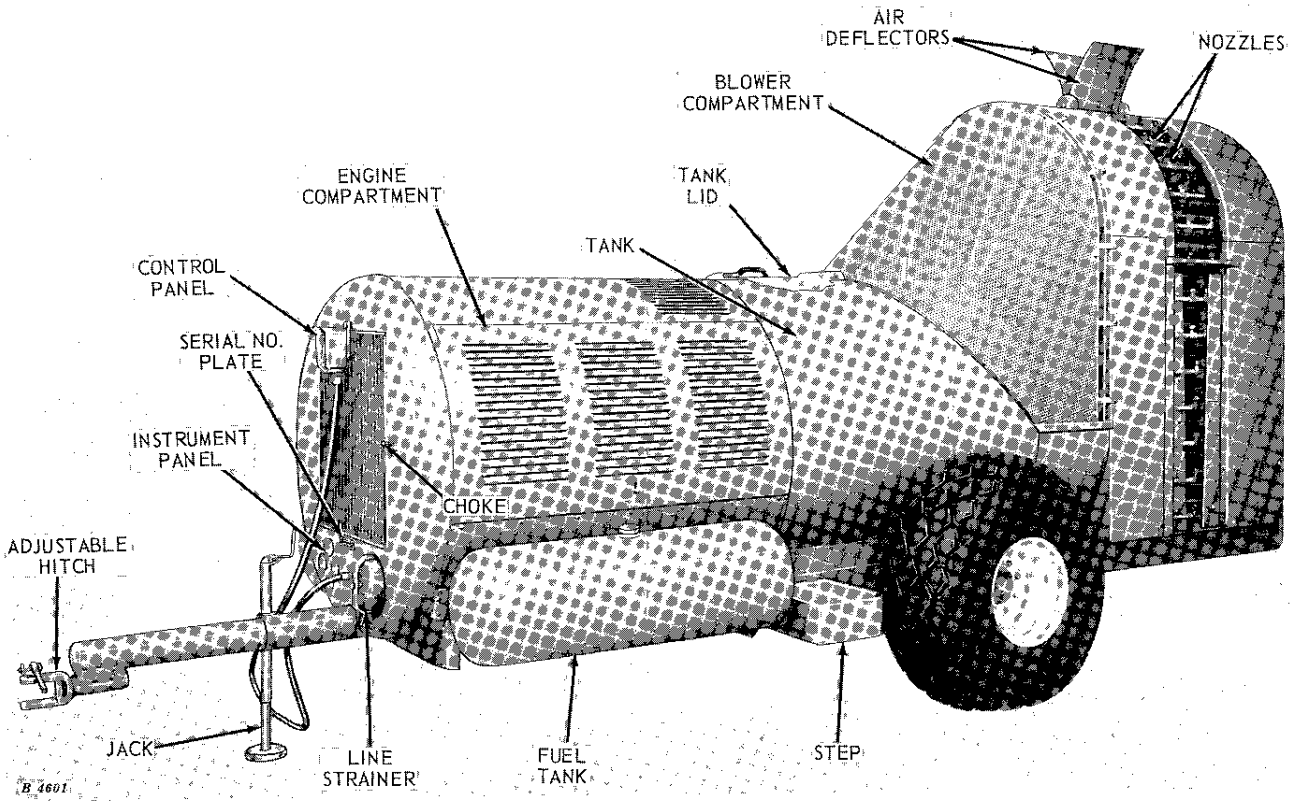
Sprayer Model 90 ☐ 100 ☐
Sprayer Serial No. _____
Engine Serial No. _____
Date Purchased _____

Study this manual carefully and keep it handy in a safe place for future reference.

CONTENTS



John Deere 90 Sprayer



John Deere 100 Sprayer

SPECIFICATIONS

Engine — Gasoline or LP-Gas:
- Manufacturer. . . . . Chrysler
- Model - Gasoline . . . HB413-332
  LP-Gas. . . . HB413-342
- Operating Speed. . . . 2000 to 3000 rpm
- Idling Speed. . . . . 600 to 800 rpm
- Number of Cylinders. 8
- Displacement. . . . . 413 cubic inches
- Horsepower Rating. . 160 at 3200 rpm
- Fuel Tank Capacity. . 80 U.S. gallons
  (Do not fill LP-Gas tanks more than 85 per cent full)
- Crankcase Capacity . 5 U.S. quarts
- Cooling System . . . . Approx. 20 U.S. quarts
- Electrical System. . . 12-Volt

Engine — Diesel:
- Manufacturer. . . . . General Motors Detroit Diesel
- Model. 6V53
- Operating Speed. . . . 1700 to 2500 rpm
- Idling Speed. . . . . 600 to 800 rpm
- Number of Cylinders. 6
- Displacement. . . . . 318 cubic inches
- Horsepower Rating. . 175 at 2600 rpm
- Fuel Tank Capacity. . 80 U.S. gallons
- Crankcase Capacity . 14 U.S. quarts
- Cooling System . . . . Approx. 20 U.S. quarts
- Electrical System. . . 12-Volt

Blower — 90 Sprayer:
- Diameter . . . . . 36 inches
- Velocity (2 side delivery) . . . . . 110 mph
- Blower Speed . . . . . 1560 rpm

Blower — 100 Sprayer:
- Diameter . . . . . 40 inches
- Velocity (2 side delivery) . . . . . 100 mph
- Blower Speed . . . . . 1300 rpm

Spray Tank:
- Type . . . . . Coated, steel cylindrical
- Capacity . . . . . 500 U.S. gallons
- Diameter . . . . . 54 inches
- Agitator . . . . . Mechanical

Pump:
- Type . . . . . Self-priming centrifugal
- Capacity . . . . 110 U.S. gallons per minute
- Pressure . . . . . 100 psi
- Drive . . . . . V-belt

Dimensions (with 18.4 x 16 Tires):
- Over-all length (less hitch) . . . . 208 inches
- Height - 90 Sprayer . . . 66-1/2 in. to 74 in.
  - 100 Sprayer. 102-1/2 in. to 110 in.
- Wheel Tread . . . . . 74 inches

Tire Pressure:
- 18.4 x 16 (10 ply) . . . . . 30 psi
- 11.25 x 24 (10 ply) . . . . . 36 psi

Weight — 90 Sprayer:

Gasoline	- Empty	Approx. 5,900 lbs.
	- Full	Approx. 10,400 lbs.
LP-Gas	- Empty	Approx. 6,250 lbs.
	- Full	Approx. 10,750 lbs.
Diesel	- Empty	Approx. 7,000 lbs.
	- Full	Approx. 11,500 lbs.

Weight — 100 Sprayer:

Gasoline	- Empty	Approx. 6,500 lbs.
	- Full	Approx. 11,000 lbs.
LP-Gas	- Empty	Approx. 6,850 lbs.
	- Full	Approx. 11,350 lbs.
Diesel	- Empty	Approx. 7,600 lbs.
	- Full	Approx. 12,100 lbs.

Hitch:

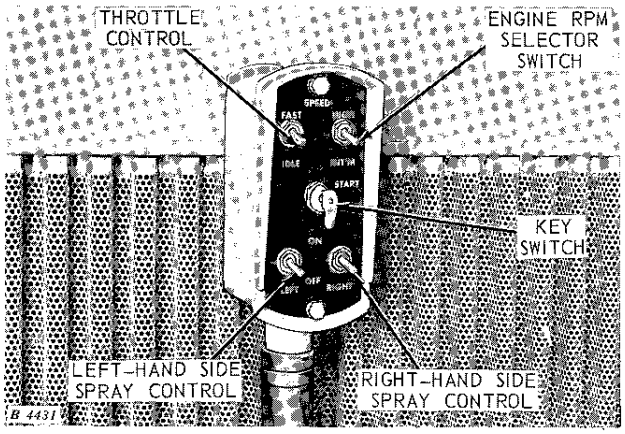
The length of the adjustable hitch and the position of the wheels will determine the weight on the tractor drawbar.

(Design and specifications subject to change without notice.)

CONTROLS AND INSTRUMENTS

CONTROLS

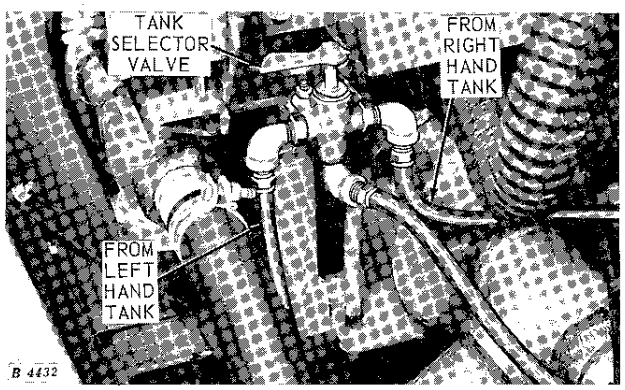
CONTROL PANEL



The control panel mounts on a carriage bolt head above the radiator grill on the sprayer. It can be mounted on the tractor within easy reach of the operator by installing a carriage bolt in a convenient location. However, for safety reasons do not attach the panel to the tractor seat.

The control panel contains the engine throttle control, engine rpm selector switch, key starter switch and spray valve controls.

FUEL TANK SELECTOR VALVE—GASOLINE

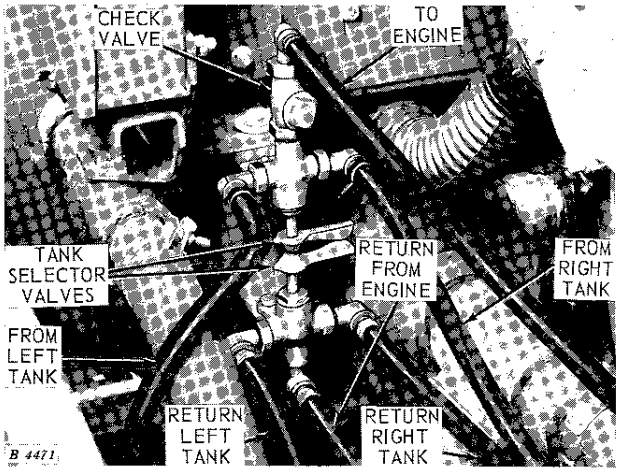


The tank selector valve determines which fuel tank is being used.

When the selector valve is positioned as shown for gasoline fuel, the flow of fuel will be from the right-hand tank.

When the selector valve is turned counterclockwise the flow of fuel will be from the left-hand tank.

FUEL TANK SELECTOR VALVE—DIESEL

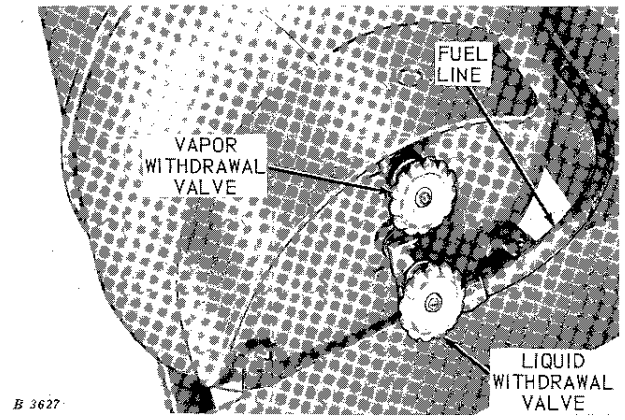


When the selector valves are positioned as shown for diesel fuel, the flow of fuel will be from the left-hand tank.

When the selector valves are turned clockwise the flow of fuel will be from the right-hand tank.

Both valves must be turned in the same direction since the diesel fuel system has a fuel return line to each tank.

LIQUID WITHDRAWAL VALVES—LP-GAS

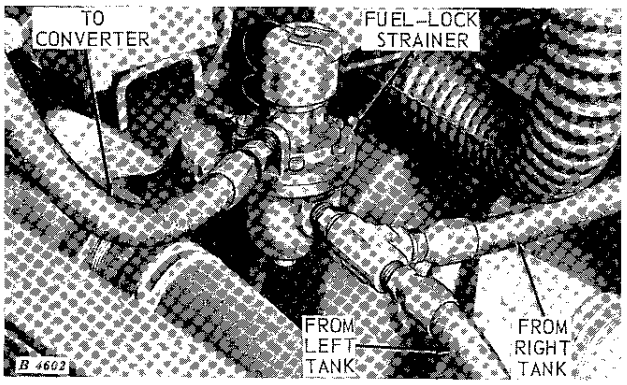


The liquid withdrawal valve controls the flow of fuel from the tank to the fuel-lock strainer.

The vapor valve is normally not connected. However, if it is connected, it supplies vapor from the top of the fuel tank for starting the engine.

Both valves are equipped with excess-flow valves which automatically close whenever the flow exceeds the normal amount used to operate the engine. 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.

FUEL-LOCK STRAINER—LP-GAS



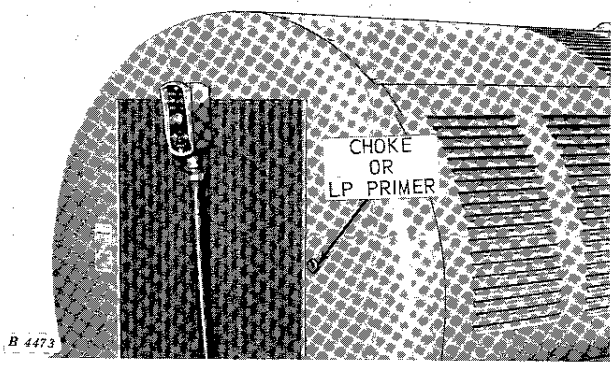
The fuel-lock strainer removes particles of dirt or other foreign matter from the fuel after it leaves the tank. An automatic electrically-operated fuel shut-off valve is built into the strainer. When the ignition switch is turned off, the valve automatically closes to prevent the fuel from entering the engine or other parts of the system. If, for any reason, the electrical system fails to operate, the shut-off valve will close.

The fuel line from each tank connects to a common tee at the fuel lock.

Use fuel from one tank only at a time.

Be sure to shut off the tank that is being used before opening withdrawal valve on the new tank.

CHOKE (GASOLINE) OR PRIMER (LP-GAS)

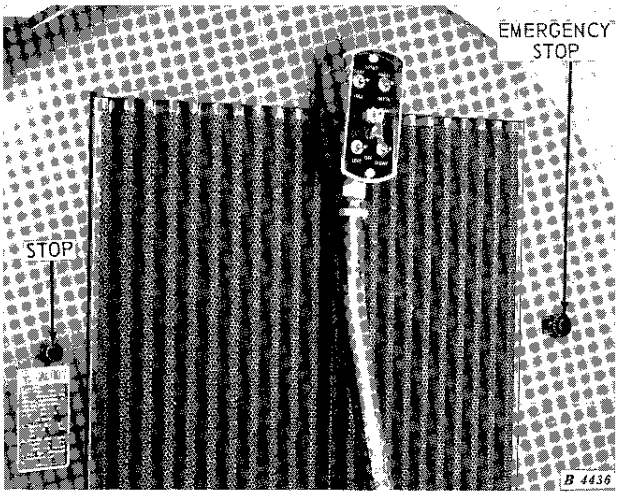


The choke is located on the front left-hand side of the sprayer.

The choke for a gasoline model sprayer is actuated by pulling the choke button.

To actuate the primer on an LP-Gas model, push the electrically operated primer button which will fill the vapor line to the carburetor with vapor.

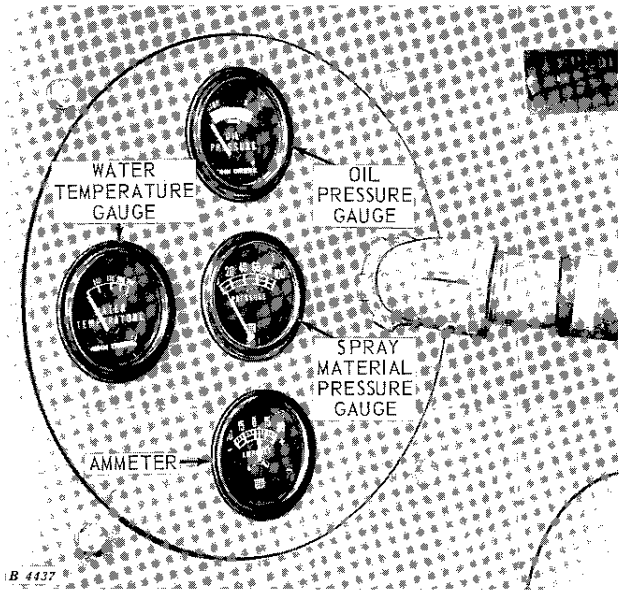
STOP AND EMERGENCY STOP—DIESEL



The control for stopping the engine on a diesel model sprayer is located on the front right-hand side of the sprayer.

The emergency stop is located on the front left-hand side of the sprayer.

INSTRUMENTS



WATER TEMPERATURE GAUGE

This gauge indicates the water temperature in the cooling system. Normal operating temperature is 170° to 200°F. If gauge registers 200°F. or above, stop engine and determine cause.

AMMETER

This gauge indicates the rate of charge or discharge of the battery. If ammeter shows discharge for an extended period during normal operation, check for a ground, short circuit or faulty regulator. If ammeter shows high charge continually, inspect for low battery, faulty connections, low battery water or bad regulator.

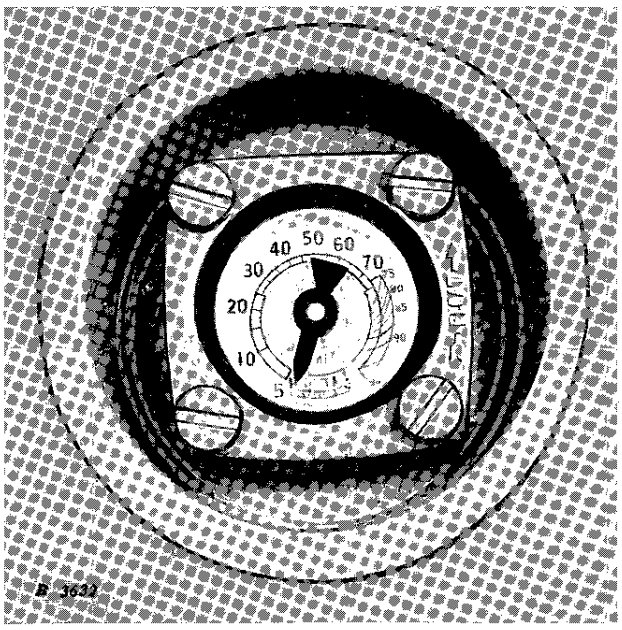
OIL PRESSURE GAUGE

This gauge indicates the pressure of engine lubricating oil. Oil pressure will vary slightly, but with recommended oil it should read normal (indicated by green band on dial) at full governed speed. If oil pressure drops (indicated by red band on dial), stop immediately and determine cause.

SPRAY MATERIAL PRESSURE GAUGE

This gauge indicates the pressure of the spray material as it is discharged from the pump. Normal operating range is 40 to 100 psi. If spray material pressure drops below the operating range, determine the cause.

FUEL GAUGE—LP-GAS

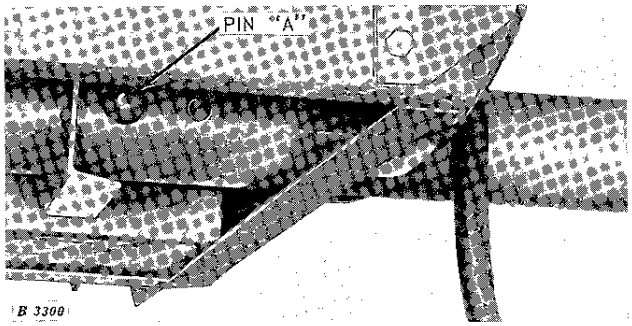


The fuel gauge, located at the end of the fuel tank, indicates the liquid level in the fuel tank. It is calibrated to show the percentage of liquid fuel in the tank.

OPERATION

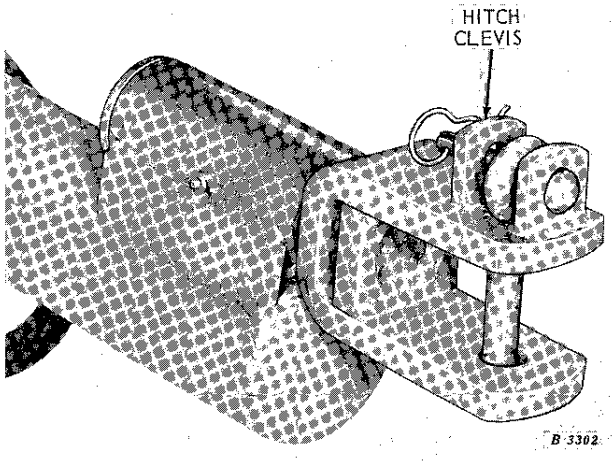
HITCHING SPRAYER TO TRACTOR

SPRAYER HITCH



The length of the sprayer hitch and the position of the sprayer wheels will determine the load on the tractor drawbar.

Adjust length of the sprayer hitch by removing pin "A" and pulling hitch out or pushing the hitch in and replacing pin "A." See page 31 for wheel adjustment.

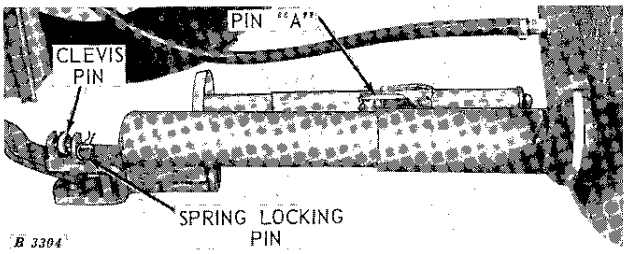


Hitch Clevis Turned Up

Position the sprayer, hitch clevis either up or down, to compensate for height of tractor drawbar. Sprayer should be level when drawbar is connected.

Place the tractor swinging drawbar in the short position and secure it in the center of the tractor hitch.

JACK



Raise or lower the jack so the sprayer hitch clevis is the same height as the tractor drawbar.

Back the tractor up to the sprayer and attach the sprayer hitch clevis to the tractor drawbar with the clevis pin. Secure the clevis pin in place with the retaining pin and spring locking pin.

Pull pin "A" and swing the jack to the horizontal position, as shown. Replace pin "A" to hold the jack in the horizontal position.

Place the sprayer control panel on the tractor.

BEFORE-OPERATION CHECKS AND ADJUSTMENTS

Careful inspection and service of the sprayer before starting work each day will prevent needless delays and breakdowns. Make the following checks and adjustments:

FUEL—GASOLINE OR DIESEL

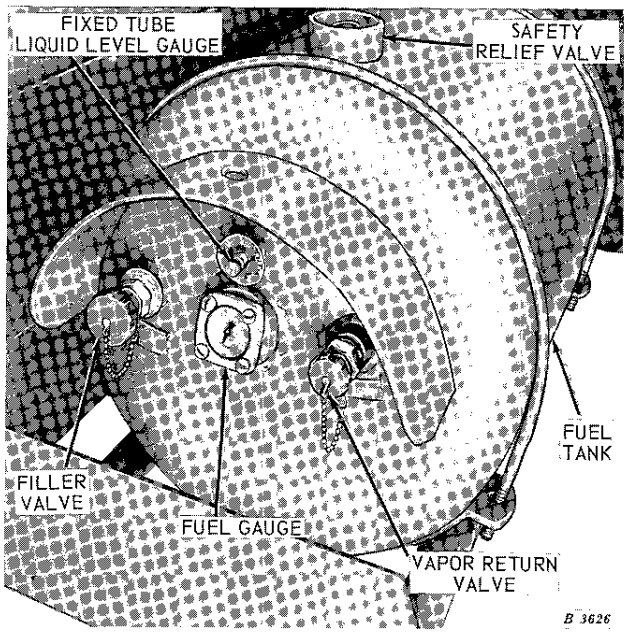
Check fuel tanks of sprayer equipped with gasoline engine to see that they are filled with a good regular grade of gasoline.

Check fuel tanks of sprayer equipped with diesel engine to see that they are filled with a good quality No. 1 or No. 2 diesel fuel.

Open the drain cocks on both the primary and secondary fuel filters on diesel engine and drain a small amount of fuel to remove any water that may have settled.

NOTE: Fill fuel tanks on sprayer with gasoline or diesel engine at the end of each day's operation. This will let any water, which may be in the fuel, separate. This will also prevent condensation of moisture overnight in a partially filled tank.

FUEL—LP-GAS



Fill fuel tanks on sprayer equipped with LP-Gas engine to 85 per cent full. The tanks should not be filled more than 85 per cent of total volume because LP-Gas expands as temperature rises.

A filler valve, located at the end of each fuel tank, is used for filling the tank. A double check valve, built into the filler valve, automatically prevents any fuel withdrawal or escape.

The vapor-return valve, located beside the filler valve, is also used when filling the tank. This valve permits vapor to return to the storage tank as the sprayer 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 vapor-return valve becomes excessive. This is a safety device designed to stop flow if the vapor-return line is broken or disconnected.

The fixed tube liquid level gauge, located at the end of each fuel tank, 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 per cent 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 assure proper transfer of fuel to sprayer fuel tank.

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, consult your fuel dealer. He may be able to supply a different blend of fuel, especially prepared for use in hot weather.

CAUTION: Do not fill fuel tank while engine is running or when near an open flame.

AIR CLEANER

Normally, the dry type air cleaner on the gasoline or LP-Gas engine, or the oil bath type air cleaner on the diesel engine, is cleaned every 50 hours. However, engines operating under extreme dust or dirt conditions will require more frequent cleaning, as often as once a day, if necessary.

COOLING SYSTEM

Check water level in radiator. Fill with rain water if available. Do not use water containing alkali.

Add coolant slowly until level is approximately 1 inch below the bottom of the filler neck.

Inspect and clean radiator core, if necessary, using air or water under pressure directed at the rear of the core. Never clean the core from the front side with air or water since this will increase clogging. The front side of the core can be cleaned with a dry brush. Never apply oil to the radiator core.

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