

LIQUID FERTILIZER ATTACHMENTS FOR 290 AND 490 CORN PLANTER



JOHN DEERE

OPERATORS MANUAL LIQUID FERTILIZER ATTACHMENTS FOR 290 AND 490 CORN PLANTER

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TO THE PURCHASER

Your new Liquid Fertilizer Attachment is sturdy and dependable. It will give long and efficient service if given proper care and operation.

This Operator's Manual is provided to furnish information on the proper operation, adjustment, maintenance, and lubrication of your new Liquid Fertilizer Attachment.

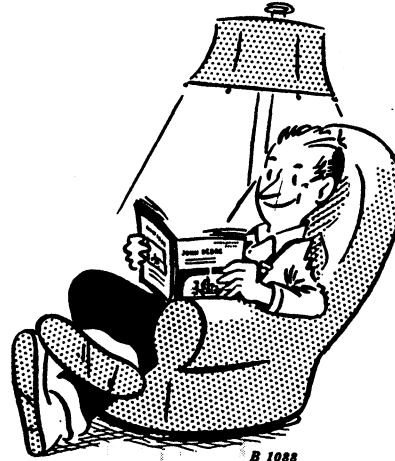
When in need of parts, see your John Deere dealer. He will furnish genuine John Deere Parts and prompt and efficient service in the field or in the shop.

Right-hand and left-hand reference is determined by standing at the rear of the planter and facing the direction of travel.

LIQUID FERTILIZER ATTACHMENT

- ☐ For 290 Planter
- ☐ For 490 Planter

Date Purchased.....



Study this manual carefully. Keep it handy, in a safe place, for future reference.

(Specifications and design subject to change without notice.)

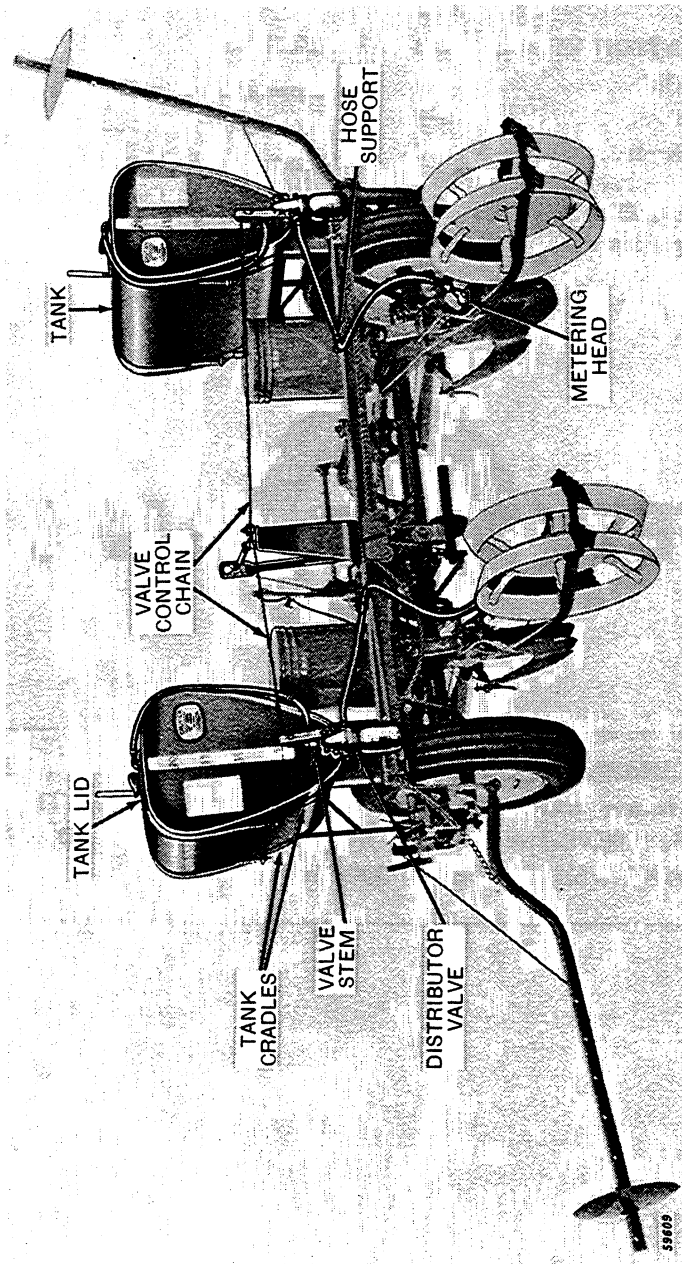
Price \$.60

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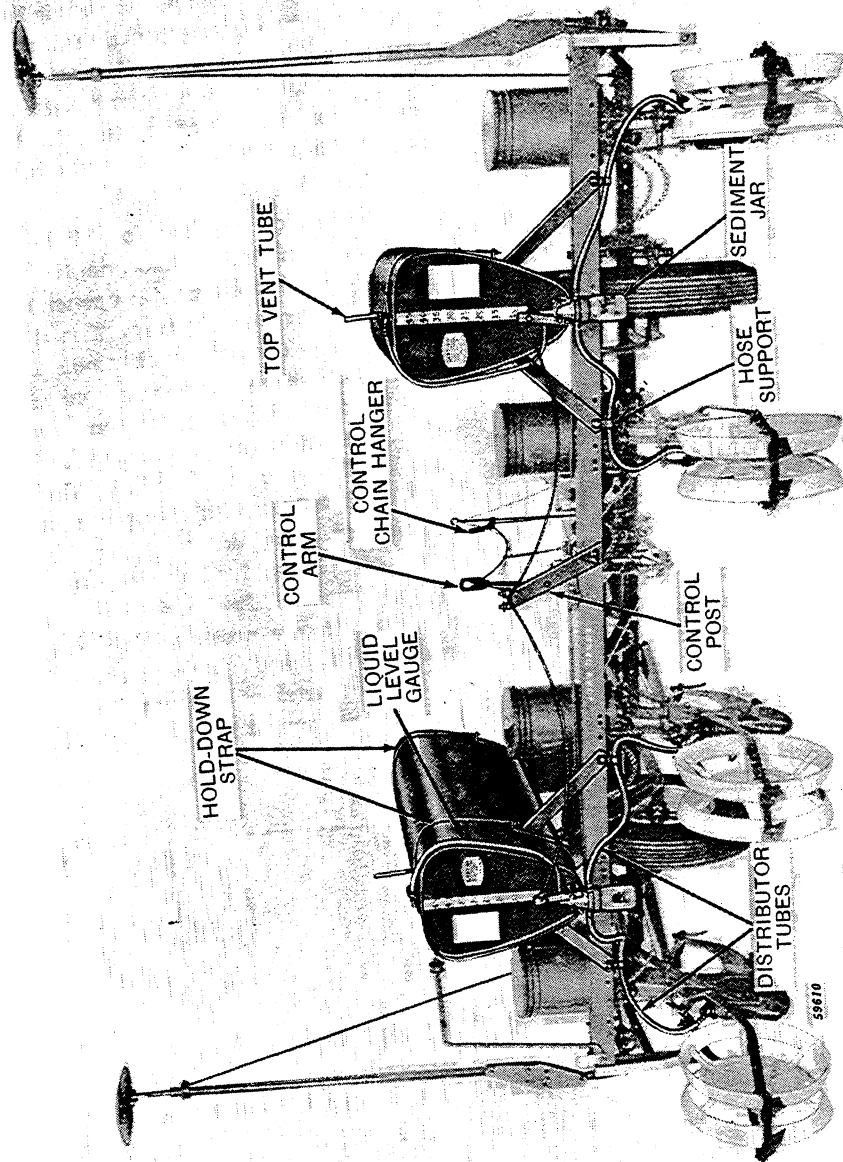
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THE COMPLETE OBSERVANCE of one simple rule would prevent many thousand serious injuries each year. THAT RULE IS: "NEVER ATTEMPT TO CLEAN, OIL, OR ADJUST A MACHINE WHILE IT IS IN MOTION."



Liquid Fertilizer Attachment Mounted on a 290 Corn Planter



Liquid Fertilizer Attachment Mounted on a 490 Corn Planter

DESCRIPTION

The John Deere Liquid Fertilizer Attachments described in this Operator's Manual are designed to distribute liquid mixed fertilizer, at the time of planting.

The attachments may be mounted on any John Deere 290 Corn Planter having Serial Number G30,000 or above, or on any John Deere 490 Corn Planter; however, on a John Deere 490 Corn Planter having a Serial Number below H14155 it is necessary to install a new marker control (Bundle No. 3019B).

The attachment, for either the 290 or 490, consists of two tanks that mount on the planter frame. Each tank for the 290 Planter has a capacity of approximately 250 pounds, and each tank for the 490 Planter a capacity of approximately 500 pounds. Each tank is equipped with a distributor valve, sediment jar, and screen. All fertilizer flows from the tank through the sediment jar and

screen so that no scale or debris can get into the delivery tubes and plug the metering orifices. All internal parts of the distributor valve are of corrosion resistant material. All the hoses are flexible and made of a transparent vinyl material.

The liquid fertilizer is delivered through a metering head adapter to either the split boot-type opener or the fertilizer disk opener. The delivery rate desired is obtained by loosening the cap screw in the metering head and aligning the tongue of the orifice disk with the desired number on the metering head base. Each orifice disk contains six graduated orifices so there is six approximate rates of delivery for any one rate of ground travel. Two size ranges of orifice disks are provided with each attachment which gives twelve approximate rates of delivery for any one rate of ground travel.

Be Careful



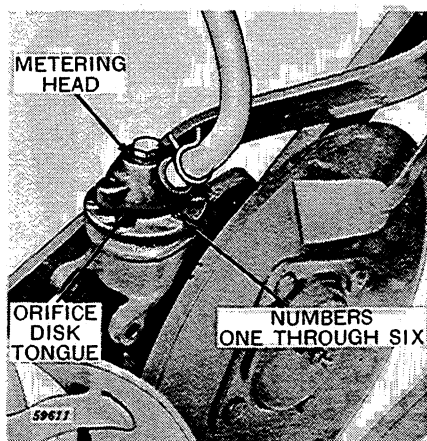
THE LIFE YOU SAVE MAY BE YOUR OWN...

NATIONAL SAFETY COUNCIL

OPERATION

METERING HEADS

The rate of application is determined by the orifice disk setting in the metering head and the rate of travel of the planter.



There are two orifice disks, low range (No. 1) and high range (No. 2) furnished with each metering head. The number is embossed on the tongue and the orifice disk must always be installed with the number up. Each orifice disk has six graduated holes which gives six delivery rates. The tongue projects out over one of the six numbers on the metering head. To change the delivery rate, loosen bolt in top of metering head. Turn orifice disk so tongue is over the number which will give the desired delivery rate and tighten bolt.

The delivery rates in the following table are approximate and will vary with changes in temperature and the particular fertilizer being used.

LIQUID FERTILIZER APPROXIMATE DELIVERY RATES IN POUNDS PER ACRE

*Calculated for 40" Row Spacing

LOW RANGE ORIFICE DISK No. 1

Orifice Number	3 mph	4 mph	5 mph
1	133	100	80
2	167	125	100
3	200	150	120
4	233	175	140
5	267	200	160
6	300	225	180

HIGH RANGE ORIFICE DISK No. 2

Orifice Number	3 mph	4 mph	5 mph
1	367	275	220
2	433	325	260
3	500	375	300
4	567	425	340
5	633	475	380
6	700	525	420

*These amounts will be increased approximately 5-1/4% when using a 38-inch row spacing, and 11% when using a 36-inch row spacing.

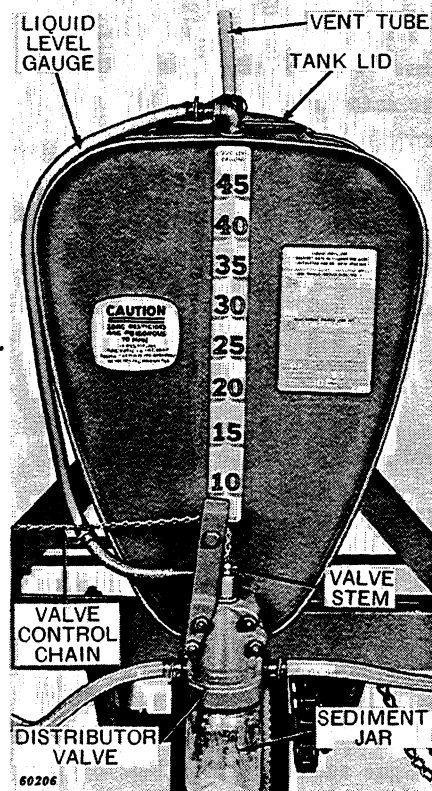
NOTE: At a ground speed of 2 mph the delivery rate will be double that shown for 4 mph in the above chart, and when the ground speed is 6 mph the delivery rate will be one-half that shown for 3 mph.

TANKS

Fill the tanks with liquid fertilizer. The lids must seal tight in order to assure uniform delivery of fertilizer in the field.

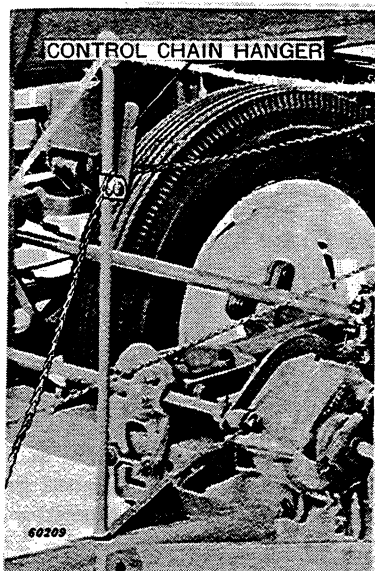
Lubricate the valve stem in each distributor valve with a good grade of light oil each day of operation.

The sediment screen, just above the sediment jar in each distributor valve, should be cleaned at least once, each day of operation, or more often if necessary.



VALVE CONTROL CHAINS

Clip the manual control chain to the tractor seat frame.

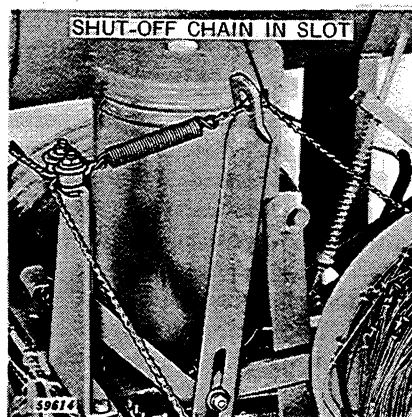


Control Chain Hanger—490 Planter

On the 490 Planter, place the control chain in the control chain hanger.

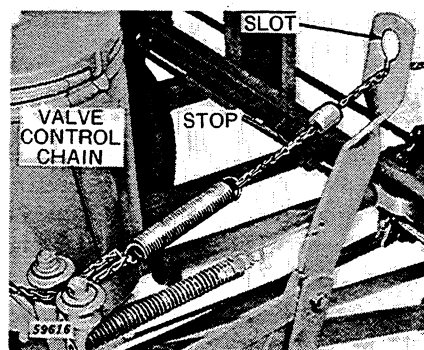
The distributor valves are controlled automatically so that they are opened when the planter runners are lowered and closed when the planter runners are raised.

The distributor valves can also be controlled by hand, from the tractor seat, when the planter runners are in the ground.



Chain Shut-Off—290 Planter

To shut off the flow of fertilizer when the planter runners are in the ground, pull on the control chain and release the stop from the slot in the valve control arm.



Chain Shut-Off—490 Planter

To start the flow again, pull the stop through the hole in the control arm and let the chain fall in the slot.

SAFETY SUGGESTIONS



Be careful during the operation of the planter, to avoid injury to yourself and the people working with you.

When the planter is transported on road or highway at night or during the day, accessory lights and devices should be used for adequate warning to operators of other vehicles. In this regard check local governmental regulations. Various safety lights and devices are available from your John Deere dealer.

Be careful when operating on hill-sides because the machine may tip sideways if it strikes a hole, ditch or other irregularity.

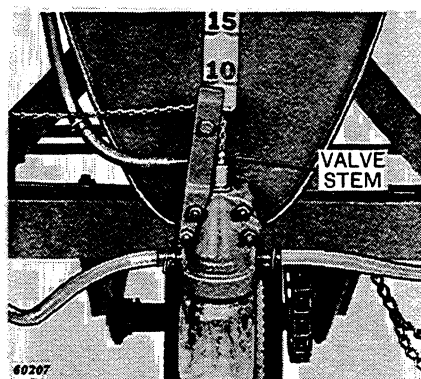
Refuel the tractor only when it has been shut off. Do not smoke or use an oil lantern when working around inflammable fuel, especially when refueling the tractor.

Agricultural chemicals can be dangerous! Improper selection or use can injure persons, animals, plants, soils or other property. **BE SAFE:** Select the right chemical for the job. Handle and apply it with care. Follow instructions of the chemical manufacturer.

Finally, remember this: An accident is usually caused by someone's carelessness, neglect or oversight.

LUBRICATION

Because of the extra weight of fertilizer being carried on the planter, grease the wheel bearings on the planter twice each day of operation.



Lubricate the valve stem in each distributor valve with a good grade of light oil each day of operation.



CAUTION: Do not clean, lubricate, or adjust your machine while it is in motion.

MAINTENANCE

Do not leave liquid fertilizer in the tanks if the temperature is expected to drop below 40°F. as some types of liquid fertilizer will begin to crystallize at this temperature.

Extra care must be taken to clean tanks thoroughly, and oil, after each day of use if nitrogen solutions are used in the tanks. **Never leave nitrogen solutions standing in the tanks.**

After use, if the planter is to stand idle for some time before being used again, remove the sediment jar, hold the valve open, and flush out the tank, distributor valve, delivery tubes, and metering heads with clean water. Refill tank with water, add approximately 1/2 pint of 10-W oil, and replace lid. Shake tank and drain, leaving lid in place.

Agricultural chemicals can be dangerous! Improper selection or use can injure persons, animals, plants, soils or other property. BE SAFE: Select the right chemical for the job. Handle and apply it with care. Follow instructions of the chemical manufacturer.

If soil insecticides are used in this attachment, the solvents which are sometimes used as carriers for the insecticides may cause swelling of the seals, gaskets, and hose.

To help overcome this difficulty, at the end of each day's use, hold valve open and flush the tank, distributor valve, hose, and metering head with clean water. Then remove lid seals from lids and orifice disks from metering heads, wash with clean water, and allow to dry overnight. Leave tank open and remove sediment jar.

NOTE: If difficulty is still encountered, it may be necessary to have an extra set of lid seals and orifice disks to alternate during the day's use.

At the end of the planting season, the distributor valves and metering heads should be disassembled. The tanks and all parts should be thoroughly cleaned with clean water and a mild detergent and the distributor valves and metering heads reassembled. Do not replace lids until tanks are completely dry. Oil all parts.

ASSEMBLY

SHIPPING BUNDLES

290 PLANTER

Qty.	Bundle No.	Description
1	BB10777B	Liquid Fertilizer Tanks
1	4556 B	Box of Parts
Optional Shipping Bundles		

1	4403 B	Split Boot-Type Openers (For Check-Row Planter)
1	4417 B	Split Boot-Type Openers (For Drill Planter)
1	4450 B	Disk Openers

NOTE: Before installing the Liquid Fertilizer Attachment on a John Deere No. 290 Planter with Serial No. below S37100, it is necessary to install a wheel hub (H2714B) and an axle (H2715B) in each planter ground wheel.

490 PLANTER

Qty.	Bundle No.	Description
1	BB10775B	Liquid Fertilizer Tanks
1	4557 B	Box of Parts
Optional Shipping Bundles		
2	4403 B	Split Boot-Type Openers (For Check-Row Planter)
2	4417 B	Split Boot-Type Openers (For Drill Planter)
2	4450 B	Disk Openers

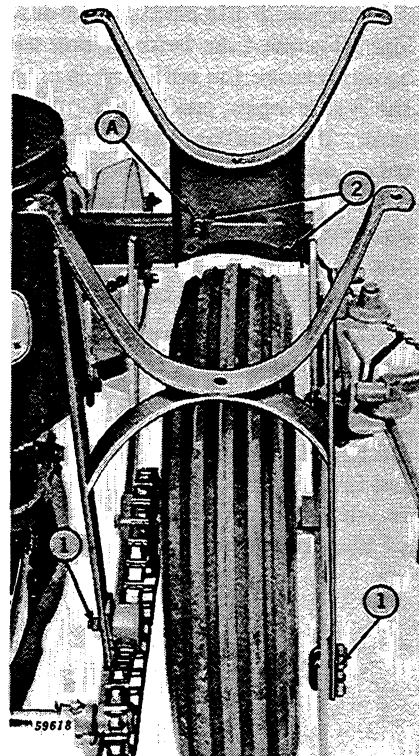
NOTE: Refer to the Planter Operator's Manual for installation of the Split Boot-Type Openers and to Planter Works Direction No. 255 for installation of the Fertilizer Disk Openers.

Use a non-hardening pipe joint compound on all pipe fittings.

NOTE: Hose clamps for all delivery tubes and the liquid level gauge tubes are included in the carton of parts. Always insert a hose clamp over the end of the hose before connecting the delivery tubes or the liquid level gauge tubes to the hose nipples.

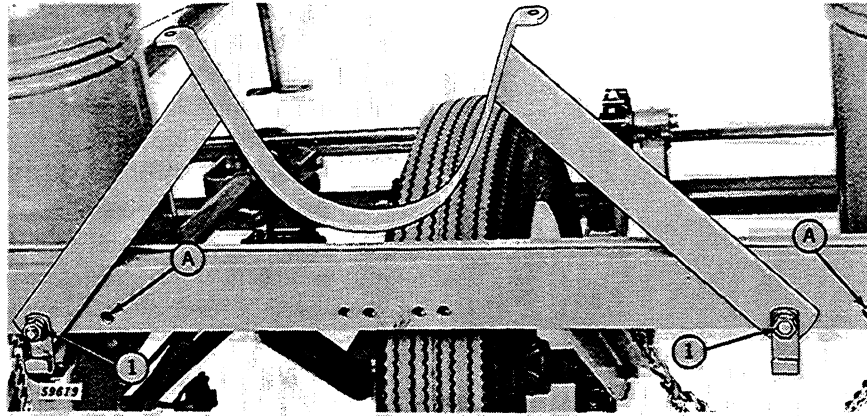
TANK CRADLES

290 Planter Only.



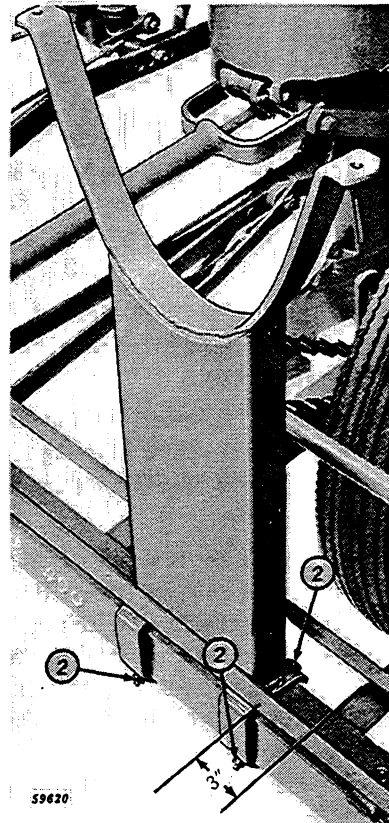
1. Install the tank cradles on front of planter, using U-bolts and longer bolt from sack of parts.

2. Install the rear right- and left-hand tank cradles, using hook bolt from sack of parts at "A."

490 Planter Only.

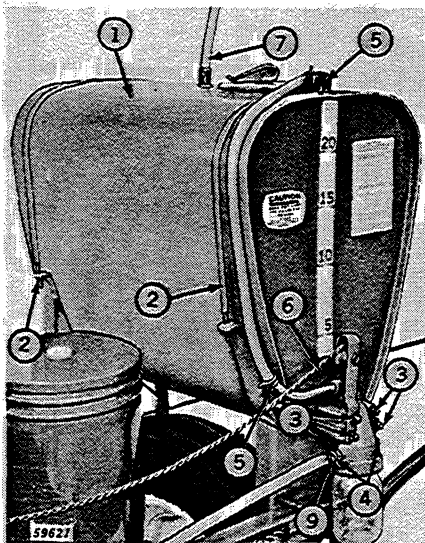
1. Install the tank cradles and hose supports on rear sill bar of planter. The tank cradles are installed as shown, except when planter is set for 36- or 38-inch row spacing and equipped with a spring pressure attachment. If using a spring pressure attachment and 36- or 38-inch row spacing, install cradles in holes "A."

2. Install the tank cradles on front frame of planter. The inside edge of the clamp should be positioned approximately 3 inches from the inside planter wheel support except when rear cradles are installed in holes "A." **The front cradles must always be positioned so the tanks set square in the cradles.**



TANKS AND DISTRIBUTOR VALVES

290 Planter Only.



1. Place the tanks in the cradles so there will be room for each sediment jar to clear the rear sill bar of the planter.

2. Place the hold-down straps over the tanks and secure them to the cradles.

NOTE: The elbow in the top of each distributor valve must be turned toward the center of the planter before installing valve.

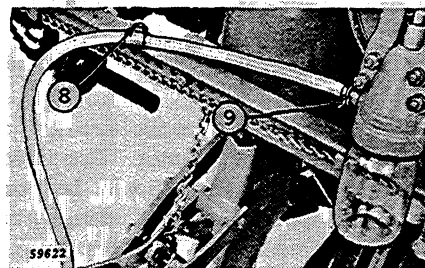
3. Install the distributor valve on each tank as follows: Insert the four bolts, from the inside, through the holes in the tank. Install the valve gasket and attach the distributor valve over the four bolts. Place the chain roller bracket on the two inside bolts. Secure the distributor valve and chain roller bracket in place with four nuts.

4. Screw a hose nipple into the inside hole of each distributor valve so that the delivery hose on each tank will be toward the inside of the planter. Screw a pipe plug into the outside hole of each distributor valve.

5. Screw one hose nipple and elbow into the top of each tank. Install one liquid level gauge stem in elbow in top of each distributor valve and attach the liquid level hoses.

6. Attach one valve control chain to each distributor valve by inserting the end of the chain into the top of the valve and holding in place with cotter pin.

7. Screw a hose nipple into the top of each tank and install a vent tube extension. The vent tube inside of each tank must be tightly in place.



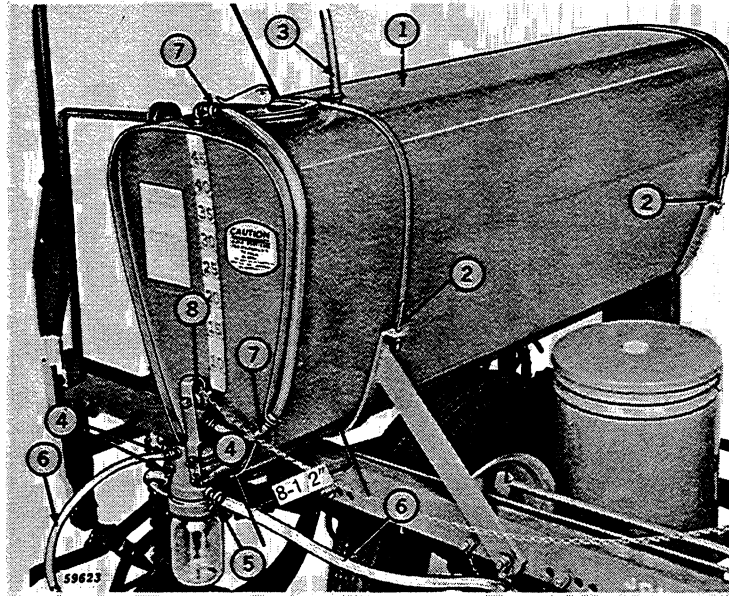
8. Bolt the hose supports to the planter frame.

9. Install a delivery hose over nipple in side of each distributor valve and hook through hose support.

NOTE: Place all hose clamps in position to hold hoses to nipples.

TANKS AND DISTRIBUTOR VALVES—Continued

490 Planter Only.



1. Place the tanks in the cradles. The rear of each tank must extend 8-1/2 inches beyond the rear edge of each rear cradle when using the spring pressure attachment on the planter.

2. Place the hold-down straps over the tanks and secure them to the cradles.

3. Screw a hose nipple into the top of each tank and install a vent tube extension. The vent tube inside of each tank must be tightly in place.

NOTE: The elbow in the top of each distributor valve must be turned toward the center of the planter before installing valve.

4. Install the distributor valve on each tank as follows: Insert the four bolts, from the inside, through the holes in the tank. Install the valve gasket and attach the distributor valve over the four bolts. Place the

chain roller bracket on the two inside bolts. Secure the distributor valve and chain roller bracket in place with four nuts.

5. Screw a hose nipple into both sides of each distributor valve.

6. Install a delivery hose over each nipple in sides of each distributor valve and hook through hose supports.

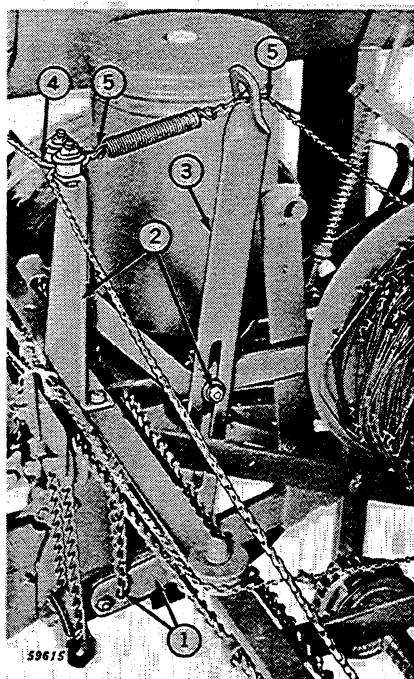
7. Screw one hose nipple and elbow into the top of each tank. Install one liquid level gauge stem in elbow in top of each distributor valve and attach the liquid level hoses.

8. Attach valve control chain to each distributor valve by inserting the end of the chain into the top of the valve and holding in place with a cotter pin.

NOTE: Place all hose clamps in position to hold hoses to nipples.

VALVE CONTROL CHAIN

290 Planter Only.



1. Remove the lift chain from the planter lift arm. Install lower arm guide locator on the planter lift arm and replace lift chain.

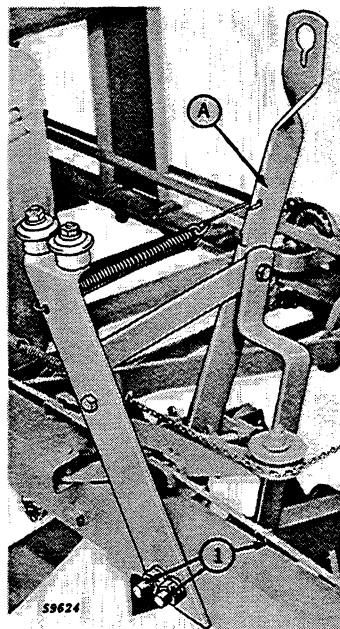
2. Attach valve control post to planter rear sill bar and center brace.

3. Attach valve control arm to planter center brace and lift arm.

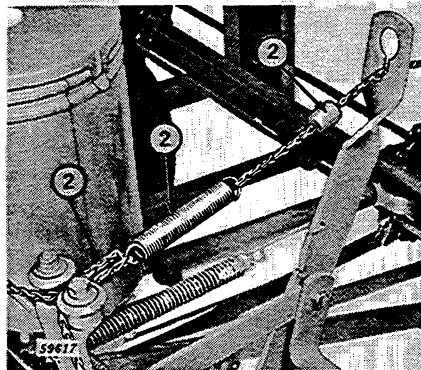
4. Install the control chain between rollers on the valve control post.

5. Attach spring to control chain. Place the long chain, with stop attached, through hole in valve control arm. Pull chain forward so stop is in front of slot in valve control arm.

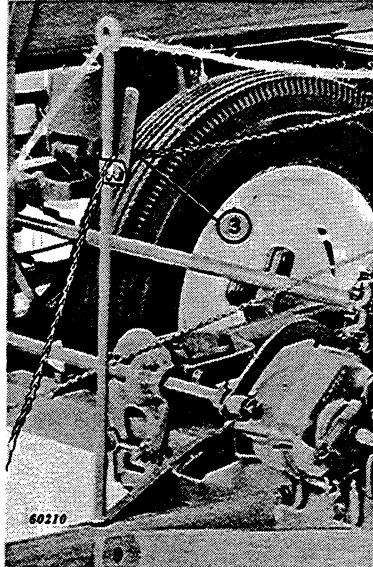
490 Planter Only.



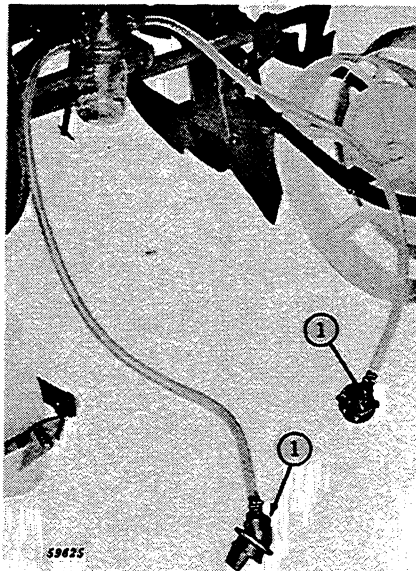
1. Install the valve control assembly. The arm "A" must be free to pivot.



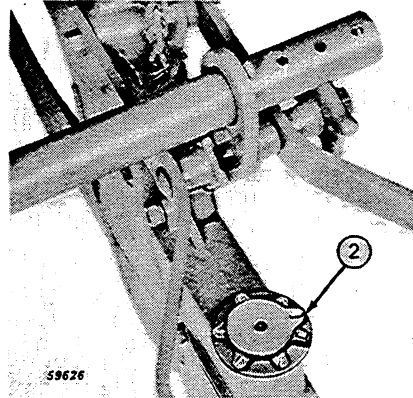
2. Install control chain, spring, and long chain with stop attached. Pull chain forward so stop is in front of slot in valve control arm.

490 Planter Only—Continued.

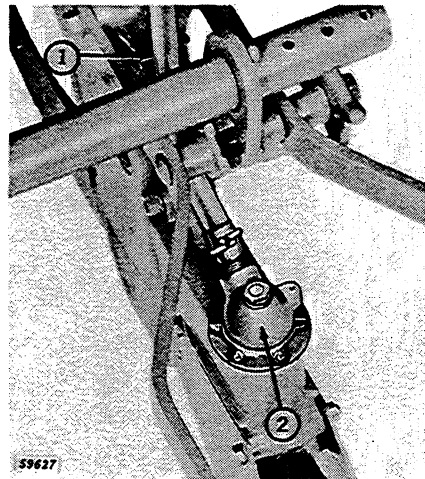
3. Clamp the control chain hanger to the rope guide and place the control chain in the hanger.

METERING HEADS

1. Remove the bolts from metering heads.



2. Install each metering head base in a fertilizer boot by engaging lugs in slot. Place each orifice disk on a metering head with the number up.

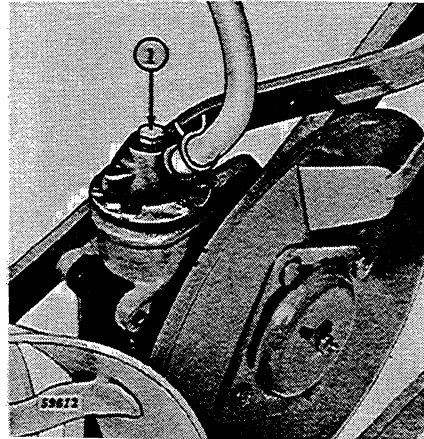
Split Boot Openers Only.

1. Insert each delivery hose and metering head cap between the press wheel frame and back of the depth adjusting nut.

2. Bolt each metering head cap through the orifice disk to the metering head base, so that the hose is straight up between the press wheel frame with gauging pin through base and into slot in fertilizer boot.

METERING HEADS—Continued**Disk Openers Only.**

1. Bolt each metering head cap through the orifice disk to the metering head base.





nobody can fill them like you can!

That's what the owner of this pair of work shoes is finding out—the hard way. Through a careless action, he has become the victim of an accident. It's a mighty tough way to find out that nobody else can wear your shoes or practice safety for you. And a needless, costly lesson to learn that safety is an everyday need.

Put safety into each of your workdays; read the operator's manual thoroughly; know how to operate each machine properly and safely; take the safety precautions specified; think before you act.

Make sure you wear your "shoes" everyday. Outfit yourself with a safety program now.

As a member of the National Safety Council, we are privileged to use the Green Cross for Safety to designate not only our interest in Safety, but to emphasize and call attention to the safety precautions in this manual.



