
Classic Series Vacuum Plot Planter /Classic Aire
uses air actuator in place of electric actuator on the
Classic model



Operators Manual

Operator's Manual

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Safety Precautions



This symbol means:

**ATTENTION
BECOME ALERT
YOUR SAFETY IS INVOLVED.**

When you see this symbol on the machine or in this manual, be alert to the potential for personal safety. Follow all recommended precautions. Safety of the operator is one of the main concerns in designing and developing a new piece of equipment. The operator can avoid many accidents by observing the warning signs. Keep the safety warning signs clean and readable. Replace all damaged warning labels on your machine that are not readable or are missing. The signal words used in this manual or on the machine are DANGER, WARNING, and CAUTION. The appropriate signal word for each has been selected using the following guidelines:

DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed, or to alert against unsafe practices.

CAUTION: Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury, or to alert against unsafe practices. Listed below are safety precautions that should become standard practice before and during operation, transport, and maintenance of the planter.



General Safety

Carefully study and understand this manual.

Do not wear loose fitting clothing which may catch in moving parts.

It is recommended that suitable protective hearing and safety glasses be worn.

The operator may come in contact with certain materials which may require specific safety equipment, relative to the handling of such materials (examples: extremely dusty, molds, fungi, bulk fertilizers, insecticides, etc).

Assure that planter tires are inflated evenly.

Give the planter a visual inspection for any loose bolts, worn parts or cracked welds, and make necessary repairs. Never operate any equipment that is not in safe working condition.

Be sure that there are no tools lying on or in the planter.

Do not hurry the learning process or take the unit for granted. Ease into it and become familiar with your new planter.

Practice operation of your planter and its attachments. Completely familiarize yourself and other operators with its operation before using.

Do not allow anyone to stand between the tongue or hitch and the towing vehicle when backing up to the planter.

Always make sure there are no persons near the planter when the wings are being lowered from transport position.

Before applying pressure to the hydraulic system, make sure all connections are tight and that hoses and fittings have not been damaged. Hydraulic fluid escaping under pressure can have sufficient force to penetrate skin causing injury.

Install lock ups on markers, as provided prior to transporting the planter or working around the unit.

SAFETY PRECAUTIONS



During Operation

Beware of bystanders, particularly children! Always look around to make sure that it is safe to start the engine of the towing vehicle.
Use necessary safety lights and devices and observe legal regulations before transporting on public roads. Be especially observant of the operating area and terrain – watch for holes, rocks or other hidden hazards. Always inspect the area to be planted prior to operation. Do not operate near the edge of drop-offs or banks. Be extra careful when working on inclines.
Do not operate on steep slopes as overturn may result.
Keep hands and clothing clear of moving parts.
Always make sure there are no persons near the planter when the marker assemblies are in operation. If a marker cylinder has been removed for any reason, do not attach the rod end of the cylinder until the cylinder is cycled several times to remove any air that may be trapped in the system.
Serious injury or death can result from contact with electric lines. Use care to avoid contact with electric lines when moving or operating this machine.
Lower the planter when not in use and cycle the hydraulic control lever to relieve pressure in hoses.



Following Operation

When halting operation, even periodically, stop the tractor, set the tractor or towing vehicle brakes, disengage the PTO and all power drives, shut off the engine and remove the ignition key.
Store the planter in an area away from human activity.
Do not permit children to play on or around the stored planter.
The planter should be stored in a dry and dust-free location with the hydraulic cylinders closed.
Engage all safety devices for storage.
Wheel chocks may be needed to prevent the parked planter from rolling.



Performing Maintenance

Good maintenance is your responsibility.
Make repairs in an area with plenty of ventilation. Never operate the engine of the towing vehicle in a closed building. The exhaust fumes may cause asphyxiation.
As a precaution, always recheck the hardware on equipment following every 50 hours of operation.
Correct all problems.
Before working on the planter, stop the towing vehicle, set the brakes, disengage the PTO and all power drives, shut off the engine and remove the ignition keys.
Never work under the planter while it is in a raised position.
Be certain all moving parts have come to a complete stop before attempting to perform maintenance.
Always use the proper tools or equipment for the job at hand.
Never use your hands to locate a hydraulic leak. Use a small piece of cardboard or wood. Hydraulic fluid escaping under pressure can penetrate the skin. If injured by escaping hydraulic fluid, see a doctor at once. Gangrene can result. Without immediate medical treatment, serious infection and reactions can occur.
Replace all shields and guards after servicing and before moving.
After servicing, be sure all tools, parts and service equipment are removed.

If the planter has been altered in anyway from the original design, the manufacturer does not accept any liability for injury or warranty.



Tire Safety

Inflating or servicing tires can be dangerous. Do not attempt to mount a tire unless you have the proper equipment and experience to do the job. Whenever possible, trained personnel should be called to service and/or mount tires.

Failure to follow proper procedures when mounting a tire on a rim can produce an explosion which may result in serious injury or death.

Check wheels for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.



Drive Line Safety

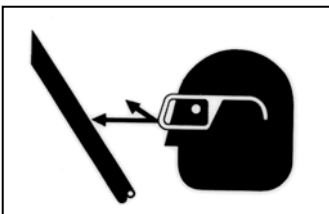
DANGER Rotating drive line contact can cause death – keep away. Do not operate without all driveline, tractor and equipment shields in place; without drivelines securely attached at both ends, and without driveline shields that turn freely on driveline.



Hydraulic System Safety

DANGER Before applying pressure to the hydraulic system, check that all connections are tight and that the hoses and fittings have not been damaged. Hydraulic fluid escaping under pressure can penetrate the skin causing serious injury. If injured by escaping hydraulic fluid see a doctor at once. Gangrene can result.

Relieve pressure on system before repairing or adjusting or disconnecting.



Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.

Keep all components in good repair.


Shown below are various safety stickers, part number and location. Keep the safety warning signs clean and readable. Replace all damaged warning labels on your machine that are not readable or are missing.

CAUTION

Lock this unit in the up position before stacking the machine.

ST053
On front of hopper of the inside wing unit of the stacking toolbar

WARNING



Agricultural chemicals can be dangerous. Improper use can result in injury to persons, animals and soil. Handle with care and follow instructions of chemical manufacturer. ATI 2

ST055
On inside of the granular hopper lid

WARNING

Any alterations to the design of this planter may create safety hazards. Follow safe practices to avoid injury. ATI 1

ST054
On front toolbar

WARNING

TOW ONLY WITH FARM TRACTOR


ST056
On front of pull-type Toolbar

Position for Pins / Posicion para Pasador

"IN" for Raw or Small Seed
"DENTRO" Semillas Pequeñas Y/O Sin Pellet

"OUT" for Pelleted or Large Seed
"FUERA" Semillas Grandes Y/O Con Pellet

ST051
On MS metering box



WARNING

TO AVOID INJURY Stand clear, Keep others away when raising or lowering markers. Lock row markers for transport using the locking sleeve or locking pin. ATI 3

ST052
On row marker

DANGER



ROTATING DRIVELINE
CONTACT CAN CAUSE DEATH
KEEP AWAY!

DO NOT OPERATE WITHOUT —

- ALL DRIVELINE, TRACTOR AND EQUIPMENT SHIELDS IN PLACE
- DRIVELINES SECURELY ATTACHED AT BOTH ENDS
- DRIVELINE SHIELDS THAT TURN FREELY ON DRIVELINE

LI 383333

ST057
On PTO shaft

CAUTION

1. Read and understand the operators manual.
2. Do not permit riders on the planter frame.
3. Clear the area of all persons when the planter is in operation.
4. Use extreme care when operating the planter near electrical lines.
5. Lower planter to the ground on a level surface before disengagement from tractor.
6. Use necessary safety precautions as safety lights and devices and observe legal regulations before transporting planter on public roads.
7. High pressure fluids can cause injury. Relieve pressure before disconnecting hydraulic lines. Tighten connections before applying pressure. ATI 4

ST050
On front of toolbar

Planter Controls

Classic Main Control Box



Main Power Switch

Cycle Button

For manual operations, press and hold button on keypad:

Manual operations 1-5 are intended for checking planter functions.

- 1) **MANUAL EVAC.** - Opens valve to evac seed chamber.
- 2) **MANUAL ROTATE & EVAC** - Opens valve to evac seed chamber and rotates seed plates.
- 3) **MANUAL DIVIDER OPEN** - Opens divider.
- 4) **MANUAL DIVIDER CLOSE** - Closes divider.
- 5) **MANUAL ROTATE** - Rotates seed plates.
- 6) Not programmed.
- 7) Not programmed.
- 8) Not programmed.
- 9) Not programmed.
- 0) Not programmed.

Green **CYCLE** button: Runs through the cycle. As it cycles it clears the seed meter of all seeds and loads new seed onto the seed plate. When it is finished the screen will read “READY”.

PLC Settings and Descriptions

	Message	Indicates
Step 1	EVAC TIME <u>01.00</u>	Delay in seconds after evac starts for motor to rotate. You want to evac all of the seeds before the motor starts turning. This will minimize the pile of seeds at the clean out point in the alley.
Step 2	EVAC & ROTATE TIME <u>00.00</u>	Time that motor rotates while evacuating the seeds. The motor should rotate enough to make the seed plate make at least one full revolution. This clears the seed plate of all of the old seed and assists the evac in clearing the seed chamber. This should be zero if you are not stopping in the alley way.
Step 3	DIVIDER OPEN TIME <u>00.85</u>	Time that divider is open. Allow the actuator time to completely retract. The divider should stop fully open to ensure all of the seed is out of the divider before closing. This sends the seed to the row unit seed meters.
Step 4	DIVIDER CLOSE TIME <u>00.85</u>	Time to close divider. The divider should stop at the end of the stroke to ensure the gate is closed.
Step 5	LOAD TIME <u>01.50</u>	Time to load plate with new seed. The new seed is picked up by the rotating seed plate. This “primes” the seed meter with the new plot. When the planter moves forward it will begin planting using the mechanical transmission.
Step 6	PLOT LENGTH FACTOR	Adjusting this number adjusts the plot length readings proportionally. Used only when using a cable.
Step 7	SETBACK	Adjusts the alley setback in relation to the cable button. Used only when using a cable.

On the left page are the directions for calibrating the planter settings to adjust the planter for your specific planting needs. Different seed varieties require different settings.

Once the readout screen says **“READY”**, push the **Right Arrow Key**.

To re-set the time element (in seconds), the numbers you will be changing are following the description on the screen. As the cursor is flashing under the first number, key in the correct seconds from keypad. If you key in the wrong number, use the left arrow key to back up, allowing you to change the number.

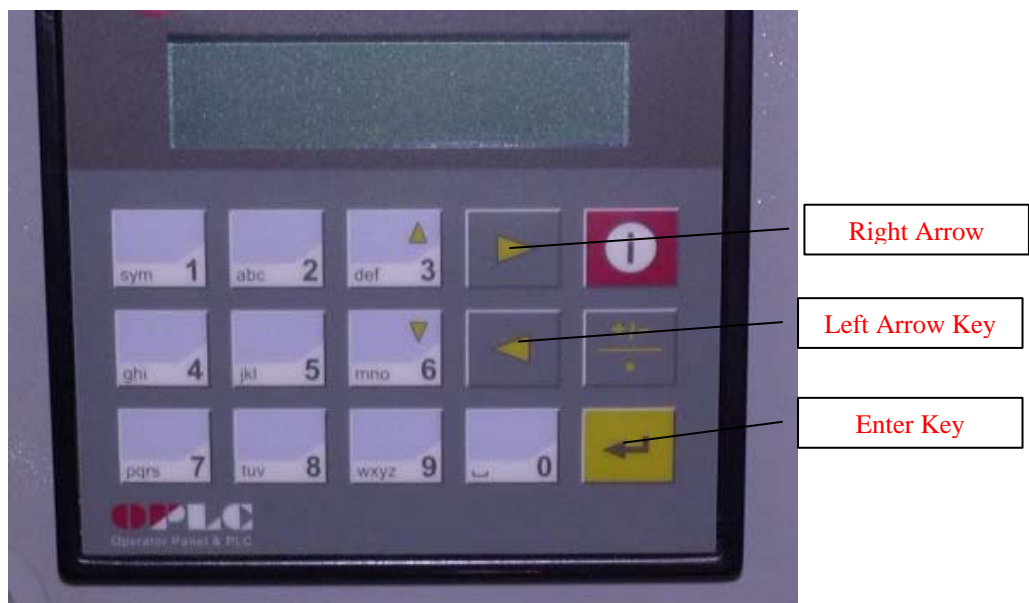
Example: for five seconds you would key in 0 5 0 0

The decimal will automatically stay in the middle with two digits in front of and two digits behind. The two digits in front of the decimal are whole seconds, the two digits behind the decimal are fractions of a second. For 1 through 9 seconds, be sure to key in the 0 first.

Once you have the correct number, push the Enter Key to save your settings.

To toggle through the setting menu you must push the Enter Key (each time after the Arrow Key) before advancing to the next step.

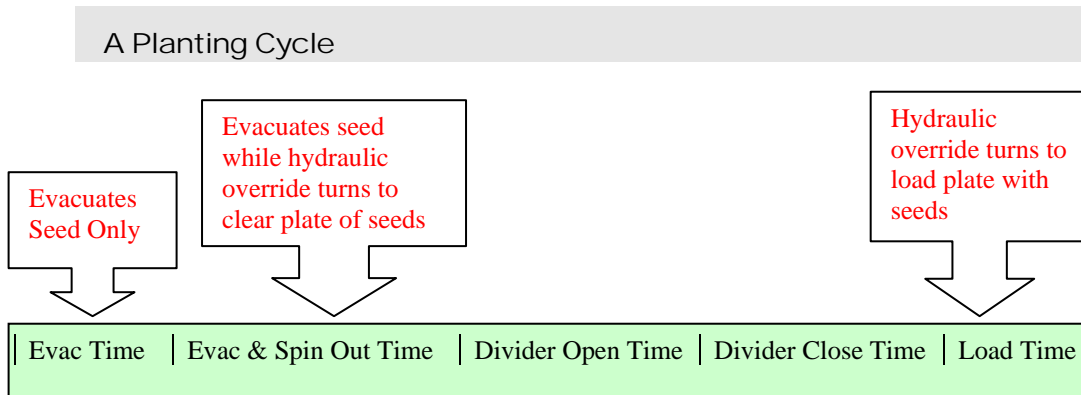
Then push the right arrow key to allow you to go on to the next step. Push the left arrow key to go back to the previous step. The procedure is the same for each step.



Setting Controls for Intermittent Operation

Use the following steps if you plan to stop between plots as you plant. If you do not want an alley, or you are planting long strip tests, follow these steps:

1. Hook tractor to planter. Hitch to draw bar on tractor or 3 point arms to planter.
2. Attach P.T.O. shaft to tractor PTO or plug in hydraulic lines for hydraulic driven fan option.
3. Attach wire leads to power and ground on tractor battery.
4. Turn on main power. Wait until readout screen says “**READY**”.
5. To calibrate the planter settings to your specific planting needs, push the Right Arrow Key. Refer to the table in Section 2, page 7. When number is flashing above cursor, change the time in seconds. Push Enter Key to save your setting.



6. Set **EVAC TIME** setting. This should be set to evac all excess seed in the seed chamber before the override motor starts turning.

SETTINGS

7. Set **EVAC & SPIN OUT TIME** to ensure all excess seed is off of the seed plate. The seed plate should rotate at least one full revolution to ensure all of the seed is out of the seed meter.
8. Set **DIVIDER OPEN TIME** to ensure the divider is open all of the way. 00.85 seconds is recommended.
9. Set **DIVIDER CLOSE TIME** to ensure the divider closes all the way. If the divider isn't closed all the way there is a possibility of cross contamination. 00.85 seconds is recommended.
10. Set **LOAD TIME** to set how long the motor runs to "prime" the seed plate. This setting is a factor of where the planter stops in relationship to the start of the next plot.
11. Planter should be tested before planting actual plots.

Setting Controls for Continuous Operation

Use these steps to calibrate the planter for continuous planting without stopping in the alleyway.

1. Hook tractor to planter. Hitch to draw bar on tractor or 3 point arms to planter.
2. Attach PTO shaft to tractor PTO or plug in hydraulic lines for hydraulic driven fan option.
3. Attach wire leads to power and ground on tractor battery.
4. Set transmission for desired seed spacing. Refer to Monosem manual.
5. Set miles per hour.
6. Set up the checkheads and cable or cable winder.
7. Turn on main power. Wait until readout screen says **“READY”**.
8. Set the top speed of the hydraulic seed shaft motor to as fast as it goes without any skips.
 - a. Set transmission for seed spacing.
 - b. Fan/tractor should be at planting RPMs.
 - c. Put in a lot of seeds on the far right row.
 - d. Open the plastic window to watch for seeds on the plate.
 - e. Have someone push and hold button #5 to turn the hydraulic motor.
 - f. Adjust the hydraulic motor speed with the needle valve.
 - g. Make sure the motor turns as fast as possible without getting skips on the plate.

PLC Settings will be different when changing the tractor speed, seed spacing, seed plates, or alley length.

9. To calibrate the planter settings to your specific planting needs, push the Right Arrow Key. Refer to the table in Section 2, page 7. When number is flashing above cursor, change the time in seconds. Push Enter Key to save your setting.
10. Set **EVAC TIME** setting. This should be set to evacuate all excess seed in the seed chamber before the override motor starts turning. Look at the end of the plot to get the Evac Time set correctly.
11. Set **EVAC & SPIN OUT TIME** to zero. Since you are not stopping in the alleys, the seed shaft will still be turning and the step is not used.
12. Set **DIVIDER OPEN TIME** to ensure the divider opens all of the way. If the divider doesn't open all the way, seed could sit on the gate and contaminate the next plot (00.85 seconds).
13. Set **DIVIDER CLOSE** time to ensure the divider closes all the way. If the divider isn't closed all the way there is a possibility of cross contamination (00.85 seconds).
14. Set **LOAD TIME** seconds to "speed up" the seed plate. The longer the time, the shorter the alley. If this number is too high, you may see seeds bunched together at the beginning of the plots. Look at the start of the plot and alley width to get the load time set correctly.
15. Please have your MPH and your alleyway set before moving onto the next steps.

Using the green manual trip button rather than a cable:

16. Follow the previous steps to calibrate your correct alley length.
17. Once you are satisfied with your alley length, you need to determine the correct location within a plot to push the button in order to have your alley where you want it.
18. Flag or stake your plots and alleys, you may even want to run alley lines across the entire field. A highly visible reference point is desirable.
19. It will help to have something hanging off the tractor or planter to give you a more accurate visual point for pressing the green cycle button. In order to

keep alleys straight and aligned, the rider will need to always push the button at the same reference point through out planting.

20. Start planting; using the visual point on the tractor or front of the planter. While planting, push the green cycle button when this visual point is over your alley. Continue to plant through the next plot. Stop and go find where the alley was placed. Check the distance between the desired alley location and the actual location. If the actual alley is too far in the direction of travel, move the visual point further back on the tractor or planter to trip at, and vice versa.

Using a cable with checkheads or a cable winder:

21. If you are planting using a cable to trip the planter, calibrate the **PLOT LENGTH FACTOR**.
 - a. Drive the planter through several ranges, and write down the plot length number from the display.
 - b. Take an average of the numbers. Divide the average by the inches between buttons on the cable to get a ratio.
 - c. Multiply the ratio by the Plot Length Factor, in your PLC settings. This will yield your new Plot Length Factor. Enter it into the PLC and try it again.
22. Set the alley **SETBACK**. Increase the number to move the alley in the direction of travel, or decrease the number to move the alley in the opposite direction of travel. Change the Setback by the number of inches you want the alley to move.
23. Planter should be tested before planting actual plots.

Troubleshooting an Alley

The first time you use this planter, you may not have any idea where to start with the timers and the speed for the hydraulic override motor for the seed shaft. Below are examples that show what settings affect different parts of the plot.

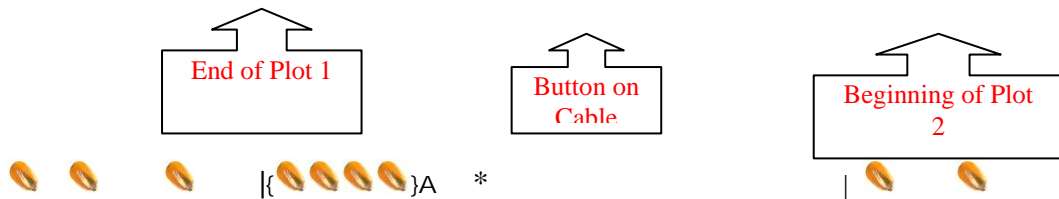
The first thing to remember when setting the planter is to **only change one thing at a time**, so you will know what worked and what didn't.

The second thing is speed plays a big part in how wide your alleys are. The faster you go, the wider your minimum alley width can be.

Example 1:

Shown below is an alley with seeds bunched at the end of the plot.

Direction of travel →

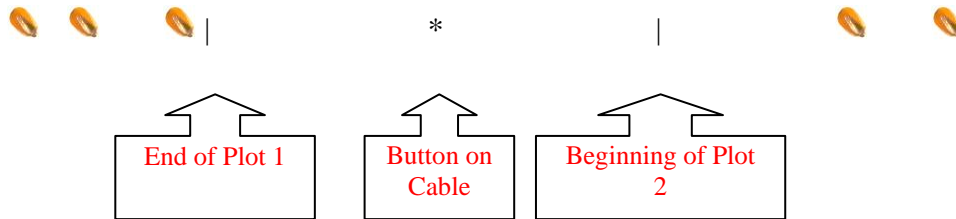


1. The seeds in parenthesis next to "A" are grouped too close together. This can be caused by :
 - a. The EVAC & SPIN OUT TIME is on. For planting on the go, it should be set to zero seconds, because the seed shaft is already turning. Running the spin out speeds the shaft up and bunches the seeds together.
 - OR-
 - b. The EVAC TIME is too short. The new seed is loaded and the LOAD TIME occurs before the seeds from the first plot are off the plate. This can be fixed by increasing the EVAC TIME.

Example 2:

Shown below is an alley that is too wide.

Direction of travel →

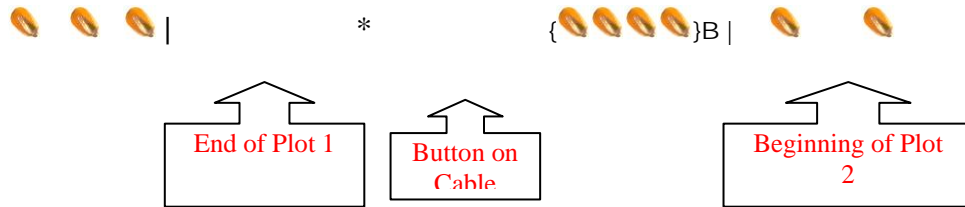


- 1) The EVAC TIME may be too long. Turn down the EVAC TIME to the minimum safe time that will allow you to evacuate all of the leftover seeds in the seed chamber. This is a 1.75 second minimum and goes up with the amount of seed you need to discard.
- 2) The DIVIDER OPEN TIME and/or DIVIDER CLOSE TIME may be too long. Try allowing only enough time to completely open and close the divider, normally 00.85.
- 3) The LOAD TIME may be too short. If the first seeds of the plots are spaced closer together, then the load time is not the cause of the wide alley.
- 4) The flow control valve on the hydraulic override motor may be set too low. Increasing the flow will cause a faster speed up, resulting in a narrower alley. If there is too much speed up, you can get skips at the beginning of the plot.
- 5) The flow control valve is set to high, not allowing seeds to be picked up on the seed plate.

Example 3:

Shown below is an alley with seeds bunched at the beginning of the plot.

Direction of travel →

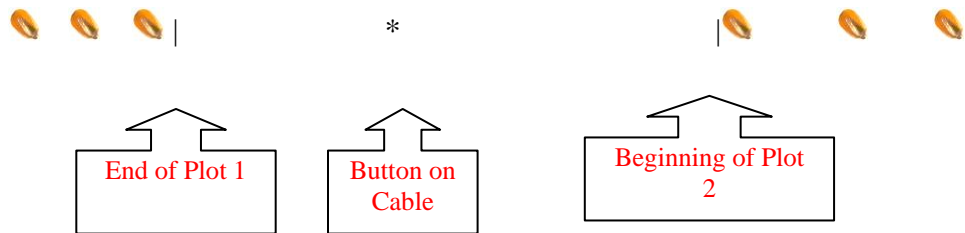


1. The seeds in parenthesis next to “B” are grouped too close together. This is caused by:
 - a. The LOAD TIME may be too long. The load time shortens the alley by speeding up the seed shaft between plots while there is no seed to drop. If this speed up is too long, the seeds will plant close together until the speedup ends.

Example 4:

Shown below is an alley that is not centered.

Direction of travel →



1. The alley is not centered over the button. **NOTE:** This is the *last* thing to be set.
 - a. If this were a three foot alley, it would appear that the button is 12 inches past the last seed of Plot 1. To be centered, the button would need to be 18 inches past the last seed in Plot 1. Increasing the Setback number by 6 would correct this.

Please contact our Service Department for any additional operating questions. 877-357-7737

SETTINGS