



Seed-Squirter™

Dual Product

Liquid Application

Quick Start Guide

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Safety

Pressurized Fluid Lines

Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials.

Pressurized lines can accidentally burst when too much heat is present.

Personal Protective Equipment

Wear close-fitting clothing and the correct personal protective equipment (PPE) for the job. See the manufacturer's manual or other information for correct PPE.

Battery Safety

Use the procedure in the appropriate agricultural equipment manual for connecting, disconnecting, and jumpstarting the machine's battery.

Keep sparks and flames away from the battery. Battery gas can explode and cause serious injury. Do not smoke in the battery charging area.

Remove jewelry, which might make electrical contact and create sparks.

Chemical Safety

Chemicals used in agricultural applications can be harmful to your health and/or the environment if not used correctly. Always follow all label directions for effective, safe, and legal use of agricultural chemicals.

Emergency Safety

Fire extinguishing systems must meet the applicable OSHA requirements, and all users of portable/fixed fire suppression equipment must know the types, limitations, and proper uses of this equipment; including hazards involved with incipient stage firefighting.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.

Know the location of fire extinguishers and first aid kits and how to use them.

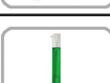
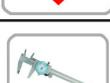
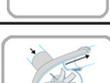
Inspect the fire extinguisher and service the fire extinguisher regularly.

Follow the recommendations on the instructions plate.

Very small fires can be put out (extinguished) with a fire extinguisher. Use an appropriate method to extinguish a fire (water for paper fires, and chemical extinguishers for electrical or chemical fires).

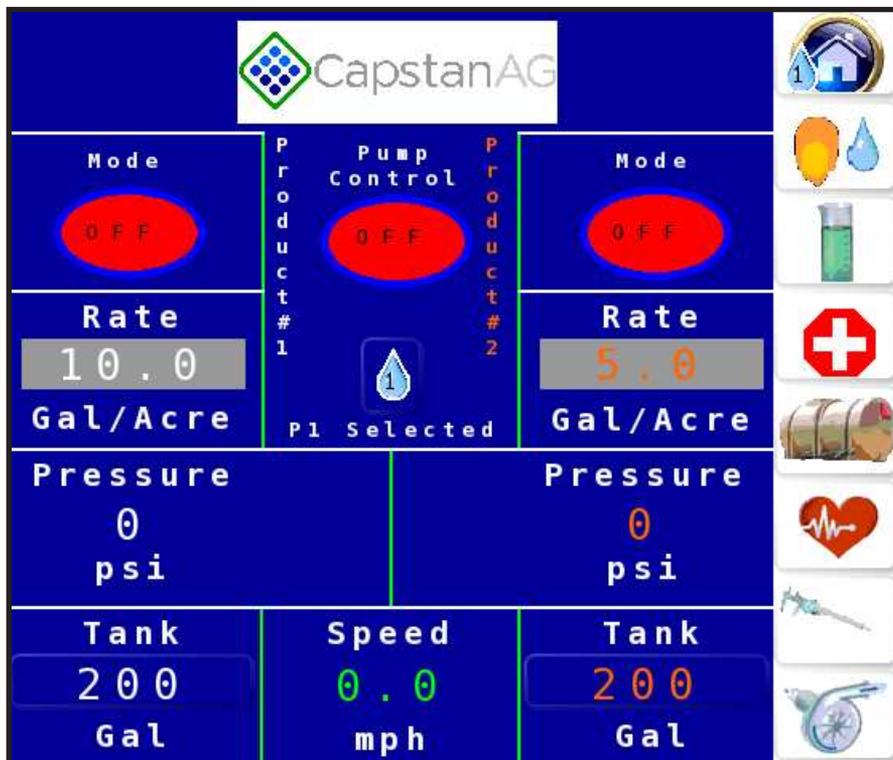
Quick Start Guide

Icon Descriptions

Icon	Description
	When the Seed-Squirter™ system is off the background of the icon is red.
	When the Seed-Squirter™ system is in any mode other than off the background of the icon is green.
	The ALARM icon shows when there is an alarm in the system. Select this icon to view and silence current alarms.
	Select this icon to go to the HOME screen.
	Select this icon to go to the PLACEMENT SETTINGS screen.
	Select this icon to go to the TIP CALIBRATION screen.
	Select this icon to go to the DIAGNOSTIC screen.
	Select this icon to go to the TANK VOLUME screen.
	Select this icon to go to the ACTIVE SEED VALVE SENSOR screen.
	Select this icon to go to the SENSOR SETTINGS screen.
	Select this icon to go to the PUMP SETTINGS screen.
	This icon only shows when there are two or more monitors on the same CAN, after unlocking the screen with the correct password. Select this icon to change the monitor that shows the Seed-Squirter™ screens.

Home Screen

The **HOME** screen is the main user interface.



 Select the **Home** icon to see the information for a dual-product system, each product has information shown on the main screen.

Product 1 (default—white) information and Product 2 (default—orange) information includes:

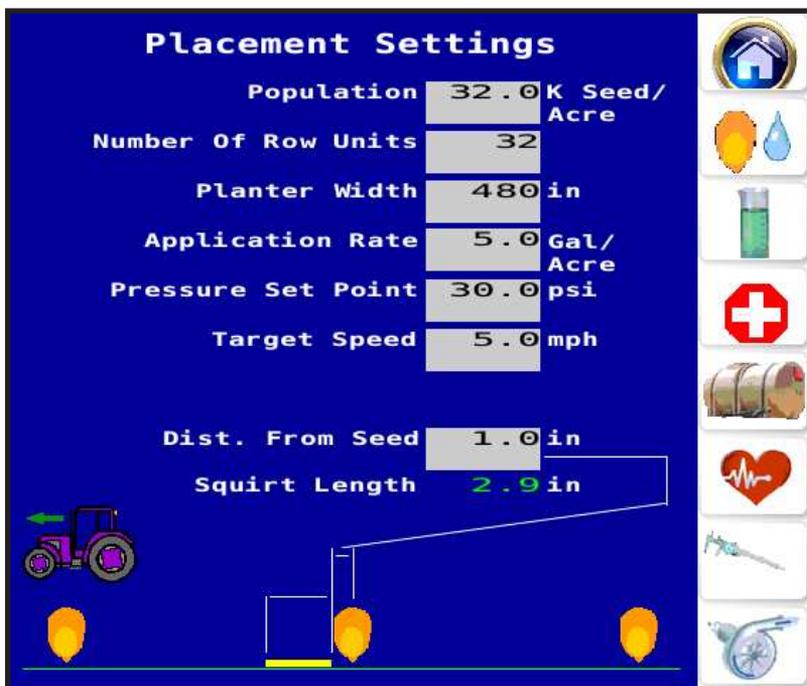
- Mode - which can be changed:
 - Auto
 - Manual
 - Open
 - Off
- Application Rate
- System Pressure
- Tank Volume

System information shown includes pump control and ground speed.

 Select the product icon to select which product is active on the display.

Placement Settings Screen

Use the **PLACEMENT SETTINGS** screen to enter/edit the placement and location of the fertilizer in relation to the location of the seed.



 Select the **Placement Settings** icon to see the placement settings information, that includes:

Setting Name	Default Value	Setting Name	Default Value
Population	32	Pressure Set Point	30.0
Number of Row Units	32	Target Speed	5.0
Planter Width	480	Distance from the Seed	1.0
Application Rate	5.0 ¹		

NOTE: A warning will show on the **PLACEMENT SETTINGS** screen when the operator-entered values do not match or align with other settings. Read the warning and touch **ACCEPT** or **CANCEL** to continue.

¹ The Application Rate units of measure can be changed, by selecting the units of measure value. The application rate will show on the main screen as either GPA or mL per seed.

Diagnostics Screen

From the **DIAGNOSTICS** screen, the operator can:

- Enable a test speed and test pressure for diagnostics and troubleshooting
- Activate key fob operation
- See system information
- See software version
- Do valve diagnostics
- See the alarm logs
- See row-by-row diagnostics



Select any red icon on the **DIAGNOSTICS** screen. The icon background will change to green, which indicates it is activated. Make sure that the **Mode** icon on the **HOME** screen is set to off to use the key fob mode and valve diagnostics.

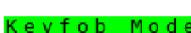
How to Use the Key Fob Controls

The key fob mode on the VT display or the key fob is used to clear any plugged rows, remove air from the system, and test row-by-row to make sure that all of the rows are working correctly.



 1. On the VT display, select the **Diagnostics** icon.

 2. Select **Key fob Mode**.

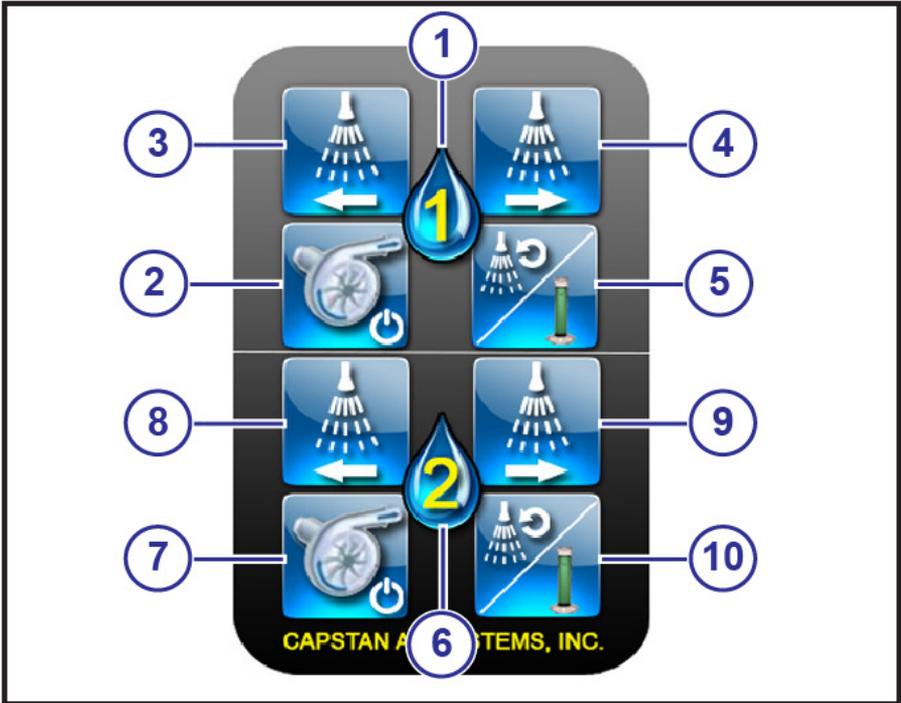
 The background of the icon will change to green, and additional icons will show.

Note: If the Mode is not set to **OFF** on the **HOME** screen, a warning message will show when enabling the key fob mode.

Note: If using the display and NOT the keyfob, make sure that the correct product is selected on this screen in the top left corner.

3. To change the current test row, without using the key fob, select the box below **Now Testing Row**.

4. Enter the desired value on the number pad.



The top four buttons on the key fob are for the first product (1).

- (2) Pump On/Off
- (3) Pulse Nozzles Right to Left
- (4) Pulse Nozzles Left to Right
- (5) This button has a dual function:
 - Repeat Current Nozzle Pulse
 - During the tip calibration procedure, press to start and stop the calibration catch test.

The bottom four buttons on the key fob are for the second product (6).

- (7) Pump On/Off
- (8) Pulse Nozzles Right to Left
- (9) Pulse Nozzles Left to Right
- (10) This button has a dual function:
 - Repeat Current Nozzle Pulse
 - During the tip calibration procedure, press to start and stop the calibration catch test.

Purge Operation

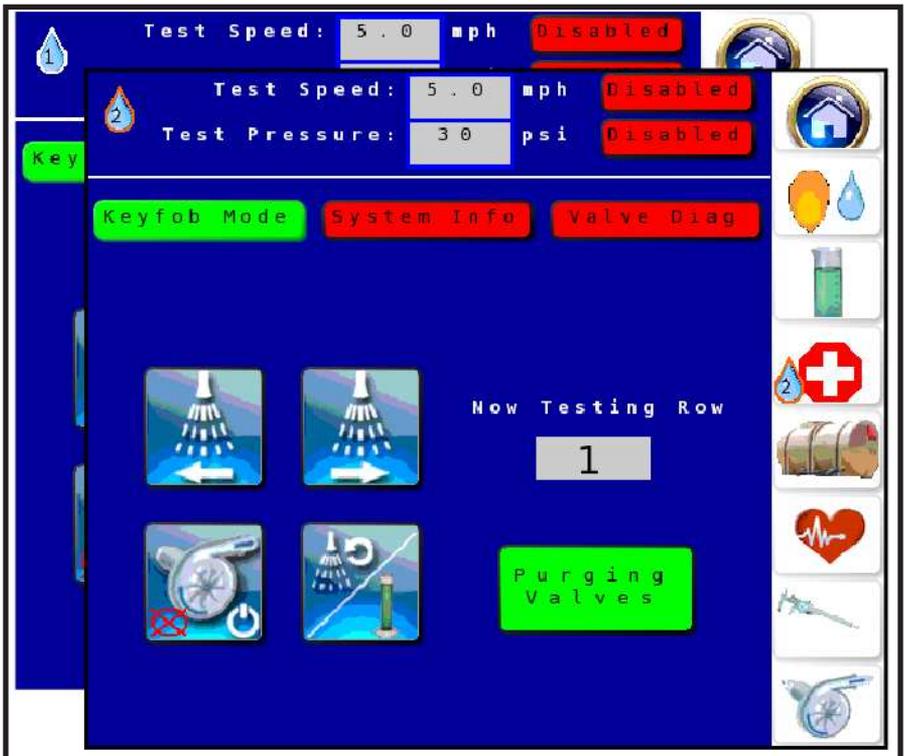
The operator can prime, purge the air, or flush the Seed-Squirter™ plumbing system from the **DIAGNOSTICS** screen with the Key fob Mode activated.



On the **DIAGNOSTICS** screen, select the red **Purge All Valves** icon.



The icon will change to a **Purging Valves** green icon. All of the nozzle valves will open 100%, which allows a constant liquid flow from the product tank, through the plumbing system and discharging through the nozzle valves.



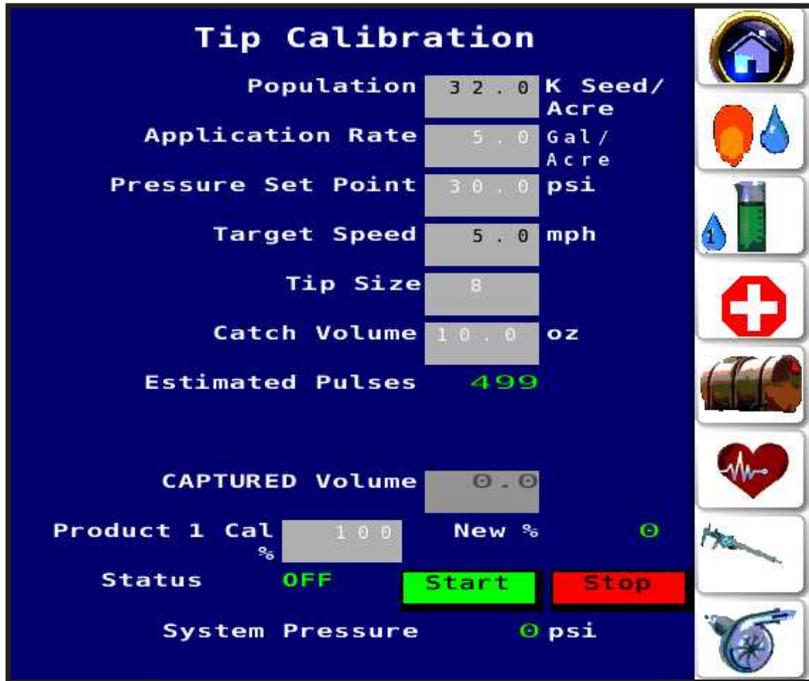
Select the product icon in the top left corner to change which product to purge.

The purge cycle will end when:

- Select the green **Purging Valves** icon.
- Select the green **Key fob Mode** icon.
- Press any of the top four buttons on the key fob.
- Leave the **KEY FOB MODE** screen.

How to Do the Tip Calibration Catch Test

The information on the **TIP CALIBRATION** screen is used to compensate for different viscosities and fluid dynamics.



1. Make sure that the Mode for each product is set to **OFF** on the **HOME** screen.

If the Mode is not set to off, a warning will show when the Tip Calibration icon is selected.

2. Make sure that Product 1 is selected on the **HOME** screen.

a) If Product 1 is not selected, select the Product icon until P1 Selected shows.

When a product is selected, an icon will show on the screen icon.

3. Select the **Tip Calibration** icon.

4. View and change the tip calibration information as needed.

NOTE: Changing values on the **TIP CALIBRATION** screen will also change the same values on the **PLACEMENT SETTINGS** screen. Likewise, information changed on the **PLACEMENT SETTINGS** screen will automatically change the information on the **TIP CALIBRATION** screen.

5. Make sure that the tip size is correct. The spray tip size is verified by looking at the outside surface of the tip near the spray end.



6. Put the calibration pitcher underneath the spray nozzle on row #1 of the planter.
7. If equipped with a hydraulic pump, engage the Seed-Squirter™ hydraulics.
8. Start the test in one of these ways:

- Select the **Start** icon on the **TIP CALIBRATION** screen
- Press the tip calibration button of the key fob.

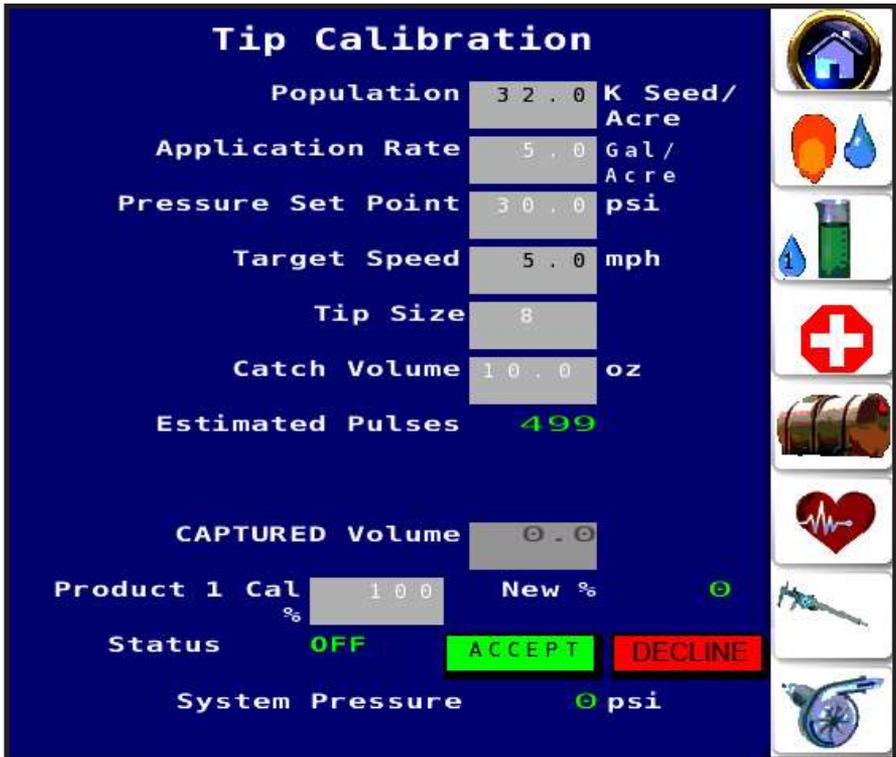
The system will start pulsing when it reached the desired system pressure. It will finish the test after the estimated pulses are done.

NOTE: Pulses should be crisp, not weak and stringy.

9. After the estimated pulses are done, read the calibration pitcher at the bottom of the meniscus.

The Meniscus is the curve in the upper surface of a liquid close to the surface of the container or another object, caused by surface tension. The curve can be either convex or concave, depending on the liquid and the surface.

NOTE: Reading the calibration pitcher at or above the meniscus will cause an inaccurate measurement.



10. Select the box next to **CAPTURED Volume**.

11. Use the number pad to enter the value.

- A new Product 1 Cal will be calculated.
- Select **ACCEPT** to select the new value or **DECLINE** to use the previous Product 1 Cal% value.

12. Repeat the catch test until the correct catch volume is caught.

13. Select the **Home** icon.

14. Select the Product icon until **P2 Selected** shows.

 When a product is selected, an icon will show on the screen icon.

 15. Select the **Tip Calibration** icon.

16. View and change the tip calibration information as needed.

NOTE: Changing values on the **TIP CALIBRATION** screen will also change the same values on the **PLACEMENT SETTINGS** screen. Likewise, information changed on the **PLACEMENT SETTINGS** screen will automatically change the information on the **TIP CALIBRATION** screen.

17. Make sure that the tip size is correct. The spray tip size is verified by looking at the outside surface of the tip near the spray end.



18. Put the calibration pitcher underneath the spray nozzle on row #1 of the planter.

18. If equipped with a hydraulic pump, engage the Seed-Squirter™ hydraulics.

19. Start the test in one of these ways:

- Select the **Start** icon on the **TIP CALIBRATION** screen
- Press the tip calibration button of the key fob.

The system will start pulsing when it reached the desired system pressure. It will finish the test after the estimated pulses are done.

NOTE: Pulses should be crisp, not weak and stringy.

20. After the estimated pulses are done, read the calibration pitcher at the bottom of the meniscus.

The Meniscus is the curve in the upper surface of a liquid close to the surface of the container or another object, caused by surface tension. The curve can be either convex or concave, depending on the liquid and the surface.

NOTE: Reading the calibration pitcher at or above the meniscus will cause an inaccurate measurement.

21. Select the box next to **CAPTURED Volume**.

22. Use the number pad to enter the value.

- A new Product 1 Cal will be calculated.
- Select **ACCEPT** to select the new value or **DECLINE** to use the previous Product 1 Cal% value.

23. Repeat the catch test until the correct catch volume is caught.

Tank Volume Screen

This screen can be accessed by selecting the **Tank** icon or by selecting the **TANK VOLUME** box on the **HOME** Screen.

The screenshot shows the 'Inventory' screen for two products. The top section is for Product #1 and the bottom for Product #2. Each section has a green gauge on the left with a 'Refill' button. To the right of each gauge is a table of tank volume data.

Product #	Tank Volume	Remaining	Warning Level
1	200 Gal	200 Gal	20 Gal
2	200 Gal	200 Gal	20 Gal

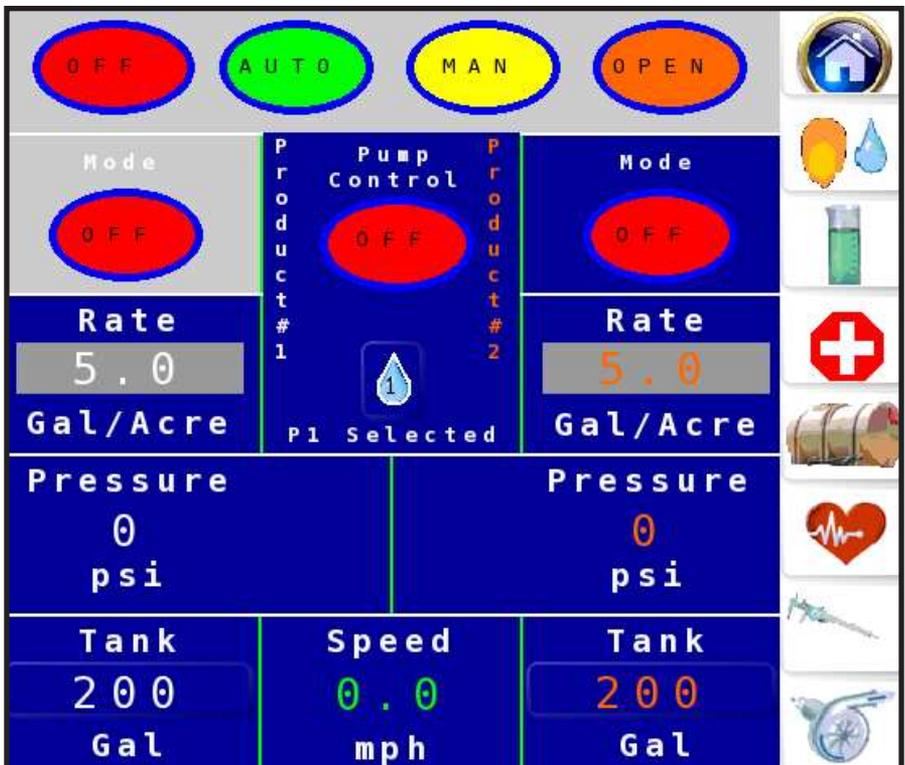
The sidebar on the right contains icons for: Home, Water, Syringe, Heart, and Wheelchair.

 Select the tank icon to go to the **TANK VOLUME** screen.

On this screen you can:

- View the tank volume
- Change the tank volume
- Set the tank volume
- Set the warning level

How to Field Operate the Seed-Squirter™ System



1. Select the **Home** icon.

2. Select one of the **Mode** icons and select **AUTO** from the list. In Auto mode, the system automatically adjusts the pressure, and activates the nozzle valves when seeds are sensed. This mode should be used for normal field operation.

3. Select the **Pump Control** icon and select **ON**.

With the Seed-Squirter™ hydraulics engaged, the liquid product pump will engage and raise the pressure to the pressure set point.

4. Operate the machine and planter.

5. When you are done with operation, select the **Pump Control** icon and select **OFF**.

The liquid product pump will disengage, and nozzle valves will not pulse.

Recommendation: Set the Pump Control to **OFF** when stopping to fill the planter with seed or liquid product.

Do a Field Check of the Seed/Squirt Placement

A field check should be completed at the first trip to field and again whenever the distance to the seed is changed.

1. Make sure that Product 1 is selected on the **HOME** screen.

a) If Product 1 is not selected, select the **Product** icon until **P1 Selected** shows.

1

When a product is selected, an icon will show on the screen icon.



2. Select the **Placement Settings** icon.

3. Select the box next to **Dist. From Seed**.

4. Use the number pad to enter the desired distance from the seed value.



5. Select the **Home** icon.

2

6. Select the **Product** icon until **P2 Selected** shows.

7. Select the **Placement Settings** icon.

8. Select the box next to **Dist. From Seed**.

9. Use the number pad to enter the desired distance from the seed value.

10. At the back of the planter, on the rows to be checked, use tie-down straps to lift the closing wheels up out of the furrow.

11. On the rows to be checked, use the side gauge wheel depth adjuster to shallow up the side gauge wheels

Recommendation: On a twin-row do a check procedure on rows that are next to each other. For example, rows one and two.

12. Use the excess from the tie-down strap, or a bungee strap to lift the seed firmer up and out of the furrow.

13. Once everything is out of the furrow and off the dirt, return to the tractor cab.

14. On the **HOME** screen, touch and release the **Pump Control** icon until **On** shows.

15. Start planting for the desired test distance, using the same settings and speeds as normal planting.

16. Stop planting and stop the tractor when the test distance is reached.

17. Visually do a check of the placement of the squirt relative to the seed in the furrow.

- Seed placement
- Squirt placement

18. If the placement needs adjustment, do one of these:

a) Change the **Dist. From Seed** value on the **PLACEMENT SETTINGS** screen.

b) Do the liquid product tube setup procedure again to adjust the measurements to get the squirt where desired.

19. When the placement is correct, remove all of the straps and adjust the side gauge wheel depth to the normal operating depth.

Note: Do a field check periodically or when the rate and/or distance to the seed changes.

Manual Mode

Manual Mode is used for troubleshooting or continuing to run when a pressure sensor has failed.

For more information about the manual mode, see the Seed-Squirter™ Operator Manual.

How to Operate in Open Mode

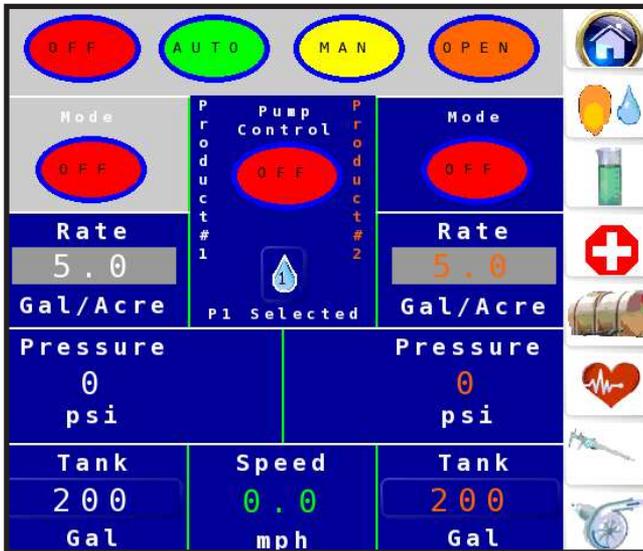
Use open mode to apply a constant stream of product. Orifice inserts are required to achieve the desired application rate.

The system pressure automatically adjusts to maintain the requested application rate, and each row shuts off independently if seeds are not sensed.

Important: Install the orifice plates when running in open mode only.

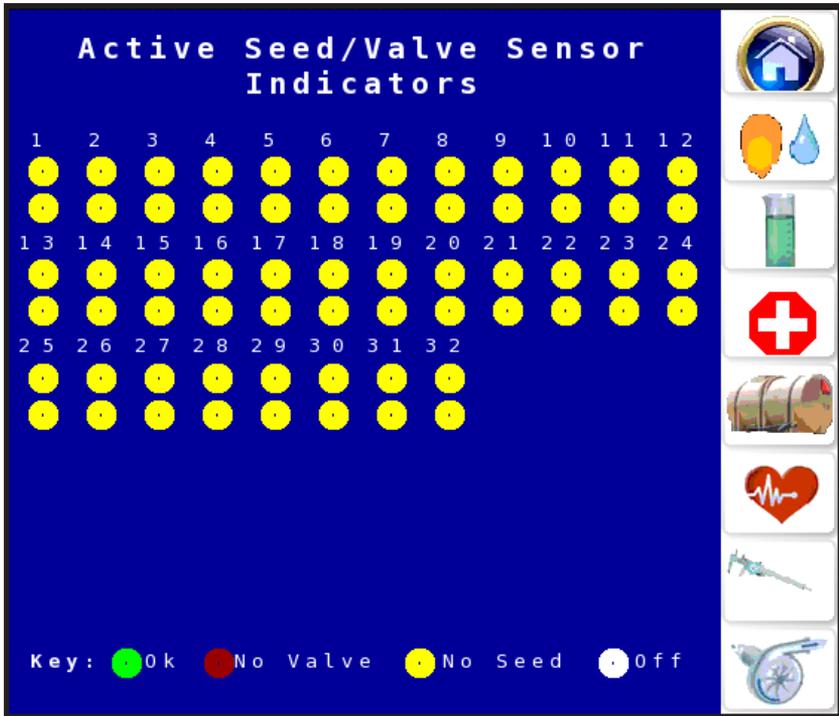
Remove the orifice plates if running in auto or manual mode.

Note: Use orifice rate charts to size the orifices correctly, or contact your local dealer.



1. Select the **Home** icon.
 2. On the **HOME** screen, select one of the **Mode** icons.
 3. Select **Open** from the list.
 4. Select the other **Mode** icon.
 5. Select **Open** from the list.
 6. Select and release the **Pump Control** icon until **On** shows. With the Seed-Squirter™ hydraulics engaged, the liquid product pump will engage and raise the pressure to the pressure set point.
 7. Select and release the **Pump Control** icon until **Off** shows. The liquid product pump will disengage, and the nozzle valves will not open.
- Recommendation:** Set the **Pump Control** to **Off** when stopping to fill the planter with seed or liquid product.

Active Seed/Valve Sensor Indicators Screen



Select the **Sensor Indicator** icon to see the **ACTIVE SEED/VALVE SENSOR INDICATORS** screen.

Use the information on this screen to make sure that the nozzle valves and seed sensors are working correctly while the planter is operating.

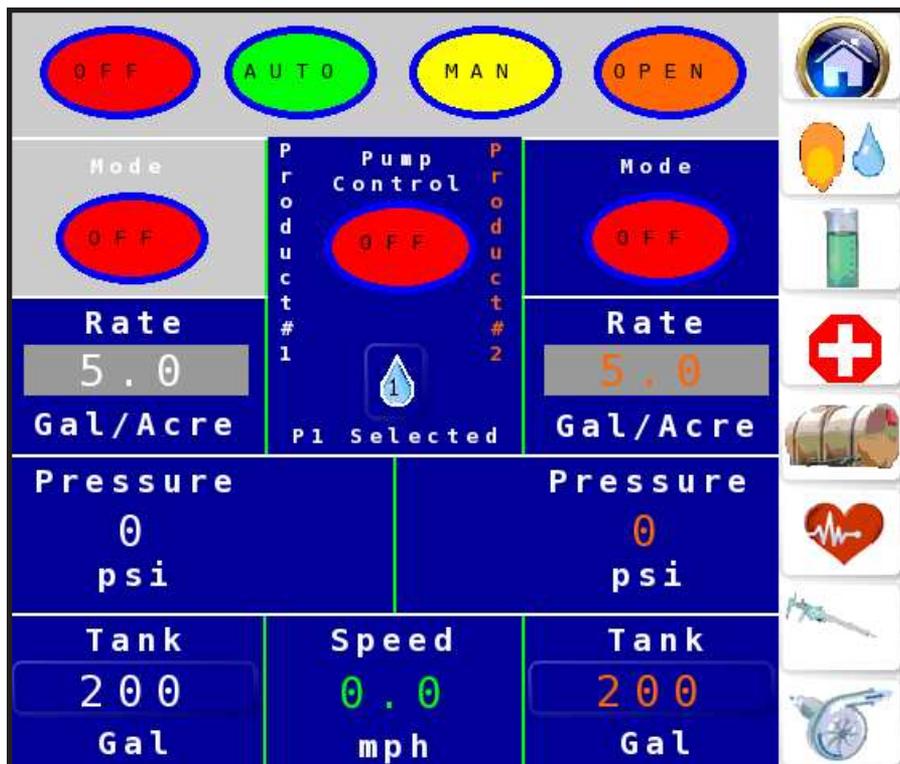
NOTE: See the troubleshooting charts in the operator manual for help with failed rows.

Icon	Description
	Indicates the seed sensor and nozzle valves are connected and operational.
	Indicates the nozzle valve is not being detected by the Seed-Squirter™ controller, while the seed sensor is operational.
	Indicates the seed sensor is not being detected by the Seed-Squirter™ controller, while the nozzle valve is operational.
	Indicates that the rows are disabled or off. These rows will not operate.

Turn Off the Seed-Squirter™ System

When the **Mode** is changed to **OFF**, the system disengages (pump and nozzle valves), and all alarms are deactivated.

Choose **OFF** when the Seed-Squirter™ system is not being used.



1. Select the **Home** icon.
2. On the **HOME** screen, select one of the **Mode** icons.
3. Select **OFF** from the list.
4. Select the other **Mode** icon.
5. Select **OFF** from the list.

Sensor Settings Screen

NOTE: The locked settings on the **SENSOR SETTINGS** screen are intended for qualified service technician access. Contact your dealer for further assistance.

The default sensor settings are set at the factory.

Setting	Default Value
High Pressure Voltage	0.50 Volts
Low Pressure Value	0 psi
High Pressure Value	100.00 psi
Min. Speed Override	0.0 mph
Hilldrop	1 Seeds/Drop
Flow meter Cal	368 Pulses/gal

Without unlocking the screen, only the flow meter cal can be changed by the operator.



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