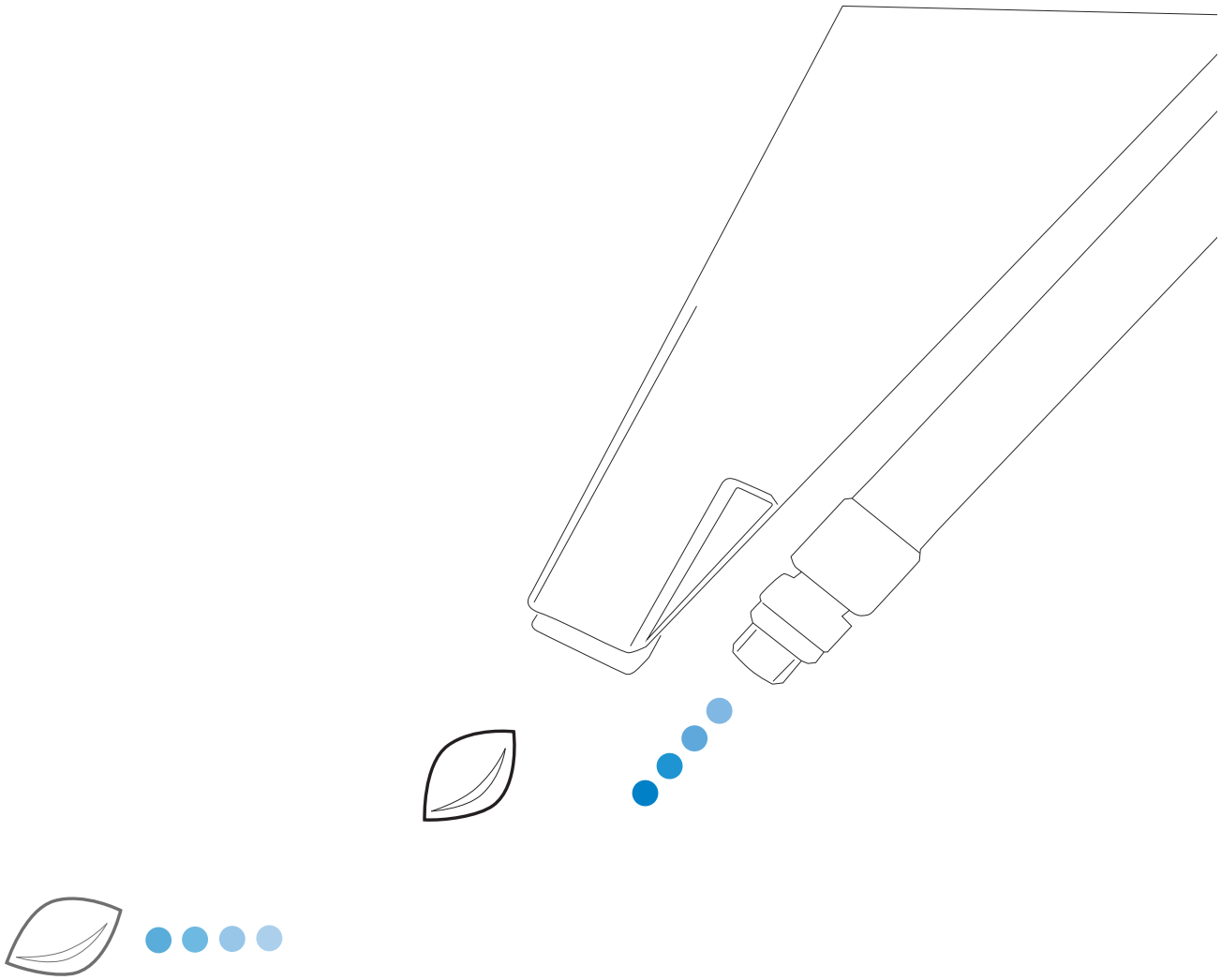
Seed-Squirter™



Installation Guide

APPLICATION SYSTEMS
FOR PROFESSIONALS™

www.capstanAG.com

CapstanAG™

How Can We Help?
855-628-7722
prodsupport@capstanag.com

P/N 115700-007 Rev. A | Revised 02/2018 |

Thank you for your business!

At CapstanAG, our goal is to redefine the way people do their chemical application. Our PWM control systems have been setting the bar for maximum productivity for more than 20 years. Our focus on performance, support, and education have dramatically changed the landscape of agricultural chemical application.

CapstanAG specializes in creating proprietary systems for the agricultural industry, primarily focusing on chemical and fertilizer applications. Our inventive process involves research, engineering, design, and lab and field testing.

Service Contact Information

If a problem occurs with your system that cannot be corrected with the information in this manual, please contact your dealer for service and technical assistance. If further assistance is needed, contact CapstanAG.

System Purchased: _____

Dealer: _____

Contact: _____

Phone: _____

Address: _____

City,State/Province, Zip: _____

Factory Service/Repairs

CapstanAG
4225 S.W. Kirklawn Ave. | Topeka, KS 66609

Hours: 8:00 a.m. to 4:00 p.m. CST

Toll-free number: (855) 628-7722 | Fax: (785) 232-7799

E-mail: prodsupport@capstanag.com | Online: www.CapstanAG.com

Contents

Chapter 1

Safety

Topics:

Signal Words

DANGER: Indicates an imminent hazard which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

Warning: Indicates a potential hazard which, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION: Indicates a potential hazard which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Important: This is used to draw attention to specific information that is necessary for the operation, setup, or service of the system.

Note: This is used for additional information that can help understand or operate the system.

Safety Signs

Figure 1:

The HCS aligned its provisions with the United Nations' Globally Harmonized System (GHS) Classification and Labeling of Chemicals in 2012. This is a GHS safety label example for a chemical hazard.

These labels and safety messages warn all personnel about hazardous chemicals or potentially unsafe chemical conditions that may exist while working around agricultural application equipment.

CapstanAG add-on application systems for OEM and retrofit agricultural application equipment (booms and toolbars) may contain HCS pictographs and GHS safety labels and safety signal word messages.

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 jump-starting 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.

Chapter 2

Assembly

Topics:

Hydraulic Pump Schematics - 1 inch Plumbing for One Section

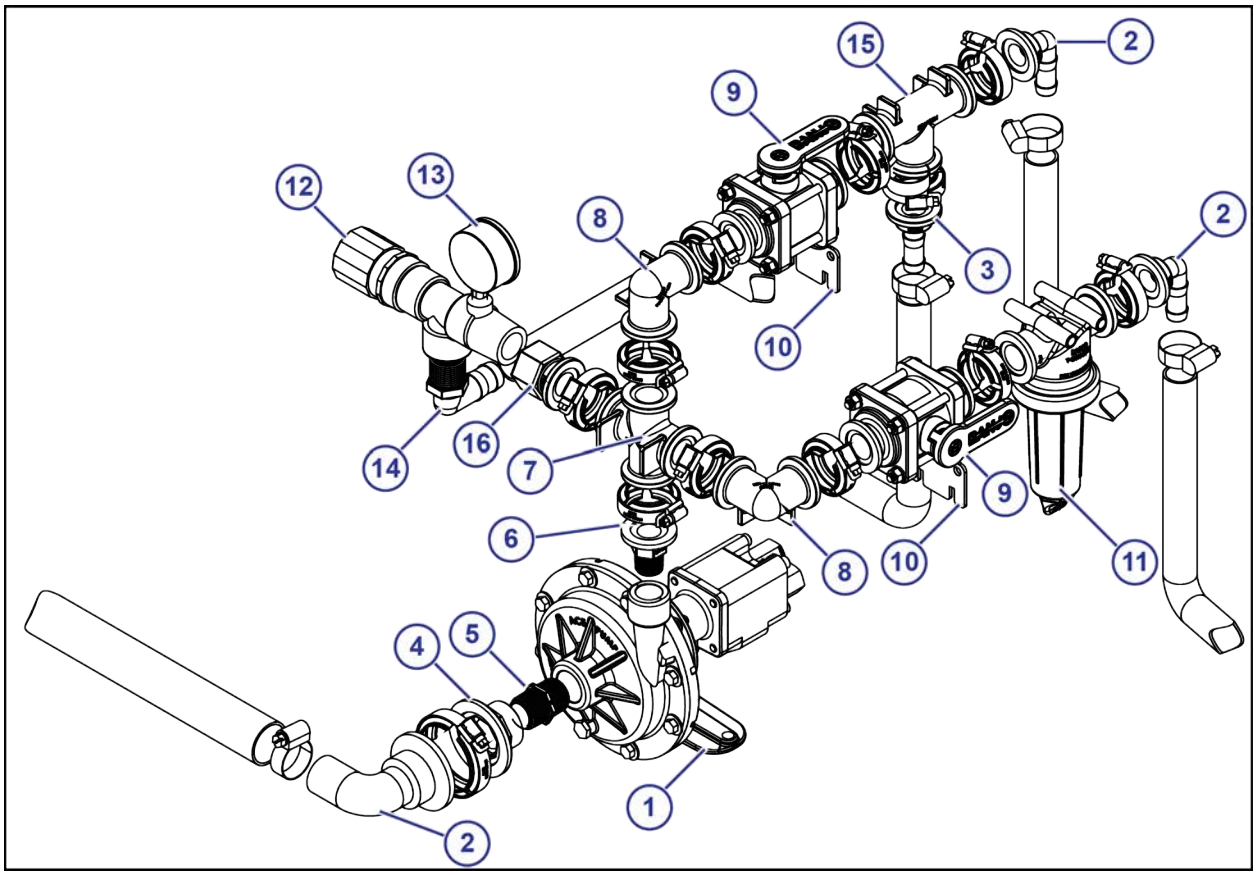


Figure 2:

Callout	Description
1	Hydraulic Pump
2	2 in Flange x 1 ½ in Hose Barb Elbow
3	2 in Flange x 1 ½ in Hose Barb
4	2 in Flange x 1 in Plug
5	1 in x 1 in Close Nipple
6	1 in Flange x ¾ MPI
7	1 in Cross Flange
8	1 in Flange Elbow
9	Ball Valve
10	Straight Mounting Bracket
11	Strainer
12	Pressure Relief Valve
13	100 psi Pressure Valve
14	¾ MPT x ¾ Hose Barb Elbow

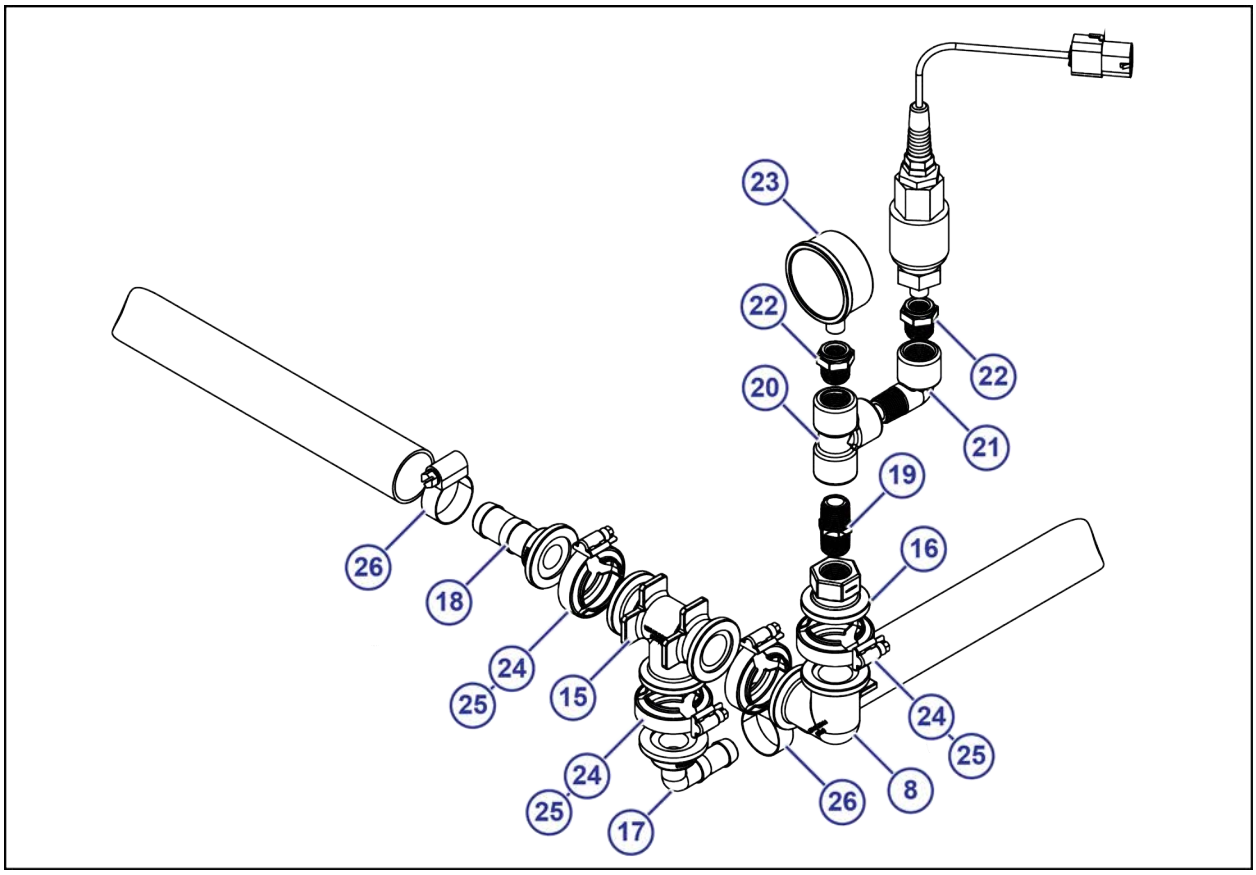


Figure 3:

Pressure Tree Layout Example	
Callout	**Description**
15	Flange Tee Fitting
16	1 in Flange x ½ in FPT
17	1 in Flange x 1 in Hose Barb Elbow
18	1 in Flange x 1 in Hose Barb
19	½ in Close Nipple
20	½ in NPT Tee Fitting
21	½ in Elbow
22	½ in x ¼ in Reducer Bushing
23	Pressure Gauge
24	1 in Flange Clamp
25	1 in Flange Clamp Gasket
26	1 in Hose Clamp

Hydraulic Pump Schematics - 1 inch Plumbing for Two/Three Section

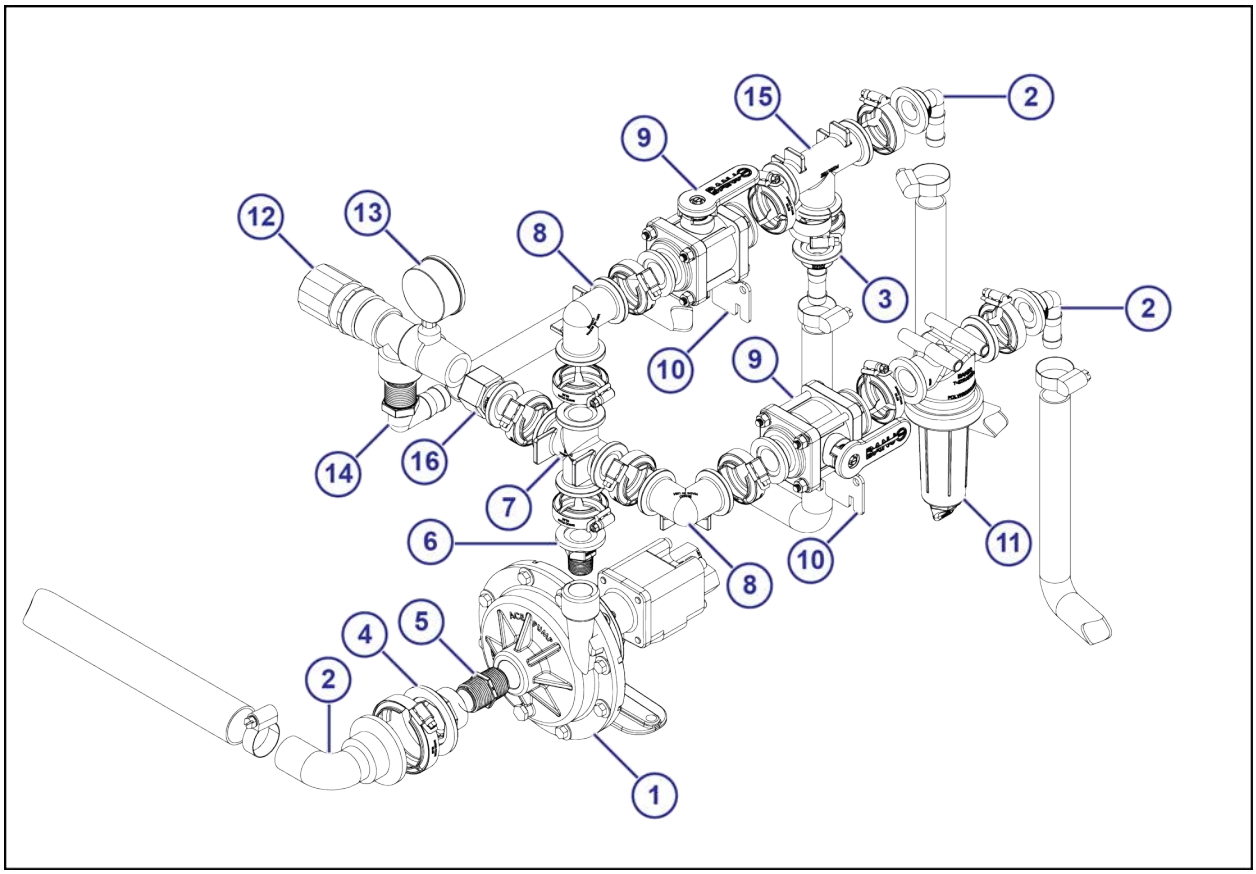


Figure 4:

Callout	Description
1	Hydraulic Pump
2	2 in Flange x 1 ½ in Hose Barb Elbow
3	2 in Flange x 1 ½ in Hose Barb
4	2 in Flange x 1 in Plug
5	1in x 1in Close Nipple
6	1 in Flange x ¾ in MPI
7	1 in Cross Flange
8	1 in Flange Elbow
9	Ball Valve
10	Straight Mounting Bracket
11	Strainer
12	Pressure Relief Valve
13	100 psi Pressure Valve
14	¾ MPT x ¾ Hose Barb Elbow

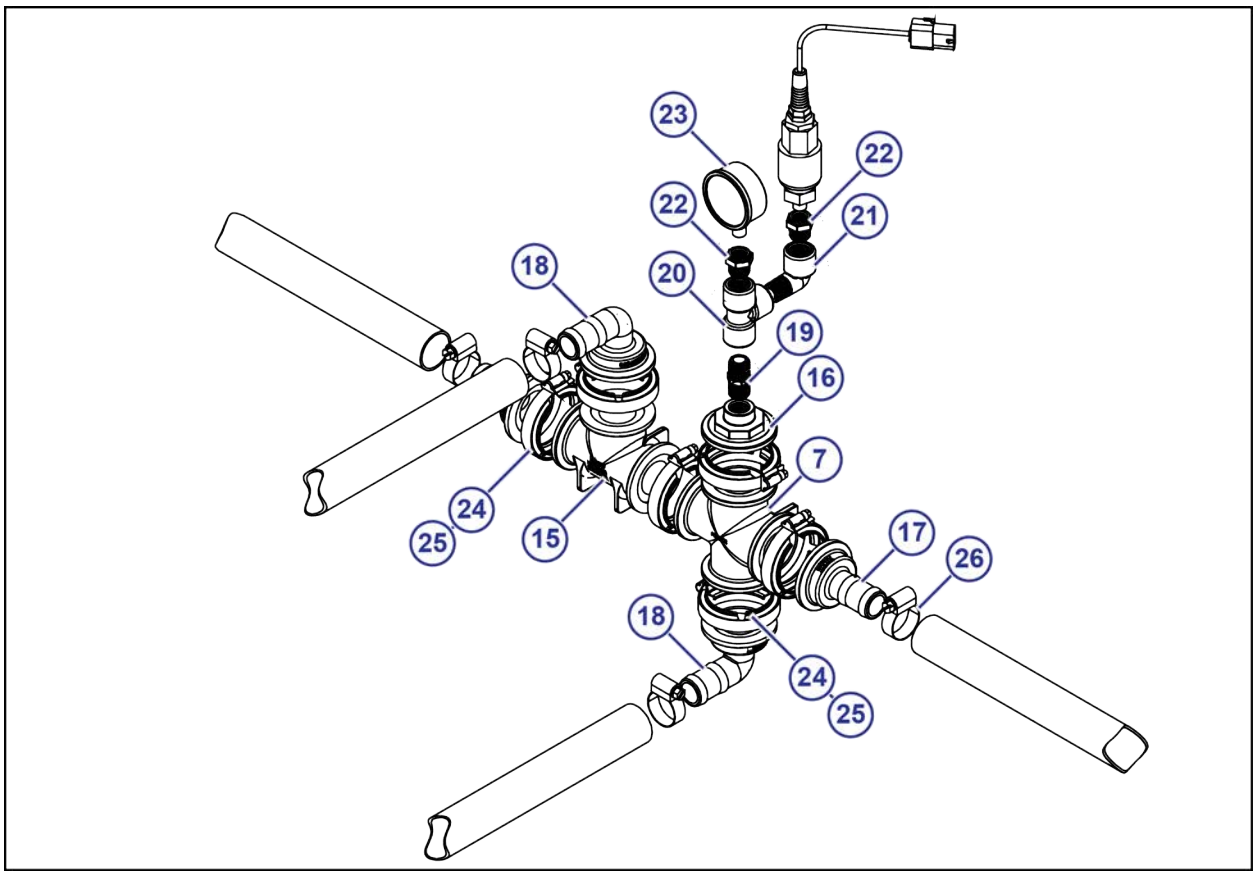


Figure 5:

Pressure Tree Layout Example	
Callout	**Description**
15	1 in Flange Tee Fitting
16	1 in Flange x ½ in FPT
17	1 in Flange x ¾ in Hose Barb Elbow
18	1 in Flange x 3/4 in Hose Barb
19	½ in Close Nipple
20	½ in NPT Tee Fitting
21	½ in Elbow
22	½ in x ¼ in Reducer Bushing
23	Pressure Gauge
24	1 in Flange Clamp
25	1 in Flange Clamp Gasket
26	1 in Hose Clamp

Hydraulic Pump Schematics - 2 inch Plumbing for Two/Three Sections

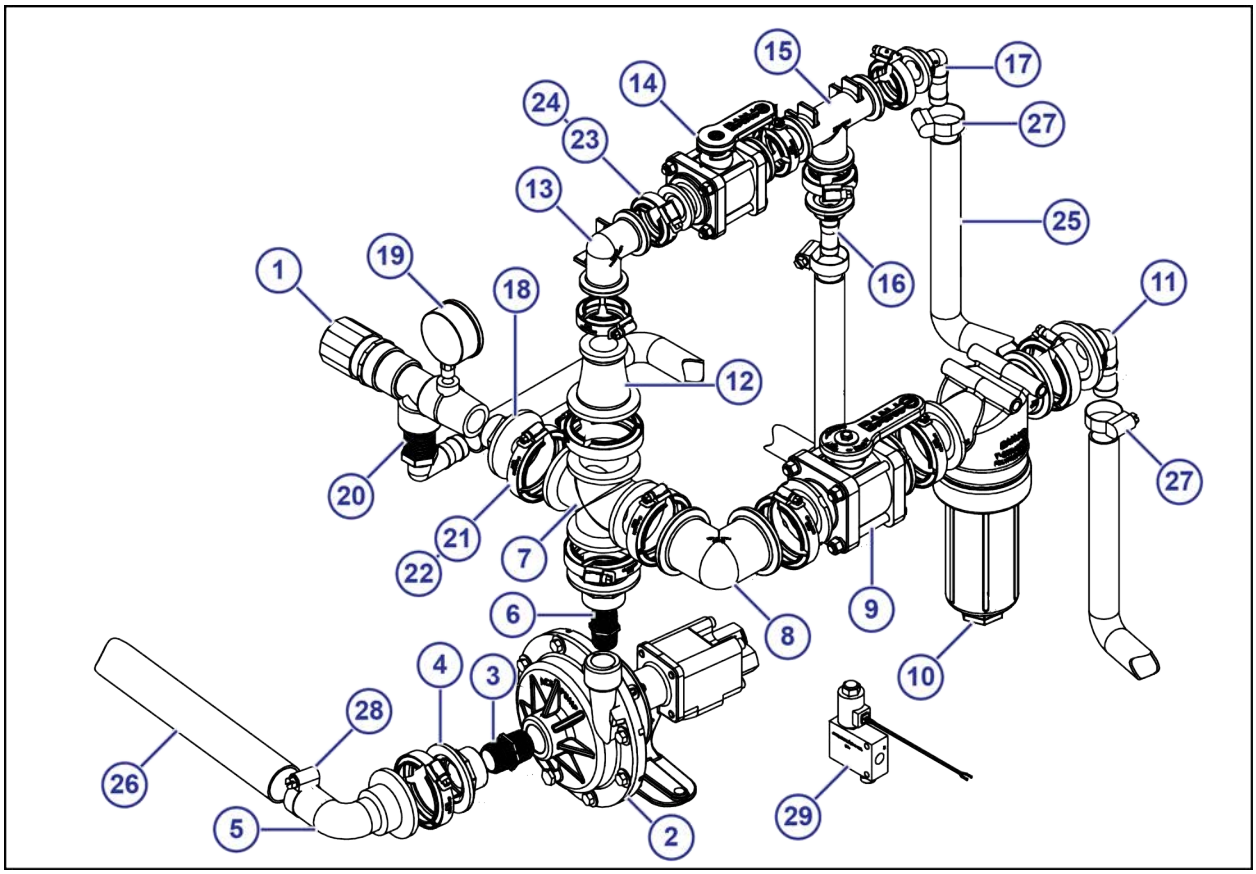


Figure 6:

Callout	Description		Callout	Description
1	Pressure Relief Valve		13	1 in Flange Elbow
2	Hydraulic Pump		14	1 in Ball Valve
3	1 in x 1 in Close Nipple		15	1 in Flange Tee Fitting
4	2 in Flange x 1 in Plug FPT		16	1 in x ¾ in Hose Barb
5	2 in x 1 ½ in Hose Barb Elbow		17	1 in x ¾ in Hose Barb Elbow
6	¾ in x ¾ in Close Nipple		18	2 in x ¾ in Flange Plug FPT
7	2 in Cross Flange		19	100 psi Pressure Gauge
8	2 in Flange Elbow		20	¾ in MPT x ¾ in Hose Barb Elbow
9	2 in Ball Valve		21	2 in Flange Clamp
10	Strainer		22	2 in Flange Clamp Gasket
11	2 in Flange x 1 in Hose Barb Elbow		23	1 in Flange Clamp
12	2 in x 1 in Reducer Bushing		24	1 in Flange Clamp Gasket

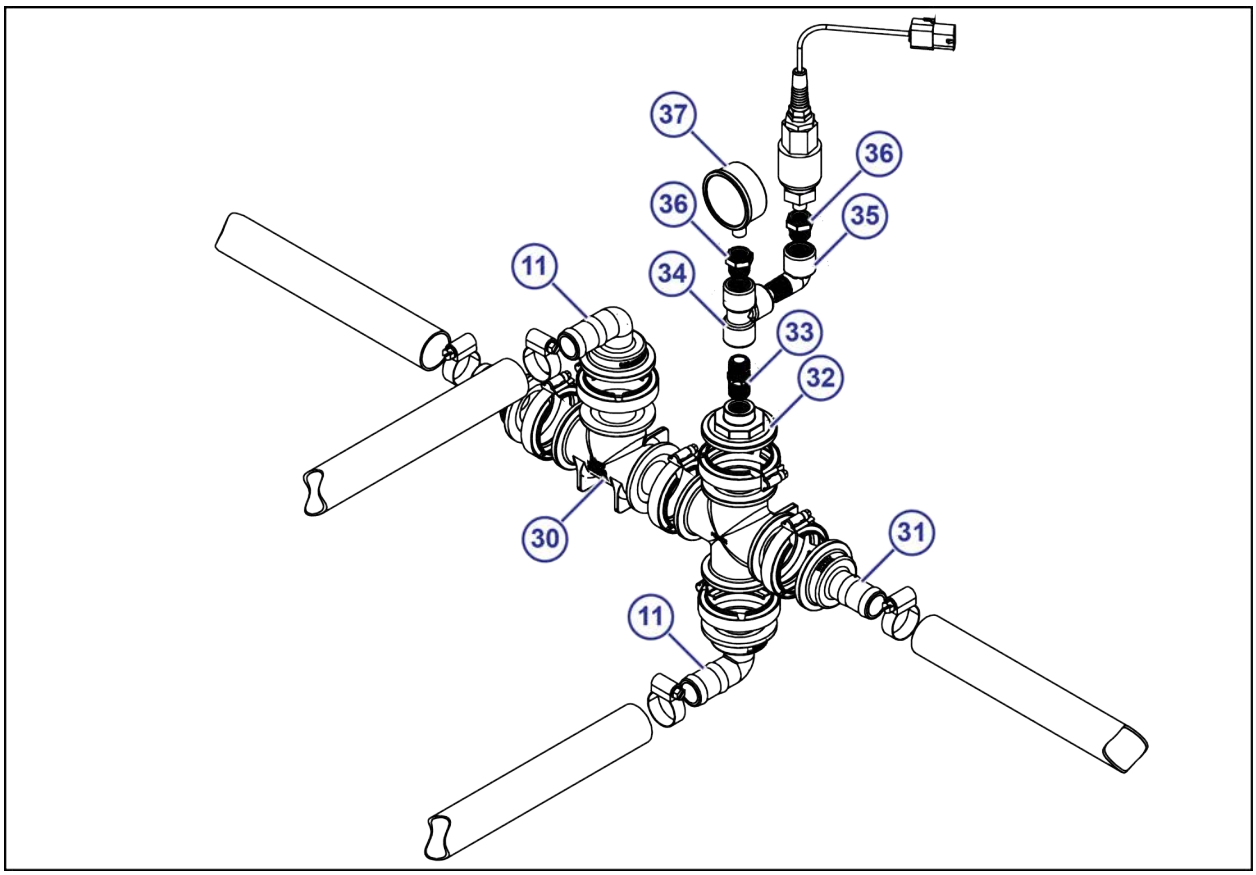


Figure 7:

Pressure Tree Layout Example	
Callout	**Description**
25	¾ in Hose
26	1 ½ in Hose
27	1 in Hose Clamp
28	1 ½ in Hose Clamp
29	Hydraulic Valve Assembly
30	2 in Flange Tee Fitting
31	1 in Hose Barb x 2 in Flange
32	2 in x ½ in FPT Flange Plug
33	½ in Close Nipple
34	½ in NPT Tee Fitting
35	½ in Elbow
36	½ in x ¼ in Reducer Bushing
37	Pressure Gauge

Before Installation

Before assembly and installation, read this installation guide carefully. Make sure that you have all of the parts in the kits. Read all of the instructions in this guide, the Seed-Squirter™ operator manual, and the machine manuals. The Seed-Squirter™ operator manual includes information on operation, adjustments, troubleshooting, and maintenance.

For further assistance contact your CapstanAG representative.

Getting Started - Before System Installation

1. Connect the tractor to the planter.
2. Unfold the planter.
3. Make sure that you have all of the correct plumbing parts and Seed-Squirter™ electrical parts.
4. If it is necessary, install the virtual terminal (VT) display in the cab of the tractor that Seed-Squirter™ will operate on.

   The virtual terminal is not supplied by CapstanAG.

Assemble and Mount the Hydraulic Pump

See the hydraulic pump schematics for an example of how to assemble and mount the hydraulic pump and plumbing.

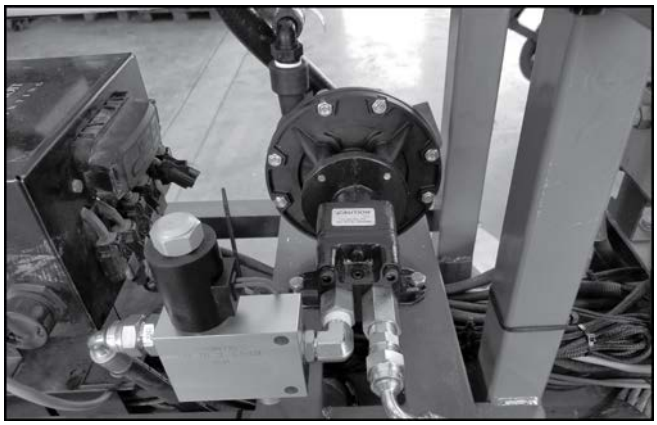


Figure 8:

1. Mount the hydraulic pump as close to the fertilizer tanks as possible so that the pump is gravity fed.
2. Mount the PWM valve for pump.

   Important: The hydraulic fittings for the valve must be 1/2 in O-ring Boss fittings.

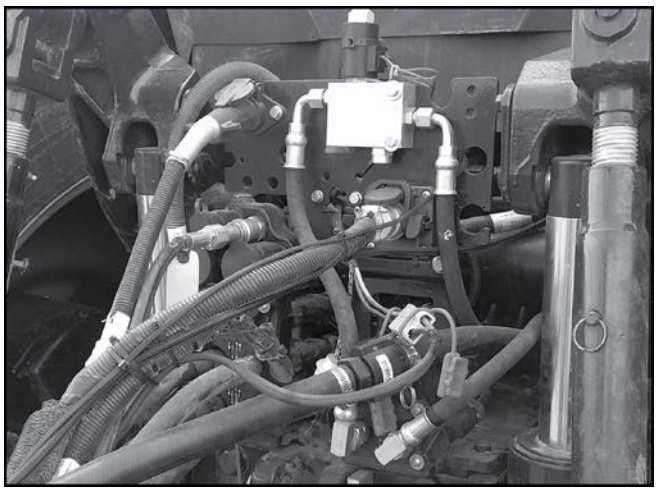


Figure 9:

3. Install and route the hydraulic hoses to an available hydraulic connector at the back of the tractor.

Assemble and Mount the Electric Pump

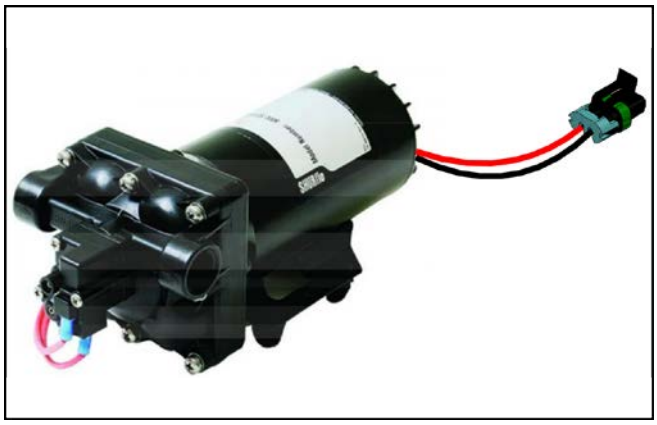


Figure 10:

1. Mount the electric pump as close to the fertilizer tanks as possible.

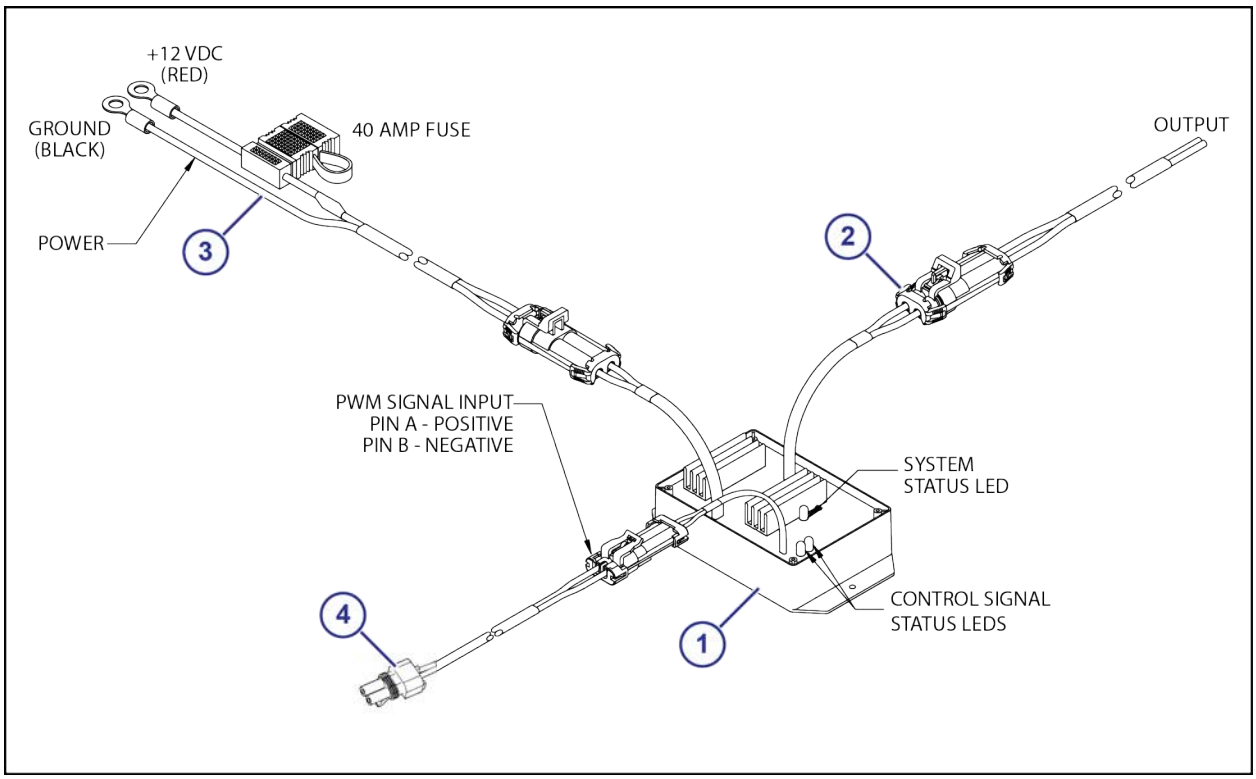


Figure 11:

2. Mount the driver *(1)* no more than 4 ft from the electric pump and connect the OUTPUT connector *(2)* to the pump.
3. Connect the power cable *(3)* for the driver to the tractor battery or another power source.
4. Connect the driver connector *(4)* to the pump extension harness on the Seed-Squirter™ controller.

Chapter 3

Installation

Topics:

Install the Plumbing on the Planter

There are two system type options:

- Wet Booms
- Manifolds

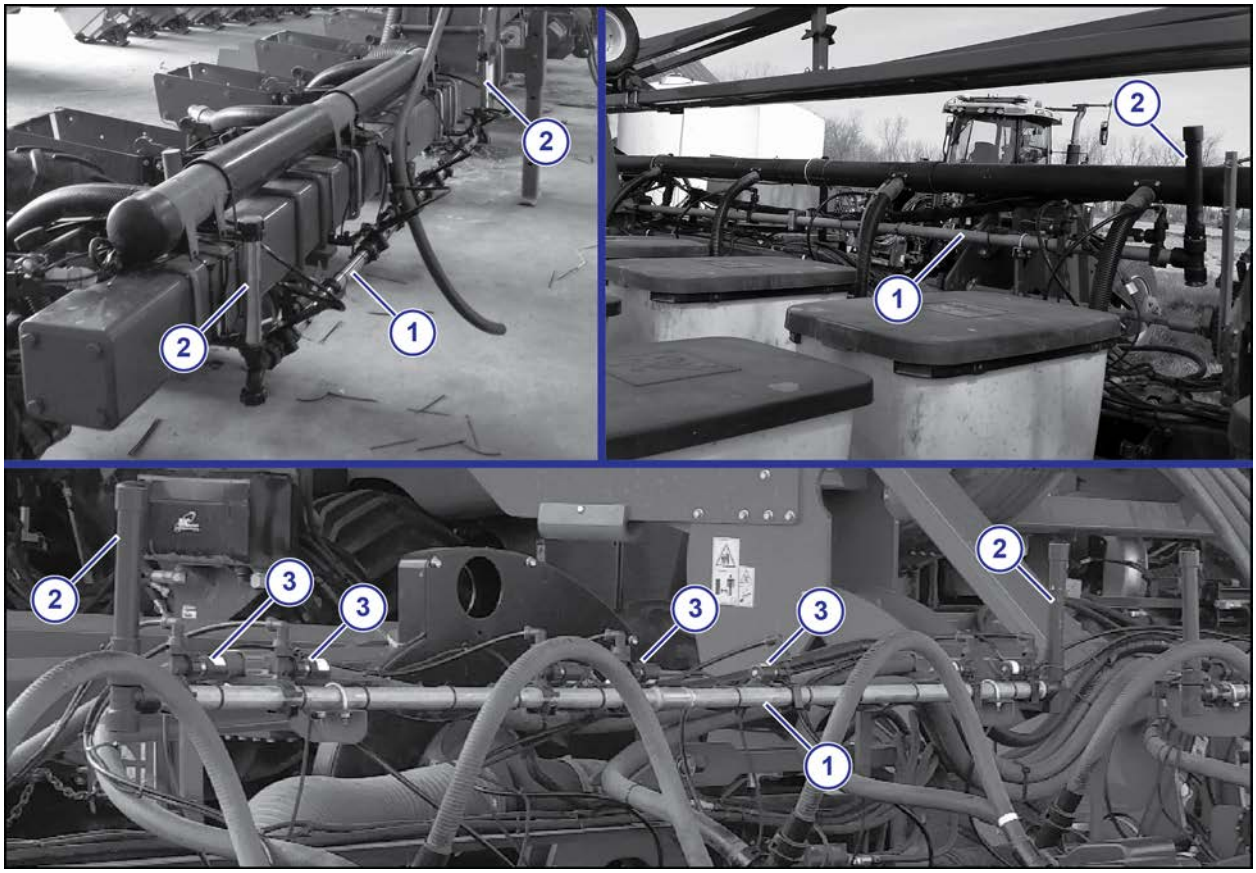


Figure 12:

1. Install the wet booms *(1)* as desired, where they fit on your planter.

   Make sure that the holes are on the top of the boom during installation.

   There should be one boom per planter section. Each make and model of planter will have a different mounting location.

   a) Make sure that you feed the booms from the center.
   b) Install a standpipe *(2)* on each end of the booms.
   c) Install the valves *(3)*.

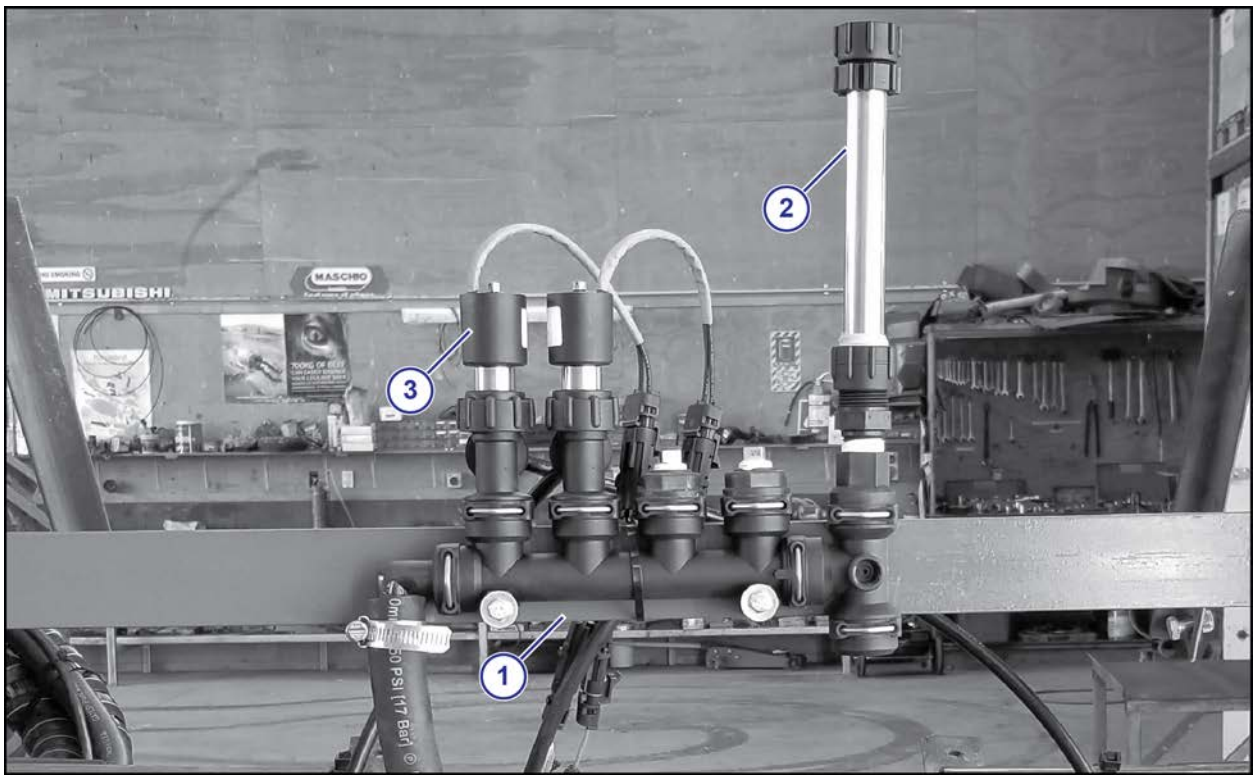


Figure 13:

2. Install the manifolds *(1)* and brackets in the correct locations.

- 30 in Spacing:

  Manifold at the center of every four rows

- 15 in Spacing:

  Manifold at the center of every six to eight rows

- 20 in Spacing:

  Manifold at the center of every five rows

- 38 in Spacing:

  Manifold at the center of every three rows

a) Install the standpipes *(2)* to the manifolds.

For two to six row manifolds install one standpipe at the end of each manifold.

For eight row or more manifolds, install a standpipe at each end of the manifold and feed from the center.

b) Make sure that the valves *(3)* and O-rings are installed correctly.

Important: During installation, apply 40 in lbs of torque to the coil when it threads into the valve body to properly seat the O-ring.

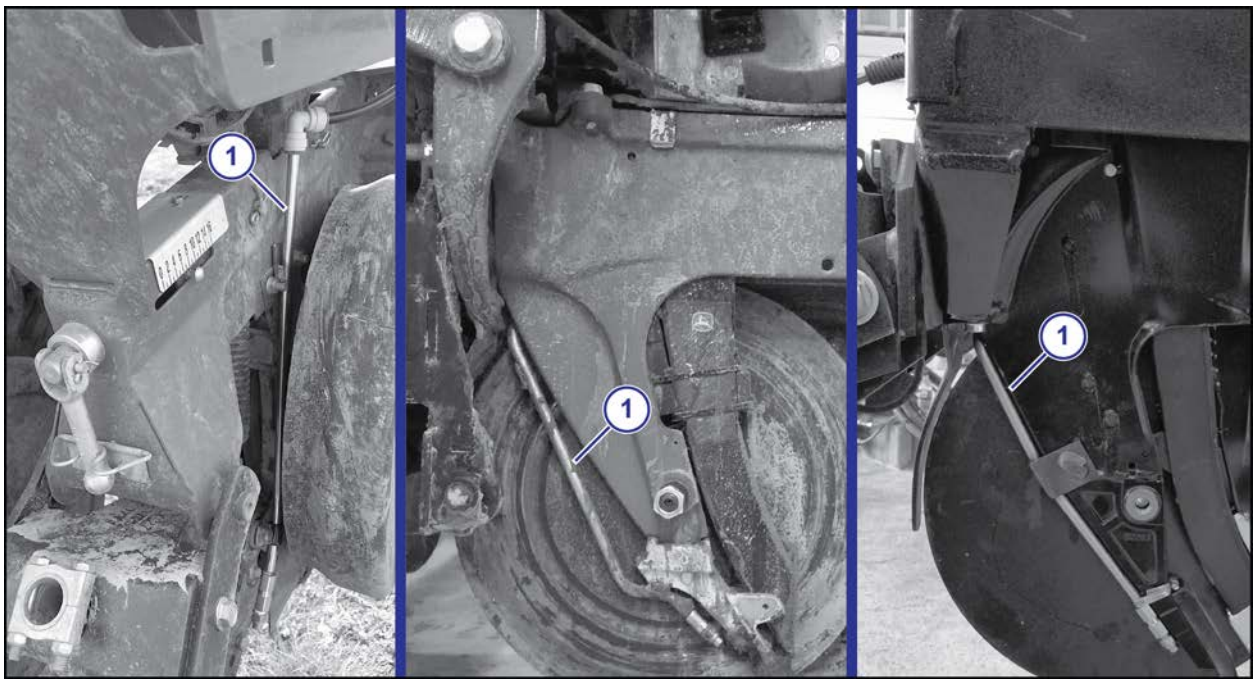


Figure 14:

3. Install the fertilizer tube *(1)* for each planter row.

Each make and model of planter will have a different style of fertilizer tube and mounting location. See additional information for your specific planter and fertilizer tube.

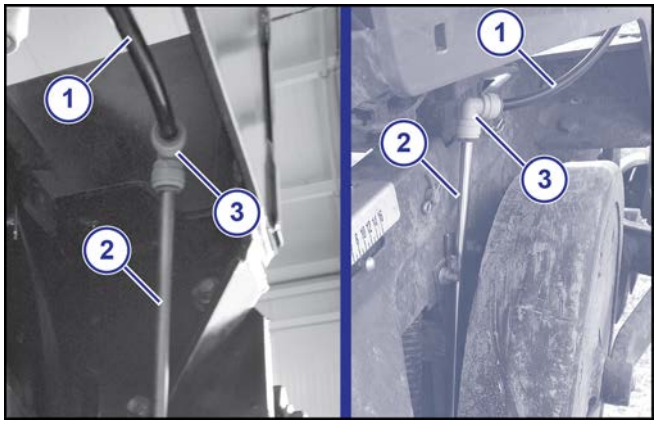


Figure 15:

4. Install the hose *(1)* from the wet boom or manifold to each fertilizer tube *(2)* using the push-to-connect fitting *(3)*.

All hoses must be the same length.

Figure 16:

5. Loosen or thread out the end *(1)* of the push-to-connect fitting.
6. Install the fertilizer tube.
7. Tighten the end of each push-to-connect fitting.

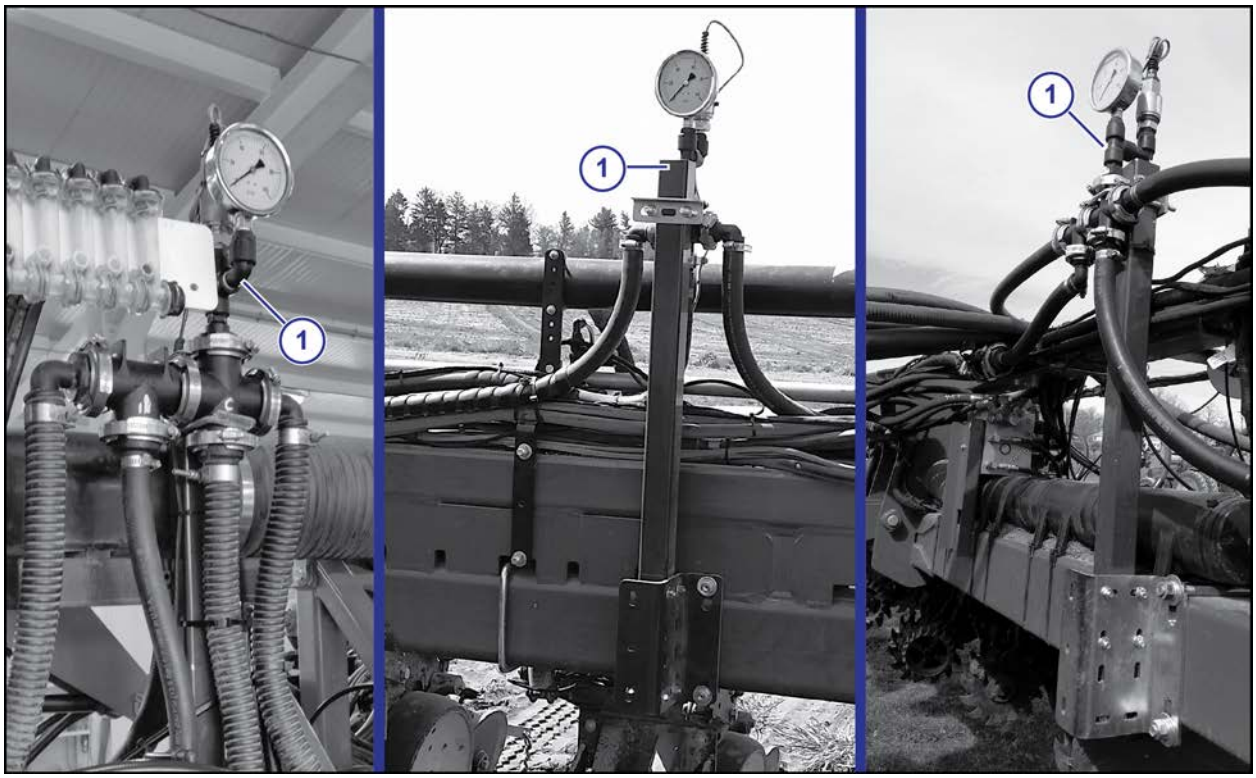


Figure 17:

8. Install the pressure tree *(1)* on the planter so that you can see it from the cab of the tractor.
   See the hydraulic pump schematics for an example of how to assemble the pressure tree.
9. Install the pressure sensor on the pressure tree.
10. Install the flow meter.
    If using a Raven flow meter, make sure that you vertically mount the flow meter.
11. Install the hoses from the pump, to the pressure tree, and then to each wet boom or manifold.

Mount the Seed-Squirter™ Controller

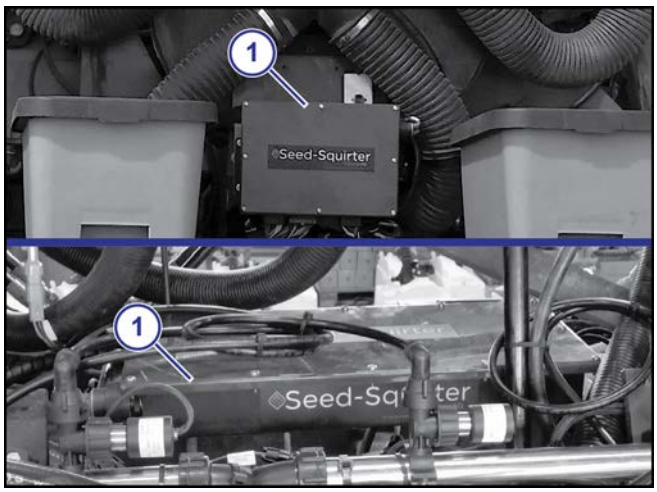


Figure 18:

Mount the Seed-Squirter™ controller *(1)* with the supplied mounting brackets, at the center of the planter.

If you cannot mount the controller at the center of the planter, make sure that all connections can still reach the controller.

The controller can be mounted two ways:

- Horizontally
- Vertically with the connectors facing down

Install the Accessory Cable

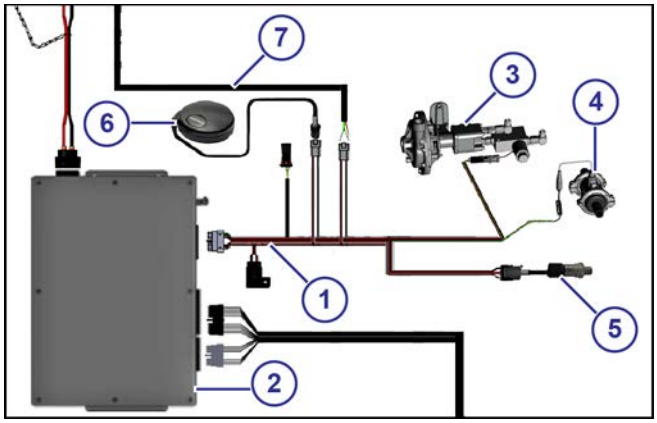


Figure 19:

1. Connect the accessory cable *(1)* to the Seed-Squirter™ controller *(2)*.
2. Connect the pump extension harness *(3)* to the accessory cable.
3. Connect the flow meter extension harness *(4)* to the accessory cable.
4. Connect the pressure sensor extension harness *(5)* to the accessory cable.
5. Connect the GPS sensor *(6)* to the accessory cable.
6. Connect the communication cable *(7)* to the accessory cable.

Route and Install the Tractor Power Harness

From the battery to the back of the tractor.

1. Connect the tractor power harness to the battery.

   Important: When connecting cables, connect the positive (+) cable first, then connect the negative (-) cable.
2. Route the tractor power harness to the back of the tractor.

Circuit Breaker

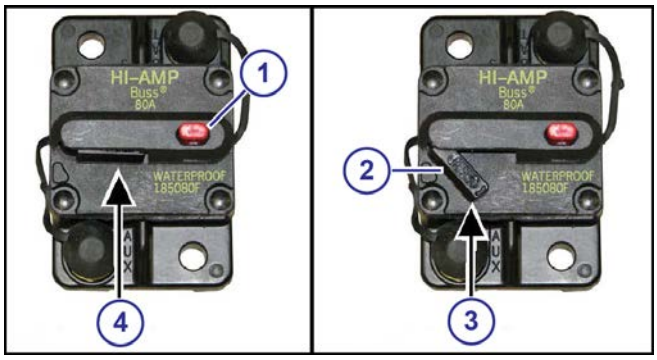


Figure 20:

The circuit breaker has an automatic/manual trip button *(1)* and a manual reset lever *(2)*.

A tripped circuit breaker *(3)* is an indicator of a short or overload condition.

Do not reset *(4)* the circuit breaker without looking into the cause of the tripped circuit breaker.

Note: The circuit breaker is usually located near the battery or in the battery compartment. The 60A or 80A circuit breaker is equipped with a manual trip. To reset the breaker, rotate the tripped lever back into the reset position.

Important: When disconnecting the battery terminals, remove the negative (-) cable first, then remove the positive (+) cable. When connecting cables, connect the positive (+) cable first, then connect the negative (-) cable.

Install the Communication Harness

There are two ways to connect the communication harness to the virtual terminal.

- Use the ISO plug on the back of the tractor and the communication harness adapter.
- Use a monitor in the cab that is not connected to the ISO plug on the back of the tractor and the tractor communication harness.

Tractor ISO Monitor

1. If you are using the communication harness adapter, connect to the ISO plug on the back of the tractor.
2. If the ISO plug is already in use, use the Y-CAN communication cable to connect both the existing ISO and the Seed-Squirter™ communication harness.

Standalone Monitor

1. If you are using the tractor communication harness, connect to the 4-pin Deutsch connector inside the cab on the harness for monitor that will show the Seed-Squirter™ screens.
2. Connect the key switch power connection in the cab to the red wire on the tractor communication harness using the supplied connectors.

Route and Install the Power and Communication Harnesses

1. Route the harnesses from the front of the planter to the controller.
   The harness ends without connectors must route through the planter draft tube.
2. Install the connectors to the harness ends.
   See planter power harness pinout and communication cable pinout for more information.
3. Connect the planter power harness to the Seed-Squirter™ controller.
4. Connect the communication harness to the accessory cable.
5. Connect the power harness to the tractor power harness.
6. Connect the communication harness to the adapter or the tractor communication harness.

Planter Power Harness Pinout

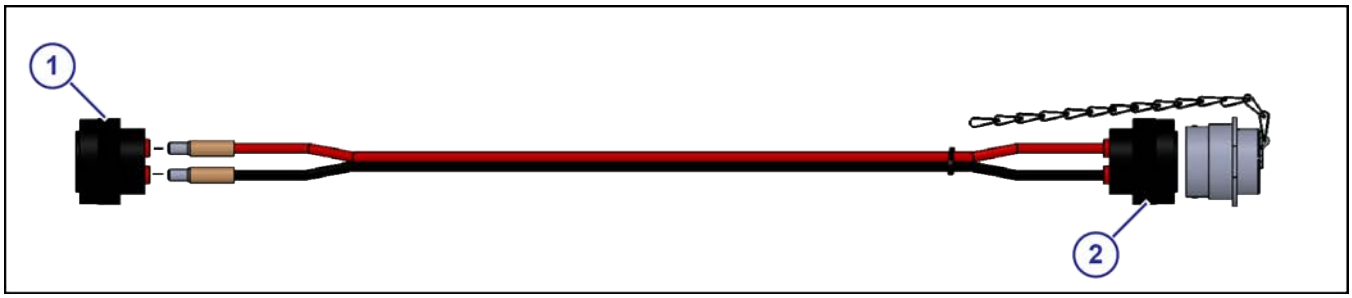


Figure 21:

The connector *(1)* connects to the controller. The connector *(2)* connects to the tractor power harness. The red wire is positive, and the black wire is negative.

Pinout	Color	Description
1	Red	Power
2	Black	Ground

Communication Cable Pinout

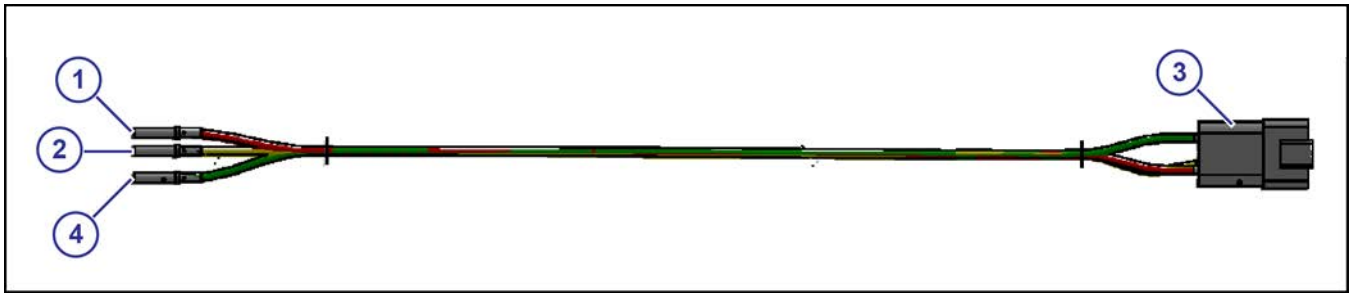


Figure 22:

The terminal ends *(1)*, *(2)*, and *(4)* of the communication cable connect to the CAN switched Power connector on the accessory harness. The 4-pin connector *(3)* on the cable connects to the communication adapter harness or the ISO plug on the back of the tractor.

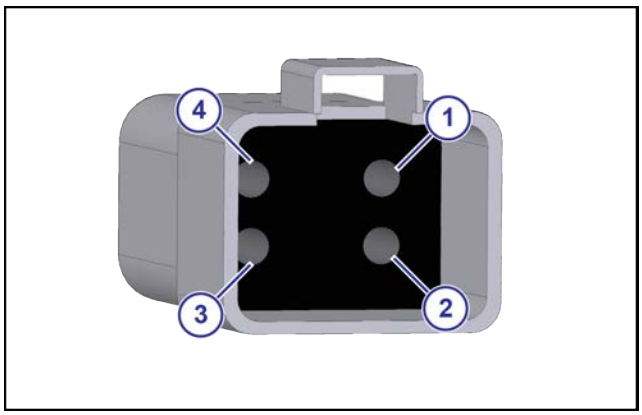


Figure 23:

Pinout	Color	Description
1	Red	Key Switched Power
2	Yellow	ISO CAN High
3	Plug	Not Used
4	Green	ISO CAN Low

Install the Planter Extension and Manifold Harnesses

1. Install and the route the planter harness(es) or WILGER manifold harness(es).
2. Connect the harness drops to the valves.
3. If you have boom(s), install the planter extension harness(es) to the controller and route to the planter harness(es).
   a) Connect the extension harness(es) to the planter harness(es).
4. If you have WILGER manifold(s), route the manifold harness(es) toward the controller.
   a) Connect the WILGER manifold pigtail(s) to the controller.
   b) Install the manifold harness connectors to the correct connectors on the pigtail(s).

   Note: On the controller, the left-hand 40-pin connector is row 1. The left leg on the pigtail harness must be installed here for planters with more than six rows. For less six rows, the left leg on the pigtail harness can be install into the 24-pin connector.

Install the Seed Sensor Tee Harnesses

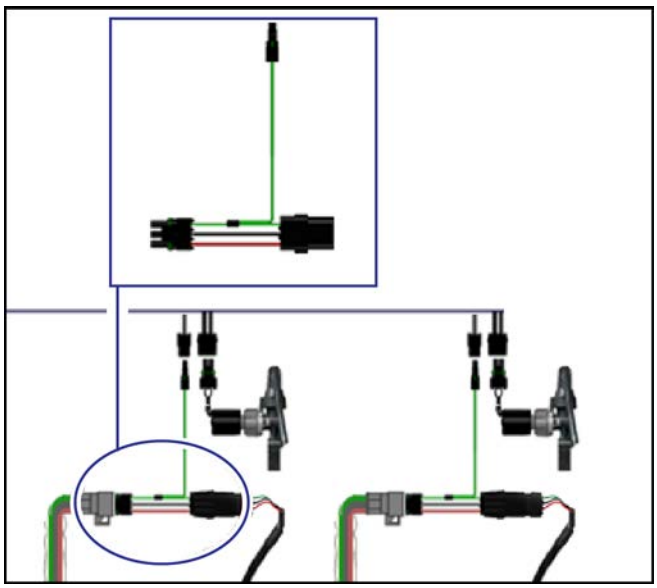


Figure 24:

1. Disconnect the 3-pin weather-pack connector closest to each seed tube.
2. Connect seed sensor tee harness between the connectors.
3. Make sure that the connectors are correctly installed.
4. Route and connect the seed sensor tee harness to the planter or manifold harness.

Install the GPS Sensor

Install the GPS sensor on the planter.

The GPS sensor must be within 15 ft of the Seed-Squirter™ controller.

Make sure that the sensor has a clear line of sight to the sky and that nothing is above the sensor.

Chapter 4

System Test

Topics:

Start the System

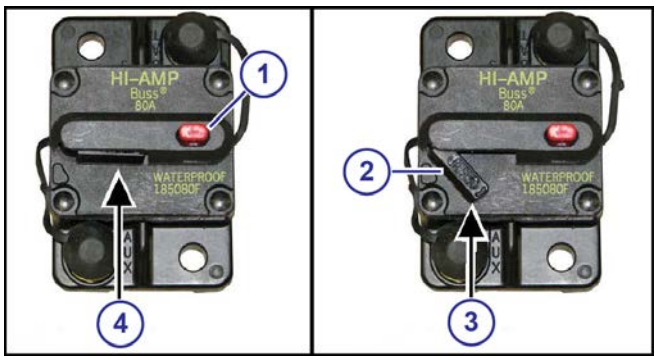


Figure 25:

The circuit breaker has an automatic/manual trip button *(1)* and a manual reset lever *(2)*.

A tripped circuit breaker *(3)* is an indicator of a short or overload condition.

Do not reset *(4)* the circuit breaker without looking into the cause of the tripped circuit breaker.

1. Set the breaker on the battery.
2. Start the tractor.
   The virtual terminal display will start.
   a. Pool loads
   b. SSQ comes on the screen
      - If SSQ does not load, see Troubleshooting in the Seed-Squirter™ Operator Manual.
3. You may be prompted to make sure that the number of row units and the planter width values are correct.
4. If you need to adjust the system settings:

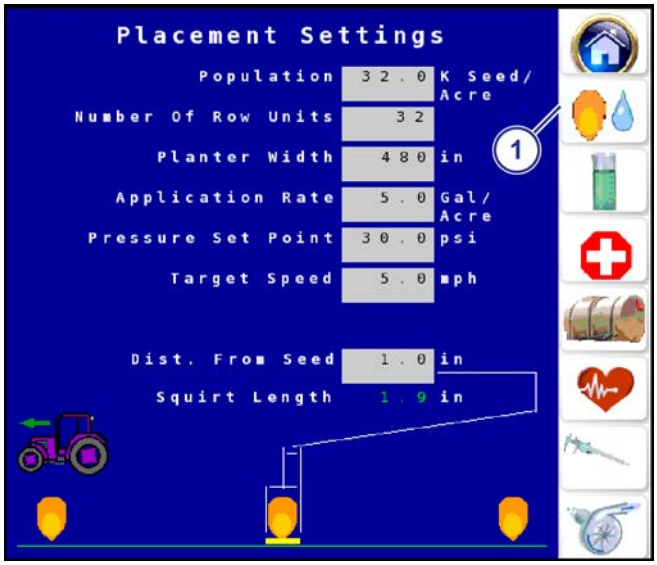


Figure 26:

a) Select the **Placement Settings** icon *(1)*.
b) Change the necessary planter information.
   - Number of rows
   - Width of planter

Setting the Flowmeter Cal

On the **SENSOR SETTINGS** screen, the flowmeter cal value must be entered by the operator. This value must match the flow meter label on the planter.

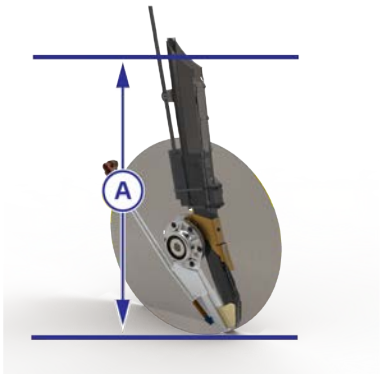
Figure 27:

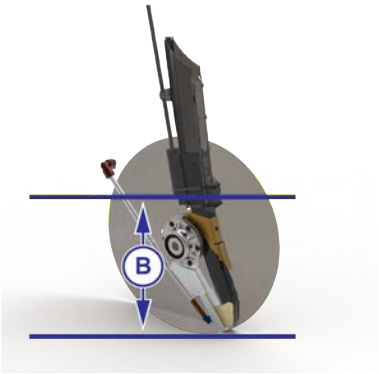
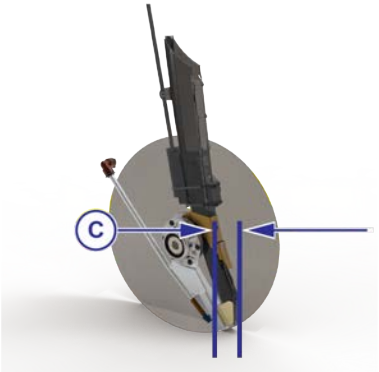
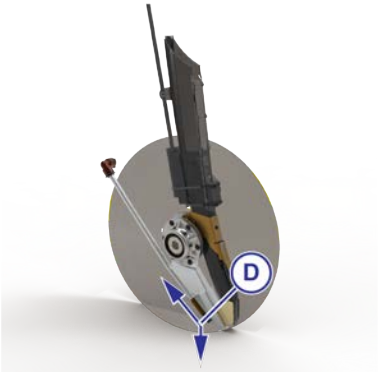
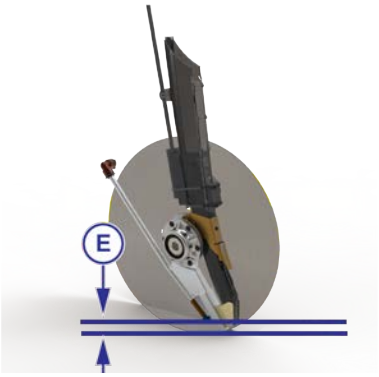
1. Select the **Sensor Settings** icon *(1)*.
2. Select the box *(2)* next to the **Flowmeter Cal**.
3. Use the number pad to enter the value and then select the check mark *(3)*.

   Important: The **Flowmeter Cal** value is in pulses per gallon.

Liquid Product Tube Setup

While the liquid product tube, seed sensor, and seed tube locations can vary by planter model, five variables must be manually measured on the planter to make sure that there is accurate placement of the liquid product. These measurements, for each product, include:

Measurement Description	Default Value
Center line distance from the top of the seed tube to the bottom of the opener discs or furrow.	

Measurement Description	Default Value
Center line distance of the seed sensor to the bottom of the opener discs or furrow.	
Horizontal distance of the liquid product tube spray tip to the lowest point on the seed tube.	
Angle of liquid product tube relative to the ground. The angle will be less than 45 degrees.	
Vertical distance of the liquid product tube spray tip to the bottom of the opener discs or furrow.	

DANGER: To prevent personal injury, use the proper personal protective equipment around the sharp opener discs.

Note: It is recommended that these values are recorded in the Setup Record.

The measurements will be entered into the **APPLICATION TUBE SETUP** screen to help the Seed-Squirter™ controller to determine when to release the squirt of liquid product.

Note: A dealer should enter the five measurements during system installation.

Note: Locked settings on the **SENSOR SETTINGS** screen are intended for qualified service technician access. Contact your CapstanAG dealer for more assistance.

The seed tube and seed sensor are stationary, and both are non-adjustable. The liquid product tube position is mechanically adjustable.

Enter Information on the Application Tube Setup Screen

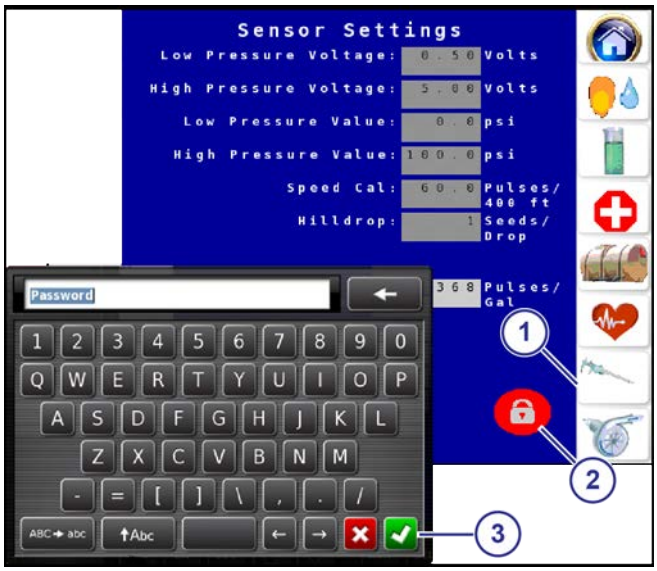


Figure 28:

1. Select the **Sensor Settings** icon *(1)*.
2. Select the **Lock** icon *(2)*.
3. Use the keyboard to enter the password to unlock additional settings and select the **check mark** icon *(3)*.
4. Select the **Application Tube Setup** *(1)*.
5. Select a box to change each value.

   The measurements are:

   - ***(1)*** - Center line distance from the top of the seed tube to the bottom of the opener discs or furrow
   - ***(2)*** - Center line distance of the seed sensor to the bottom of the opener discs or furrow
   - ***(3)*** - Horizontal distance of the liquid product tube spray tip to the lowest point on the seed tube
     - If spray tip is ahead of the seed tube, enter a positive distance.
     - If spray tip is behind of the seed tube, enter a negative distance.
   - ***(4)*** - Angle of liquid product tube relative to the ground
   - ***(5)*** - Vertical distance of the liquid product tube spray tip to the bottom of the opener discs or furrow
6. Use the number pad to enter the correct value and then select the **check mark** icon.
7. When all the correct values have been entered, make sure that the image on the screen matches the layout of your planter.

Select Which VT Display Will Show the Seed-Squirter™ Screens

If there is more than one VT display on the same CAN, select the desired display to view the Seed-Squirter™ information.

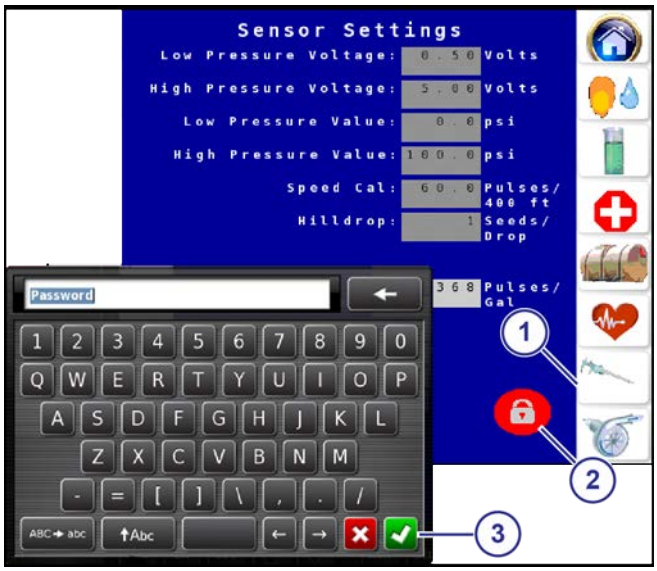


Figure 31:

1. Select the **Sensor Settings** icon *(1)*.
2. Select the **Lock** icon *(2)*.
3. Use the keyboard to enter the password to unlock additional settings and select the **check mark** icon *(3)*.

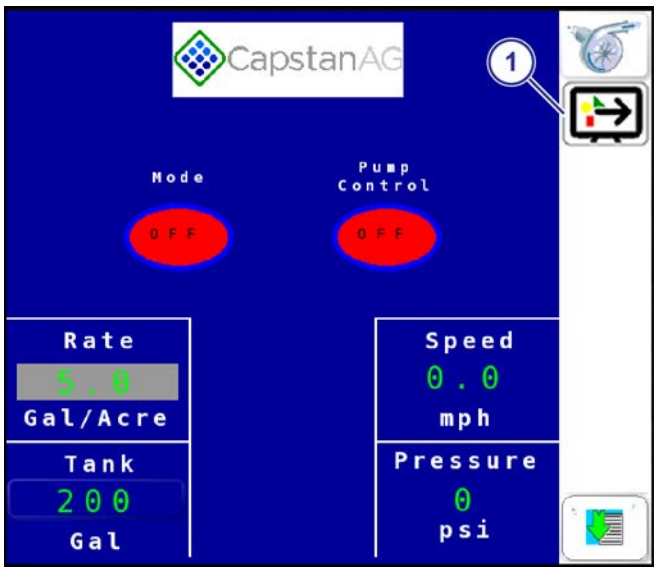


Figure 32:

4. Select the **Switch Display** icon *(1)*.
   A message screen will show.
5. Select **Accept** or **Cancel**.

Do a Check of the Valve Diagnostics

When the **DIAGNOSTICS** screen shows the valve information, you can see if all nozzle valves and seed sensors are connected.

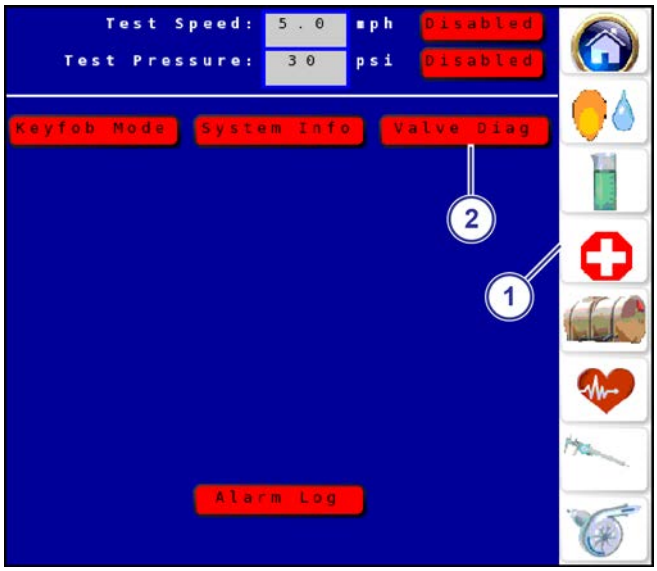


Figure 33:

To view the valve diagnostics information:

1. Select the **Diagnostics** icon *(1)*.
2. Select **Valve Diag** *(2)*.

   The background of the **Valve Diag** icon will change to green, and additional information will show at the bottom of the screen.

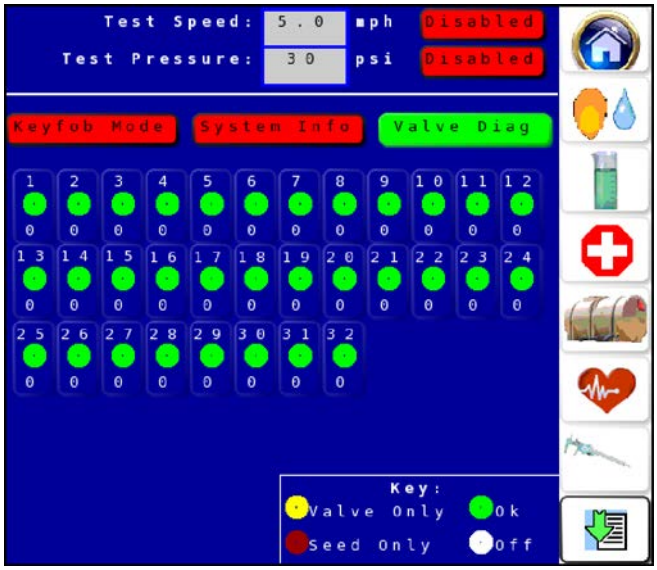


Figure 34:

Make sure that all of the rows have a green icon which indicates that the row is correctly operating.

The information at the bottom of the screen will show all of the nozzle valves and seed sensor connection information.

Icon	Description
	Seed sensors and nozzle valves are connected.
	Nozzle valve is connected while seed sensor is not being detected by controller.
	Seed sensor is connected while the nozzle valve is not being detected by controller.
	The rows are disabled or off. These rows will not operate. If it is necessary, go to the troubleshooting for more diagnostic help.

Do a System Test

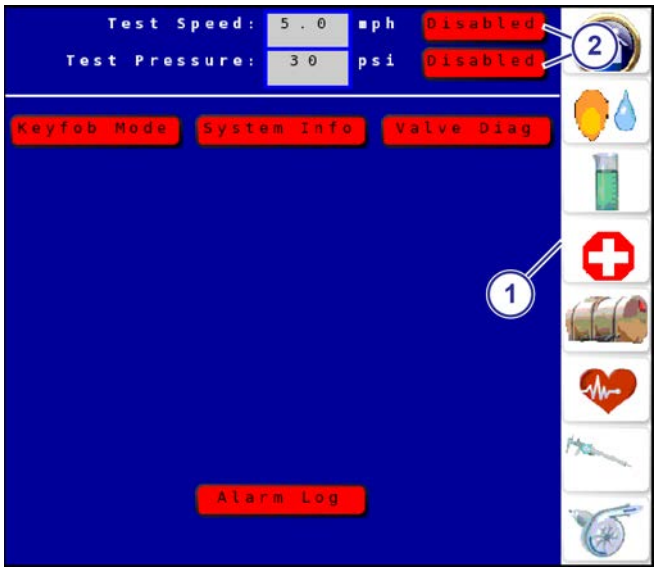


Figure 35:

1. Select the **Diagnostics** icon *(1)*.
2. Select the desired **Disabled** icon *(2)* to enable the function.

   The background of the icon will change to green and show **Enabled**.

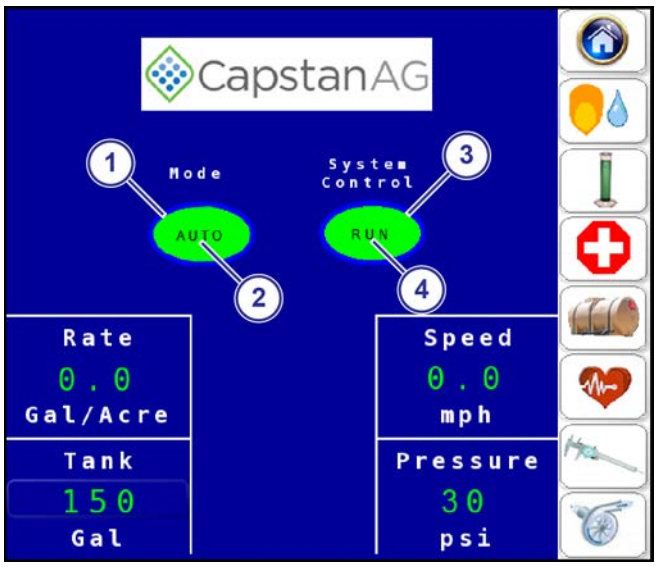


Figure 36:

3. On the **HOME** screen, select the **Mode** icon *(1)* until **AUTO** *(2)* shows.

   Note: Do not engage the hydraulics.
4. Select the **System Control** icon *(3)* until **RUN** *(4)* shows.
5. At the back of the planter, use something like a tarp strap to activate the seed sensor.
6. Make sure that each valve pulses from row 1 across the planter in the correct order.

Set the Liquid Bypass

1. Fill the liquid product tank(s).

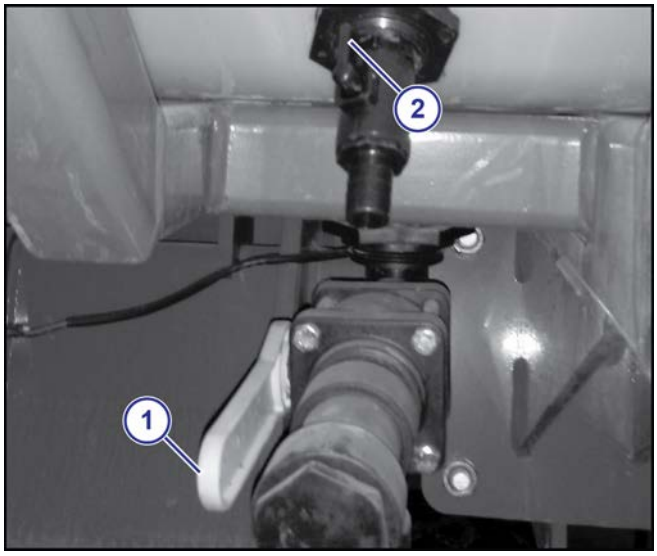


Figure 37:

2. Make sure that each tank supply valve *(1)* is open.
3. Make sure that each liquid product shutoff valve *(2)*, used for Seed-Squirter™, is open on the liquid product tank(s).

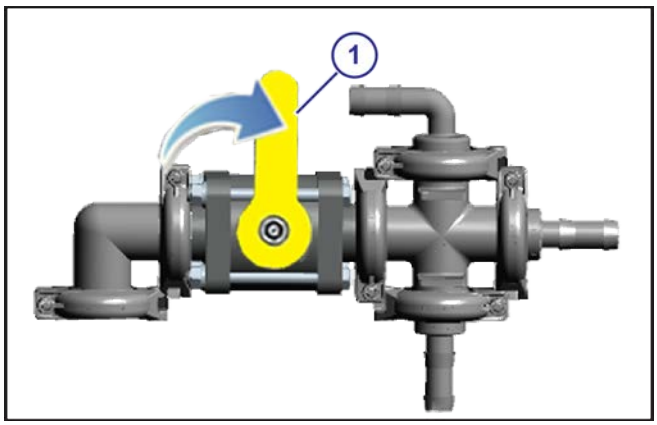


Figure 38:

4. Close the main bypass valve *(1)* on the planter, near the liquid product pump.

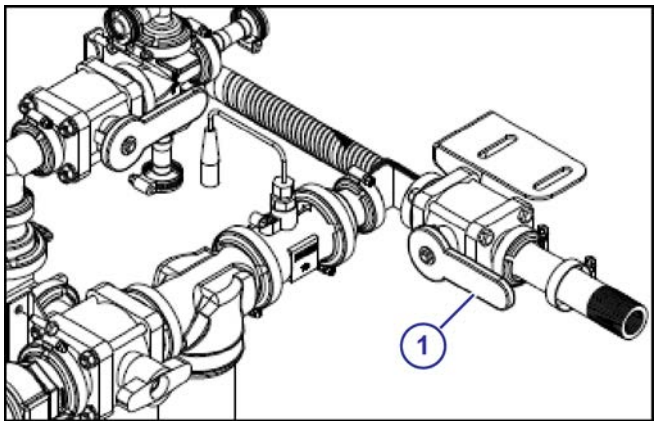


Figure 39:

5. Open the shutoff valve *(1)* to the booms on the product line.
6. Start the tractor and engage the planter hydraulics.

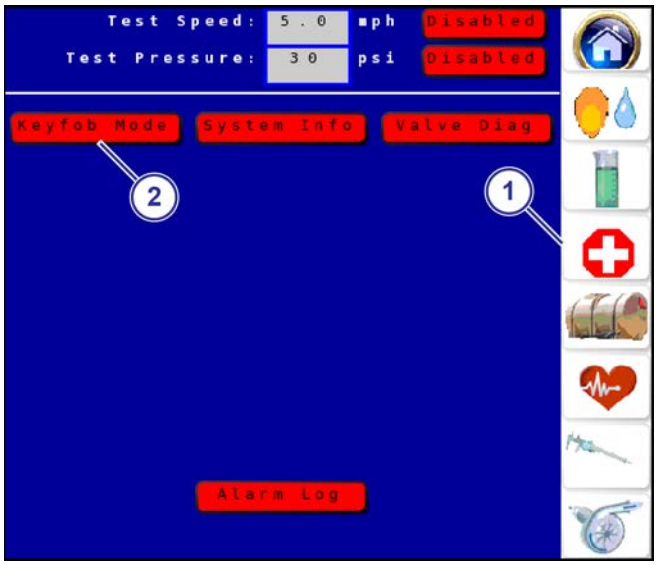


Figure 40:

7. In the cab of the tractor, on the VT display, select the **Diagnostics** icon *(1)*.
8. Select **Keyfob Mode** *(2)*.
   The background of the icon will change to green, and additional icons will show.

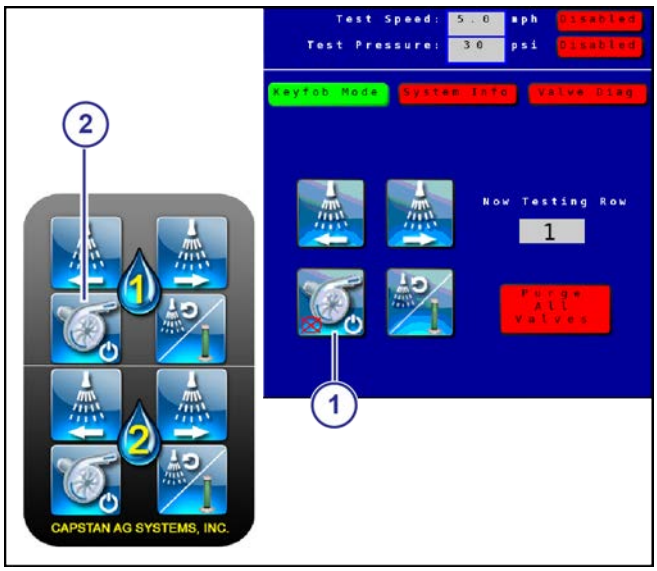


Figure 41:

9. Select the **Pump On/Off** icon to start the liquid product pump.

(1)	**Pump On/Off** on the VT screen
(2)	**Pump On/Off** on the key fob

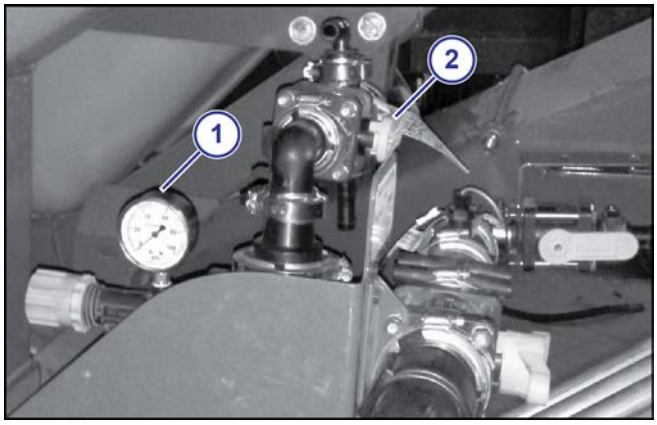


Figure 42:

10. Look at the manual pressure gauge *(1)* at the liquid product pump.

11. Adjust the pressure relief valve *(2)* to set the pressure to a maximum of 70 psi.

- Rotate the pressure relief valve counter-clockwise to decrease the pressure
- Rotate the pressure relief valve clockwise to increase the pressure

12. If the pressure cannot reach 70 psi, increase the hydraulic flow to the Seed-Squirter ™ hydraulics until the pressure gauge shows 70 psi.

Some bypass is needed for better Seed-Squirter ™ operation.

Important: If the pressure does not reach 70 psi with the relief valve fully closed and hydraulic flow increased, the tractor hydraulic supply is not sufficient. Contact your tractor dealer for further assistance.

13. If the pressure is more than 70 psi, with the relief valve open fully, decrease the hydraulic flow to the Seed-Squirter ™ hydraulics until the pressure gauge shows 70 psi.

14. When the pressure is set, use the locknut to lock the setting in place.

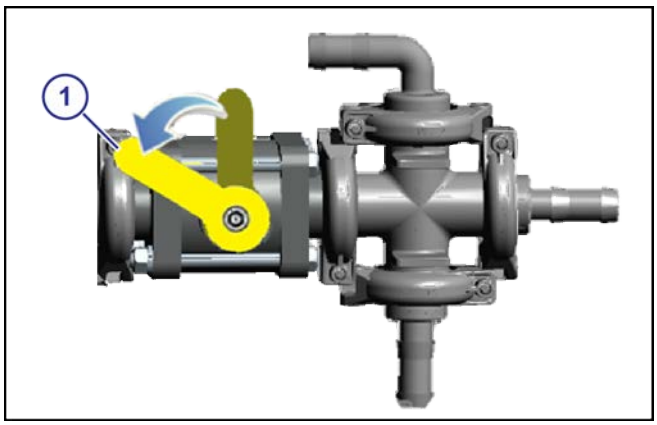


Figure 43:

15. Look at the manual pressure gauge at the liquid product pump, and open the main bypass valve *(1)* until the pressure is at 60 psi.

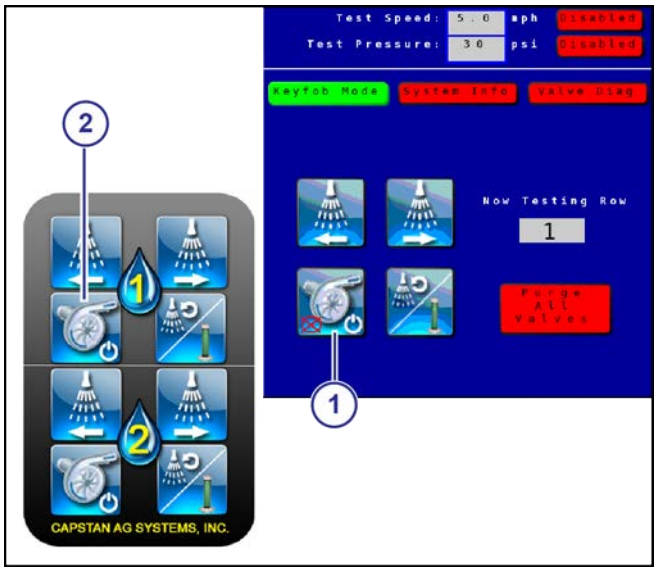


Figure 44:

16. In the cab of the tractor, on the VT display, select the **Pump On/Off** icon to stop the liquid product pump.

(1)	**Pump On/Off** on the VT screen
(2)	**Pump On/Off** on the key fob

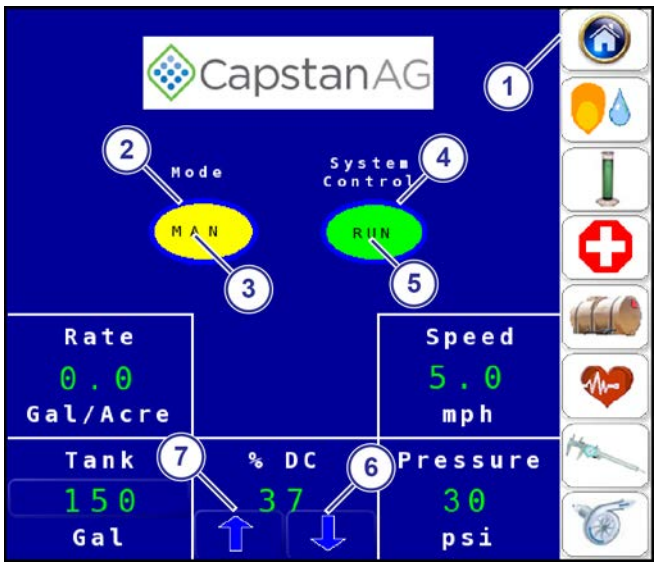


Figure 45:

17. Select the **Home** icon *(1)*.

18. Select the **Mode** icon *(2)* until **MAN** *(3)* shows.

19. Select the **System Control** icon *(4)* until **RUN** *(5)* shows.

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

20. Use the down arrow *(6)* to decrease the system pressure to about 15 psi.

21. Use the up arrow *(7)* to increase the system pressure to 55 psi or 60 psi.

If you cannot get the desired pressures, lower the minimum duty cycle or increase the maximum duty cycle on the **Pump Settings** screen.

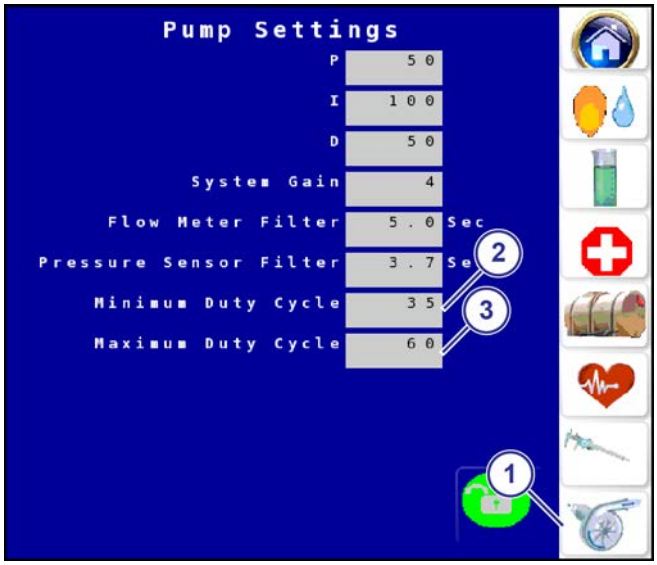


Figure 46:

22. When the minimum and maximum % DC are know, select the Pump icon *(1)*.

23. Enter the values into the boxes next to **Minimum Duty Cycle** *(2)* and **Maximum Duty Cycle** *(3)*.

Note: You may need to unlock the screen to access and change the duty cycle values.

Index

APPLICATION SYSTEMS
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CapstanAG™

P/N 115700-007 Rev. A | Revised 02/2018 |