

Integration Instructions

PinPoint™ III ENVELOP on Miller/New Holland Machines

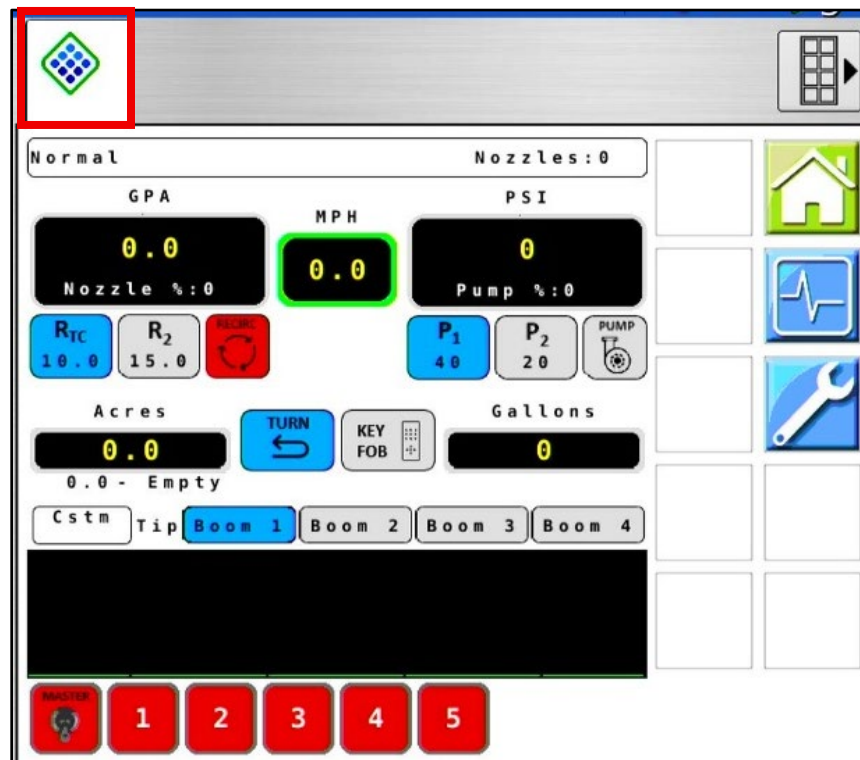
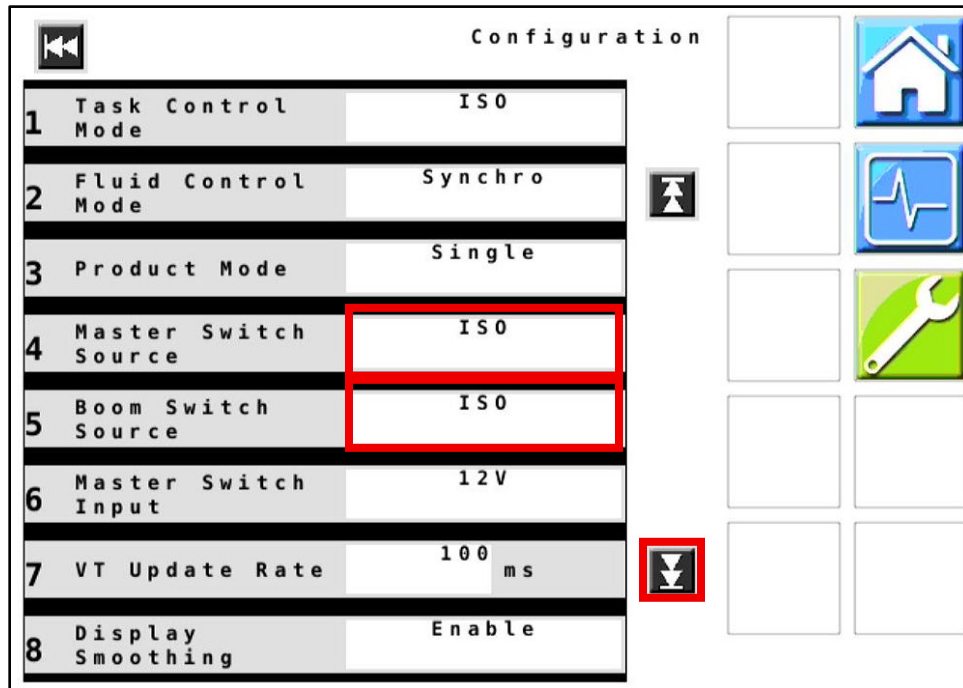


Figure 1 — PinPoint III Home Screen

Menu Setup

1. **Figure 1:** Select the CapstanAG PinPoint™ III icon  from the UT selection list. This icon may be located in slightly different places depending on the task controller.
2. Basic running settings and information are displayed on the PinPoint™ III home screen. The boom profile buttons can be selected here. To edit these configurations and set up other features of the PinPoint™ III software, tap the **Settings** icon  at the right side of the screen.

3. To begin setup, Tap the  button > **Initial Setup** > and **Configuration** on the following page.



Configuration	
1 Task Control Mode	ISO
2 Fluid Control Mode	Synchro
3 Product Mode	Single
4 Master Switch Source	ISO
5 Boom Switch Source	ISO
6 Master Switch Input	12V
7 VT Update Rate	100 ms
8 Display Smoothing	Enable

Figure 2 — Configuration Menu – Page 1

4. **Figure 2:** Change **Master Switch Source** and **Boom Switch Source** to ISO

Note: Older software revisions will have both selection options listed as None, which is their equivalent.

5. Tap  to navigate to Page 2.



Figure 3 — Configuration Menu – Page 2

6. **Figure 3:** On Page 2 of the Configuration Menu:
 - a. Enter the correct **Nozzle Spacing** for your machine
 - b. Verify the **Total Number of Nozzles** matches the number on your machine
 - c. Match the **Maximum TC Sections** number to the **Total Number of Nozzles**
 - d. Change the **Selected VT** option if desired
 - i. This option will dictate which monitor the PinPoint III UT will be displayed
 - e. Change the **Selected TC** to the desired Task Controller
7. Tap  to navigate to Page 3.

Figure 4 — Configuration Menu – Page 3

8. **Figure 4:** Change **Fill Station** option to **appropriate Model Year**. If machine is not MY23/24, leave at disable.
9. **Leave all other items in Configuration Menu at default setting unless otherwise advised.**
10. Tap the **Back Arrow** to return to the Initial Setup menu and select **VCM Setup**.



IMPORTANT: Complete this step before performing any other boom setup.

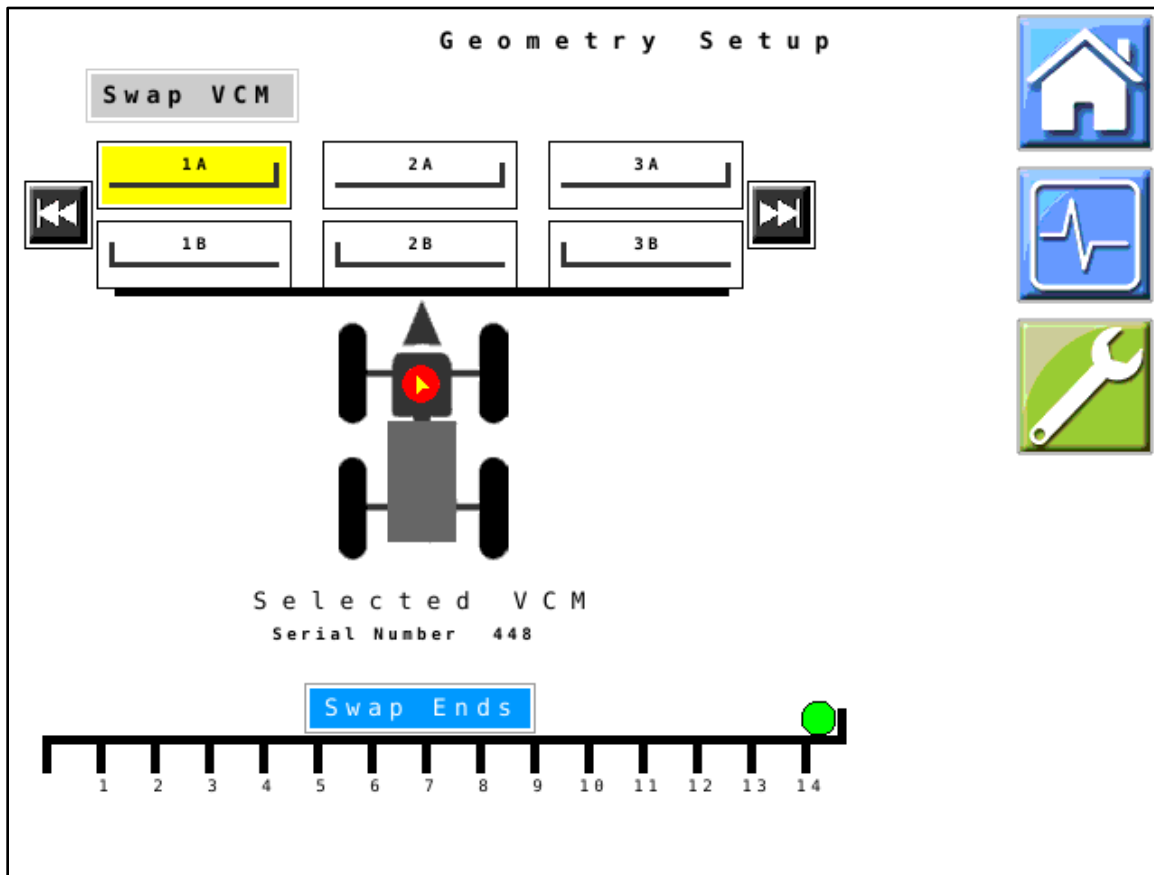


Figure 5 — Geometry Setup – Legacy VCMs

Note: The **green dot** on the display indicates the position of the selected VCM (highlighted in yellow) in relation to the nozzles on its hub CAN channel. Tapping a VCM again after highlighting will cause the nozzles attached to it to pulse to assist with recognition.

11. **Figure 5:** VCMs must be in the correct order and orientation on the boom. Tap the **Swap Ends** button with the highlighted VCM to orient the VCM correctly on the boom, if necessary. VCMs can be mounted with the tube towards the center of the machine (**green dot**) and the pigtail running towards the outside tip, or vice versa. If two VCMs are located on the same hub CAN channel, use the **Swap VCM** button with these VCMs highlighted to orient them correctly left to right, and then make sure the orientation (swap ends) is correct.
12. Use the **Left** and **Right Scroll** icons   to scroll through all the VCMs installed on the machine. Verify each of their locations and serial numbers.

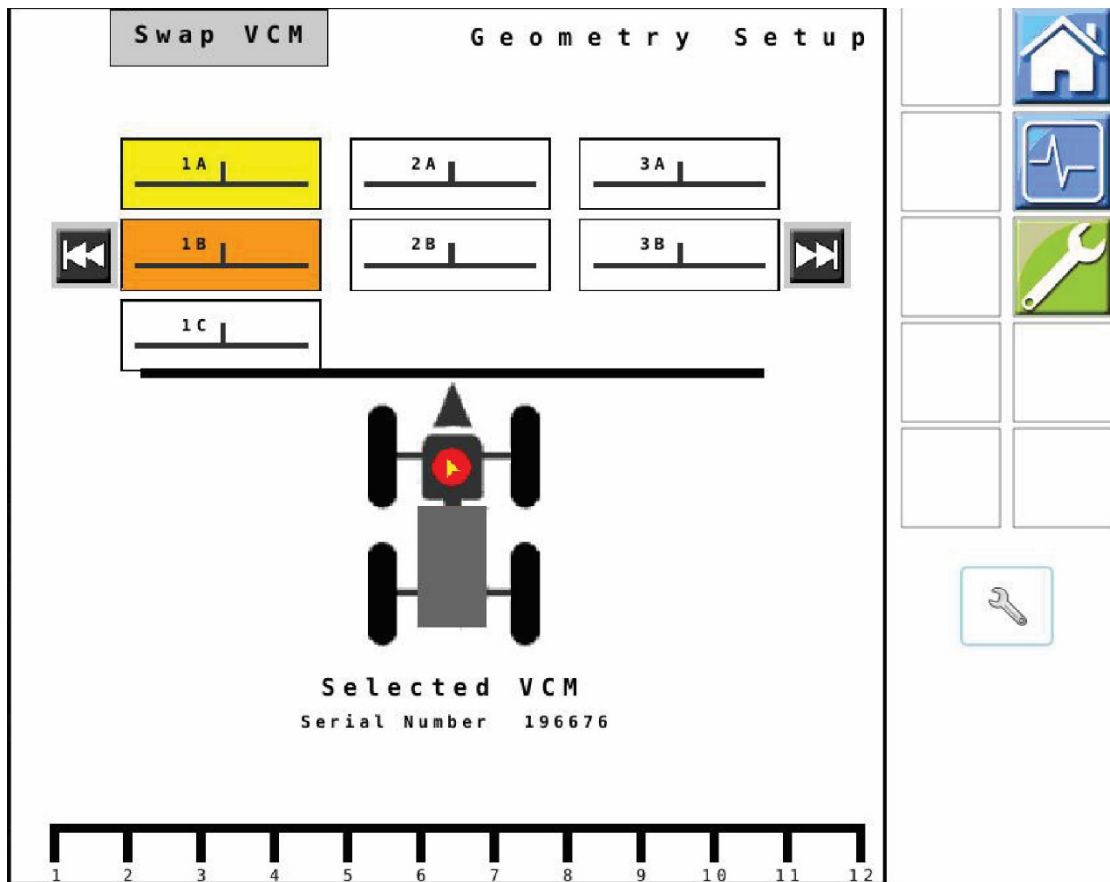


Figure 6 — Geometry Setup – Leap Start VCMs

Figure 6: If your machine is equipped with Leap Start VCMs, the process will be similar, with the exception of the necessity of swapping orientations of each VCM.

Leap Start VCMs should automatically order themselves across the boom but should be verified to ensure proper application.

To Swap VCMs:

- Locate the two VCMs that need to be swapped (tapping a single VCM twice will cause its associated valves to pulse)
- Tap the first to highlight **yellow**
- Tap the second to highlight **orange**
- Tap **Swap VCM**

Leap Start VCMs are labeled to assist with correct installation orientation. If nozzles are firing in reverse order from left to right, check installation orientation.



13. To verify correct order and orientation of the VCMs, perform a Key Fob test. This process is outlined in further detail in the PinPoint III Operator's Manual shipped with your kit, or on the CapstanAG website at: <https://capstanag.com/pinpoint-iii-envelop/>

Note: This MUST be done before continuing any further with setup. Failure to verify the VCM orientation will result in incorrect automatic nozzle shutoff.

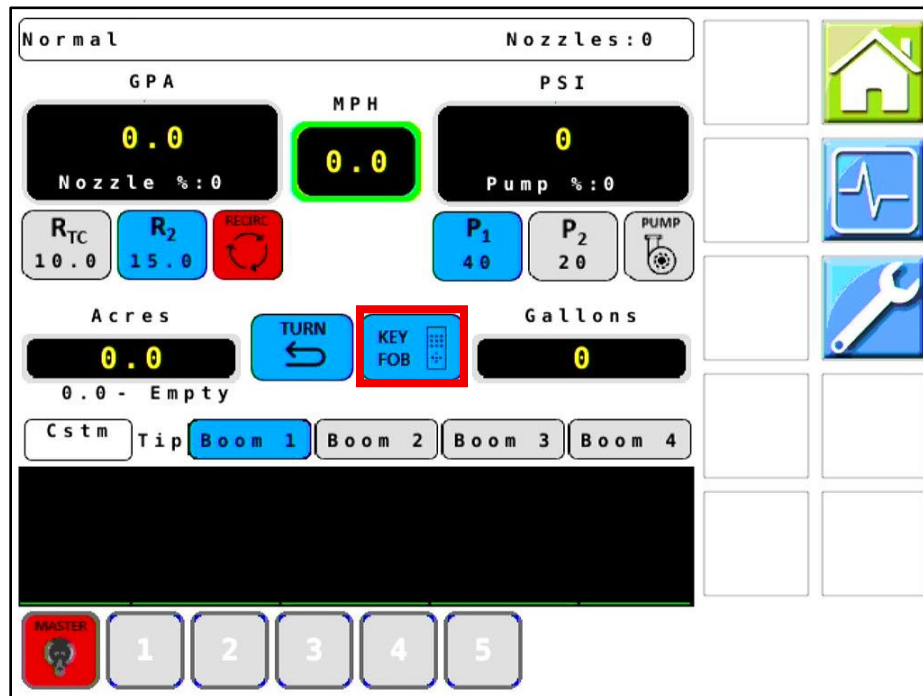
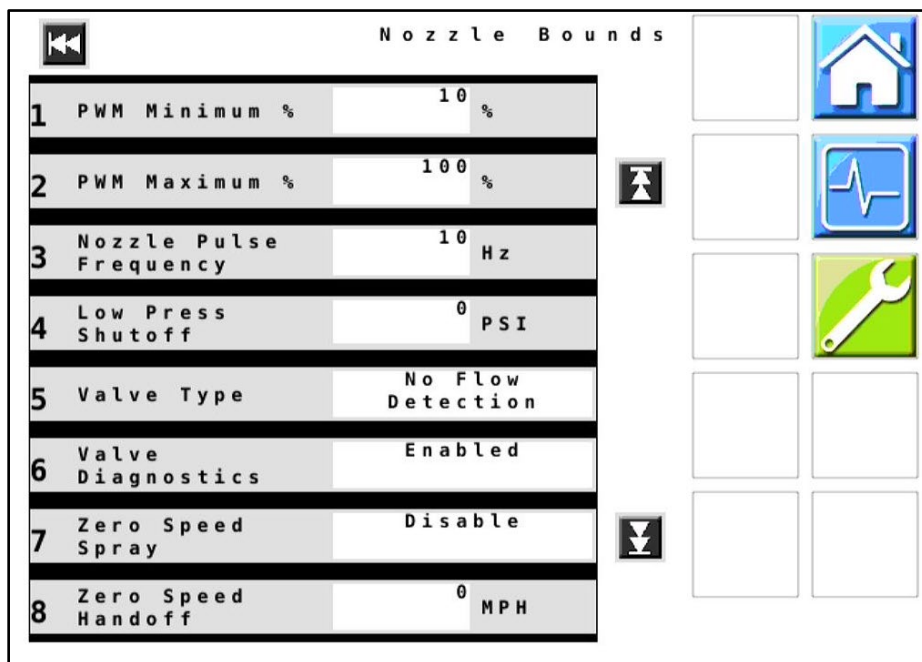


Figure 7 — Key Fob Verification

Note: The CapstanAG Mobile App must be used with the system in key fob mode for this test Procedure when using Leap Start VCMs

14. Tap the **Home** icon  to return to the home screen.
15. **Figure 7:** Tap the **Key Fob** icon to set key fob mode to **ON**.
16. Locate the key fob remote control or use the Capstan app. Using the right arrow key on the key fob or the app, turn on each of the nozzles one at a time across the boom. If the VCM orientation and position is correct, the nozzles will turn on in order left to right across the boom. If the nozzles do not turn on in the correct order, navigate back to the **VCM Setup** screen and correct any errors.

17. Tap the **Wrench**  icon and select **Boom/Nozzle > Nozzle Bounds**.



Nozzle Bounds			
1	PWM Minimum %	10	%
2	PWM Maximum %	100	%
3	Nozzle Pulse Frequency	10	Hz
4	Low Press Shutoff	0	PSI
5	Valve Type	No Flow Detection	
6	Valve Diagnostics	Enabled	
7	Zero Speed Spray	Disable	
8	Zero Speed Handoff	0	MPH

Figure 8 — Nozzle Bounds

18. **Figure 8:** The settings for Nozzle Bounds are generally left at default settings. Refer to the Operator's Manual for setting descriptions prior to making changes.

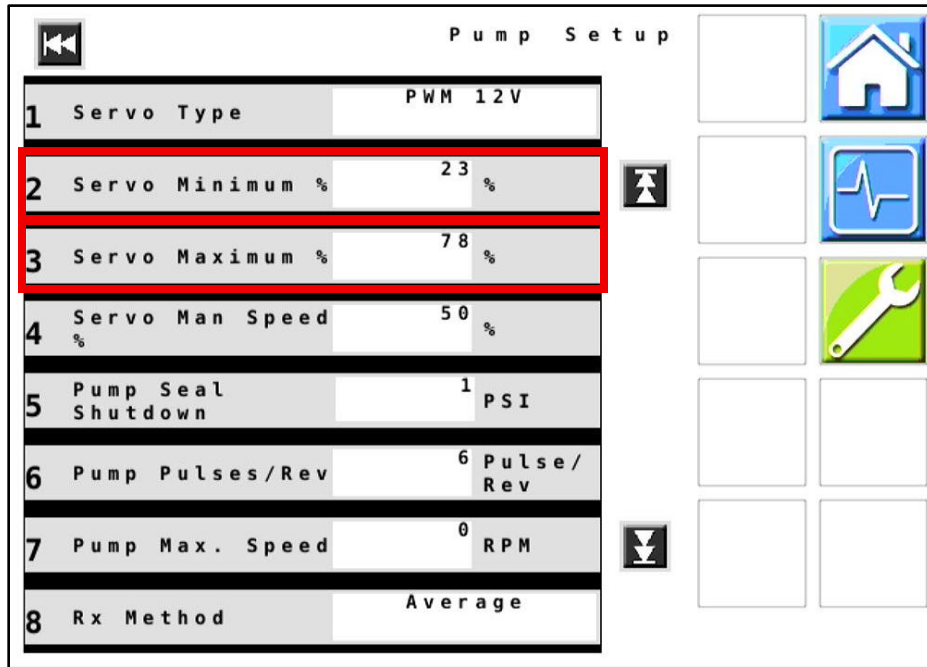
19. Tap the **Back** icon  to return to the **Boom/Nozzle** menu. Select **Nozzle Setup**.



Figure 9 — Nozzle Setup

20. **Figure 9:** Use the Nozzle Setup screen to set up and name custom boom profiles.
21. Valve size value may be either **15.5** (for 7-watt valves with black heat shrink tubing) or **24** (for 12-watt valves with blue heat shrink tubing). Verify which valves your unit is equipped with.
22. Change the Tip Size to the correct value installed on your machine.
- Different nozzle profiles can be configured by selecting each Boom profile button and modifying nozzle size and ranks. Refer to the Operator's Manual for Nozzle Rank explanations if necessary.
23. Select the **Soft Boom**  icon to configure the soft boom setup for each profile. Refer to the tables at the end of these instructions for the correct soft boom configuration for your machine.

24. Tap the **Wrench** icon  to return to the **Settings** menu. Select **Pressure > Pump Setup**.

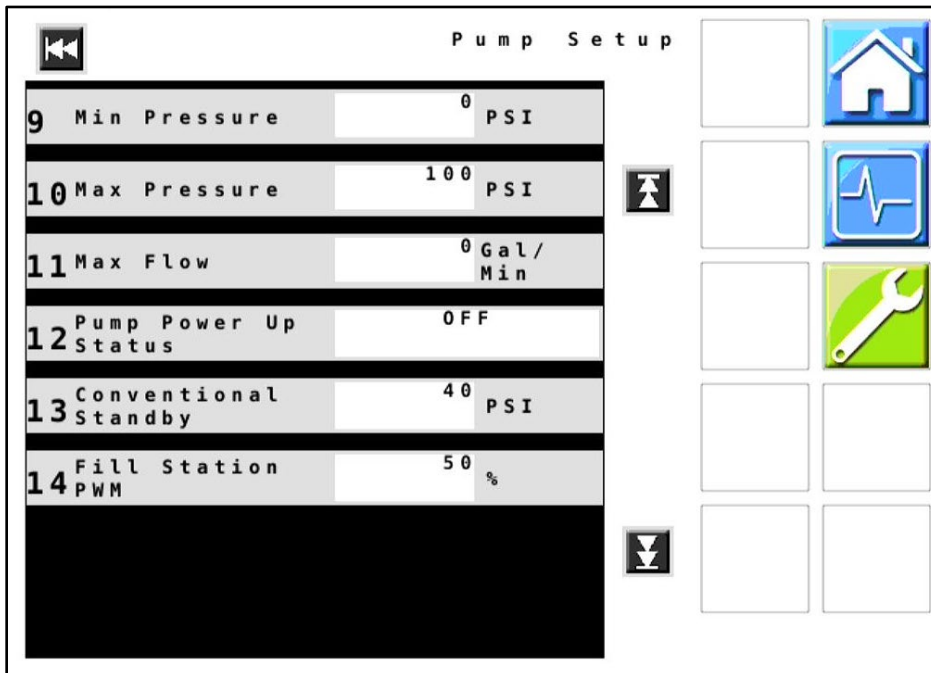


Pump Setup

1	Servo Type	PWM 12V
2	Servo Minimum %	23 %
3	Servo Maximum %	78 %
4	Servo Man Speed %	50 %
5	Pump Seal Shutdown	1 PSI
6	Pump Pulses/Rev	6 Pulse/Rev
7	Pump Max. Speed	0 RPM
8	Rx Method	Average

Navigation icons: Home, Heart Rate, Wrench, and a 2x2 grid of empty boxes.

Figure 10 — Pump Setup – Page 1



Pump Setup

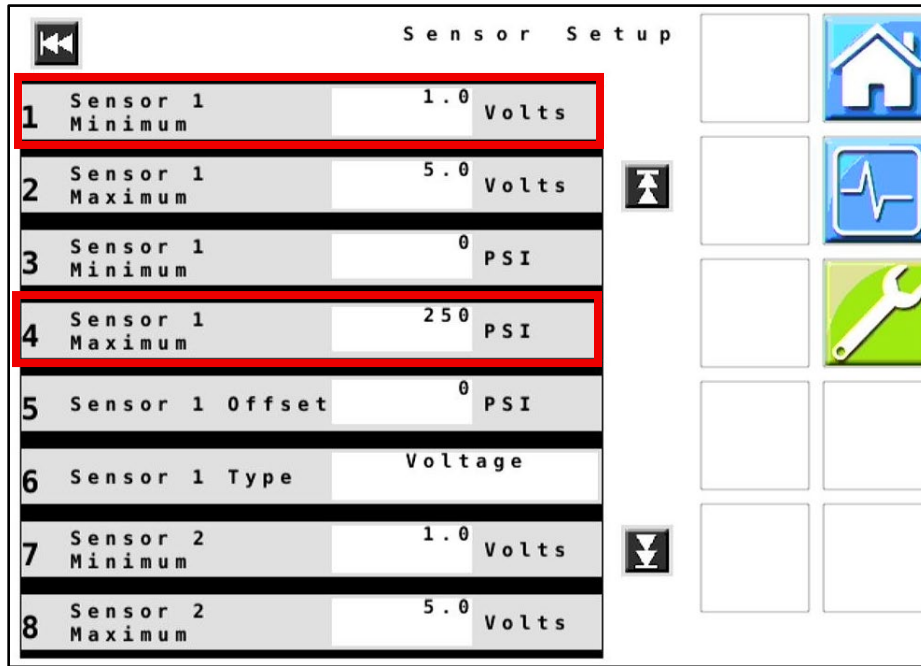
9	Min Pressure	0 PSI
10	Max Pressure	100 PSI
11	Max Flow	0 Gal/Min
12	Pump Power Up Status	OFF
13	Conventional Standby	40 PSI
14	Fill Station PWM	50 %

Navigation icons: Home, Heart Rate, Wrench, and a 2x2 grid of empty boxes.

Figure 11 — Pump Setup – Page 2

25. **Figures 10 & 11:** Verify that all values displayed on your unit match those shown here. Change values if necessary.

26. Tap the **Back** icon  to return to the **Pressure** menu. Select **Sensor Setup**.

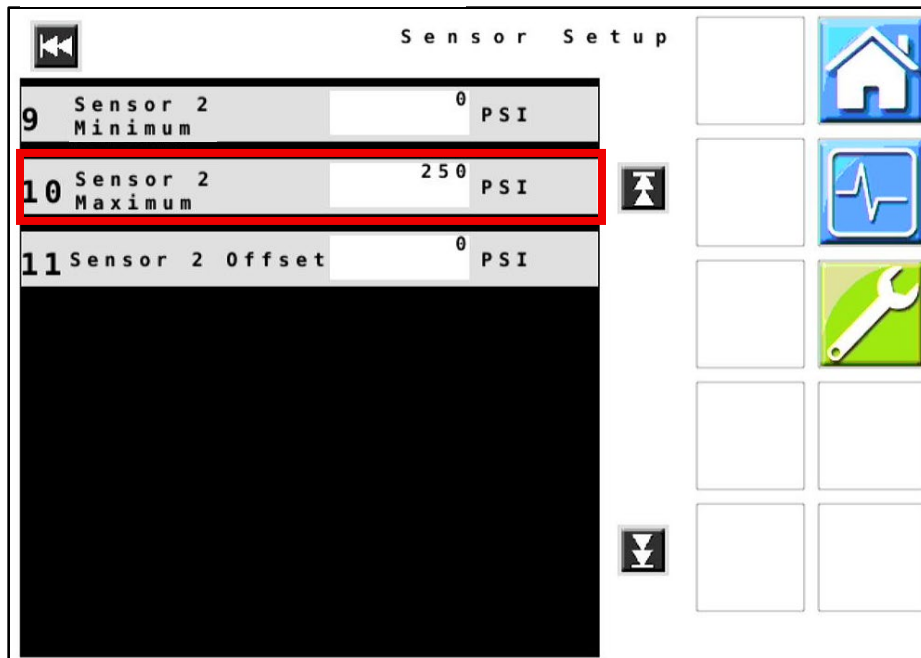


Sensor Setup

1	Sensor 1 Minimum	1.0	Volts
2	Sensor 1 Maximum	5.0	Volts
3	Sensor 1 Minimum	0	PSI
4	Sensor 1 Maximum	250	PSI
5	Sensor 1 Offset	0	PSI
6	Sensor 1 Type	Voltage	
7	Sensor 2 Minimum	1.0	Volts
8	Sensor 2 Maximum	5.0	Volts

Navigation icons: Home, ECG, Wrench, and a 2x2 grid of empty boxes.

Figure 12 — Sensor Setup Page 1



Sensor Setup

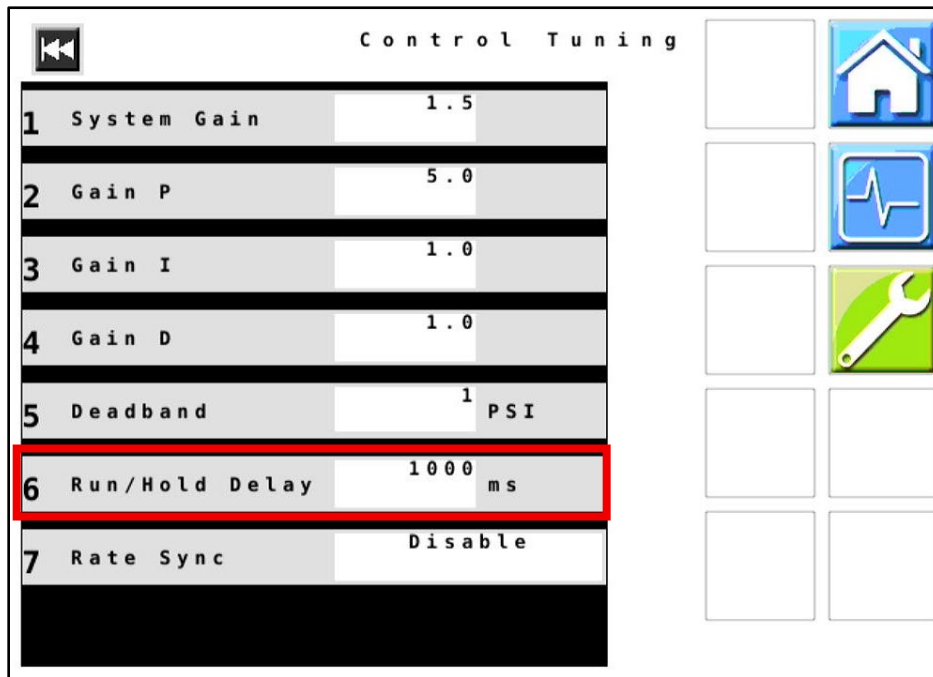
9	Sensor 2 Minimum	0	PSI
10	Sensor 2 Maximum	250	PSI
11	Sensor 2 Offset	0	PSI

Navigation icons: Home, ECG, Wrench, and a 2x2 grid of empty boxes.

Figure 13 — Sensor Setup Page 2

Figures 12 & 13: Verify that all values displayed on your unit match those shown here. Change values if necessary.

27. Tap the **Back** icon  to return to the **Pressures** menu. Select **Control Tuning**.



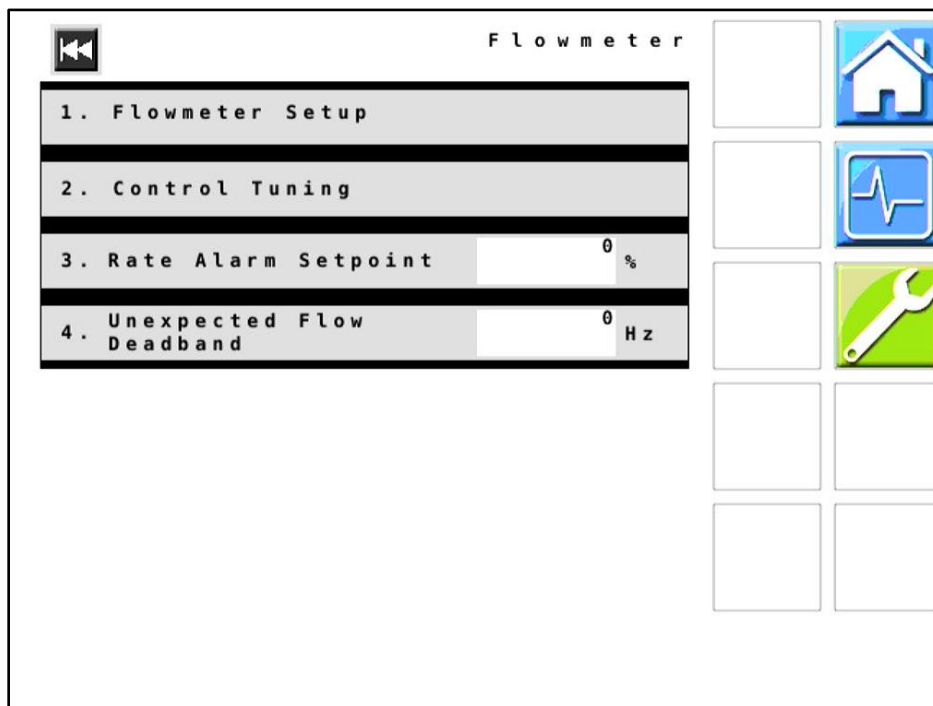
The **Control Tuning** screen displays a list of seven parameters for adjustment. A red box highlights the **Run/Hold Delay** parameter, which is set to 1000 ms. The other parameters are: System Gain (1.5), Gain P (5.0), Gain I (1.0), Gain D (1.0), Deadband (1 PSI), and Rate Sync (Disable). On the right side of the screen, there are navigation icons: a home icon, a pulse icon, and a wrench icon, along with several empty square buttons.

Parameter	Value
1 System Gain	1.5
2 Gain P	5.0
3 Gain I	1.0
4 Gain D	1.0
5 Deadband	1 PSI
6 Run/Hold Delay	1000 ms
7 Rate Sync	Disable

Figure 14 — Control Tuning

28. **Figure 14:** Change **Run/Hold Delay** to 1000ms if check valve is installed. Change other values if necessary.

29. Tap the **Back** icon  twice to return to the **Settings** menu. Select **Flow > Flowmeter**.



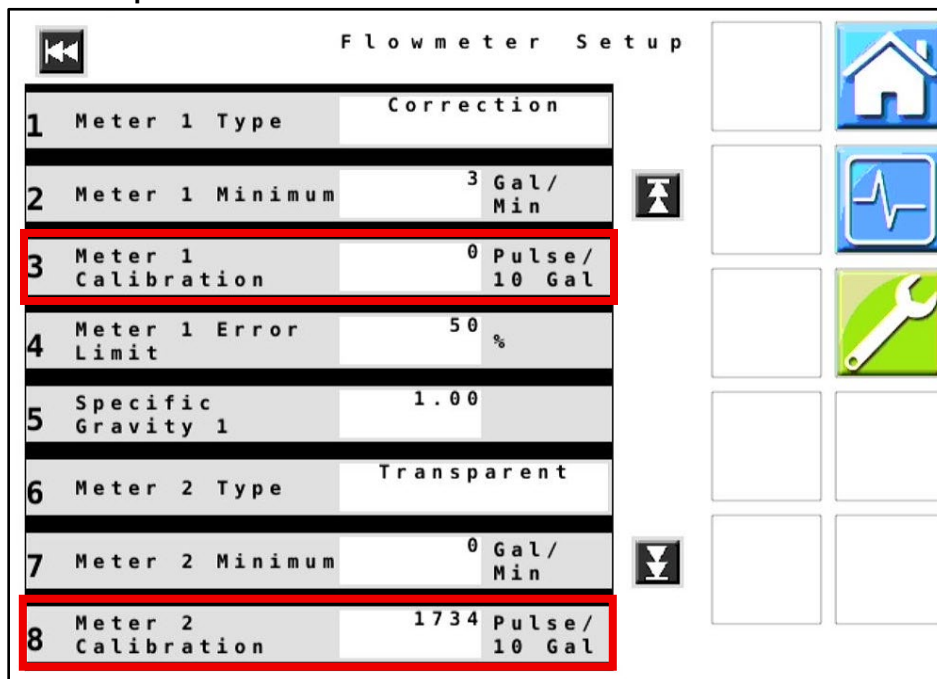
The **Flowmeter** screen displays a list of four parameters for adjustment. The parameters are: 1. Flowmeter Setup, 2. Control Tuning, 3. Rate Alarm Setpoint (0 %), and 4. Unexpected Flow Deadband (0 Hz). On the right side of the screen, there are navigation icons: a home icon, a pulse icon, and a wrench icon, along with several empty square buttons.

Parameter	Value
1. Flowmeter Setup	
2. Control Tuning	
3. Rate Alarm Setpoint	0 %
4. Unexpected Flow Deadband	0 Hz

Figure 15 — Flowmeter

30. **Figure 15:** Verify that all values displayed on your unit match those shown here. Change values if necessary.

31. Select **Flowmeter Setup**.

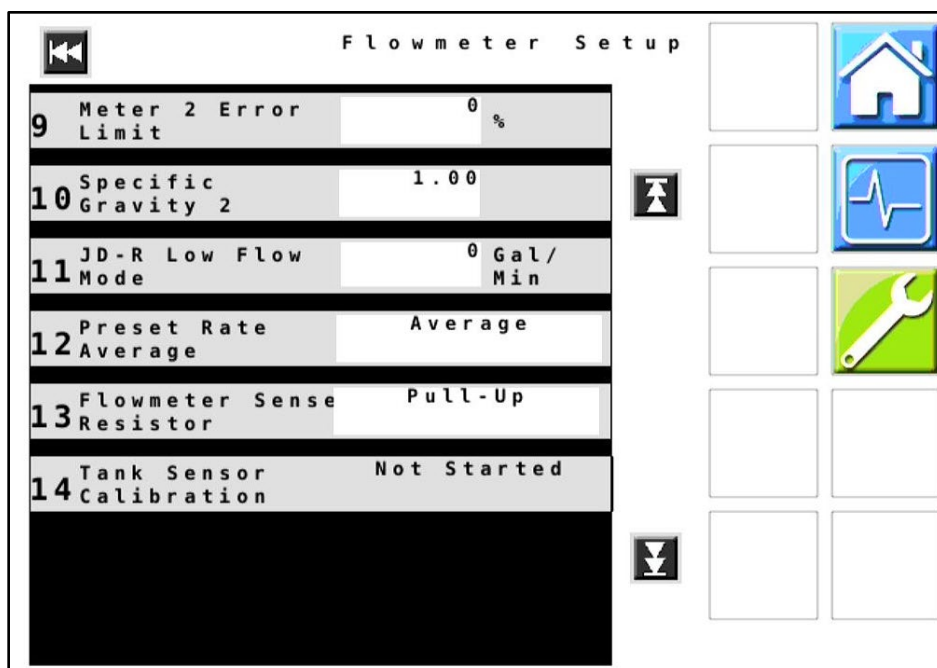


The screenshot shows the 'Flowmeter Setup' menu. The title 'Flowmeter Setup' is at the top. On the right, there are navigation icons: a home icon, a pulse icon, and a wrench icon. The main list contains the following items:

		Correction
1	Meter 1 Type	
2	Meter 1 Minimum	3 Gal / Min
3	Meter 1 Calibration	0 Pulse / 10 Gal
4	Meter 1 Error Limit	50 %
5	Specific Gravity 1	1.00
6	Meter 2 Type	Transparent
7	Meter 2 Minimum	0 Gal / Min
8	Meter 2 Calibration	1734 Pulse / 10 Gal

Items 3 and 8 are highlighted with red boxes. Up and down arrow icons are located between item 2 and 3, and between item 7 and 8.

Figure 16 — Flowmeter Setup Page 1



The screenshot shows the 'Flowmeter Setup' menu, page 2. The title 'Flowmeter Setup' is at the top. On the right, there are navigation icons: a home icon, a pulse icon, and a wrench icon. The main list contains the following items:

9	Meter 2 Error Limit	0 %
10	Specific Gravity 2	1.00
11	JD-R Low Flow Mode	0 Gal / Min
12	Preset Rate Average	Average
13	Flowmeter Sense Resistor	Pull-Up
14	Tank Sensor Calibration	Not Started

Up and down arrow icons are located between item 10 and 11, and between item 14 and the bottom of the list.

Figure 17 — Flowmeter Setup Page 2

32. **Figures 16 & 17:** Gather and record the Flowmeter Calibration numbers found on the Flowmeter's tag. The default value is 0 or 1734 depending on software revision. If Machine is equipped with a Fill Flowmeter, enter this number for Meter 2 Calibration.

Note: Other settings in this menu may be left at default settings unless otherwise required. Refer to Operator's Manual for setting descriptions.

33. Tap the **Back** icon  to return to the **Flow** menu. Select **Control Tuning**.

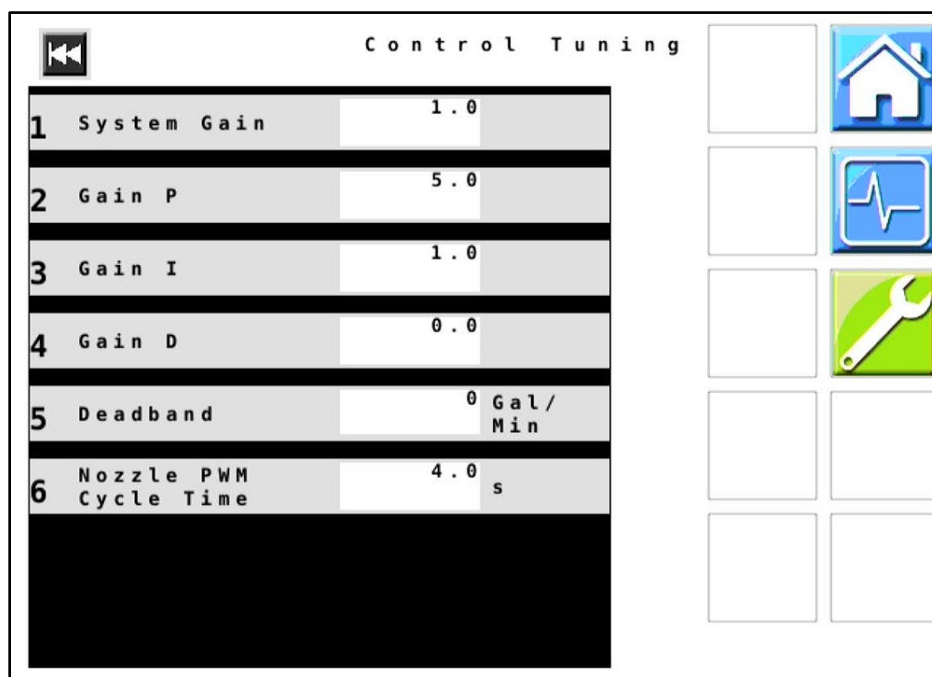
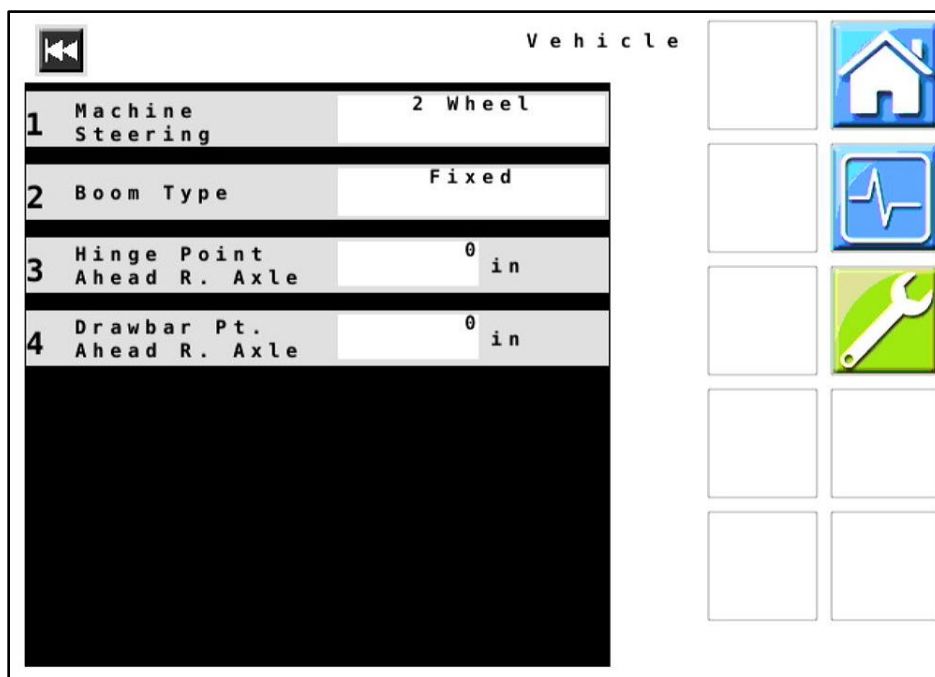


Figure 18 — Control Tuning

34. **Figure 18:** Verify that all values displayed on your unit match those shown here. Change values if necessary.

Note: Flow Control Tuning values do not need to be changed unless the sprayer will be operating in No Pulse or Conventional Mode. Refer to the Conventional Sprayer setup guide on the CapstanAg website at: <https://capstanag.com/pinpoint-iii-envelop/>.

35. Tap the **Back** icon  twice to return to the **Settings** menu. Select **Navigation > Vehicle**.

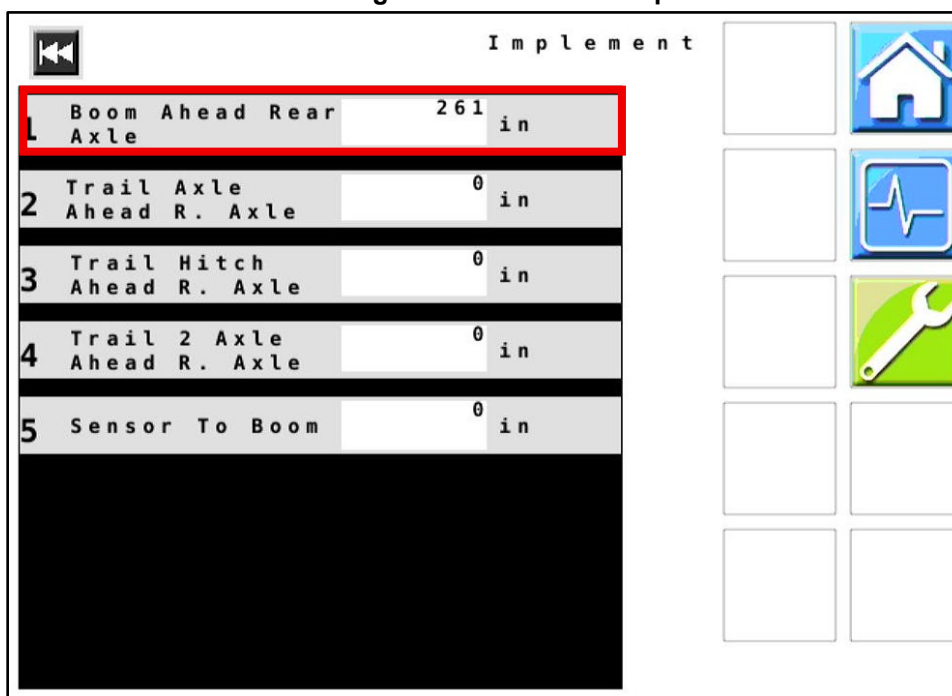


Vehicle	
1 Machine Steering	2 Wheel
2 Boom Type	Fixed
3 Hinge Point Ahead R. Axle	0 in
4 Drawbar Pt. Ahead R. Axle	0 in

Figure 19 — Vehicle

36. **Figure 19:** Verify that all values displayed on your unit match those shown here. Change values if necessary.

37. Tap the **Back** icon  to return to the **Navigation** menu. Select **Implement**.



Implement			
1	Boom Ahead Rear Axle	261	in
2	Trail Axle Ahead R. Axle	0	in
3	Trail Hitch Ahead R. Axle	0	in
4	Trail 2 Axle Ahead R. Axle	0	in
5	Sensor To Boom	0	in

Figure 20 — Implement

38. **Figure 20:** Verify the measurement above for **Boom Ahead Rear Axle**. This measurement is the distance between the rear axle of the sprayer and application point.



39. Tap the **Back** icon  to return to the **Navigation** menu. Select **ISO Look Ahead**.

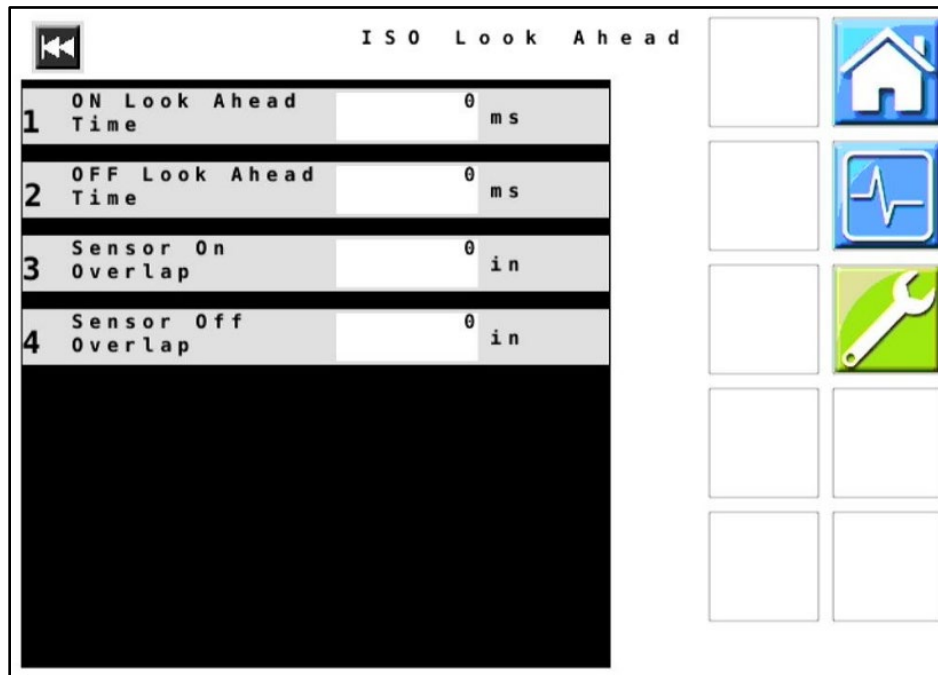
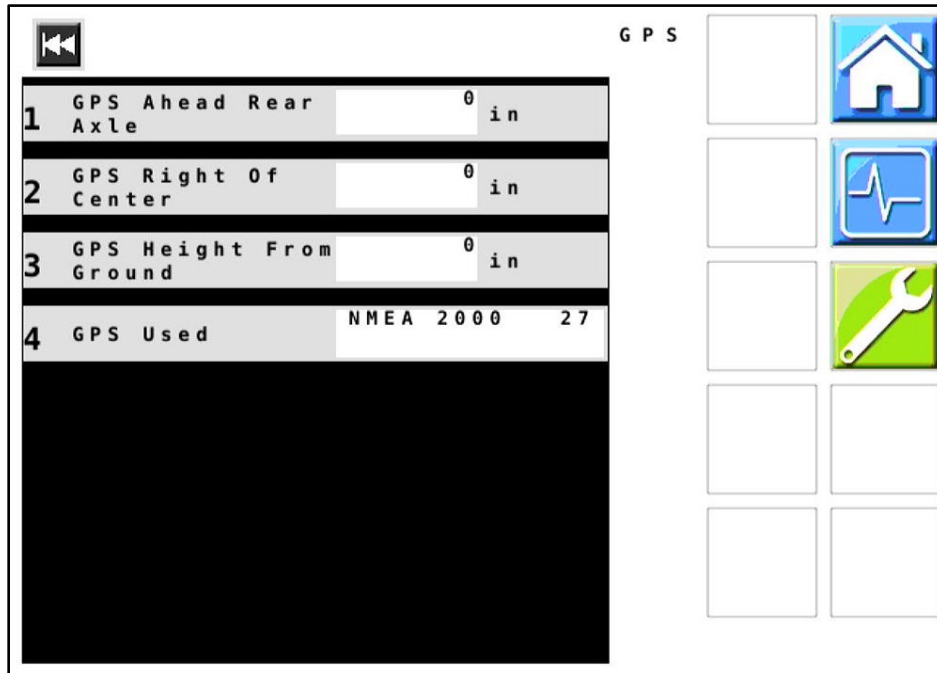


Figure 21 — ISO Look Ahead

40. **Figure 21:** Verify that all values displayed on your unit match those shown here. ISO Look Ahead settings are generally governed by the Task Controller attached. If preferred, the Look Aheads set on the Task Controller can be disabled and these values can be modified to take Look Ahead information from the PinPoint III.



41. Tap the **Back** icon  to return to the **Navigation** menu. Select **GPS**.



Item	Value	Unit
1 GPS Ahead Rear Axle	0	in
2 GPS Right Of Center	0	in
3 GPS Height From Ground	0	in
4 GPS Used	NMEA 2000 27	

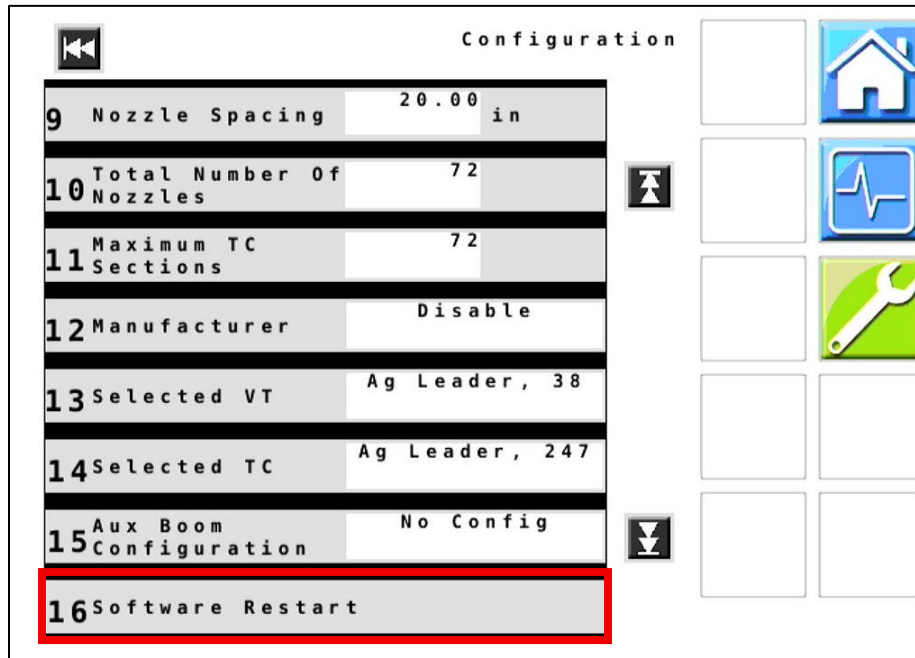
Figure 23 — GPS

42. **Figure 23:** Select the type of GPS from the list of available options. Not all the options listed here will be shown on your system. Only the types available for your system will be shown on your list.

- If your machine has serial GPS, select NMEA0183
- If your machine has CAN GPS, available types include—in preference order:
 - a. J1939
 - b. NMEA2000
 - c. ISO 11783

IMPORTANT: Machines with a Raven RS1 or Trimble receiver, GPS measurements will be left at the default values displayed. If any other GPS receiver, take measurements and record them here.

43. To complete setup, Tap the  button > **Initial Setup** > and **Configuration** on the following page.



Configuration	
9	Nozzle Spacing 20.00 in
10	Total Number Of Nozzles 72
11	Maximum TC Sections 72
12	Manufacturer Disable
13	Selected VT Ag Leader, 38
14	Selected TC Ag Leader, 247
15	Aux Boom Configuration No Config
16	Software Restart

Figure 24 – Configuration Menu – Page 2

44. **Figure 24:** Navigate to **Page 2** and tap **Software Restart**.

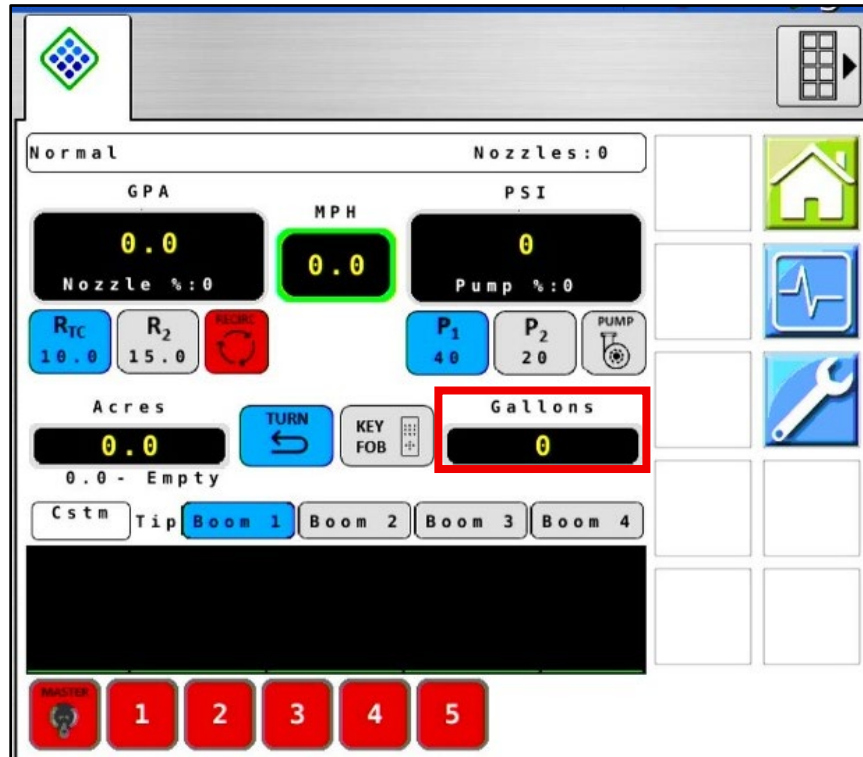


Figure 25 – PinPoint III Home Screen

45. **Figure 25:** Once system is restarted from previous step, tap the **Gallons** text input area to open the **Tank Meter** popup.

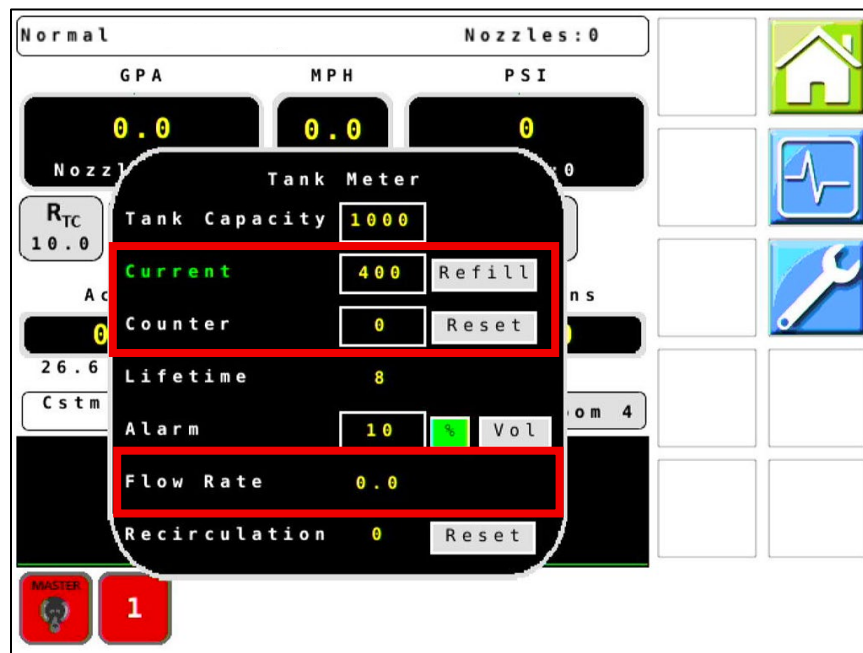


Figure 26 – Tank Meter Popup

46. **Figure 26:** Enter the **Tank Capacity**, **Current Volume** in the tank, and the **Alarm** threshold for alerting when volume is running low if desired.



Soft Boom Configurations

Soft Boom	Start	Soft Boom End	Boom Setup	Soft Boom Start	End	
1	1	7	11	0	0	✓
2	8	19	12	0	0	✗
3	20	29	13	0	0	⬆
4	30	39	14	0	0	
5	40	48	15	0	0	
6	49	58	16	0	0	
7	59	68	17	0	0	
8	69	78	18	0	0	⬇
9	79	90	19	0	0	
10	91	97	20	0	0	

120' x 15" Truss Boom

Soft Boom	Start	Soft Boom End	Boom Setup	Soft Boom Start	End	
1	1	8	11	0	0	✓
2	9	16	12	0	0	✗
3	17	24	13	0	0	⬆
4	25	32	14	0	0	
5	33	40	15	0	0	
6	41	49	16	0	0	
7	50	57	17	0	0	
8	58	65	18	0	0	⬇
9	66	73	19	0	0	
10	74	81	20	0	0	

100' x 15" Mono Boom

Soft Boom	Start	Soft Boom End	Boom Setup	Soft Boom Start	End	
1	1	12	11	0	0	✓
2	13	20	12	0	0	✗
3	21	30	13	0	0	⬆
4	31	39	14	0	0	
5	40	48	15	0	0	
6	49	58	16	0	0	
7	59	67	17	0	0	
8	68	77	18	0	0	⬇
9	78	85	19	0	0	
10	86	97	20	0	0	

120' x 15" Mono Boom

Soft Boom	Start	Soft Boom End	Boom Setup	Soft Boom Start	End	
1	1	8	11	0	0	✓
2	9	15	12	0	0	✗
3	16	22	13	0	0	⬆
4	23	29	14	0	0	
5	30	36	15	0	0	
6	37	44	16	0	0	
7	45	51	17	0	0	
8	52	58	18	0	0	⬇
9	59	65	19	0	0	
10	66	73	20	0	0	

120' x 20" Mono Boom



Soft Boom	Soft Boom		Setup		
	Start	End	Soft Boom	Start	End
1	1	6	11	0	0
2	7	12	12	0	0
3	13	20	13	0	0
4	21	28	14	0	0
5	29	36	15	0	0
6	37	45	16	0	0
7	46	53	17	0	0
8	54	61	18	0	0
9	62	67	19	0	0
10	68	73	20	0	0

90' x 15" Mono Boom