

# Sentinel Setup and Configuration

## Home Screen Navigation for Seed Control

## Sentinel HOME Screen

Sentinel Home Screen for Seed Control.

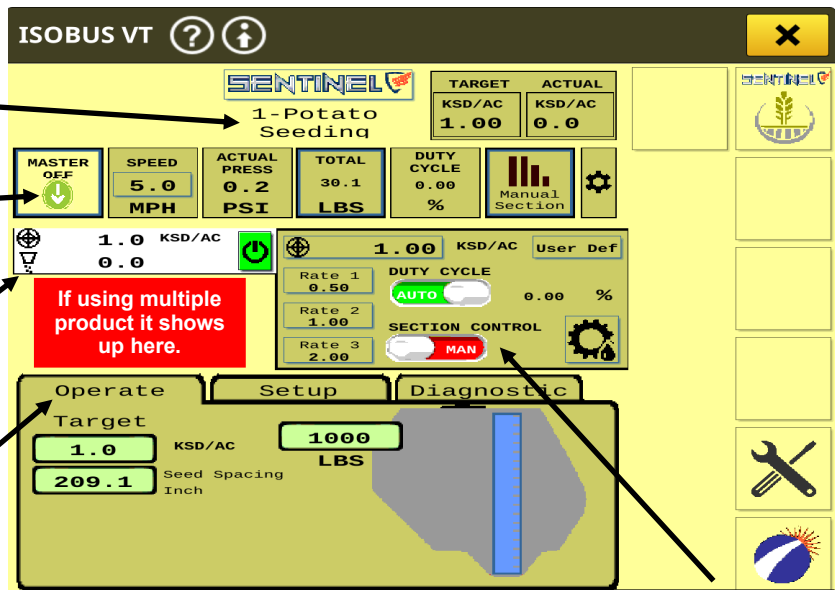
Identifies this screen as showing Product 1.

If an implement height switch is plugged into the Sentinel harnessing, there is an arrow showing the current implement height status.

Target and Actual Rate shown. Green buttons indicate product is ON.

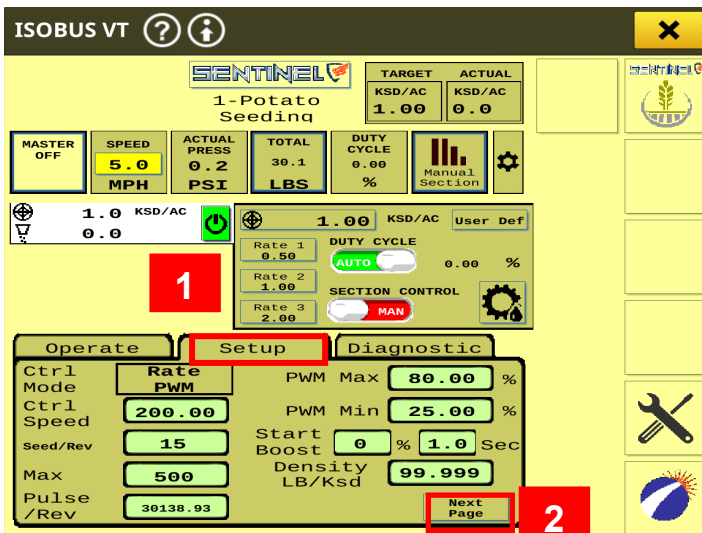
**Operate, Setup, & Diagnostic tabs** for Rate Control setup, operation, and troubleshooting diagnostics.

To do a simulated test. Manual section control must be turned on. Enter a simulated speed, and enable master switch.



Task control must be enabled in display and hardware setup page and Task Control must be checked on the hardware tab for the system to work in auto.

## SETUP for Seed Control - Setup for operations of the



From Sentinel Home Screen

**Disclaimer-** These settings are highly variable depending on multiple factors that can affect your seeding rate. Verify with a catch test before planting.

1.) Press the center **SETUP** tab.

Start with the following settings. Adjust as needed.

**Ctrl Mode - RATE PWM**

**Ctrl Speed - 10-200** start with 50 Increase the Ctrl Speed if the drive is slow to adjust. Decrease the Ctrl Speed if the drive fluctuates and will not lock on to the rate going across the field.

**Seed/Rev-120-** The number of seeds dropped per revolution. Total number of cups per section.

**Max RPM - 500** (Maximum is 550. Can set lower)

**Pulse/ Rev - 112 -** Utilize a catch test to calibrate the drive to ensure product is being applied accurately for the desired target rate.

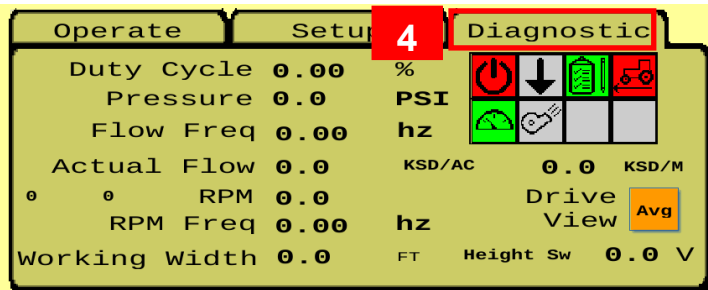
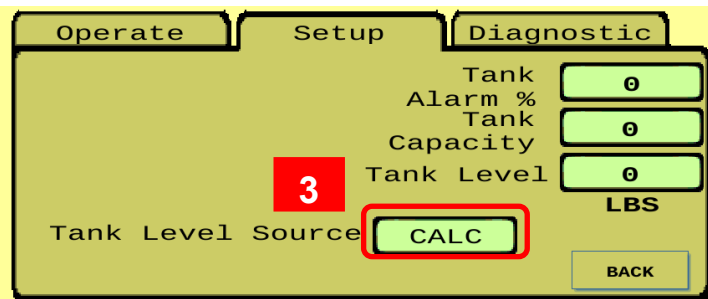
**PWM Max - 80 to 100** (can be set lower)

**PWM Min -15.** Decrease this number if the pump will not slow down enough when speed, rate, or width decreases.

**Start Boost -** When start boost is set to 0, the PWM will return to the last percentage. Can be set slightly higher than normal PWM Duty Cycle for a startup boost.

**Density LB/K -** Number of seeds per 1000. For example  $2.5\text{oz} \times 1000 \div 16 = 156.25 \text{ lbs./1000 seeds}$ . This is used for tank capacity levels. Also affects as applied mapping.

## SETUP for Seed Control - Setup for opera-



2.) **Next Page** – This allows for tank setup.

Alarm %- When you want to be alarmed when tank is low

Tank Capacity– Amount of Lbs the tank holds

Tank Level– Amount in Tank

3.) **Tank Level Source**– Tank level source will generally be on CALC. This setting may be changed if it's tied to scales.

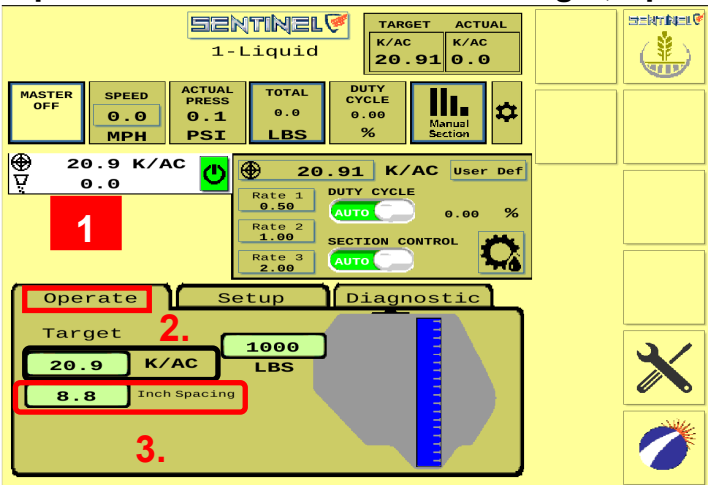
4.) **DIAGNOSTIC TAB** - Observe the system parameters during operation. Use green and red buttons to see what components are working during operations.

Green means conditions met to apply.

Red means condition is not met.

Gray means condition is ignored.

## Operate Tab for Seed Control - Target, Spacing, and Tank Levels

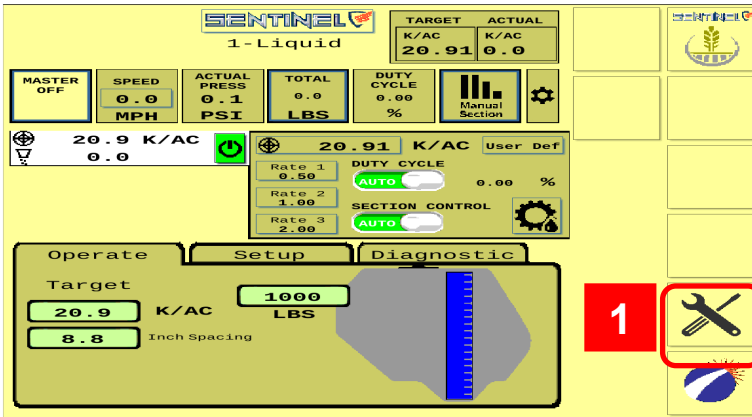


### Operate Tab

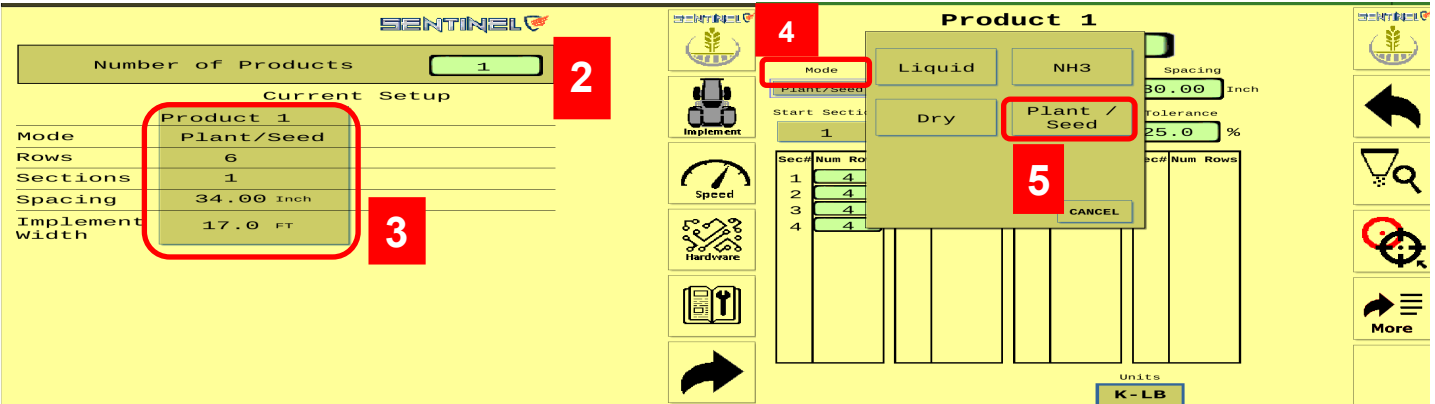
1.) Your operate tab will show you target rate. Seed Spacing and Tank Level.

2.) **K/Acre**– This shows the thousands of seeds per acre. You have to know your seed size to put in this value

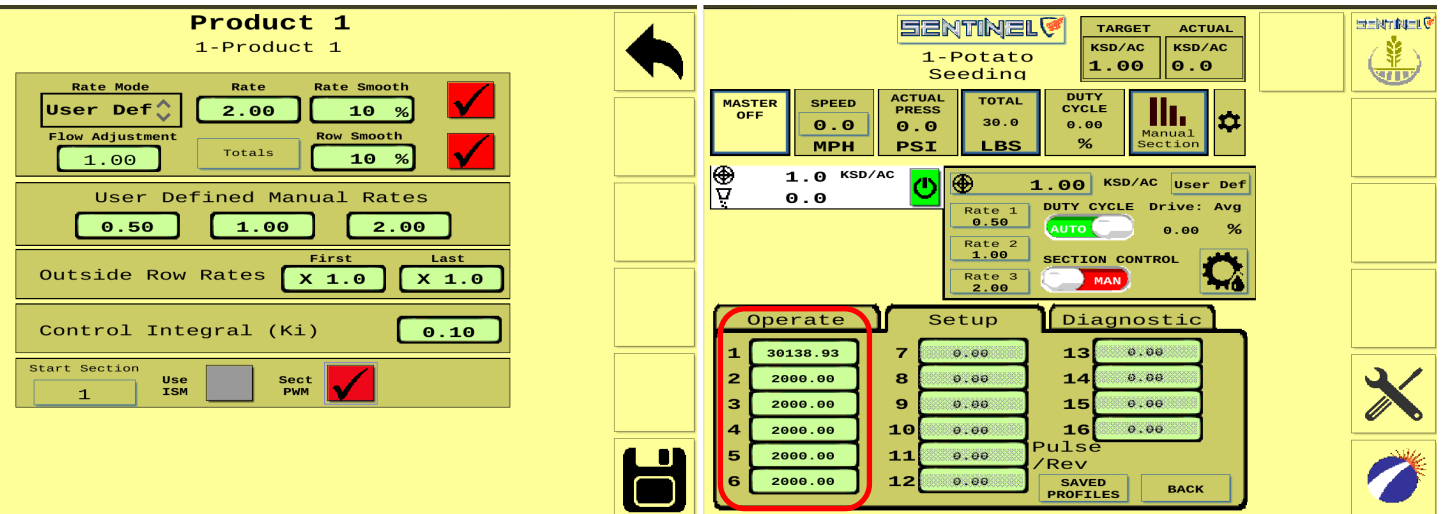
3.) **Inch Spacing**– This is your desired target rate and will be displayed as thousand seeds per acre.



- 1.) Press the **SETTINGS** Tools button to go to the System Configuration screens.
- 2.) Enter the **number of products** that will be monitored or controlled with the Sentinel.
- 3.) Press the big **Product 1** box.  
(If the system has two products, there will be a Product 2 box to the right of Product 1. Set up Product 2 in a similar fashion to what is shown for Product 1.)
- 4.) Press the box under **"Mode"**.
- 5.) Select **"Plant/Seed"** to use the Sentinel for Seed Control.



If you are running multiple drive motors you will have multiple **PWM sections**. With multiple PWM sections you will have to set a calibration number for each individually driven section. The best way to do this is to do a catch test for one section, then set that as the calibration for all of the sections. Next you will need to do catch tests for **each** section to verify you have the correct calibration number for each section.



If you have multiple PWM sections you will need to set a calibration value for each individually driven section (shown above).

**TESTS - Catch Test** (v 1.5.0 and later) Verify and adjust the calibration to set pulses/Rev.  
 From the Product Setup page (Refer to step 3 on the previous page) press the Catch Test icon (36). Be sure MASTER is OFF. Press CATCH TEST (37).

**Product 1**  
 1-Potato Seeding

Mode: Total Rows: 6 Sections: 6 Spacing: 30.00 Inch

Plant/Seed: 6

Start Section: 1 Implement Width: 15.0 FT Tolerance: 25.0 %

Sec#	Num Rows	Sec#	Num Rows	Sec#	Num Rows	Sec#	Num Rows
1	1						
2	1						
3	1						
4	1						
5	1						
6	1						

Units: K-LB

36

**Product 1**

WARNING!! For an accurate sample make sure that the lines and pump are primed, the different rows sampled catch relatively the same amount and the system pressure is adequate. After changing the flow cal, run another test to verify the setting. Always verify with the area and amount of product used in the field after a calibration change.

37 Catch Test Section To Cal: 1

If an expected and known volume is already known, enter the information below

Expected Volume: 0.00 Count

Actual Volume: 0.00

Current Cal: 30138.93

Proposed Cal: 30138.93

Accept New Cal

**Product 1**  
 Catch Test

For the catch test, the system will run the previously selected sections until a specified volume is reached. Please enter the information below.

Enter the information based upon your seeding requirements. These are only simulated values below.

Number Of Rows To Catch: 1

Simulated Speed: 5.0 MPH

Target Rate: 1.0 KSD/AC

Volume to Dispense Per Row: 1 Count LBS

Prev Next

**Product 1**  
 Catch Test

Enable the Master Switch to begin the test. Disable the Master Switch to cancel and abort the test. Once the test is complete, press the Next button.

MASTER ON

Target/Actual Rate: 25.0 / 0.0 K/AC

Pressure: 0.0 PSI

Flow Per Minute: 0.0 KPM

Volume Target/Actual: 60 / 0 Count

The Volume Target is the volume per row multiplied by the number of rows being caught.

Cancel Next

Count: A catch test performed using count will require counting the set number of seeds dispensed.  
 Lbs: A catch test performed using lbs. will require weighing the set lbs. of seed dispensed.

**Product 1**

WARNING!! For an accurate sample make sure that the lines and pump are primed, the different rows sampled catch relatively the same amount and the system pressure is adequate. After changing the flow cal, run another test to verify the setting. Always verify with the area and amount of product used in the field after a calibration change.

Catch Test

If an expected and known volume is already known, enter the information below

Expected Volume: 0.00

Actual Volume: 0.00

Current Cal: 120.00

Proposed Cal: 120.00

Accept New Cal

While the test is running, the actual rate and Flow per Minute will be shown. The Volume Target is the volume per row multiplied by the number of rows being caught. When the Volume Target for the test rows is reached, the test will stop. Add together the amount caught in all the rows tested. Enter this amount in **Actual Volume**. After the test has ran enter your expected volume and the actual volume caught. Then hit Accept New Cal and it will update the calibration number in the Setup tab.

Repeat the catch test to verify consistency and accuracy. Run multiple catch tests doing a single revolution of the drive to fine tune your calibration. Then do it with 10 revolutions of the drive belt to verify accuracy.

**NOTE: If you are under applying raise your flow cal.**

**NOTE: If you are over applying lower your flow cal.**