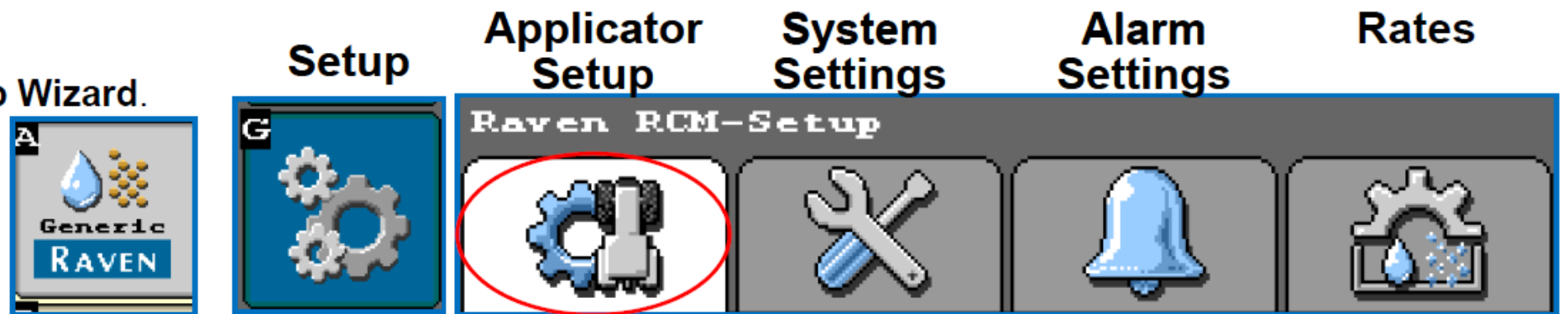




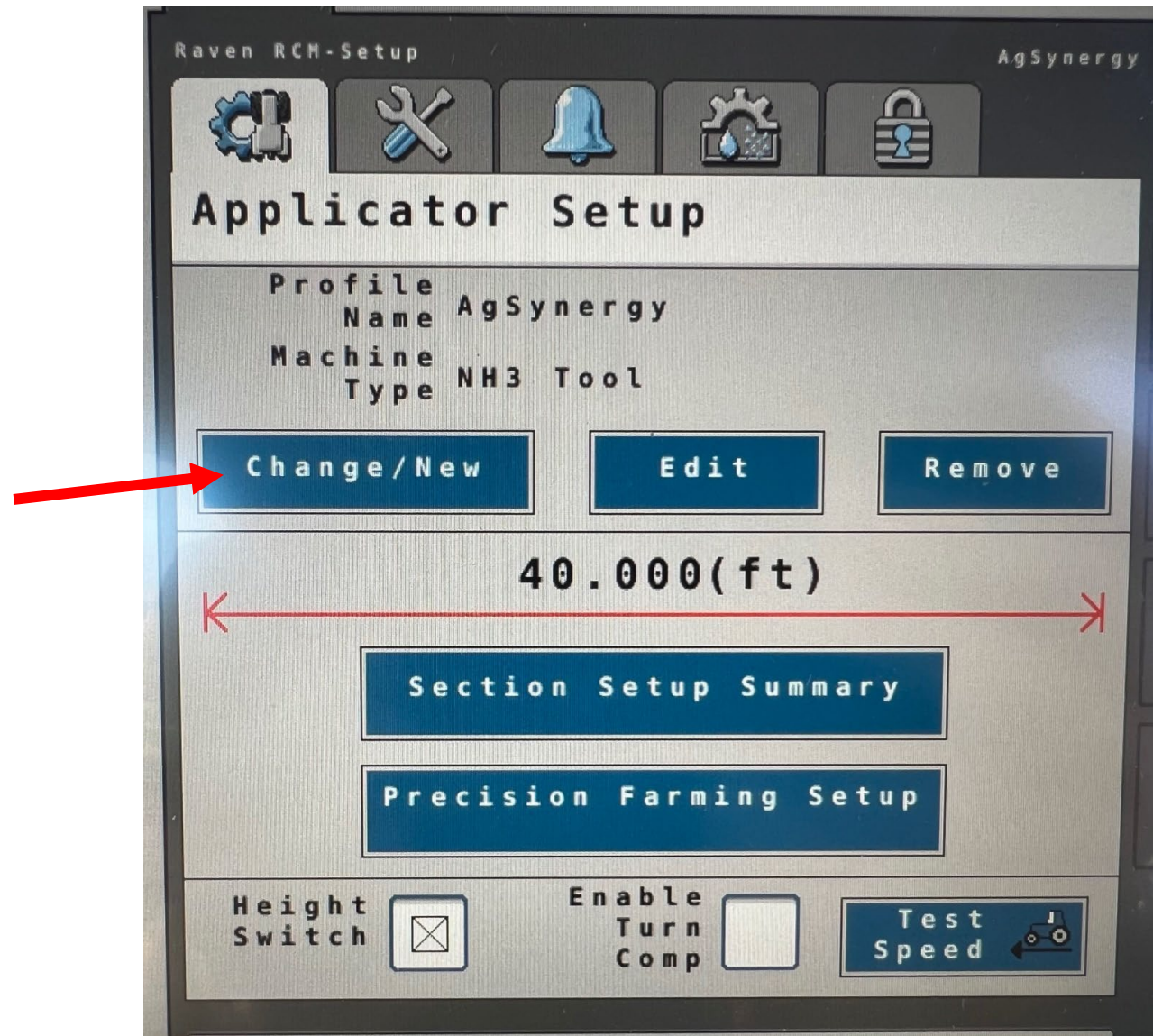
***TR 430/440
Dual Product Setup
Raven RCM
Montag Gen 1 Dry Box***



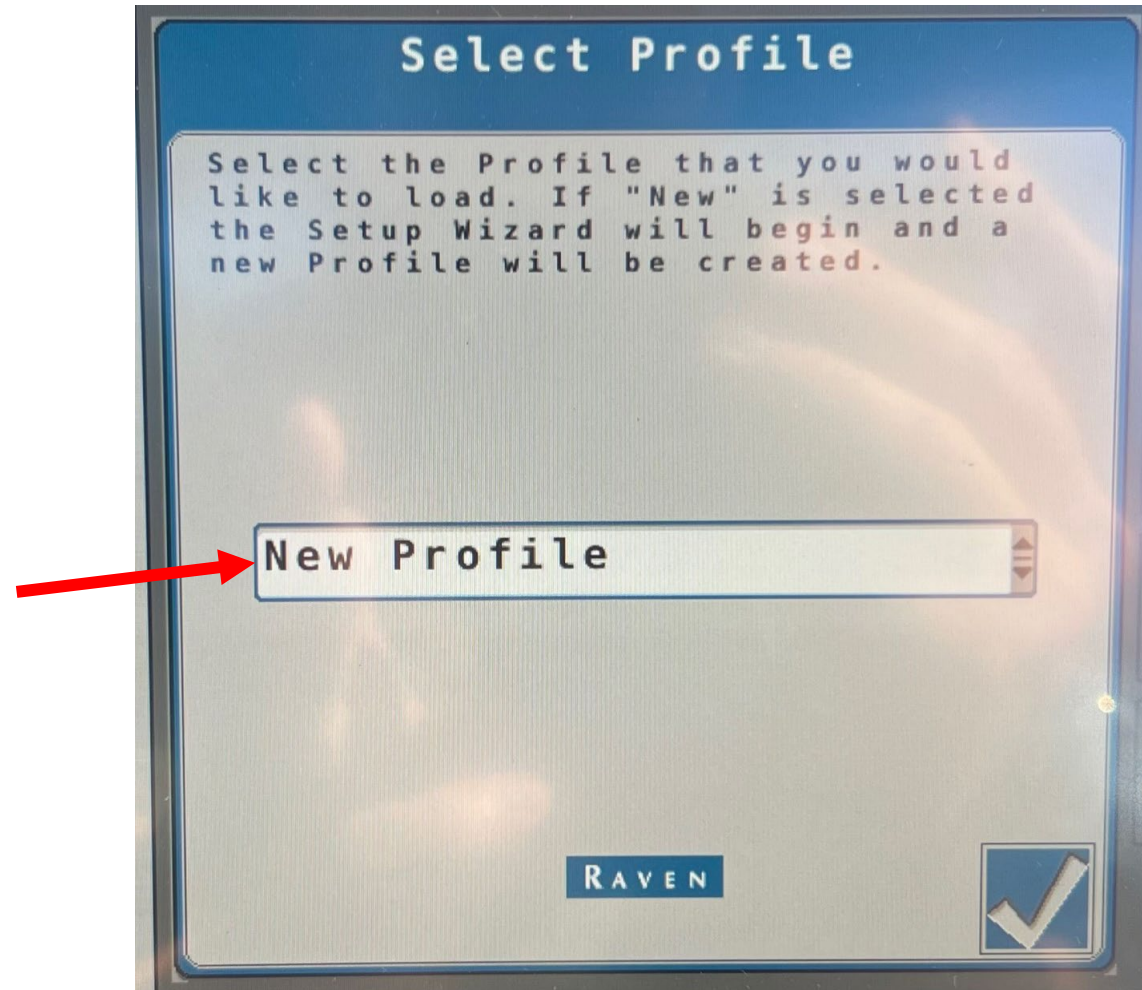
1. Navigate to the **Setup Wizard**.



- *Under Applicator Setup, select Change/New (B)*



- *Select New Profile from the drop down menu, Then Press Accept*



- *Create a Profile Name , Select NH3 Machine as Machine Type, enter Application Width , and press the next Icon.*

Name Profile

Profile Name
* AgSynergy TR 440 Mon

Machine Type
* NH3 Tool

Application Width * 40.000 (ft)

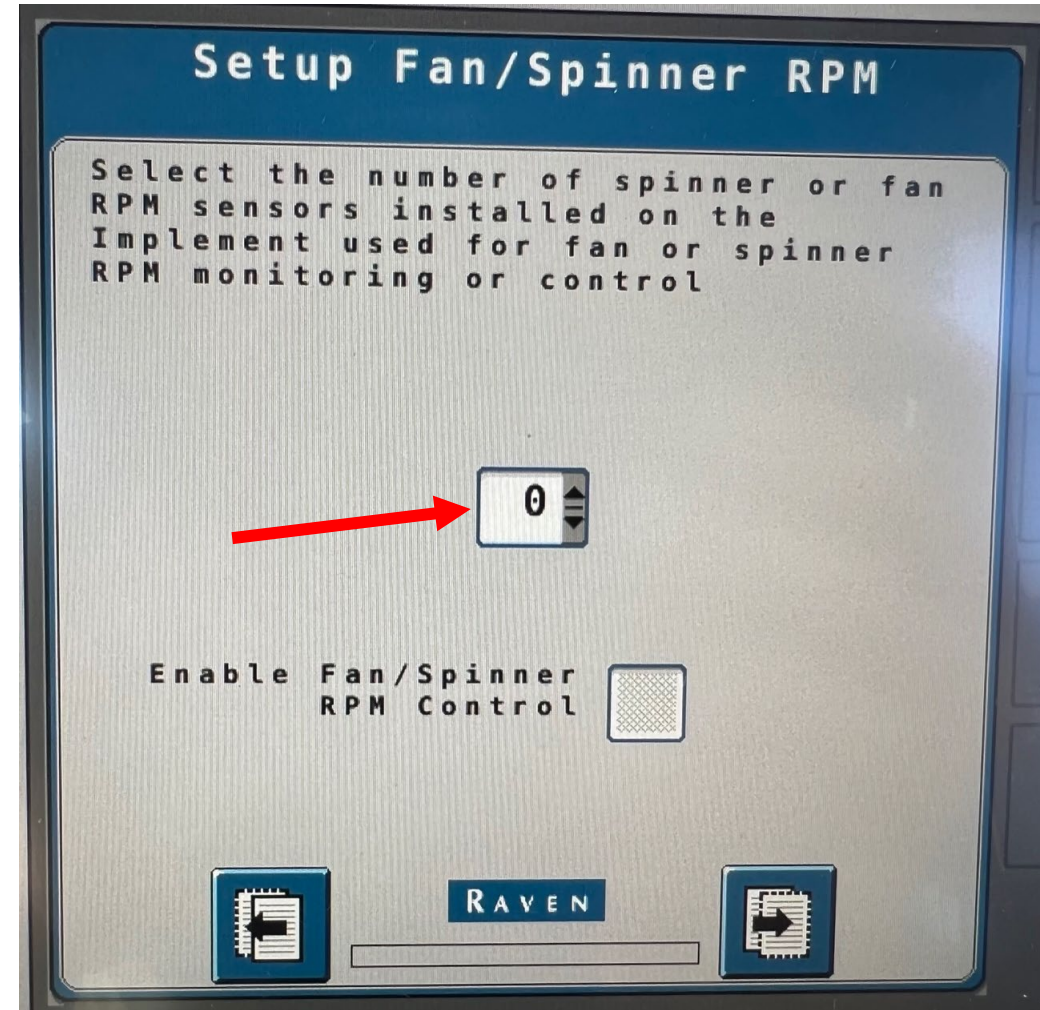
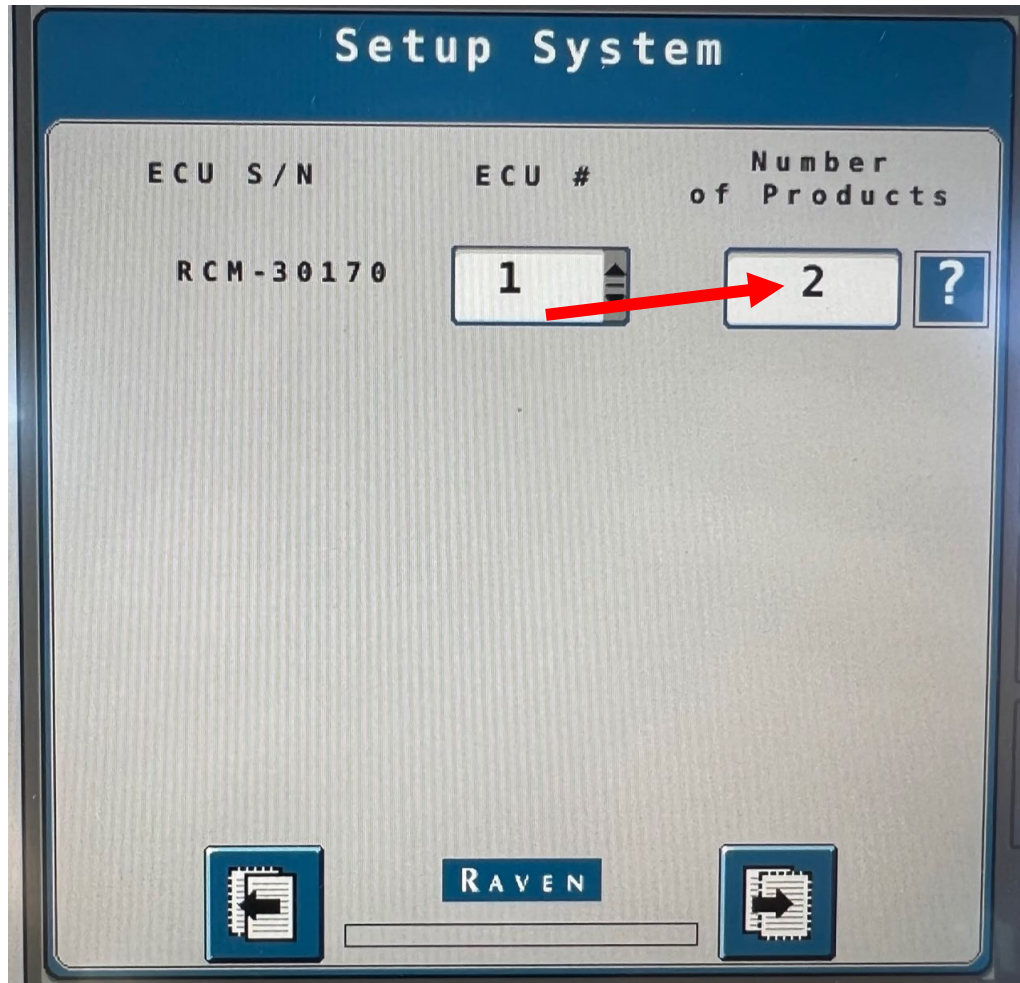
Software Version Number 1.5.2.6

Hardware Serial Number 30170

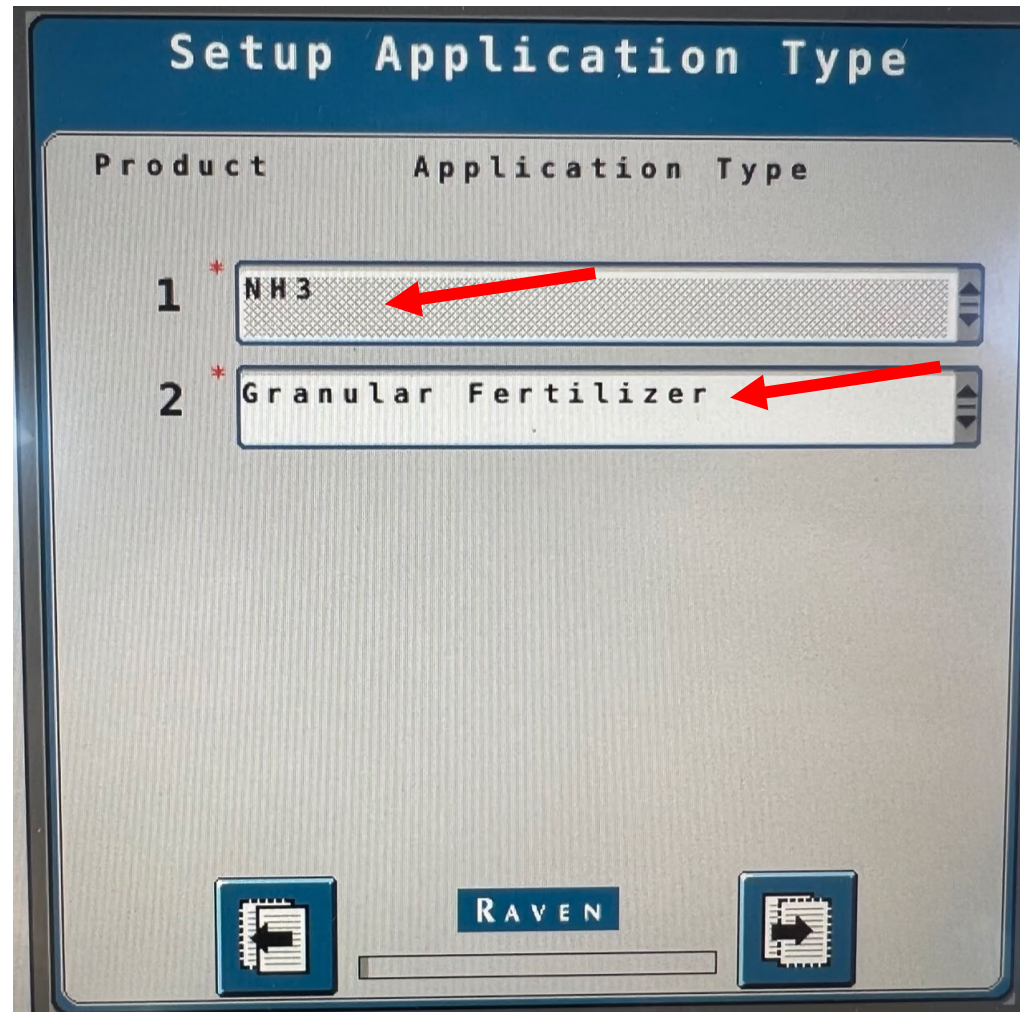
RAVEN

Next Icon

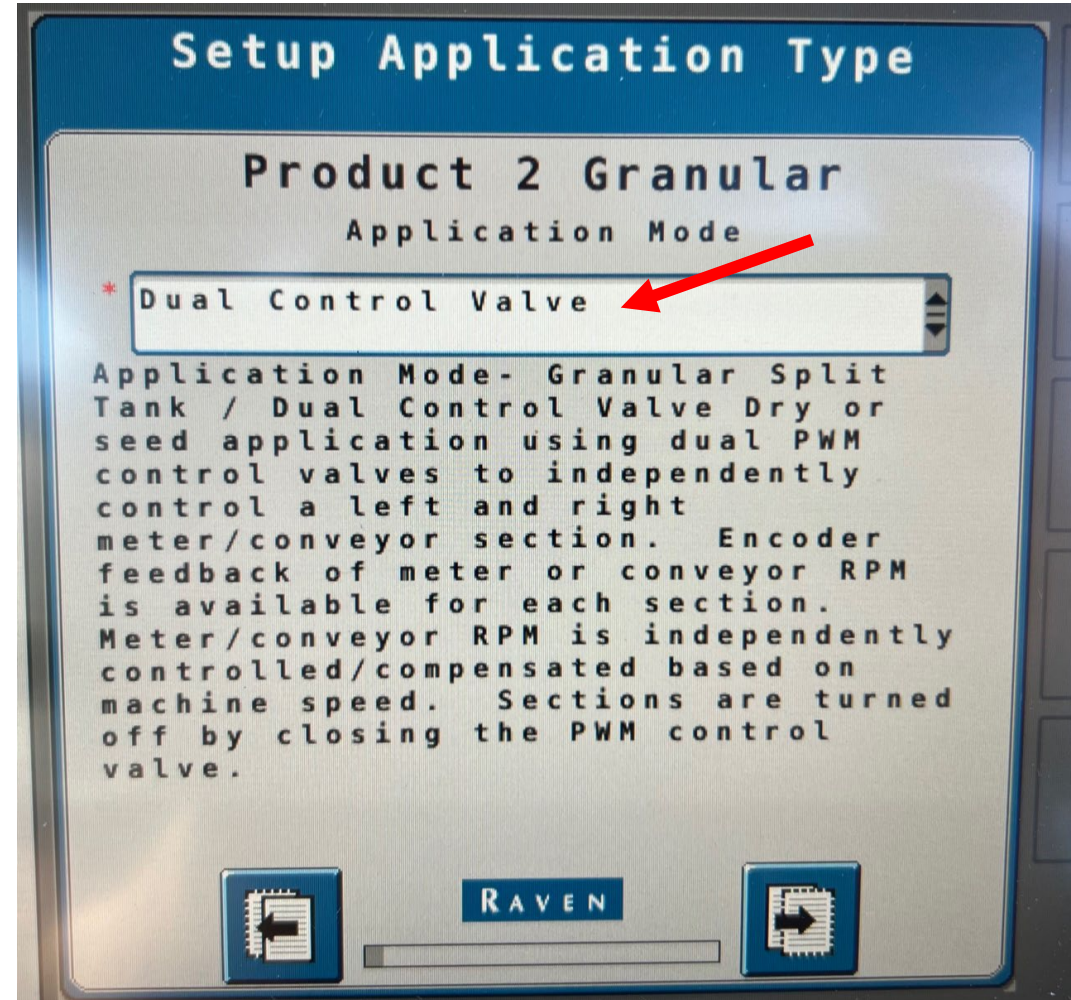
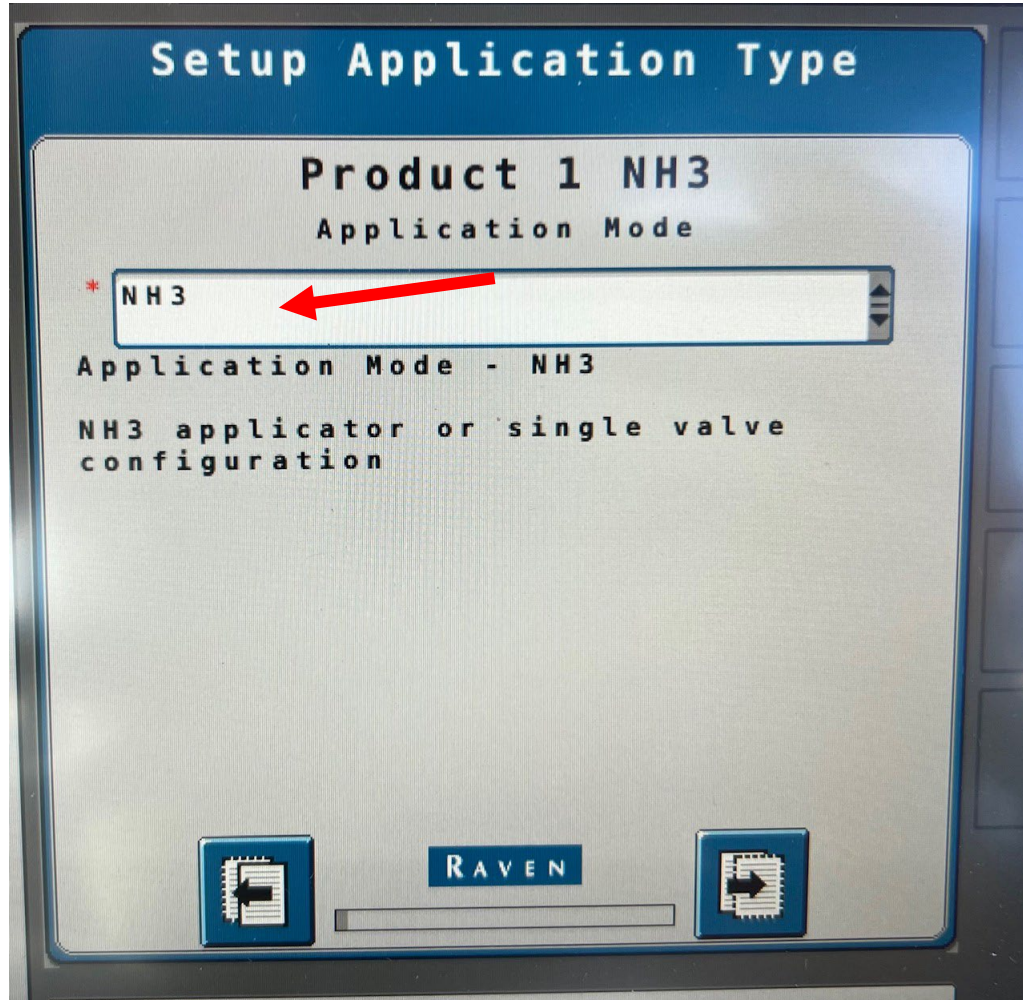
- Under Setup System enter 2 for the number of products
- Under Setup Fan Select "0" from the RPM Sensors dropdown



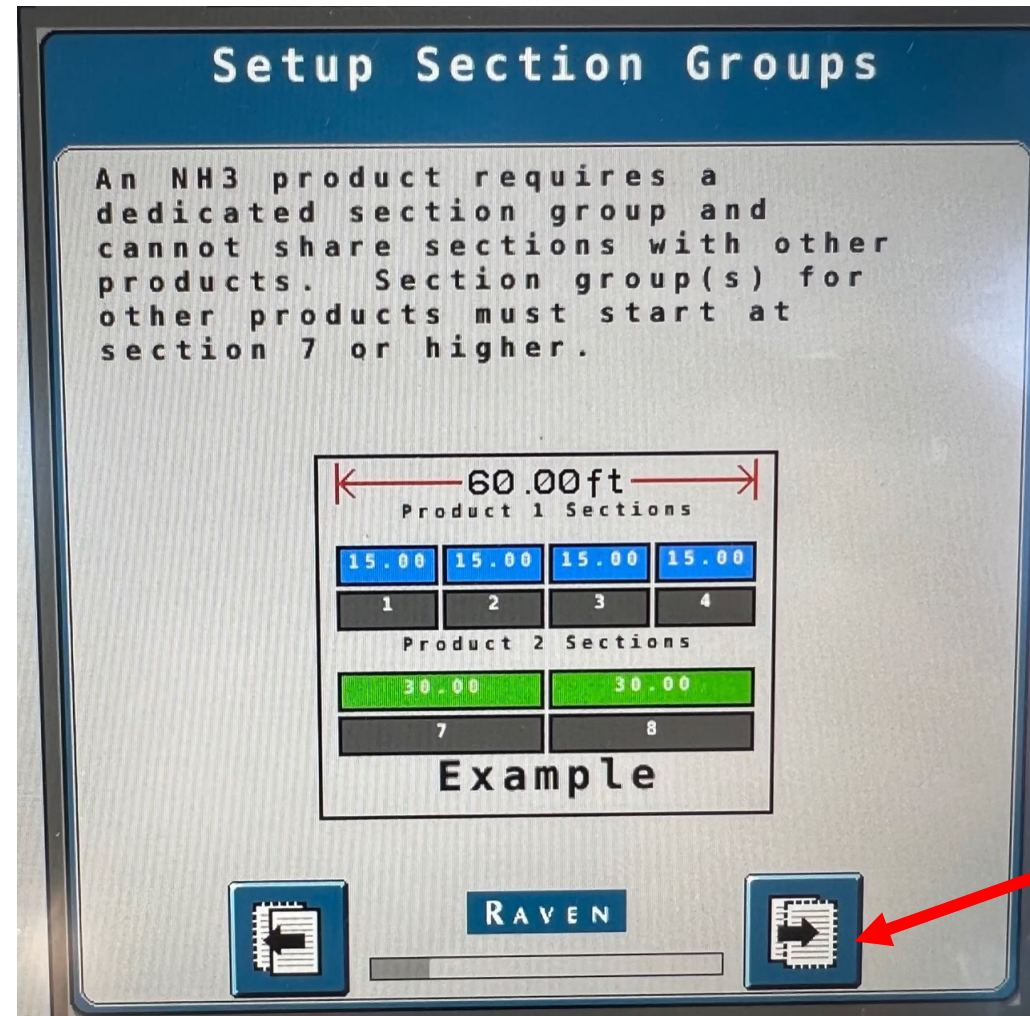
- Under Setup Application Type select “NH3” for Product 1
- Select “Granular Fertilizer” for Product 2



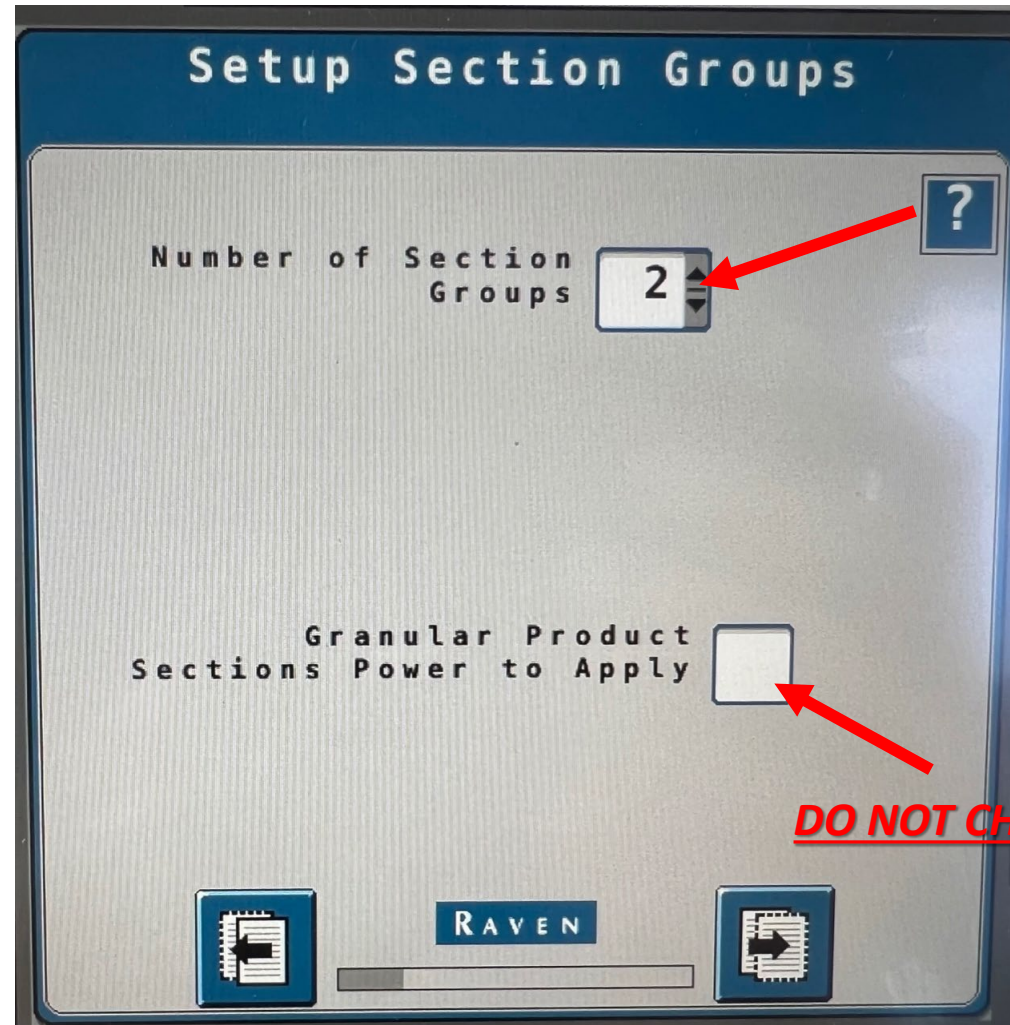
- Under Setup Application Type select “NH3” for Product 1 Application Mode
- Select “Dual Control Valve” for Product 2 Application Mode



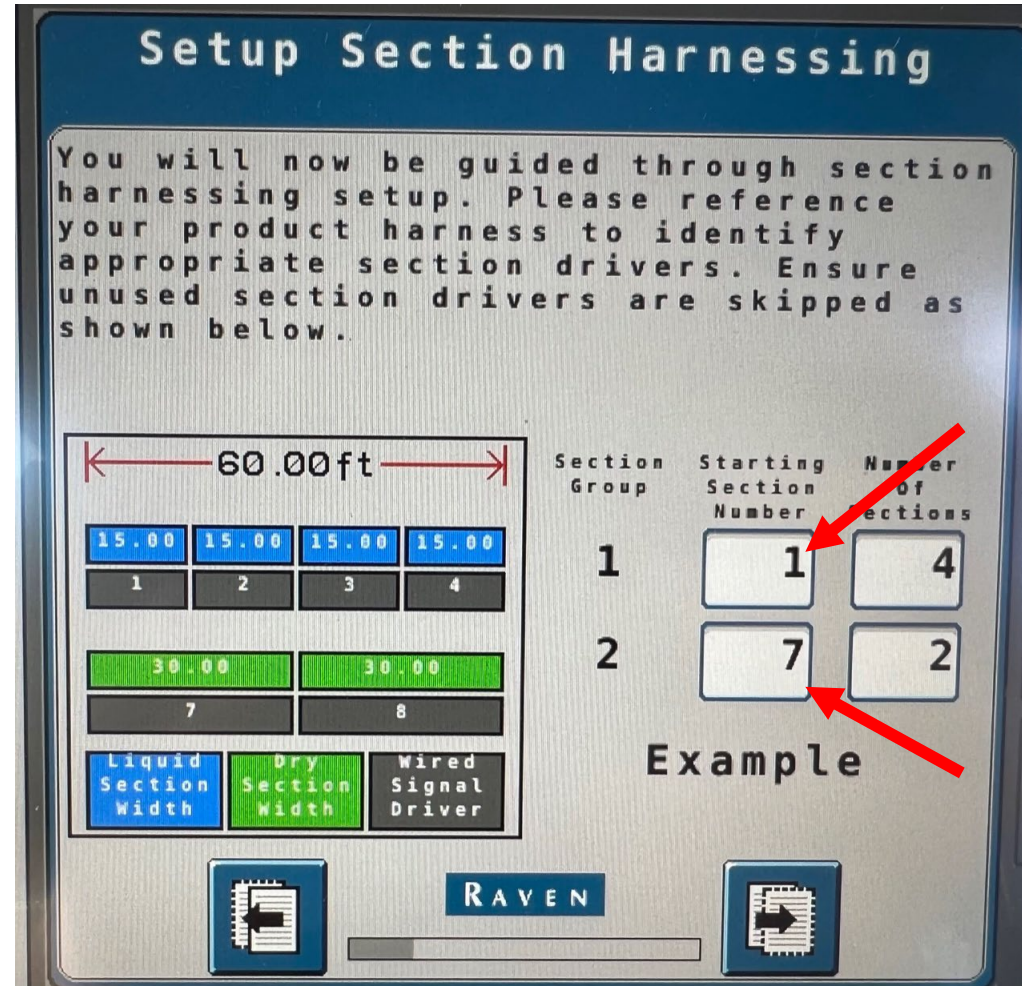
- *Under Setup Section Groups select Next*



- *Under Setup Section Groups select "2"*
- ***DO NOT CHECK Granular Product Sections Power to Apply***



- *Under Setup Section Harnessing Enter “1” for Starting Section Driver and the correct number of sections for Section Group 1.*
- *Enter “7” for Starting Section Driver 2 and 2 Sections.*



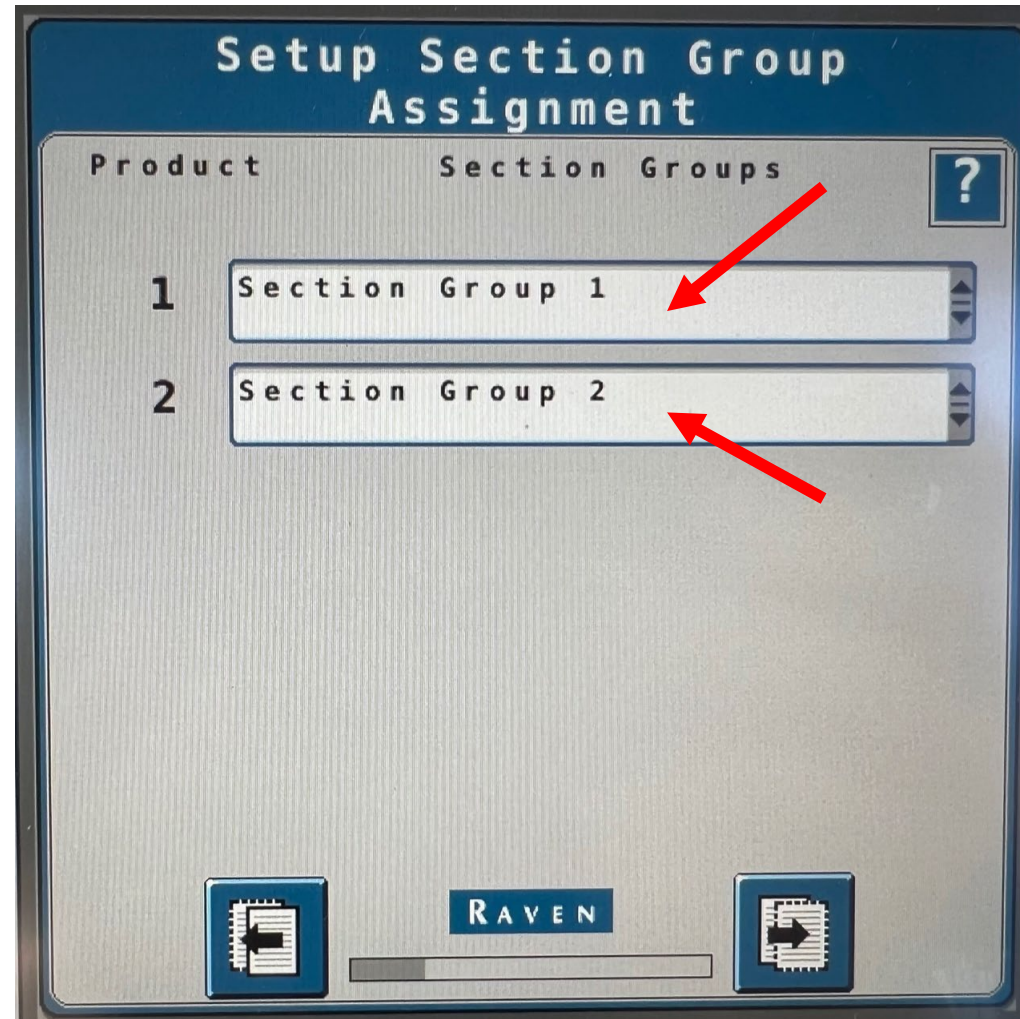
- Under Setup Section Groups Enter “1” for Starting Section Driver and the correct number of sections for Section Group 1 and select “Equal Section Widths”.
- For Section Group 2 Enter “7” as the Starting Section Driver and the correct number of Sections and select “Equal Section Widths”
- The first 6 section groups are reserved for NH3 so Section Group 2 needs to start at 7 or higher

Setup Section Harnessing

Section Group	Starting Section Number	Number Of Sections	Equal Section Widths
1	1	4	<input checked="" type="checkbox"/> ?
2	7	2	<input checked="" type="checkbox"/>

RAVEN

- *Under Setup Section Groups select “Section Group 1” for Product 1*
- *Select “Section Group 2” for Product 2*



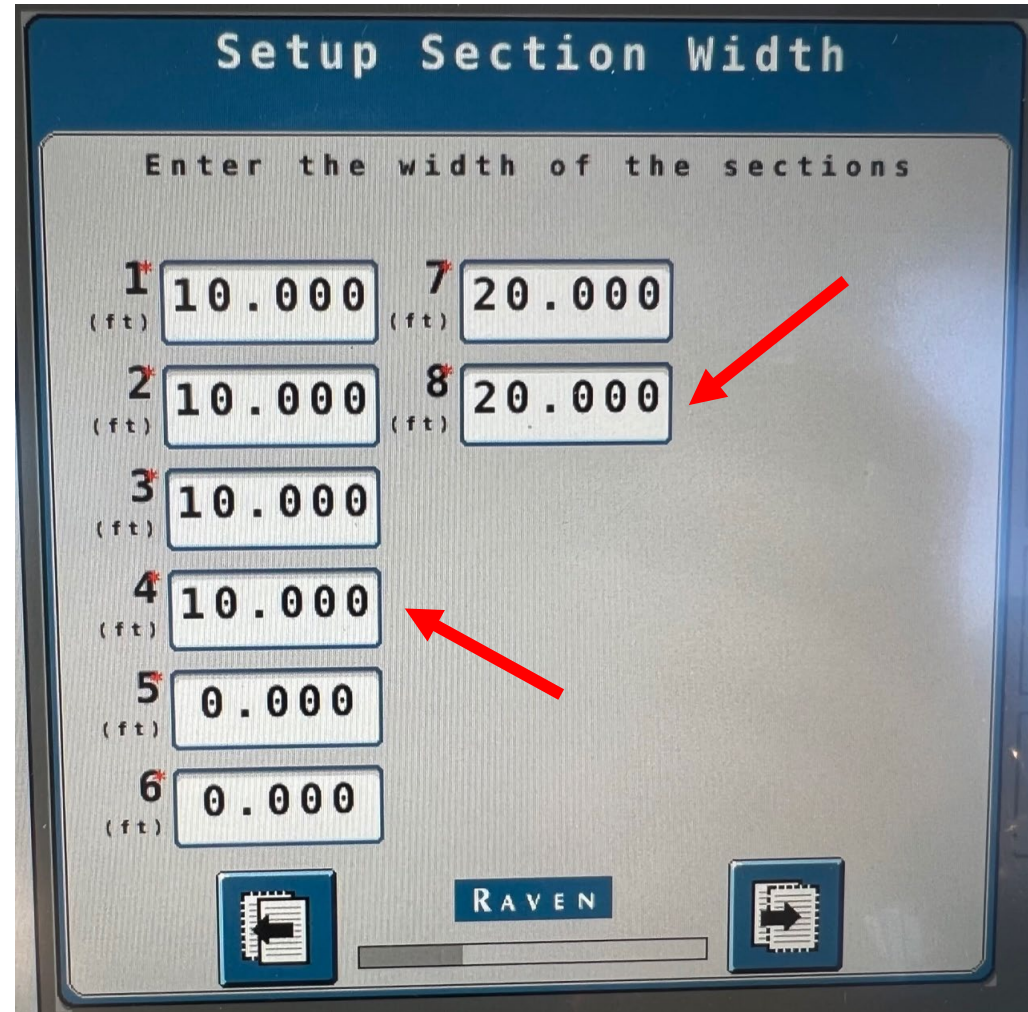
- *Under Setup Section Width enter the correct width for each section.*

Setup Section Width

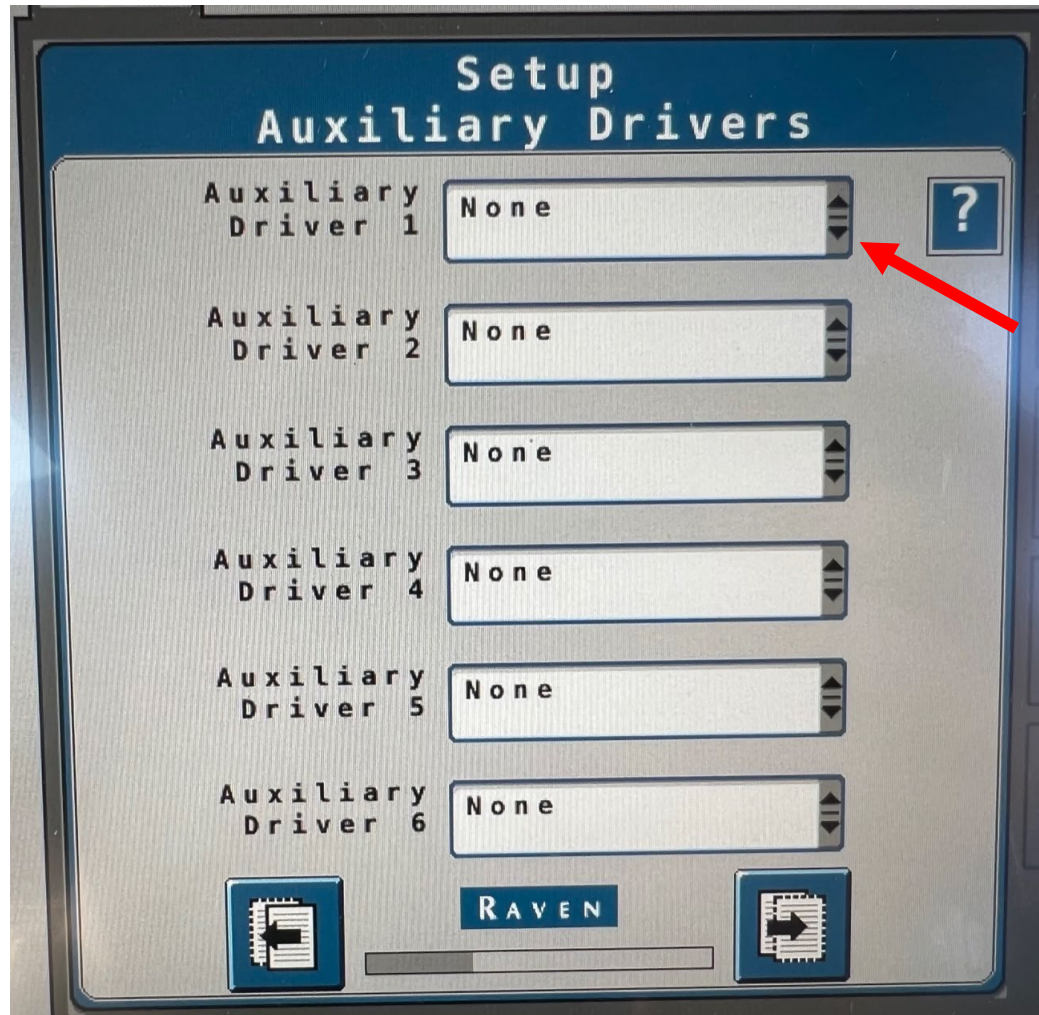
Enter the width of the sections

1* (ft)	10.000	7* (ft)	20.000
2* (ft)	10.000	8* (ft)	20.000
3* (ft)	10.000		
4* (ft)	10.000		
5* (ft)	0.000		
6* (ft)	0.000		

RAVEN

The image shows a control panel with a blue header and a grey background. The title 'Setup Section Width' is at the top. Below it, the instruction 'Enter the width of the sections' is displayed. There are eight input fields, each with a red asterisk and a '(ft)' label. The first four fields (1-4) are arranged in two columns, with values 10.000 and 20.000. The last four fields (5-8) are arranged in two columns, with values 0.000 and 20.000. Two red arrows point to the 20.000 values in the second and fourth rows. At the bottom, there is a 'RAVEN' logo, a progress bar, and two square buttons with circular arrows.

- *Under Setup Auxiliary Drivers select "None"*



- *Verify sections are correct and select next.*

Section Summary

40.000(ft)

Product 1

10	10	10	10
1	2	3	4
1	2	3	4

Product 2

20	20
7	8
7	8

Liquid
Section
Width

Granular
Section
Width

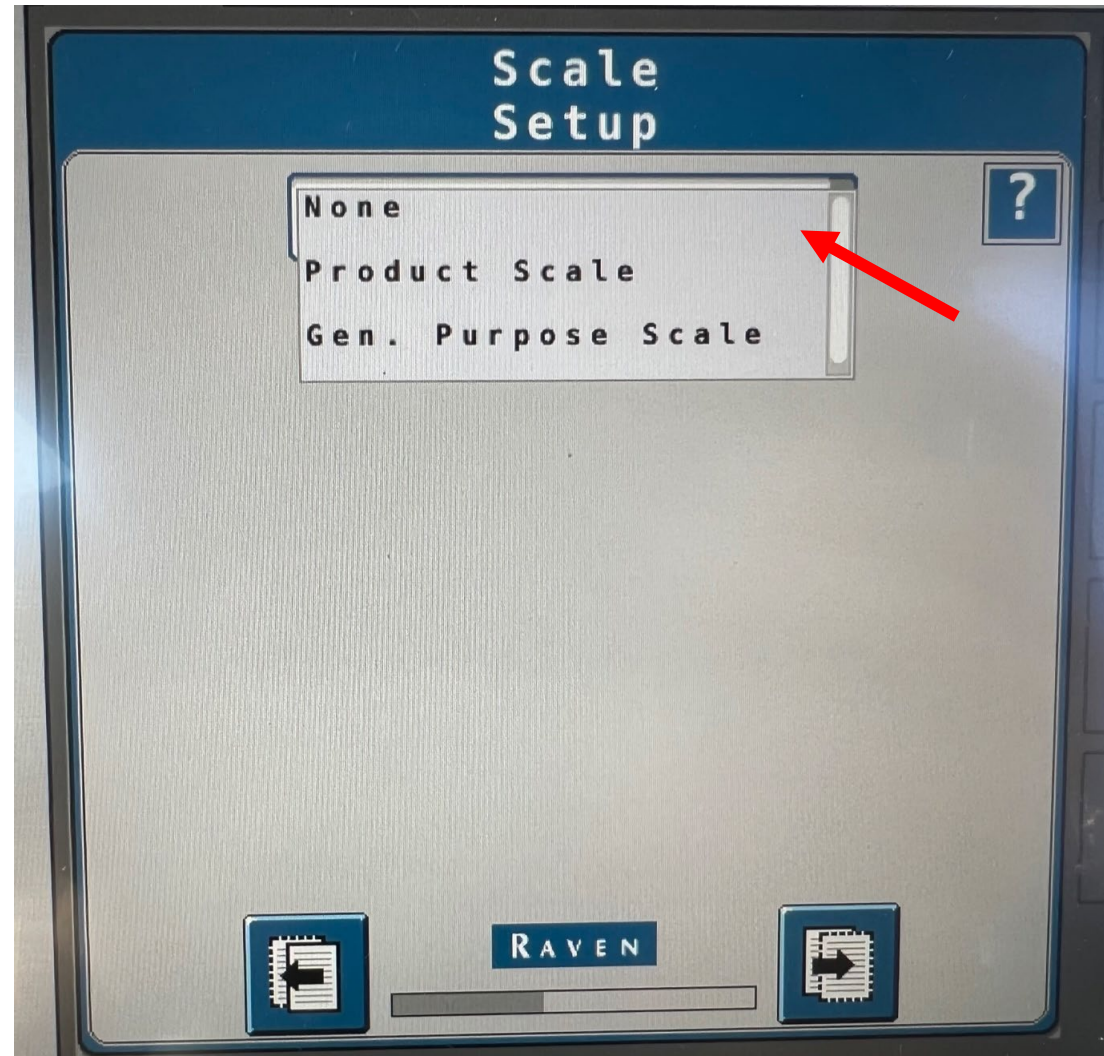
Wired
Signal
Driver

Switch
Number

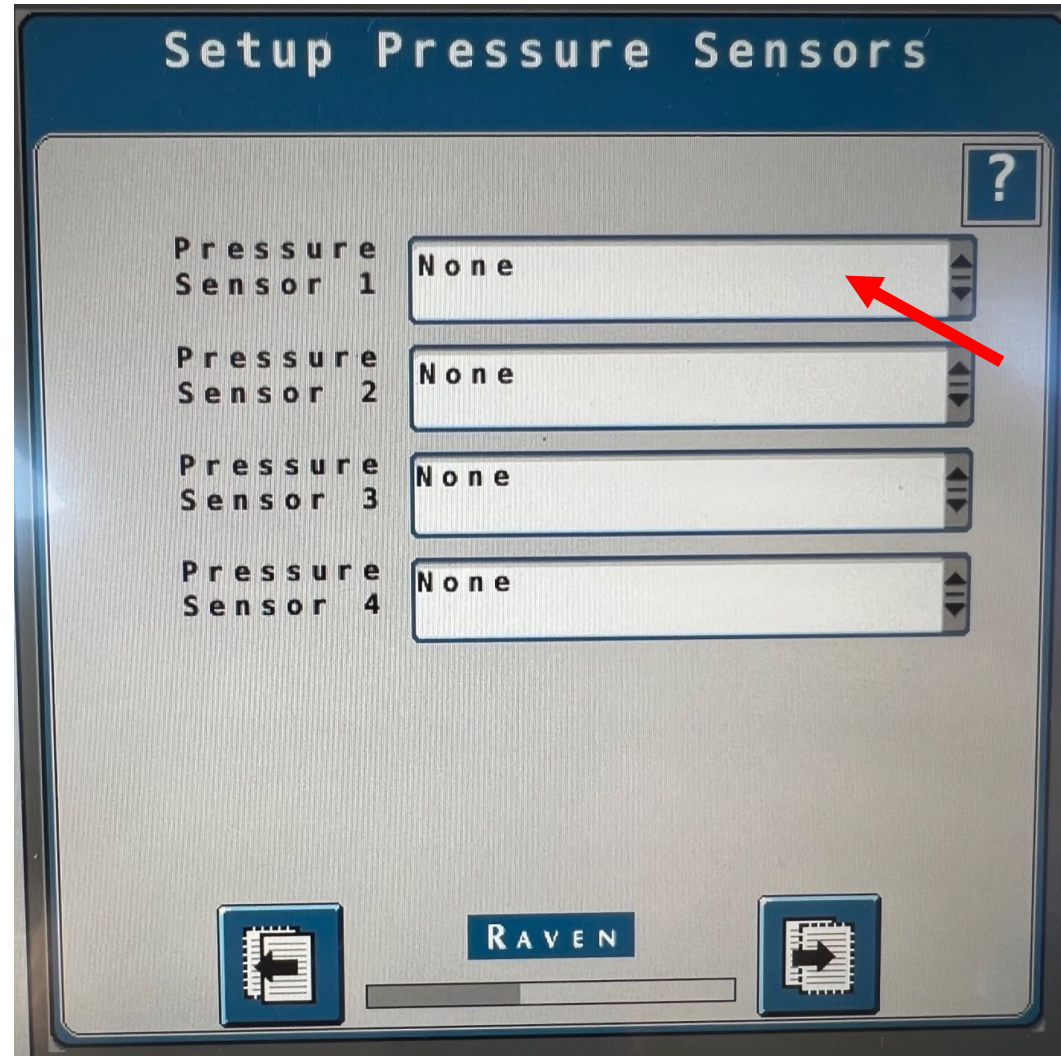
RAVEN

▶

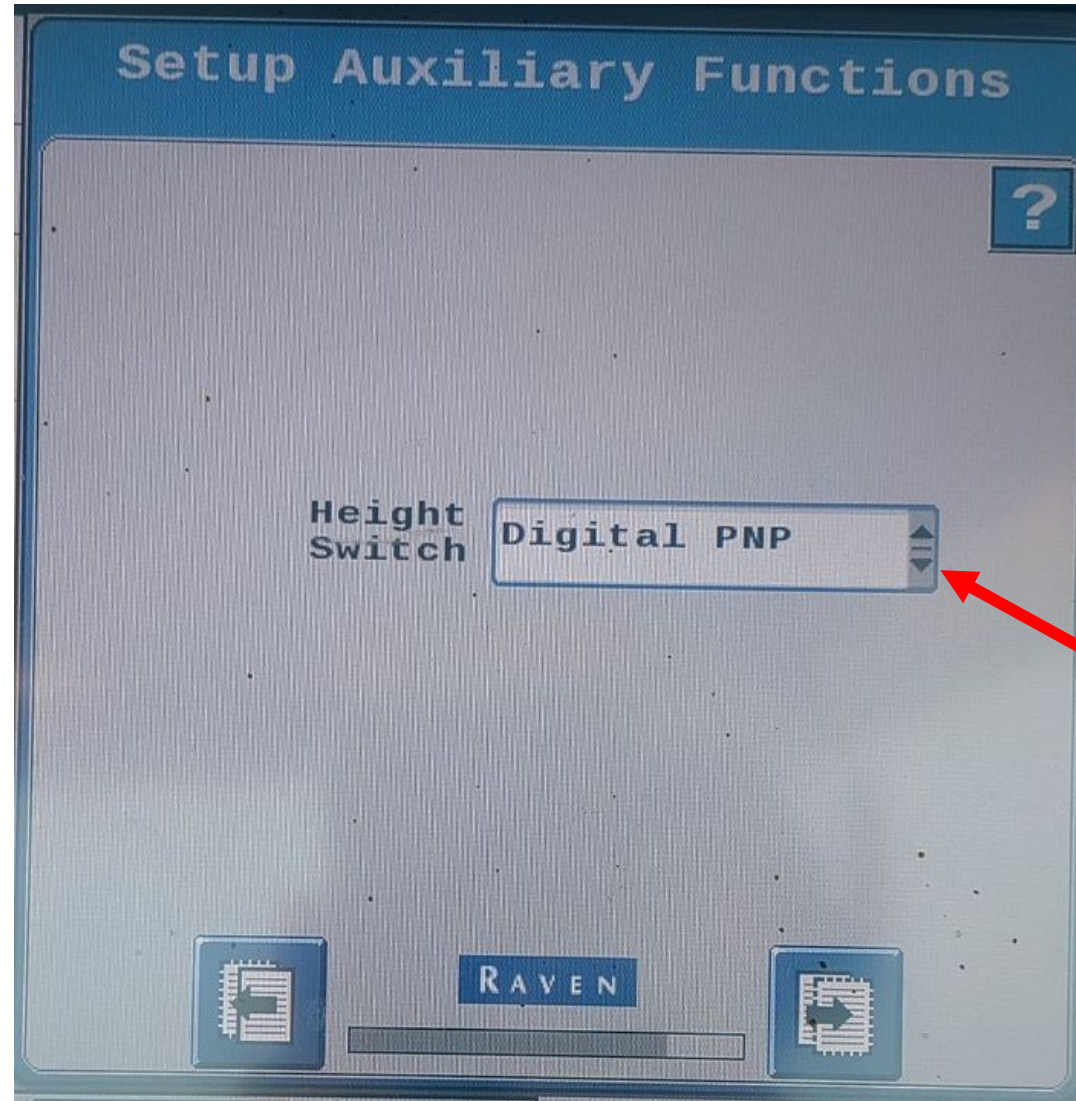
- *If no scales are present, select “None”*



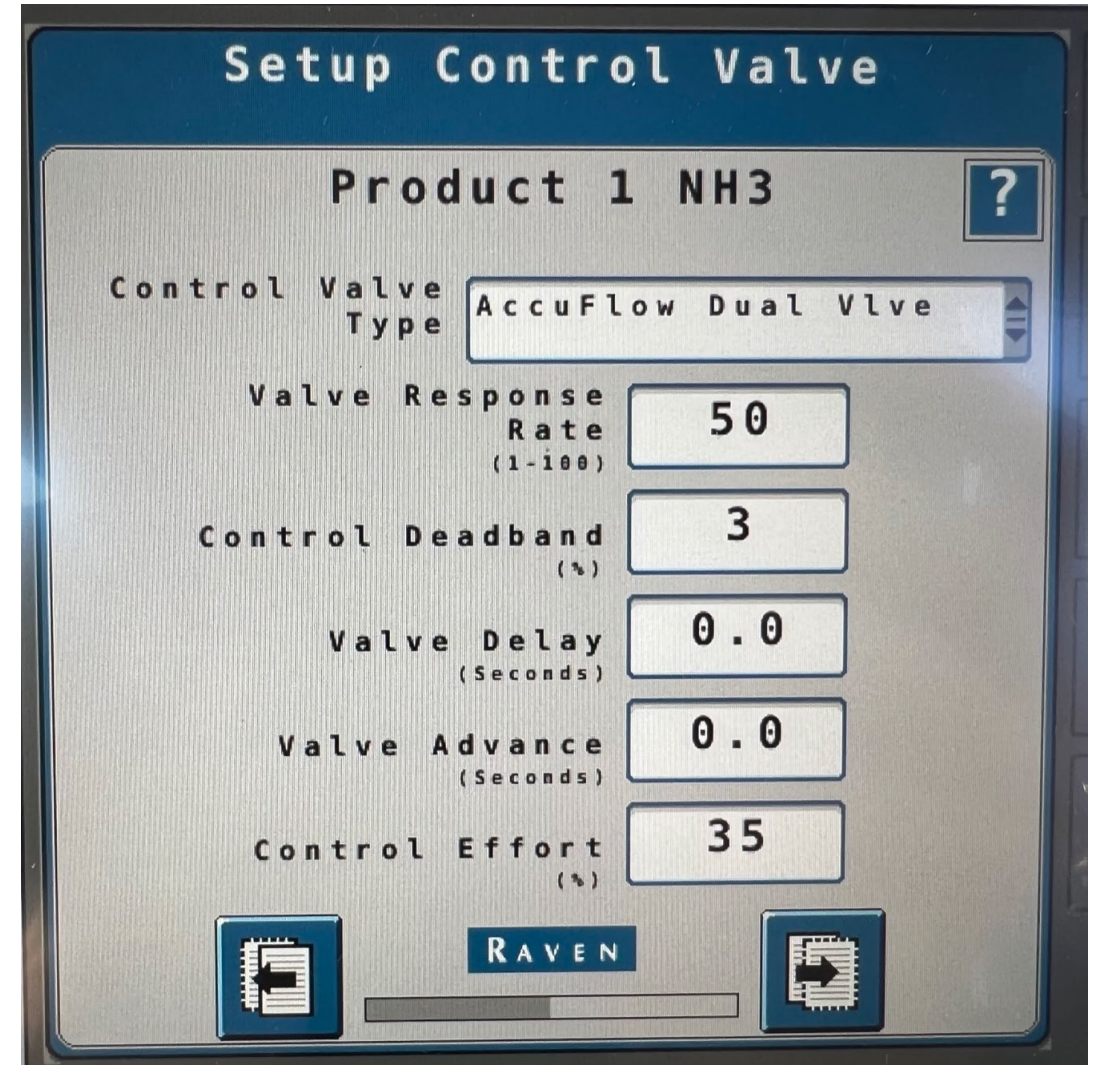
- *Under Setup Pressure Sensors select “None”*



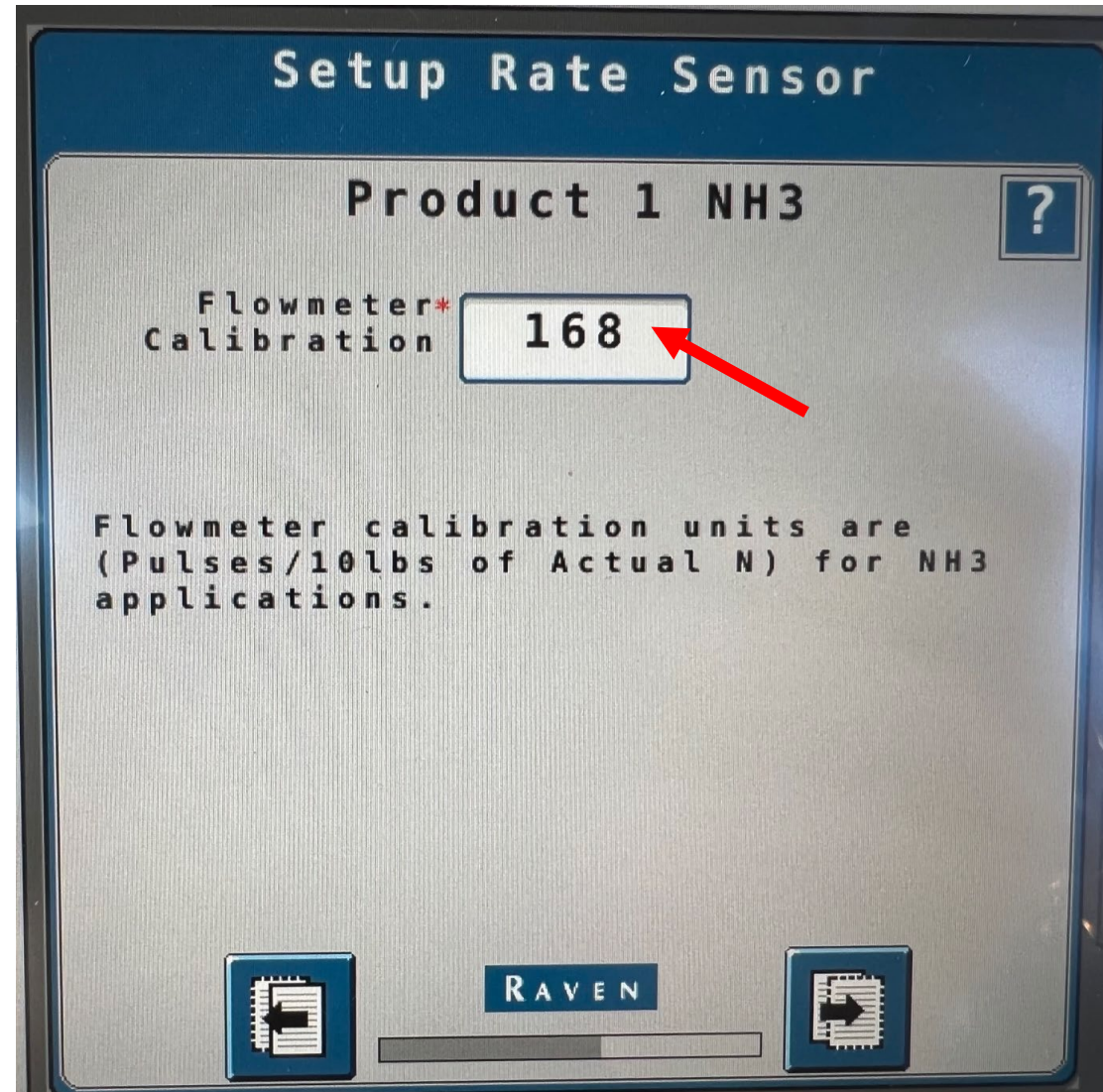
- *Under Setup Auxiliary Functions select “Digital PNP”*



- Under Setup Control Valve-Product 1 NH3 select “AccuFlow Dual Valve” under Control Valve Type
- Enter “50” for Valve Response Rate
- Enter “3” for Control Deadband
- Enter “0” for Valve Delay
- Enter “0” for Valve Advance
- Enter “35” for Control Effort



- *Under Setup Rate Sensors-Product 1 NH3 enter the Flowmeter Calibration number from the tag on the flow meter*



- Under Setup Tank-Product 1 NH3 enter the desired Tank Capacity and
- Enter “10” for Low Tank Level and check “Alarm?” box

Setup Tank/Bin

Product 1 NH3

Tank Capacity (lb N) 8600

Current Tank Level (%) 0

Low Tank Level (%) 10

Alarm?

RAVEN

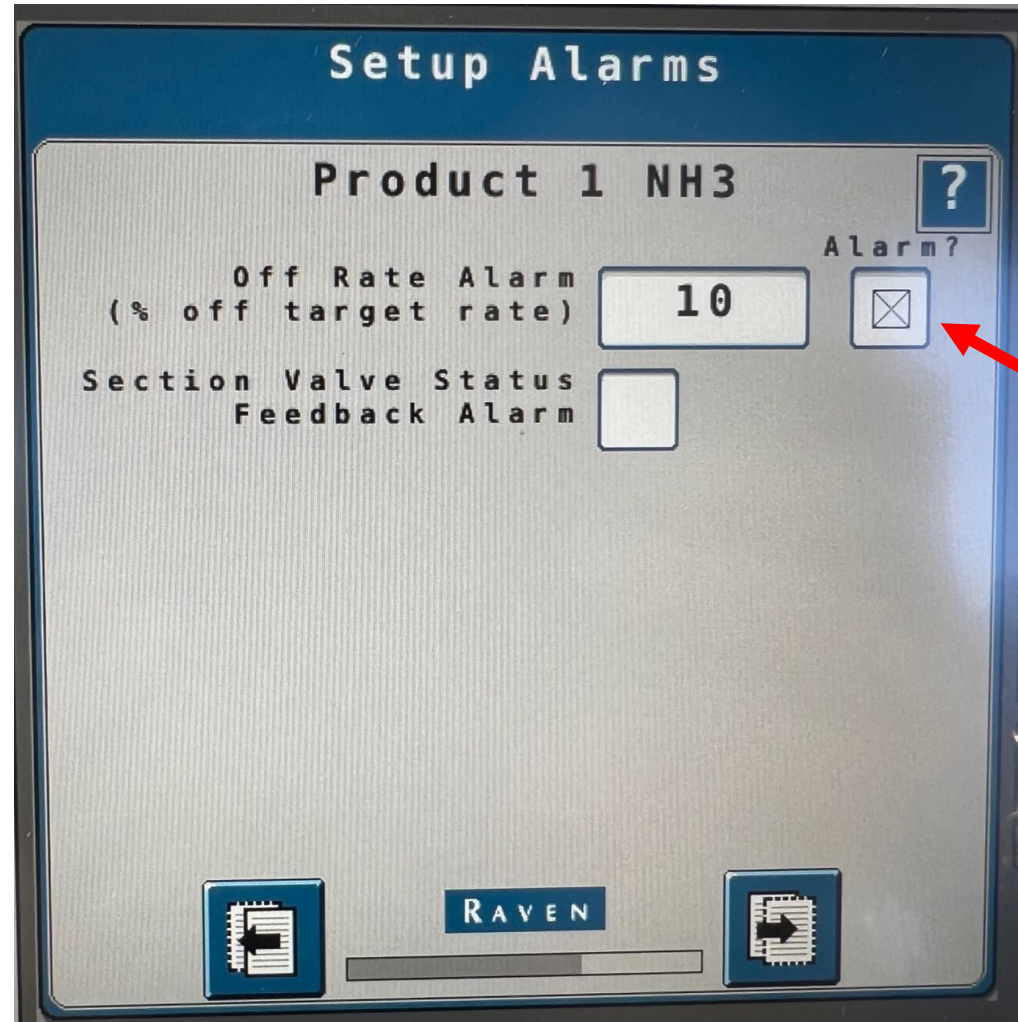
- Under Setup Rates-Product 1 NH3 enter the desired Preset Rate Values
- Enter “5” for Rate Bump
- Select desired Rate Selection and check Display Smoothing Box

The screenshot shows a control panel interface for 'Setup Rates' for 'Product 1 NH3'. The interface includes a title bar, a product name, a help icon, and several input fields and checkboxes. A red arrow points to the 'Display Smoothing' checkbox, which is checked.

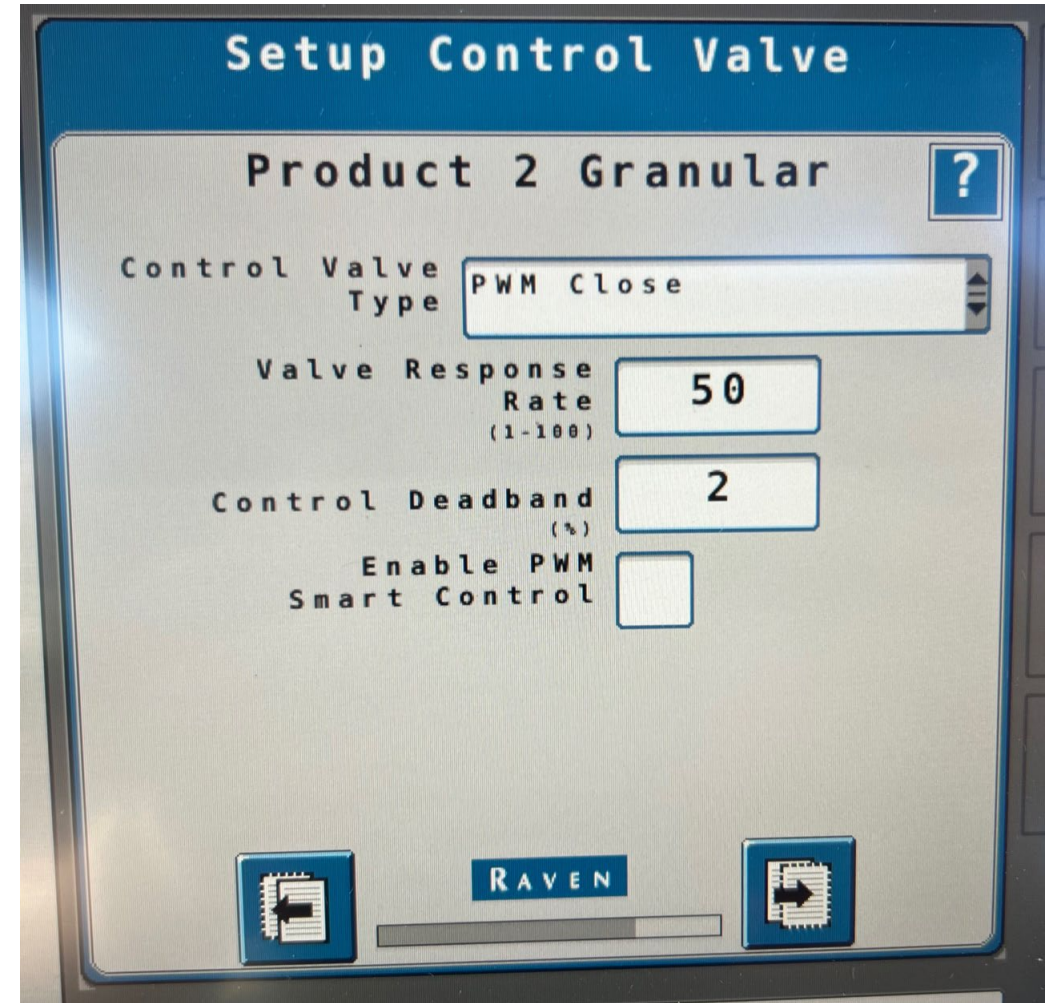
	Rate 1	Rate 2	Rate 3
Preset* Rate Values (Lbs N/Ac)	150	175	200
Rate Bump (Lbs N/Ac)	10		
Rate Selection	Predefined or Rx		
Display Smoothing	<input checked="" type="checkbox"/>		

At the bottom of the screen, there are two navigation buttons (left and right arrows) and a central 'RAVEN' label.

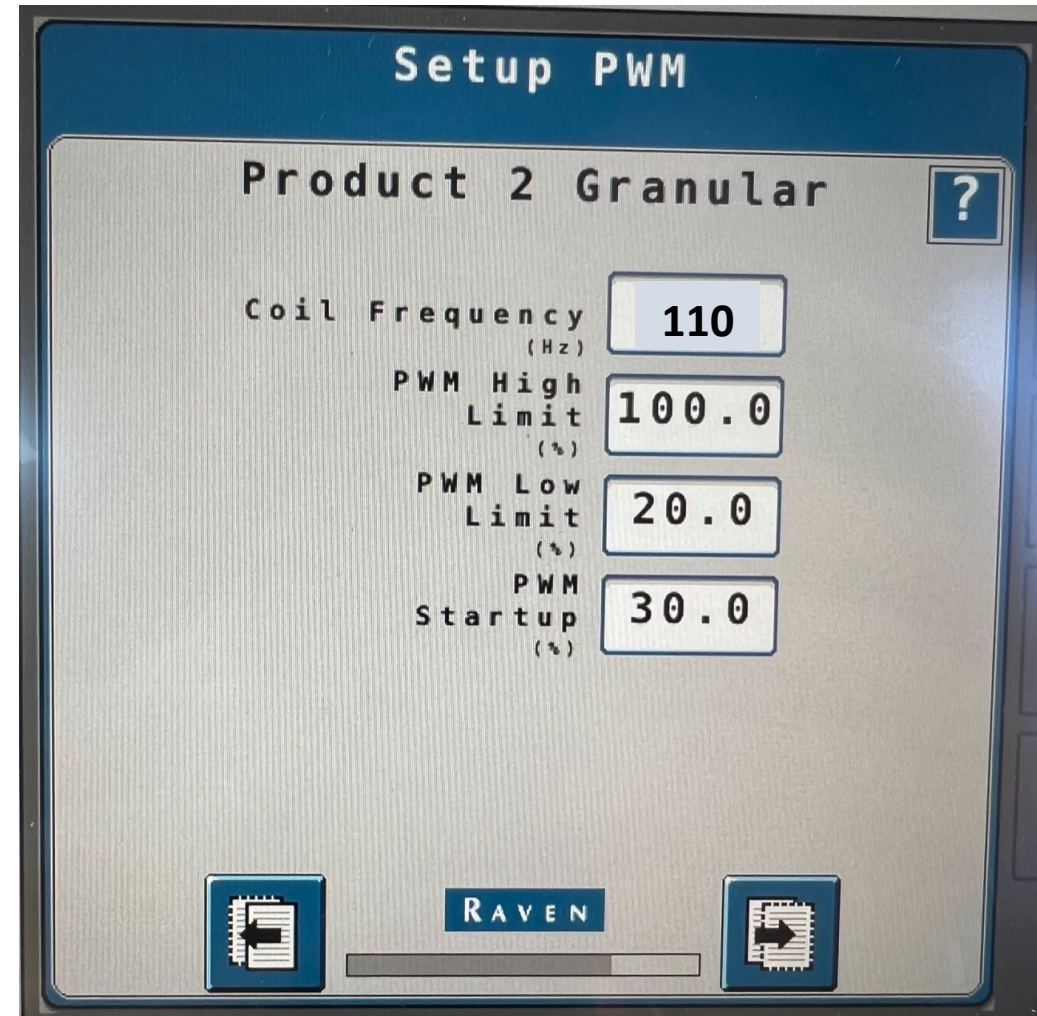
- *Under Setup Alarms-Product 1 NH3 enter the desired Off Rate Alarm and select the “Alarm?” Checkbox*



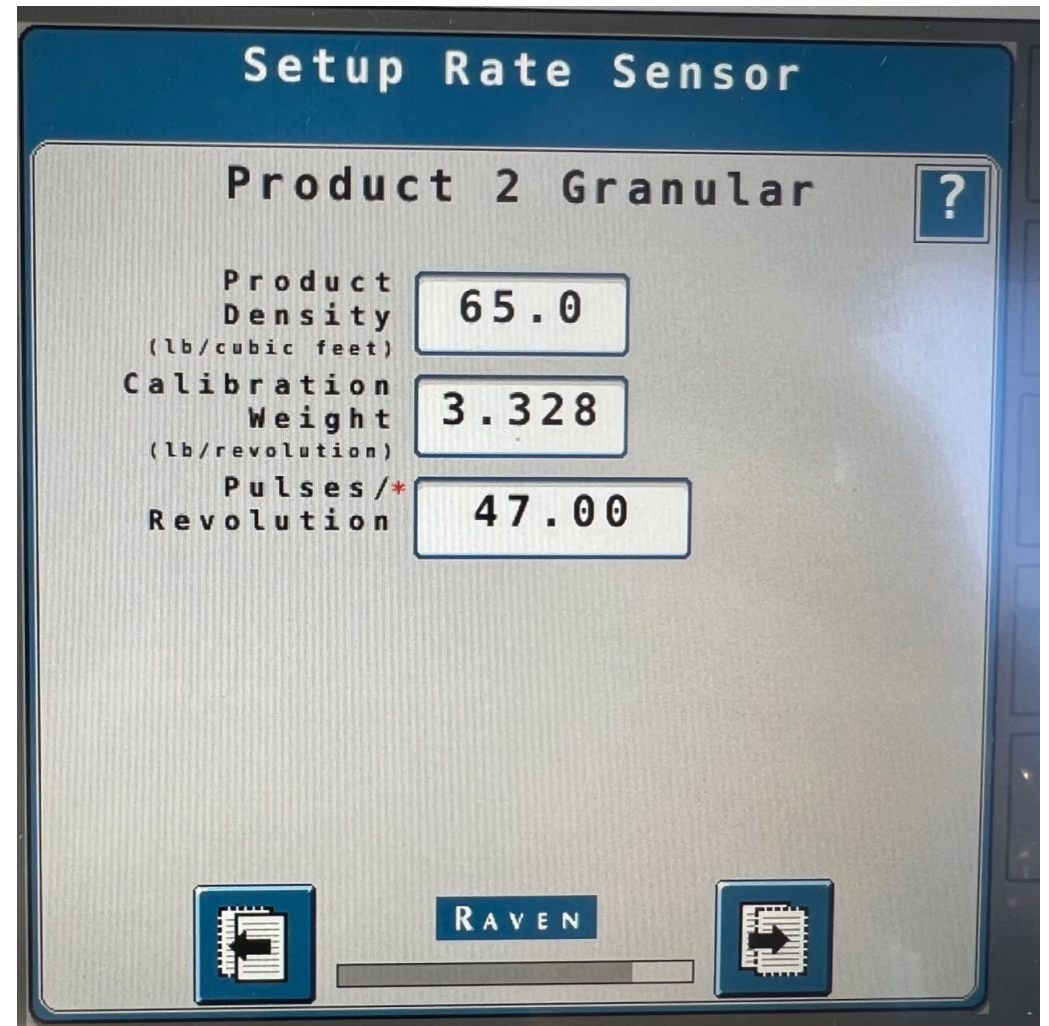
- *Under Setup Control Valve-Product 2 Granular select “PWM Close” under Control Valve Type*
- *Enter “50” for Valve Response Rate*
- *Enter “2” for Control Deadband*



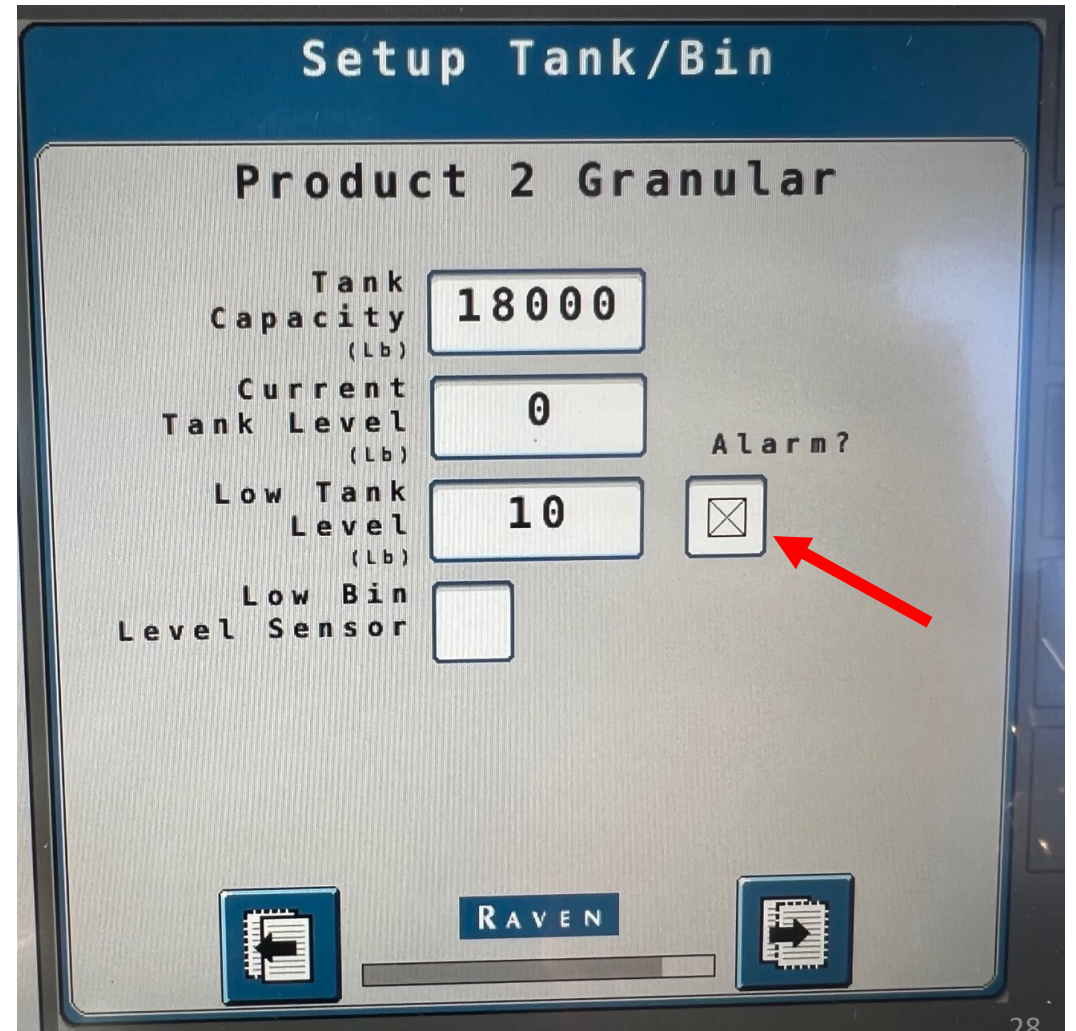
- *Under Setup Control Valve-Product 2 Granular enter “110” for Coil Frequency*
- *Enter “100” for High Limit*
- *Enter “20” for Low Limit*
- *Enter “30” for PWM Startup*



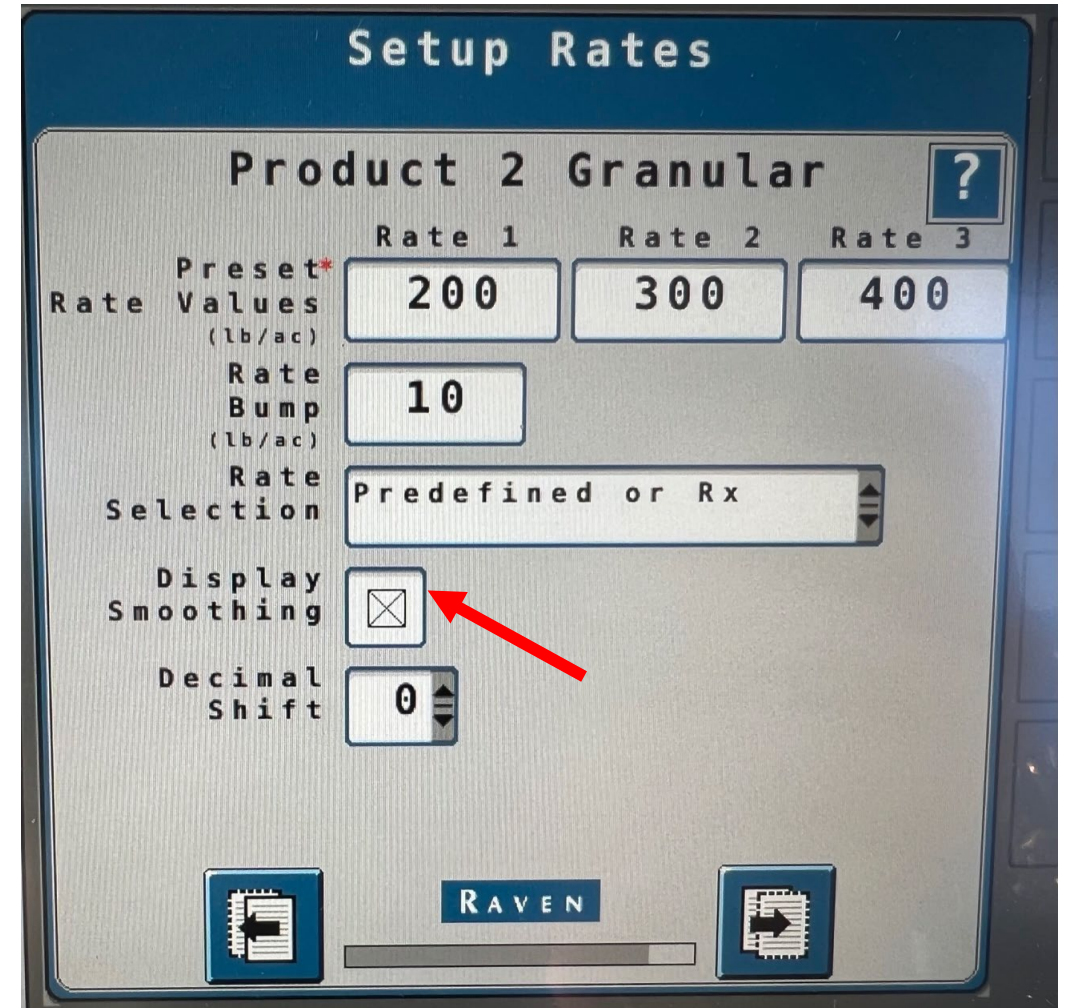
- **Under Setup Rate Sensor-Product 2 Granular**
- **Enter Correct for Product Density**
- **Calculate Calibration Weight**
 - *Cal. Weight = .0032 x # of rows x Product Density*
- **For Parker Hydraulic Motors Enter “47” for Pulses/Revolution**
- **For Eaton Motors Enter “94”**



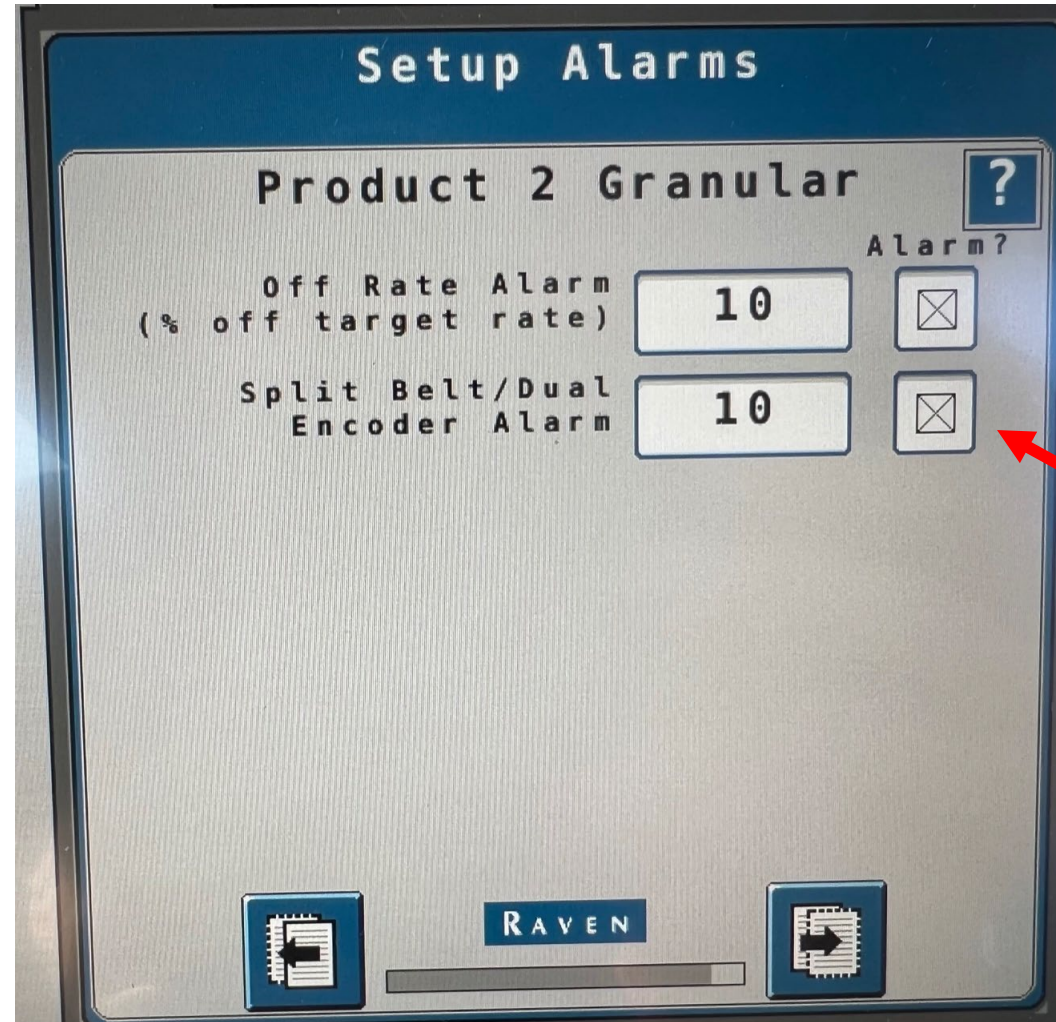
- *Under Setup Tank-Product 2 Granular*
- *Enter “18000” for Tank Capacity*
- *Enter “1500” for Low Tank Level*
- *Select “Alarm?” Checkbox*



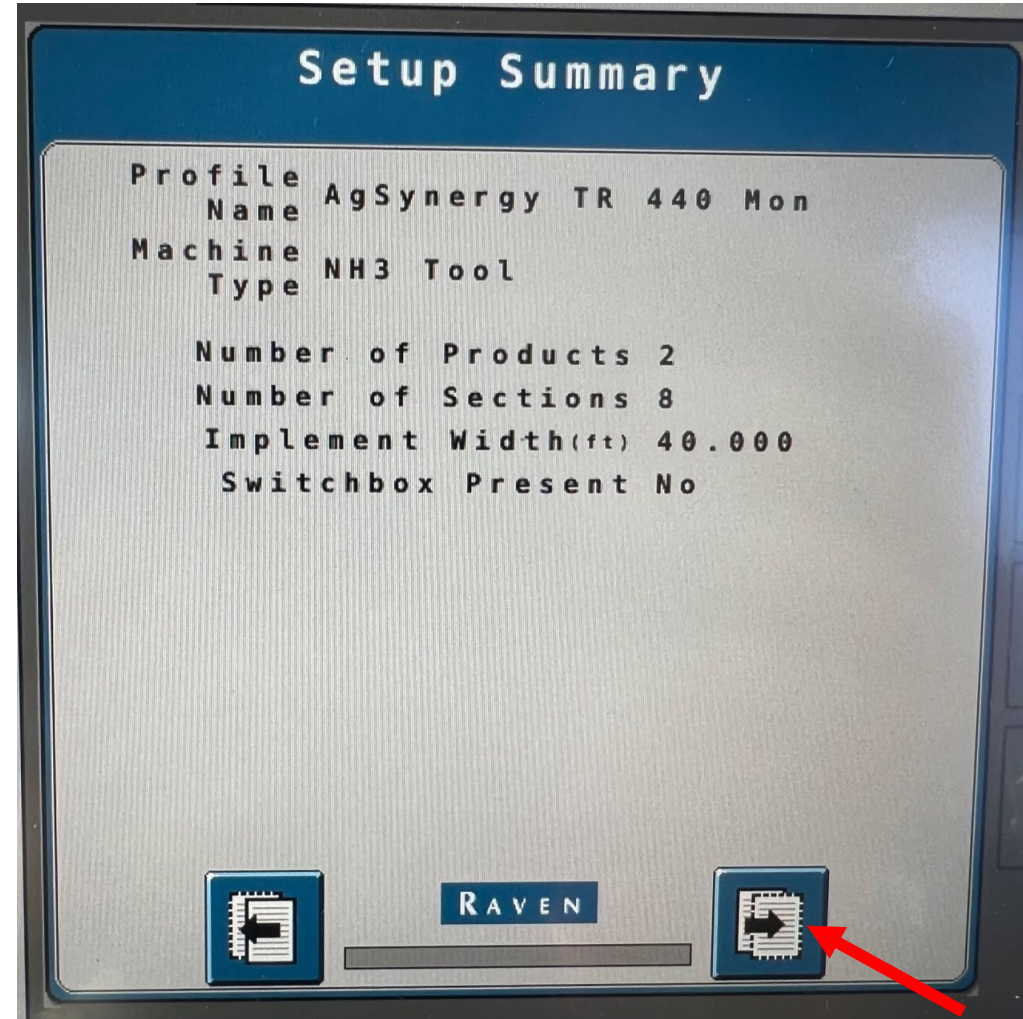
- *Under Setup Rates-Product 2 Granular*
- *Enter Desired Preset Rate Values*
- *Enter “10” for Rate Bump*
- *Select Correct Rate Selection*
- *Select “Display Smoothing”
Checkbox*



- *Under Setup Alarms-Product 2 Granular enter the desired Off Rate Alarm and Dual Encoder Alarm*
- *Select the “Alarm?” Checkboxes*



- *Setup is now complete*
- *Select “Accept” to close the Setup Wizard*



Montag Gen 1 Calibration Notes

GEN 1 - CONTROLLER CALIBRATION

Row Spacing	Standard Rate	High Output Rate
20 Inch Row Spacing	375 lb/acre	375 lb/acre
22 Inch Row Spacing	341 lb/acre	341 lb/acre
30 Inch Row Spacing	250 lb/acre	250 lb/acre
34 Inch Row Spacing	220 lb/acre	220 lb/acre
36 Inch Row Spacing	208 lb/acre	208 lb/acre
38 Inch Row Spacing	197 lb/acre	197 lb/acre
40 Inch Row Spacing	187 lb/acre	187 lb/acre

	Standard Meter 2 Inch Hose	High Output Meter 2½ Inch Hose
Auger Shaft Speed (RPM)	60	31
Product Density (lb/cu-ft)	62	62
Test Speed (MPH)	5	5
Displacement Per Row (cu-ft/rev)	0.0016	0.0032

CALIBRATION INFORMATION - GEN 1

- Flow Control Valve = PWM Closed
12 Volt
110 Hertz
- Meter Control Valve Cal # = 1023 (See Controller manual for fine tuning)
- Meter speed Sensor = Option 1- Raven 5 Volt 36 Pulse (External Mount)
Option 2 - Eaton 12 Volt 60 Pulse (In Hydraulic Motor)
Option 3 - Parker 12 Volt 30 Pulse (In Hydraulic Motor) *
- Auger Drive = 14 tooth #40 drive sprocket (encoder)
22 tooth #40 driven sprocket (auger)
1.57 to 1 Ratio
- Meter Speed Sensor Cal # = Option 1 Raven 36 x 1.57 = 56 (pulses per auger revolution)
Option 2 Eaton 60 x 1.57 = 94 (pulses per auger revolution)
Option 3 Parker 30 x 1.57 = 47 (pulses per auger revolution) *
- Low limit/High limit = (Use default setting see controller manual for instructions)
Auger RPM Standard meter 10 – 130 MAX
Auger RPM High Output meter 10 -165 MAX
- Tank Capacity = 6 Ton 187 cubic ft. or 150 bushels
9 Ton 281 cubic ft. or 225 bushels
- Displacement per Row = Standard Meter (2" hoses) 0.0016 Cubic Ft.
High Output Meter (2 ½" hoses) 0.0032 Cubic Ft.
- CFR (cubic ft / Revolution) = Displacement per Row X Number of Rows = CFR
- Adjust CFR = $\frac{\text{Actual Rate or Scale weight}}{\text{Desired Rate or Weight displayed on controller}} \times \text{Current CFR} = \text{New CFR Cal\#}$
- Spreader Constant = $\frac{\text{Meter Speed Sensor Cal\#}}{\text{CFR}} = \text{Spreader Constant}$
- Adjust Spreader Constant = $\frac{\text{Spreader Constant}}{\text{Actual Rate}} \times \text{Desired Rate} = \text{New Spreader Constant}$