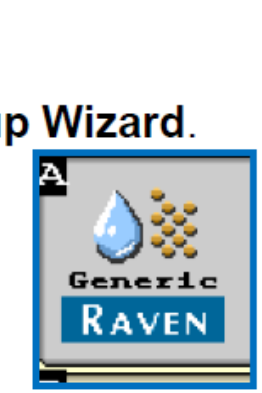
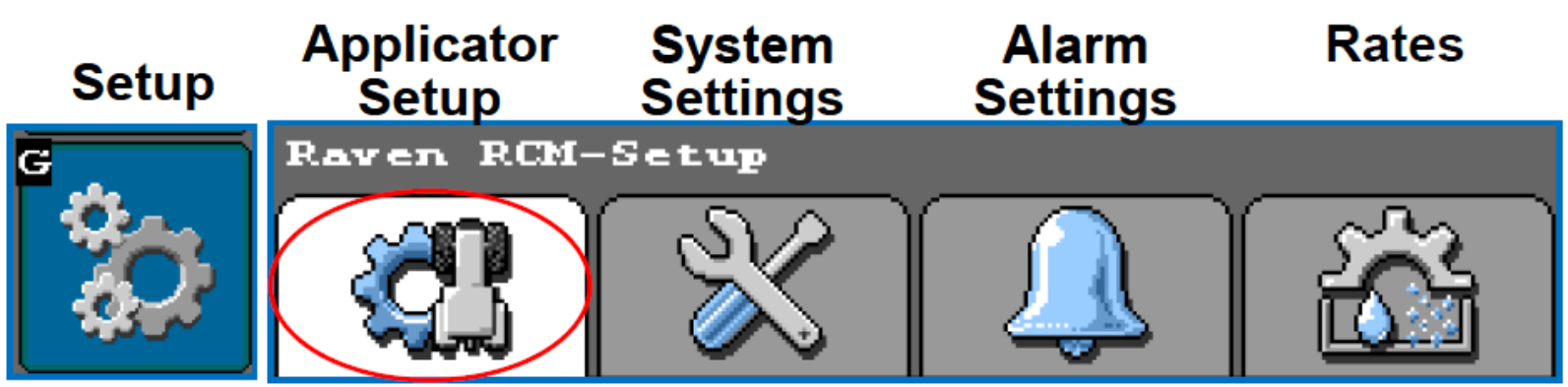
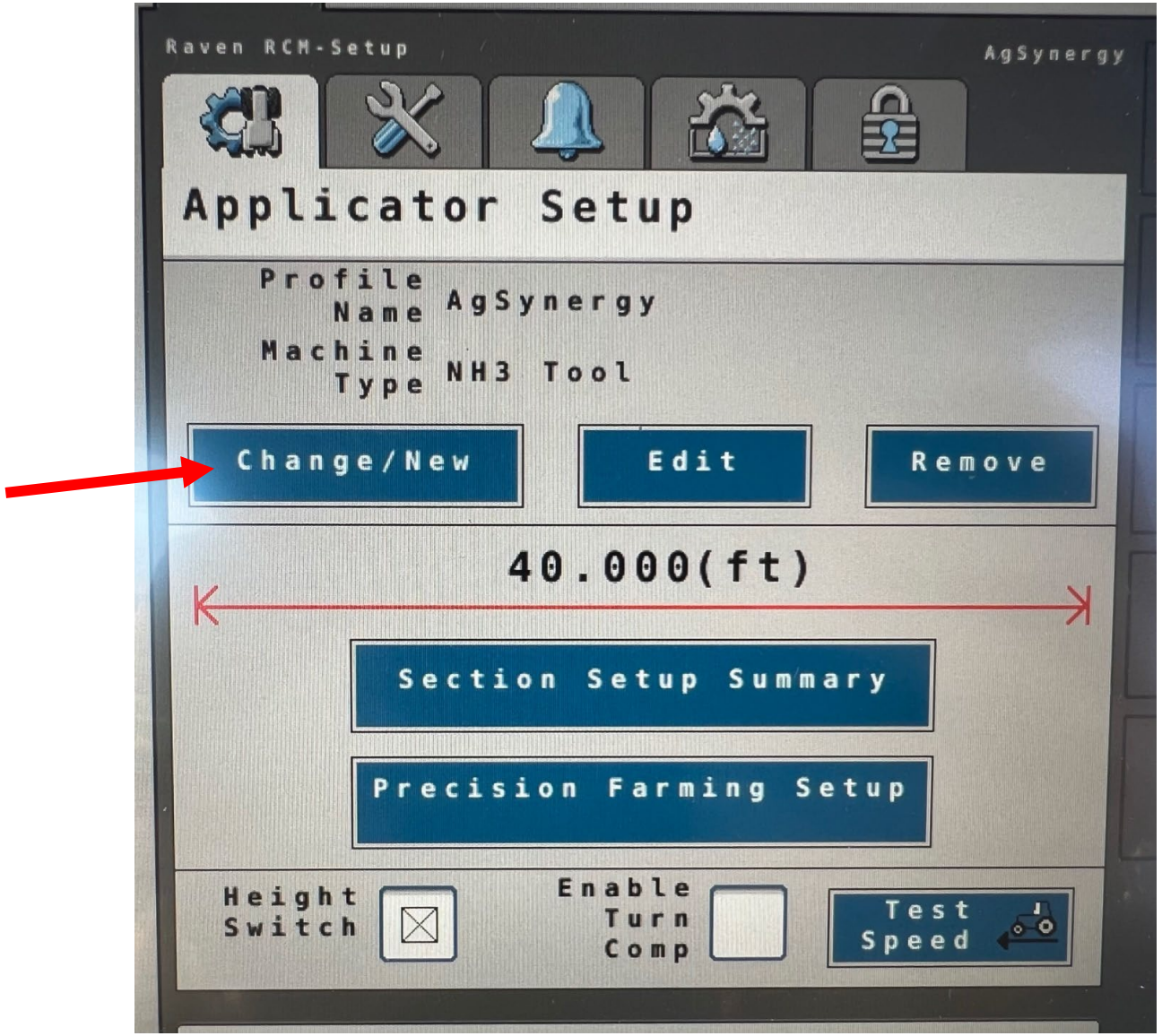
TR 430/440
Dual Product Setup
Raven RCM
Montag Gen 1 Dry Box

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

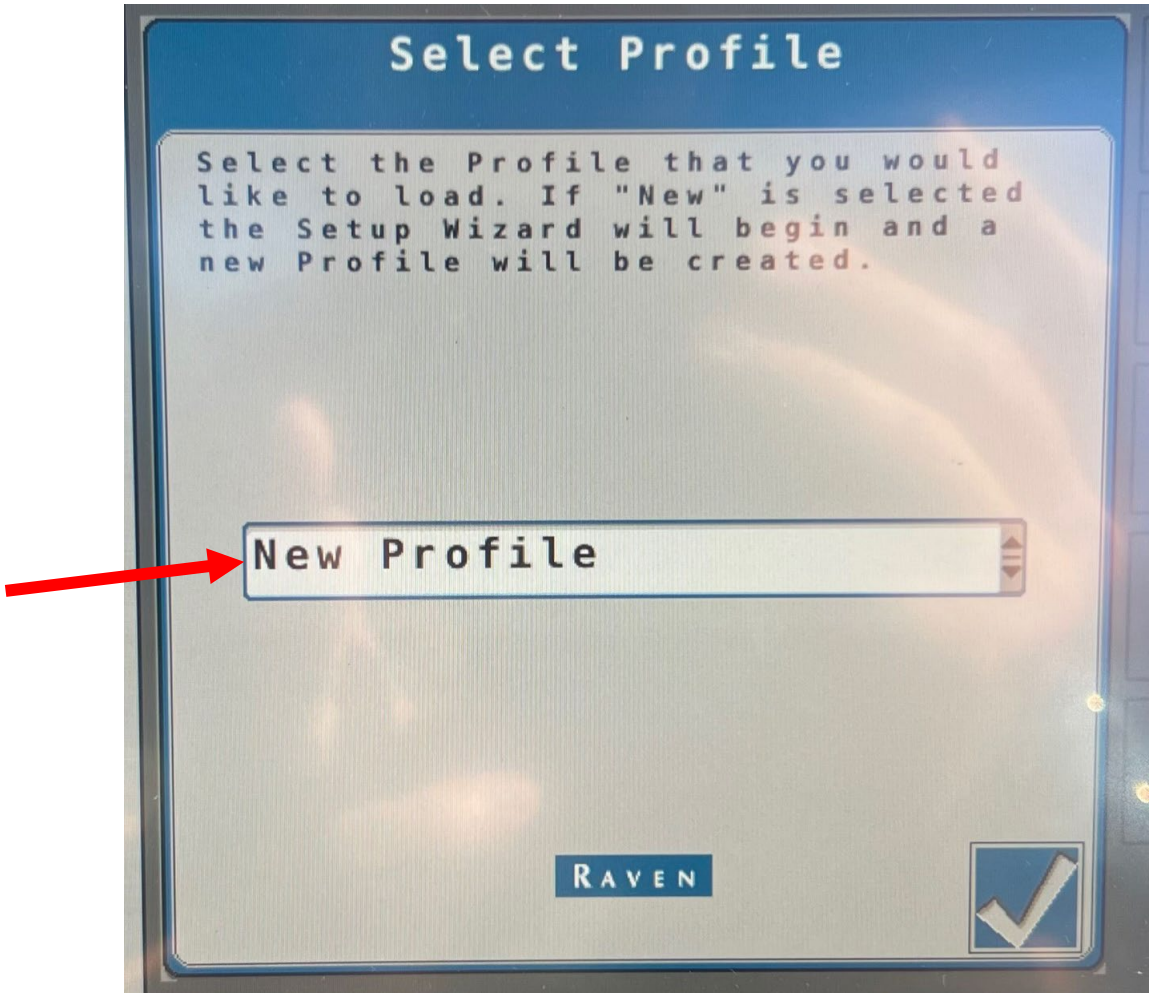




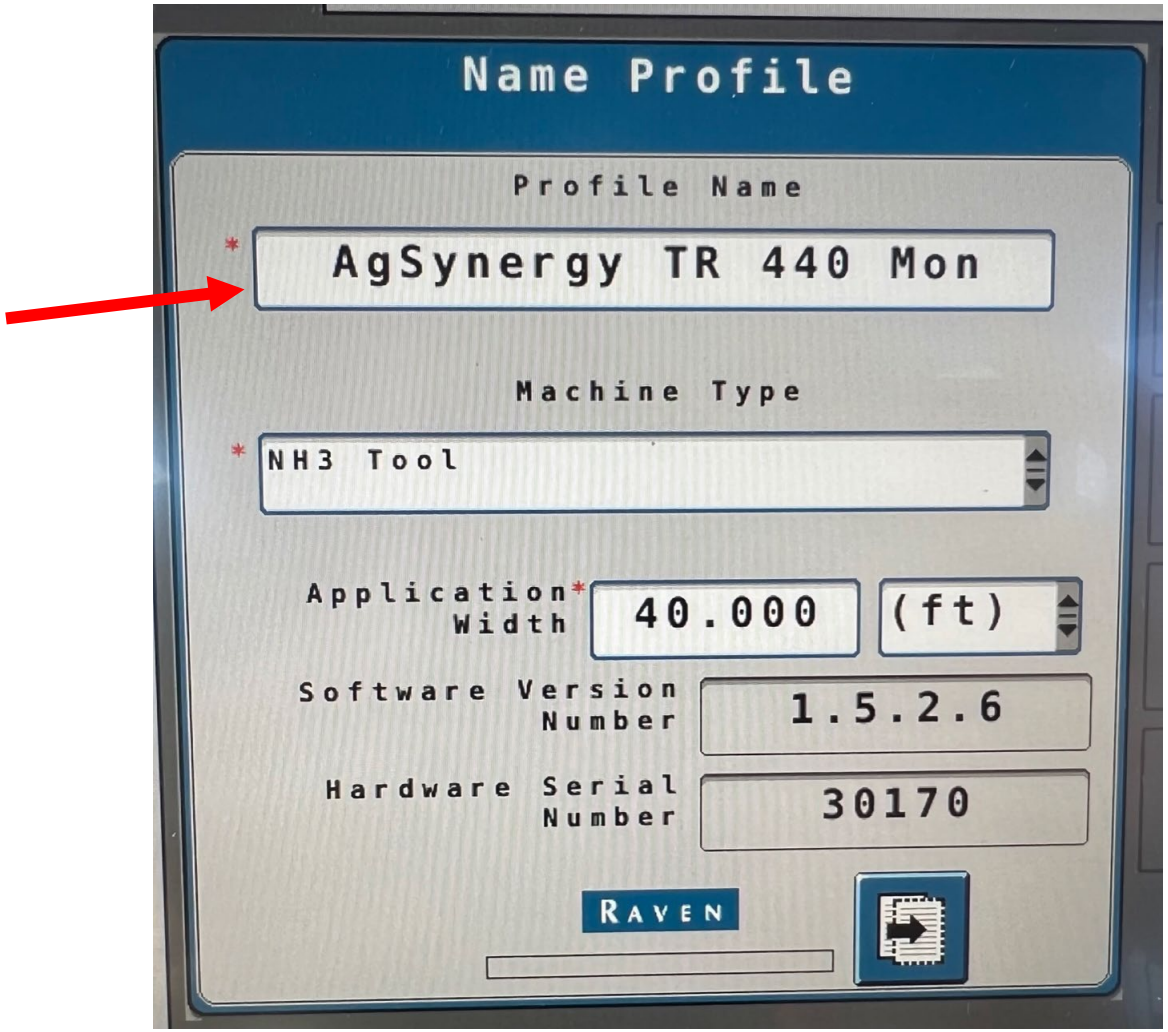
- ***Under Applicator Setup, select Change/New (B)***



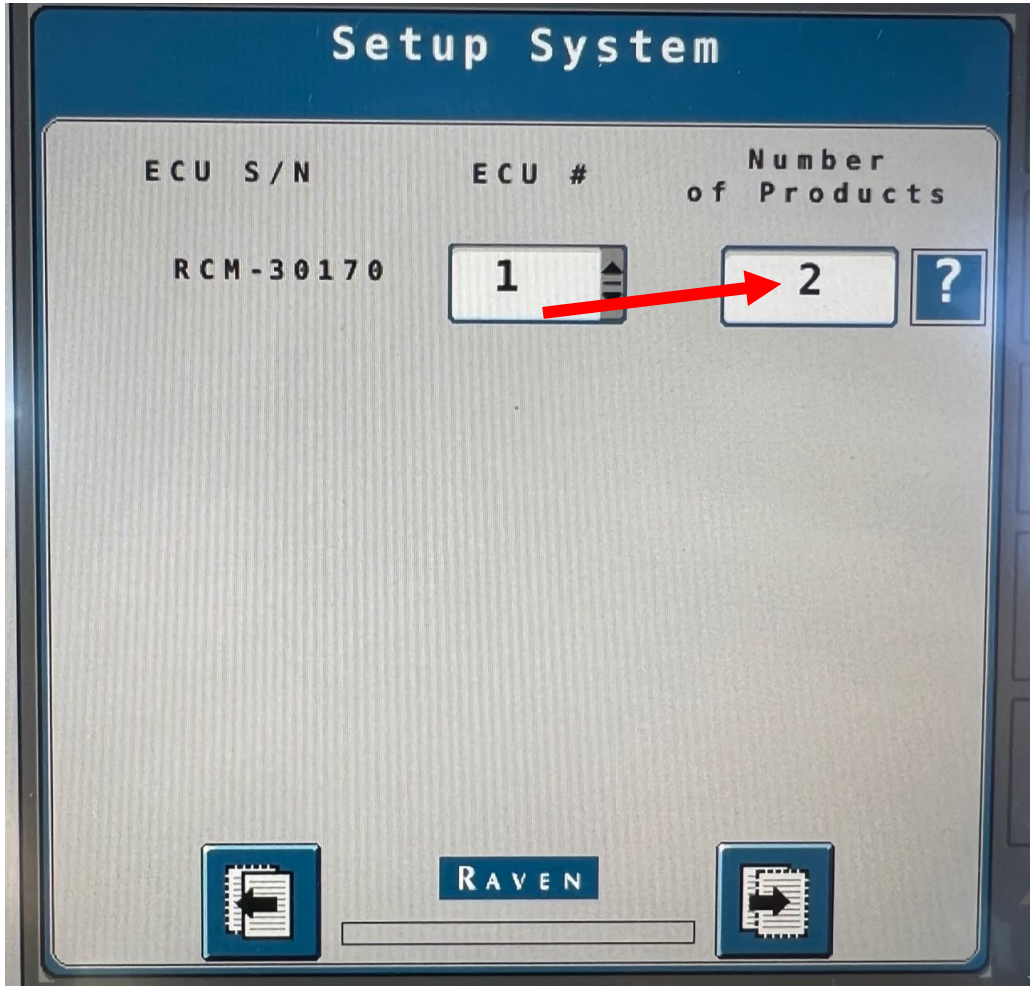
- ***Select New Profile from the drop down menu, Then Press Accept***

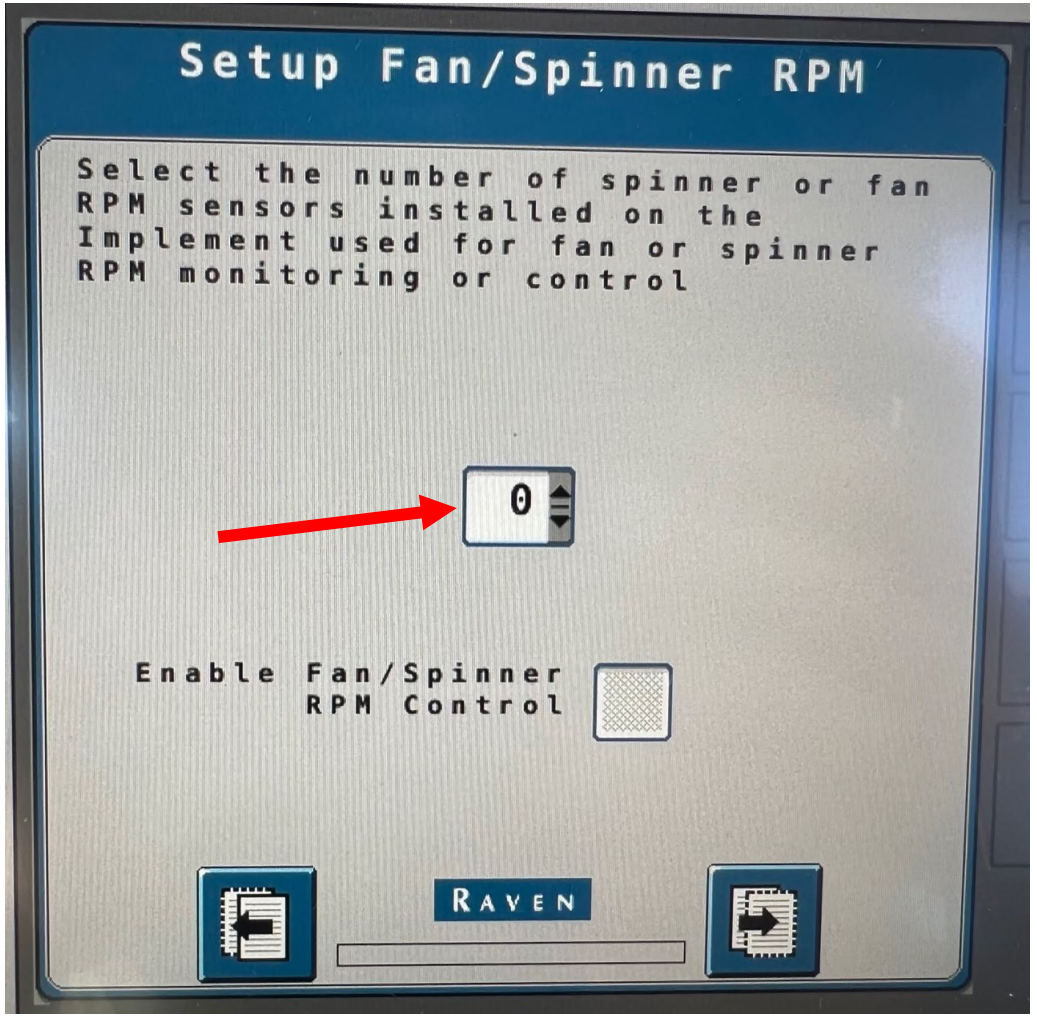


- ***Create a Profile Name , Select NH3 Machine as Machine Type, enter Application Width , and press the next Icon.***

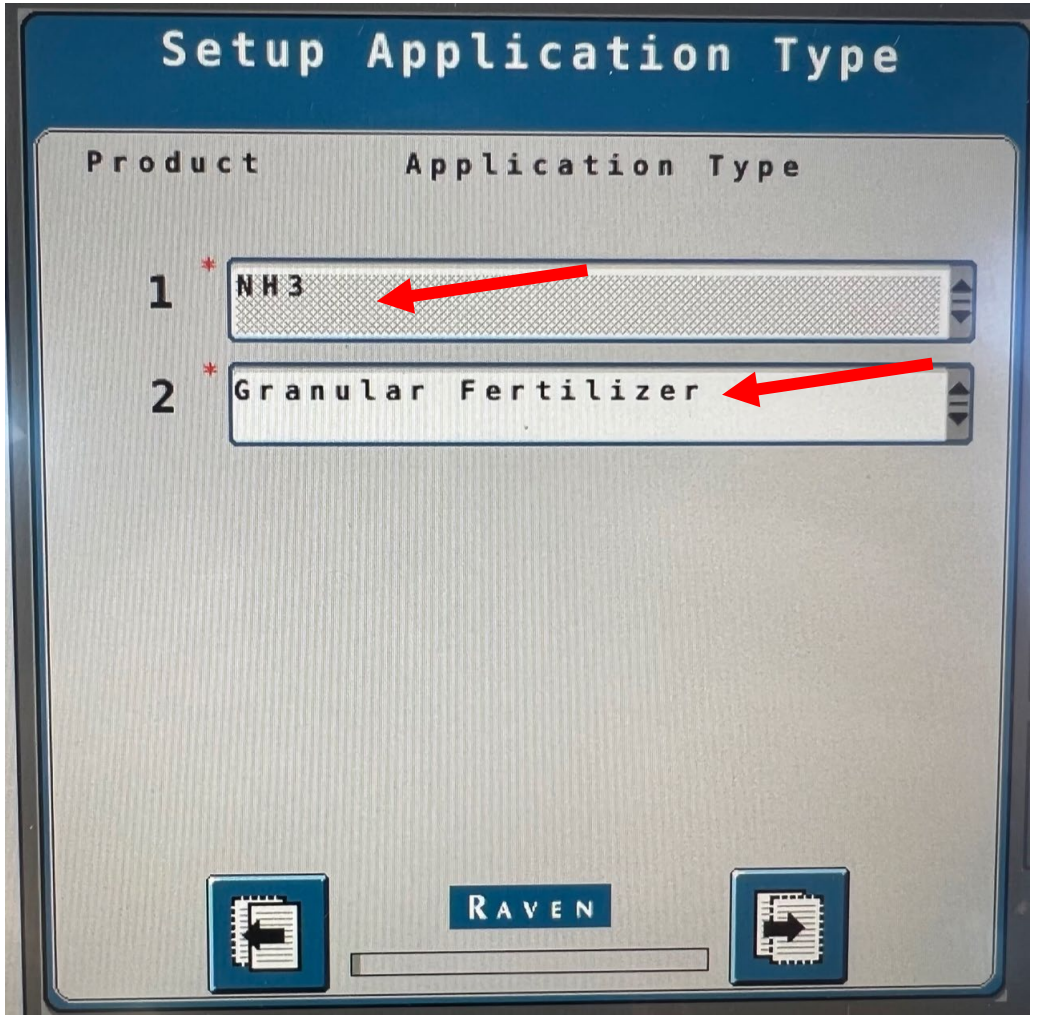


- *Under Setup System enter 2 for the number of products*
- *Under Setup Fan Select "0" from the RPM Sensors dropdown*

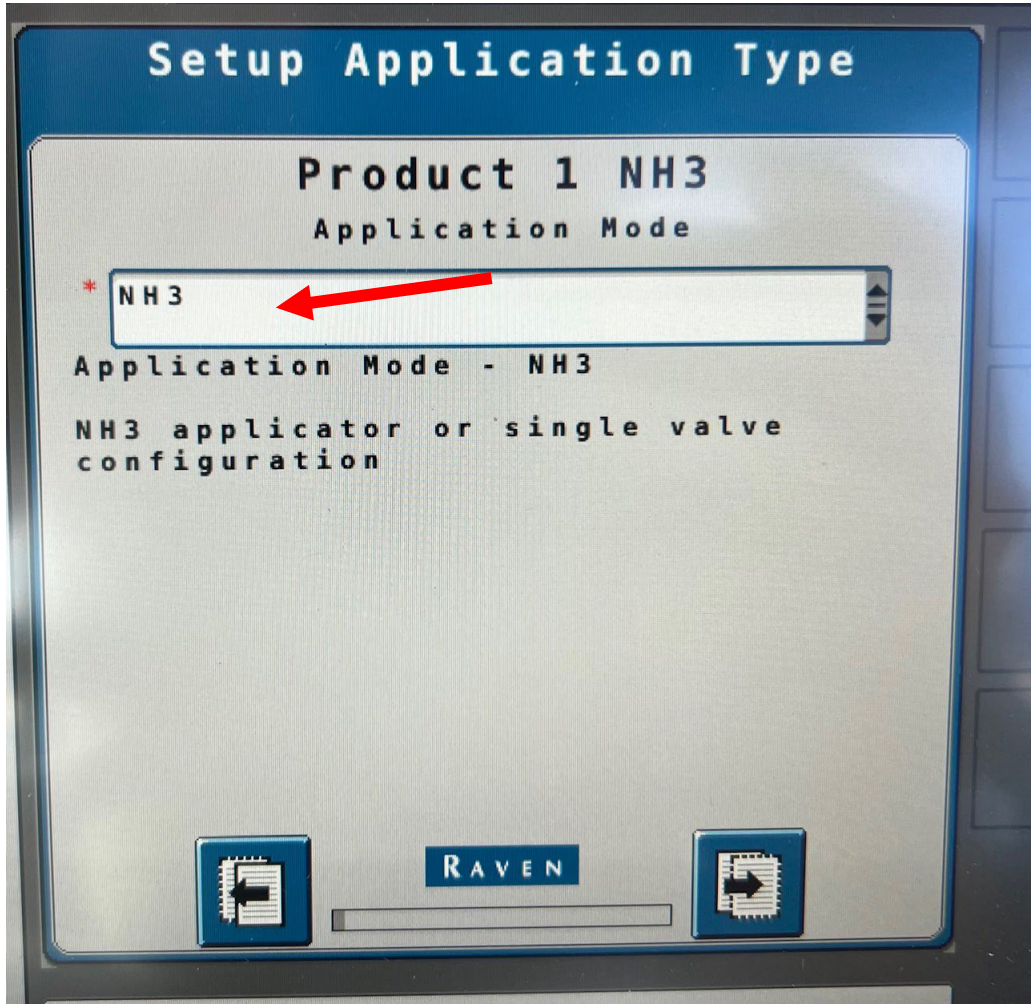


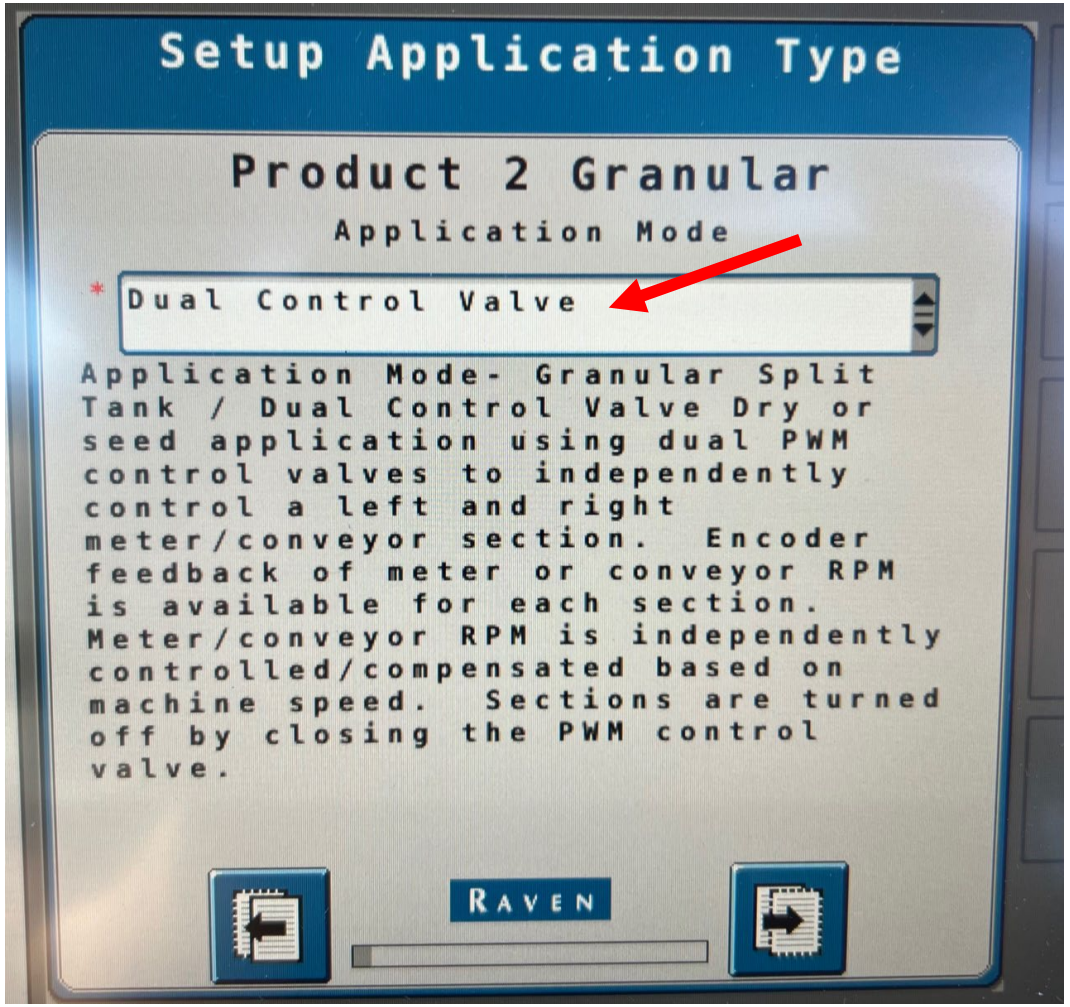


- *Under Setup Application Type select “NH3” for Product 1*
- *Select “Granular Fertilizer” for Product 2*

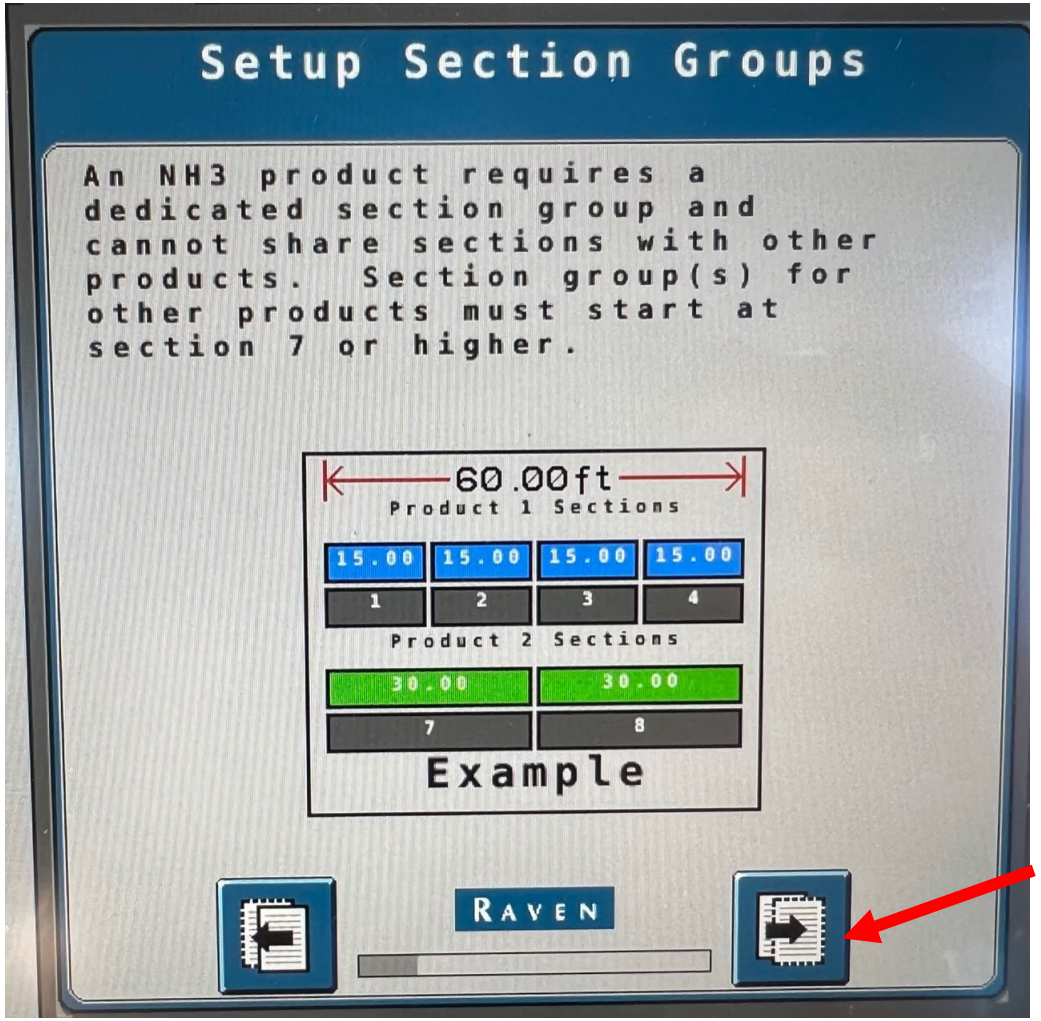


- *Under Setup Application Type select “NH3” for Product 1 Application Mode*
- *Select “Dual Control Valve” for Product 2 Application Mode*

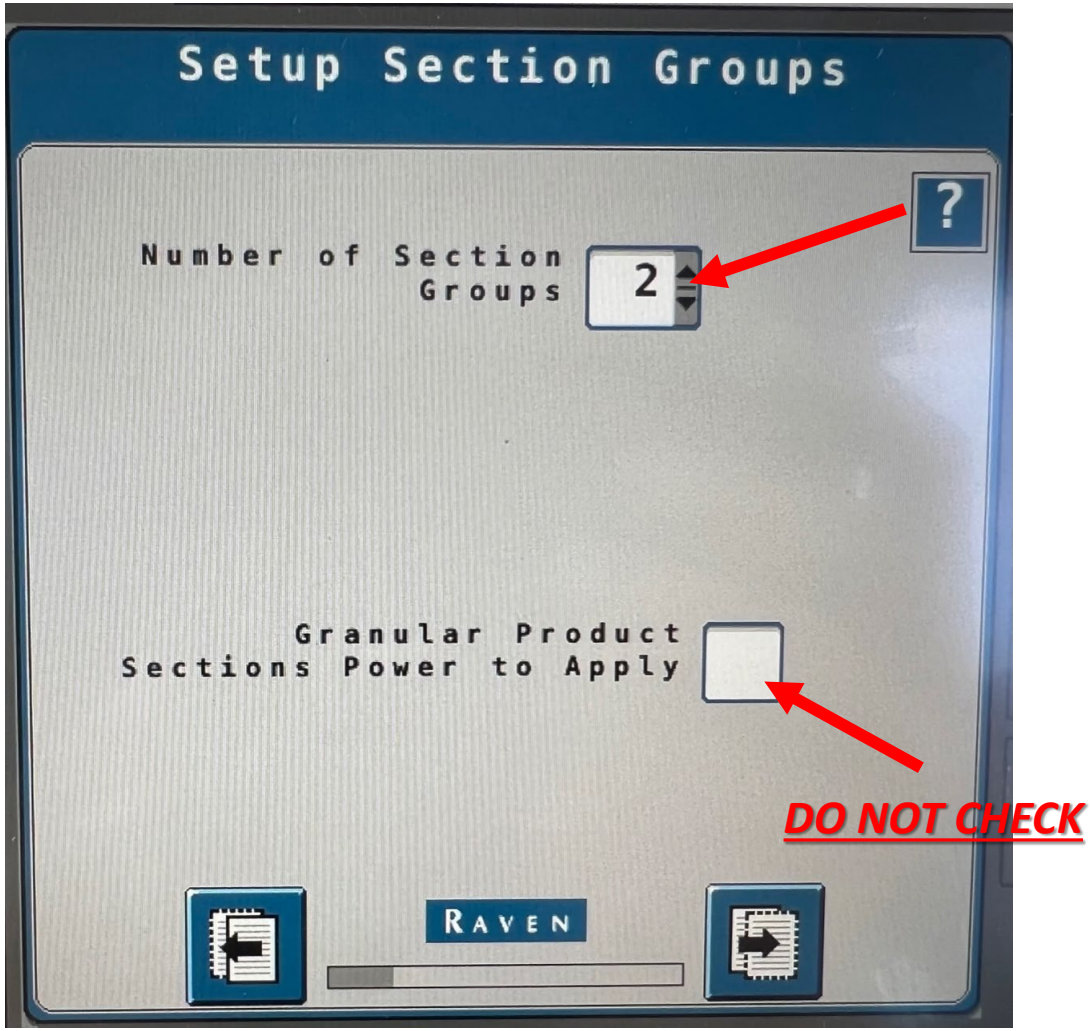




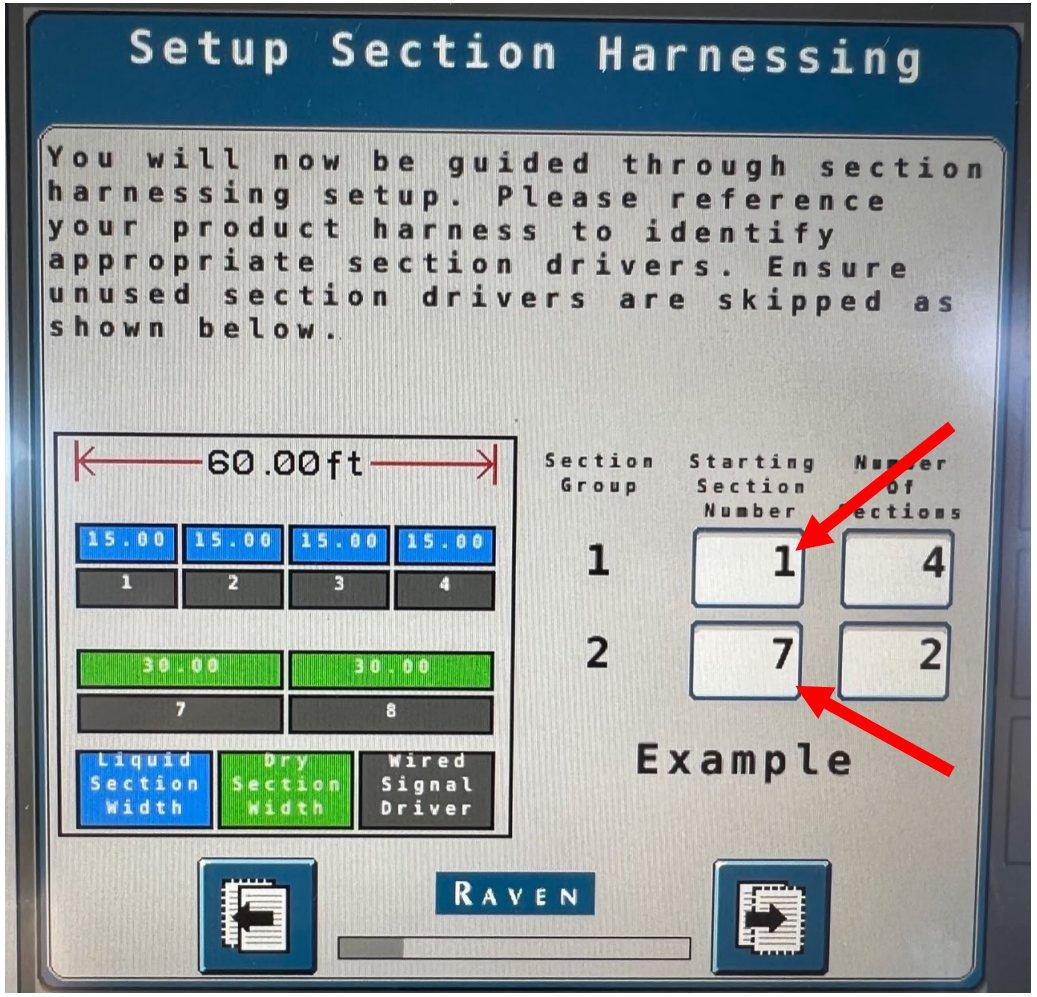
- ***Under Setup Section Groups select Next***



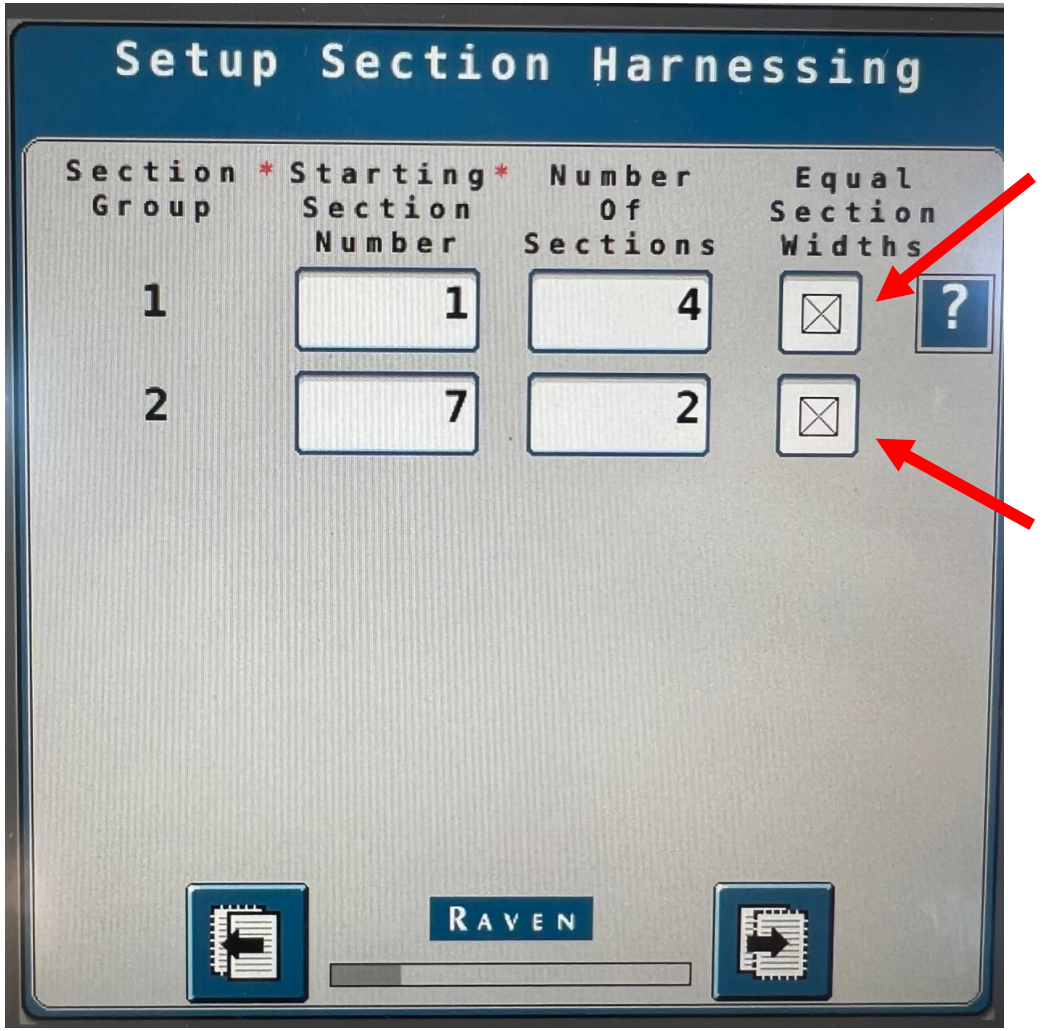
- *Under Setup Section Groups select “2”*
- *DO NOT CHECK Granular Product Sections Power to Apply*



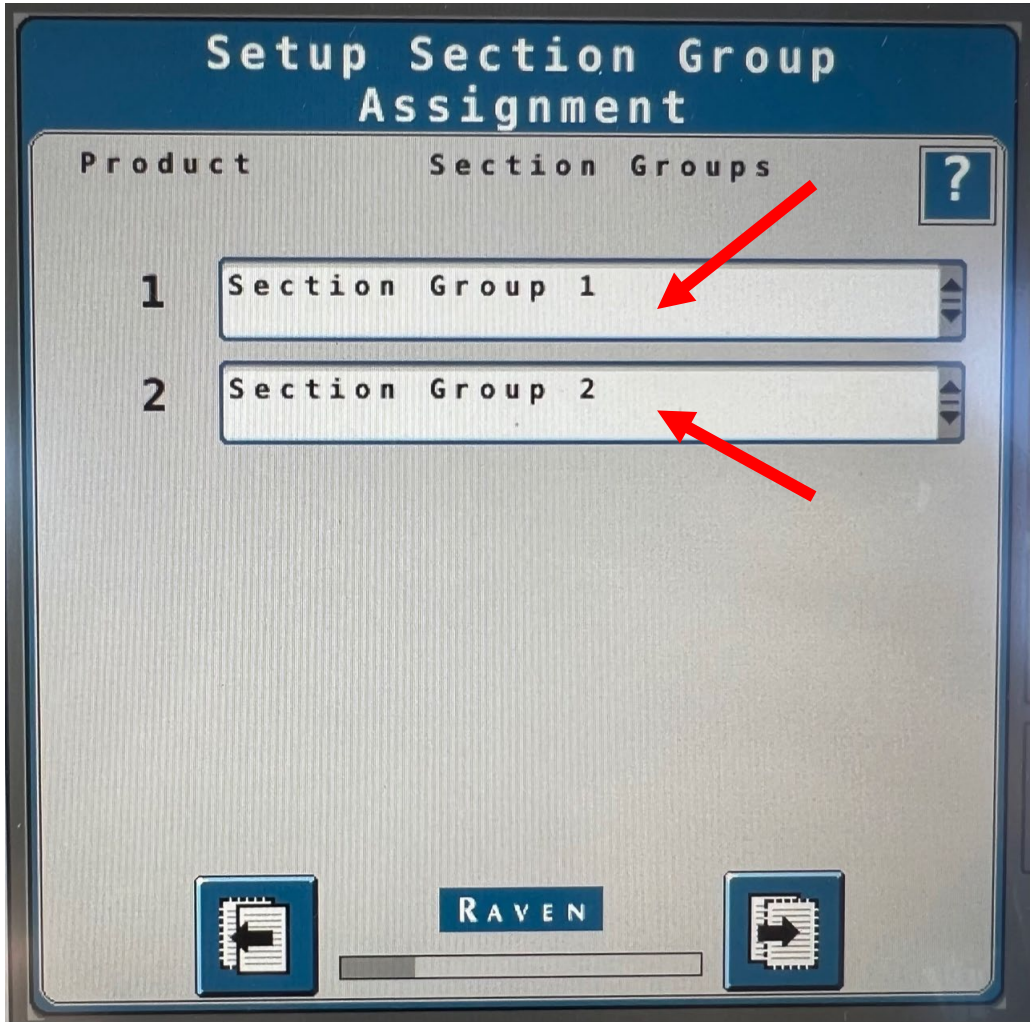
- *Under Setup Section Harnessing Enter “1” for Starting Section Driver and the correct number of sections for Section Group 1.*
- *Enter “7” for Starting Section Driver 2 and 2 Sections.*



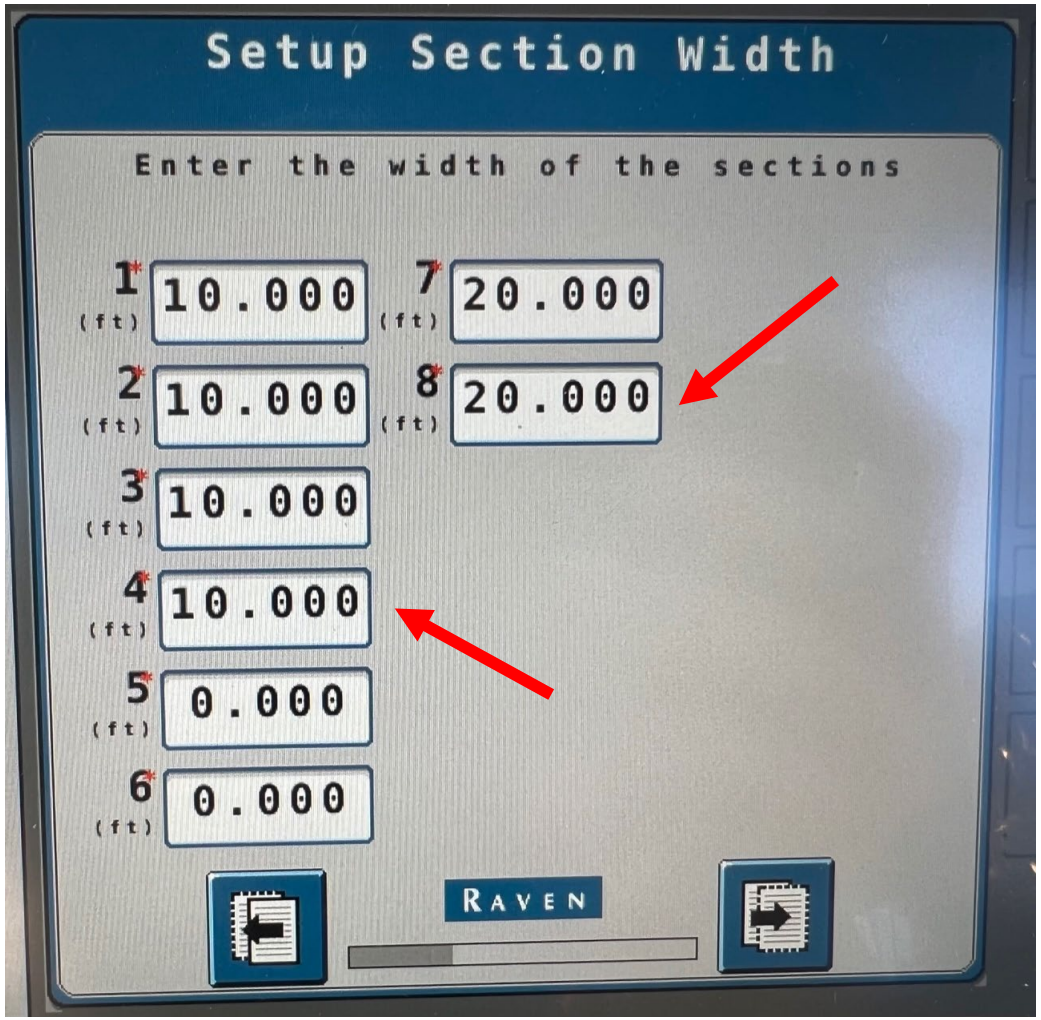
- *Under Setup Section Groups Enter “1” for Starting Section Driver and the correct number of sections for Section Group 1 and select “Equal Section Widths”.*
- *For Section Group 2 Enter “7” as the Starting Section Driver and the correct number of Sections and select “Equal Section Widths”*
- *The first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



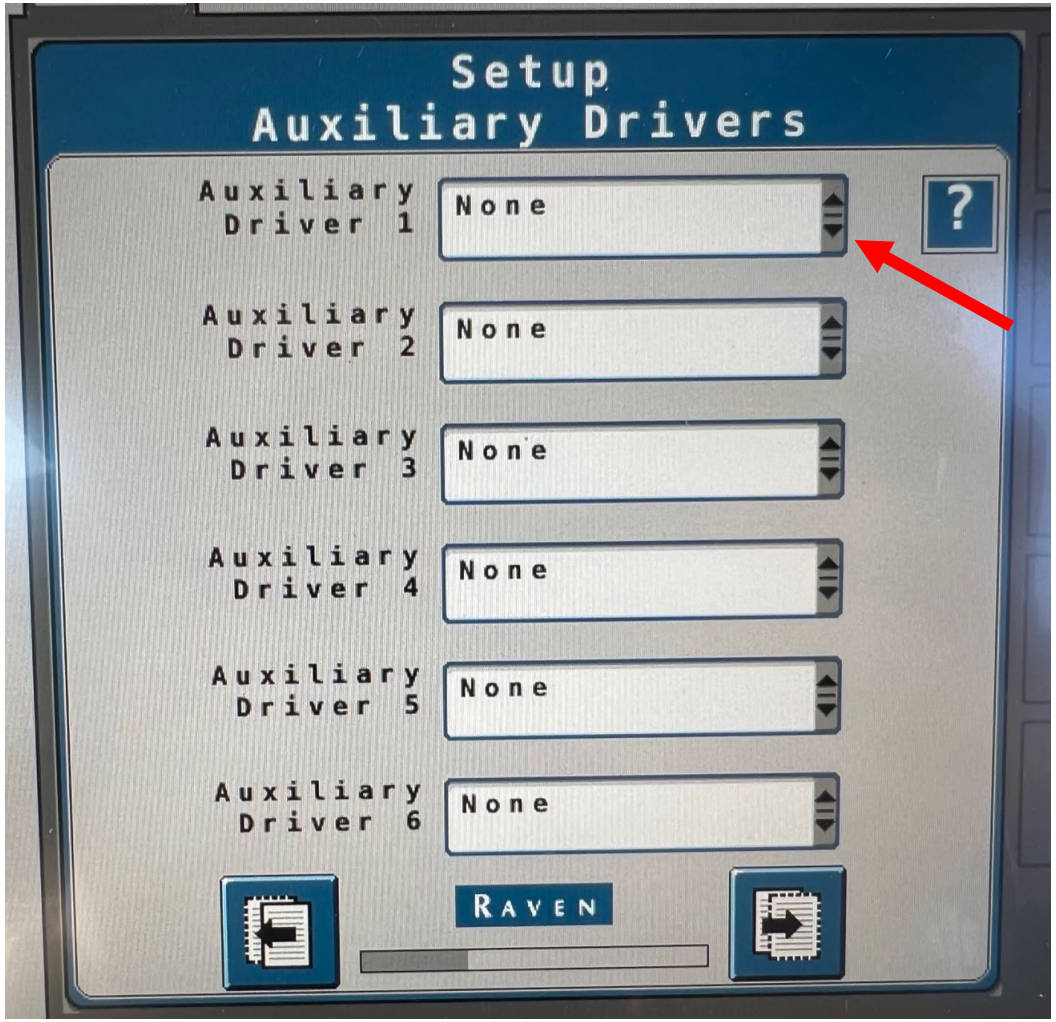
- *Under Setup Section Groups select “Section Group 1” for Product 1*
- *Select “Section Group 2” for Product 2*



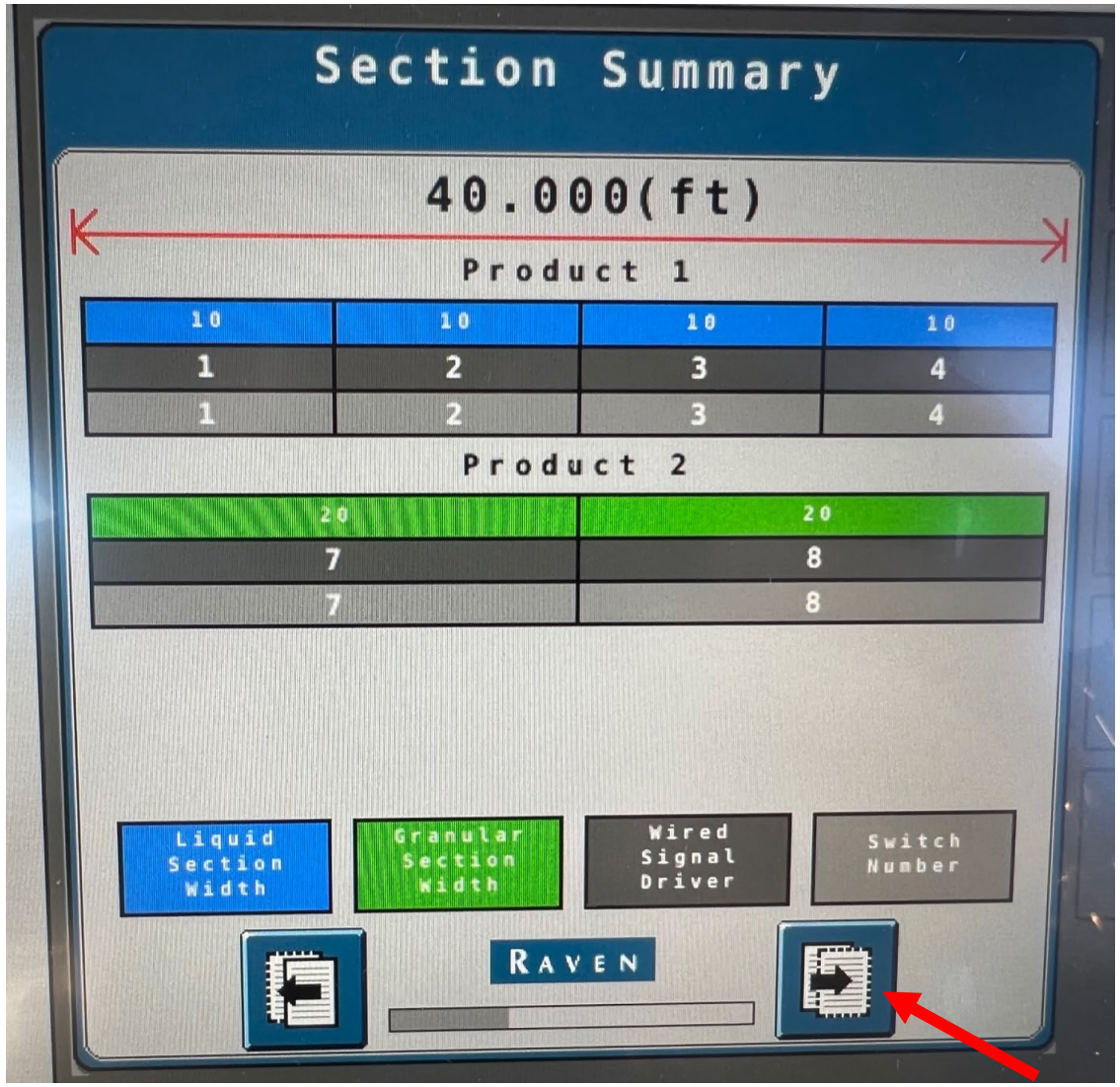
- ***Under Setup Section Width enter the correct width for each section.***



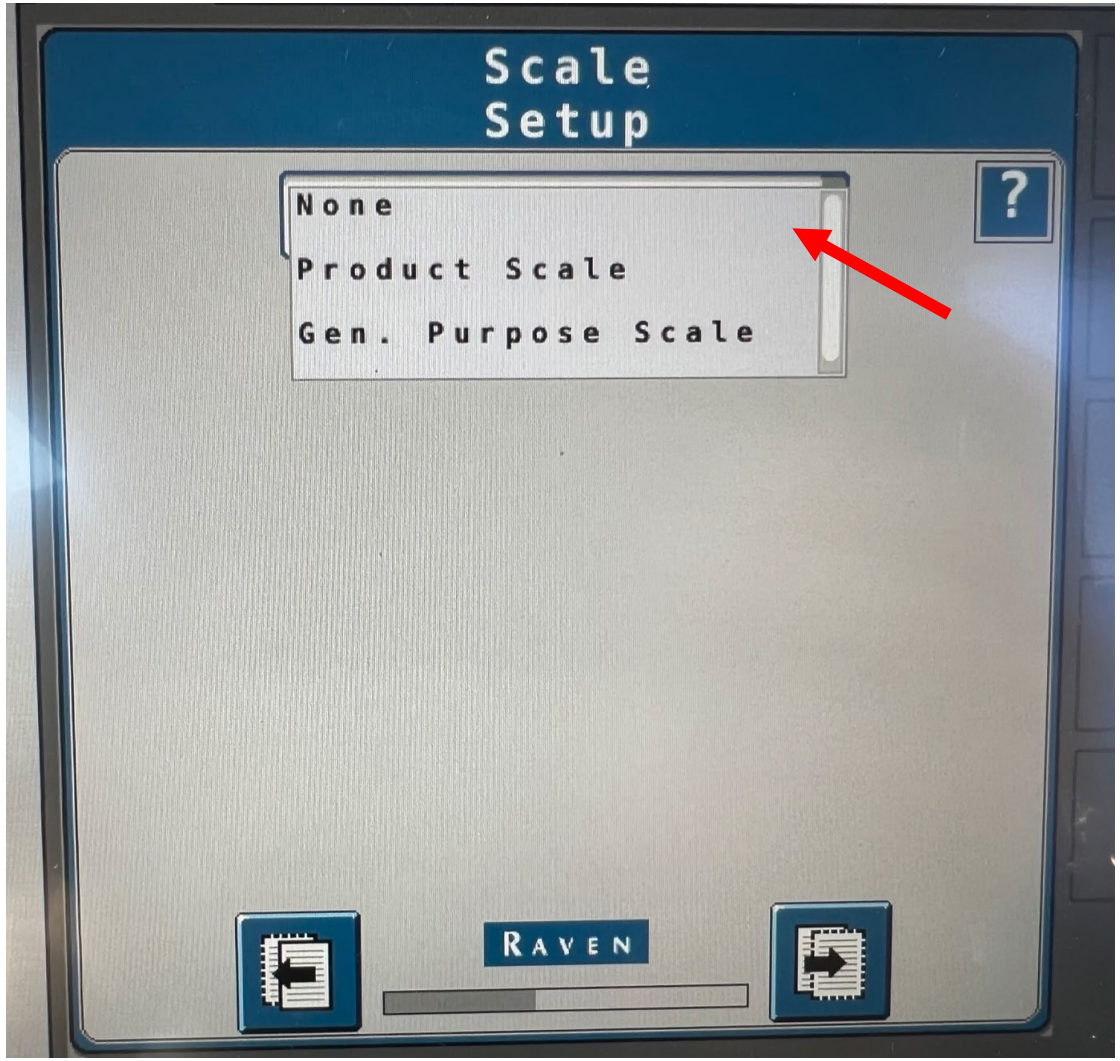
- ***Under Setup Auxiliary Drivers select “None”***



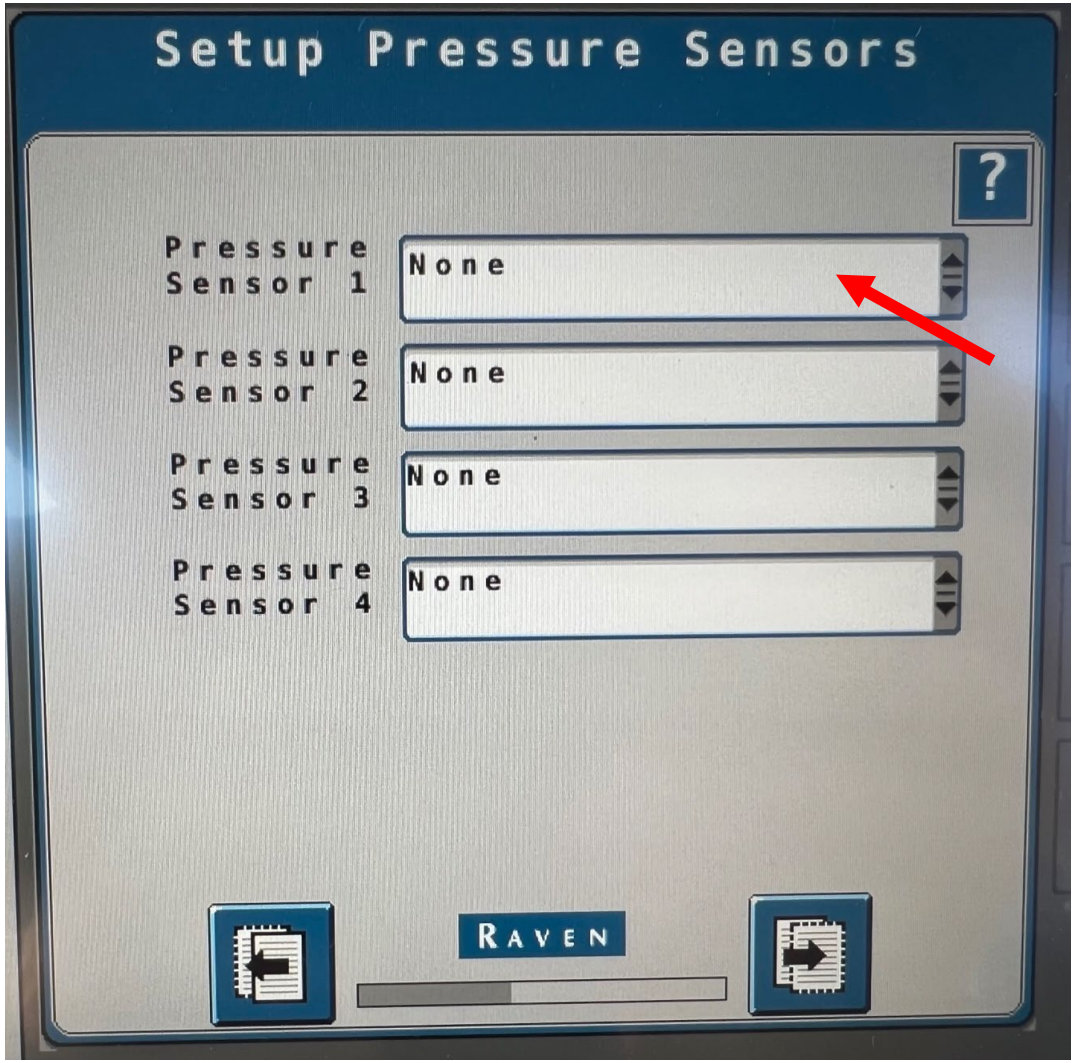
- ***Verify sections are correct and select next.***



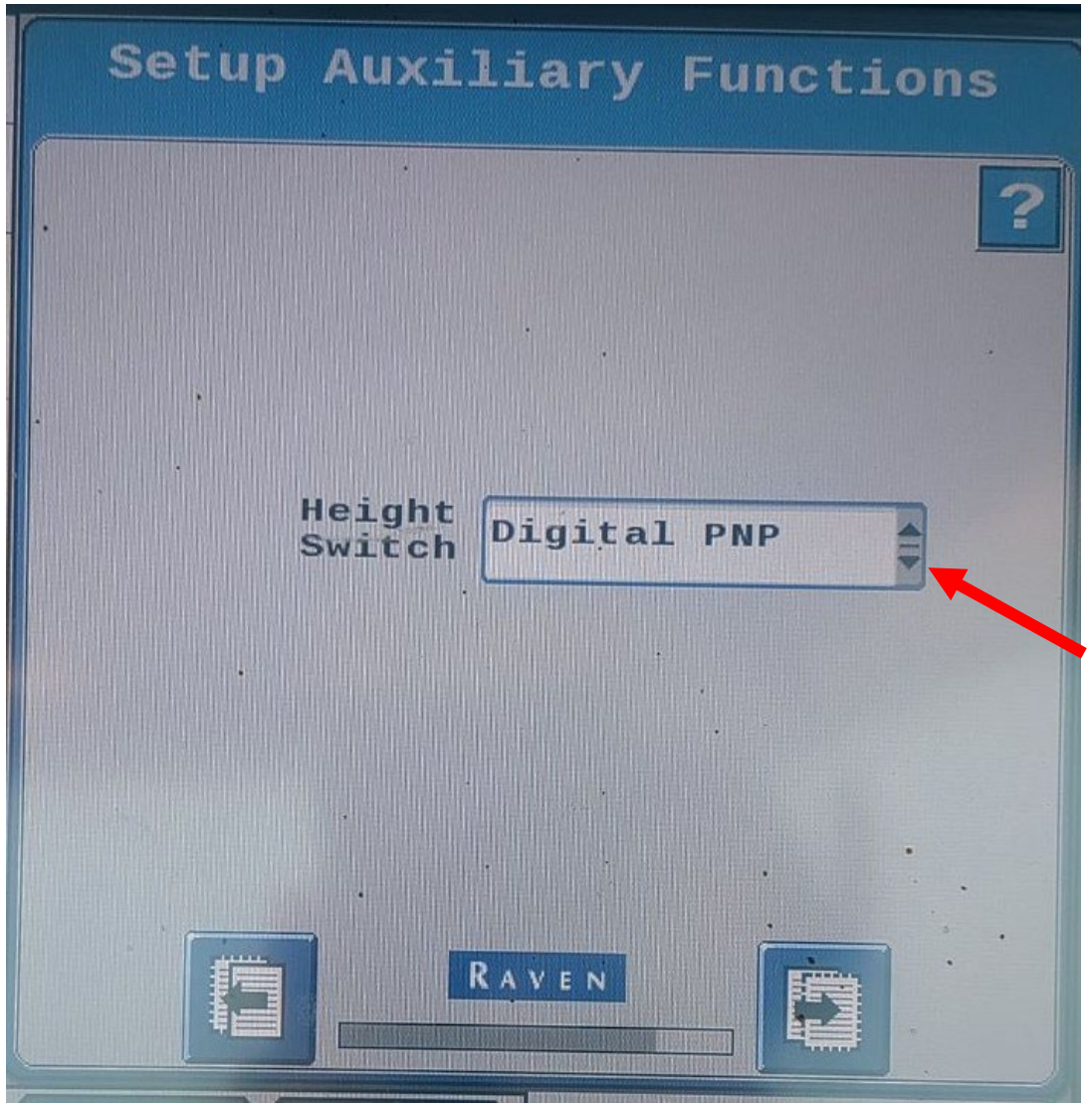
- *If no scales are present, select “None”*



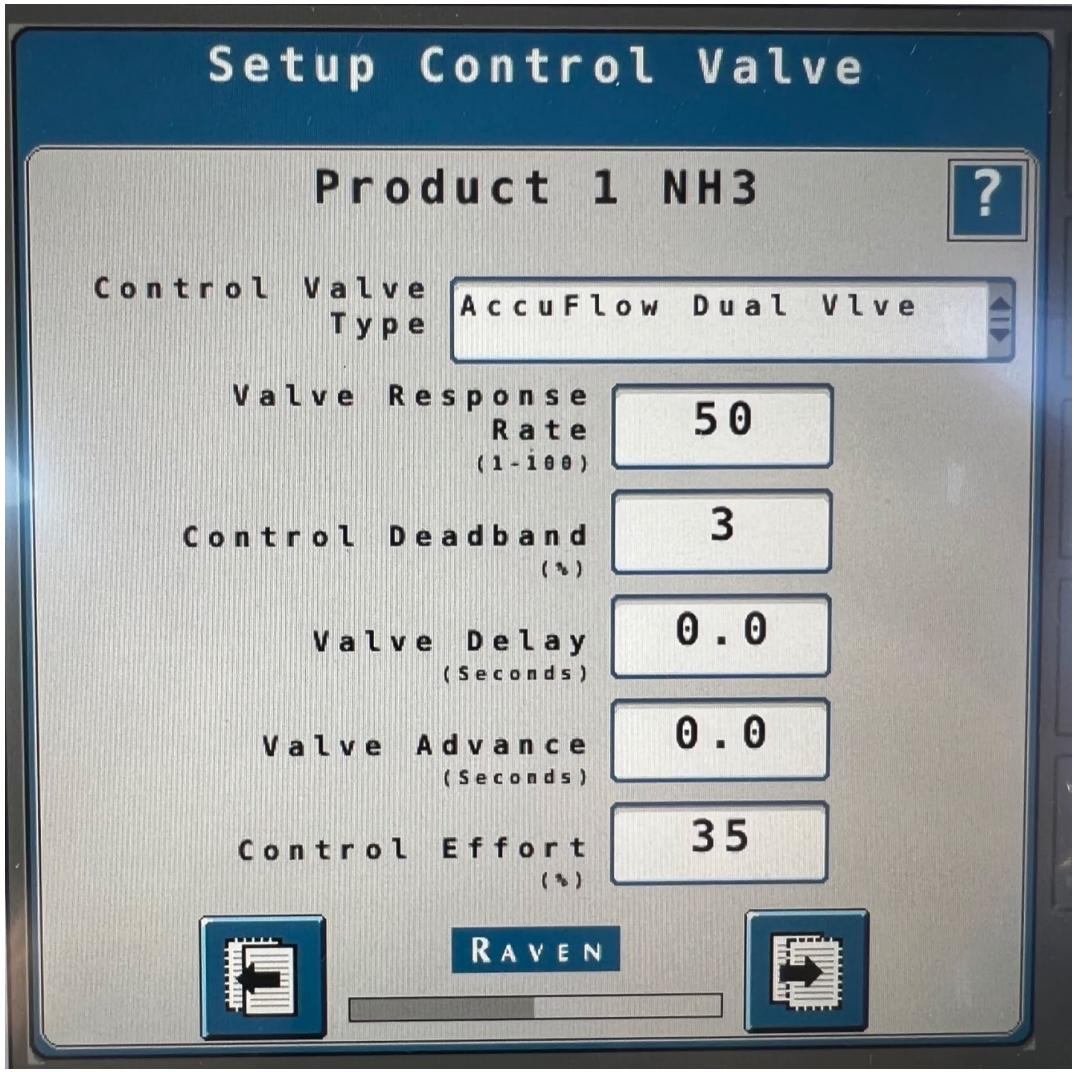
- ***Under Setup Pressure Sensors select “None”***



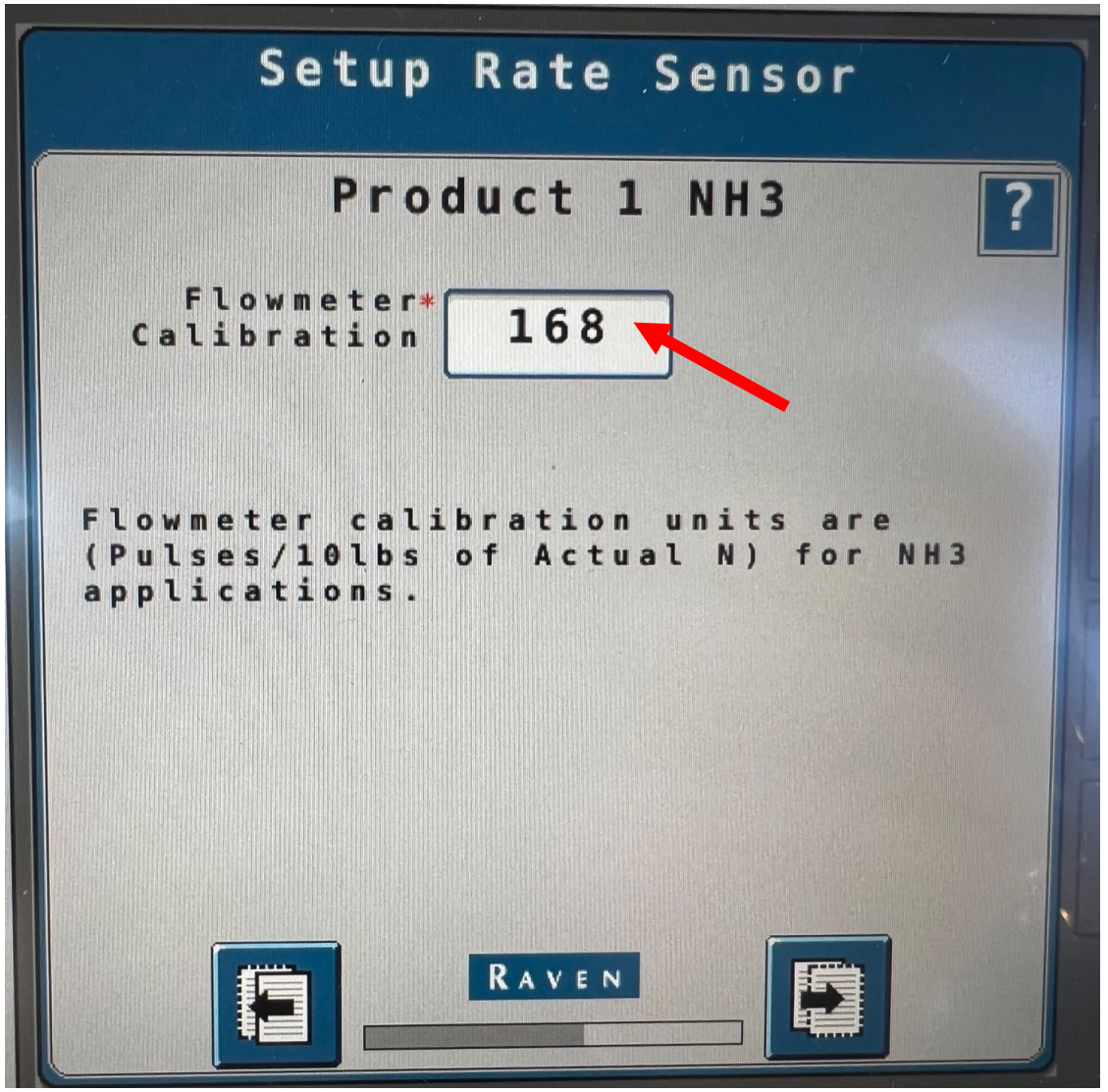
- ***Under Setup Auxiliary Functions select “Digital PNP”***



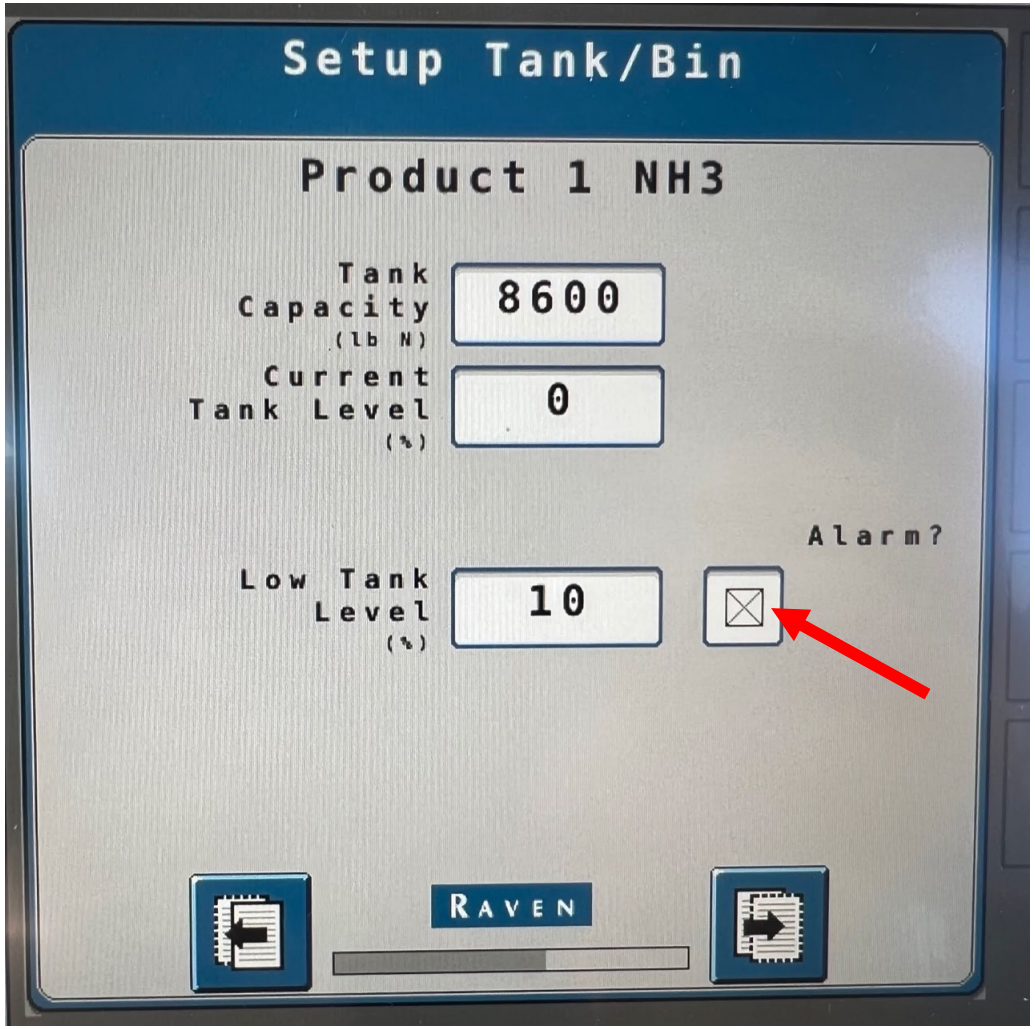
- *Under Setup Control Valve-Product 1 NH3 select “AccuFlow Dual Valve” under Control Valve Type*
- *Enter “50” for Valve Response Rate*
- *Enter “3” for Control Deadband*
- *Enter “0” for Valve Delay*
- *Enter “0” for Valve Advance*
- *Enter “35” for Control Effort*



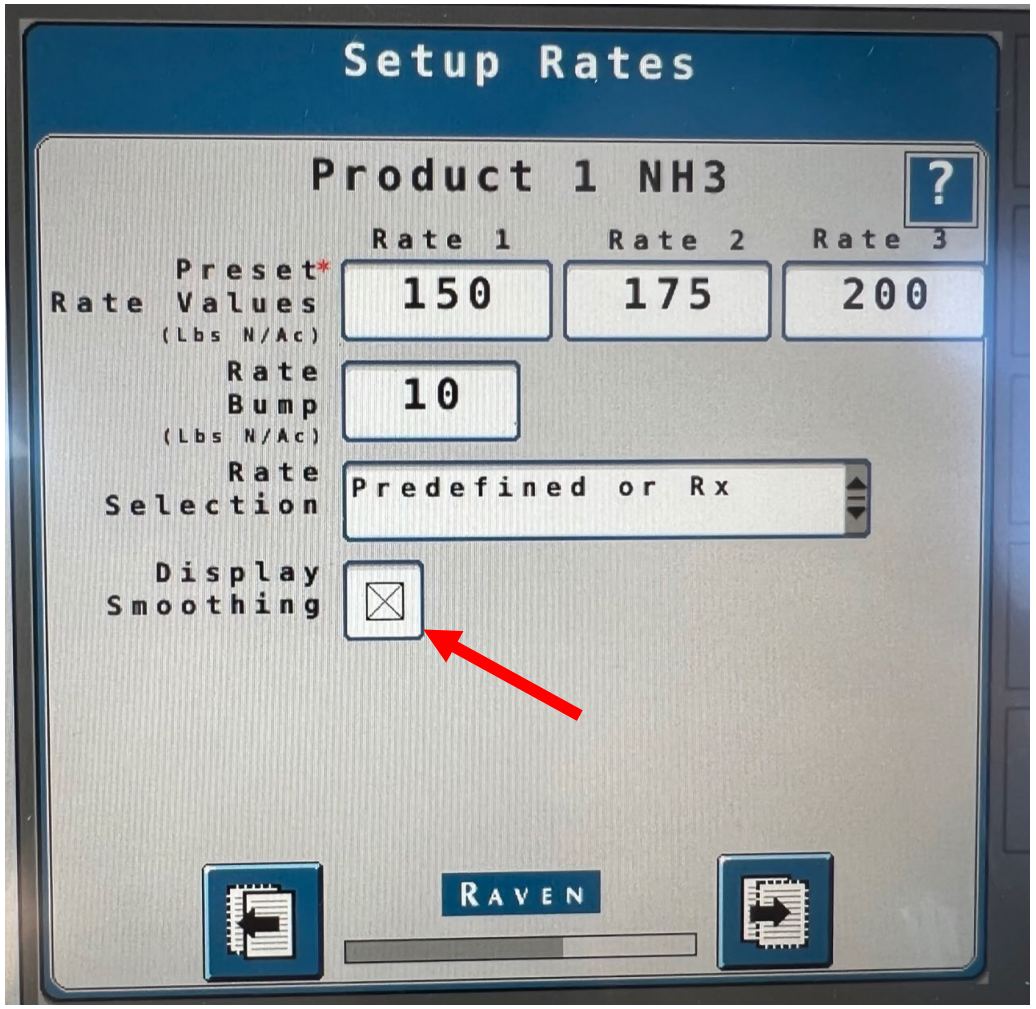
- ***Under Setup Rate Sensors-Product 1 NH3 enter the Flowmeter Calibration number from the tag on the flow meter***



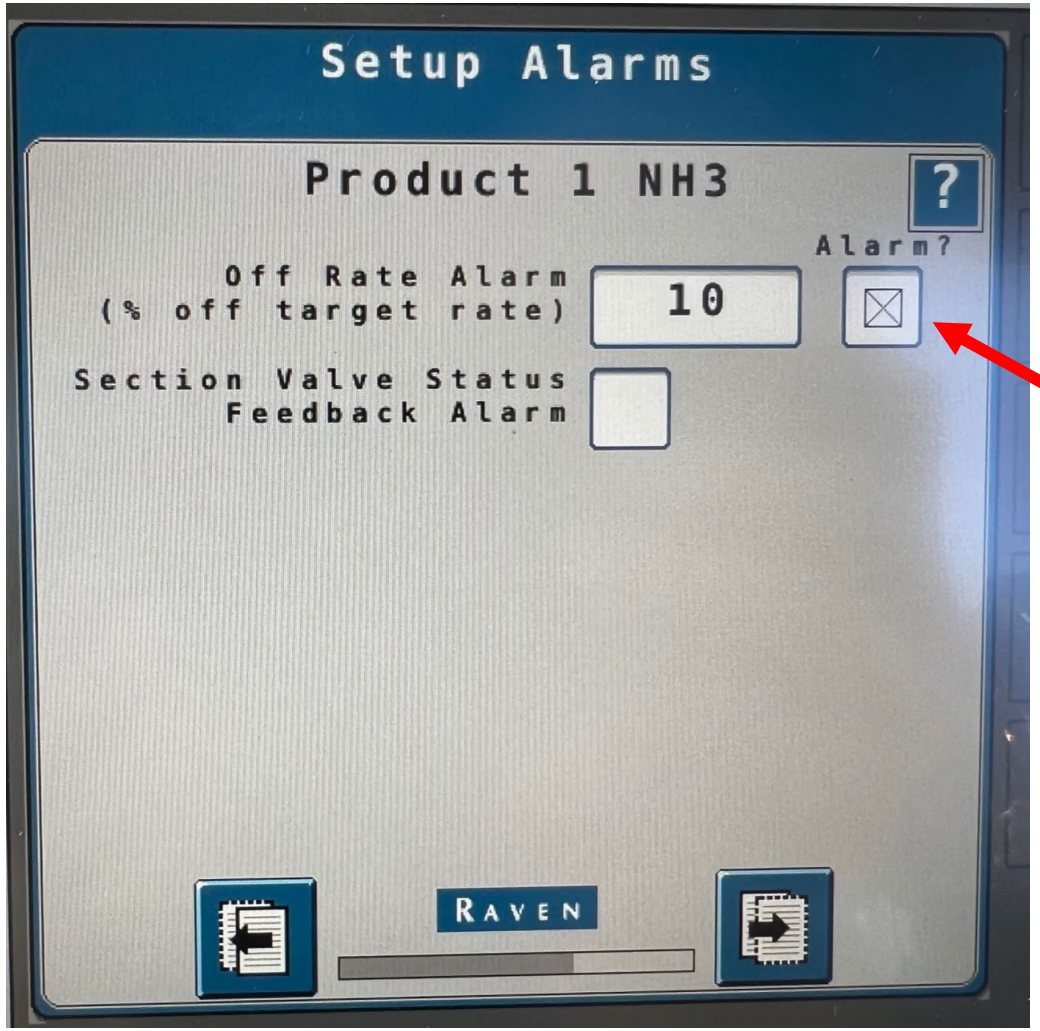
- *Under Setup Tank-Product 1 NH3 enter the desired Tank Capacity and*
- *Enter "10" for Low Tank Level and check "Alarm?" box*



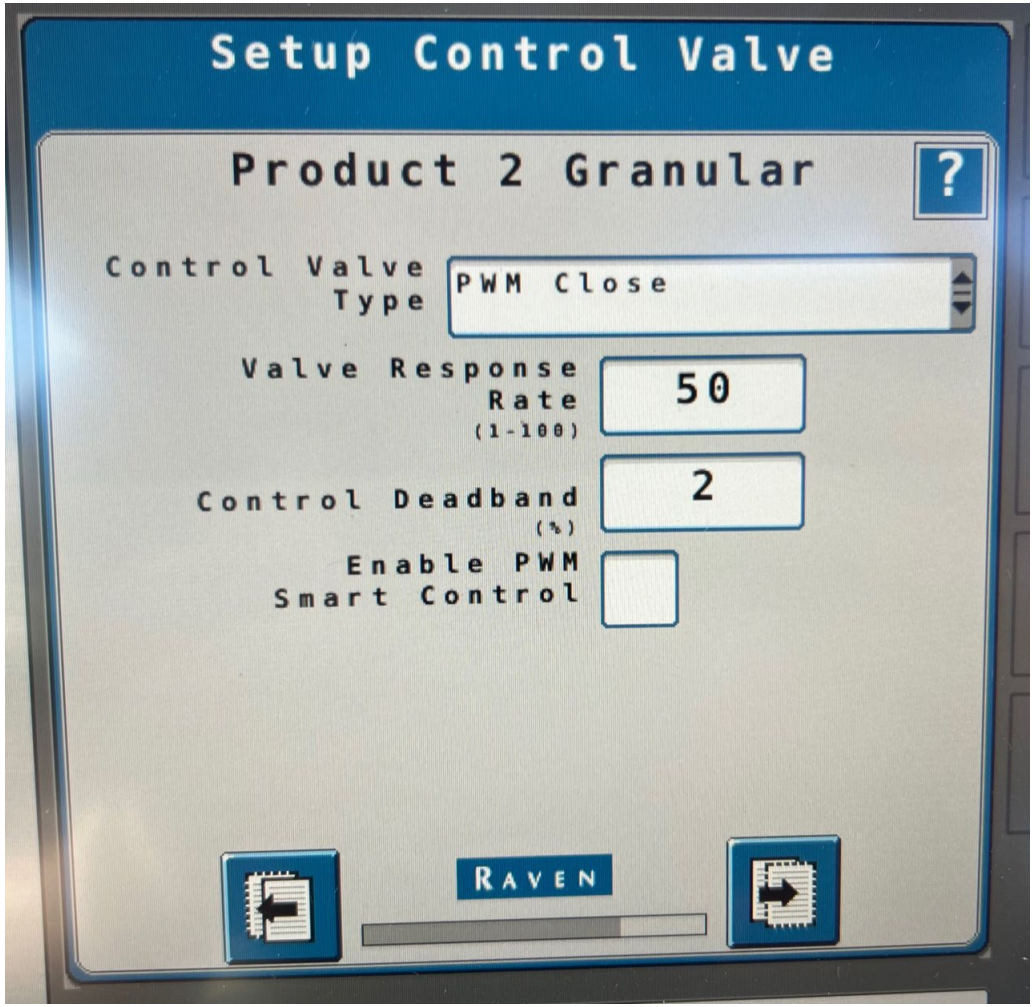
- *Under Setup Rates-Product 1 NH3 enter the desired Preset Rate Values*
- *Enter “5” for Rate Bump*
- *Select desired Rate Selection and check Display Smoothing Box*



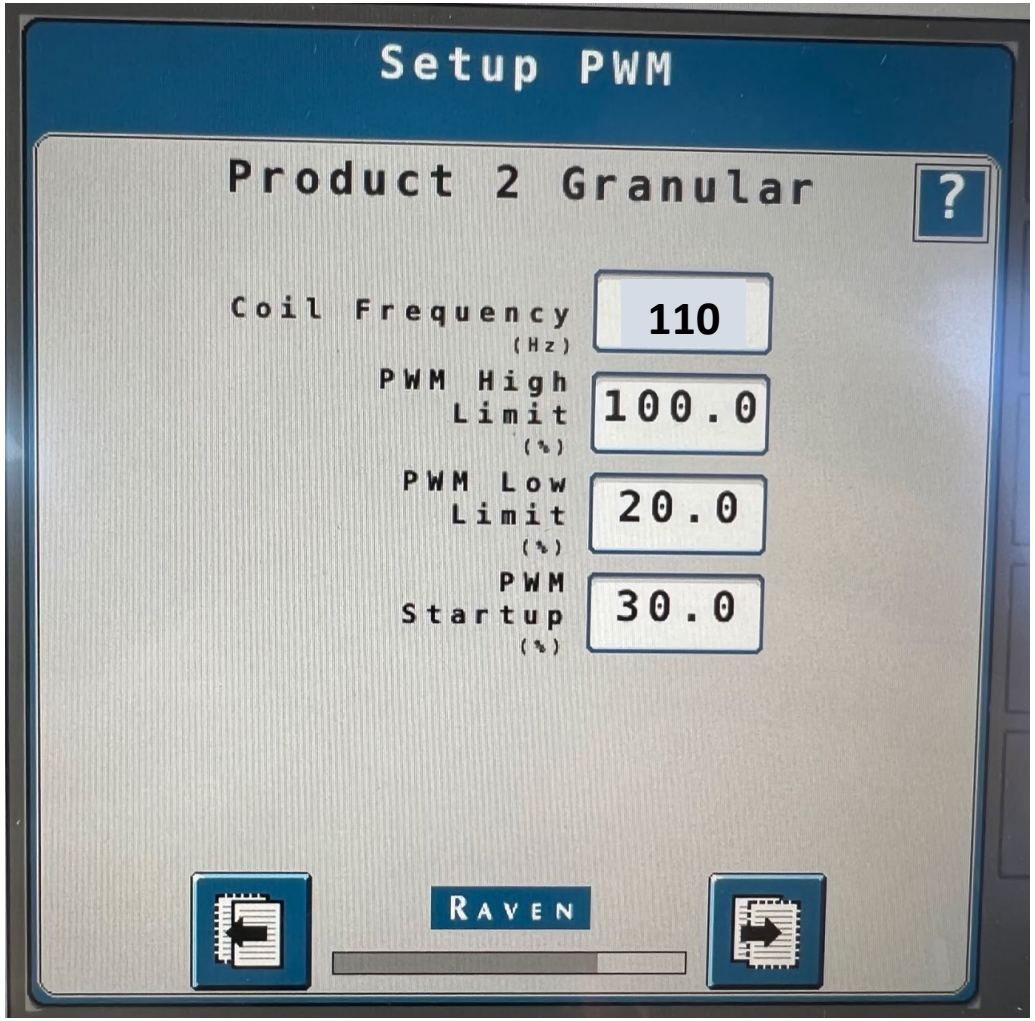
- ***Under Setup Alarms-Product 1 NH3 enter the desired Off Rate Alarm and select the "Alarm?" Checkbox***



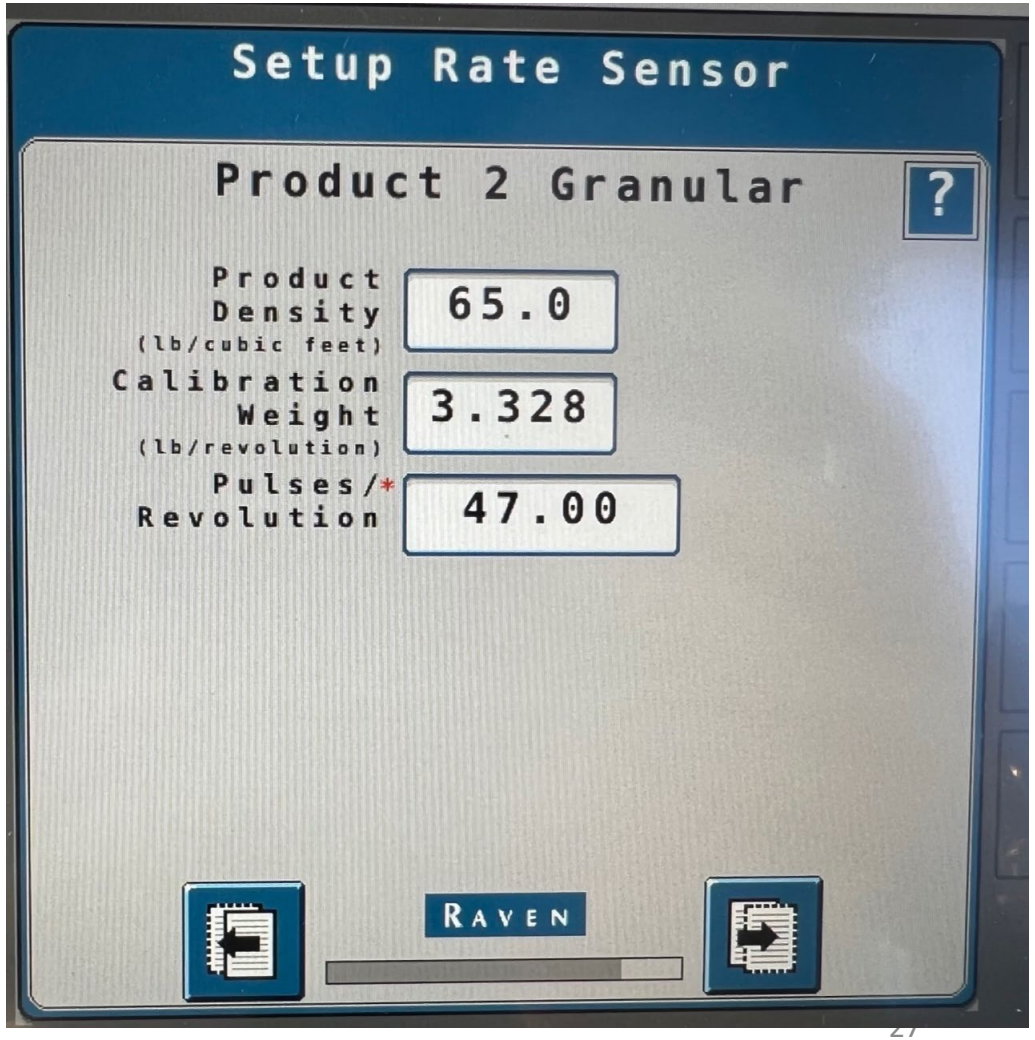
- *Under Setup Control Valve-Product 2 Granular select “PWM Close” under Control Valve Type*
- *Enter “50” for Valve Response Rate*
- *Enter “2” for Control Deadband*



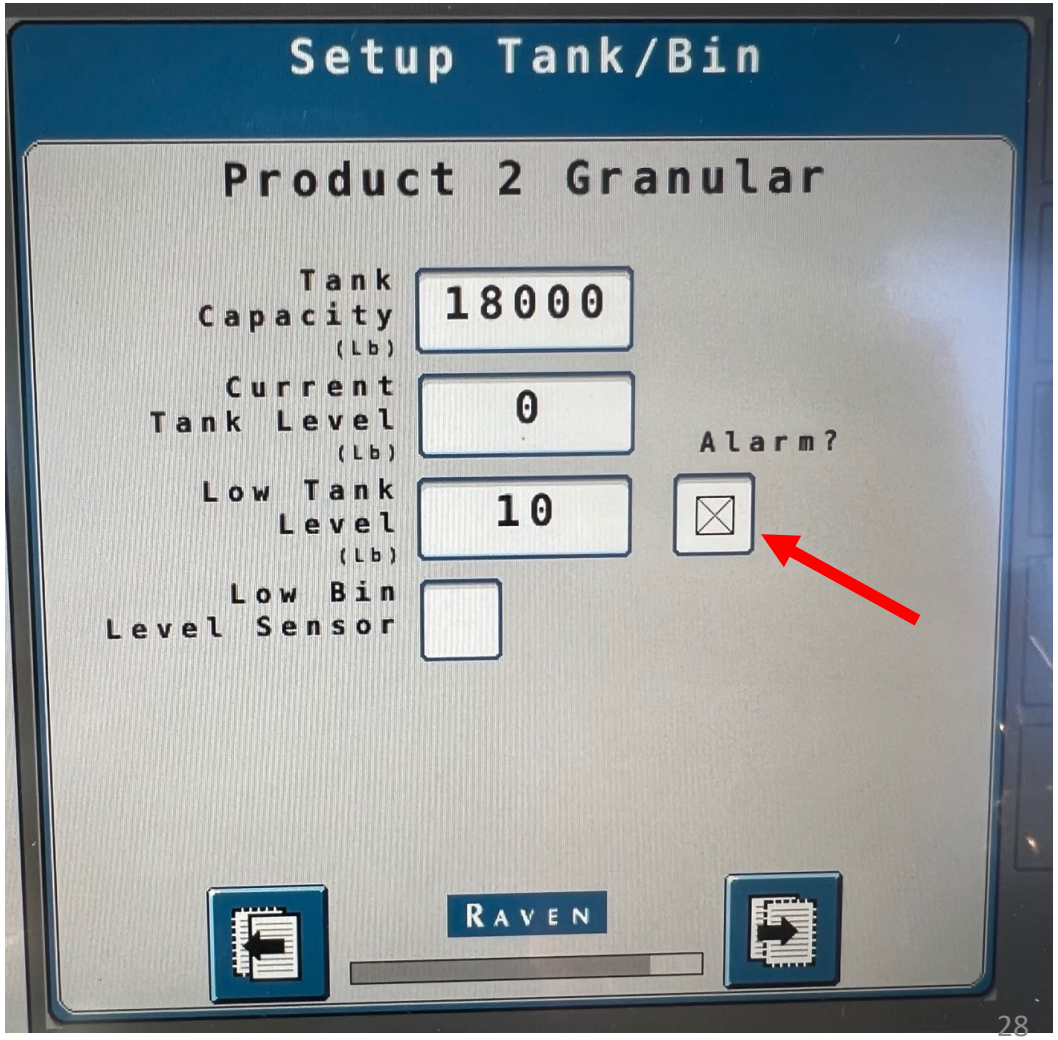
- *Under Setup Control Valve-Product 2 Granular enter “110” for Coil Frequency*
- *Enter “100” for High Limit*
- *Enter “20” for Low Limit*
- *Enter “30” for PWM Startup*



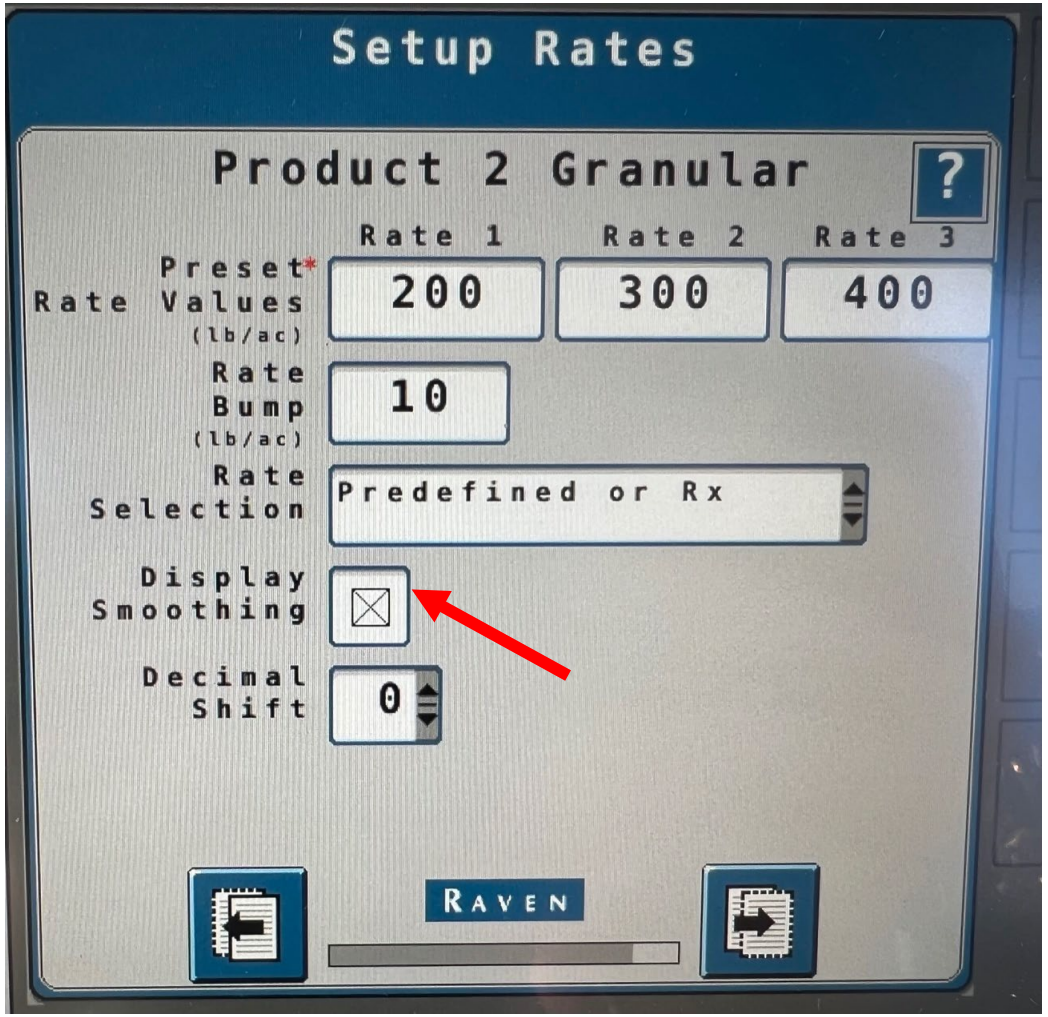
- *Under Setup Rate Sensor-Product 2 Granular*
- *Enter Correct for Product Density*
- *Calculate Calibration Weight*
  - *Cal. Weight=.0032 x # of rows x Product Density*
- *For Parker Hydraulic Motors Enter “47” for Pulses/Revolution*
- *For Eaton Motors Enter “94”*



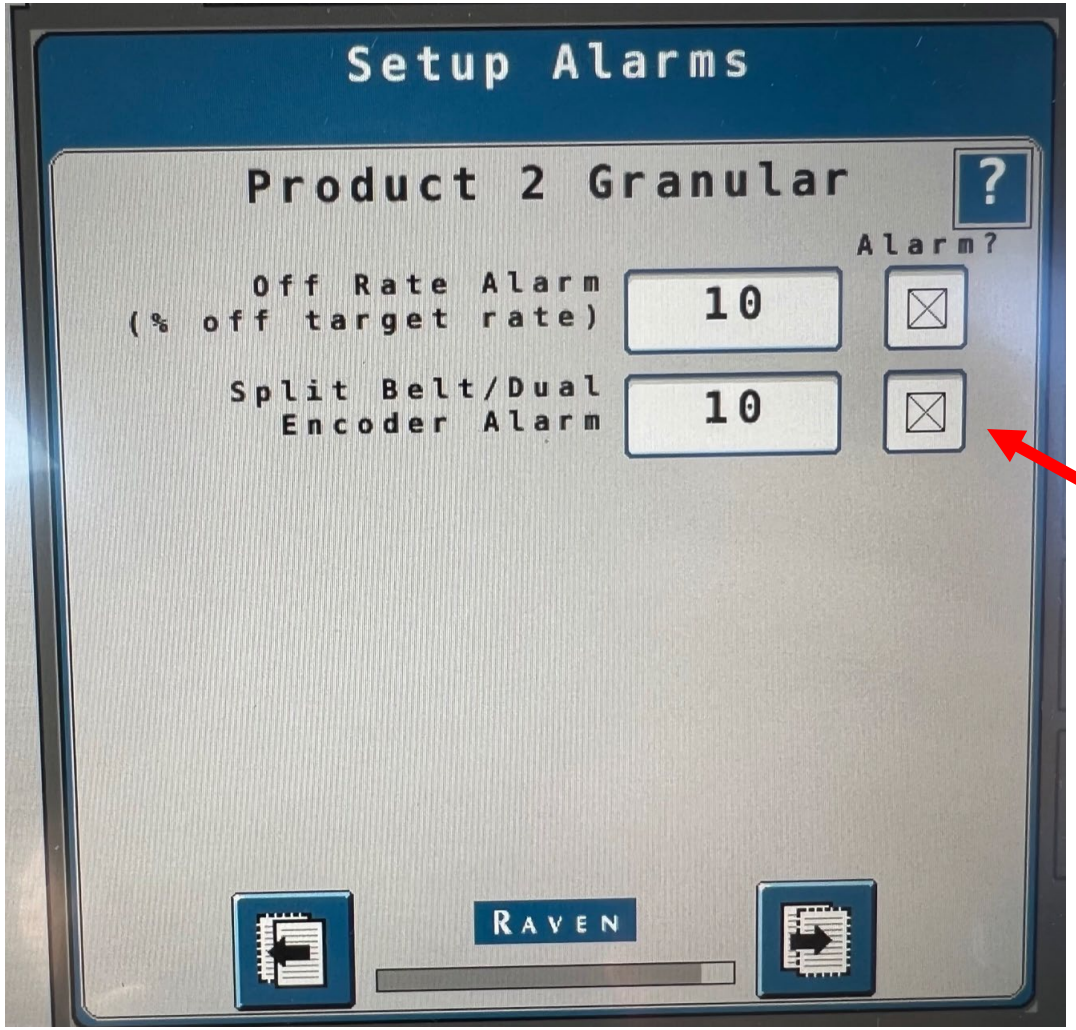
- *Under Setup Tank-Product 2 Granular*
- *Enter “18000” for Tank Capacity*
- *Enter “1500” for Low Tank Level*
- *Select “Alarm?” Checkbox*



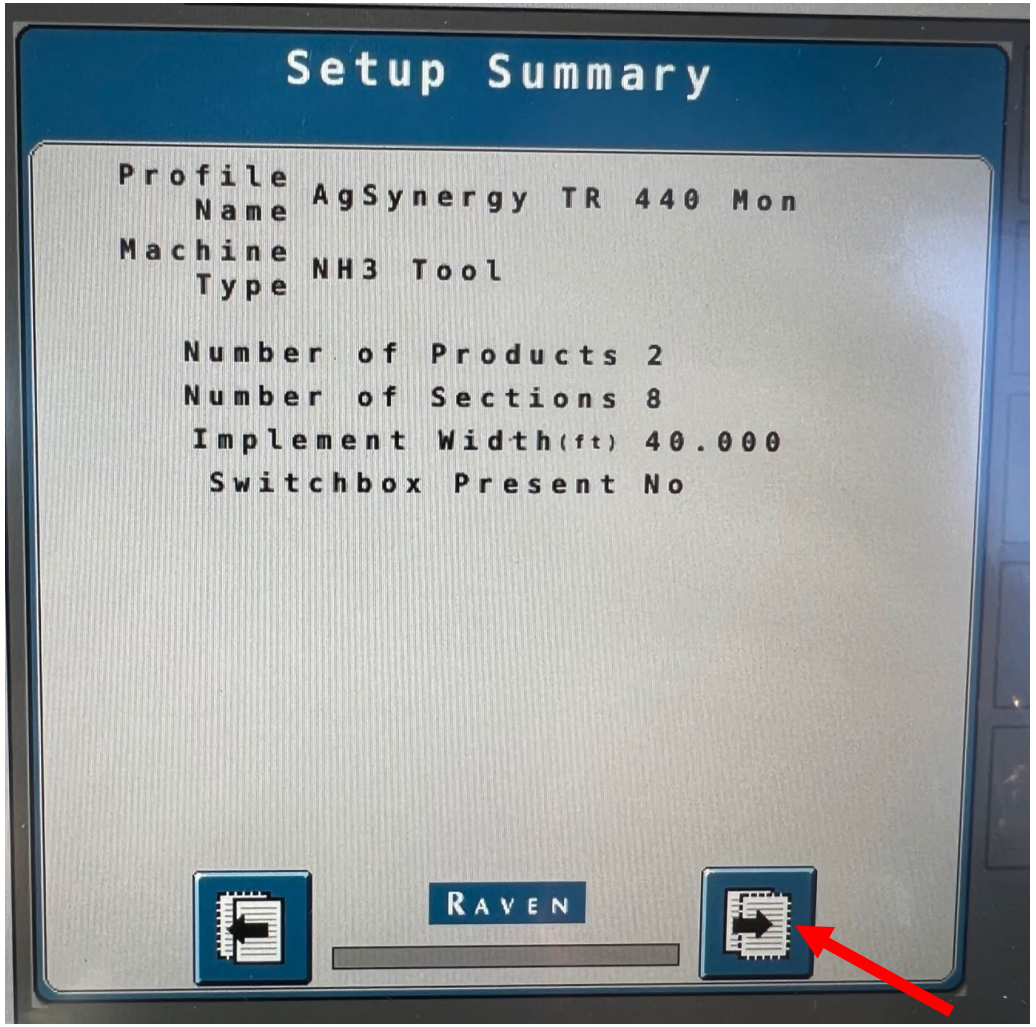
- *Under Setup Rates-Product 2 Granular*
- *Enter Desired Preset Rate Values*
- *Enter “10” for Rate Bump*
- *Select Correct Rate Selection*
- *Select “Display Smoothing” Checkbox*



- *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 = $\frac{\text{Actual Rate or Scale weight}}{\text{Desired Rate or Weight displayed on controller}}$ X Current CFR = New CFR Cal#

Spreader Constant = $\frac{\text{Meter Speed Sensor Cal\#}}{\text{CFR}}$ = Spreader Constant

Adjust Spreader Constant = $\frac{\text{Spreader Constant}}{\text{Actual Rate}}$ X Desired Rate=New Spreader Constant