



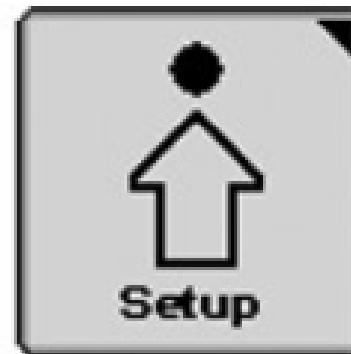
***TR 430/440  
Dual Product Setup  
John Deere Rate  
Controller 2000  
Montag Gen 1 Dry Box***



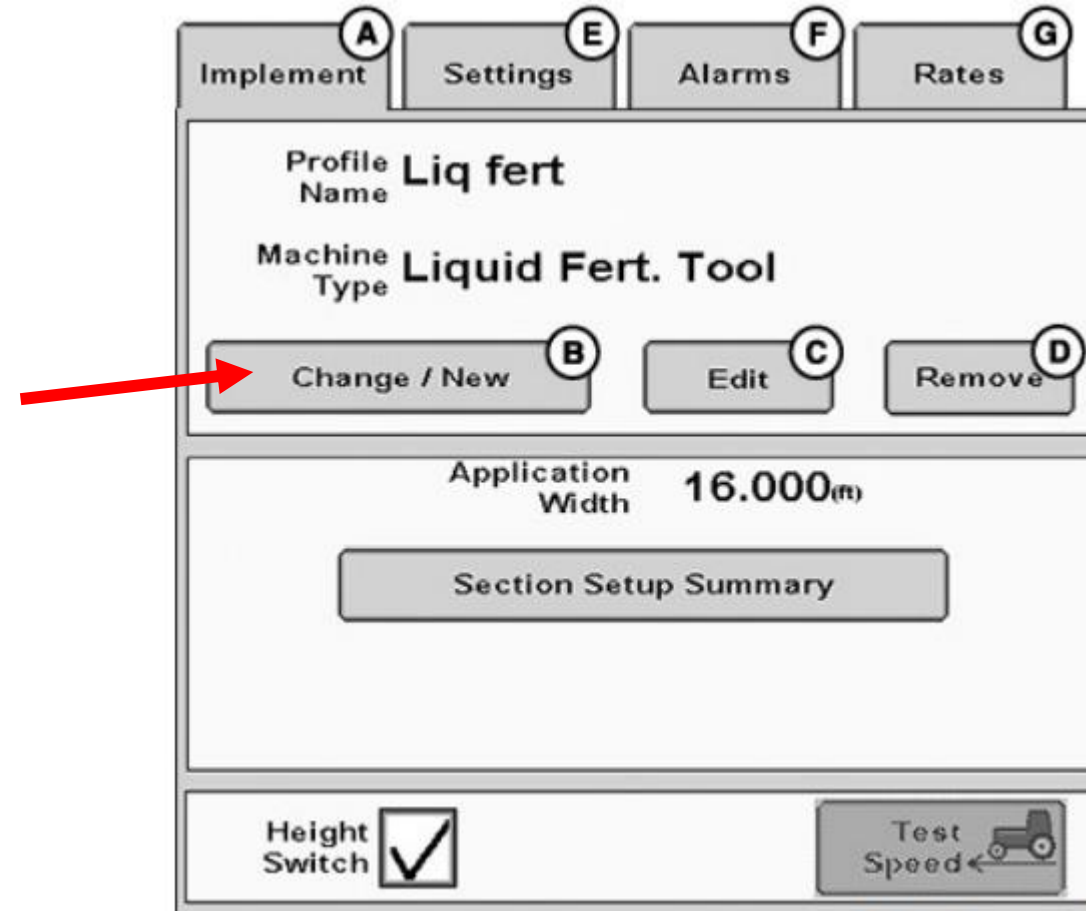
- *Open the Rate Controller 2000 Main page by selecting the Rate Controller 2000 Icon*



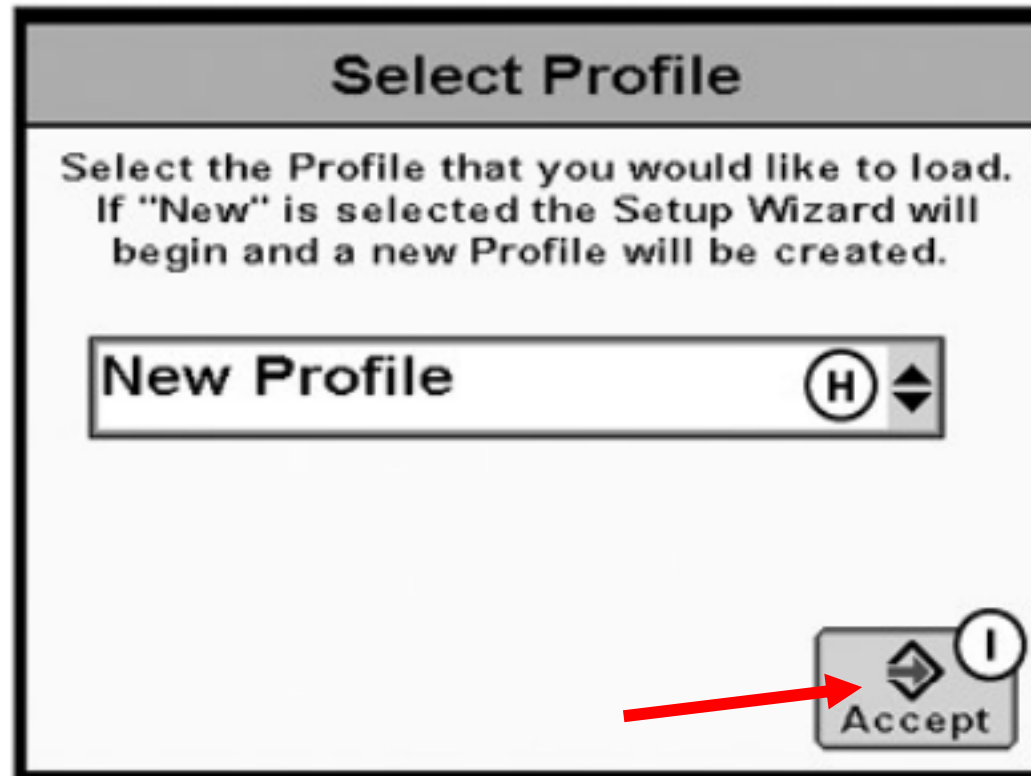
- *To begin setup select the Setup Softkey*



- *Under the Implement Tab (A), select Change/New (B)*



- *Select New Profile from the drop down menu (H), Then Press Accept (I)*



- **Create a Profile Name (A), Select NH3 Machine as Machine Type (B), enter Application Width (C), and press the next Icon (E)**

**Name Profile**

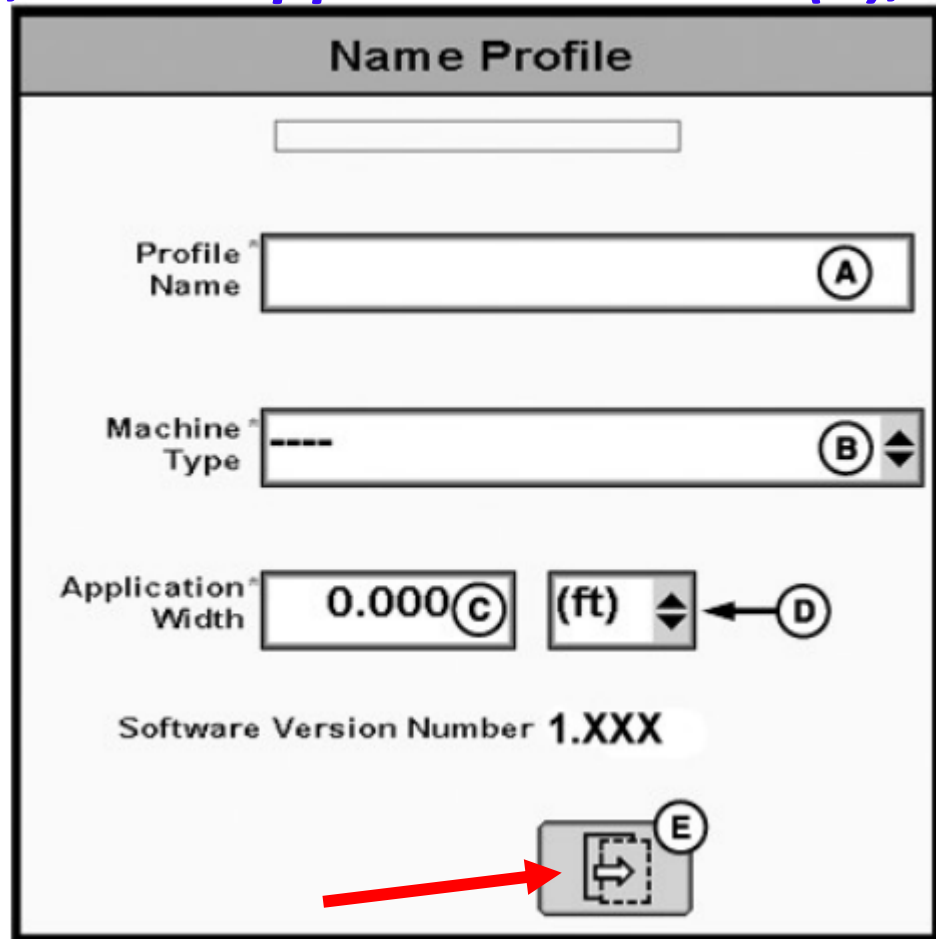
Profile Name  (A)

Machine Type  (B)

Application Width  (C)  (D)

Software Version Number 1.XXX

(E)



**ISOBUS VT** ⓘ ⓘ

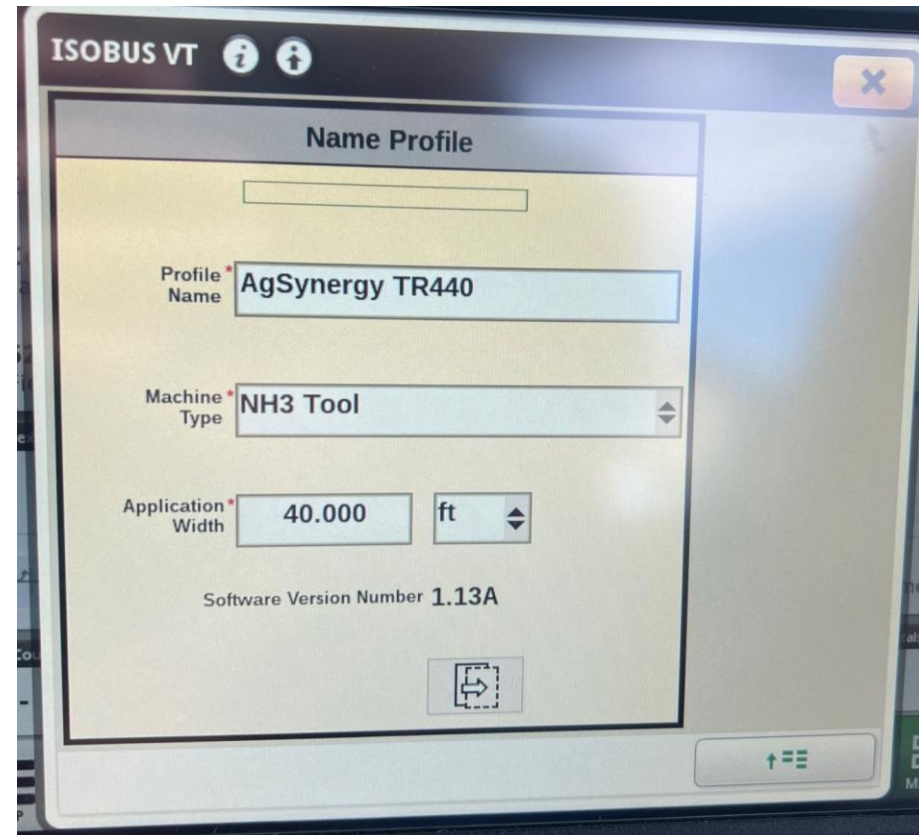
**Name Profile**

Profile Name

Machine Type

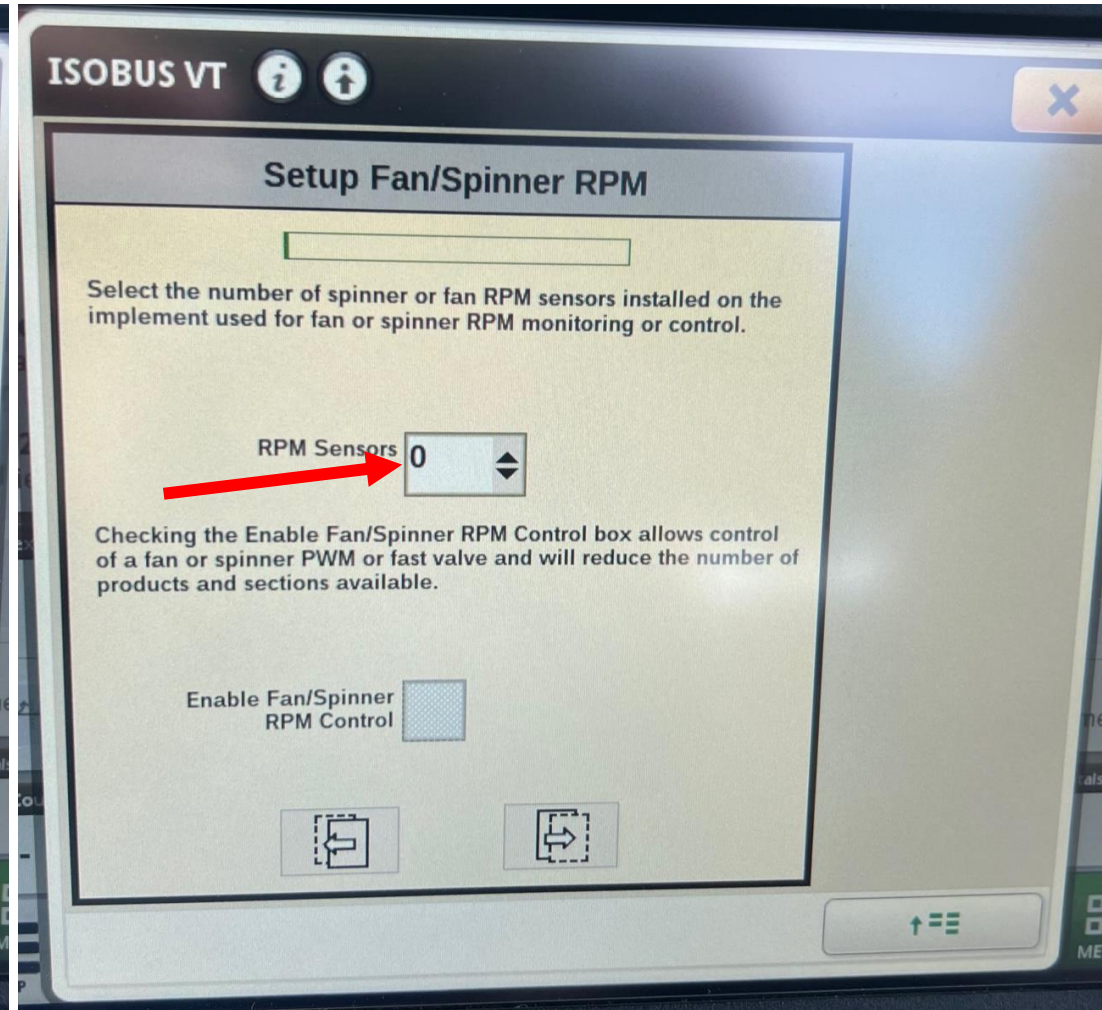
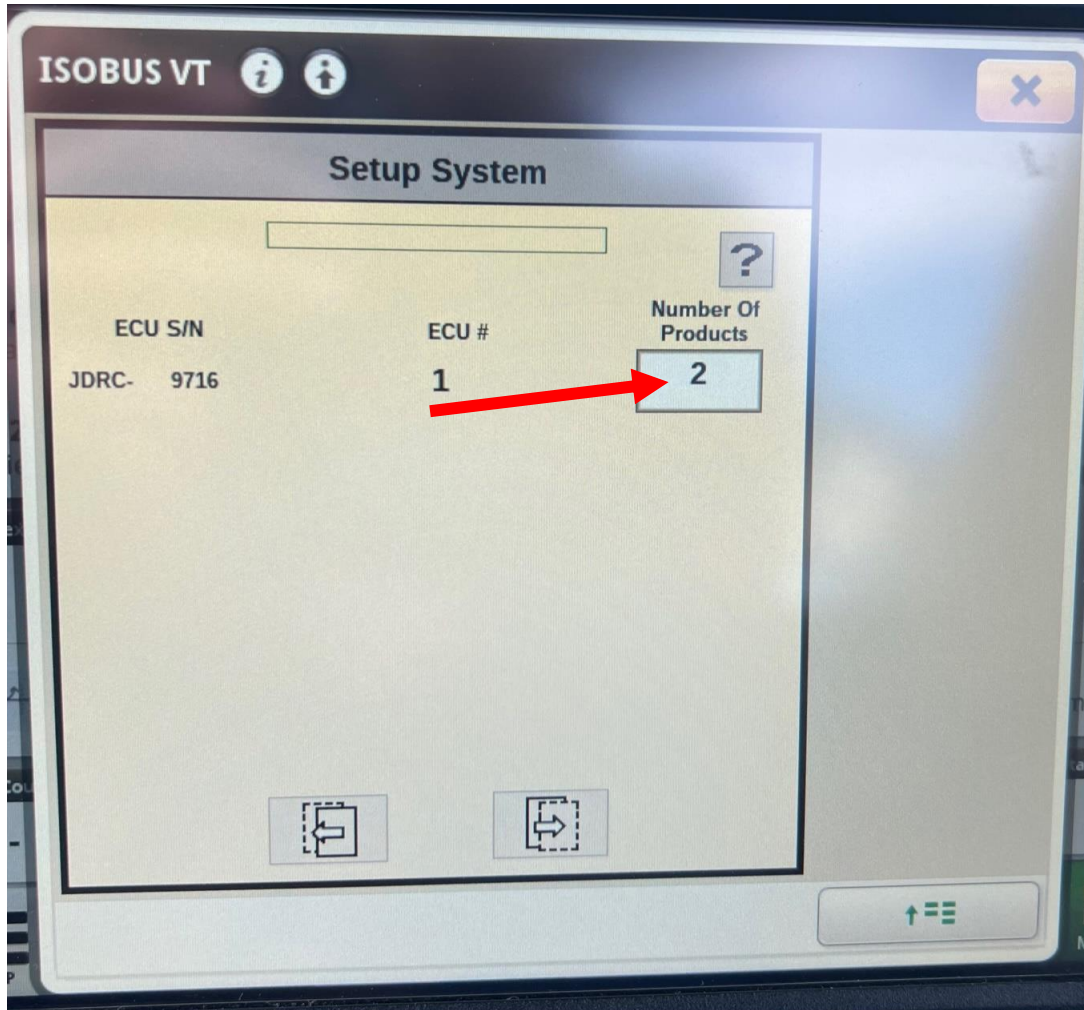
Application Width

Software Version Number 1.13A

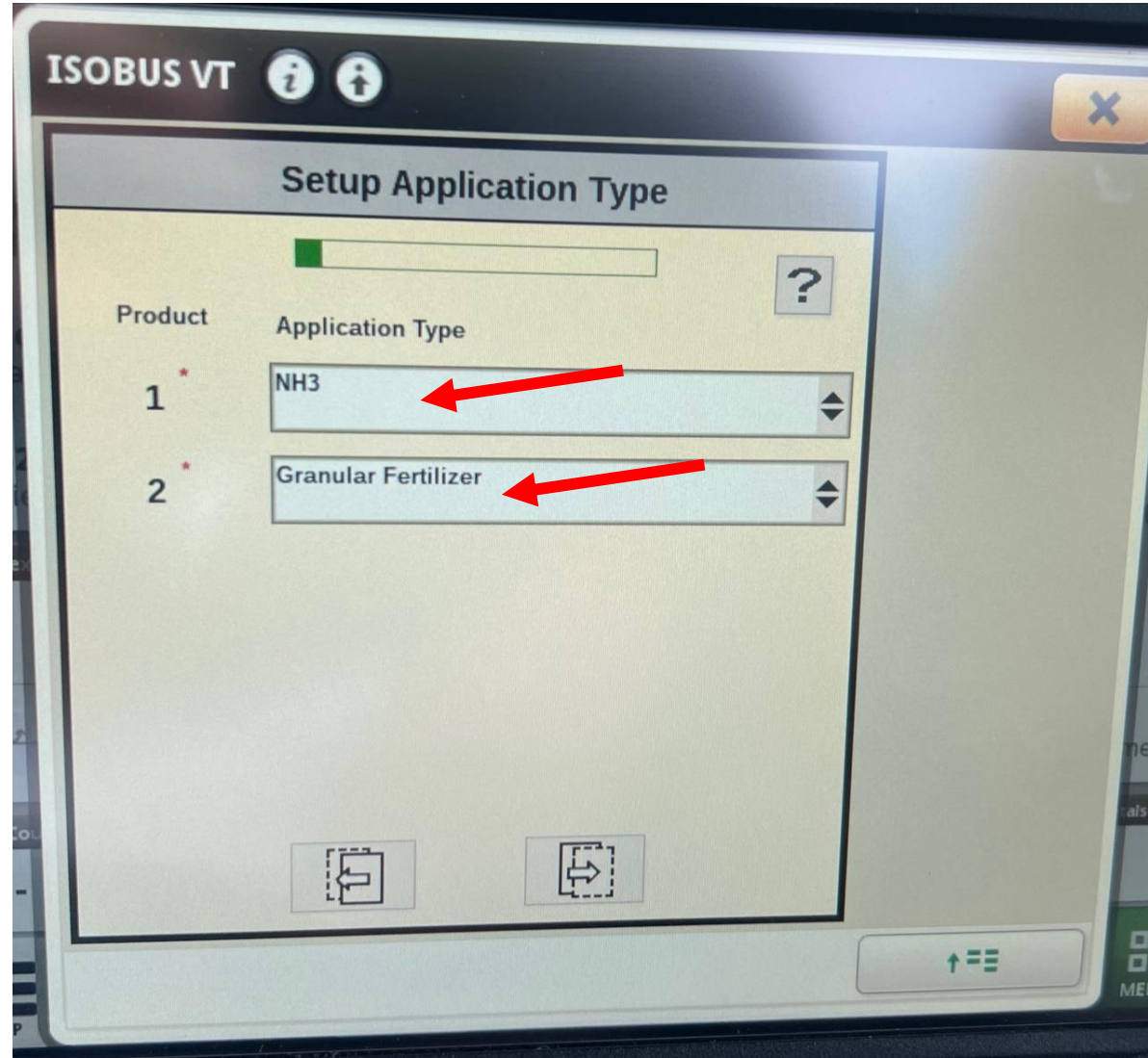




- Under Setup System enter 2 for the number of products
- Under Setup Fan Select "0" from the RPM Sensors dropdown

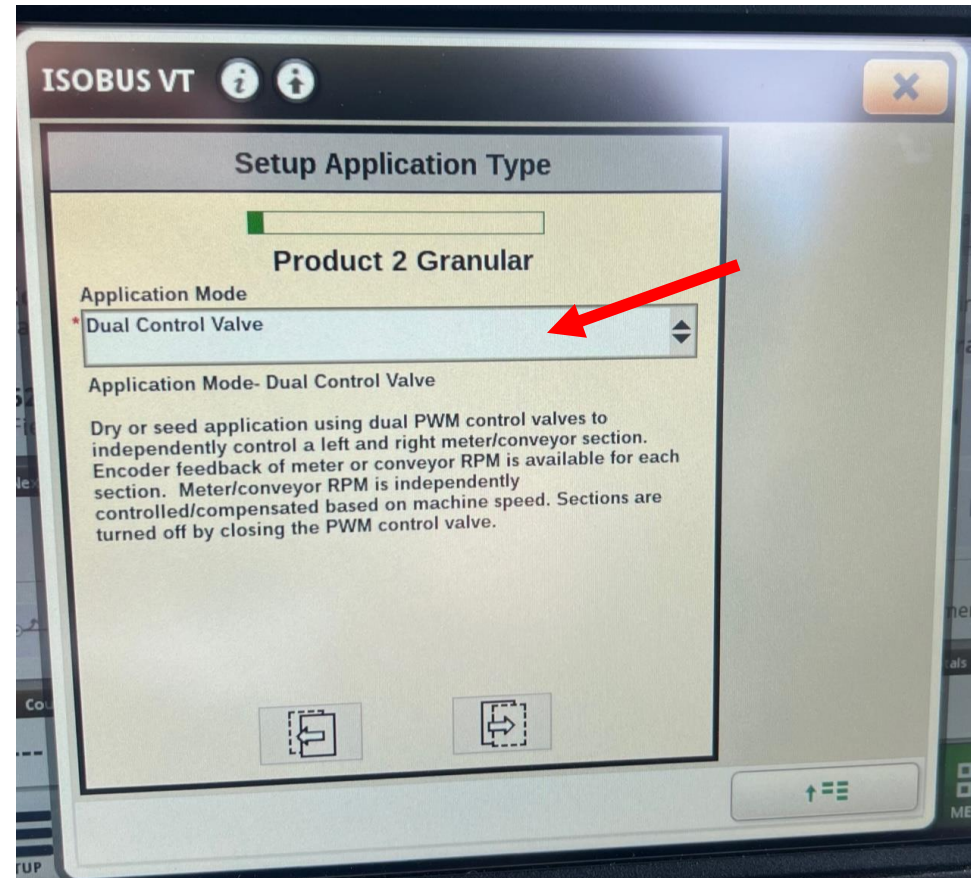
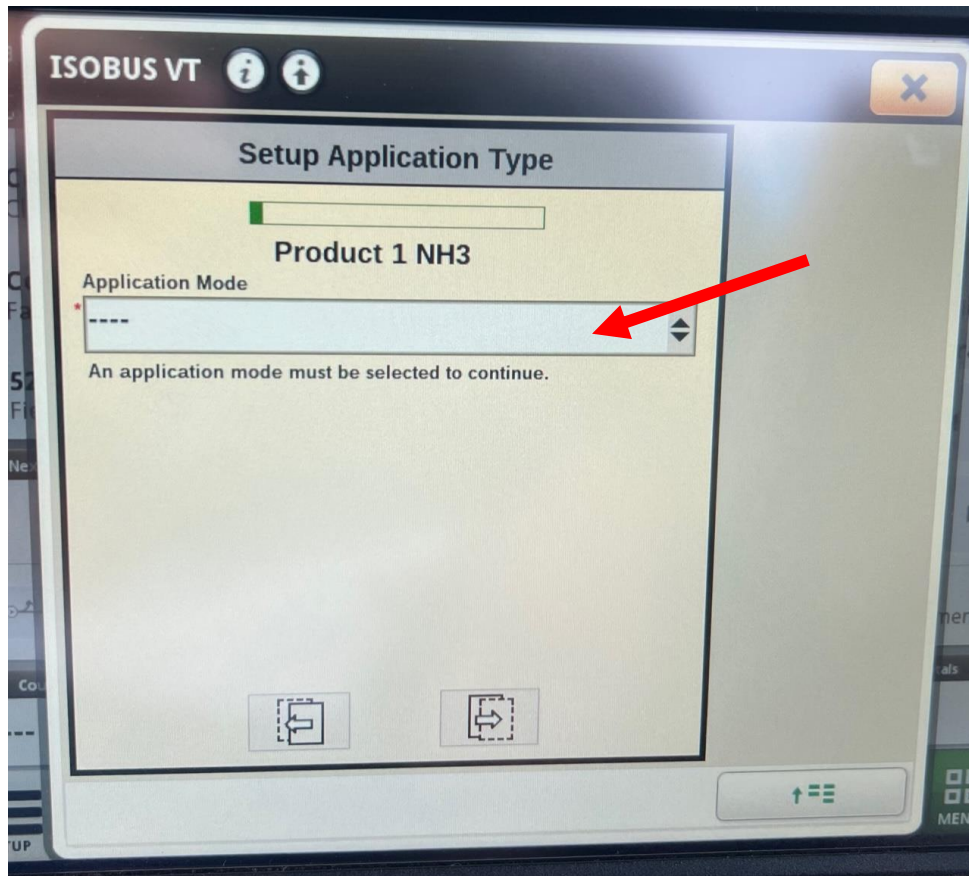


- *Under Setup Application Type select “NH3” for Product 1*
- *Select “Granular Fertilizer” for Product 2*



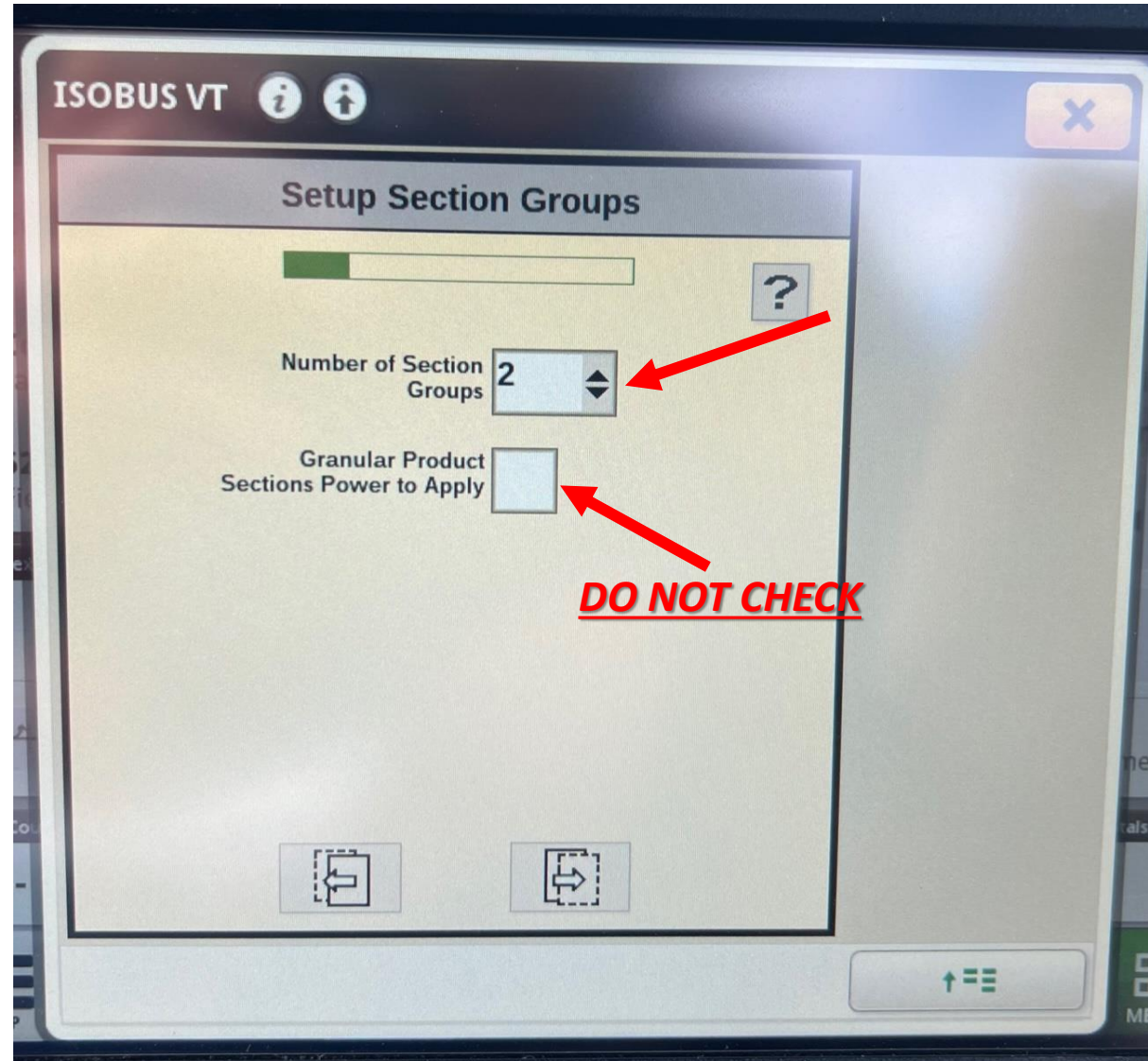


- *Under Setup Application Type select “NH3” for Product 1 Application Mode*
- *Select “Dual Control Valve” for Product 2 Application Mode*

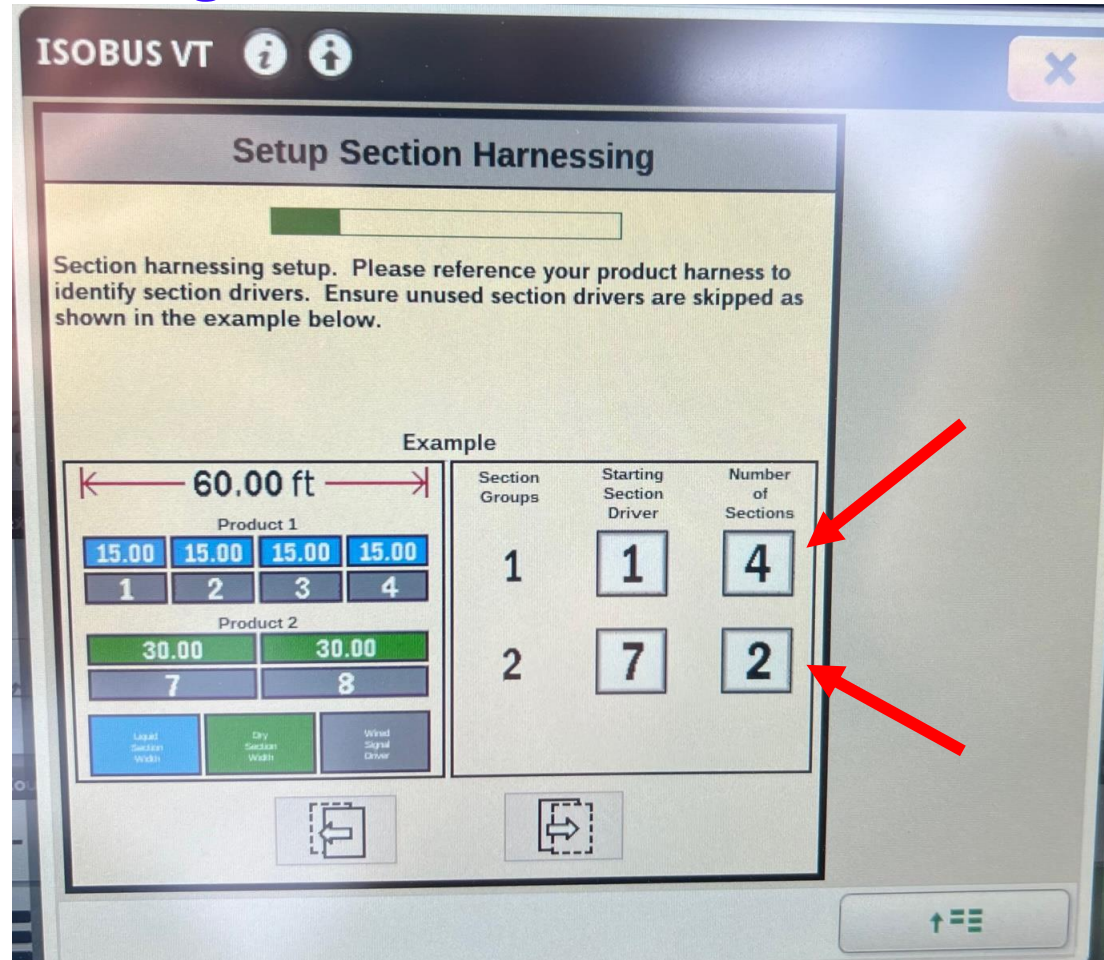




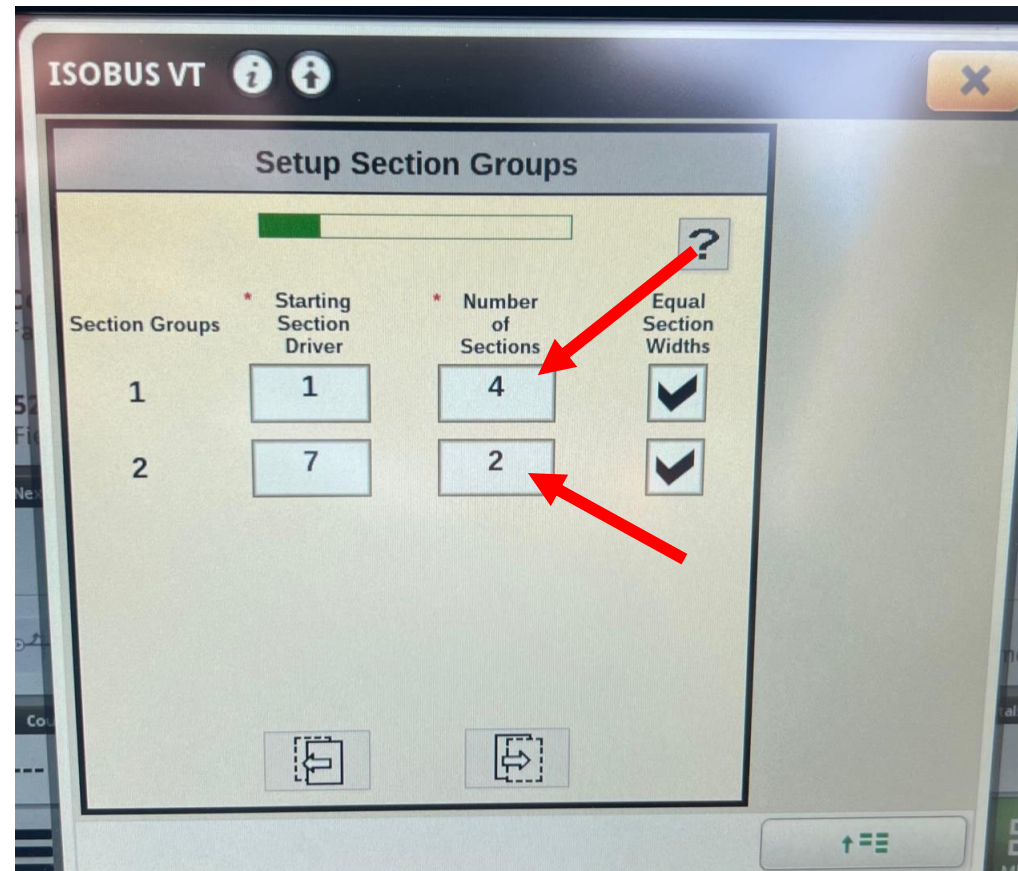
- *Under Setup Section Groups select "2"*
- ***DO NOT CHECK Granular Product Sections Power to Apply***



- **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.**

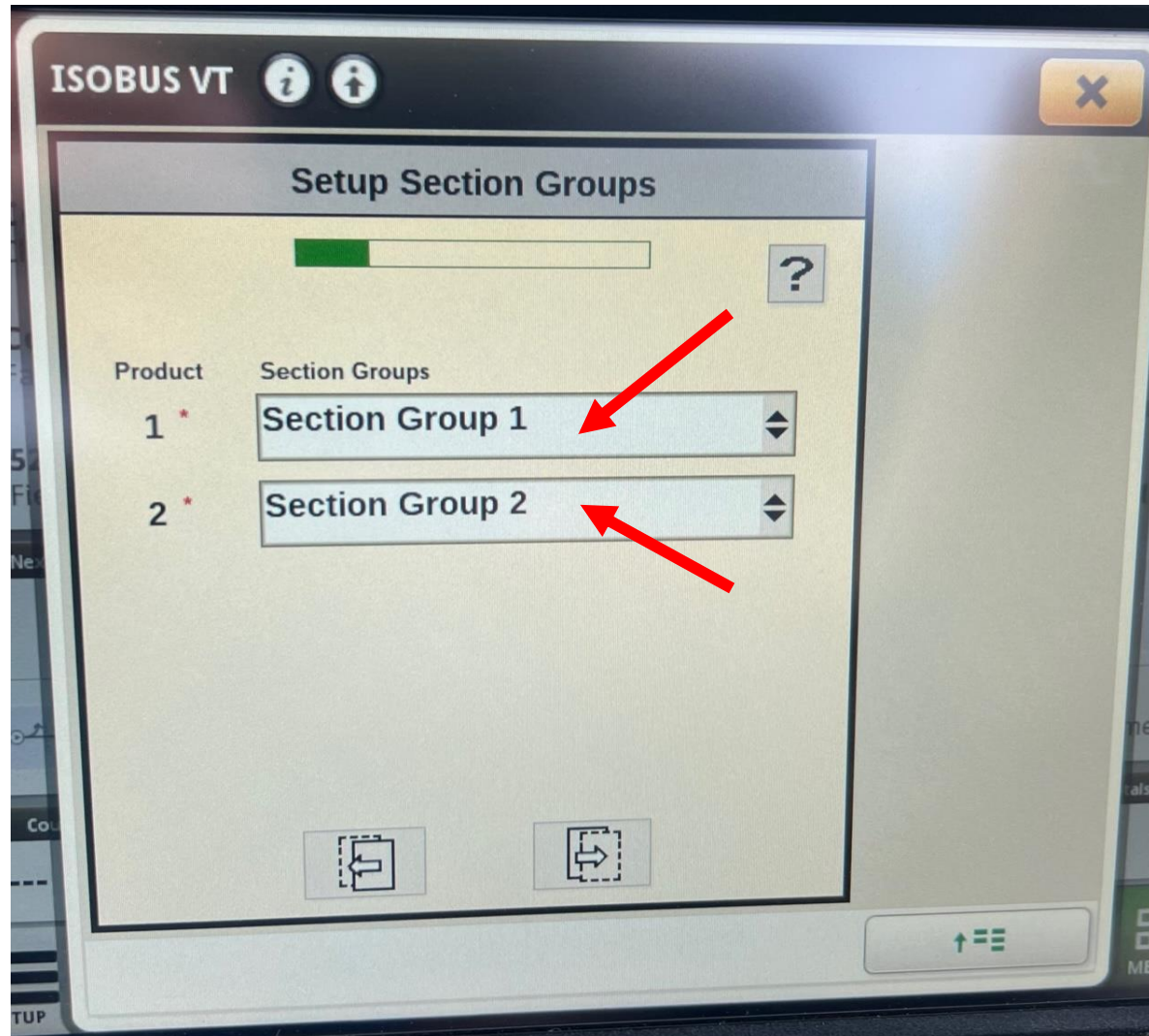


- Under Setup Section Groups Enter “1” for Starting Section Driver and the correct number of sections for Section Group 1 and select “Equal Section Widths”.
- For Section Group 2 Enter “7” as the Starting Section Driver and the correct number of Sections and select “Equal Section Widths”
- The first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



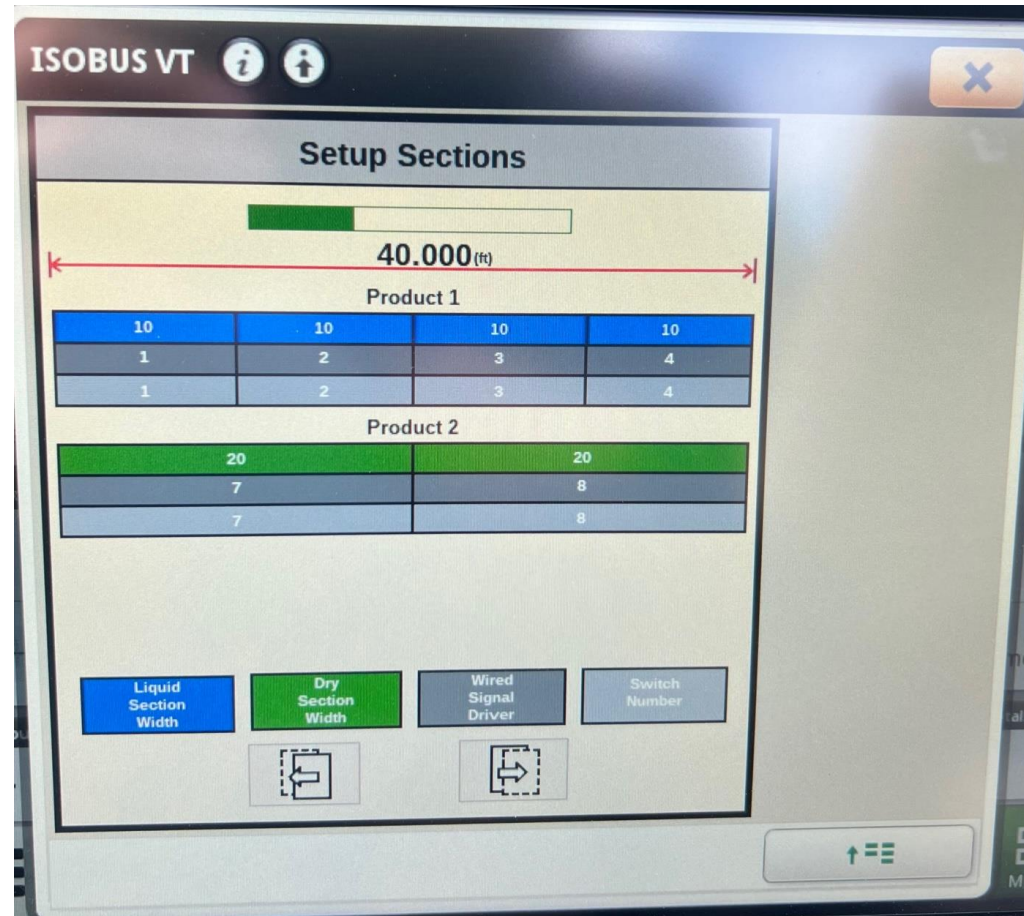
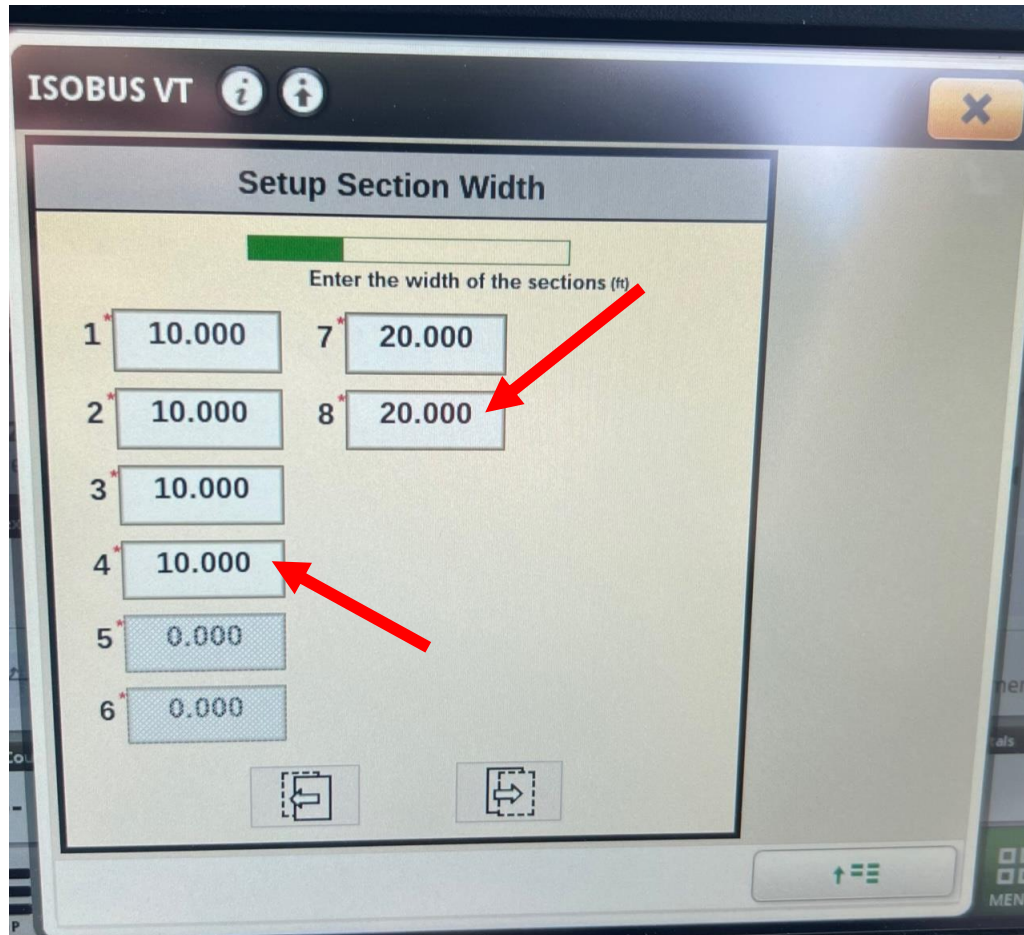


- *Under Setup Section Groups select “Section Group 1” for Product 1*
- *Select “Section Group 2” for Product 2*

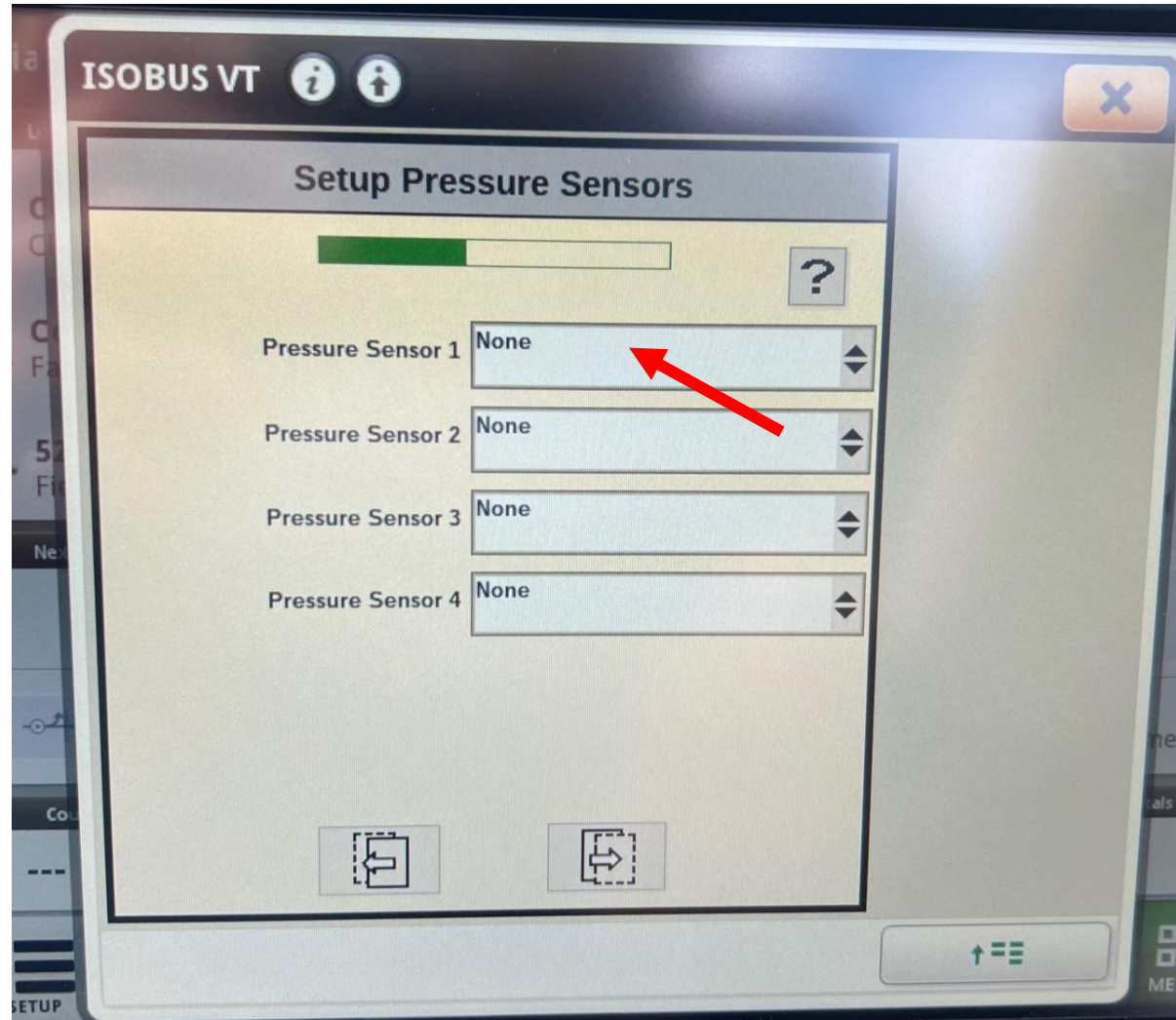




- *Under Setup Section Width enter the correct width for each section.*

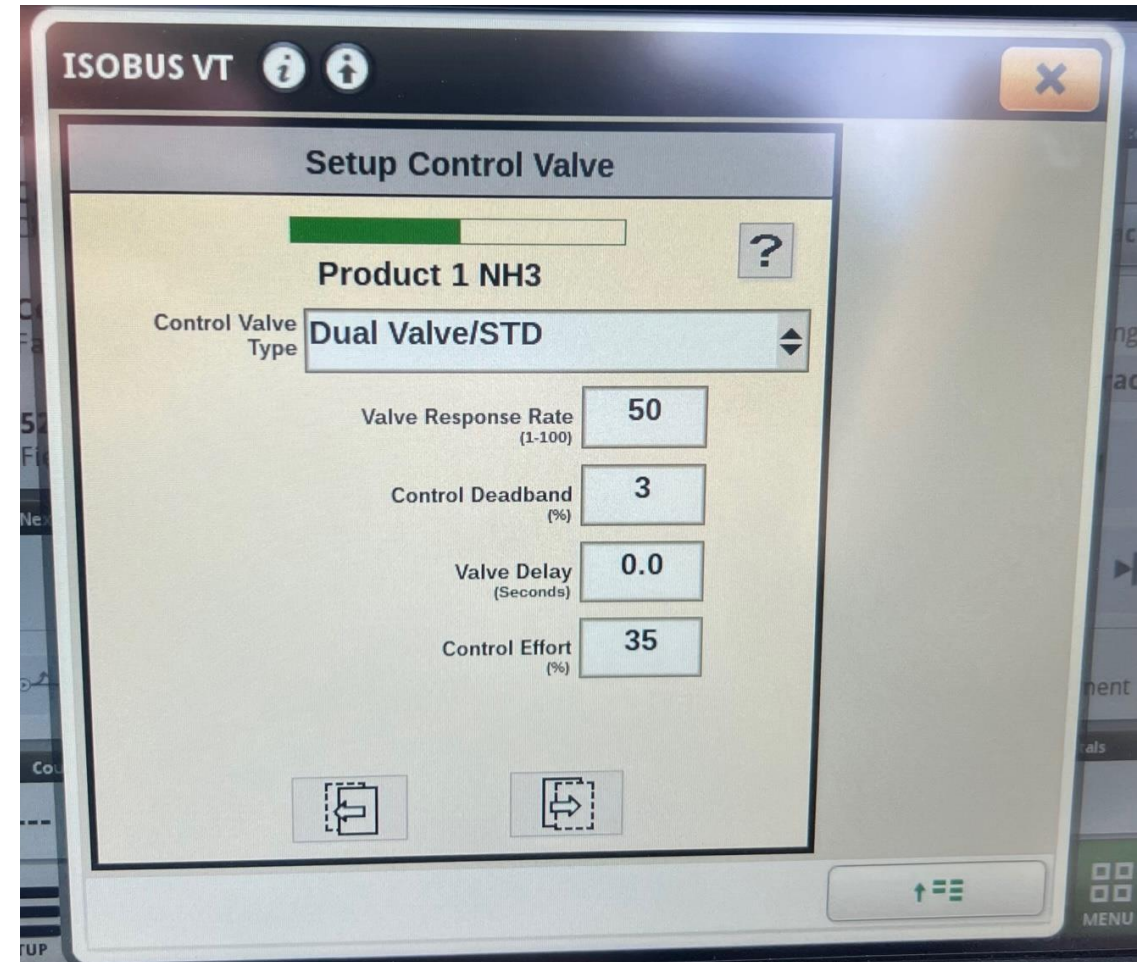


- *Under Setup Pressure Sensors select “None”*





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

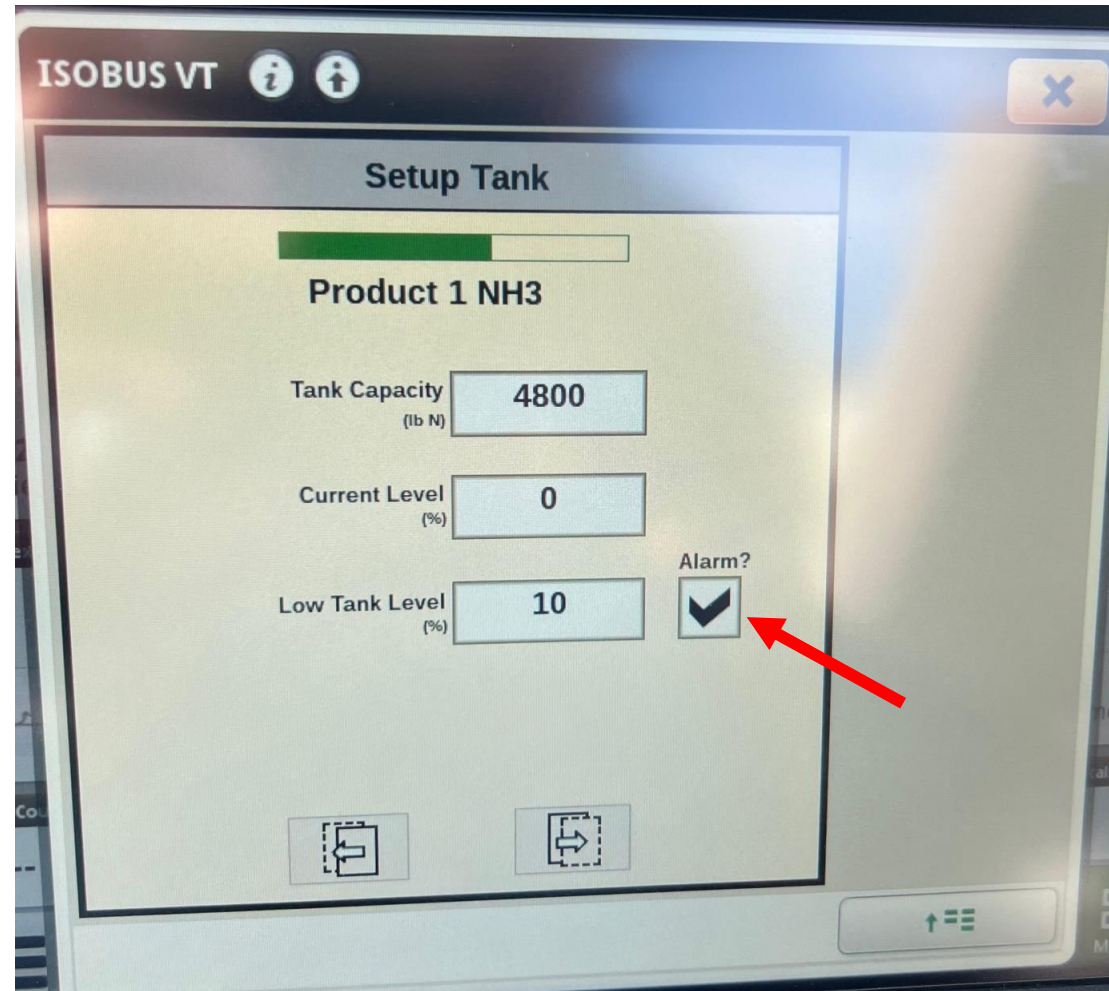


- *Under Setup Rate Sensors-Product 1 NH3 enter the Flowmeter Calibration number from the tag on the flow meter*

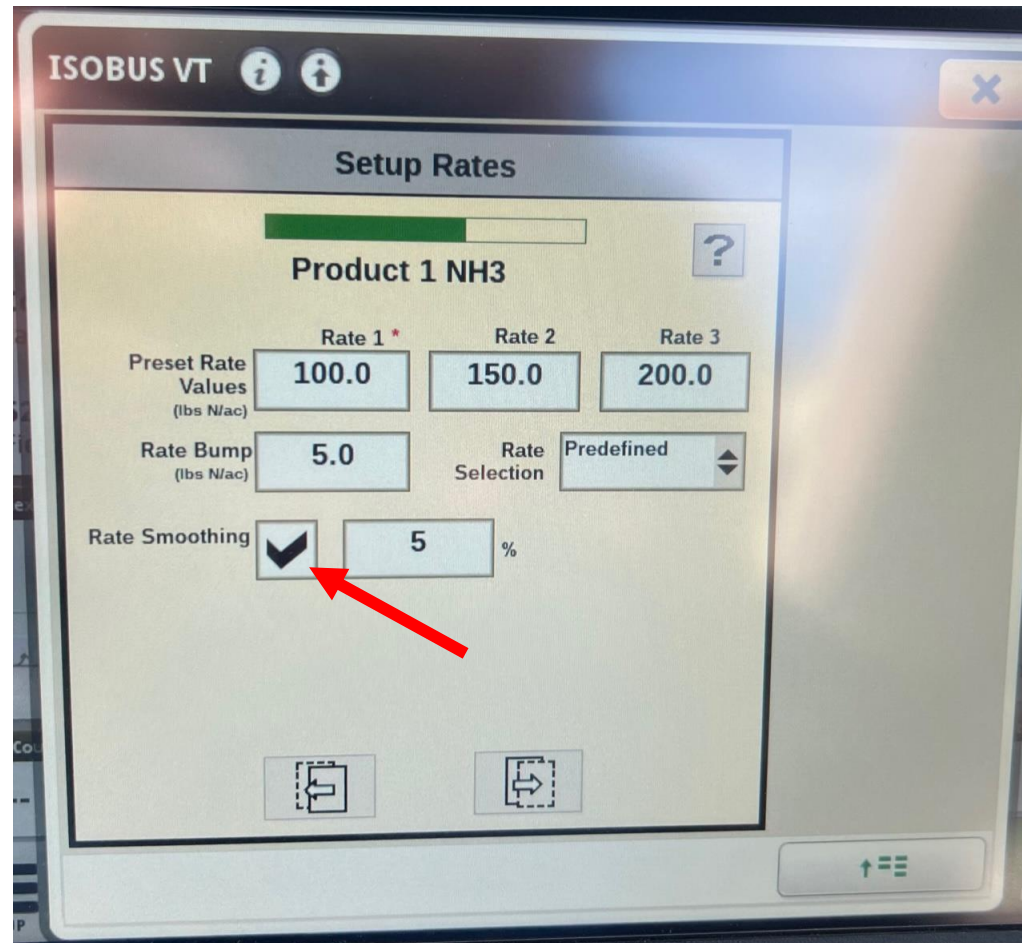




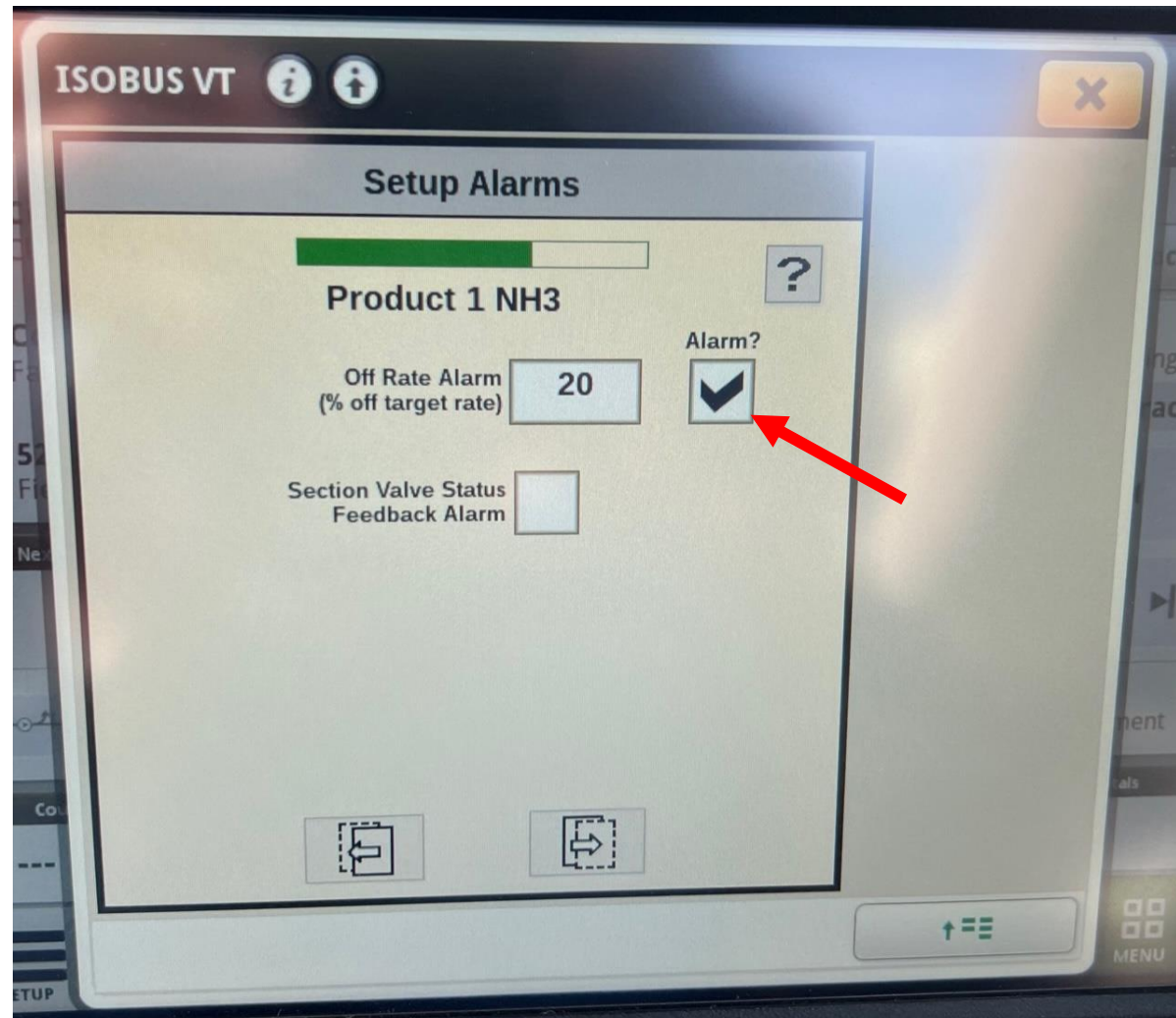
- *Under Setup Tank-Product 1 NH3 enter the desired Tank Capacity and*
- *Enter “10” for Low Tank Level and check “Alarm?” box*



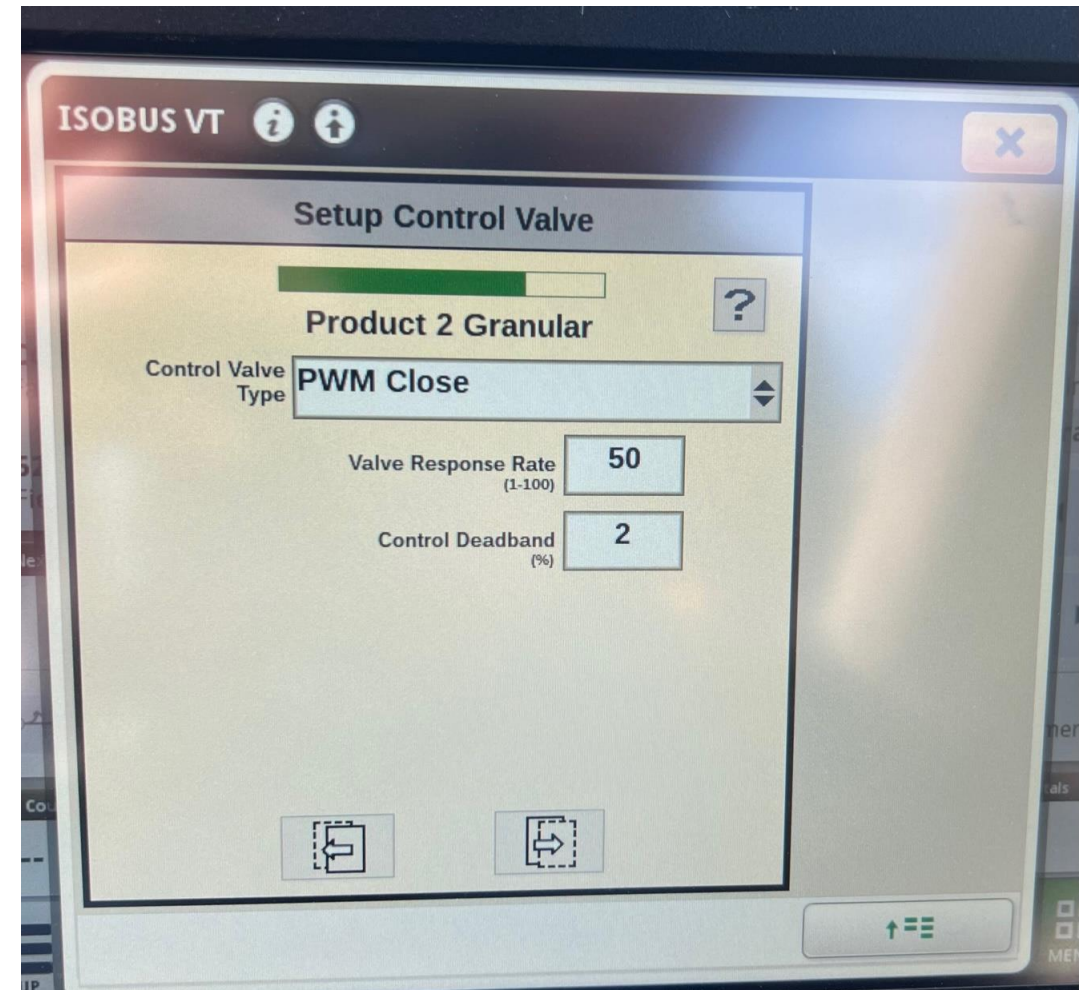
- *Under Setup Rates-Product 1 NH3 enter the desired Preset Rate Values*
- *Enter “5” for Rate Bump*
- *Enter “5” for Rate Smoothing and check Rate Smoothing Box*



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

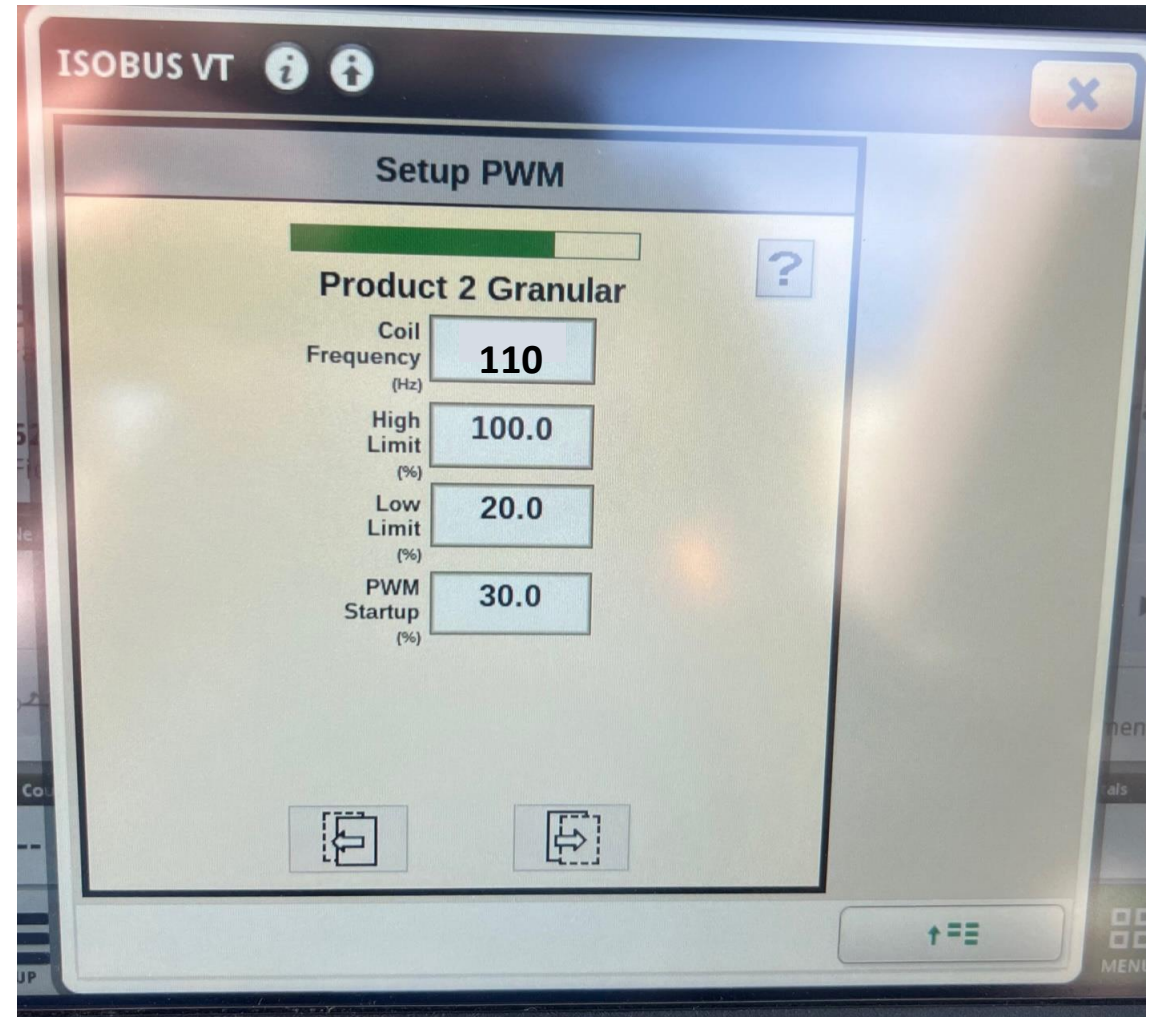


- *Under PWM Setup Valve-Product 2 Granular select “PWM Close” under Control Valve Type*
- *Enter “50” for Valve Response Rate*
- *Enter “2” for Control Deadband*

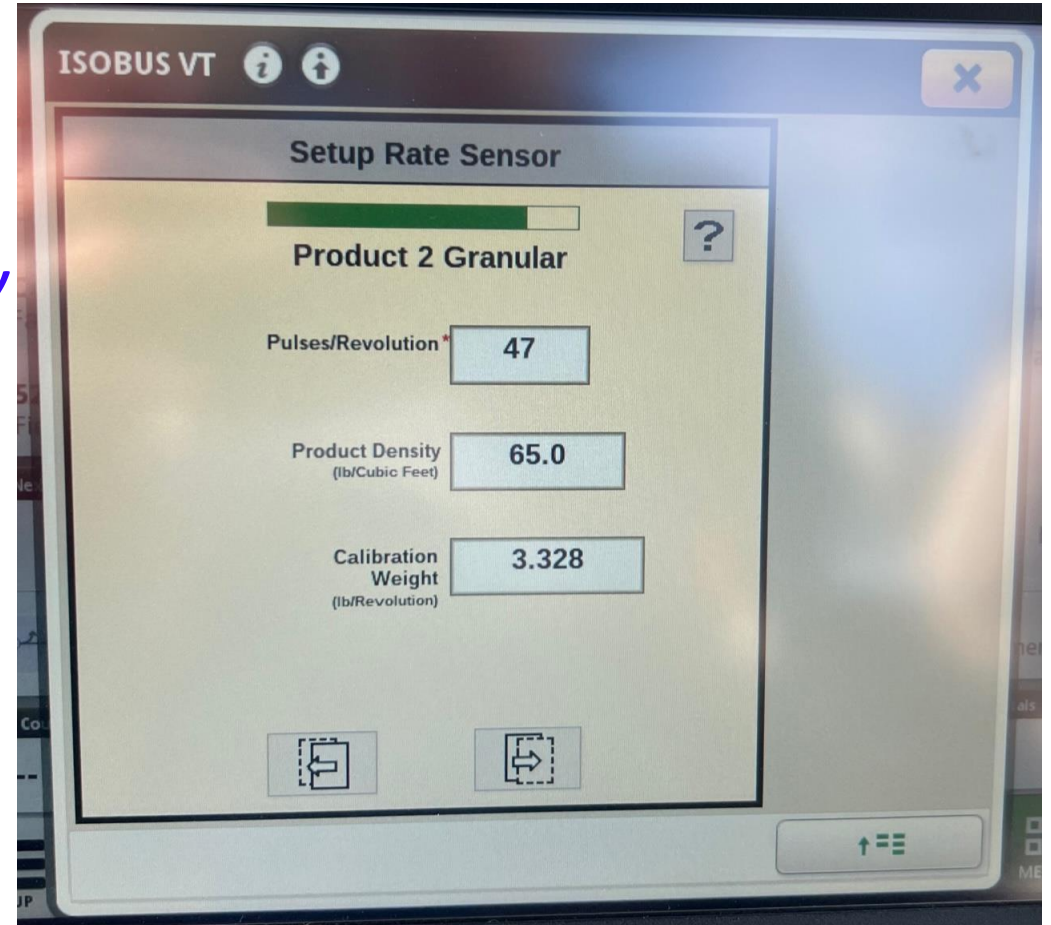




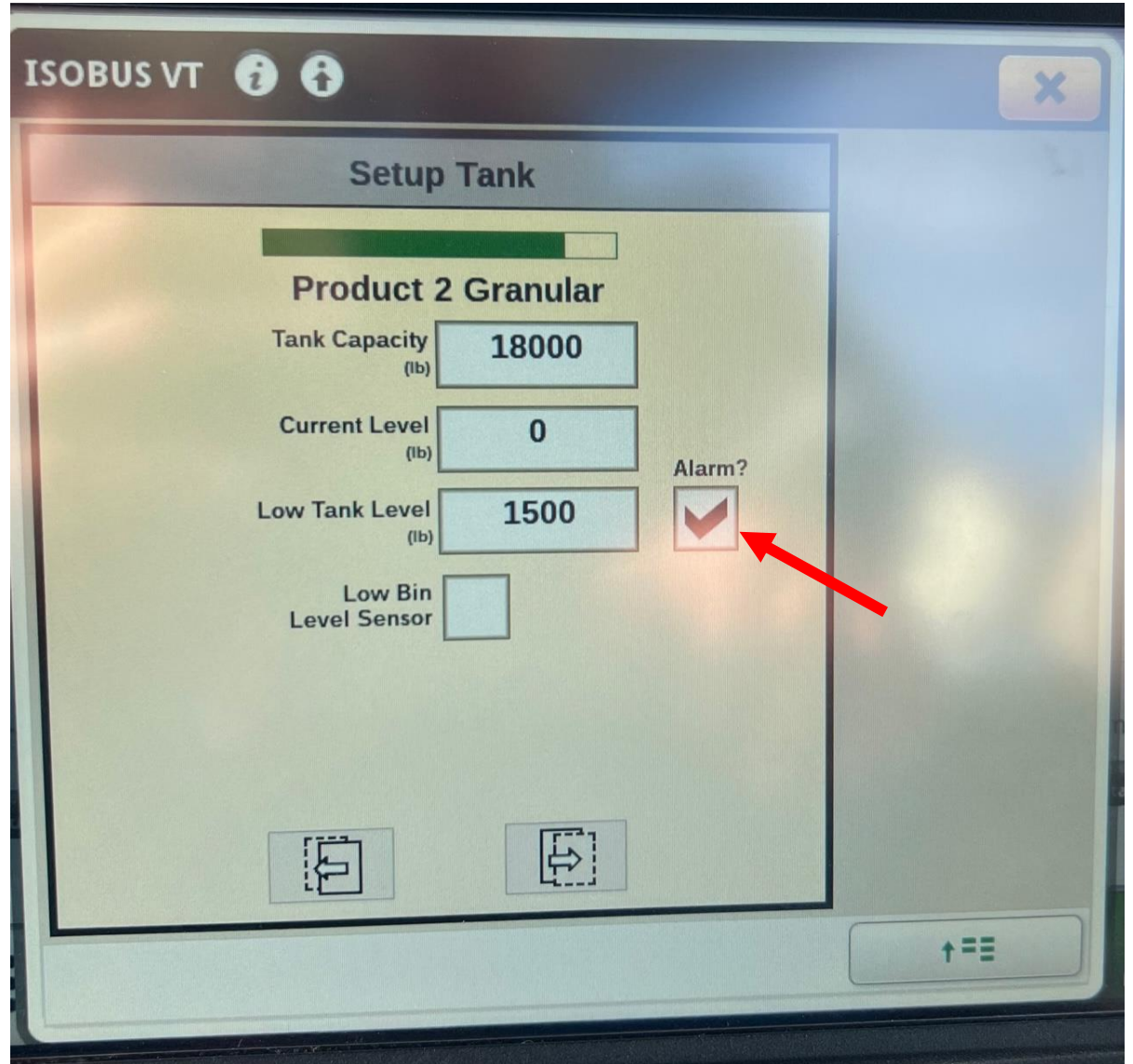
- *Under Setup Control Valve-Product 2 Granular enter “110” for Coil Frequency*
- *Enter “100” for High Limit*
- *Enter “20” for Low Limit*
- *Enter “30” for PWM Startup*



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

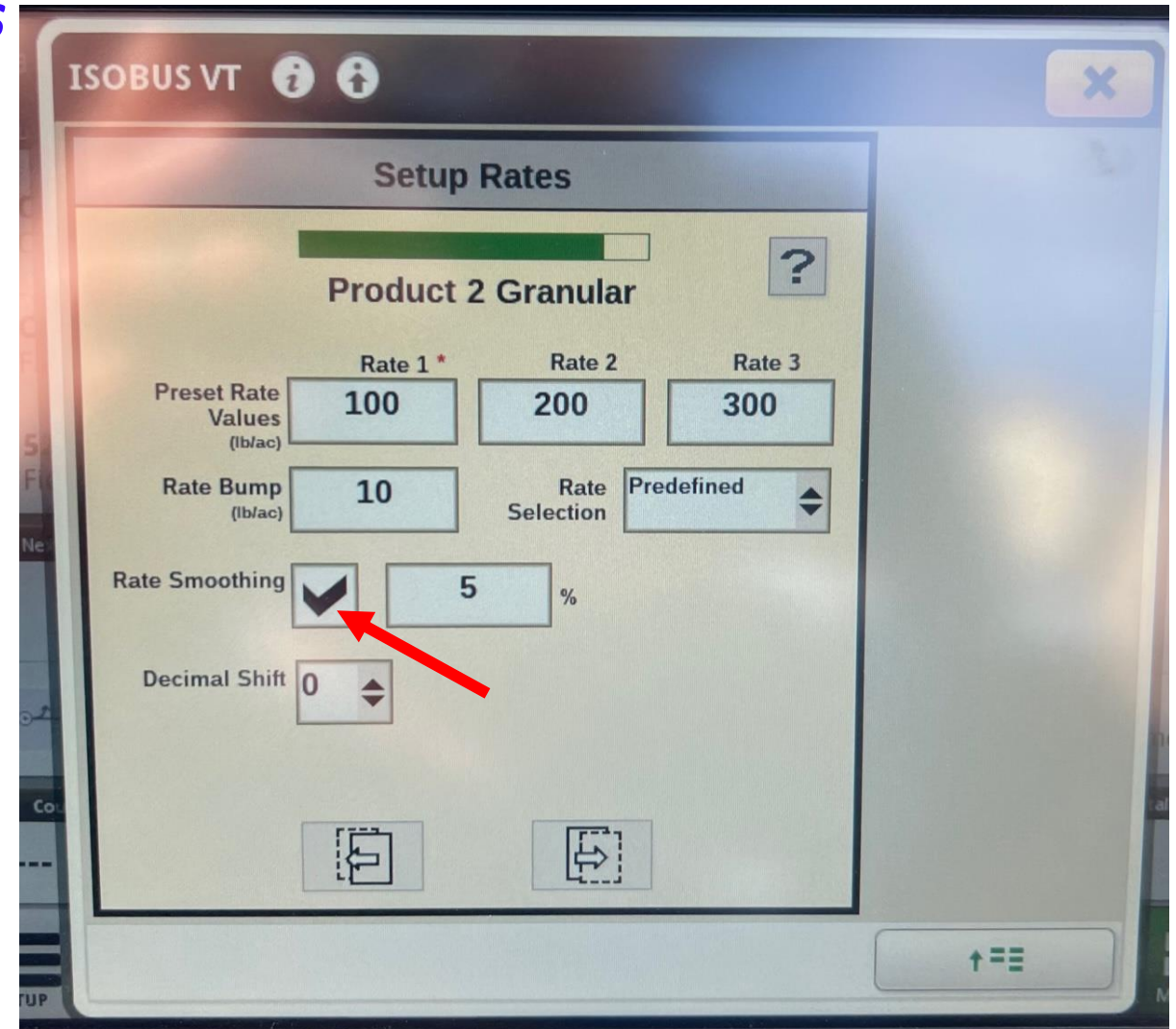


- *Under Setup Tank-Product 2 Granular*
- *Enter “18000” for Tank Capacity*
- *Enter “1500” for Low Tank Level*
- *Select “Alarm?” Checkbox*

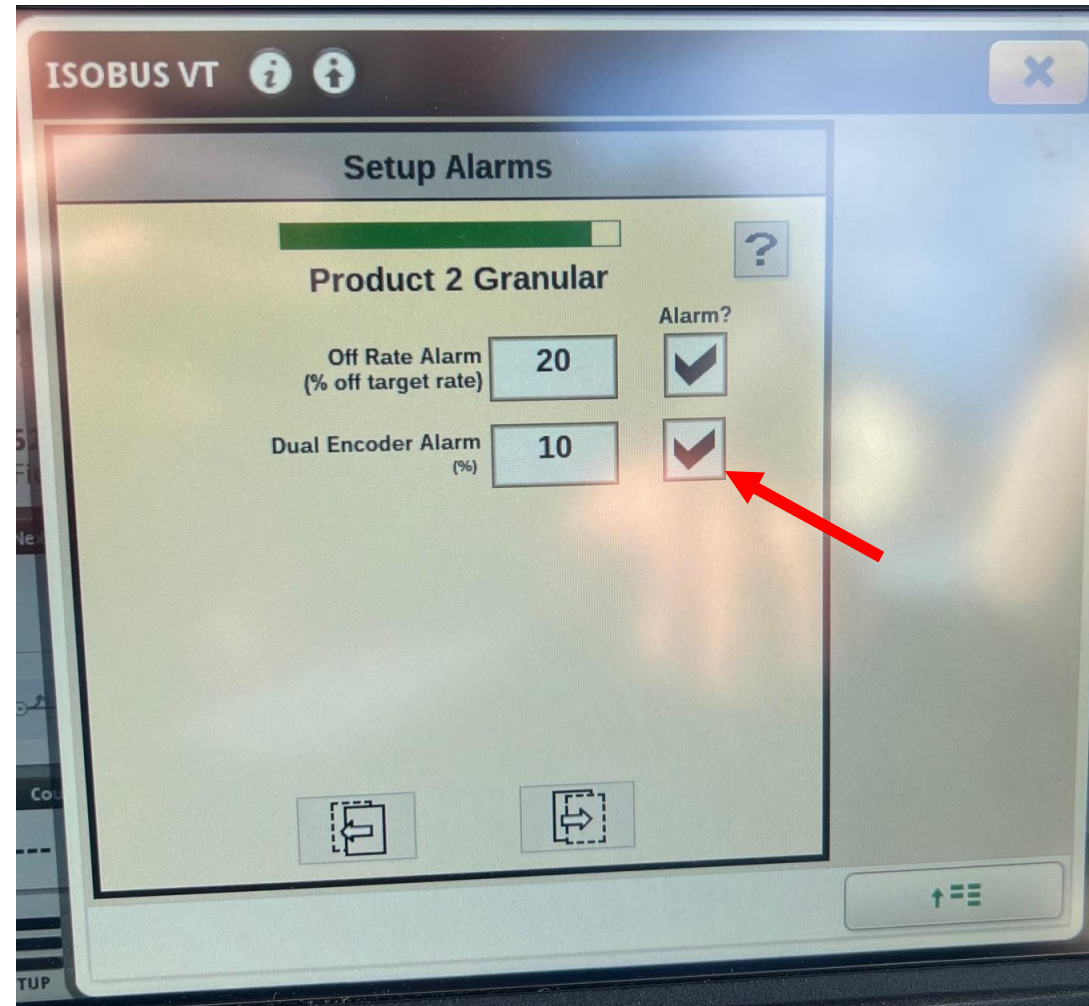




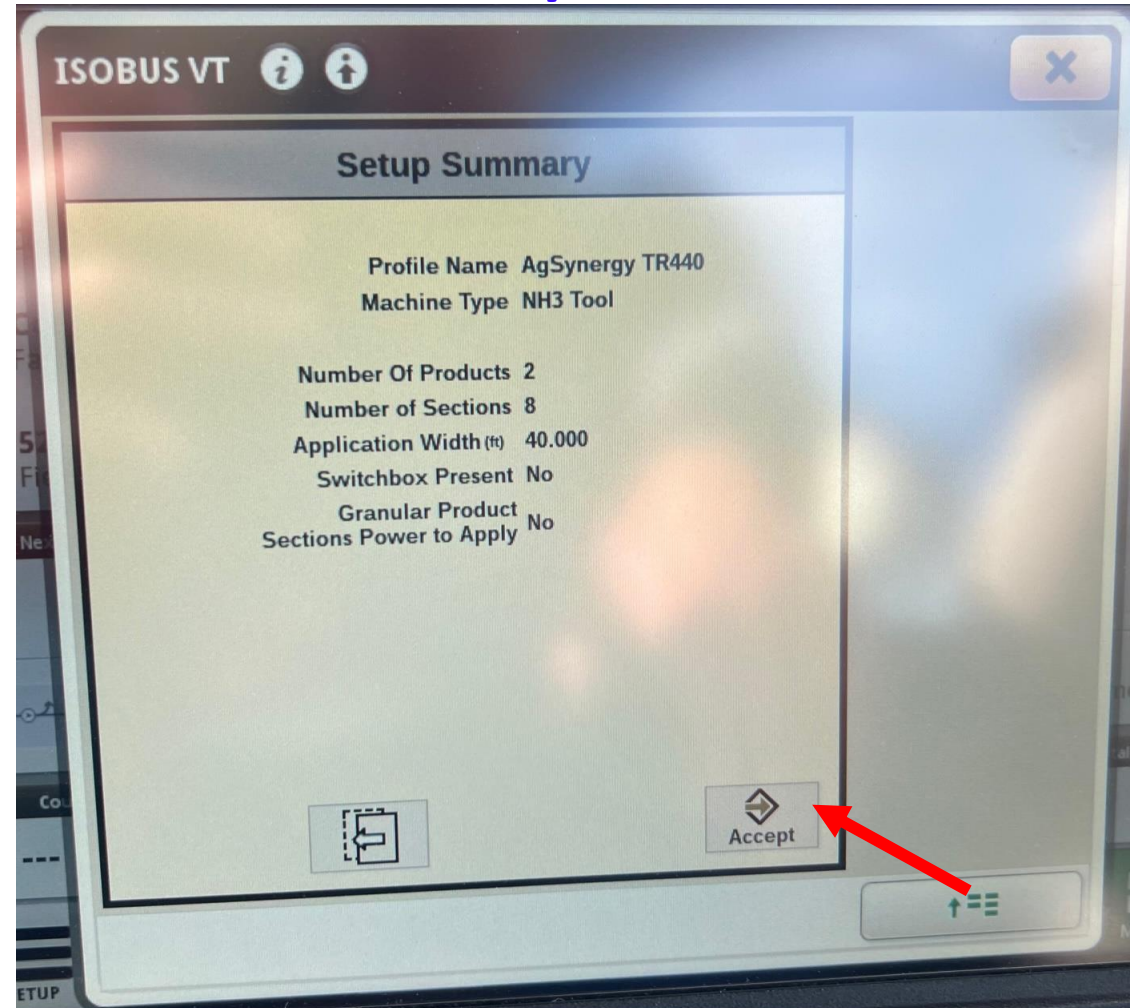
- *Under Setup Rates-Product 2 Granular*
- *Enter Desired Preset Rate Values*
- *Enter “10” for Rate Bump*
- *Enter “5” for Rate Smoothing*
- *Select “Rate Smoothing”  
Checkbox*



- *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 =  $\frac{\text{Spreader Constant}}{\text{Actual Rate}} \times \text{Desired Rate} = \text{New Spreader Constant}$