
BOURGAULT
X30
Monitor/Controller
INGENUITY.
SIMPLICITY.
DURABILITY.
TOPCON
Precision Agriculture
www.bourgault.com

BOURGAULT

X30
Monitor/Controller

X30 System Components

TOPCON
Precision Agriculture

X30 Monitor

- Monitor is 12.1 inches
- LINUX operating system – not windows
- Can-based communication. No serial ports
- New part number 3132-10

BOURGAULT

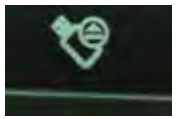
X30 Monitor/Controller

The following offers a general guide to the meaning of battery status LED colors.

- Battery fully charged
- Battery partly charged
- Battery flat
- Charging (flashing)

The following offers a general guide to the meaning of power supply status LED colors.

- Good supply
- Low supply
- Very low supply or off



Before removing the USB, always disconnect first by touching the **USB Eject** icon on the base of the console. A message will display that it is safe to remove the USB.

Use the **Topcon Logo** for screen shots or navigate through your made global home screens.

Brightness Control adjusts the brightness of the display. Use plus or minus to adjust display.

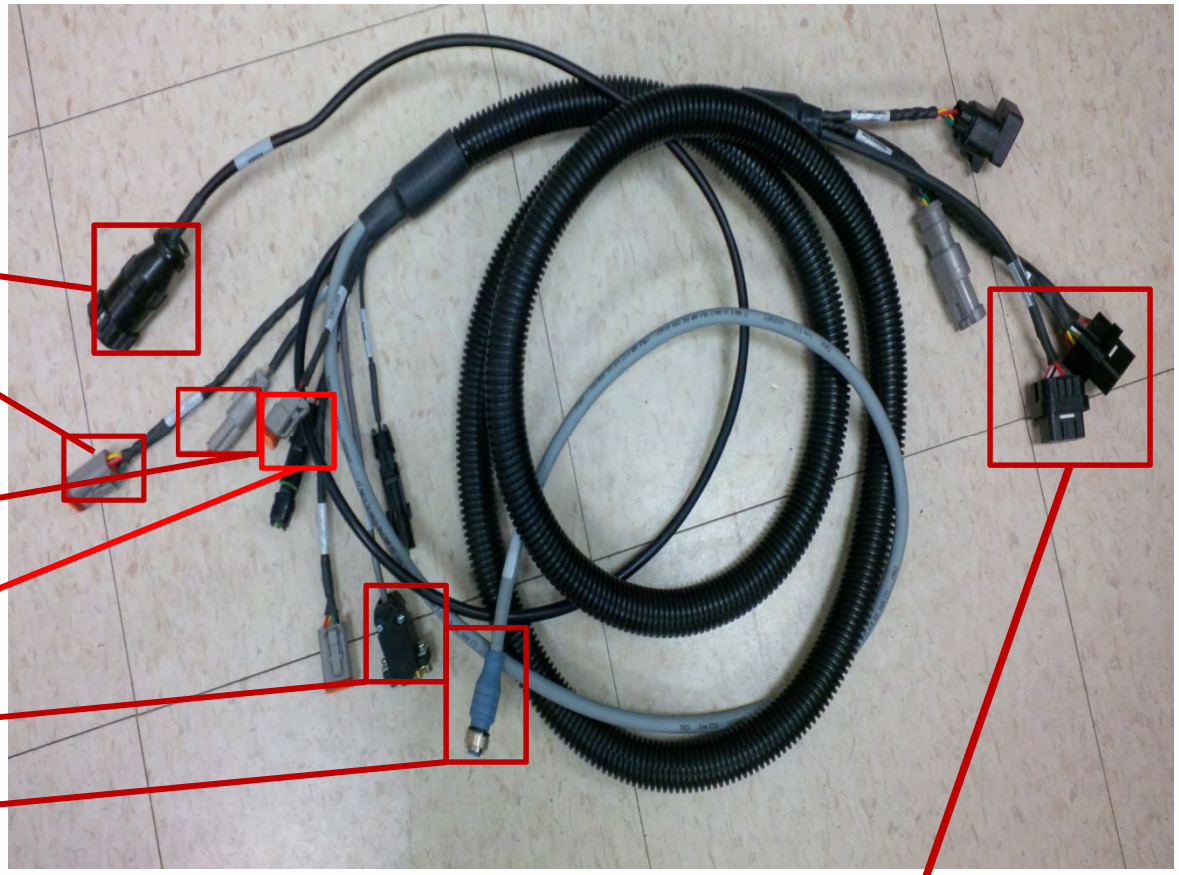
Day/Night mode changes the brightness of the display. Settings are Day, Night and Auto. Auto light mode will set the mode automatically depending on light conditions

Bridge ECU

- Added into the cab of tractor
- Replaces SRC interface box used for the X20
- Translates RS485 from on tank ECU to CAN for X30
- ISOBUS Capable (can be used with a ISO terminal future)
- Bourgault Part Number 3132-13
- Topcon number AGA4634
- Both the ISO bridge adapter cable and the main power cable hooks into this
- Upgradeable though the USB port

X30 Main Harness

- Connects X30 to power, bridge ECU, GPS Signal, remote steer engage (if equipped with Topcon)
- Bourgault Part Number 3132-12-01
- Topcon Harness AGA5072



Hooks to main battery cable

CAN 1 to the ISO bridge through the Can harness

ENGAGE wire Hooks to the ISO bridge adapter cable AGA4885

Switched power connects to terminator Harness AGA4678

COM 2 hooks to outside receiver for GPS

COM 1 Hooks to GPS adapter cable AGA4219 for connection to outside receiver for GPS

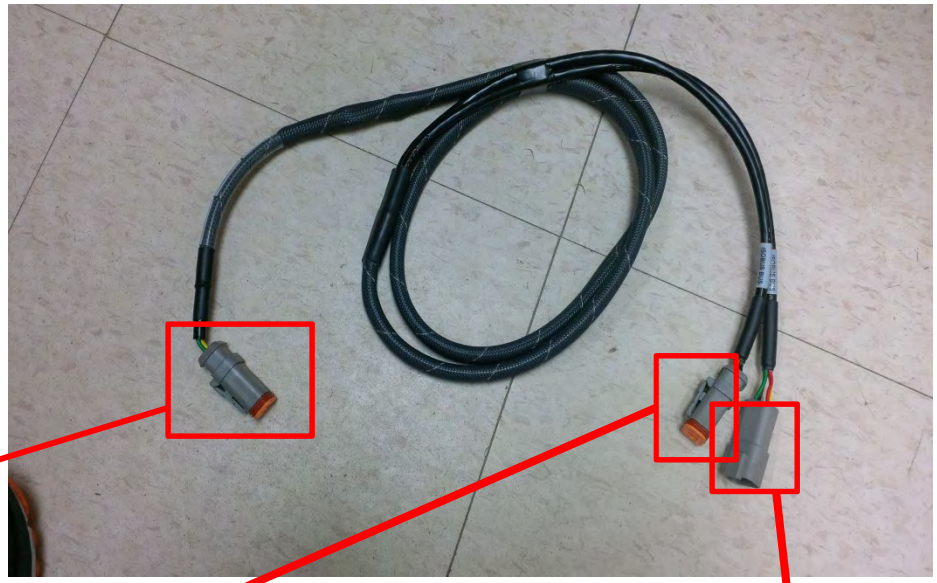
NOTE; GPS can be brought in though either COM 1 or Com 2

Also the can 2, remote mapping and radar plugs are not used.

Power and communication plugs that hook to the back of the X30

Can harness

- Connects bridge ECU to Topcon monitor harness
- Bourgault Part number 3132-09-01
- Harness Number AGA5251



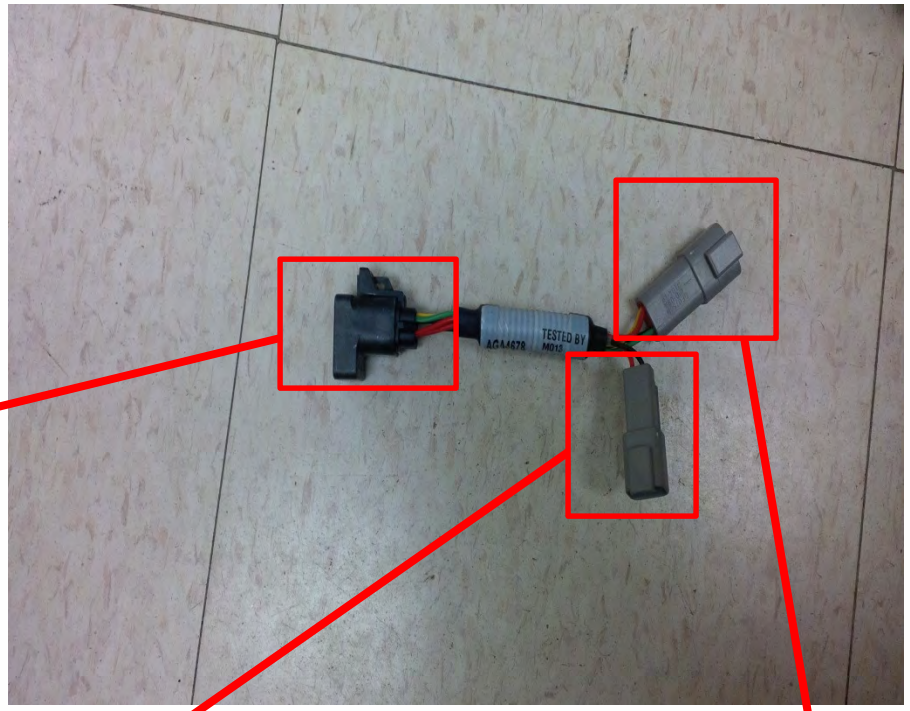
Hooks to the ISO Bridge

Connects to the terminator harness AGA4678

Connects to the can1 plug on the main power Harness AGA5072

Terminator harness

- Connects Can harness to Topcon monitor harness
- Bourgault Part number 3132-09-02
- Harness Number AGA4678



Terminator part number
Bourgault 3132-09-03
Topcon AGK159

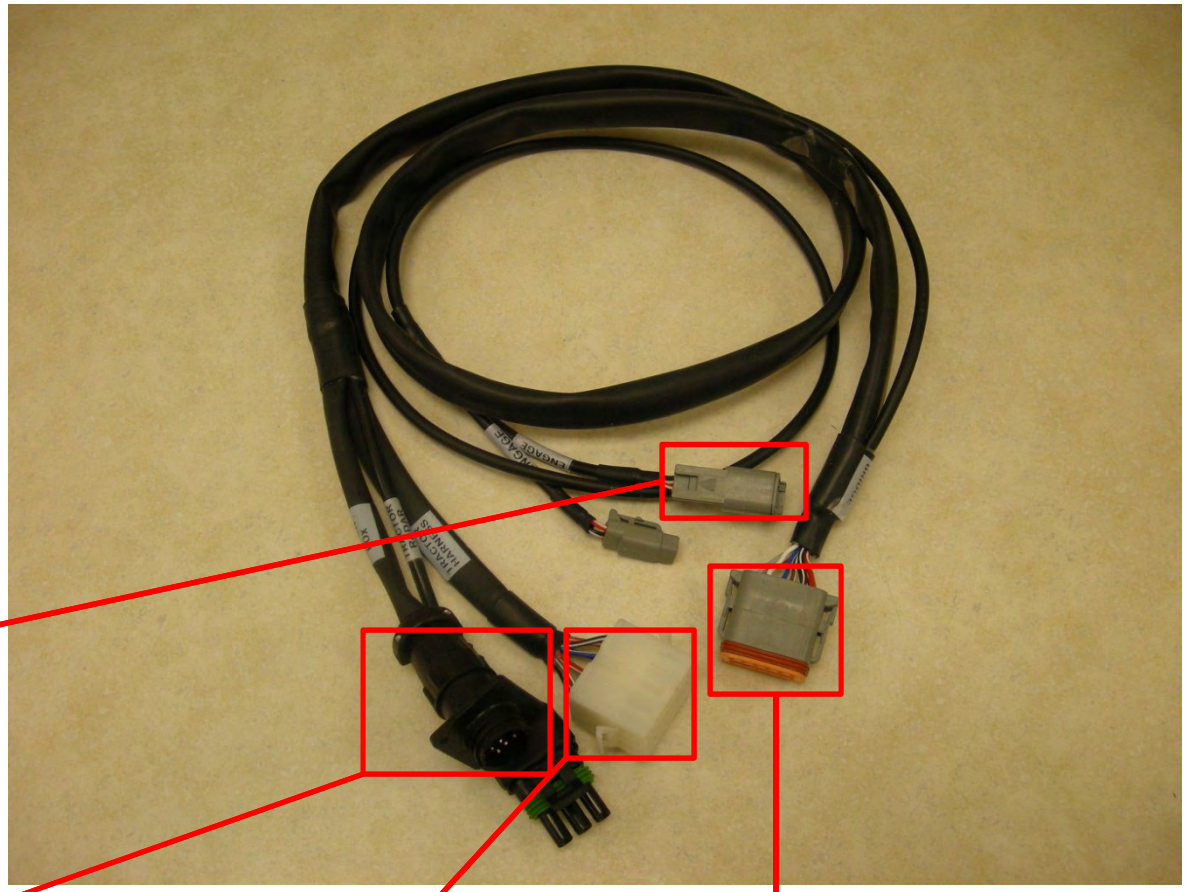
Connects to switched power plug
on the monitor harness AGA5072

Connects to the iosbus plug on the
Can harness AGA5251

Bridge ECU adapter harness

- Connects bridge ECU to Topcon tractor harness
- Connects Switchbox and Switch power to the ISO bridge.
- Bourgault Part number 3132-06
- Harness Number AGA4885

X30 engage wire
Hooks to the engage wire on the main power Harness AGA5072



Hooks to cabin switch box

Hooks to the tractor harness

Hooks to the ISO Bridge

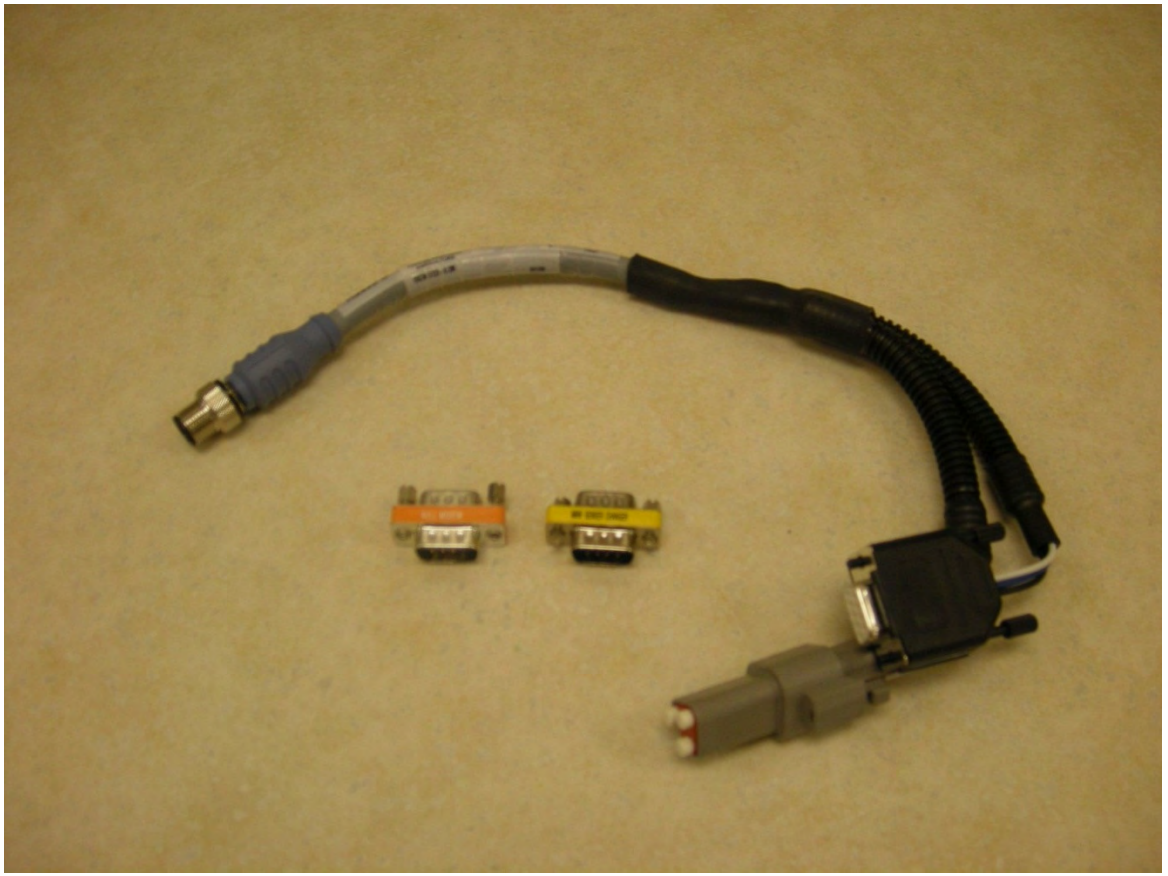
X30 power Harness

- Connects X30 main harness to the battery
- Included in 3132-04 package
- Highly recommended to hook direct to the battery
- Bourgault Part Number 3132-04-03
- Topcon Harness AGA4073

Hooks to the main X30 power harness

GPS Adapter Harness

- Connects receivers to Main X30 harness on Com 1
- Includes gender changer/ Null Modem
- Bourgault Part number 3132-04-04
- Topcon Harness AGA4219

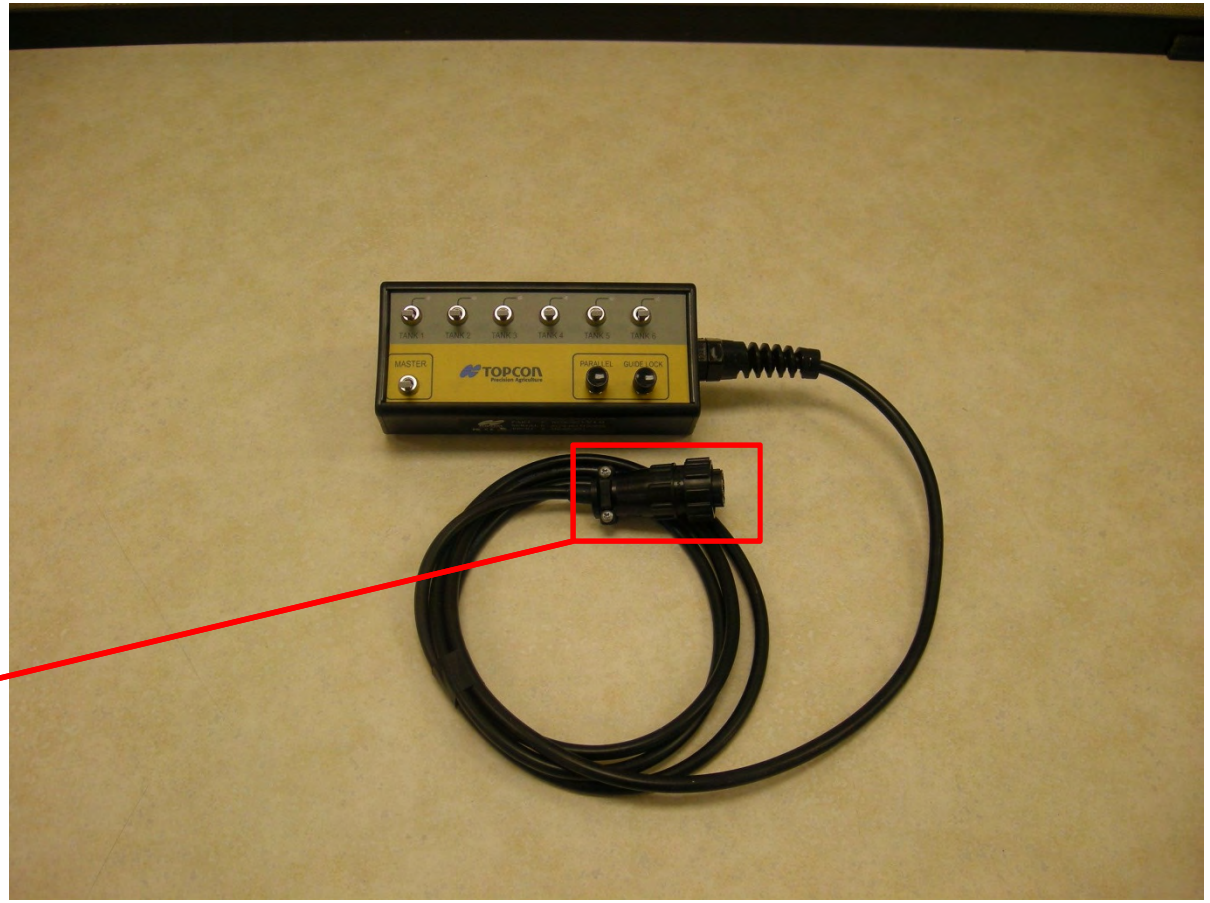


BOURGAULT

X30 Monitor/Controller

Multi clutch switch box

- Master switch
- Six tank switches
- Bourgault Part number 3132-01



Hooks to the ISO bridge adapter harness AGA4885

BOURGAULT

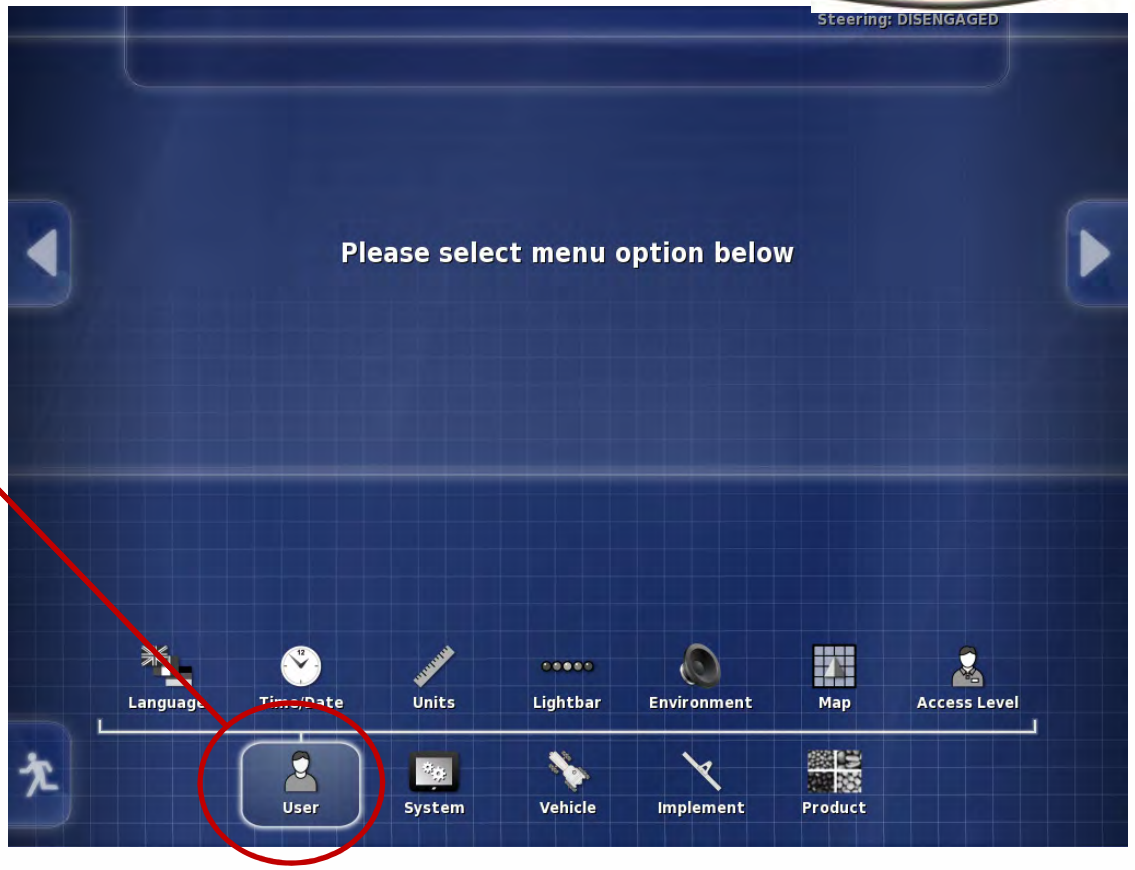
X30 Monitor/Controller

110V power converter

- For use at home outside of the tractor
- Bourgault Part number 3132-07

User

1. Language
2. Time/Date
3. Units
4. Light bar (used for steering)
5. Environment
6. Map
7. Access

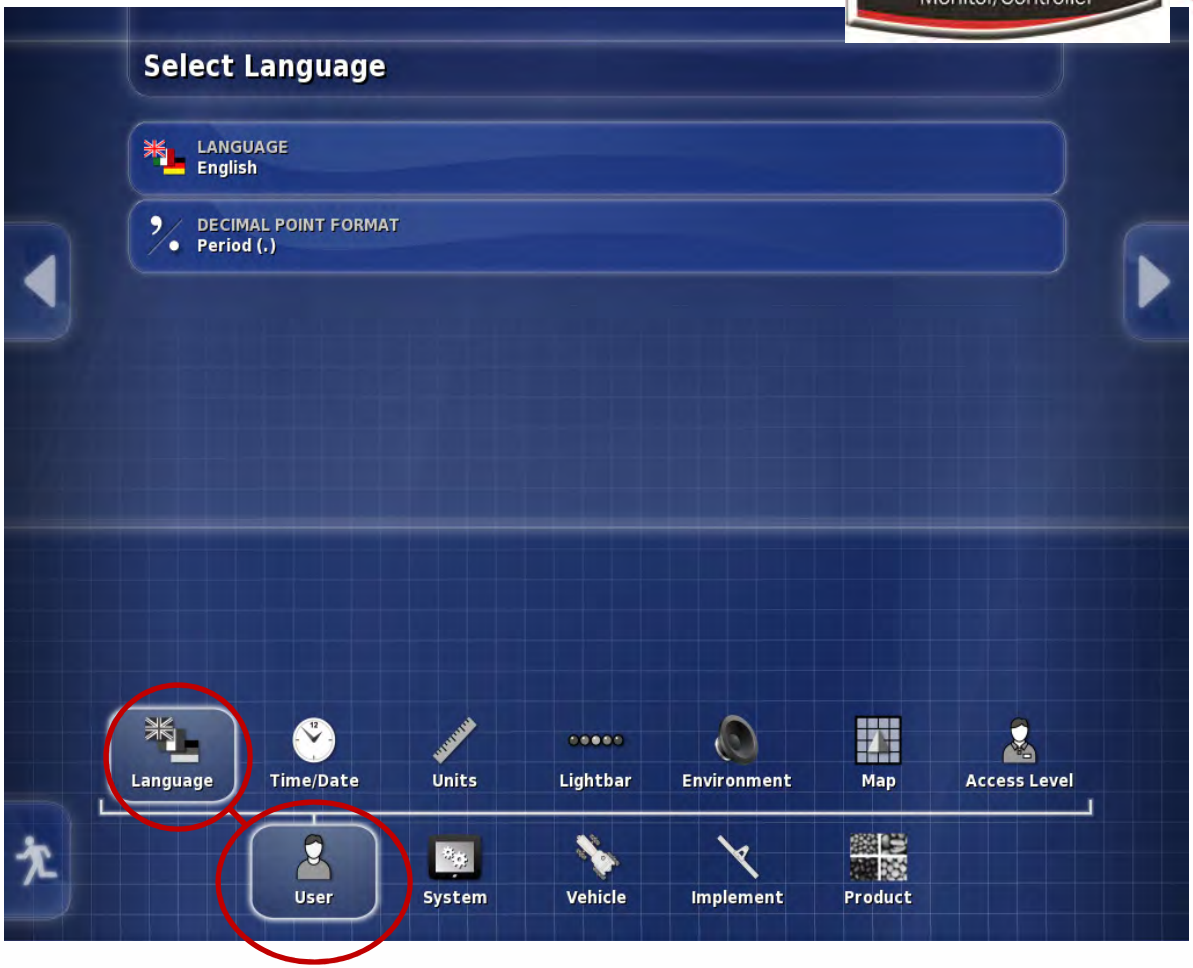


BOURGAULT

X30 Monitor/Controller

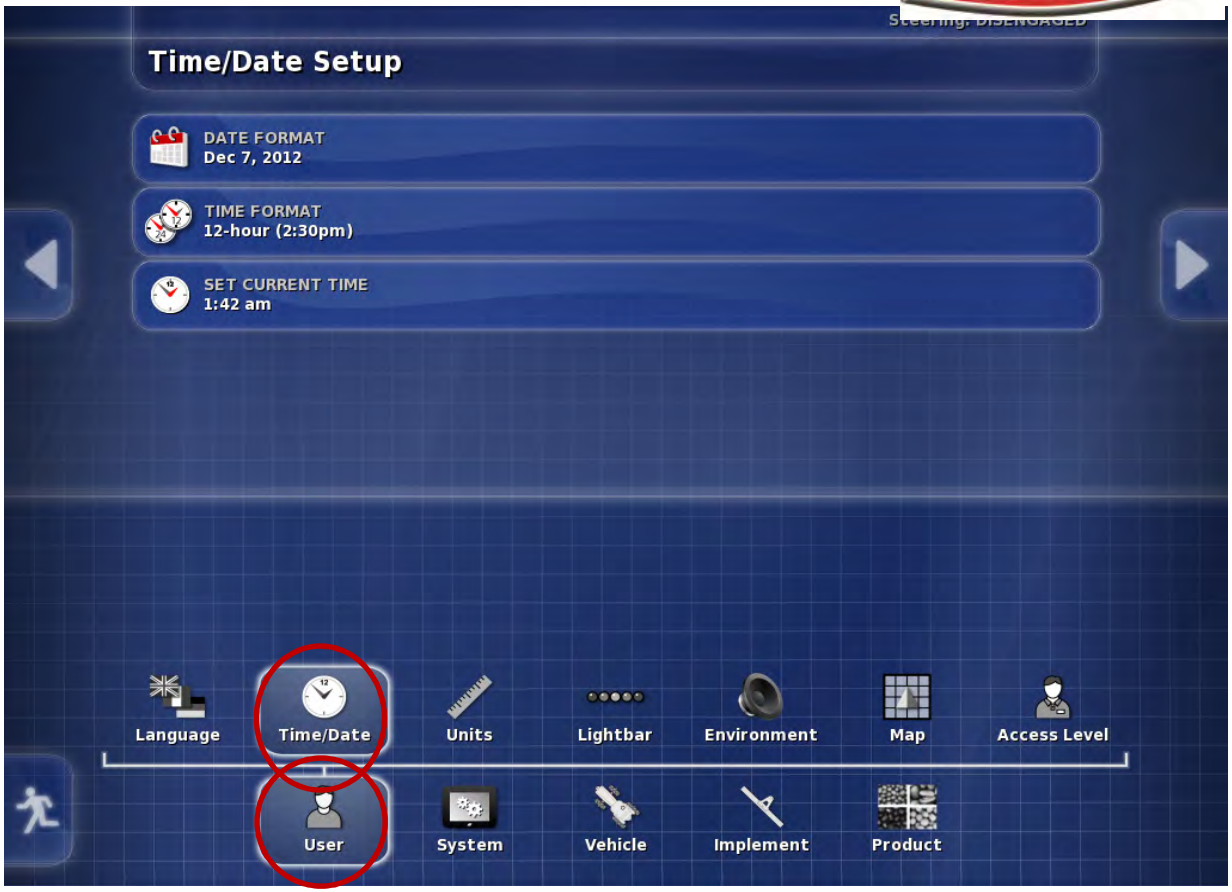
Language

- Just touch the each bar to
  Can change the language
  Decimal point format



Time/Date

- Just touch each bar to
  Set the Date format: the way it shows
  Set the Time format: 12hrs or 24hrs
  Set the current time: this will set itself when you hook to GPS signal



BOURGAULT

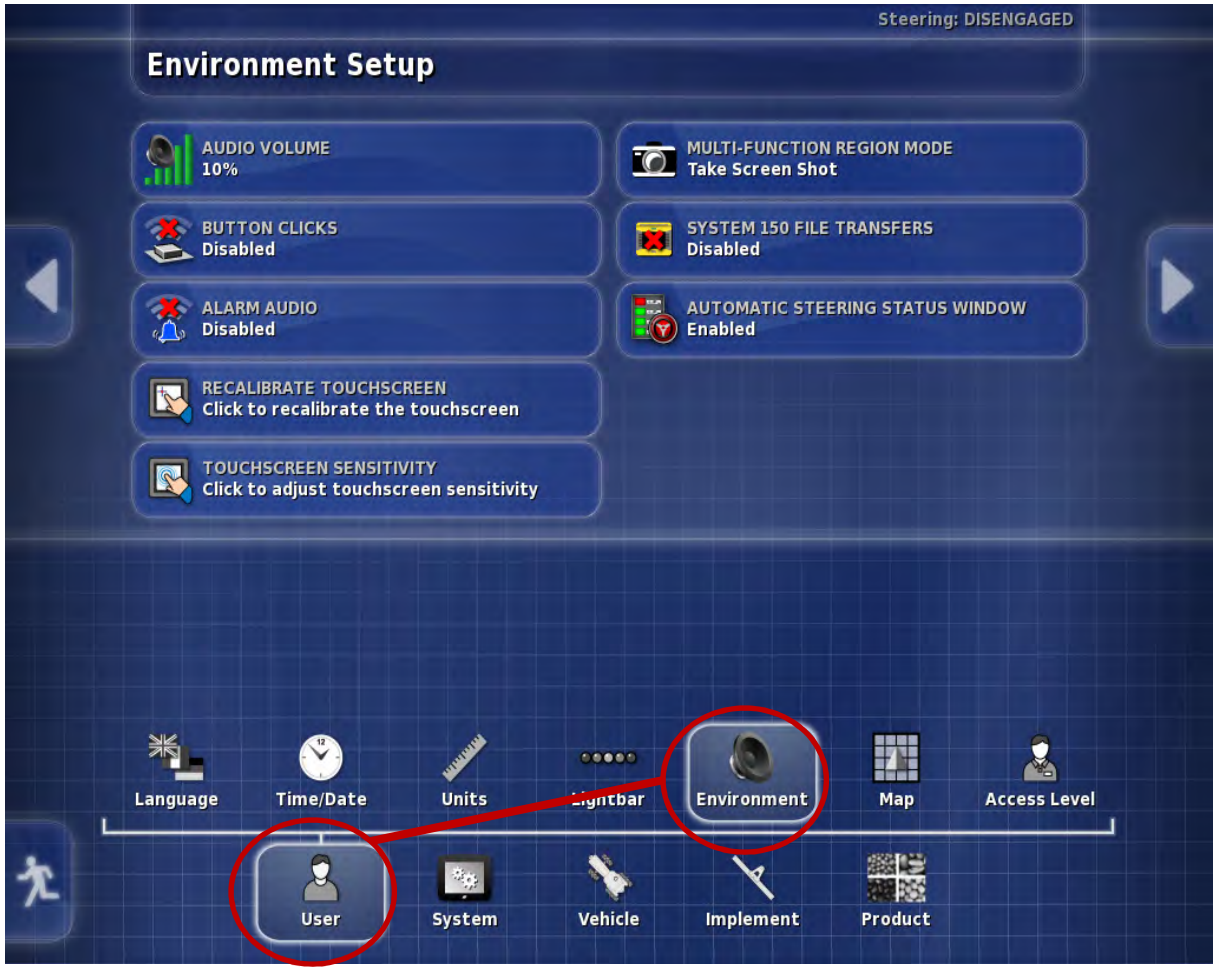
X30 Monitor/Controller

Units

- Units**: imperial (US)**
- Latitude: **DMS**
- Pressure: **PSI**
- Area: **acre**
- Dry Product: **bushels**
- Dry Density: **pounds per cubic foot**
- Liquid units**: Gallons**
- Application Rate**: fixed rate**

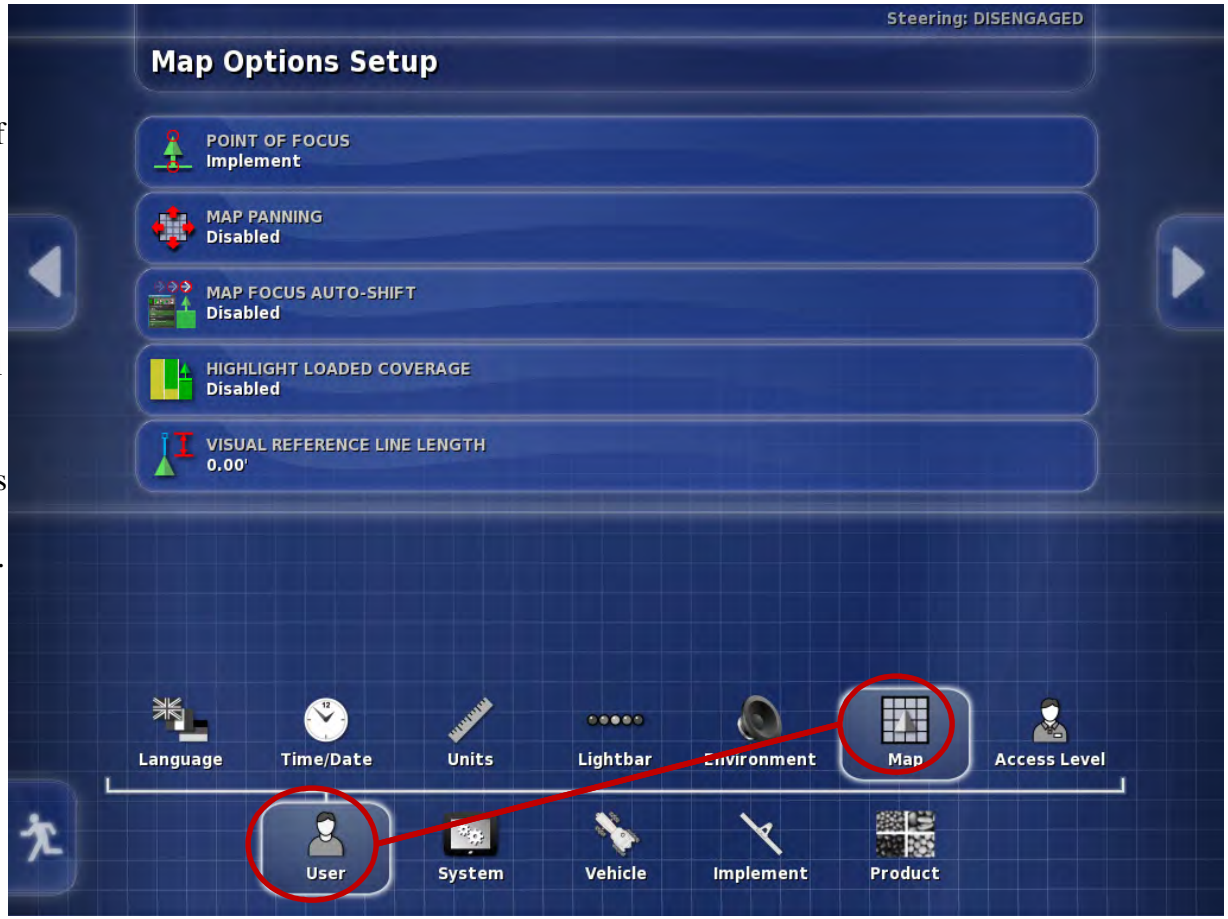
Environment Setup

-**Audio Volume %**
The volume of the audio and button clicks.
- **Button Clicks on/off**
Clicking sound every time you touch a button.
-**Alarm Audio on/off**
Whether or not you want the audio part of the alarm
-**Touchscreen Calibration**
If the screen is out of calibration. Restart required
-**Sensitivity of touchscreen**
Change the sensitivity. Restart required
-Multi-function Region Mode this is talking about the Topcon symbol on the front of the monitor. When screen shots is selected it allows you to take a picture of the screen your on. When global home screen is selected it allows you to build home screens and you can toggle through with touching the Topcon symbol.
-**System transfer** Not used
-**Steering status** used for Topcon steering



Maps

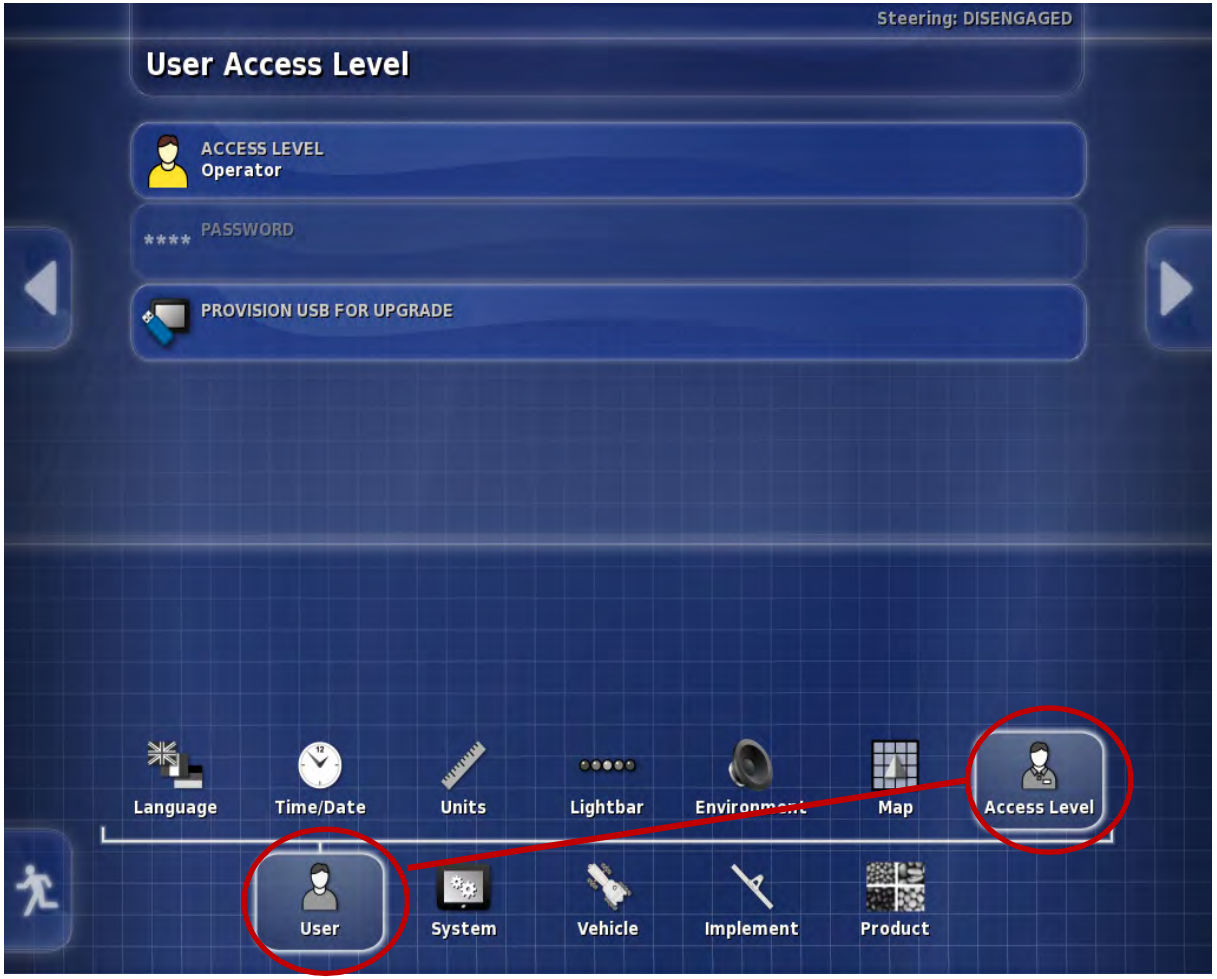
- **Point of focus:** Allows you to set the point of focus to either the vehicle or the implement
- **Map Planning:** allows you to pan though the map with your finger and drag it to where ever you like. So you can see parts of the map that aren't on the screen
- **Map focus auto shift:** if this is enabled it will automatically refit the map in the guidance screen when you have any mini views out.
- **Highlight loaded coverage:** when enabled, as product is being applied covered area will be in green and the previously covered will be yellow.
- **Visual reference line length:** allows you to Set a visual reference line length



Access Level

- Allows for access to some feature (like diagnostics) not accessible at the Operator level

- **Provision USB for upgrade**
This allows you to unlock the software on a thumb drive when an update is required.

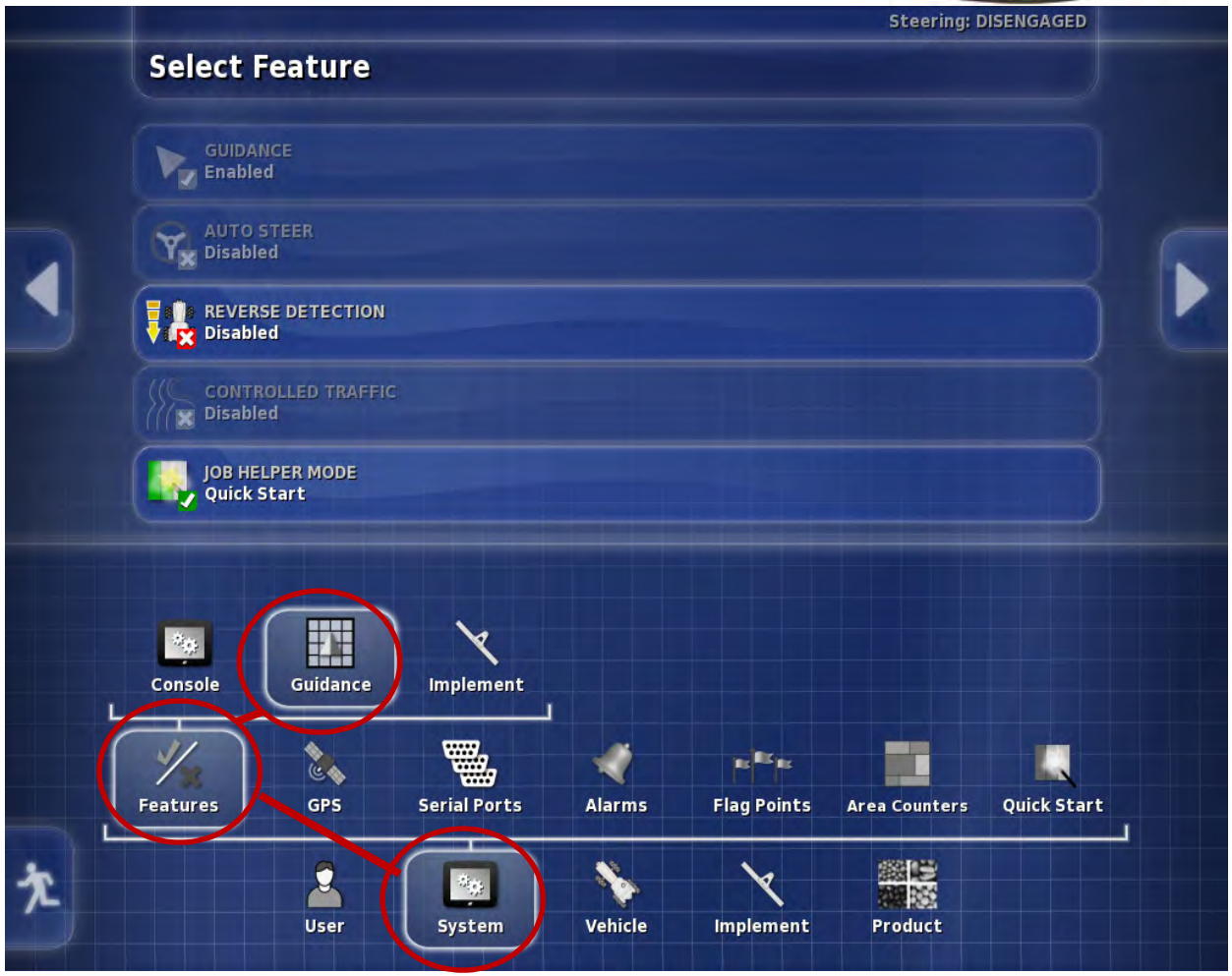


BOURGAULT

X30
Monitor/Controller

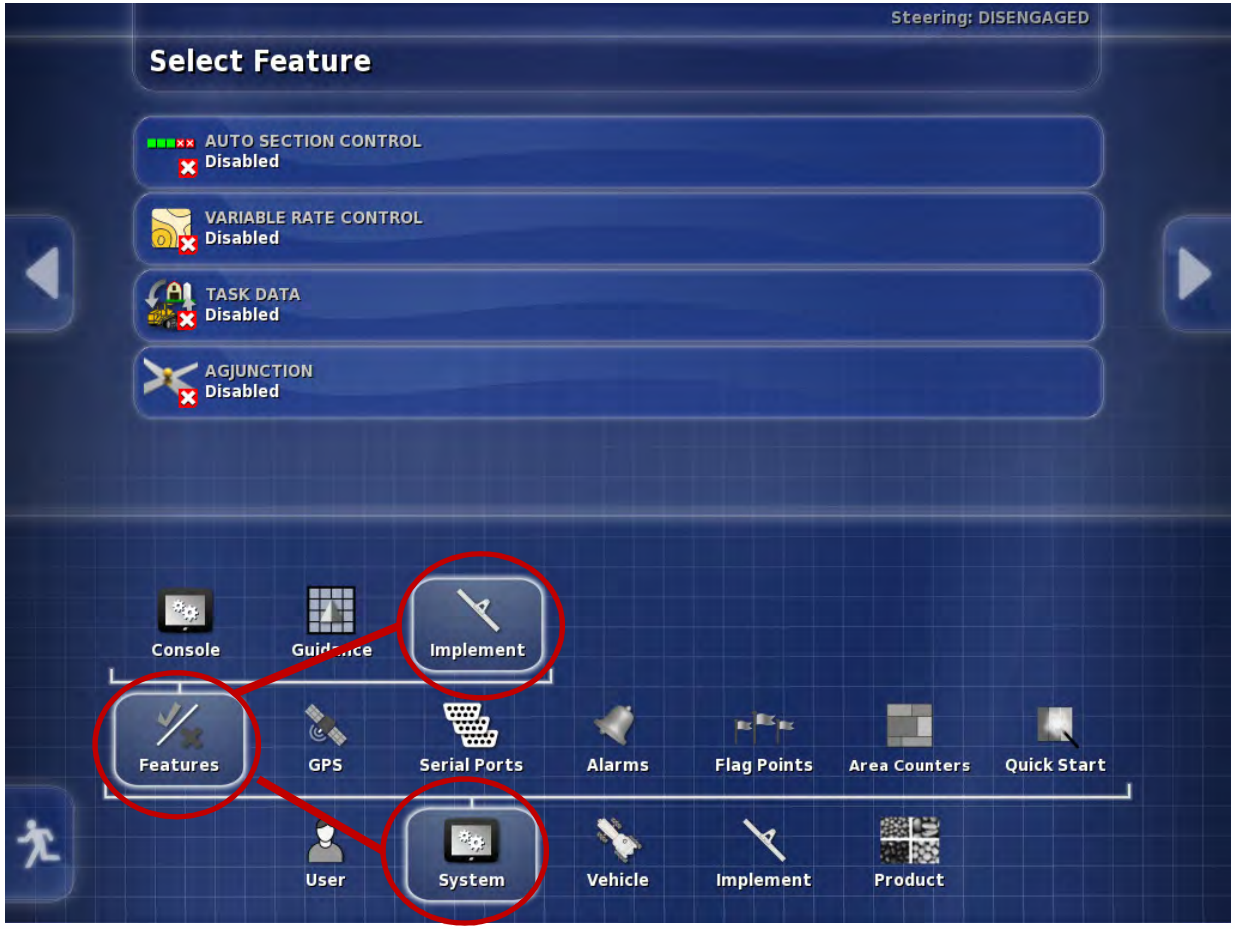
Guidance

- **Guidance** (this is always enabled)
- **Auto Steer** (used with Topcon Steer)
- **Reverse Detection** (Topcon Steer)
- **Controlled Traffic** (Topcon Steer)
- **Job Helper Mode** adds a pop up menu to the guidance screen for navigation ease. You can have either Job Assist or Quick Start.



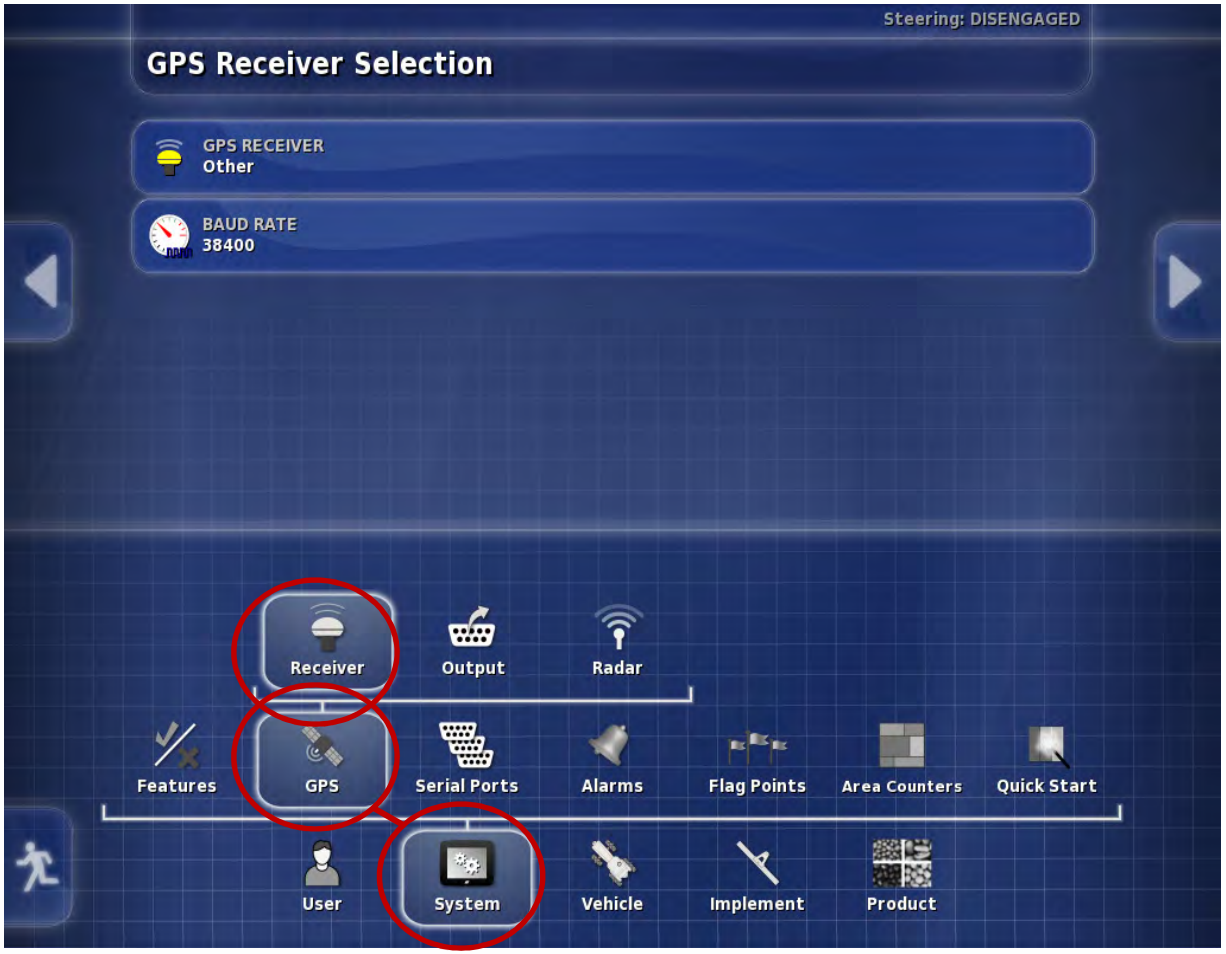
Implements

-**Auto Sectional Control**: **ON** if you want the guidance to turn the clutches on and off. Or if your using sectional control NH3 or Liquid.
-**Variable Rate Control** if using a VR map
-Task Data (not used)
-Agjunction (not used)

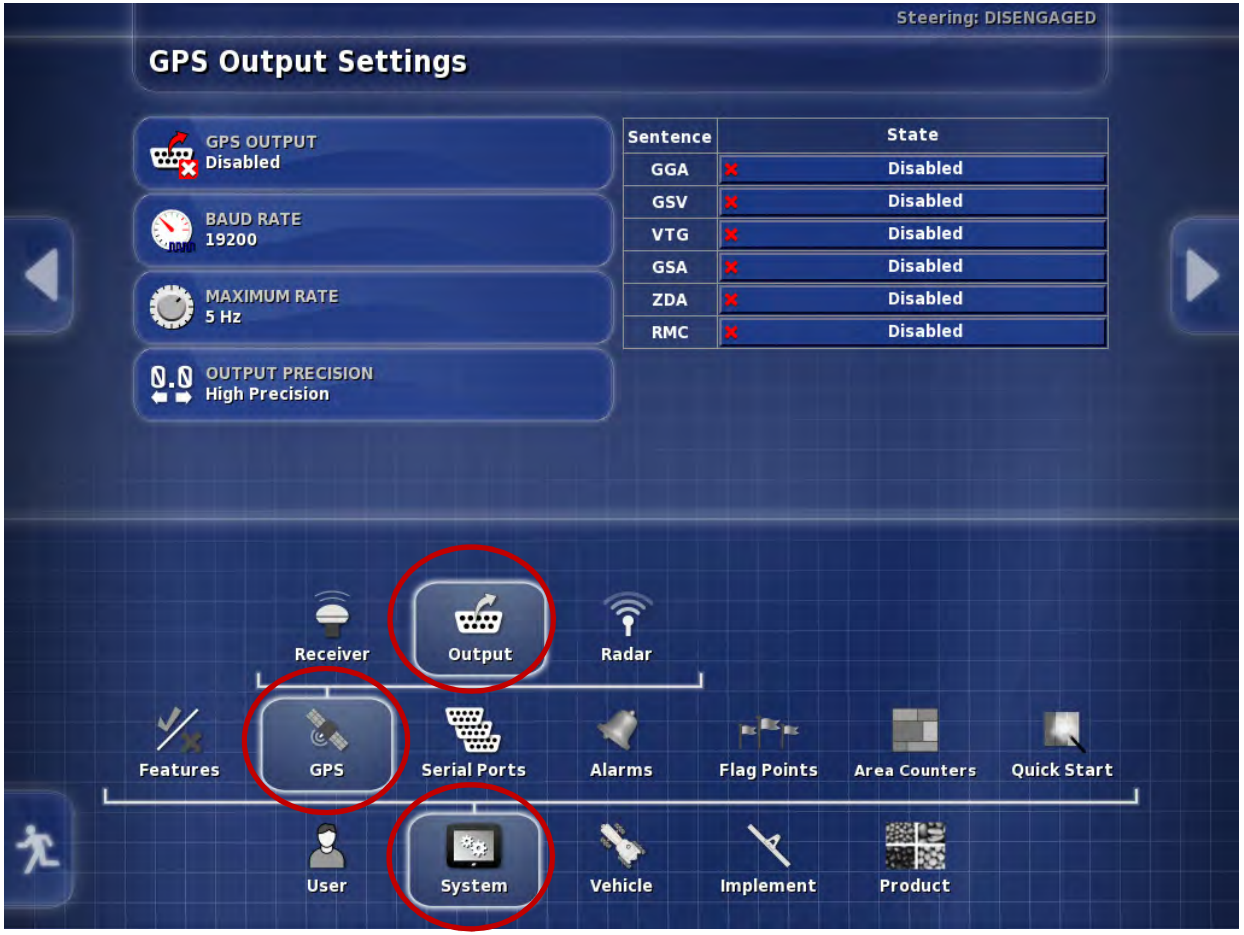


GPS Receiver

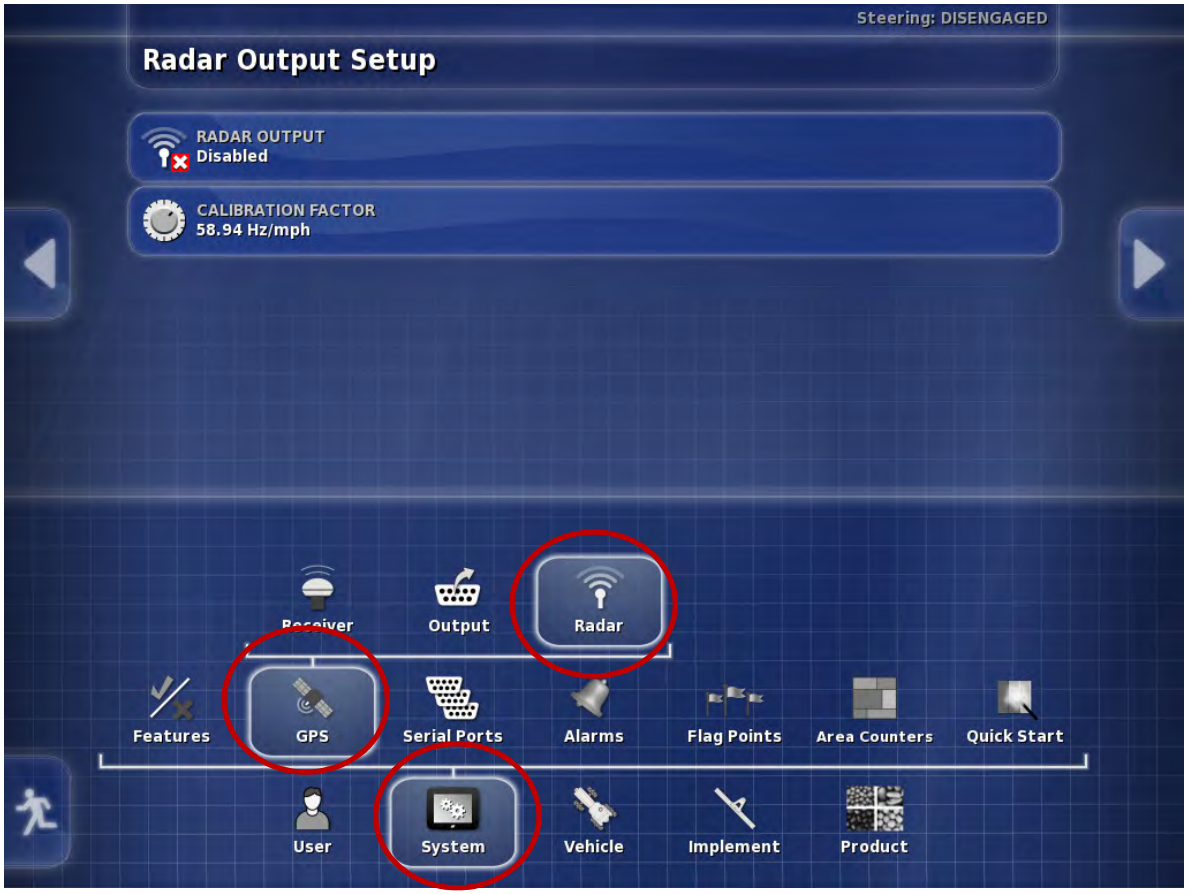
- **GPS Receiver** use other for non Topcon
- **Baud Rate** set to the rate that your receiver is outputting.



Not Used


Steering: DISENGAGED
GPS Output Settings
GPS OUTPUT
Disabled
BAUD RATE
19200
MAXIMUM RATE
5 Hz
OUTPUT PRECISION
High Precision
Sentence
State
GGA
Disabled
GSV
Disabled
VTG
Disabled
GSA
Disabled
ZDA
Disabled
RMC
Disabled
Receiver
Output
Radar
Features
GPS
Serial Ports
Alarms
Flag Points
Area Counters
Quick Start
User
System
Vehicle
Implement
Product

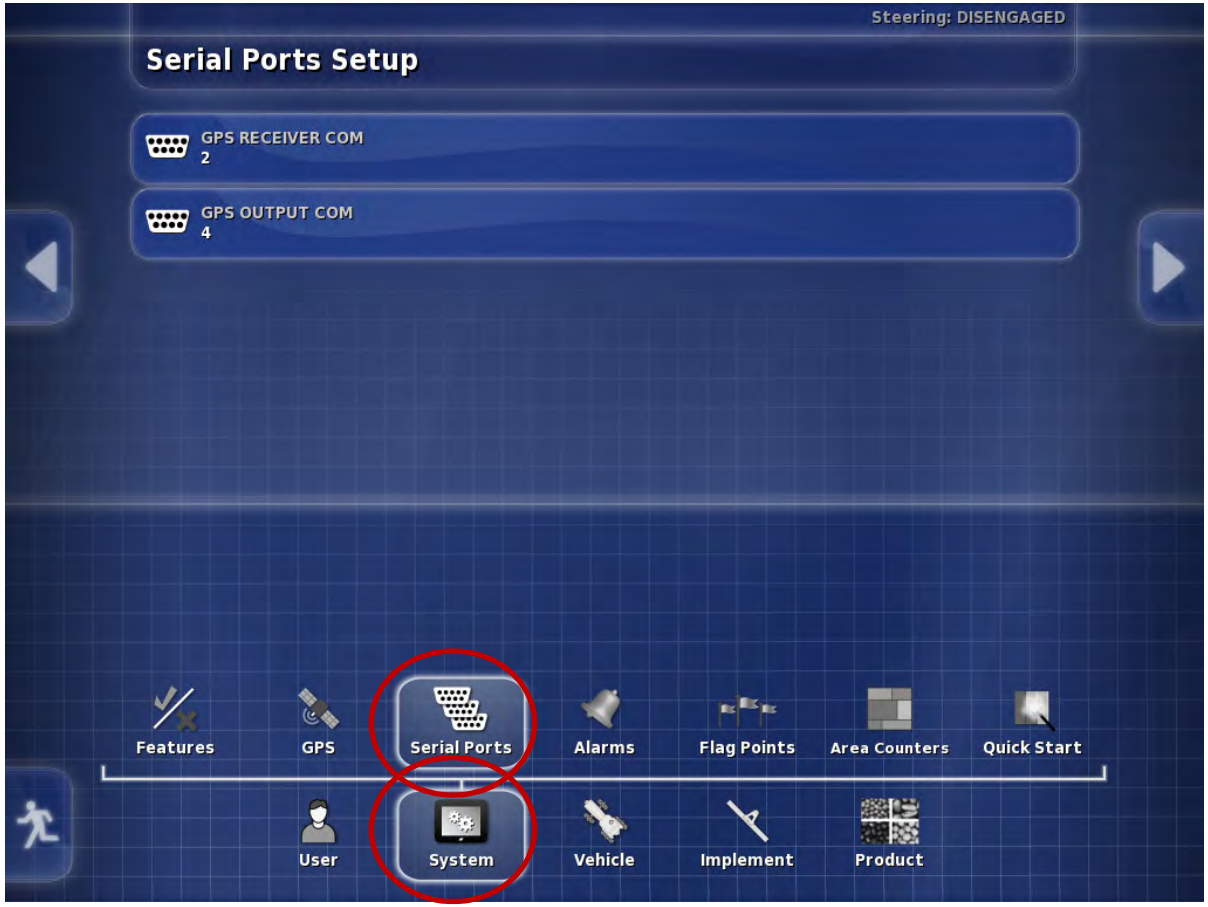
Not Used


Steering: DISENGAGED
Radar Output Setup
RADAR OUTPUT
Disabled
CALIBRATION FACTOR
58.94 Hz/mph
Receiver
Output
Radar
Features
GPS
Serial Ports
Alarms
Flag Points
Area Counters
Quick Start
User
System
Vehicle
Implement
Product

Serial Port

Receiver Com this needs to be set to match the way that you have brought in the signal into the X30

Output Com have this set to something different then what the receiver Com is

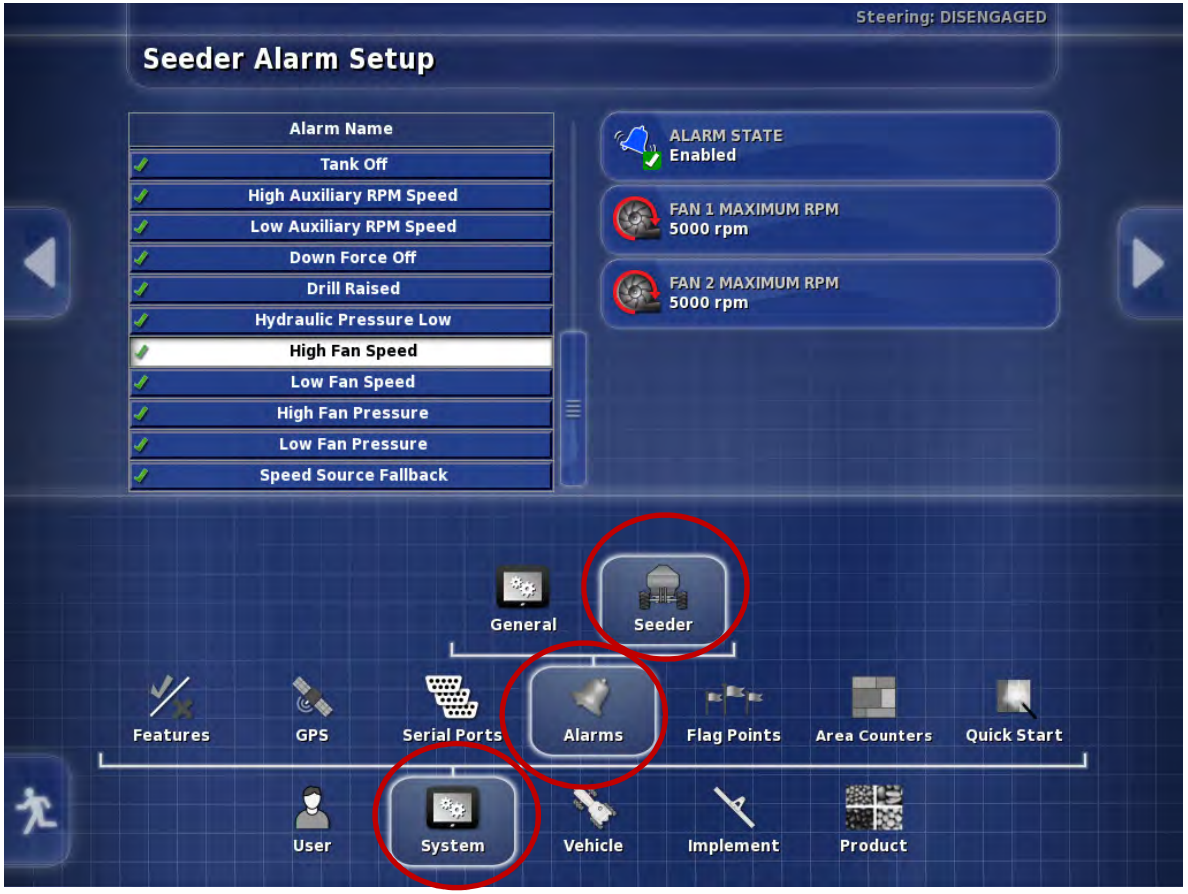


Alarms

- Alarms that deal with the console, GPS or Steering. All can be disabled

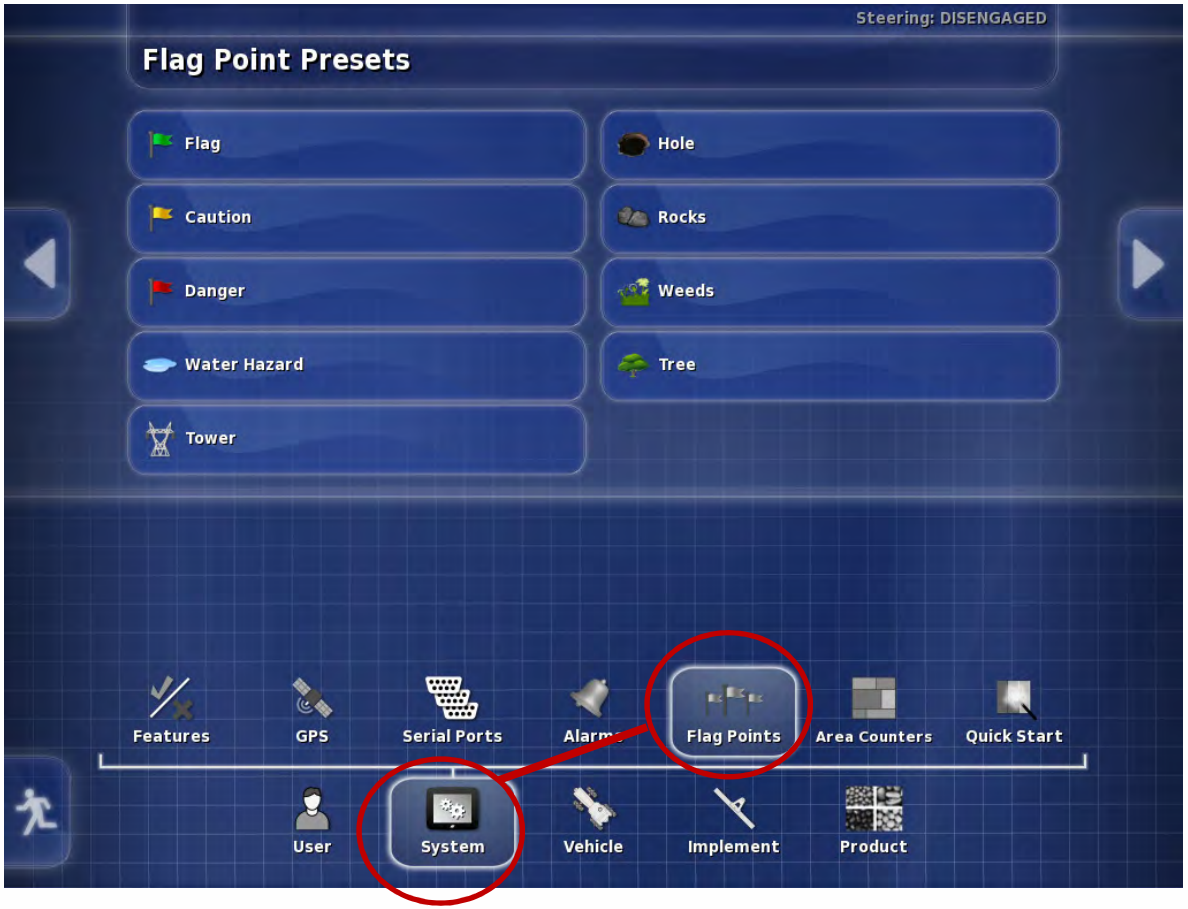
Seeder Alarms

- All the alarms for the seeder, can be turned on or off individually



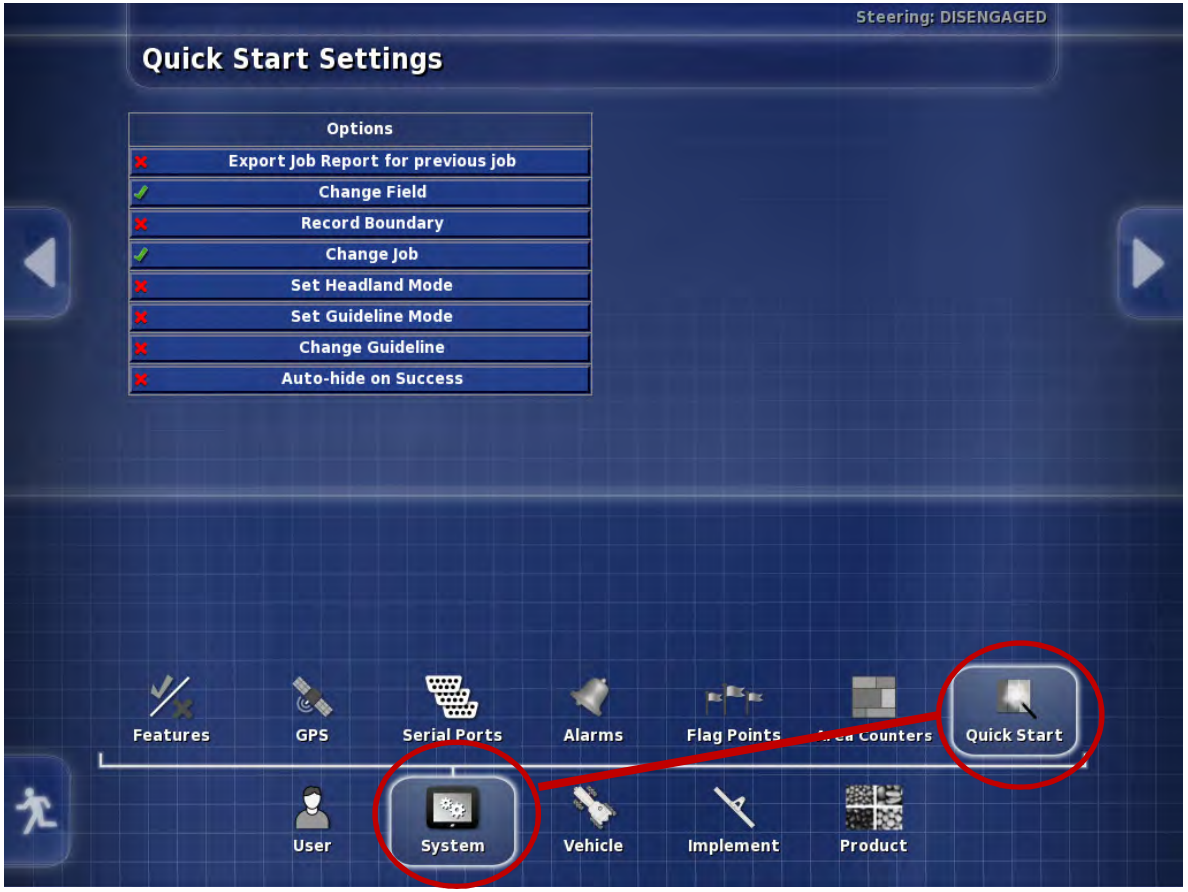
Flag Points

- With all the flag points you can change the description or name of the point



Area Counters

-**Area counters** (on/off)
-**Reset area** (never, auto, and Prompt)
Never: area will never reset unless the operator does it
Auto: it will automatically reset every time they start a new job.
Prompt: it will prompt you every time that you start a new job

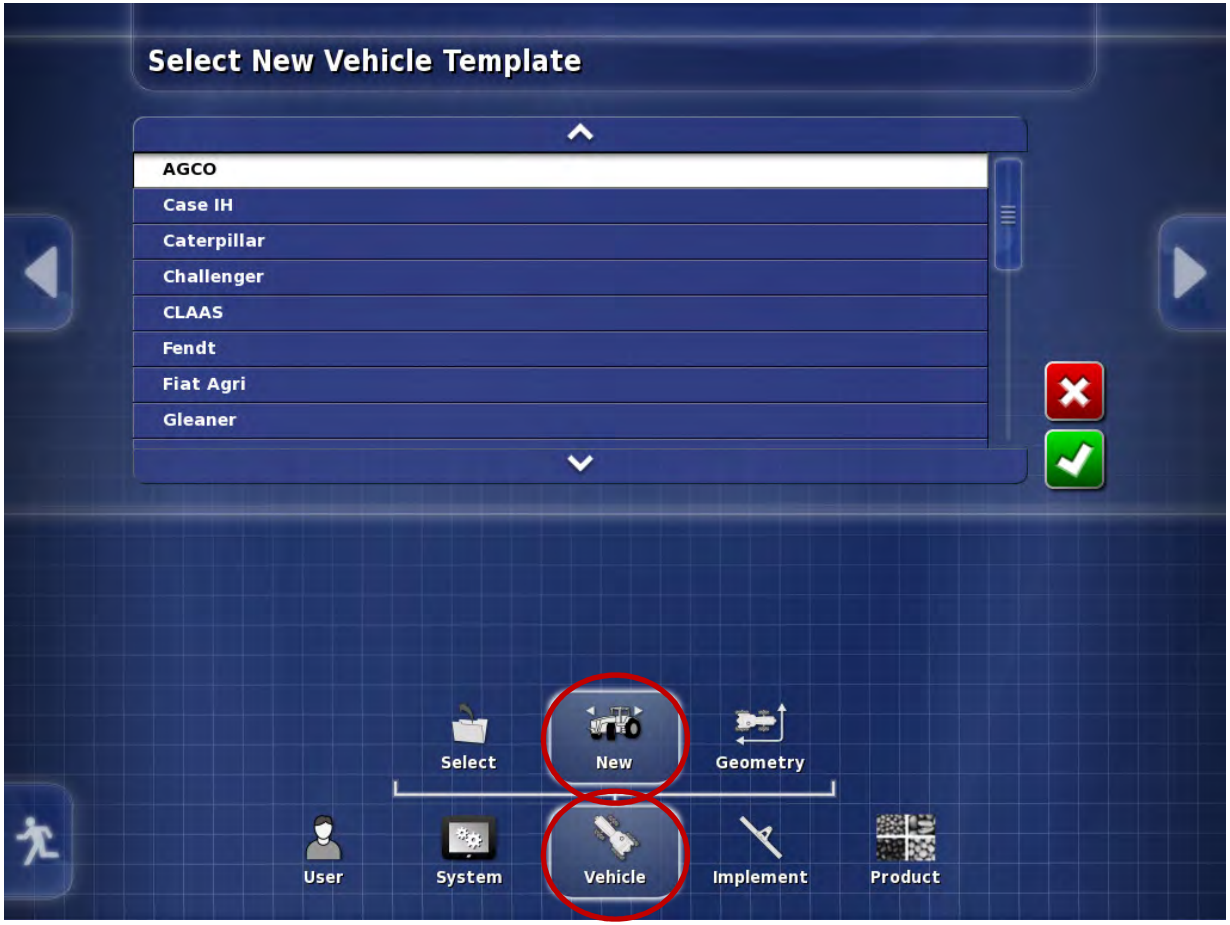

Steering: DISENGAGED
Quick Start Settings
Options
Export Job Report for previous job
Change Field
Record Boundary
Change Job
Set Headland Mode
Set Guideline Mode
Change Guideline
Auto-hide on Success
Features
GPS
Serial Ports
Alarms
Flag Points
Quick Start
User
System
Vehicle
Implement
Product

Select Vehicle

- You can change between different vehicles that you have created
- You can load a vehicle from another monitor through a USB
- If you change the vehicle in this page it will restart the monitor

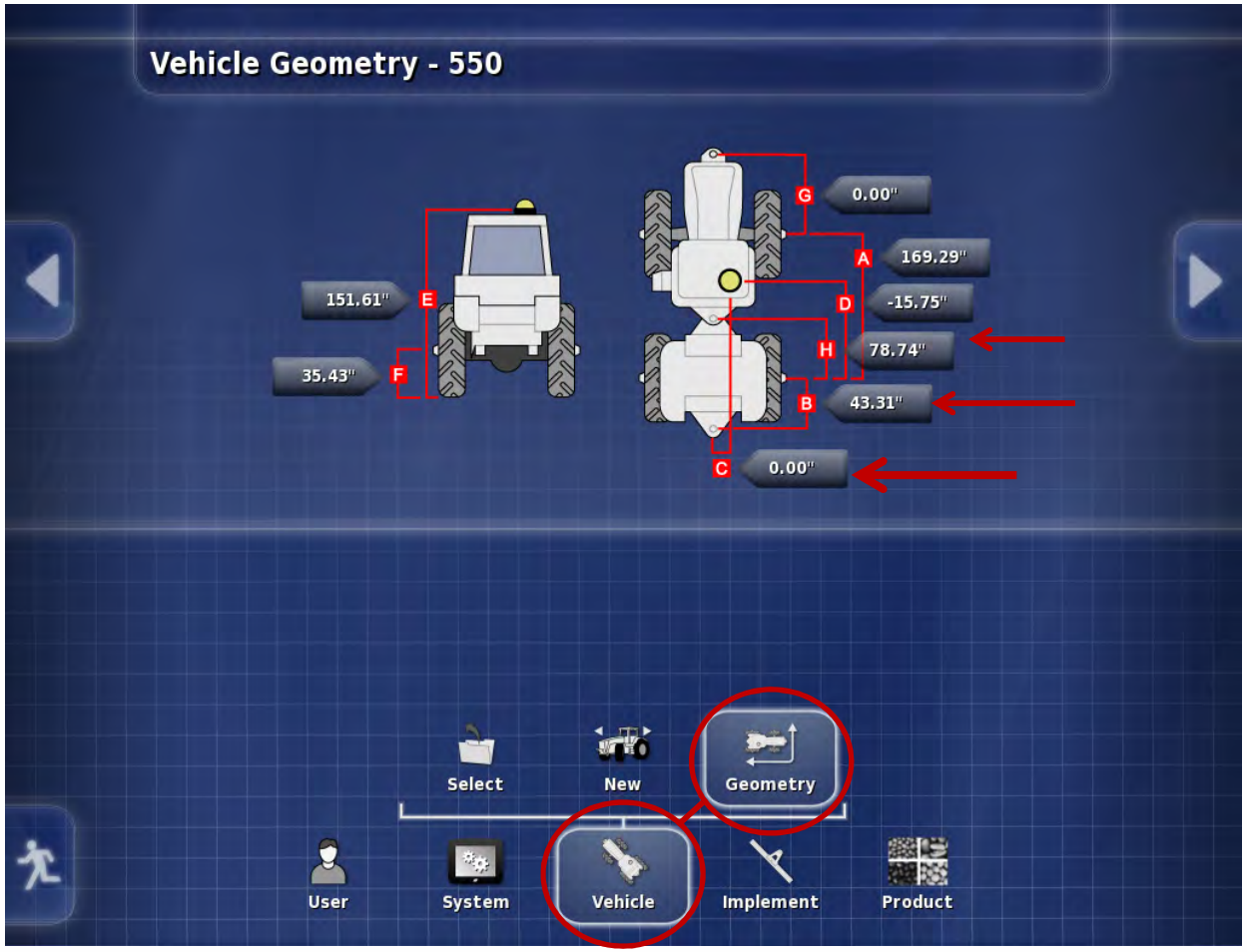
New Vehicle

- This is were you can go in and create a new vehicle by selecting the proper manufacture.
- Then it will ask you to pick the model of the unit if its not there pick a model that is close to right one.



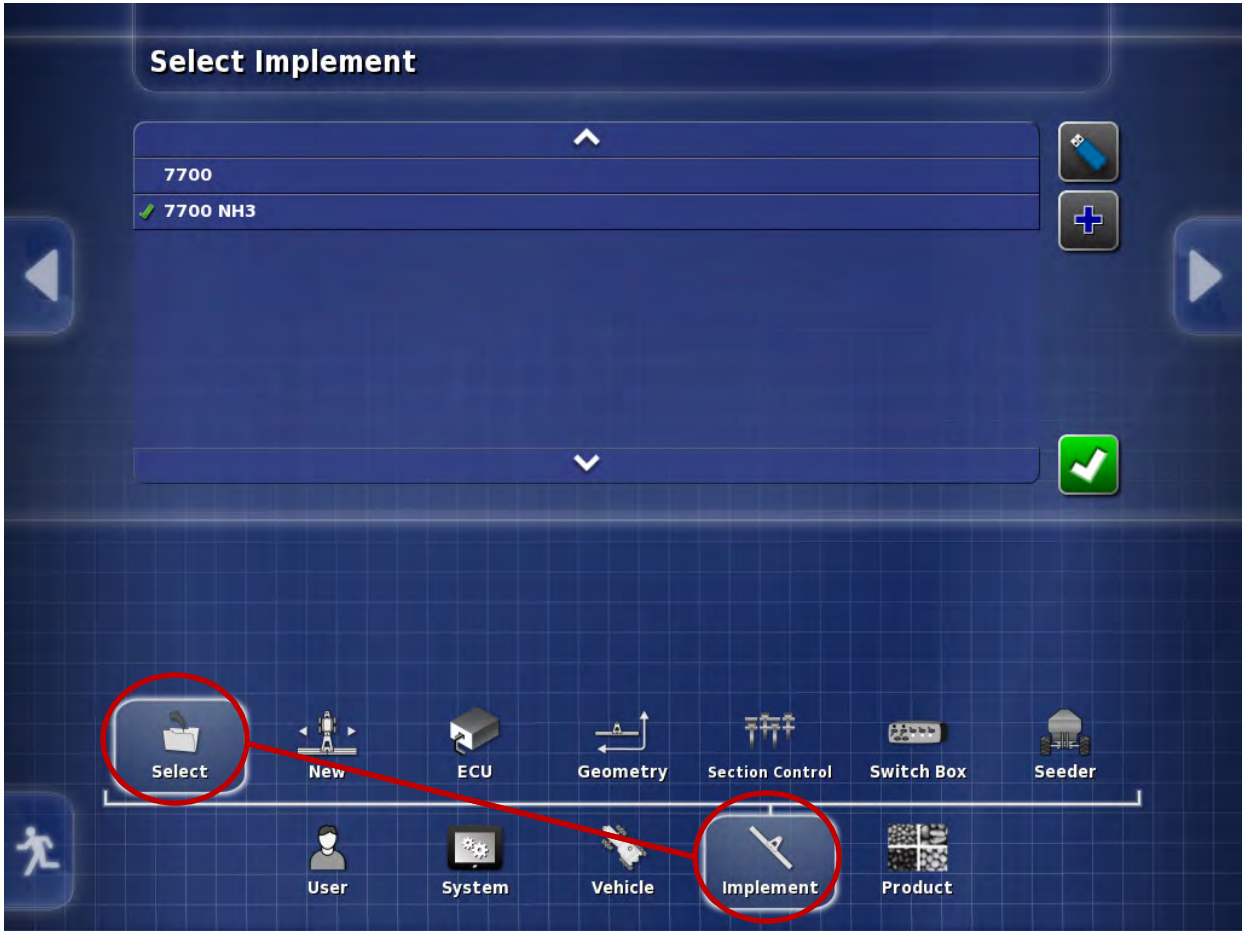
Vehicle Geometry

- After the unit is picked you will have to come in and adjust the measurements specific to each vehicle
- Ensure distance from receiver to rear axle, rear axle to the hitch and the receiver to the center of the machine are accurate as this will affect ASC/Mapping
- The rest are primarily for steering application
- Some steer systems require odd dimensions to steer (AES25) Topcon



Select Implement

- This is were you will pick the machine that you are operating
- Every time you create a new profile it will appear here

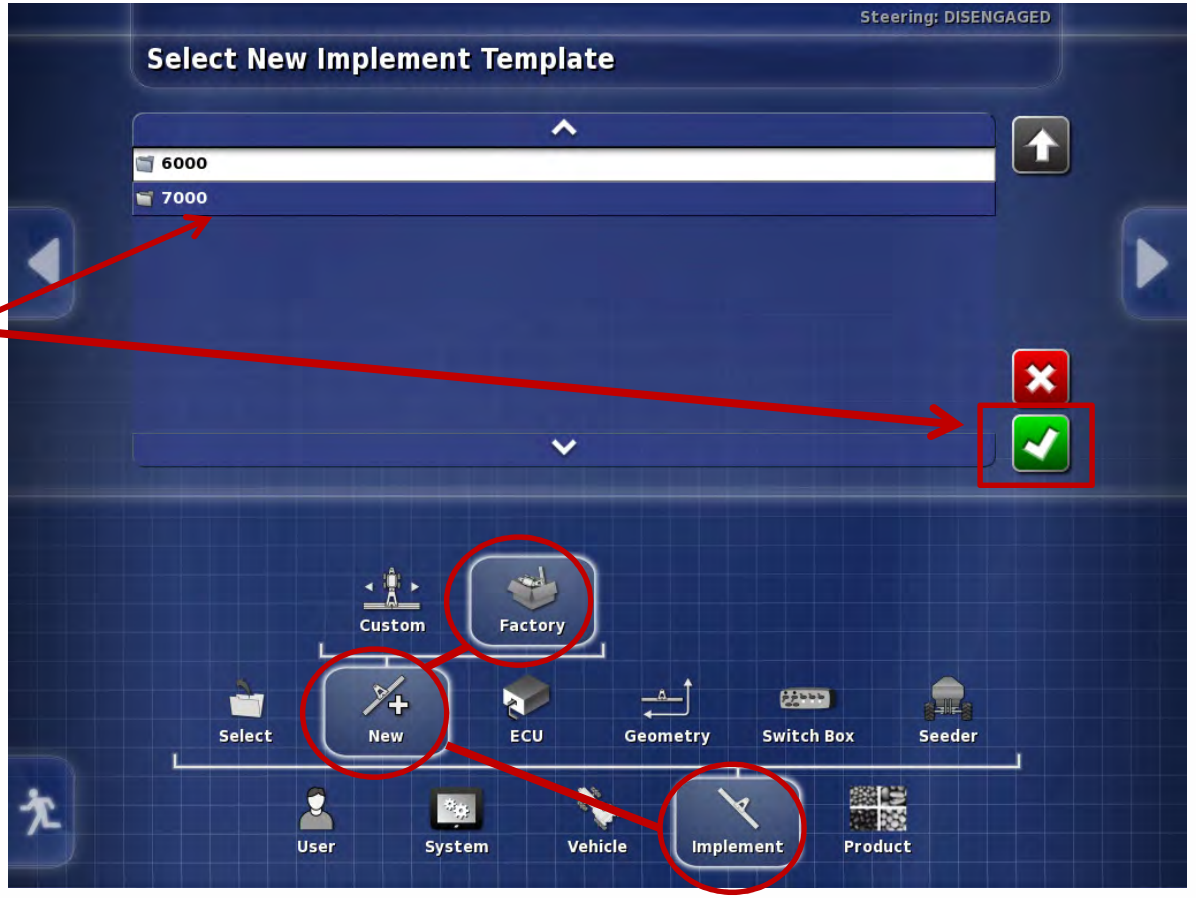


Factory Profile

-Follow though a few steps to configure your monitor to the machine you are working with.

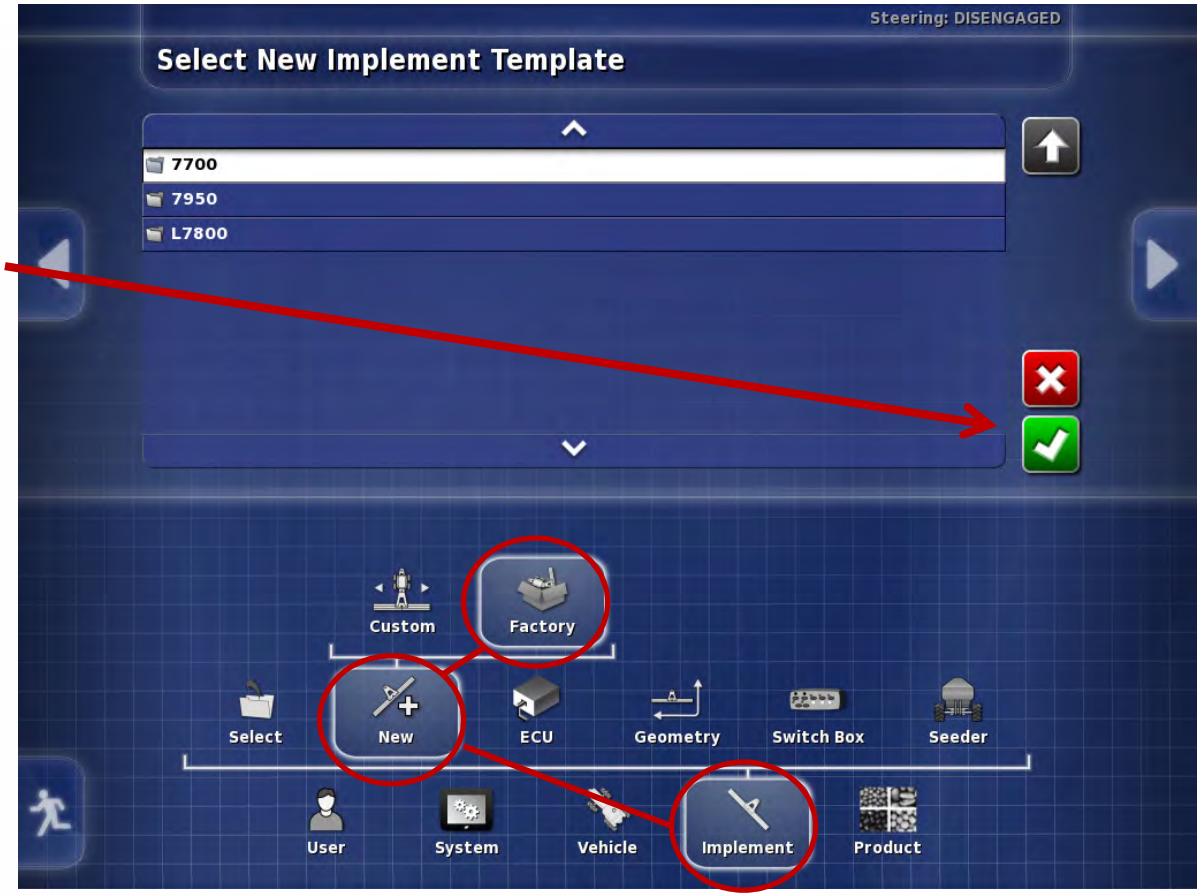
-Start by picking the series of tank that you have. Touch and highlight the proper one then press the green arrow.

-Setting up a profile for both 6000/7000 a basically the same as you go though



Factory Profile

Select the model for tank by highlighting it then press the green arrow to move on.

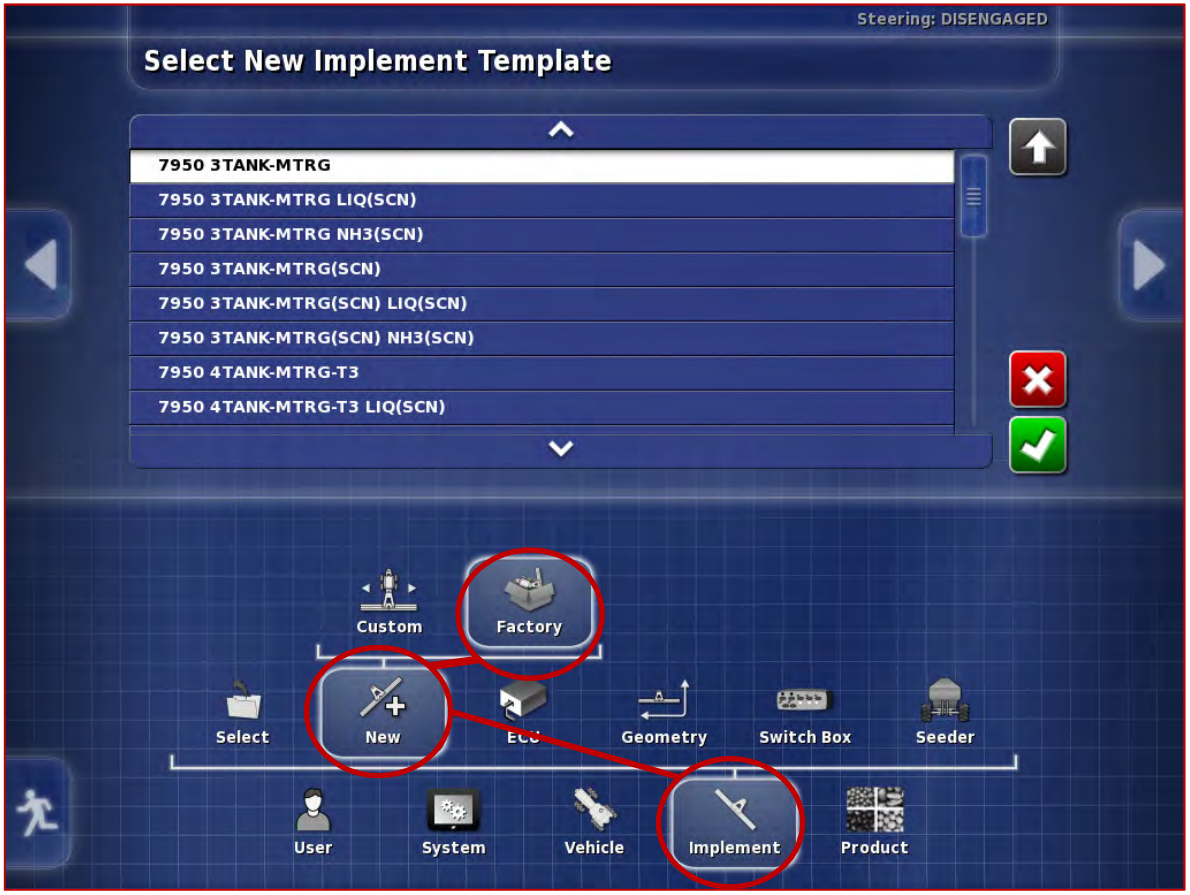


Factory Profile

This is were you pick how your machine is configured. How many meters and weather or not you have sectional NH3/LIQ. Find the one that fits your tank and highlight it and press the green check mark.

NOTE: you will see in a four tank configuration that it has a T3 or a T5.

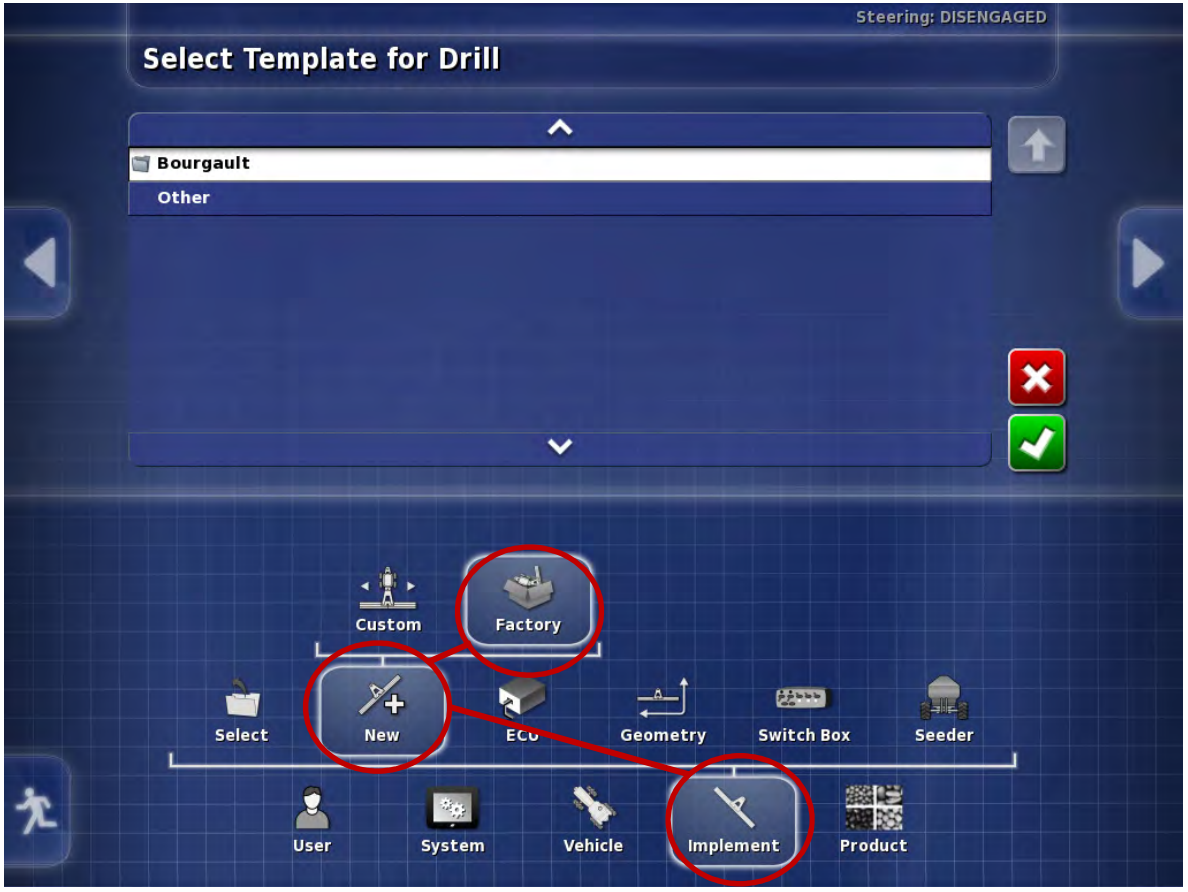
T3 - means that the fourth meter is on tank three.
T5 – means that the fourth meter is on the saddle tank.



Factory Profile

- Pick Bourgault then go ahead and press the green check mark.

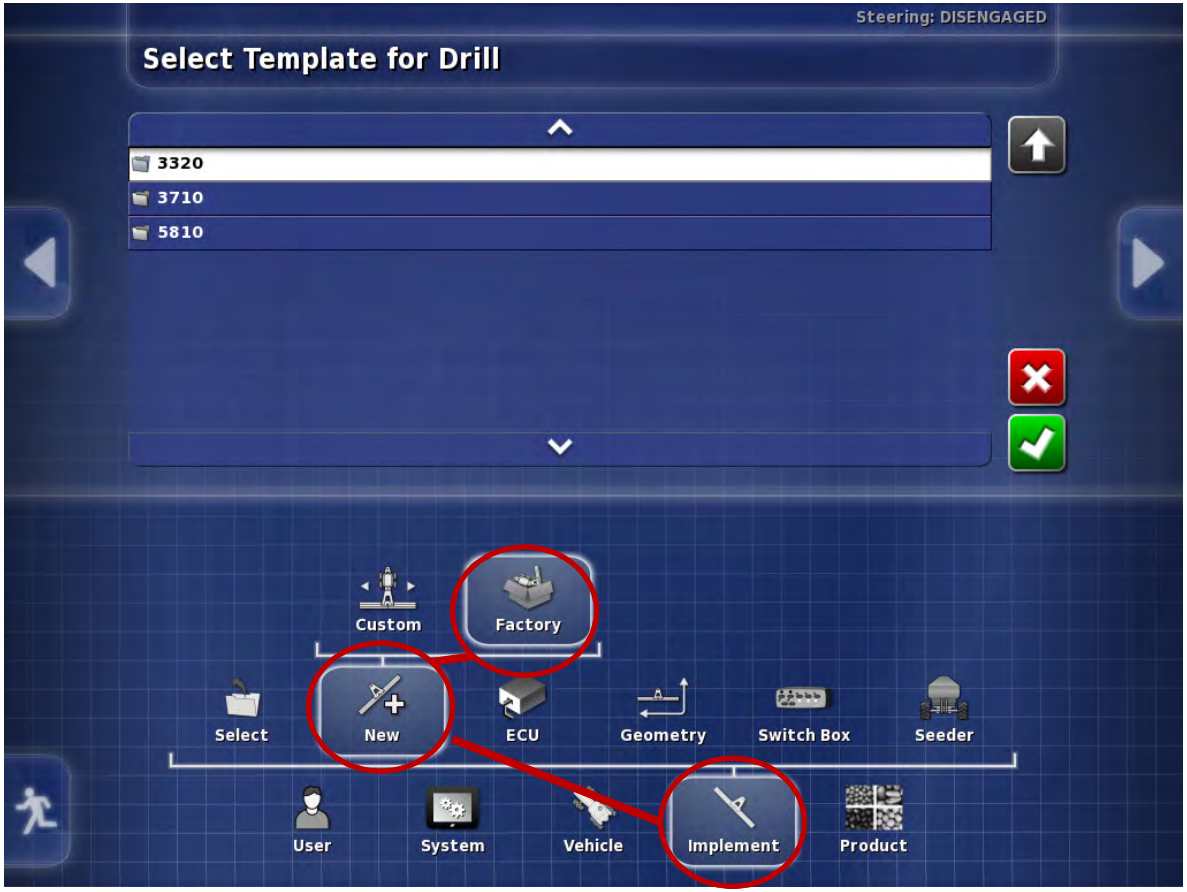
- At this point it will tell you that the X30 will need to preform a reboot. Just touch on the green check mark to move on.



Factory Profile

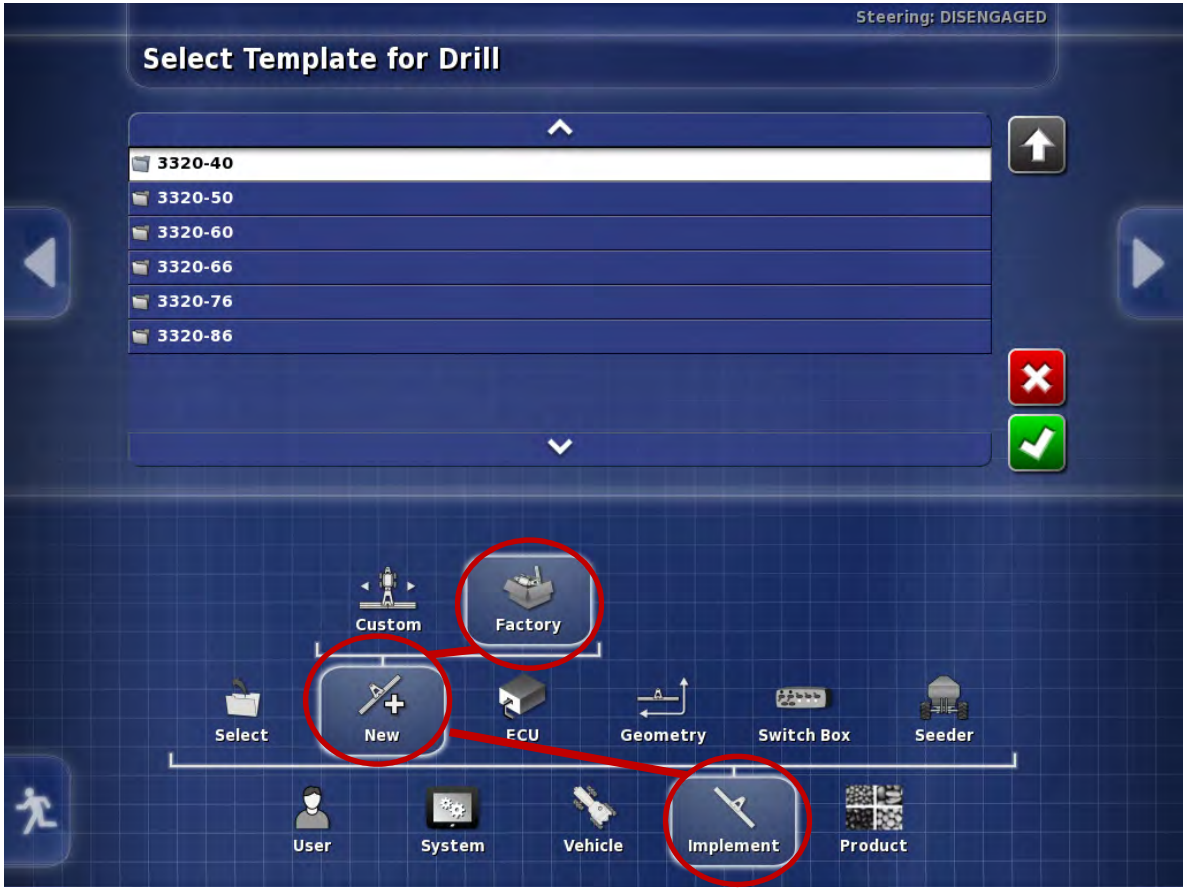
- Highlight the machine that you will be using. Then press the green check mark to proceed.

- If the machine that you are using is not listed you will have to pick one. After you have to go into the geometry and change the dimensions to fit the machine you have.



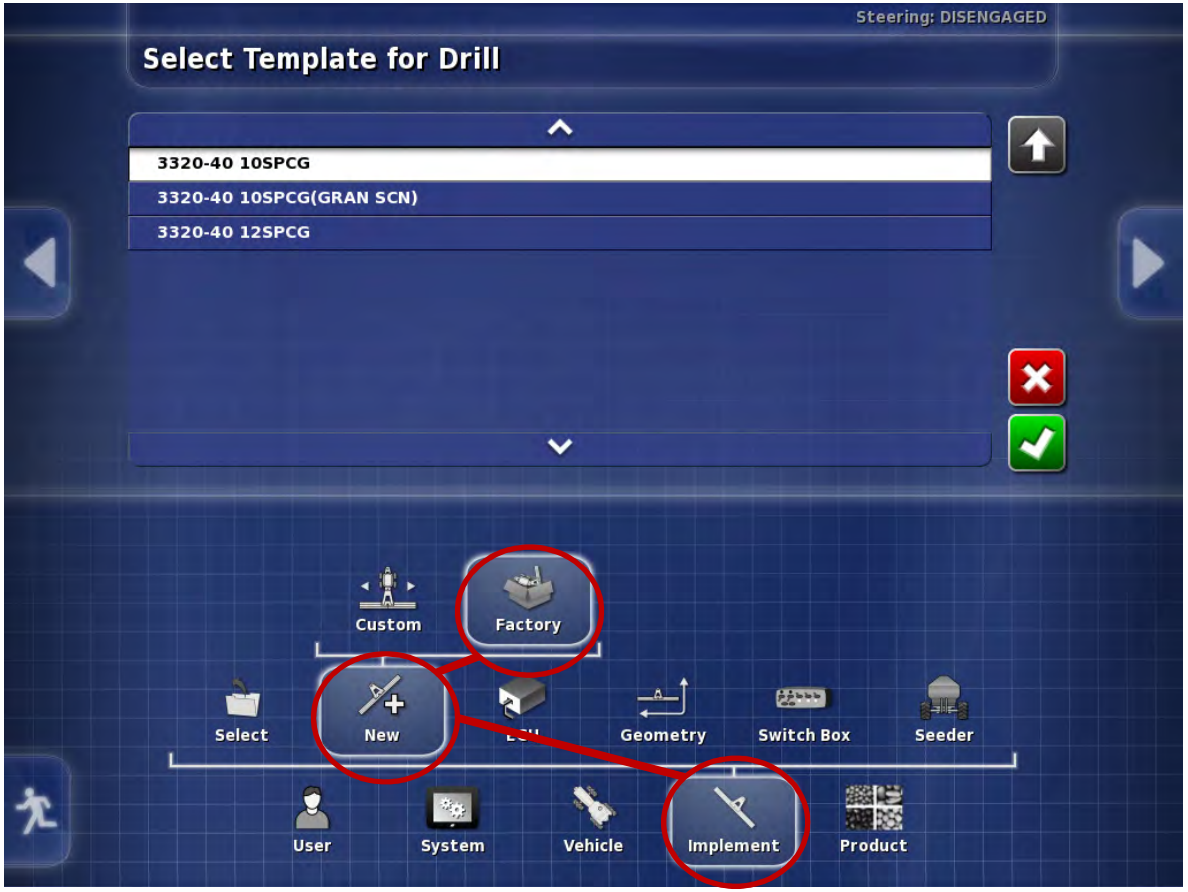
Factory Profile

- Find the machine that fits then highlight it and hit the green check mark to move on



Factory Profile

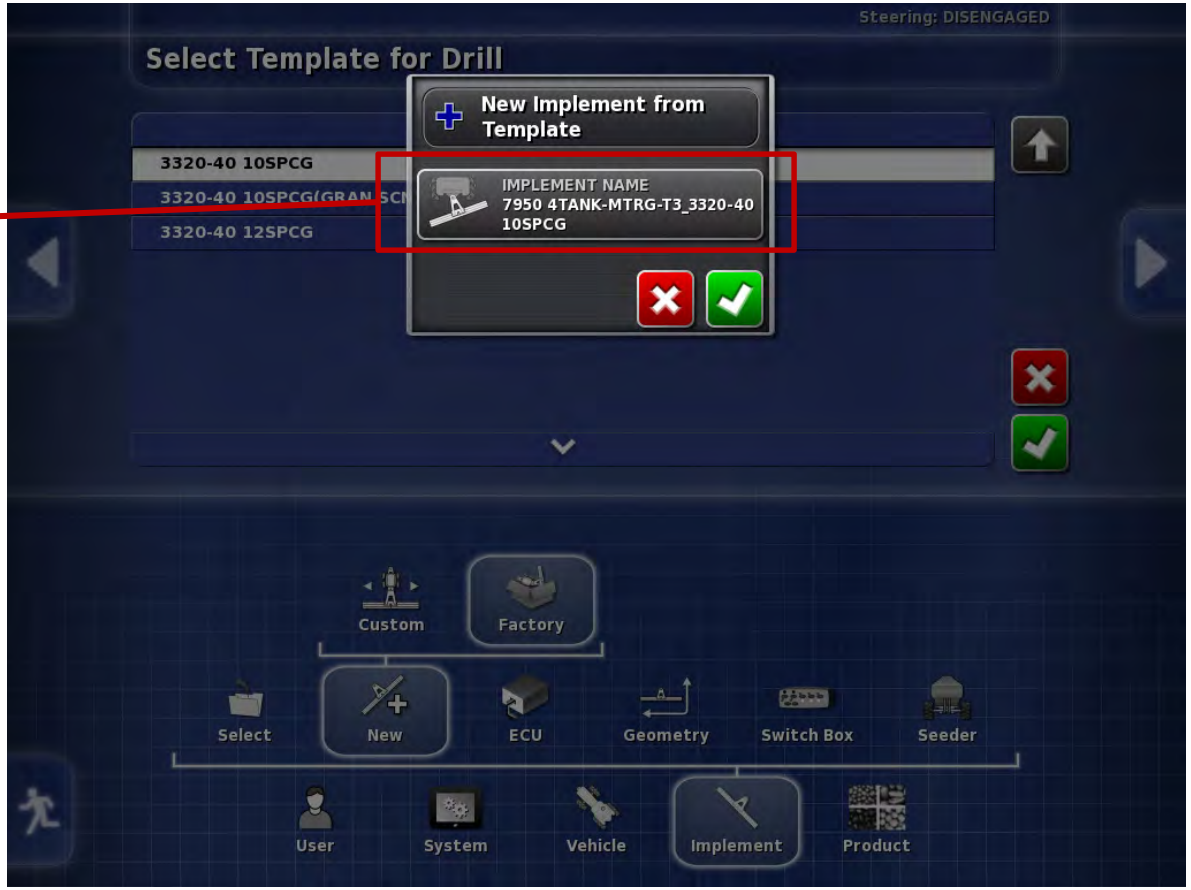
- Pic the one that matches the your machine, highlight and pick the green check mark to move on.



Factory Profile

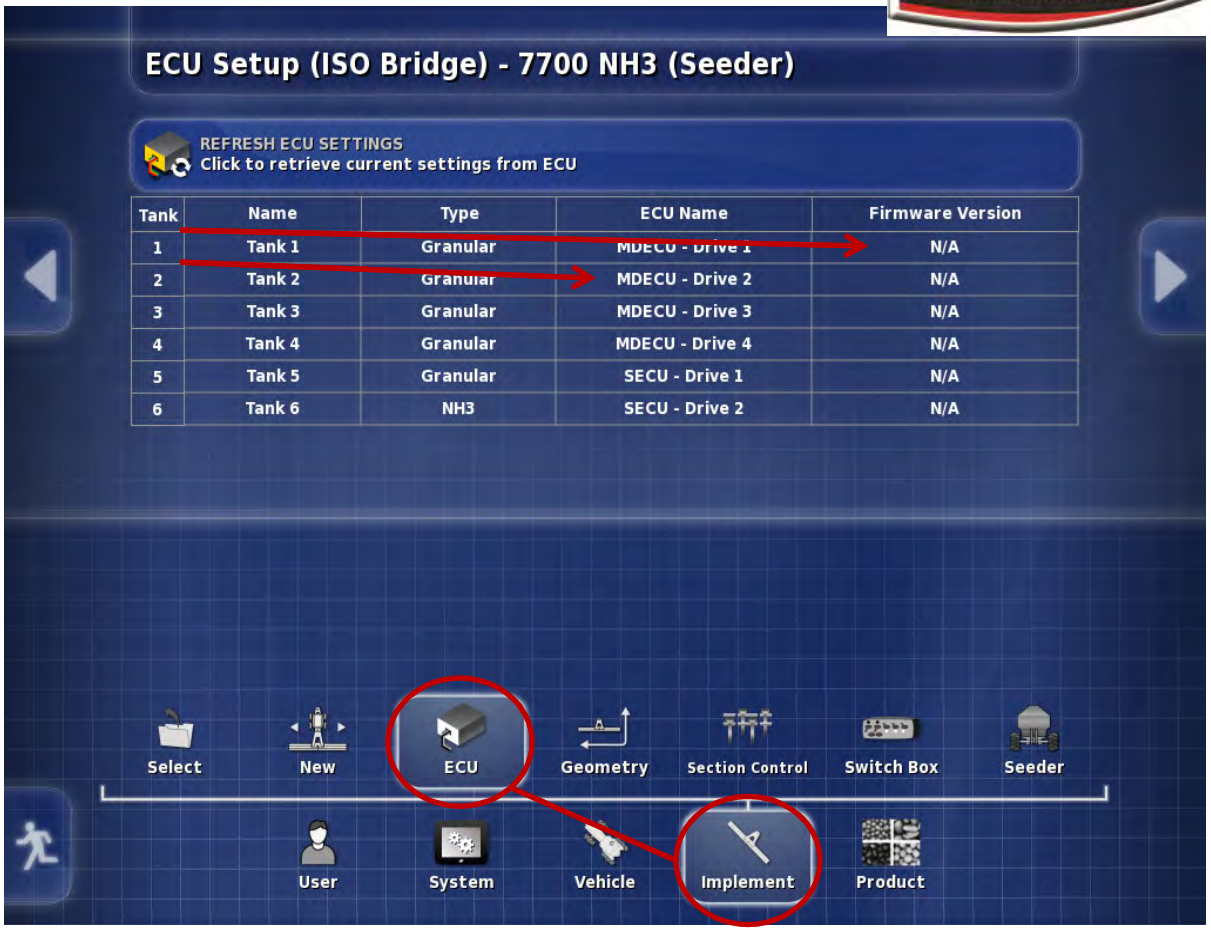
- On this screen it allows you to the name the unit simply by touching on the box with the name in it.
- Then a key pad will come up for you to type the name.
- When finished then touch the green check mark to move on

- So when its on the select tab you will be able to recognized it.



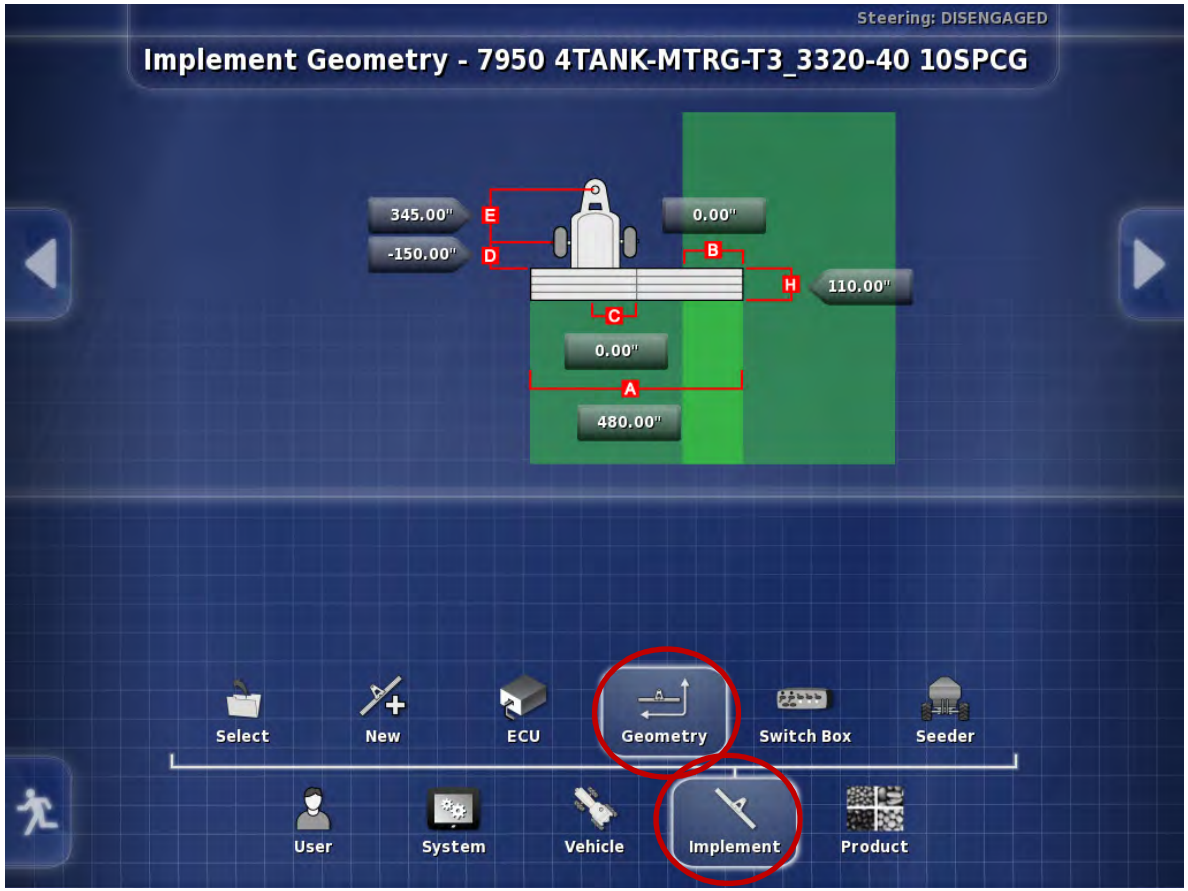
ECU Setup

- This page shows what ECU and drive each tank is working through it will also let you know what firmware versions they are running when connected to the tank



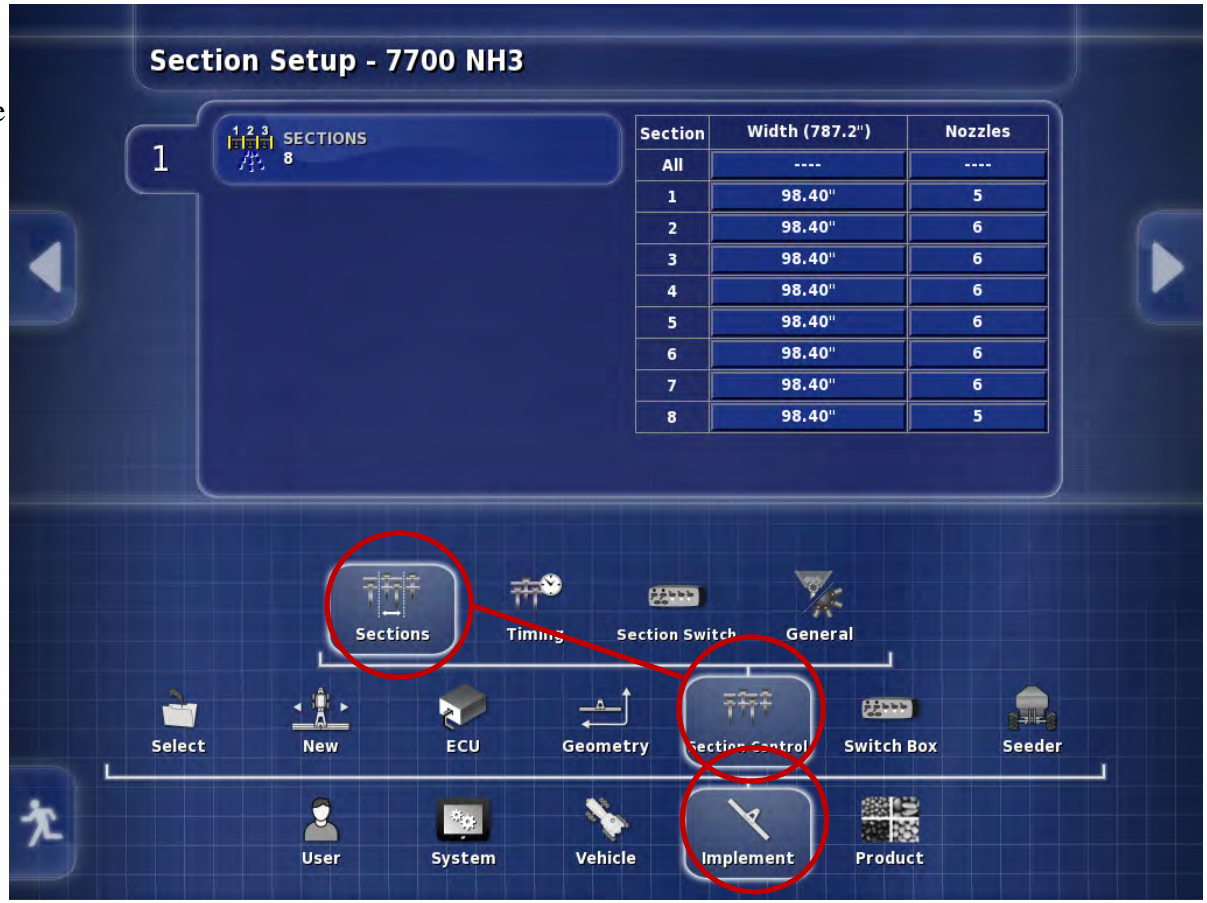
Implement Geometry

These values should be set into the monitor from the factory but should be checked to make sure.
A- enter the width of the implement. If using Sectional control the value will be entered in the section setup screen
B- overlap (not used)
C- depth (not used)
D- from the pin to the front row of openers or MRB
E- from the main pin to the center of the caster hub or the High Flotation hub
H- from the front row of openers to the back row of openers.



Section Setup

- Enter # of section and the width of each for the Multi-section boom
- It can be set all the same or individually
- If using multi-section the total width will auto Populate into the geometry screen
- Nozzles numbers only come into effect with Liquid

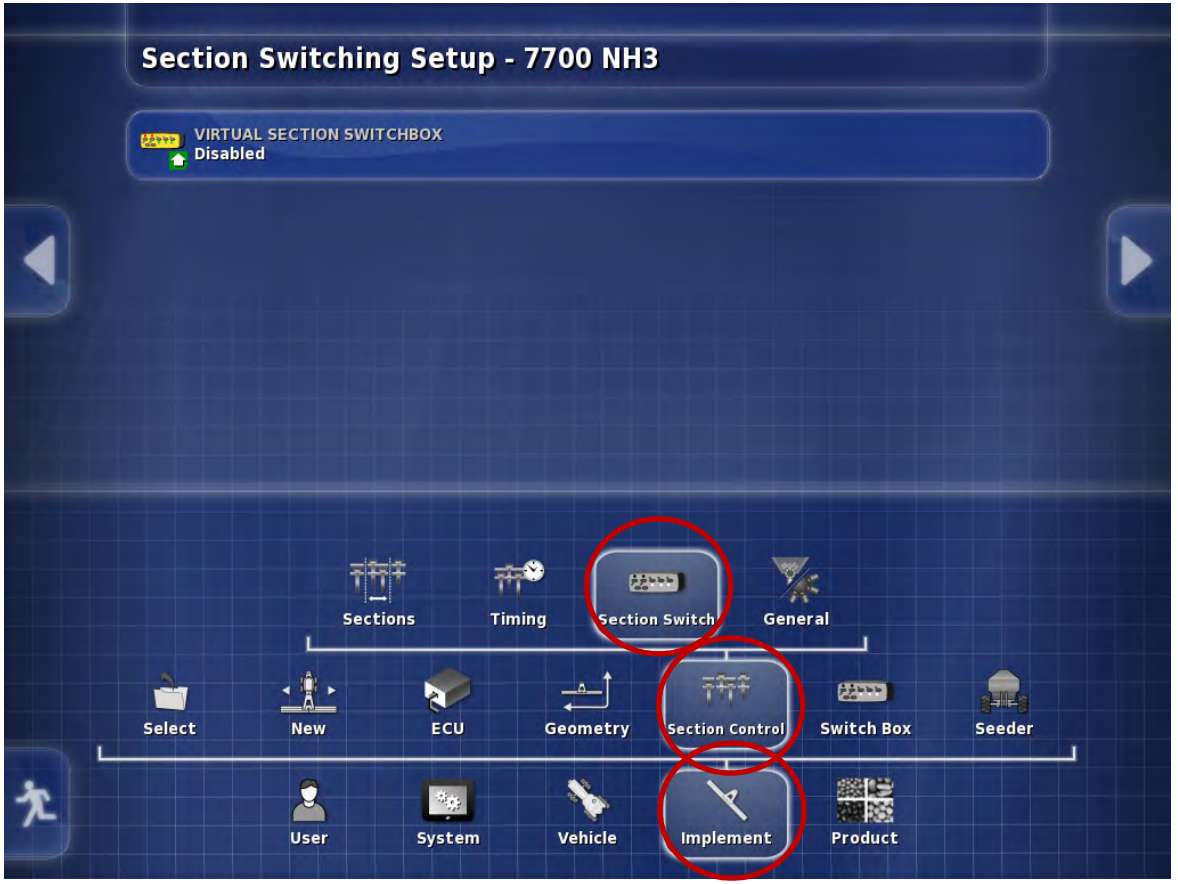


Sections Timing

- Look ahead times for the individual section valves
- For NH3/ LQd would typically be the same as the tank on/off times
- This will come more into affect with granular

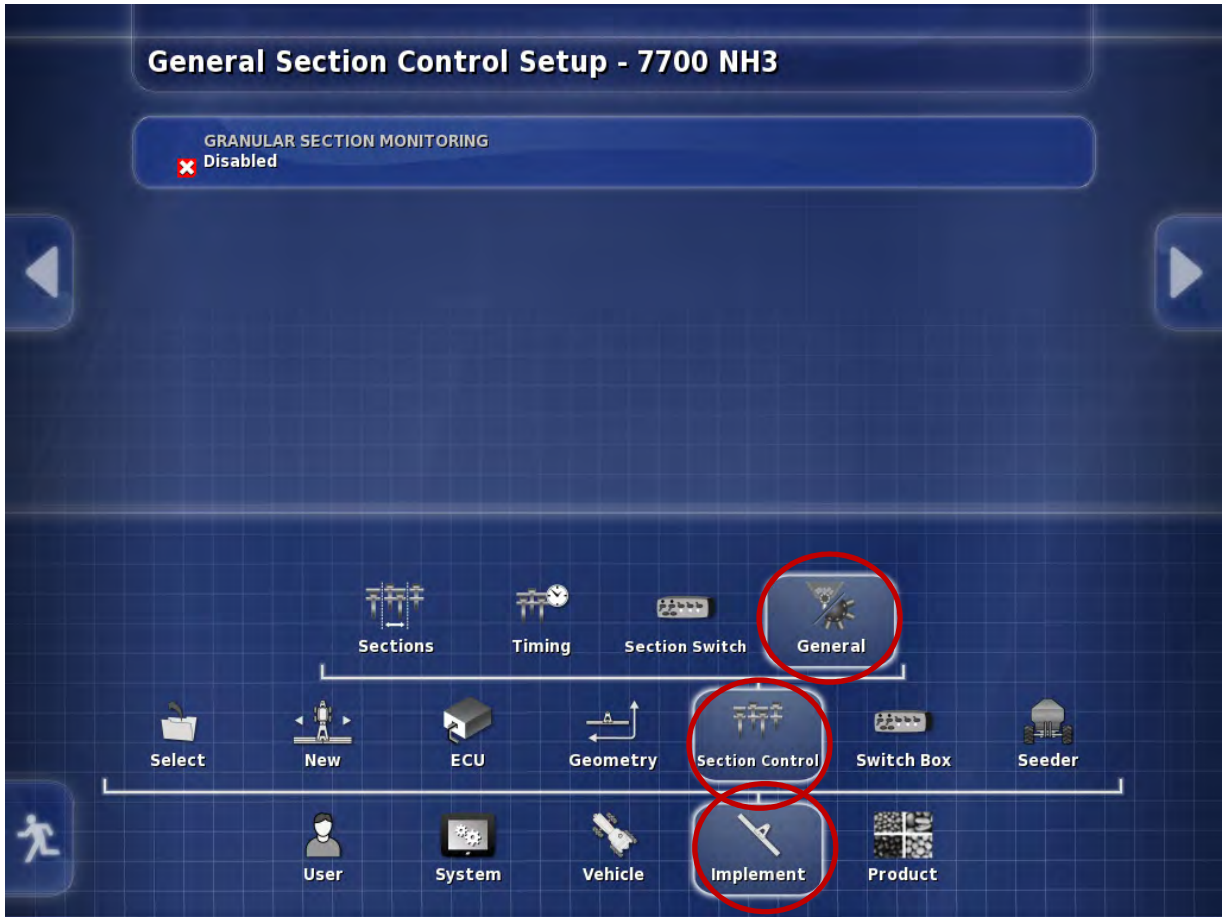
Section Switch

- Enable a virtual switchbox so that you can manually control sections on screen
- This virtual switchbox will show up on the guidance Page
- Only works if your using sectional control



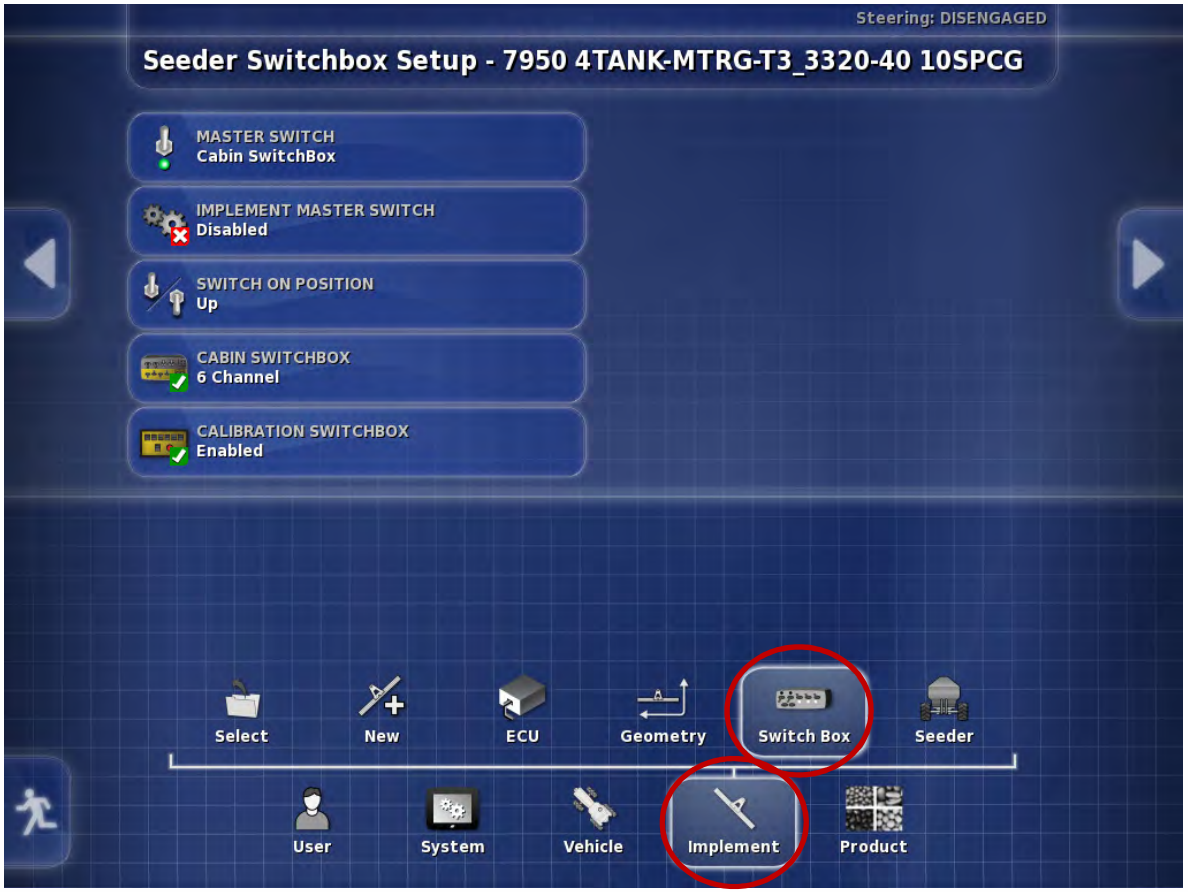
Granular Sections

- Related to section valve state monitoring, not Applicable without granular section control



Switch Box

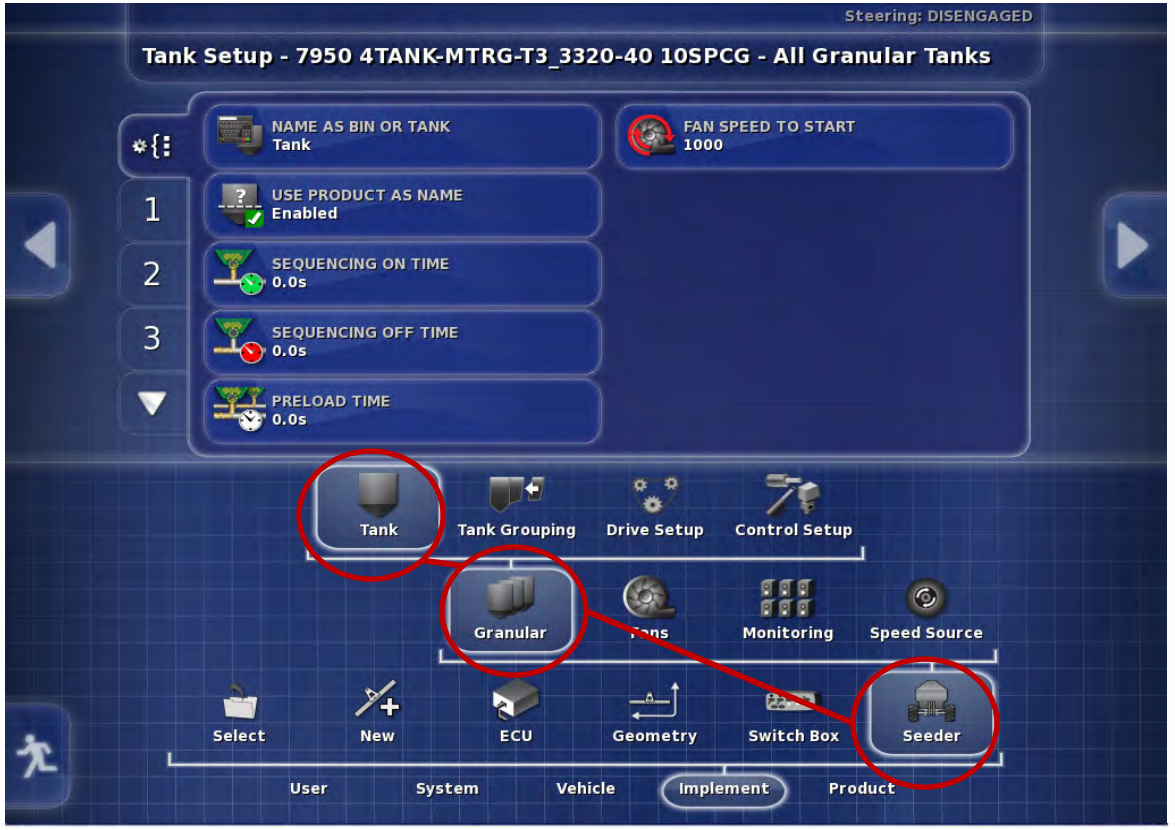
-Master Switch –
- **virtual -** allows you to use the touchscreen
-**cabin switchbox –** to use the external switchbox
-**Implement –** to use the machine to turn the clutch on
-On position **UP**
-Cabin switchbox
- **6 channel** if your going to use the external box it must be put on this setting
- **disabled** if your not going to use the external box
-Calibration **enabled**



General Tank Setup

- Accessed by selecting the tab on the top of the Individual tank's

- Name (Bin/Tank)
- Product as name (enable/disable)
* Sequencing on time (0-10 sec)
* Sequencing off time (0-10 sec)
** Preload time (0-15 sec)
- Fan to start- ensures a min speed before the metering can be activated. Can prevent plugging/ meter damage. Should be set to around 1000
- Master clutch used with 6000 AS



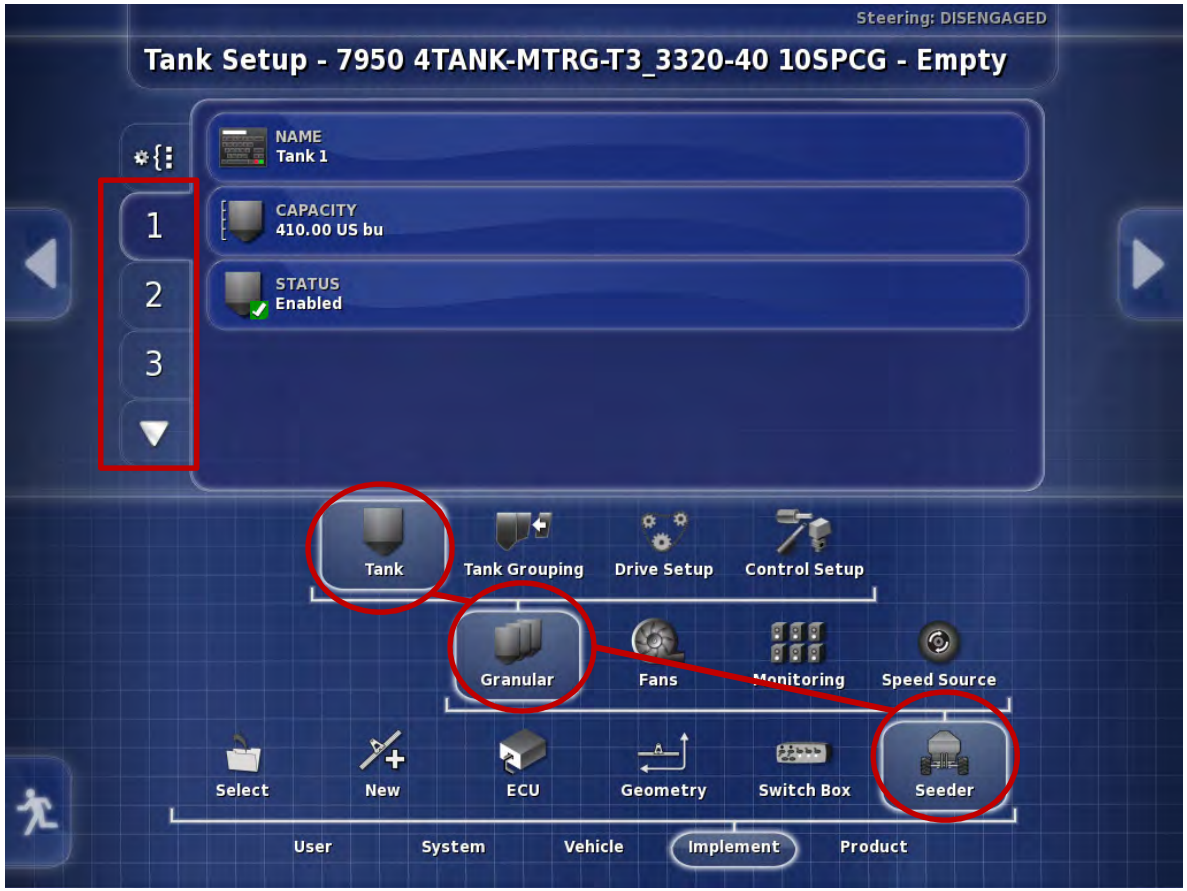
• Sequence Time's – On time based on measured time form when the meter starts to when product is at outermost openers of machine. Typically 3-4 Seconds. Off Time is based on measured time from when the meter stops to when the products stops flowing at the outer most openers. Typically 3-4 sec. Can add some time to ON and remove some time from OFF for safety factor to ensure there are no misses.

** Preload Time – When starting a seeding pass from a stop it allows for product to be at the openers when before moving. Also the time the meters will run when the **PRIME** button on-frame switchbox is pushed. Good for priming for calibrations or if wanting to check plugged runs.

Tank Setup

- **Name** you can name how it is seen on the seed rate controller screen.
- **Capacity** the amount of product that will fit in the tank. It can be altered.
- **Status** if not using one of the tanks you can come in and disable them.

- Accessed by selecting one of the numbered tabs on the left hand side. Or the arrow to move the tanks up or down

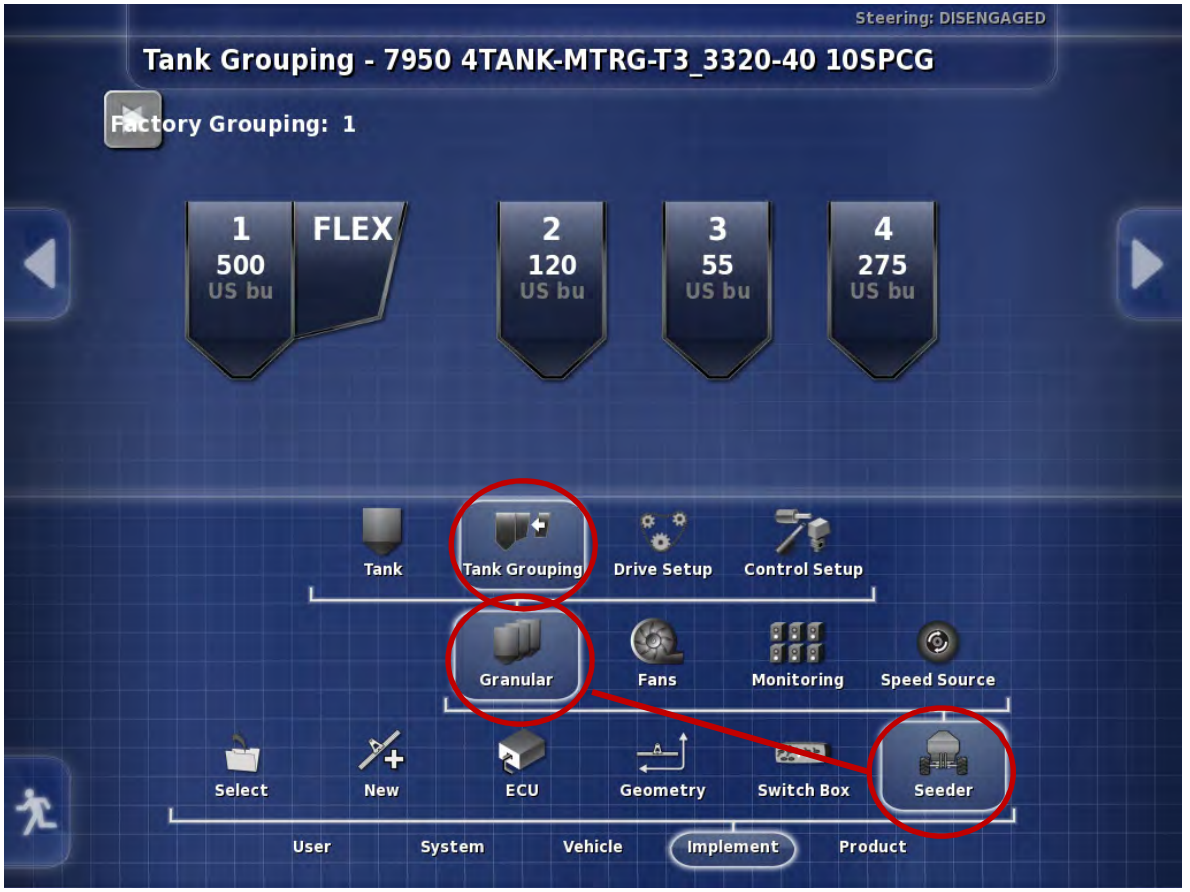


HINT: if tank is not being used disable it otherwise system won't allow you to start applying.
All enabled tanks need a cal factor even if they are switched off

Tank Grouping

Groupings are pre-set from the factory use the arrows on the right hand side to scroll though them

- Tank volumes update automatically

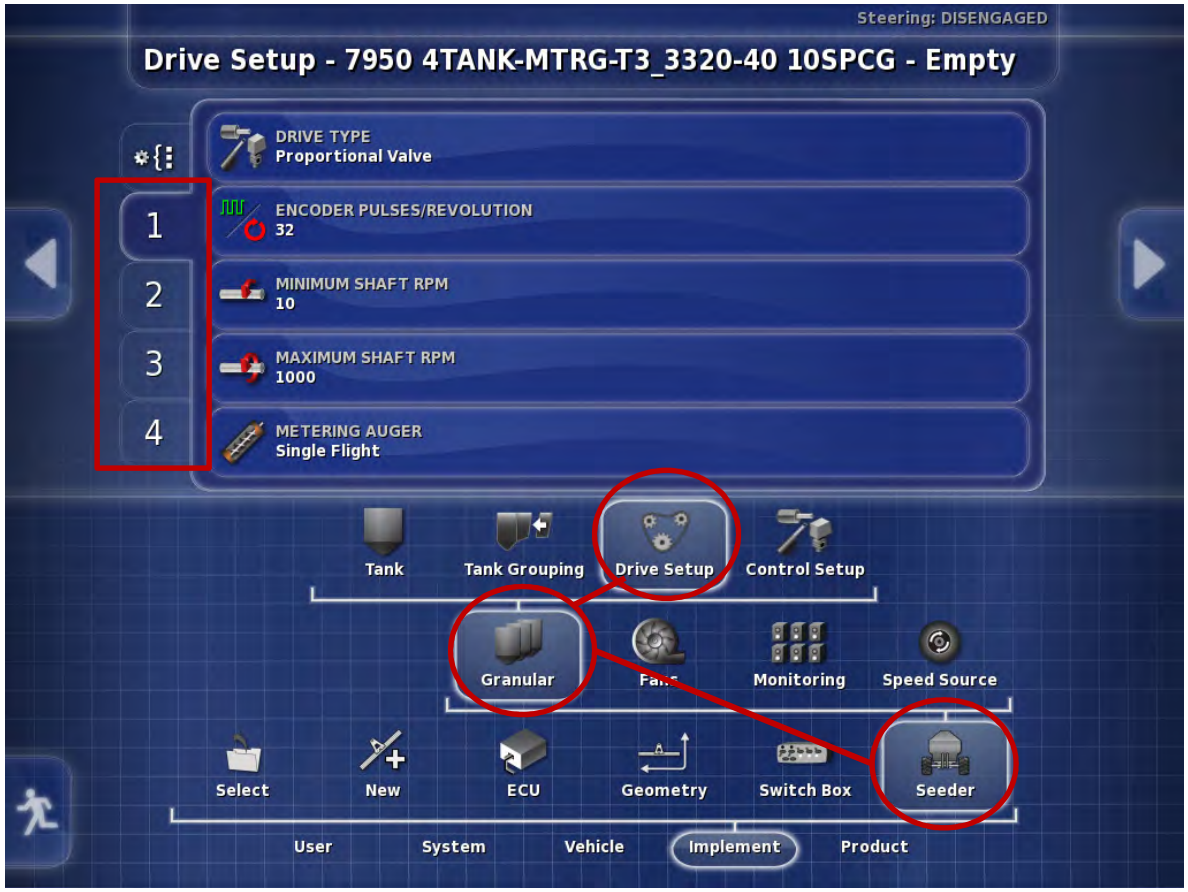


Drive Setup

- Toggle between the tanks with the tabs on the left Hand side

- Drive type **– proportional for 7000 AS**
  - linear for 6000 AS
- Pulses/ Revolution **– 32 for 7000 AS**
  16 for 6000 AS
- Minimum RPM set at **10**
- Maximum RPM set at **1000**
- Metering Auger pick corresponding augers to each tank

- Accessed by selecting one of the numbered tabs on the left hand side. Or the arrow to move the tanks up or down

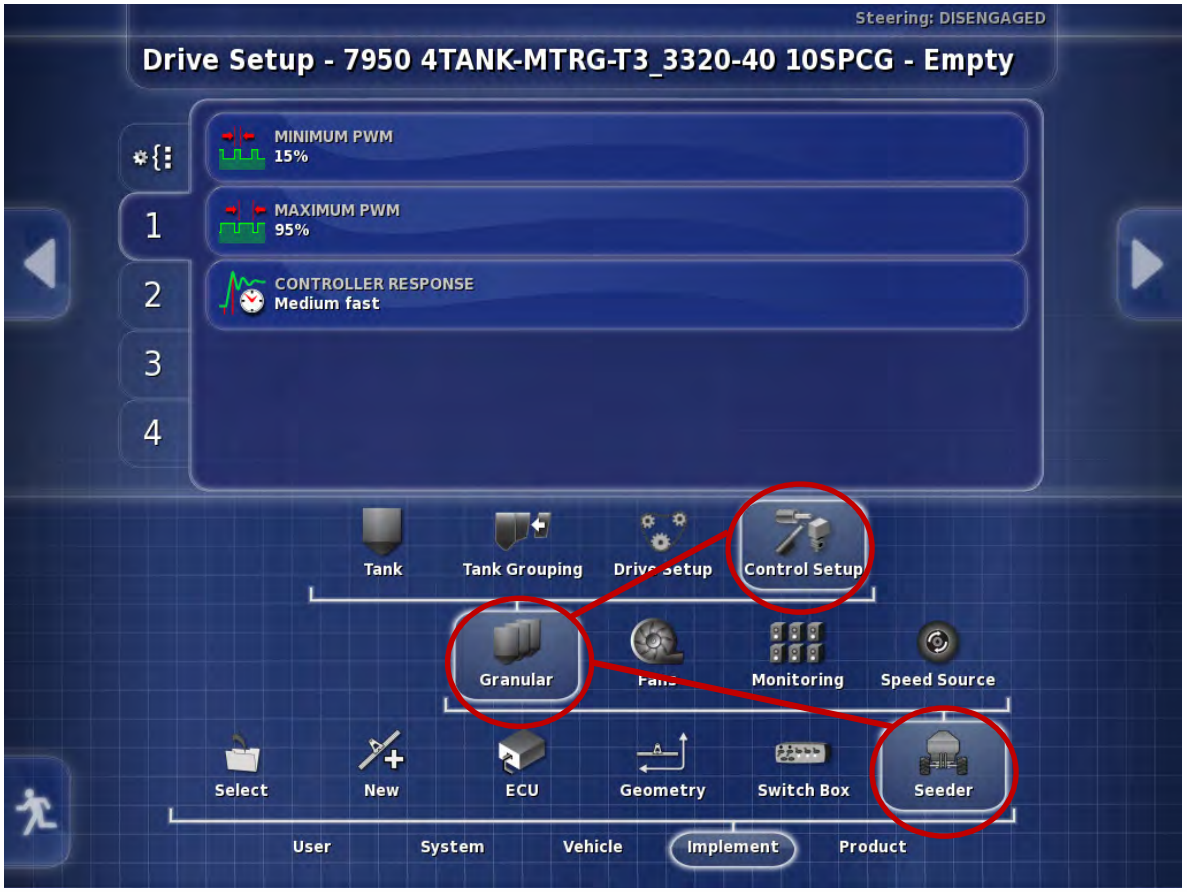


Controller Settings

-Minimum PWM **(15%)**

-Maximum PWM **(95%)**

-Controller Response **(medium fast)**



- Accessed by selecting one of the numbered tabs on the left hand side. Or the arrow to move the tanks up or down

Tank Setup

- Product Name enabled/disabled
- Sequence On/Off

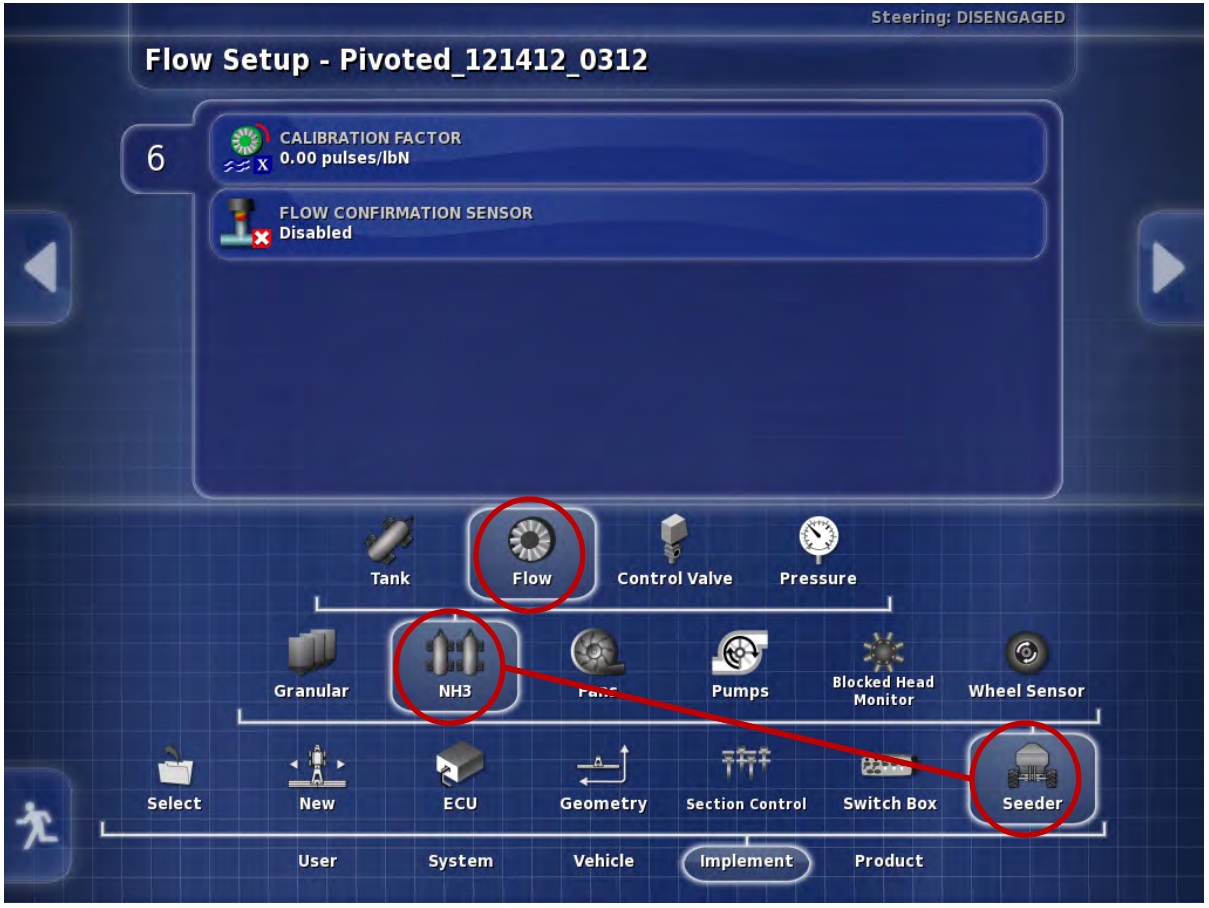
Times work similar basis as granular on/off, based on time for product to reach openers after switched on/off, usually a bit faster then granular

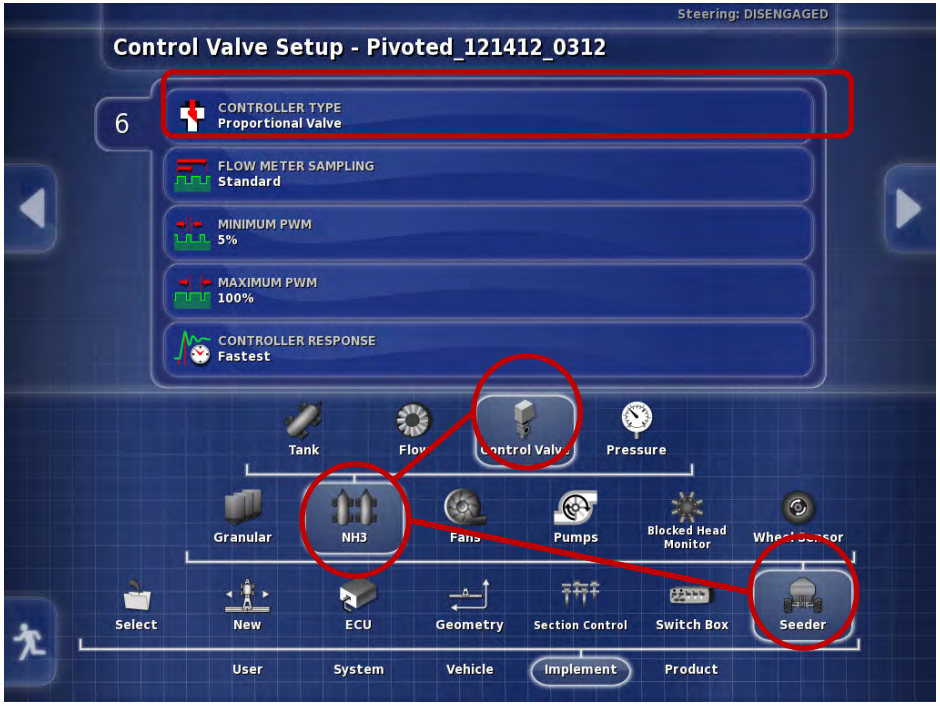
Tank Setup

- Name - can name each tank/bin
- Capacity – can be changed to match your tank
- Status (enable/disable) if your not using one for a field
- Section Control (NH3 if you are, full width if single boom
- Pump Speed (not used)

Flow Setup

- Calibration Factor – Can be set here or on the SRC screen
- Flow Confirmation (not used)



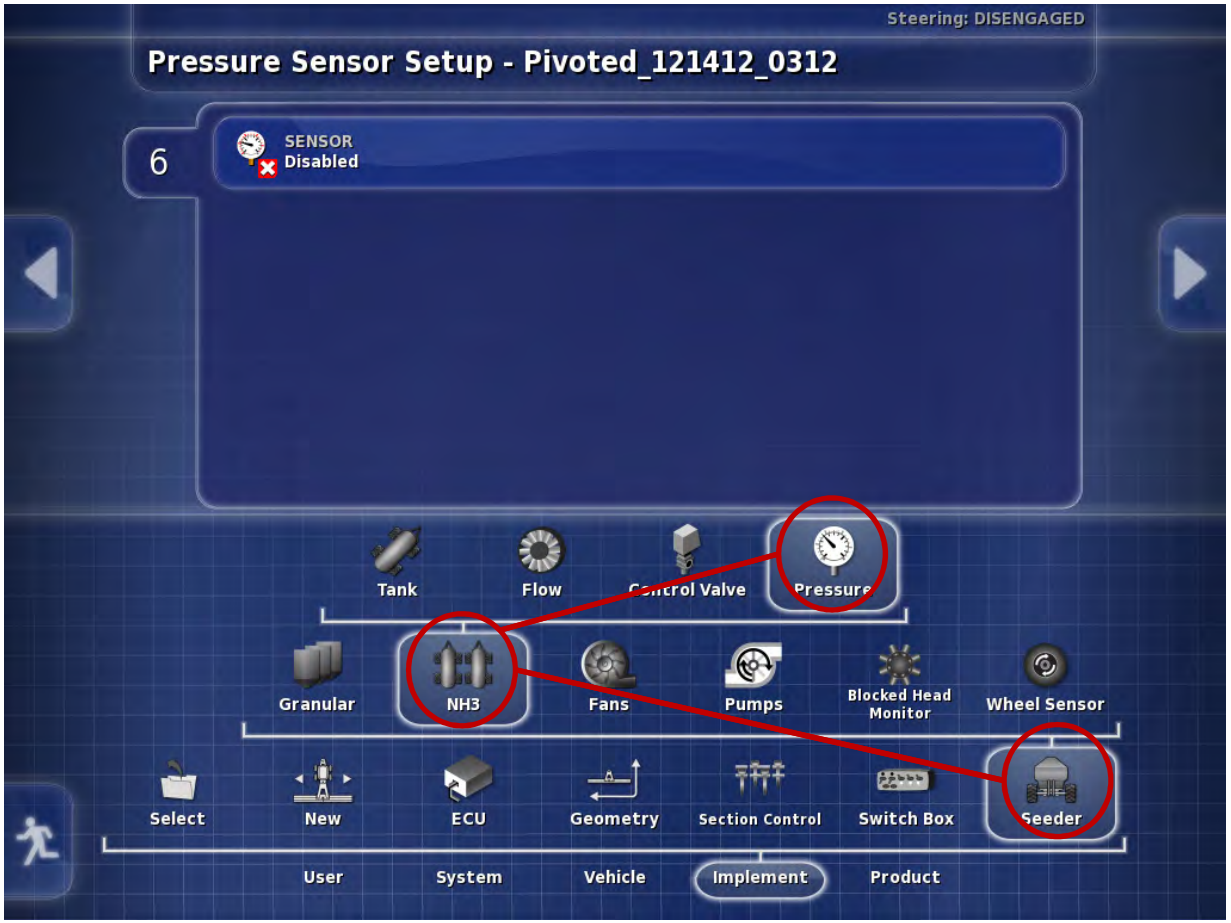


Control Valve Setup

- Similar to the options of the X20
- Pick between regulator or proportional

Pressure Sensor

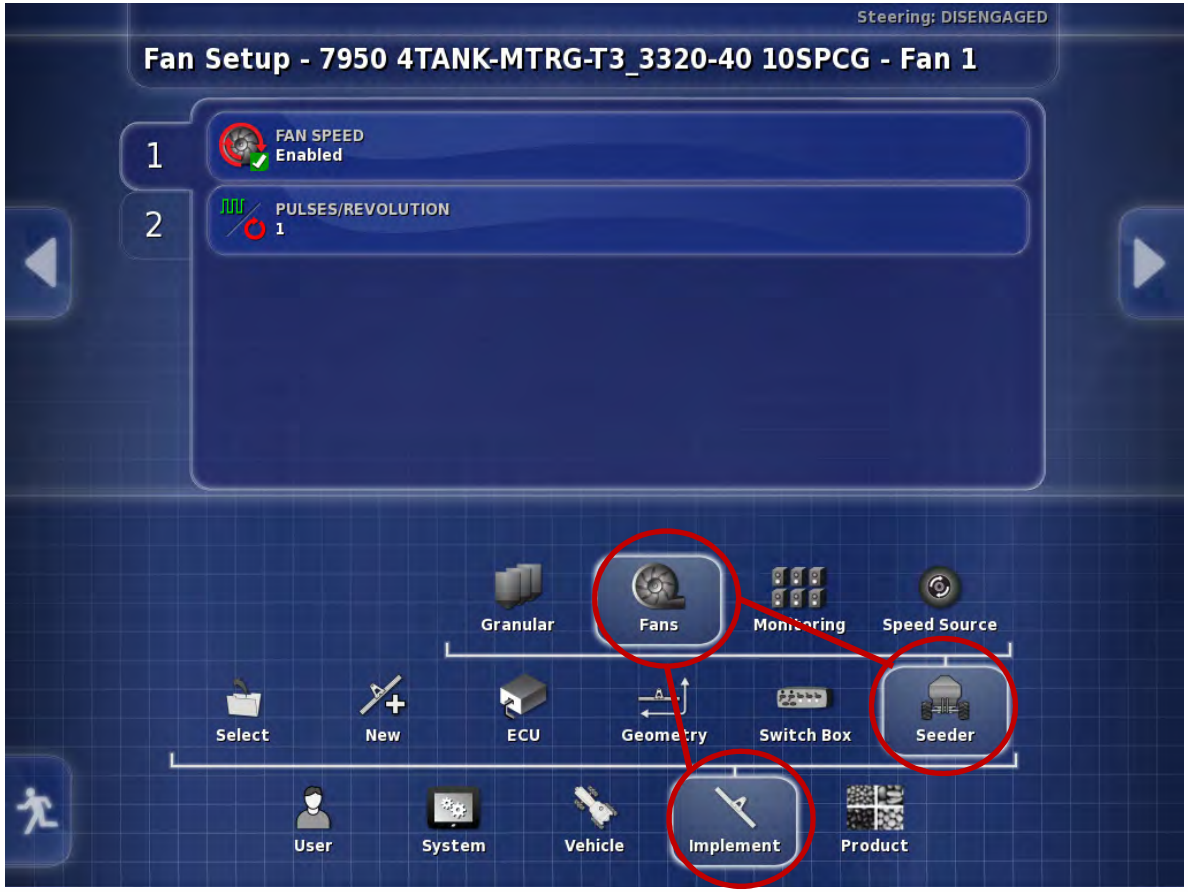
Not Used



Fan Setup

- Toggle though the different fans using the tabs On the left hand side

- Fan speed – disable if not using one of fans
- Pulses (1)

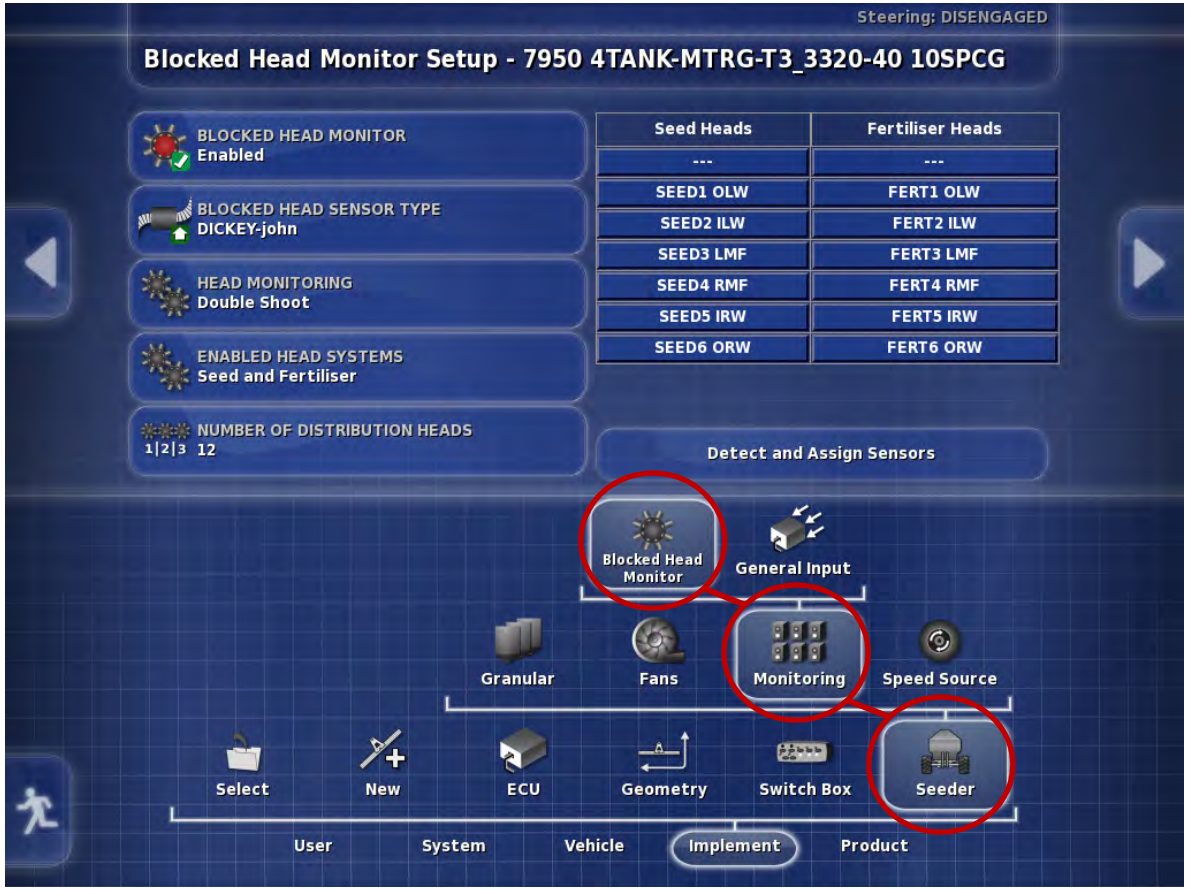


Pump Speed

Not Used

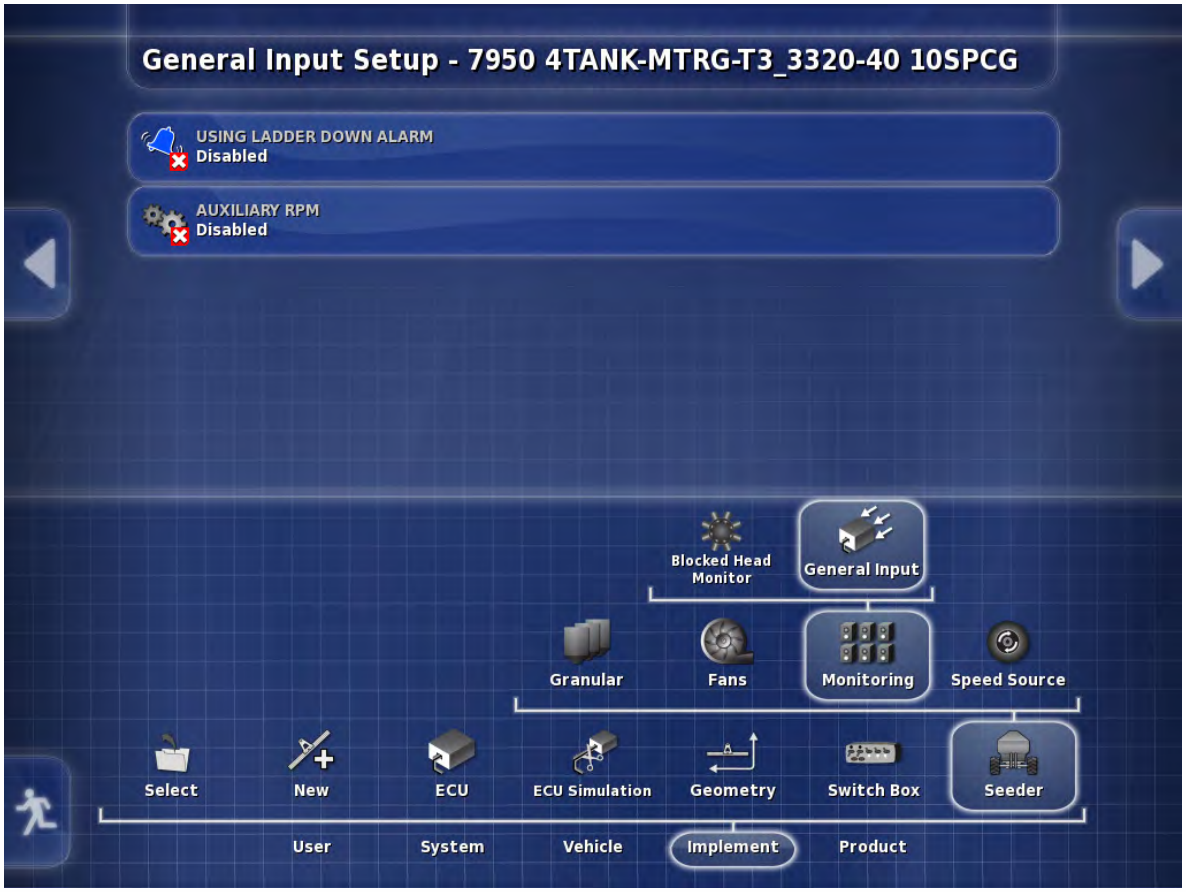
Blocked Head Monitor

- Block head monitor **(enabled/disabled)**
- Sensor Type **(dickey - john)**
- Head monitoring **Single/double shoot**
- Number of sensors **1 – 20 max**
- On the right hand you can name individual runs



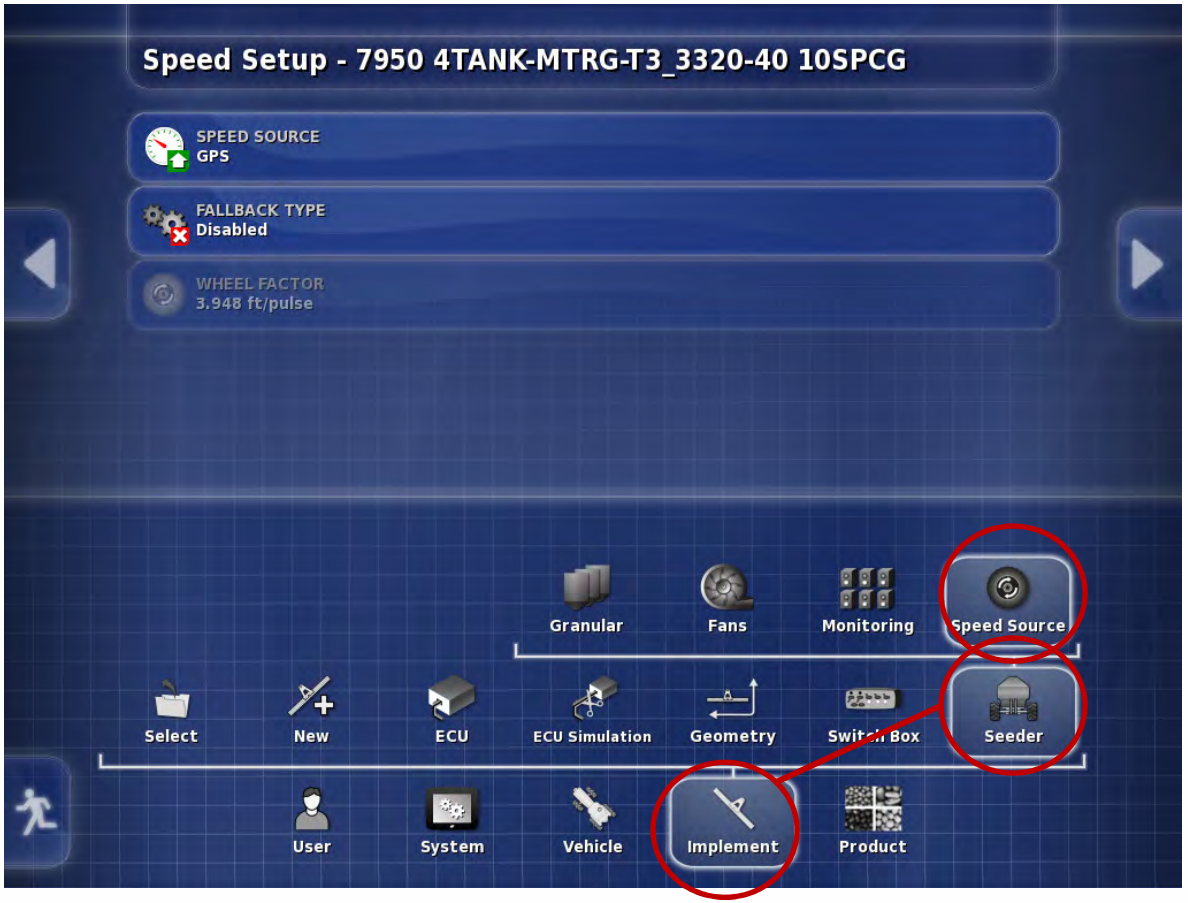
General input setup

Not Used



Speed setup

- **Speed source** GPS
- **Fallback Type** manual speed
- **Wheel Factor** this is used when you switch the speed source to wheel. It will be set from the factory.



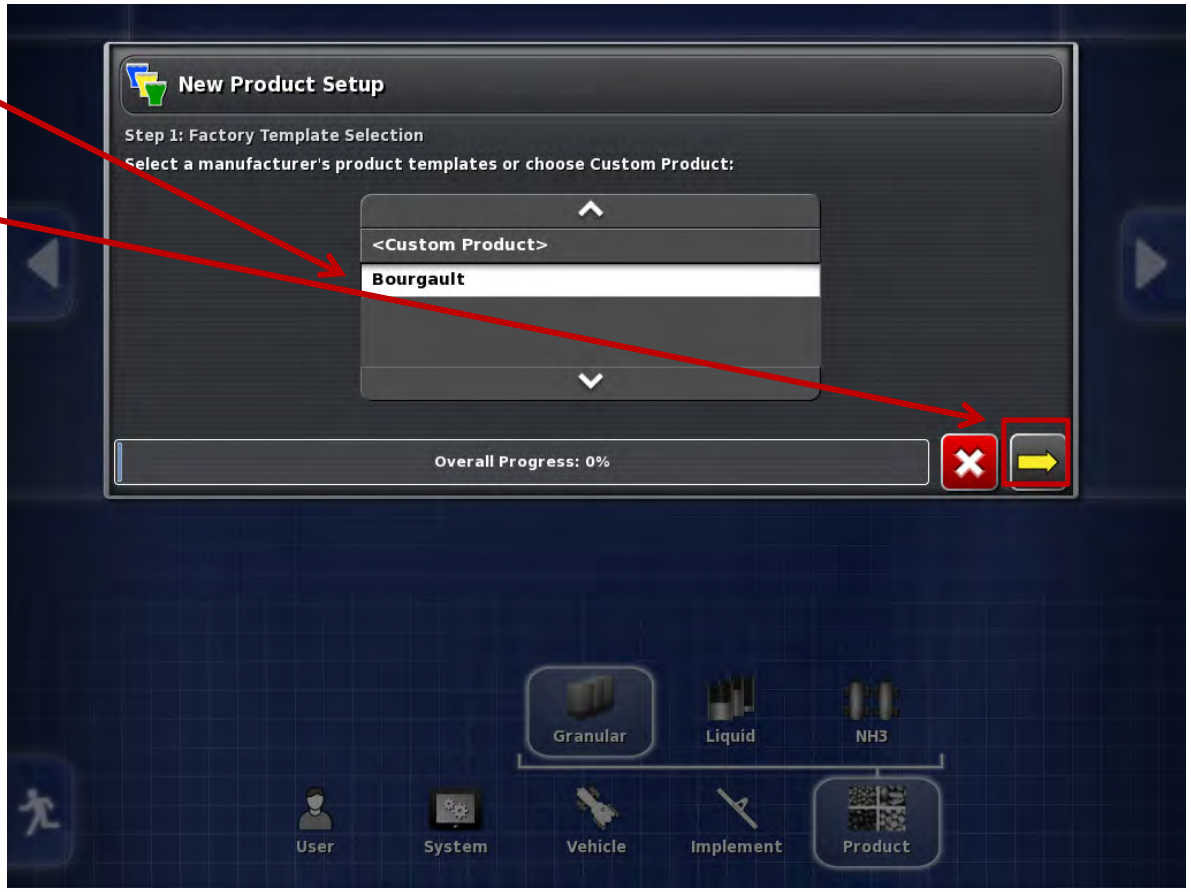
NOTE: GPS speed should be used at all times. Wheel speed is not consistent enough because of the amount of tire deflection. The rolling radius of the tires on the bigger machines can changed up to 20% from full to empty

Product Setup

- You will need to come in and enter the products that will be used with this air seeder
- You are able to add new products at anytime.
- The way of entering new products is the same weather its liquid, granular or NH3.
- Touch on the New Product tab to start to enter a new product

New Product

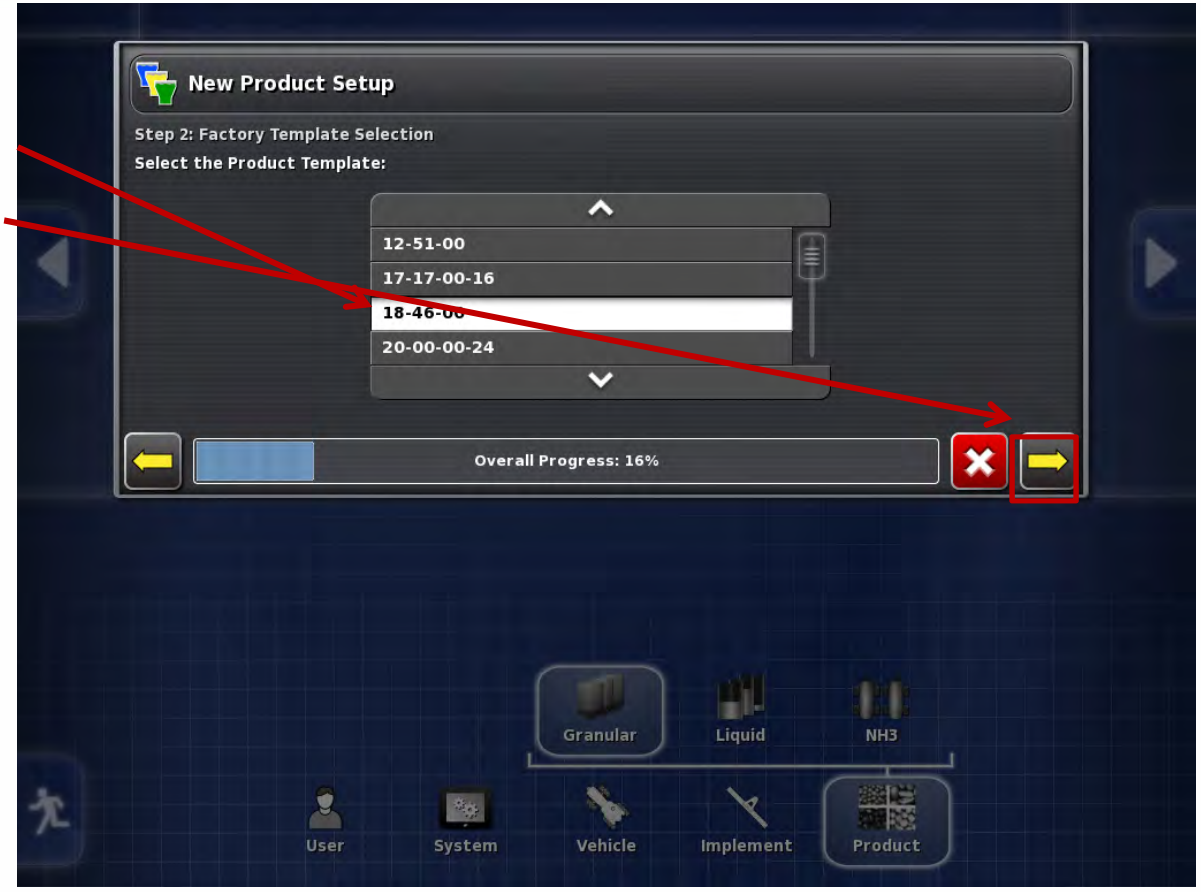
- Highlight on Bourgault then touch the yellow arrow to move on to the next screens.



New Product

- Scroll though the list to find the product that you are wanting then highlight it and press the yellow arrow.

- If the product is not in this list find one that would be close in density. We can rename the product and change the density in the coming slides.

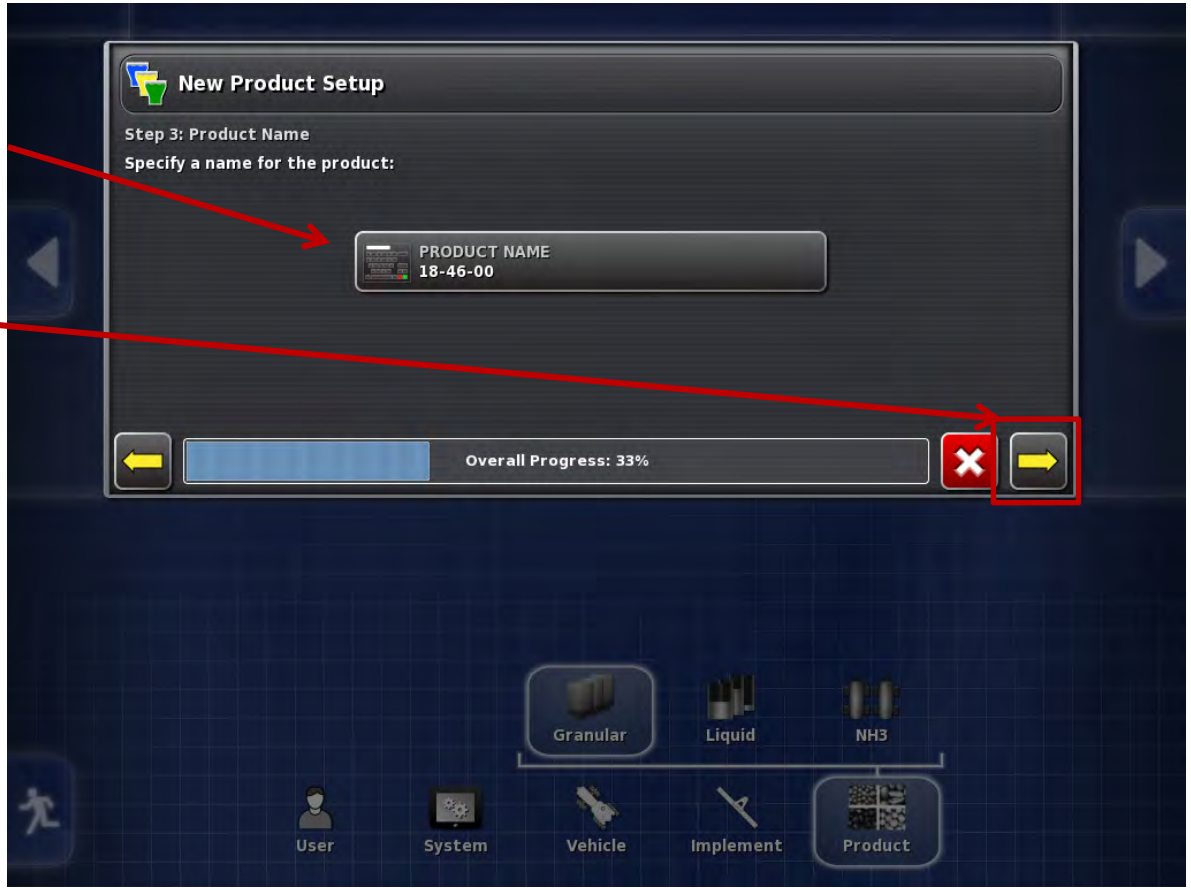


BOURGAULT

X30 Monitor/Controller

New Product

- Now you can rename the product to what ever you like. Just touch on the product name then it will bring up a keyboard so it can be named. When finished touch on the yellow arrow to move on.

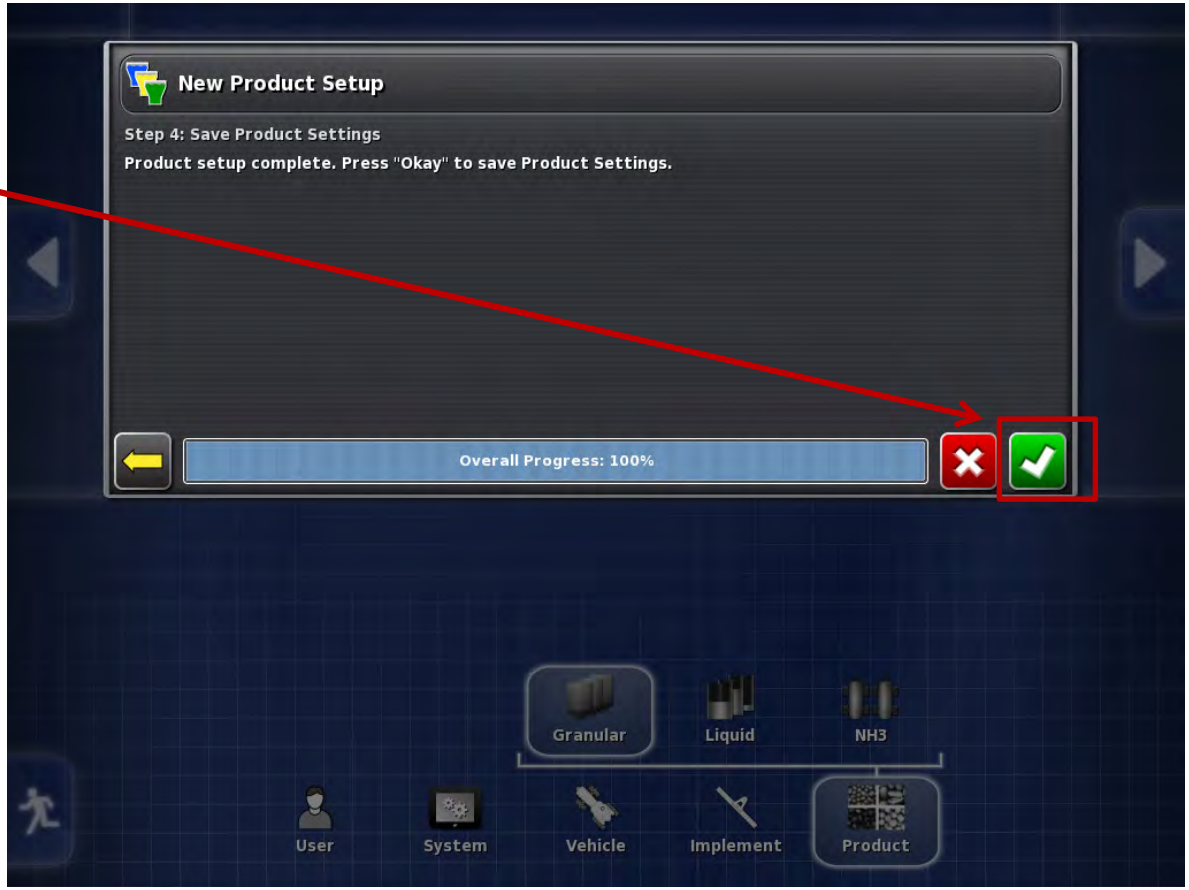


BOURGAULT

X30 Monitor/Controller

New Product

- This is the final step, just touch on the green check mark to complete.



New Product

Density - Now you can go in and enter an known density if needed.
Rate Increments – the amount that the rate will change every time you touch the up or down arrow on the SRC screen.
Rate preset 1 – set the rate that you want to be using this product at.
Rate preset 2 – set a secondary rate you might want to use.

Once this is set every time you bring this product into one of your tanks these figures will auto populate in to the screen