



OPERATOR'S MANUAL

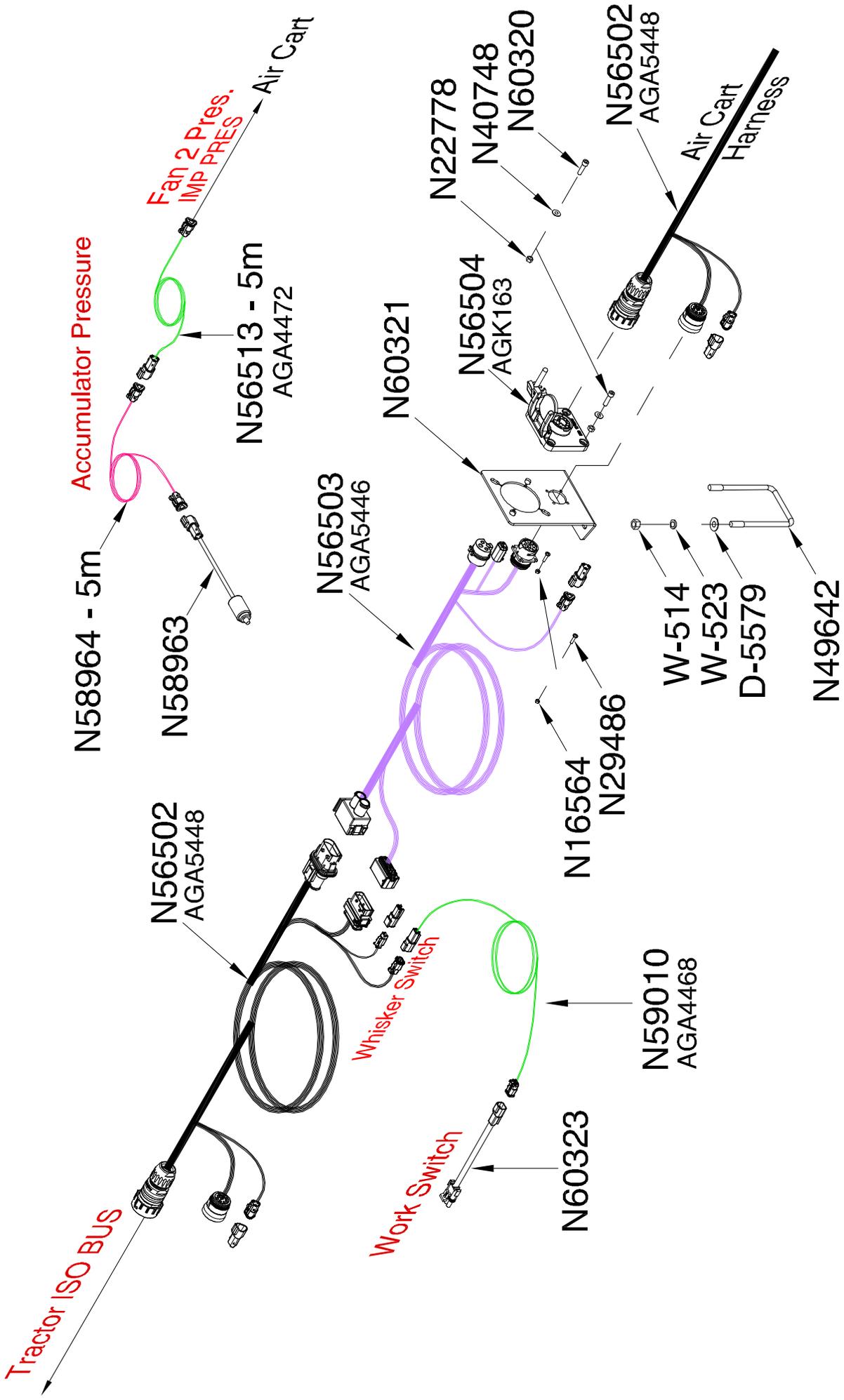
X30 SYSTEM

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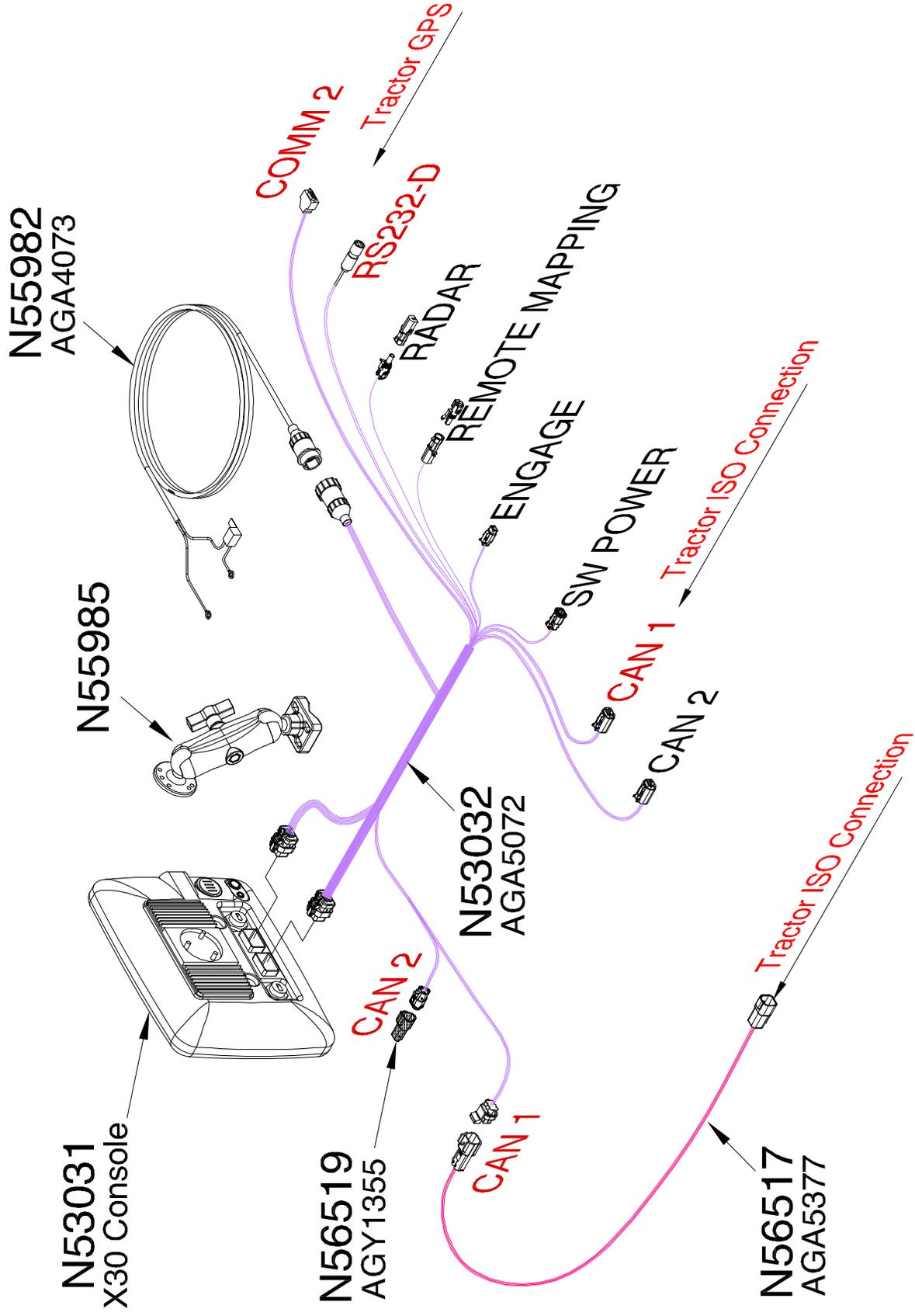
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Tow Behind Air Cart Seed Unit



Tractor ISO BUS Connection





1. Press and hold the **Green Power** button.



2. To **Power Off** the X30 system, simply just press the Green Power button for One second.



3. A **Power Down** Prompt will appear, simply just press the Green Check mark.



4. Press the **Wrench** on the **Bottom Left Corner** to enter the **Set up Menu**

NOTE: If you do not see this particular screen simply proceed to step 2.



5. Navigate from **System, Features, and then Console. – Disable - UNIVERSAL TERMINAL.**



6. Navigate to **User-Region-Units**. Always start from the bottom of the screen upwards.

Change the following items;

-Units-**Imperial (US)**

-Pressure units- **psi**

-Short Distance- **Inches**

-Area Units- **ac**

Dry Product volume– **Bushels**

Dry density units– **Pounds per Cubic Foot**



7. Now navigate down the **Environment** icon.



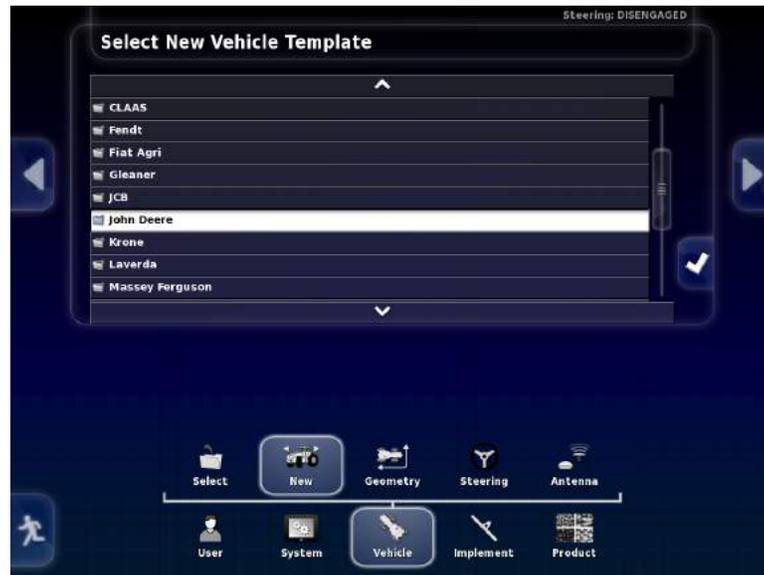
8. Adjust the volume to a comfortable level, take into account tractor engine noise.



9. Toggle the **Multi-Function Region Mode** to **Save/Load Global Home Screen**. Apply with the Green Check mark.



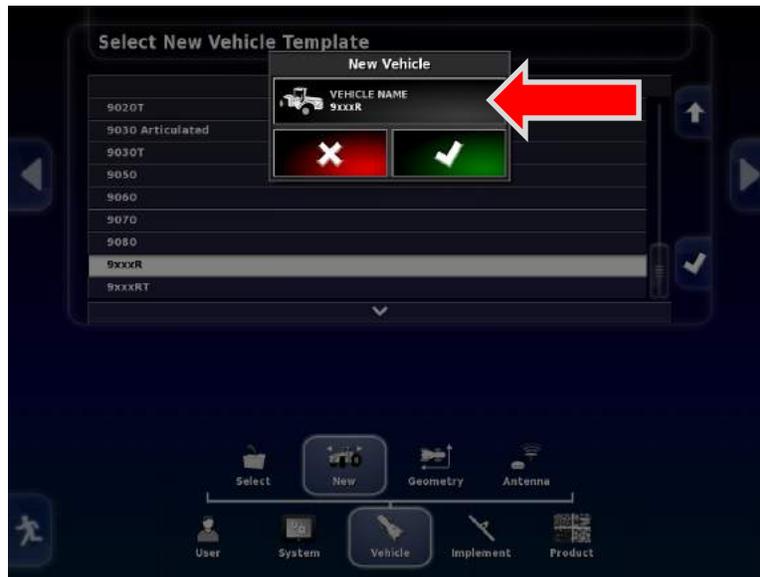
10. Continue to **Vehicle – New**.



11. Select your **brand of tractor manufacture** from the list.



12. Select the **Model of tractor** from the list. Press the **White Check** mark to Continue.



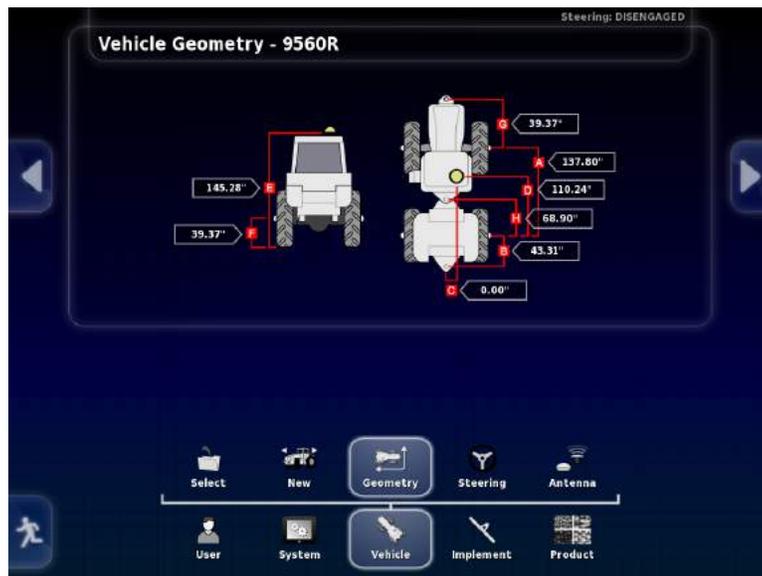
13. Adjust the name to match your model of tractor.



14. Press the back space and rename. Apply with the Green check mark.



15. Confirm the model is correct. Apply with the green check mark.



16. Adjust the dimensions as needed. Use a tape measure, and record your dimensions on a note pad.

It is very important to have the dimensions as accurate as possible. Especially when equipped with an ICT unit.



17. Navigate from **System-GPS- Receiver**. Select the Type of GPS antenna you will be using. The default entry level antenna which is included with the X30 is the SGR-1.

SGR-1 - receiver

Baud rate - 115200.

Serial Port COM 1

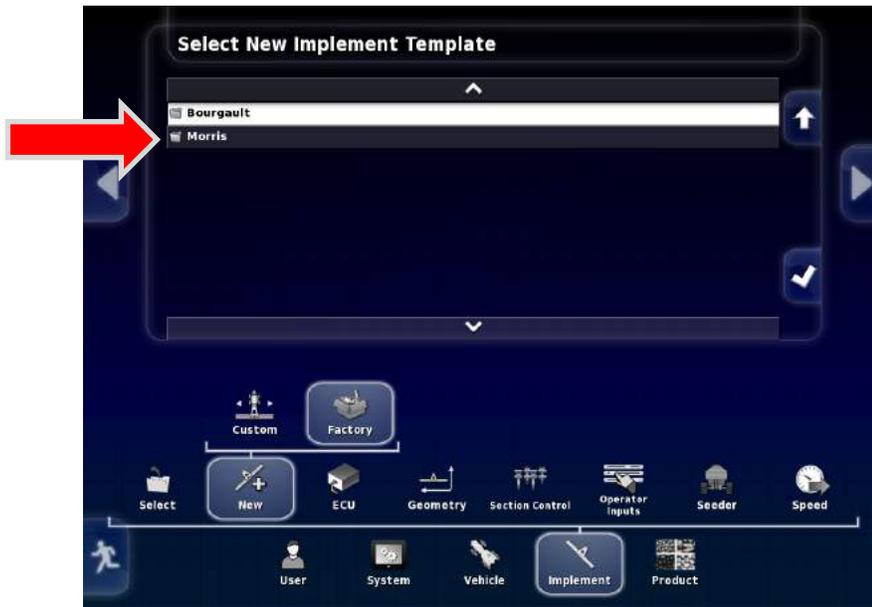
18. If you prefer to connect a 3rd party OEM GPS receiver system such as John Deere Green Star 3000 see Section – 14 GPS Connection.



19. Press **Implement - New - Factory**



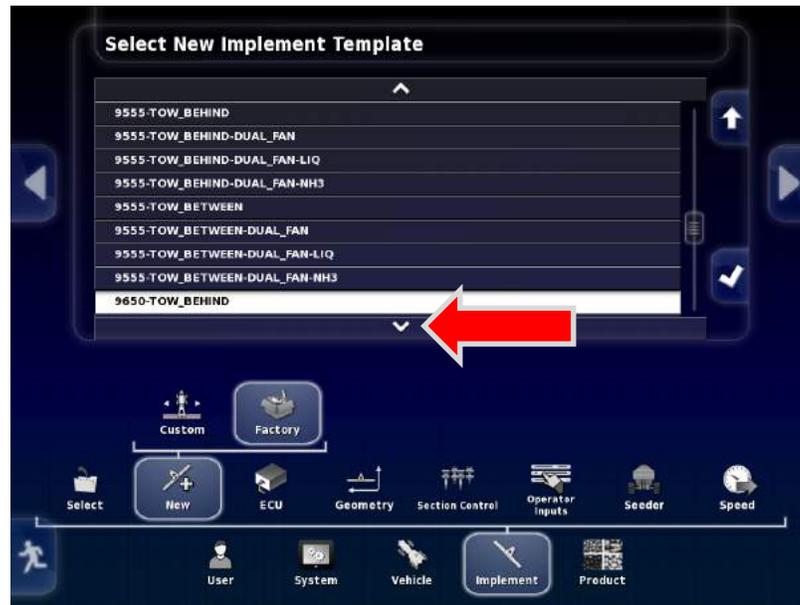
20. Press the **White Checkmark** to proceed.



21. Select Morris

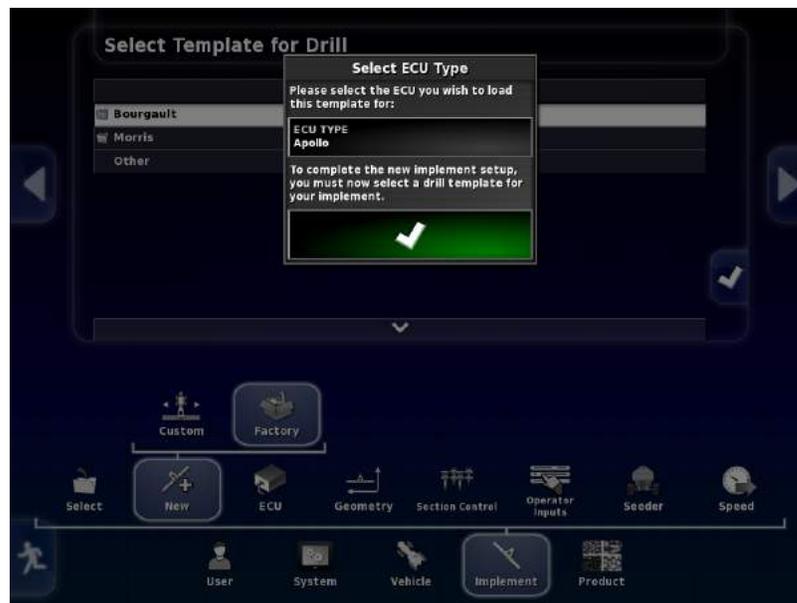


22. Select 9 SERIES

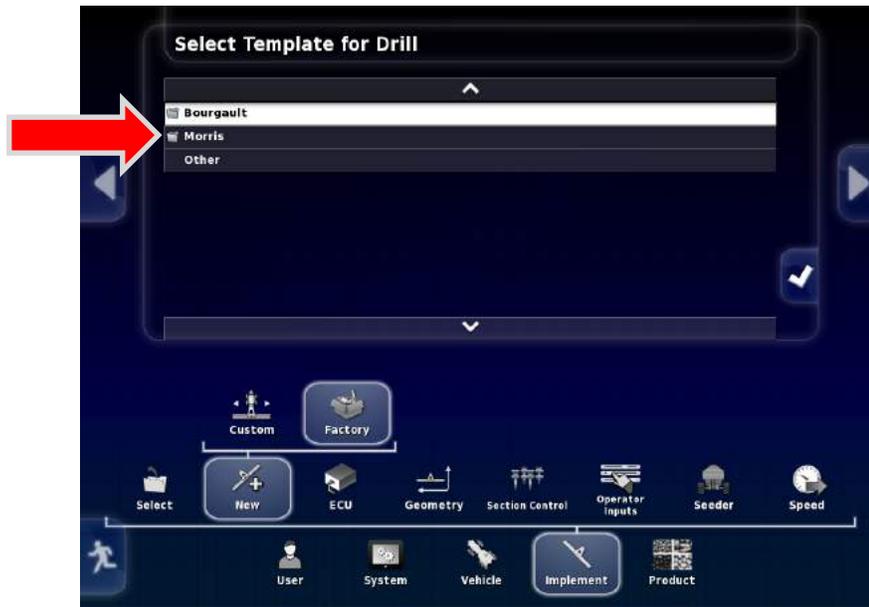


23. Select the correct aircart profile from the list.

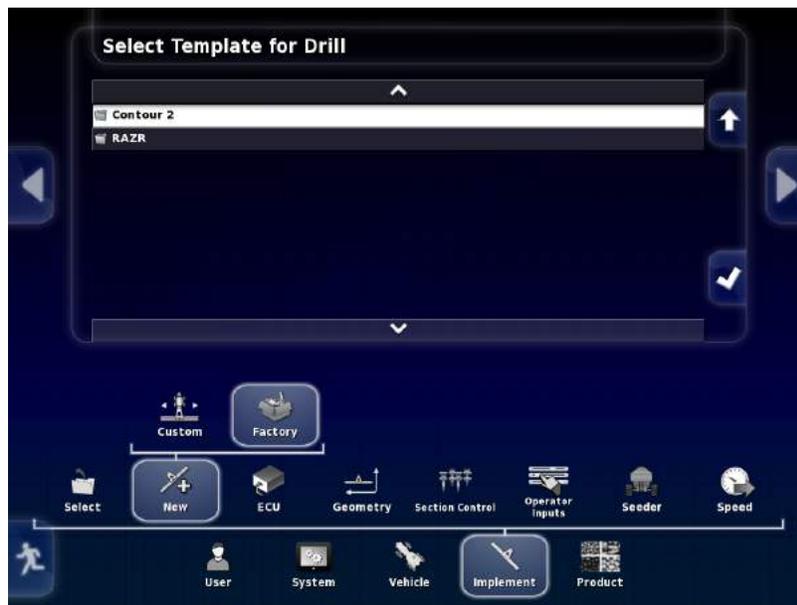
Note: the Up / Down arrows located above and below the list.



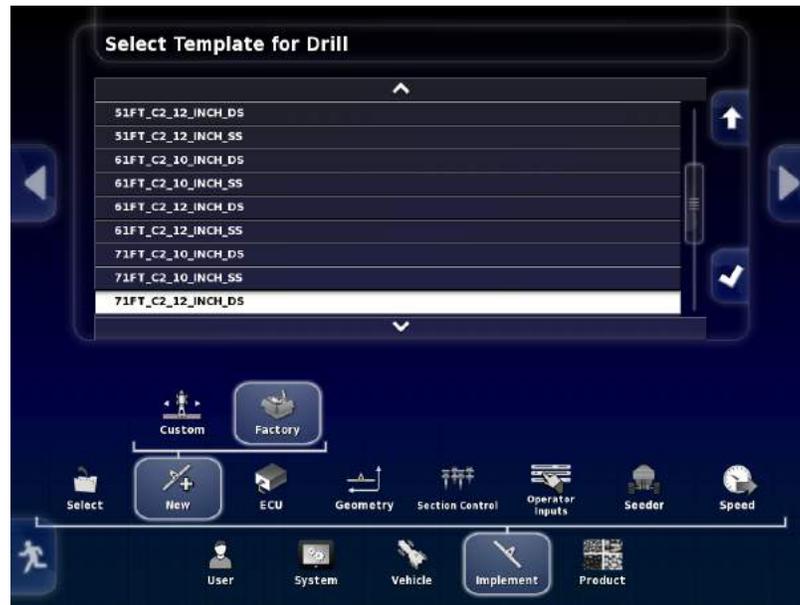
24. Press the Green Checkmark to assign the Drill template.



25. Select **Morris**.

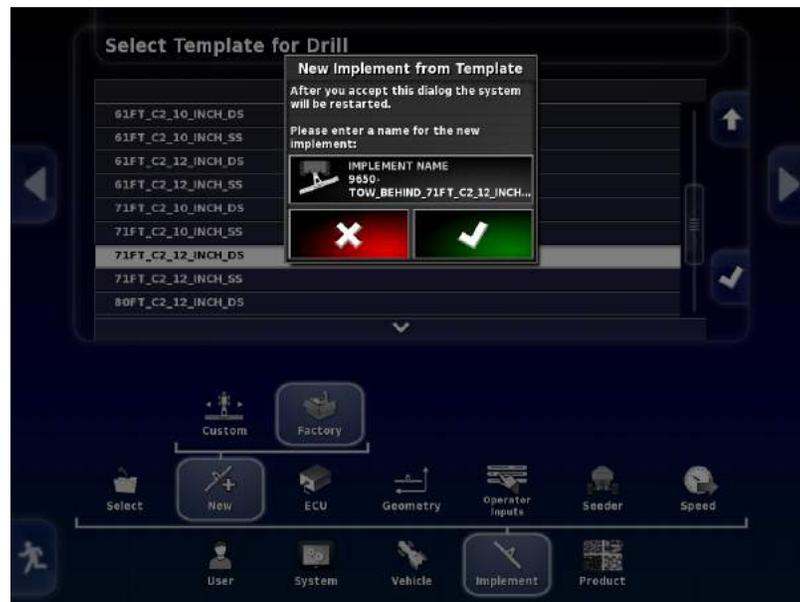


26. Select from either a **Contour 2** or **Razr**



27. Select your Drill.

Note: the spacing sizes



28. Press the Green checkmark to use the new Implement.



29. The system will now reboot.

Note: No communication with Apollo CM-40, the ECU must now be paired to the profile.



30. Select **Implement - ECU - Add/ Replace ECU**.

| ECU | ECU Name | ECU Type | ECU ISO Name | Firmware version | Status |
|-----|----------------|--------------|--------------------|------------------|-----------------|
| 1 | Apollo CM-40 1 | Apollo CM-40 | Please replace ECU | N/A | Aux CPU Enabled |

31. Press on the Status (**AUX CPU Enabled**)

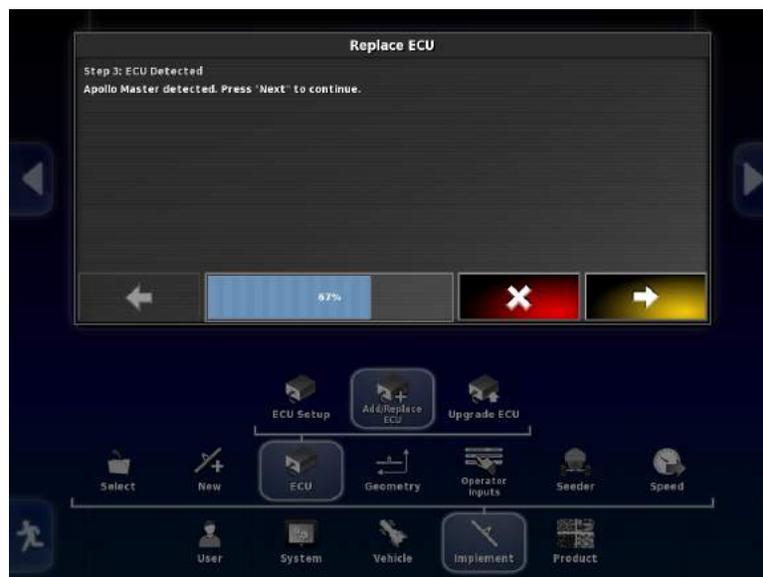


32. Now select **Replace** from the menu followed by the Checkmark.



33. The Wizard will now tell you to disconnect the Old Master ecu, however this is unnecessary as you are programming a new Aircart.

Simply press the **Yellow Arrow** to continue.



34. The Wizard will now automatically detect the new CM-40 Ecu, Press the Yellow arrow to continue.



35. The ECU has been successfully added, press the green check mark to continue.



36. Disconnecting the ISO coupler, and then reconnect after 30 seconds. The system will synchronize after the full power cycle.



37. Success the Firmware version should now be present on the CM-40.

CURRENT FIRMWARE VERSION _____



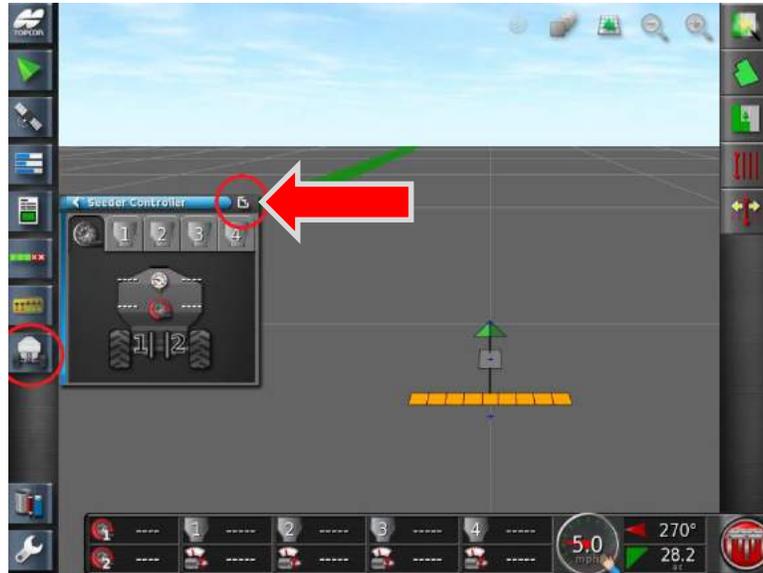
38. Press the Running man icon to return back to the Home screen



39. Continue to set up **Global Home** screens.

Notes:

Global Home Screen Setup



1. The **Seeder Controller** must be fully expanded. Hide any of the mini windows by pressing the small **Left Arrows**.



2. Press the **Guidance Icon** to bring up the mini view **Guidance window**.



3. Toggle to the **North up map view** (DIAMOND SHAPE).



4. Press the **Job Information** Icon.



5. The mini **Job Information** window will appear.



6. Customize the **Dash Board** by simply tapping on the bottom row of icons. **ENABLE THE FOLLOWING:**

Fan Speed

1:

2:

3:

4:

Speed

Heading / Area Covered



7. While the **Customize Dashboard** option is open, by tapping the Dashboard again within the **Tank 1 Zone** will allow for further customization. Notice how the **Select Data** window is now visible.



8. Adjust the **Select Data** to include: **Motor Load**, and **Area Remaining**. Apply your changes with the Green check mark.



9. Match the parameters in the **Tank 2, 3, 4 Zones**.



10. Touch the on the **Compass Heading** icon.



11. Ensure **Heading** and **Area Covered** is highlighted. Apply with the Green Check mark on both Menus.



12. Toggle the **Fan Icon ON**.

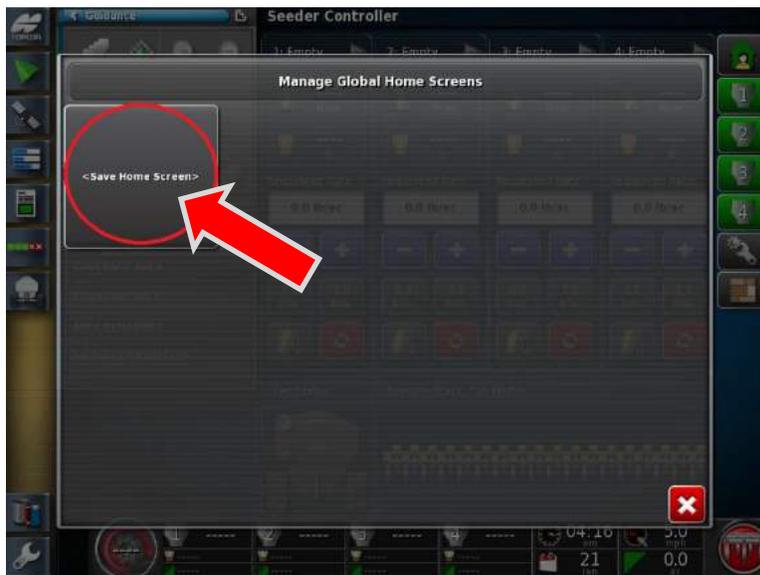


SEEDER-HOME

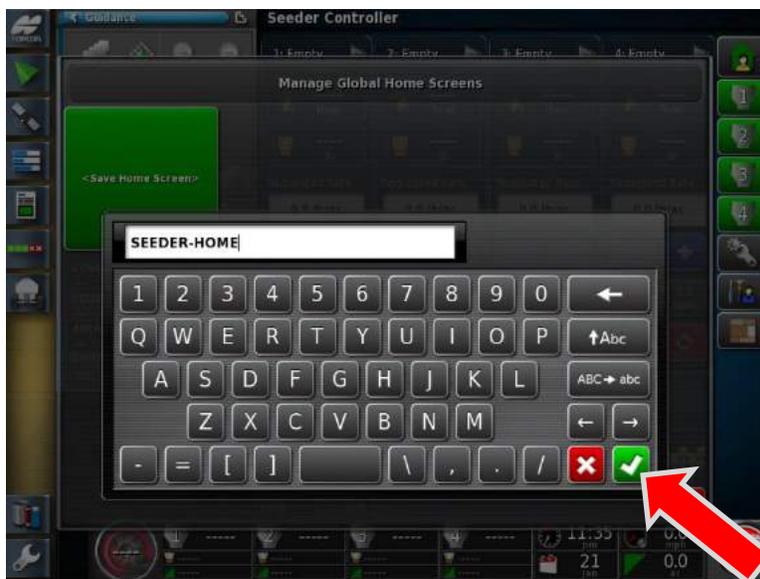
13. Notice how the Dashboard now has the updated layout. Ensure your screen parameters match this layout.



14. We will now lock the screen settings by saving a **Global Home Screen**. Simply press and **HOLD** the **Yellow Topcon Logo FIRMLY for 5 seconds**. If you have a **White Topcon logo**. Simply press and **HOLD** on the touch screen directly above the logo.



15. The **<Save Home Screen>** window will appear, Tap within the window.



16. Name the layout: **SEEDER-HOME**
Apply the changes with the **Green Check mark**.
NOTE: (use – instead of spaces)



17. You will be brought back to the **SEEDER-HOME** screen, **Expand the Guidance window** into the main view.



18. Press on the Hide this window - **Seeder Controller** tab.



19. Press the **Guidance** Icon.



20. Toggle the Map View Mode to the **Perspective View** and to **North Up** in the mini view.



21. Zoom in or out using the + or – icons.



22. Customize the **Dash Board** by simply tapping on the bottom row of icons. Adjust the **Select Data** to include: **Application Rate** and **Motor Load**. Apply your changes with the Green checkmark.



23. Match the parameters in the **Tank 2, 3, 4 Zones**.



24. Ensure your screen matches this layout. **Save a new Global Home Screen** by holding the **Yellow Topcon Logo** for 5 seconds.



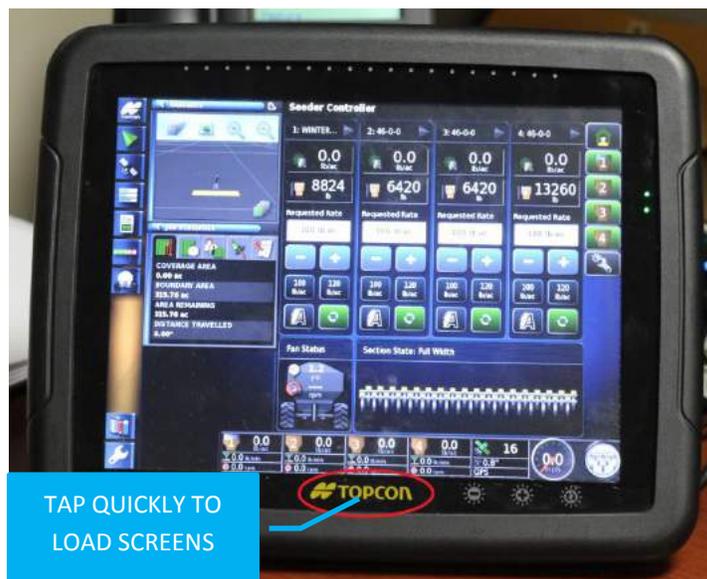
25. Tap the new **<Save Home Screen>** window.



26. Name this layout: **MAPPING**



27. You will now return to the Mapping screen.



28. Now Tap the Topcon button for one second, this will bring up the LOAD a GLOBAL HOME SCREEN menu.



29. Select **SEEDER-HOME**



30. You will be brought back to the **SEEDER-HOME** screen. Hide the **Guidance** and **Job Statistics** mini view windows. **Enable** the **Area Counter** Icon.



31. Ensure your screen parameters match this layout.



32. **Holding** the Topcon logo for 5 seconds, Tap the new <Save Home Screen> window.



33. Save this home screen as **AREA-COUNTERS**.



34. You will return to the **Area Counters** Home screen, Adjust the following;

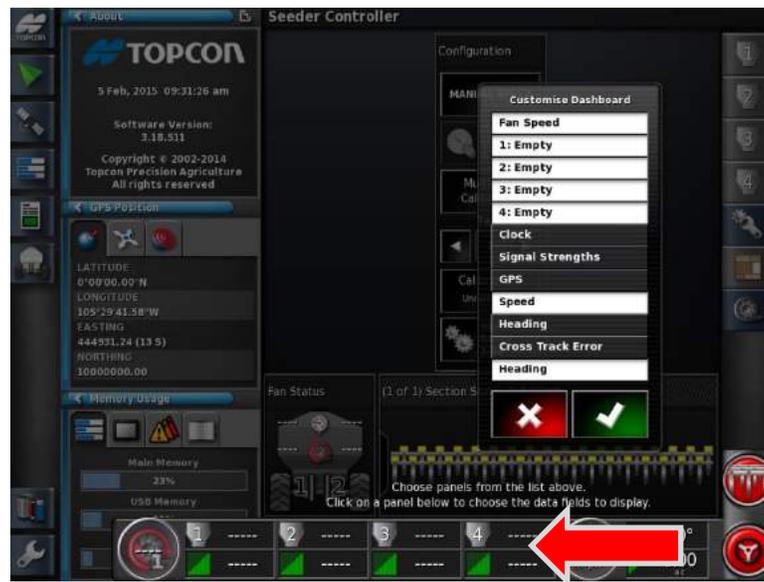
- **Turn OFF VISIBILITY TANK 1, 2, 3, and 4**
- **Turn OFF AREA COUNTERS**
- **Turn OFF FAN**
- **Turn ON the Configuration Wrench.**

35. Turn **ON** Version Information.



36. Turn **ON**;

- **Version Information**
- **GPS Information**
- **System Diagnostics.**



37. Customize the Dash Board by simply tapping on the bottom row of icons.



38. DISABLE THE FOLLOWING:

Fan

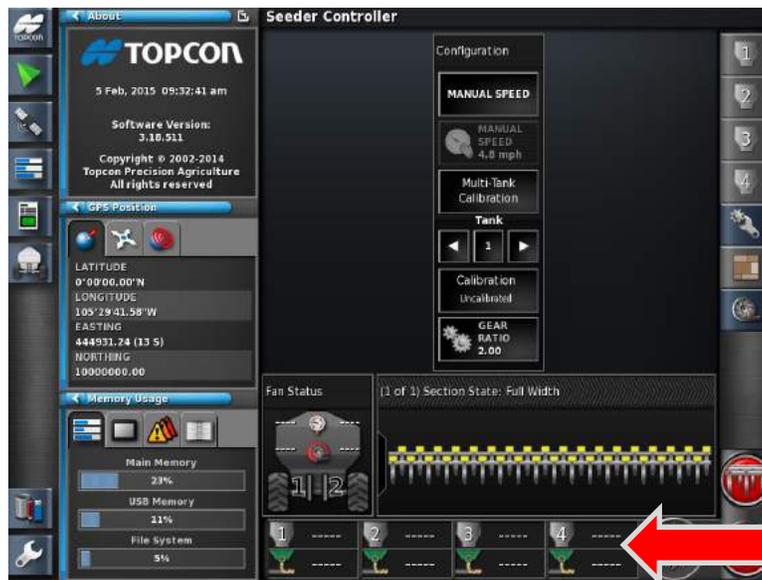
Heading /Area Covered



39. While the **Customize Dashboard** option is open, by tapping the Dashboard again within the **Tank 1 Zone** will allow for further customization.



40. Highlight only **Calibration Factor** and **Discharge rate**. Apply with the Green checkmark.



41. Continue adding **Calibration Factor** and **Discharge Rate** the remaining **Tanks Zones**. Apply with the Green Checkmark.



42. Save a new Global Home Screen by holding the **Yellow Topcon Logo** for 5 seconds.



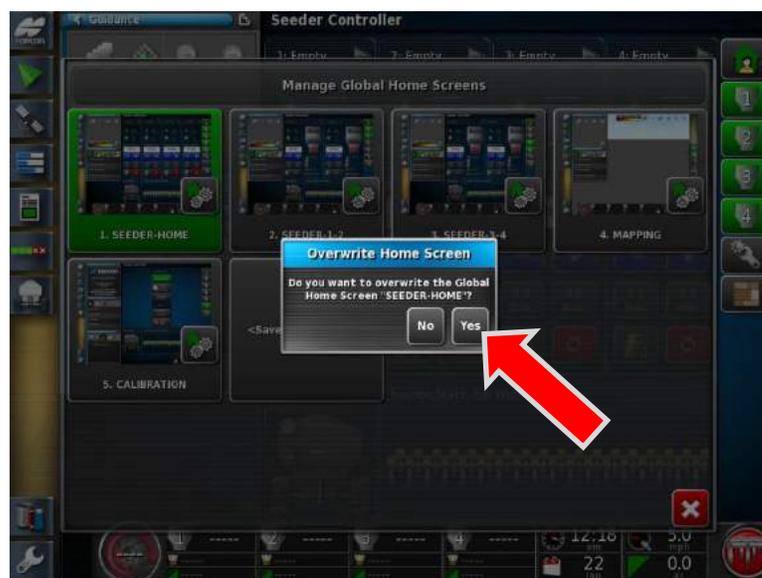
Tap the new <Save Home Screen> window.



43. Name this Layout: **CALIBRATION**. Apply the settings by pressing the **Green Check mark**.



44. By “**tapping**” the Topcon logo you can now quickly choose between the Global Home Screens that you have saved. Return by pressing the **Seeder-Home** icon.



45. If you ever need to make adjustments to the screen templates, example (Adjusting Map layers) the screens layouts must be **resaved** after any changes have been made. To save the changes just hold the **Topcon logo for 5 seconds** and select the icon of the screen you modified. Tap **yes** to use the **Overwrite Home Screen** feature.

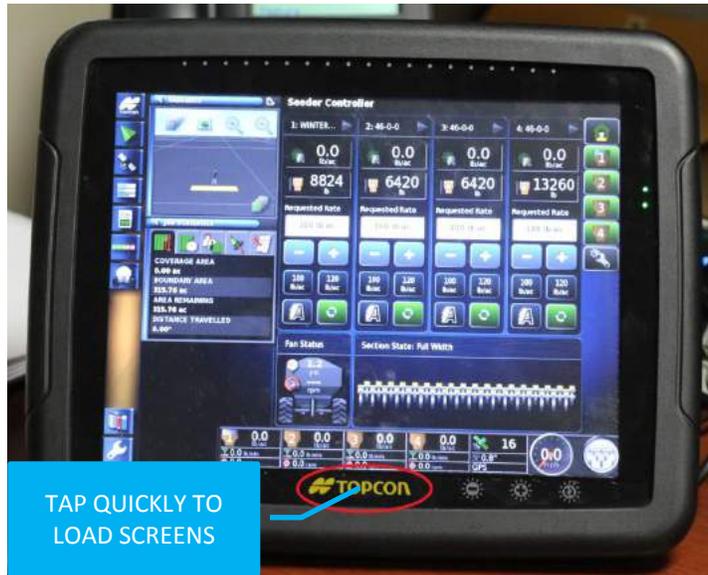


46. You will be prompted to rename the home screen (**DO NOT rename**), simply apply the settings with the Green checkmark.



47. The screen changes are now locked into the monitor's memory.

Notes:



1. Enter the Mapping Screen, (press Topcon Logo to bring up the Global home Screen menu).



2. Select **MAPPING**



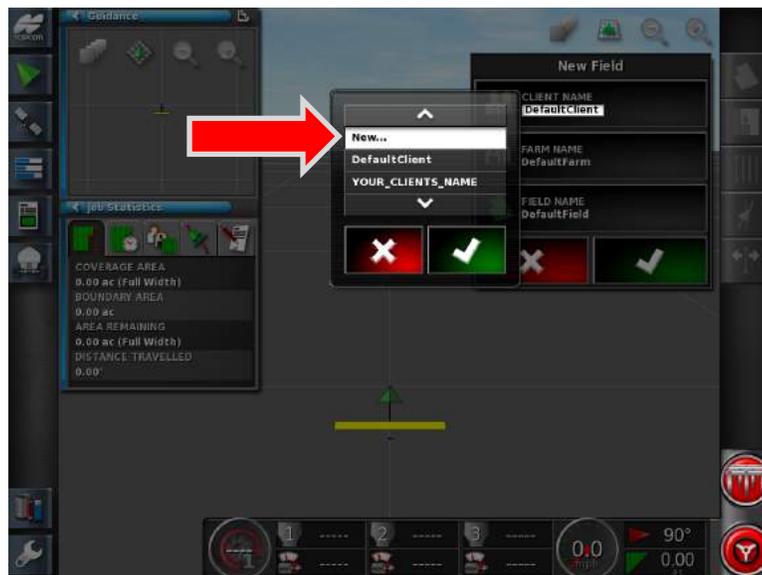
3. You may not have a yellow implement toolbar on your screen at this time. It will only appear if your GPS is configured properly. It is not needed at this time of the lesson.



4. Expand the **Field Menu** icon and press the **Create a New Field** icon.



5. Press the on **Client Name** tab.



6. Select **New...** Apply the setting with the Green Check box.



7. Enter a Name for the Client. **Always use – no spaces.**



8. Press on the **Farm Name <Create New>** tab.



9. Enter the farm name. Apply the setting with the Green Check box.



10. Press on the **Field Name <Create New>** tab.



11. Enter the name of your first field. Apply the setting with the Green Check box.



12. Review the information you entered, apply and save the changes with the **Green check** mark. Once the Green check mark is pressed the field information has been saved.



13. You will now return to the Mapping screen.



14. At this time it is recommended to enter all of your fields into the monitor's memory. Simply press the **Create new field** icon once again to add another field.



15. This time only touch the **Field Name**.



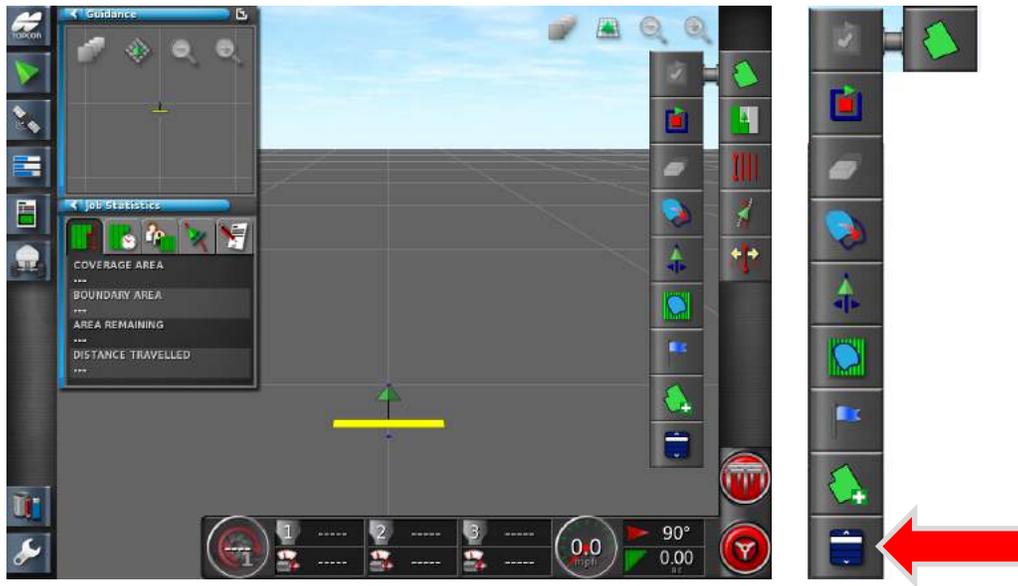
16. Press the **Backspace** button to delete the old name.



17. Enter the new field name. Use nick names or Land location. Apply with the Green Check mark.



18. Apply the new Field Name with the Green Check mark. The field has now been saved. Repeat the above procedure to add all of your remaining fields into the X30's memory. Note: Remember you must press the Green Check mark to save the field name.



19. Once you are finished entering your fields Press the **Select Field** icon.



20. The fields we created are in the list. Notice how the last field we created has the Green Check beside it. Select the Field you wish to seed first. Press the Green Check mark to apply the settings.

-Proceed to Job Creation-

Notes:



1. Open the Field Menu - Press the **Select Field** icon.



2. **Select the Field** you wish to seed. Press the Green Check mark to apply the settings.



3. Press the **Job menu icon**, and press the **Create New Job icon**.



4. Tap on the **Job name**.



5. Press backspace to rename the job to match the current **Field and Date**. Example: **HOME-MAY-CAN-14-2015**; apply the settings with the green Check mark.



6. Confirm and **apply** the settings with the **Green Check** mark.



7. Press the **Job Setting** on the Job Statistics mini view to review that the Job information and Field are correct.
8. Proceed to -Add product to tanks.

Notes:



1. Expand the Tank you wish to add the Product into.



2. Press on the **Top** area of the Tank- to open the Product Configuration Window

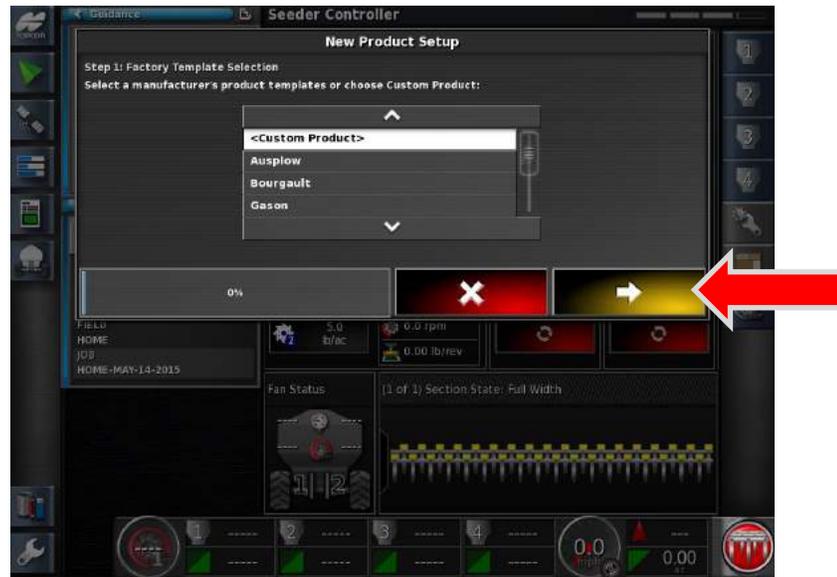
Note: You must have the Tank full expanded.



3. Press on the **Product Name Window**.



4. Select **New Product**.



5. Chose **Custom Product**, proceed by pressing the Yellow forward arrow after each step.



6. Tap on the **PRODUCT NAME**.



7. Enter a product name, as an example we are using **CAN-BLEND**.



TIP: we use an abbreviation of the word Canola, this because when the tanks are collapsed on the SEEDER-HOME screen the names become shortened. CANOLA-BLEND would appear as CANOLA... Thus causing confusion as to which is the SEED and which is the Fertilizer.



8. Enter Product **Density** (The density of the product can be requested by the distributor of the seed or fertilizer). Note: The X30 default rate is Pounds Per Cubic Foot. These settings can be changed in Regional Units.



9. Enter Product **Rate increment** and **Preset Rates**.

Rate increment- Used for quickly bumping the rates up or down (+/-) while moving.

Preset 1 – Enter the desired rate you will be seeding at.

Preset 2 - Used to split the rate if you have the same product in the Front and Rear Tanks.



10. Proceed by touching the Green Check box.



11. Review the product data. Apply with the Green Check mark.

Notes:



1. Press the **Yellow Topcon logo** to bring up **Global home Screen menu**.



2. Select **1.Seeder-Home**

6 - Adding Products to Tanks



3. Expand the Tank you wish to add the Product into by pressing on the top Band.



4. Press on the **Top Area** of the Tank – to open the Product Configuration Window.



5. Press the **Product Name <Select Product>** tab.



6. **Select Product** from the list. Proceed by pressing with Green check mark.



7. Review the **Rate Presets** and **Rate Increment** settings.



8. *****ENSURE A CALIBRATION FACTOR IS ENTERED*****

Note: If this is the first time using this product you will need to add a calibration factor.

Simply press on the Calibration Factor window, if a Calibration Factor is already present **skip to Step 13.**



9. Press **Manual Entry**



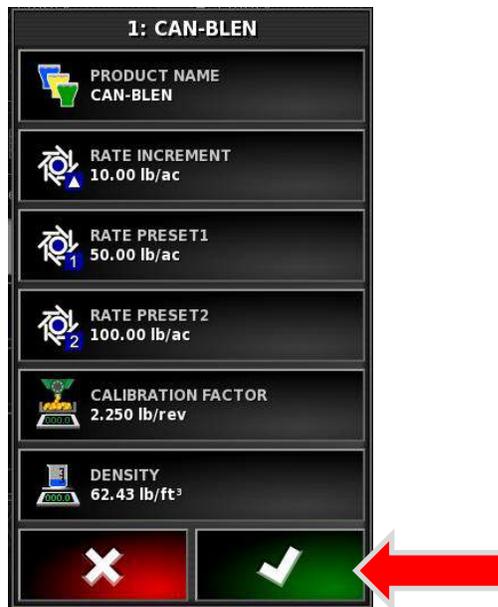
10. Press the Cal Factor Icon.



11. Using the keypad enter the following Cal factor **2.25 lb/Rev**



12. Review the Cal Factor is set, press the Green checkmark.



13. Review the settings are correct press the Green Checkmark.



14. Do you want to fill the Tank with the New Product? **Yes**



15. **Tank 1:** has been filled with the desired product **CAN-BLEND**. Press the **Request Application Rate Preset 1** to use the default preset information. Note: The **Requested Rate** window now shows 50lb/ac.

6 - Adding Products to Tanks



16. Minimize Tank 1 and Expand Tank 2.



17. Add a Product to Tank 2.



18. Select the Product from the list. Proceed by pressing with Green check mark.



19. Review the Rate Presets and Rate Increment settings, proceed.



20. Do you want to fill the Tank with the New Product? **NO**

***Since we are adding Canola to the tank we will use a different fill method.**



21. Set Rate to Preset- Yes.



22. Press the **Open Tank Fill Window**.



23. Press the **Weight** icon.



24. Using the keypad enter the **Weight manually**. Proceed by pressing the Green Check mark.

Example: We added **10 bags** of Canola at **50lbs per bag = 500lbs**.



25. As you can see the weight is now 500lbs. Apply the weight with the Green Check mark.



26. Tank 2: has been filled with the desired product **CANOLA**. Press the **Request Application Rate Preset 1** to use the default preset information. Note: The requested Rate window now shows **4.0lb/ac**.



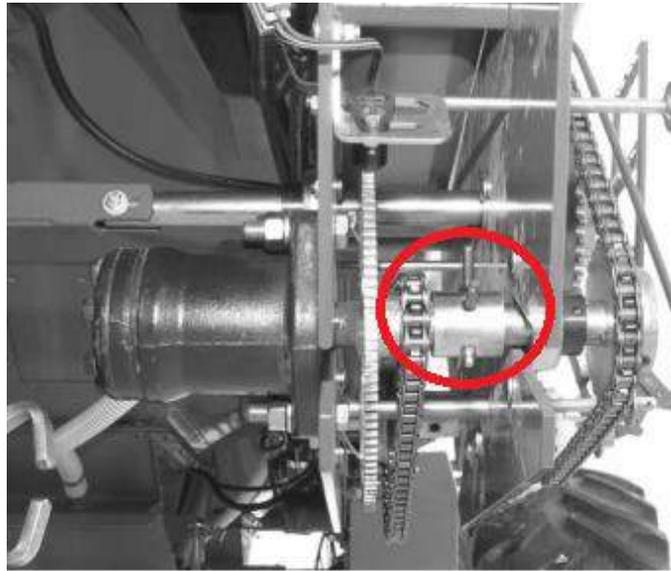
27. Continue to add products into **Tanks 3, and 4** following the desired procedures.

Notes:

**NOTE: BEFORE STARTING A CALIBRATION ENSURE THAT THE PRODUCT HAS A CAL FACTOR ASSIGNED.
REFER TO: ADDING PRODUCT TO TANK - CHAPTER 6**



1. Divert hydraulic Flow from Fan
2. Adjust product diverters to Calibration setting (add picture)
3. Insert the Calibration deflector.
4. Slide sample collection tray onto collector.



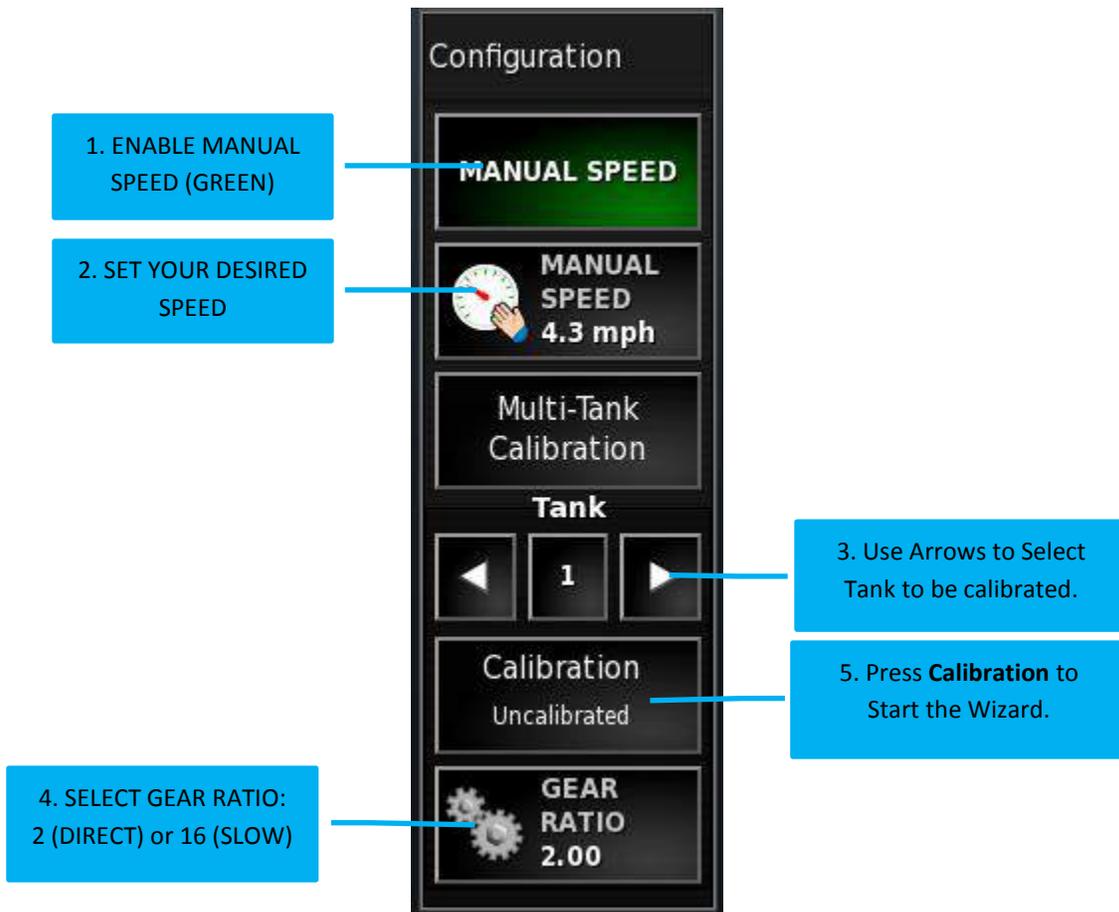
- 5. Adjust the transmissions by moving the locking pin from **Direct Drive** to **Slow Speed Drive**.
(DIRECT DRIVE SHOWN) ENSURE THE TRACTOR IS NOT RUNNING WHILE REMOVING PINS!



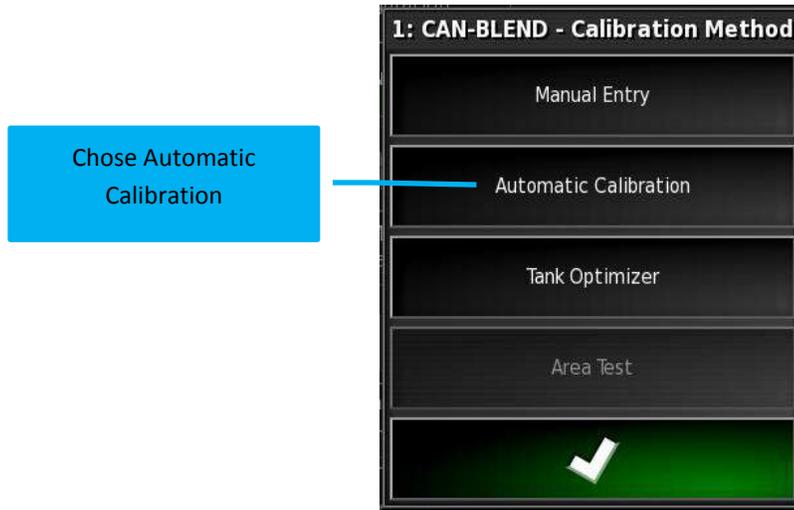
- 6. Press the **Topcon logo** for **one second** to load the Global Home screen menu.



7. Navigate to the **Calibration** page.

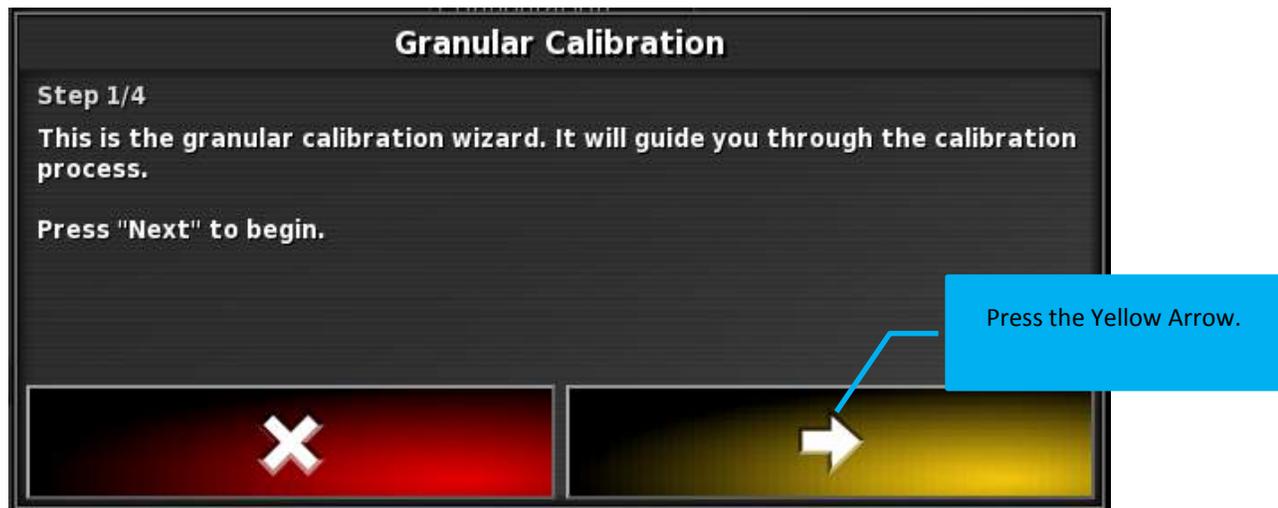


8. Follow the above step in sequence.



9. Calibration Method window opens

Note: Tank number and Product are present.



10. The Calibration wizard will now open. Follow the prompts.



11. GREEN indicates the Metering is Active and is ready to discharge product. The Tank Preset Rate will automatically be displayed. Change if required.



12. Activate the metering by pressing the Start/Stop button on the keypad.



13. Stand back while the metering engages and distribute the product into the sample collector.

Note: The Lights are Green when Product is flowing.

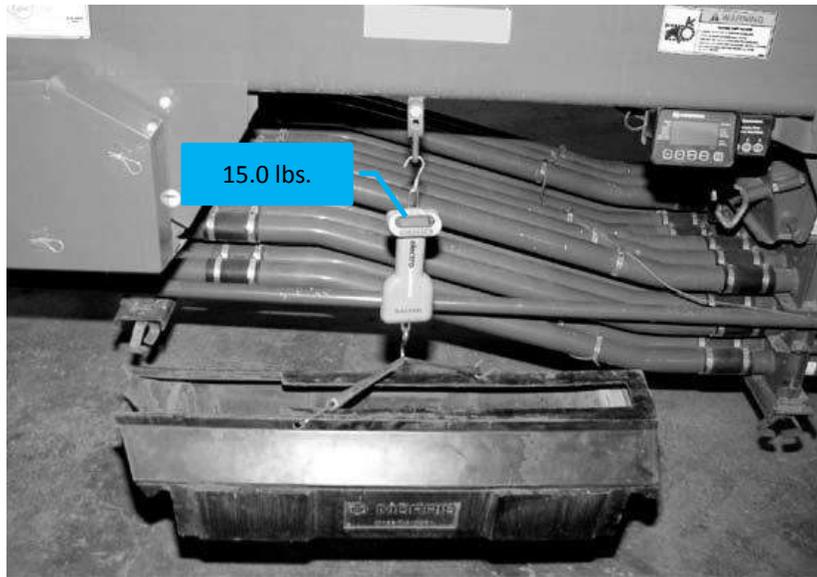


14. The **Estimated Weight** will count continuously as product is collected into the Sample Collector. Keep an eye on the collector box, fill until roughly $\frac{3}{4}$ full.



15. Stop the metering of the product by pressing the Start / Stop button.

Note: the Tank and Start / Stop colors are now Orange /Red.



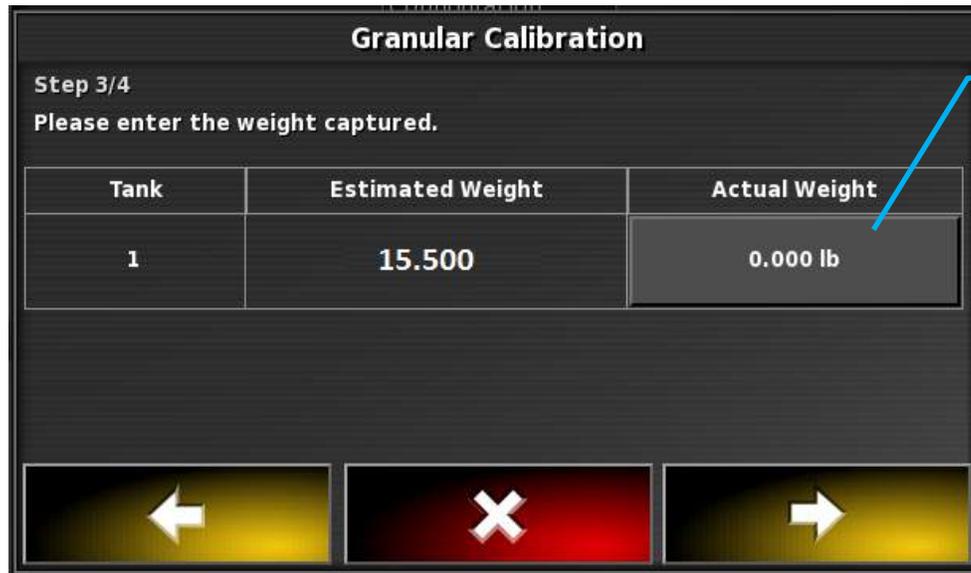
16. Remove the **Collector Tray** and **Weigh the Product** using the provided scale.

Granular Calibration

Step 2/4
 Please activate the tank and Master Switch to run the seeder.
 When sufficient weight is obtained, turn OFF the tank or Master Switch and press "Next".
 Using a Manual Speed of 4.5 mph.

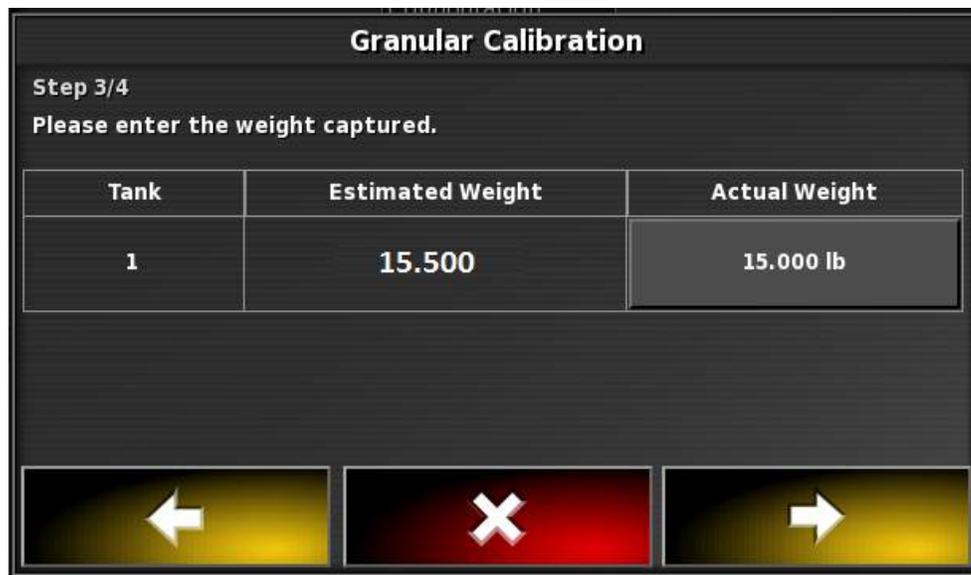
| Tank | State | Rate | Revs | Estimated Weight | % | |
|------|-------|----------|------|------------------|----|-------|
| 1 | | 50 lb/ac | 5.1 | 15.5 | 95 | Reset |

17. Return to the X30 monitor, notice the estimated weight. Proceed to the next screen by pressing the **Yellow Forward arrow**.

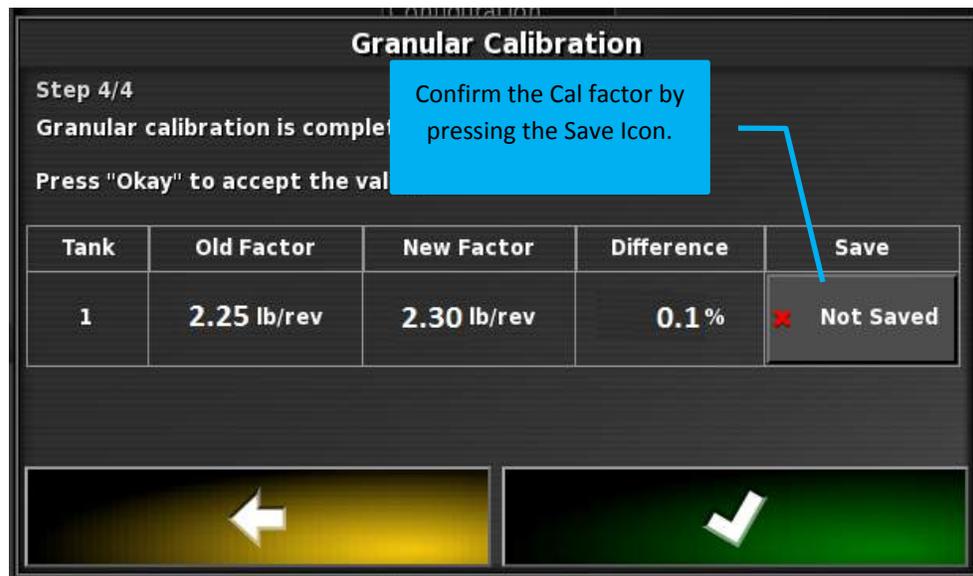


Press here to enter the weight from the scale

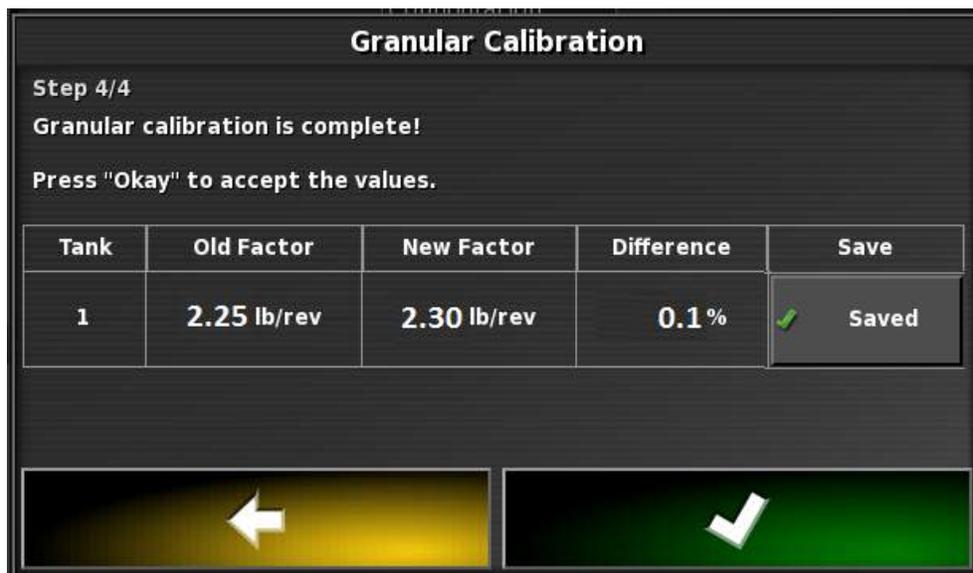
18. Press the **Actual Weight** icon to enter the proper amount of the product collected. Enter the **Weight** of the product apply the setting by pressing the Green check mark.



19. Proceed to the next screen by pressing the **Yellow Forward Arrow**.



20. Press the on the **Not Saved** icon to **SAVE** the updated Calibration Factors.



21. The Save status will change to **Saved**. Exit and Apply the Calibration Factor by pressing the Green check mark. It is recommends to repeat the calibration procedure 2 more times to fine tune and verify the calibration factor is accurate.



22. Notice how the new Calibration Factors are shown for Tank 1. Continue the Calibration procedure until you are satisfied with the results.

NOTES:

1. Follow the previous chapters. At this stage you will have;

- Created Fields
- Added Products to Tanks
- Performed Calibration tests on all Tanks



1. Open the Field Menu - Press the **Select Field** icon.



2. **Select the Field** you wish to seed. Press the Green Check mark to apply the settings.



3. Press the **Job menu icon** and press the **Create New Job** icon.



4. Tap on the **Job name**.



5. Press backspace to rename the job to match the current **Field and Date**. Example: **HOME-CAN-MAY-14-2015**; apply the settings with the green Check mark.



6. Confirm and **apply** the settings with the **Green Check** mark.

8 – Seeding

The screenshot shows the 'Seeder Controller' interface with the following callouts:

- 1. TURN ON ALL TANKS:** Points to the top-left navigation icons.
- 2. VERIFY JOB SETTINGS:** Points to the 'JOB SETTINGS' menu on the left.
- 3. FAN SPEED IS PRESENT:** Points to the fan speed gauges at the bottom left.
- 4. RATES ARE SET CORRECTLY:** Points to the 'Requested Rate' fields for the four tanks.
- 5. GROUND SPEED IS PRESENT:** Points to the ground speed gauge at the bottom right.
- 6. MASTER SWITCH:** Points to the master switch icon at the bottom right.

7. Return to the Seeder Home screen. Ensure the following items are checked before Engaging the Master Switch.

The screenshot shows the 'Seeder Home' screen with the following data:

| Tank | Material | Requested Rate | Actual Rate |
|------|----------|----------------|-------------|
| 1 | G-PEAS | 50 lb/ac | 17242 lb |
| 2 | G-PEAS | 22 lb/ac | 8311 lb |
| 3 | G-PEAS | 50 lb/ac | 8348 lb |
| 4 | G-PEAS | 100 lb/ac | 17243 lb |

Additional data from the screenshot:

- Fan Status:** 1.2 rpm, 5044 rpm, 4965 rpm
- Ground Speed:** 0.7 mph
- Job Settings:** CLIENT: STEPHEN-B, FARM: AMBERLY, FIELD: MAIL-BOX, JOB: MAIL-BOX-MAY-25-15

8. Seeder will change to the color Green when Metering is active. Toggle between the various screens to view important data.

Notes:

1. Drive to the next field location.



2. Select **MAPPING**



3. Press the **Field Menu** followed by the **Select Field** icon.



4. **High-Light** the Field you desire to seed next from the list. Press the Green Check mark.



5. Press the **Job menu icon**, followed by the **Create New Job** icon.



6. Rename the job to match the current **Field, Seed and Date**. Apply the settings with the green Check mark.



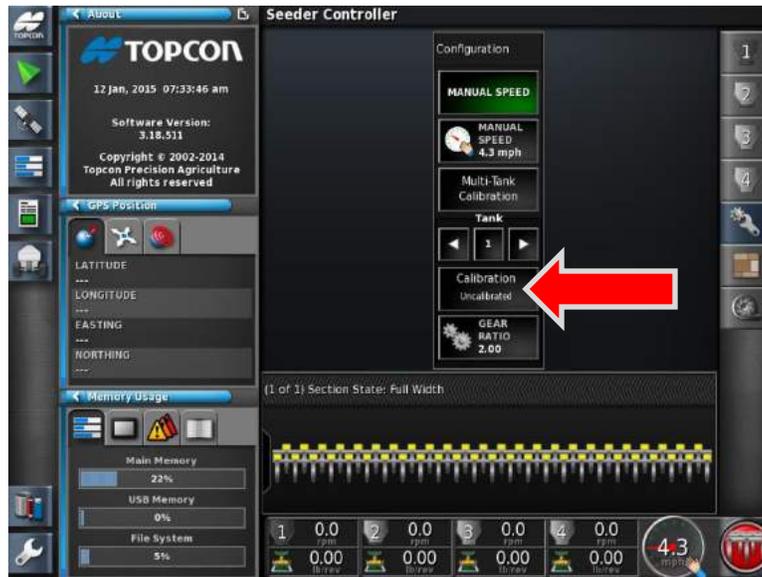
7. Return to the **Seeder-Home** to change Products.



8. Turn Off all Tanks, proceed to change the Products in Tanks 1-2-3-4.



9. Return to the **Calibration** screen.



10. Calibrate the products that have changed.



11. Return to the **Seeder-Home** screen.



12. Check all settings, ensure rates are correct, and turn tanks **ON**.



13. Press Master Switch to engage seeder.

Notes:

Setting up USB Folder Structure

1. You will require a USB memory stick and a Personal Computer.
2. Insert the USB stick into PC and go to **Start, Computer**, and then **Removable Disk**.

| Name | Date modified | Type |
|---|-------------------|-------------|
|  Clients | 3/15/2031 6:23 AM | File folder |

3. In the root directory of the USB drive Right click and create a new folder called **“Clients”**

| Name | Date modified | Type | Size |
|---|----------------------|-------------|------|
|  YOUR_CLIENTS_NAME | 2015-02-03 10:20 ... | File folder | |
|  DefaultClient | 2015-02-03 10:29 ... | File folder | |

4. Inside of the Clients folder create another folder with your Clients **First and last** name.

Example: GREG_WATSON

| Name | Date modified | Type | Size |
|--|----------------------|-------------|------|
|  YOUR_CLEINTS_FARM_NAME | 2015-02-03 10:21 ... | File folder | |

5. Inside the Clients Name folder create an additional folder. It will be the name of the **Farm**.

Example: WATSON_FARMS

| Name | Date modified | Type | Size |
|---|----------------------|-------------|------|
|  HOME_QTR | 2015-02-03 10:19 ... | File folder | |
|  JIMMYS | 2015-02-03 10:42 ... | File folder | |
|  MAILBOX | 2015-02-03 10:41 ... | File folder | |
|  MIKEYS | 2015-02-03 10:43 ... | File folder | |
|  MILLERS | 2015-02-03 10:19 ... | File folder | |
|  SEVEN | 2015-02-03 10:42 ... | File folder | |
|  TOTES | 2015-02-03 10:42 ... | File folder | |

6. Inside of the Farm folder create a new folder for each of the fields.

NOTE: Always use Upper case letters with _ underscores.

Example: HOME_QTR

| Name | Date modified | Type | Size |
|--|----------------------|-------------|------|
|  Boundaries | 2015-02-03 10:19 ... | File folder | |
|  VRC | 2015-02-03 10:40 ... | File folder | |

7. Inside of each Field folder create a **VRC** and a **Boundaries** folder.

| Name | Date modified | Type | Size |
|-----------------|----------------------|-------------|------|
| HOME_QTR_CAN_15 | 2015-02-03 11:44 ... | File folder | |

- Open the **VRC** folder and create the Rx map data folder.

The folder should include the Field, Type of product being applied, and year.

Try to keep the names as short as possible. Always use Uppercase Letters and _ do not use any symbols.

| Name | Date modified | Type | Size |
|---------------------|--------------------|--------------------|----------|
| HOME_QTR_CAN_15.dbf | 2013-05-27 8:27 PM | DBF File | 1,110 KB |
| HOME_QTR_CAN_15.shp | 2013-05-27 8:27 PM | AutoCAD Shape S... | 1,863 KB |
| HOME_QTR_CAN_15.shx | 2013-05-27 8:27 PM | AutoCAD Compil... | 110 KB |

- Place the .shp .dbf and .shx files inside the Folder.

Note: The name of the files must match the name of the folder exactly!

| | | | |
|------------------------|----------------------|--------------------|----------|
| Clients | 2015-02-03 10:33 ... | File folder | |
| YOUR_CLIENTS_NAME | 2015-02-03 10:20 ... | File folder | |
| YOUR_CLEINTS_FARM_NAME | 2015-02-03 10:54 ... | File folder | |
| HOME_QTR | 2015-02-03 10:19 ... | File folder | |
| Boundaries | 2015-02-03 10:19 ... | File folder | |
| VRC | 2015-02-03 11:44 ... | File folder | |
| HOME_QTR_CAN_15 | 2015-02-03 11:44 ... | File folder | |
| HOME_QTR_CAN_15.dbf | 2013-05-27 8:27 PM | DBF File | 1,110 KB |
| HOME_QTR_CAN_15.shp | 2013-05-27 8:27 PM | AutoCAD Shape S... | 1,863 KB |
| HOME_QTR_CAN_15.shx | 2013-05-27 8:27 PM | AutoCAD Compil... | 110 KB |

- Example of a properly structured VRC folder

How to create a Boundary Shape file folder structure

| Name | Date modified | Type | Size |
|--|----------------------|-------------|------|
|  Boundaries | 2015-02-03 10:19 ... | File folder | |
|  VRC | 2015-02-03 10:40 ... | File folder | |

11. Return to the Field folder open the “**Boundaries**” folder.

| Name | Date modified | Type | Size |
|---|----------------------|-------------|------|
|  ShapefilesForBoundary | 2015-02-03 10:40 ... | File folder | |

12. Inside of the Boundaries folder create a “**ShapefilesForBoundary**” folder.

| Name | Date modified | Type | Size |
|--|----------------------|-------------|------|
|  HOME_QTR | 2015-02-03 10:41 ... | File folder | |

13. Inside of the ShapefileForBoundary folder create a new folder which has the same name as the Field name “**HOME_QTR**”.

| Name | Date modified | Type | Size |
|--|--------------------|--------------------|-------|
|  HOME_QTR.shp | 2012-05-21 8:16 PM | AutoCAD Shape S... | 16 KB |

14. Add the Modified Shape file to the directory. Ensure the name is the same as the parent folder.

| | | | |
|--|----------------------|--------------------|-------|
|  Clients | 2015-02-03 10:33 ... | File folder | |
|  YOUR_CLIENTS_NAME | 2015-02-03 10:20 ... | File folder | |
|  YOUR_CLEINTS_FARM_NAME | 2015-02-03 10:54 ... | File folder | |
|  HOME_QTR | 2015-02-03 10:19 ... | File folder | |
|  Boundaries | 2015-02-03 10:19 ... | File folder | |
|  VRC | 2015-02-03 11:44 ... | File folder | |
|  ShapefilesForBoundary | 2015-02-03 10:40 ... | File folder | |
|  HOME_QTR | 2015-02-03 10:41 ... | File folder | |
|  HOME_QTR.shp | 2012-05-21 8:16 PM | AutoCAD Shape S... | 16 KB |

15. Example of a properly structured Boundary folder.
16. Eject USB from PC and insert it into the side USB slot on the X30.

Notes:



1. Enter the **Setup** menu.



2. Enable **Variable Rate Control** in the – **System - Features - Implement** menu.



3. Add the products you will be Applying to your tanks.



4. Press the **Inventory Manager** icon.



5. Press the **CATEGORY** tab.



6. A drop down list will appear, select **Clients** from the list. Press the Green check mark.



7. This screen shows the Clients currently stored inside of the X30 internal memory. **Plug your USB stick with the Rx maps into the side port of the X30.**



8. Notice how the Bottom row of icons has become visible.



9. Switch to the **USB file system** by pressing the first **Blue USB stick icon**. The X30 is now reading the files off of the USB drive.



10. Select the **Client (First Last)** and now press the **Green arrowed USB Export Icon**.



11. All of the files we created on the usb drive are now being transfer into the X30 main memory. Press the Green checkmark to continue.



12. Return to the Seeder Home screen by pressing the **Inventory Manager Icon**. You may now eject the USB stick.



13. Return to the **Mapping** screen.



14. Press the **Field Menu**.



15. Press the Select Field Icon.



16. Change from the **Default Client**, by pressing on the tab.



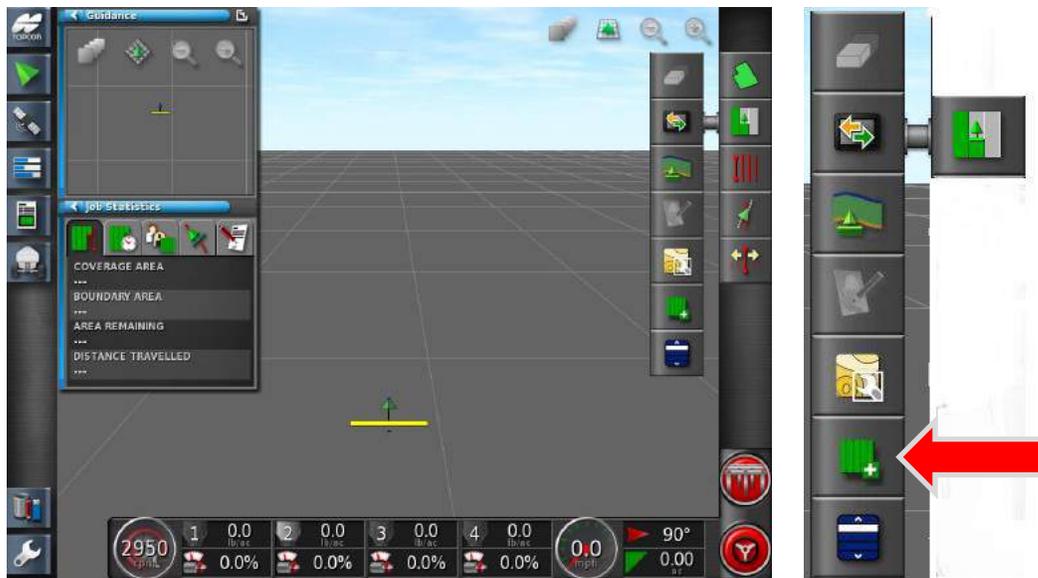
17. Select your **Client Name**. Example: GREG_WATSON



18. Select your Farm.



19. Select the **Field** you will be seeding. Apply settings with the Green check mark.



20. Press the **Job Menu**, Select **Create New Job**.



21. A new job name will automatically open. Tap inside the Job name window. Delete the text by pressing the back space key. Although you could use the Job name we prefer to rename it something that is more logical.



22. Enter new text that includes: **FIELD-DATE-SEED** (always uses – instead of spaces). Apply the Job name by pressing the Green Check mark.



23. Review the Job name, Apply with the Green Check mark.



24. Press the Job menu Icon- Press the **Configure VRC** for this Job



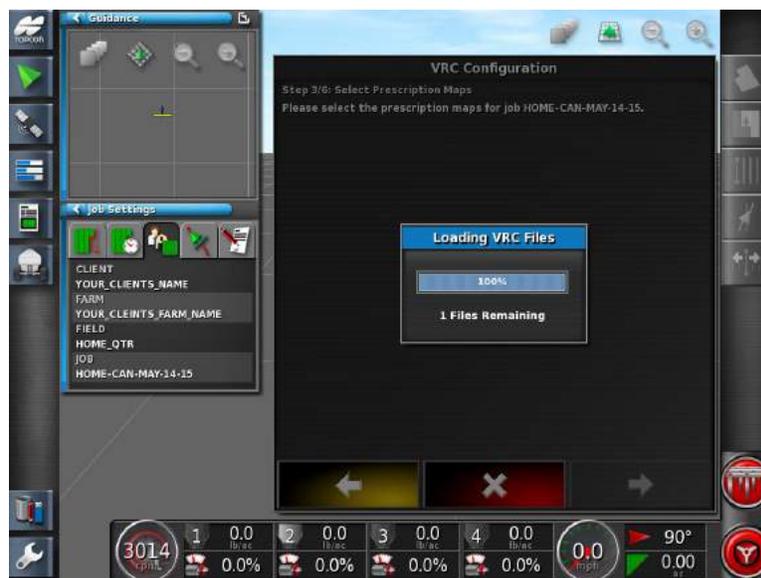
25. Follow the **VRC wizard**. Press the Yellow forward Arrow to continue.



26. Select **Shape Files**. Press the Yellow forward Arrow to continue.



27. Select the VRC (.shp) map. Press the Yellow forward Arrow to continue.



28. Loading VRC files will appear.

| Channel | Source | Attribute | Units | Rescale | Default |
|--------------|----------|-----------|-------|---------|---------|
| 1: CAN-BLEND | <Select> | <Select> | lb/ac | 1.00 | 0.0 |
| 2: CANOLA | <Select> | <Select> | lb/ac | 1.00 | 0.0 |
| 3: 0-0-60 | <Select> | <Select> | lb/ac | 1.00 | 0.0 |
| 4: 46-0-0 | <Select> | <Select> | lb/ac | 1.00 | 0.0 |

29. Understanding the Prescription (Rx) table.

Channel – Tanks on the Aircart

Source – Tells the Tank to use VRC map data.

Attribute – Assigns specific Rx data to Tank (Channel)

Units – Use lb/ac

Rescale – Normally set at 1.00. However you can Increase / Decrease the rate of the default Rx map.

Example: 1.1 would increase the Rx by 10%. This feature is also very useful when doing multiple tank splits.

Default - Allows the seeder to apply product outside of the Rx map. A flat rate will always be applied.

Example: a sough has dried up, and can now be seeded and no Rx data is in that region of the map. A flat rate will be applied.



30. Start with **Tank 1: CAN-BLEND** under **Source** tap <Select> to assign the Rx map data to the desired tank.



31. Choose the **Rx map data**. Proceed with the Green Checkmark.

*Note: If we were not running Rx on the tank we simply choose No VRC.

| Channel | Source | Attribute | Units | Rescale | Default |
|--------------|----------|-----------|-------|---------|---------|
| 1: CAN-BLEND | HOME_QTR | <Select> | lb/ac | 1.00 | 0.0 |
| 2: CANOLA | <Select> | <Select> | lb/ac | 1.00 | 0.0 |
| 3: 0-0-60 | <Select> | <Select> | lb/ac | 1.00 | 0.0 |
| 4: 46-0-0 | <Select> | <Select> | lb/ac | 1.00 | 0.0 |

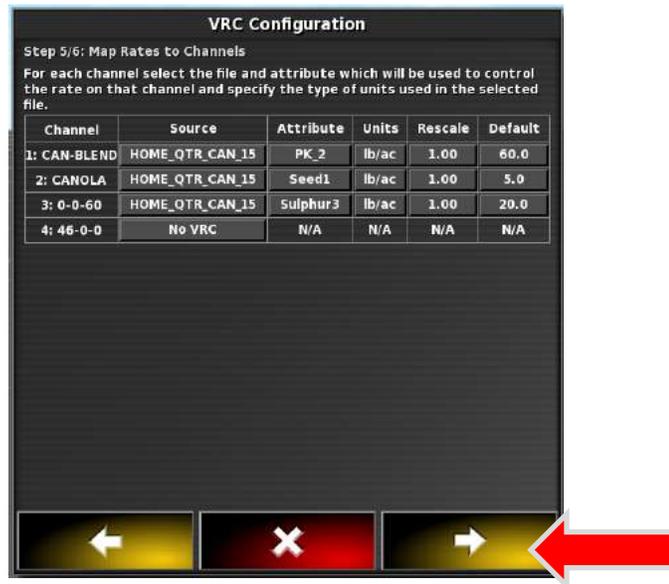
32. Press the <Select> under the **Attribute**.



33. Choose the appropriate map data for the product. If you are unsure please consult your agronomist to ensure you have the correct file selected. Proceed with the Green check mark.



34. Continue to assign the map data to the remaining tanks.



35. Review the data closely before proceeding. Proceed with the Yellow forward arrow.



36. VRC Configuration is complete; apply the settings by pressing the Green check mark.



37. The VRC map should now be visible. Press the **Select Visible Map Layer** icon to toggle between different layers.



38. Note: you may need to perform an Overwrite of the Mapping screen to keep your desired map layers.



39. To add the **Boundary**, press the **Field Menu** icon.



40. Press the **Create Boundary from Shape file** icon.



41. Select the **Boundary Shapefile**. Proceed with Green Checkmark.



42. You will now see a **Blue Boundary** appear.

Note: if your boundary is very small the person who has created your map has made a crucial error. **The X30 requires a one shape polygon boundary file.** Contact your map maker for further assistance.



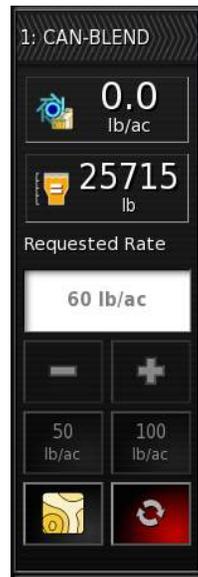
43. Return to the **SEEDER-HOME** screen.



44. On the main seeder screen, press the **Set Rate Control Mode** icon.



45. Change the settings from Auto to **VRC**. When VRC is in use it tells the tank to use the Rx map data.



46. Notice how the **Requested Rate** is ghosted out and cannot be changed. The VRC icon is now displayed and is working correctly as it is pulling the **Rate Data** off of the **Rx map**.



47. Toggle the remaining tanks to use VRC.

Perform a small practice lap around field, watch the requested rates change as the map is being read. Verify the rates are within reason.



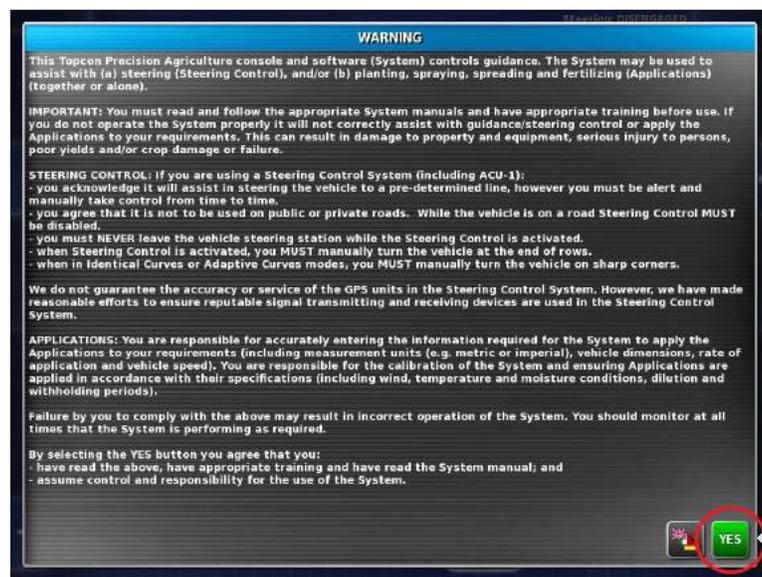
48. Turn on Tanks and Master Switch, system is now seeding off Rx map.

Notes:

X30 FIRMWARE UPGRADE



1. Turn the monitor **ON** by pressing and holding the Green Button on the Back left side of the monitor for 5 seconds. The guidance LEDS will flash and the loading screen will be displayed.



2. Press **YES** after reading the warnings.



3. Insert the USB stick labeled “X30 UPGRADE” into the side port on the X30.
4. Press the setup wrench and navigate to **System** and then press the **Utilities** icon.
5. Press the **PROVISION USB FOR UPGRADE**, Press **YES** when prompted.
6. You will now see the message **USB Provision Successful**.
7. Power down the X30 by Press the **Green Power button** on the rear of the X30 for 1 second, A Power down Menu will appear select **YES**.
8. The Monitor will shut down, wait approximately 10 seconds. Power the monitor back on by **holding the Green Power button for 5 seconds**.
9. Leave the USB inserted until the monitor asks you to remove it.
10. Upon powering on, the monitor will perform the upgrade automatically.
11. Wait, the upgrade will take around 7 mins.
12. [Factory Only] At this time print 2 labels of the **sales order number** with label maker. Affix the sales order number label onto the back of the monitor on the serial number tag onto the Monitor box. Example: 426415

13. Once the upgrade is completed a message will appear on the screen, asking you to **“Please Remove the USB flash drive”**

14. The monitor will now reboot and a **“Touch Screen to start calibration”** will appear.

15. Touch in the middle of the screen.

16. **Carefully press the Cross hair icon on the Top Left of the screen.** If you miss the icon or make a mistake. Wait and allow the screen calibration to time out and start over.

17. Press commit calibration

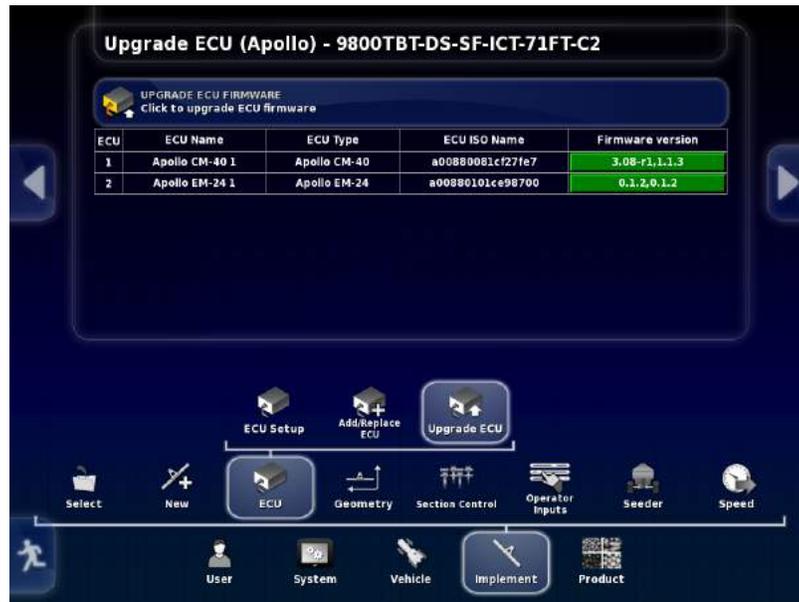
18. Press -High -Test- Apply - Close.

19. Restore user Data will now appear, Select **YES**.

- Note: very important, all data will be lost if No is selected.

20. Monitor is now ready for the next stage.

Notes:



1. Press the Set up Wrench Navigate up the tree – **Implement - ECU- Upgrade ECU**.



2. Always start with the Apollo **CM-40** press on the Firmware version window and select the Upgrade Both Icon followed by the Green Check mark.



3. Press the **Click to upgrade ECU Firmware** icon located at the Top of the screen. Press green check mark.



4. Insert the Apollo Upgrade USB stick into the Side port of the Topcon X30 monitor.



5. Follow the wizard by pressing yellow forward arrow.



6. Press forward arrow.



7. Press **FORWARD** Arrow only, the files will be found automatically.



8. Press the **Green Checkmark** to continue.



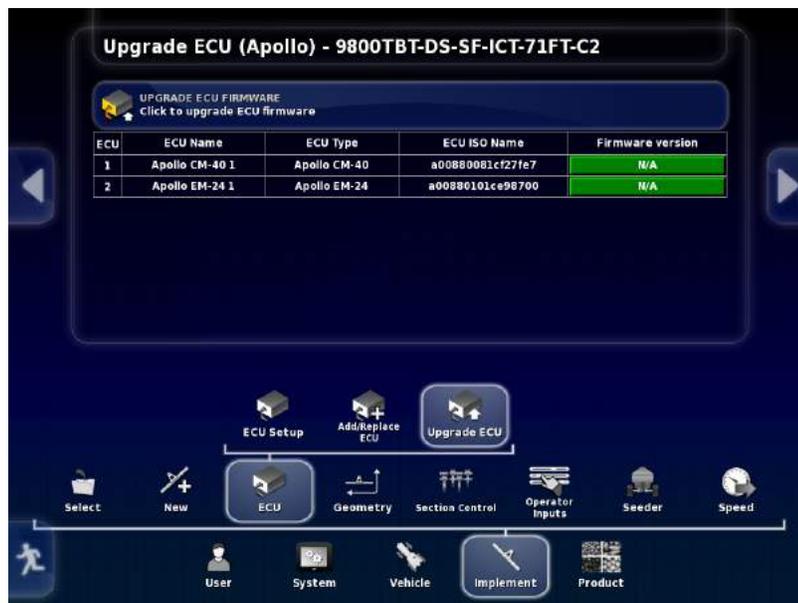
9. The update will now start.



10. Wait for firmware to transfer. The progress of the transfer will be displayed status bar.



11. Wait for screen to read 100% and then WAIT ANOTHER 30 SECONDS THEN PROCEED BY PRESSING GREEN CHECKMARK.



12. System will now reboot, do not touch anything, please let the system sit for nearly 4 minutes.



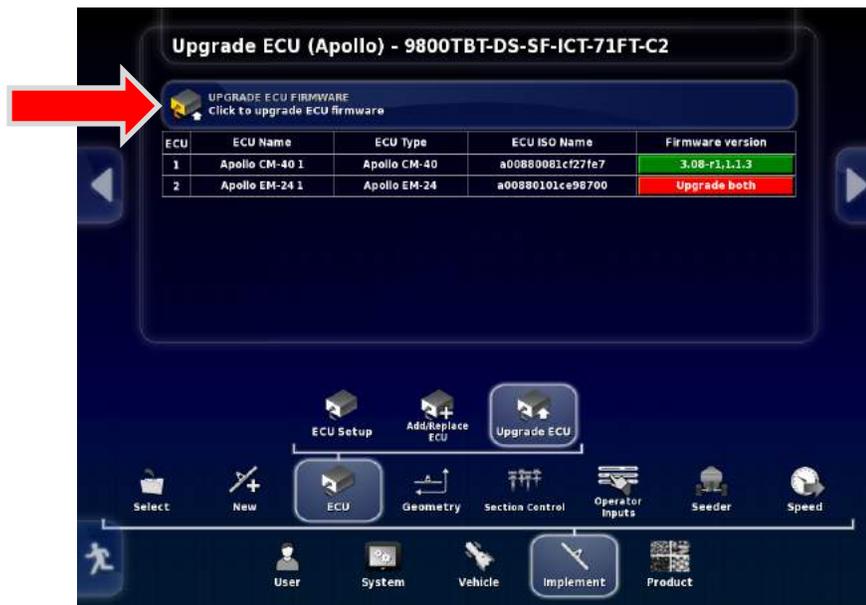
13. Disconnecting the ISO coupler, and then reconnect after 30 seconds. The system will synchronize after the full power cycle.



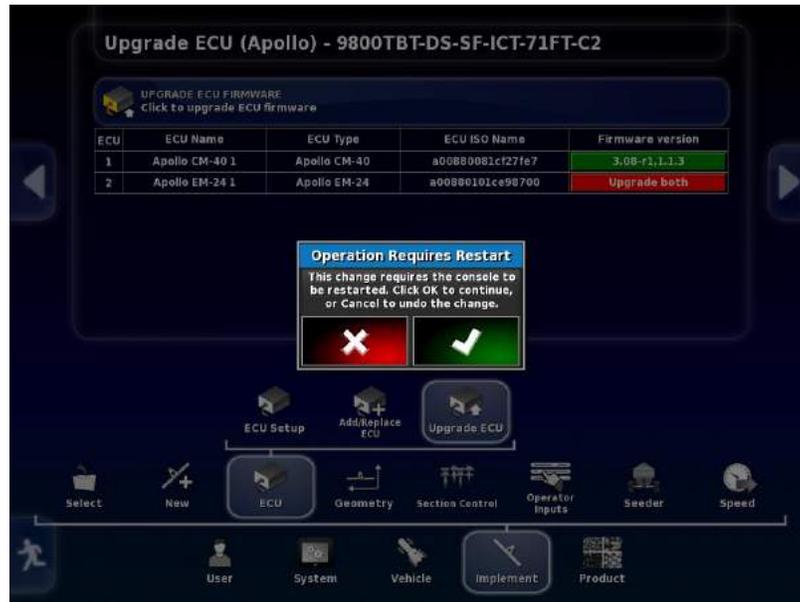
14. Continue onto the Apollo **EM-24**, press on the Firmware version window.



15. Select the Upgrade both Icons followed by the Green Checkmark.



16. Press the **Click to Upgrade ECU Firm** icon located at the Top of the screen.



17. Press the Green Checkmark to continue.



18. Follow the wizard by pressing yellow forward arrow.



19. Press forward arrow.



20. Press **FORWARD** Arrow only, the files will be found automatically.



21. Press the **Green Checkmark** to continue.



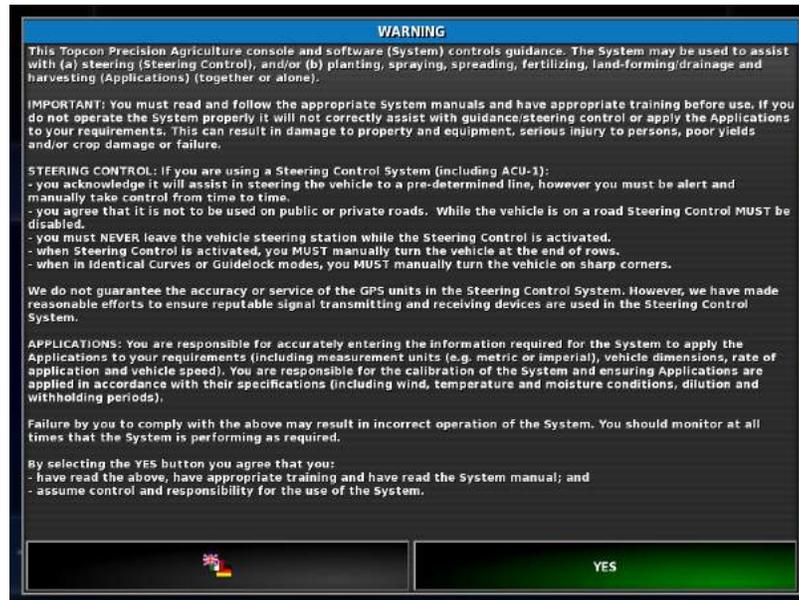
22. Update will now start.



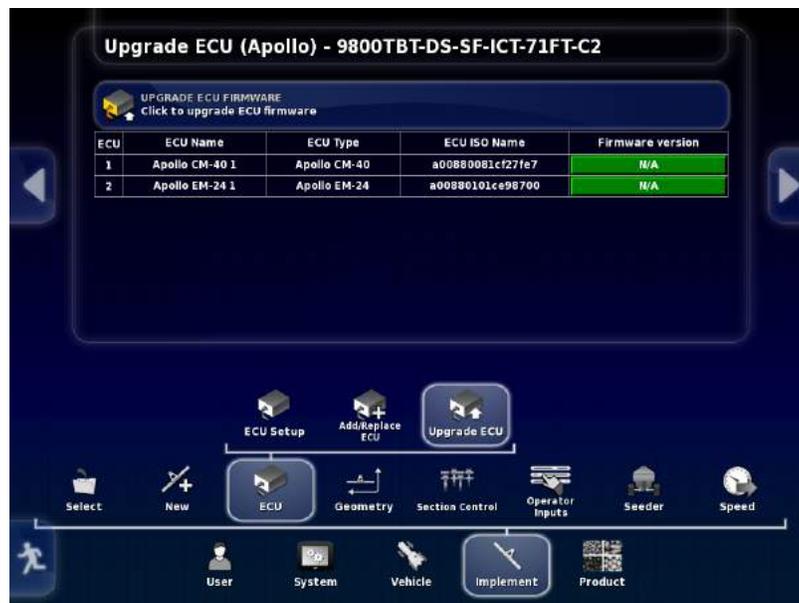
23. Wait for firmware to transfer.



24. Wait for screen to read 100% and then WAIT ANOTHER 30 SECONDS THEN PROCEED BY PRESSING GREEN CHECKMARK.



25. Then unit will power now and power back up then press the YES Icon



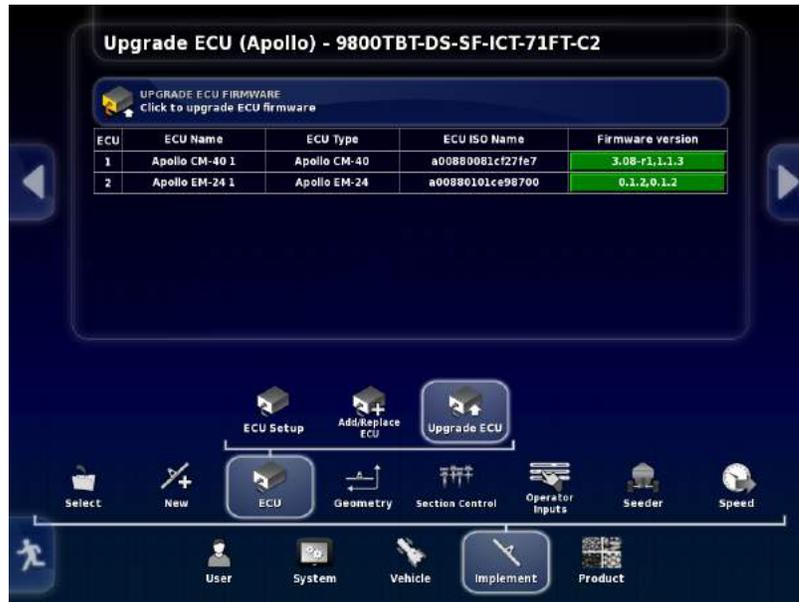
26. Do not touch anything, please let the system sit for nearly 4 minutes.



27. Disconnecting the ISO coupler, and then reconnect after 30 seconds. The system will synchronize after the full power cycle.



28. Wait until the ECU is finished Configuring



29. Success the Firmware version should now be present on the CM-40 and EM-24

30. Eject the USB stick using the eject button located on the front of the X30 panel.

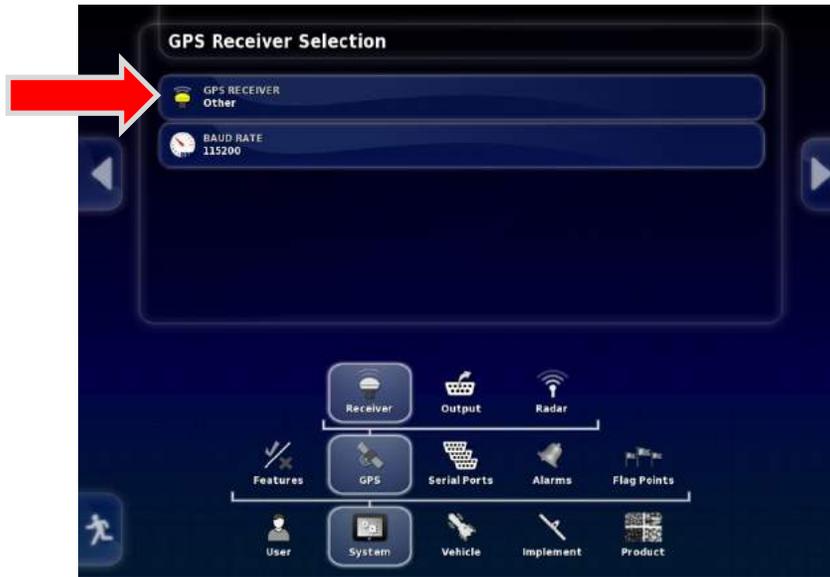
Notes:



1. The Calibration page contains detailed information on the GPS signal. No GPS information is available as we are currently are not receiving any signal.



2. Enter the Setup menu



1. Navigate **System-GPS-Receiver**. Change the following settings:

The Monitor will ask to restart once the GPS is changed.

GPS Receiver – Other

Baud rate - 115200



2. Navigate **System-Serial Ports**. Change the following settings:

GPS RECEIVER COM: COM 2

GPS RECEIVER COM: COM 3

GPS RECEIVER COM: COM 4



3. Additional parts may be required when connecting to 3rd Party antennas. Often an Orange M/M Gender changer is required.

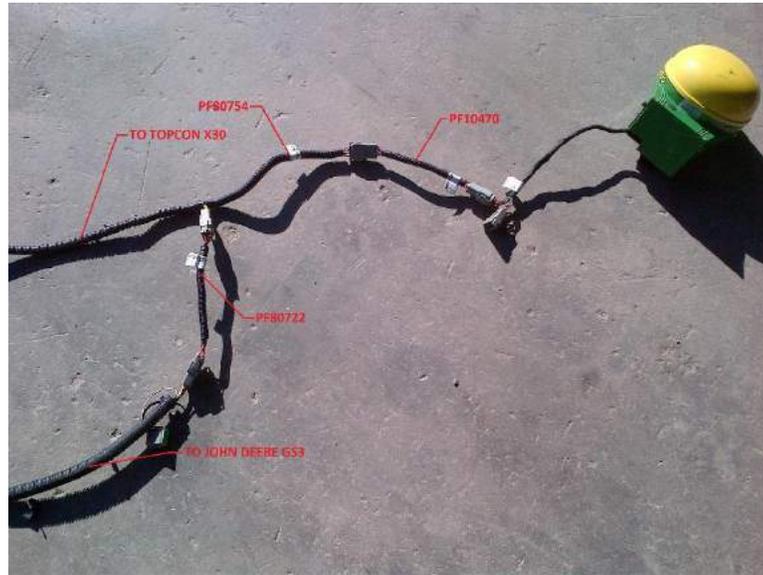
John Deere Star Fire 3000

Parts Required:

- PFP10470 Female to Female mini harness (included with GS3)
- PF80722 Male to Male mini harness (included with GS3)
- PF80754 Y-Harness (John Deere part)
- M/M Null Modem adapter



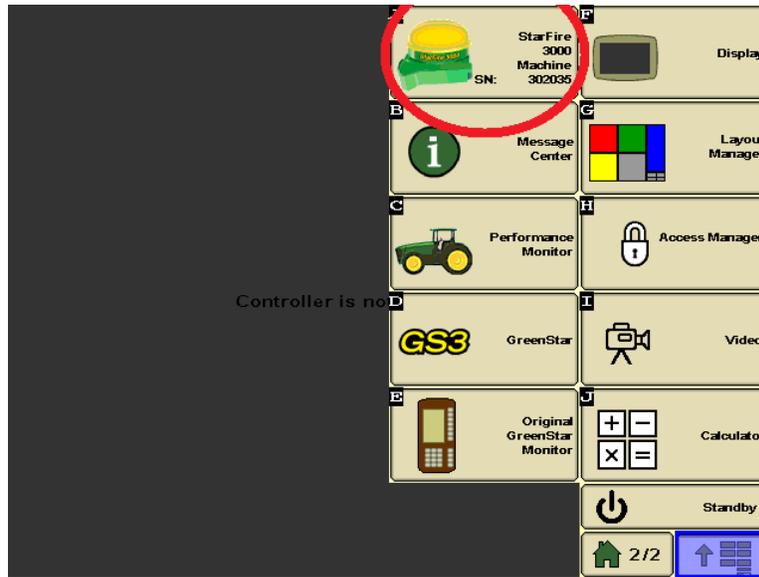
1. Attach **PFP10470** to the female end of StarFire 3000 antenna. Connect the remaining end of PFP10470 to the longer plug on the **PF80754 Y-Harness**.



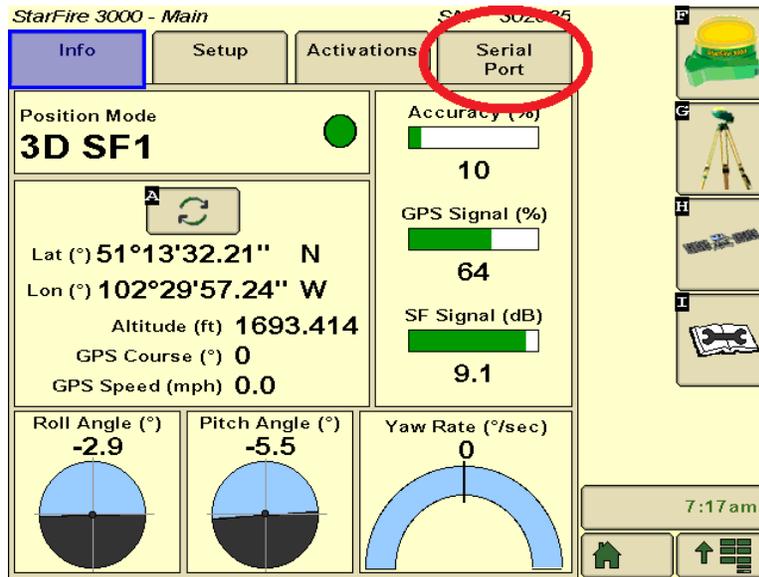
2. Connect **PF80722** mini harness between the **short end** on **PF80754** and the original GS3 harness.



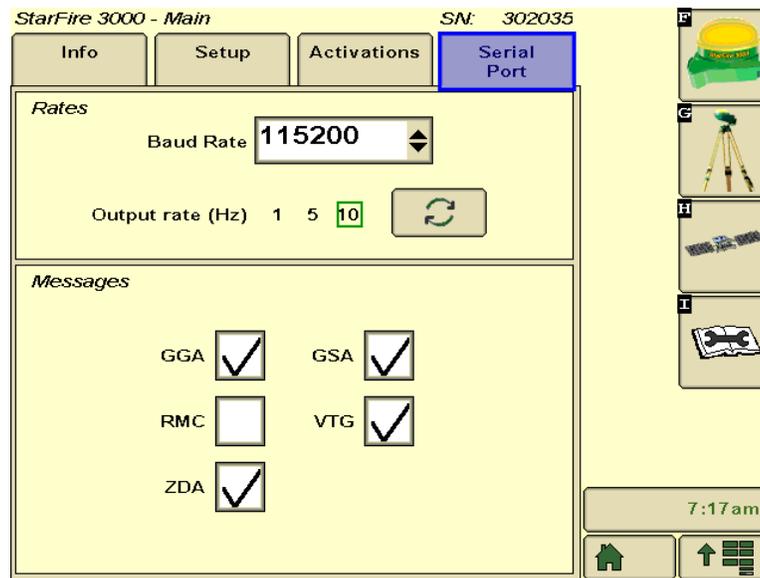
3. Attach an **Orange mini M/M Null Modem** adapter between the **PF80754** serial connector and the **COMM 2** input on the X30 AGA5072 harness.



- On the GS3 Monitor navigate to the GPS settings by pressing the **StarFire** icon.



- Drive tractor outside and ensure GPS signal is present on the GS3. Now open the **Serial Port** setting tab.



6. Change the setting to use:

115200 Baud Rate

10Hz Output rate

GGA, GSA, VTG, and ZDA



7. GPS signal should now be present on both monitors.

Notes:

FAN ALARMS



1. Enter the **Setup** menu.



2. Navigate from – **System - Alarms – Seeder**. Find **LOW FAN SPEED** from the list.



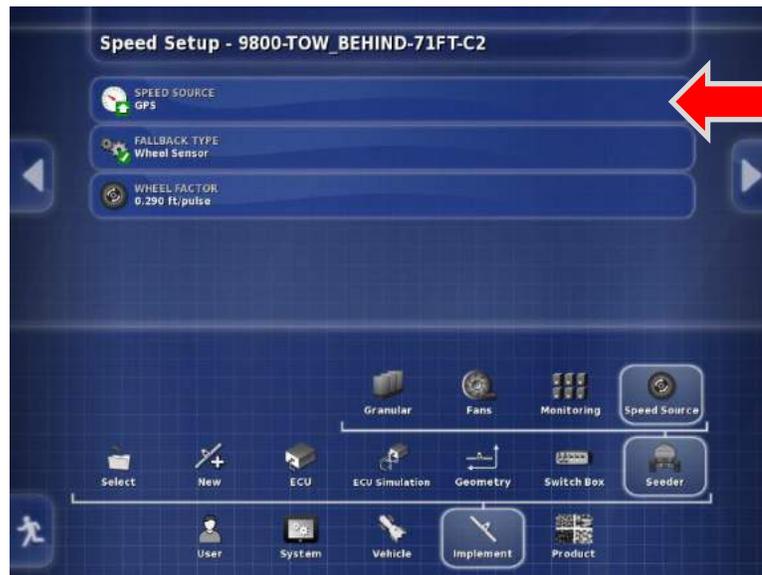
3. **Adjust the Alarm point**, by setting the alarm point just slightly below the normal operating range you could quickly determine if the system is surging or about to plug.



4. Exit the Setup Menu.



1. Enter the **Setup** menu.



2. Navigate **Implement-Seeder-Speed Source**. Press on the **Speed Source** tab.



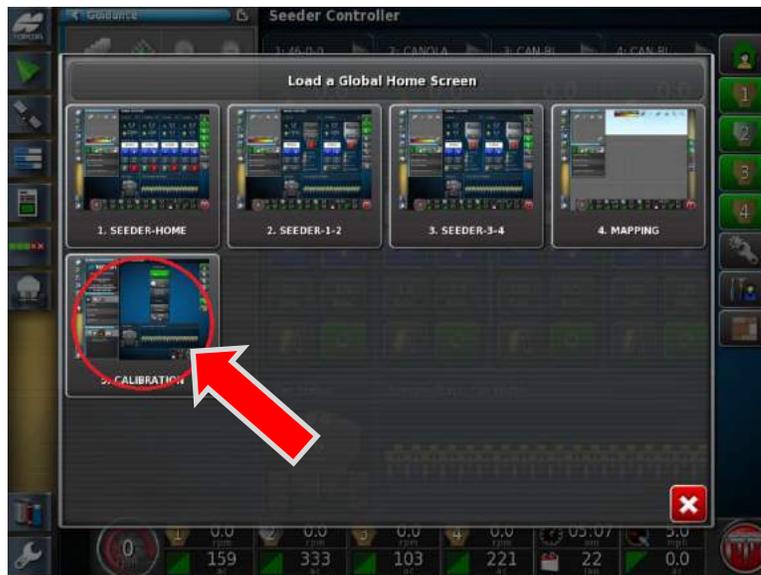
3. Change the Speed Source from **GPS** to **Wheel Sensor**. Apply the changes with the Green Check mark.



4. Ensure Wheel Factor is set at **.288ft/pulse**. Press the Exit Set up key.



5. Press the **Topcon logo** to enter the **Global Home Screen** menu.



6. Press the **CALIBRATION** window.



7. Press the **Wheel Sensor** icon.



8. **Auto Speed Cal**, follow the on screen wizard by pressing the Yellow forward arrow.



9. Morris aircarts do not require this step as the pulses are read off of a sprocket. Press the Yellow forward arrow.



10. Drive the implement forward for a measured distance between 164' to 654'



11. Press on Distance Covered tab.



12. Enter the exact distance you traveled. Apply the changes with the Green check mark.



13. Confirm the setting by pressing the yellow forward arrow.



14. Return to the Setup menu to change the speed source back to GPS.



15. Press the **Speed Source** tab.



16. Change **Wheel Sensor**, back to **GPS**. Apply the changes with the Green Check mark.



17. Exit the Setup menu.

Notes:



1. Press the Topcon Logo to open the Global Home Screens. Select Calibration. We have also added important diagnostic features within the Calibration screen which we can access quickly.



2. Press the **Trouble Codes** icon. A list of problems will be visible. Our problem is: NO ECU COMMUNICATION –IB-1 - Check Harness connections.



3. Software version: **3.18.511**, Expand the mini Topcon window by pressing the arrow.



4. Scroll the slider down to reveal the Implement ECU information.
Note: the green box at the top of the screen, this message should appear with-in the first 3 minutes of powering on the X30.



5. Verify that there is successful communication between the IsoBridge and MD-ECU/ SECU. The following numbers should match the ECUFirmware version.

- 1- ISOBRIDGE – 4.04.06**
- 2- MDECU1 -3.6.0, 3.6.0.**

Note: if MDECU version is showing 3.5.0, 3.5.0 please contact the Morris 360 help line to schedule an ECU upgrade. The old firmware version is known to cause issues when using the Run / Stop switch box.

17 – TROUBLESHOOTING

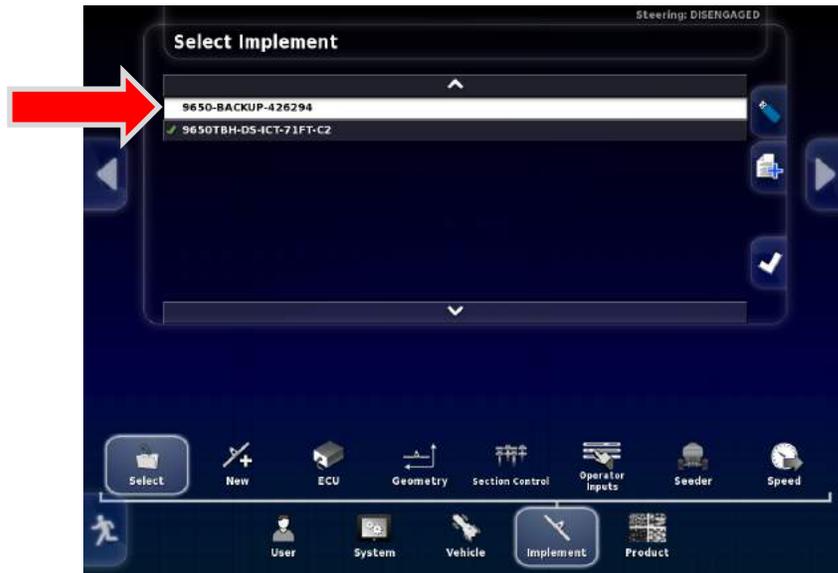


| Symptom | Solution |
|--|--|
| Monitor is Frozen | Hold Green Power Button until LED lights Flash. Restart monitor |
| Metering is not Turing | Check All Fuses on A464 Tractor Harness |
| Gear Ratio Alarm | Adjust Proximity Sensor closer to Encoder, ensure sensor is centered |
| Calibration switch does not function | Enable all Tanks- Restart monitor- Ensure MD-ECU is on Version 3.6 |
| Monitor has no Tanks / White Screen | Load Back up Profile - Call 360 Service |
| Monitor will not engage | Unplug A464 from Implement extension harness, reconnect. |
| Tanks are Grey- Will not turn ON | No ECU Communication - Check connections Verify IB-1 is ON. |
| ICT Cylinders are building pressure | Ensure Case drain is connected |
| Monitor will not load profile after update | Create a new profile (Implement - New), and then reload the Profile |

LOADING A BACK UP PROFILE



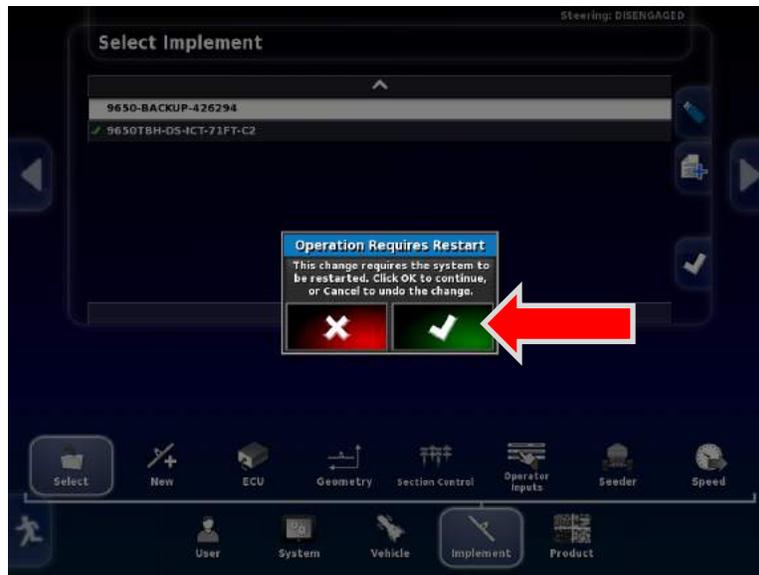
6. Press the **Setup menu** wrench.



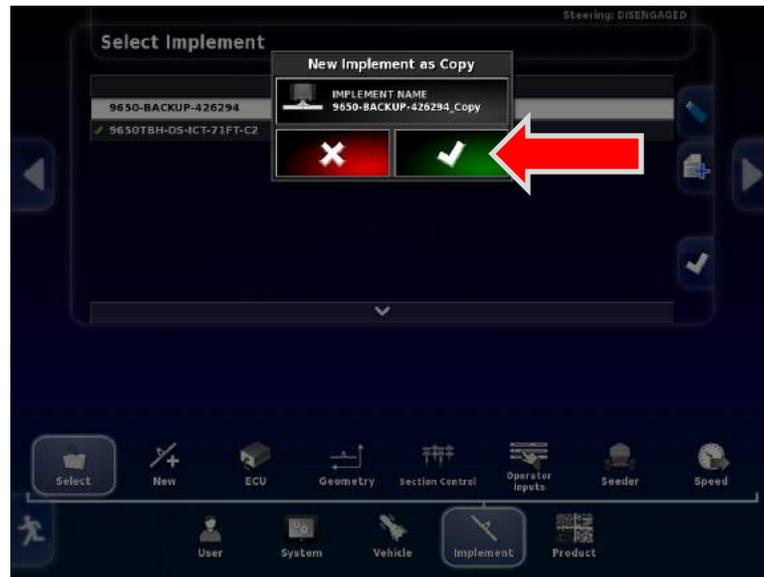
7. Navigate from **Implement – Select**. Choose the **BACKUP** profile.



8. Press the Create New Implement as Copy Icon.



9. The monitor may ask to be restarted. Press the Green the Check mark.



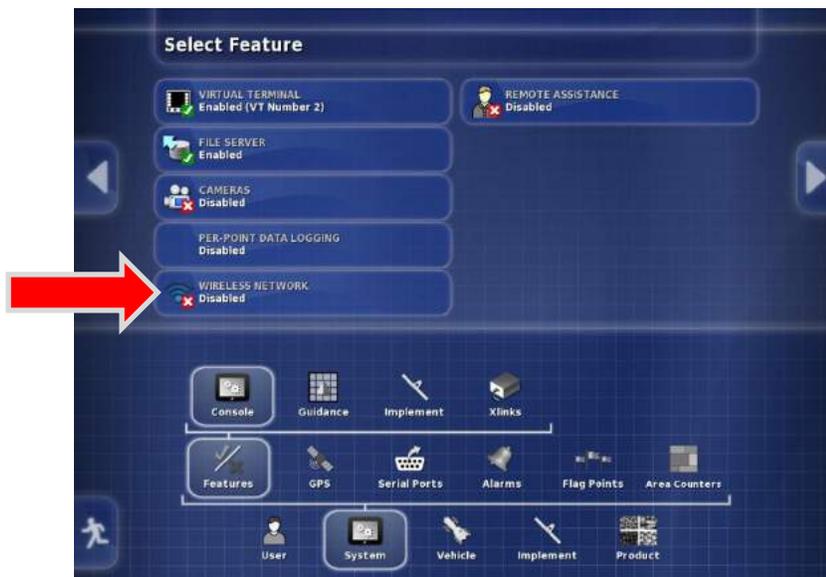
10. Simply use the provided name. Press the Green check mark.



11. The system will now restart with the new profile, test the functionality of the aircart. If the seeder still does not function correctly examine wiring harnesses and fuses.

REMOTE ASSISTANCE SETUP

12. Insert Wifi USB Dongle to the Back USB port of the X30.
13. On Smart phone / Tablet enable the Wifi Hotspot. (NOTE: using a WIFI hotspot uses significant amount of Battery power. It is highly recommend that the phone is Fully charged before Proceeding, or plugged in and charging)
14. Press the **Setup** Wrench.



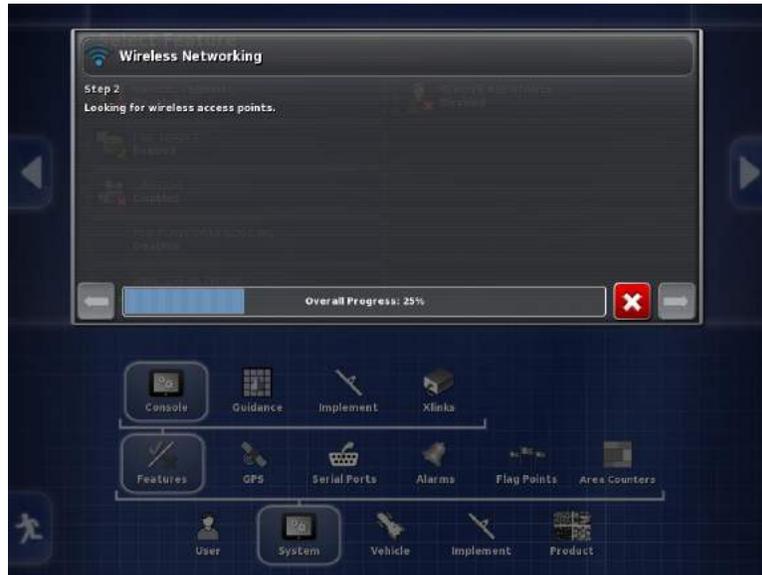
15. Navigate from **System-Features-Console-Wireless Network**



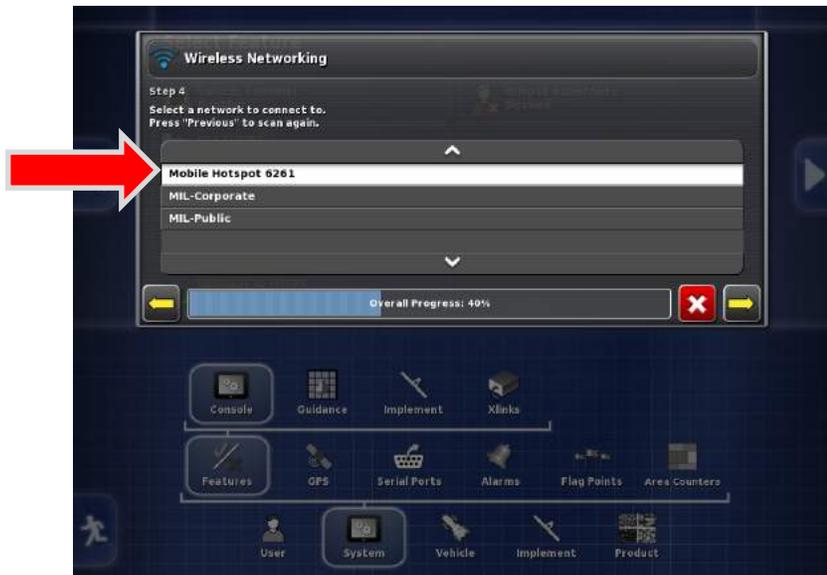
16. Enable the Wireless Network.



17. Follow the On screen Wizard.



18. Searching for access point.



19. Select Your Mobile Hotspot



20. Enter your mobile Hotspot Password.



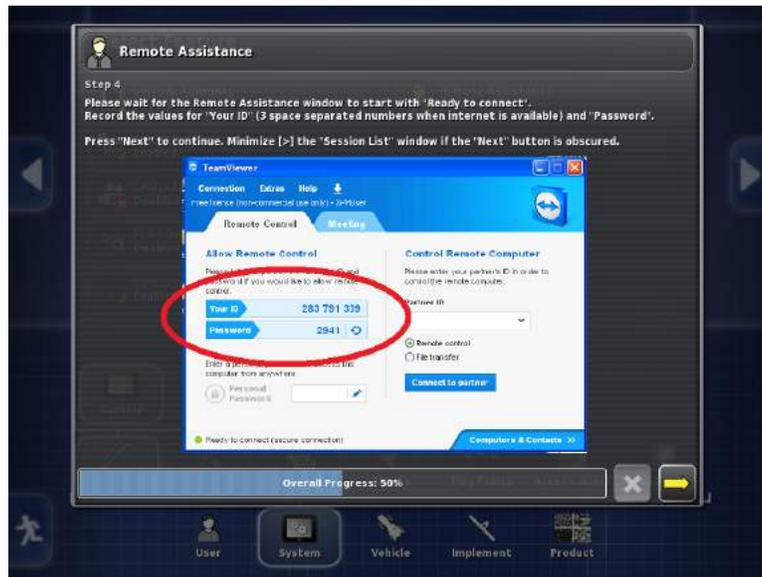
21. Connection is successful, proceed by pressing the Green check mark



22. Enable Remote Assistance.

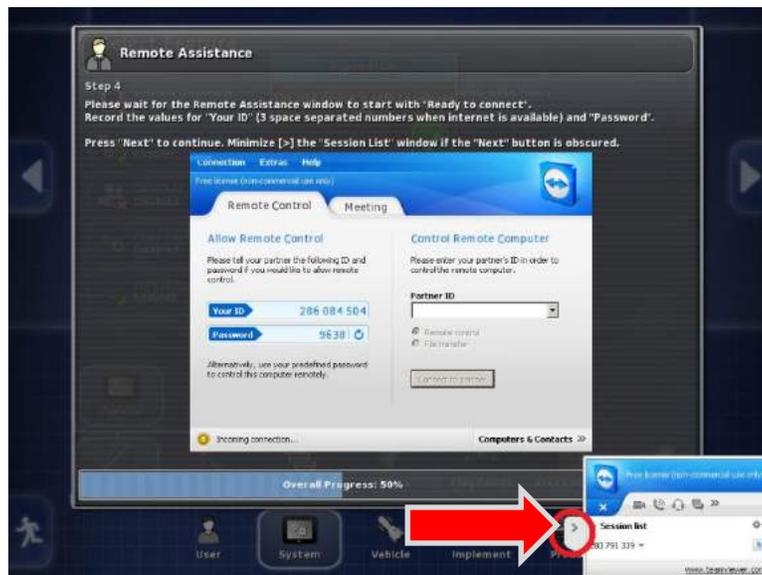


23. Follow the wizard and press the yellow arrow to continue.



24. Relay **Your ID** and **Password** to the Morris 360 representative when asked.

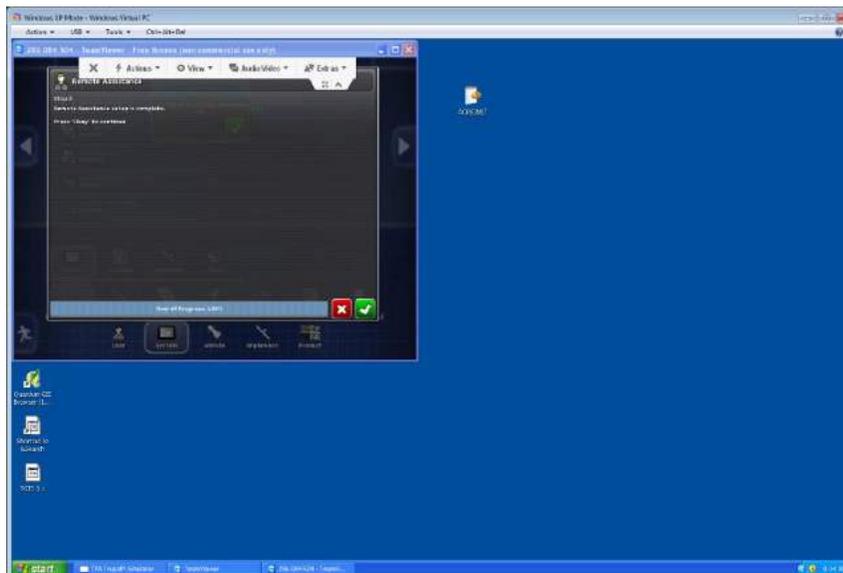
Morris 360 help support: 1-877-360-4360



25. You will see an Incoming connection, Awaiting Authentication message. Press the Arrow on the Session list.



26. The Yellow arrow is now revealed, press it to proceed.

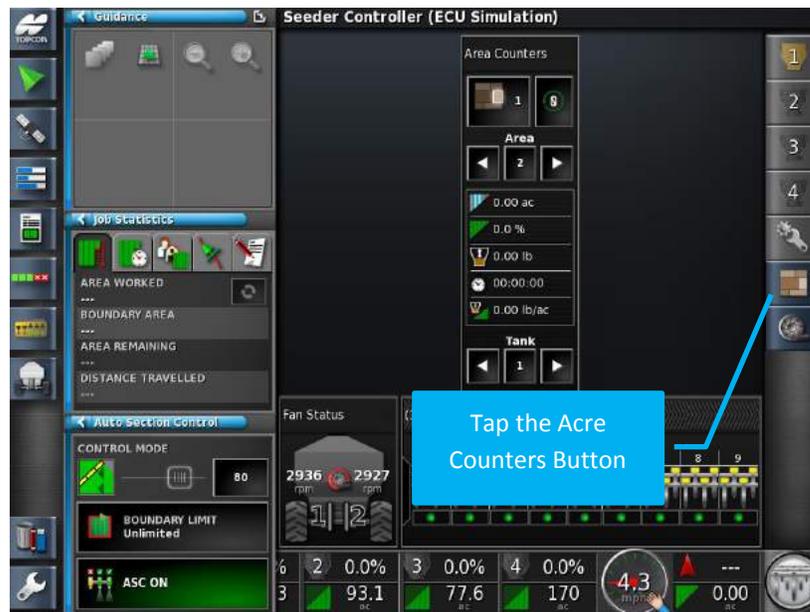


(MORRIS 360 HELP DESK SCREEN-SHOT)

27. The Morris 360 tech now has full control your X30 monitor, sit back and relax while he checks the settings from his remote office.

Note: The system has a slight lag time between commands.

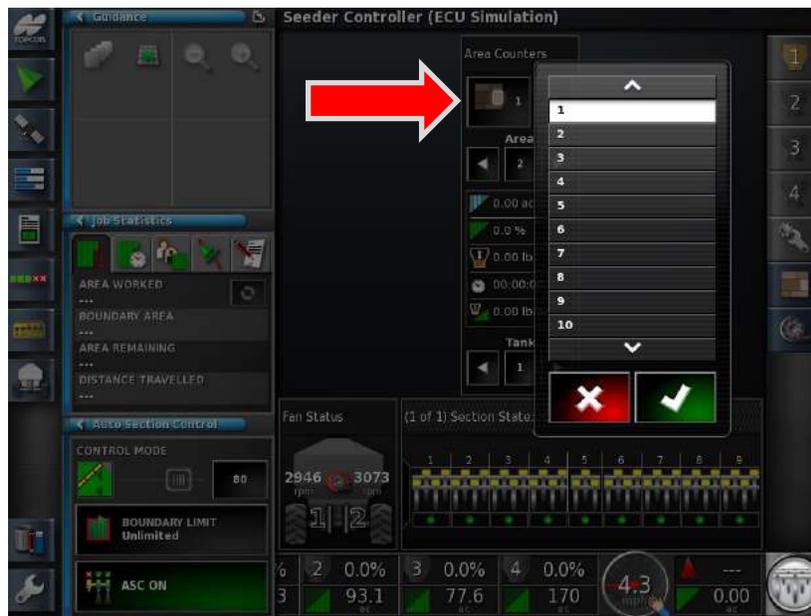
Notes:



1. Initially, bring up the **Acre Counters** by tapping the button on the **Seeder Controller** side menu. You now have the ability to look at the data compiled for different areas based on your current job.



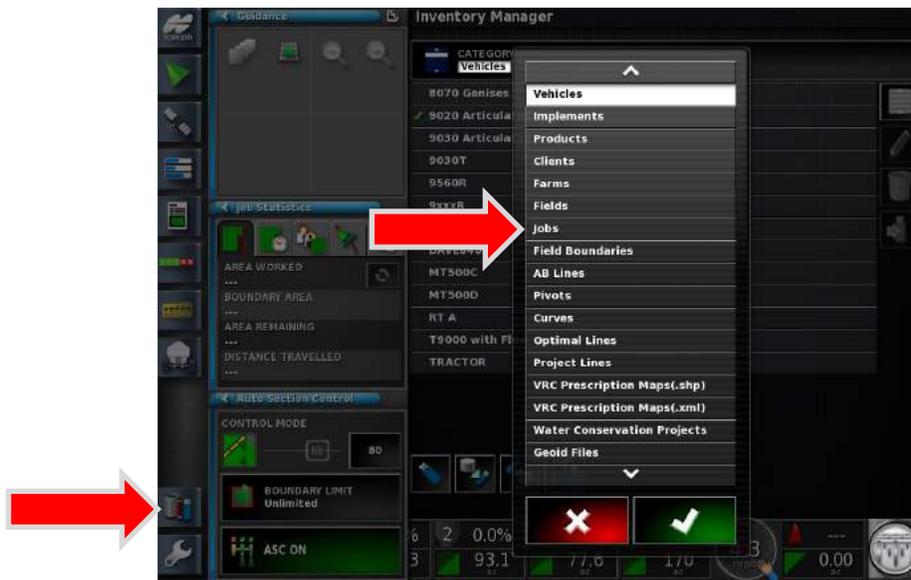
2. Now, you can customize the data that you wish the **Acre Counter** to track. Click anywhere in the area under the area selector, this will bring up the **Customize Data** list where you can select any 5 options. They appear in order below the area selector.



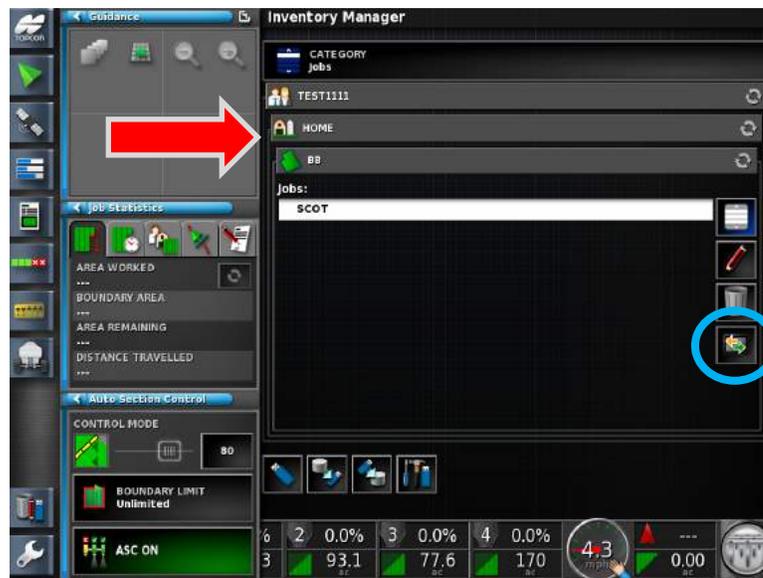
- On the main acre counter tab, press the icon with multiple squares and a 1 inside, this is an **Area Selector**. This just brings up a manual way of switching areas to check on.



- To reset the counters after completing a job, press the button on the acre counter tab with a zero and a green arrow around it. This **reset** button will bring up options to reset the tank counter, job area counter or all job area counters.

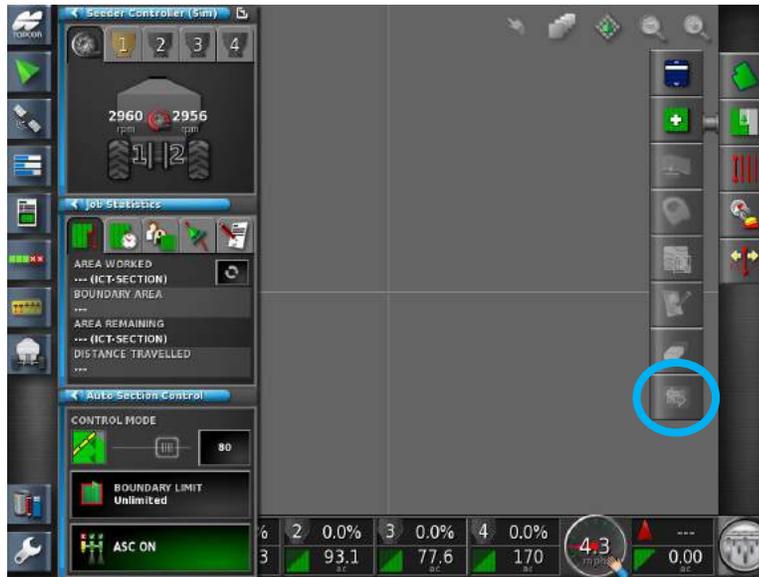


- With acre counters and job statistics, you have the ability to export resulting data in the form of map reports in order to analyze how your seeding performed in a season. There are two ways to export this data. The first way is through **the inventory manager**. Open it and look for the jobs category.



- Once on the jobs tab, move through your client tree and select whichever field and resulting job you want, in this case it is the **SCOT** job. Once highlighted, you now see that you can click the **Export Report** button on the right.

Note: You must have a usb device plugged in in order to export reports.

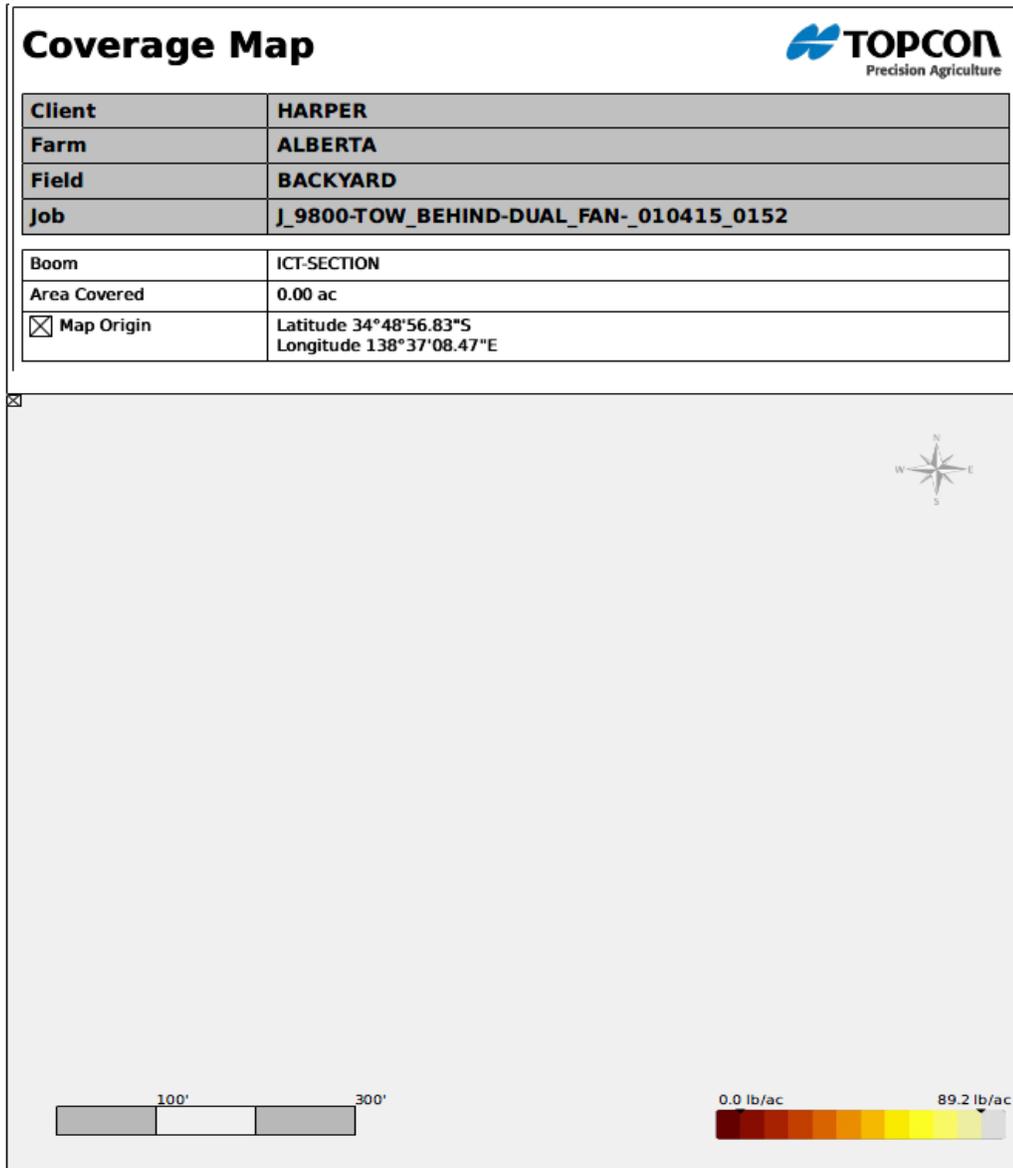


7. The second method of exporting reports is done through the actual mapping screen under the **Jobs** tab menu. When a job is still active once you've completed your field, the export button will be highlighted. Again, you will need a usb device inserted in order to transfer the report.



8. Notice that you can also watch a live area counter while seeding through the **job statistics window**. You can also select which section counter to watch if you have an **ICT** enabled machine. You can watch **Full-Width** or **ICT Section** counting. Clicking the circular arrow button will allow you to make that selection on the go.

9. Once a report has been transferred to your usb device, it will have been shown as a pdf report with multiple pages showing different counter data in the form of maps. As shown below is an example of **Your ICT Section Coverage Area** over a map of the job area. In this case however, no GPS was hooked up, nor was product used as it a simulation.





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