

# KINZE TRUE DEPTH PACKAGE

## OPERATOR'S MANUAL

**M0286**

**Rev. 4/22**

This manual is applicable to: Kinze True Depth Planter Hydraulic Down Force System

Record the serial numbers of your planter True Depth system and the purchase date:

Master Module Serial Number \_\_\_\_\_

Date Purchased \_\_\_\_\_

**This page left blank intentionally.**

**TABLE OF CONTENTS . . . . . I**

**OVERVIEW**

To The Owner . . . . . 1  
 Warranty . . . . . 2  
 Introduction . . . . . 3  
 System Overview . . . . . 4

**STARTUP**

Power . . . . . 5  
 Start Up Screen . . . . . 6  
 Navigation Bar . . . . . 8

**PLANT . . . . . 9**

Plant Screen . . . . . 9  
 Mode . . . . . 10  
 % Contact . . . . . 13

**ALERTS . . . . . 15**

Applied Force . . . . . 15  
 Sensed Force . . . . . 15  
 Actions . . . . . 16  
 Lift Assist . . . . . 18  
 Alert Screen . . . . . 21

**HEALTH . . . . . 22**

Health Screen . . . . . 22

**SETTINGS . . . . . 24**

Settings Screen . . . . . 24  
 Preference Screens . . . . . 25  
 Assembly Test . . . . . 26  
 Troubleshooting . . . . . 34  
 Display Menu Screen . . . . . 35  
 Main - System . . . . . 36  
 Main - System - Info . . . . . 36  
 Main - System - Modules . . . . . 37  
 Main - System - Logs . . . . . 37  
 Main - Preferences . . . . . 38

**TROUBLESHOOTING**

CAN Communication Errors . . . . . 41  
 Row Valve Open Circuit . . . . . 42  
 Link Error: Low Voltage . . . . . 43  
 Link Error: High Calibration . . . . . 44  
 Link Error: High Voltage . . . . . 45  
 Low Ground Contact  
     [User Defined] Planter Average . . . . . 46  
 Zero Ground Contact . . . . . 47  
 No Speed . . . . . 48  
 No Hydraulics . . . . . 49  
 Implement Switch Mismatch . . . . . 50  
 Manual Zero Cal Error . . . . . 51  
 Main Valve Open Circuit . . . . . 52  
 MC42(#) Status - High Temperature . . . . . 53  
 MC42(#) Status - Low Supply Voltage . . . . . 54  
 MC42(#) Status - High Supply Voltage . . . . . 55  
 MC42(#) Status - Multiple Address . . . . . 56  
 MC42(#) Status - VREF Error . . . . . 57

**MOBILE APPS**


IQANgo Update Instructions . . . . . 58  
 Update the True Depth Software  
     (Android) . . . . . 76  
 Update the True Depth Software  
     (Apple - iOS) . . . . . 88  
 Update the True Depth Display . . . . . 98





**This page left blank intentionally.**

Kinze Manufacturing, Inc. thanks you for your patronage. We appreciate your confidence in Kinze farm machinery. Your Kinze planter has been carefully designed to provide dependable operation in return for your investment.

**This manual has been prepared to aid you in the operation and maintenance of the planter. It should be considered a permanent part of the machine and remain with the machine when you sell it.**

It is the responsibility of the user to read and understand the Operator Manual in regards to safety, operation, lubrication, and maintenance before operation of this equipment. It is the user's responsibility to inspect and service the machine routinely as directed in the Operator Manual. We have attempted to cover all areas of safety, operation, lubrication and maintenance; however, there may be times when special care must be taken to fit your conditions.

Throughout this manual the symbol  and the words **DANGER**, **WARNING**, and **CAUTION** are used to call attention to safety information that if not followed, will or could result in death or injury. **NOTICE** and **NOTE** are used to call your attention to important information. The definition of each of these terms follows:

	Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components which, for functional purposes, cannot be guarded.
	Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.
	Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.
	Used to address safety practices not related to personal injury.

**NOTE:** Special point of information or machine adjustment instructions.

The Kinze Limited Warranty for your new machine is stated on the retail purchaser's copy of the Warranty And Delivery Receipt form. Additional copies of the Limited Warranty can be obtained through your Kinze Dealer.

Warranty, within the warranty period, is provided as part of Kinze's support program for registered Kinze products which have been operated and maintained as described in this manual. Evidence of equipment abuse or modification beyond original factory specifications will void the warranty. Normal maintenance, service and repair is not covered by Kinze warranty.

To register your Kinze product for warranty, a Warranty And Delivery Receipt form must be completed by the Kinze Dealer and signed by the retail purchaser, with copies to the Dealer, and to the retail purchaser. Registration must be completed and submitted to Kinze Manufacturing, Inc. within 5 business days of delivery of the Kinze product to the retail purchaser. Kinze Manufacturing, Inc. reserves the right to refuse warranty on serial numbered products which have not been properly registered.

If service or replacement of failed parts which are covered by the Limited Warranty are required, it is the user's responsibility to deliver the machine along with the retail purchaser's copy of the Warranty And Delivery Receipt to the Kinze Dealer for service. Kinze warranty does not include cost of travel time, mileage or hauling. Any prior arrangement made between the Dealer and the retail purchaser in which the Dealer agrees to absorb all or part of this expense should be considered a courtesy to the retail purchaser.

*Kinze warranty does not include cost of travel time, mileage, hauling, or labor.*

## TRUE DEPTH SYSTEM

True Depth provides on demand row by row hydraulic row unit down force ranging from 100 lbs. up force to 600 lbs. down force at 2350 psi. The system includes a 7" in cab standalone screen display with antiglare screen protector and RAM mount, electronic control modules, harnesses, gauge wheel sensors, hydraulic cylinders, upper and lower cylinder mounts, and valves.

## CAN-BUS TECHNOLOGY

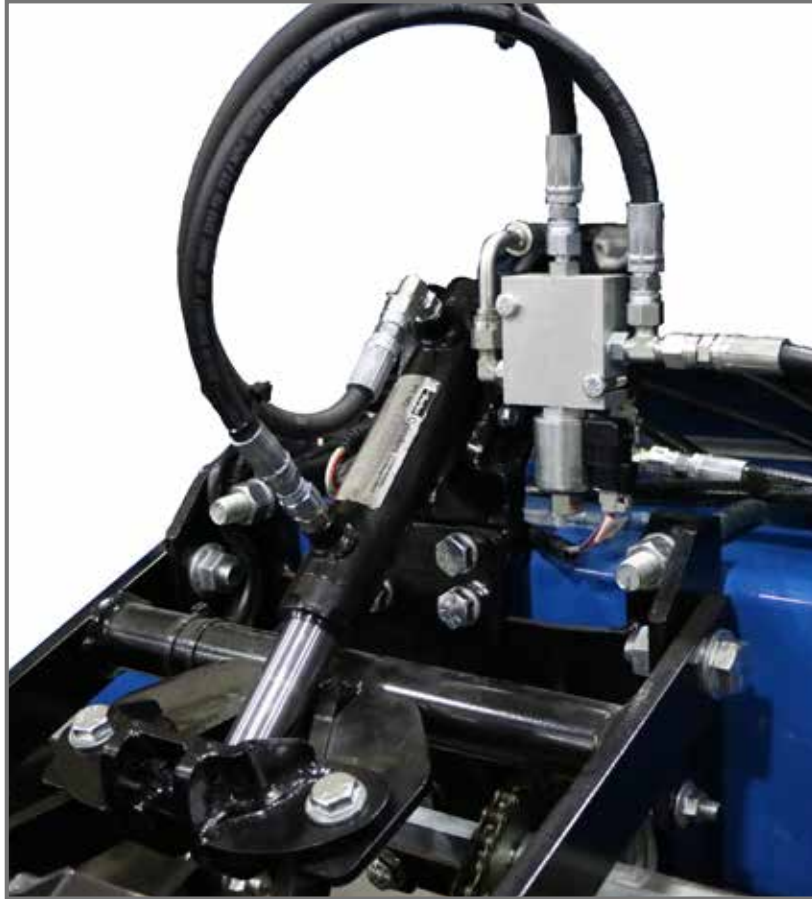
The True Depth system uses Controller Area Network (CAN) technology. CAN systems are comprised of individual modules, each with their own high-speed processor, connected through a high-speed communications cable. CAN has many benefits, including greater ability to configure and expand the system, compatibility, simpler installs with less wiring, and increased system dependability.

## GENERAL INFORMATION

The information used in this manual was current at the time of printing. However, due to Kinze's ongoing product improvement, production changes may cause your planter control system display to appear or operate slightly different in detail. Kinze Manufacturing, Inc. reserves the right to change specifications or design without notice and without incurring obligation to install the same on machines previously manufactured.

Right hand (R.H.) and left hand (L.H.), as used throughout this manual, are determined by facing in the direction the machine will travel when in use, unless otherwise stated.

**NOTE: The display images used in this manual may vary slightly.**



**True Depth System**

See the Planter Operator's Manual for mechanical, hydraulic, and electric operation and service.



**Power**



**Power**



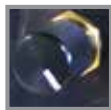
**Master**

The master switch controls power to the True Depth system including the speaker and the display. Press the top of the button to turn on. Press the bottom of the button to turn off.



**WARNING**

**Master switch should be turned off whenever servicing or filling the planter.**



**Volume**

Turn the volume knob clockwise to increase volume and counter-clockwise to decrease volume.

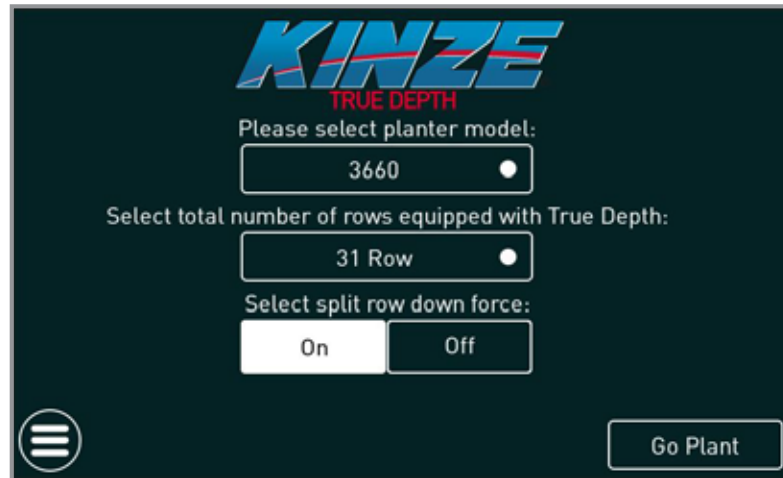


**DANGER**

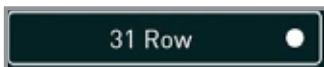
**ELECTRICAL SHOCK HAZARD**  
Disconnect (unplug) power before inspecting or servicing the unit.



## Start Up Screen



**Select planter model by tapping this button.** This will open a drop down to select the appropriate planter model.



**Select total number of rows equipped with True Depth by tapping this button.** This will open a drop down to select the number of rows on your planter.


\* If equipped with Split Rows, select the total number of rows equipped with True Depth.



**Select split row down force: On/Off.** Toggle On/Off to turn the split row down force on and off if the planter is equipped with split rows.



Select **“Go Plant”** when you are ready to plant. Tapping this button will turn on the main valve which will supply hydraulic power to the down force system. The system will display the Plant Screen.



**The True Depth System is an Active down force system, improper operation can cause unintended machine movement. To avoid death or serious injury to a bystander, understand how this display operates the functions of the machine. Read and understand the True Depth Operator's Manual. Tapping "OK" will open the Main Hydraulic System Valve. Which will cause the planter to move.**



Select **System Menu** by tapping this button. This will open the System menu screen where you can check Software Version, Mobile Status, and display brightness. See [\(page 35\)](#) for more details.

---

## Navigation Bar

**Plant.** Tap to display the Plant Screen. ([page 9](#))

**Actions.** Tap to display the Actions Screen. ([page 16](#))

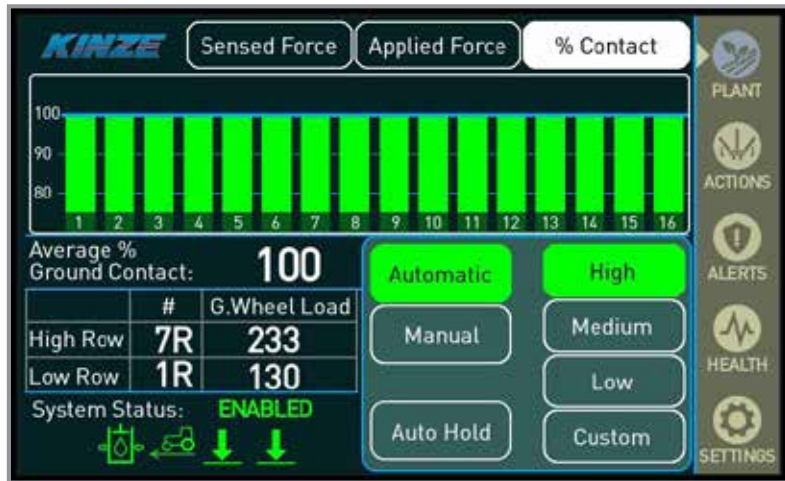
**Alerts.** Tap to display the Alerts Screen. ([page 21](#))

**Health.** Tap to display the Health Screen. ([page 22](#))

**Settings.** Tap to display the Settings Screen. ([page 24](#))



Plant Screen



% Contact

% Contact Bar Graph [\(page 13\)](#)

Applied Force

Applied Force Bar Graph [\(page 15\)](#)

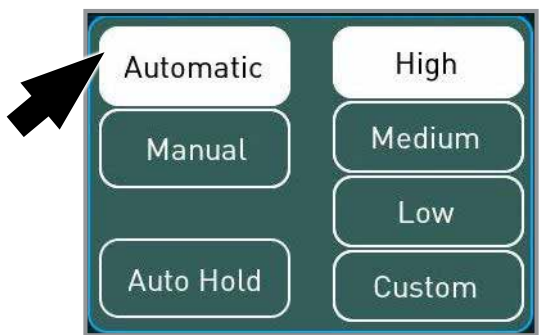
Sensed Force

Sensed Force Bar Graph [\(page 15\)](#)

A close-up view of the mode selection buttons from the Plant screen. The buttons are arranged in two columns. The left column contains "Automatic", "Manual", and "Auto Hold". The right column contains "High", "Medium", "Low", and "Custom".

Mode Selection [\(page 10\)](#)

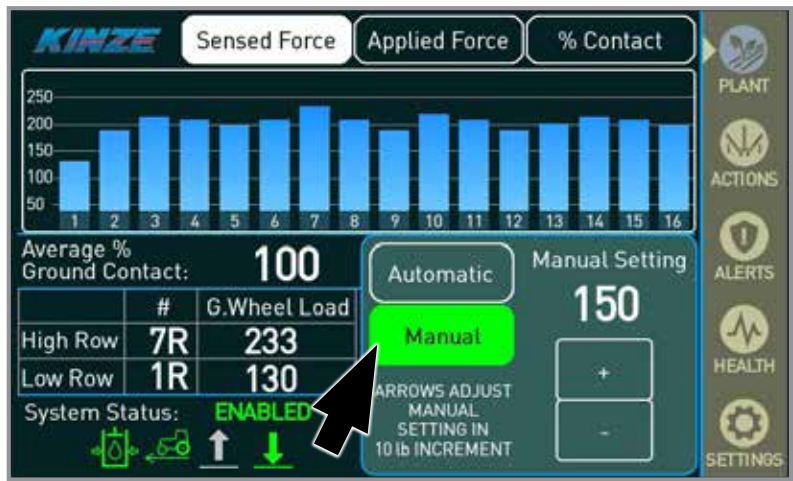
Mode



Automatic Mode Adjustment

The system automatically adjusts the hydraulic down force being applied to maintain a target sensed force at the gauge wheels measured by the load link. This is not the same as the down force settings used for springs or pneumatic down force on planters not equipped with Kinze True Depth. This would be equivalent to instantly changing the spring position to a higher/lower force when you reach an area that requires more/less down force across the field.

- High - the heaviest setting, targets 200 lbs. at the gauge wheels
- Medium - the middle setting, targets 150 lbs. at the gauge wheels
- Low - the lightest setting, targets 75 lbs. at the gauge wheels
- Custom - user defined setting, targets between 75 lbs. and 250 lbs. at the gauge wheels



Manual Mode Adjustment

The system is set to a constant applied force that does not change unless the user changes it, regardless of ground contact. The Sensed Force is not used in this mode. This is similar to the spring or pneumatic down force settings used on planters without Kinze True Depth.

- Manual - can be adjusted from 0-max applied load or 500 lbs., whichever is lower.

**Note: Ground contact is very important, but not the only indication that proper and consistent depth is being met. For example, lower settings may achieve good percent ground contact in dry mellow soils but may not form a stable seed trench. It is highly recommended that the user checks the depth and quality of the seed trench when moving to new soil conditions.**

**Note: It is important to make sure each row unit depth adjustment setting is the same across the planter. Depth settings have direct effects on the performance of the Hydraulic Down Force system and should be uniform across the planter for consistent performance.**

Average %  
Ground Contact: **100**

**Average % Ground Contact** - This displays a planter wide calculation for the average percent ground contact. This would be comparable to average population on a planting display.

	#	G.Wheel Load
High Row	7R	233
Low Row	1R	130

**High/Low Row** - This displays which row has the highest/lowest sensed force, or gauge wheel load at the gauge wheel. If any row is consistently high or low, it is recommended to check that row.

System Status: **ENABLED**

**System Status** - When "ENABLED", this signifies that the system is sensing force on the gauge wheels and applying hydraulic down force.



*Mode Buttons turn green when the system is enabled*

There are two requirements for the system to be "ENABLED":

Tractor Speed - Must be moving  
Toolbar Position - Must be down

When "DISABLED"\*, this signifies that at least one of the two requirements have not been met and the system is disabled.



**\* While the system is disabled there is still a hold force applied to the row units after the "Go Plant" button has been tapped.**



### System States -



\* While the system is disabled there is still a hold force applied to the row units after the "Go Plant" button has been tapped.



### Hydraulic Pressure

This displays the state of the tractor pressure which is color coded to red, yellow and green. If the tractor pressure appears as RED/LOW, the system will not perform as well as intended.



### Tractor Speed

This displays the state of the tractor speed. If "FALSE", the icon will be grey which means the minimum speed has not been met and the system cannot be enabled.\*

If "TRUE", the icon will be green (the minimum speed has been met) and the system can be enabled.\*

Minimum Speed to "ENABLE" the system: 1.0 mph

If the speed falls below 0.5 mph, the system will "DISABLE".





**Toolbar Position**

This displays the overall state of the toolbar position. Toolbar position is indicated by the up and down arrow icons representing the left and right implement switches. If "UP", both icons will be grey which means the toolbar is up. At least one switch needs to be "DOWN" (Green) for the system to "ENABLE".

**Toolbar Position States**



**Toolbar Up** DISABLED - Toolbar condition NOT met



**Toolbar Down** ENABLED - Toolbar condition MET



**Toolbar Down** ENABLED - Toolbar condition MET



**Toolbar Down** ENABLED - Toolbar condition MET

**% Contact**



**% Contact Graph**

The % Contact graph is the opening screen in the plant menus and shows each row's average ground contact percentage in real time. 100% ground contact means the gauge wheels are in complete contact with the ground.

**This page left blank intentionally.**

### Applied Force



Applied Force Graph

The Applied Force graph shows each row's average applied down force in pounds. Due to varying ground conditions, this value will fluctuate in Automatic Mode (In Manual Mode it will be constant). Negative applied down force values signify lift force. Lift force occurs when the down force system is removing weight from the row unit.

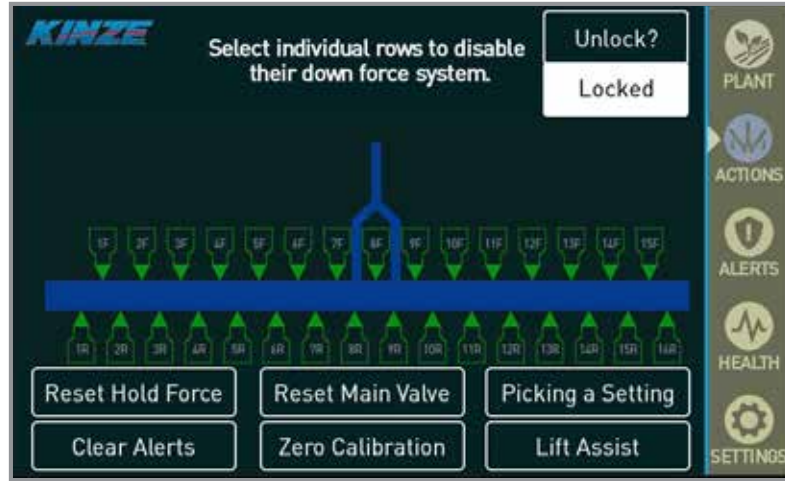
### Sensed Force



Sensed Force Graph

This graph shows each row's average sensed force at the gauge wheel in pounds. This should hover around the selected target force in automatic mode.

Actions



Actions Screen

Note: Do not use this screen to configure split rows. For split row planters, go to the settings screen to turn split rows on/off (page 24)



The True Depth System is an Active down force system, improper operation can cause unintended machine movement. To avoid death or serious injury to a bystander, understand how this display operates the functions of the machine. Read and understand the True Depth Operator Manual. Tapping this button will reset the hold force to factory settings.



**Reset Hold Force** - Resets the hold force to the start-up default. Used when the planter is lowering quickly or suspended by the row unit when the planter is stationary.



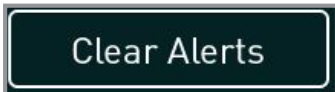
The True Depth System is an Active down force system, improper operation can cause unintended machine movement. To avoid death or serious injury to a bystander, understand how this display operates the functions of the machine. Read and understand the True Depth Operator Manual. Tapping "OK" will cycle the Main Hydraulic System Valve.



**Reset Main Valve** - Resets the main valves on the main valve block. Used when an open circuit condition disabled the valves.



**Picking a Setting** - Displays a brief summary of the down force settings.

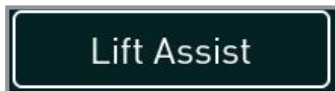


**Clear Alerts** - Clears the Alerts log. After pressing this button, an acknowledgment will appear.



**Zero Calibration** - Pressing this button will recalibrate the load links. The planter must be in the raised position and remain there for 10 seconds after pressing the button. When the button is pressed, a message stating that the calibration is in progress will appear. When the calibration is complete, a message will appear stating the calibration is complete. If the planter is lowered during the calibration sequence, the "Manual Calibration Error" message will appear and the calibration will not be used.

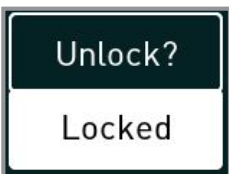
**Note: Auto-calibration occurs every time the bar is lifted.**



**Lift Assist** - Opens the "Lift Assist" Screen ([page 18](#))

**Note: Button is only visible if selected "planter model" and "number of rows equipped with True Depth" are a split row planter.**

**Example: 3660 31 row = button visible  
3660 16 row = button not visible**



**Lock / Unlock** - This is used to lock/unlock the individual row enable/disable feature.

**Note: The Individual Row Disable feature will auto-lock after a short period of time or by navigating away from the "Actions" screen.**



Individual Row Enabled (Green)



Individual Row Disabled (Grey)




The True Depth System is an Active down force system, improper operation can cause unintended machine movement. To avoid death or serious injury to a bystander, understand how this display operates the functions of the machine. Read and understand the True Depth Operator Manual. Disabling a row will turn off the indicated row's valve. Hydraulic lines may still be pressurized.



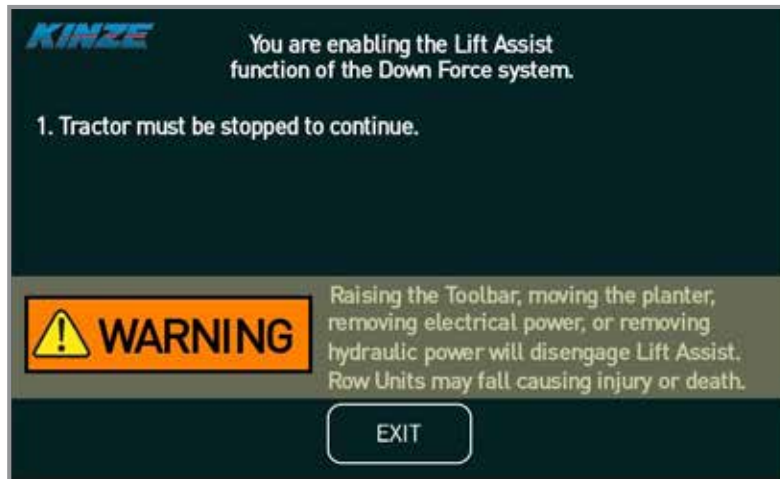
Do not modify the hydraulic system design. Do not restrict flow out of rod side of cylinder.

**Lift Assist**

Lift Assist is a feature that uses the hydraulic up force to assist when locking up or unlocking the split row units.

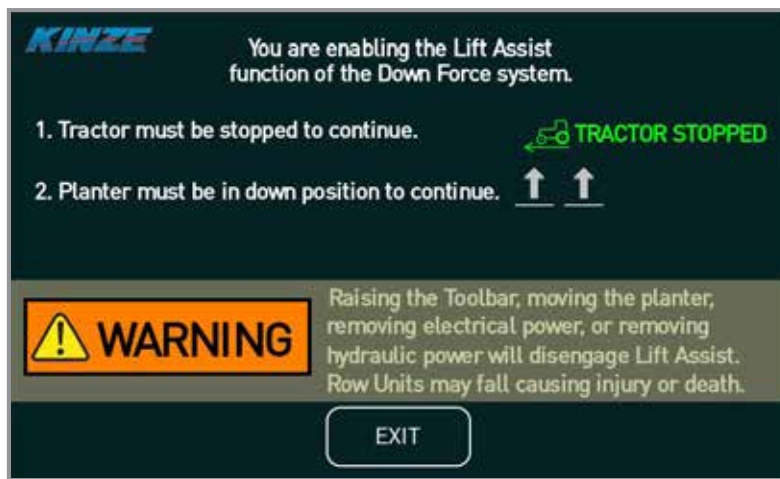


**WARNING** Raising the Toolbar, moving the planter, removing electrical power, or removing hydraulic power will disengage Lift Assist. Row Units may fall causing injury or death.



**Lift Assist - Step 1**

**Step 1** - Stop the tractor. Tractor must be stopped to show the next step and enter Lift Assist mode.



**Lift Assist - Step 2**

**Step 2** - Lower planter to the ground. Planter must be in "DOWN" position to display the next step and enter Lift Assist mode.



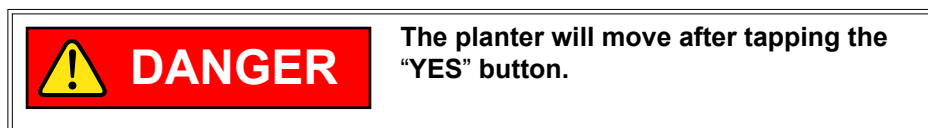
**Lift Assist - Step 3**

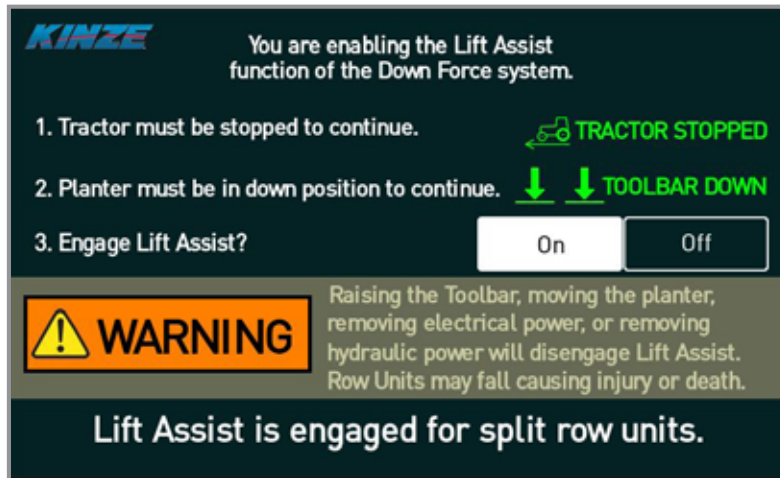
**Step 3** - Tap the “ON” button once the tractor is stopped and the planter is lowered.



**Lift Assist Warning**

You must acknowledge the fact that the planter/row units may move when engaging Lift Assist by tapping “Yes”.



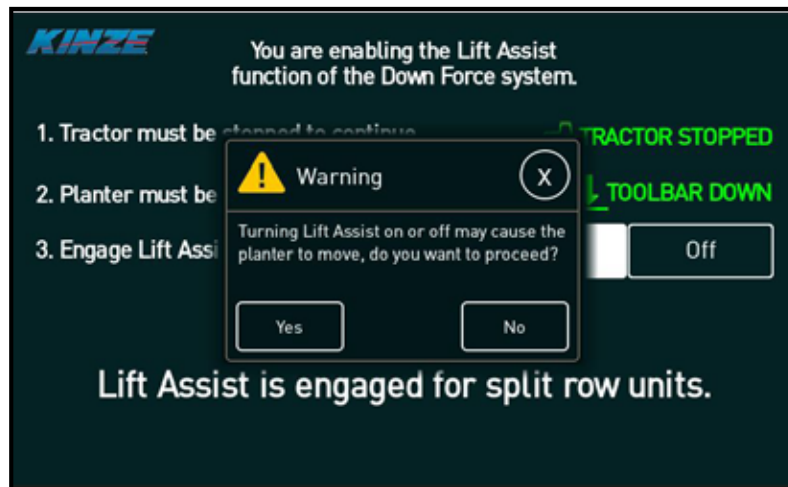


Lift Assist On

Lift Assist is engaged.

NOTE: See Planter Operator's Manual for procedure to lock up row units.

NOTE: To exit Lift Assist from this screen, you must first tap "Off" for "Engage Lift Assist?".



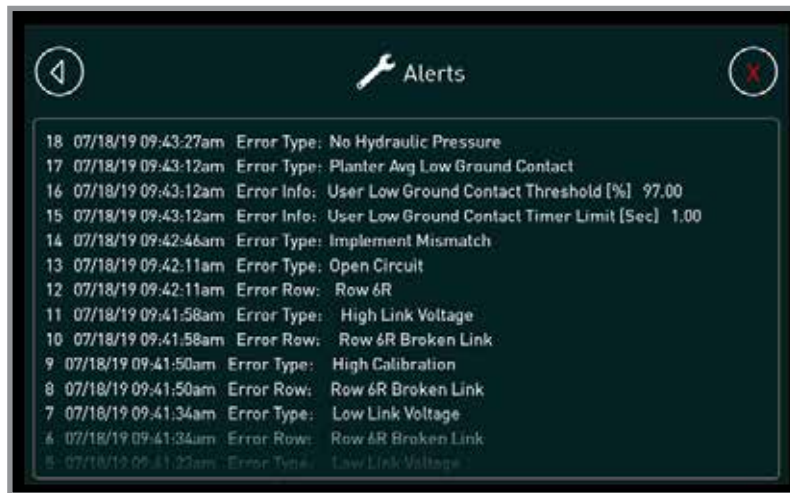
Lift Assist Disengaged

Tap "Off" to disable Lift Assist. Factory hold force will be applied. Tap "Yes" to confirm.





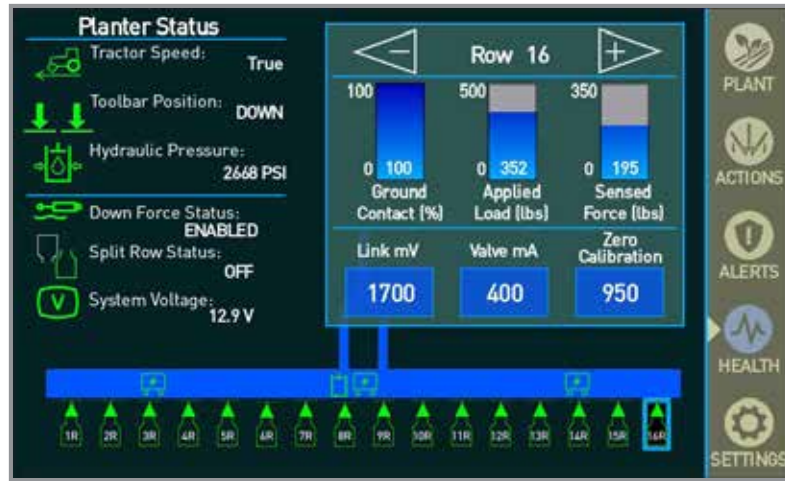
## Alert Screen



### Alerts Screen

This screen shows a history of all the alerts that have occurred during the current power cycle. This screen is cleared by the "Clear Alerts" button on the Actions screen. ([page 17](#))

Health Screen



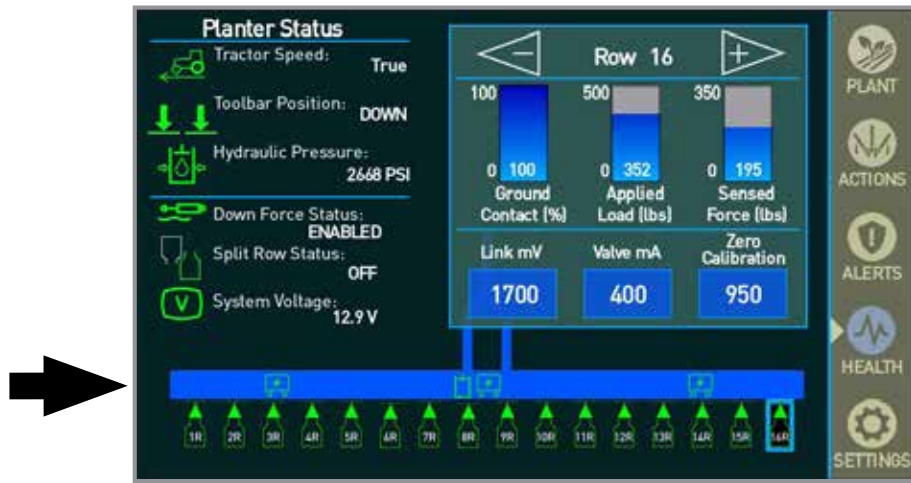
Health Screen

WARNING

**\* While the system is disabled there is still a hold force applied to the row units after the “Go Plant” button has been tapped.**

<p>Tractor Speed: True</p>	<p><b>Tractor Speed:</b> If “False”, the icon will be grey. This means the minimum speed has not been met. If “TRUE”, the icon will be green which means the desired speed has been met. The system will not enable until speed is at least 1.0 mph. The system will disable if the speed drops below 0.5 mph.</p>
<p>Toolbar Position: DOWN</p>	<p><b>Toolbar Position:</b> If “UP”, both icons will be grey. This means the toolbar is up, and the condition has not been met and the system is disabled. If “DOWN”, at least one icon will be green which means the toolbar is down and the condition has been met.</p>
<p>Hydraulic Pressure: 2650 PSI</p>	<p><b>Hydraulic Pressure:</b> Color coded to show the system status. If RED the hydraulic pressure is not at the desired state and the system will perform poorly &lt;1500 psi. Check the hydraulic supply/remote/hoses. If YELLOW, the hydraulic pressure is low and the system may perform poorly. If GREEN, the hydraulic pressure is at the desired level &gt;2150 psi.</p>
<p>Down Force Status: ENABLED</p>	<p><b>Down Force Status:</b> If “ENABLED”, the speed and toolbar position requirements have been met and the system is active. If “DISABLED”, the system requirements have not been met and the system is disabled. There is still a hold force being applied to each row unit.</p>
<p>Split Row Status: OFF</p>	<p><b>Split Row Status:</b> Only visible for planter configurations with split row option. If “ON”, the icon will be green and split row down force is enabled. If “OFF”, the icon will be grey and split row down force is disabled but still has a hold force applied to the split row units.</p>
<p>System Voltage: 13.2 V</p>	<p><b>System Voltage:</b> The system voltage readout displays system voltage.</p>

Health Screen (continued)



Health Screen

	<p><b>Row Health:</b> Left Arrow - Toggle one row to the left. Right Arrow - Toggle one row to the right.</p>
	<p><b>Row Unit:</b></p> <ul style="list-style-type: none"> <li>Green - Row is operating correctly</li> <li>Red - Row has a error, check “Alerts” screen to identify which error</li> <li>Grey - Row is disabled via the “Actions” screen</li> </ul>
	<p><b>Module:</b> Module status.</p> <ul style="list-style-type: none"> <li>Green - Module is operating correctly.</li> <li>Red - Module has an error, check “Alerts” screen to identify which error.</li> </ul>
	<p><b>Main Hydraulic Valve:</b> Main Hydraulic Valve Status</p> <ul style="list-style-type: none"> <li>Grey - Closed</li> <li>Green - Good/Open</li> <li>Red - Open Circuit Error</li> </ul>
	<p><b>Link mV:</b> Displays the link voltage in mV.</p>
	<p><b>Valve mA:</b> Displays the valve current in mA.</p>
	<p><b>Zero Calibration:</b> Displays the Zero Calibration voltage in mV.</p>

Settings Screen



Settings Screen



Select split row down force: **On/Off**. Toggle On/Off to turn the split row down force on and off if the planter is equipped with split rows.



Display Brightness Screen ([page 25](#))

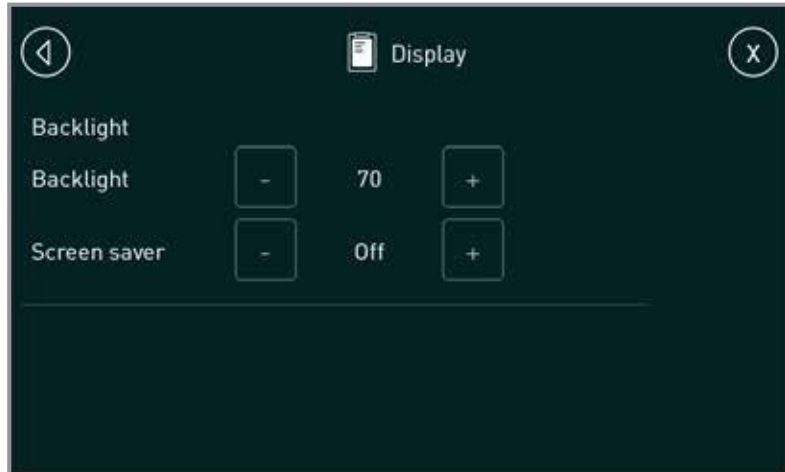


Advanced Settings ([page 25](#))



Main Menu ([page 35](#))

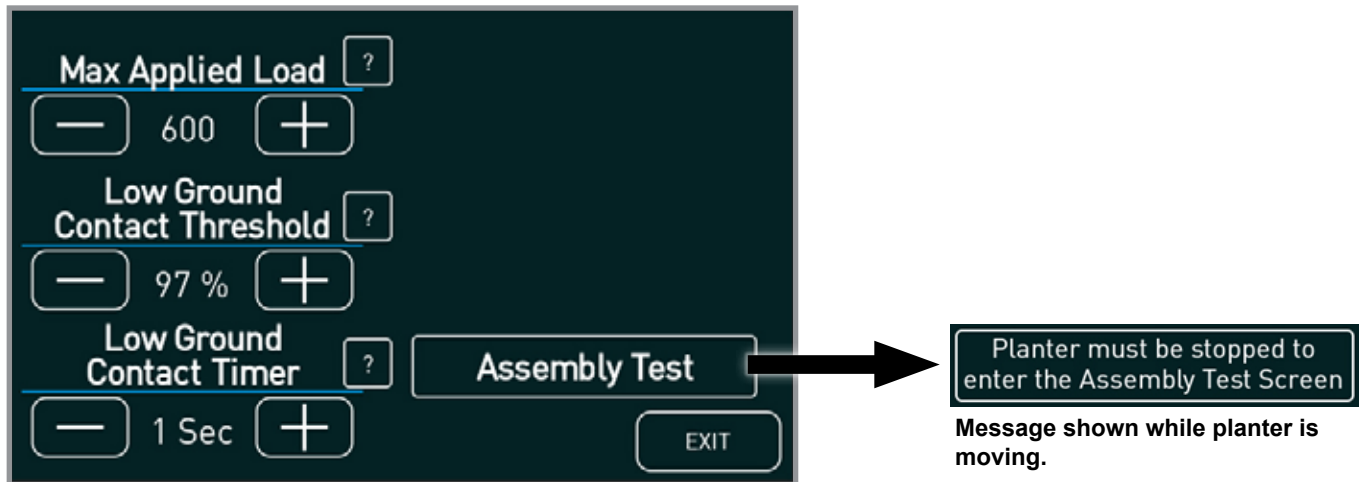
**Preference Screens**



**Display Screen**

Tap to adjust Backlight and Screen saver.

Note: The use of the screen saver is not recommended.



**Advanced Settings Screen**

**Max Applied Load** - Allows you to change the maximum amount of force applied by the cylinder to the row unit by tapping “+” or “-”. The range is 250-650 lbs.

**Low Ground Contact Threshold** - Allows you to change the value that the ground contact percentage has to be below before the “Low Ground Contact” alert appears by tapping “+” or “-”. The range is 60-95%)

**Low Ground Contact Timer** - Allows you to adjust the period of time that the ground contact percentage has to be below the “Low Ground Contact Threshold” by tapping “+” or “-”. Example: If this is set to “5 Sec”, the system will have to experience a ground contact pressure below the “Low Ground Contact Threshold” percentage for 5 seconds before sending the warning. The range is 0-10 seconds.

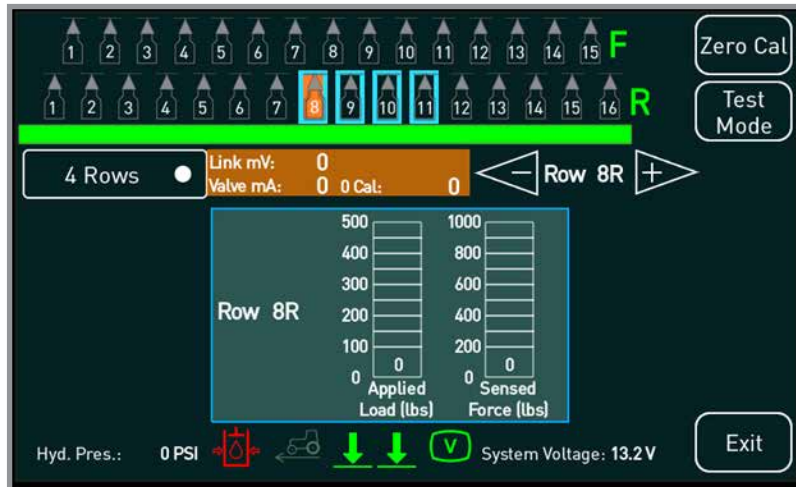
**Assembly Test** - Enters assembly test diagnostics mode and screen, not able to enter “Assembly Test Diagnostics” while planter is moving.

**Assembly Test**

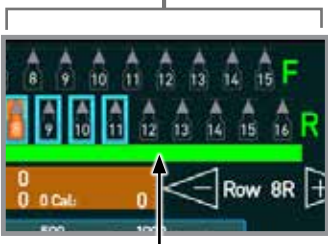

The Assembly Test is designed to identify assembly issues like unplugged harnesses and incorrectly installed hydraulic hoses as well as verify that every component is operating correctly. The System must be supplied with electrical (12VDC) and hydraulic power to complete the test. Do not supply hydraulic power to the machine while working on the machine unless instructed to do so.







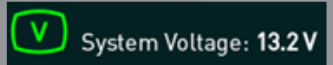
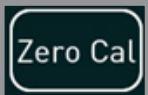


DANGER

**The True Depth System is an Active down force system, improper operation can cause unintended machine movement. To avoid death or serious injury to a bystander, understand how this display operates the functions of the machine. Read and understand the True Depth Operator's Manual.**



**Main Assembly Test Page, Four Row Test**

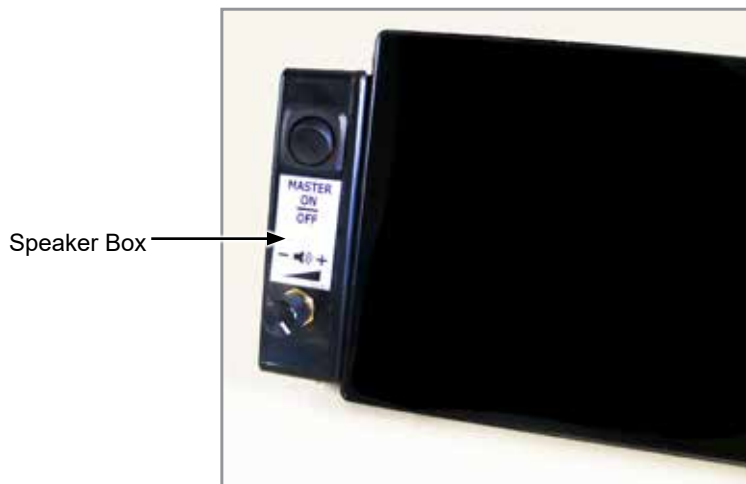
<p>Planter Rows</p>  <p>Progress Bar</p>	<p><b>Planter Rows</b> Shows the status of the entire planter.</p> <p><b>Row Unit</b></p> <ul style="list-style-type: none"> <li>Grey - Row has not been tested.</li> <li>Yellow - Row is currently being tested.</li> <li>Green - Row has passed test.</li> <li>Red - Row has failed test.</li> <li>Blue Box - Row is selected to be tested</li> <li>Orange Background - Row is selected to display row's link mV, valve mount, and Zero Cal.</li> </ul>
	<p><b>Progress Bar</b> Progress of current test.</p> <p><b>Row Selection</b> Changes the number of rows being tested.</p> <ul style="list-style-type: none"> <li>Single Row 1 row is tested.</li> <li>4 Rows 4 Rows are tested sequentially.</li> <li>Entire Planter The entire planter is tested sequentially.</li> </ul>

	<p><b>Row Selector</b> Selects the row to test (orange background).</p>
	<p><b>Row Details</b> Displays Link mV, Valve mA, and Zero Cal values for the selected row.</p> <p><b>Valve mA</b> Displays the valve current in mA.</p>
	<p><b>Test Details</b> Shows the current row being tested, the applied force, and sensed force for that row.</p>
	<p><b>Hydraulic Pressure</b> Color coded to show the system status. If RED the hydraulic pressure is not at the desired state and the system will perform poorly &lt;1500 psi. Check the hydraulic supply/remote/hoses. If YELLOW, the hydraulic pressure is low and the system may perform poorly. If GREEN, the hydraulic pressure is at the desired level &gt;2150 psi.</p>
	<p><b>Tractor Speed</b> If "FALSE", the icon will be grey. This means the minimum speed has not been met. If "TRUE", the icon will be green which means the desired speed has been met. The system will not enable until speed is at least 1.0 mph. The system will disable if the speed drops below 0.5 mph.</p>
	<p><b>Toolbar Position</b> If "UP", both icons will be grey. This means the toolbar is up, and the condition has not been met and the system is disabled. If "DOWN", at least one icon will be green which means the toolbar is down and the condition has been met.</p>
	<p><b>System Voltage</b> The system voltage readout displays system voltage.</p>
	<p><b>Zero Cal Button</b> Recalibrates the links for the entire planter.</p>
	<p><b>Test Mode Button</b> Enters test mode where every row is turned off, except for the row being tested.</p>
	<p><b>Exit Button</b> Navigates back to the "Settings" screen only, visible when "Test Mode" is not active.</p>

1. If the planter has more than 16 rows with True Depth installed, remove the CAN terminators from the Cab Harness.



2. Supply power to the system and turn the power switch on, which is located on the speaker box attached to the display.



3. Verify that display turns on and that every True Depth Module has a flashing light (ignore color for now). If all of the modules do not have any flashing lights, verify that Cab harness is connected to correct planter harness (Blue Vantage has same plug type). If some of modules have flashing lights and others do not, verify that power connections (2 pin Deutsch) between toolbar harnesses are good.
4. Download latest 7" True Depth Hydraulic Down Software from Kinze.com
5. Install software following instructions on ["Update the True Depth Software \(Android\)" on page 76](#) or ["Update the True Depth Software \(Apple - iOS\)" on page 88](#). If "incomplete system" comes up during update process, verify that Cab harness is connected to correct planter harness. Blue Vantage has same plug type, but True Depth has 6 wires (red, black, green, yellow, blue, and white).
6. Turn power switch for True Depth system off.
7. Re-install CAN terminators in Cab Harness.
8. Turn power switch for True Depth system on, hydraulic power is still turned off.



9. Tap System Menu Button.



10. Tap “Preferences”.

11. Tap “Date/Time”.

12. Set correct Date and Time.

13. Tap “X” in upper right corner to exit back to startup screen.

14. Select correct planter model.

15. Select correct number of rows equipped with True Depth. If testing a split row equipped planter, split rows will still be pressurized with rest of system even with split rows turned off.

16. With Hydraulics still off, tap “Go Plant” button.



17. Tap “OK” to accept this warning.

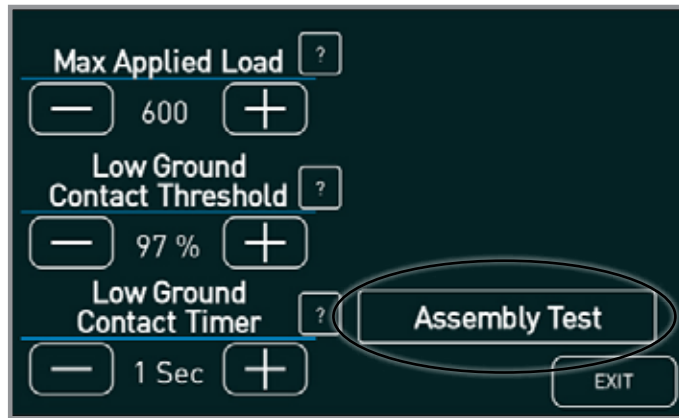
18. If any plugs are not plugged in, warnings will appear now. “Row # Link Error, Low Voltage” is link for that row and “Row #, Open Circuit detected” is the valve for that row.

19. Cycle power and repeat until Link Error and Open Circuit warning stop appearing.

20. Tap “Settings”.

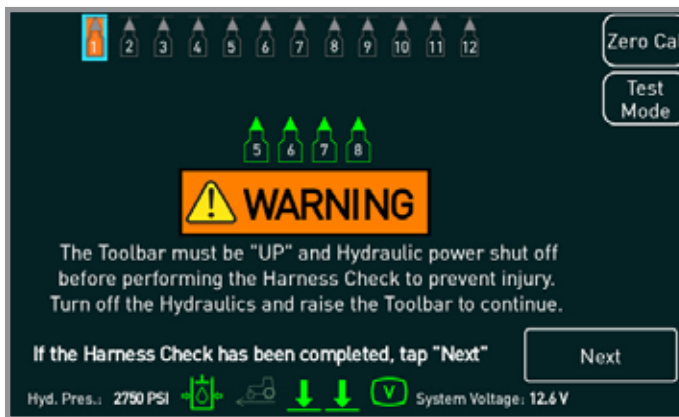
21. Tap “Advanced Settings”.

22. Tap "Assembly Test".



If the planter is a 3600 or 3660, Skip ahead to step 28 ([page 31](#)).

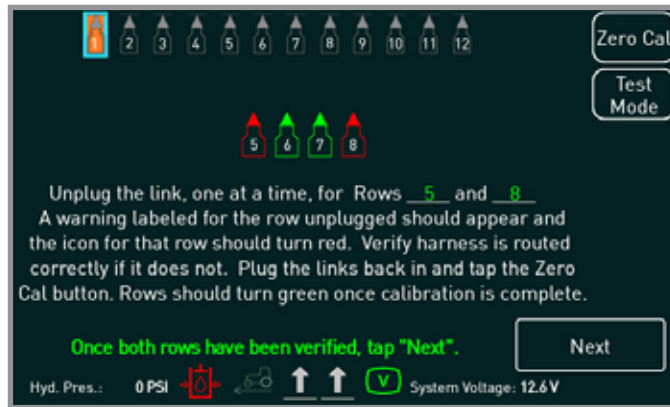
If hydraulic pressure is supplied and/or toolbar is down the following screen will appear:



Turn off hydraulics and raise planter to continue

23. Unplug links, one at a time, of specified rows.

24. A Link Error warning should appear for the correct row and the row should turn red, otherwise harness is not plugged into the correct row.



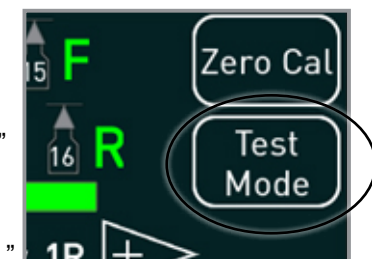
25. Plug the link back into the correct row.

26. Once both rows have been verified, the links need to be recalibrated. Tap "Zero Cal" and wait until the calibration process is completed. After calibration is complete, both rows should turn green as seen below:

27. Once both rows have been verified, tap "Next".



28. Tap "Test mode"



29. Tap “yes” when all personnel are clear of the planter.

30. Raise planter and place a metal object next to each Down Force implement switch, one at a time. The respective icons should turn green with object next to the implement switch.



31. Supply hydraulic power to the system (do not supply hydraulic power to system before entering test mode).

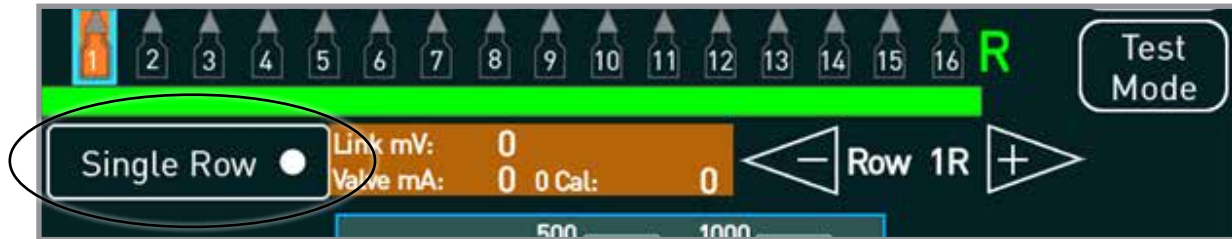
32. Raise and lower the planter 8-10 times to purge air from the system. Row units may “chatter” when cold.

33. Use Drop Down to Select Desired Test Mode:

Single Row – 1 row at a time

4 Rows – 4 consecutive rows in a row

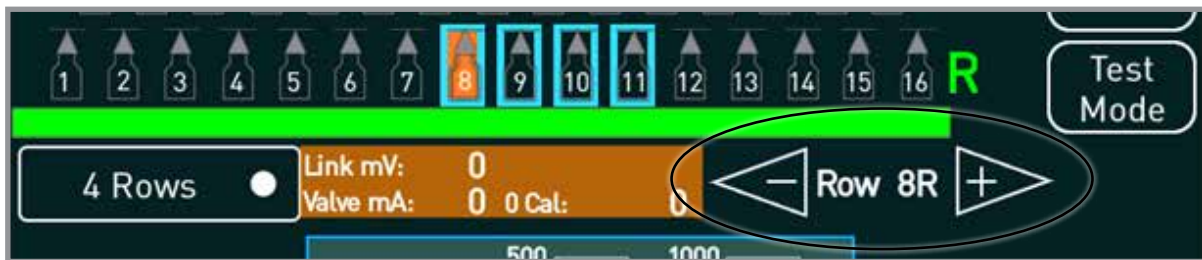
Entire planter – the tests the entire planter in sequence, left to right, split rows first



34. Selected rows for testing are outlined with a blue box.

35. A solid orange box behind the row indicates the row values displayed in Orange Box.

To change selected orange row, use arrows

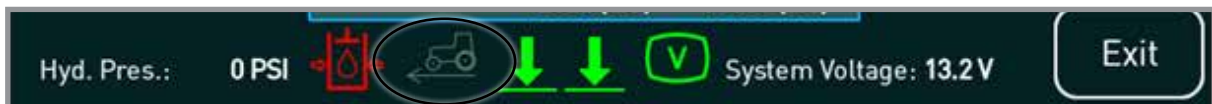


36. Place blocks under the selected row unit gauge wheels, so the disc openers are not touching the ground. **NOTE: A depth setting of 4-4 and using 4x4 blocks would achieve this.**

37. Lower planter until the implement switches show that the planter is down and the parallel arms are straight. **NOTE: Lowering planter too far may cause parallel arms to contact the travel stops, causing “High Voltage Errors” when the planter is lowered.**



38. When ready, tap “start”.
39. Tap “ Yes” when all personnel are clear of planter.
40. Test progress for those specific rows is shown by the green bar on the top. The Row unit currently being tested will be yellow. When a row unit has completed it’s test, it will be green if it passed and red if it failed (see [“Troubleshooting” on page 34](#)).
41. Repeat steps 33- 44 until all rows are green and the “Test Complete” popup appears.
42. Remove hydraulic power from system.
43. To test jumpstart sensor, block planter up so that the wheel with jumpstart sensor can spin freely or take planter outside.
44. Spin tire or pull forward at a speed greater than 1 mph, the icon in the lower center should light up green, if not check harness and sensor adjustment (sensor should be 1/8"-1/4" away from wheel).



**Troubleshooting**

**Row Fails EOL, no Sensed Force on bar graph.**

- Verify that row unit gauge wheels are the only thing in contact with blocks. (closing wheels can be ignored).
- Verify that link is plugged in.
- With **only the row is question** supported by blocks/stand, turn off hydraulic power. Then turn off “Test Mode”, and check if any rows show a sensed force other than the one supported by blocks (harnesses may be connected in the wrong order).

**Row Fails EOL, constant Sensed Force with increasing Applied Force on bar graph.**

- Verify that row unit gauge wheels are the only thing in contact with blocks. (closing wheels can be ignored).
- Verify that valve is plugged in.
- With **only the row is question** supported by blocks/stand, turn off hydraulic power. Then turn off “Test Mode”, and check if any rows show a sensed force other than the one supported by the blocks (harnesses may be connected in the wrong order).

**Row Fails EOL, constant Sensed Force with constant Applied Force on bar graph**

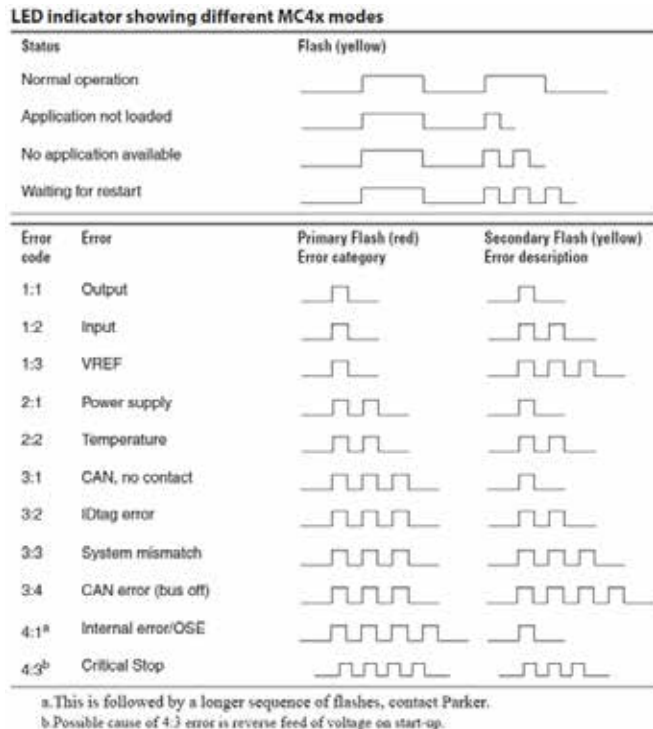
- Raise planter and recalibrate the links (tap “Zero Cal”).

**Row Fails EOL, no hydraulic pressure on EOL test Page**

- Verify that the hydraulic lines coming into the main down force block are routed correctly.
- Verify that sensor and valves are plugged in correctly.

**MC42 module has blinking red light**

- Consult Chart below:

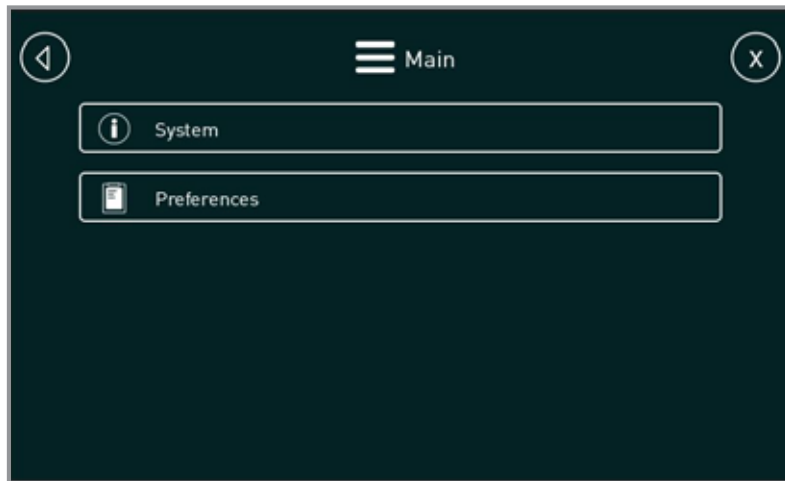


**Error 1:1 - a valve is unplugged.**

**Error 1:2- a link, implement switch, or speed wheel is unplugged.**

**Error 3:1- verify connections between toolbar harnesses, that CAN terminators are installed on the Cab Harness, that the Bluetooth Dongle is plugged in, and toolbar harness furthest to the right (looking back to front) for pull row planters and the toolbar harness for the front, left for split rows.**

### Display Menu Screen



Display Menu Screen

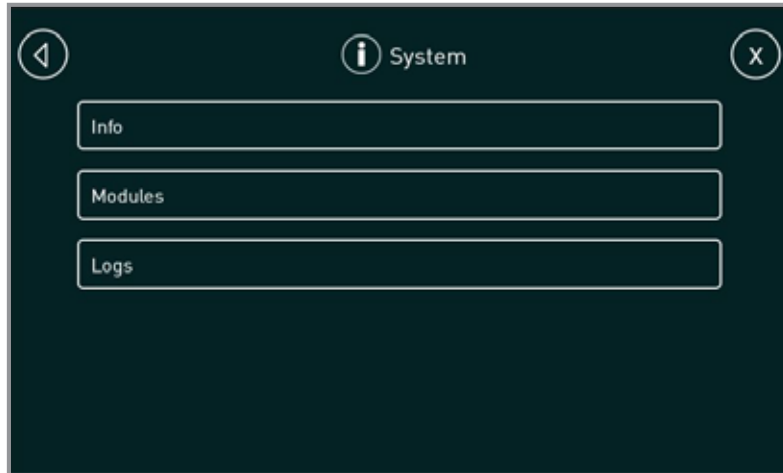


System ([page 24](#))



Preferences ([page 25](#))

**Main - System**



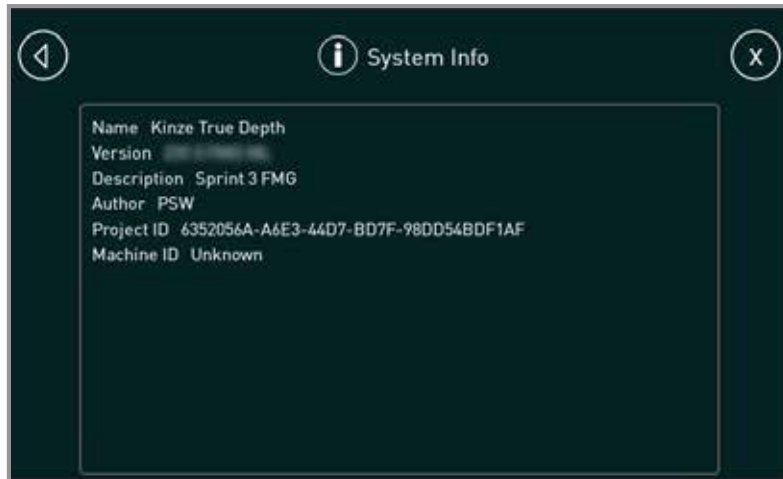
**System Screen**

**Info** - Location of software version (Below)

**Modules** - Information on Individual Modules ([page 37](#))

**Logs** - Location of the Alerts log ([page 37](#))

**Main - System - Info**



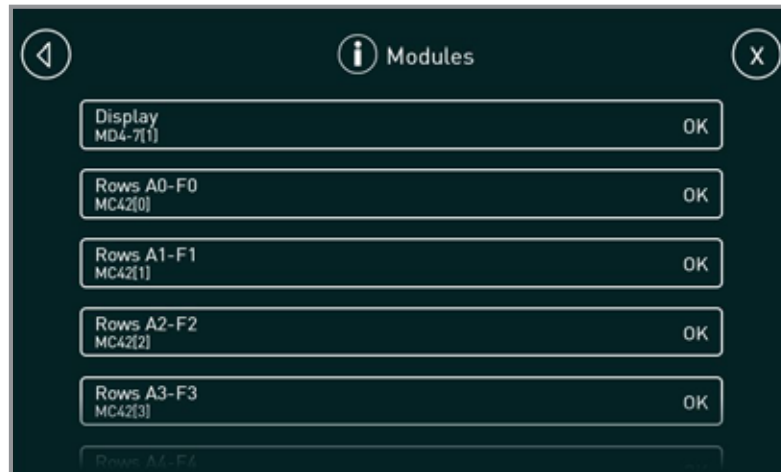
**Info Screen**

Software version format is as follows:  
1.00.00.0000

Use this information to ensure that the latest software is installed.



## Main - System - Modules



### Modules Screen

Displays State of Modules:

OK- Functioning

High Temperature - Module is overheating

Low Supply Voltage- Module is not receiving enough power

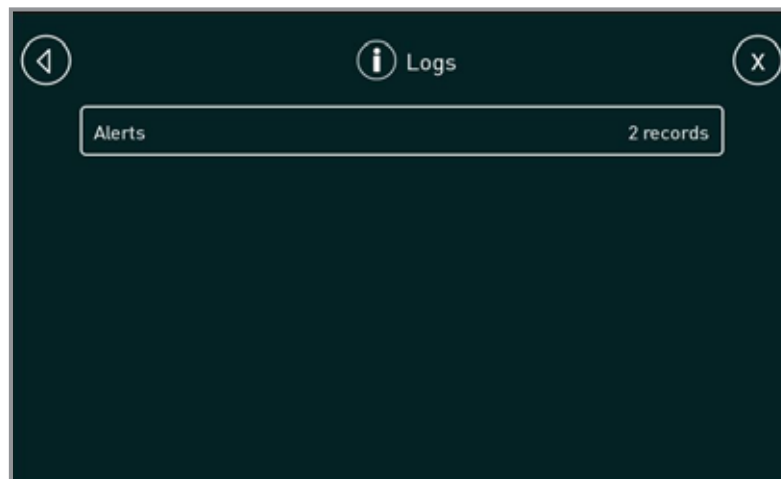
High Supply Voltage - Module is receiving more than the rated power

Multiple Address - Module has a duplicate address with another module connected to the system

VREF Error - There is an error with the reference Voltages on the module (they are used for the load links)

NOTE - See Interconnect Diagram in planter Operator's Manual for module location

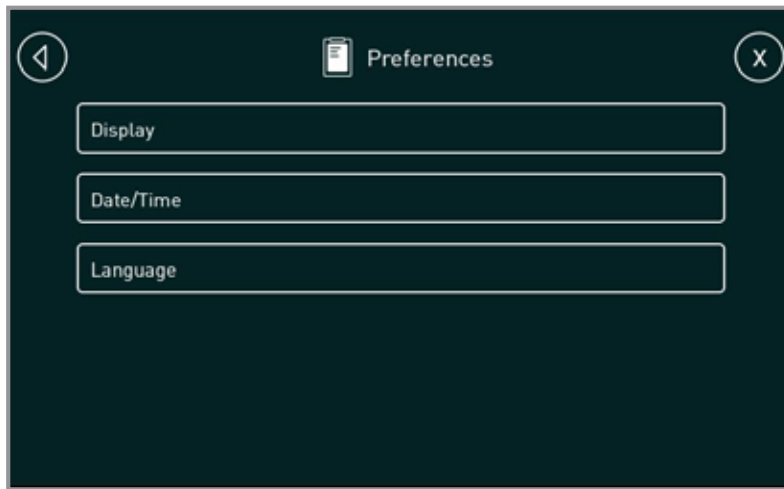
## Main - System - Logs



### Logs Screen

Tap "Alerts" to access the "Alerts" screen.

**Main - Preferences**

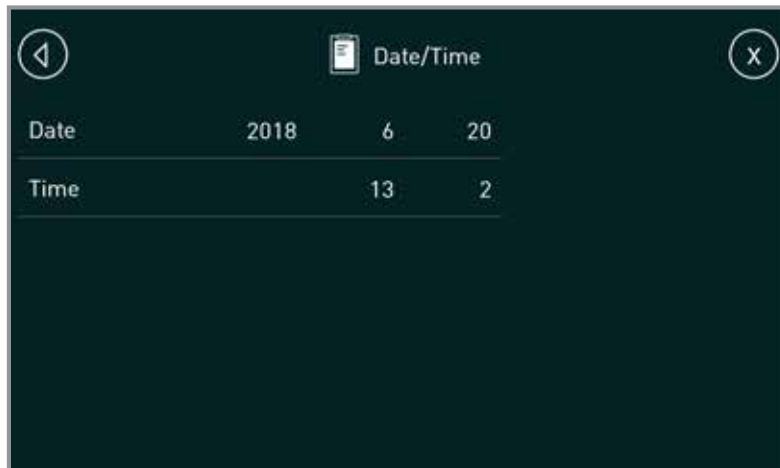


**Preferences Screen**

**Display** - Display Screen ([page 24](#))

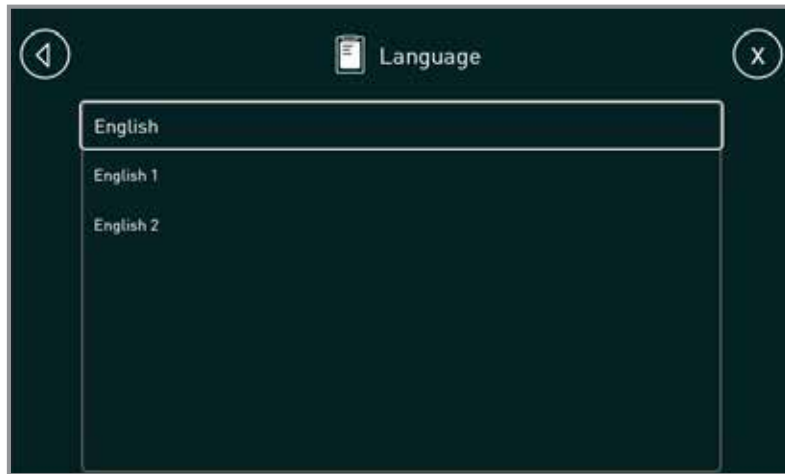
**Date/Time** - Date/Time Screen (See Below)

**Language** - English



**Date / Time**

Tap any field to adjust date and time.



**Language**

Multi-language is not supported.

Refer to the following pages for troubleshooting of issues that may occur.

**NOTICE**

Disconnect all electronic monitor and control modules prior to making any repairs or modifications to the planter or mounted attachments. Failure to do so will result in permanent damage to sensitive electronic components and could void your warranty.

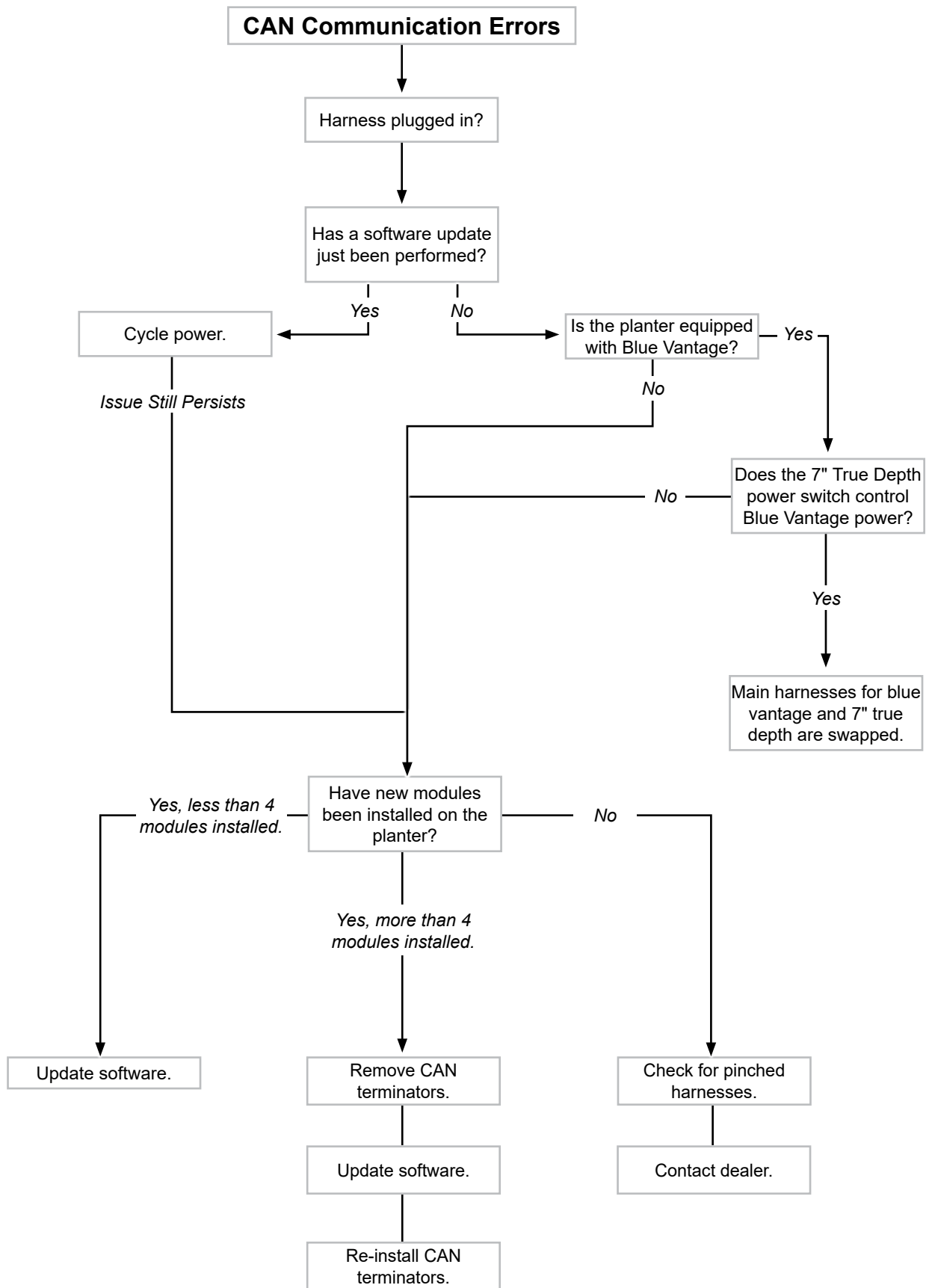
**DANGER**

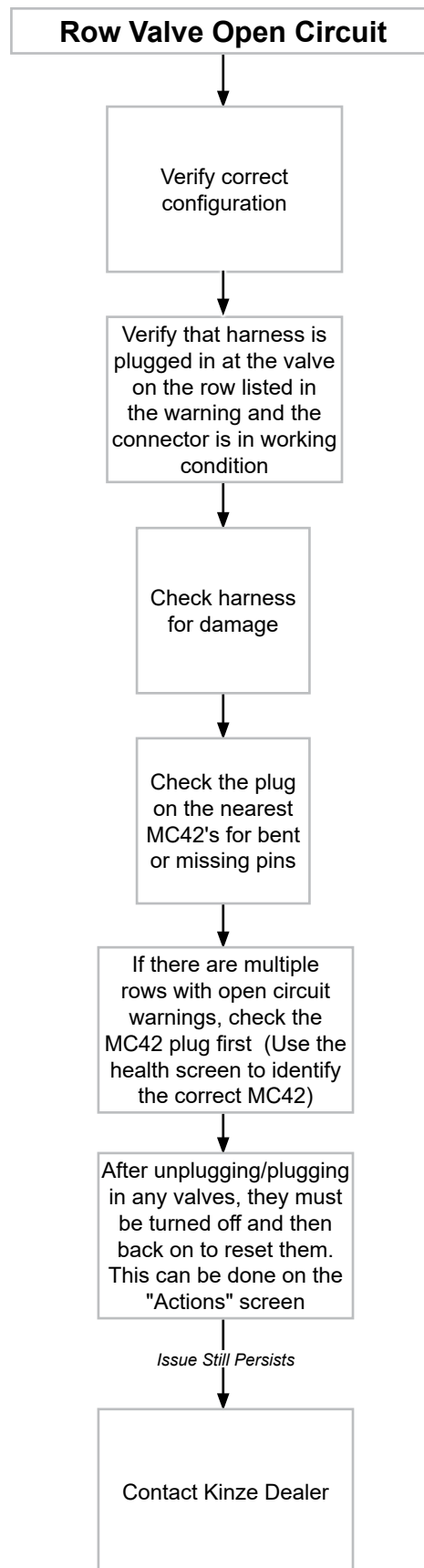
**ELECTRICAL SHOCK HAZARD**  
Disconnect (unplug) power before inspecting or servicing the unit.

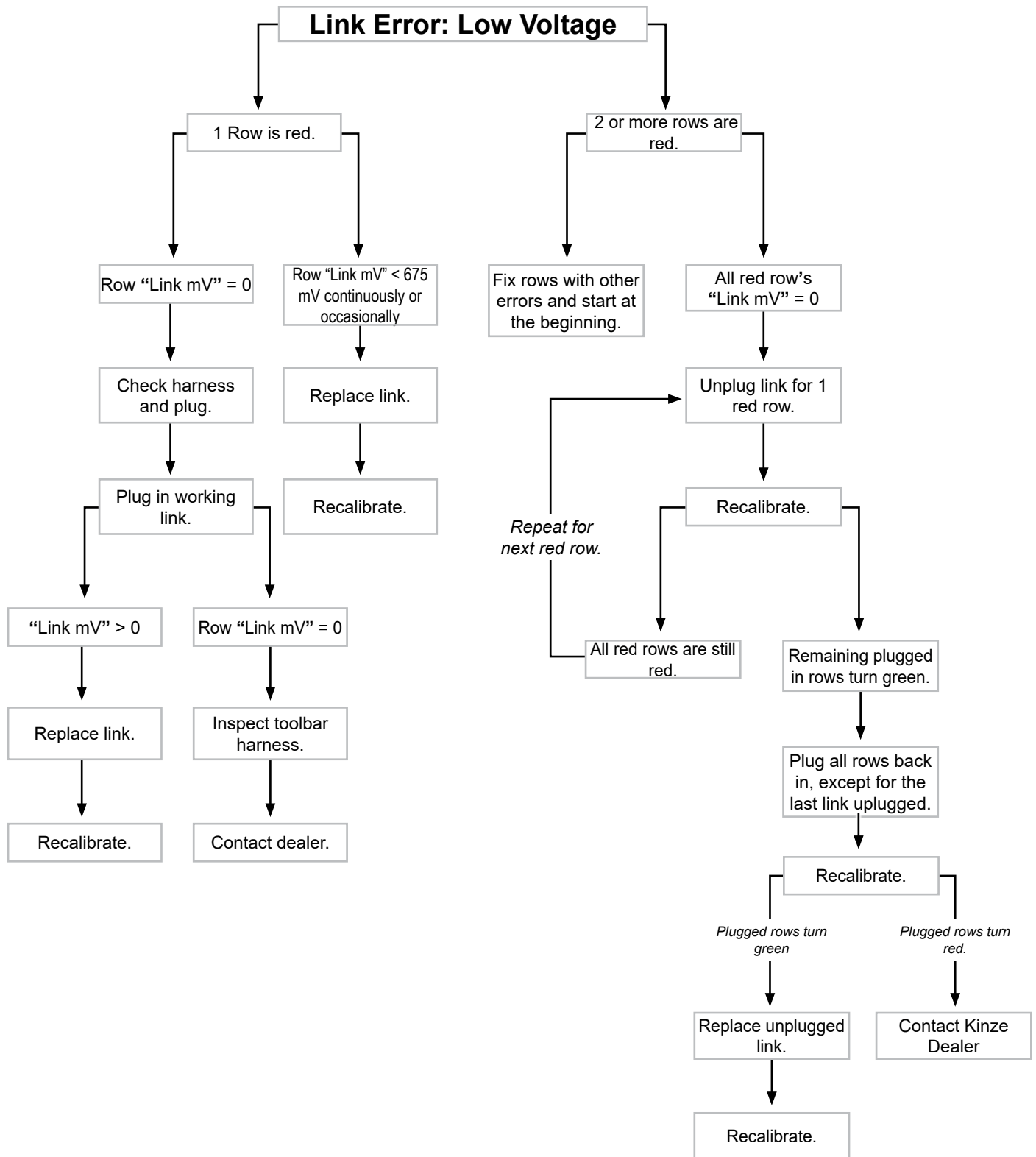
**WARNING**

Uncontrolled movement of equipment can cause loss of control and could result in death, serious injury, or damage to property and equipment. Install all safety lockup devices before transporting equipment.

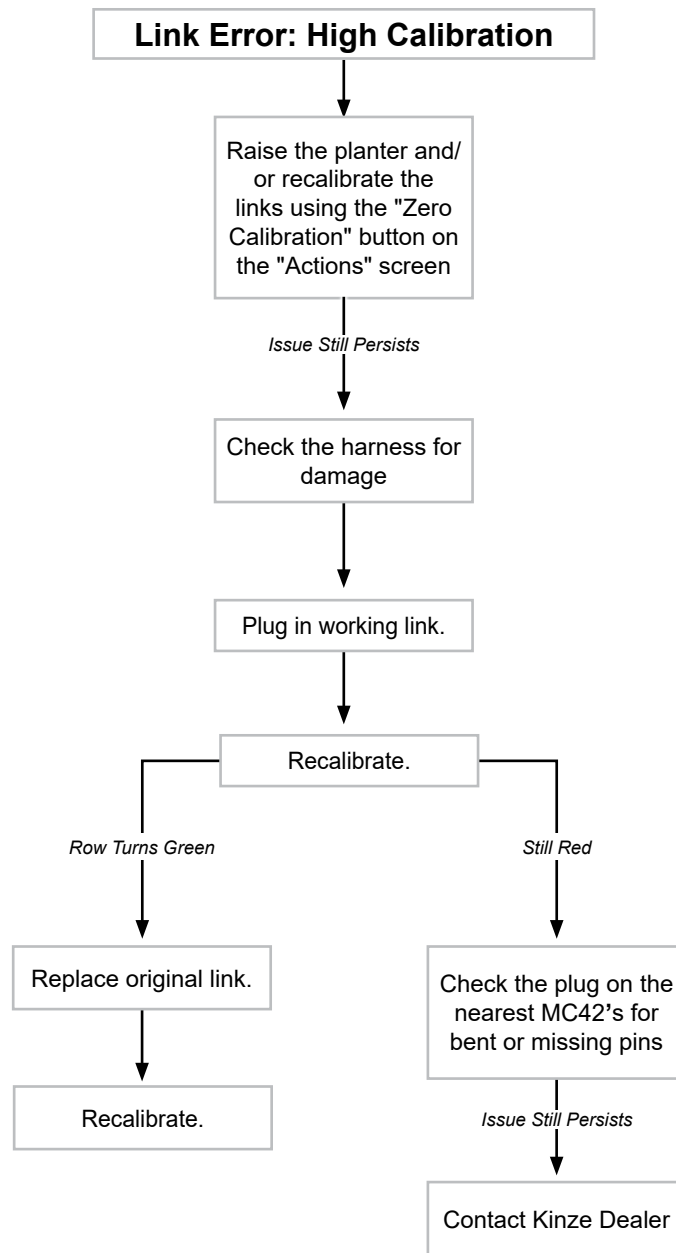






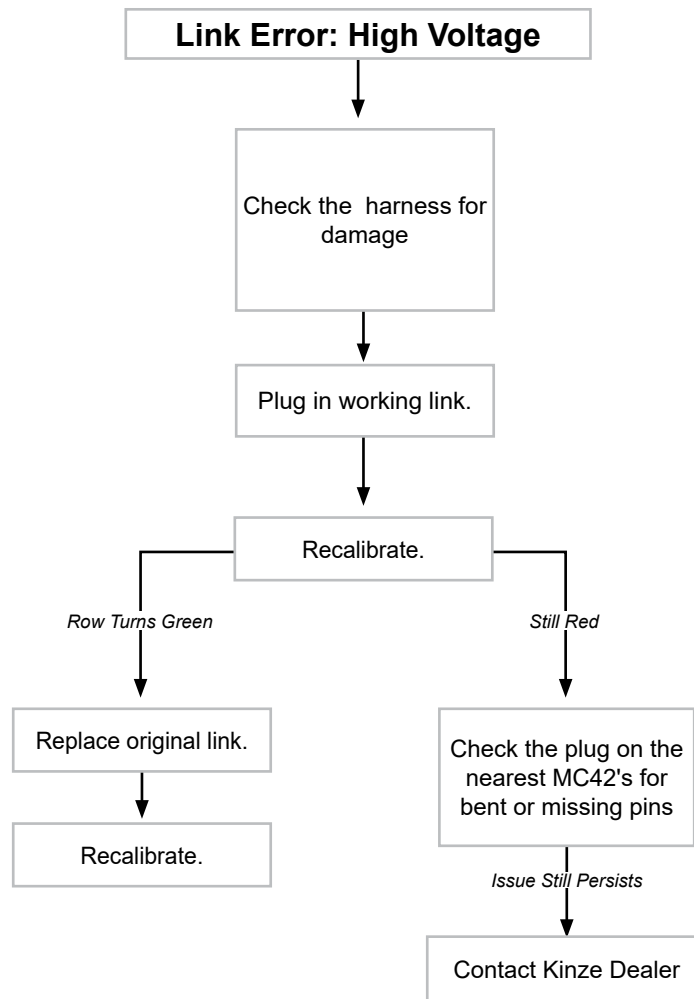


**NOTE:** After the warning appears on the screen, the Applied Force is set to the Link Error Force (Average Force of functioning neighbors). The Applied Force will remain at the Link Error Force, regardless of mode, until a link is calibrated between 675mV and 1200mV.

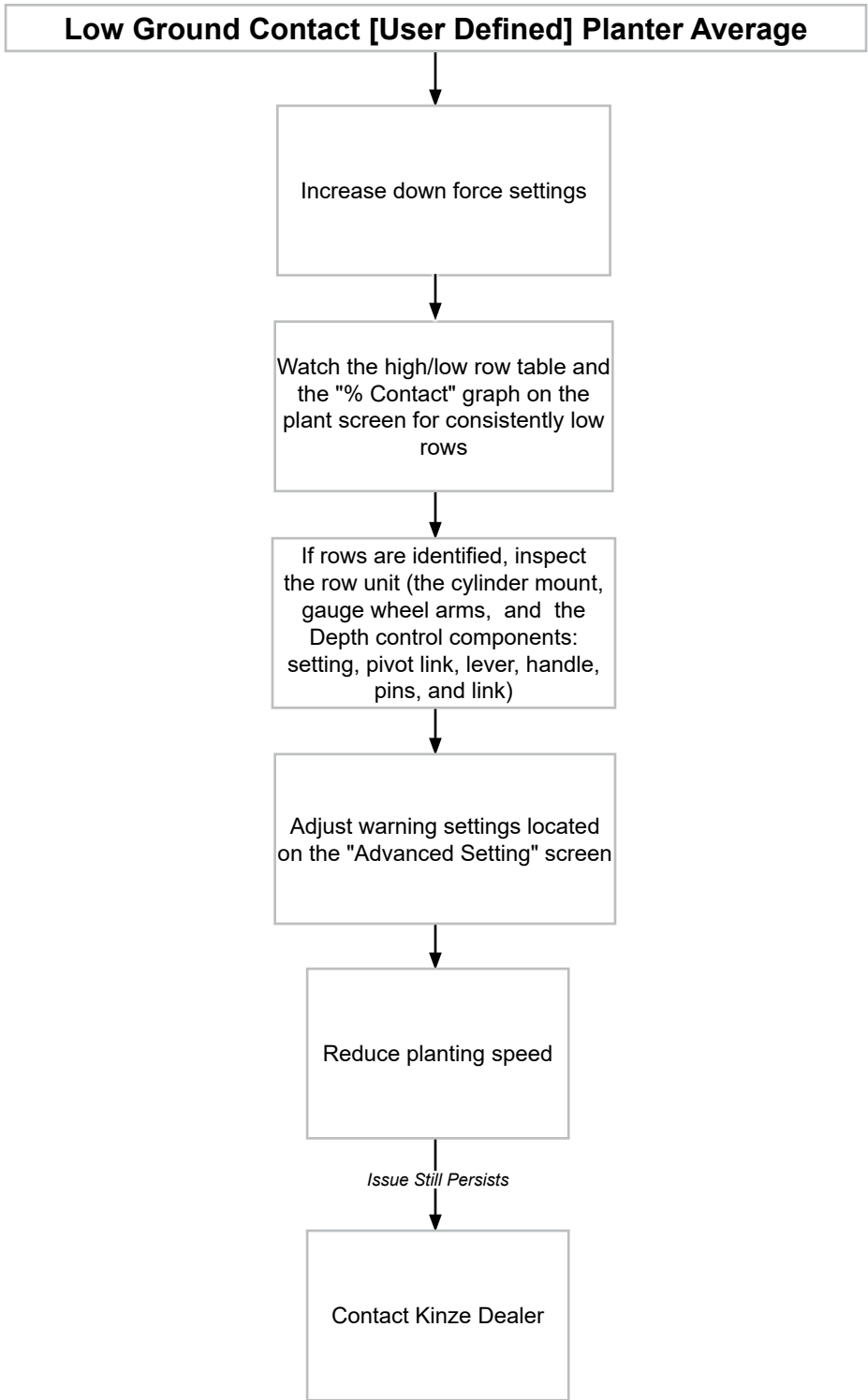


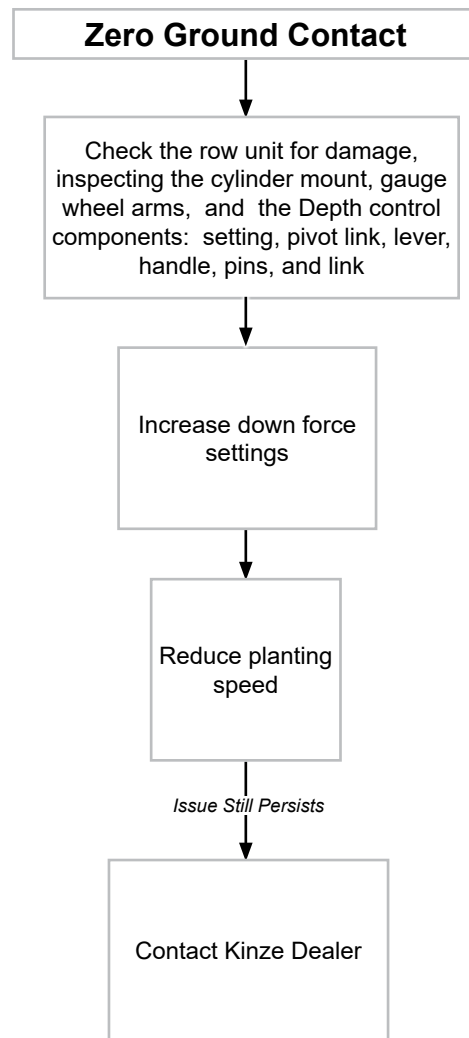
**NOTE:** After the warning appears on the screen, the Applied Force is set to the Link Error Force (Average Force of functioning neighbors). The Applied Force will remain at the Link Error Force, regardless of mode, until a link is calibrated between 675mV and 1200mV.

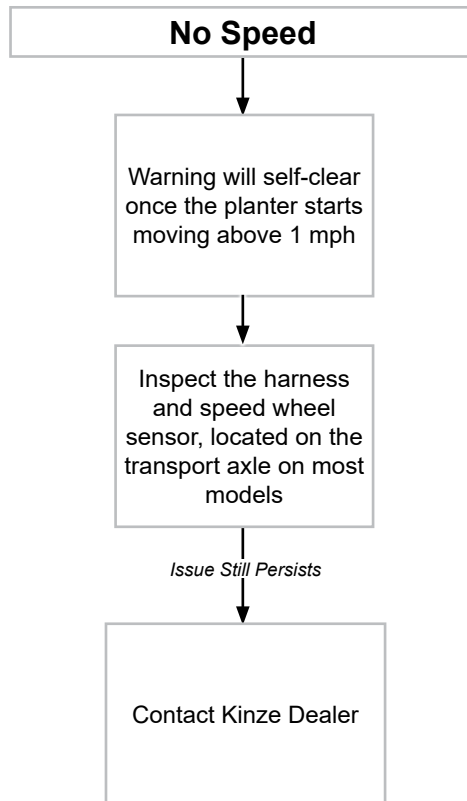


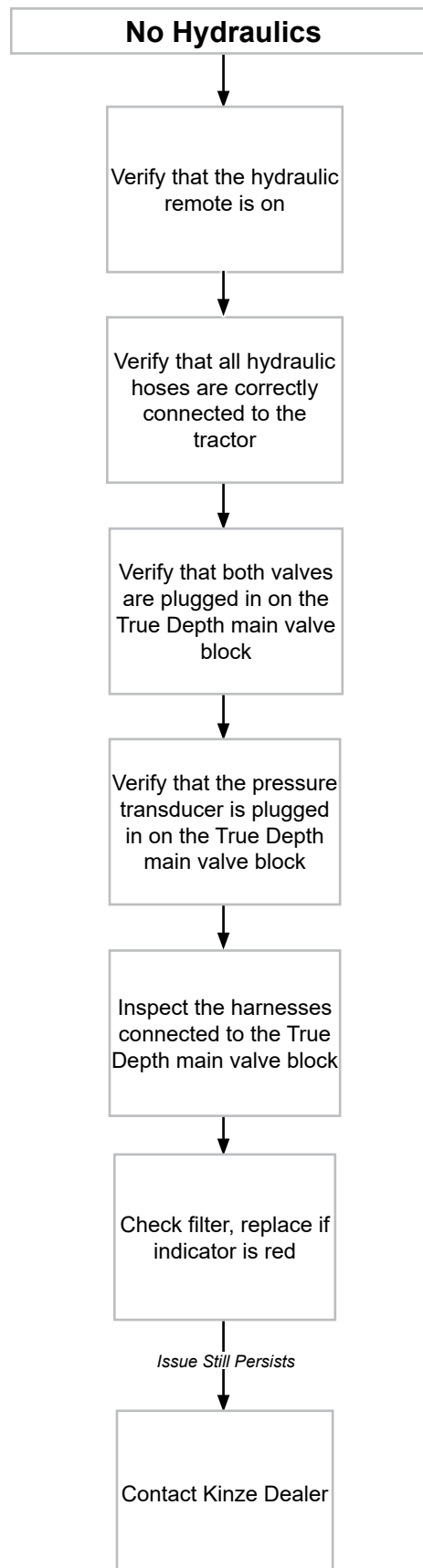


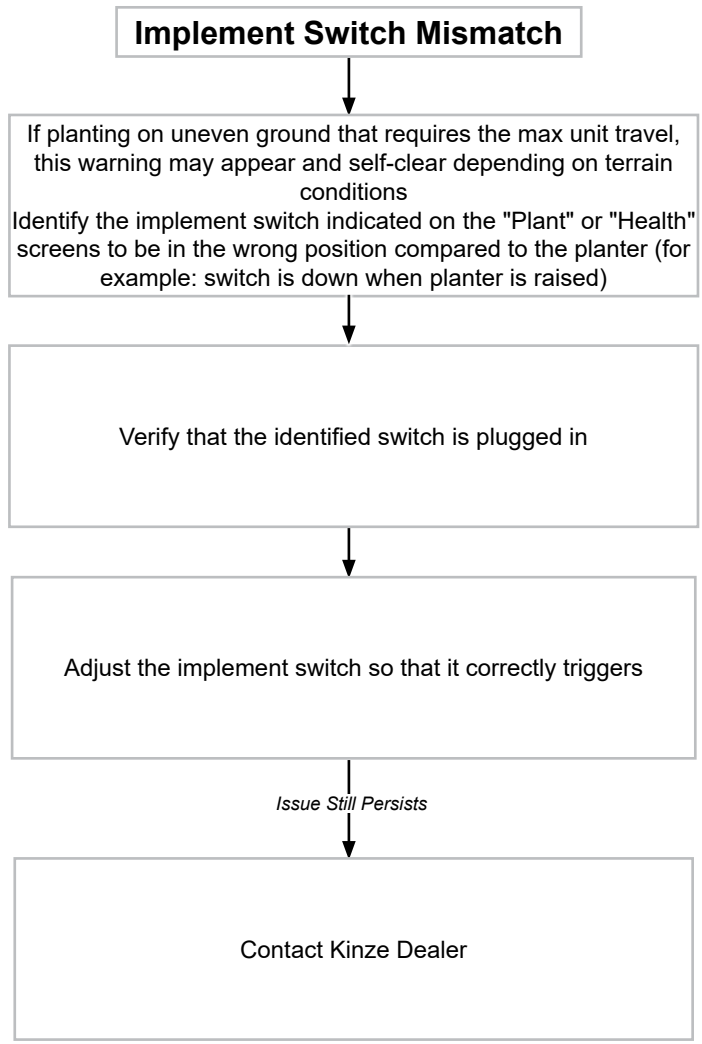
**NOTE:** After the warning appears on the screen, the Applied Force is set to the Link Error Force (Average Force of functioning neighbors). The Applied Force will remain at the Link Error Force, regardless of mode, until a link is calibrated between 675mV and 1200mV.

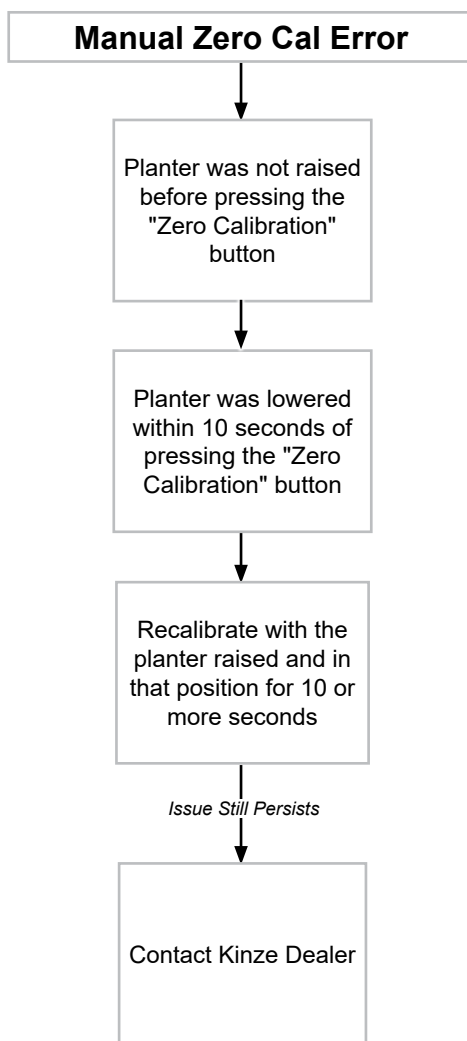


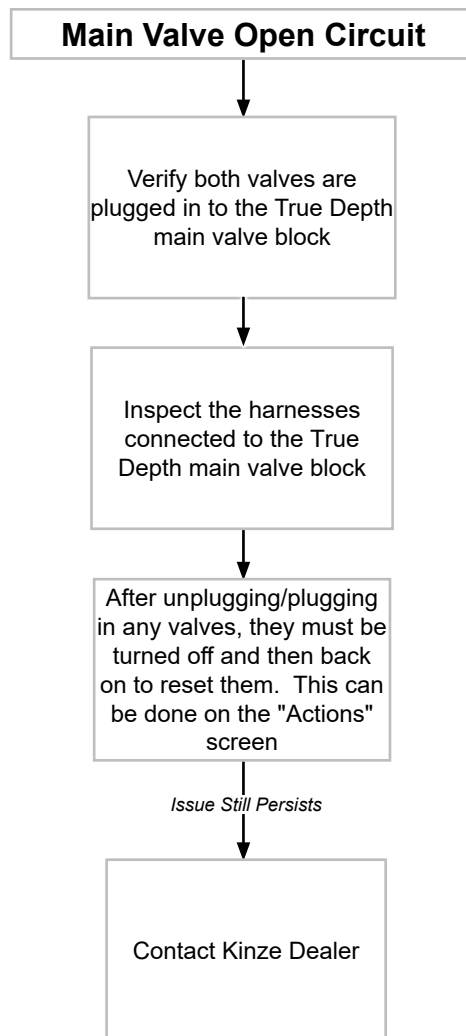




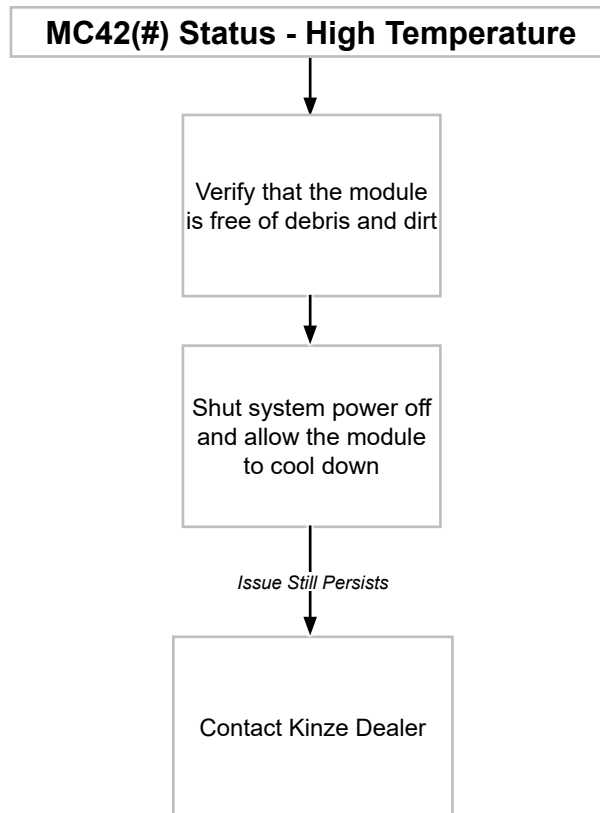


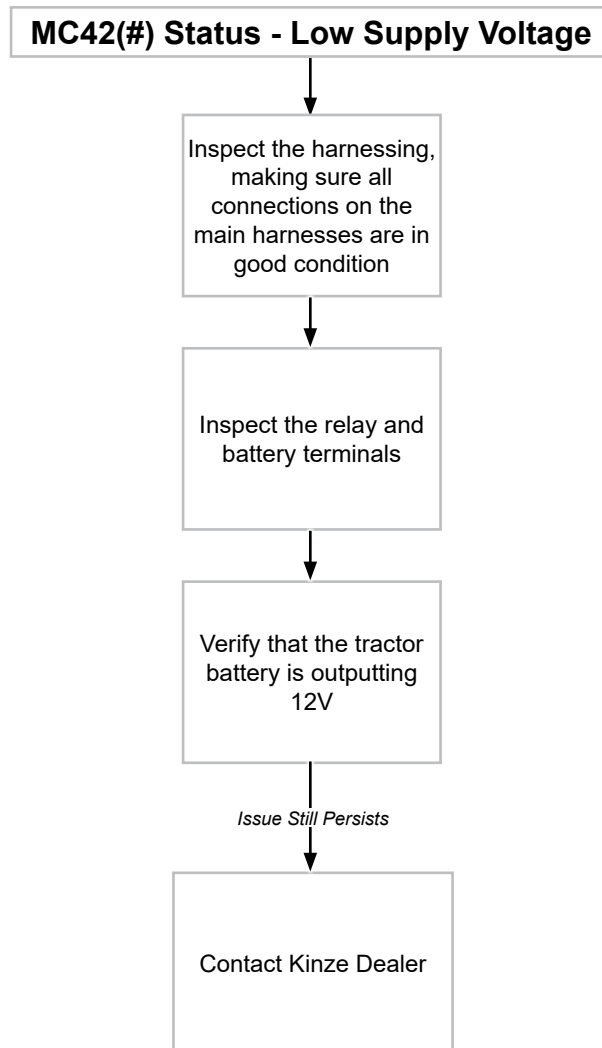












**MC42(#) Status - High Supply Voltage**

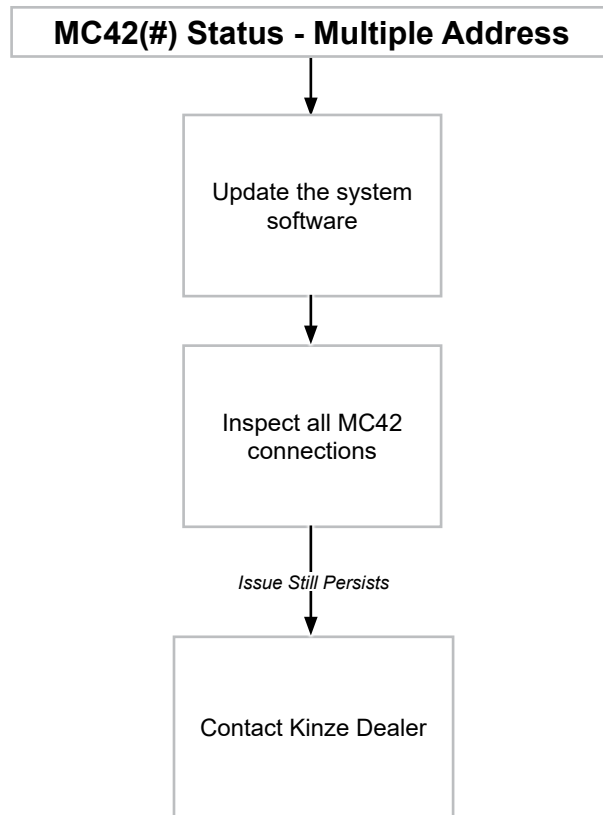
Inspect the harnessing, making sure all connections on the main harnesses are in good condition. If accompanied by multiple "Link Error! Low Voltage" warnings, refer to ["Link Error: Low Voltage" on page 43](#)

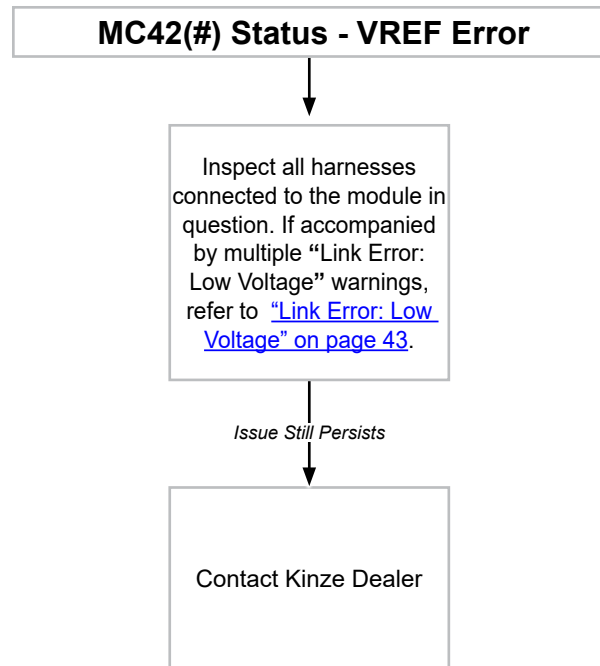
Inspect the relay and battery terminals

Verify that the tractor battery is outputting 12V

*Issue Still Persists*

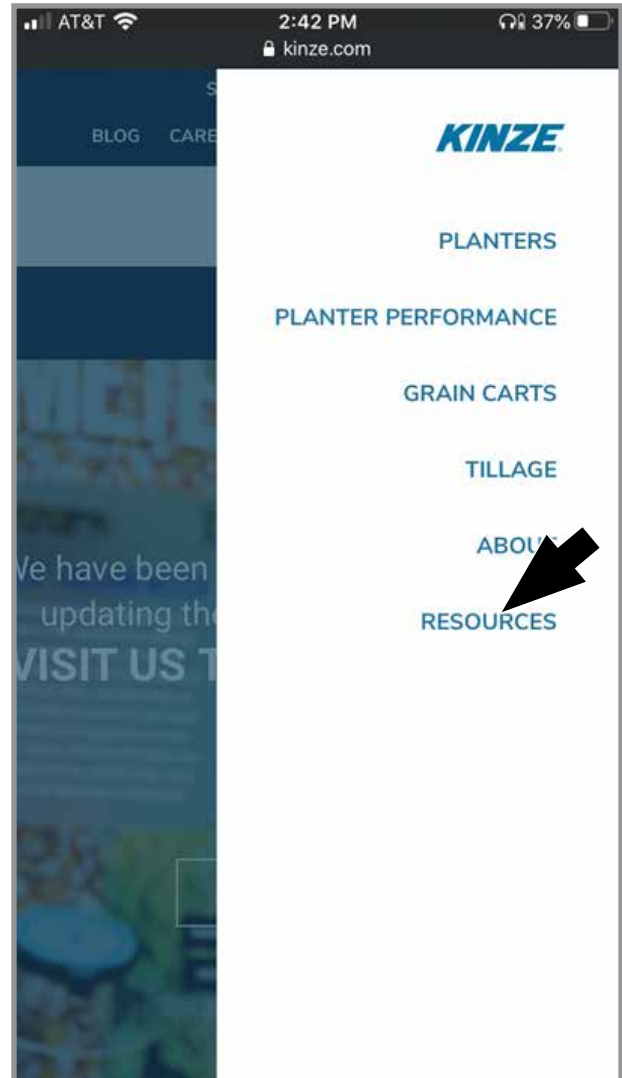
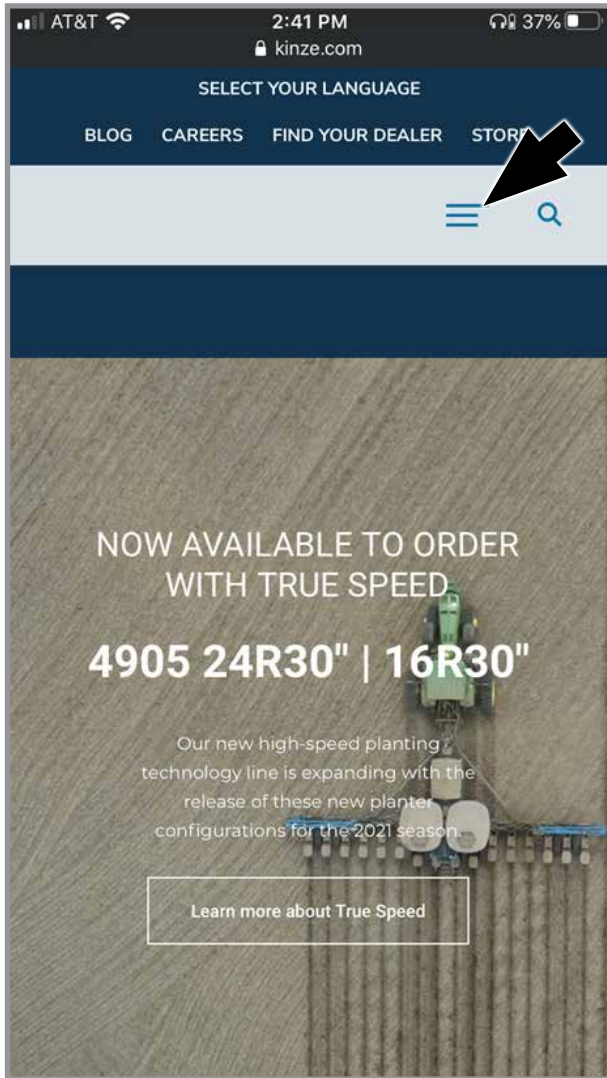
Contact Kinze Dealer





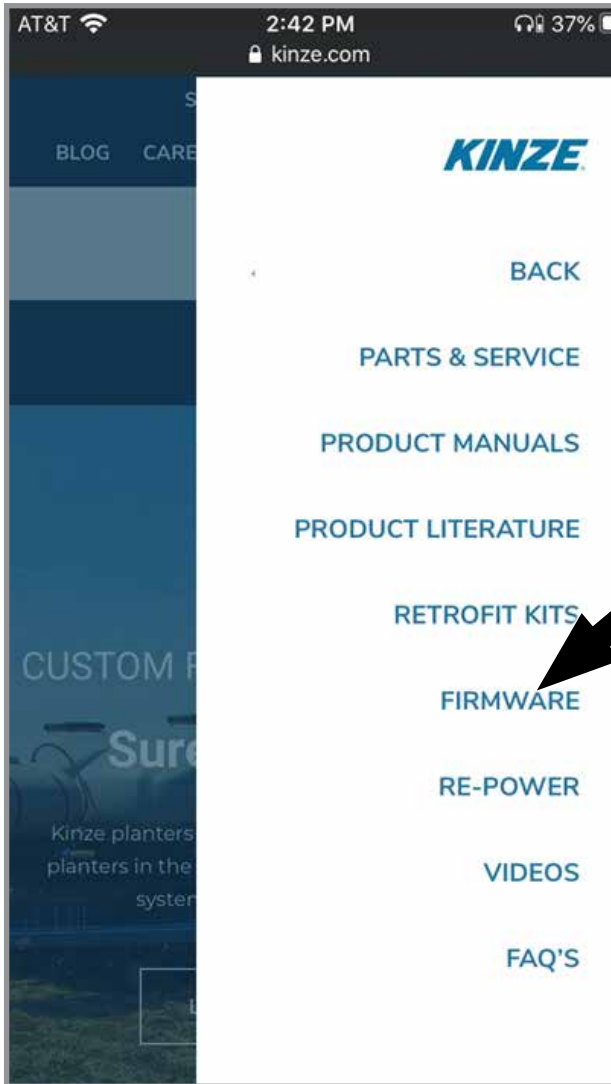
## IQANgo Update Instructions

A. Download the IQANgo from your app store

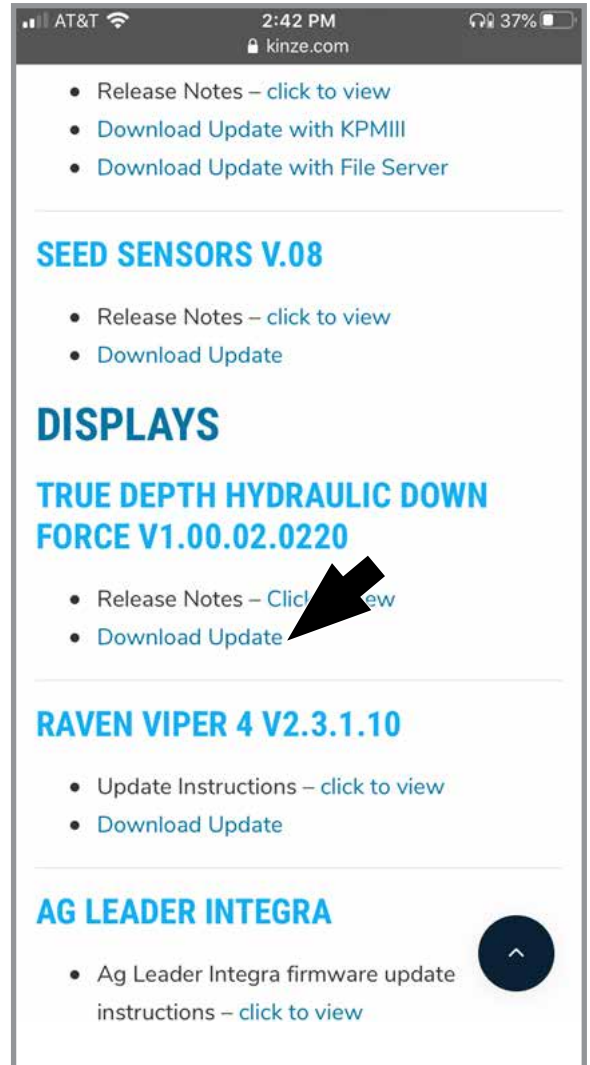


1. Go to [www.kinze.com](http://www.kinze.com).

2. Tap "Resources".



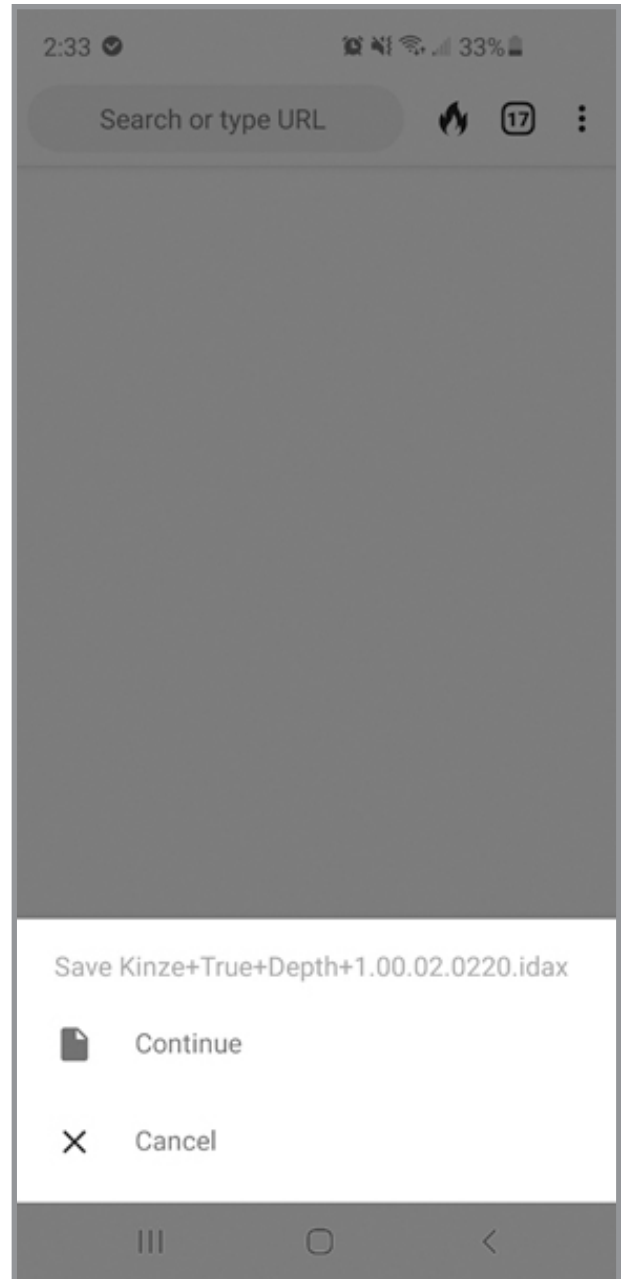
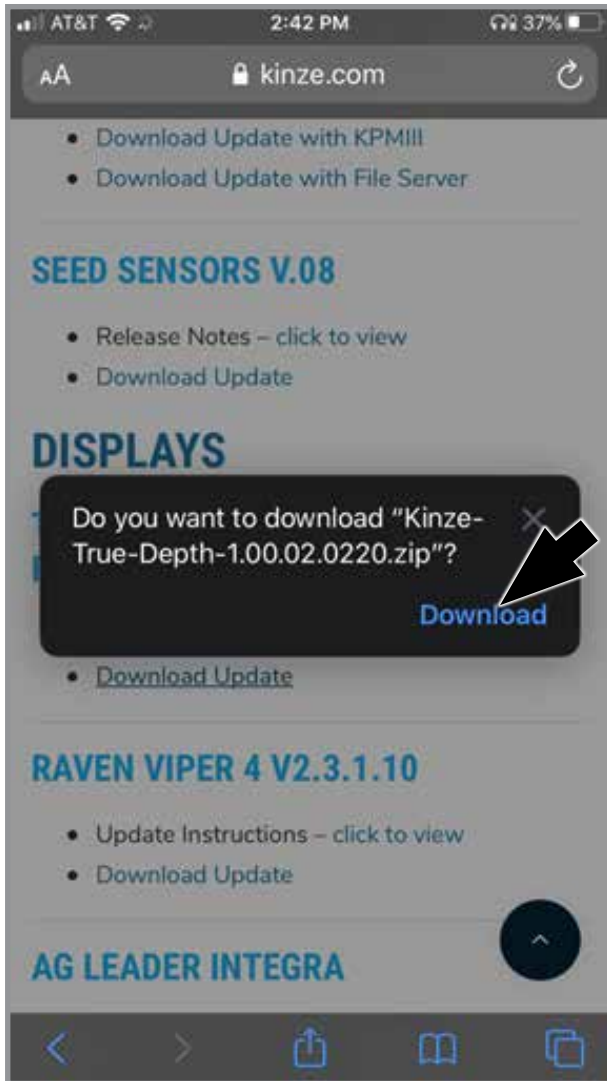
3. Tap "Firmware".



4. Scroll down to "True Depth Hydraulic Down Force", tap "Download Update".

Apple

Android

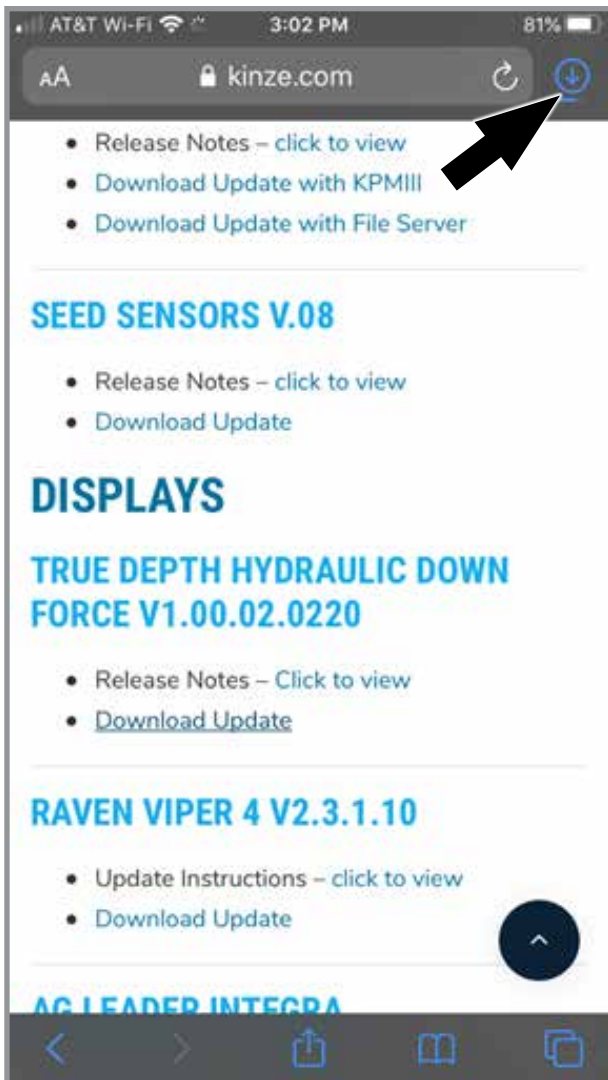


5. Tap "Download".

5. Tap "Continue".

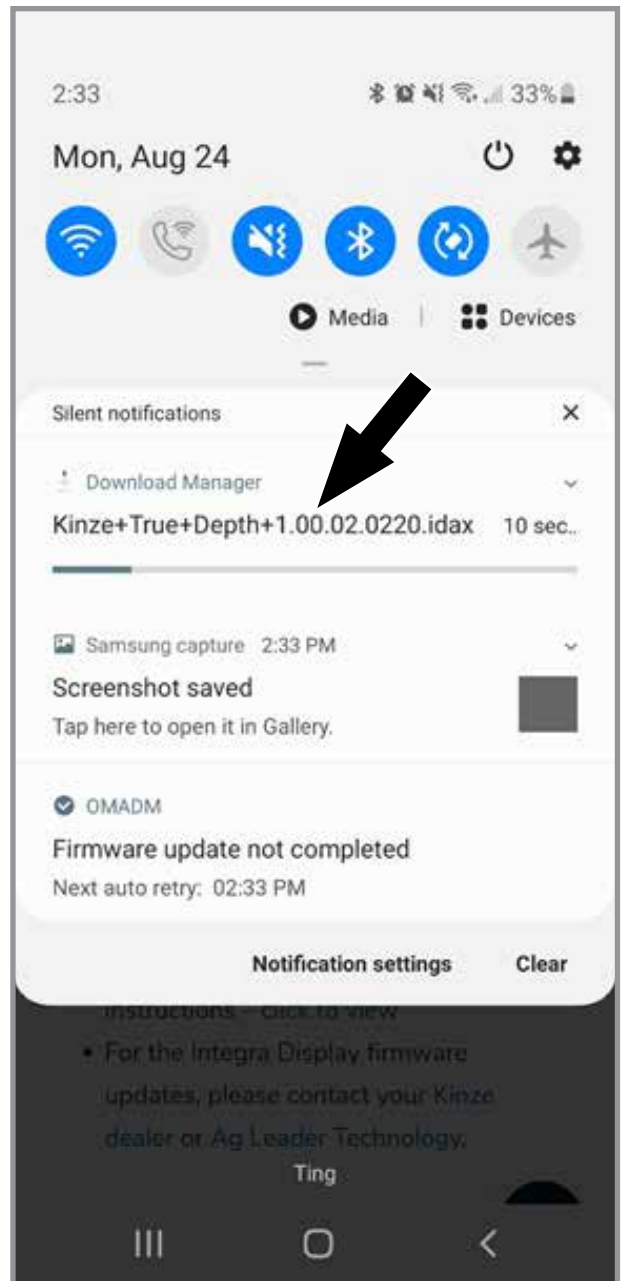


Apple



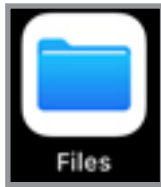
- 6. Wait for download to complete. Tap the blue arrow to show download menu.

Android



- 6. Wait for download to complete. Swipe down from the tip of the screen to show download menu.

**Apple**



7. Open the "Files" app.

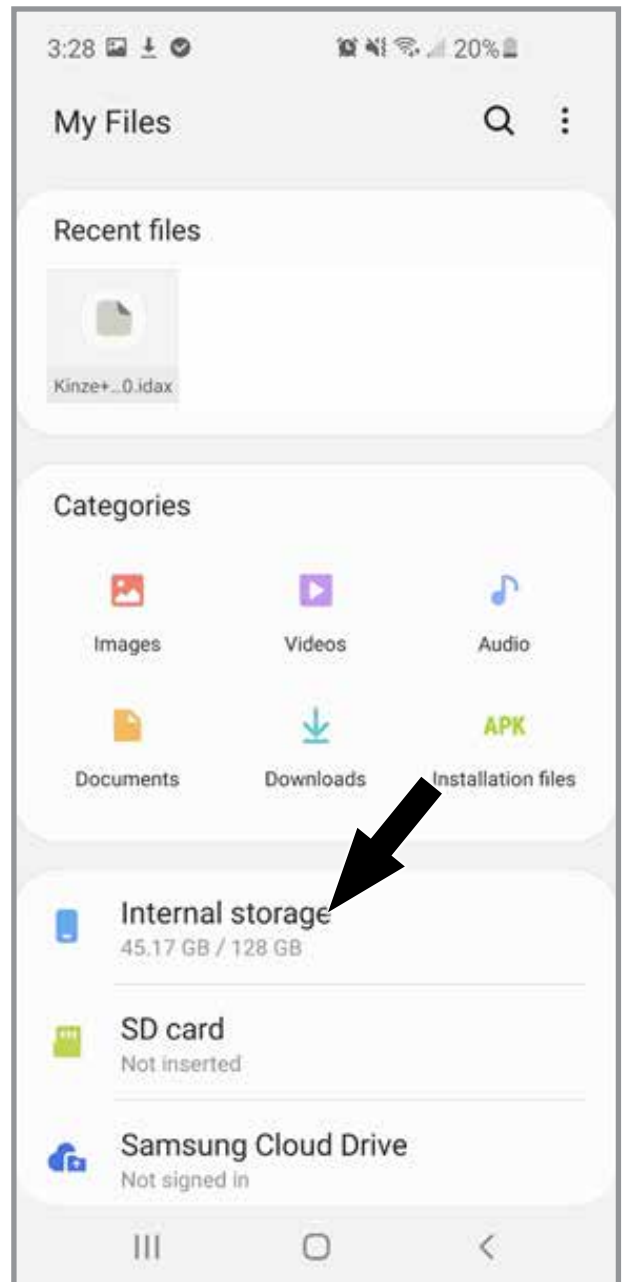
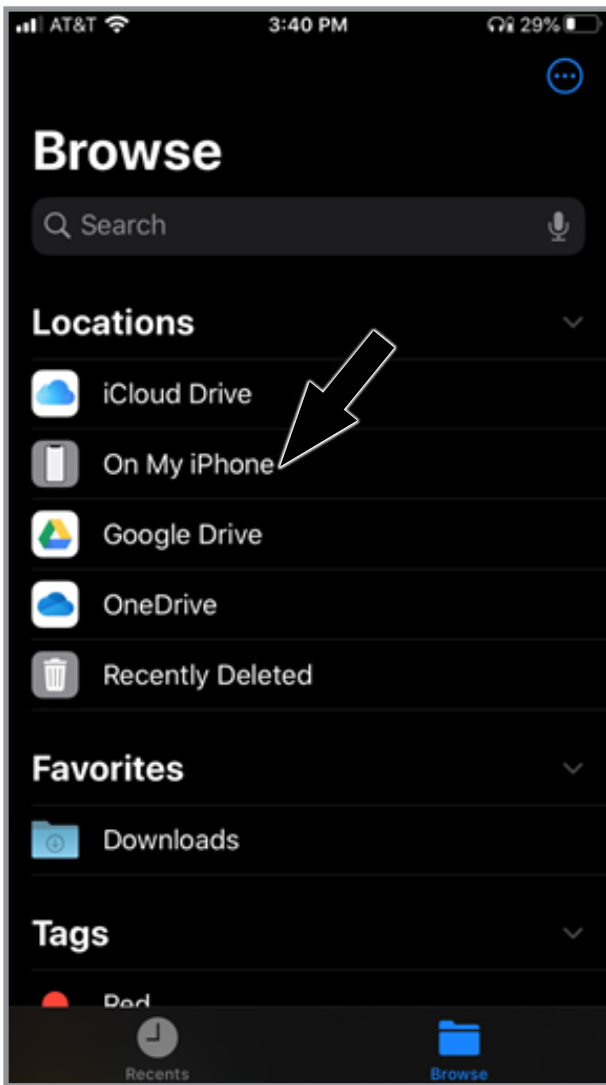
**Android**



7. Open the "Files" app.

Apple

Android

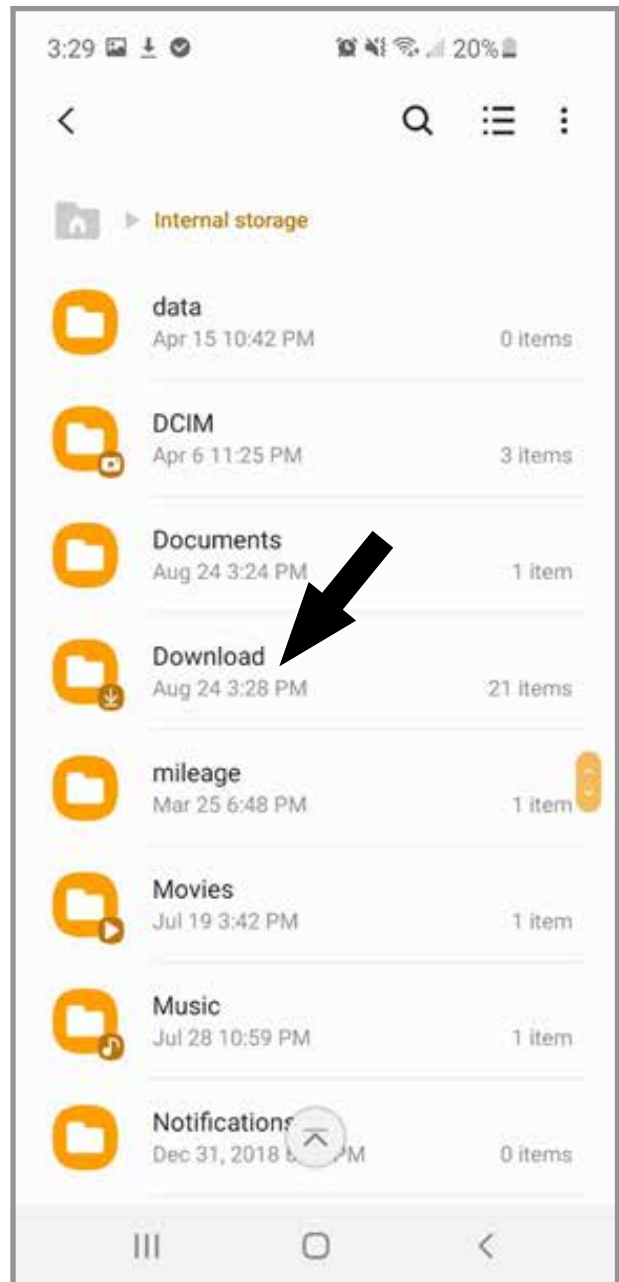
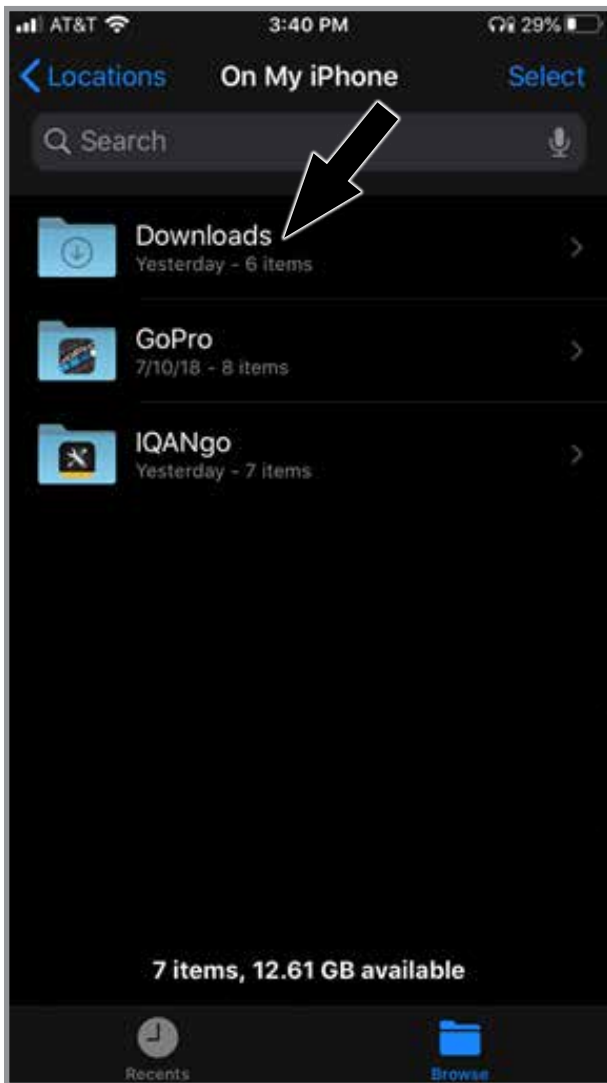


8. Tap "On My iPhone".

8. Tap "Internal Storage"

Apple

Android

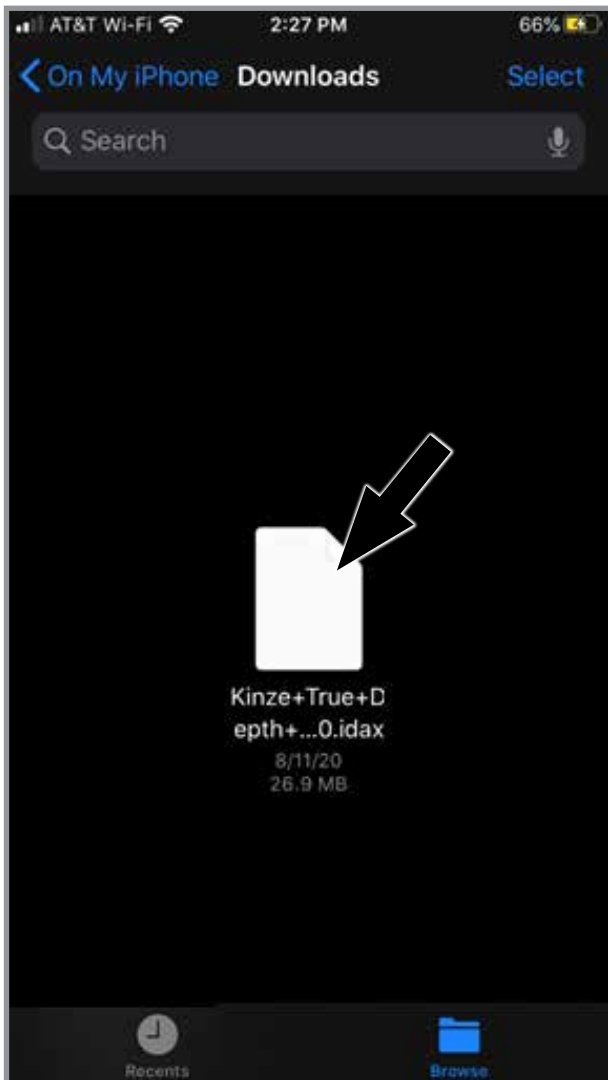


9. Tap "Downloads".

9. Tap "Download".

Apple

Android

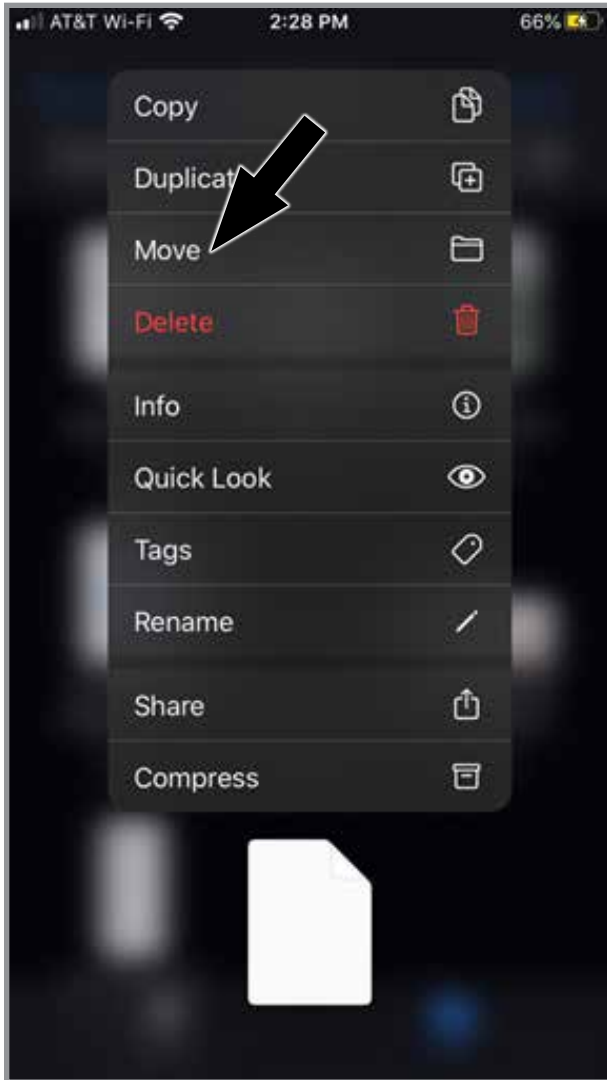


10. Tap and hold the downloaded file.

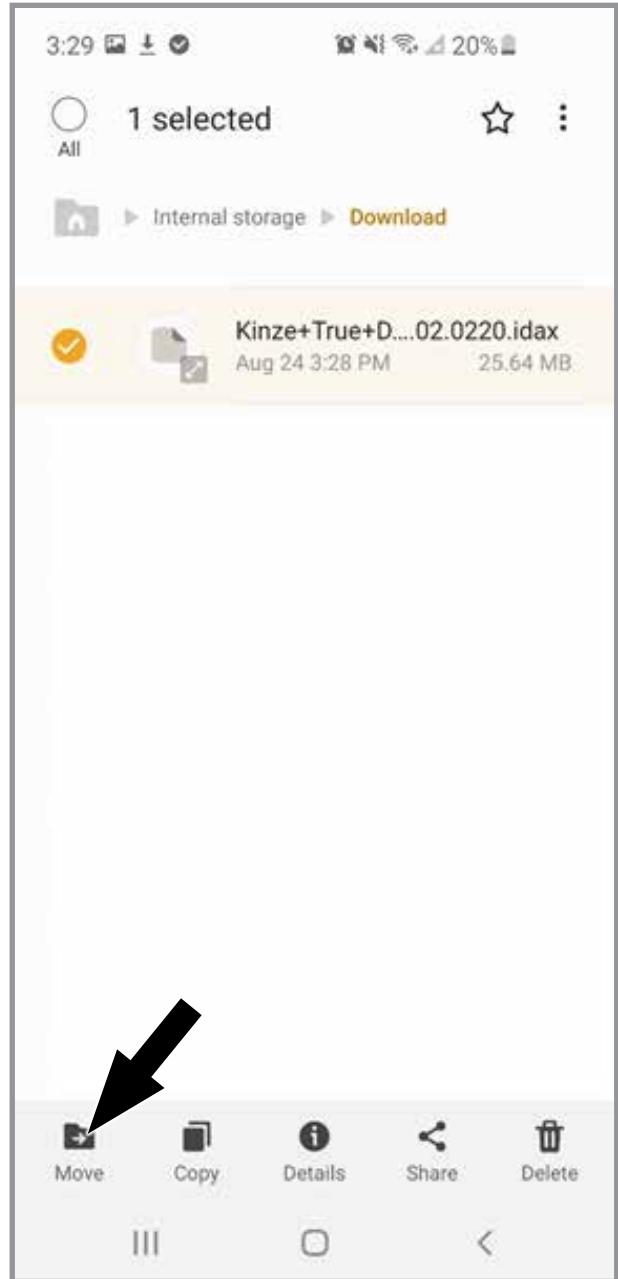
10. Tap and hold the downloaded file.

Apple

Android



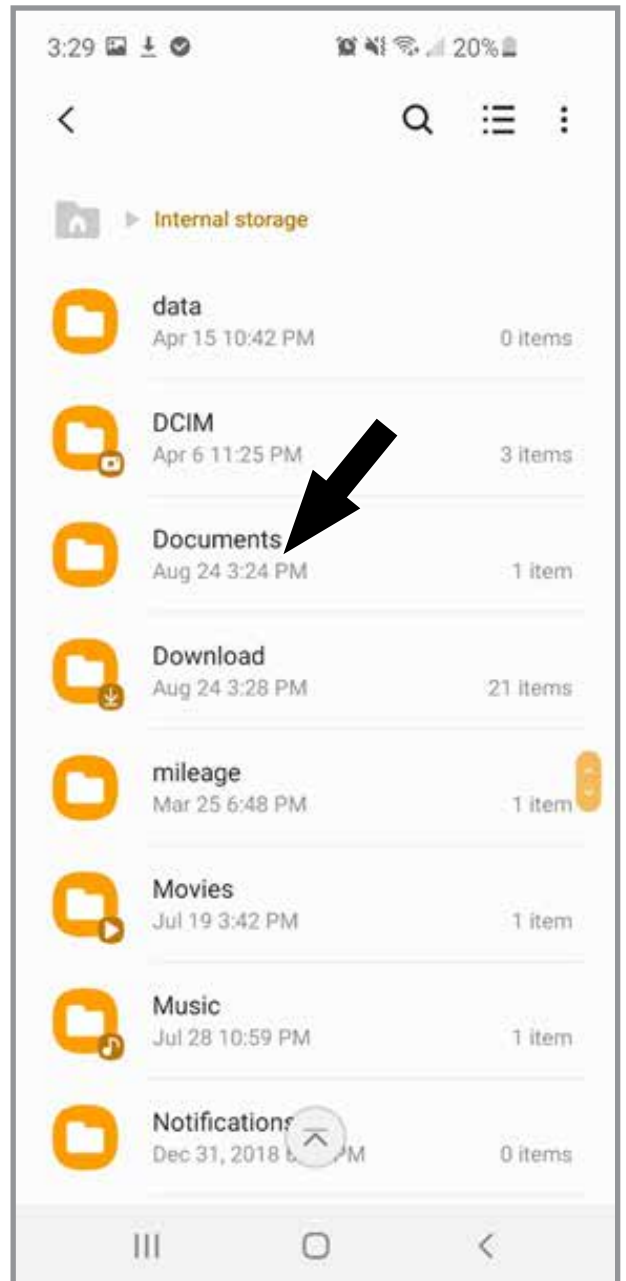
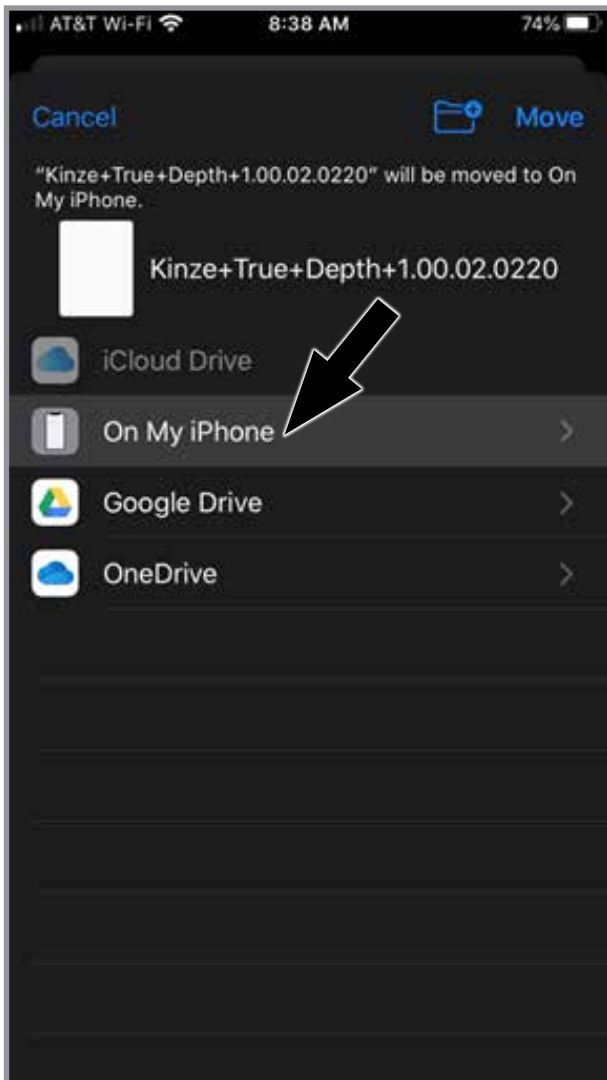
11. Tap "Move".



11. Tap "Move".

Apple

Android

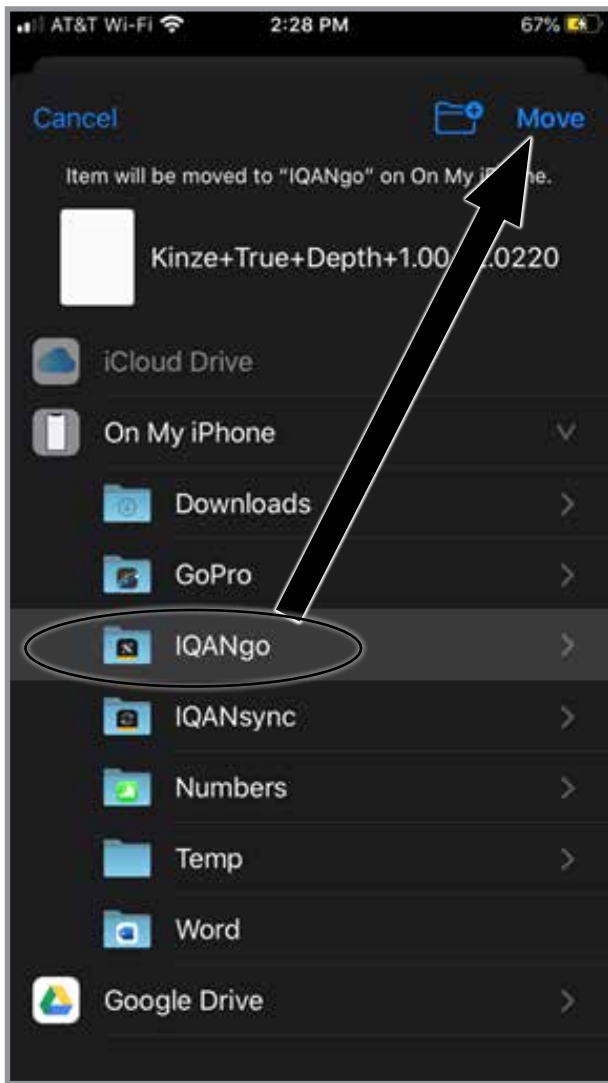


12. Tap "On My iPhone".

12. Tap "Documents".

Apple

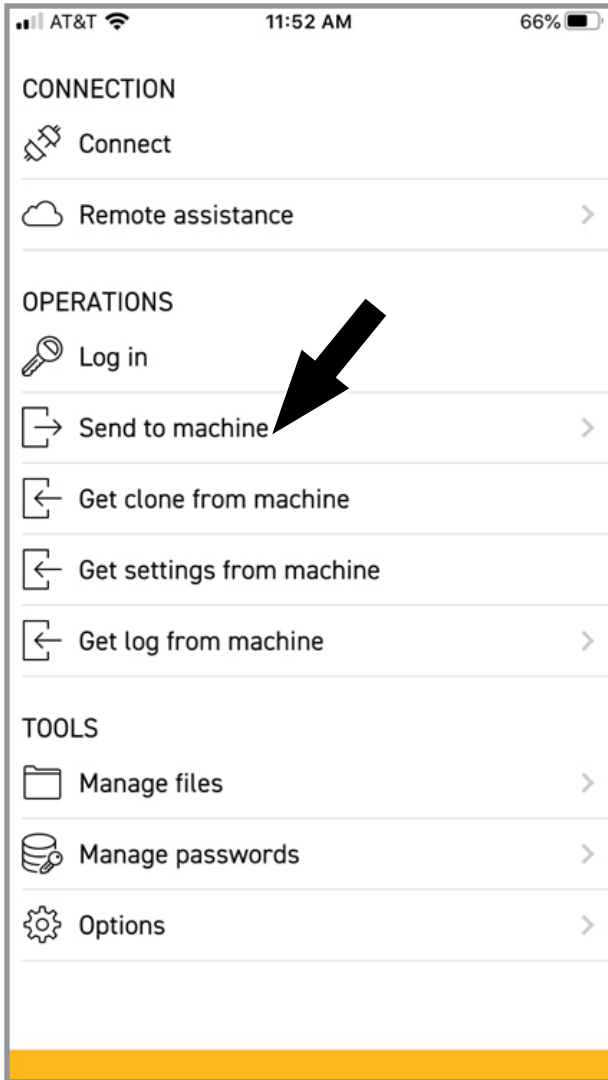
Android



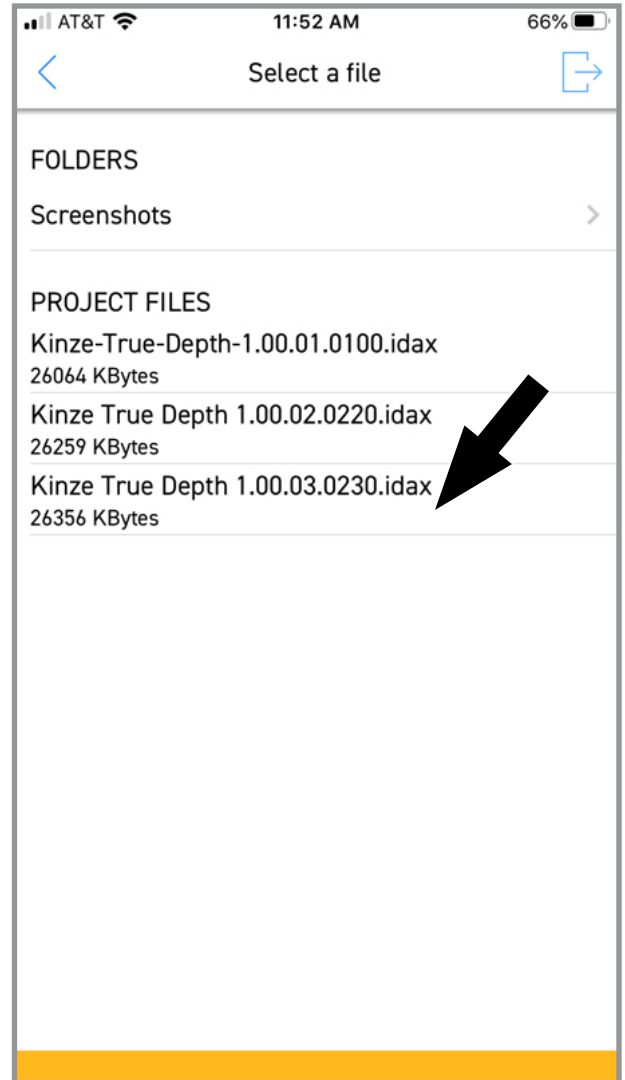
13. Tap "IQANgo" to select the app's folder, then tap "Move".

13. Tap "IQANgo Files", then tap "Copy Here".

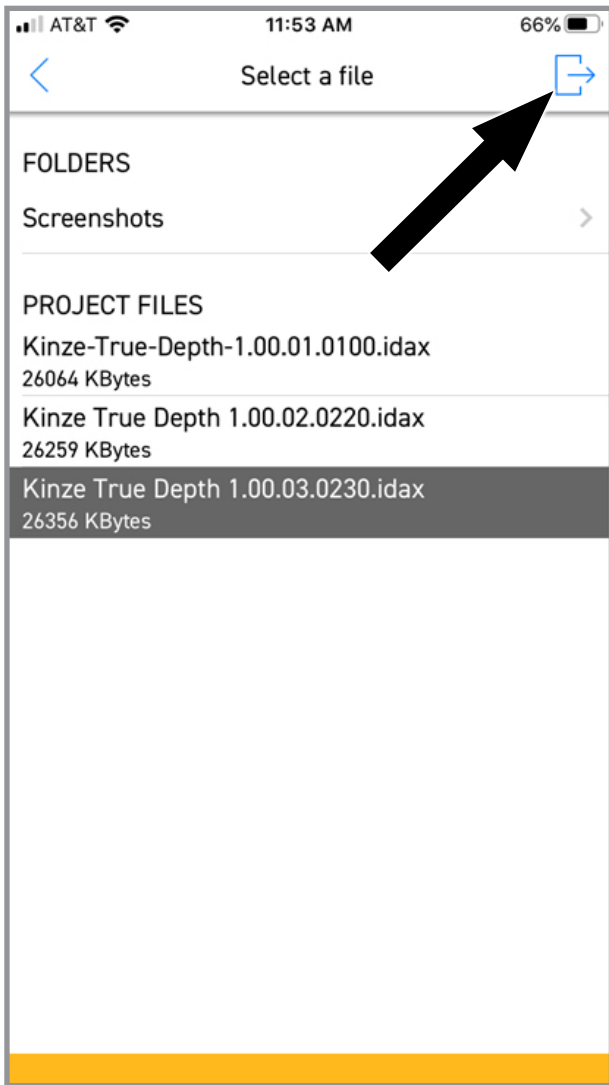




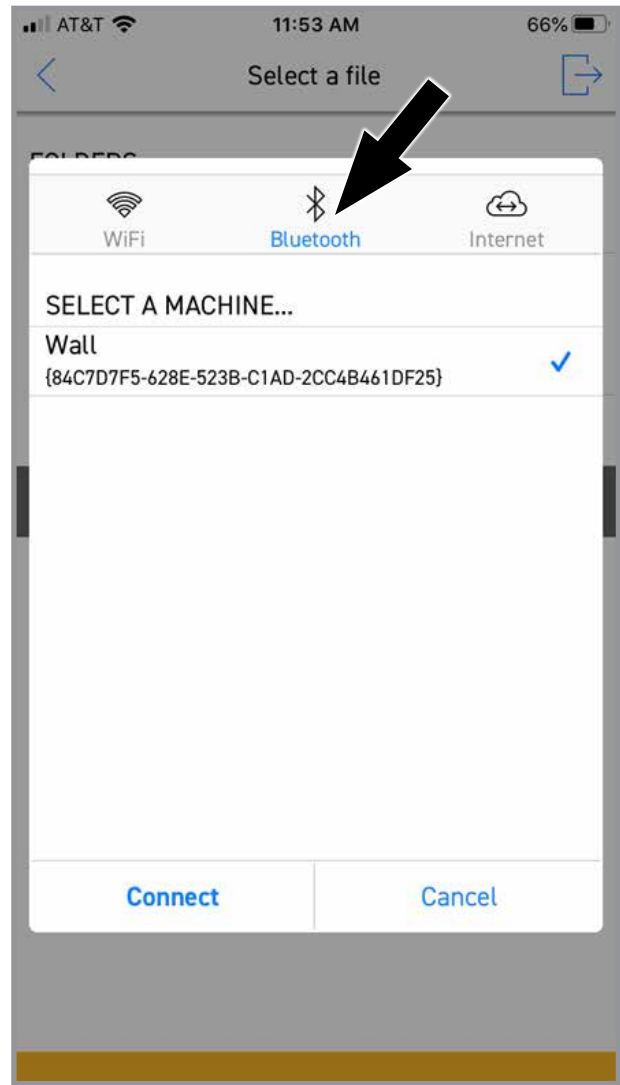
14. Tap "Send to machine".



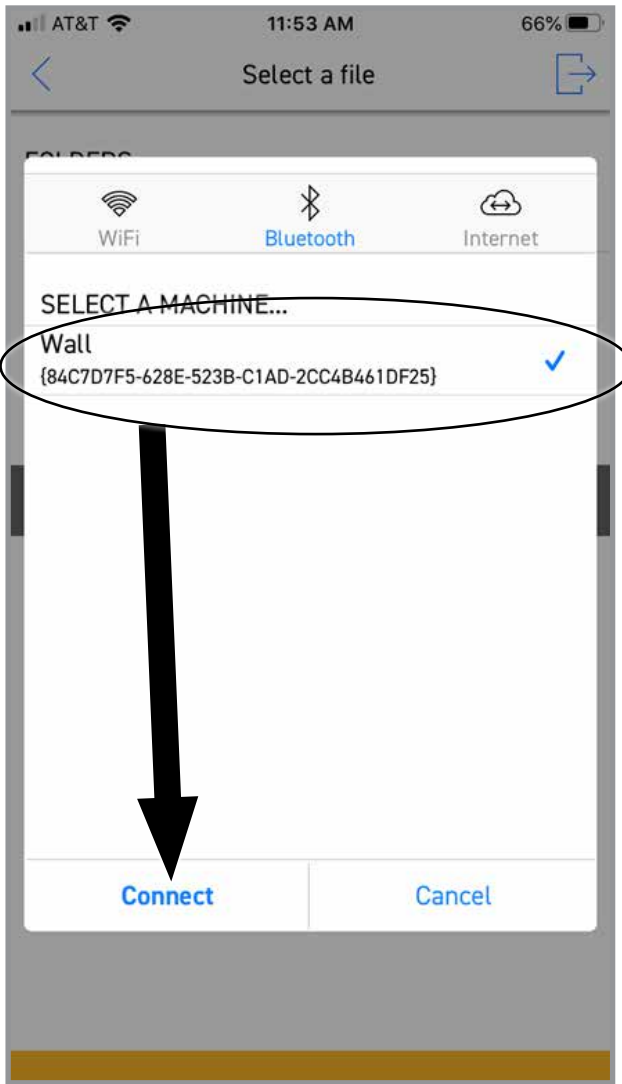
15. Tap to select desired software version.



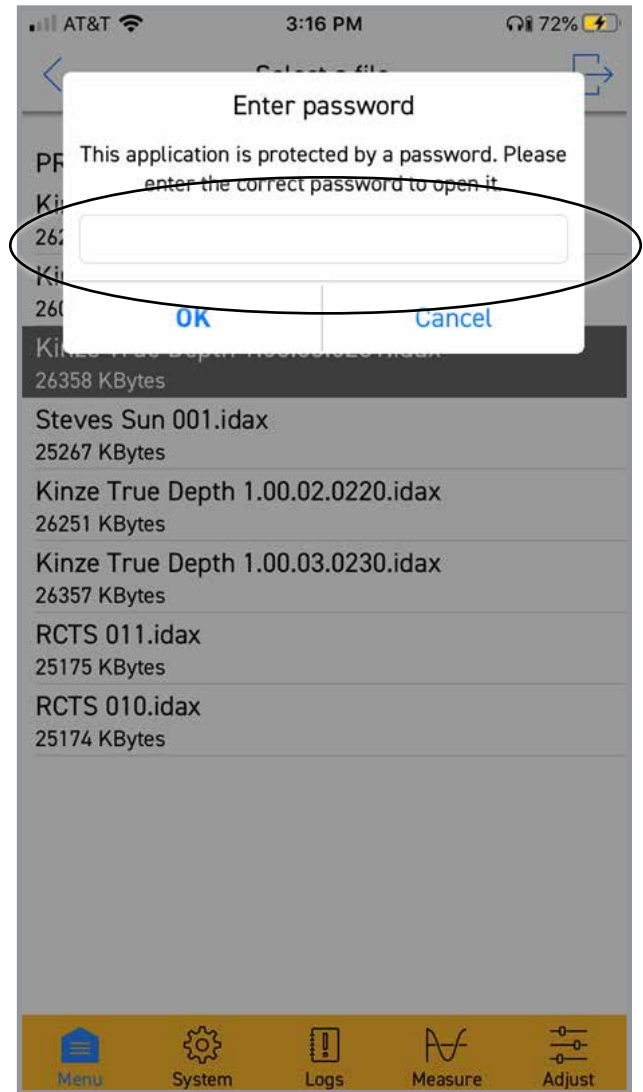
16. Tap the box with the arrow in the upper right corner to send to machine.



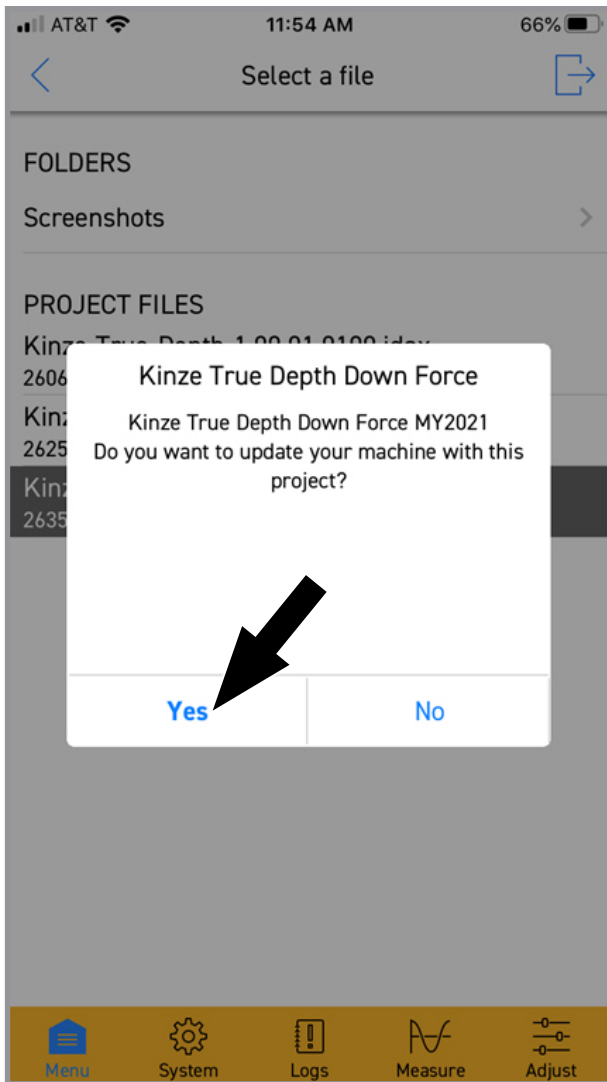
17. Select Bluetooth.



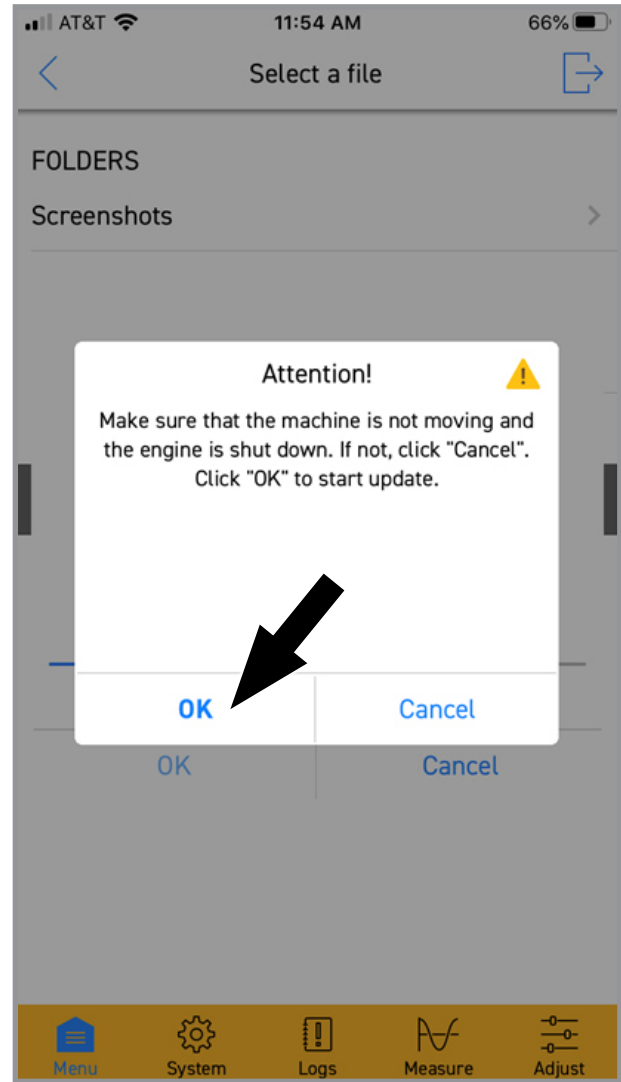
18. Machine should appear, display and planter need to be powered on. Tap to select machine, then tap "Connect".



19. If prompted for a Password, enter "5012" and tap "OK".

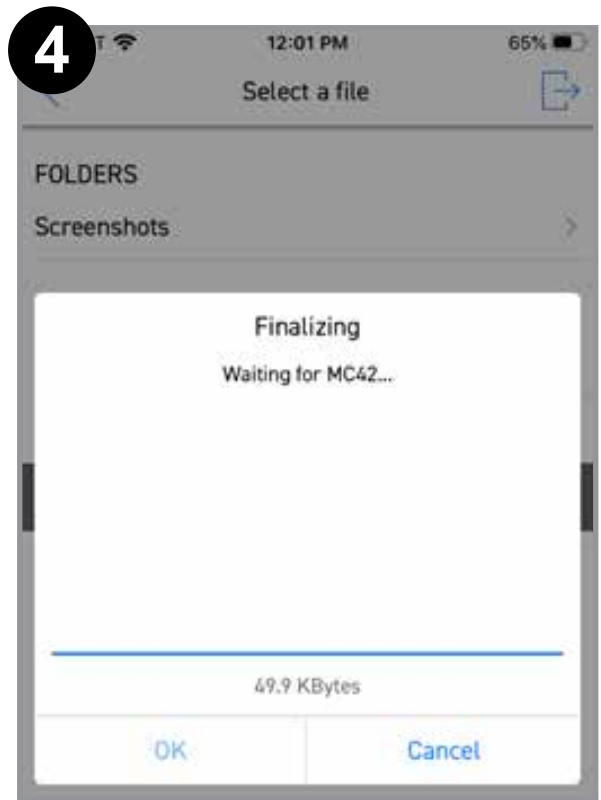
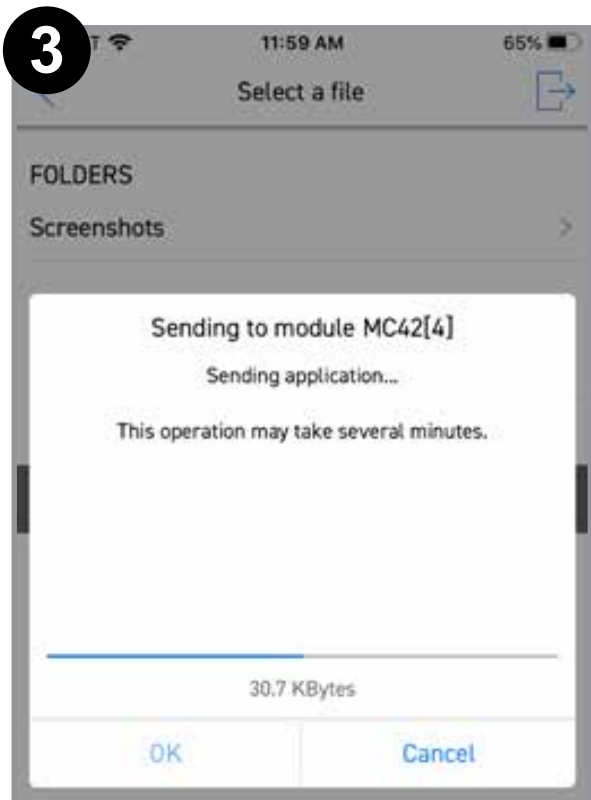
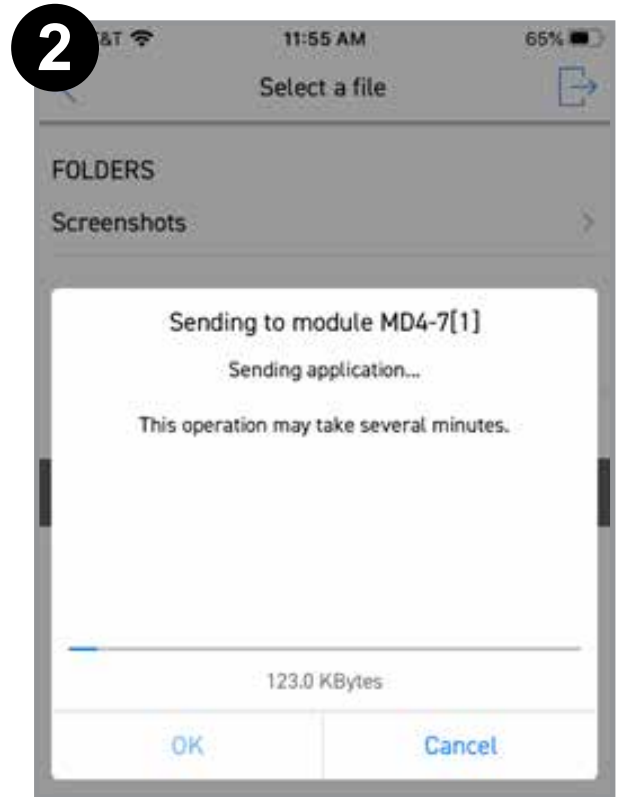
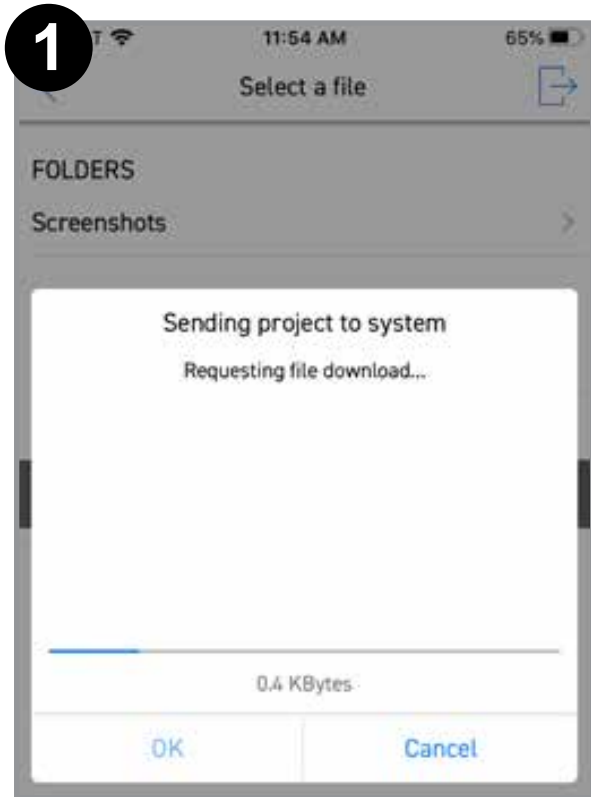


20. Tap “Yes” when presented with prompt shown above.

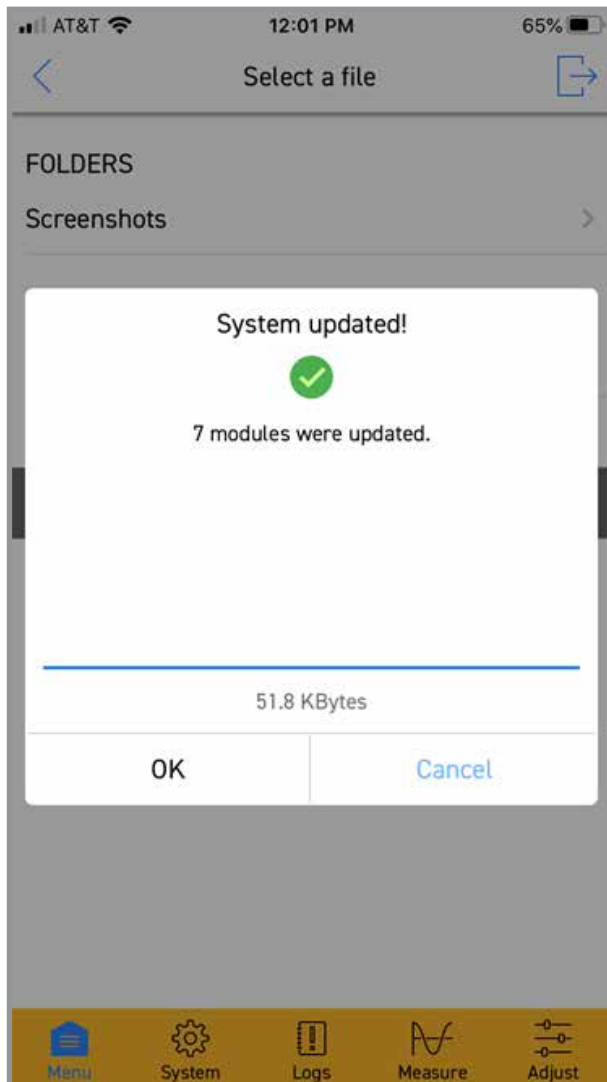


21. Tap “OK” when presented with the prompt shown above.

**NOTE: It is recommended to update the machine with the tractor running, but with the hydraulics and PTO off.**



22. Each module will be updated one at a time with a progress bar. DO NOT EXIT THE APP while updating, the update will need to be restarted if app is exited.



23. Tap "OK" when presented with the prompt shown below. Number of modules may differ, between 3 and 7 depending on planter model.

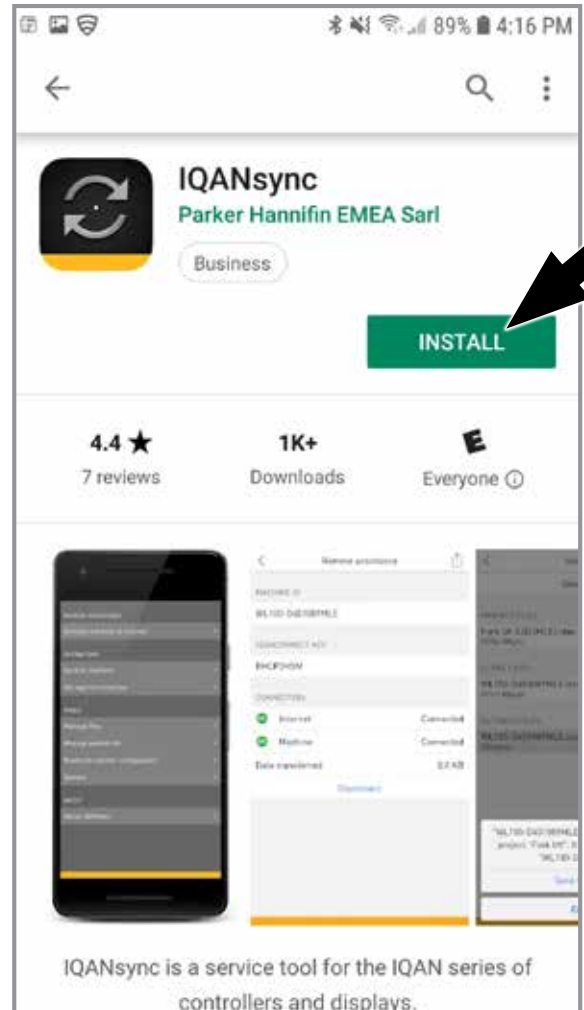
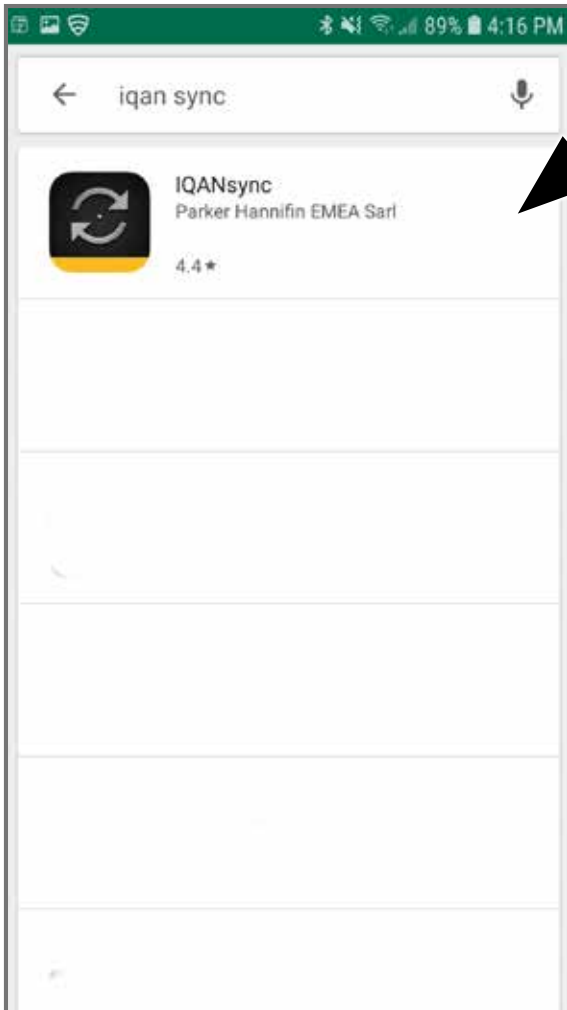
24. Cycle power on true depth display. Update complete.

**This page left blank intentionally.**

**Update the True Depth Software (Android)**

See [\(page 88\)](#) for Apple/iOS

A. Download the IQANsync application to your Android tablet or smart phone.

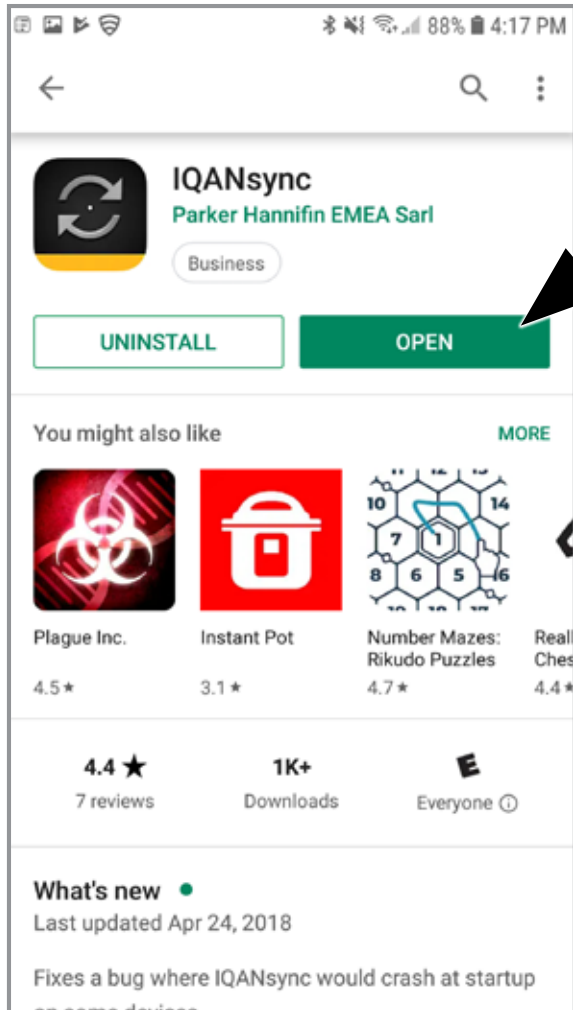


1. Go to Play Store on an Android phone and search for "iqan sync". Tap "IQANsync".

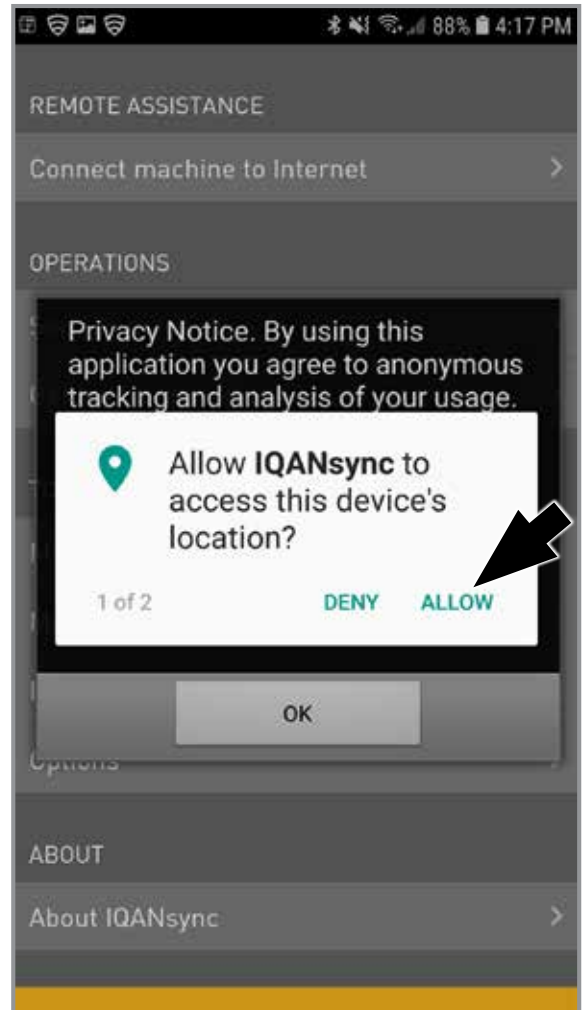
2. Tap "Install".



### Update the True Depth Software (Android)



3. Tap "Open".



4. Tap "Allow" to allow IQANsync to access this device's location.

## Update the True Depth Software (Android)

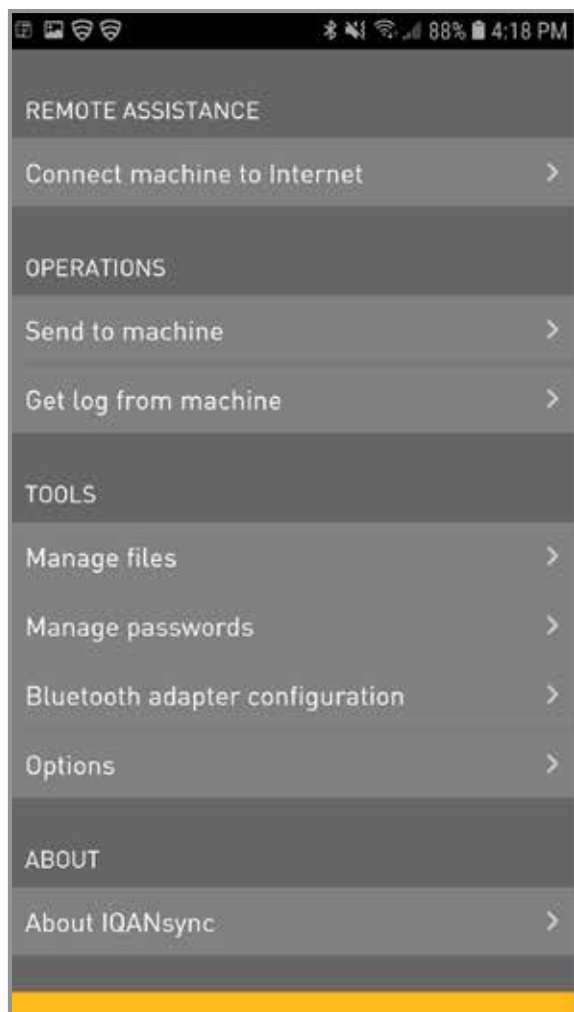


5. Tap "Allow" to allow IQANsync to access photos, media, and files on this device.



6. Tap "OK" to accept the privacy notice.

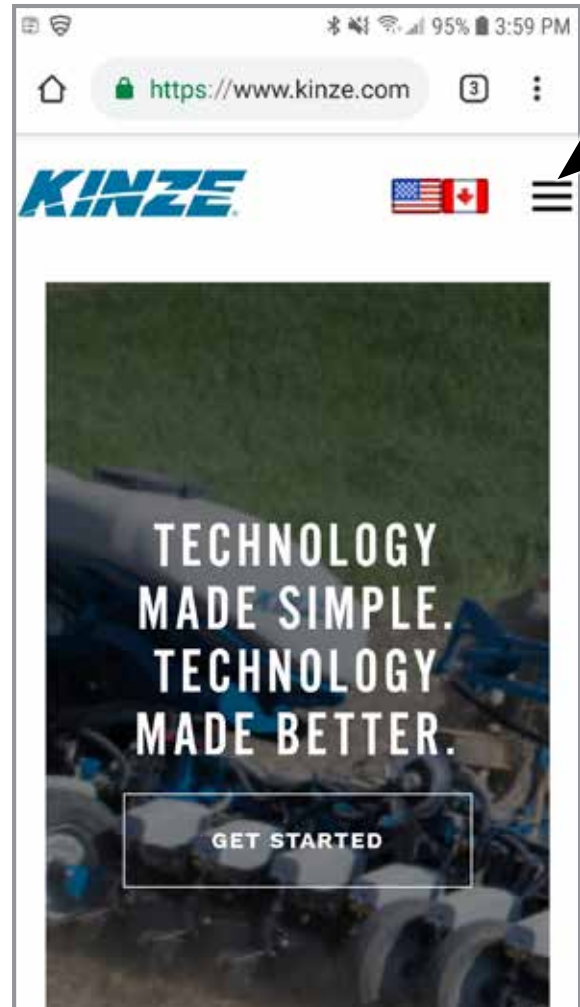
## Update the True Depth Software (Android)



The IQAN app installation is now complete.

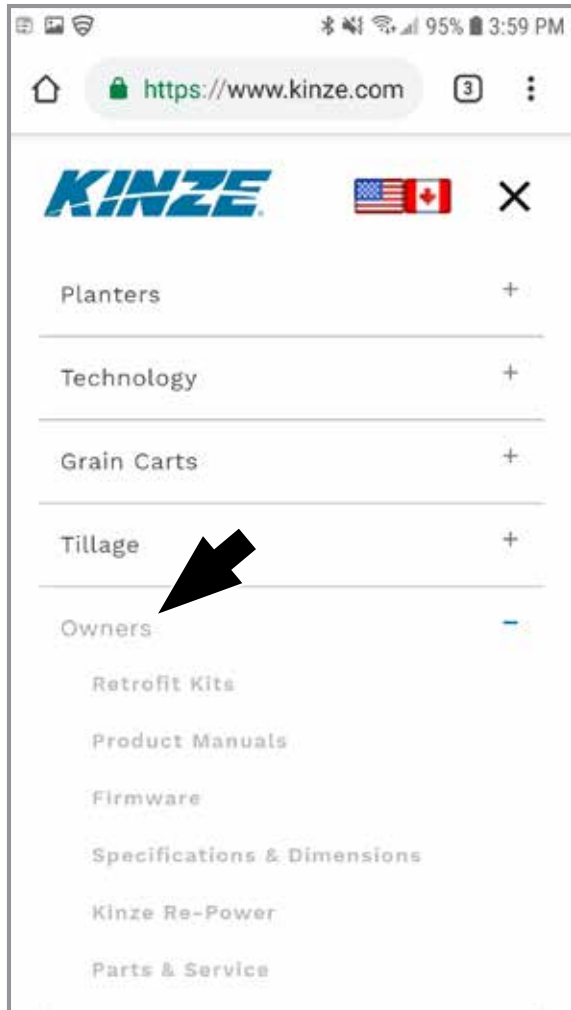
## Update the True Depth Software (Android)

B. Download the appropriate True Depth firmware to the IQANsync application.

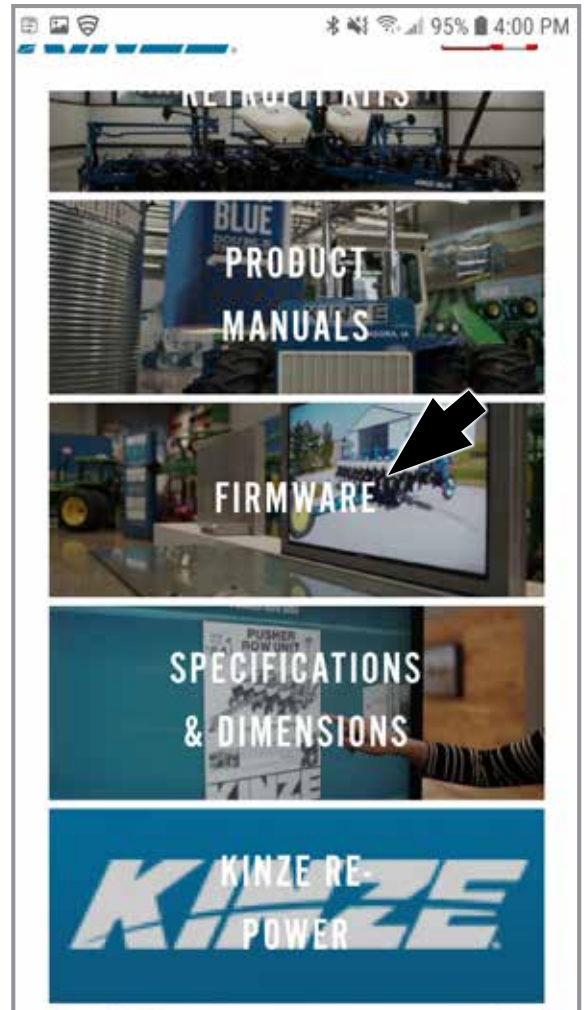


1. Open a web browser application and browse to [www.kinze.com](https://www.kinze.com). Then tap the menu icon at the top right.

Update the True Depth Software (Android)

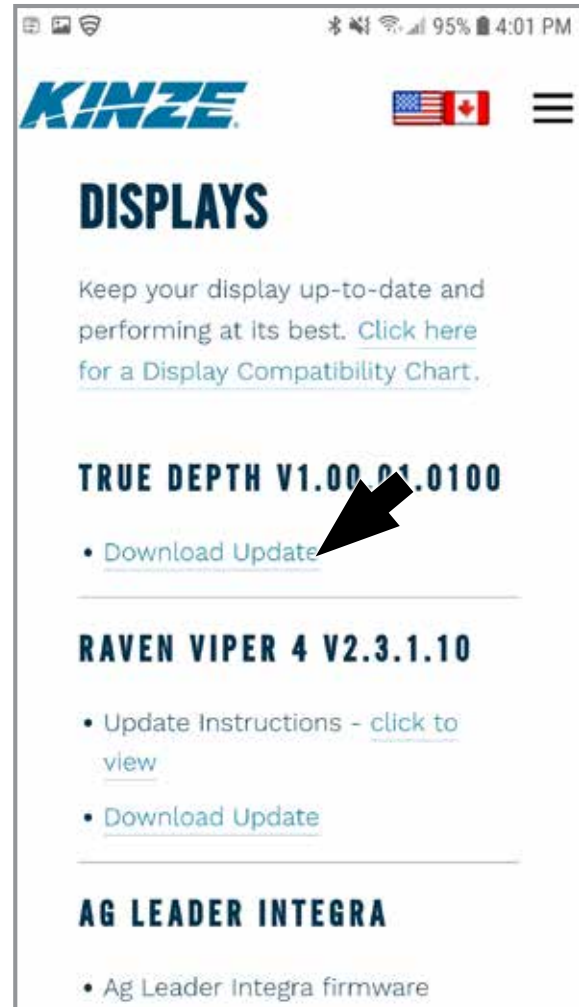
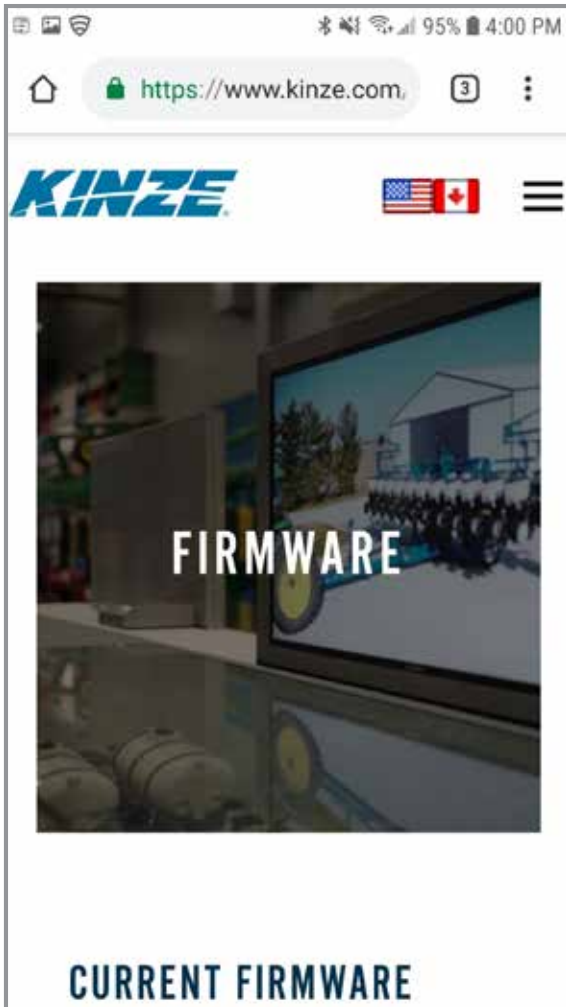


2. Tap "Owners".



3. Scroll down and tap "Firmware".

## Update the True Depth Software (Android)

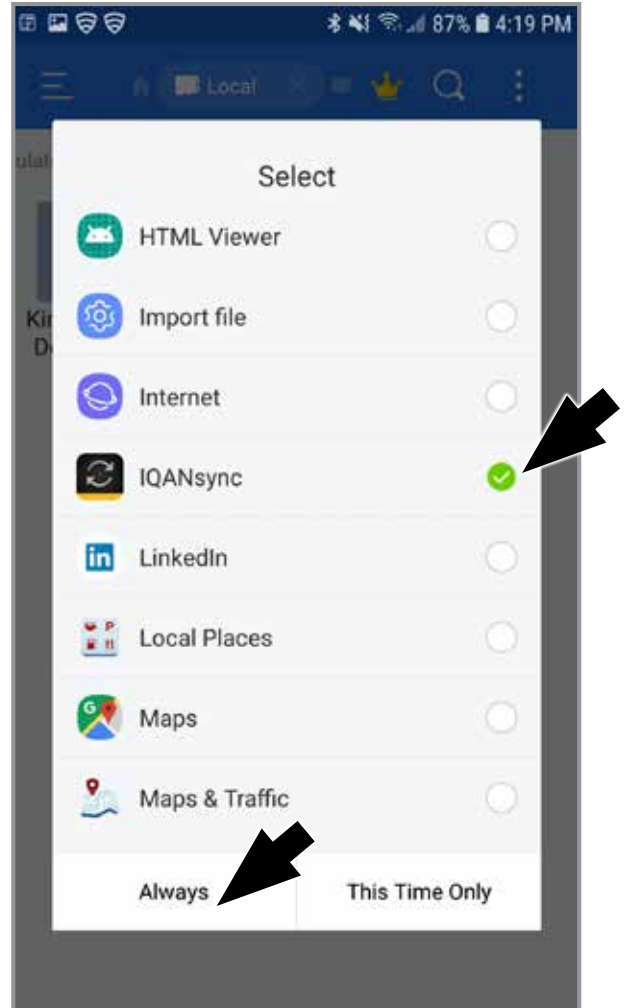


4. From the firmware screen, scroll down to "True Depth..."

5. Tap "Download Update" for True Depth.

### Update the True Depth Software (Android)

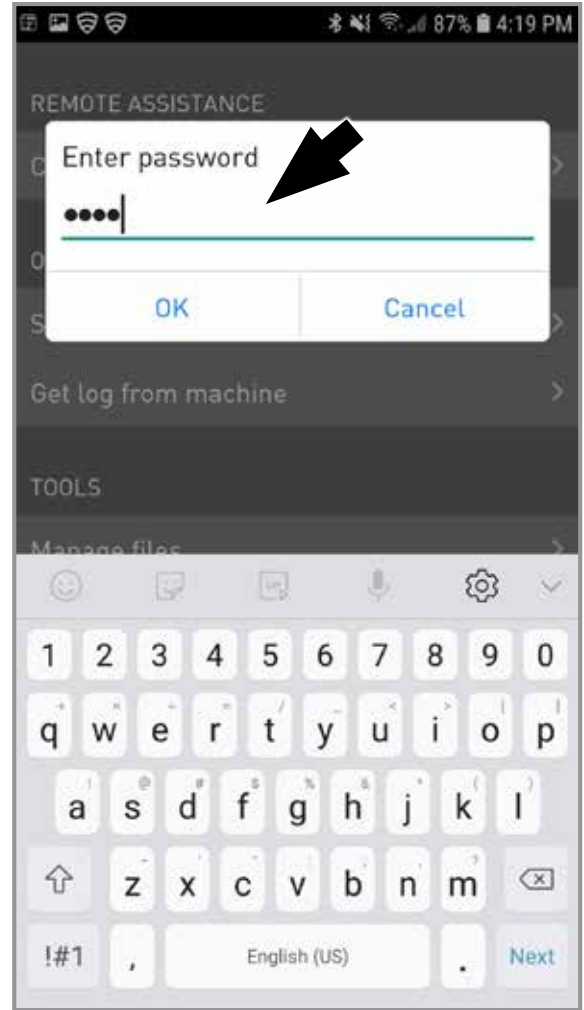
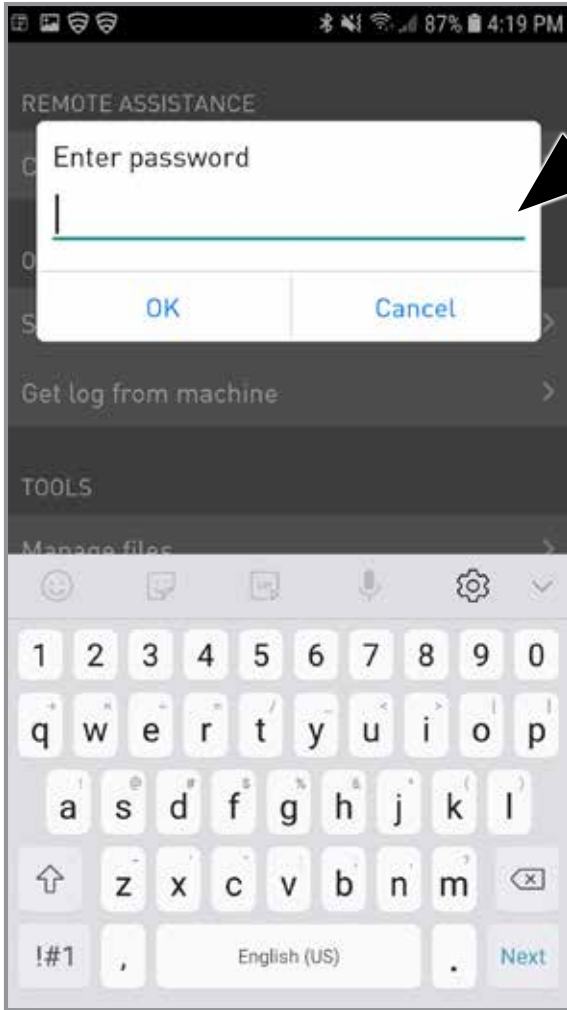
C. Load the True Depth firmware to IQANsync on an Android tablet or smart phone.



1. Locate the downloaded file on tablet or smart phone. Double tap the downloaded True Depth file.

2. Tap "IQANsync" and then tap "Always".

Update the True Depth Software (Android)

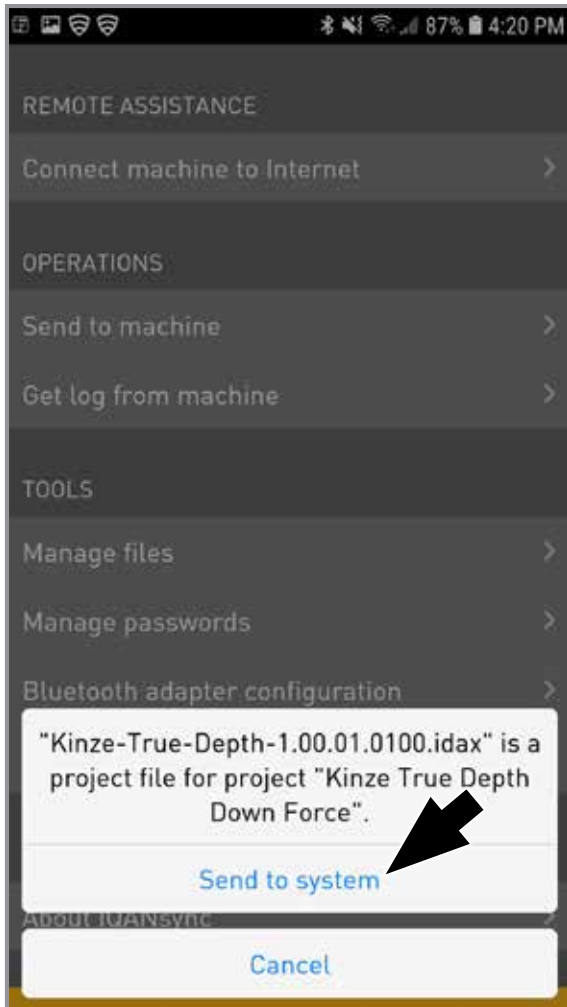


3. IQAN sync will open the password screen.

4. Enter password: 5012. Then tap OK

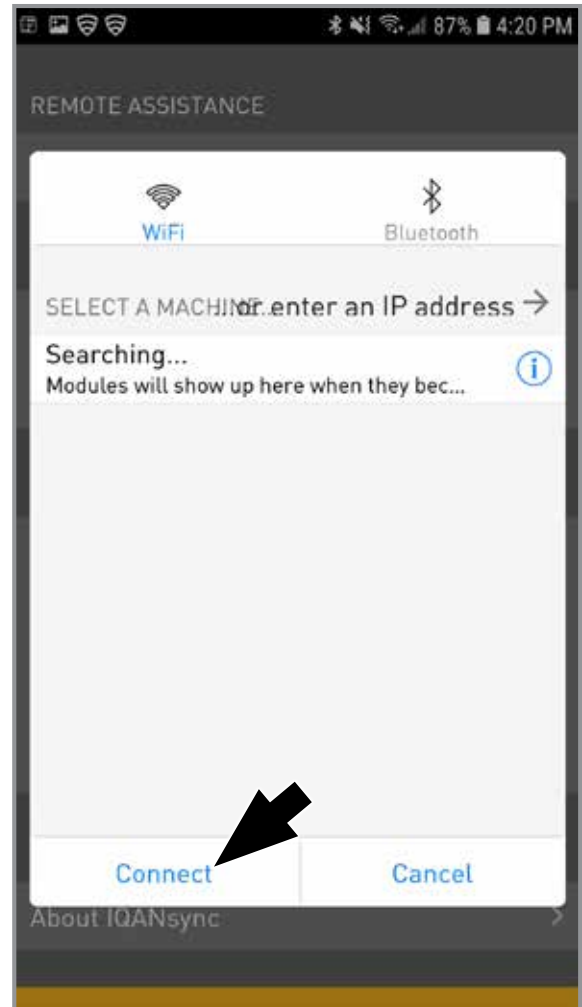


## Update the True Depth Software (Android)



**Note:** Key must remain on during this step.

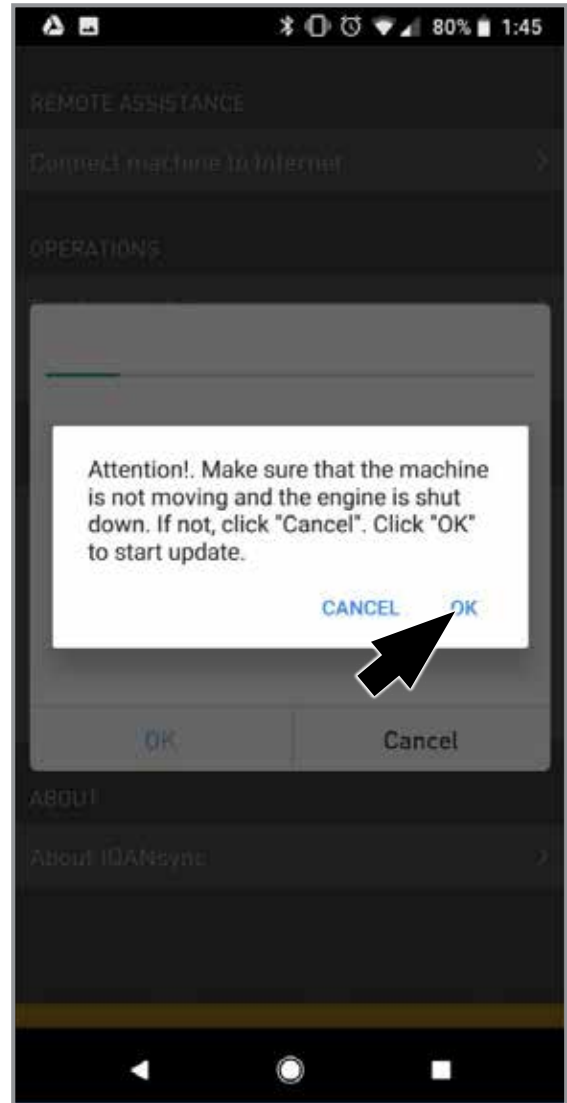
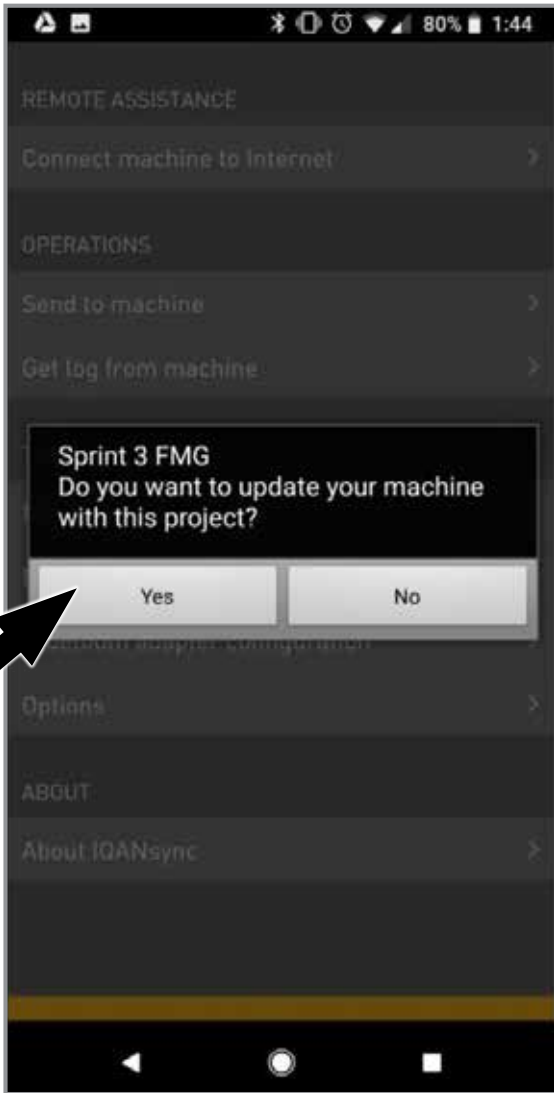
5. Ensure you are near the True Depth display and it is powered on. Tap "Send to system".



**Note:** Key must remain on during this step.

6. Select the system and tap "Connect".

Update the True Depth Software (Android)



7. The app will ask for confirmation that you want to update. Tap "Yes".

8. Tap "OK".

## Update the True Depth Software (Android)



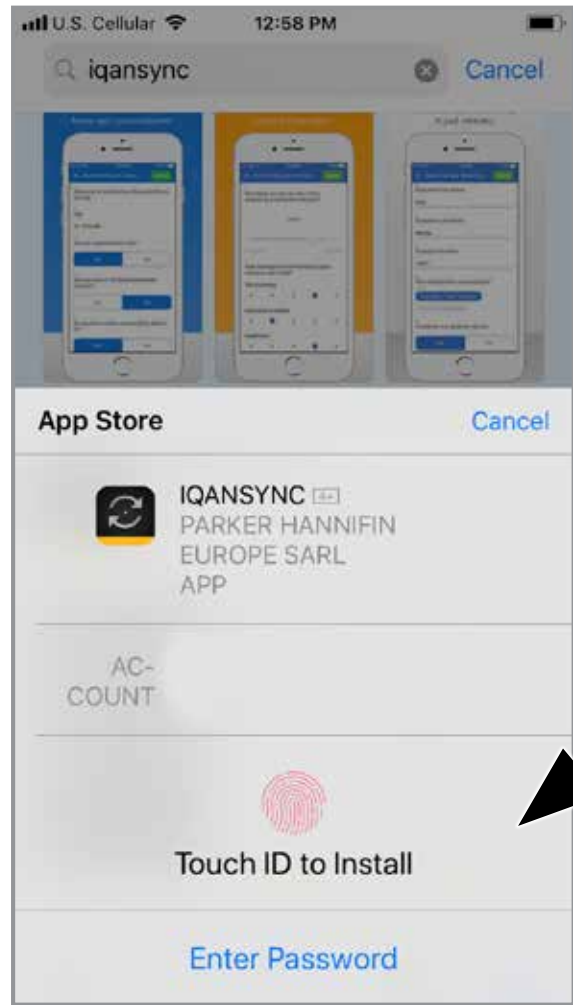
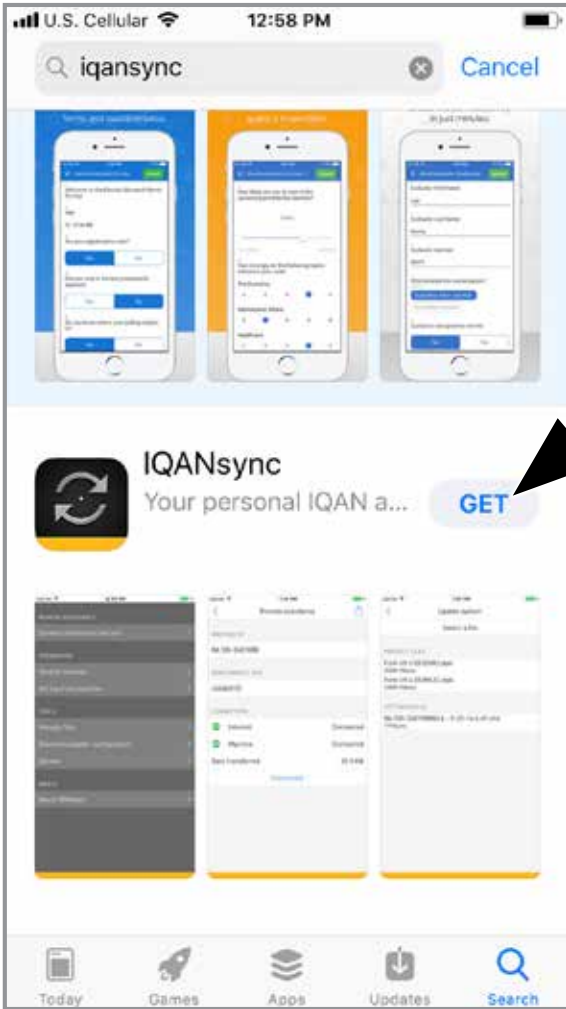
9. DO NOT close your phone screen while the software is updating. DO NOT close the IQANsync app until the monitor has completely updated. The True Depth monitor will flash several times and will show a blue screen detailing update progress. There is a known bug where your phone will disconnect from the monitor's Bluetooth during the update. If this happens, you will have to repeat steps 6-11 until the monitor has successfully updated.

10. Cycle power to system.

The IQAN setup is now complete. Refer to ["Update the True Depth Display" on page 98.](#)

### Update the True Depth Software (Apple - iOS)

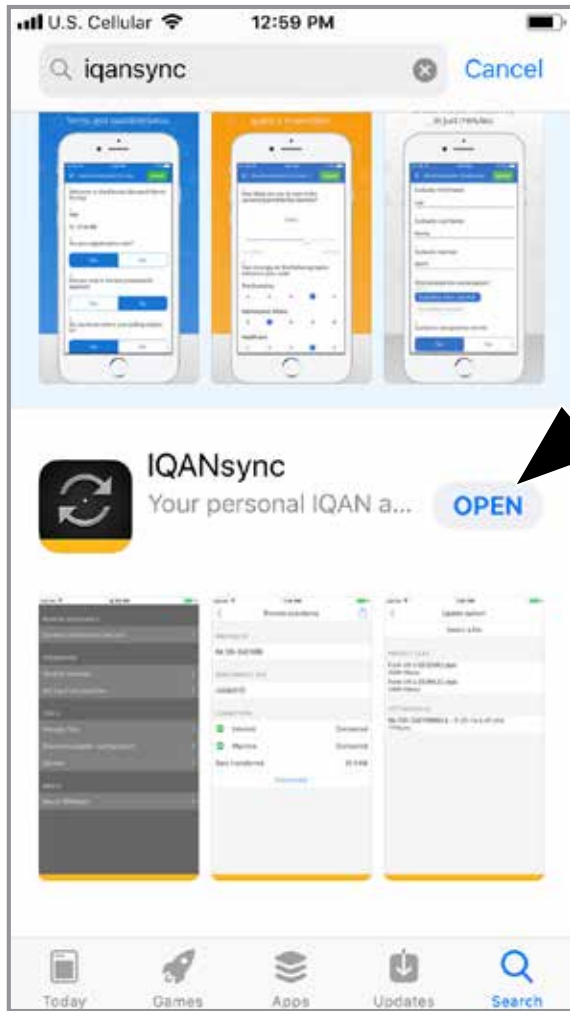
A. Download the IQANsync Application to an iOS tablet or smart phone.



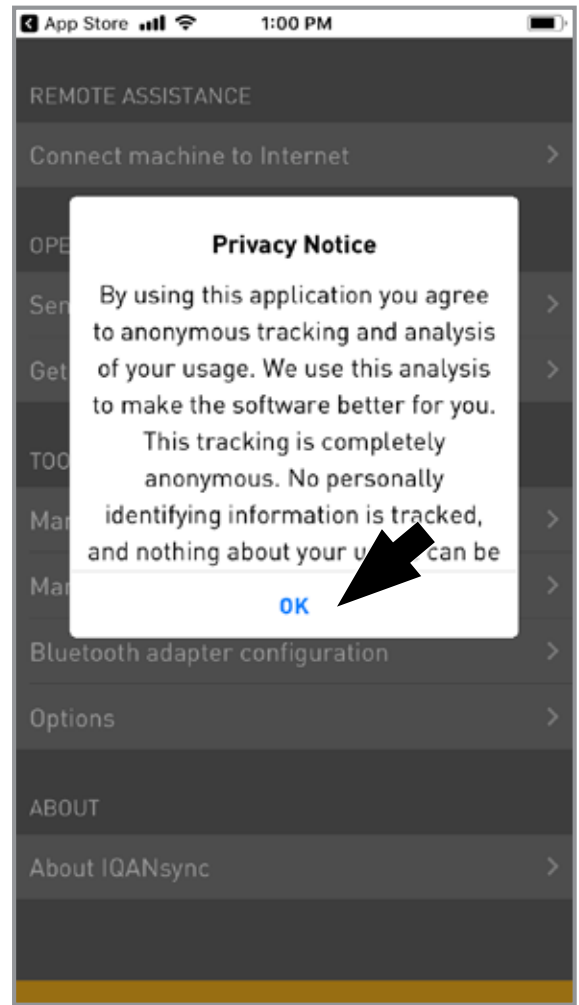
1. Go to App Store on an iOS phone and search for "iqan sync". Tap "IQANsync". Tap "GET".

2. Use Touch ID or Password to enter your App Store Account.

Update the True Depth Software (Apple - iOS)



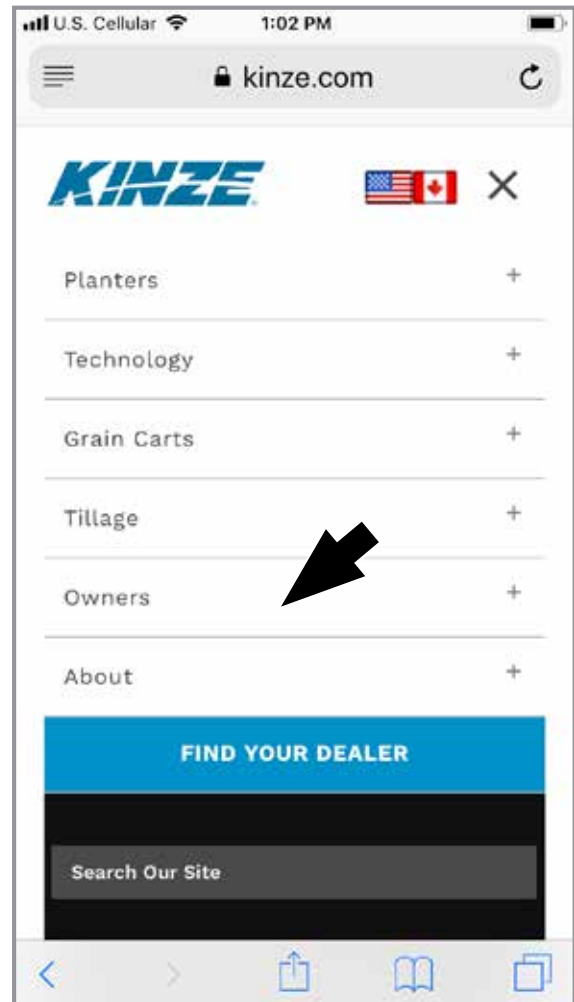
3. Tap "OPEN" to open IQANsync.



4. Tap "OK" to accept the privacy notice.

## Update the True Depth Software (Apple - iOS)

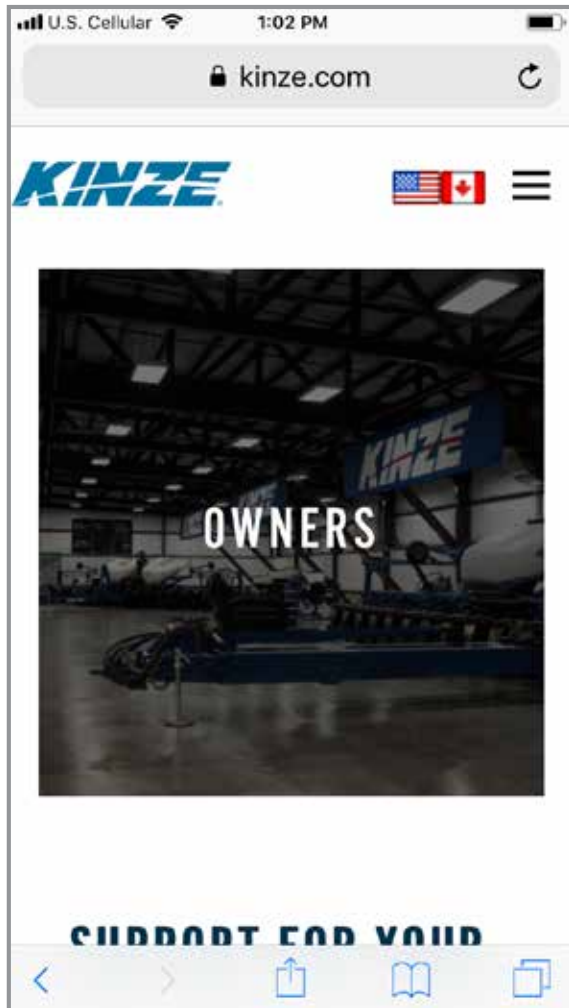
B. Download the appropriate True Depth firmware to the IQANsync application.



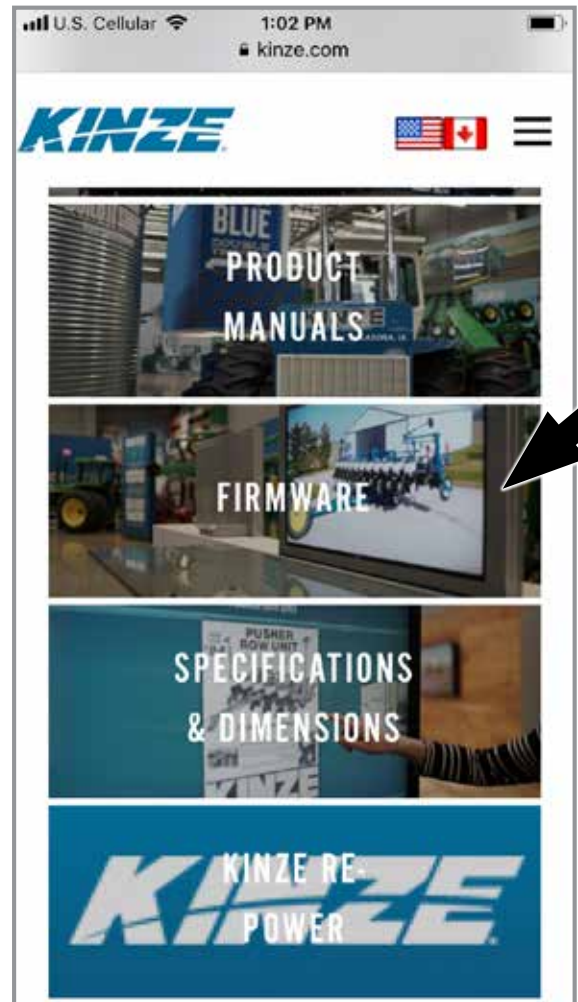
1. Open a web browser application and browse to [www.kinze.com](http://www.kinze.com). Then tap the menu icon at the top right.

2. Tap "Owners".

Update the True Depth Software (Apple - iOS)

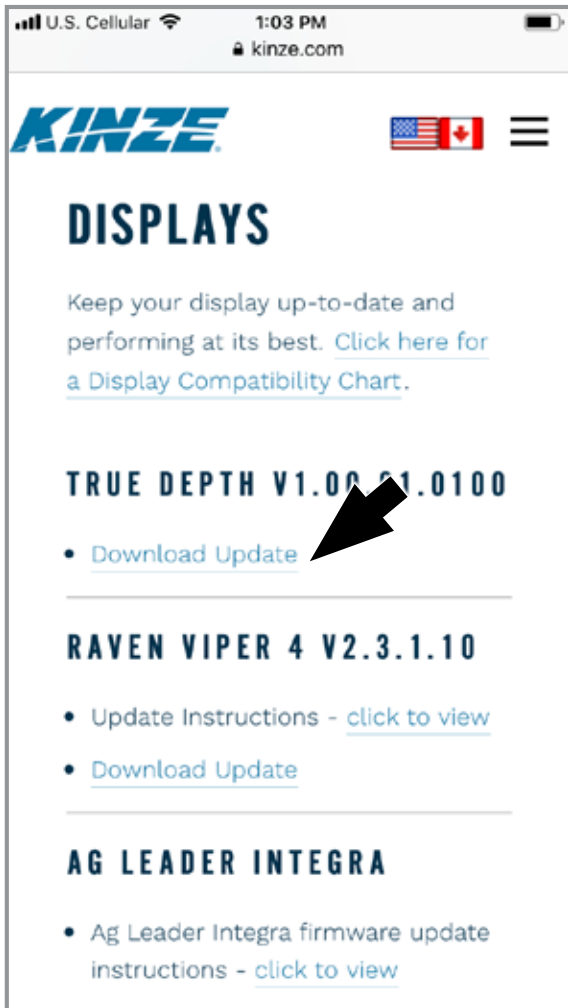


3. Scroll down on the "OWNERS" page.



4. Tap "Firmware".

Update the True Depth Software (Apple - iOS)

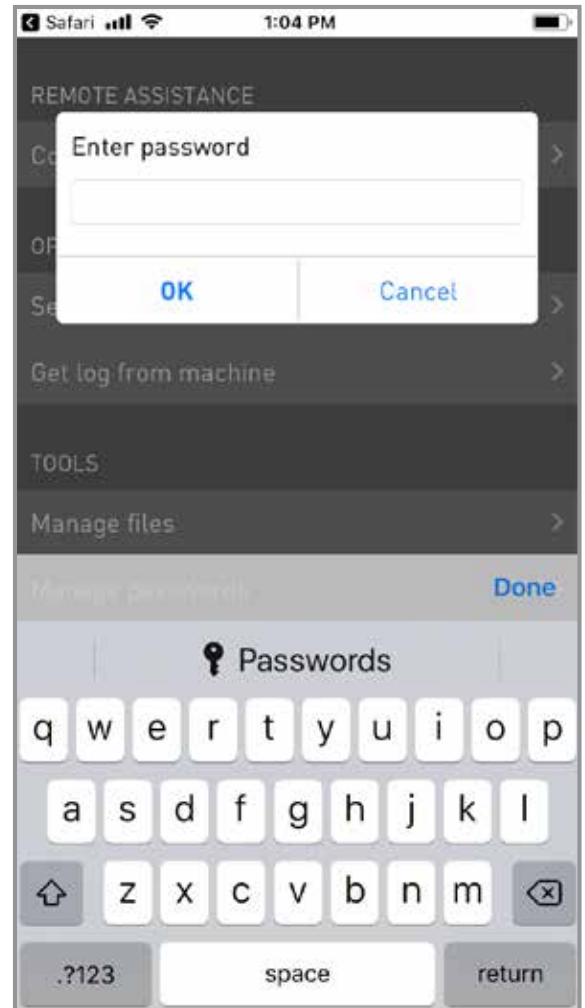
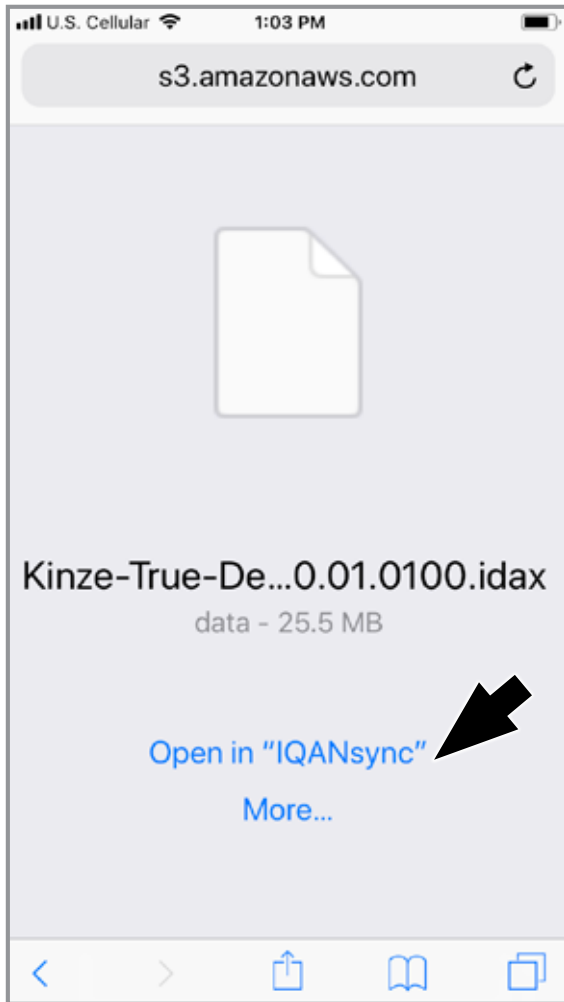


5. Tap "Download Update" for True Depth.



### Update the True Depth Software (Apple - iOS)

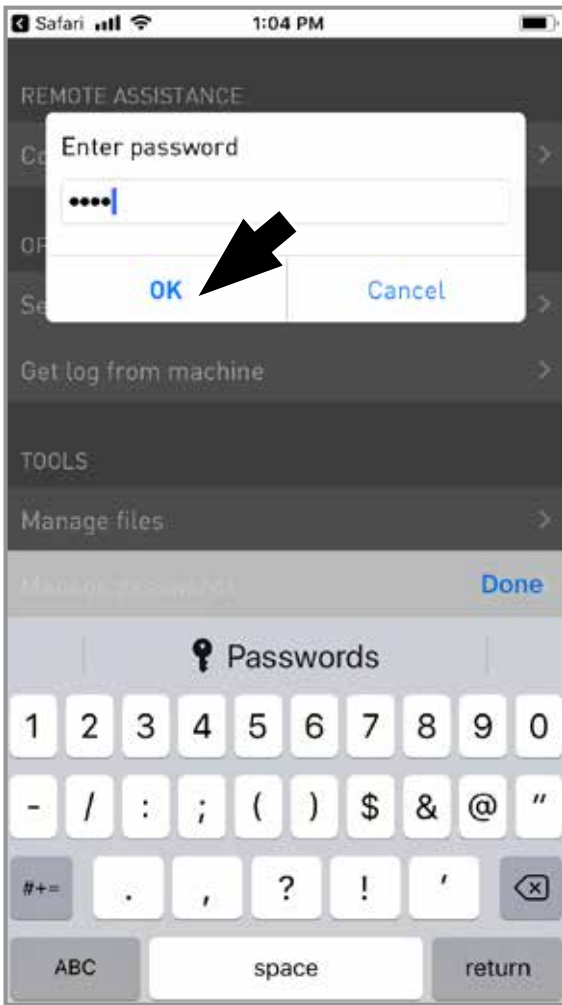
C. Load the True Depth firmware to IQANsync on an Apple/iOS tablet or smart phone.



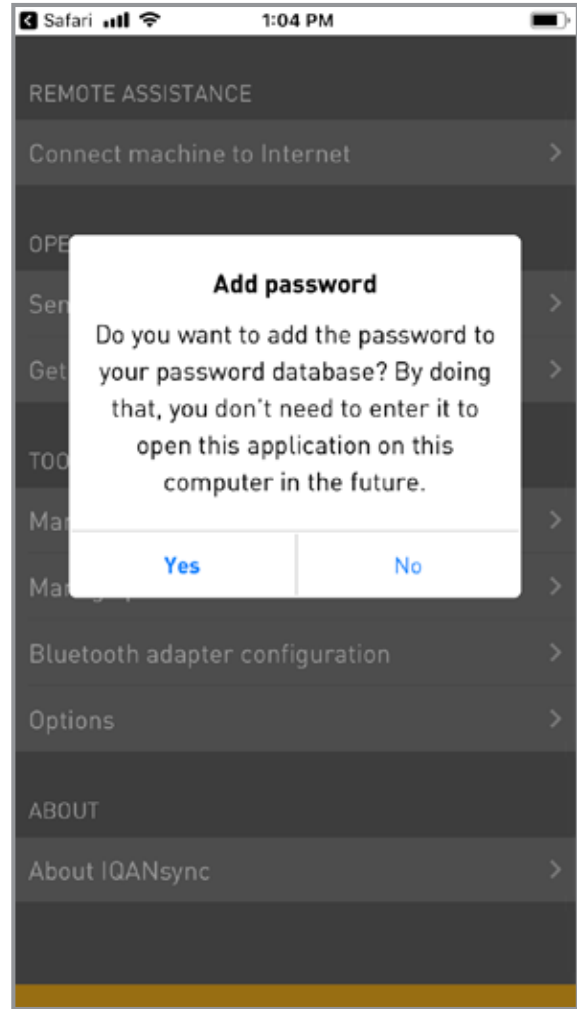
1. Once the download is complete, Tap "Open in "IQANsync" ".

2. IQAN sync will open the password screen.

Update the True Depth Software (Apple - iOS)

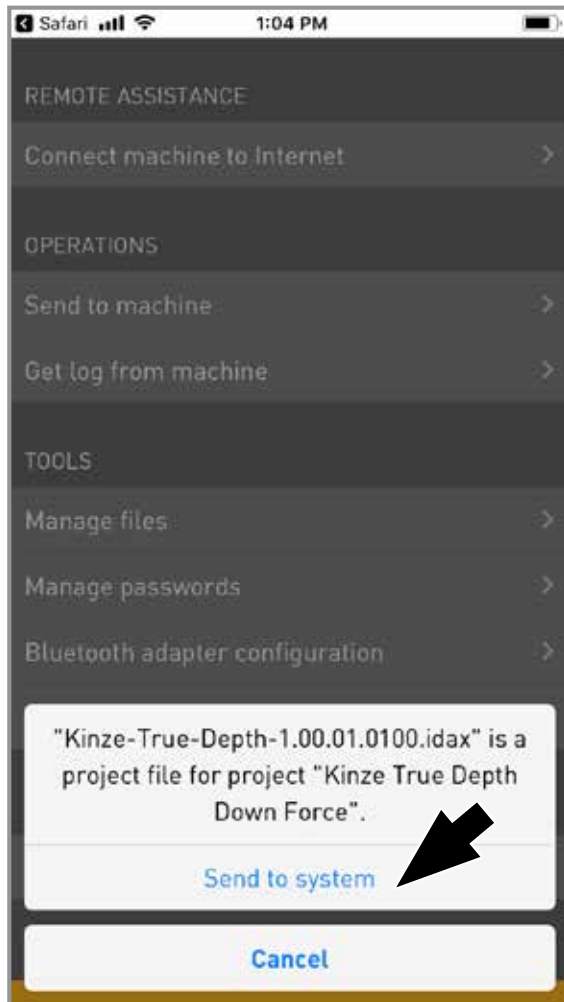


3. Enter password: 5012. Then tap OK.



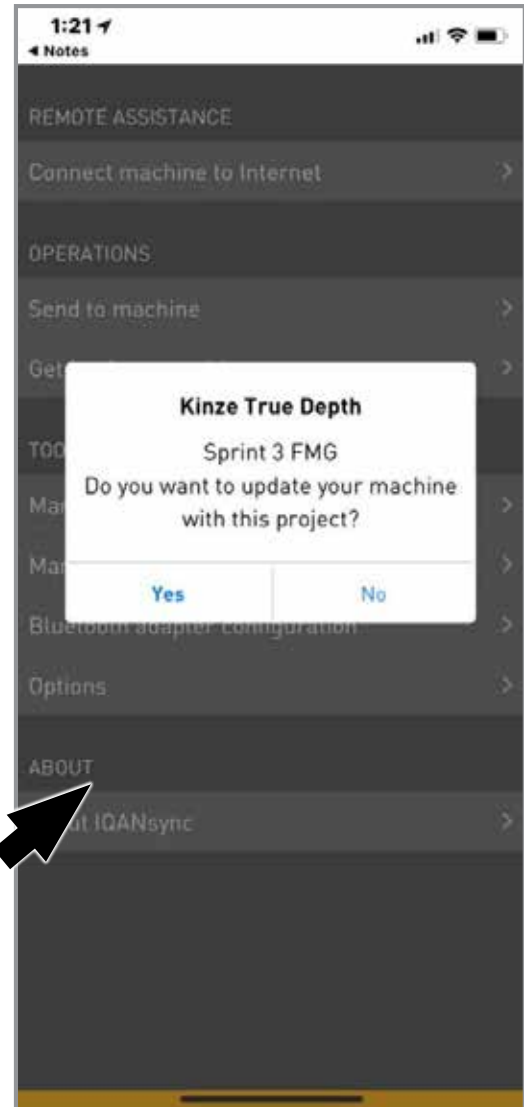
4. Select your preference for password display.

## Update the True Depth Software (Apple - iOS)



**Note: Key must remain on during this step.**

5. Ensure you are near the True Depth display and it is powered on. Tap "Send to system".

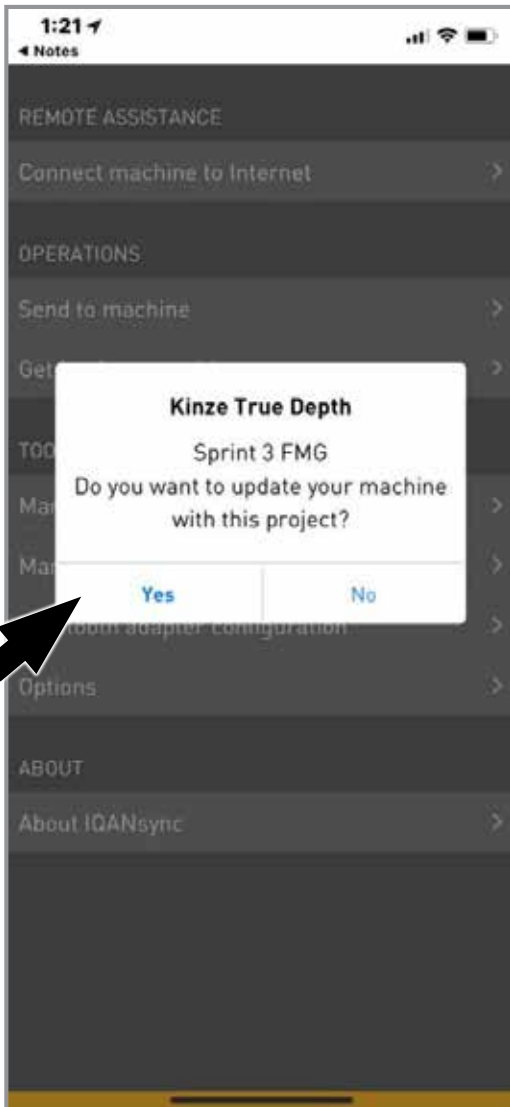


**Note: Key must remain on during this step.**

6. The app asks "Do you want to update your machine with this project?"

Tap "Yes" to update.

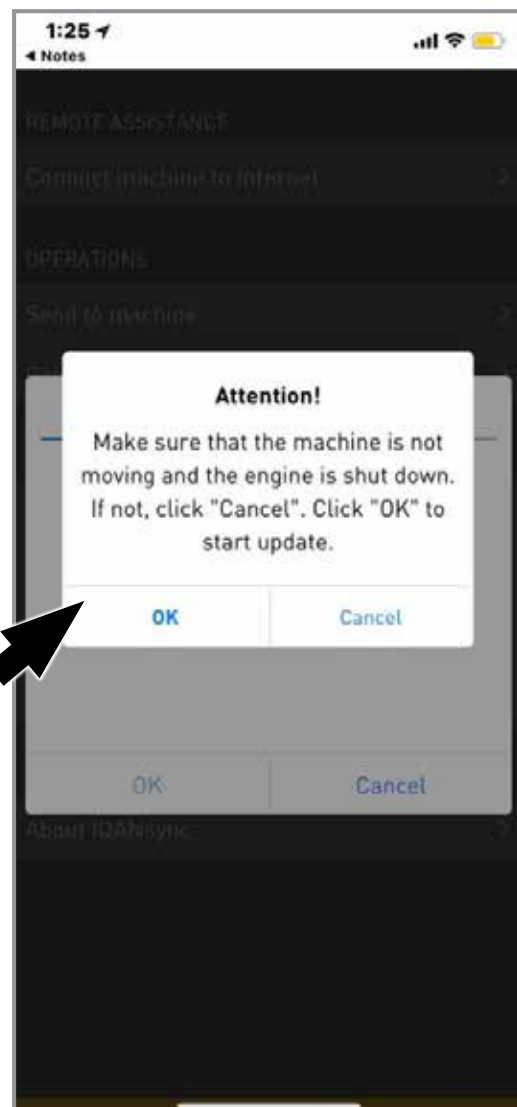
## Update the True Depth Software (Apple - iOS)



**Note:** Key must remain on during this step.

- The app asks “Do you want to update your machine with this project?”

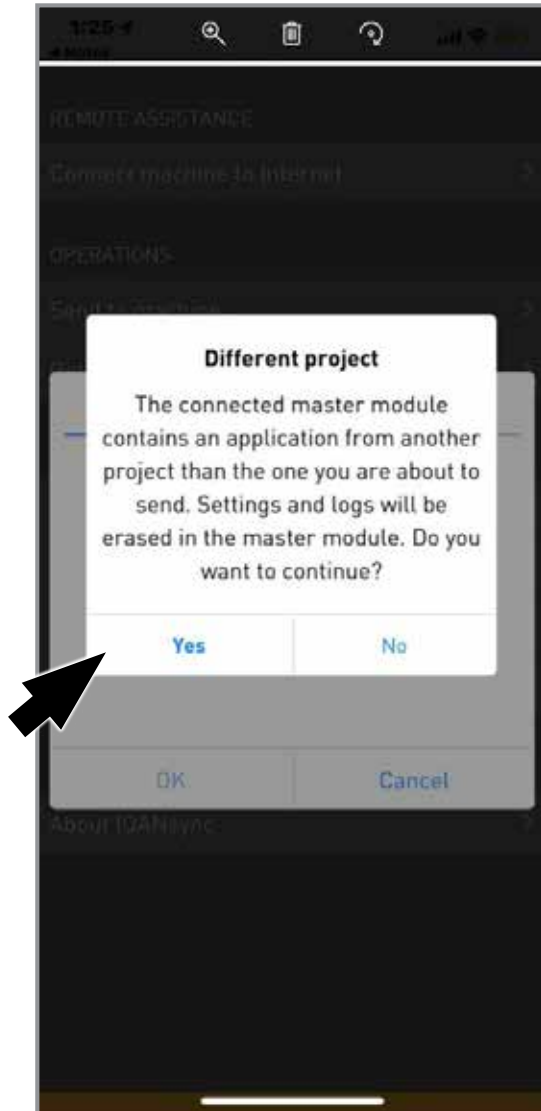
Tap “Yes” to update.



**Note:** Key must remain on during this step.

- If “Yes”, it will warn you to make sure you are not moving and engine is shut down, but key must be turned on such that power is supplied to the system throughout the update process.

If all above is correct, tap “OK”.



Warnings:

8. By tapping “Yes”, you are authorizing the system to update to the next version of software. By tapping “No”, the system will not be updated.

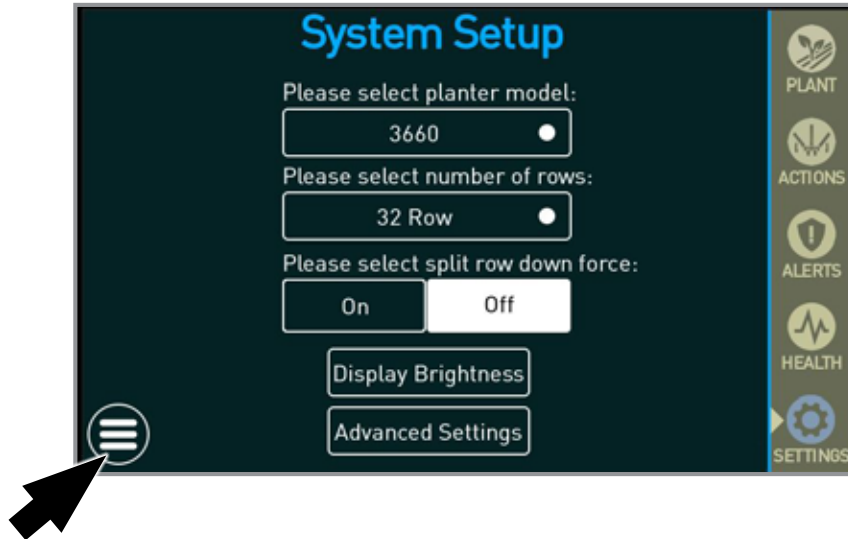
## Update the True Depth Display

9. The Kinze True Depth Screen will turn blue.

The application tells you the progress of the update.

**DO NOT turn off tractor key or close the application.**

The operation may take several minutes.



10. The Kinze True Depth Screen will go back to the Start-up Screen.

11. Tap "OK" on the Apple iOS device.

12. Cycle power to the system.