SEED HAWK ®

R A V E N On Board

Quick Reference Guide

Seed Hawk®
Viper Pro™ Software Version 3.10

Viper Pro Do's and Don'ts

Do have the Viper Pro serial number and firmware revision available when calling for technical assistance. It is best if the user is in the machine and in front of the Viper Pro when calling for tech support.

Do review the manual in its entirety before operating Viper Pro.

Do power the DGPS receiver and the CANbus system before powering Viper Pro.

Don't jump start or weld on any part of the vehicle with the field computer connected. To prevent damage to the field computer, disconnect the main and auxiliary cable connectors on the back of the field computer.

Don't turn Viper Pro off when in a job without properly closing the job first. If the field computer loses power when in a job, part of the information within the job files will not be saved and the associated files may become corrupt.

Don't use sharp objects or harsh chemicals on the field computer touch screen as they may damage the display.

Don't use the USB ports to charge mobile devices such as phones, tablets, or mp3 players.

Basic Startup

1. Touch the power button to turn on the Viper Pro field computer.
2. Allow the Viper Pro field computer to power up.
3. If the Program Selection Menu displays, touch the **Seed Hawk** option to begin the Viper Pro application on the field computer.

Note: Refer to the *Seed Hawk Viper Pro Installation and Operation Manual* for information about the other options available in the Program Selection Menu.

4. Verify that the appropriate CANbus nodes or control channels are displayed on the CAN Initialization Results screen and touch the **Start Viper** button to launch the Viper Pro precision application management system.

   If nodes or control channels do not display correctly when the Viper Pro is powered on, touch the **Retry CAN Init** button. If you still have CAN issues, see the *Viper Pro Installation and Operation Manual* for more information.
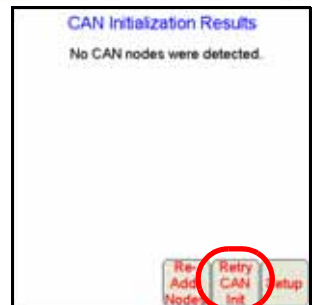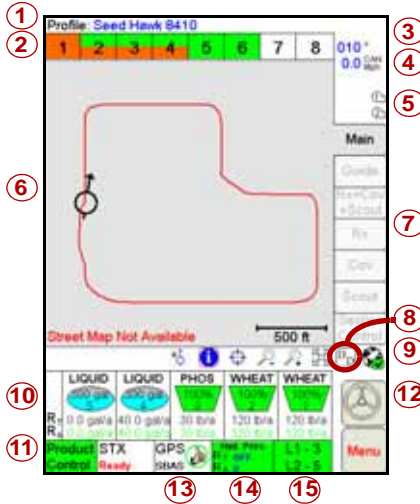
Backlight Adjustment

1. Touch **Menu**, **About**, **Adjust Brightness**.
2. Touch the display mode button to toggle the day or night modes for the Viper Pro display.
3. Touch ⬆ to increase screen intensity or touch ⬇ to decrease screen intensity.
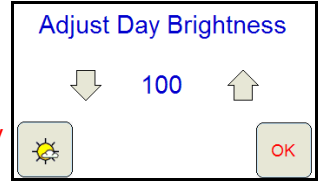
Main Screen Areas

See the screen below and the corresponding numbered sections for a description of each screen area.

1. **Profile** - The machine profile contains configuration settings for specific vehicles, when created by the user.

2. **Section Status Area** - In an SCT system, the section status area displays the current status of the meter gates and openers for each section of the Seed Hawk system.

The section status indicator displays:

- Green when the section is on.
- White when the section is off.
- Red when the section has been toggled off by the SCT system.

Touch the section status area to configure the SCT system and the Seed Hawk switch box. Refer to the *Seed Hawk Viper Pro Installation & Operation Manual* for more information on the section status display.

3. **Current Heading** - The current heading of the vehicle in compass degrees.

4. **Speed** - The current speed of the vehicle (CAN or GPS).

5. **Fan Speed** - The current speed of the air cart fan(s).

6. **Map Area** - The map area displays information based on the selected tab. Touch the tabs along the right side of the Viper Pro display to view application information, maps, or guidance information.

7. **Tabs** - Used to access available features, functions and screen displays during a job. The Main tab is available only if a job is not in progress.

8. **Display Data and Alarm Information** - Touch the Display Data icon to view the status of CAN Tally Registers. Touch the 'DD' icon again to hide the data.

   If an active alarm condition is detected, the 'DD' icon will be replaced with a red alarm icon. Touch this icon to display alarm information. Information for new alarms will be displayed automatically.

Note: Refer to the *Seed Hawk Calibration and Operation Manual* for additional alarm display information.

9. **Wireless Status** - If an optional Slingshot Field Hub™ is connected with the Viper Pro field computer, the status of wireless communications is accessible by touching the wireless communication status indicator.

10. **Application Rates** - The current Target Rate (R_T) and Actual Rate (R_A), as well as the remaining bin or tank levels are displayed in the application area. Touch within this area to set or change rates or setup the Seed Hawk switch box.

11. **Product Control Status** - Product Control Status of the CAN system displays in this area. Touch this area to view or modify Product Control settings.

12. **SmarTrax Status Display** - If an optional SmarTrax system is installed with the Viper Pro system, this area displays the status of SmarTrax system.

13. **GPS Status Indicator** - Status of DGPS messages and the current source of GPS corrections are displayed in this area. Touch this area for additional GPS information.

14. **Packing Pressure Status** - If equipped to monitor or control packing pressure, the current pressure will displayed in this area. Touch the packing pressure area to access the drill node setup screen and configure the packing pressure system.

15. **Seed Blockage Sensor** - This area displays the status of the optional seed blockage sensor system if applicable.

Map Tools

| Map Symbols	Description
	When the **Cursor Lock icon** is active, Viper will automatically pan the display to keep the vehicle indicator on screen. Select this mode when running a job.
	The **Information icon** is available on the Main tab when a job is not in progress, or on the Scout tab during an active job. Select this icon and touch the map area to view map information.
	The **Prescription icon** is only available on the Rx tab (if a prescription map had been previously loaded) or the Cov tab.
	The **Pan icon** is used to manually pan the map information up/down or left/right.
	Touch the **Zoom Out icon** and then select the map area to view a larger area on the map.
	Touch the **Zoom In icon** and then select the map area to view a more detailed area on the map.
	The **Zoom Extents icon** allows you to quickly bring all map information back onto the display.

Status Symbols

Status Symbols	Description
	Thumbs Up: System is normal and all operating conditions are met.
	Caution: There is a system alert. It is recommended to investigate the cause of the condition and correct it.
	Red 'X': The system has encountered a critical error and requires immediate attention. The condition must be corrected before proceeding with application.

CAN Controller Status Screen

See the screen below and the corresponding sections for a description of the CAN Controller Status screen.

1. **Section Cals Area** - Current sections that have been configured. Touch in this area to access the Section Setup screen and assign sections to products.

2. **Fan Speed** - Touch this area to set the air cart fan hi and low speed limits and turn fan alarm on or off.

3. **Miscellaneous Area** - Various system settings and actual system readouts. Touch in this area to change the displayed settings.

4. **Feature Settings Area** - The upper portion of the Feature Settings area displays the selected product node or control channel. Touch the indicators to display the current settings for each node.
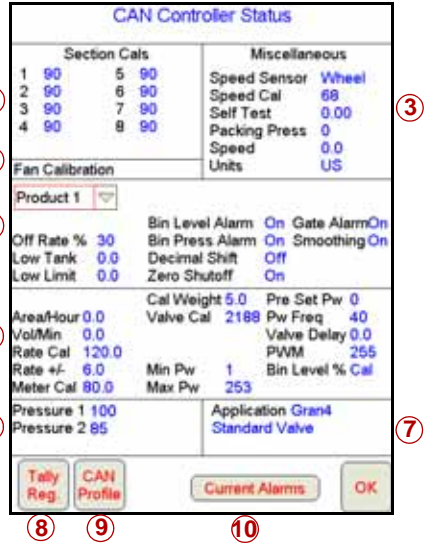
The lower portion of the Feature Settings area displays the current alarm and feature setting selections. Touch in this area to access the feature and alarm settings.

5. **Product Control Settings Area** - Displays the current product control settings for the selected product node or control channel. Touch in this area to configure product control for the selected node or channel.

6. **Pressure Area** - Dual pressure readouts for two different systems. Touch in this area to calibrate pressure readouts.

7. **Application Area** - Valve and application types used to apply the product. Touch in this area to select a different valve type and/or application type.

8. **Tally Registers** - Touch this button to access the tally registers. Also displays the distance traveled by the vehicle. All values can be reset to zero, when not in a job.

9. **CAN Profile** - Touch this area to set up profiles for different products.

10. **Current Alarms** - Touch this button to view any current system alarms.

SCT and Switch Box Setup

1. Touch the **Section Status Area**.
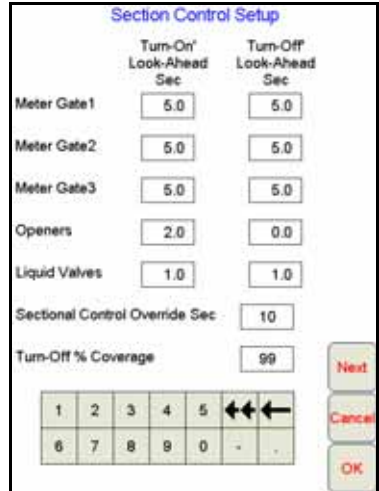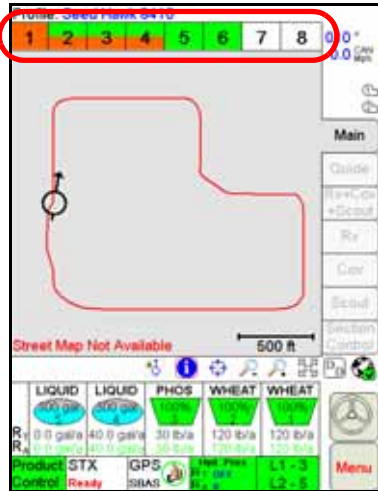
2. Select in the **Look-Ahead**, **Override Sec**, or **Turn-Off % Coverage** fields to modify and use the on-screen keypad to enter the desired value.

3. Touch the **OK** button to accept any changes and return to the main screen or the **Next** button to view the Switchbox Setup screen.

4. Before starting any job, be sure the switch box options are setup properly. Check the openers column to allow the Seed Hawk switch box to raise or lower the drill openers. Select the meter gates and liquid valves column to toggle products by section using the section switches. The vapor rows option should only be selected if an anhydrous ammonia product will be applied. Refer to the Seed Hawk Viper Pro Installation & Operation Manual for more information.

Using the Switch Box
(SCT Mode)

The Seed Hawk switch box may be used to manually control products and/or sections or to enable automatic product rate control or the Seed Hawk SCT system.

Section Switches - In an SCT system, the section switches set the control mode for drill sections. Toggle section switches to the OFF or ON position to manually control sections of the drill. Toggle the switch to the SCT position to allow the Seed Hawk Viper Pro and SCT system to automatically control assigned functions based on coverage or apply/no-apply maps.

Master - Toggle the master switch to control product application and drill sections. The master switch must be in the ON position to allow product application. Toggle the master switch to the OVERRIDE position to momentarily override the SCT system and turn sections on.

Packing Pressure - Use the packing pressure switch to increase or decrease the pressure on the packer gauge wheels.

SBR - Switch the seed between rows feature on or off.

RWS - Toggle the rear wheel steering feature on or off. Note: This feature is currently not available on the Seed Hawk Viper Pro system.

Product Switches - Toggle product control manually by placing the product switch in the ON or MAN position. To allow the Viper Pro to automatically adjust product rates, toggle the product switch to the AUTO position.

INC/DEC Switch - Use the INC/DEC switch to quickly adjust the application rate of enabled products (see the "Setting Application Rates" on page 8 to set and enable rate bump (+/-) values for specific products.

For products in manual (MAN) mode, hold the switch in the INC or DEC position to manually increase or decrease the actual application rate.

For products in automatic (AUTO) mode and rate bump enabled, hold the switch in the INC or DEC position to increase or decrease the target application rate by the rate bump value.

Wing Down - The wing down switch may be used to lower wing sections on 7 Plex toolbars. The wing down switch is only enabled when the master switch is in the off position. Hold the wing down switch to unfold the left and right wings.

Setting Application Rates

1. Touch the **Application Rates Area** at the bottom of the main screen.
2. Touch the displayed **Target Rate** value for the specific product node or control channel to set/change.
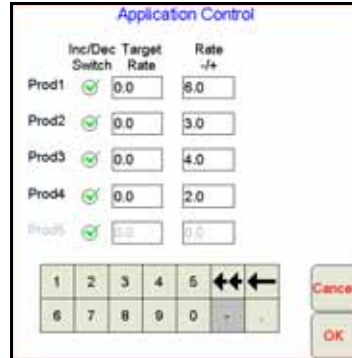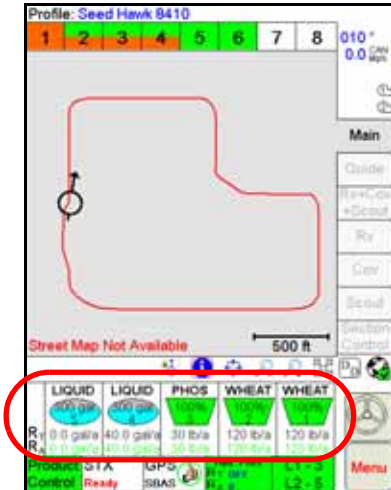

3. Use the on-screen keypad to enter the target rate for the selected node or channel.

Note: Changes made to the target rate or rate bump values will not take affect until the **OK** button is selected.

4. Touch the **Rate +/-** value for a product node or control channel and use the on-screen keypad to enter the rate bump value for the specific node or control channel.

5. Enable the **Inc/Dec Switch** option to allow the operator to use the INC/DEC switch on the Seed Hawk switch box to increase or decrease the target rate by the rate bump value entered for the product node or control channel.

Note: Operating the INC/DEC switch will increase or decrease all nodes or channels with the **Inc/Dec Switch** option selected at the same time.

6. Change other nodes as necessary or touch **OK** to save the displayed settings and return to the main screen.
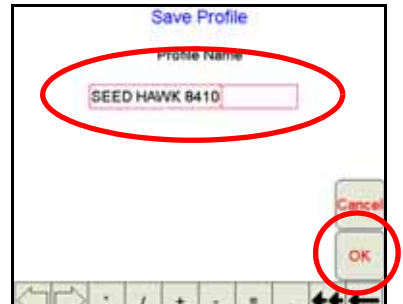
Profiles

Saving a Vehicle Profile

Vehicle profiles store information about the vehicle on which the Viper Pro is installed. This profile stores information such as antenna offsets and Comm Port settings.

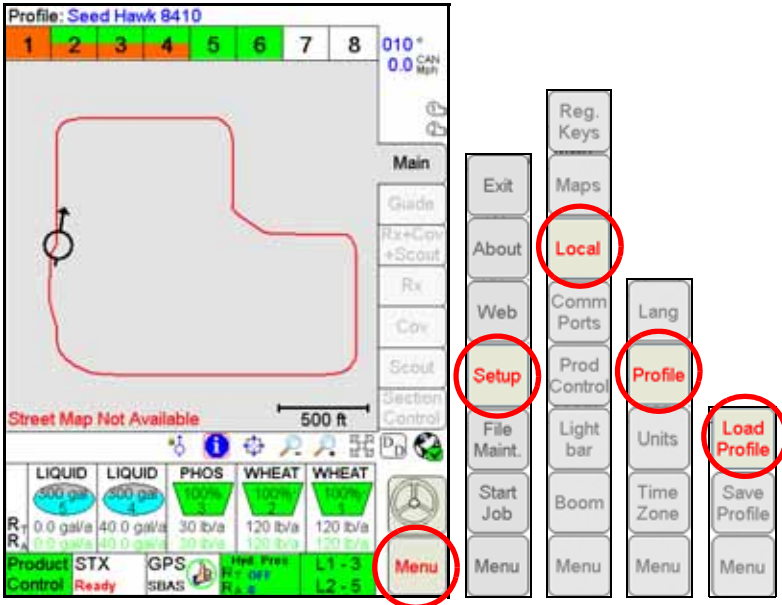1. Select **Menu,** then **Setup, Local, Profile**, and **Save Profile**.
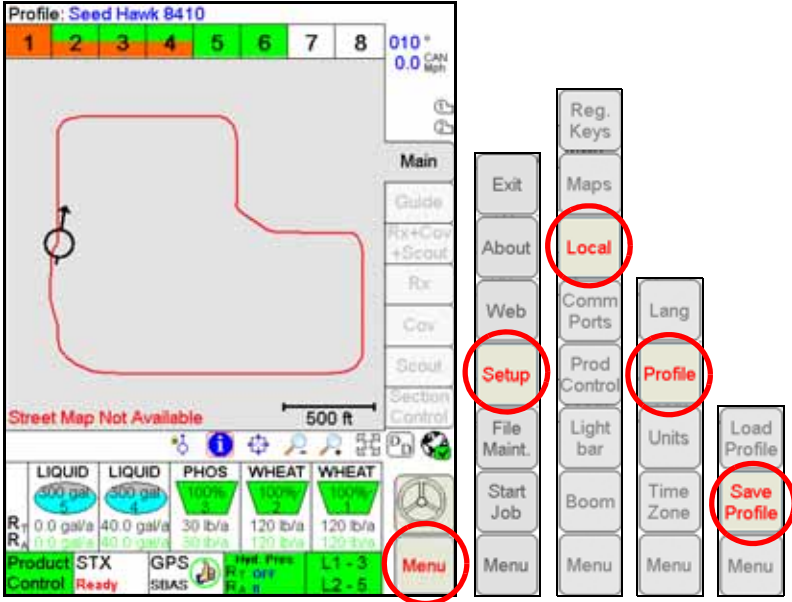
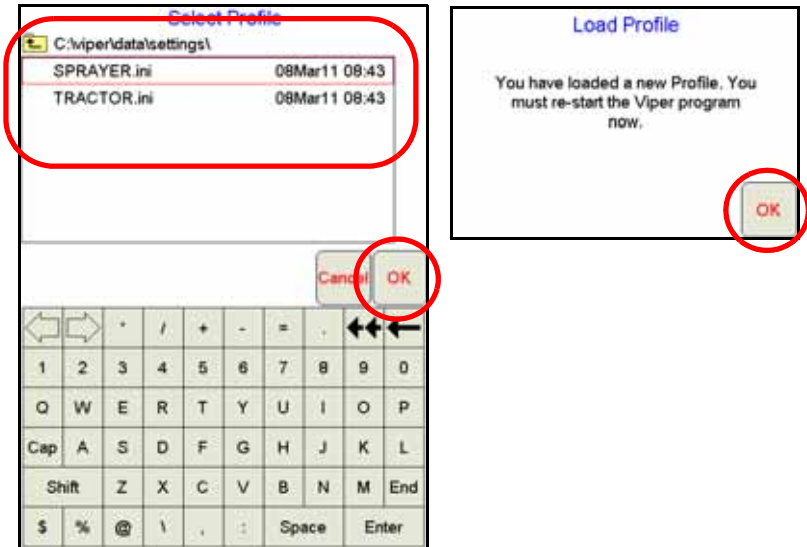2. Use the on-screen keyboard to enter a **Profile Name** and touch **OK**.

Loading a Saved Vehicle Profile

1. Select **Menu**, then **Setup**, **Local**, **Profile**, and **Load Profile**.

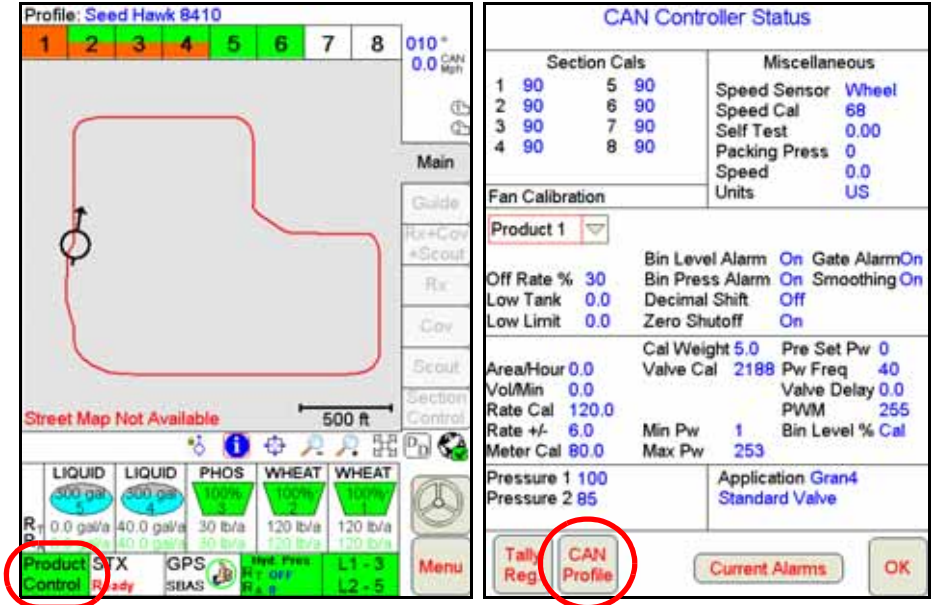2. Select a profile from the list and touch **OK**.

3. Touch the **OK** button on the Load Profile prompt. The Shutdown Viper prompt will be displayed.

4. Select the **Exit to Menu** button and select the appropriate option to restart the Viper Pro application management system.

Saving and Loading a CAN Profile

A CAN profile saves information normally stored on the CANbus nodes. The CAN profile allows the Viper Pro to quickly reconfigure connected nodes for specific applications.

1. Select the **Product Control** status in the lower left corner of the main screen.

2. On the CAN Controller Status screen, touch the **CAN Profile** button.

3. To load a CAN profile, select an existing profile name from the list and touch the **OK** button.

4. To save a CAN Profile, touch the **Create CAN Profile** button. Using the on-screen keyboard, enter a **profile name** and touch **OK**.

Using the Remote Tank Console

The following sections provide an overview of using the remote tank console to prime and calibrate the Seed Hawk air seeder. For additional settings or operation on the console, refer to the *Seed Hawk Viper Pro Installation and Operation Manual*.

Note: Be sure the Seed Hawk Viper Pro is powered on and displaying the Program Selection Menu screen before starting the priming or calibration procedure.

Priming Procedure

1. Use the **Next** and **Prev** keys to select the desired bin to calibrate and press the **Enter** key.

2. Press the **Begin** button to start the priming and calibration system.

3. Press the **Enter** key to select the 'Prime Meter Roller' option and then press the **Start** key to begin priming the metering rollers.

⚠ WARNING

The metering rollers will begin turning during the priming procedure. Keep away from moving components and alert anyone around the air cart when performing the priming process.

4. Allow the metering rollers to rotate until a consistent amount of product is dispensed and then press the **Stop** key. Use the **INC** or **DEC** keys to increase or decrease the PWM Output, or speed, of the metering rollers during the priming process.

Note: The PWM Output, or metering roller speed, will also be used for the catch test procedure, however, the output may not be adjusted during the calibration. Be sure to set the PWM Output during the priming process to ensure the best results.

5. A catch test may now be performed with the primed bin.

Catch Test

Note: The priming procedure should be performed before performing the catch test procedure.

1. Press the **Next** key to select the 'Start Calibration' option and press the **Enter** key.

2. Press the **Start** key.

⚠ WARNING

The metering rollers will begin turning. Keep away from moving components and alert anyone around the air cart when performing the catch test process.

3. Continue dispensing product until a sufficient weight is in the weight box or the weight box is full.

4. Press the **End** key to complete the calibration.

Note: Press the **Stop** key during the calibration process to pause the calibration and stop the metering rollers if necessary. While paused, press **Start** key to resume the catch test. It is recommended to run the catch test without pausing the calibration to get the most accurate results.
Press the **Cancel** key to stop the calibration process and return to the calibration screen without entering a cal weight.

5. Weigh the product dispensed (minus the weight box). The Metered Weight Page will display automatically at the end of the catch test procedure.


Product or Cal Weight Value

6. Use the **Left** and **Right** keys to move the cursor below the bin cal weight value to the first digit of the measured cal weight and press the **Enter** key.

7. Press the **INC** or **DEC** keys to set the appropriate value for the selected digit and press the **Enter** key to set the value.

8. Repeat the above procedure to set the remaining cal weight digits up to two decimal places.

9. To program the cal weight value, press the **Right** key to move the cursor past the last decimal place in the cal weight value and press the **Send** key. The remote tank console will send the entered cal weight value to the appropriate control node and display the bin calibration screen.

10. Press the **Exit** key to return to the bin selection screen.

Starting a New AgX Job

1. Select **Menu**, **Start Job**, then **New AgX Job**.
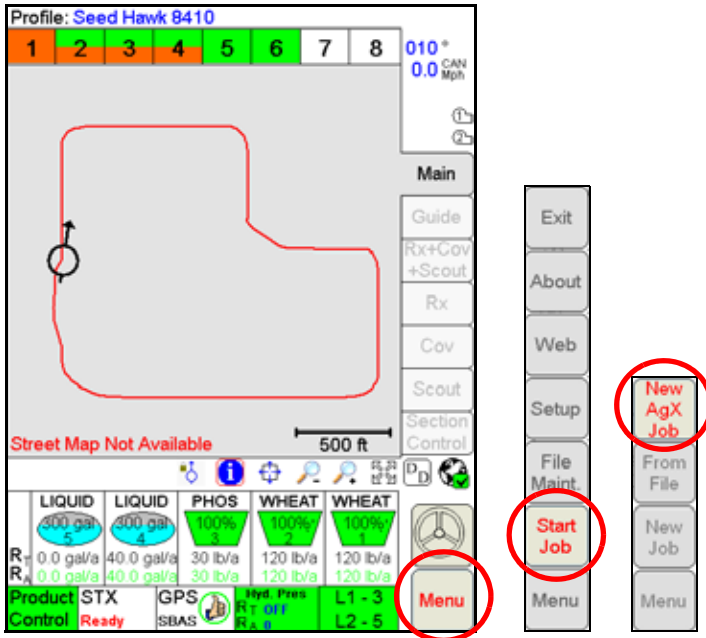
2. Select from the available grower, farm, and field lists to locate the pre-populated job information for the next job.
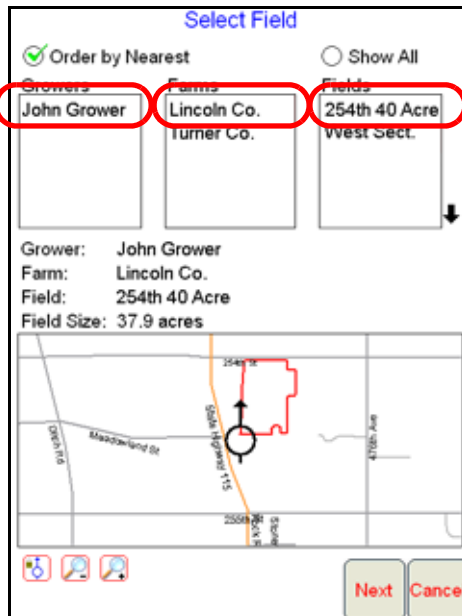
3. Touch the **Next** button.

Assign Recommendation to Channel

Chain Profile

Select Channel to Configure

1 2 3 4 5

Operation

Recommendations

Fert Rec ✓

Preview

18-46-0 DAP
Min Rate: 100.00 lb/ac
Max Rate: 100.00 lb/ac
Average Rate: 100.00 lb/ac
Total Product: 14922.38 lb
Coverage Area: 149.22 lb/ac
Season: 2010

Booms All   Default Rate   Conv. Factor   Prev   Next   Cancel

4. Touch an available control channel and select a recommendation from the list to assign pre-populated job information to the selected control channel.

Note: While recommendations are not required, product control channels selected on this screen should have a recommendation assigned before the job is started.

A target rate may be entered for channels used to control pump, fan, or spinner speeds as necessary after the job is started. Do not select control channels for these functions during the job setup process.

To deselect a channel, touch a selected channel again to remove the channel from the job setup process. Any deselected channels will not be available during the active job.

5. Touch the **Default Rate** button and enter the default rate for each control channel outside of the pre-populated prescription map.

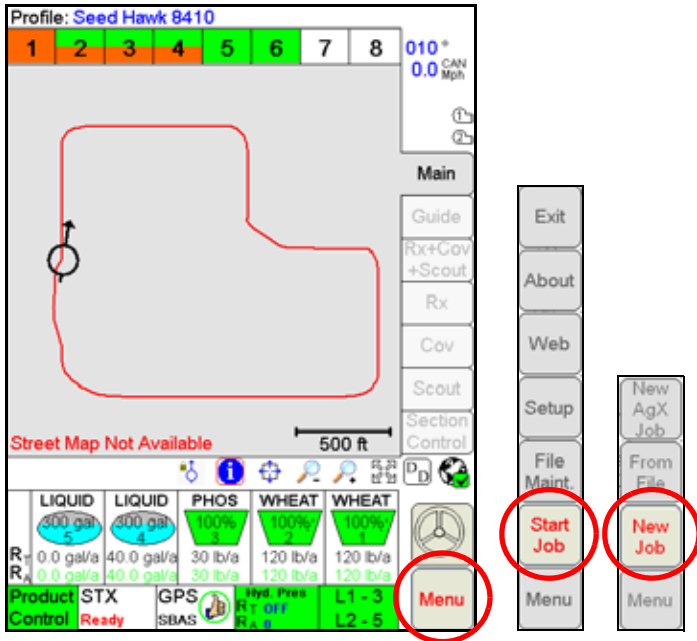6. A **Conversion Factor** may be entered to adjust rate zones within the pre-populated prescription map.

7. Touch **Next** and enter the name for the job, select the guidance pattern to use during the job and enable the AccuBoom feature if applicable.

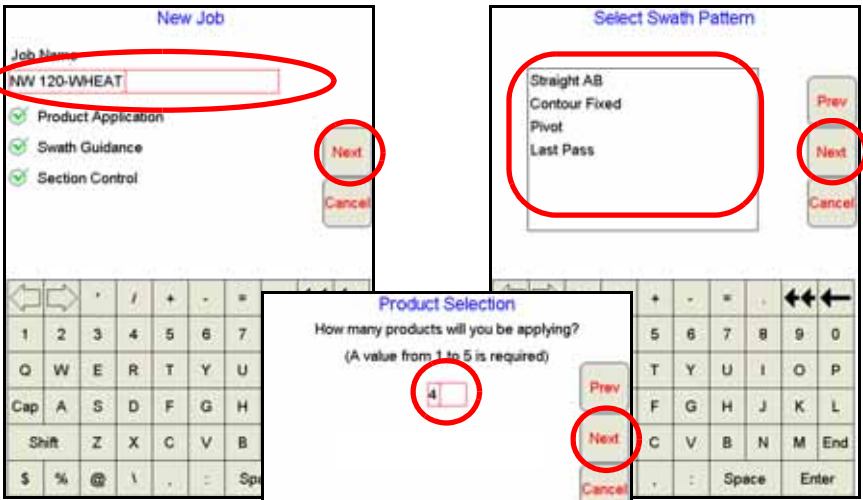8. Touch the **OK** button to begin the job.

Starting a New Standard Job

1. Select **Menu, Start Job,** then **New Job**.

2. Type in a **Job Name** and enable appropriate application options to use during the job. Select a **Swath Pattern** (if guidance is enabled) and **enter the number of products** (if product application is enabled).

Note: If none of the job options are enabled, touch the **OK** button on the New Job screen to begin the job.

3. Select an existing product name or use the on-screen keyboard to enter a new product name.

4. If a Variable Rate map will be used, select **VRC** and proceed with the steps below. Otherwise, touch **OK**.

   a. Touch **Browse** to find an Rx Map file.

   b. Select the desired map file and touch **OK**.

   c. Select the column heading from the .dbf file to use for rate information.

   d. Touch the **Next** button.

5. After each of the products have been configured for the job, enter a **Rate Conversion** (if necessary) and touch **OK**.

Adding to Existing Jobs

1. Select **Menu, Start Job, From File,** then **Add to Job**.
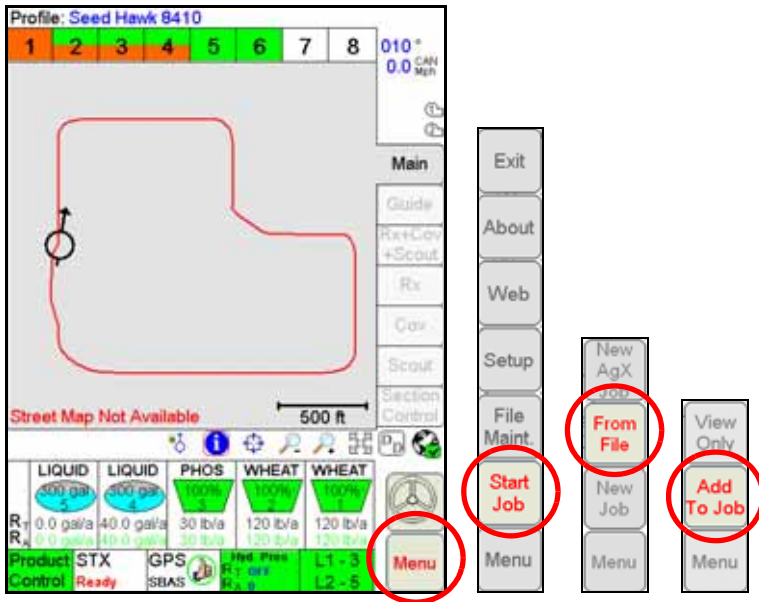
2. Select an existing job name and touch **OK**. Then touch **Menu** and **Cont. Job** to resume application within the job.
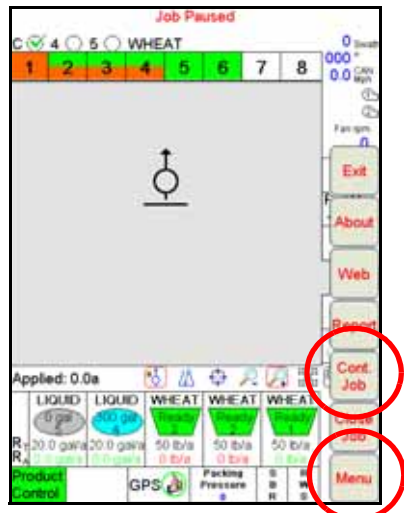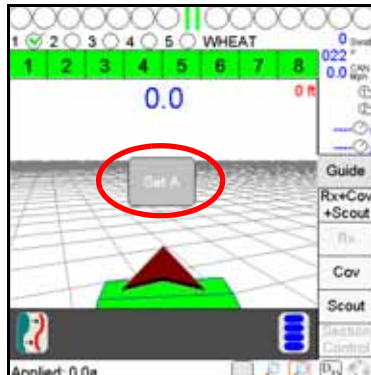

Note: The Viper Pro will not log application or location information until the **Cont. Job** button is selected.

Guidance (A-B) Lines

Use the following steps to set an A-B Line.

1. With the Guide tab selected, touch the **Set A** button.
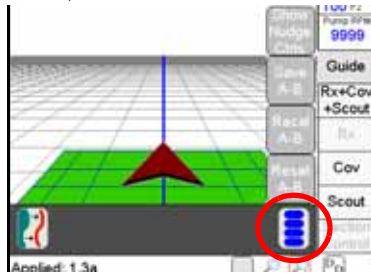

   An A-B Line may also be set by entering a compass heading. Touch the **Set B by Heading** icon at the bottom of the guidance display to enter an A-B Line heading.

2. When the **Set B** button appears, touch the button to set the B point of the A-B Line. The set A-B Line appears on the screen in blue.

To Save the Displayed A-B Line:

1. With the Guide tab selected, touch the Guide Menu icon.

2. Touch the **Save A-B** button and follow the on-screen instructions to save the displayed Guidance path.

To Load a Saved A-B Line:

1. Reset any currently displayed Guidance paths.

2. With the Guide tab selected, touch the Guide Menu icon.

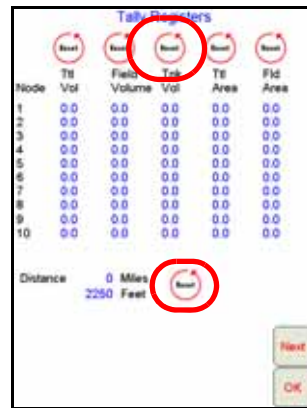3. Touch the **Load A-B** button and follow the on-screen instructions to load a selected Guidance path.

Resetting Tank Volume

1. Touch **Product Control**.
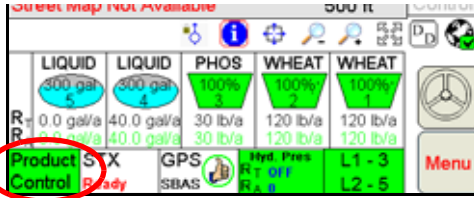
2. Touch **Tally Registers.**

3. To reset an individual product or tank, touch the **Next** button in the lower portion of the Tally Registers screen.
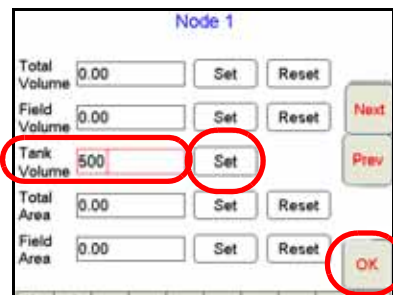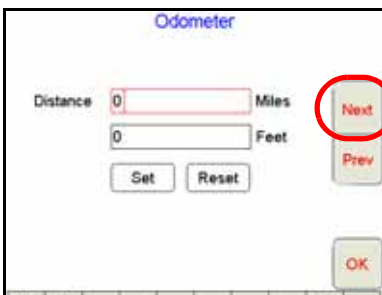

Note: To reset all tank volumes to the previously entered values, touch **Reset** above Tnk Vol.

4. On the Odometer screen, touch **Next**.

5. Type in a value for the **Tank Volume** and then touch **Set**.

6. Touch **Next**. Do the same process for all nodes, if needed, and touch **OK** when finished.

7. Touch **OK** again to exit the Product Control screen.

Marking a Field Boundary

1. Touch the **Scout tab** and then the **Record** button.

2. Select **Zone** from the list of features.

3. The Record Field Feature screen displays. Select **Field Boundary** and select the point entry and offset your **options**, and touch **OK**.
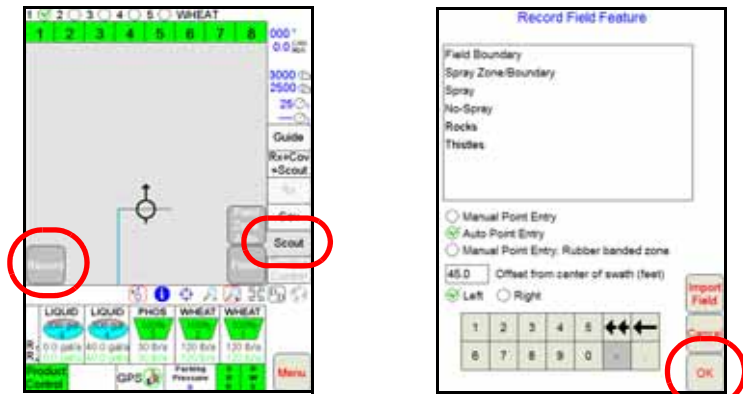
Note: The Field Boundary will automatically close if the machine comes within one boom width of the starting point. To manually close the boundary, touch the **Finish** button in the Map area and select the zone or feature to close.

Seed Blockage Sensors

The status of optional seed blockage sensor loops will be displayed on the main screen of the Seed Hawk Viper Pro and will allow the operator to monitor status of seed or product flow at the sensor locations throughout a seeding operation.
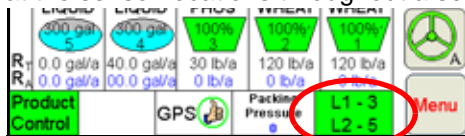
The seed blockage status indicators will display:

Green when the system is operating normally.

Yellow when a product blockage or dirty sensor is detected in the system. Check the indicated sensor locations in the Blocked display and clear any obstructions as necessary during operation.

Red if a communication issue is detected with the seed blockage sensors. Check sensor assemblies and cables for disconnected or damaged parts and replace parts as necessary.

Packing Pressure

The current pressure applied to the packing gauge wheels is displayed in the Packing Pressure area.

The packing pressure value displays the packing pressure in PSI (English) or kPa (Metric) based on the display units selected during set up of the field computer. Touch the packing pressure display to access drill node settings. Refer to the *OmniSeed Calibration and Operation Manual* for additional assistance with configuring the drill node for field operations.
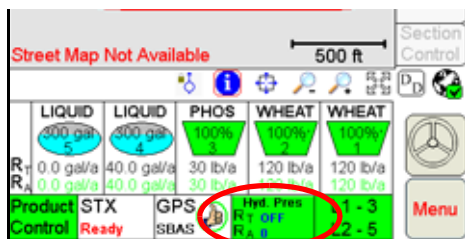
GPS

1. Select **Menu**, **Setup**, and **Comm Ports**.

2. Select the appropriate GPS setting.

- Select **Raven GPS** when connected to all Raven GPS receivers, except for the RPR 400, RPR 410, or Phoenix 300, or when not using the guidance in the Viper Pro to control an automated steering system.

- Select **Generic GPS**, when connected to a Raven RPR 400, RPR 410, Phoenix 300, Non-Raven GPS receivers, or when the Viper Pro is providing guidance to an automated steering system.

3. Touch **OK**.

CAN Startup
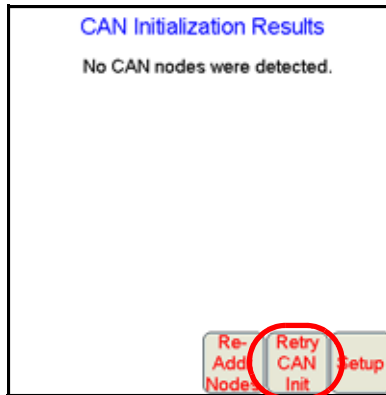
If no CAN nodes are detected on the CANbus when the Viper Pro is powered on, touch the **Retry CAN Init** button. If you still have CAN issues, see the Seed Hawk Viper Pro Installation and Operation Manual for more information.
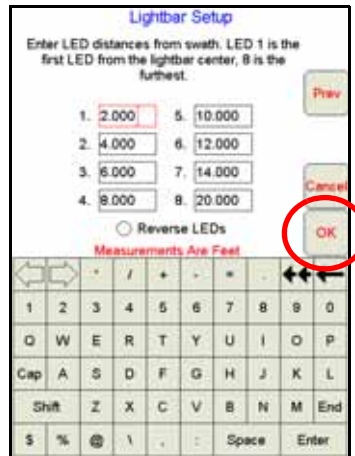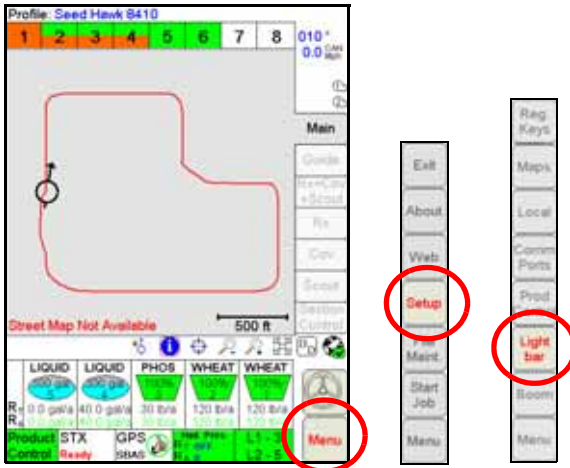
Section Setup

1. Touch the **Sections Area**.
2. Enter **Look-Ahead** values and touch **Next**.
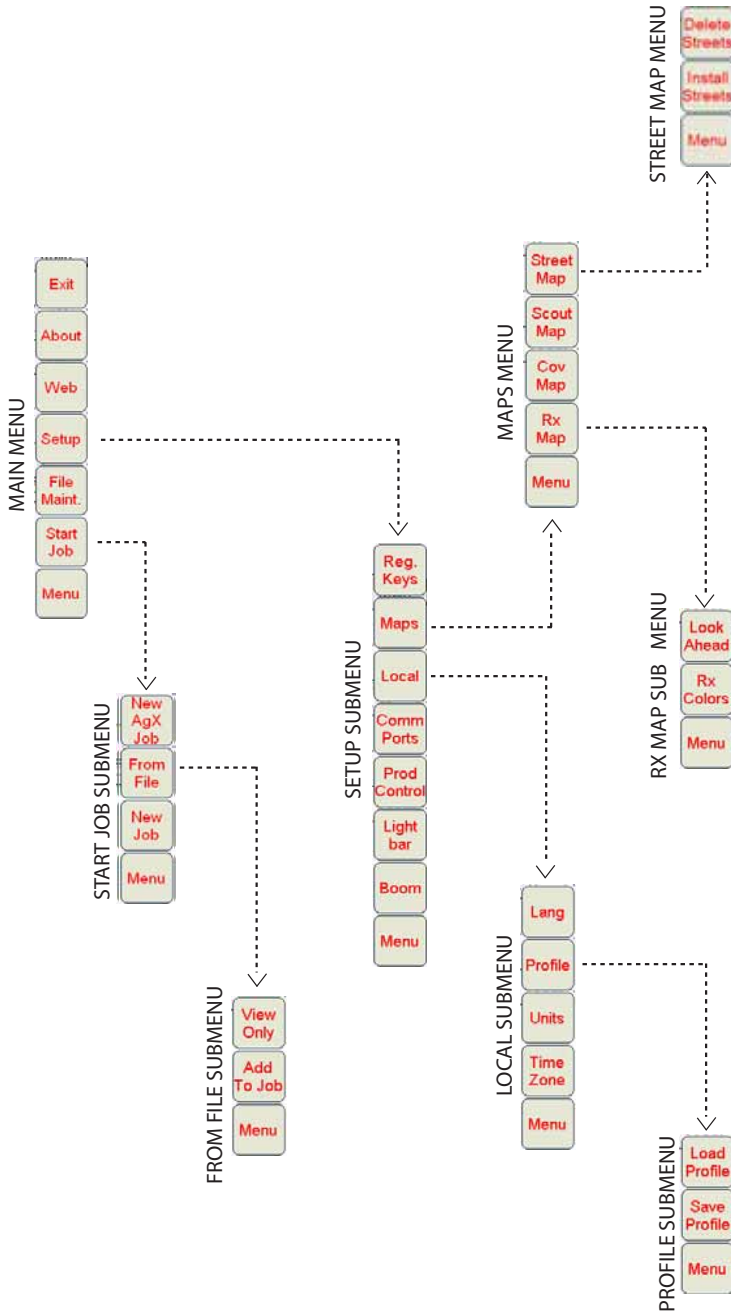3. Select the sections and products for section control and touch **OK**.
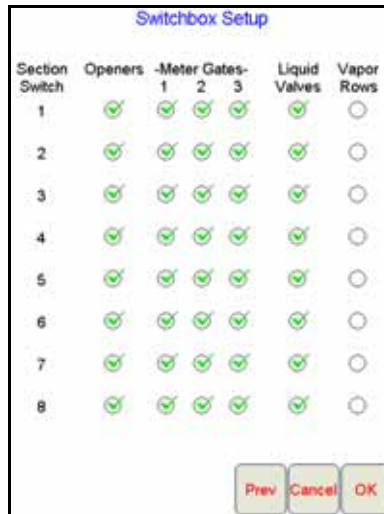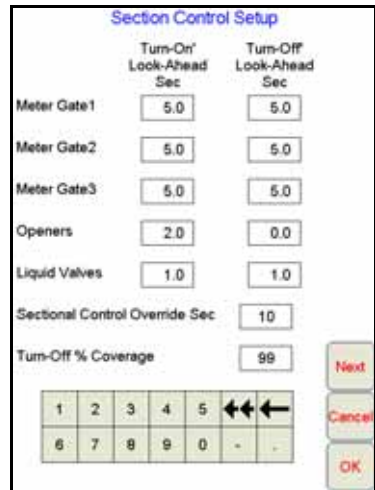
On-Screen Lightbar

1. Touch **Menu**, **Setup**, then **Lightbar**.

2. Select **On-Screen Lightbar** to display a lightbar on the Viper Pro guidance screen. Enable the **External Lightbar** option to slave an external lightbar to the Viper Pro.

3. Select **Send Guidance Message** when using the Viper Pro to provide guidance information to an automated steering system.

4. Touch **Next** to set the coarseness of the lightbar display.

5. Touch **OK** when finished.

Viper Sub-Menu Structure

MAIN MENU

- Exit
- About
- Web
- Setup
- File Maint.
- Start Job
- Menu

START JOB SUBMENU

- New AgX Job
- From File
- New Job
- Menu

FROM FILE SUBMENU

- View Only
- Add To Job
- Menu

SETUP SUBMENU

- Reg. Keys
- Maps
- Local
- Comm Ports
- Prod Control
- Light bar
- Boom
- Menu

MAPS MENU

- Street Map
- Scout Map
- Cov Map
- Rx Map
- Menu

STREET MAP MENU

- Delete Streets
- Install Streets
- Menu

RX MAP SUB MENU

- Look Ahead
- Rx Colors
- Menu

LOCAL SUBMENU

- Lang
- Profile
- Units
- Time Zone
- Menu

PROFILE SUBMENU

- Load Profile
- Save Profile
- Menu

* Buttons with arrows go to sub-menus. Buttons without arrows go directly to selection screens.

SEED HAWK ®

R A V E N On Board

Seed Hawk®
Viper Pro™ Software Version 3.10
Quick Reference Guide
(P/N 016-0171-291 Rev C 06/14 E23275)