

# AUTOFARM

RAVEN On Board

## Quick Reference Guide



**FarmPRO™**  
GPS Steering & Application Control System

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# Viper PRO Do's and Don'ts

1. **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.
2. **Do** read the manual in its entirety before using Viper PRO.
3. **Do** power the DGPS receiver and the Raven console or CANbus system before powering Viper PRO.
4. **Don't** turn Viper PRO off when in a job, without properly closing the job first. If Viper PRO 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.

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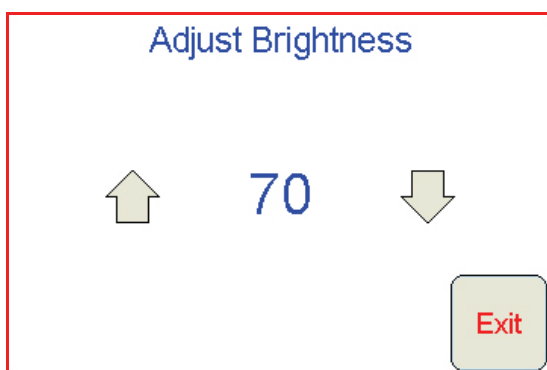
## Basic Startup



Touch the Power button to turn on the Viper PRO console.



## Backlight Adjustment

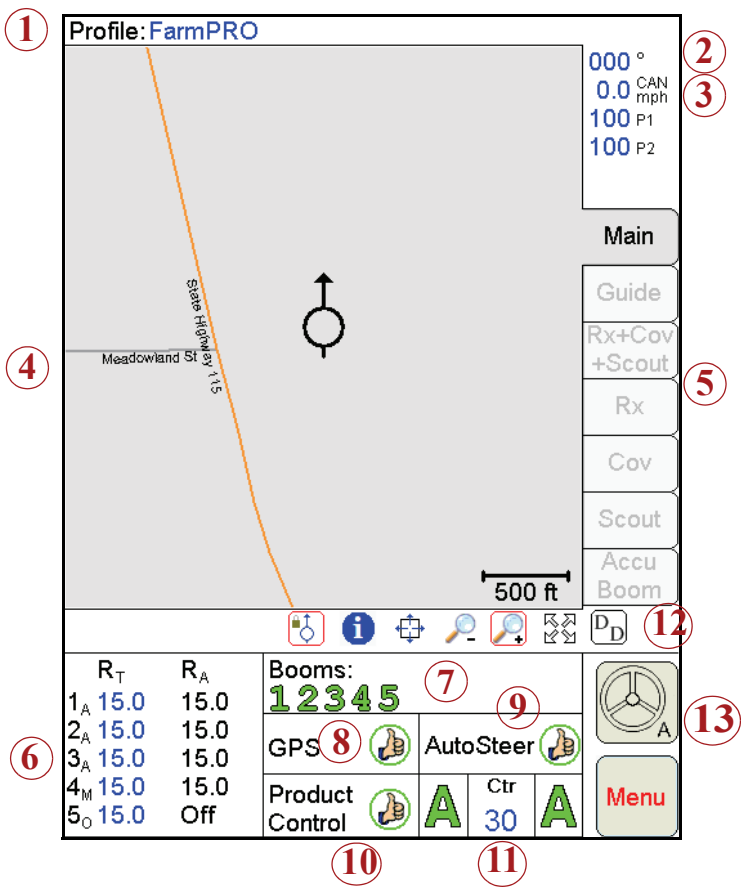
1. Touch **Menu / About / Adjust Brightness**.



2. Touch  to increase screen intensity.  
Touch  to decrease screen intensity.
3. The screen can be adjusted between 100 (brightest) and 0 (dimpest).

# Main Screen Areas



See the screen below and the corresponding numbers on the next page for a description of each screen area.



1. **Profile** - The machine profile contains configuration settings for specific vehicles, when created by the user.
2. **Current Heading** - The current heading of the vehicle in compass degrees.
3. **Speed** - The current speed of the vehicle (CAN or GPS).
4. **Map Area** - Information that is associated with the current tab.
5. **Tabs** - Used to access the features, functions, and screen displays for the Viper console. Touch a tab to access.
6. **Application Rates** - Target Rate ( $R_T$ ) and Actual Rate ( $R_A$ ).  
Touch in this area to set or change rates (Available for CAN systems only).
7. **Booms** - Booms turn green when on, grey when off. Touch in this area to configure your AccuBoom system.
8. **GPS Status Indicator** - Status of the DGPS receiver displays in this area. Touch this area for additional GPS information.
9. **AutoSteer Status Display** - The status of the AutoSteer system is displayed in this area. Touch this area to view the AutoSteer Status screen.  
The AutoSteer Status screen displays the current SAM Status, and firmware version as well as the SAM's Serial Number.
10. **Product Control Status** - Product Control Status of the Raven console or the Raven CAN system displays in this area. Touch this area to modify Product Control settings.
11. **Autoboom Status Display** - If an optional Autoboom system is installed with the Viper Pro system, this area displays the status of Autoboom system. Touch this area to enable/disable or configure Autoboom system.
12. **Display Data** - Status of CAN Tally Register. Touch this area to view the CAN Tally Register data. Touch the area again to hide the data.
13. **Engage/Disengage AutoSteer** - Touch this button to engage or disengage the AutoSteer system. When AutoSteer is active, this icon will appear with a green steering wheel.

# AutoSteer Status Screen

This screen displays the status of the AutoFarm Steering System and communication with the SA Module. You may create several vehicle profiles which will allow you to move the Viper PRO console to other vehicles with different characteristics. This screen also displays the SA Module's serial number and current firmware version.

Steering Status	
SAM Status:	OK
SAM Serial Number:	DEMO
SAM Firmware Version:	DEMO
SAM Hardware Type:	WHEELED
Vehicle Name:	DEMO
Vehicle Type:	WHEELED
Solution: No Problems Detected	
Response Rate (Range 0 to 20): 9  	
<div>Default NudgeSteer DiagOK</div>	

The SAM Serial Number and Firmware Version are displayed on the Steering Status screen.

The Steering Status screen also displays the current Vehicle and Hardware settings programmed through the AutoFarm FarmPRO Application.

The **Response Rate** setting increases or decreases the on-line aggressiveness of the FarmPRO automatic steering system. Touch the up and down arrows to increase or decrease this setting.

Touch the **Default Nudge** button to access the Nudge Settings screen.

The **Steer Diag** button launches the AutoFarm FarmPRO application and displays the Vehicle Steering Diagnostics screen.

See the FarmPRO Operation Manual for more calibration and tuning information and a full description of these settings in the Interface Box.

# GPS Status Screen

The GPS Status screen displays the current status and mode of operation for the FarmPRO RTK Base Station and Roof Array.

GPS Status	
GPS Status:	Position Ok
GPS Mode:	RTK Fixed
Position:	<div><div></div></div> 10
RTK Init:	<div><div></div></div> 100%
Base Station:	<div><div></div></div> 9
Radio Link:	<div><div></div></div> 96%
SBAS Satellite:	<div><div></div></div> 135
PDOP:	<div><div></div></div> 1.30
Dist to Base:	2.0 Miles
Latitude:	N43°41'46.212000"
Longitude:	W096°42'26.196000"
Elevation:	0.00 Feet
Solution: No Problems Detected	
<div><div>GPS Setup</div><div>GPS Diag</div><div>OK</div></div>	

The **Position** display is the number of satellites which the FarmPRO system is currently locked onto and using to determine correction.

**RTK Init** displays the progress of the FarmPRO system while determining RTK accuracy.

The **Base Station** and **Radio Link** bars help determine the status of communication with the RTK Base Station. The **Radio Link** value must be above 80% to allow for RTK assisted steering.

The **Dist to Base** value is the distance of the machine from the Base Station.

Touch the **GPS Setup** button to launch the AutoFarm FarmPRO application and view the GPS Configuration screens.

Touch the **GPS Diag** button to launch the AutoFarm FarmPRO application and view the GPS Diagnostics screens.

For a full description of the GPS Status screen, refer to the FarmPRO Operation Manual.

# CAN Controller Status Screen Areas

See the screen below and the corresponding numbers on the next page for a description of each screen area.








CAN Controller Status			
Boom Cals		Miscellaneous	
1	120	Speed Sensor	Radar
2	240	Speed Cal	765
3	360	Self Test	0.00
4	240	Pump RPM	0
5	120	Speed	0.0
		Units	US
Node <input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5			
Dual Flow %	50	Flow/Shaft Alarm	Off Smoothing On
Off Rate %	30	Vac/Bin Alarm	Off Agitator Off
Low Tank	0.0	Decimal Shift	Off Ratio Rate Off
Low Limit	0.0	Zero Shutoff	Off
Tank Vol	0.0	Spreader	0 Pre Set Pw 0
Area/Hour	0.0	Valve Cal	2123 Pw Freq 122
Vol/Min	0.0	Valve Cal 20	Ratio Rate 0.00
Rate Cal	15.0	Pump Cal	0 Valve Delay 0.0
Rate +/-	2.0	Min Pw	0 PWM 0
Meter Cal	700.0	Max Pw	253
Pressure 1	100	Application Liquid	
Pressure 2	100	Standard Valve	
Tally Registers		Current Alarms	OK

1. **Boom Cals Area** - Current booms that have been configured. Touch in this area to access the Boom Select screen and assign booms to products.
2. **Miscellaneous Area** - Various system settings and actual system readouts. Touch in this area to change the displayed settings.
3. **Data Box 1** - User configuration settings and product node selector. Touch in this area to access and/or change the user configuration.
4. **Data Box 2** - More user configuration settings. Touch in this area to access and/or change the user configuration.
5. **Pressure Area** - Dual pressure readouts for two different systems. Touch in this area to calibrate pressure readouts.
6. **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.
7. **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.
8. **Current Alarms** - Touch this button to view any current system alarms.






# Screen Icons & Symbols

## Map Symbols

Icon Name	Description
	When the <b>Cursor Lock icon</b> is active, Viper is in the auto-pan mode. Select this mode when running a job.
	The <b>Information icon</b> is only available when you are not running a job and you have selected the Main tab on the Viper console, or when you have selected the Scout tab when in a job.
	The <b>Prescription icon</b> is only available when on the Rx tab (if a prescription map had been previously loaded) or the Cov tab.
	The <b>Pan icon</b> is used to move screen information up/down or left/right.
	The <b>Zoom Out icon</b> zooms the map area displayed out to view a larger area on the map.
	The <b>Zoom In icon</b> zooms into the map area display and allows more detailed viewing of information contained within the display.
	The <b>Zoom Extents icon</b> allows you to quickly bring all map information back onto the display.

## Status Symbols

Icon Name	Description
	<b>Thumbs Up:</b> System is normal and all operating conditions are met.
	<b>Caution:</b> There is a system alert. User should investigate cause of condition and correct it.
	<b>Red 'X':</b> The system is down and requires immediate attention. This problem must be corrected before proceeding with application.

# Setting Application Rates

- 1. Touch the **Application Rates Area**.
- 2. Touch the **Node** you want to set/change.
- 3. Enter **Target Rate**. Touch **Next** to change other Nodes or **OK** to save changes and close.

Profile: SPRAYER

000 ° CAN  
0.0 mph P1  
100 P2

254th St

511, 14400th St

Meadowland St

500 R

Main  
Guide  
Rx+Cov  
+Scout  
Rx  
Cov  
Scout  
Accu  
Boom

R<sub>T</sub> R<sub>A</sub>

1<sub>A</sub> 15.0 15.0

2<sub>A</sub> 15.0 15.0

3<sub>A</sub> 15.0 15.0

4<sub>A</sub> 15.0 15.0

5<sub>A</sub> 15.0 Off

Booms: L12345\*\*R

GPS

Product Control

Ctr 30

Menu

Application Control

pwm

Node 1

☒ Off ☐ Man ☐ Auto

Node 2

☐ Off ☐ Man ☒ Auto

Node 3

☒ Off ☐ Man ☐ Auto

Node 4

☒ Off ☐ Man ☐ Auto

Node 5

☒ Off ☐ Man ☐ Auto

OK

Node 1

Target Rate 15.00

Next

Cancel

OK

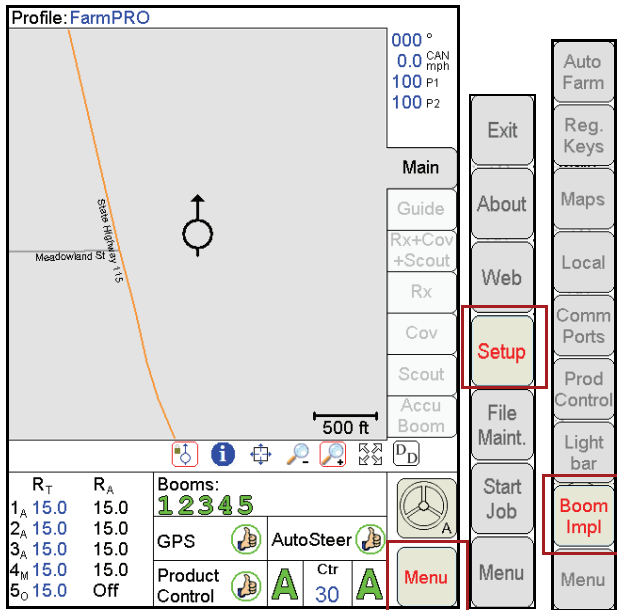
**Note:** You can only set Application Rates if you are using a CAN system.

# Profiles

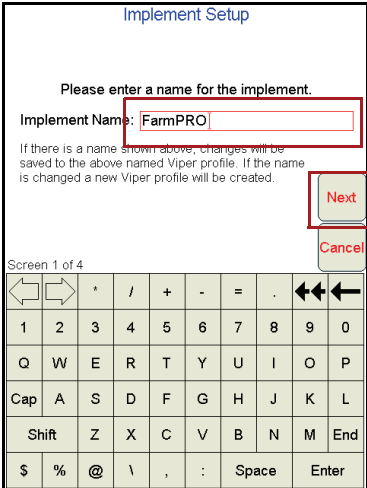
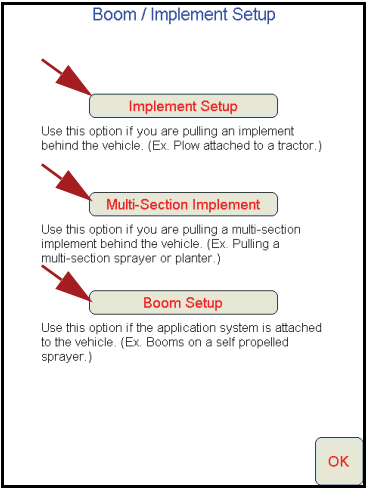
Profiles save vehicle and implement information which can then be recalled as needed when moving the system between vehicles or using different implements.

## Saving a Profile

1. Select **Menu**, then **Setup**, and **Boom/Impl.**



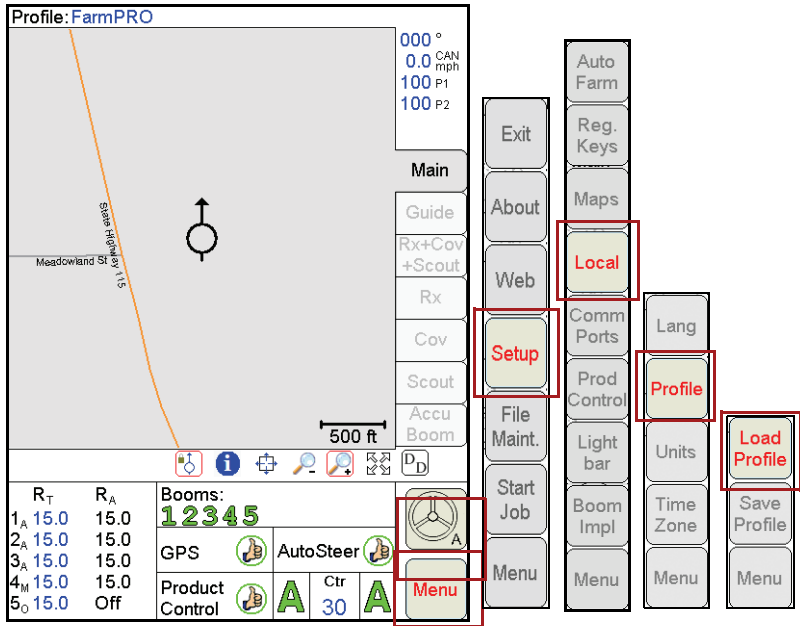
2. Select the machine or implement type and enter a **profile name** and touch **Next**.



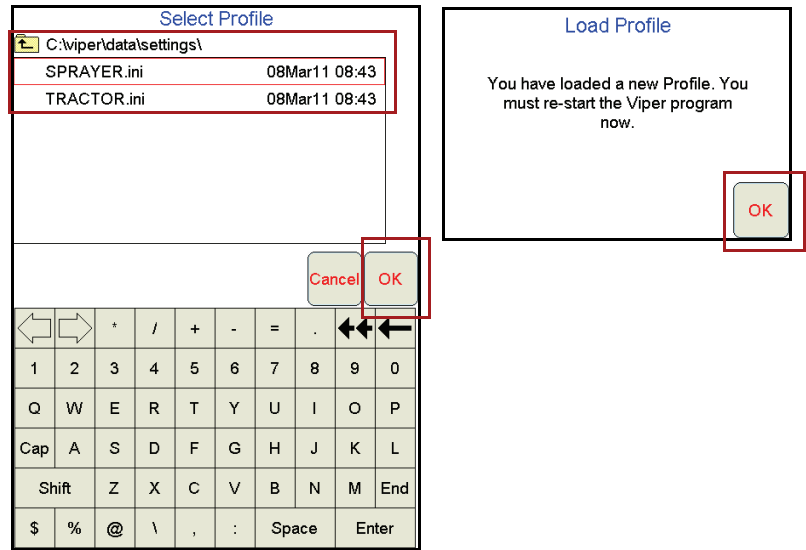
3. Follow the on-screen instructions and touch **OK** to complete setup.

## Loading a Saved Profile

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

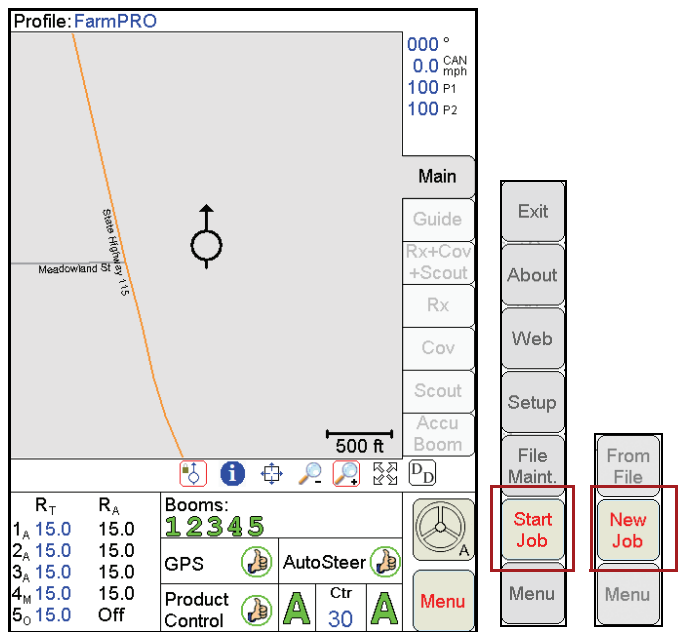


2. Select a profile from the list and touch **OK**.

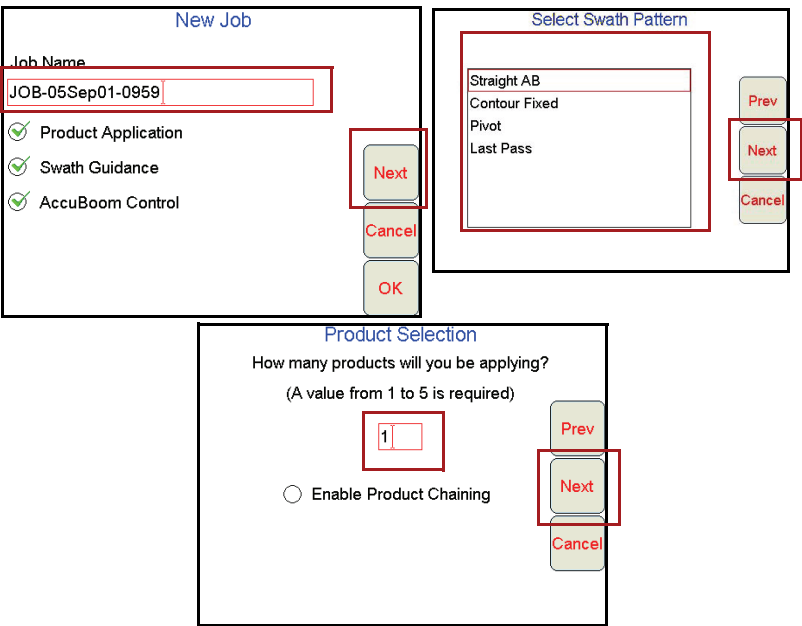


# Starting a New Job

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



2. Type in a **Job Name**, Select a **Swath Pattern**, and enter the number of **products**



- 3. Type a **Product Name**.
- 4. Select **Booms** (typically 'All'), if necessary.
- 5. If a Variable Rate map will be used, select **VRC** and proceed with the steps below. Otherwise, click **OK**.
  - a. Click **Browse** to find an Rx Map file. Select the file and click **OK**.
  - b. Click on the **Rate field** (outlined in red below) and click **Next**.
  - c. Type in a **Rate Conversion** (if necessary) and click **OK**.

Product #1 Setup

Product Name

Booms

All

☐ VRC

Using Default Colors

Select

Prescription File and Rate Field

liquid.shp

Browse

Prev

Next

Cancel

OK

Select Rx Shape File

\\storage card\rx\Maps\

colors

liquid.shp04Nov11 13:40

prod1 dry.shp04Nov11 13:41

prod2 dry.shp04Nov11 13:26

prod3 dry.shp04Nov11 13:29

Cancel

OK

Product #1 Setup

Product Name

Viper Demo

Booms

All

☒ VRC

Using Default Colors

Select

Prescription File and Rate Field

liquid.shp

Browse

Rate

Prev

Next

Cancel

OK

Rate Conversions

Enter a Rate conversion factor for each product. Rx Map Rates are multiplied by this factor before being sent to the Spray Controller.

Viper Demo

1.0

Prev

Cancel

OK

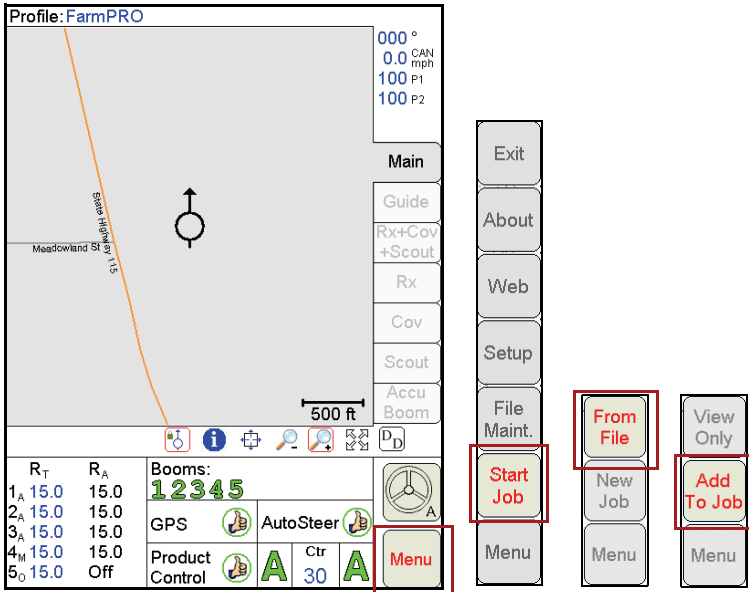
Common Factors

**Note:** The steps above are for a single product. If you have more than one product, you will be guided through the product setup for each product.

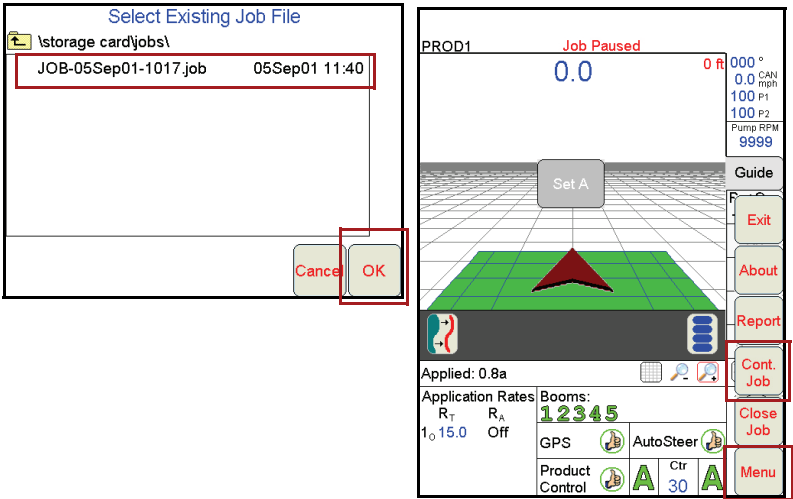
13

# Adding to Existing Jobs

1. Select **Menu**, **Start Job**, **From File**, then **Add to Job**.



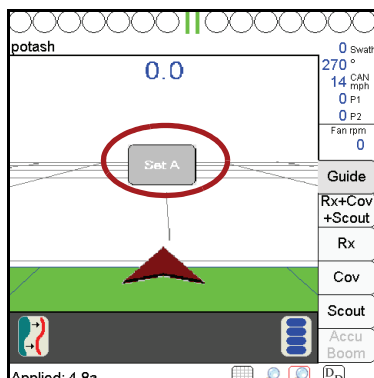
2. Select **Existing Job** and touch **OK**. Then touch **Menu** and **Cont Job** to un-pause the job.



# Setting, Saving, and Loading A-B Lines

When a Job with Straight Line (A-B) guidance has been opened and the Guide tab is selected, use the following steps to set an A-B Line.

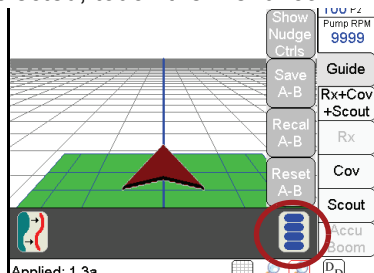
1. With the Guide tab selected, touch the **Set A** button.



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 currently displayed A-B Line:

1. With the Guide tab selected, touch the 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 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**.

R <sub>T</sub>	R <sub>A</sub>	Booms: 12345	
1 <sub>A</sub> 15.0	15.0	GPS	AutoSteer
2 <sub>A</sub> 15.0	15.0		
3 <sub>A</sub> 15.0	15.0	Product Control	Menu
4 <sub>M</sub> 15.0	15.0		
5 <sub>O</sub> 15.0	Off		

2. Touch **Tally Registers**.

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

**Tally Registers**

Node	Ttl Vol	Field Volume	Tnk Vol	Ttl Area	Fld Area
1	8729.0	1392.0	832.0	111.0	41.0
2	8729.0	1392.0	832.0	111.0	41.0
3	8729.0	1392.0	832.0	111.0	41.0
4	8729.0	1392.0	832.0	111.0	41.0
5	8729.0	1392.0	832.0	111.0	41.0

Distance 0 Miles 0 Feet

Next OK

4. To reset individual nodes, touch **Next**.

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

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

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

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

**Odometer**

Distance 0 Miles

0 Feet

Set Reset

Next Prev OK

**Node 1**

Total Volume 0.00 Set Reset

Field Volume 0.00 Set Reset

Tank Volume 500 Set

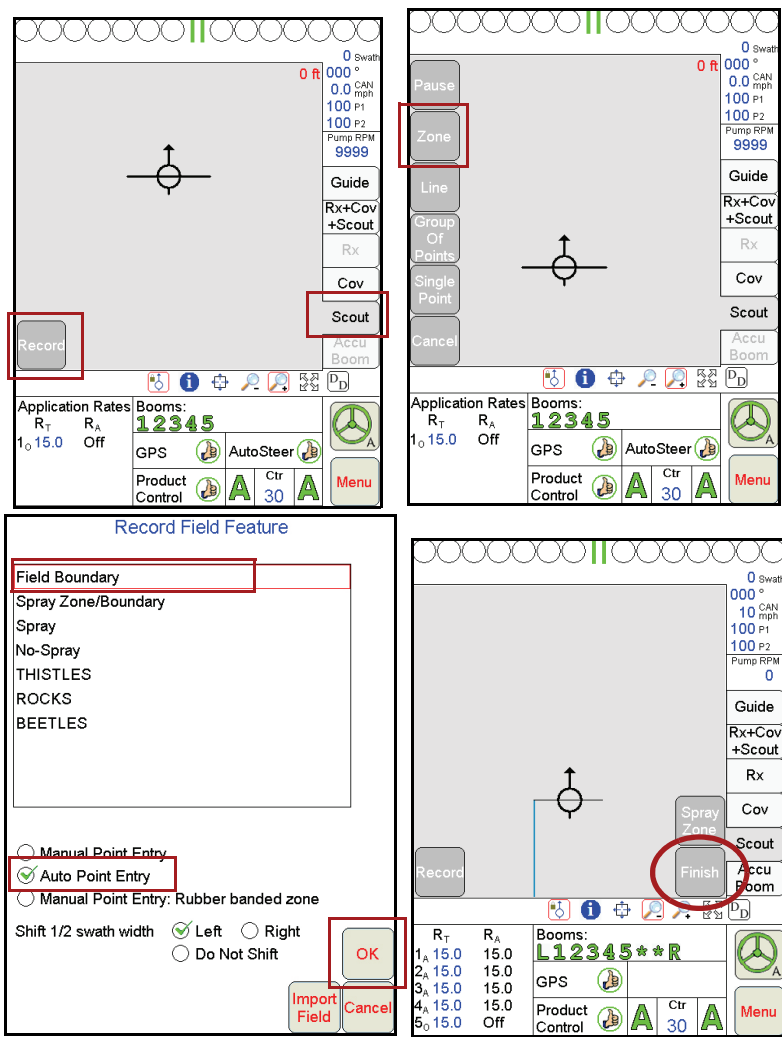
Total Area 0.00 Set Reset

Field Area 0.00 Set Reset

Next Prev OK

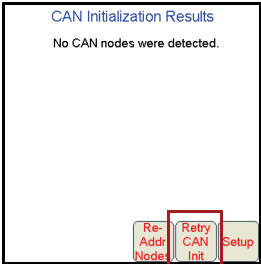
# Marking a Field Boundary

- 1. Touch the **Scout** tab and then **Record**.
- 2. Touch **Zone**.
- 3. The Record Field Feature screen displays. Select the **name**, choose 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.

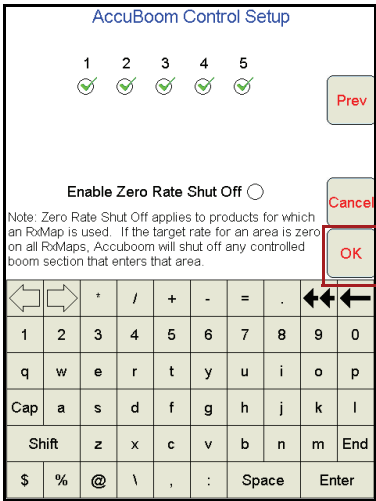
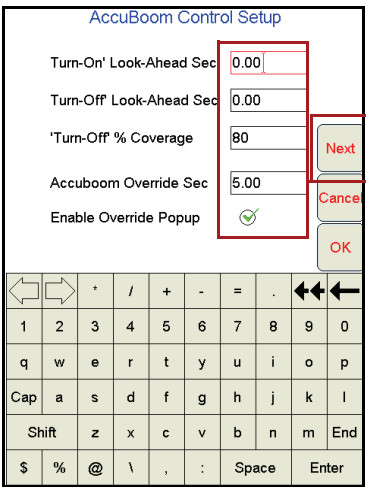
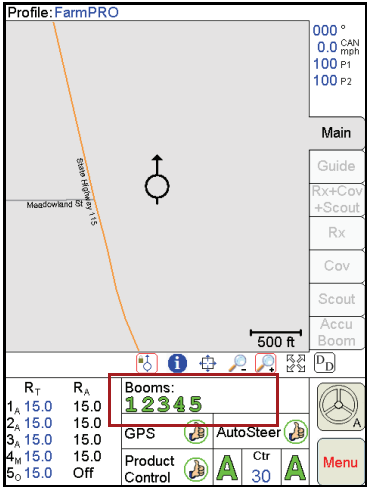
# CAN Startup



If no CAN Nodes are found, touch the **Retry CAN Init** button. If you still have CAN issues, see Chapter 2 in the FarmPRO Operation Manual for more information.

# AccuBoom Setup

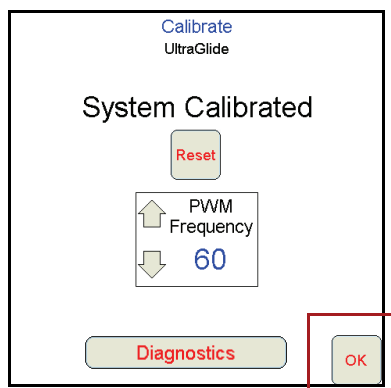
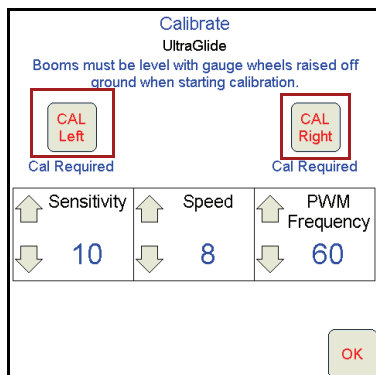
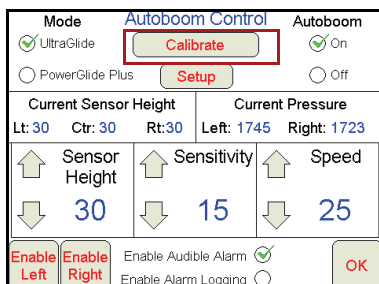
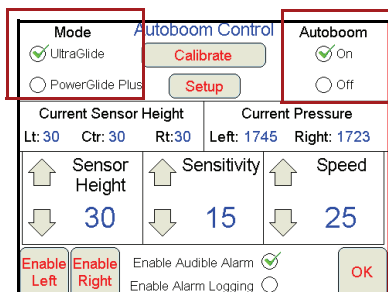
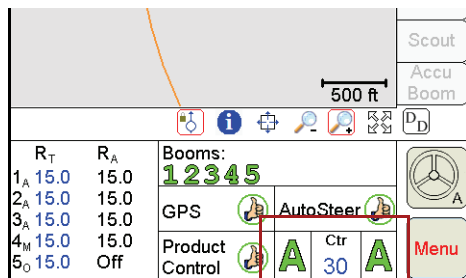
1. Touch the **Booms Area**.
2. Enter **Look-Ahead** values and touch **Next**.
3. Select the **booms** for AccuBoom automatic boom section control and touch **OK**.



# AutoBoom Calibration

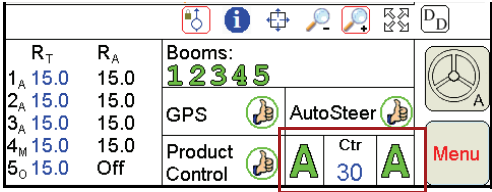
## UltraGlide

1. Touch in the center of the **AutoBoom Area**
2. Select Autoboom **ON** and **UltraGlide** for mode.
3. Touch the **Calibrate** button.
4. Touch **Cal Left** and wait for left boom calibration to complete, then touch **Cal Right** and wait for right boom calibration to complete.
5. Touch **OK**.



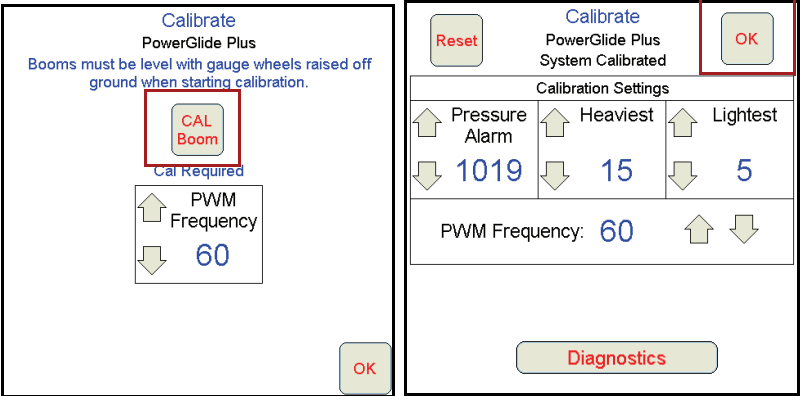
# PowerGlide Plus

1. Touch in the center of the **AutoBoom Area**.



2. Select Autoboom **ON** and **PowerGlide Plus** for mode.

**Note:** The AutoBoom Control screen in PowerGlide Plus mode will appear similar to the screens shown in the previous UltraGlide section. Refer to the UltraGlide section to locate the **ON** and **Calibrate** buttons if necessary.

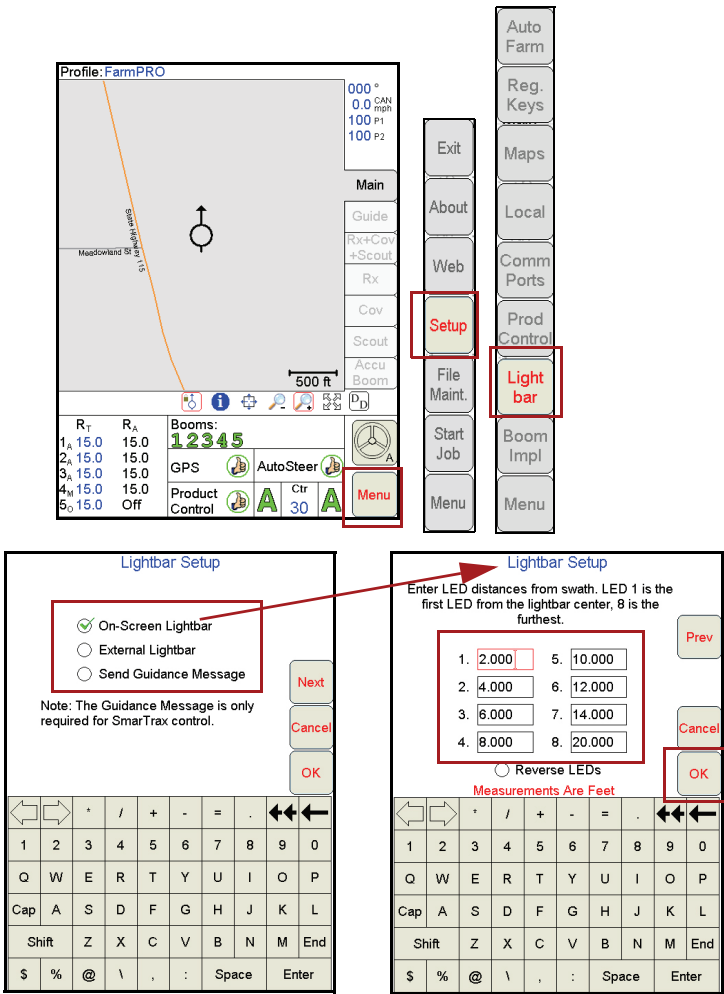


3. Touch the **Calibrate** button and then touch the **Cal Boom** button.  
Wait for the calibration to complete.

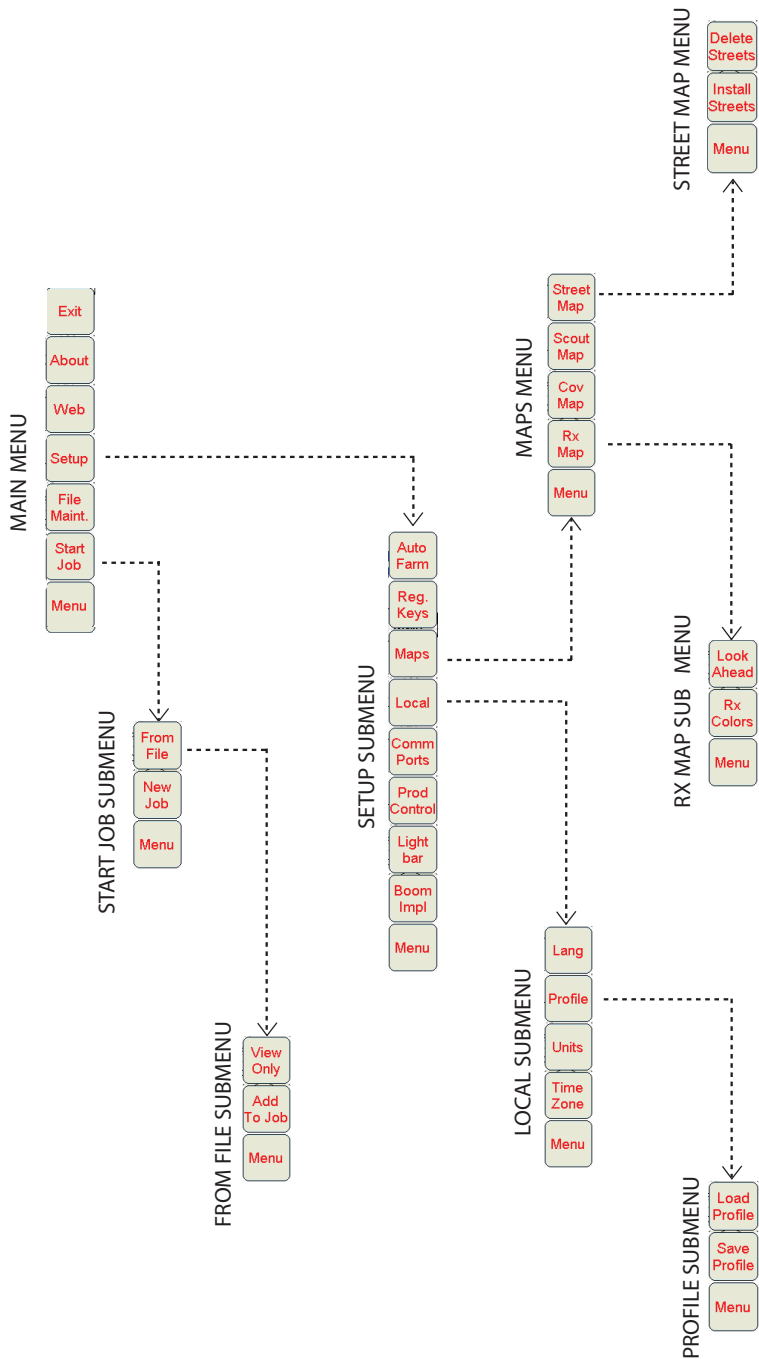
4. Touch **OK**.

# On-Screen Lightbar

- 1. Touch **Menu**, **Setup**, then **Lightbar**.
- 2. Select **On-Screen Lightbar** to display the Lightbar on Guidance screen.
- 3. Touch **Next** to set it up.
- 4. Touch **OK** when finished.



# Viper PRO Sub-Menu Structure









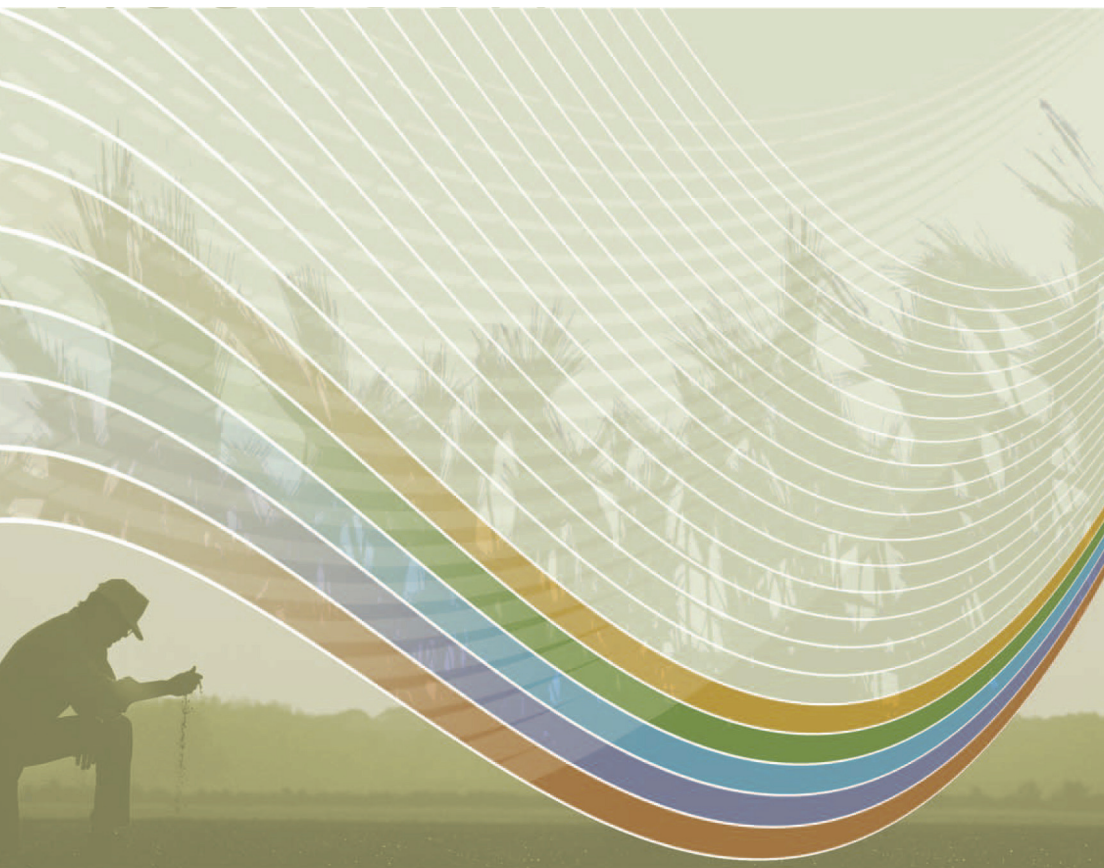
FarmPRO™  
Quick Reference Guide  
(P/N 602-0164-01-B)

**RAVEN**

*Simply improving your position.™*

[www.ravenprecision.com](http://www.ravenprecision.com)

(P/N 016-0171-179 Rev B 01/09)



For technical support, call your local dealer first. If any additional technical support is required, AutoFarm support may be reached at (U.S./Canada):

Phone: 1-877-947-7327

Web: [www.gpsfarm.com](http://www.gpsfarm.com)

Outside U.S./Canada, call your local dealer for country-specific requirements.

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