

**Hemisphere**  
GPS



# Outback S3

## User Guide Addendum for AutoMate

Part No. 875-0259-000 Rev. A1



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6,549,091	6,631,916	6,711,501	6,744,404	6,865,465
6,876,920	7,142,956	7,162,348	7,277,792	7,292,185
7,292,186	7,373,231	7,400,956	7,400,294	7,388,539
7,429,952	7,437,230	7,460,942		

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Hiawatha, KS 66434

Phone: (800) 247-3808

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## **Chapter 1: Overview**

Welcome

What's New

System Requirements



## Welcome

This document is an addendum to the Outback S3 User Guide. It covers configuring and operating AutoMate through the Outback S3 control console.

For additional product support, please refer to the Outback S3 User Guide (875-0196) and the AutoMate User Guide (875-0190), available for download at <http://www.outbackguidance.com>.

## What's New

AutoMate can now be operated directly from the Outback S3 console! From the console, you can:

- Configure basic AutoMate features
- Operate AutoMate and view spray data on the moving map

## System Requirements

- Outback S3 version 2.14.4.15 or higher. The Outback S3 System Setup screen displays the current software version. If you are not running a current version, please download and install the software upgrade from <http://www.outbackguidance.com>.
- AutoMate version 1.11.0001 or higher





## **Chapter 2: Getting Started**

Powering AutoMate

Configuring AutoMate

Testing Spray Boom Sections

This chapter covers:

- Powering AutoMate
- Configuring AutoMate through the Outback S3 console
- Testing spray boom sections

### **Powering AutoMate**

AutoMate is powered through the rate controller. Switch on the rate controller to turn on AutoMate.

### **Configuring AutoMate**

Most settings are configured through the Outback S3 guidance screens. No configuration is necessary on the AutoMate controller for most users.

Before operating AutoMate, define the following in Outback S3:

- Basic job settings in the **Vehicle Setup** screen (skip/overlap, swath and antenna offsets)
- Individual boom and planter section control settings in the AutoMate setup screen (section widths, look ahead, and percent coverage)

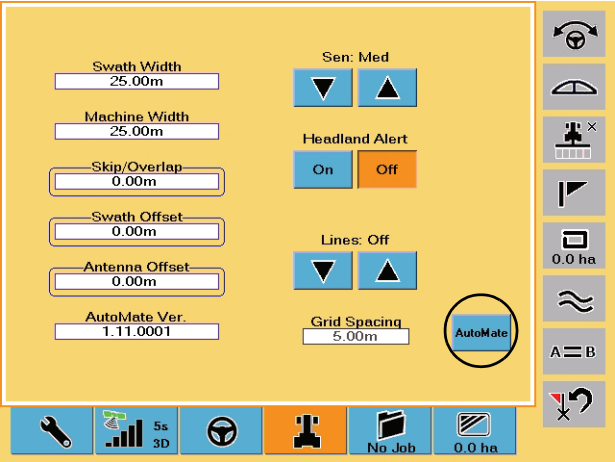


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**Note:** Overall boom offset is set in the "Swath Offset" field on the main **Vehicle Setup** screen.

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


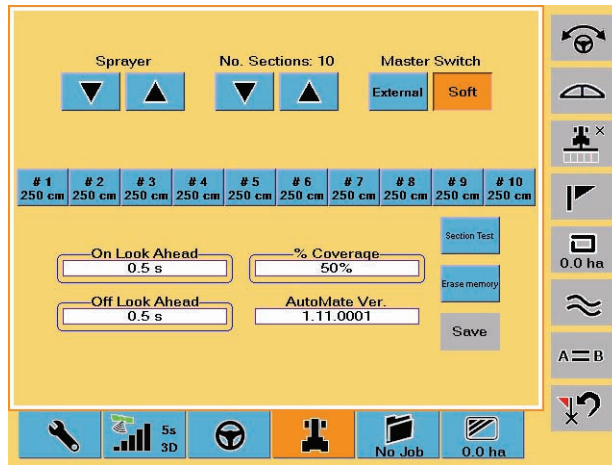
**To configure AutoMate:**

Step	Screen Item (when applicable)
<p>1. From the Outback S3 controller, open the <b>Vehicle Setup</b> screen.</p>	 <p>The screenshot shows the Vehicle Setup screen with the following settings: Swath Width: 25.00m, Machine Width: 25.00m, Skip/Overlap: 0.00m, Swath Offset: 0.00m, Antenna Offset: 0.00m, AutoMate Ver.: 1.11.0001, Sen: Med, Headland Alert: On, Lines: Off, Grid Spacing: 5.00m. A button labeled 'AutoMate' is circled in red. The bottom status bar shows 'No Job' and '0.0 ha'.</p>
<p><b>Figure 2-1: Vehicle Setup screen.</b></p> <hr/> <p><b>Note:</b> The AutoMate button will change to  if no AutoMate was detected at startup. Connect AutoMate and press  to detect AutoMate.</p> <hr/>	



Step	Screen Item (when applicable)
2.	On the <b>Vehicle Setup</b> screen, review and edit your current job settings. Review your Outback S3 system documentation if this is your first time using the Outback S3.
<p><b>Note:</b> Machine Width is automatically calculated by the boom section widths set in the <b>AutoMate Setup</b> screen.</p>	



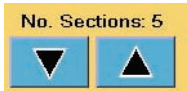


3. Press  to open the **AutoMate setup** screen.



**Figure 2-2: AutoMate Setup screen.**


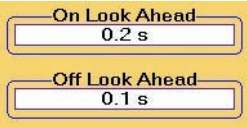
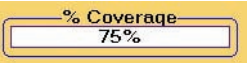


**Note:** Any changes on the **AutoMate Setup** screen must be saved manually by pressing  .



Step	Screen Item (when applicable)
<p>4. Select the <b>Master Switch</b> setting.</p> <ul style="list-style-type: none"> <li>• <b>Soft</b> - Controls the Master switch through the <b>Apply</b> button in the Outback S3.</li> <li>• <b>External</b> - Used for Planting mode and when using an external master switch.</li> </ul>	
<p>5. Select the mode using the up and down arrow keys. Available modes include:</p> <ul style="list-style-type: none"> <li>• Electric planter</li> <li>• Air planter</li> <li>• Sprayer</li> </ul>	
<p>6. Set the number of boom sections using the up and down arrows.</p> <hr/> <p><b>Note:</b> The mode selected in step 5 determines the maximum number of sections.</p>	
<p>7. Set the individual boom section widths.</p> <ol style="list-style-type: none"> <li>Press a boom section button (for example, #1).</li> <li>Enter the width using the <b>Width</b> pop-up screen.</li> <li>Press .</li> </ol>	



## 2: Getting Started

Step	Screen Item (when applicable)
<p>8. Set the Look Ahead times (On/Off) in the “On Look Ahead” and “Off Look Ahead” fields. Press  to save.</p> <hr/> <p><b>Note:</b> Look ahead times compensate for delays in the spray system caused by the speed at which the boom valves can open and close and the vehicle’s speed. For additional information, please see the AutoMate User Guide.</p>	
<p>9. Set the Percent Coverage in the “% Coverage” field.</p> <hr/> <p><b>Note:</b> Percent coverage is the amount of the boom section that must enter a previously applied area before AutoMate will turn it off. For example, if the percent coverage is set to 75%, then 75% of a given section must enter an applied area before shutting off, potentially leaving a skip of 25%. AutoMate allows a percent coverage anywhere from 5% to 100% in increments of 5%.</p>	
<p>4. Press .</p> <hr/> <p> <b>Warning!</b> You must press the <b>Save</b> button or you will lose your settings.</p>	



## Testing Spray Boom Sections

After configuring AutoMate, you will need to test the spray boom sections. The **Section Test** window is accessible from the main **AutoMate Configuration** screen.

AutoMate will turn on each boom section consecutively for five seconds.

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**Note:** If you have made any recent changes in the number of sections you must save the changes in order for them to be reflected in the section test.


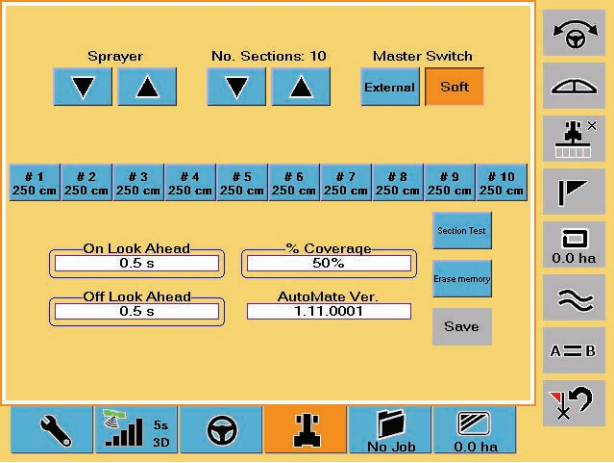
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**Note:** Speed must be less than 1 mph to perform a section test.

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

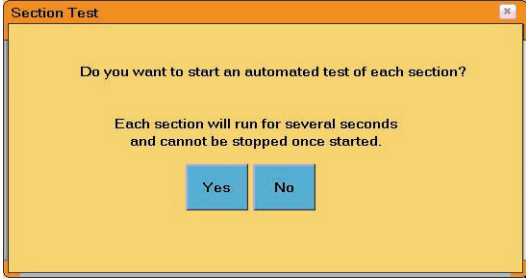
Step	Screen Item (when applicable)
<p>1. On the <b>AutoMate Configuration</b> screen, press</p>	<div style="text-align: right; margin-bottom: 10px;">  </div> 

**Figure 2-3: AutoMate Configuration screen.**





## 2: Getting Started

Step	Screen Item (when applicable)
2. Press  to start the automated test. Press  to cancel.	





## **Chapter 3: Operating AutoMate**

About Jobs

Beginning a Basic Spray Job Using AutoMate

Creating Field Boundaries and No Spray Zones

Manually Overriding Boom Sections

Troubleshooting

This chapter covers AutoMate operation with the Outback Guidance S3 system. It includes the following sections:

- About jobs
- Beginning a basic spray job using AutoMate
- Creating field boundaries and no spray zones
- Manually overriding boom sections
- Troubleshooting

## About Jobs

### Job Types

Outback S3 with AutoMate supports four types of jobs:

1. **Standard job** - The simplest way to use AutoMate is to start a job in the Outback S3 and begin spraying. AutoMate will generate an as-applied record of spray activity.
2. **Job with field boundary** - AutoMate allows you to create a no-spray boundary by creating a field boundary in Outback S3. After making an initial spray pass around the boundary of the field, AutoMate will create a no-spray zone around the boundary of the field.
3. **Job with no-spray zones** - AutoMate allows you to create up to eight no-spray zones within a job. This is a useful feature for areas such as waterways, well heads and other no-spray areas. Set the no-spray zones in the Outback S3 and drive around the no-spray zone while spraying. AutoMate will create a no-spray zone within the area sprayed around, and turn off any boom sections that enter the no-spray zones.
4. **Job with field boundary and no-spray zones** - For complete control, the operator can generate both a field boundary and up to eight no-spray zones for a job. Simply use the field boundary and no-spray zone menus on the S3 and spray around the areas that are not to be sprayed.



## Data Logging

The AutoMate controller saves all job swath information until manually erased. When AutoMate has less than 20% of available memory remaining, you will see the following message on the Outback S3 **Map** screen:

**WARNING! AutoMate memory low**

If this warning appears, press  on the **AutoMate Configuration** screen.

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**Note:** Erasing memory will erase previously applied areas in AutoMate.


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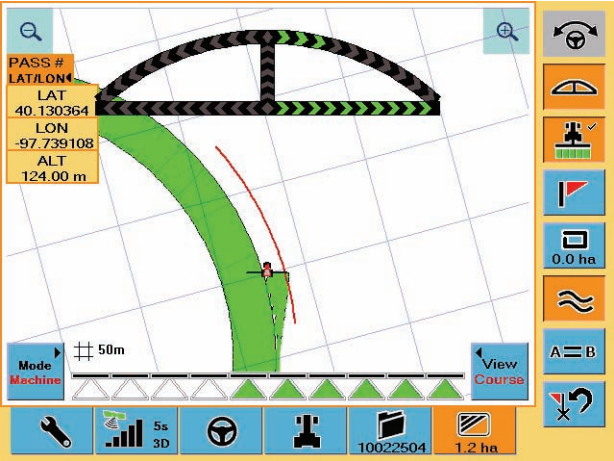

## Beginning a Basic Spray Job Using AutoMate

Before beginning a job, configure basic job settings. See Chapter 2, “Getting Started” for configuration instructions.

### To start a job:

Step	Screen Item (when applicable)
1. Turn on the Outback S3.	
2. The <b>Getting Started</b> screen appears. <ul style="list-style-type: none"><li>• <b>New Job:</b> Begins a new job.</li><li>• <b>Continue Job:</b> Continues a previous job.</li><li>• <b>List Jobs:</b> Displays a list of jobs.</li></ul>	



Step	Screen Item (when applicable)
<p>3. Select <b>New Job</b> and begin driving your field. AutoMate will begin application when:</p> <ul style="list-style-type: none"> <li>• Master switch is ON</li> <li>• Ground speed is detected</li> <li>• AutoMate recognizes that boom sections are in an unapplied area.</li> </ul>	 <p>The screenshot shows a map interface with a grid. A green path curves through the field. A scale bar indicates 50m. A data box on the left shows: PASS #, LAT/LON, LAT 40.130364, LON -97.739108, ALT 124.00 m. A bottom toolbar contains icons for a wrench, 5s 3D, a steering wheel, a boom icon, 10022504, and 1.2 ha. A right sidebar has buttons for a steering wheel, a boom, a flag, 0.0 ha, a wavy line, A=B, and a return arrow. A 'View Course' button is at the bottom right.</p>
<p><b>Figure 3-4: Outback S3 Map screen.</b></p>	
<p><b>Note:</b> The spray status icons at the bottom of the screen indicate which boom sections are active (green) or inactive (gray).</p>	
<p>4. Using the <b>Map</b> screen as a guide, press the <b>Apply</b> button to adjust spray status. See Table 3-1 for <b>Apply</b> button states.</p>	







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**Note:** If entering an area that has already been sprayed, AutoMate will automatically turn off the boom or booms that have entered the previously sprayed area.

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**Table 3-1: Apply Button Key**

Master Switch Mode	State	Apply Button
Soft	On	
Soft	Off	
External	On	
External	Off	

**Tip:**


- **Soft** - Controls the Master switch through the **Apply** button in the Outback S3.
- **External** - Used for Planting mode and when using an external master switch.



## Creating Field Boundaries and No Spray Zones

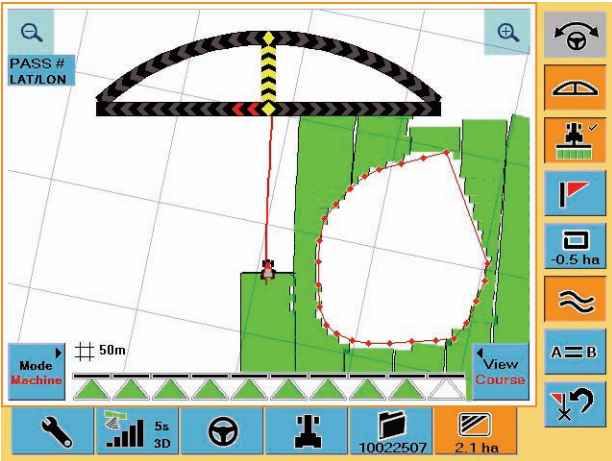
For help creating field boundaries and no-spray zones, please refer to your Outback S3 User Guide. This area provides a brief overview of using these with AutoMate.

### To create field boundaries and no-spray zones:

Step	Screen Item (when applicable)
1. Start a standard AutoMate Job (see "Beginning a Basic Spray Job Using AutoMate" on page 14).	
2. Select the Outback S3 <b>Perimeter</b> button.	





Step	Screen Item (when applicable)
<p>3. On the <b>Perimeter</b> screen, set the desired boundary settings.</p> <ul style="list-style-type: none"> <li>• Select “Include” to set a field boundary.</li> <li>• Select “Exclude” to set a no-spray zone.</li> </ul>	 <p>The screenshot displays a top-down view of a field with a red dashed line indicating a perimeter. A yellow and black striped arrow points to a specific location on the perimeter. The interface includes a search bar at the top left, a scale bar for 50m, and a 'Mode Machine' indicator. A toolbar on the right side contains icons for navigation and control. At the bottom, there are icons for a wrench, a 5s 3D bar chart, a steering wheel, a tractor, a folder labeled '10022507', and a field area of '2.1 ha'.</p>
<p>4. Make an initial pass around your desired boundary to set it in Outback S3. AutoMate will automatically turn off booms when approaching a field boundary or no-spray zone.</p>	

**Figure 3-5: Exclude Perimeter example.**



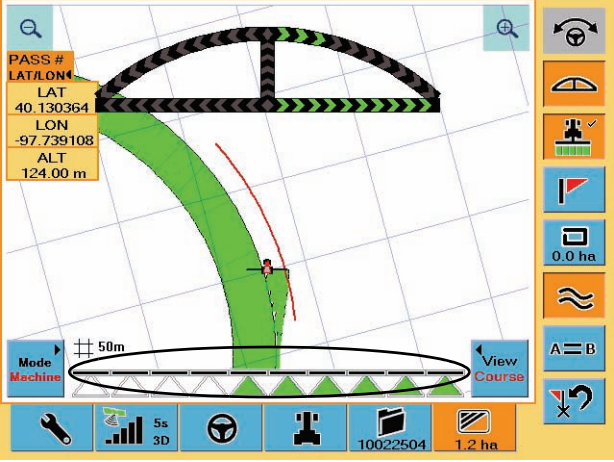
## Manually Overriding Boom Sections

AutoMate allows the operator to manually override all sections. This feature is used to back into a corner and start spraying before reaching the minimum speed.

To override the booms, you must:

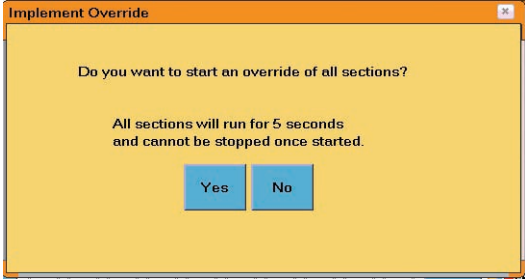
- Be stopped or moving less than 1 mph
- Set the Master Switch to **Soft**
- Turn the **Apply** button on

### To manually override boom sections:

Step	Screen Item (when applicable)
1. At the bottom of the <b>Map</b> screen, press the spray status icons.	 <p>The screenshot shows the AutoMate Map screen. At the bottom, there is a toolbar with several icons. The spray status icons are located on the right side of the screen, within a vertical sidebar. These icons include a compass, a boom icon, a machine icon, a flag icon, a 0.0 ha area icon, a wavy line icon, an A=B icon, and a spray status icon. The map itself shows a green spray path and a boom. A sidebar on the left displays coordinates: PASS #, LAT/LONG, LAT 40.130364, LON -97.739108, and ALT 124.00 m. A 50m scale bar is also visible.</p>

**Figure 3-6: Spray status icons on Map screen.**



Step	Screen Item (when applicable)
<p>2. Press <input type="button" value="Yes"/> to start the override. Press <input type="button" value="No"/> to cancel.</p>	

## Troubleshooting

Table 3-2 describes possible AutoMate error messages and solutions.

**Table 3-2: Troubleshooting Error Messages**

Warning	Solution
AutoMate Communication Error	Warning displays if AutoMate loses communication for more than two seconds. Check cables or AutoMate power.
WARNING: AutoMate Memory Low	Warning displays if AutoMate has less than 20% of available memory left. Press <input type="button" value="Erase memory"/> on the <b>AutoMate Configuration</b> screen.





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