Form No. 3433-776 Rev E

TORO®

Count on it.

Software Guide

X25 GeoLink® Precision Spray System Kit

Multi Pro®1750 or 5800 Turf Sprayer

Software Version 4.04 and Up

Note: Contact your authorized Toro distributor, Toro NSN at 1-844-GEOLINK (1-844-436-5465), or GeoLinkNSN@toro.com for customer service.

Register at www.Toro.com.
Original Instructions (EN)

CE

3433-776 E

Introduction

The GeoLink® Precision Spray System automatically controls the spray application rate and the spraying area. The system monitors the area sprayed, the speed of the vehicle, and the total volume of material sprayed. You set the target volume per unit area to spray and the spray system automatically maintains the flow within the proper range of the vehicle speed and continually displays the actual volume of material per area sprayed.

Read this information carefully to learn how to operate and maintain your product properly and to avoid injury and product damage. You are responsible for operating the product properly and safely.

Visit www.Toro.com for product safety and operation training materials, accessory information, help finding a dealer, or to register your product.

Whenever you need service, genuine Toro parts, or additional information, contact an Authorized Service Dealer or Toro Customer Service and have the model and serial numbers of your product ready. Write the numbers in the space provided.

Model No. _____

Serial No. _____

This manual identifies potential hazards and has safety messages identified by the safety-alert symbol (Figure 1), which signals a hazard that may cause serious injury or death if you do not follow the recommended precautions.



g000502

Figure 1

1. Safety-alert symbol

This manual uses 2 words to highlight information. **Important** calls attention to special mechanical information and **Note** emphasizes general information worthy of special attention.

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Safety

Read and understand the contents of this *Operator's Manual* before operating the console computer.

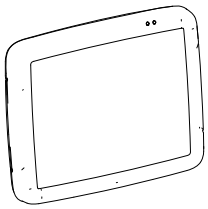
- Keep these instructions with the *Operator's Manual* for the turf sprayer.
- It is very important that all who operate this equipment have ready access to these instructions at all times.
- Read these instructions and the instructions in the *Operator's Manual* for the turf sprayer carefully. Be familiar with the controls and the proper use of the equipment.
- Never allow children or people unfamiliar with these instructions to use the controls.
- Never spray while people, especially children, or pets are nearby.
- Chemicals can injure people, animals, plants, soils, or other property. To avoid personal injury and environmental damage:
  - Select the proper chemicals for the job.
  - Follow the manufacturer's instructions on the chemical container labels. Apply and handle chemicals as recommended.
  - Handle and apply the chemicals with care.
  - Wear all necessary protective equipment.
  - Handle chemicals in well-ventilated areas.
  - Never smoke when handling chemicals.
  - Properly dispose of unused chemicals and containers.
- Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people or for damage to property.

Setup

Media and Additional Parts

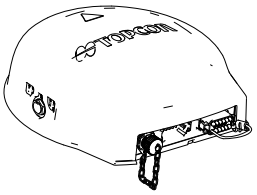
Description	Qty.	Use
USB storage device (includes a digital copy of the Operator's Manual)	1	The setup and use of the X25 GeoLink precision spray system.

Product Overview



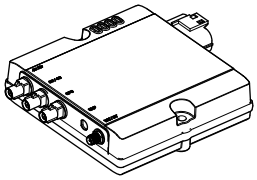
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Figure 2
X25 control console



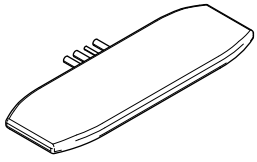
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Figure 3
Satellite receiver



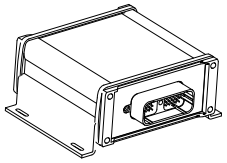
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Figure 4
Modem



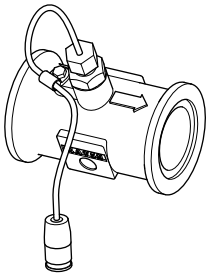
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Figure 5
Modem Antenna



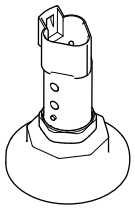
g204995

Figure 6
Automatic section controller (ASC)



g205645

Figure 7
Turbine-type flowmeter



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Figure 8
Pressure transducer

Controls

Become familiar with the controls before you start the engine and operate the sprayer.

Floating-Menu Bar

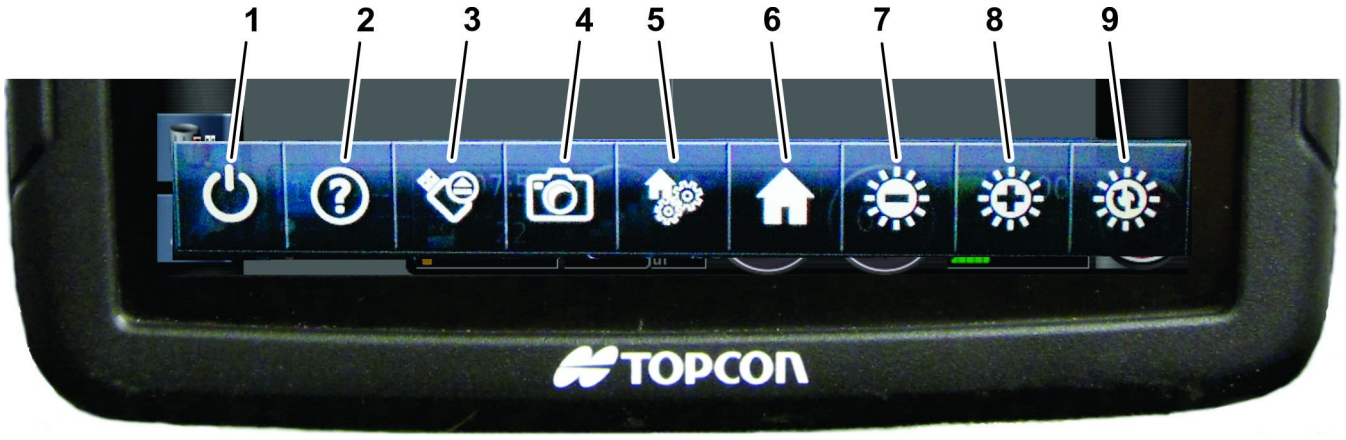


Figure 9

1. POWER DOWN icon
2. HELP icon
3. USB EJECT icon (displays when a USB storage device is inserted into the X25 control console)
4. SCREENSHOT icon
5. MANAGE GLOBAL-HOME SCREENS icon
6. HOME SCREEN icon
7. SCREEN BRIGHTNESS icon (reduce brightness)
8. SCREEN BRIGHTNESS icon (increase brightness)
9. BRIGHTNESS MODE icon (auto, day mode, and night mode)

Using the Floating Menu-Bar

Accessing the Floating-Menu Bar

Press the screen of the control console with your finger and swipe upward from the bottom to display the floating-menu bar (Figure 10).



Figure 10

Power Down Icon

Use the POWER DOWN icon to shut off the GeoLink system (Figure 9).

Note: During normal operation, the X25 spray system powers ON when the key switch is in the RUN position; the X25 spray system powers OFF when the key switch is in the SHUT OFF position.

Help Icon

Press the HELP icon on the floating-menu bar to display the individual help icons that describe the controls on the current screen (Figure 9). Pushing the individual help icon displays the descriptive text for that control (Figure 11). Press the HELP icon on the floating-menu bar again to clear the individual help icons.

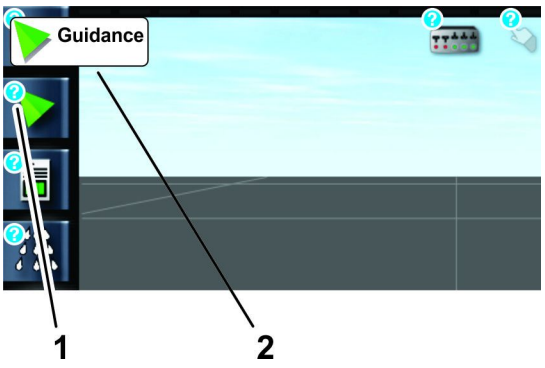


Figure 11

1. Individual help icon
2. Descriptive text

USB Eject Icon

Press the USB EJECT icon before you remove a USB device from the X25 control console (Figure 9). The

USB EJECT icon is available on the floating-menu bar only when you have a USB storage device inserted into the USB port.

Note: The USB port (not shown) is located at the back of the control console.

Screenshot Icon

Press the SCREENSHOT icon to record the current screen image onto the USB storage device.

Manage Global-Home Screens Icon

Press the MANAGE GLOBAL-HOME SCREENS icon to save the layout of the operation screen. Use the manage global-home screen to reduce the clutter of the operation screen or quickly return to display the required information in the operation screen. Display or hide the required views in the operation screen and press the SAVE HOME SCREEN icon to save the layout.

Screen Brightness Icons

Use the SCREEN BRIGHTNESS icons (Figure 9) to adjust the screen brightness of the control console:

- Press the (**-**) screen brightness icon to reduce display brightness.
- Press the (**+**) screen brightness icon to increase display brightness.
- Press the brightness mode icon to select 1 of the following:
  - Auto (uses the light sensor in the control console to adjust the screen brightness)
  - Day mode (preset screen brightness for machine operation during bright ambient light)
  - Night mode (preset screen brightness for machine operation during low ambient light)

Power Button

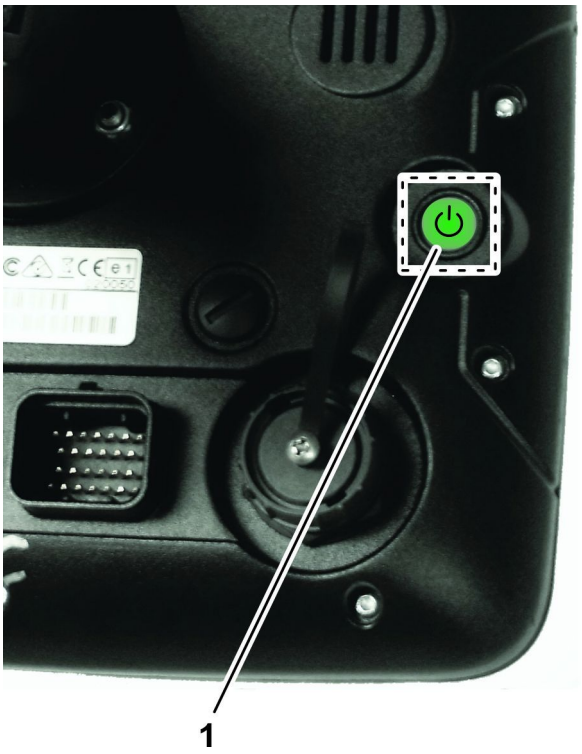
Important: **The system powers ON when you start the machine. The power button is not needed to start the system.**

- During normal operation, power ON the X25 spray system with the key switch in the RUN position.

  Note: When necessary, you can power ON the X25 spray system by pushing the power button at the back of the control console (Figure 12).
- Power OFF the X25 spray system with the key switch in the SHUT OFF position.

  Note: In an emergency, you can press the power button at the back of the control console (Figure 12) to shut off the X25 spray system.

Note: Turning off the console correctly does not affect the data stored in the ECU memory.



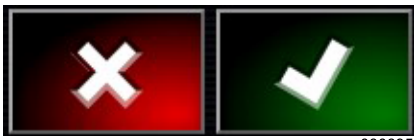
g203113

Figure 12

1. Power button—green

Cancel and Confirm Icons

Press the cancel icon to cancel an action or the confirm icon to entry or selection. You must select 1 of these icons to progress from any screen displaying them (Figure 13).



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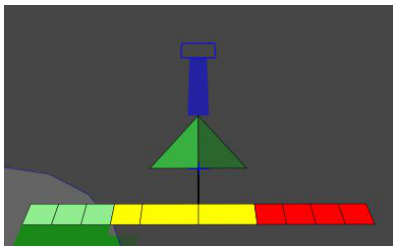
Figure 13

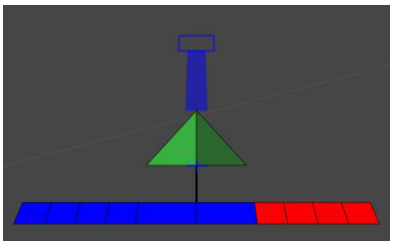
Implement Color Indicators

These indicators show the position and direction of the vehicle and its implement.

The implement color indicates the status of the product application as follows (Figure 14):

- Red—the boom section is off.
- Blue—the boom section is inhibited (on and not flowing, typically due to low speed or pressure).
- Yellow—the boom section is on and not flowing intentionally (typically due to auto-section control stopping the flow).
- Green—the boom section is on and flowing.





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g031203

Figure 14

Specifications

The following are important acronyms for the user to understand:

- WAAS (Wide Area Augmentation System)—This positioning-correction system was developed by the US Federal Aviation Administration to serve as an air navigation aid by improving the accuracy and availability of the GPS signals.
- RTK (Real Time Kinematic)— RTK Network - a group of land-base stations that transmit position data to a server through the internet. GPS guided machines equipped with RTK correction exchange data with the server, transmitting position information and receiving correction information through cellular data exchanges. The server uses the position data from the base station to calculate position-correction data and transmits it to the vehicles through the cellular modem. The corrected GPS position provides location accuracy between 1 to 2 cm (0.39 to 0.79 inch) in real time.
- GLONASS (Global Navigation Satellite System (Russian GNSS))—This allows the GPS receiver to use the Russian satellite navigation system in addition to GPS.

Operation

The computer in the automatic section controller (ASC) controls the spray application rate for varying vehicle speeds. You set the target volume per unit area to spray, and the ASC automatically maintains the flow within the proper range of the vehicle speed and continually displays the actual volume of material per area sprayed. The X25 control console also monitors the area sprayed, the speed of the vehicle, and the total volume of material sprayed.

Note: Ensure that the sprayer is calibrated correctly before starting to spray.

Note: Ensure that the InfoCenter is set to GeoLink before using the display to spray.

Starting the X25 Command Console

1. Ensure that the GeoLink components and finish kit are installed.
2. Start the machine and wait a few seconds for the command console to start.

   Note: Remember the following about starting and shutting off the command console:

   - Shut off the machine to power OFF the command console and X25 spray system.
   - Shutting off the command console does not affect the data stored in the computer.

Using the Touch Screen

You access, add, or modify sprayer information on the X25 control console by touching the screen and working with the individual icons.

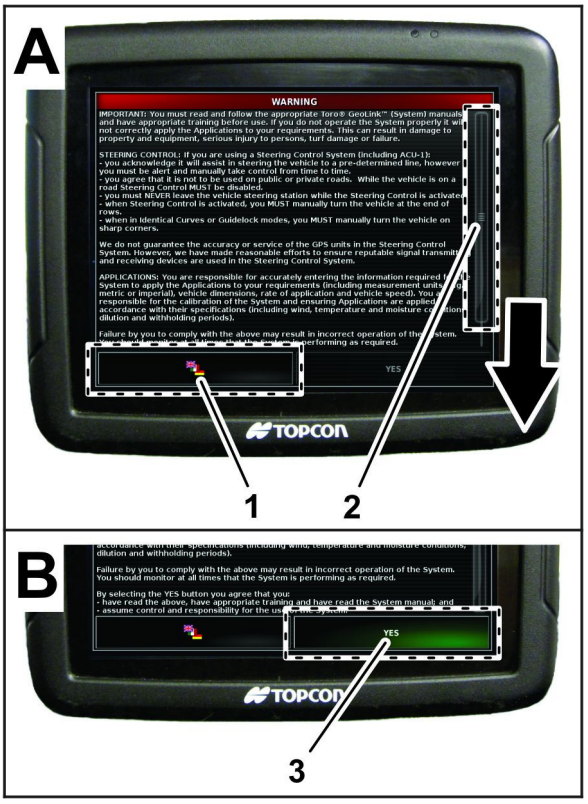
- Press any icon on the screen to display what is shown on the screen.
- Additional options display when you press some icons.
- Select options as required.
- Confirm the new display (Figure 13).

Selecting a Language and Accepting the License Agreement

The screen that follows the splash screen displays the language selection and the EULA (end user license agreement).

1. If needed, press the languages icon to change the X25 display to a different language (Figure 15).

   Note: Setting the language in the EULA screen changes the language setting throughout the X25 user interface. You can also change the language in the User settings.



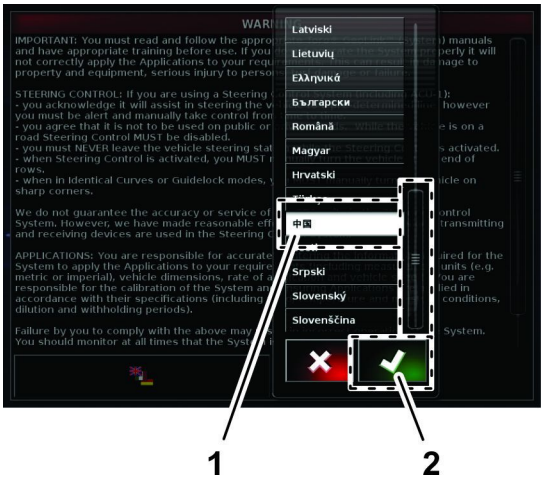
g203216

Figure 15

1. Languages icon
2. Scroll bar
3. YES icon

2. At the language selection dialogue box, navigate to your preferred language, select it from the list, and press the YES icon (Figure 16).

   The X25 control console starts in the selected language.



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Figure 16

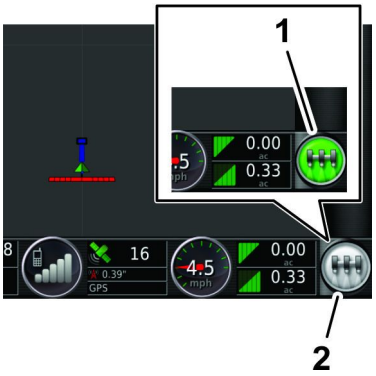
1. Selected language
2. Confirm icon

3. Read the EULA (Figure 15).

Use the scroll bar to navigate to the bottom of the screen. The YES icon will change to green (Figure 15).

4. Press the YES icon to move to the home screen (Figure 15).

Using the Master Switch on the X25 Control Console



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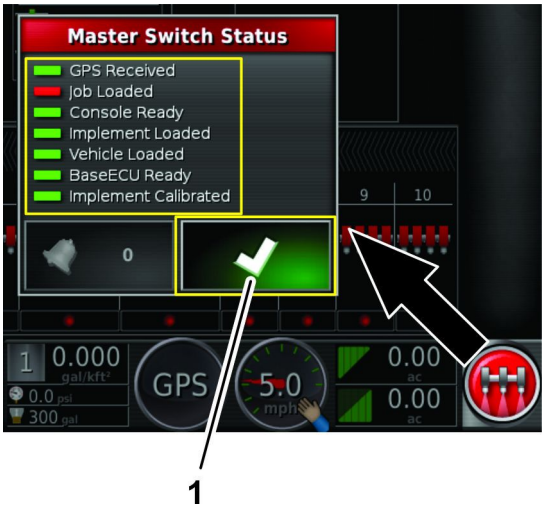
Figure 17

1. Green MASTER SWITCH icon (system ready, sprayer controller on)
2. White MASTER SWITCH icon (standby)

The MASTER SWITCH icon indicates the readiness (Figure 17) of the system by the following colors:

- Green—indicates that the system is ready, and the sprayer controller is on and working.
- White—sprayer controller is in standby.
- Red—indicates that the system is not ready, the sprayer controller is off and cannot be used.

When the MASTER SWITCH icon is red, press the icon to display the master switch status dialog box, which shows the number of active alarms (Figure 18).



g205202

Figure 18

At any time, press the confirm icon (Figure 18) to return to the main screen and complete the necessary corrective action.

Using the Master Switch

Multi Pro 1750 Turf Sprayer

The MASTER SWITCH icon on the home screen indicates the sprayer system is on or off (Figure 17).

Using the Master Switch

Multi Pro 5800 Turf Sprayer

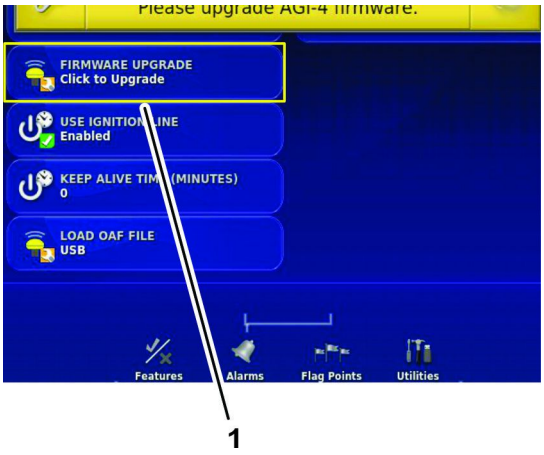
The MASTER SWITCH icon on the home screen turns the sprayer system on or off (Figure 17). This switch does not work if the master-section switch or the left, center, and right section switches of the machine are in the OFF position; refer to the *Operator's Manual* for information about the master-section switch and the 3 section switches.

- Press the MASTER SWITCH icon to run the sprayer system (the icon turns green).
- Press the MASTER SWITCH icon to shut off the sprayer system (the icon turns white).

Information, Urgent, Caution, and Warning Messages

Messages table

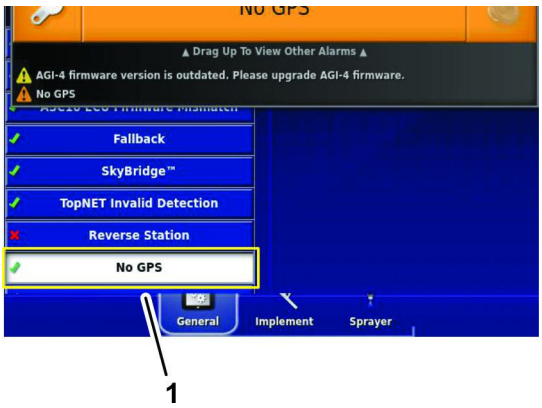
<table>
<tr>
<td>
</td>
<td>Information messages tell you the status of a process.</td>
</tr>
<tr>
<td>
</td>
<td>Urgent messages tell you that you need to act.</td>
</tr>
<tr>
<td>

1. SETTINGS LINK icon 2. CLOSE icon 3. ALARM AUDIO SHUTOFF icon</td>
<td rowspan="2">Caution messages tell you that you should to perform a corrective action before operating the machine.</td>
</tr>
<tr>
<td>

1. Icon linked to the settings-menu screen</td>
</tr>
</table>

Messages table (cont'd.)

<table>
<tr>
<td>

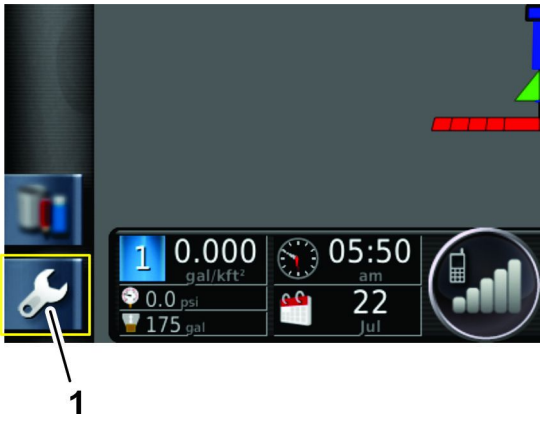

1. Corrective action information
2. Details icon (swipe down)
3. Message details
</td>
<td rowspan="2">Warning messages tell you that you must to perform a corrective action before operating the machine.</td>
</tr>
<tr>
<td>


1. Linked to the settings-menu screen
</td>
</tr>
</table>

Selecting the Correct Units of Measure

The following options are available: Metric, Imperial (US), and Imperial (UK). The United States (US) and the United Kingdom (UK) imperial options are provided because gallons and fluid ounces have different measurements in the US and the UK.

1. Press the SETUP icon on the main screen (Figure 19).

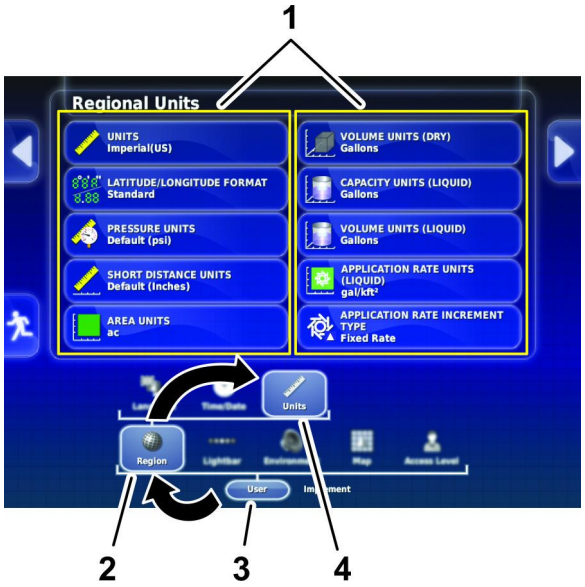


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Figure 19

1. SETUP icon

2. Press the USER icon (Figure 20).

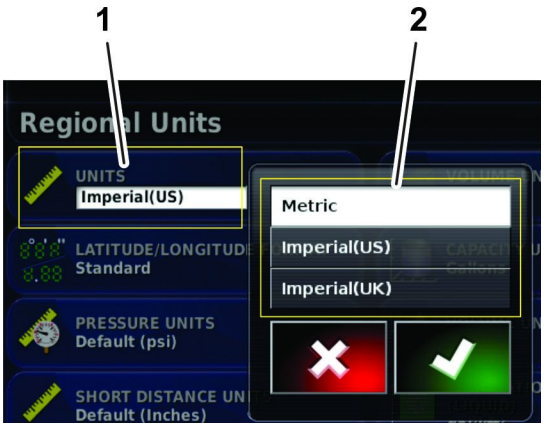


g203793

Figure 20

1. Unit categories
2. REGION icon
3. USER icon
4. UNITS icon

3. Press the REGION icon (Figure 20).
4. Press the UNITS icon (Figure 20).
5. As needed, select the correct units and application rate, and press the confirm icon (Figure 21).



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Figure 21

1. Current unit of measure
2. List of units of measure icons

Managing Job Data

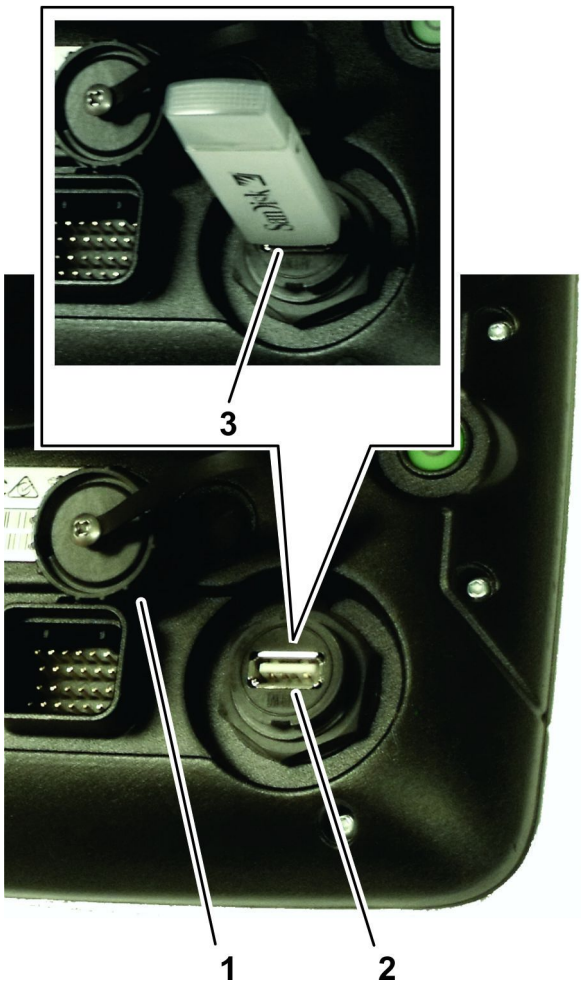
The job menu selects or sets up specific job information associated with the chosen area. Use this menu to store information, and record and report activity.

USB Storage Device Specification

- USB 3.0
- 8 GB or larger
- Linux compatible

Using a USB Storage Device

1. Remove the cap for the USB port located below the power button (Figure 22).

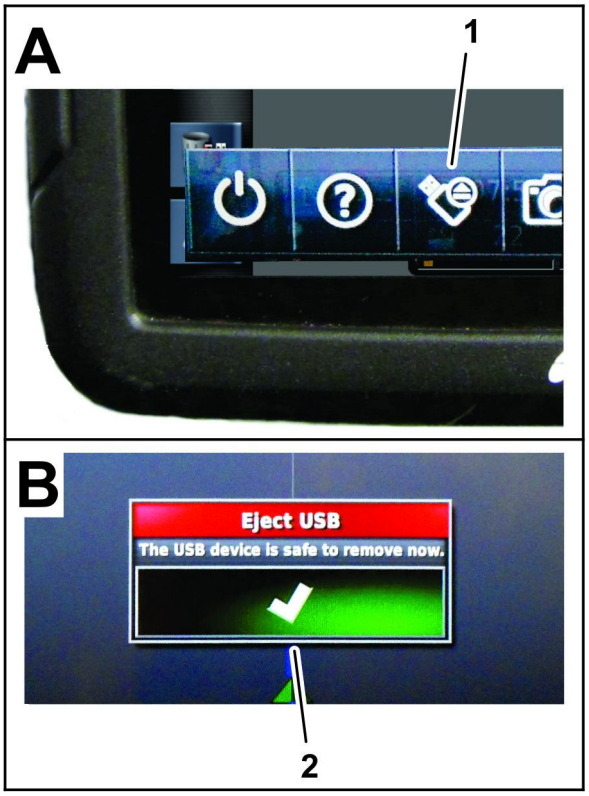


g212841

Figure 22

1. Cap
2. USB socket
3. USB storage device

2. Insert a USB storage device into the USB socket (Figure 22).
3. Save information to the storage device.
4. At the bottom of the control console screen, swipe up to access the floating-menu bar (Figure 23).



g203571

Figure 23

1. Eject USB icon
2. Confirm icon (eject USB dialog box)

5. Press the eject USB icon (Figure 23).
6. At the eject USB dialog box, press the confirm icon and remove the USB storage device from the control console (Figure 23).

Recording Job Information

1. Ensure that you have selected the active job.
2. Press the job icon (Figure 24).

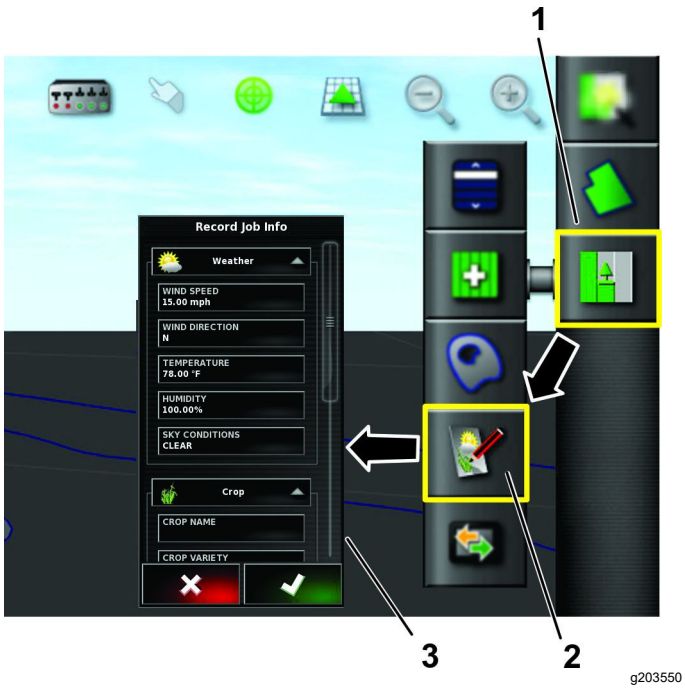


Figure 24

1. Job-menu icon
2. Record-job information icon
3. List of information to change

3. Press the record-job information icon (Figure 24).
4. Press the icons for the types of job information that you want to include with the job, enter the specific information, and press the confirm icon; refer to the information-types table.

   Note: You can add a records multiple products for the job by pressing the ADD NEW PRODUCT icon.



Figure 25

1. ADD NEW PRODUCT icon

Information Types

Weather	Crop	Product
Wind speed	Crop Name	Product Name
Wind direction	Crop Variety	Rate (application)
Temperature	Growth stage	Units
Humidity	Soil type	
Sky conditions	Soil conditions	
	Application method	

Recording Job Notes

Use the notes area to record any information for each job.

1. Open the job-information icon (Figure 26).

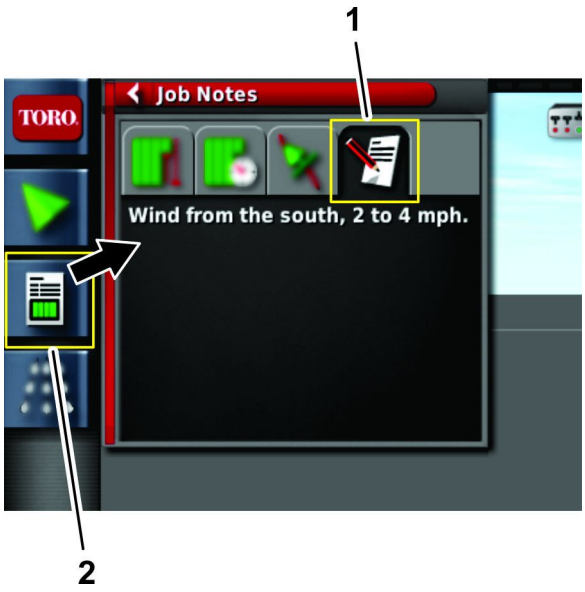


Figure 26

1. Job-notes icon
2. Job-information icon

2. Press the job-notes icon (Figure 26).
3. Enter the information and press the confirm icon.

Creating a Job Report

1. Press the Job Menu icon (Figure 27).

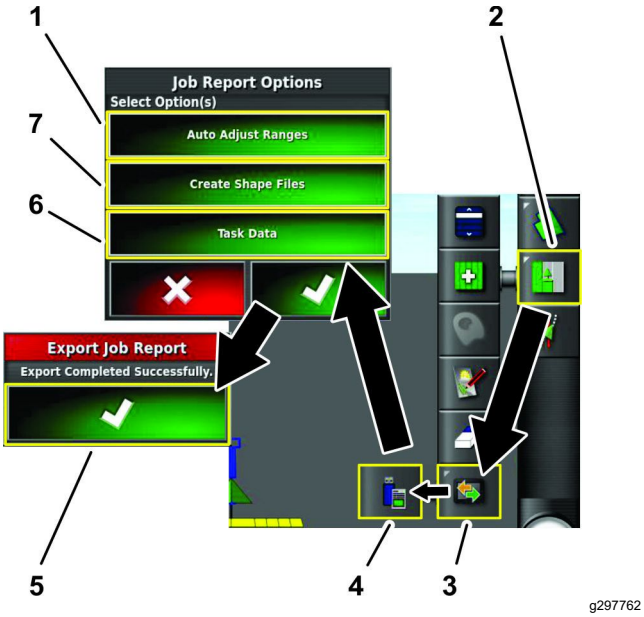


Figure 27

1. Auto adjust ranges icon
2. Job menu icon
3. Data exchange menu icon
4. Export job report to USB icon
5. Confirm icon
6. Task data icon
7. Shape report icon

2. Press the Data Exchange Menu icon (Figure 27).
3. Press the Export Job Report to USB icon (Figure 27).
4. Press the icons for the options that you want in the job reports options dialog box:
   - Auto adjust ranges—increases the color contrast for the yield rates in the report map.
   - Exports a job report file (.pdf); as shown in Figure 28.
5. In the job reports options dialog box, press the confirm icon (Figure 27).
6. In the export job reports dialog box, the confirm icon (Figure 27).

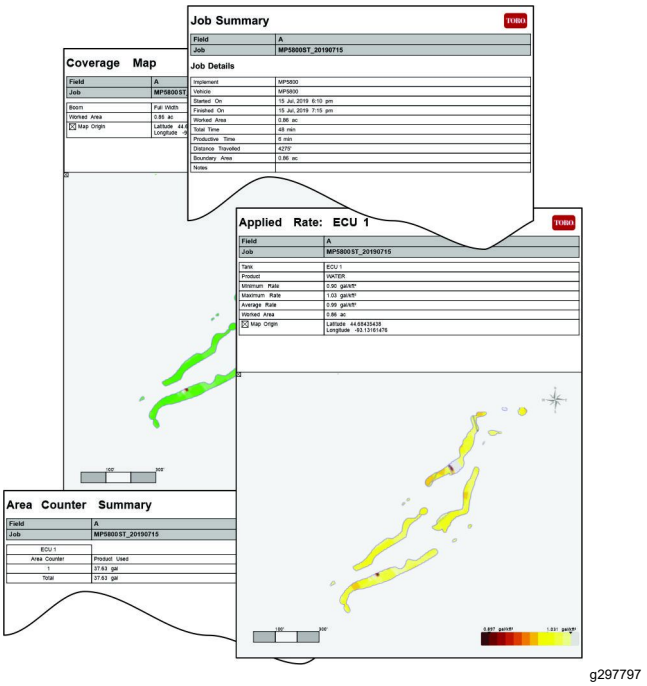


Figure 28
Job Report Example

Exporting a Shape File

1. Press the Job Menu icon (Figure 29).

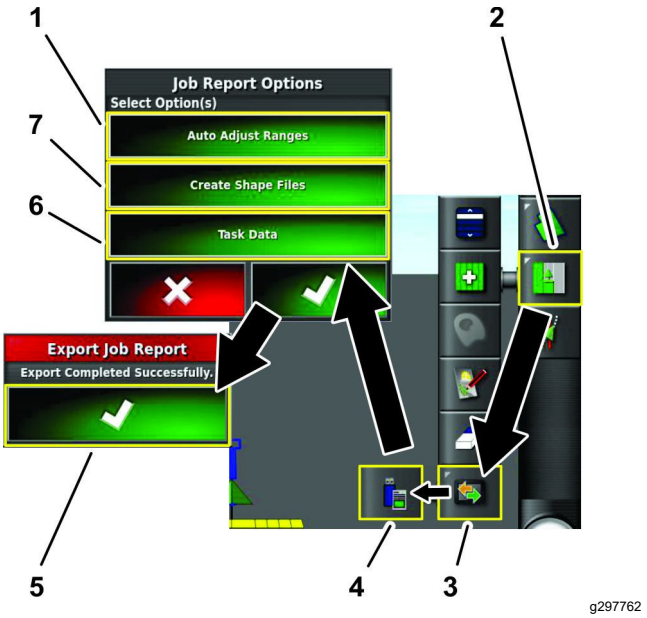


Figure 29

1. Auto adjust ranges icon
2. Job menu icon
3. Data exchange menu icon
4. Export job report to USB icon
5. Confirm icon
6. Task data icon
7. Shape report icon

2. Press the Data Exchange Menu icon (Figure 29).

3. Press the Export Job Report to USB icon (Figure 29).
4. Deselect the following in the job-report options menu:
   - Auto adjust ranges
   - Task data
5. Press the CREATE SHAPE FILES icon (Figure 29).

   Note: The shape file data is exported to D:/Client/Farm/Field/CoverageShapefiles and D:/Client/Farm/Field/BoundaryShapefiles.
6. In the job reports options dialog box, the confirm icon (Figure 29).
7. In the export job reports dialog box, the confirm icon (Figure 29).

Clearing Job Information

You can clear information for the active job, including job notes and counter data; the control console keeps the record-job information.

1. Press the Jobs Menu icon (Figure 30).

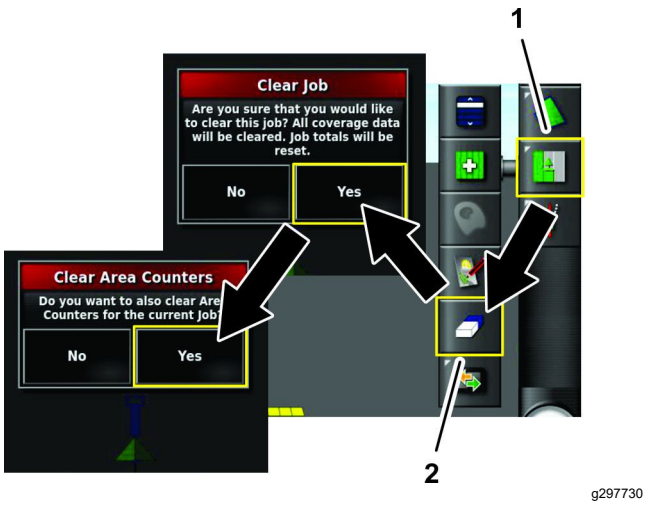


Figure 30

1. Jobs menu icon
2. Clear jobs data icon

2. Press the Clear Jobs Data icon (Figure 30).
3. Press the Yes icon in the clear jobs dialog box (Figure 30).
4. Press the Yes icon in the clear area counters dialog box (Figure 30).

Exporting Job Information

Note: Ensure that a job is in session before exporting job information.

1. Remove the cap for the USB port located below the power button (Figure 31).

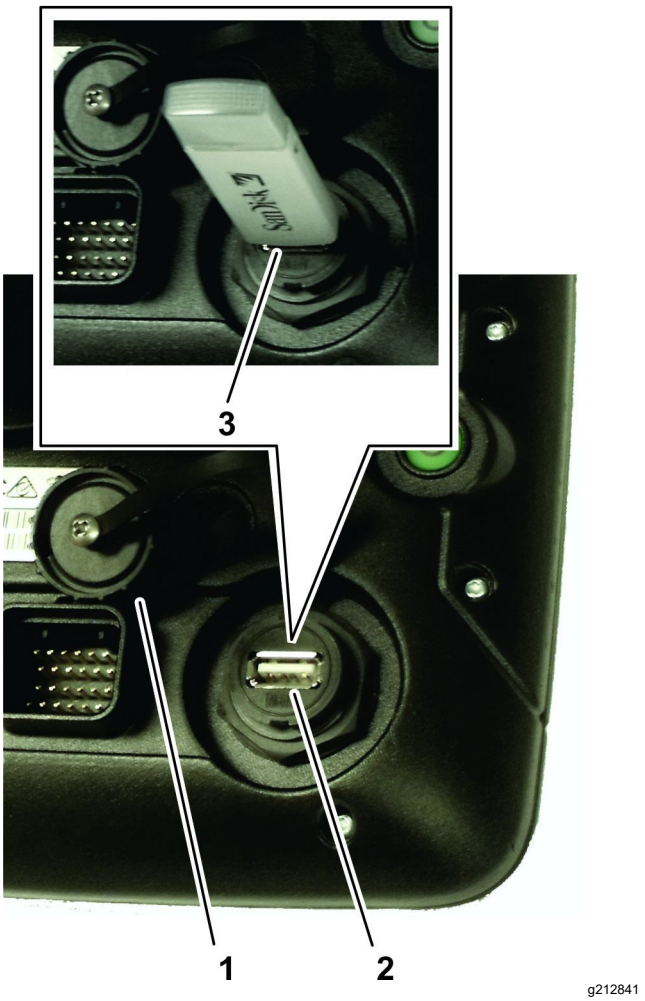


Figure 31

1. Cap
2. USB socket
3. USB storage device

2. Insert a USB storage device into the USB socket (Figure 31).
3. Press the job-menu icon (Figure 32).

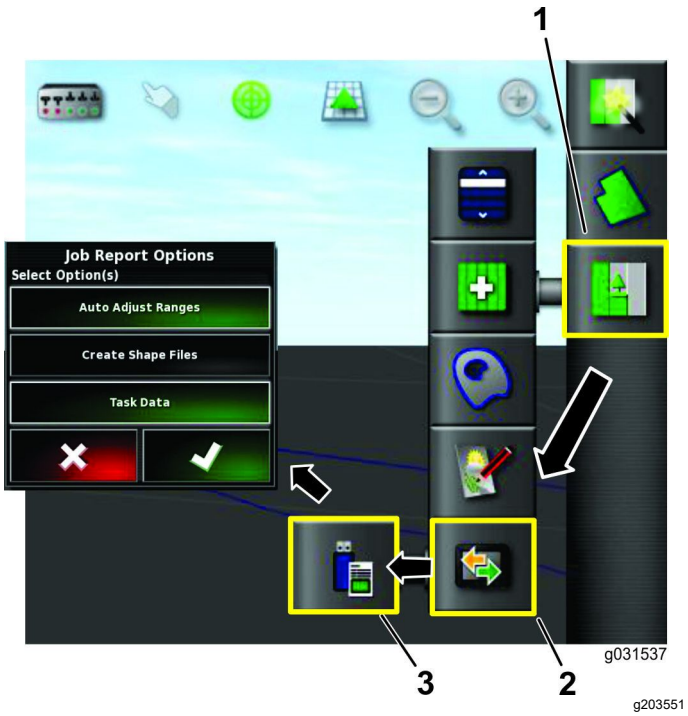


Figure 32

1. JOB MENU icon
2. DATA EXCHANGE icon
3. EXPORT JOB REPORT TO USB icon

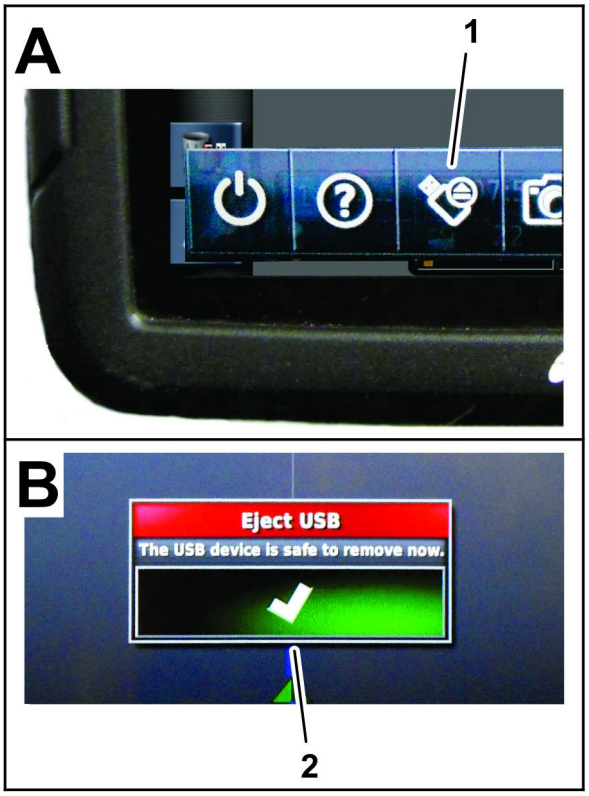


Figure 33

1. EJECT USB icon
2. Confirm icon (eject USB dialog box)

4. Press the DATA EXCHANGE icon (Figure 32).
5. Press the EXPORT JOB REPORT TO USB icon (Figure 32).
6. Deselect the following in the job-report options menu:
   - Auto adjust ranges
   - Task data
7. If required, select the create shape files option in the job-report options.

   Note: The shape file data is exported to D:/Client/Farm/Field/CoverageShapefiles and D:/Client/Farm/Field/BoundaryShapefiles.

   Note: This saves the job information to the USB storage drive.

   Note: Before removing the USB storage device, always disconnect it electronically; refer to steps 8 through 10 that follow. If you do not do this, you may create a missing or corrupt report.
8. Swipe the screen to access the floating-menu bar (Figure 33).
9. Press the EJECT USB icon (Figure 33).
10. At the eject USB dialog box, press the confirm icon, and remove the USB storage device from the control console (Figure 33).

Control Console Icons

Use the home screen when spraying areas with defined boundaries, allowing you to select from the list of jobs and display the spraying area.

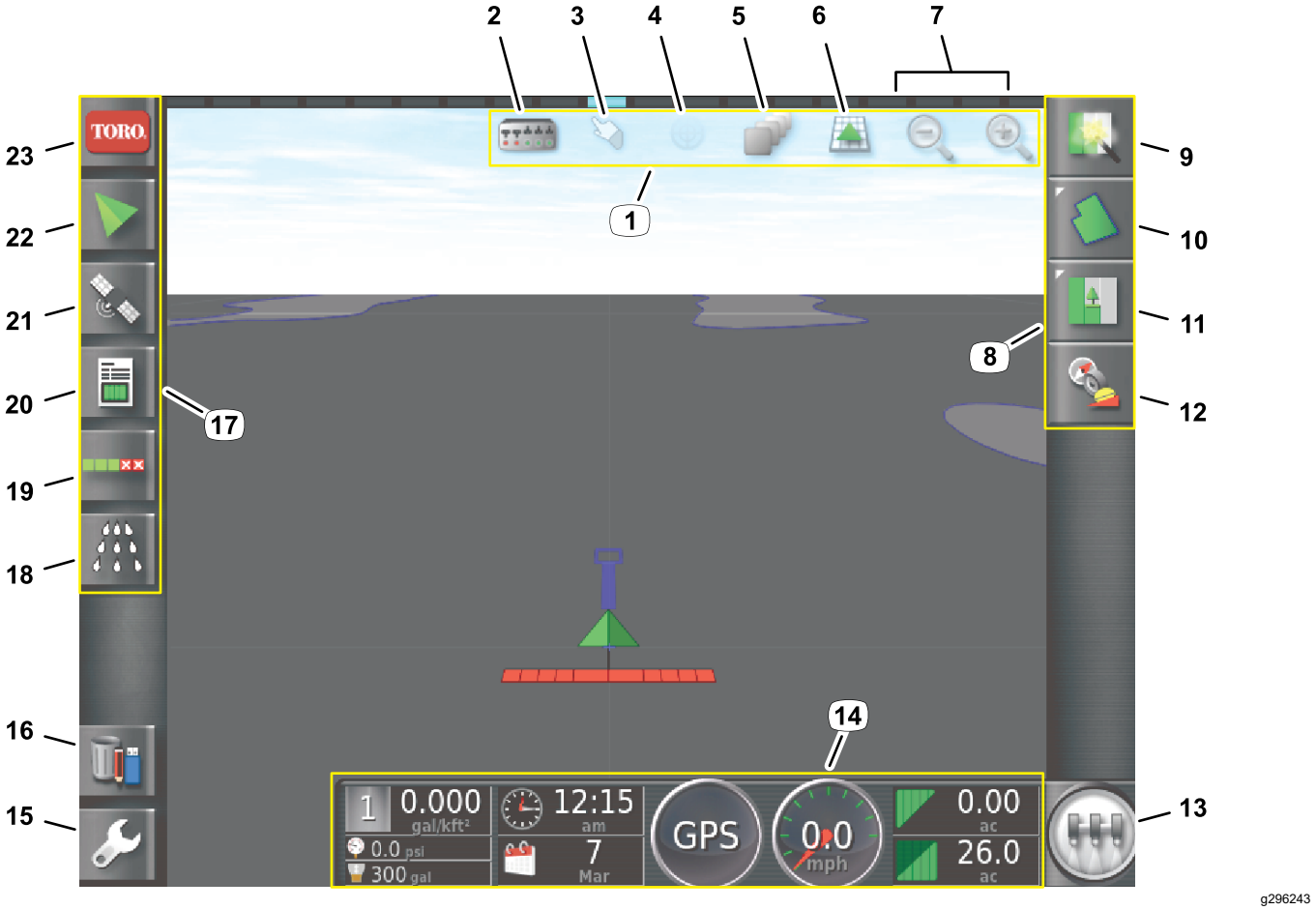


Figure 34

1. View Controls
2. Switch Box and Boom Display icon
3. Boundary Selection icon
4. Center Map View icon
5. Map Layers icon
6. Display View icon
7. Zoom Function icon
8. Guidance toolbar
9. Quick Start icon
10. Field Menu icon
11. Job Menu icon
12. Receiver Calibration icon
13. Master Switch icon
14. Virtual dashboard
15. Setup icon
16. Inventory Manager icon
17. Navigation toolbar
18. Spray-Rate Controller icon
19. Auto Section Control icon
20. Job Information icon
21. GPS icon
22. Guidance icon
23. System Information icon

Managing Field Information

Selecting a Field

Choosing a Field from the Field list

1. Press the Field Menu icon, and press the Select Field icon (Figure 35).

   Note: A green checkmark indicates the active field.

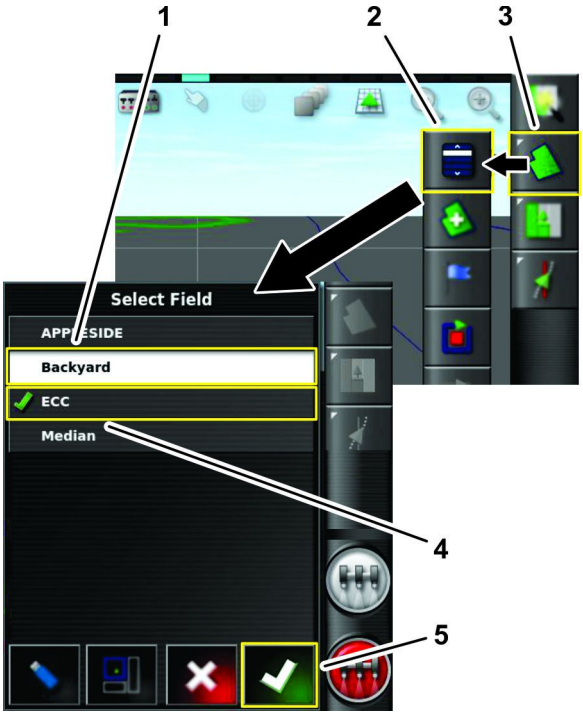


Figure 35

1. Field icon (new selection)
2. Select Field icon
3. Field Menu icon
4. Active field
5. Confirm icon

2. In the select field list, press the Field icon for the field you are spraying, and press the confirm icon (Figure 35).

   Note: A green checkmark indicates selected field is the active field.

Choosing a Field from a USB Field List

1. In the select field list, press the Switch icon (Figure 36).

   Note: The Select Field list (control console stored fields) switches to the Select Field (USB) list (USB storage device stored fields).

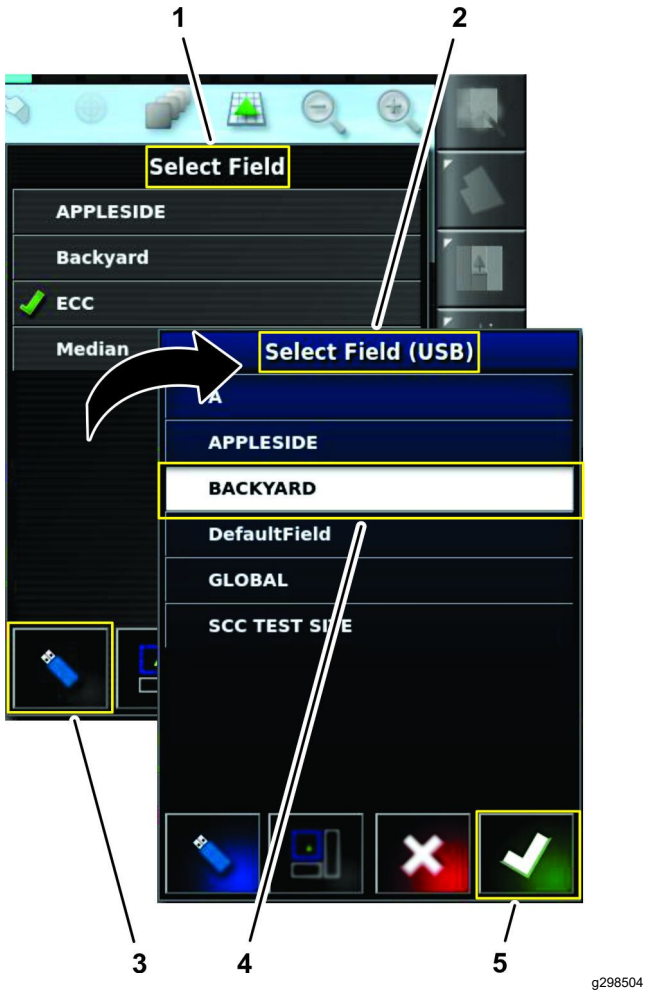


Figure 36

1. Select Field list (control console stored)
2. Select Field (USB) list
3. Switch icon (control console/USB storage device)
4. Field icon (USB stored)
5. Confirm icon

2. In the select field list, press the Field icon for the field you are spraying, and press the confirm icon (Figure 36).

Choosing the Nearest Field Based on Your Current GPS Location

The nearby fields must have boundaries when using the current GPS location.

1. In the select field list, press the Nearest GPS field boundary icon (Figure 37).

   Note: The control console displays a list of fields near your current GPS location.

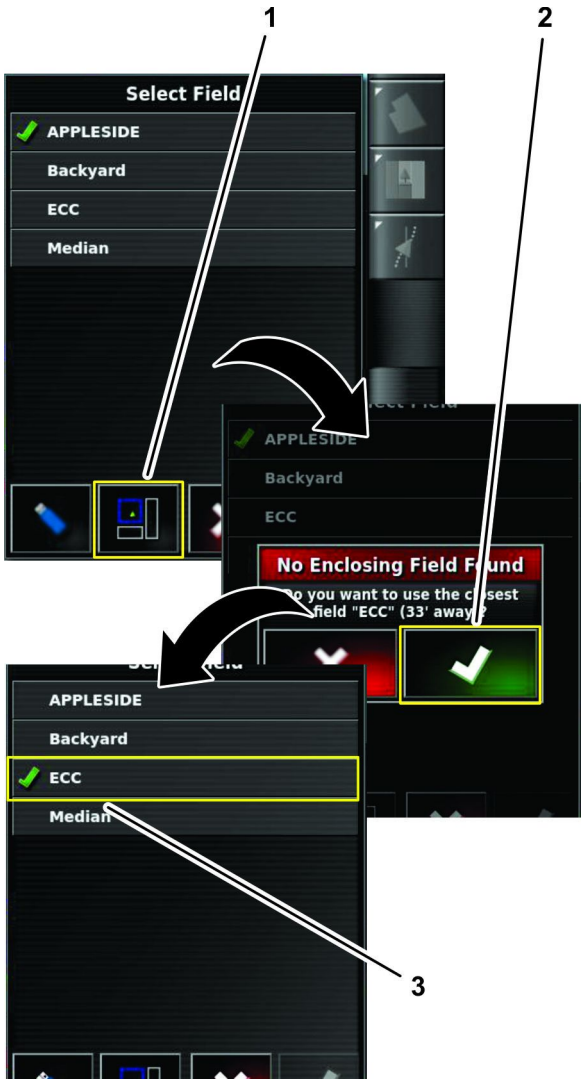


Figure 37

1. Nearest GPS field boundary icon
2. Confirm icon
3. Active field

2. Press the confirm icon (Figure 37).

   Note: The nearest field changes to the active field.

Creating a New Field

Note: Create 1 field per course with all field boundaries for that course within that field.

A spray job only relates with 1 field. A spray job cannot spray boundaries between multiple fields.

1. Press the Field Menu icon, and press the New Field boundary icon (Figure 38).

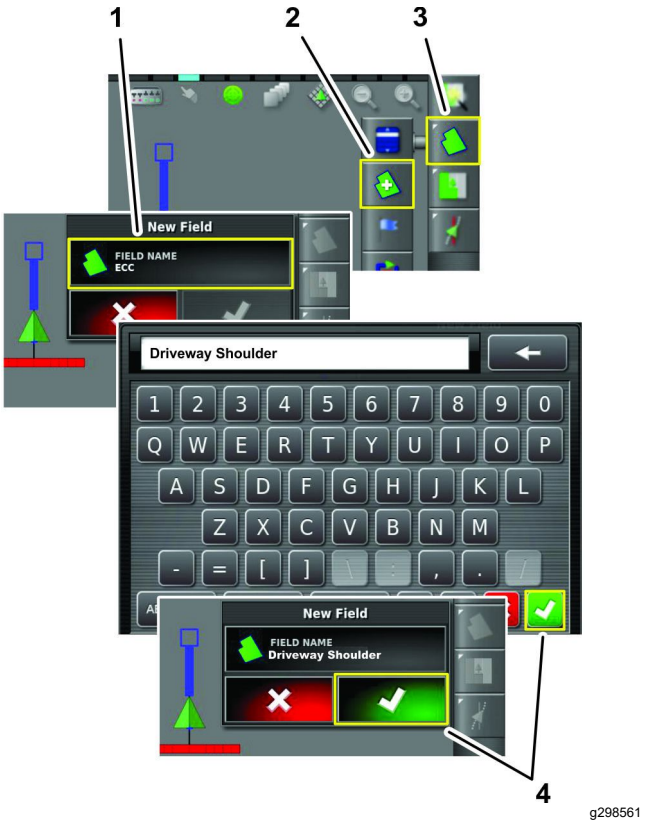


Figure 38

1. Field name icon
2. New field icon
3. Field menu icon
4. Confirm icons

2. Press the Field Name icon (Figure 38).
3. Enter the field name with the on-screen keyboard, and press the confirm icon (Figure 38).
4. In the new field dialog box, press the confirm icon (Figure 38).

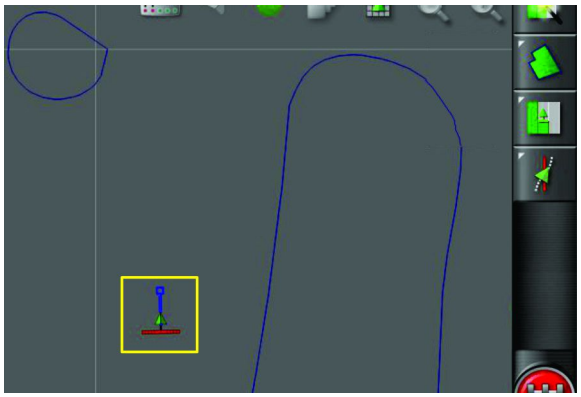
   Note: The new field changes to the active field.

Recording a Field Boundary

Important: **The boundaries that you create and save are accurate and repeatable only if the boundary is created using RTK correction.**

Starting the Record Boundary

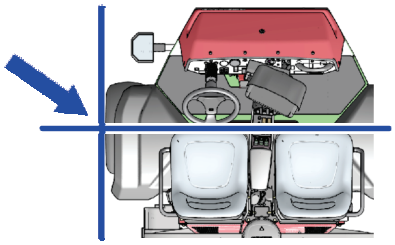
1. Drive the machine to the active field for job site (Figure 39).



g298538

Figure 39

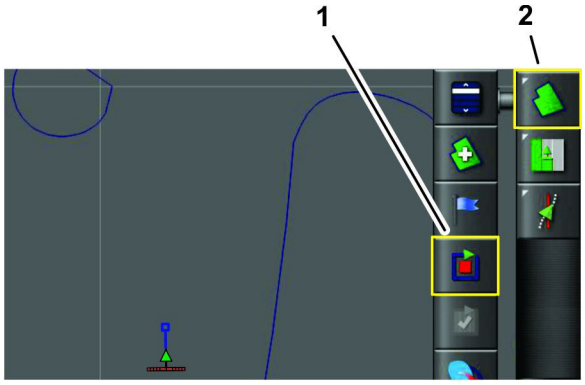
2. Align the outside, center part of the left front tire at the starting point of the new field boundary (Figure 40).



g294392

Figure 40

3. Press the FIELD MENU icon, and press the RECORD FIELD BOUNDARY icon (Figure 41).



g298539

Figure 41

1. RECORD FIELD BOUNDARY icon
2. FIELD MENU icon

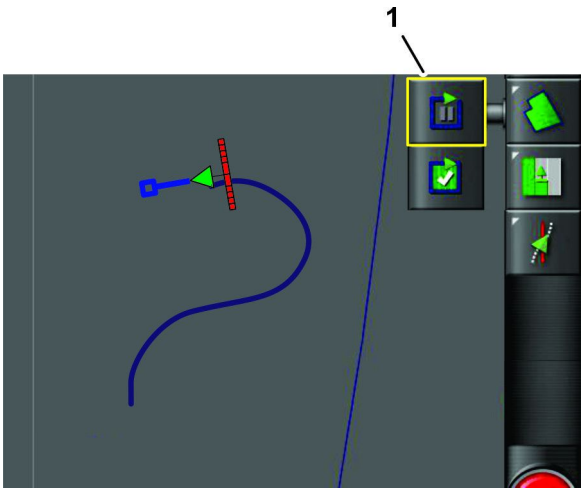
4. Drive the machine around the field to define the field boundary perimeter.

   Note: You can drive as slow as needed and stop the machine as needed while recording the field boundary.

Pausing the Record Boundary

You can pause recording the field boundary if you need to move the machine into an area with limited space.

1. Stop the machine.
2. Press the PAUSE FIELD BOUNDARY RECORDING icon (Figure 42).

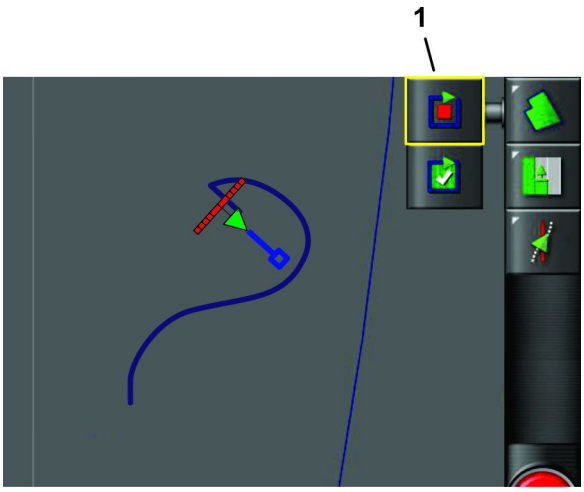


g298540

Figure 42

1. PAUSE FIELD BOUNDARY RECORDING icon

3. Align the machine into position (Figure 43).



g298541

Figure 43

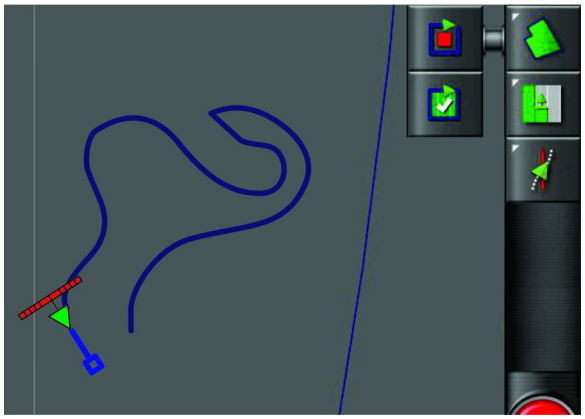
1. RECORD FIELD BOUNDARY icon

4. Press the RECORD FIELD BOUNDARY icon to begin recording again, and continue driving the machine to define the boundary perimeter (Figure 43).

   Note: When you resume recording the boundary, the system draws a straight line from the location where you paused recording to the location where you resumed recording the boundary.

Completing a Boundary

1. When you are close to the beginning point of the field boundary, stop the machine (Figure 44).

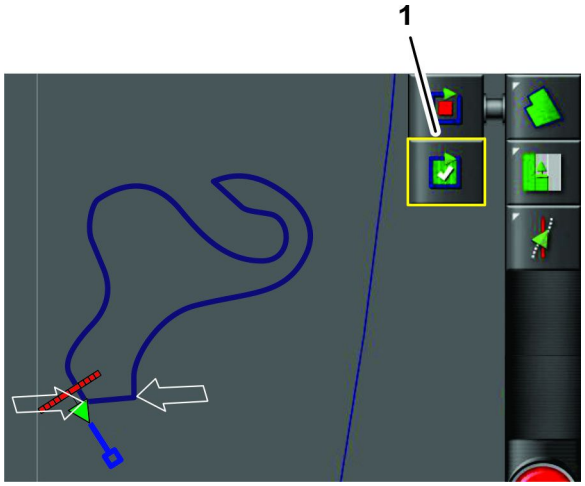


g298550

Figure 44

2. Press the COMPLETE FIELD BOUNDARY RECORDING icon (Figure 45).

   Note: The control console connects the beginning and end points with a straight line.



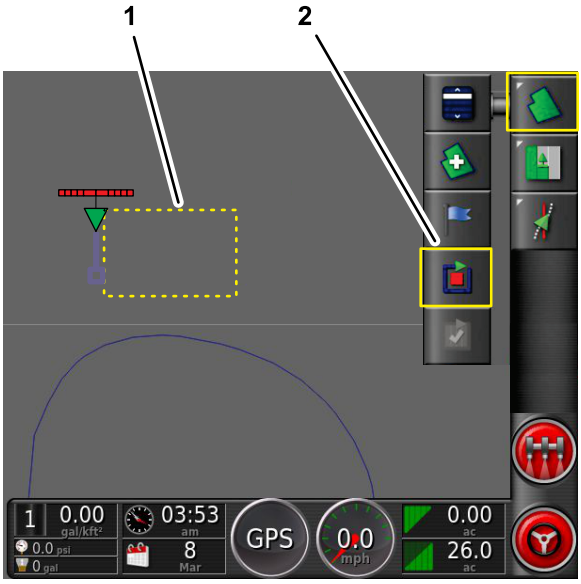
g298537

Figure 45

1. COMPLETE FIELD BOUNDARY RECORDING icon

Creating a Boundary with All Straight Sides

1. Align the outside, center part of the left front tire at the first point of the straight sided field boundary, and stop the machine (Figure 46).

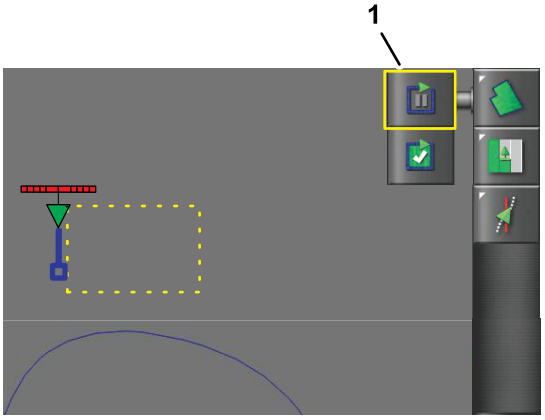


g300291

Figure 46

1. Proposed field boundary
2. RECORD FIELD BOUNDARY icon

2. Without moving the machine, press the RECORD FIELD BOUNDARY icon, and press the PAUSE FIELD BOUNDARY RECORDING icon (Figure 30).



g300292

Figure 47

1. PAUSE FIELD BOUNDARY RECORDING icon

3. Move the machine, and align the outside, center part of the left front tire at the next point of the straight sided field boundary, and stop the machine (Figure 48).

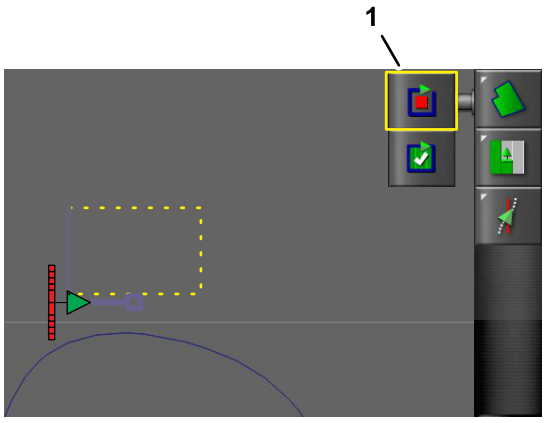


Figure 48

1. RECORD FIELD BOUNDARY icon

4. Press the RECORD FIELD BOUNDARY icon, and press the PAUSE FIELD BOUNDARY RECORDING icon (Figure 48).

   Note: The control console connects the 2 points with a straight line.

5. Repeat steps 3 and 4 for all the remaining points (Figure 49) except for the last open point.

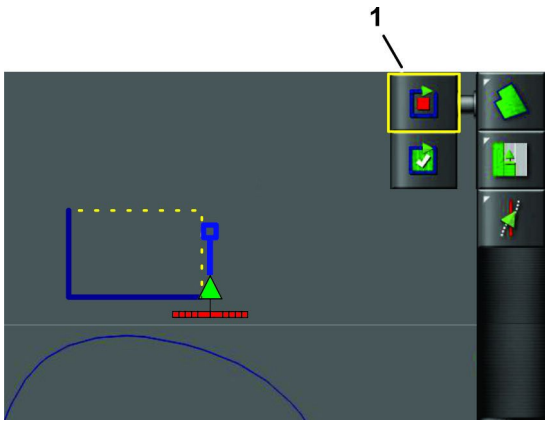


Figure 49

1. RECORD FIELD BOUNDARY icon

6. Align the outside, center part of the left front tire at the last point, and stop the machine (Figure 50).

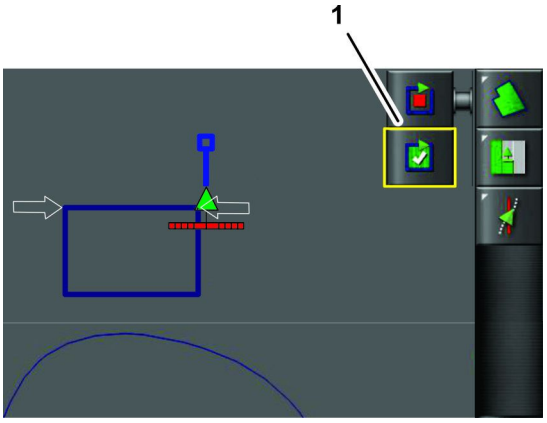


Figure 50

1. COMPLETE FIELD BOUNDARY RECORDING icon

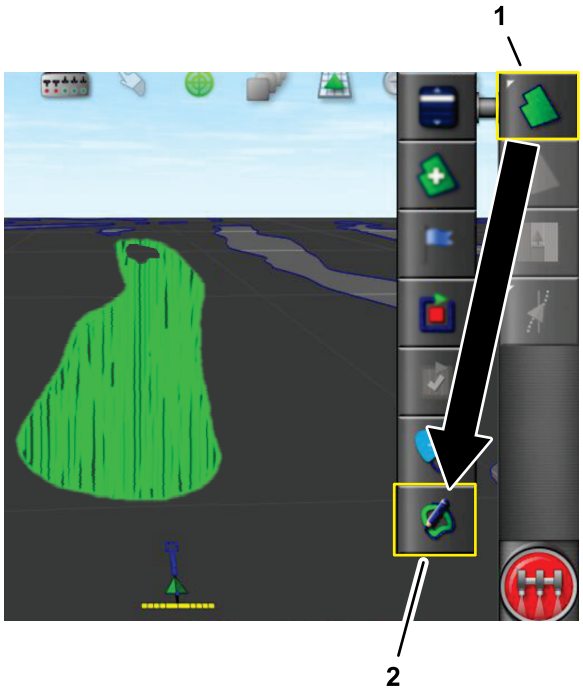
7. Press the COMPLETE FIELD BOUNDARY RECORDING icon (Figure 50).

   Note: The control console connects the beginning and end points with a straight line.

Creating a Boundary from Coverage

This procedure describes how to create boundaries from areas of previously recorded coverage. With only the center spray section spraying water, you can use this procedure to create exclusion boundaries for golf cart paths.

1. Park the machine near the coverage area from which you are creating a field boundary.
2. Press the Field icon and press Create Boundary from Coverage icon (Figure 51).



g300533

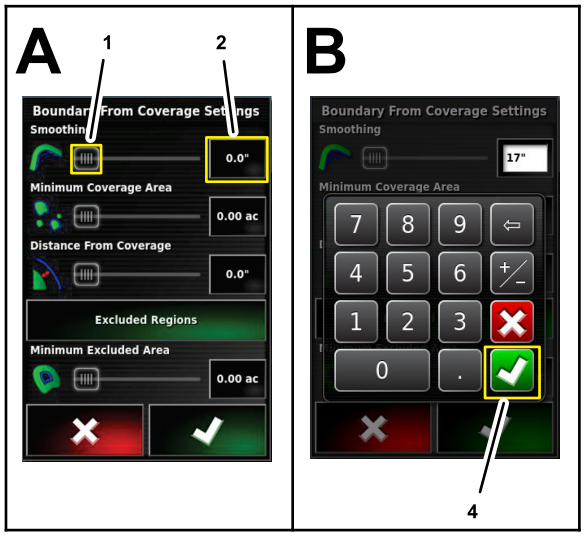
Figure 51

1. Field icon
2. Create Boundary from Coverage icon

3. Press the number icon for the Smoothing setting (Figure 52). Use the on-screen keypad to enter a value, and press the confirm icon.

   Note: You can also change the setting by moving slider left or right.

   Note: Use the smoothing setting controls the minimum gap size that is automatically filled when creating a field boundary from coverage.



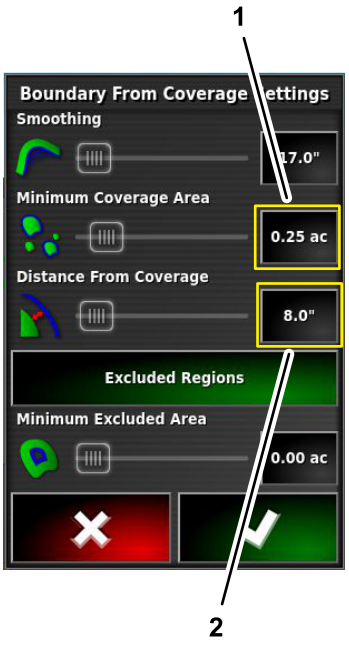
g300536

Figure 52

1. Slider (smoothing)
2. Number icon
3. Confirm icon

4. Press the number icon for the Minimum Coverage Area setting (Figure 53). Use the on-screen keypad to enter a value, and press the confirm icon.

   Note: Use the minimum coverage area setting to exclude coverage smaller that the area specified (not included in the field boundary).



g300535

Figure 53

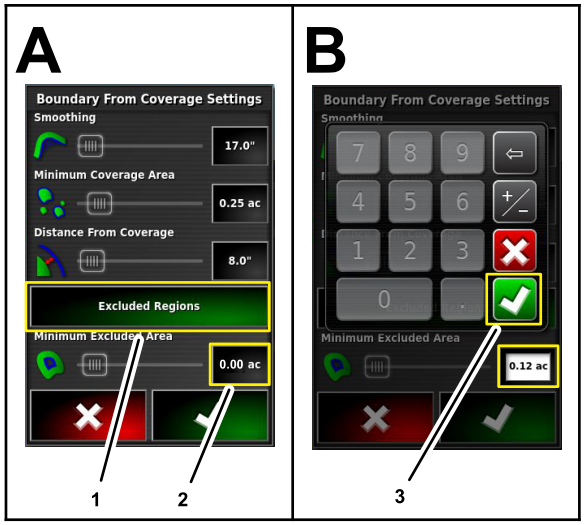
1. Minimum coverage area icon
2. Distance from coverage icon

5. Press the number icon for the Distance from Coverage setting (Figure 53). Use the on-screen keypad to enter a value, and press the confirm icon.

   Note: Use the distance from coverage setting to expand the created field boundary the specified distance away from the coverage.

6. Press the Excluded Regions icon (Figure 54) to create boundaries for coverage areas that are not sprayed.

   Note: Enabling exclude regions creates exclude regions from gap within the coverage area.



g300534

Figure 54

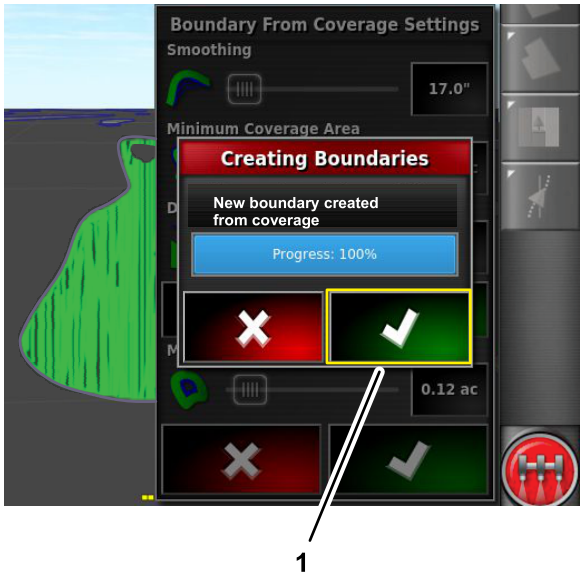
1. Excluded regions icon
2. Minimum excluded area icon
3. Confirm icon

7. Press the number icon for the Minimum Excluded Area setting Figure 54). Use the on-screen keypad to enter a value, and press the confirm icon.

   Note: Use this setting to control exclude regions are not created from gaps smaller than the area you specify in minimum exclude area setting.

8. Press the conform icon for the Boundary from Coverage Settings dialog box (Figure 55).

   Note: The control console automatically creates boundaries from coverage areas.



g300532

Figure 55

1. Confirm icon

Editing Field Boundary Attributes

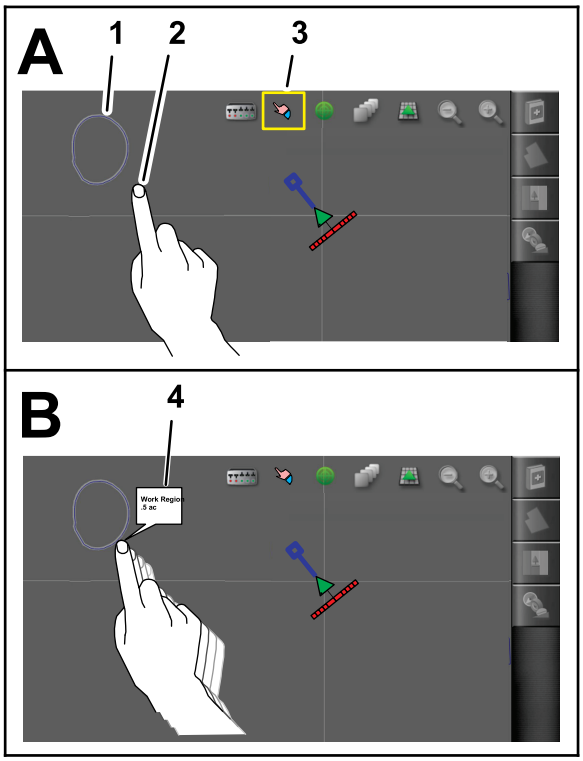
Field boundary attributes are used to uniquely identify the boundaries within a field, and indicate to the system areas where product is applied or not applied.

- **Work Region**—work regions indicate to the system areas where product is always applied if you use the section control. Use work regions for areas such as fine and course turf grass.
- **Excluded Region**—exclude regions indicate to the system areas where product is never applied if you use the section control. Use excluded regions for areas such as water features, sand features, and walking or cart paths.
- Disabled—the existence of the boundary is ignored.
- **Categorized Region**
  - Categorized regions are used for fields with many boundaries.
  - Assigning each boundary to a category is useful when including boundaries when applying a product or excluding a boundary when applying another product.
  - You can use categorized regions to define work regions and excluded regions for the current job.
  - In addition to the preset categorized regions, you can create new categorized regions for unique boundary-product application or unique boundary-product exclusion.

Naming a Field Boundary

1. After creating the boundary, press your finger on the control console screen next to the boundary line until the boundary-selection icon illuminates, and slid your finger to the boundary line (Figure 56).

   Note: The control console displays a notification about the boundary.

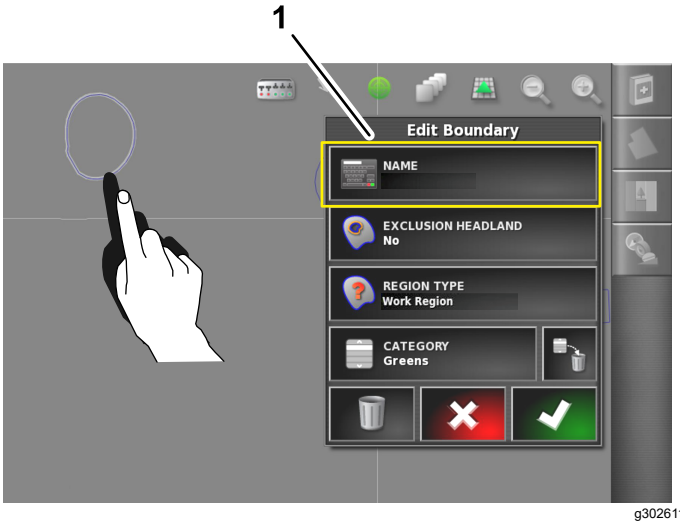


g302612

Figure 56

1. Boundary (field)
2. Your finger (pressed to the screen)
3. Boundary-selection icon
4. Notification

2. Remove your finger from the screen, and the edit boundary dialog box opens (Figure 57).



g302611

Figure 57

1. NAME icon

3. Press the name icon, use the on-screen keyboard to type in the boundary name, and press the confirm icon.



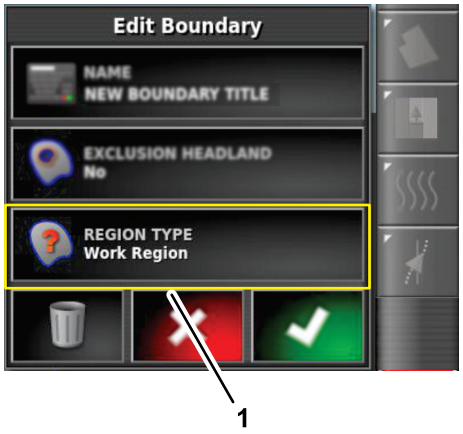
g304445

Figure 58

1. Confirm icon (on-screen keyboard)

Setting a Work Region Field Boundary

1. In the edit boundary dialog box, press the REGION TYPE icon (Figure 59).



g302815

Figure 59

1. REGION TYPE icon

2. In the regions type dialog box, press the WORK REGION icon, and press the confirm icon (Figure 60).

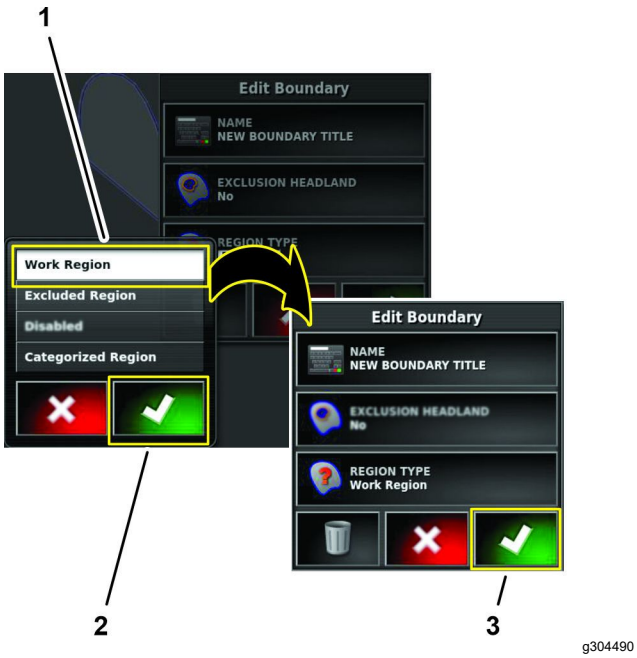


Figure 60

1. Work Region icon
2. Confirm icon (regions type dialog box)
3. Confirm icon (edit boundary dialog box)

3. In the edit boundary dialog box, press the confirm icon (Figure 60).

Setting an Excluded Region Field Boundary

Note: Setting an excluded region field boundary permanently excludes spraying the area in the boundary of the field. An excluded region field boundary is different from configuring in the spray job with an excluded region.

1. In the edit boundary dialog box, press the REGION TYPE icon (Figure 61).

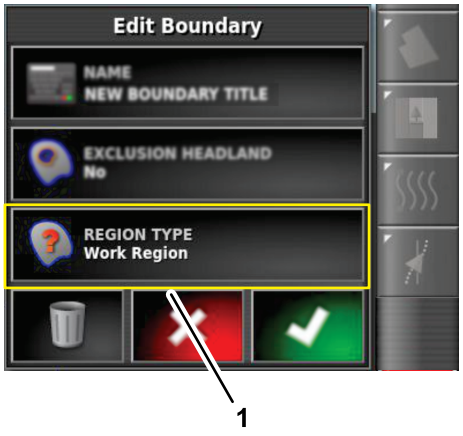


Figure 61

1. REGION TYPE icon

2. In the regions type dialog box, press the EXCLUDED REGION icon, and press the confirm icon (Figure 62).

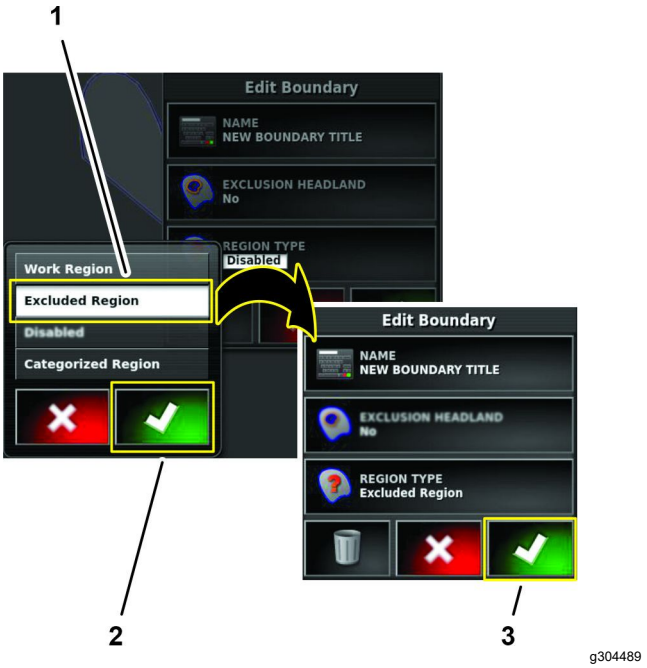


Figure 62

1. Excluded Region icon
2. Confirm icon (regions type dialog box)
3. Confirm icon (edit boundary dialog box)

3. In the edit boundary dialog box, press the confirm icon (Figure 62).

Setting a Categorized Field Boundary

1. In the edit boundary dialog box, press the REGION TYPE icon (Figure 63).

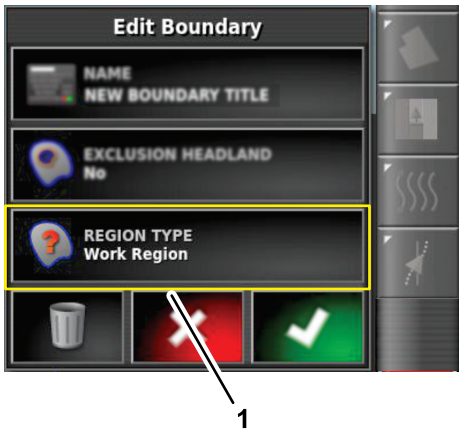


Figure 63

1. REGION TYPE icon

2. In the regions type dialog box, press the CATEGORIZED REGION icon, and press the Confirm icon (Figure 64).

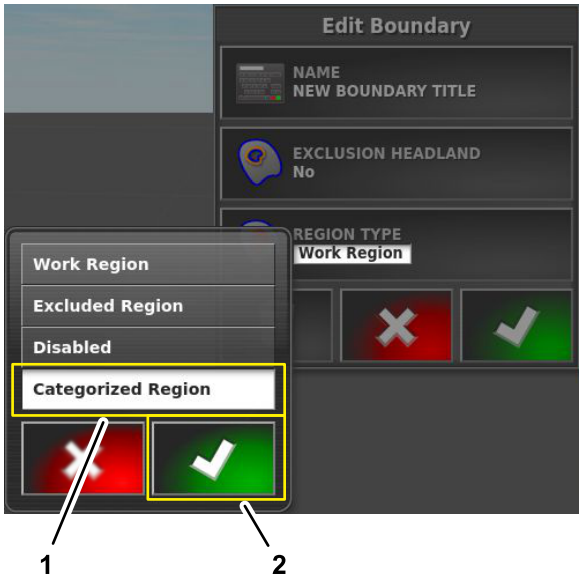


Figure 64

1. CATEGORIZED REGION icon 2. Confirm icon

3. In the edit boundary dialog box, press the CATEGORY icon to display a list of category types (Figure 65).

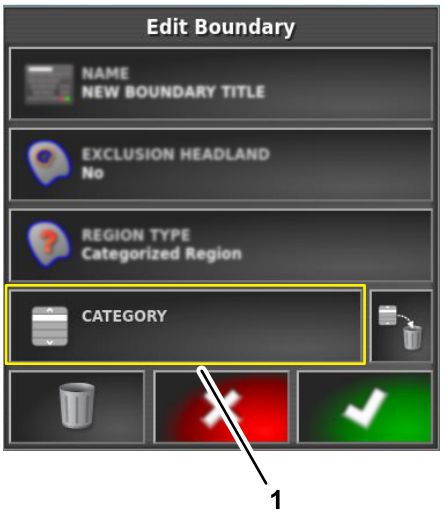


Figure 65

1. Category icon

4. In the category types list, press the icon for a preset category types, or select the NEW . . . icon (Figure 66).

   Note: Pressing the NEW . . . icon displays the new boundary category dialog box. Press the name icon, use the on-screen keyboard to type a new boundary-type name and press the confirm icon. In the new boundary category dialog box, press the confirm icon to create the new category type.



Figure 66

1. Category list 2. Confirm icon

5. The selected category type displays, and press the confirm icon (Figure 67).

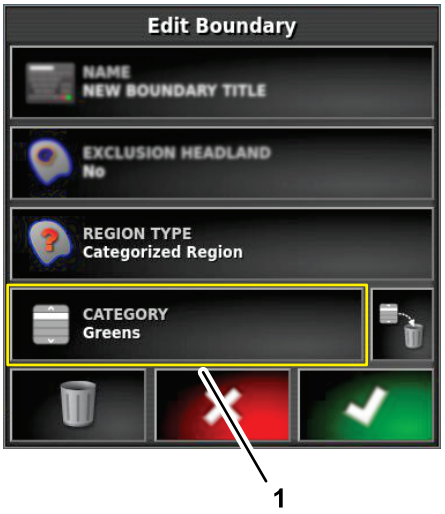


Figure 67

1. CATEGORY icon

Merging Field Boundaries

The example in the procedures that follow use a strategy to map an 18 hole golf course that includes:

- A spray technician uses machine #1 to map field boundaries for holes 1 through 9 (Figure 68).
- Another spray technician uses machine #2 to map field boundaries for holes 10 through 18 (Figure 69).
- The spray technician merges the field boundaries (the back 9) created on machine #2 with field boundaries (the front 9) created on machine #1.

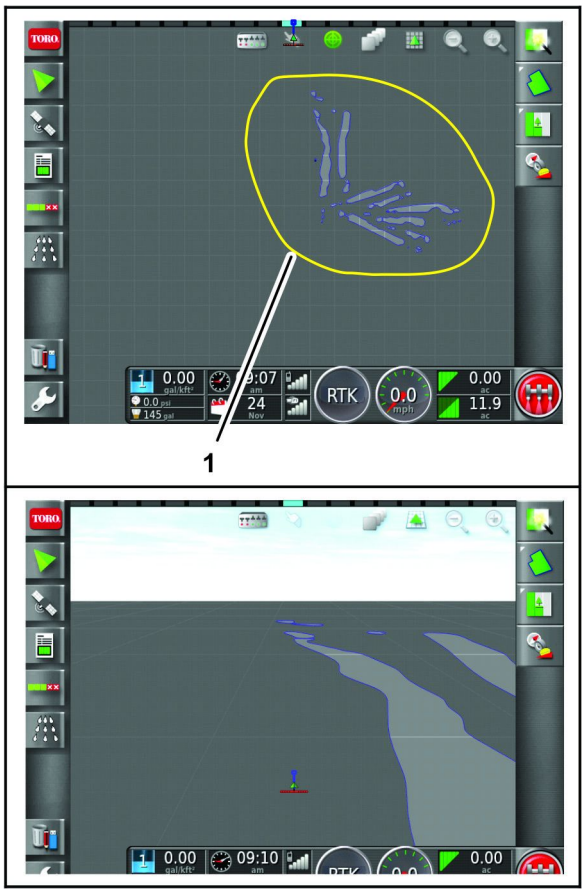


Figure 68

1. Field boundaries (holes 1 through 9—machine #1)

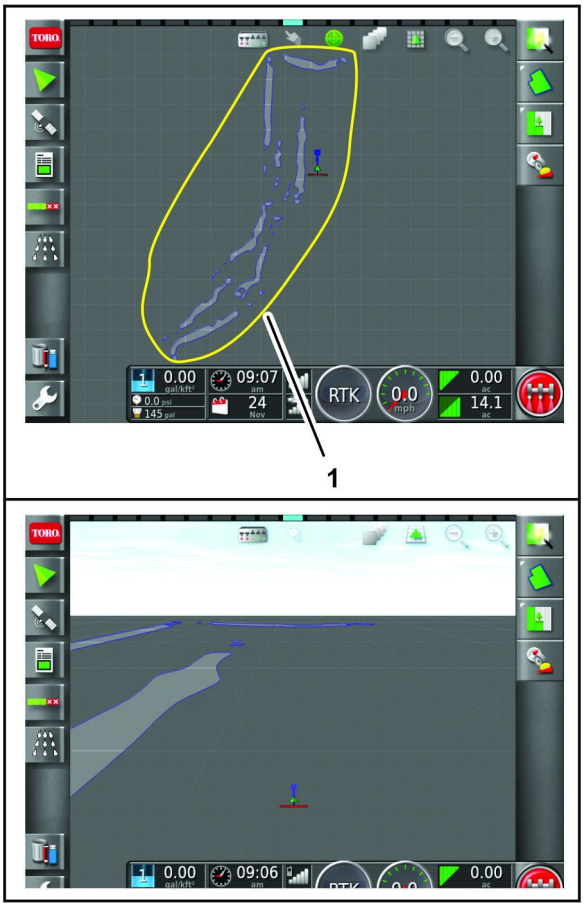


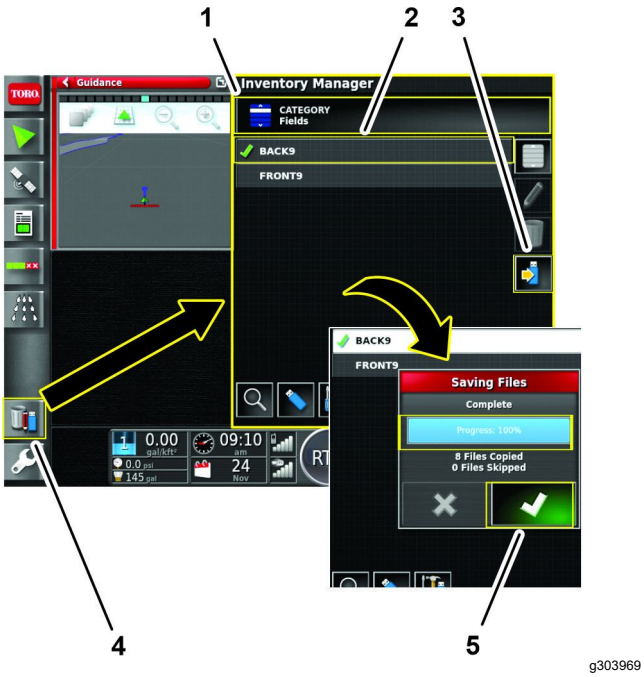
Figure 69

1. Field boundaries (holes 10 through 18—machine #2)

Exporting the Field Boundaries

Note: In this example, the technician is working with machine #2, used to create boundaries for holes 10 through 18.

1. Plug a USB storage device into the back of the machine #2.
2. Press the INVENTORY MANAGER icon, press the CATEGORY TYPE icon (Figure 70).



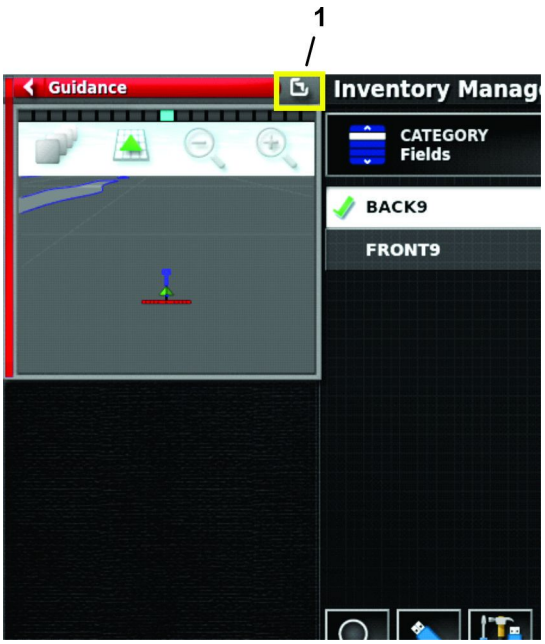
g303969

Figure 70

1. CATEGORY TYPE icon
2. FIELD icon (boundary shape files)
3. SAVE SELECTION TO USB icon
4. INVENTORY MANAGER icon
5. Confirm icon

3. In the category list, and press the FIELD icon.
4. Press the FIELD icon for the boundaries that you are merging onto machine #1, press the SAVE SELECTION TO USB icon, and press the confirm icon (Figure 70).

   Note: In this example the technician is saving the field information (including the boundaries) for holes 10 through 18 (back9).
5. Press the RESTORE FULL SCREEN icon (Figure 71).



g303968

Figure 71

1. RESTORE FULL SCREEN icon

6. Eject the USB storage device electronically, and remove the USB device from the back of the control console; refer to steps 4 through 6 in Using a USB Storage Device (page 12).

Importing the Field Boundaries

Note: In this example, the technician is working with the machine #1, used to create boundaries for holes 1 through 9.

1. Plug the USB storage device into the back of the control console of machine #1.
2. Press the FIELD MENU icon and the SELECT FIELD icon (Figure 72).

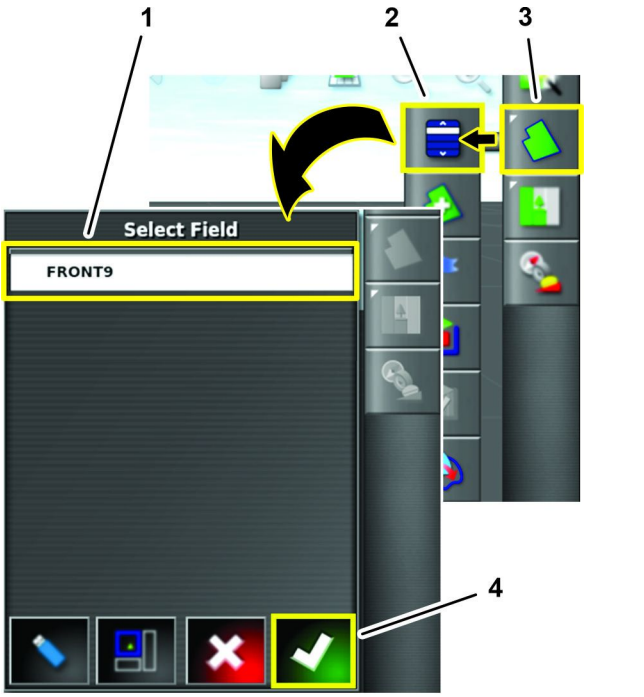


Figure 72

1. FIELD icon
2. SELECT FIELD icon
3. FIELD MENU icon
4. Confirm icon

3. Press the FIELD icon into which you will merge the boundaries from machine #2, and press the confirm icon (Figure 72).

   Note: In this example, the technician selected the Front 9 field boundary information of machine #1 into which they are merging the field boundary information (Back 9) exported from machine #2.

4. Press the FIELD MENU icon, and press the CREATE BOUNDARY FROM SHAPE FILE icon (Figure 73).

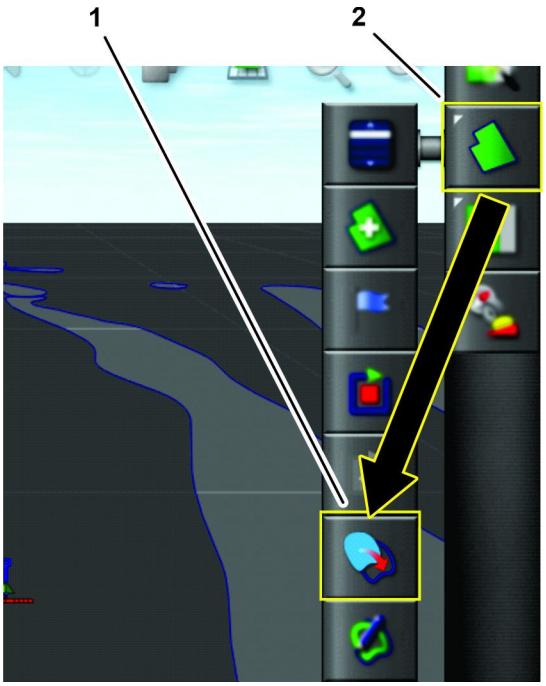


Figure 73

1. CREATE BOUNDARY FROM SHAPE FILE icon
2. FIELD MENU icon

5. In the select shapefile for boundary dialog box, press the SWITCH TO USB DRIVE icon (Figure 74).

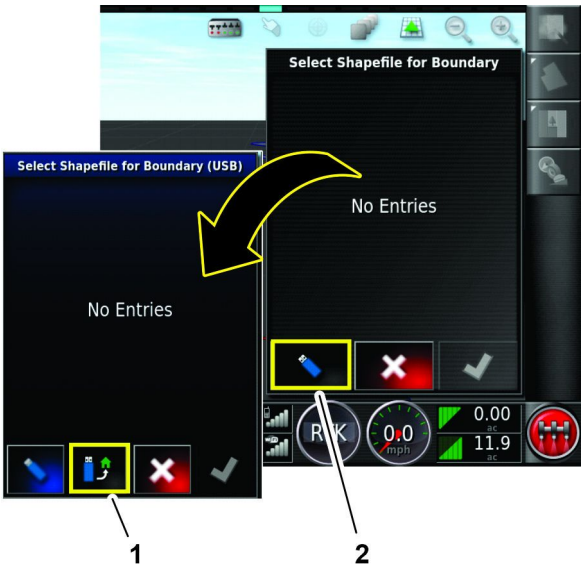


Figure 74

1. IMPORT FROM USB DRIVE icon
2. SWITCH TO USB DRIVE icon

6. In the select shapefile for boundary (USB) dialog box, press the IMPORT FROM USB DRIVE icon (Figure 74).
7. Press the directory icons to navigate to the GeoLink directory (Figure 75).

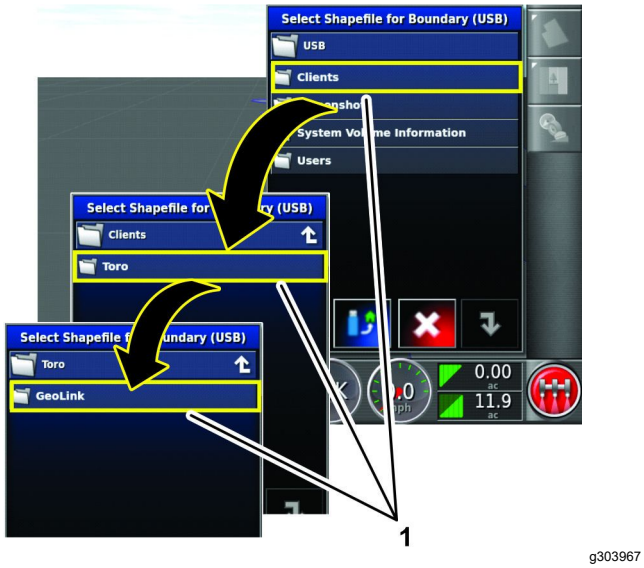


Figure 75

1. Directory icons

8. Press the directory icons (Figure 76) to navigate to the field information that you exported in step 4 of Exporting the Field Boundaries (page 29).

   Note: In this example the technician imports the field information (including the boundaries) for holes 10 through 18 (back9).

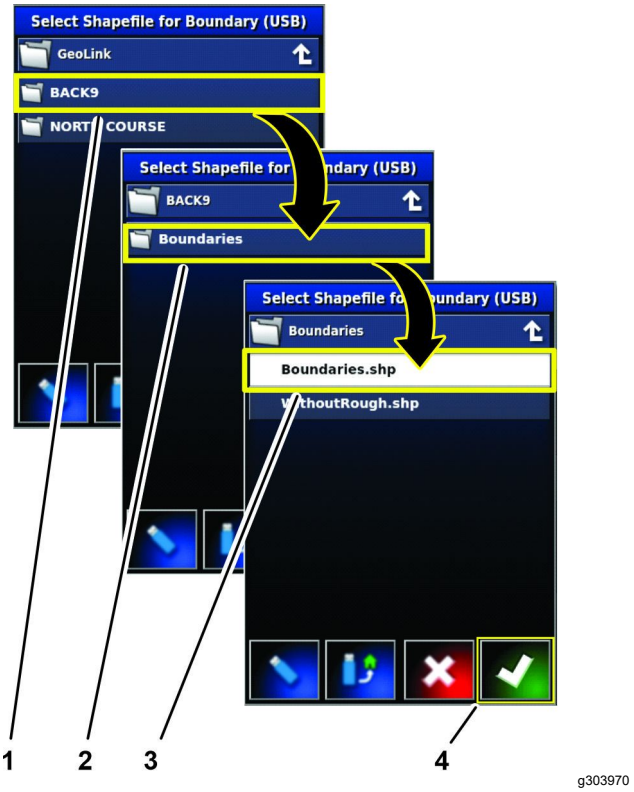
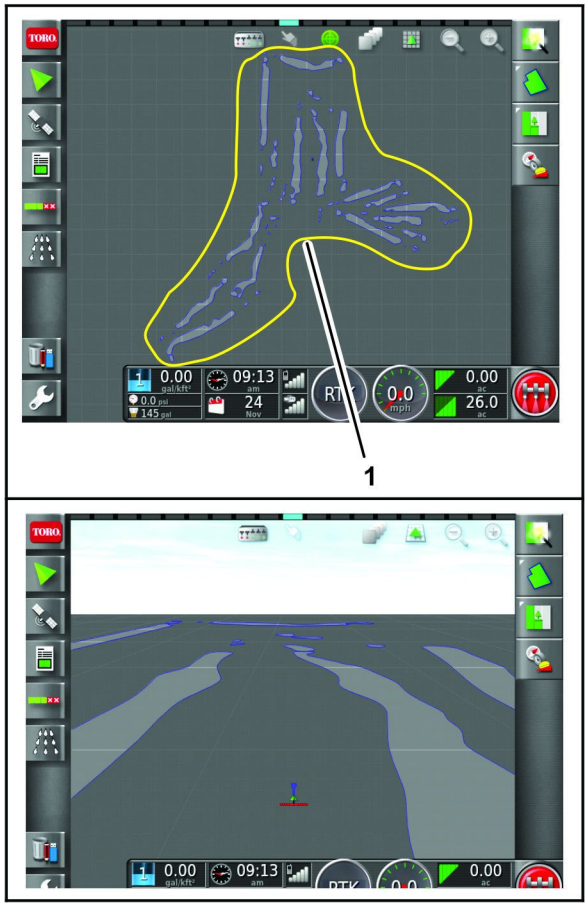


Figure 76

1. Field name icon (exported from the other machine—Back 9)
2. BOUNDARIES icon (directory)
3. BOUNDARIES.SHP icon (file)
4. Confirm icon

9. Press the BOUNDARIES icon, press the BOUNDARIES.SHP icon, and press the confirm icon (Figure 76).

   Note: In this example, the control console of machine #1 displays the field boundary information (holes 1 through 18) of both machines # 1 and #2 (Figure 77).



g303964

Figure 77

1. Field boundaries (holes 1 through 18—machine #1)

Naming and Categorizing the Imported Field Boundaries

The naming and categorizing are not copied with the imported field boundaries. Name and categorize each of the field boundaries that you imported; refer to Editing Field Boundary Attributes (page 25).

Note: In this example, name and categorize the holes 10 through 18 (Back 9) on the machine #1, the same as the names and categories of holes 10 through 18 on the machine #2.

Updating Field Boundary Information on Other Machines

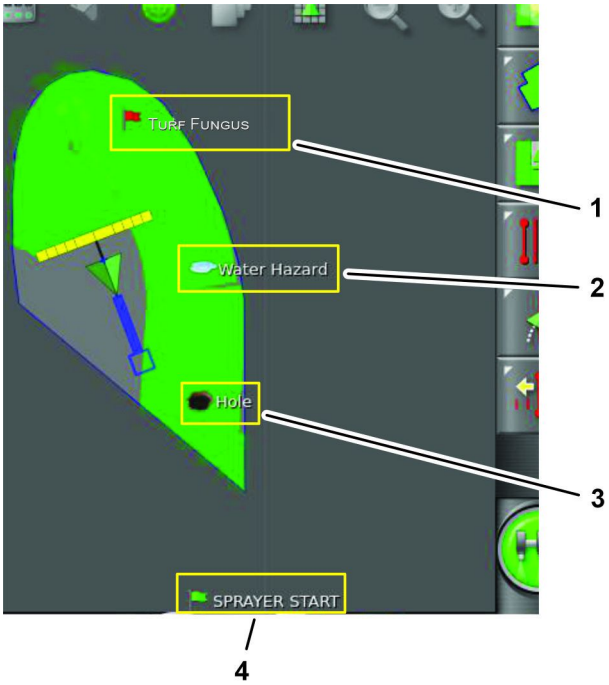
1. Once all the field boundaries information is loaded and categorized, export the merged boundary file from the machine onto USB storage device; refer to Exporting the Field Boundaries (page 29).

   Note: In this example, from machine #1.
2. Import the merged boundary file from the USB storage device into the other machine(s) needing the updated field boundaries information; refer to Importing the Field Boundaries (page 30).

   Note: In this example, into machine #2.

Flag Points

You add flag points to the control console map while you are creating field boundaries or spraying to identify terrain features or hazards for the site.



g304435

Figure 78

1. Turf disease flag point (custom)
2. Water hazard flag point
3. Terrain hazard flag point
4. Start of an operation flag point (custom)

Setting a Flag Point

1. Drive the machine to the location of the terrain feature that you want to mark with a flag point, and stop the machine.
2. Press Field Menu icon and the Set Flag Point icon (Figure 79).

   The add flag point menu displays.

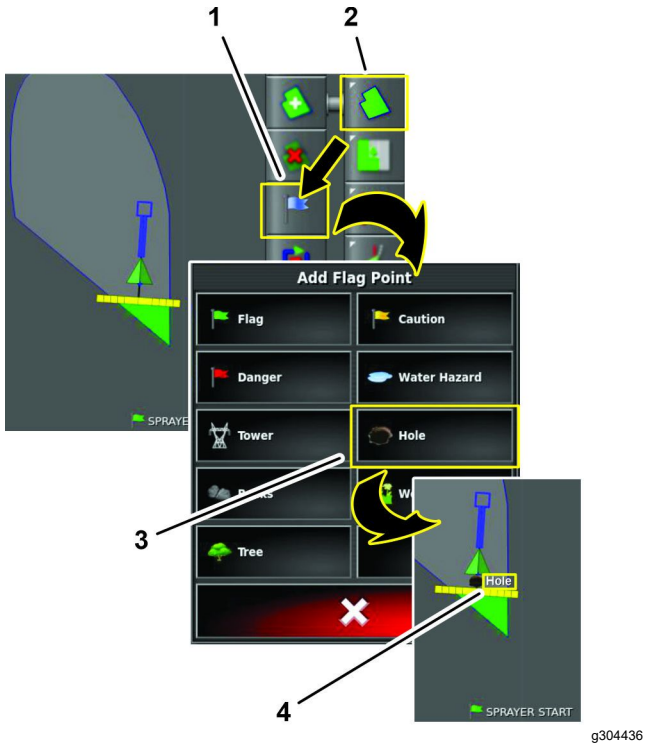


Figure 79

1. SET FLAG POINT icon
2. FIELD MENU icon
3. Flag point icon (HOLE—preset 6)
4. Flag point symbol (hole—control console operation screen)

3. In the add flag point menu, select a flag point icon (Figure 79).

   The flag point displays in the control console behind the vehicle (Figure 79).

   Note: The flag point drop location is beneath the machine, at the centerline, and between the rear tires.

Setting a Custom Flag Point

1. Drive the machine to the location of the terrain feature that you want to mark with a flag point, and stop the machine.
2. In the add flag point menu, press FIELD MENU icon and the SET FLAG POINT icon (Figure 80).

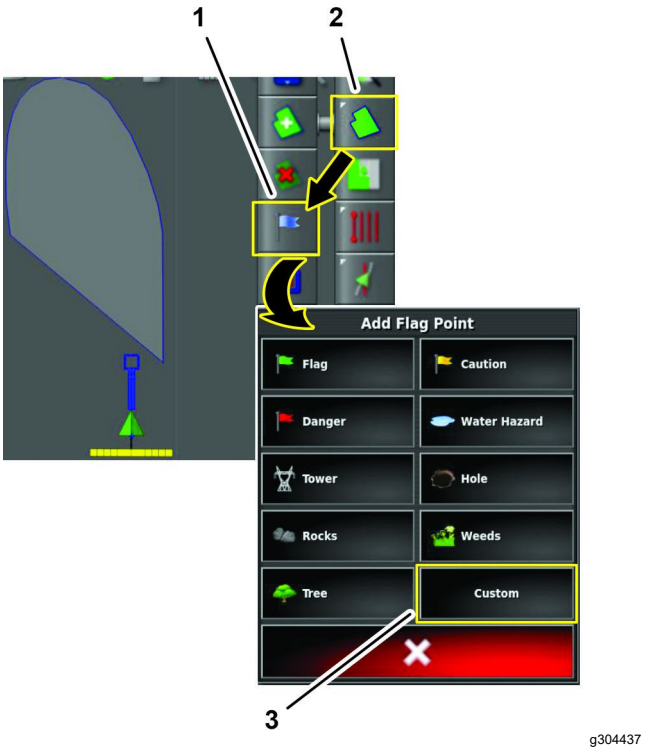


Figure 80

1. SET FLAG POINT icon
2. FIELD MENU icon
3. Flag point icon (custom name and icon—add flag point menu)

3. Press the CUSTOM flag point icon (Figure 80).

   The add flag point dialog box displays.

4. In the add flag point dialog box, press a flag point icon, and press the FLAG POINT NAME icon (Figure 81).

   The on-screen keyboard displays.

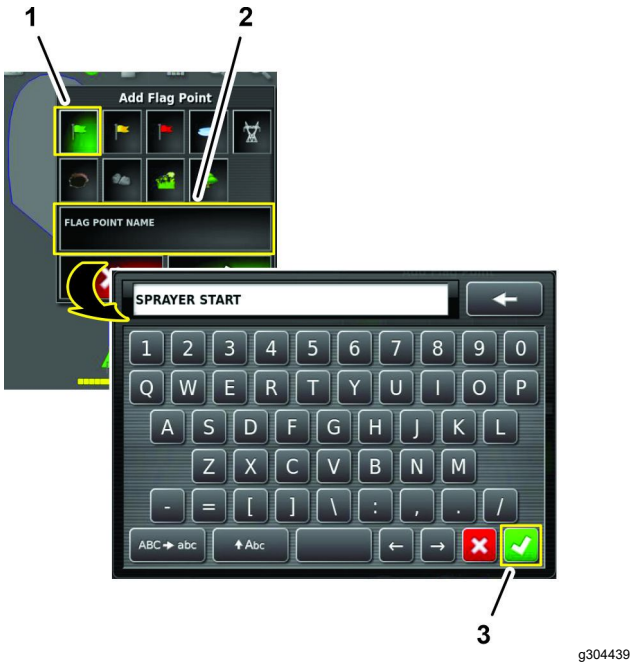


Figure 81

1. Flag point icon
2. FLAG POINT NAME icon
3. Confirm icon

5. Use the on-screen keyboard to type the name of the custom flag point, and press the confirm icon (Figure 81).
6. In the add flag point dialog box, press the confirm icon (Figure 82).

   The flag point displays in the control console behind the vehicle.

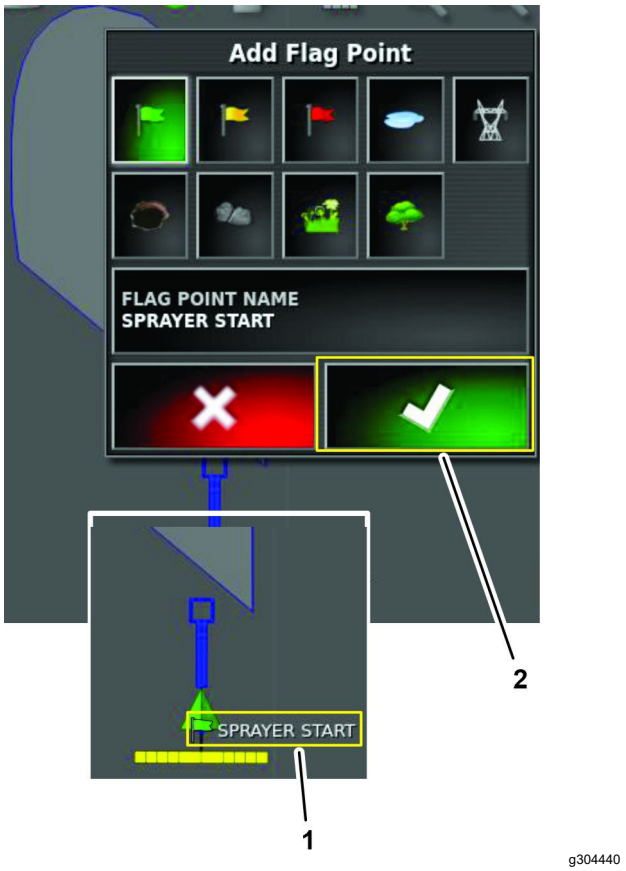


Figure 82

1. Confirm icon (add flag point dialog box)
2. Flag point symbol (custom—control console operation screen)

Editing Flag Points

1. Press your finger on flag point in command console screen until the flag point pop-up displays (Figure 83).

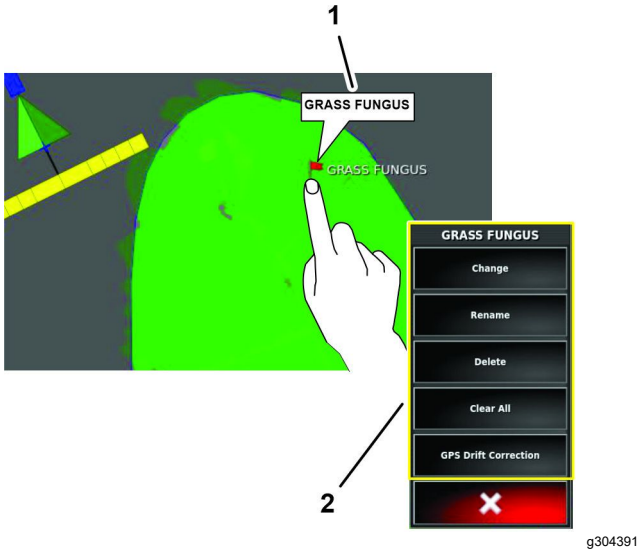


Figure 83

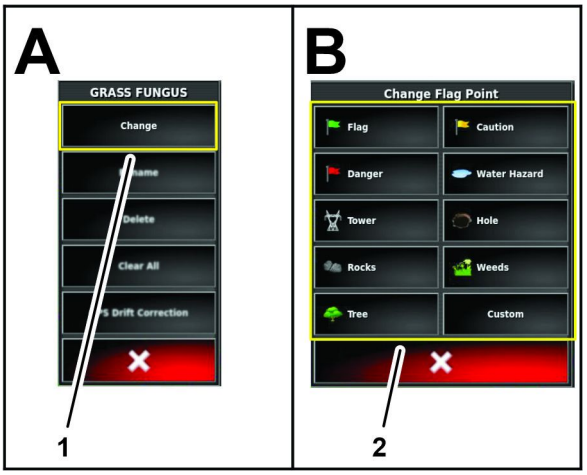
1. Flag point pop-up
2. Edit flag menu

2. Remove your finger from the screen.

   The flag edit menu displays (Figure 83).

Changing a Flag Point Type

1. In the edit flag menu, press the CHANGE icon (Figure 84).



g304388

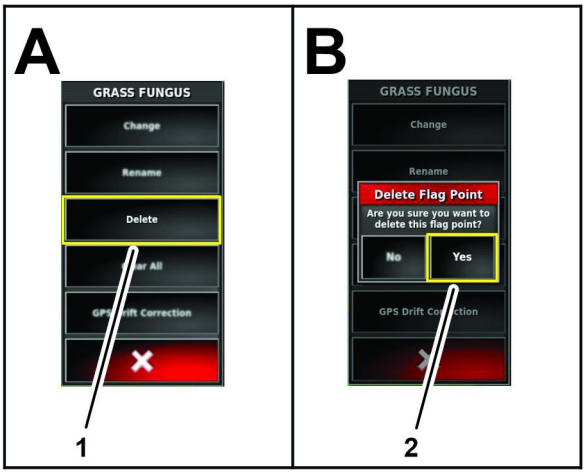
Figure 84

1. CHANGE icon (edit flag menu)
2. Flag-point type icons (change flag point menu)

2. In the change flag point menu, press the icon for the flag-point type (Figure 84).

Deleting 1 Flag Point

1. In the edit flag menu, press the DELETE icon (Figure 85).



g304389

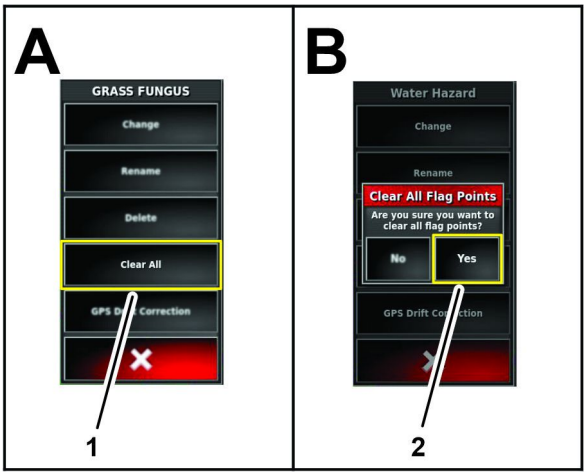
Figure 85

1. DELETE icon (edit flag menu)
2. YES icon (delete flag point dialog box)

2. In the delete flag point dialog box, press the YES icon (Figure 85).

Deleting All Flag Points

1. In the edit flag menu, press the CLEAR ALL icon (Figure 86).



g304390

Figure 86

1. CLEAR ALL icon (edit flag menu)
2. YES icon (clear all flag points dialog box)

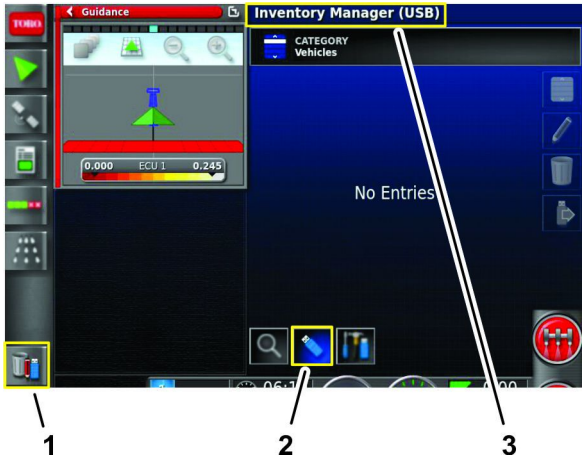
2. In the clear all flag points dialog box, press the YES icon (Figure 86).

Managing Job Information

Transferring an Active Sprayer Job Between Machines

Exporting an Active Job

1. Stop the machine and engage the parking brake.
2. Insert a USB storage device into the back of the control console.
3. Press the Inventory Manager icon (Figure 87).



g297570

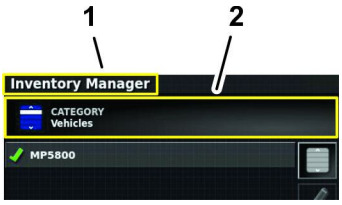
Figure 87

1. Inventory manager icon
2. Switch view icon
3. Title—inventory manager (USB)

4. If the title at the top of the screen states Inventory Manager (USB), press the Switch View icon (Figure 87).

   Note: The title must only state Inventory Manager.
5. If the category Jobs is not displayed on the Category icon, press the Category icon (Figure 88).

   Note: A list of categories displays.

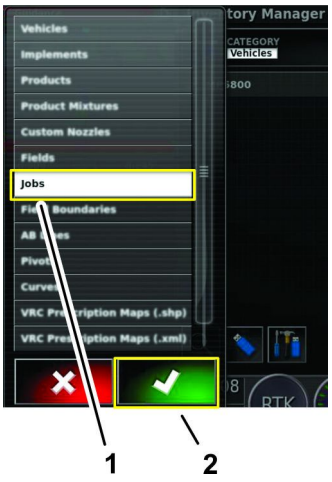


g297571

Figure 88

1. Title—inventory manager
2. Category icon (vehicle shown)

6. In the category list, press the Jobs icon, and press the confirm icon (Figure 89).

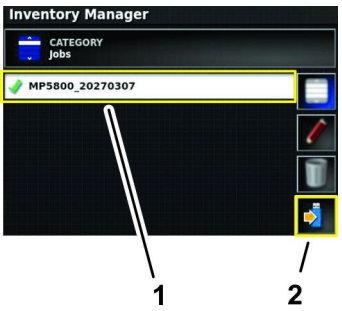


g297567

Figure 89

1. Jobs icon
2. Confirm icon

7. In the inventory manager screen, press the icon(s) of the job(s) information that you want to transfer to the other machine (Figure 90).



g297569

Figure 90

1. Job information icon
2. Save selected items icon

8. Press the Save Selected Items icon (Figure 90).
9. In the Job Saving Options dialog box, press the Save Job icon, and press the confirm icon (Figure 91).



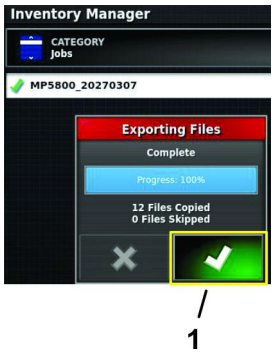
g297572

Figure 91

1. Save job icon
2. Confirm icon

10. In the exporting files dialog box, press the confirm icon (Figure 92).

Note: Press the Inventory Manager icon to hide it.



g297568

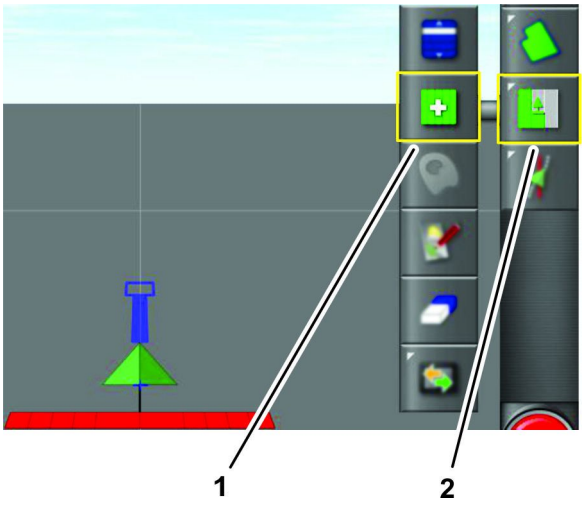
Figure 92

1. Confirm icon

11. Swipe upward to display the floating-menu bar, press the USB eject icon, press the confirm icon, and remove the USB storage device.

Transferring the Active Job to Another Machine

1. Stop the machine and engage the parking brake.
2. Insert a USB storage device into the back of the control console.
3. Press the Job Menu icon (Figure 93).

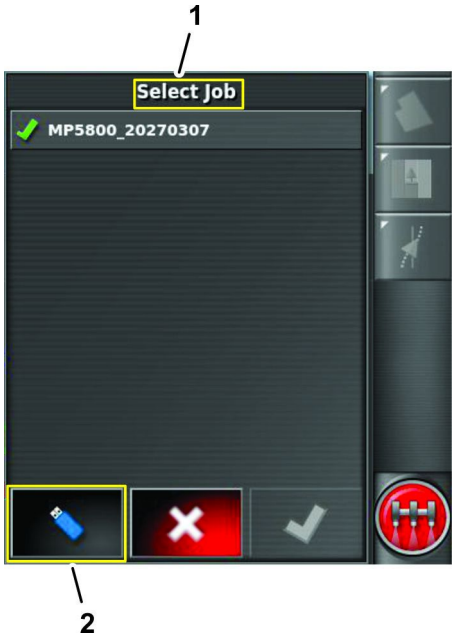


g297601

Figure 93

1. Job menu icon
2. Select job icon

4. Press the Select Job icon (Figure 93).
5. Press the Switch View icon to display the Select Jobs (USB) list (Figure 94).

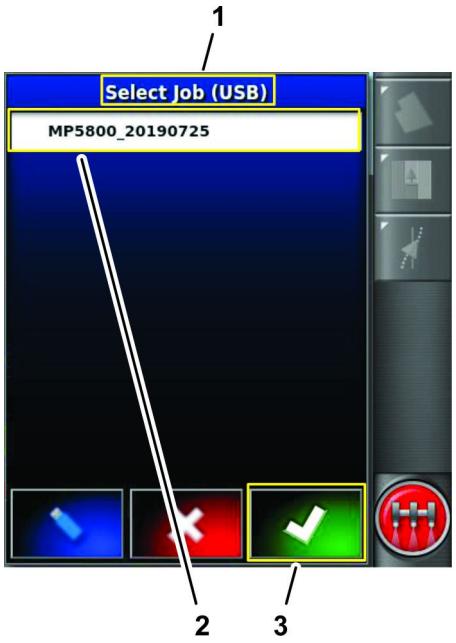


g297604

Figure 94

1. List title—select jobs
2. Switch view icon

6. Press the icon of the job that you want to transfer to the other machine, and press the confirm icon (Figure 95).



g297603

Figure 95

1. List title—select jobs (USB)
2. Job icon (transferring)
3. Confirm icon

Note: The transferred job displays in the Select Job list, and ready to use (Figure 96).



g297602

Figure 96

1. Transferred job (active)

Copying Categories of Information Between Machines

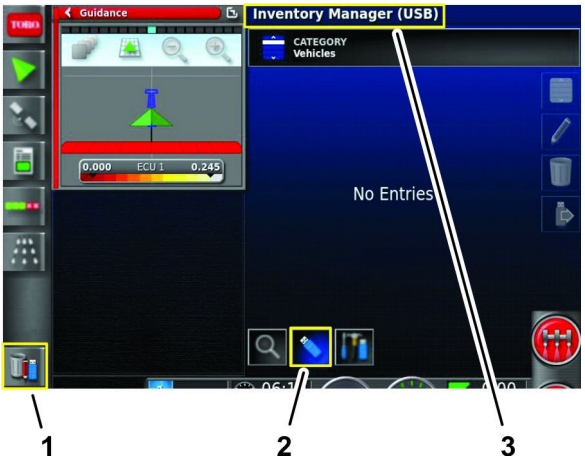
Use the exporting information categories procedure and the importing information categories procedure to share the same sprayer information across multiple machines.

Information Categories

Products	Field Boundaries
Custom Nozzles	AB Lines
Fields	Curves
Jobs	

Exporting Information Categories

1. Stop the machine and engage the parking brake.
2. Insert a USB storage device into the back of the control console.
3. Press the Inventory Manager icon (Figure 97).



g297570

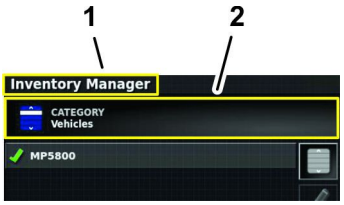
Figure 97

1. Inventory manager icon
2. Switch view icon
3. Title—inventory manager (USB)

4. If the title at the top of the screen states Inventory Manager (USB), press the Switch View icon (Figure 97).

   Note: The title must only state Inventory Manager.

5. If the category of information type (e.g., products, custom nozzles, fields, jobs, field boundaries, AB lines, and curves) that you are exporting is not displayed on the Category icon, press the Category icon (Figure 98).



g297571

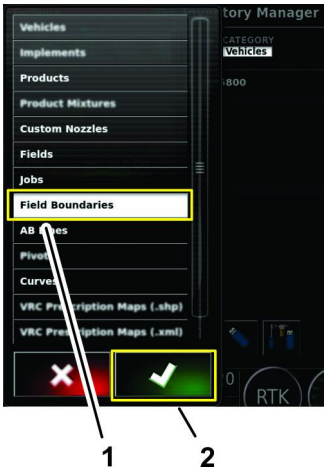
Figure 98

1. Title—inventory manager
2. Category icon (vehicle shown)

6. In the category list, press the icon for the information category that you want to export, and press the confirm icon (Figure 99).

   Note: A list of categories displays.

   You can only import 1 category of information at a time.



g297615

Figure 99

1. Jobs icon (example)
2. Confirm icon

7. In the inventory manager screen, select the information that you want to transfer to the other machine as follows:
   - Press the Select All icon to select all information from the category (Figure 100).
   - Press the individual icon(s) of information from the category (Figure 100).



g297627

Figure 100

1. Multiple category information selected
2. Select all icon
3. Save selected items icon
4. Individual category information selected

8. Press the Save Selected Items icon (Figure 100).

9. In the exporting files dialog box, press the confirm icon (Figure 101).

   Note: Press the Inventory Manager icon to hide it.



g297626

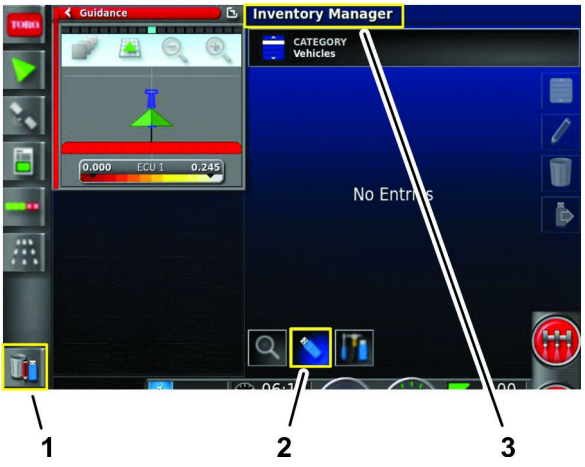
Figure 101

1. Confirm icon

10. Swipe upward to display the floating-menu bar, press the USB eject icon, press the confirm icon, and remove the USB storage device.

Importing Information Categories

1. Stop the machine and engage the parking brake.
2. Insert a USB storage device into the back of the control console.
3. Press the Inventory Manager icon (Figure 102).



g297641

Figure 102

1. Inventory manager icon
2. Switch view icon
3. Title—inventory manager

4. If the title at the top of the screen states Inventory Manager, press the Switch View icon (Figure 102).

   Note: The title must only state Inventory Manager (USB).



g297642

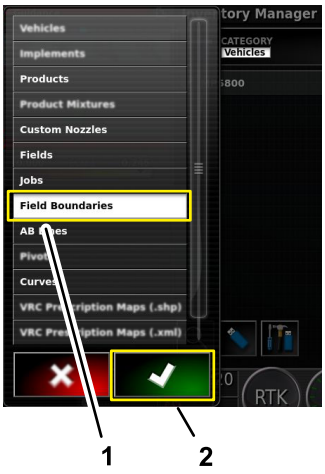
Figure 103

1. Title—inventory manager (USB)
2. Category icon (vehicle shown)

5. If the word of the information type (products, custom nozzles, fields, or field boundaries) that you are importing is not displayed on the Category icon, press the Category icon (Figure 104).

   Note: A list of categories displays.

   You can only import 1 category of information at a time.



g297643

Figure 104

1. Field boundaries icon (example)
2. Confirm icon

6. In the category list, press the icon for the information category that you want to import, and press the confirm icon (Figure 104).
7. Select the information that you want to import as follows:
   - Press the Select All icon to select all information from the category (Figure 105).
   - Press the individual icon(s) of information from the category.



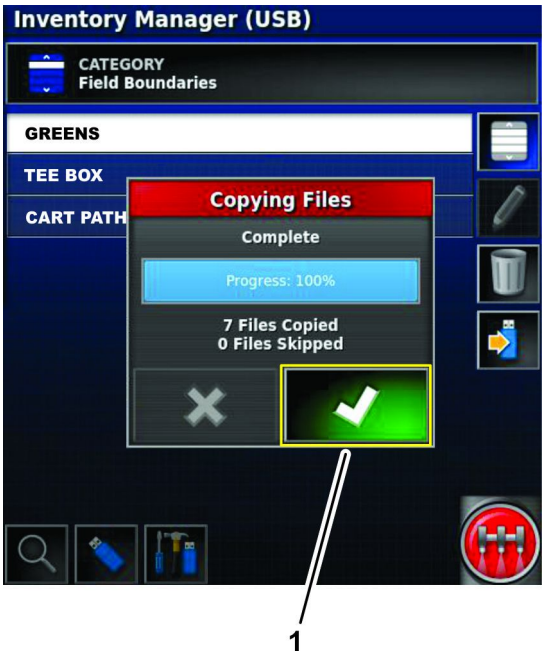
g297656

Figure 105

1. Multiple category information selected
2. Select all icon
3. Save selected items icon
4. Individual category information selected

8. Press the Save Selected Items icon (Figure 105).
9. In the exporting files dialog box, press the confirm icon (Figure 106).

   Note: Press the Inventory Manager icon to hide it.



g297655

Figure 106

1. Confirm icon

10. Swipe upward to display the floating-menu bar, press the USB eject icon, press the confirm icon, and remove the USB storage device.

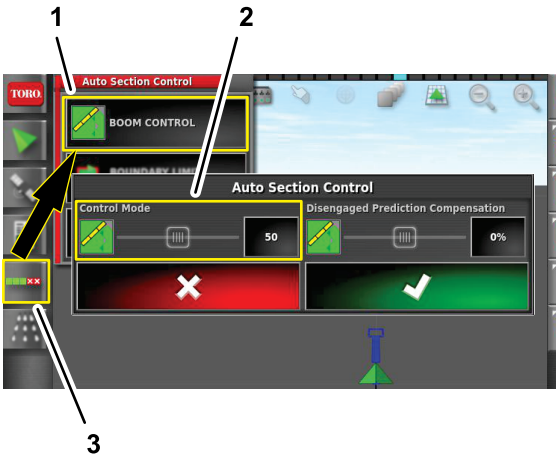
ASC Boom Control

Setting the Control Mode

Note: This setting controls the amount of nozzle-spray overlap for adjacent sprayer passes at the outermost spray nozzles (as a percentage of the spray pattern).

The default setting is 50.

1. Press the AUTO SECTION CONTROL icon (Figure 107).



g305218

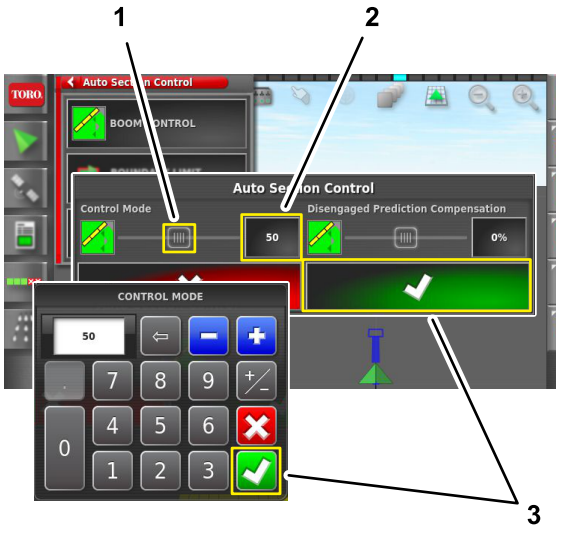
Figure 107

1. BOOM CONTROL icon
2. Control mode (ASC overlap threshold) setting
3. AUTO SECTION CONTROL CONFIGURATION icon

2. Press the BOOM CONTROL icon (Figure 107).
3. Adjust control mode setting (Figure 108) as follows:

   Note: Lowering the control mode value decreases the amount nozzle-spray overlap for adjacent sprayer passes; raising the control mode value increases the amount nozzle-spray overlap.

   - Press the VALUE icon, enter a value with the on-screen keypad, and press the confirm icon (Figure 108).
   - Slide the on-screen slider left or right (Figure 108).



g305220

Figure 108

1. On-screen slider
2. VALUE icon (keypad)
3. Confirm icon

4. Press the confirm icon.

Setting the Disengaged Prediction Compensation

Note: This setting controls the percentage of the spray pattern that crosses field boundary before the nozzle shuts off.

The default setting is 0%.

1. Press the AUTO SECTION CONTROL icon (Figure 109).

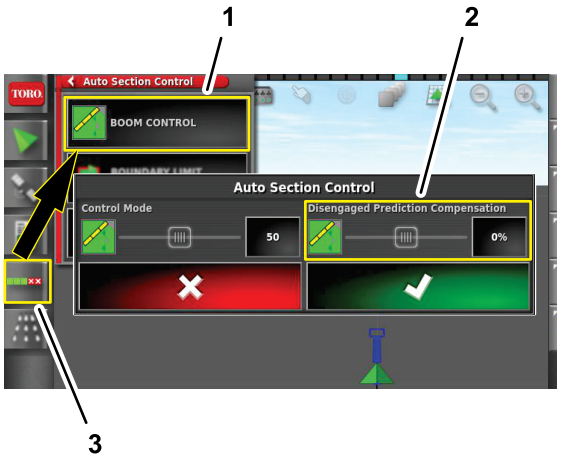


Figure 109

1. BOOM CONTROL icon
2. Disengaged prediction compensation setting
3. AUTO SECTION CONTROL CONFIGURATION icon

2. Press the BOOM CONTROL icon (Figure 109).
3. Adjust disengaged prediction compensation setting (Figure 110) as follows:

   Note: Lowering the disengaged prediction compensation decreases the distance from the field boundary when nozzle-spray shuts off; raising the control mode value increases the shut off distance.

   - Press the VALUE icon; enter a positive (+) value, neutral (0) value, or negative (-) value with the on-screen keypad; and press the confirm icon (Figure 110).
   - Slide the on-screen slider left or right (Figure 110).

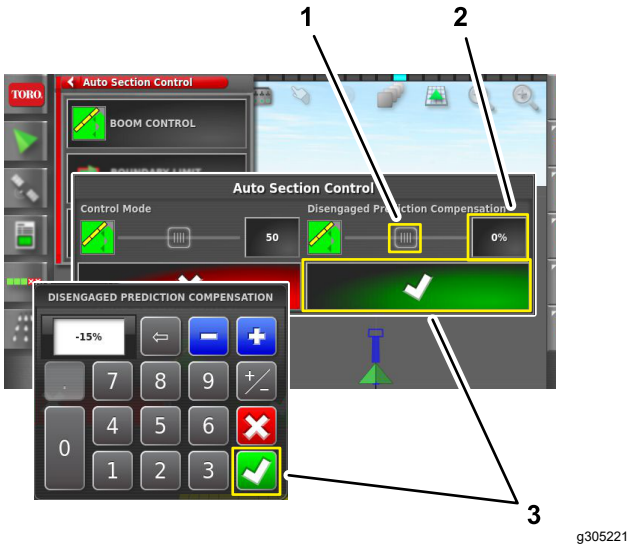


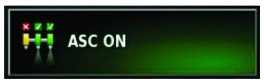
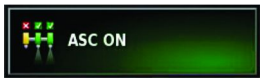
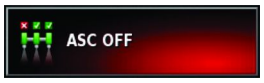
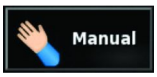
Figure 110

1. On-screen slider
2. VALUE icon
3. Confirm icon

4. Press the confirm icon.

Choosing a Spraying Method

Spray Methods

	Auto Section Control	Boundary Limit	Rate Control	Description
Field Boundary				• The machine controls nozzle sections with boundary and pass to pass control. • The machine controls the application rate.
Unlimited				• The machine controls nozzle sections without boundary control, but with pass to pass. • The machine controls the application rate.
Manual Section Control				• The operator controls the spray sections. • The machine controls the application rate.
Manual Control				• The operator controls the spray sections. • The operator controls the application rate.

Automatic Section Control

Automatic Section Control (ASC) Icon Description

Setting	Description
ASC ON	The machine controls the operation of the individual nozzle sections.
ASC OFF	The operator controls the nozzle sections as groups with the left, center, and right spray-section switches.
ASC INHIBITED (MANUAL MODE)	The operator controls the nozzle sections as groups with the left, center, and right spray-section switches.

Boundary Limit

Boundary Limit Icon Description

Setting	Description
FIELD BOUNDARY	The machine turns on nozzle sections as the turf sprayer enters the field boundary of a work region.
	The machine turns off nozzle sections as the turf sprayer enters excluded regions within the work region.
	The machine turns off nozzle sections as the turf sprayer exits the field boundary of a work region.
	The machine turns off nozzle sections where pass-to-pass spraying overlaps.

Setting	Description
UNLIMITED	The machine controls the nozzle sections with pass to pass control, but without any field boundary.
	The machine turns off nozzle sections where pass-to-pass spraying overlaps.
Field Boundary disabled	The operator manually controls the state of the left, center, and right spray section (on/off).
	The machine provides no control of individual nozzle sections.
	The machine provides no control of pass-to-pass spraying overlaps.

Rate Control

Rate Control Icon Description

Setting	Description
Automatic (Auto)	The machine controls the application rate based on the rate that you set for the active spray job or the rate you set in the sprayer control panel.
Manual	The operator controls the application rate while spraying.

Setting the ASC for Field Boundary Spraying Method

The field boundary spraying method allows the following:

- The GeoLink system controls the nozzle sections within a field boundary and with pass-to-pass control.
- The GeoLink system controls the application rate.

1. Press the AUTO SECTION CONTROL CONFIGURATION icon (ASC icon) and the SPRAYER CONTROLLER icon to open these screens (Figure 111).
2. Press the ASC icon to the ON position, set the boundary limit to the FIELD BOUNDARY position, and set the rate control to the AUTO position (Figure 111).

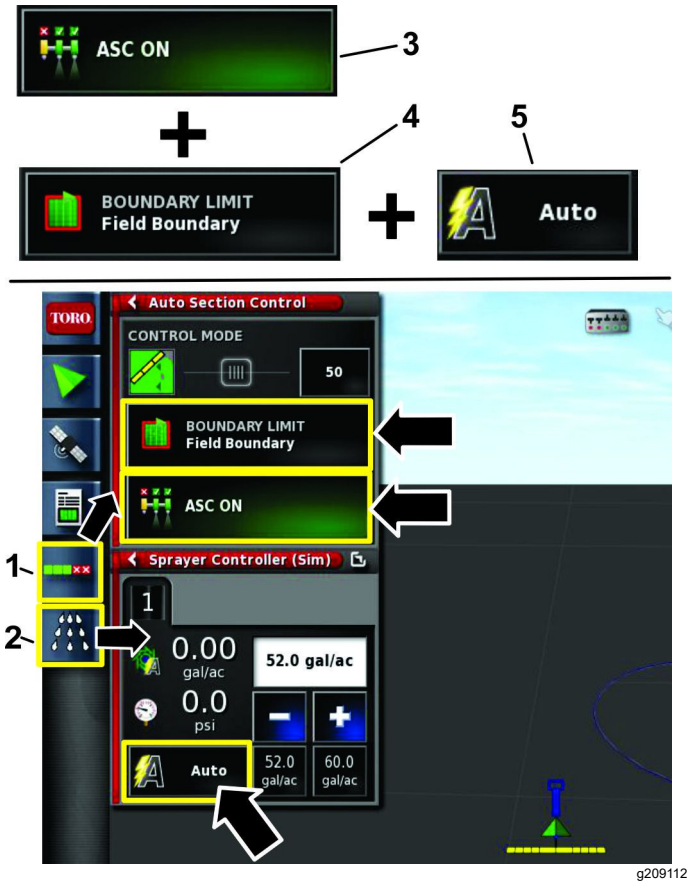


Figure 111

1. AUTO SECTION CONTROL CONFIGURATION icon (ASC)
2. SPRAYER CONTROLLER icon
3. ASC on/off icon
4. BOUNDARY LIMIT icon
5. RATE CONTROL icon

Setting the ASC for Unlimited Boundary Spraying Method

This spraying method allows the following:

- The GeoLink system controls the nozzle sections with pass to pass control without any field boundary.
- The GeoLink system controls the application rate.

1. Press the AUTO SECTION CONTROL CONFIGURATION icon and the SPRAYER CONTROLLER icon (Figure 112).
2. Press the ASC icon to the ON position, set the boundary limit to the UNLIMITED position, and set the rate control to the AUTO position (Figure 112).

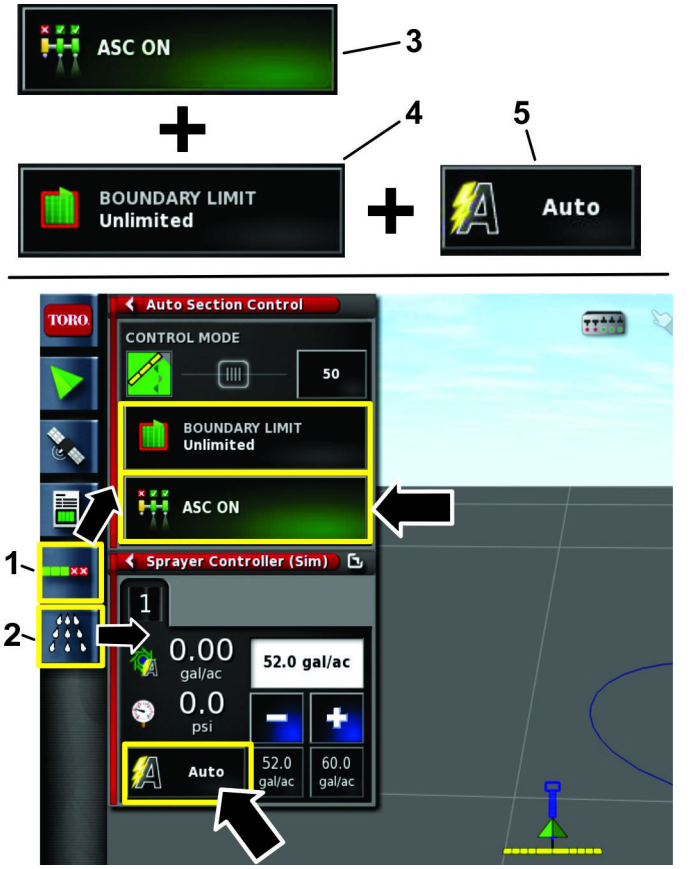


Figure 112

1. AUTO SECTION CONTROL CONFIGURATION icon
2. SPRAYER CONTROLLER icon
3. ASC on/off icon
4. BOUNDARY LIMIT icon
5. RATE CONTROL icon

Setting the ASC for Manual Section Control Spraying Method

This spraying method allows the following:

- The operator controls the boom sections.
- The GeoLink system controls the application rate.

1. Press the AUTO SECTION CONTROL CONFIGURATION icon and the sprayer-controller icon (Figure 113).
2. Press the ASC icon to the OFF position, and press the rate control to the AUTO position (Figure 113).

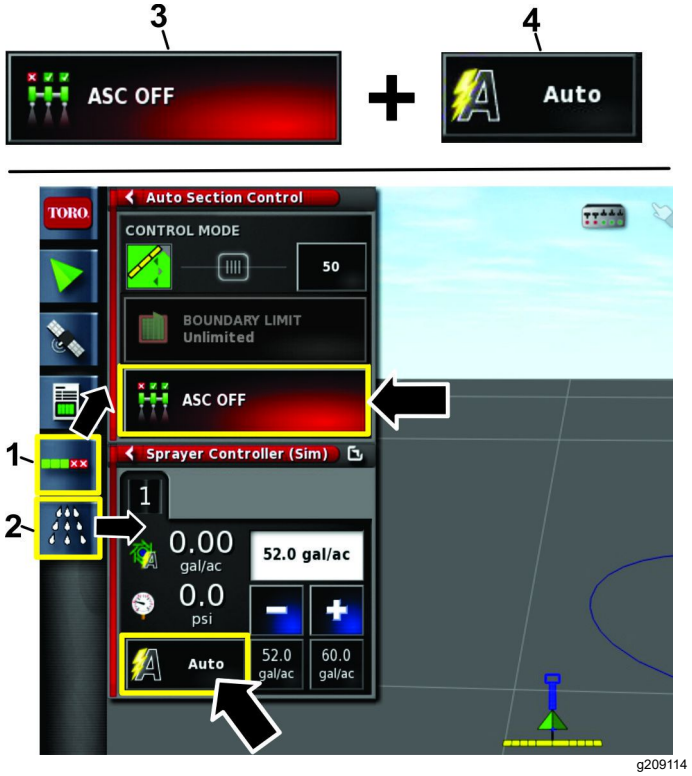


Figure 113

1. Auto-selection control-configuration icon (ASC)
2. Sprayer-controller icon
3. ASC on/off icon
4. Rate-control icon

Setting the ASC for Manual Control Spraying Method

This spraying method allows the following:

- The operator controls the boom sections.
- The operator controls the application rate.

1. Press the auto-selection control-configuration icon and the sprayer-controller icon (Figure 114).
2. Press the rate control to the MANUAL position (Figure 114).

   Note: ASC turns to ASC Inhibited (Manual Mode).

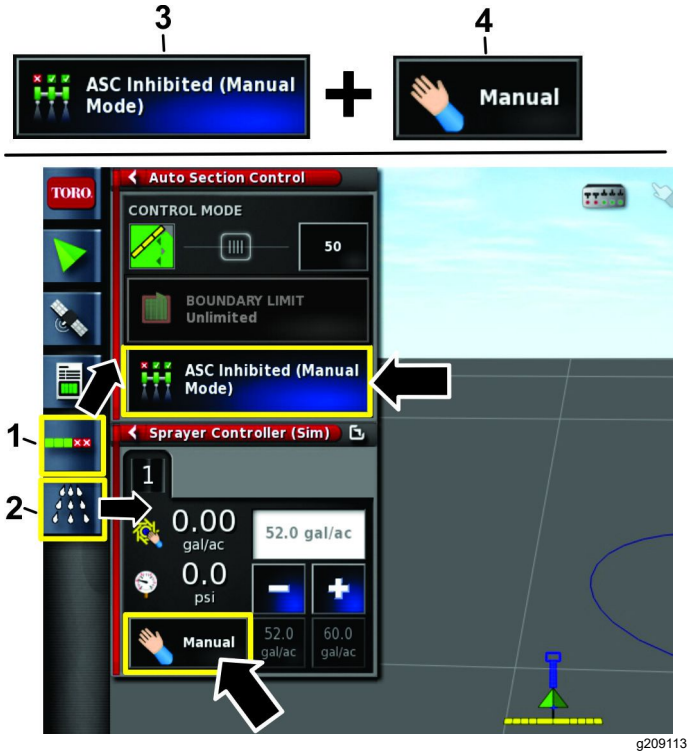


Figure 114

1. Auto-selection control-configuration icon (ASC)
2. Sprayer-controller icon
3. ASC on/off icon
4. Rate-control icon

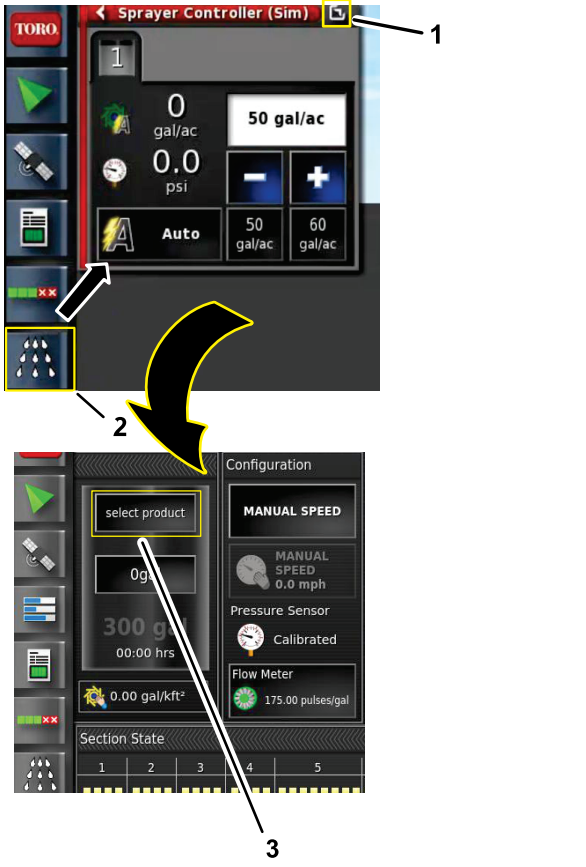


Figure 115

1. Expand view icon
2. SPRAYER CONTROLLER icon
3. PRODUCT CONFIGURATION icon

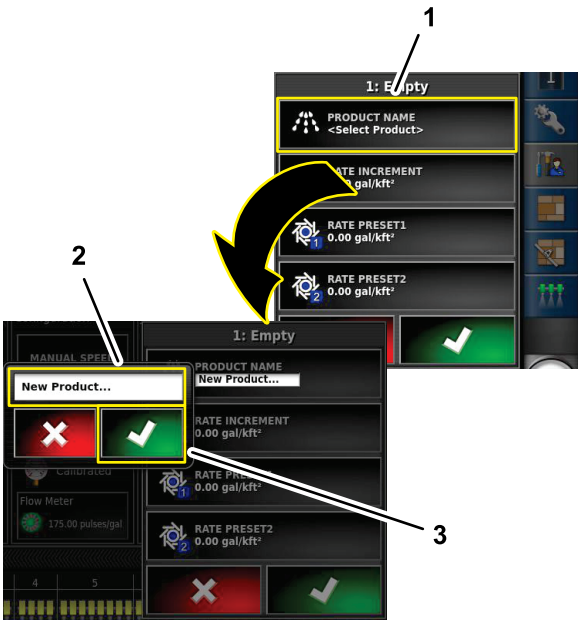
Creating a New Application Rate Product and Setting the Tank Volume

Note: Ensure that the units are correct for your use, refer to Selecting the Correct Units of Measure (page 12).

Creating a New Application Rate Product

1. Fill the tank with water.
2. Press the SPRAYER CONTROLLER icon and press the expand view icon in the sprayer-controller panel (Figure 115).
3. Press the PRODUCT CONFIGURATION icon (Figure 115).

   The product configuration dialog box opens.
4. In the product configuration window, press the PRODUCT NAME icon (Figure 116).



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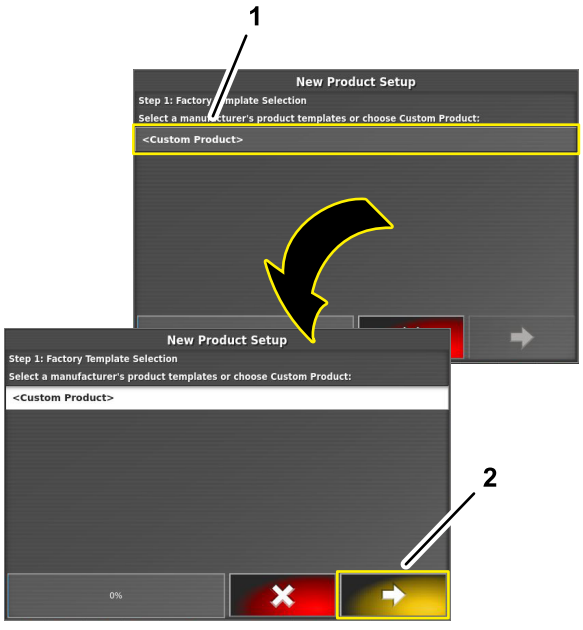
Figure 116

1. PRODUCT NAME icon
2. NEW PRODUCT icon
3. Confirm icon

5. Press the NEW PRODUCT... icon, and press the confirm icon (Figure 116).

   The New Product Setup wizard displays.

6. On step 1 of the new product setup dialog box, press the CUSTOM PRODUCT icon, and press the next icon (Figure 117).



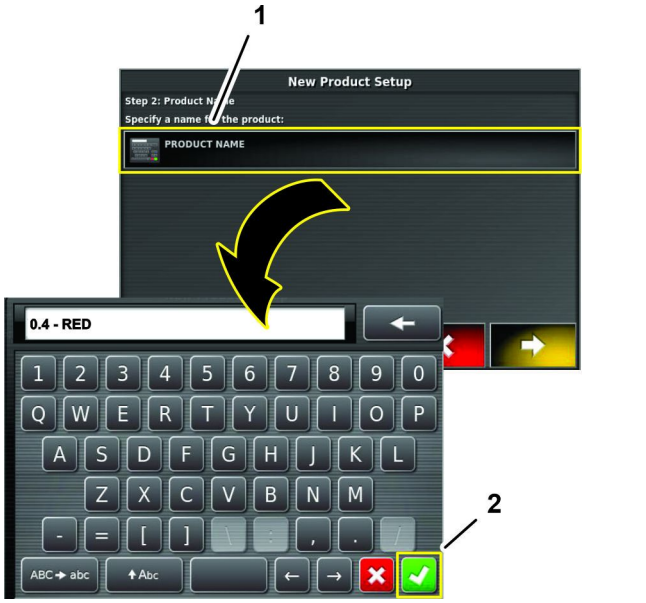
g302993

Figure 117

1. CUSTOM PRODUCT icon
2. Next icon

7. Press the PRODUCT NAME icon, enter the with the display on-screen keyboard, and press the confirm icon (Figure 118).

Note: You can use the name of the nozzle color for the application rate range as the product name.

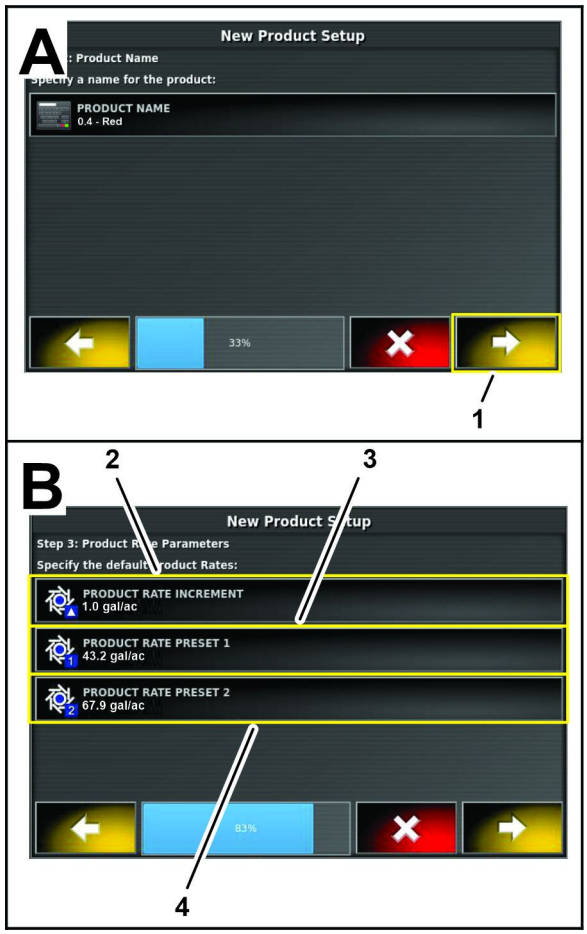


g306584

Figure 118

1. PRODUCT NAME icon
2. Confirm icon (on-screen keyboard)

8. On step 2 of the new product setup dialog box, press the NEXT icon (Figure 119).

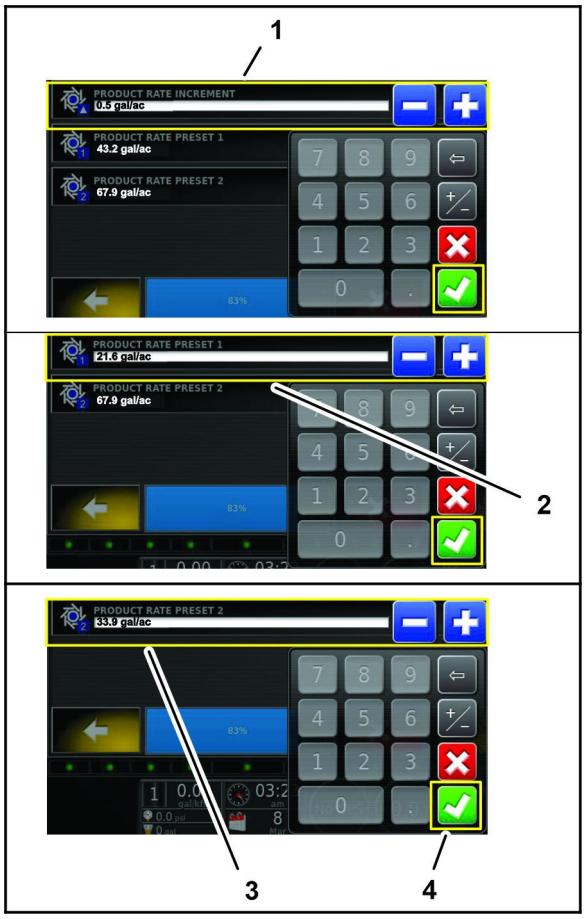


g306585

Figure 119

1. Next icon
2. PRODUCT RATE INCREMENT icon
3. PRODUCT RATE PRESET 1 icon
4. PRODUCT RATE PRESET 2 icon

9. On step 3 of the new product setup dialog box, press the PRODUCT RATE INCREMENT icon (Figure 119).
10. Use the on-screen keypad to type a rate by which you raise or lower application preset rates 1 and 2, and press the confirm icon (Figure 120).



g306586

Figure 120

1. Product rate increment value
2. Product ate preset 1 value
3. Product rate preset 2 value
4. Confirm icon

11. On step 3 of the new product setup dialog box, press the PRODUCT RATE PRESET 1 icon (Figure 119).
12. Use the on-screen keypad to type the application rate for application preset rate 1, and press the confirm icon (Figure 120).
13. On step 3 of the new product setup dialog box, press the PRODUCT RATE PRESET 2 icon (Figure 119).
14. Use the on-screen keypad to type the application rate for application preset rate 2, and press the confirm icon (Figure 120).
15. Press the next icon (Figure 121).

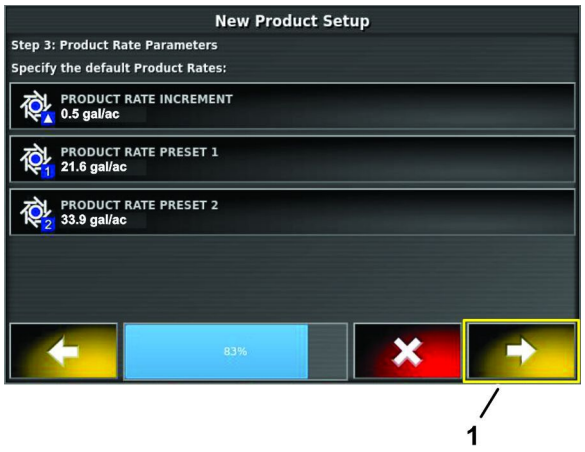


Figure 121

1. Next icon

16. On step 4 of the new product setup dialog box, confirm icons (Figure 122).

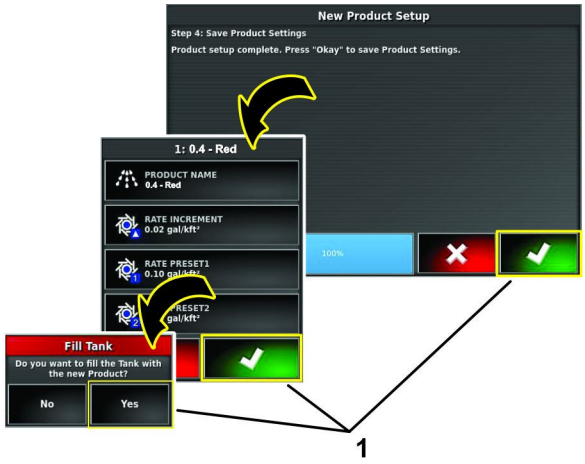


Figure 122

1. Confirm icons

17. If you are filling the tank, in the fill tank dialog box, press the YES icon (Figure 122).

Entering Product Tank Volume

1. Press the TANK FILL icon (Figure 126).

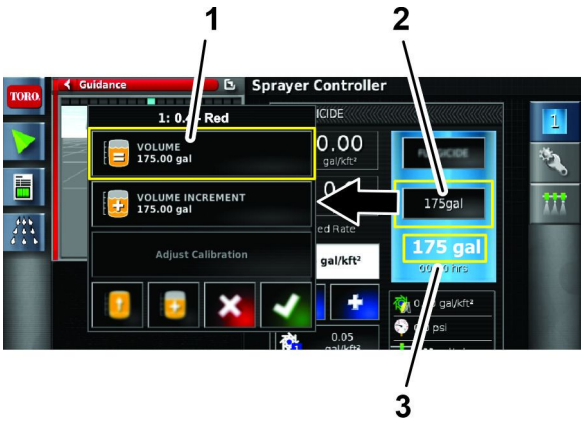


Figure 123

1. Tank fill icon
2. Set volume of product in tank icon
3. Volume of product remaining

2. Press the VOLUME icon (Figure 123).
3. Use the numeric pad of the display to enter 1 of the following:

   Note: Press the INCREMENT VALUE or DECREMENT VALUE icons to enter a preset increment of product volume quantity.

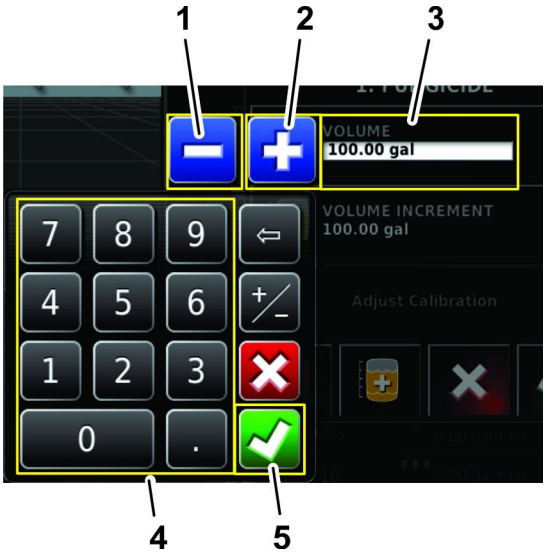


Figure 124

1. Decrement value icon
2. Increment value icon
3. Product volume field (example: 100.00 gal)
4. Numeric pad
5. Confirm icon

- If you are entering a final product volume into the tank (such as water and chemicals), enter the total volume of product that you will add product to the tank, press the confirm

icon, and press the confirm icon on the tank fill window (Figure 125).

Note: The volume of water and product is less than or equal to the configured tank capacity.



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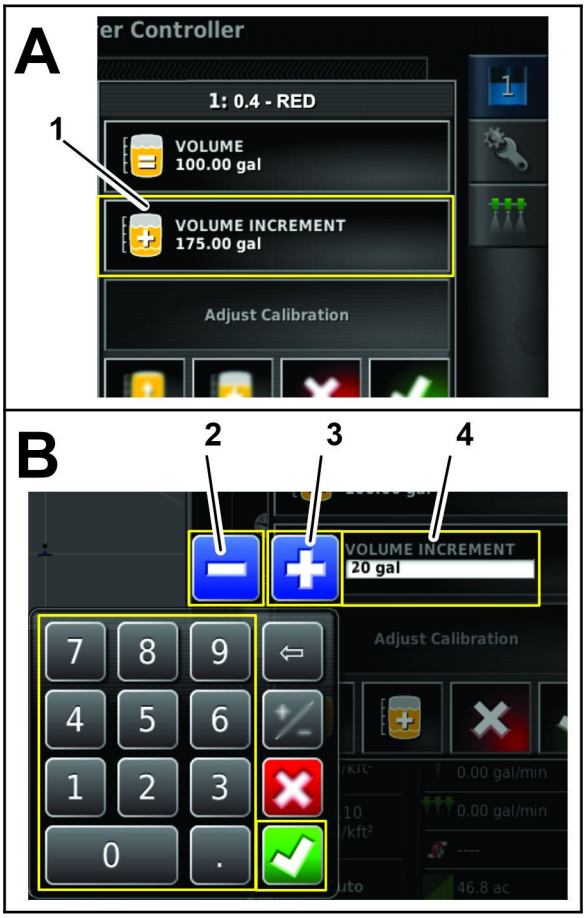
Figure 125

1. Old product tank volume
2. New product tank volume

- If you are incrementally adding chemicals to water, enter the volume of water in the tank , press the confirm icon, and proceed to step 4.

  Note: The volume of water and product is less than or equal to the configured tank capacity.

4. If you are incrementally adding chemicals to water, press the VOLUME INCREMENTS icon (Figure 127).



g306627

Figure 126

1. Volume increment icon
2. Decrease increment icon
3. Increase increment icon
4. New volume increment value

5. Use the numeric pad of the display to enter increment of the volume of product (such as chemicals to water) that you will add product to the tank, and press the confirm icon (Figure 127).

   Example: 19 L (5 gallon), 114 L (30 gallon), or 208 L (55 gallon) increments.

6. If you are incrementally adding chemicals to water, add the product into the tank and press the INCREMENT AMOUNT OF PRODUCT icon (Figure 127).

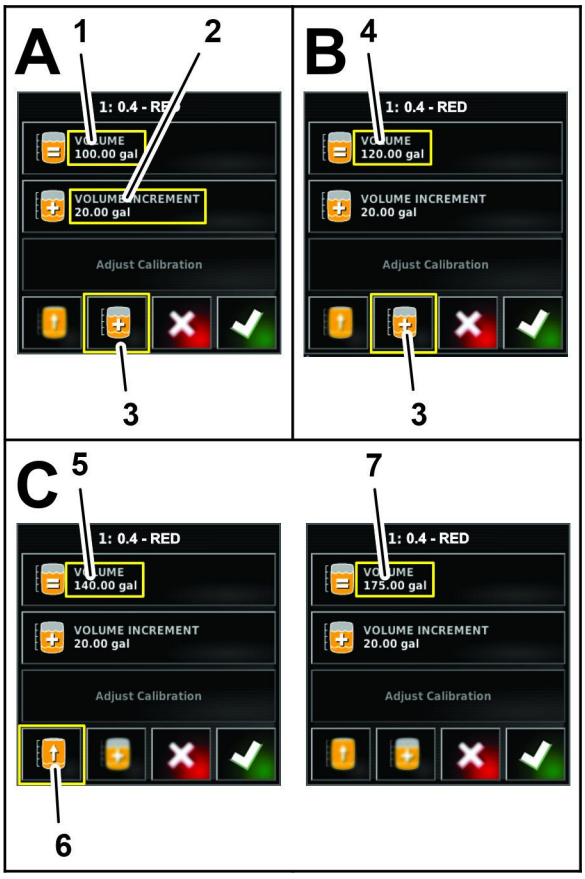


Figure 127

Incrementally adding product

1. Volume of water in the tank (example: 100.00 gal)
2. Increment amount of product icon (example: 20.00 gal)
3. Increase volume by “Volume Increment” icon
4. Volume of water in the tank plus the increment amount of product (120.00 gal)
5. 120.00 gal Volume of water and product in the tank plus an increment amount of product (example: 140.00 gal)
6. Fill tank to capacity icon
7. Full (configured tank capacity—example: 175 gal)

7. If you are filling the tank to capacity with a product or water, you can press the FILL TANK TO CAPACITY icon (Figure 127).
8. Press the confirm icon and press the confirm icon on the tank fill window.

Configuring the Sprayer Controls for a New Job

Standard Mode

Setting the Application Rate and Naming the Job

1. Start the machine and keep the key in the RUN position.
2. Open the sprayer-controller icon (Figure 128).



Figure 128

1. Sprayer-controller icon

3. In the sprayer-controller screen, determine if the correct preset application is set.
4. If the rate is not correct, change the rate by pressing the preset rate icons, press the decrease and increase icons to incrementally change the rate, or select the current rate field and enter the application rate with the on-screen keypad (Figure 129 and Figure 130).

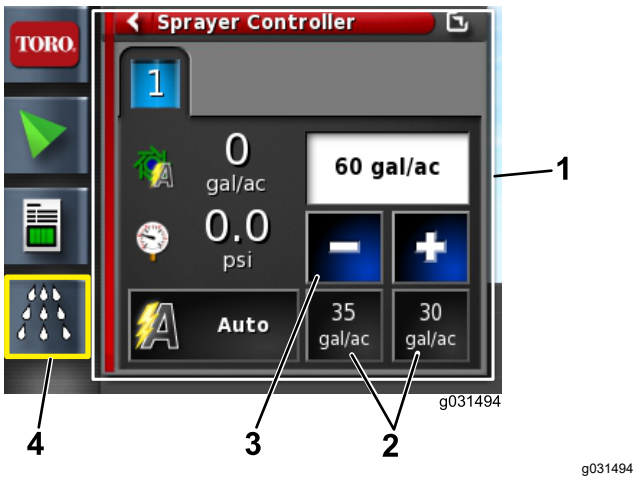


Figure 129

1. Current rate field
2. Preset-rate icons
3. Decrease and increase icons
4. Sprayer-controller icon



Figure 130

1. Current rate field
2. Numeric pad
3. Confirm icon

5. Press the job-menu icon in the upper right of the screen (Figure 131).

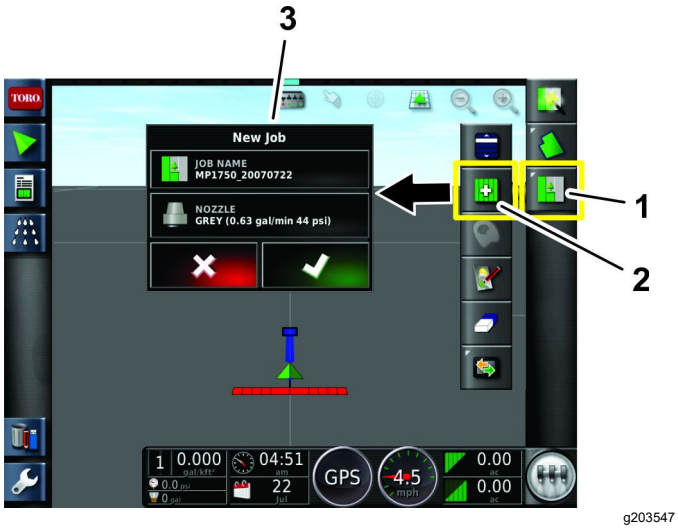


Figure 131

1. Job-menu icon
2. Create new job icon
3. New job menu

6. Input a new name for the job or leave the default time stamp (Figure 131).

Selecting the Spray Nozzle—Preparing to Balance the Nozzle Valves

Multi Pro 1750 Turf Sprayer

Important: **When you create a job, the nozzle size to which the GeoLink system is controlled shows on the X25 display. You must use the valve balance wizard each time you change spray nozzles.**

1. Ensure that the agitation bypass valve is balanced, and that the spray system pressure is more than 207 kPa (30 psi); refer to your *Operator's Manual*.
2. Fill the sprayer tank with clean water.
3. Ensure that the parking brake is engaged, and the gear selector is in the NEUTRAL position.
4. If your machine is equipped with the optional ultra sonic boom leveling kit, shut off the sonic-boom switch.
5. Start the engine, lower the boom sections, set the machine master-section switch to the OFF position, and set the 3 section switches to the ON positions.
6. Press the spray rate controller icon, and then swipe the full screen icon in the upper right corner of the sprayer controller window (Figure 132).

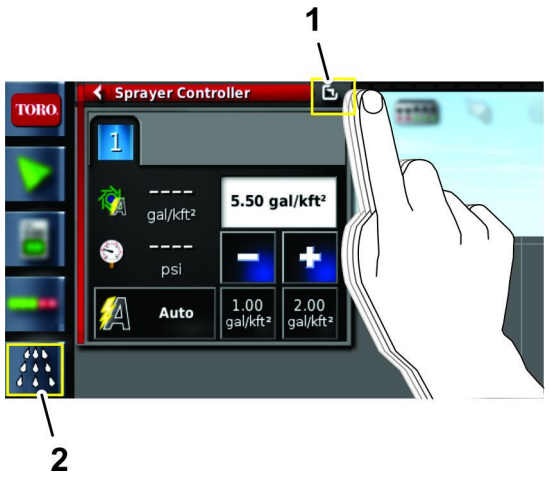


Figure 132

1. Full screen icon
2. Spray rate controller icon

7. Press the configuration icon, and then press the valve balance wizard icon (Figure 133).

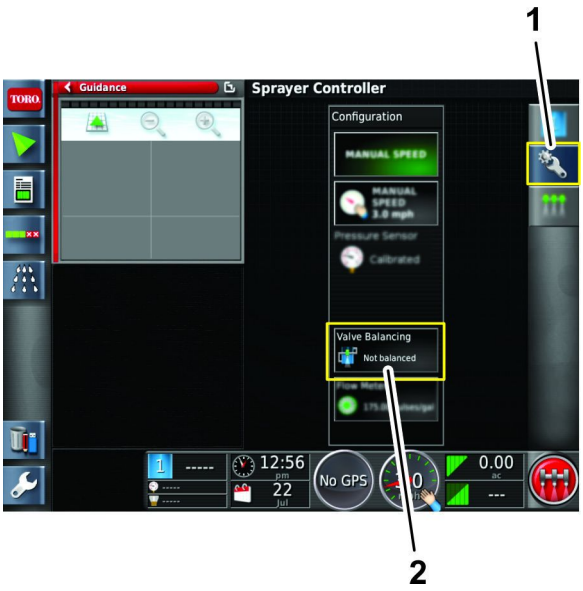


Figure 133

1. Configuration icon
2. Valve balance wizard icon

Selecting the Spray Nozzle—Valve Balancing Wizard—Steps 1 through 3

Multi Pro 1750 Turf Sprayer

1. At step 1 of the valve balancing wizard, read the description of the valve balancing wizard, and then press the next icon (Figure 134).

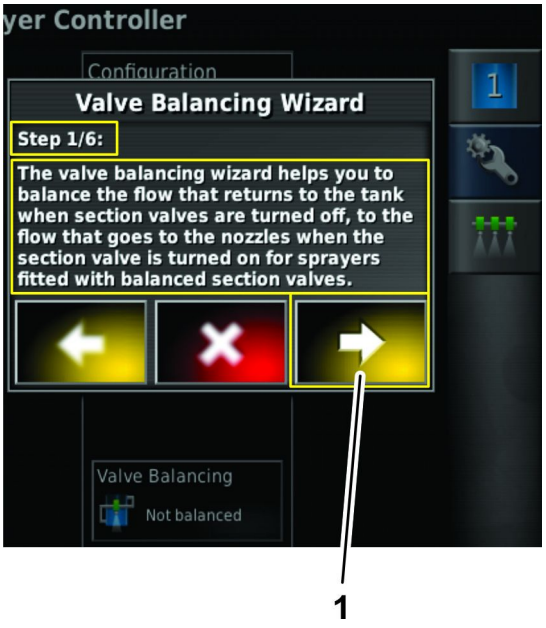


Figure 134

1. Next icon

2. At step 2 of the valve balancing wizard, drag the scroll bar as needed to display the spray nozzle that you are configuring, and then press the nozzle icon from the drop-down list (Figure 135).

Note: If the nozzle that you are configuring is not in drop-down list, you will need to create a new nozzle before using the valve balancing wizard; contact your authorized Toro distributor, Toro NSN at 1-844-GEOLINK (1-844-436-5465), or GeoLinkNSN@toro.com for customer service.

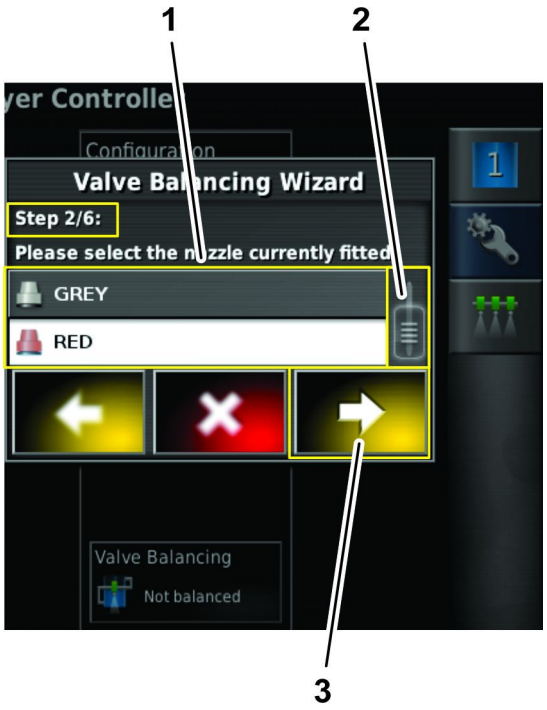


Figure 135

1. Nozzle list icons
2. Scroll bar
3. Next icon

Nozzle Table

Nozzle	Nozzle Color	Flow Rate
0.2	Yellow	0.8 lpm (0.2 gpm)
0.4	Red	1.5 lpm (0.4 gpm)
0.5	Brown	1.9 lpm (0.5 gpm)
0.6	Gray	2.3 lpm (0.6 gpm)
0.8	White	3.0 lpm (0.8 gpm)
1.0	Blue	3.8 lpm (1.0 gpm)
1.5	Green	5.7 lpm (1.5 gpm)

3. Press the next icon (Figure 135).
4. At step 3 of the valve balancing wizard, If you need to set an different application rate press the application rate icon (Figure 136).

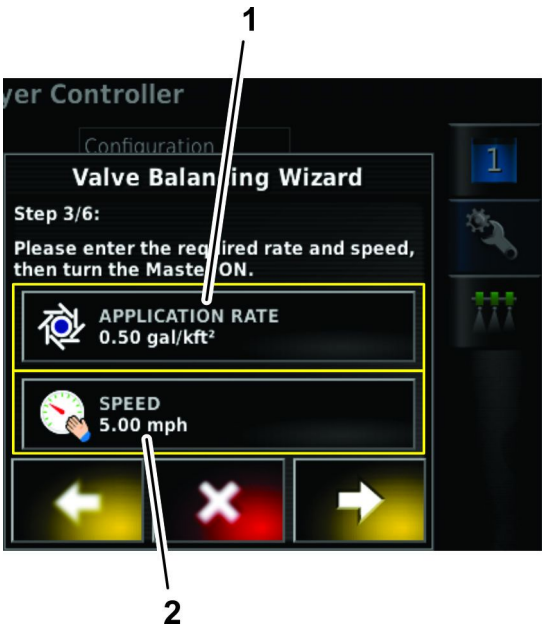


Figure 136

1. Application rate icon
2. Speed icon

5. Use the numeric pad to enter the application rate that you are configuring, and then press the confirm icon (Figure 137).



Figure 137

1. Application rate field
2. Numeric pad
3. Confirm icon

6. At step 3 of the valve balancing wizard, If you need to set an different sprayer ground speed, press the speed icon (Figure 136).
7. Use the numeric pad to enter the ground speed at which you will spray, and then press the confirm icon (Figure 138).

   Note: If you spray in 1rst gear, enter 5.6 kph (3.5 mph); If you spray in 2nd gear, enter 9.7 (6.0 mph)

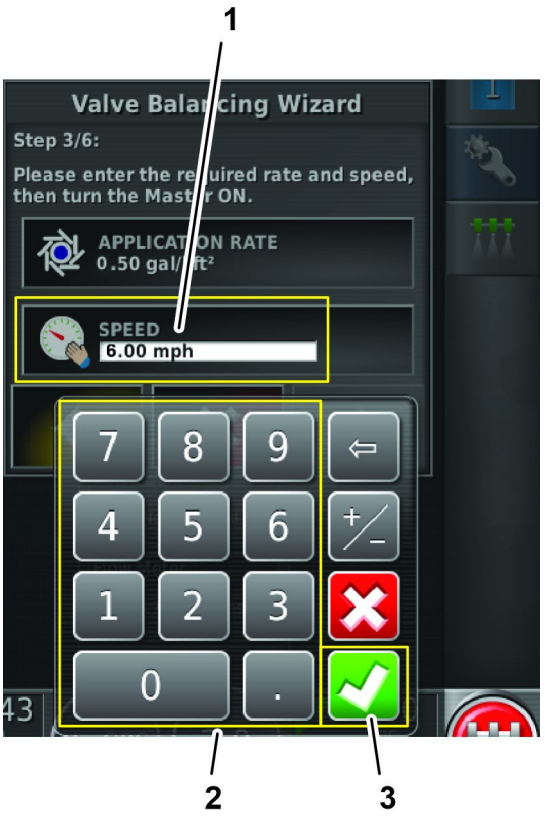


Figure 138

1. Ground speed field
2. Numeric pad
3. Confirm icon

8. On the machine, set the master-section to the ON position.
9. In the command console, press the next icon (Figure 139).



g307537

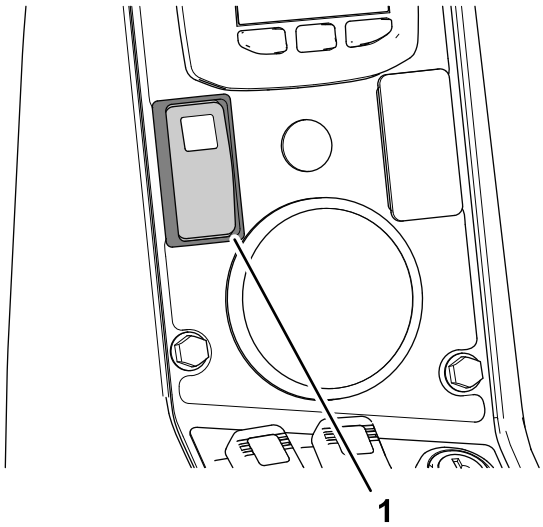
Figure 139

1. Next icon

Selecting the Spray Nozzle—Valve Balancing Wizard—Steps 4 through 6

Multi Pro 1750 Turf Sprayer

1. Press the accelerator pedal for full engine speed (wide-open throttle), set the throttle-lock switch of the machine (Figure 140).

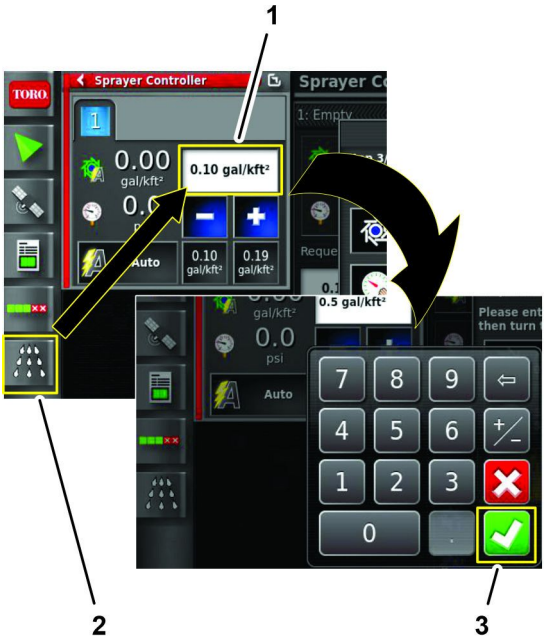


g307535

Figure 140

1. Throttle-lock switch

2. Press the SPRAY RATE CONTROLLER icon, press the REQUESTED APPLICATION RATE icon, use the on-screen keypad to enter the target application rate, and press the confirm icon (Figure 141).

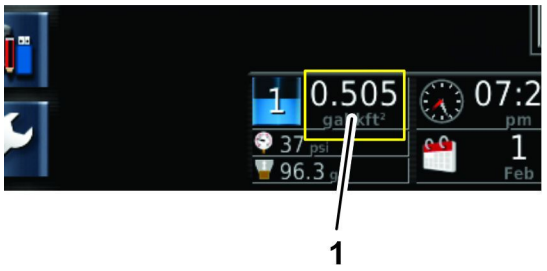


g307534

Figure 141

1. SPRAY RATE CONTROLLER icon
2. REQUESTED APPLICATION RATE icon
3. Confirm icon

3. Wait until the target application rate displays on the dashboard (Figure 142).



g307533

Figure 142

1. Application rate (dashboard—X25 command console)

4. At step 4 of the valve balancing wizard, wait for the system flow rate to stabilize and the lock icon to appear in the dialog box (Figure 143).

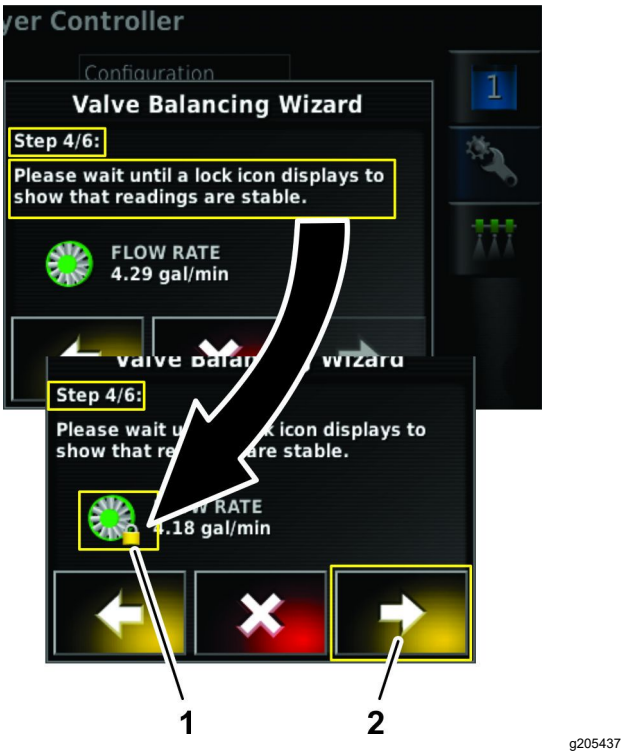


Figure 143

1. Lock icon (flow rate stabilized)
2. Next icon

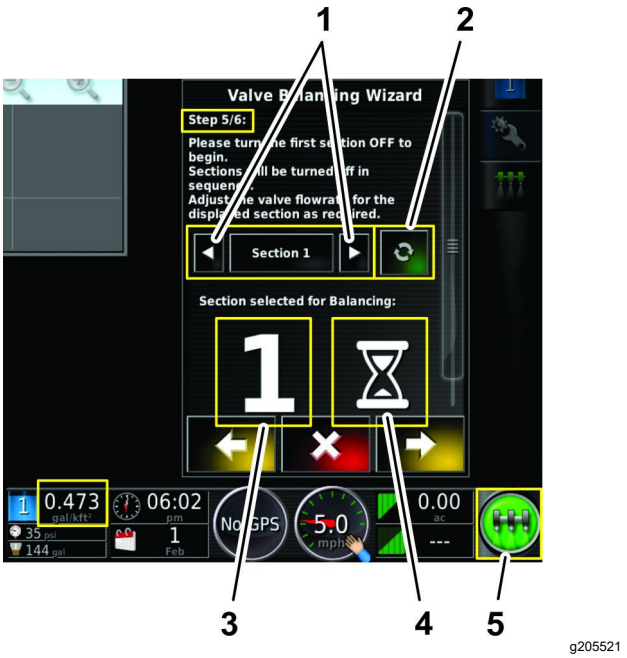


Figure 144

1. Previous and next section icons
2. Section On/Off icon (ON indicated)
3. Active section bypass adjustment indicator
4. Wait indicator
5. Master switch icon (ON—green)

5. Press the next icon (Figure 143).
6. At step 5 of the valve balancing wizard, perform 1 of the following:

   Note: The (+) and (-) icons displayed in the valve balance wizard match the decal on the valve body, and aid in determining which way to turn the knob of the bypass valve.

   - Wait for the GeoLink software to process the flow-rate action (Figure 144).

     Note: Pressing the section On/Off icon to On (green) allows you to use the previous and next icons to select a section valve that you want to balance. Press the section On/Off icon to On if you adjusted the wrong bypass valve and want to navigate to a specific section-valve selection in the valve balancing wizard.

   - The application rate for the section valve is too high (Figure 145).

     Note: In this example, the target application rate is 0.500 gallon/1,000 ft^2 but the measured application rate is 0.529 gallon/1,000 ft^2.



g205520

Figure 145

1. Previous and next section icons (inactive)
2. Section On/Off icon (OFF indicated)
3. Flow rate (e.g., above the 0.500 target rate)
4. Reduce the flow indicator (close the bypass valve)

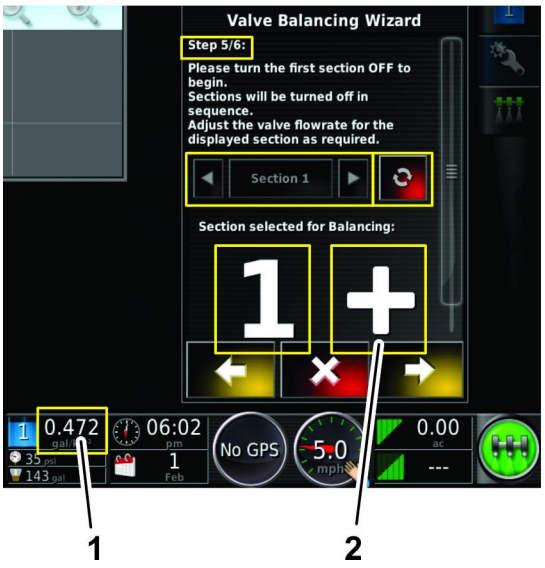
A. Press the section On/Off icon (Figure 145) to shut off the section valve (red).

B. Move to the back of the machine.

C. Adjust the bypass valve at section valve 1 to reduce the flow rate to the target application rate.

- The application rate for the section valve is too low (Figure 146).

  Note: In this example, the target application rate is 0.500 gallon/1,000 ft² but the measured application rate is 0.472 gallon/1,000 ft².



g205524

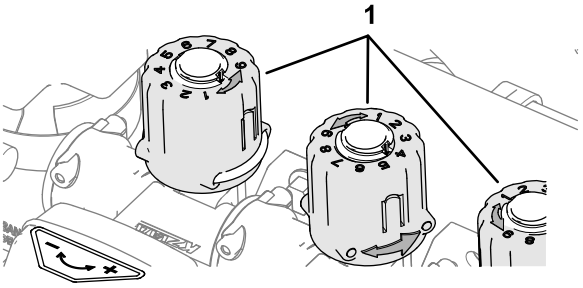
Figure 146

1. Flow rate (e.g., below the 0.500 target rate)
2. Increase the flow indicator (open the bypass valve)

A. Press the section On/Off icon (Figure 145) to shut off the section valve (red).

B. Move to the back of the machine.

C. Adjust the bypass-valve knob at section valve selected in the control console to set the flow rate to the target application rate.

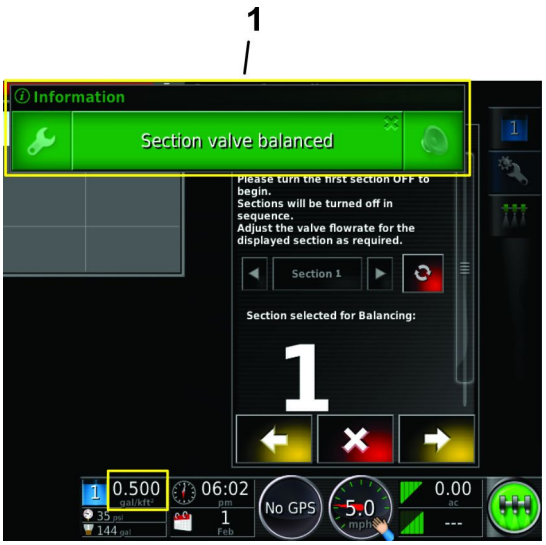


g305385

Figure 147

1. Bypass-valve knob (section valve)

7. The Section Valve Balanced message appears, and the valve balance wizard automatically advances to the next section valve (Figure 148).

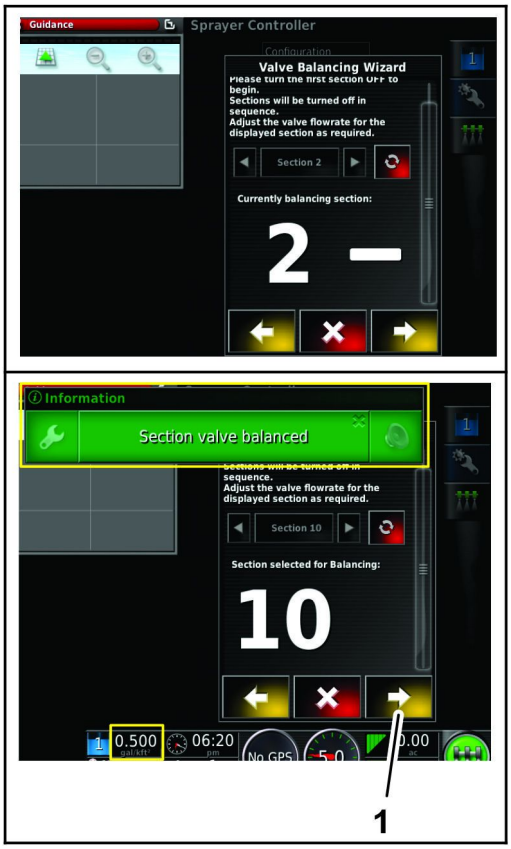


g205523

Figure 148

1. Section valve balanced message

8. Repeat steps 6 and 7 for section valves 2 through 10 (Figure 149).



g205522

Figure 149

1. Next icon

9. When all section valves are balanced, press the next icon (Figure 149).
10. At step 6 of the valve balancing wizard, check the section valve balanced list to ensure that all the bypass valves are adjusted, and press the confirm icon (Figure 150).

Note: If you find that any section valves do not have its bypass valve adjusted, press the back icon to navigate the step 5 screen for that nozzle valve and perform steps 6 and 7 (Figure 150).

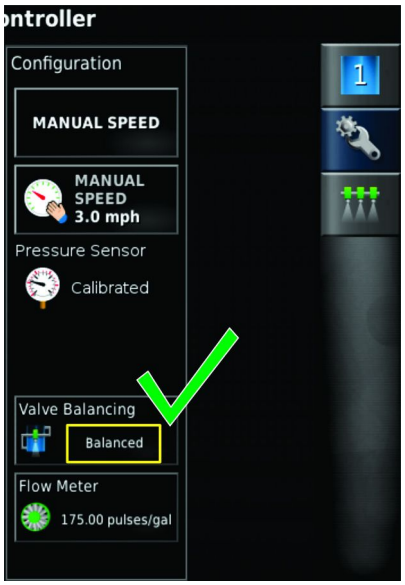


g205525

Figure 150

1. Section valve balanced list (green—complete; red—incomplete)
2. Scroll bar
3. Back icon
4. Complete icon

When you complete the valve balancing wizard, the valve balancing icon in the setup dialog box indicates balanced (Figure 151).



g205519

Figure 151

Selecting the Spray Nozzle

Multi Pro 5800 Turf Sprayer

1. In the new job menu, press the nozzle icon (Figure 152).



g305408

Figure 152

1. Nozzle icon
2. Confirm icon

2. In the drop-down list, select the nozzle for the application rate that you are spraying.

   Note: If the nozzle for the application rate that you are spraying does not appear in the list, you will need to create a new nozzle before using the valve balancing wizard; contact your authorized Toro distributor, Toro NSN at 1-844-GEOLINK (1-844-436-5465), or GeoLinkNSN@toro.com for customer service.

3. Press the confirm icon (Figure 152).

Configuring a New Job Region

1. Select a field, ensure that you have a boundary in the field, and the boundary is categorized; refer to Managing Field Information (page 19).
2. Press the JOB MENU icon (Figure 153).



g203546

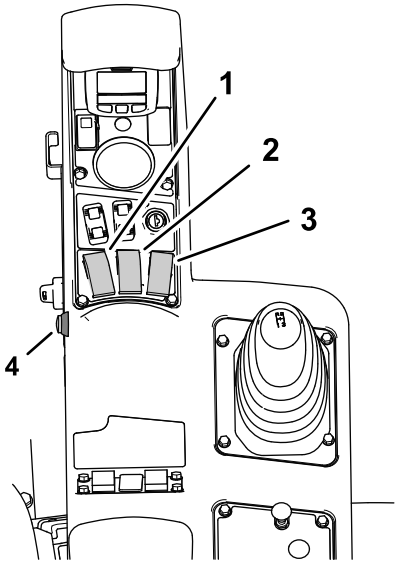
Figure 153

1. JOB MENU icon
2. CONFIGURE JOB REGIONS icon
3. Job region menu

3. Press the CONFIGURE JOB REGIONS icon (Figure 153).
4. In the job region menu (Figure 153), select 1 of the following region types:
   - Press the WORK REGIONS icon that you are spraying (i.e., fairways, greens, or tees), as shown in Figure 153.
   - Press the EXCLUDED REGIONS icon that are not to be sprayed (bunkers, trees, hazards, etc.), as shown in Figure 153.
5. Press the confirm icon (Figure 153).

Operating the Spray System of the Machine

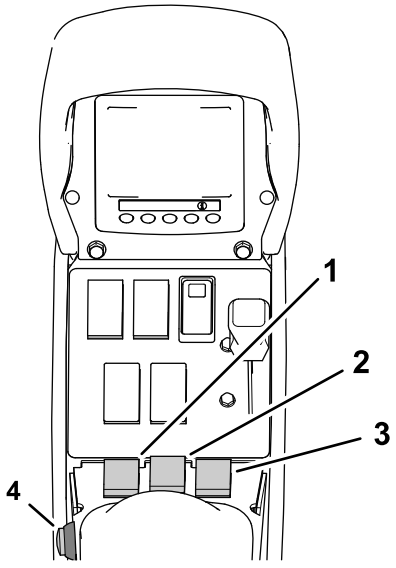
1. Set the 3 section switches (located in the control console of the machine) to the ON position (Figure 154 and Figure 155).



g305273

Figure 154
Multi-Pro 1750

1. Left section switch
2. Center section switch
3. Right section switch
4. Master section switch



g305272

Figure 155
Multi-Pro 5800

1. Left section switch
2. Center section switch
3. Right section switch
4. Master section switch

2. Press the master-section switch on the machine (Figure 154 or Figure 155).
3. Press the master-switch icon (Figure 34) in the control-console display (Multi Pro 5800 turf sprayers only).
4. Drive into the spray area.

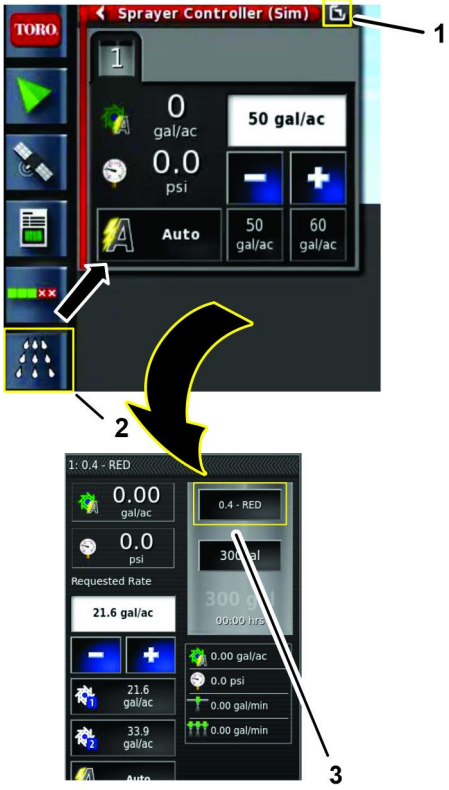
   Note: The machine starts spraying when the sprayer crosses into the defined spray area with the ASC control mode set the FIELD BOUNDARY position.

Note: The display shows areas you will spray as light gray and non-spray areas as dark gray. If the display shows all light gray, you can spray every area.

Using an Existing Job

Note: A job is set up in the standard mode. Ensure that any previous job information is deleted before repeating an existing job.

1. Start the machine and keep the key in the RUN position.
2. Press the SPRAYER CONTROLLER icon and press the expand view icon in the sprayer-controller panel (Figure 156).



g306639

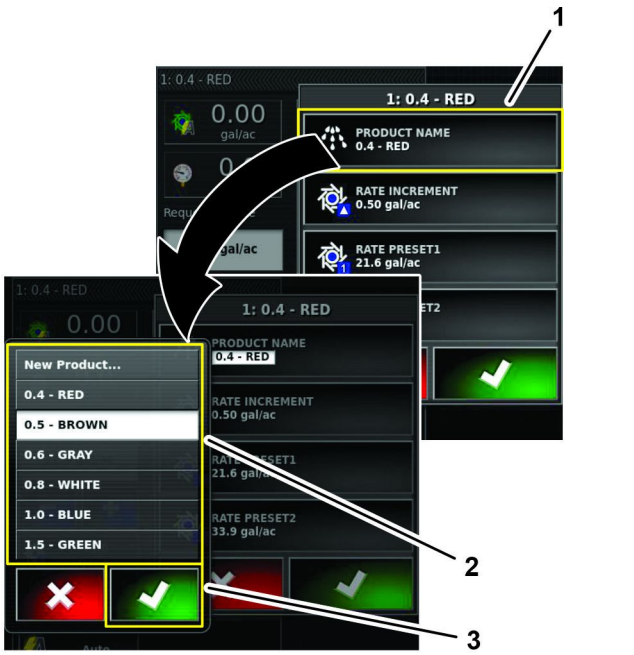
Figure 156

1. Expand view icon
2. SPRAYER CONTROLLER icon
3. PRODUCT CONFIGURATION icon

3. If the application rate products that you need is not currently selected (Figure 157), select an application rate product as follows.

   Note: If the application rate products that you need is not listed, create a new application rate product; refer to Creating a New Application Rate Product (page 47).

   A. In the product configuration window, press the PRODUCT NAME icon (Figure 157).



g306640

Figure 157

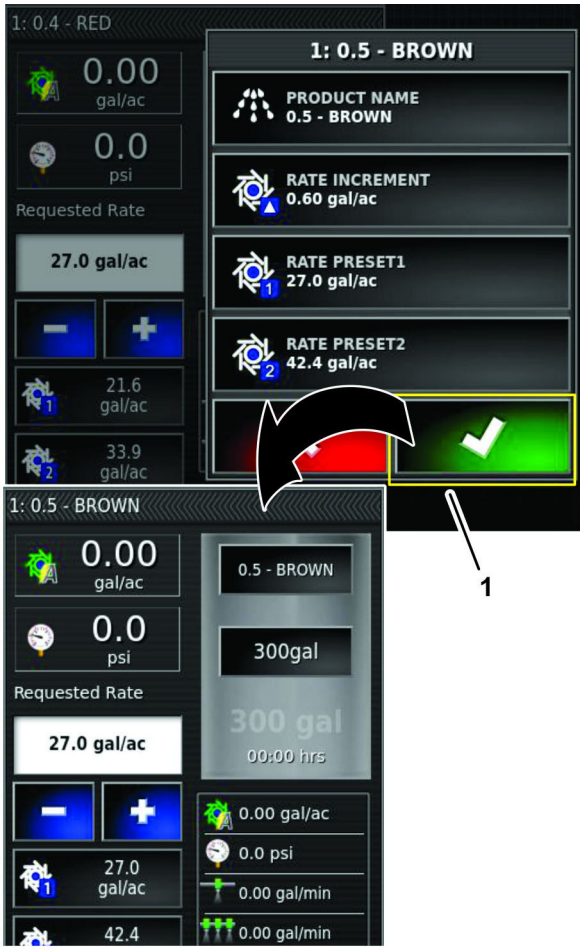
1. PRODUCT NAME icon (product configuration window)
2. Application rate product icons (product selection list)
3. Confirm icon

   B. In the product selection list, press the icon of an application rate product (Figure 157).

   C. Press the confirm icon (Figure 157).

   D. In the product configuration window, press the confirm icon (Figure 158).

   Note: The sprayer controller window update with the new application rate product information.



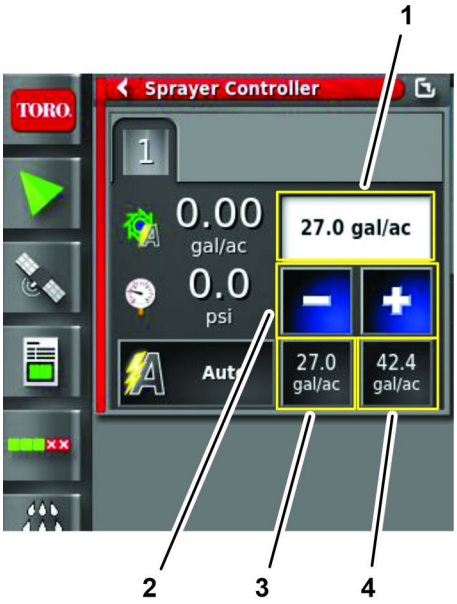
g306641

Figure 158

1. Confirm icon

   Note: When the sprayer controller window is minimized, the name of the application rate product name does not display, but the preset information displays.

4. If the rate is not correct, change the rate with the preset rates, incrementally or selecting the current rate and manually entering the application rate (Figure 159).



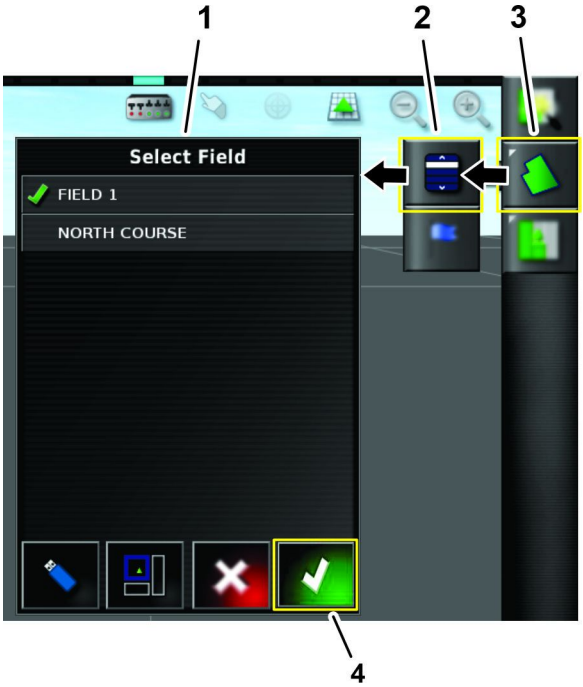
g306642

Figure 159

1. Current rate
2. Decrease and increase icons
3. Preset-rate 1 icon
4. Preset-rate 2 icon

5. Press the FIELD MENU icon, in the select field list press the icon for a field, and press the confirm icon (Figure 160).

   Note: The checkmark identifies the icon of the active field.



g203549

Figure 160

1. List of existing fields
2. SELECT FIELD icon
3. FIELD MENU icon
4. Confirm icon

6. In the select field list, press the icon for a field (Figure 160); refer to Creating a New Field (page 20).
7. Press the JOB MENU icon (Figure 161).



g203772

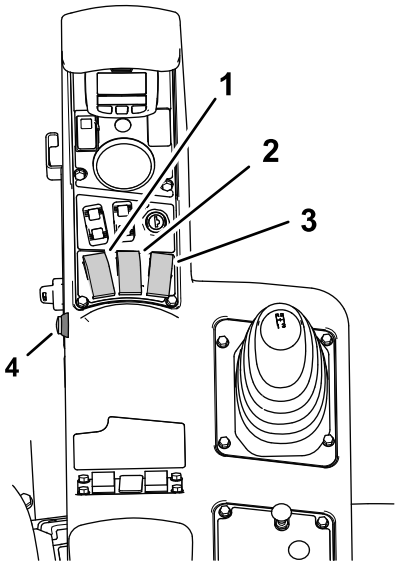
Figure 161

1. List of existing jobs
2. SELECT JOB icon
3. JOB MENU icon
4. Confirm icon

8. Press a SELECT JOB icon, in the select job list press a job icon, and press the confirm icon (Figure 161).

   Note: A checkmark identifies the icon of the active job.

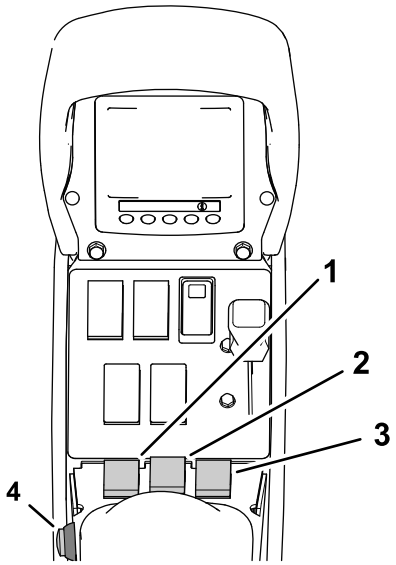
9. Set the 3 section switches (located in the control console of the machine) to the ON position (Figure 162 and Figure 163).



g305273

Figure 162
Multi-Pro 1750

1. Left section switch
2. Center section switch
3. Right section switch
4. Master section switch



g305272

Figure 163
Multi-Pro 5800

1. Left section switch
2. Center section switch
3. Right section switch
4. Master section switch

10. To start spraying, press the MASTER SWITCH icon on the screen and drive into the spray area (Figure 34).

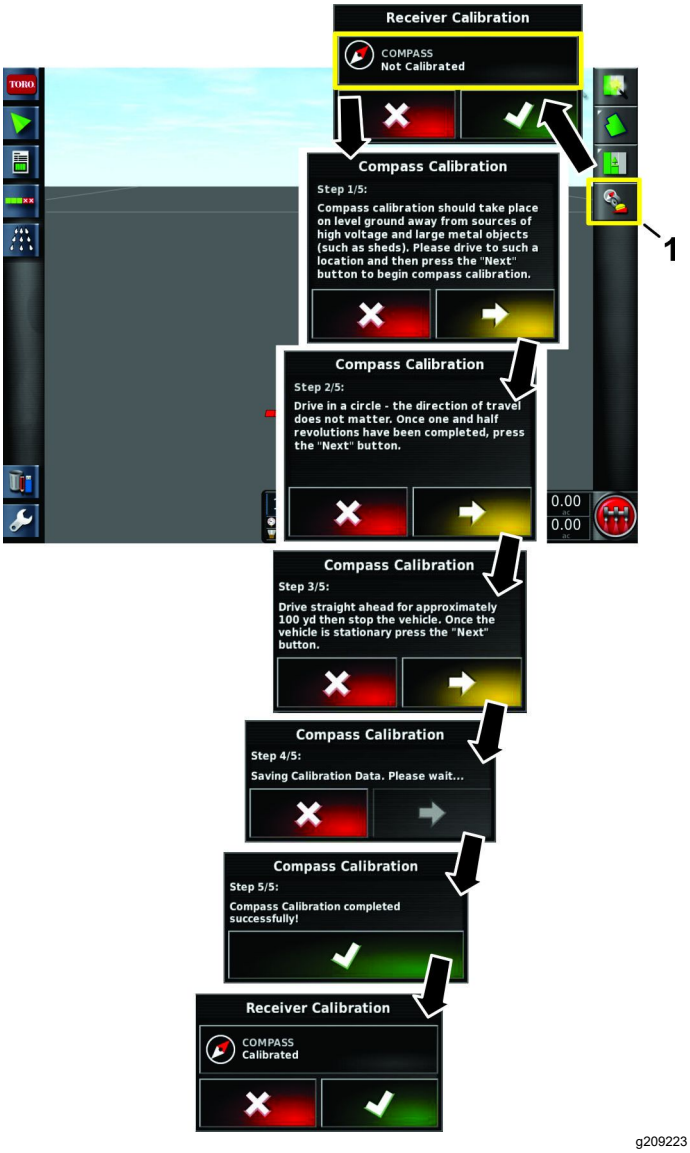
    Note: The machine starts spraying when the sprayer crosses into the correct spray area.

    Note: The display shows areas to be sprayed as light gray and non-spray areas as dark gray. If the display shows all light gray, every area can be sprayed.

Calibration and Testing

Calibrating the Compass

1. Press the RECEIVER CALIBRATION icon (Figure 164).
2. Press the COMPASS icon (Figure 164).

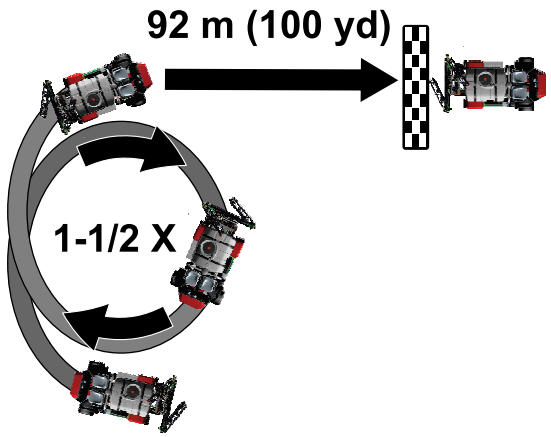


g209223

Figure 164

1. RECEIVER CALIBRATION icon

3. Drive the machine in a circle 1–1/2 revolutions (Figure 165).
4. Press the next icon (Figure 164).
5. Drive straight for 92 m (100 yd); refer to Figure 165.



g209126

Figure 165

6. Confirm the calibration (Figure 164).

Calibrating the Flow Meter

Customer provided equipment:

- A graduated catch container (graduated in 0.01 ml (1/2 fl. oz) increments is preferred)
- A stopwatch capable of measuring ± 1/10 second.

Preparing for the Calibration

1. Ensure that the sprayer tank is clean.
2. Fill the sprayer tank with at least 150 gallons of fresh water.
3. Ensure that the nozzles that you intend to test are in the active spray (down) position.
4. Engage the parking brake and start the engine.

   Note: Allow the engine and hydraulic system to warm for 10 minutes.

Performing the Pretest Priming

1. On the command console, press the SPRAY RATE CONTROLLER icon, and press the full screen icon in the upper right corner of the sprayer controller (Figure 166).



g307453

Figure 166

1. Full screen icon
2. SPRAY RATE CONTROLLER icon

2. Press the MANUAL MODE icon to set the rate controller to manual mode (Figure 167).



g307455

Figure 167

1. MANUAL MODE icon
2. REQUESTED APPLICATION RATE icon
3. Confirm icon (on-screen keypad)

3. On the machine, set the sprayer pump switch to the ON position.
4. Set all the 3 spray section switches to the ON position.
5. Set the throttle to the FAST position.
6. On the command console, press the MASTER SWITCH icon.
7. On the machine, set the master section switch to the ON position.

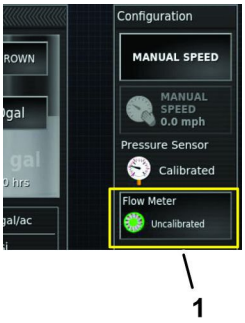
   Note: The master section switch is located on the machine console.
8. If needed, press the REQUESTED APPLICATION RATE icon, and use the on-screen keypad (Figure 167) to enter a flow rate value for the active position spray nozzles.
9. On the machine, set the master section switch to the OFF position.

Running the Catch Test and Entering the Information

1. On the machine, set the throttle to the FAST position.

   Allow the spray pressure to stabilize.
2. Ensure that the 3 spray section switches are in the ON position.
3. In the control console, ensure that the MASTER SWITCH icon indicates green (system ready).
4. Press the FLOW METER icon (Figure 168).

   Note: The auto flow calibration wizard displays.



g307457

Figure 168

1. FLOW METER icon

Performing the 15-Second Catch Test

Auto Flow Calculation Steps 1 and 2

1. In step 1 of 4 of the auto flow calibration wizard, press the next button (Figure 169).



g307456

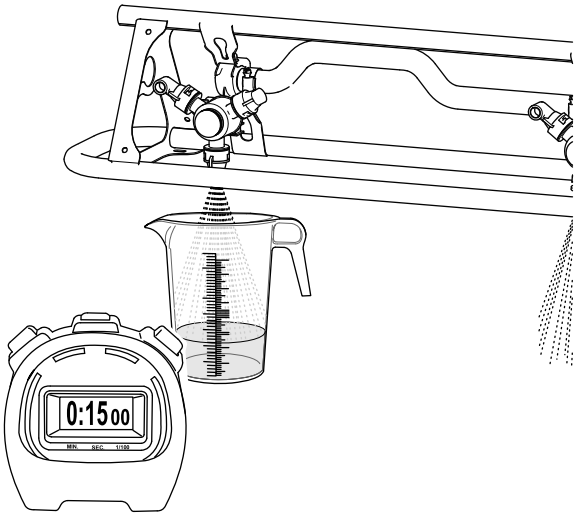
Figure 169

1. Next icon

2. On the machine, set the master section switch to the ON position.

   Note: The pulse counter, time counter, and estimated volume counter run.
3. Move to the back of the machine, place the catch container under 1 of the nozzles, and start the stopwatch (Figure 170).

   Important: **Ensure the catch container is fluid from 1 nozzle.**



g306656

Figure 170

4. At 15-seconds, remove the catch container from the nozzle, and move to the operator's seat.
5. On the control console in step 2 of 4 in the auto flow calibration wizard, when the time counter reaches 60-seconds (Figure 171)—set the

master section switch of the machine to the OFF position.

Note: The pulse counter and estimated volume counter stop. The time counter runs until you move to step 3 of 4 in the auto flow calibration wizard.

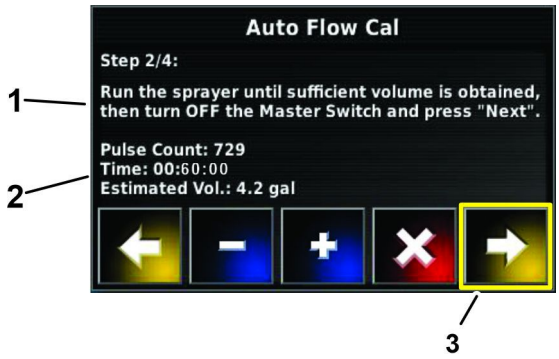


Figure 171

1. Run the catch test.
2. Pulse counter, time counter, and estimated volume counter
3. Next icon

6. Set the throttle to the slow position, and shut off the spray pump.
7. In step 2 of 4 in the auto flow calibration wizard, press the next icon (Figure 171).

Calculating the 60-Second Sprayer Volume

1. Set the graduated container on a level surface, allow the fluid to settle, and note the fluid volume (Figure 172).

   Record your measurement here: _____.

   Important: **When you read the graduated container, you must set it on a level surface.**

   Important: **Small errors reading the fluid volume in the graduated container will significantly impact the accuracy of the sprayer calibration.**

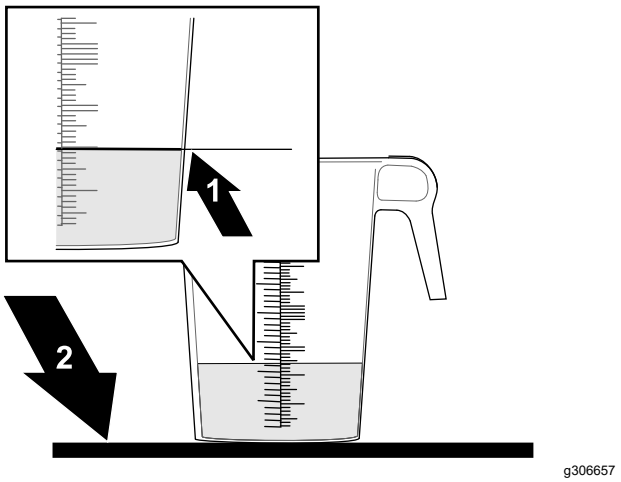


Figure 172

1. Fluid level
2. Level surface

2. Using the fluid amount collected from the 1 nozzle, multiply 12 (the number of nozzle),to calculate the 15-second sprayer volume.

Step 1 Measurement		15-Second Sprayer Volume
(ml or oz)	x 12 =	(ml or oz)

   Example: 44 fl oz X 12 nozzles = 528 fl oz

3. Multiple the 15-second sprayer volume that you calculated in step 2 by 4 to calculate the 60-second sprayer volume.

15–Second Sprayer Volume		60-Second Sprayer Volume
(ml or oz)	x 4 =	(ml or oz)

   Example: 528 fl oz X 4 = 2112 fl oz

4. Convert that 60-second sprayer volume into liters or gallons (33.8 oz equals 1 liter; 128 fl oz equals 1 US gallon).

   Record the converted volume here: _____ (L or US gal).

   Example: 2112 fl oz / 128 = 16.5 US gal

Entering the Converted 60-second Sprayer Volume

Auto Flow Calculation Steps 3 and 4

1. In step 3 of 4 in the auto flow calibration wizard, press the VOLUME CAPTURED icon, enter the fluid volume that you converted in step 4 of Calculating the 60-Second Sprayer Volume (page 67) with the on-screen keypad, and press the confirm icon (Figure 173).

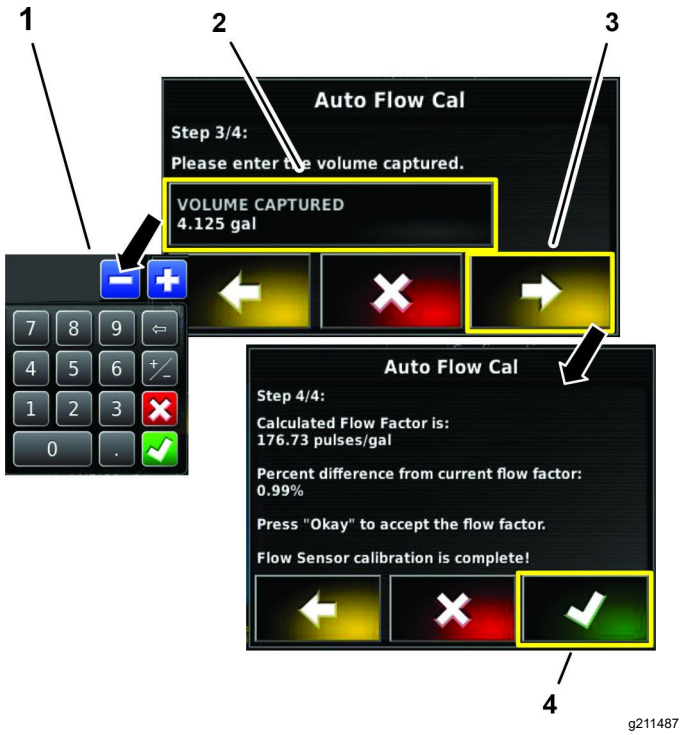


Figure 173

1. On-screen keypad
2. VOLUME CAPTURED icon (auto flow calibration wizard—step 3 of 4)
3. Next icon
4. Confirm icon (auto flow calibration wizard—step 4 of 4)

2. Press the next icon (Figure 173).
3. In step 4 of 4 in the auto flow calibration wizard, press the confirm icon (Figure 173).

Setting Up the System

Before operating the GeoLink spray system, perform the following procedures:

Note: The master section switch for the machine is at the following locations, refer to (Figure 174 or Figure 175).

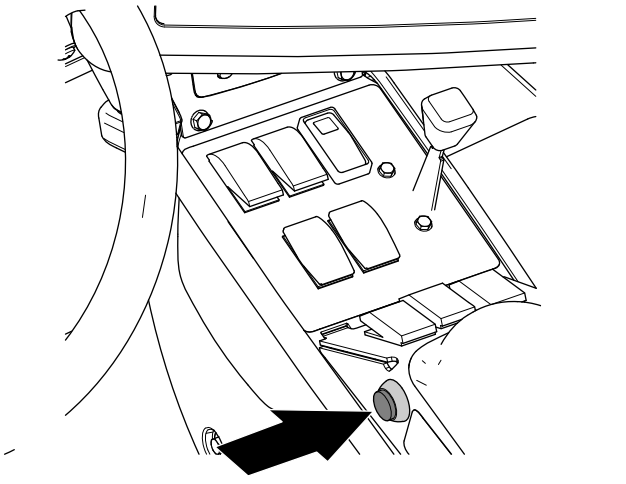


Figure 174

Master section switch—Multi Pro 5800 turf sprayer, 2016 and after

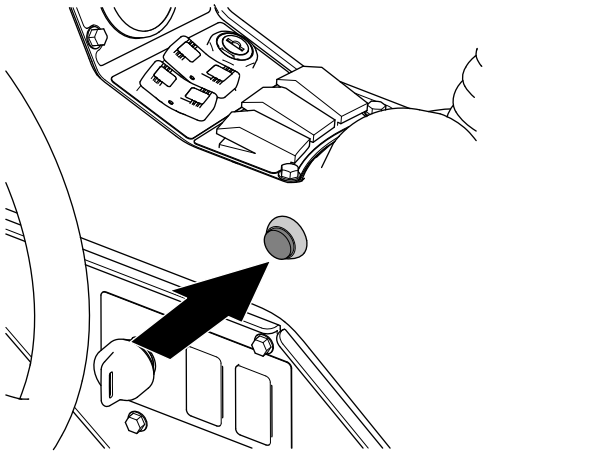


Figure 175

Master section switch—Multi Pro 1750 turf sprayer:

Preparing the Machine

1. Read the following instructions before starting.
2. Attach the supply hose to the anti-siphon tube and fill the tank half full of clean water.

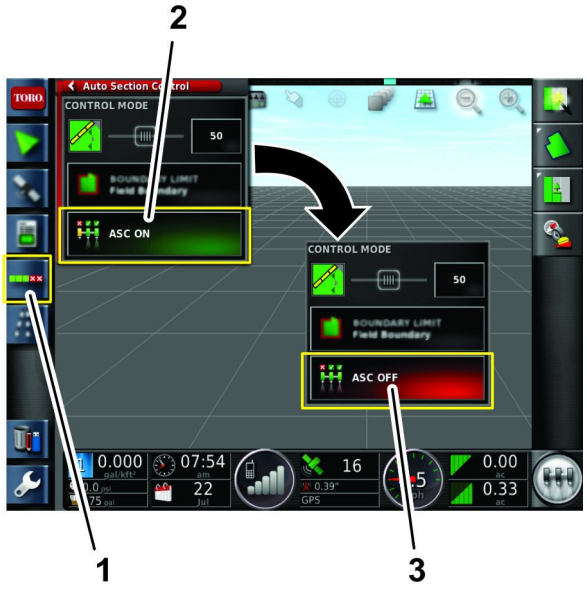
   Important: **Inspect and clean all system components before spraying, including the tank, strainer, pump, valves, and nozzles.**
3. Start the engine, and set the engine speed to idle; refer to the *Operator's Manual* for your machine.
4. Push the pump switch to the ON position.
5. Set the engine speed to the maximum setting (wide open throttle).
6. Set the console switches of the machine to the OFF position.

7. Ensure that you have entered the proper calibration values.

Setting the Self-Test Feature

Note: The self-test feature simulates machine ground speed so that you can test the system without moving. This feature clears itself when the speed sensor detects that the vehicle is in motion. The self-test feature of the GeoLink system service the similar function as the test speed feature of the Multi Pro 1750 and Multi Pro 5800 machines.

1. Open the ASC (Auto-section controller) icon (Figure 176).

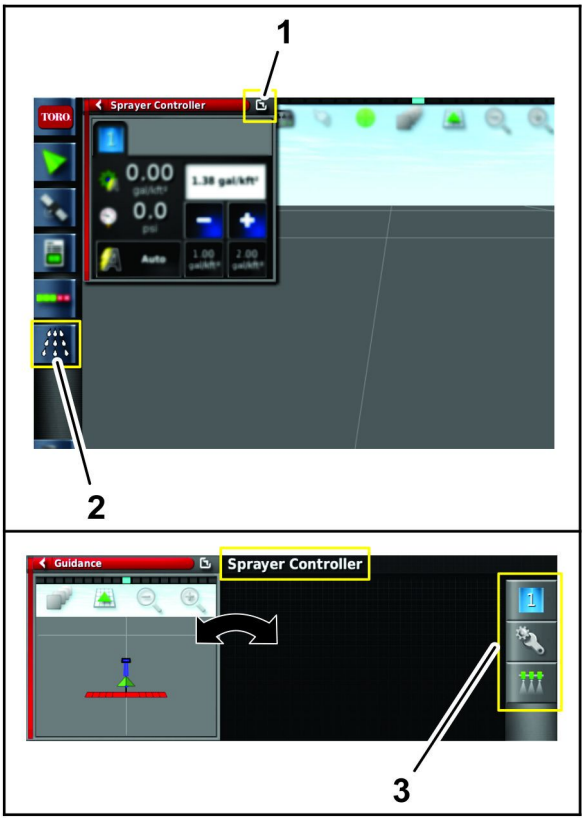


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Figure 176

1. Auto section control configuration icon
2. ASC icon (ON)
3. ASC icon (OFF)

2. Press the ASC icon to OFF (Figure 176).
3. Press the sprayer-controller icon (Figure 177).



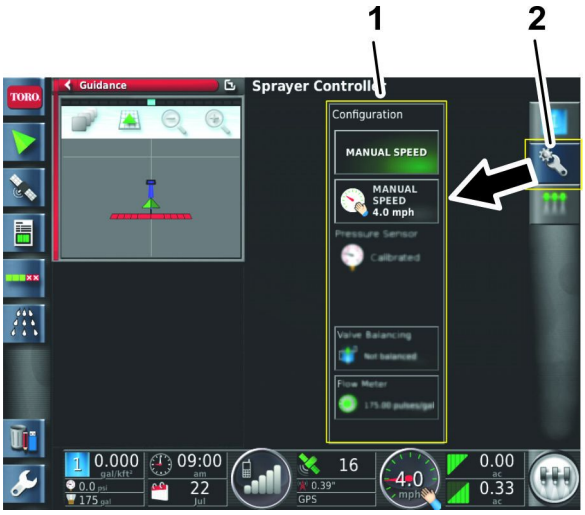
g203966

Figure 177

1. Switch window icon
2. Sprayer-controller icon
3. Spray controller submenu

4. Press the switch window icon for the sprayer controller menu.

   The current home screen and the sprayer controller menu switches position.
5. Press the configuration icon in the sprayer controller submenu to display to configuration menu (Figure 177).

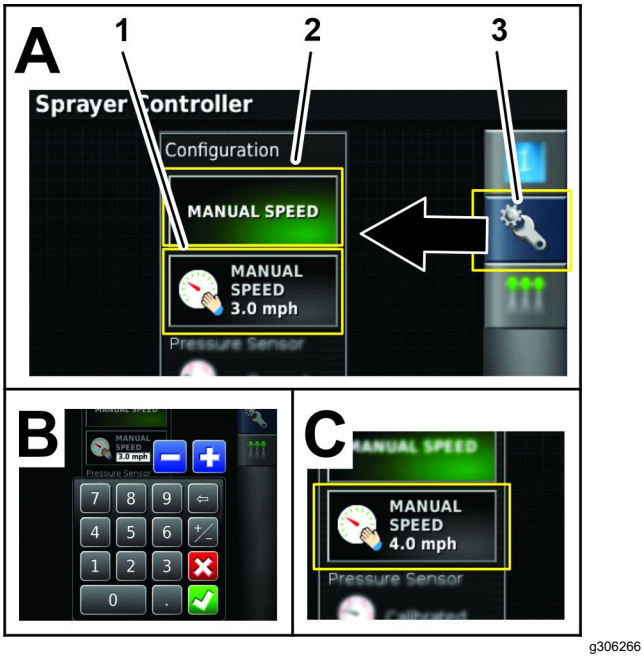


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Figure 178

1. Configuration icon
2. Configuration menu

6. Press the MANUAL SPEED icon (Figure 179).

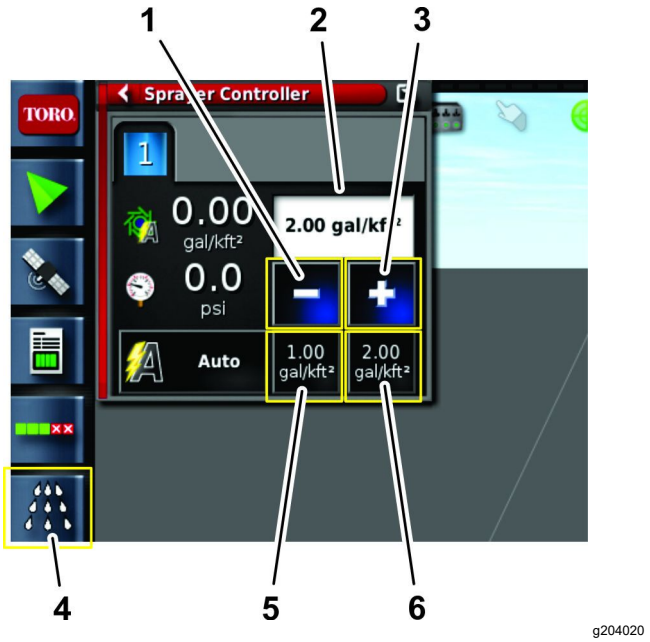


g306266

Figure 179

1. Manual speed entry icon
2. MANUAL SPEED icon
3. Configuration icon

7. Press the manual speed entry icon (Figure 179).
8. Use the on-screen keypad to enter the simulated speed and press the confirm icon (Figure 179).
9. Press the switch window icon to return sprayer controller menu. (Figure 177).
10. Enter the desired application rate by using the pre-sets, increase or decrease icons, or by selecting the current-target application rate icon (Figure 180).



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Figure 180

1. Decrease application-rate icon
2. Requested application-rate field
3. Increase application-rate icon
4. Sprayer-controller icon
5. Pre-set application-rate 1 icon
6. Pre-set application-rate 2 Icon

Initially Testing the System

Before operating the GeoLink spray system, perform this procedure.

Note: Use only water when performing this procedure.

1. Drive the vehicle at the desired spraying speed with the sprayer booms off.

   The vehicle speed displays on the control console dashboard.
2. On the control console of the machine, press the master switch to the ON position.
3. Ensure that the left, center, and right section switches are in the ON position.
4. Set the machine master-section switch to the ON position.

   Note: Use the master-section switch to control all the spray sections together.
5. Set the rate control to AUTO.

   Note: Ensure that either the ASC is OFF or the boundary limit set to UNLIMITED.
6. Select a target application rate.
7. Increase or decrease the vehicle speed by 2 km/h (1 mph).

The system should automatically correct the target application rate.

Note: If the system does not correct the application rate, review Setting the Self-Test Feature (page 69).

8. After spraying a swath, set the master-section switch to the OFF position.

   Note: This also shuts off the area calculations.

9. Verify the area covered and the volume of material sprayed.

Restoring the X25 Software Configuration

Important: **The user access level to restore the software configuration is restricted. Please contact your authorized Toro distributor for assistance.**

Alarm List

The table that follows lists the alarms and the alarm descriptions:

Alarm List

Alarm	Description
ASC 10 ECU firmware mismatch	Contact your authorized Toro distributor, Toro NSN at 1-844-GEOLINK (1-844-436-5465), or GeoLinkNSN@toro.com for customer service.
Exclusion map distance	The exclusion map is too far from the current GPS position.
Fallback	The selected GPS correction source is not available, and the system must use a less accurate correction source temporarily.
Firmware version mismatch or out-of-date	Contact your authorized Toro distributor, Toro NSN at 1-844-GEOLINK (1-844-436-5465), or GeoLinkNSN@toro.com for customer service.
Incorrect rate	The implement is in Auto mode and the target rate is not achieved.
Invalid or obsolete profile loaded	An old implement or vehicle profile is active on the system.
Low resources	The system resources (memory or space in the file system) are more that 90% full.
No Comms	The X25 control console is unable to communicate with the automatic section controller (ASC).
No GPS	The GPS signal is lost.
Parameter mismatch	Contact your authorized Toro distributor, Toro NSN at 1-844-GEOLINK (1-844-436-5465), or GeoLinkNSN@toro.com for customer service.

Alarm List (cont'd.)

Alarm	Description
Pressure high	The pressure signal input has exceeded the alarm-point setting.
Receiver disconnected	The GPS receiver is not responding.
Requested rate is zero	The auto-rate control is enabled, the tank is On, the master switch is On, and the requested rate is zero.
Tank empty	The calculated tank volume has reached zero.
Tank low	The tank is running low (to the preset tank volume percent).

Setup Configuration

User Tab

Region Options

Topic	Setting Option	Description	Additional Information
Select language	Language	Use the scroll bar to view the complete list of language choices. The control console requires a restart with a language change.	
	Decimal point format	Choose between (.) or (,) to represent the decimal point.	
Time/date setup	Date format	Choose between D MMM, YYYY or MMM D, YYYY date formats.	
	Time format	Choose between 12-hour or 24-hour time formats.	
	Set current date	Press the backspace-arrow icon to erase the date and enter the date in the same format that you choose in date format option.	
	Set current time	Press the backspace-arrow icon to erase the time, enter the hour value, and minute value. When the time formation is set to 12-hour format, select the AM or PM day period.	

Region Options (cont'd.)

Topic	Setting Option	Description	Additional Information
Regional units	Units	Choose between metric, imperial US, or imperial UK units of measure. Selection of the Units value does not override other selected unit of measure values.	
	Latitude/longitude format	Choose between standard (decimal degree measurements 45.54) or DMS (degree, minute, second 45°, 23', 16")	
	Pressure units	Choose between kPa (kilopascal), psi (pounds per square inch), bar, or Default (based on the Units value).	
	Short distance units	Choose between meters, inches, feet, or Default (based on the Units value).	
	Area units	Choose between ha (hectares), ac (acres), or Default (based on the Units value).	
	Volume units (dry)	Choose between Liters, Kilograms, Cubic Meters, US Bushels, UK Bushels, Gallons, Pounds, Cubic Feet, Cubic Yards, Tonnes, or Default (based on the Units value).	
	Capacity units (liquid)	Choose between Liters, Cubic Meters, Gallons, Cubic Feet, or Default (based on the Units value).	
	Volume units (liquid)	Choose between Liters, Cubic Meters, Tonnes, Gallons, Cubic Feet, Pounds, or Default (based on the Units value).	
	Application rate units (liquid)	Choose between L/ha, m^3/ac, t/ac, L/100m, L/100m^2, ga;/ac, ft^3/ac, lb/ac, gal/100yd, or Default (based on the Units value).	
	Application rate increment	Choose between fixed rate and percentage of rate 1.	

Lightbar Options

Topic	Setting Option	Description	Additional Information
Light bar		Choose between enabled or disabled.	
LED spacing		Sets the ground distance from the wayline (guideline) that each LED represents. The larger the value, the larger the distance from the guideline each LED represents. Press the backspace arrow to erase the LED spacing measurement and enter a value between 0 to 2.0 m (0 to 78.74 inches). **Note:** Units of measure based on the Units value.	
LED mode		Choose between drive away (drive away from the lit LED to move the machine toward the guideline) or drive towards (Drive toward the lit LEDs to move the machine toward the guideline).	

Environment Options

Topic	Setting Option	Description	Additional Information
Audio volume		Press the (-) or (+) icons to lower or raise the volume (%) of the console sounds.	
Button clicks		Choose between enabled or disabled sounds when making selection on the console.	
Alarm audio		Choose between Enabled (sounds are made when an alarm is triggered) or Disabled.	
Global home screen mode		Choose Toggle (when you press the home screen icon the display switches between saved global home screens) or Select (when you press the home screen icon a list of saved global home screens display from which you choose). **Note:** Global home screens are a custom operations screen that you create and save.	
System 150 file transfers			Inactive feature. Do not change this setting.
Automatic steering status window (auto open only)			Inactive feature. Do not change this setting.
Toolbar button size		Choose between small, medium, or large icons on the operation screen.	

Map Options

Topic	Setting Option	Description	Additional Information
Point of focus		Choose Vehicle (places the vehicle in the center of the display screen) or Implement (places the implement in the center of the display screen).	
Map panning (enabled/disable)		Choose Enable (the screen moves around in a map when the operator slides a finger across the screen) or Disable.	
Map focus auto-shift (enabled/disable)		Choose Enable (aligns the vehicle icon to the center of the display screen when a mini view is open) or Disable.	
Highlight loaded coverage (enabled/disable)		Choose Enable (after loading and existing job , the display shows previously completed and loaded coverage in a different color from the newly created coverage) or Disable.	
Pause boundary recording with master (enabled/disable)			Inactive feature—do not change this setting.
Visual reference line length			

User Access Level Options

Topic	Setting Option	Description	Additional Information
Access level (easy/standard/expert)		Choose between Easy, Standard or Expert access levels. **Note:** The Easy access level removes icons and features from the setup and main screens. The Expert access level adds icons and features to the setup and main screens.	The recommended access level for most GeoLink users is the standard level.
Password		Press the password icon to enter the password for the chosen user access level.	To prevent inexperienced users from accessing higher access levels, protect the levels with passwords. **Note:** By default, the expert level is password protected.
Change password		Press the change password icon to change the password for the active user access level.	

Remote Support Option

Topic	Setting Option	Description	Additional Information
		Allows Technical Support to virtually access and control GeoLink.	Requires internet access.

Systems Tab

Features Options

Topic	Setting Option	Description	Additional Information
License Options	Export license data	Insert a USB storage device into the back of the control console, and press the Export License Data icon to save console and license information to the storage device.	
	Import license data	Insert the USB storage device with the new license file into the back of the control console and press the Import License Data icon to update the current license.	
	Feature	Shows a list of optional features for the console.	
	Status	Shows the current license status for each feature.	
	Expiry	Shows the time until a licensed feature expires.	
Console Features	Configuration		Inactive feature—do not change this setting.
	Universal terminal (enabled/disable)		Inactive feature—do not change this setting.
	Isobus shortcut (enabled/disable)		Inactive feature—do not change this setting.
	File Server (enabled/disable)		Inactive feature—do not change this setting.
	Cameras (unlicensed)		Inactive feature—do not change this setting.
	LH5000 rate sensor		Inactive feature—do not change this setting.
	Weather station (unlicensed)		Inactive feature—do not change this setting.
	Beta features (enabled/disable)		Inactive feature—do not change this setting.
	Xtend (unlicensed)		Inactive feature—do not change this setting.

Features Options (cont'd.)

Topic	Setting Option	Description	Additional Information
Guidance Features	Guidance (enabled/disable)	A standard feature that is always enabled.	
	Auto steer (enabled/disable)		Inactive feature—do not change this setting.
	Job helper mode	Disabled (no job helper modes are available), Job Assist (a help screen you can use to step through the tasks in a typical job—adds an icon to the Operation screen, or Quick Start (automatically steps through tasks required to complete a typical job—places a new menu item at the right side of the Features menu).	
	AB lines	Choose Enable (to display the AB line option in the guidelines menu) or Disable.	
	Identical curves	Choose Enable (to display the identical curves line option in the guidelines menu) or Disable.	
	Pivot		Inactive feature—do not change this setting.
	Guidelock	Choose Enable (to display the guidelock lines option in the guidelines menu) or Disable.	
	Boundary steering		Inactive feature—do not change this setting.
	Tramlines		Inactive feature—do not change this setting.
	Headland turns		Inactive feature—do not change this setting.

Features Options (cont'd.)

Topic	Setting Option	Description	Additional Information
Implement Features	Auto section control	Choose Enable (allows the spray system to turn on nozzles for new areas that you want to spray and shut off nozzles you have already sprayed) or Disable.	
	Variable rate control		Inactive feature—do not change this setting.
	Area counters	Choose Enabled—Stored per Job (area counters are stored separately for each job), Enabled—Stored per Implement (area counters continue to record across jobs, but loading a new implement displays new area counters), Enabled—Stored per Job and Implement (area counters are stored for each job and each implement), or Disabled.	
	Reset job area counters	Choose Never (you must reset area counters manually, or they continue accumulating data), Prompt (when you erase a job, you are asked if the area counters should be reset), or Auto (creating a new job or erasing a job automatically resets the area counters).	
	Norac boom height control		Inactive feature—do not change this setting.
	Seeder controller		Inactive feature—do not change this setting.
	Hypro Prostop-E		Inactive feature—do not change this setting.
	Weight scales		Inactive feature—do not change this setting.
	LH5000 rate sensor		Inactive feature—do not change this setting.

Features Options (cont'd.)

Topic	Setting Option	Description	Additional Information
Quick Start Settings	Export job report for previous job	Choose Enable (adds a task to the quick start menu to export the job report for previous job) or Disable.	
	Change field	Choose Enable (adds a task to the quick start menu to change the field selection. Actions include Select Field, Auto-Locate Field, or Create Field) or Disable.	
	Record boundary	Choose Enable (adds a task to the quick start menu to record a boundary) or Disable.	
	Change job	Choose Enable (adds a task to the quick start menu to change the job selection. Actions include Create Job—Select Job or Create Job, and Set Job Name—Default, Custom, or Prompt) or Disable.	
	Configure job region	Choose Enable (adds a task to the quick start menu to job region selection) or Disable.	
	Set guidance mode	Choose Enable (adds a task to the quick start menu to select the guideline mode. Actions include setting a default: AB Lines, Identical Curves, Pivots, Guidelock, or Boundary Steering) or Disable.	
	Change Guideline	Choose Enable (adds a task to the quick start menu to change the guideline. Actions include Select Guideline or Create Guideline—Default, Custom, or Prompt) or Disable.	
	Auto-hide on success	Choose Enable (automatically hides the quick guide upon completion) or Disable.	

Alarm Options

Topic	Setting Option	Description	Additional Information
General alarm setup	All General Alarms (enabled/disable)	Choose Enable (automatically enables all general alarm types) or Disable.	
	End of Row	Choose Enable (the alarm sounds when the machine approaches the edge of the boundary. Actions include a First Distance alarm—the distance from the boundary when the initial alarm triggers, entering a Second Distance alarm—the distance from the boundary when the second alarm triggers, and entering a Look Ahead Distance—the distance in front of the machine the system measures to respond with an actions) or Disable.	
	Steering Unable to Engage	Choose Enable (the steering status popup displays when the Auto steering is unable to engage) or Disable.	
	GPS Receiver Firmware Mismatch	Choose Enable (the GPS receiver firmware mismatch popup displays a setup screen to upgrade the receiver firmware) or Disable.	Contact your authorized Toro distributor, Toro NSN at 1-844-GEOLINK (1-844-436-5465), or GeoLinkNSN@toro.com for customer service.
	ASC10 ECU Firmware Mismatch	Choose Enable (the ASC10 ECU firmware mismatch popup displays a setup screen to upgrade the ECU firmware) or Disable.	Contact your authorized Toro distributor, Toro NSN at 1-844-GEOLINK (1-844-436-5465), or GeoLinkNSN@toro.com for customer service.
	No GPS	Choose Enable (the alarm triggers if the GPS connection is lost) or Disable.	
	GPS Lost	Choose Enable (the alarm triggers if the GPS connection is lost, but the receiver is still connected) or Disable.	
	Parameter Mismatch	Choose Enable (the alarm triggers if the machine parameters do not match the geometry configuration in the steering system) or Disable.	Machines with the optional Autosteer system.
	Steering Profile Mismatch	Choose Enable (the alarm triggers if the machine profile does not match the vehicle configuration in the steering subsystem) or Disable.	Machines with the optional Autosteer system.
	All other alarms		Contact your authorized Toro distributor, Toro NSN at 1-844-GEOLINK (1-844-436-5465), or GeoLinkNSN@toro.com for customer service.

Alarm Options (cont'd.)

Topic	Setting Option	Description	Additional Information
Implement alarm setup	No comms alarm	Choose Enable (the alarm triggers if the console is unable to communicate with the ECU) or Disable.	
Sprayer alarm setup	All Sprayer Alarms	Choose Enable (automatically enables all sprayer alarm types) or Disable.	
	Incorrect rate	Choose Enable (the alarm triggers when the sprayer in the auto mode and cannot spray at the target application rate. Actions include entering the incorrect rate threshold or Disable.	
	Pressure high	Choose Enable (the alarm triggers when the sprayer system pressure is higher that the alarm setting. Actions include entering the maximum system sprayer pressure) or Disable.	
	Tank Empty	Choose Enable (the alarm triggers when the calculated sprayer tank volume is empty) or Disable.	
	All other alarms		Contact your authorized Toro distributor, Toro NSN at 1-844-GEOLINK (1-844-436-5465), or GeoLinkNSN@toro.com for customer service.

Flag Points Options

Topic	Description
Flag	Press the flag point preset icon to change the icon type and name.
Caution	
Danger	
Water hazard	
Tower	
Hole	
Rock	
Weeds	
Tree	

Vehicle Setup Tab

Topic	Description	Additional Information
Speed Source	Press the speed source icon to choose GPS or Wheel Sensor.	Default is GPS.

Configuring an Auxiliary Mapping Rover

An auxiliary mapping rover is a non-sprayer machine used for mapping only field boundaries.

1. Install the satellite receiver onto the mapping-rover machine.
2. Install the command console onto the mapping-rover machine.
3. Disconnect the battery.
4. Connect the wire harness to the following:
   - Satellite receiver
   - Command console
   - Key-switch controlled electrical circuit, protected with a fuse (15 A).
   - Battery cables terminals
5. Connect the battery.

Measuring the Vehicle Geometry

1. On the machine used for mapping field boundaries, measure the distance between the front and rear axle centerlines (Figure 181), and record your measurement in the vehicle geometry form that follows.

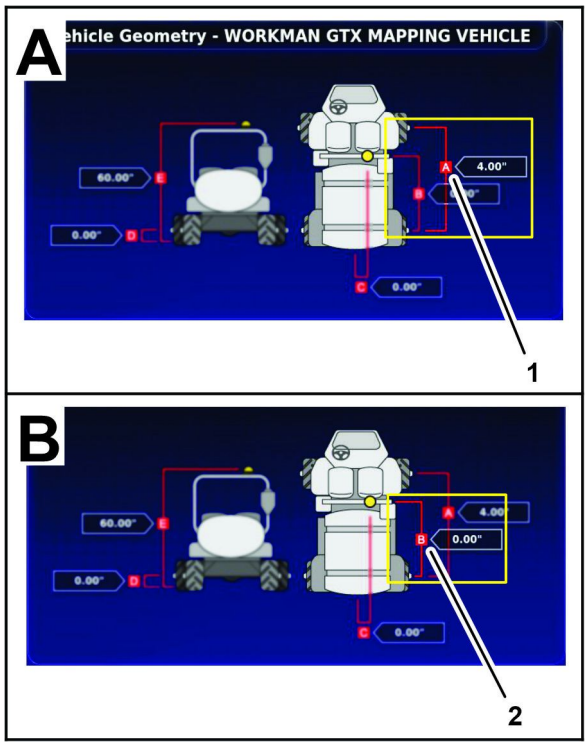


Figure 181

1. Front and rear axle centerline measurement (A)
2. Rear axle centerline and satellite receiver center measurement (B)

2. Measure the distance between the rear axle centerline and the center of the satellite receiver (Figure 181), and record your measurement in the geometry form.

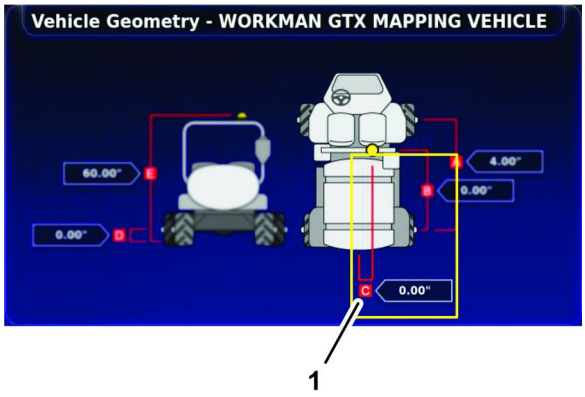


Figure 182

1. Machine centerline and satellite receiver center measurement (C)

3. Measure the distance between the centerline of the machine and the center of the satellite receiver (Figure 182), and record your measurement in the geometry form.
4. Measure the distance between the rear axle centerline and the ground (Figure 183), and record your measurement in the geometry form.

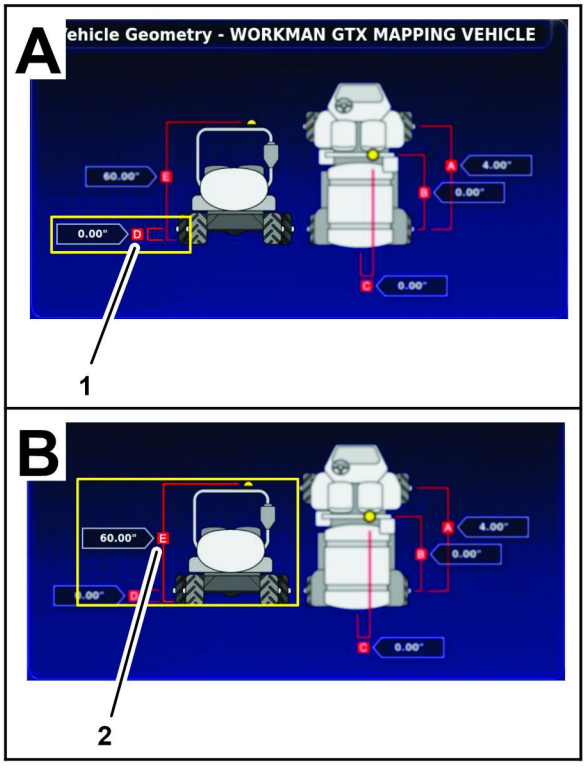


Figure 183

1. Rear axle centerline and ground measurement (D)
2. Satellite receiver and ground measurement (E)

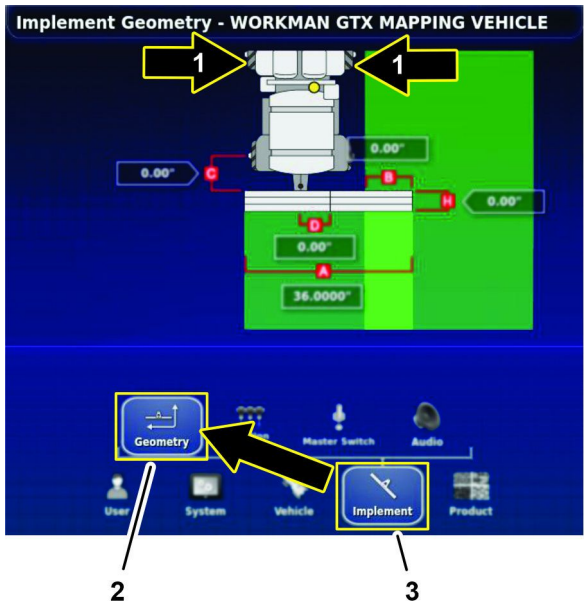
5. Measure the distance between the top of the satellite receiver and the ground (Figure 183, and record your measurement in the geometry form.

Vehicle-Geometry Form

Description	Measurement
Front and rear axle centerline (A)	
Rear axle centerline and satellite receiver center (B)	
Machine centerline and satellite receiver center (C)	
Rear axle centerline and ground (D)	
Satellite receiver and ground (E)	

Measuring Implement Geometry

Measure the distance between the outside surfaces of the front tires of the machine used for mapping field boundaries (Figure 184), and record your measurement in the implement geometry form that follows.



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Figure 184

1. Outside front tire width
2. GEOMETRY icon
3. IMPLEMENT icon

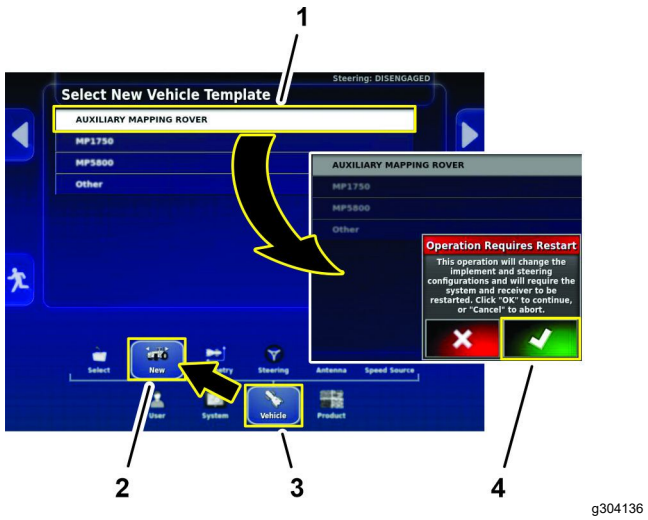
Implement-Geometry Form

Description	Measurement
Outside tire surface width (A)	

Creating the Auxiliary Mapping Rover Vehicle

Note: The example in this procedure uses a Workman GTX with an optional roll bar.

1. Switch the user access level to expert or dealer mode; contact your authorized Toro distributor, Toro NSN at 1-844-GEOLINK (1-844-436-5465), or GeoLinkNSN@toro.com for customer service.
2. On the home screen, press the SETUP icon.
3. On the Setup screen, press the VEHICLE icon and the NEW icon (Figure 185).



g304136

Figure 185

1. AUXILIARY MAPPING ROVER icon (select new vehicle template)
2. NEW icon
3. VEHICLE icon
4. Confirm icon (operation requires restart dialog box)

4. On the select new vehicle template page, press the AUXILIARY MAPPING ROVER icon (Figure 185).
5. In the operation requires restart dialog box, press the confirm icon (Figure 185).
6. In the new vehicle dialog box, press the VEHICLE NAME icon, use the on-screen keyboard to type a name for the mapping vehicle, and press the confirm icon (Figure 186).



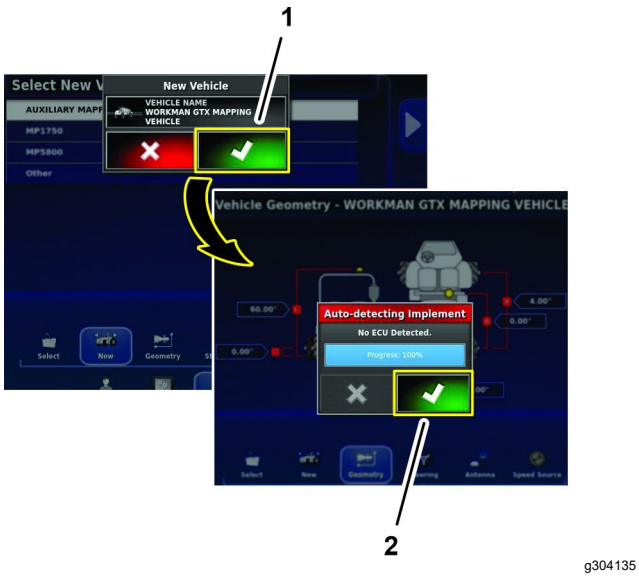
g304133

Figure 186

1. VEHICLE NAME icon (default name shown)
2. Confirm icon

7. In the new vehicle dialog box, press the confirm icon (Figure 187).

   Note: The auto-detecting implement wizard runs.



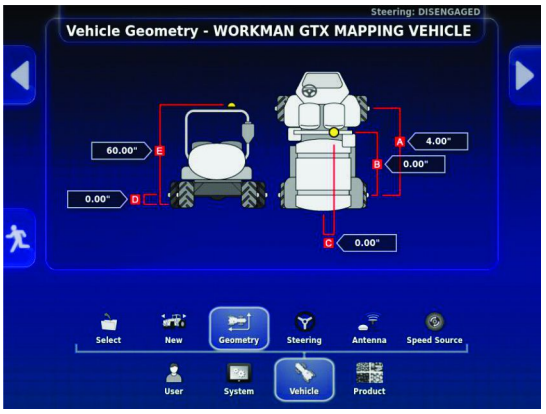
g304135

Figure 187

1. Confirm icon (new vehicle dialog box)
2. Confirm icon (auto-detecting implement dialog box)

8. In the auto-detecting implement dialog box (Figure 187), press the confirm icon.

   Note: The control console restarts and the vehicle geometry screen displays (Figure 188).



g304159

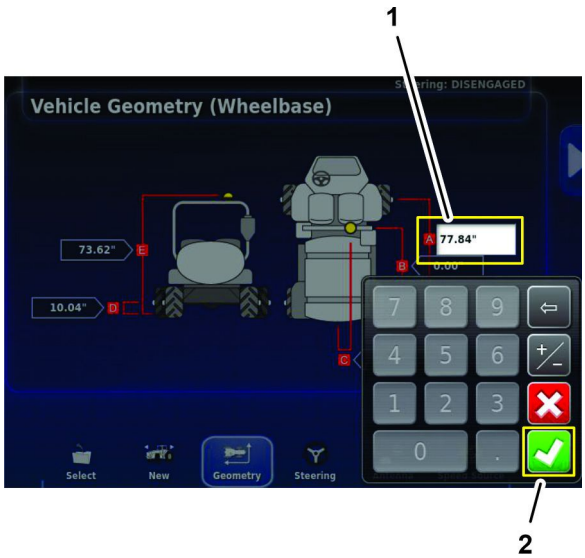
Figure 188

Entering Vehicle Geometry

Important: **This procedure requires expert or dealer mode user access level; contact your authorized Toro distributor, Toro NSN at 1-844-GEOLINK (1-844-436-5465), or GeoLinkNSN@toro.com for customer service.**

Note: The example in this procedure uses a Workman GTX with an optional roll bar, and the satellite receiver mounted at the centerline of the machine.

1. Press the front and rear axle centerline icon (A), use the on-screen keypad to enter the measurement that you recorded in the vehicle-geometry form of Measuring the Vehicle Geometry (page 82), and press the confirm icon (Figure 189).



g304167

Figure 189

1. Front and rear axle centerline icon (A)
2. Confirm icon (on-screen keypad)

2. Press the rear axle centerline and satellite receiver center icon (B), use the on-screen keypad to enter the measurement that you recorded in the vehicle-geometry form of Measuring the Vehicle Geometry (page 82), and press the confirm icon (Figure 190).

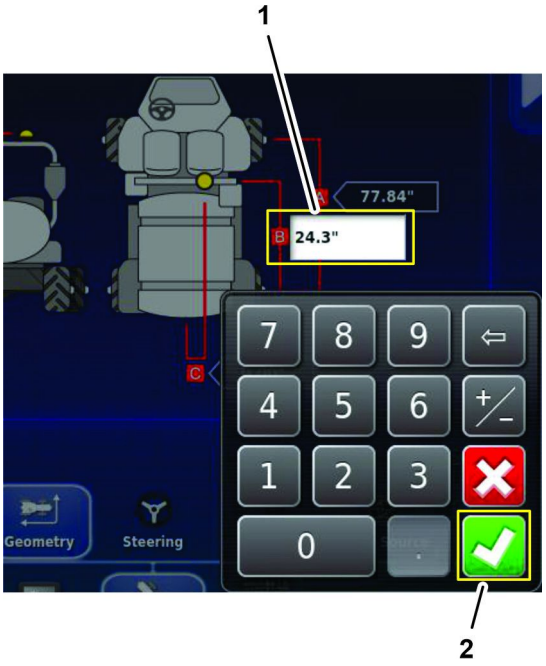


Figure 190

1. Rear axle centerline and satellite receiver center icon (B)
2. Confirm icon (on-screen keypad)

3. Press the machine centerline and satellite receiver center icon (C), use the on-screen keypad to enter the measurement that you recorded in the vehicle-geometry form of Measuring the Vehicle Geometry (page 82), and press the confirm icon (Figure 191).

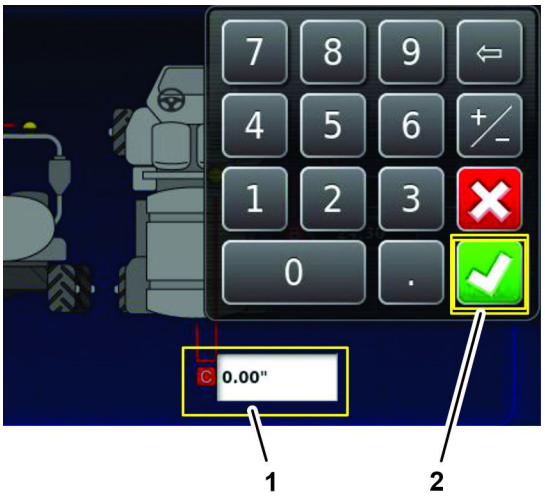


Figure 191

1. Machine centerline and satellite receiver center icon (C)
2. Confirm icon (on-screen keypad)

4. Press the rear axle centerline and ground icon (D), use the on-screen keypad to enter the measurement that you recorded in the vehicle-geometry form of Measuring the Vehicle Geometry (page 82), and press the confirm icon (Figure 192).

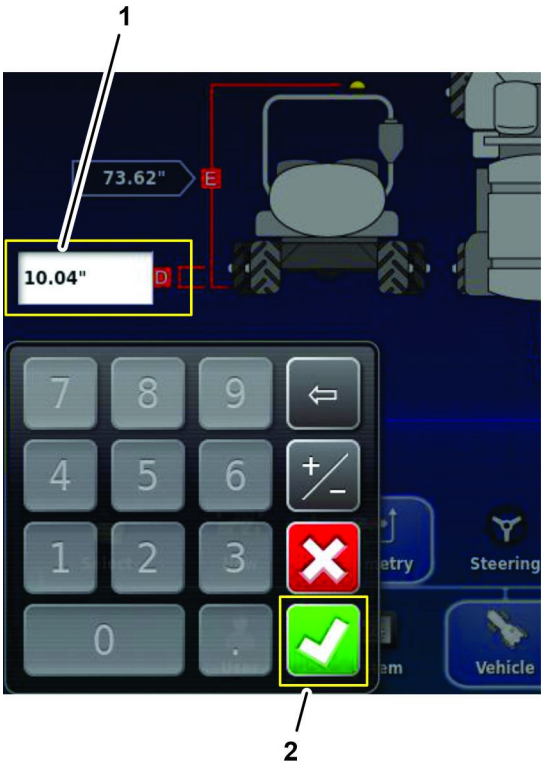


Figure 192

1. Rear axle centerline and ground icon (D)
2. Confirm icon (on-screen keypad)

5. Press the satellite receiver and ground icon (E), use the on-screen keypad to enter

the measurement that you recorded in the vehicle-geometry form of Measuring the Vehicle Geometry (page 82), and press the confirm icon (Figure 193).

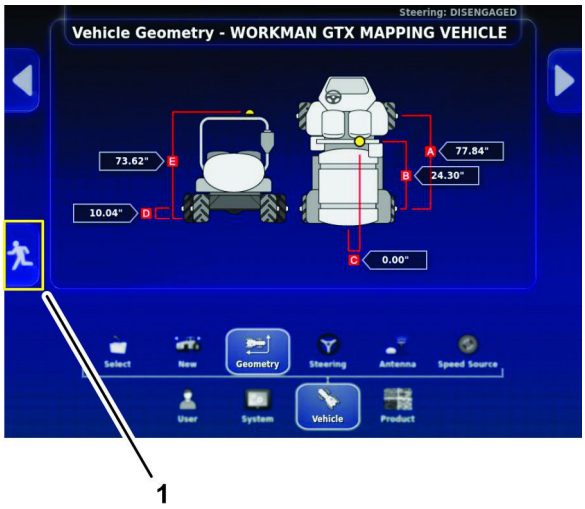


g304165

Figure 193

1. Satellite receiver and ground icon (E)
2. Confirm icon (on-screen keypad)

6. Press the EXIT SETUP icon (Figure 194).



g304134

Figure 194

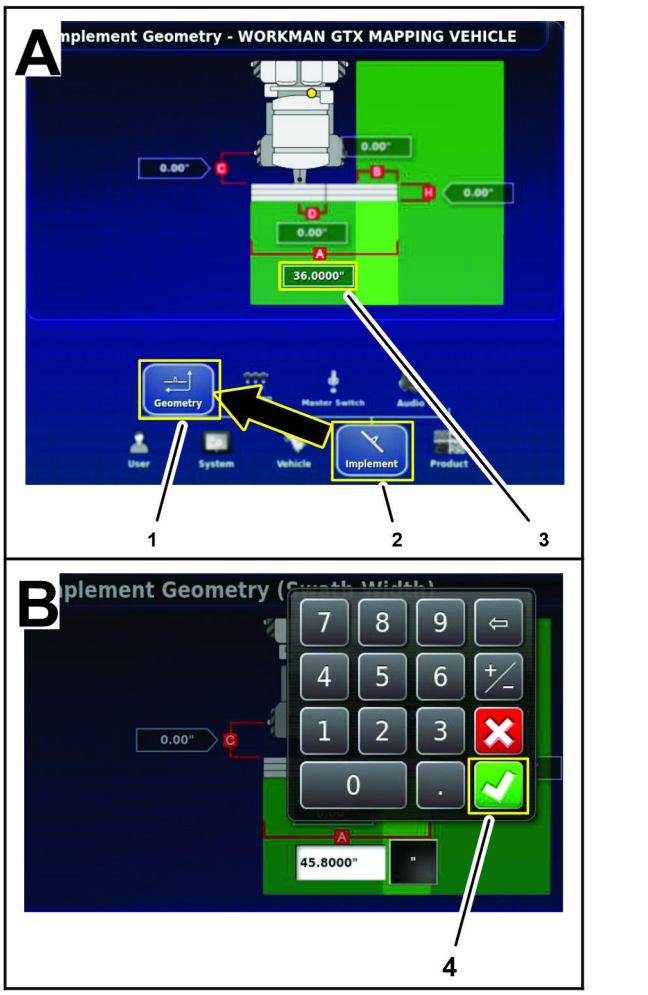
1. EXIT SETUP icon

Entering Implement Geometry

Important: **This procedure requires dealer mode user access level; contact your authorized Toro distributor, Toro NSN at 1-844-GEOLINK (1-844-436-5465), or GeoLinkNSN@toro.com for customer service.**

Note: The example in this procedure uses a Workman GTX with the mapping point aligned with a front tire.

1. Press the IMPLEMENT icon and the GEOMETRY icon (Figure 195).

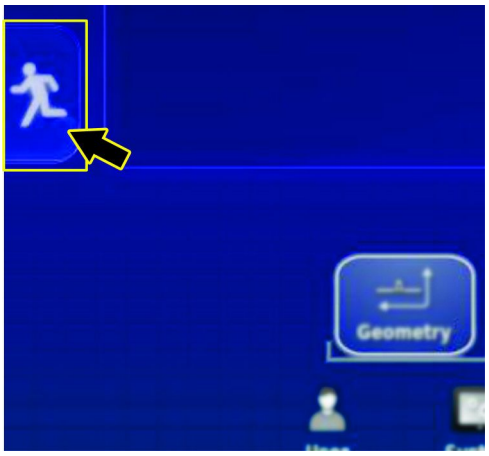


g304229

Figure 195

1. GEOMETRY icon
2. IMPLEMENT icon
3. Overall width icon (A)
4. Confirm icon (on-screen keypad)

2. Press the overall width icon (A), use the on-screen keypad to enter the measurement that you recorded in the implement-geometry form of Measuring Implement Geometry (page 83), and press the confirm icon (Figure 195).
3. Press the EXIT SETUP icon (Figure 196).



g304230

Figure 196

Setting Boundary Offset

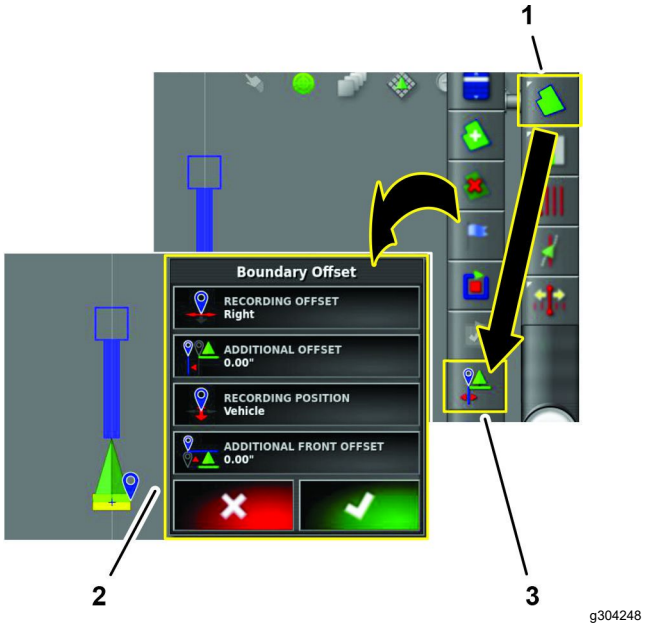
Important: **The boundary offset procedures require dealer mode user access level; contact your authorized Toro distributor, Toro NSN at 1-844-GEOLINK (1-844-436-5465), or GeoLinkNSN@toro.com for customer service.**

Note: The example in this procedure uses a Workman GTX with the mapping point aligned 15.2 cm (6 inches) left of the left front tire.

Accessing the Boundary Offset Menu

On the operation screen, press the FIELD MENU icon and the BOUNDARY RECORDING OFFSET (Figure 197).

The boundary offset settings box displays.



g304248

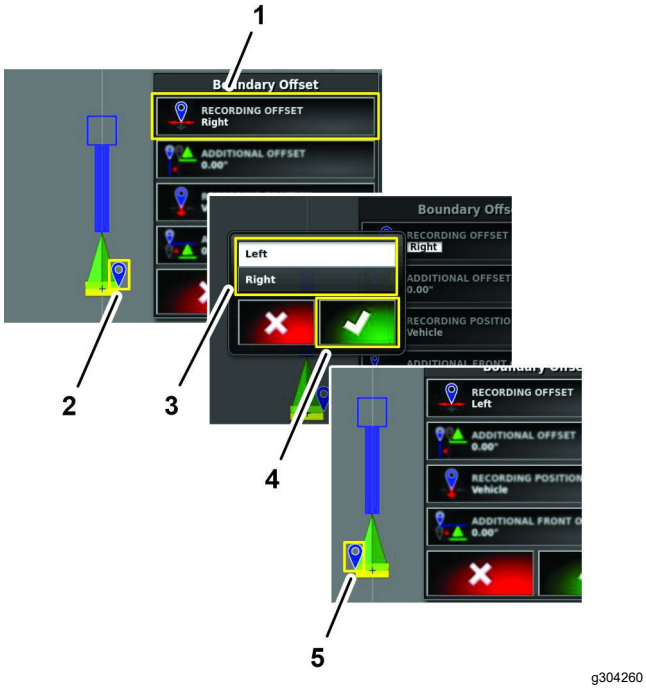
Figure 197

1. FIELD MENU icon
2. BOUNDARY RECORDING OFFSET icon
3. Boundary offset settings box

Changing the Recording Offset Side

The example in this procedure moves the recording offset from the right side of the mapping vehicle to the left side.

1. Press the RECORDING OFFSET icon (Figure 198).



g304260

Figure 198

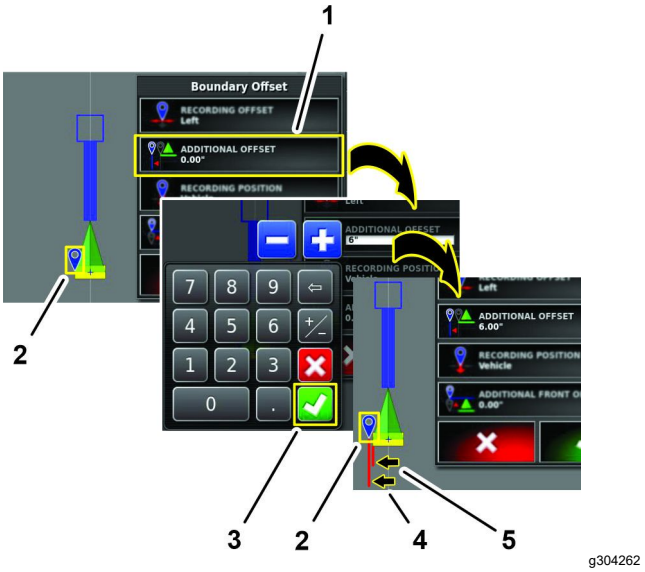
1. RECORDING OFFSET icon
2. Boundary recording-point symbol (right position)
3. LEFT icon and RIGHT icon
4. Confirm icon
5. Boundary recording-point symbol (left position)

2. In the dialog box, press the LEFT icon or the RIGHT icon, and press the confirm icon (Figure 198).

Changing the Side-Offset Recording Position

The example in this procedure moves the recording offset 15.2 cm (6 inches) outward from the left tire right side of the mapping vehicle to provide an operating margin from field objects the boundary records.

1. Press the ADDITIONAL OFFSET icon (Figure 199).



g304262

Figure 199

1. ADDITIONAL OFFSET icon
2. Boundary recording-point symbol
3. Confirm icon (on-screen keypad)
4. Old recording point position (outside surface, rear tire)
5. New recording point position with side-offset distance

2. Use the on-screen keypad to enter the side-offset distance, and press the confirm icon (Figure 199).

   The boundary recording-point position moves side-offset distance.

Changing the Forward-Offset Recording Position

The example in this procedure moves the recording from the rear tire to the front tire for better operating and recording visibility.

1. Press the ADDITIONAL FRONT OFFSET icon (Figure 200).

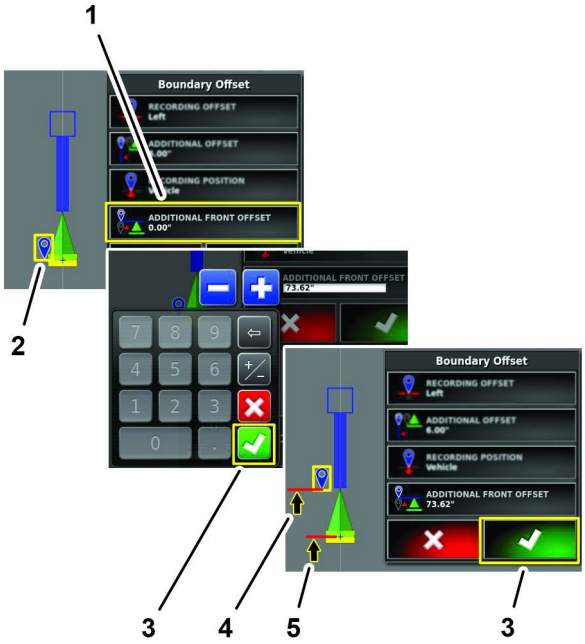


Figure 200

1. ADDITIONAL FRONT OFFSET icon
2. Boundary recording-point symbol
3. Confirm icon
4. New recording point position (front-tire centerline)
5. Old recording point position (rear-tire centerline)

2. Use the on-screen keypad to enter the front-offset distance, and press the confirm icon (Figure 200).

   The boundary recording-point position moves side-offset distance.

3. In the boundary offset settings box, press the confirm icon (Figure 201).

   Note: The boundary recording-point in the display updates (Figure 201).

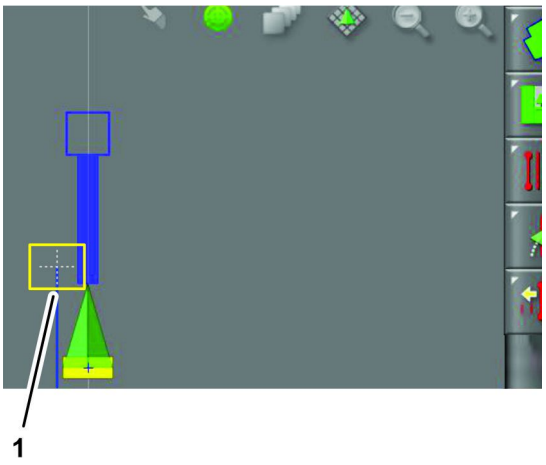


Figure 201

1. Boundary recording-point

Changing Vehicle Types

Important: **This procedure requires expert or dealer mode user access level; contact your authorized Toro distributor, Toro NSN at 1-844-GEOLINK (1-844-436-5465), or GeoLinkNSN@toro.com for customer service.**

The example in this procedure changes the control console vehicle type from a mapping vehicle to a sprayer machine.

1. On the setup screen, press the VEHICLE icon and the SELECT icon (Figure 202).

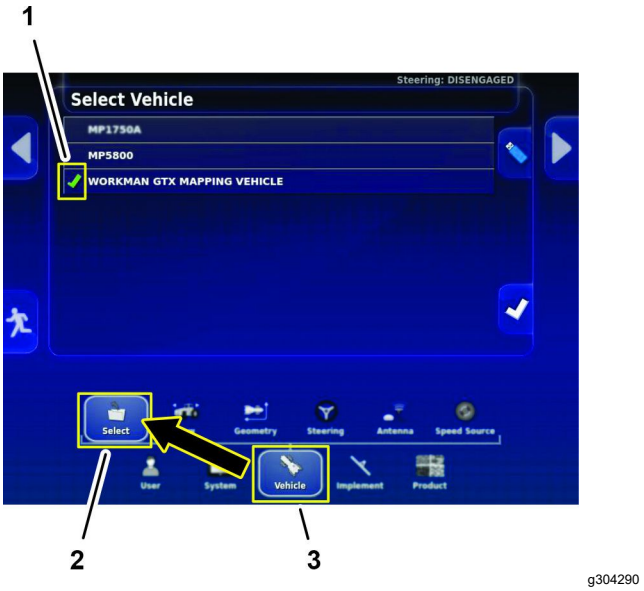


Figure 202

1. Active vehicle profile (mapping vehicle)
2. SELECT icon
3. VEHICLE icon

2. Press the icon for the sprayer vehicle, and press the select icon (Figure 203).

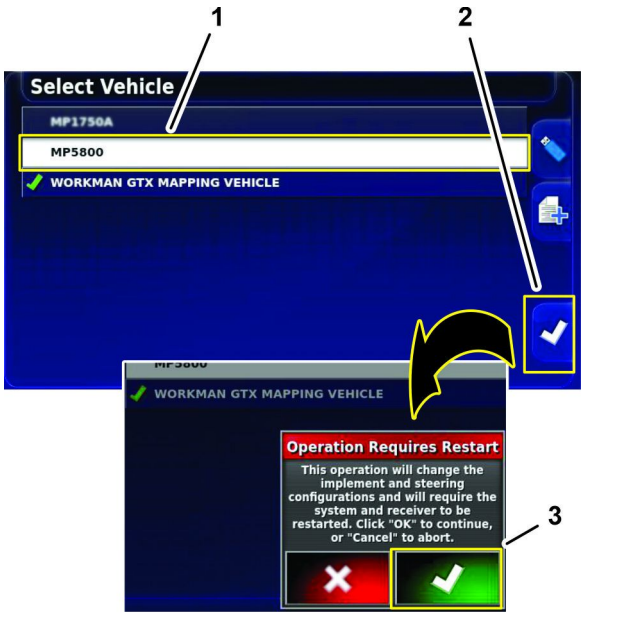


Figure 203

1. Sprayer vehicle icon
2. Select icon
3. Confirm icon (operation requires restart)

3. In the operation requires restart dialog box, press the confirm icon (Figure 203).

   Note: The control console restarts and displays the sprayer vehicle selected (Figure 204).



Figure 204

1. Active vehicle profile (sprayer vehicle)
2. EXIT SETUP icon

4. Press the EXIT SETUP icon (Figure 204).

Operating Tips

Improving the RTK Reception

Reduce the machine speed when you are approaching an area with known RTK reception difficulty.

Using the Manual Control

To boost pressure for the hose reel and mixing chemicals, use the manual control to boost pressure.

Improving the Application Rate Response Time

Multi Pro 5800 Machines

Set the agitation PWM (preset agitation value) to approximately 69 kPa (10 psi) above the target-spraying pressure.

Creating a Backup File of Boundaries

Save a backup file of all field boundaries in an alternate location. Save the boundaries by installing a USB drive, selecting the inventory-manager icon, and selecting the options shown in Figure 205.

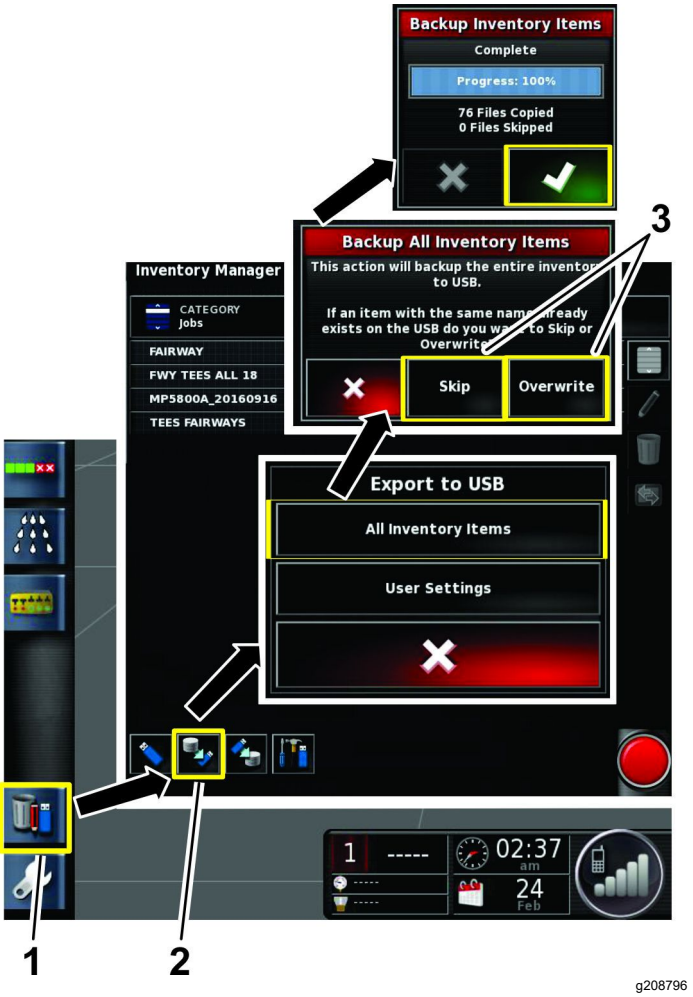


Figure 205

1. Inventory-manager icon
2. Backup to USB
3. Select skip or overwrite

Maintenance

Recommended Maintenance Schedule(s)

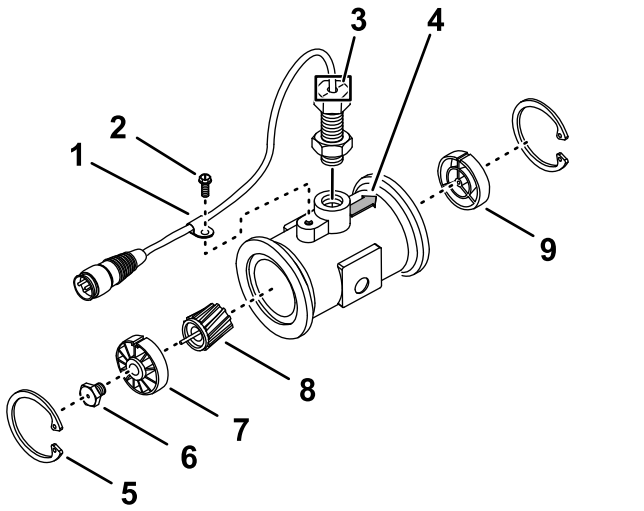
Maintenance Service Interval	Maintenance Procedure
Every 200 hours	• Clean the flowmeter (more often when using wettable powders).

Cleaning the Flowmeter

Service Interval: Every 200 hours

1. Thoroughly rinse and drain the entire spraying system.
2. Remove the flowmeter from the sprayer and flush it with clean water.
3. Remove the retainer ring on the upstream side (Figure 206).

   Note: The upstream side is the end of the flowmeter opposite the alignment arrow of the flanged body.



g305995

Figure 206

1. Cable clamp
2. Screw
3. Alignment marks (sensor assembly)
4. Flow arrow (modified flanged body)
5. Retainer ring
6. Turbine-stud assembly
7. Hub assembly (bearing)
8. Rotor assembly (magnet)
9. Hub assembly (with keyway up)

4. Clean the turbine and the turbine hub to remove metal filings and any wettable powders.
5. Inspect the turbine blades for wear.

   Note: Hold the turbine in your hand and spin it. It should spin freely with very little drag. If it does not spin freely, replace it.

6. Assemble the flowmeter.
7. Install the sensor until it gently touches the bottom of the housing, then back out the sensor until the alignment marks are parallel with the flow arrow of the flanged body (Figure 206).
8. Carefully tighten the jam nut of the sensor.
9. Use a jet of low pressure air (50 kPa or 5 psi) to ensure that the turbine spins freely. If it does not spin freely, loosen the hex stud on the bottom of the turbine hub by 1/16 of a turn until the turbine spins freely.

Cleaning the Display Screen

Clean the screen, when needed, with mild soap and water.

Note: Avoid using window cleaners and any cleaners with solvents.

Technical Assistance

For many errors an error code, or trouble code, will display. It is also possible to view the errors on the screen. The errors listed below are common and are correctable. For other errors or if a problem persists, always record the error message including any code displayed and report to your distributor or contact your authorized Toro distributor, Toro NSN at 1-844-GEOLINK (1-844-436-5465), or GeoLinkNSN@toro.com for customer service.

Identifying System Information

1. Press the System Information (Toro) icon at the top, left corner of the screen (Figure 207).



g297984

Figure 207

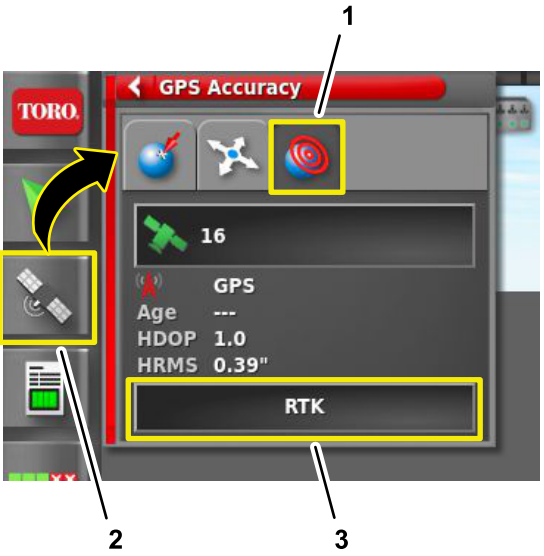
1. System information (Toro) icon
2. Full-screen icon
3. Information dialog boxes

2. In the system information mini-view window, press the full-screen icon (Figure 207).
3. Use the scroll bar to view the following types of system information details:
   - Console
   - GPS receiver
   - Steering controller (optional kit)
   - Implement (section controller ECU)
   - Wireless network

Accessing the GPS Accuracy Information

Verifying the RTK Signal

1. Move the machine outdoors, away from buildings and power lines.
2. Engage the parking brake.
3. On the GeoLink control console, press the GPS INFORMATION icon (Figure 208).



g303792

Figure 208

1. GPS ACCURACY icon
2. GPS INFORMATION icon
3. RTK DIAGNOSTIC icon

4. Press the RTK DIAGNOSTIC icon, and verify in the RTK diagnostics dialogue box (Figure 209) that the RTK modem link quality is 50% or greater.



g303850

Figure 209

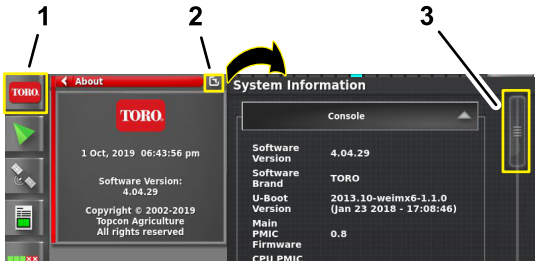
1. Link quality (RTK diagnostic dialog box)
2. Confirm icon

5. Press the confirm icon to close the dialog box.

Note: If RTK link quality is less than 50%, contact your authorized Toro distributor, Toro NSN at 1-844-GEOLINK (1-844-436-5465), or GeoLinkNSN@toro.com for customer service.

Verifying the Cell Signal

1. Press the SYSTEM INFORMATION icon, and then swipe the FULL SCREEN icon in the upper right corner of the system information window (Figure 210).

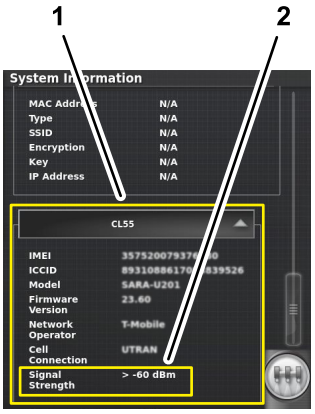


g305245

Figure 210

1. SYSTEM INFORMATION
2. FULL SCREEN icon
3. Scroll bar

2. In the system information screen, use the scroll bar to navigate to the CL55 icon (Figure 211).



g305244

Figure 211

1. CL55 icon
2. Signal strength information

3. Press the CL55 icon to display the signal strength information.(Figure 211), and verify that the modem signal strength is between -60 dBm and -99 dBm.

   Note: If the modem signal is equal to or less than -100 dBm, contact your authorized Toro distributor, Toro NSN at 1-844-GEOLINK (1-844-436-5465), or NSNTech@toro.com for customer service.

4. Swipe the FULL SCREEN icon to minimize the system information screen.

Remote Assist

Entering a Support Desk PIN

1. Request a desk PIN code from customer service by performing the following:

   Note: Record the PIN code on a piece of paper.

   - Contact your authorized Toro distributor
   - Call Toro NSN at 1-844-GEOLINK (1-844-436-5465)
   - Email GeoLinkNSN@toro.com

2. In the setup screen, press the USER icon, and press the REMOTE SUPPORT icon (Figure 212).

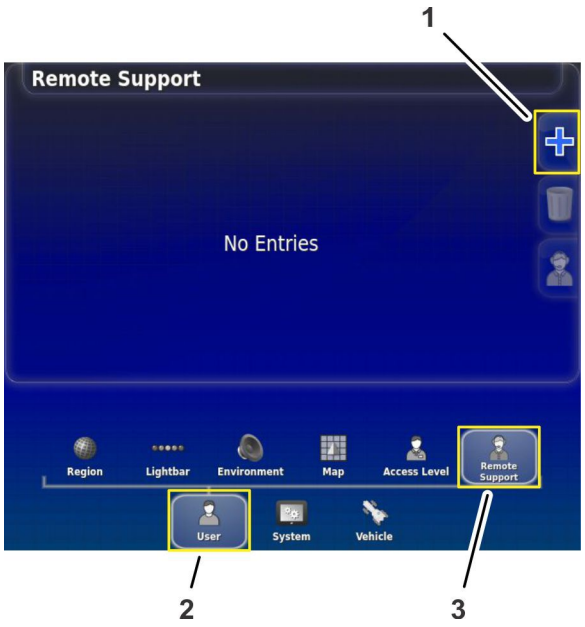


Figure 212

1. ADD SUPPORT DESK icon
2. USER icon
3. REMOTE SUPPORT icon

3. If no support desk entries appear in the remote support window, press the ADD SUPPORT DESK icon (Figure 212).
4. Press the DESK PIN icon (Figure 213).

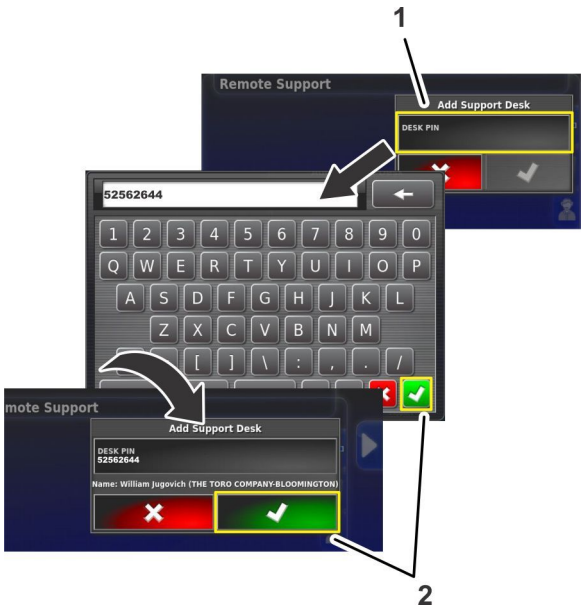


Figure 213

1. DESK PIN icon
2. Confirm icons

5. Use the on-screen keyboard to type the desk PIN code you recorded in step 1, and press the confirm icon (Figure 213).
6. In the Add Support Desk screen, press the confirm icon (Figure 213).

Note: The control console saves the support desk information to memory.

Connecting to the Support Desk Personnel

1. Press the SUPPORT DESK icon for customer service, saved to the support desk list (Figure 214).

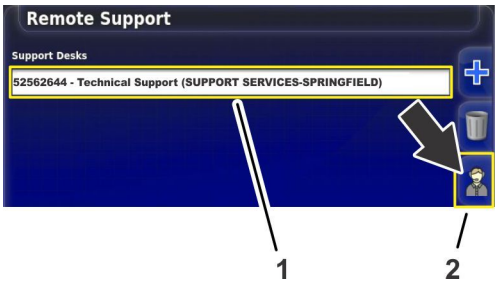


Figure 214

1. SUPPORT DESK icon (customer service)
2. REQUEST SUPPORT FROM DESK icon

2. Press the REQUEST SUPPORT FROM DESK icon (Figure 214).

   The request support screen dialog box appears, then the support session active dialog box appears (Figure 215).

   Note: The customer service representative remotely connects to the control console.

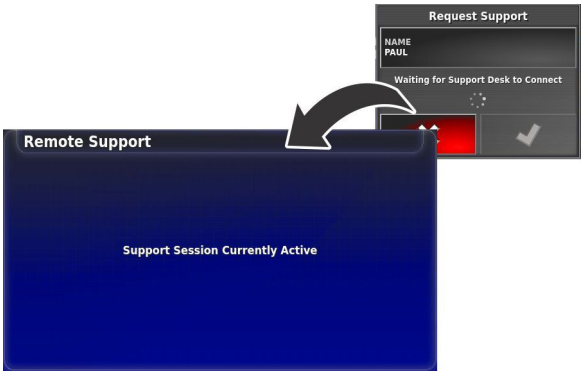


Figure 215

Troubleshooting

Problem	Possible Cause	Corrective Action
There is no power to the display.	1. The harness connectors are not installed correctly. 2. The in-line fuse (10 A) for the X25 control console is open (blown). 3. The battery connections are loose.	1. Ensure that the connectors are installed correctly at the back of the X25 control console. 2. Replace the fuse. 3. Secure the battery connections.
The sprayer does not spray.	1. The master-control switch for the machine is shut off. 2. The section switch(es) on the console of the machine are off. 3. No job and field boundary are created. 4. The incorrect nozzle is selected in sprayer-control setup menu.	1. Ensure that the master-control switch for the machine is set to the ON position. 2. Ensure that the switches on the console are set to the ON position. 3. Create a job and field boundary. 4. Select the correct nozzle in sprayer-control setup menu that matches the nozzles being used.
The No GPS alarm is on.	1. The X25 control console is not connected to GPS receiver correctly. 2. The machine is under trees or other obstructions.	1. Ensure that the connections are installed correctly. 2. Allow the machine to make connection after driving under obstructions.
The sprayer sprays outside boundaries.	1. The auto section control (ASC) is set to unlimited.	1. Set the auto section control (ASC) to field boundary.
You cannot create boundaries.	1. The display is not in standard mode. 2. There is no field created.	1. Switch the user profile to standard mode. 2. Create a field.
The machine is not shown on the screen.	1. The display screen has been moved. 2. The machine may not have GPS signal because the machine is inside a building. 3. The machine may not have GPS signal because the machine lost the connection to the satellite receiver.	1. Select the center-map icon on the main screen. 2. Move the machine outside to an area clear of tall buildings and trees. 3. Check the status light on the satellite receiver. Check the wire harnesses to the satellite receiver.
The lights are not blinking on the GPS receiver located on the ROPS.	1. There is no power to the GPS receiver.	1. Ensure that the connectors are installed correctly.
The pressure is not high enough.	1. The nozzle size used is incorrect. 2. The nozzle size selected in the display does not match the nozzles on the boom sections. 3. The agitation is set too low.	1. Refer to the nozzle selection chart for the proper nozzle sizing. 2. Ensure that the nozzle size selected in the X25 command console matches the installed boom-section nozzles. 3. Adjust the agitation until the desired pressure is realized.
The controller lights not on at the ASC 10 controller.	1. There is no power to the ASC 10 controller.	1. Ensure that the connectors are installed correctly.
The speed is not displayed in the X25 control console when the machine is moving.	1. The compass is not calibrated. 2. The receiver lacks satellite reception. 3. The vehicle ground speed is less than 0.16 km/h (0.1 mph).	1. Calibrate the compass. 2. Drive away from reception obstructions and allow time for the receiver to connect to the satellites. 3. Increase the speed above 0.16 km/h (0.1 mph).

Problem	Possible Cause	Corrective Action
There is condensation inside the display of the X25 control console.	1. The display warms up too quickly in direct sunlight with the display set at 100 percent brightness.	1. Change the screen brightness to 85 percent and allow the display to warm up.
The X25 control console displays a crash report notification.	1. Improperly powering down the console display.	1. Clear the crash report from Inventory Manager. Always use the keys switch to shutoff the console display.

Notes:

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EEA/UK Privacy Notice

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