DCY

GS2 1800 Display

OPERATOR'S MANUAL

GS2 1800 Display

OMPFP11871 ISSUE L1 (ENGLISH)

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

If this product contains a gasoline engine:

⚠ WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

The State of California requires the above two warnings.

Additional Proposition 65 Warnings can be found in this manual.

John Deere Ag Management Solutions

(This manual replaces OMPFP11235)

LITHO IN THE U.S.A.

OMPFP11871

Introduction

Foreword

WELCOME to the GreenStar™ system offered by John Deere.

READ THIS MANUAL carefully to learn how to operate and service your system correctly. Failure to do so could result in personal injury or equipment damage. This manual and safety signs on your machine may also be available in other languages. (See your John Deere dealer to order.)

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your system and should remain with the system when you sell it.

MEASUREMENTS in this manual are given in both metric and customary U.S. unit equivalents. Use only correct replacement parts and fasteners. Metric and inch fasteners may require a specific metric or inch wrench.

RIGHT-HAND AND LEFT-HAND sides are determined by facing in the direction of forward travel.

RECORD PRODUCT IDENTIFICATION NUMBERS (P.I.N.). Accurately record all the numbers to help in tracing the components should they be stolen. Your dealer also needs these numbers when you order parts. File the identification numbers in a secure place off the machine.

WARRANTY is provided as part of John Deere's support program for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate which you should have received from your dealer.

This warranty provides you the assurance that John Deere will back its products where defects appear within the warranty period. In some circumstances, John Deere also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change its performance beyond the original factory specifications, the warranty will become void and field improvements may be denied.

GreenStar is a trademark of Deere & Company

JS56696,0000218 -19-10DEC08-1/1

Storage and Operating Environments

IMPORTANT: The following GreenStar 2 1800 Display is not weatherproof and should only be used on vehicles equipped with a cab. Improper use may void warranty.

Recommended operating temperature range: -20° to 70° C (-4° to 158° F).

Recommended storage temperature range: -40° to 85° C (-40° to 185° F).

Store in a dry environment.

OUO6050,00010F0 -19-12MAY09-1/1

Cleaning and Storage

The display glass should be handled with care to maintain the anti-reflective coating. Never let dirt or grease remain on the glass. Normally it is enough to use water and a soft cloth to clean the glass. If needed, Windex, Glass Plus, alcohol and acetone can be used to remove obstinate dirt.

DO NOT use strong alkalis, acids and detergents with fluoride, since they will destroy the coating.

DO NOT use detergents with abrasive additives and do not use razor blades on the coating.

OUO6050,00010F1 -19-12MAY09-1/1

www.StellarSupport.com

NOTE: Product functionality may not be fully represented in this document due to product changes occurring after the time of printing. Read the latest Operator's Manual and Quick Reference Guide prior to operation. To obtain a copy, see your dealer or visit www.StellarSupport.com

OUO6050,0000FB1 -19-10AUG10-1/1

Read This Manual

Before operating display/software, familiarize yourself with components and procedures required for safe and proper operation.

IMPORTANT: The following GreenStar components are not weather-proof and should only be used on vehicles equipped with a cab. Improper use may void warranty.

- **Original GreenStar Display and Mobile Processor**
- **GreenStar Displays**
- **AutoTrac Universal Steering Kit**

JS56696,0000491 -19-04JUN10-1/1

Contents

Continued on next page

Original Instructions. All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

Continued on next page

Page

Recognize Safety Information

This is a safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.

T81389 —UN—07DEC88

DX,ALERT -19-29SEP98-1/1

Understand Signal Words

A signal word—DANGER, WARNING, or CAUTION—is used with the safety-alert symbol. DANGER identifies the most serious hazards.

DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.

TS187 —19—30SEP88

DX,SIGNAL -19-03MAR93-1/1

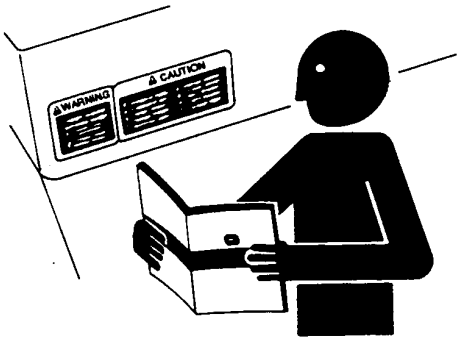
Follow Safety Instructions

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your John Deere dealer.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.



TS201 —UN—23AUG88

If you do not understand any part of this manual and need assistance, contact your John Deere dealer.

DX,READ -19-16JUN09-1/1

Practice Safe Maintenance

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is moving. Keep hands, feet , and clothing from power-driven parts. Disengage all power and operate controls to relieve pressure. Lower equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

On self-propelled equipment, disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

On towed implements, disconnect wiring harnesses from tractor before servicing electrical system components or welding on machine.

TS218 —UN—23AUG88

DX,SERV -19-17FEB99-1/1

Handle Electronic Components and Brackets Safely

Falling while installing or removing electronic components mounted on equipment can cause serious injury. Use a ladder or platform to easily reach each mounting location. Use sturdy and secure footholds and handholds. Do not install or remove components in wet or icy conditions.

If installing or servicing a RTK base station on a tower or other tall structure, use a certified climber.

If installing or servicing a global positioning receiver mast used on an implement, use proper lifting techniques and wear proper protective equipment. The mast is heavy and can be awkward to handle. Two people are required when mounting locations are not accessible from the ground or from a service platform.

TS249 —UN—23AUG88

DX,WW,RECEIVER -19-24AUG10-1/1

Operate Guidance Systems Safely

Do not use AutoTrac system on roadways.

- Always turn off (Deactivate and Disable) AutoTrac system before entering a roadway.
- Do not attempt to turn on (Activate) AutoTrac system while transporting on a roadway.

The AutoTrac system is intended to aid operator in performing field operations more efficiently. Operator is always responsible for machine path. To prevent injury to operator and bystanders:

- Remain alert and pay attention to surrounding environment.
- Take control of steering wheel when necessary to avoid field hazards, bystanders, equipment, or other obstacles.
- Stop operation if poor visibility conditions impair your ability to operate the machine or identify people or obstacles in machine path.
- Consider field conditions, visibility, and vehicle configuration when selecting vehicle speed. For example, use duals when using AutoTrac at high speeds on tractors.

CZ76372,0000281 -19-11JAN11-1/1

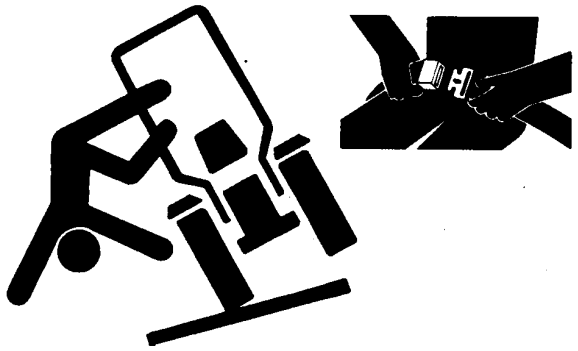
Use Seat Belt Properly

Use a seat belt when you operate with a roll-over protective structure (ROPS) or cab to minimize chance of injury from an accident such as an overturn.

Do not use a seat belt if operating without a ROPS or cab.

Replace entire seat belt if mounting hardware, buckle, belt, or retractor show signs of damage.

Inspect seat belt and mounting hardware at least once a year. Look for signs of loose hardware or belt damage, such as cuts, fraying, extreme or unusual wear, discoloration, or abrasion. Replace only with replacement parts approved for your machine. See your John Deere dealer.



TS205 —UN—23AUG88

DX,ROPS1 -19-29OCT07-1/1

Read Operator Manuals for ISOBUS Implements

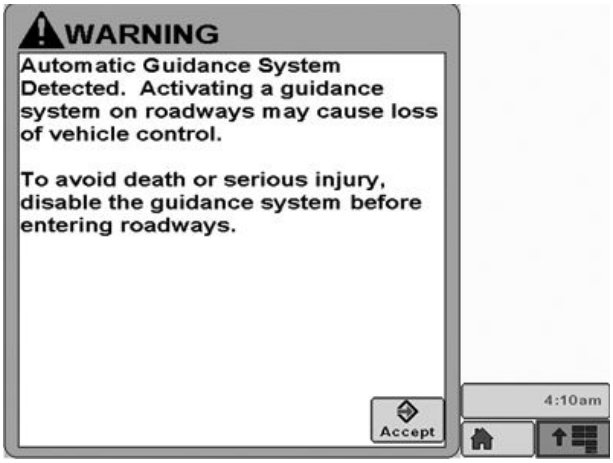
In addition to GreenStar Applications, this display can be used as a display device for any implement that meets ISO 11783 standard. This includes capability to control ISOBUS implements. When used in this manner, information and implement control functions placed on the display are provided by the implement and are the responsibility of the implement manufacturer. Some of these implement functions could provide a hazard either to the Operator or a bystander. Read the operator manual provided by the implement manufacturer and observe all safety messages in manual and on implement prior to use.

NOTE: ISOBUS refers to the ISO Standard 11783

DX,WW,ISOBUS -19-19AUG09-1/1

Automatic Guidance System Detected

This message occurs during start-up on vehicles with an Automatic Guidance System installed.



PC13157 —19—17FEB11

RN38933,0000139 -19-21SEP11-1/1

Features

PC10857DS —UN—29SEP08

The GS2 1800 is a 17.8 cm (7 in.) LCD display that features state-of-the art, full-color screens and allows the operator to manage the applications for their GreenStar systems.

Software included in base equipment includes:

- Basic Performance Monitor: Monitor machine data such as vehicle speed, fuel efficiency, and acres covered.
- ISOBUS compatibility: Compatible with ISOBUS implements, including SeedStar™ 2
- GreenStar 2 Rate Controller compatibility (Single Product Only)

One function of the GS2 1800 is to operate as an ISO virtual terminal. This means any brand of implement that is an ISOBUS Virtual Implement can be plugged in and run through the GS2 1800 display. One example of an ISOBUS implement is the SeedStar™ 2 system for new John Deere planters and air seeding equipment. The GS2 1800 is considered the entry-level display for the SeedStar™ 2 systems.

An integrated display control features a scroll wheel along with check, cancel, menu, and home buttons. Users can easily toggle between multiple home pages to monitor more than one field of activity. The letter keys correspond with soft keys on the display and allow quick one-touch operation.

The GS2 1800 Display is compatible with all John Deere GreenStar Ready vehicles, as well as vehicles outfitted with GreenStar field install kits.

OUO6050,0000F95 -19-29SEP08-1/1

Installing the GS2 1800 Display

Components Of Your Greenstar2 1800 System

- GS2 1800 Display
- Wing Nuts (2 Used)
- Publications bundle

GS2 Display brackets and harnesses are sold separately.

A USB memory device is required for software updates and to transfer data.

OUO6050,0001011 -19-02JUN10-1/1

USB Memory Device Requirements for John Deere Displays

Most USB memory storage devices are compatible with John Deere displays. Note the following USB flash drive requirements:

- Format - Windows FAT or FAT32. This display will not recognize NTFS format.
- Capacity - There are no specific limits to the memory capacity of the drive.
- Connectivity - USB 2.0
- Maximum Dimensions - 9.2 mm thick by 21.7 mm wide

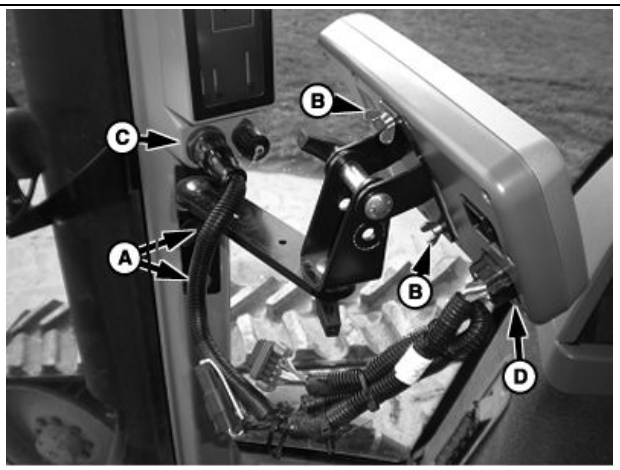
As a best practice, clean all files off the USB that are not associated with John Deere Displays.

OUO6050,0001282 -19-02JUN10-1/1

Attaching Your Display

1. Attach bracket to corner post mounts (A).
2. Attach display to bracket using the wing nuts (B) (provided with display).
3. Attach harness to the corner post connector (C) and the lower connector on the back of the display (D).

A—Corner Post Mounts
B—Wing Nuts (2 Used)
C—Vehicle Display Connector
D—Connector on Display



PC10857GA —UN—28OCT08

OUO6050,0001013 -19-28OCT08-1/2

4. Position the display so that it is comfortable to reach and does not obstruct your view.

IMPORTANT: Display must be connected to SWITCHED and CONSTANT power. This allows the display to shutdown properly and save data. When the key is switched off, a 'Saving Settings' message will appear on the screen.

NOTE: Bracket and harness are sold separately.

PC10857GC —UN—28OCT08

OUO6050,0001013 -19-28OCT08-2/2

Front of Display

PC10857DT —UN—29SEP08

A—Check
B—Cancel
C—Menu
D—Home
E—A-J buttons
F—Thumb Wheel
G—LED
H—USB port

(A) Check button - select input fields, buttons, or softkeys.

(B) Cancel button - used to cancel out of a selection.

(C) Menu button - shows list of available applications and controllers (Virtual Implements).

(D) Home button - toggles between three operator-defined home screens.

(E) (A) through (J) keys - shortcut buttons that allow operator one-touch selection of desired input field, button, or softkey with the corresponding letter.

(F) Thumb Wheel - move the highlighted area around screen to access desired application.

(G) Status LED - green when display is on, orange when display is starting up and shutting down.

If LED is FLASHING ORANGE and the screen is blank, an out of range temperature condition is detected and the unit should be turned off to prevent damage to the display.

Operating Temperature Range

-20° to 70° C (-4° to 158° F)

Storage Temperature Range

-40° to 85° C (-40° to 185° F)

(H) USB port - used to transfer data to and from display and also updating software. Most USB drives will work with the display.

OUO6050,0000F96 -19-29SEP08-1/1

Back of Display

PC10857DU —UN—12MAY09

A—Future Use

B—GreenStar Harness Connector

C—Label with Model and Serial Number

D—Mounting Grommets

CZ76372,0000332 -19-29JUN11-1/1

Getting Started With Your Display

Turning The Display On/Off

The display will turn on and off with the vehicle key switch. There is no on/off switch on the GS2 1800 because it must remain powered in order to display vehicle or implement system alarm messages whenever required. The display can be put into dim mode for transport by selecting the Home button for 4 seconds. Selecting any button will bring the display out of transport mode.

The display saves some types of settings and data automatically and the rest are saved during PROPER SHUTDOWN and also during data transfer to a USB drive. Proper shutdown is accomplished by turning off the vehicle key switch. The Status LED remains orange until the display is shutdown.

Unplugging the harness before the LED light is black may result in loss of data and settings.

- Warm boot - occurs when the display has been operated in the last 21 days and has NOT lost unswitched power anytime during the last 6 hours. Warm boot is indicated by a yellow progress bar with a green outline.
- Cold boot - may take longer for the display to power up (around 30 seconds). Cold boot is indicated by a green progress bar with a yellow outline.

OUO6050,0001015 -19-12MAY09-1/1

Navigating Your Display

NOTE: Some buttons and softkeys only appear when the hardware or functions associated with them are available.

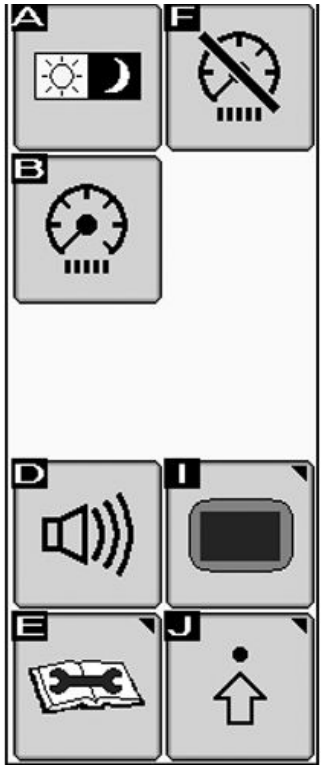
There are two methods of navigating the GS2 1800 display:

1. Rotate the thumb wheel to highlight “input fields” and “buttons.” Select the check button to make a selection or the cancel button to cancel a selection.
2. Use the Shortcut buttons (A) through (J) to select “input fields” and “buttons” that have the corresponding letters in the upper left corners.

There are a variety of input fields and buttons that allow the operator to navigate through the screens on the display and input values:

Softkey

Softkeys appear in two columns of five on the right side of the screen and are associated with the Shortcut buttons A-J. They perform functions or navigate to a different page. To activate a softkey, highlight it and press check or select the shortcut button associated with it.



PC10857GV —UN—29OCT08

OUO6050,0001016 -19-28OCT08-1/8

Button

Buttons appear in center and left regions of the display. To activate a button, highlight it and press check button or select the shortcut button associated with it. Activating a button will perform a function indicated by the icon on the button. The enter and goto buttons are used often and are important to remember.

PC8649 —UN—01NOV05

ENTER

PC8650 —UN—01NOV05

GOTO

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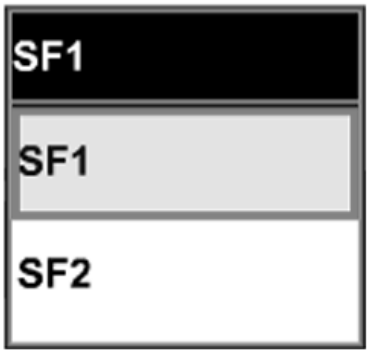
OUO6050,0001016 -19-28OCT08-2/8

Drop-Down Box

PC8845 —UN—30OCT05



PC8846 —UN—30OCT05

A drop-down box contains a list of items.

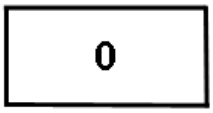
1. Select the check button to select a highlighted drop-down box to see the list.
2. Rotate the thumb wheel to choose an item from the list.
3. Select the check button to select the item.
4. Rotate thumb wheel move the highlight to a different Input field or Button.
5. Select the cancel button to close a drop-down box,

OUO6050,0001016 -19-28OCT08-3/8

Input Box

An input box is used to enter numeric or text values.

PC8847 —UN—30OCT05



OUO6050,0001016 -19-28OCT08-4/8

If the input box is a number with a small range of values, the value is changed by rotating the thumb wheel.

1. Select the check button to select a highlighted Input box and the color of the box will turn black.
2. Rotate the thumb wheel up to increase the value and down to decrease the value.
3. Select the check button to accept the value.

PC10857GW —UN—29OCT08

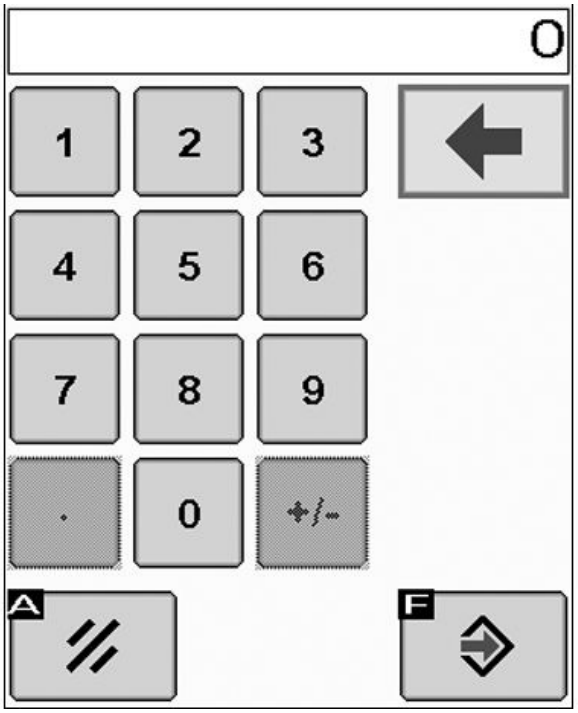
4. Rotate thumb wheel move the highlight to a different input field or button.

Continued on next page

OUO6050,0001016 -19-28OCT08-5/8

If the input box is a number with a large range of values, the value is changed with a Keypad.

1. Select the check button to select a highlighted Input box and the keypad will appear.
2. Rotate the thumb wheel up to highlight a number or button.
3. Select the check button to enter numbers.
4. Select Accept to accept the entered value and close the keypad.
5. Rotate thumb wheel move the highlight to a different Input field or Button.
6. Select the cancel button to reject the entered value and keep the existing value. Select Backspace to undo a value entry.



PC10857GX —UN—29OCT08

OUO6050,0001016 -19-28OCT08-6/8

Bar Graph

Bar graphs are used to adjust settings such as screen brightness and volume.

1. Select the check button to select a highlighted bar graph.
2. Rotate the thumb wheel up to increase the value (bar graph moves to right) and down to decrease the value (bar graph moves to left).

PC10857GY —UN—29OCT08

BAR BGRAPH

3. Select the check button to accept the change.
4. Rotate thumb wheel to a different input field or button.

OUO6050,0001016 -19-28OCT08-7/8

Check Box

Check boxes allow single items to be activated or deactivated. A check mark indicates an active feature. An empty box indicates an inactive feature.

PC8686 —UN—09AUG05

OUO6050,0001016 -19-28OCT08-8/8

Triangle at Top Right of Button

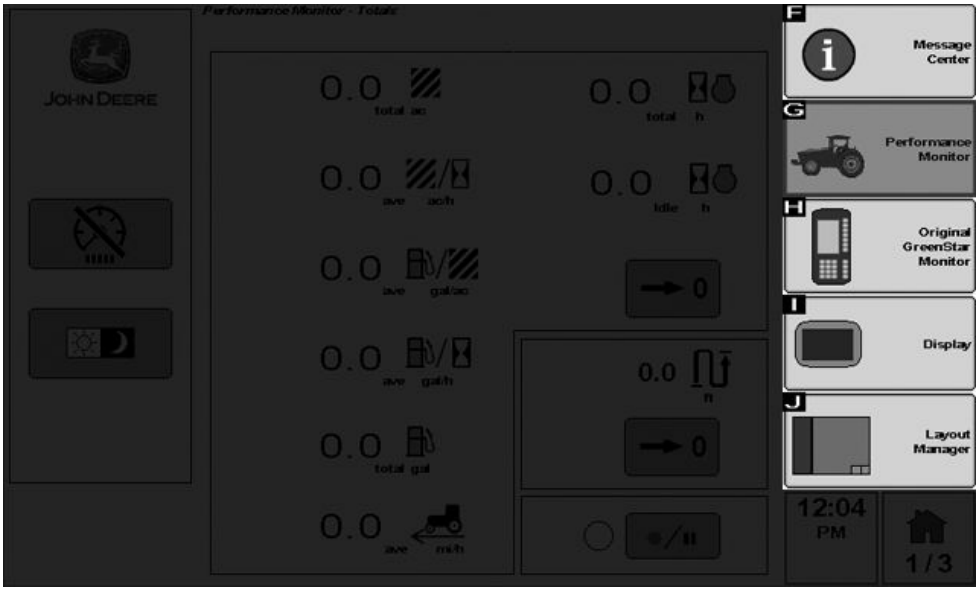
The triangle in the top right corner of a button signifies that the button opens another page rather than performing a function.

PC10857HG —UN—30OCT08

Triangle at Top Right of Button

OUO6050,0001283 -19-02JUN10-1/1

Understanding The Display Menu



PC10857GZ —UN—30OCT08

Select the Menu button to show available applications

Rotate the thumb wheel to highlight the desired menu selection and select the check button.

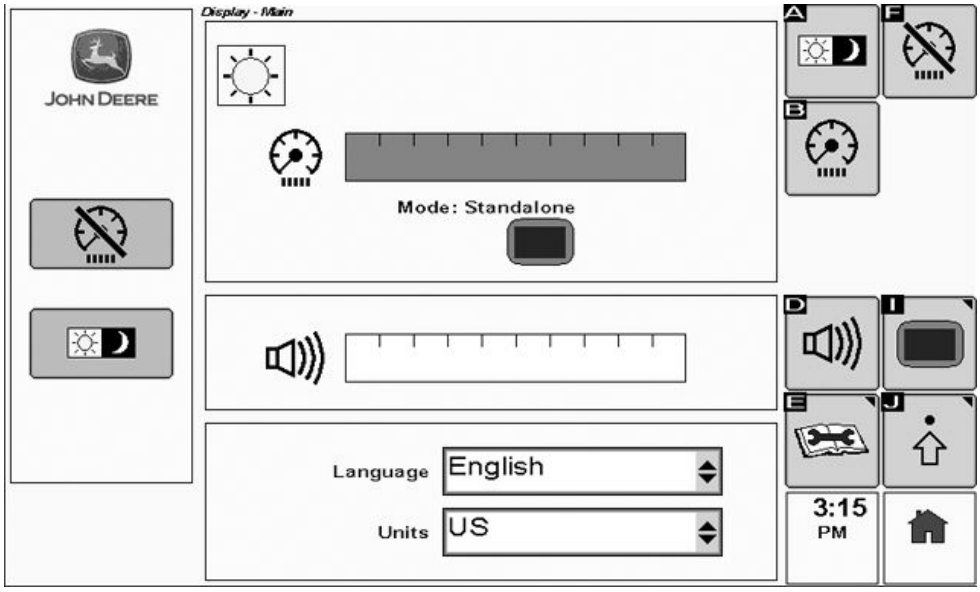
Standard menu items found in the display menu are:

- Layout Manager - set up three home pages for easy access to information that is often referenced and to controls that are frequently used.
- Display - set time, date, regional settings, language, units, brightness levels, and volume.
- Performance Monitor - provides productivity information such as vehicle speeds, acre counters, and fuel efficiency data.
- Message Center - access detailed diagnostic information and manually initiate re-programming sessions.
- Original GreenStar Monitor - displays information from controllers that are designed for use with the original GreenStar display.

Application icons will also appear for any attached ISO implement controller such as StarFire iTC, GS2 Rate Controller, or SeedStar2.

OUO6050,0001017 -19-30OCT08-1/1

Adjusting Volume And Brightness



PC10857HA —UN—30OCT08

Display

To view the Display - Main page select: Menu > Display > Display

The speaker volume and screen brightness can both be adjusted.

To adjust the volume:

1. Select the volume slider bar by rotating the thumb wheel until the volume slider bar is highlighted and then select the check button.
2. Rotate the thumb wheel to make the volume adjustment.
3. Select the check button to save the adjustment.

To adjust screen brightness:

1. Select the brightness slider bar by rotating the thumb wheel until the brightness slider bar is highlighted and then select the check button.
2. Rotate the thumb wheel make the desired adjustment.
3. Select the check button to save the adjustment.

The display brightness can also quickly be toggled between day and night mode by selecting this button.

Note that the brightness level for each mode is set independently.

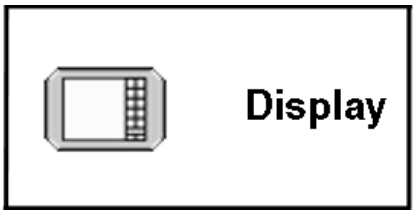
To put the display into dim mode select the dim button. Once in dim mode, selecting any button on the display will re-activate the backlight

Settings button - Navigate to display settings page.

PC10857GJ —UN—28OCT08

Menu button

PC8654 —UN—05AUG05



Display button

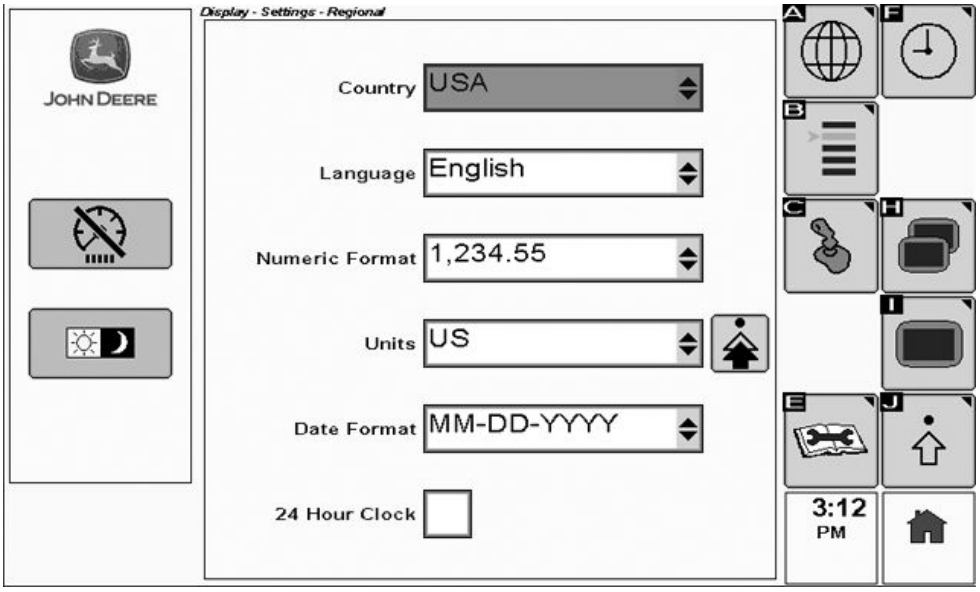
PC10857HG —UN—30OCT08

Display

If the GS2 1800 is installed in a late model John Deere vehicle, an option called "Sync with Cab" is available. In this mode the display will sync it's brightness level with other devices in the cab. Select the Settings button next to the brightness mode indicator to make adjustments to the "Sync with Cab" mode. Point this out in a screen shot

OUO6050,0001018 -19-30OCT08-1/1

Changing Regional Settings



PC10857HH —UN—30OCT08

To view the Regional Settings page select: Menu > Display > Settings > Regional Settings

Regional Settings are available to support intuitive operation in most regional markets.

These settings allow for custom selection of language, numeric format, units, and date format.

To change Regional Settings:

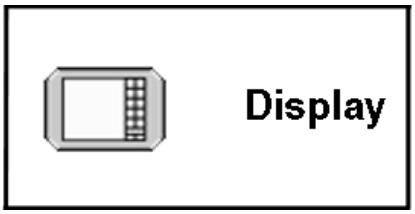
1. Rotate the thumb wheel until the Country list box is highlighted.
2. Select the check button to expand the list.
3. Rotate the thumb wheel to choose the desired country, then select the check button.

When a new country is selected, the language, numeric format, units, and date format also change to match what is commonly used in the selected country. These default settings can be modified by changing each of the Regional Settings drop down lists individually.

PC10857GJ —UN—28OCT08

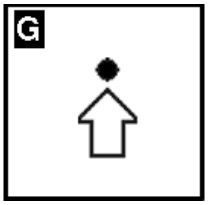
Menu button

PC8654 —UN—05AUG05



Display button

PC8792 —UN—18OCT05



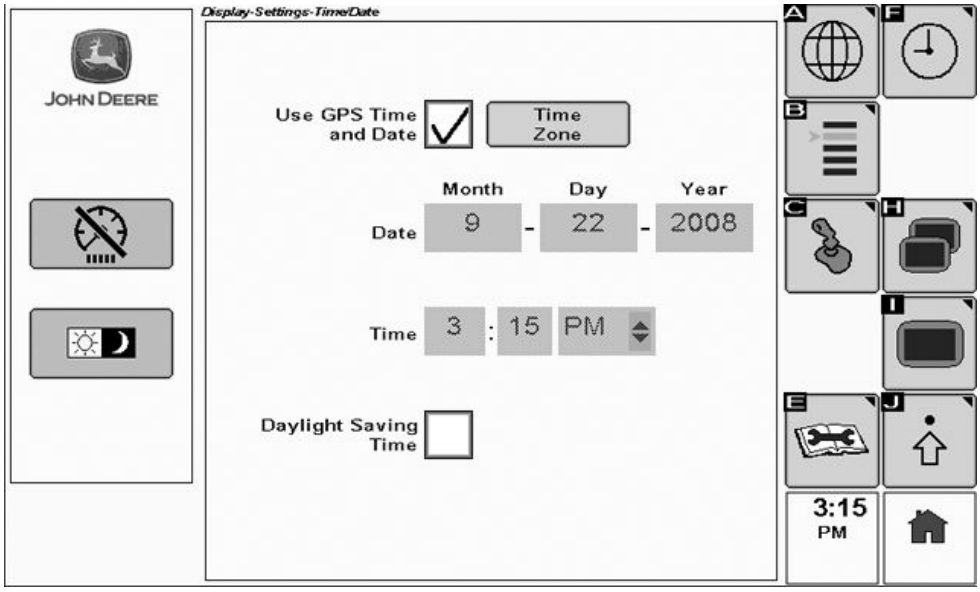
Settings button

PC10857HD —UN—30OCT08

Regional Settings

OUO6050,0001019 -19-30OCT08-1/1

Setting The Time And Date



PC10857HC —UN—30OCT08

PC10857GJ —UN—28OCT08

To view the Time and Date page select: Menu > Display > Settings > Time and Date

Setting the time and date is important for optional GreenStar product activations.

To set the time and date:

If a StarFire GPS receiver is detected the checkbox will appear yellow and GPS date and time will be available automatically from the receiver.

1. Rotate the thumb wheel until the Time Zone button is highlighted and select check button.
2. In the pop-up box that appears, enter your local time.
3. Select button (A) to save and exit, or select button (F) to cancel changes and exit.

If no StarFire GPS receiver is detected, the date and time must be manually entered.

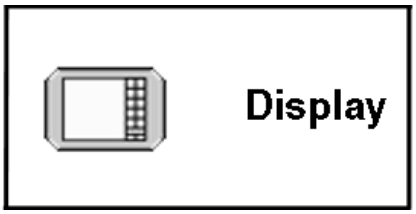
1. Rotate the thumb wheel until the Month box is selected.
2. Select the check button to activate the box.
3. Use the thumb wheel to highlight the desired month and select the check button to save.

Repeat this procedure for all date and time fields.

Check the Daylight Saving Time box if appropriate for your time zone and region.

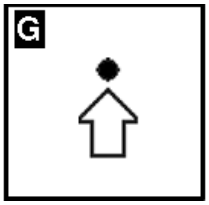
PC8654 —UN—05AUG05

Menu button



Display button

PC8792 —UN—18OCT05



Settings button

PC10857HE —UN—30OCT08

Time and Date button

OUO6050,000101A -19-30OCT08-1/1

Setting the Highlight Color

PC10857HB —UN—30OCT08

To view the Highlight Color page select: Menu > Display > Settings > Highlight Color

Cursor highlight color can be changed between green, blue, or red.

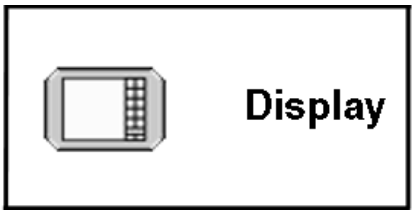
To change the Highlight Color:

1. Rotate the thumb wheel until the desired highlight color is selected.
2. Select the check button to activate the box.

PC10857GJ —UN—28OCT08

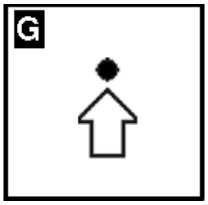
Menu button

PC8654 —UN—05AUG05



Display button

PC8792 —UN—18OCT05



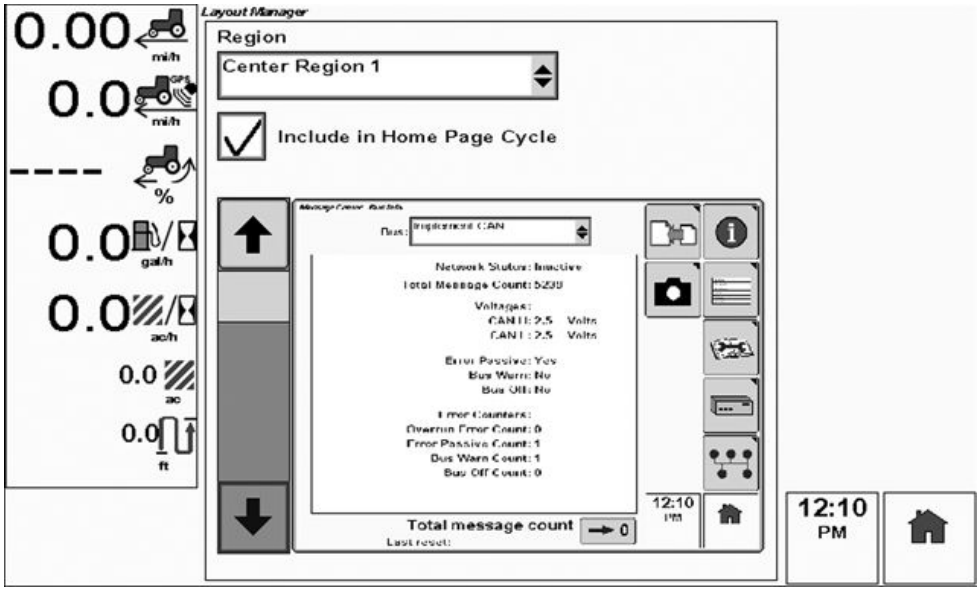
Settings button

PC10857HF —UN—30OCT08

Highlight Color Button

OUO6050,000101B -19-30OCT08-1/1

Choosing Home Pages For Your Display



PC10857HI —UN—30OCT08

To view the Layout Manager page select: Menu > Layout Manager

The Layout Manager will appear the first time you power up your display. Layout Manager allows you to choose what information will be displayed for home pages, and what information will be displayed in the left region of the screen.

1. Rotate the thumb wheel until the Region list box is highlighted.
2. Select the check button to expand the list.
3. Choose the region you would like to setup (such as Center Region) and select the check button.
4. Rotate the thumb wheel until the page image in the center of the screen is highlighted and select the check button.

PC10857GJ —UN—28OCT08

Menu button

5. Rotate the thumb wheel to scroll through the available pages.
6. Select the check button to select the desired page.
7. Check box to include page in Home Page cycle
8. After choosing the home pages, select the Home button repeatedly to change the active home page.

OUO6050,0001014 -19-30OCT08-1/1

Saving Screens to a USB Memory Device

Almost any screen on the display may be saved to the internal memory and then copied to a USB memory device.

To save a screen to internal memory:

1. Navigate to the screen you want to save.
2. Hold the Home button and press the menu button. The Status LED will blink red while the screen is saved

To copy saved screens to a USB memory device:

1. Stop operating the vehicle.
2. Insert USB memory device.
3. Accept 'USB Detected' message.

PC10857NY —UN—12MAY09

Transfer Debug Files softkey

4. Navigate to the message center (Menu > Message Center).
5. Select the 'Transfer Debug Files' softkey.
6. Scroll to the 'Transfer Debug Files' button in the middle of the screen and select it.
7. A 'Data Transfer Complete' message will appear.

OUO6050,00010F2 -19-12MAY09-1/1

GreenStar System Introduction

Read This Manual

Before operating GreenStar applications on the GreenStar display such as Manual Guidance, On-screen Mapping, AutoTrac, or Swath Control, please read this manual carefully to understand components and procedures required for safe and proper operation. This manual

PC10857JC —UN—13APR09

Menu Button

covers GreenStar applications, that can be accessed through the Menu button .

OUO6050,0001090 -19-04JUN10-1/1

GreenStar Basic Information

This section describes the functionality available in the GreenStar System. Manual Guidance and On-Screen Mapping are available only after the license agreement is accepted. The following optional Pro Modules can be purchased and unlocked with a 26 digit activation code:

- **AutoTrac™ (SF1, SF2, and RTK)** - Automatically guides vehicle in a defined straight, curve, or adaptive curve path.
- **PivotPro** - Automatically guides vehicle in defined concentric circles for fields with center pivot irrigation systems.
- **Swath Control** - Turns implement or sprayer boom sections ON and OFF based on GPS and defined boundaries.

Please see your dealer and www.StellarSupport.com for more information on these Pro Modules. A 15-hour demo activation for each Pro Module is included on your display.

NOTE: Applications require a StarFire receiver or compatible third-party receiver.

BA31779,0000178 -19-29APR11-1/1

Manual Guidance

Manual guidance, also known as Parallel Tracking, enables the operator to manually steer along guidance tracks using the on-screen lightbar, map, and audible tones. In addition, the GreenStar™ Lightbar may be added to run as a companion to the GreenStar display. This provides a secondary display mounted on the windshield directly in the line of sight.

OUO6050,0001092 -19-07JUN10-1/1

On-Screen Mapping

On-screen coverage maps serve as a visual reference to the operator to ensure complete coverage of the field. This is especially important in applications where coverage is not easily seen by looking at the field, such as spraying and spreading operations, as well as planting or no-till seeding.

Only one Coverage map may be stored per field and only one map may be stored when no field is selected. Coverage maps are stored in the internal memory of the display until they are cleared by the operator.

OUO6050,0001093 -19-11APR09-1/1

Boundaries

This display is capable of mapping Exterior and Interior boundaries:

- An **Exterior Boundary** delineates the perimeter of a field. Only one may be stored per field.
- An **Interior Boundary** delineates the perimeter of an area inside the field which is not farmed such as a grass waterway or field road. Interior Boundaries must be named and several may be stored per field.

Boundaries are useful for calculating acreage and required to operate Swath Control or Sprayer Pro. Boundaries may be recorded in the display with GPS while driving a vehicle.

BA31779,0000179 -19-29APR11-1/1

AutoTrac

AutoTrac™ is an assisted steering system that allows operators to take their hands off the steering wheel as the machine travels down the created guidance line in the field. Operators still have to turn the machine around on the end rows, but by simply pressing the resume button AutoTrac™ will again regain control and start steering the vehicle down the adjacent pass.

OUO6050,0001095 -19-11APR09-1/1

AutoTrac RowSense

AutoTrac RowSense is an assisted steering system that allows operators to take their hands off the steering wheel as the machine travels through rows of crop. Row Sensors mounted to the head detect stalks and allow the machine to follow the row. Signals provided by row sensors are integrated with existing AutoTrac signals so the machine will remain on the row while driving through areas with no crop, such as a waterway.

CZ76372,00002FD -19-02MAY11-1/1

Swath Control

Swath Control automatically turns sections ON and OFF based on the following conditions:

- **Previous Coverage** - The system will turn sections off when it enters an area that has already been covered.
- **Exterior Boundaries** - The system will turn sections off when they go outside of a previously recorded exterior boundary. Sections will turn on when they re-enter the boundary.
- **Interior Boundaries** - Interior boundaries, or no-spray zones, can be set up for any field. The system will turn sections off when passing inside of a previously recorded interior boundary. Sections will turn on when exiting the boundary.

The on-screen map gives an operator a visual reference for when sections are turned on and off.

Swath Control will only function on vehicles and implements with compatible software:

- SprayStar version 5.11 or higher
- 5430 Sprayer(European only)
- All versions of GS Rate Controller
- All versions of SeedStar 2: Planters, Air Carts, and 1990CCS.

NOTE: A 15 hour (actual use time) demo code is available on every new display. The 15 hours count down when Swath Control is activated, and the master switch is on. When the demo period is over, Swath Control will be unavailable until an activation code is purchased through a John Deere Dealer, and entered into the display.

BA31779,000017A -19-29APR11-1/1

John Deere Documentation Basics

John Deere Documentation Basic is capable of recording field totals. Totals can either be provided by ISOBUS implements or will be calculated by the display system.

These field totals can then be exported as TASKData.XML, .CSV and PDF files to USB drive.

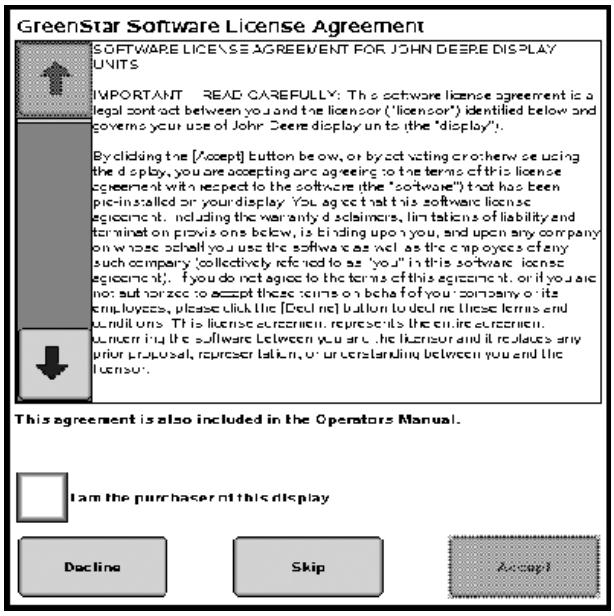
NOTE: Rate maps and yield maps are not recorded and cannot be exported.

BA31779,0000162 -19-02MAY11-1/1

License Agreement

The first time you access the GreenStar tab on the display menu a license agreement will appear. If you are the purchaser of the display, read the agreement fully, check the box next to “I am the purchaser of this display”, and Accept agreement if you agree to the terms.

The License Agreement can be obtained from you local John Deere dealer or can be viewed at www.StellarSupport.com.



License Agreement

OUO6050,0001097 -19-12MAY09-1/1

Activating GreenStar Pro Modules

IMPORTANT: The date and time must be set correctly on your display before entering Activation Codes.

Software activations are required to operate the optional Pro Modules

- AutoTrac
- PivotPro
- Swath Control

Activations can be purchased from your local John Deere Dealer. The display software Activation Codes are separate from the StarFire 24 digit GPS activation numbers. The following items are REQUIRED to activate a Pro Module:

- 6 digit COMAR order number (obtained from your dealer)
- Display Serial Number (found in display)
- Display Challenge Code (found in display)

Once you have obtained the 6 digit COMAR order number from your dealer for the GreenStar Pro Module you have purchased, visit StellarSupport.com to obtain a 26 digit Activation Code. Follow these steps:

1. Select MENU > GreenStar > Settings > Activations
2. Find the Serial Number and Challenge Code on your display.
3. Go to StellarSupport.com and select 'GreenStar Pro Module' under Activations and Subscriptions. You may need to register for an account.
4. Select your display model and enter your Serial Number and Challenge Code.

PC10857JC —UN—13APR09

Menu Button

PC10857JN —UN—13APR09

GreenStar Button

PC10857JF —UN—13APR09

Settings Button

PC10857JG —UN—13APR09

Activation Button

5. Follow the prompts to obtain the 26 digit code.
6. Enter the 26 digit code in your display (Menu > GreenStar > Settings > Activations > Enter Code).
7. You will now see Activated in the Activations page area.
8. This completes the Display Software Activation Process. Keep in mind, the activations you have purchased may be transferred from other GreenStar displays to this display.

BA31779,000017B -19-29APR11-1/1

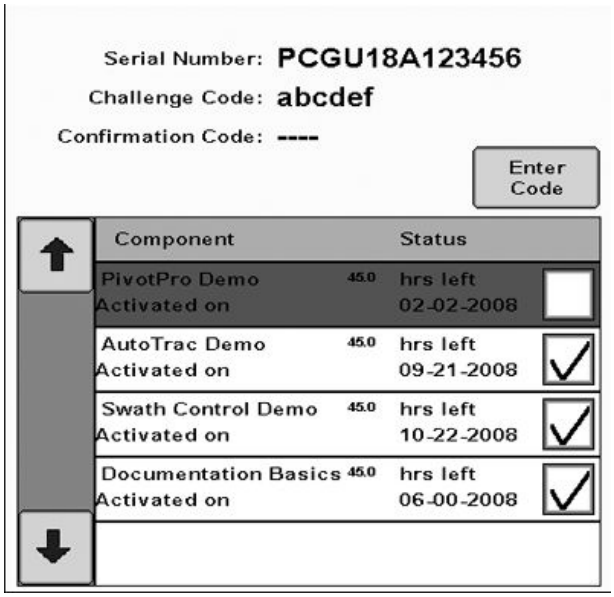
Managing Activations

The buttons and functions corresponding to each GreenStar Pro Module activation may be shown or hidden by checking the ON / OFF checkbox for each activation. The box must be checked to use the corresponding Pro Module. By turning OFF activations that are not being used, the corresponding buttons and functions will be hidden, making the display simpler to navigate.

Demo Activations are available to try out each Pro Module for 15 hours of use. The AutoTrac Demo is turned on by default. To try another Demo, such as Swath Control, turn it on and the Swath Control buttons and functions will show up on the display if an implement controller capable of that Pro Module is connected.

Go to GreenStar Main >> Settings >> Activations

IMPORTANT: Turning a Demo Activation OFF will not stop the activation time from counting down if the corresponding function has been setup and started. It will simply hide the corresponding buttons.



PC13234 —UN—31MAR11

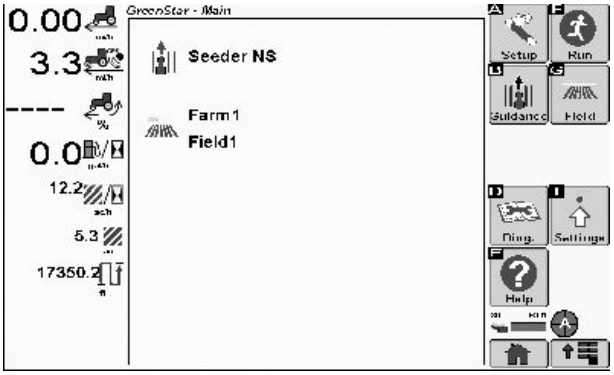
BA31779,000017C -19-29APR11-1/1

GreenStar Main

GreenStar Main Page

The GreenStar Main Page is the center for access to GreenStar functions and lists the currently selected Client, Farm, Field, and Guidance Track.

NOTE: Some buttons and softkeys only appear when the hardware or functions associated with those buttons are connected or available, respectively.



PC10857WZ —UN—15JUN10

GreenStar Main Page

CZ76372,00002BF -19-31MAR11-1/11

Setup Wizard – Must complete prior to operation. Complete each step for optimal system performance.

PC10857JH —UN—13APR09

Setup Wizard

CZ76372,00002BF -19-31MAR11-2/11

Run - Return to Run Page if your system is already setup.

PC10857JI —UN—13APR09

Run

CZ76372,00002BF -19-31MAR11-3/11

Guidance Quick Change - Change Tracking Mode or Edit Track

PC10857JJ —UN—13APR09

Guidance Quick Change

CZ76372,00002BF -19-31MAR11-4/11

Field Quick Change - Change Field or Create a boundary

PC10857JK —UN—13APR09

Field Quick Change

CZ76372,00002BF -19-31MAR11-5/11

Spacing Quick Change - Change Implement Width and Tracking Spacing

PC13230 —UN—31MAR11

Spacing Quick Change

Continued on next page

CZ76372,00002BF -19-31MAR11-6/11

Documentation Quick Change - Change Task and Operation settings

PC13231 —UN—31MAR11

Documentation Quick Change

CZ76372,00002BF -19-31MAR11-7/11

GreenStar Diagnostics

PC10857JL —UN—13APR09

GreenStar Diagnostics

CZ76372,00002BF -19-31MAR11-8/11

GreenStar Settings

PC10857JF —UN—13APR09

Settings Button

CZ76372,00002BF -19-31MAR11-9/11

Help - Show help text in the Left Region

PC10857JM —UN—13APR09

Help

CZ76372,00002BF -19-31MAR11-10/11

You can return to GreenStar Main from most pages in the GreenStar application by selecting the GreenStar button.

PC10857JN —UN—13APR09

GreenStar Button

CZ76372,00002BF -19-31MAR11-11/11

Setup Wizard

The Setup Wizard walks you through setup of your GreenStar system.

There are two Setup Modes contained in the Setup Wizard:

- **Basic Mode** is a quick setup for straight track guidance and sets all other setup data to defaults.
- **Standard Mode** takes the user through all setup necessary for using field names, curve track guidance, Swath Control Pro, and documentation.

IMPORTANT: Basic Mode is NOT RECOMMENDED for use with curve track guidance or Swath Control Pro due to mapping inaccuracies that may occur without proper equipment offsets setup.

The Setup Wizard does not allow you to advance without filling out required entries so it is important to enter correct information in all entry boxes.

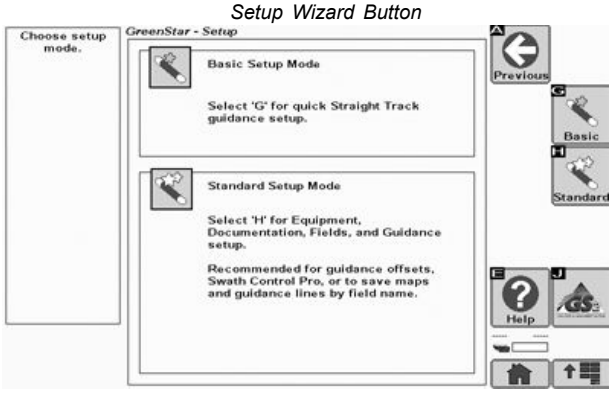
Proper setup is important whether you are running AutoTrac, Swath Control, or just Coverage mapping. Machine and implement dimensions impact the accuracy of the maps recorded and how well the machine follows a guidance track. Naming fields allows storage of coverage maps and guidance lines by field.

You can use GreenStar Apex desktop software to assist in setting up your management data. Setup information such as Client, Farm, Field, and Implement names can be created in Apex and transferred to your display. Machine and Implement dimensions may be downloaded from a database provided by John Deere using Apex.

IMPORTANT: If changes are made while machine key switch is in auxiliary mode, turn the key off and wait for display to completely shut down before starting the ignition. This allows display to shut down and save the setup data to permanent memory. Changes to entries in the Setup Wizard are saved to temporary memory when the Next, Previous, or GreenStar Main softkeys are pressed.

PC10857JH —UN—13APR09

Setup Wizard Button



PC13199 —UN—25MAR11

Setup Wizard Screen

NOTE: Machine and Implement dimensions that are downloaded from the John Deere database may need to be modified for the unique variances of your equipment.

A GPS receiver is required to run GreenStar applications.

Up to 250 names may be entered for most setup items, such as Clients, Farms, Fields, and Guidance lines.

BA31779,000017D -19-03MAY11-1/1

Basic Setup Mode

The Basic Setup Wizard only walks through the bare necessities needed to run straight track guidance. All other setup is set to default values. Any guidance lines or coverage maps will be saved as Global guidance lines and maps. Global guidance lines and maps are only available when NO field name is selected. When using this mode the user will need to clear the coverage map more often.

If any settings were previously set using the Standard Setup Mode, those settings will be reset to defaults upon entering Basic Setup Mode. Those settings may be re-selected again using the Standard Mode or the quick change buttons on the Main Page.

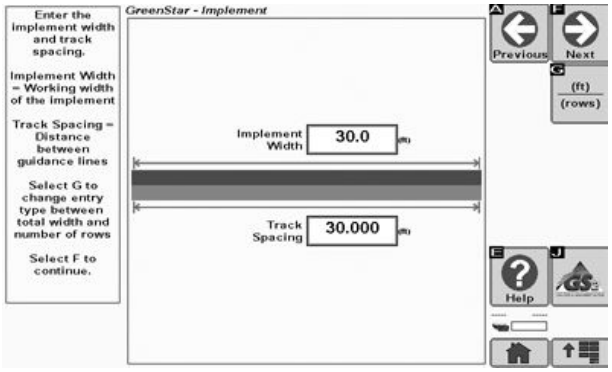
1. Select the Basic Wizard button.

PC13195 —UN—24MAR11

Continued on next page

CZ76372,00002A8 -19-03MAY11-1/6

2. Enter the desired Track Spacing to define the desired overlap or skip between passes.



PC13196 —UN—24MAR11

CZ76372,00002A8 -19-03MAY11-2/6

3. Select Next button.

PC10857JP —UN—13APR09

Next

CZ76372,00002A8 -19-03MAY11-3/6

4. Select a Recording Source to turn Coverage recording ON and OFF.

PC13197 —UN—24MAR11

CZ76372,00002A8 -19-03MAY11-4/6

5. Select Next button.

PC10857JP —UN—13APR09

Next

Continued on next page

CZ76372,00002A8 -19-03MAY11-5/6

6. Set the tracking mode to Straight Track and enter a track name. Once the name is created, set the tracking line. For more information on setting up guidance lines, see the Guidance Track Setup section. When the guidance line is set, the display is ready to go.

PC13198 —UN—24MAR11

CZ76372,00002A8 -19-03MAY11-6/6

Standard Setup Mode

The Standard Setup Wizard steps through the different sections of the display that need to be completed for Guidance, Documentation, and Swath Control to operate with full functionality.

Once all the information is complete on a page, press the Next button to continue to the next section.

PC13200 —UN—25MAR11

Standard Setup

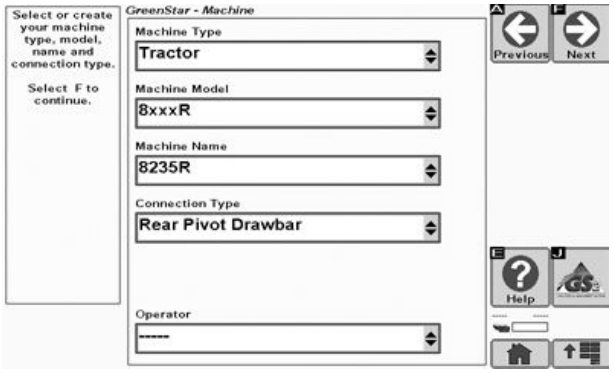
BA31779,000017E -19-29APR11-1/1

Machine

1. Select the **Machine Type** (e.g. tractor, combine, or sprayer). This list box is grayed out when the display automatically recognizes the machine.
2. Select or create the **Machine Model** number being used. The drop down list is pre-populated with some John Deere vehicles.
3. Select or create your **Machine Name**. The name is used to further clarify which machine is being used. For instance, if there are two 8430's in your operation, the machine names may be simply "1" and "2".

NOTE: Settings pertaining to the Machine, offset measurements are stored to the Machine Name.

Some list boxes may be grayed out when the machine is automatically recognized.



PC13201 —UN—25MAR11

Machine Setup Page

Continued on next page

BA31779,000017F -19-03MAY11-1/7

PC10857JS —UN—13APR09

Rear Rigid 3-pt

PC10857JT —UN—13APR09

Rear Pivot 2-pt

PC10857JU —UN—13APR09

Rear Pivot Drawbar

PC10857JV —UN—13APR09

Rear Pivot Wagon-Hitch

PC10857JW —UN—13APR09

Front Rigid 3-pt

4. Select a Connection Type. The following options are available (examples are shown):
   - Rear Rigid 3-pt
   - Rear Pivot 2-pt
   - Rear Pivot Drawbar
   - Rear Pivot Wagon-Hitch
   - Front Rigid 3-pt (e.g. combine header or front mounted mower conditioner)

BA31779,000017F -19-03MAY11-2/7

5. Select Next button.

PC10857JP —UN—13APR09

Next

BA31779,000017F -19-03MAY11-3/7

6. Select the **Non-steering Axle Toggle** to change the non-steering axle per your machine as indicated by the diagram. The following is a list of some Non-Steering Axle Locations:
   - Row Crop Tractor (Wheel) Rear Axle
   - Track Tractor Rear Axle
     (The point is actually located somewhere in front of the rear axle. Best way to locate point is by making a turn at field operating speeds with normal draft load and ballast applied. Measurement point is where soil begins to build on the outside track.)

PC10857JX —UN—13APR09

Non-steering Axle Toggle

   - (4wd) Four Wheel Drive Front Axle
   - Self-Propelled Sprayer Rear Axle
   - Combine and SPFH Front Axle

Continued on next page

BA31779,000017F -19-03MAY11-4/7

7. Select the **Lateral Receiver Offset Toggle** to change the GPS receiver offset direction per your receiver setup. If your lateral offset is zero, the direction will not matter.

PC10857JY —UN—13APR09

Lateral Receiver Offset Toggle

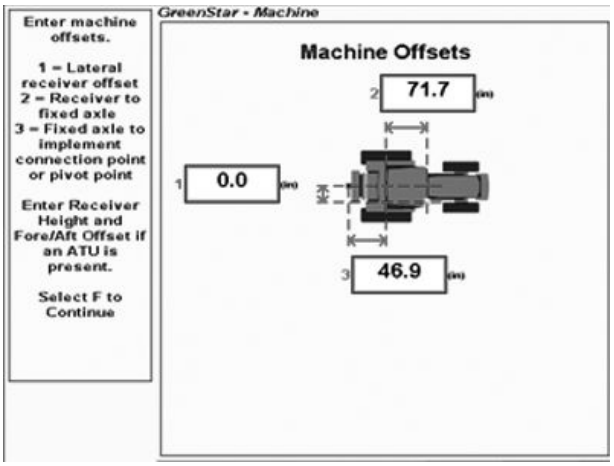
BA31779,000017F -19-03MAY11-5/7

8. Enter the Machine Offsets. These offsets are used to eliminate skips or overlaps for mapping and for curve track accuracy.
   1. Lateral distance from the center-line of the machine to the center of the GPS receiver. This distance is zero in many cases.
   2. In-line distance from the non-steering axle to the center of the GPS receiver, measured horizontally.
   3. In-line distance from the non-steering axle to the connection/pivot point.

   The connection/pivot point is where the tractor connects to the implement (drawbar, hitch) except on 2 pt pivoting implements (e.g. large planter). In this case, measure the distance back to the pivot point immediately behind the hitch.

NOTE: Use a tape measure to accurately determine machine offsets.

These offsets are saved to the Machine Name.



PC13550 —UN—03MAY11

GreenStar Machine

BA31779,000017F -19-03MAY11-6/7

9. Select Next button.

PC10857JP —UN—13APR09

Next

BA31779,000017F -19-03MAY11-7/7

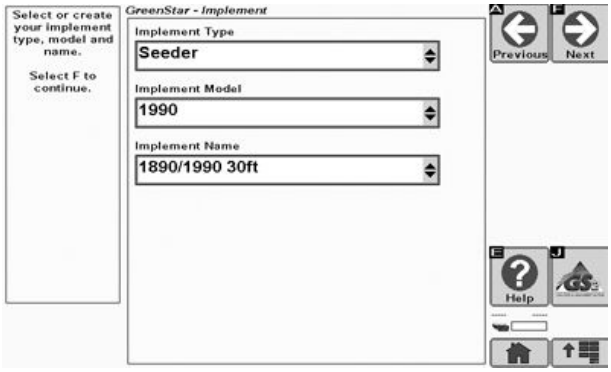
Implement

1. Select the Implement Type (e.g. Seeder, Tillage, Grain Drill). This list box is auto-populated and disabled when the display automatically recognizes the implement. Use other if you do not have an implement attached.
2. Select or create the Implement Model number being used. The drop down list is pre-populated with some John Deere vehicles.
3. Select or create your Implement Name. The name is used to further clarify which implement is being used. For instance, if there are two 1990 seeders in your operation, the implement names may be simply “1” and “2”.

NOTE: Settings pertaining to the Implement, such as offset measurements are stored to the Implement Name.

Some list boxes may be grayed out when the implement is automatically recognized.

This display only allows one implement setup at a time. If you are operating with more than one implement, such as an air cart and seeding tool, complete the setup for the implement of interest (i.e. seeding tool).



PC13202 —UN—25MAR11

GreenStar Implement

BA31779,0000192 -19-03MAY11-1/7

4. Select Next button.

PC10857JP —UN—13APR09

Next

Continued on next page

BA31779,0000192 -19-03MAY11-2/7

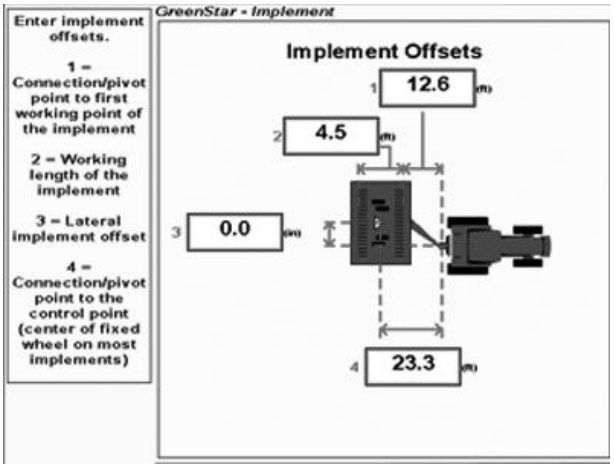
5. Select the **Lateral Implement Offset Toggle** to change the implement offset direction per the setup of your implement. If your lateral offset is zero, the direction will not matter.
6. Enter the **Implement Offsets**. These offsets define the actual implement position relative to the tractor. This is important for eliminating skips or overlaps for coverage mapping and Swath Control.
    1. In-line distance from the connection/pivot point to first working point of the implement.
    2. In-line working length of the implement.
        a. On ground engagement tools, this is the distance from the front rank of sweeps or points to the rear rank.
        b. On a standard planter or pull type sprayer, this dimension would be zero and Offset 1 would extend to the location of seed drop or the sprayer boom.

NOTE: Offset 1 + Offset 2 = The point that Swath Control uses to turn sections on/off.

    3. Lateral distance from connection/pivot point to the control point of implement. This offset will be zero for most common implements. Examples of offset implements include mower conditioners and most split row planters with an even number of 38 cm (15 in.) rows, (e.g. 24R15 or 32R15) unless you have an adjustable hitch crossbar.
    4. In-line distance from the connection/pivot point to control point of the implement. This distance is zero for 3-pt mounted implements.

    The **connection/pivot point** is where the tractor connects to the implement (drawbar, hitch) except on 2 pt pivoting implements (e.g. large planter). In this case, measure the distance back to the pivot point immediately behind the hitch.

    The **Working Point** of the implement is the point of ground engagement, sprayer boom, crop engagement, or seed drop, depending on operation.



PC13551 —UN—03MAY11

GreenStar Implement

PC10857KF —UN—13APR09

The **Control Point** of the implement is usually the center of the fixed wheels. On combine headers, it is the center of the header at the point where the crop is harvested.

NOTE: Use a tape measure to accurately determine implement offsets. These dimensions may need to be adjusted once in the field, because the dimensions may change when the implement is engaged in the ground.

These offsets are saved to the Implement Name.

BA31779,0000192 -19-03MAY11-3/7

7. Select Next button.

PC10857JP —UN—13APR09

Next

Continued on next page

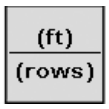
BA31779,0000192 -19-03MAY11-4/7

8. Select the entry type (Total Width or Number of Rows) for Implement Width and Track Spacing by selecting. In some cases, a higher degree of precision can be achieved when track spacing is entered in Number of Rows.

NOTE: Toggling the entry type after a value is entered may decrease the precision of the value.

9. Enter the Implement Width. This is the actual coverage area of the implement/boom and may be used to calculate total area in Performance Monitor.

PC10857KB —UN—13APR09



(ft)(rows)

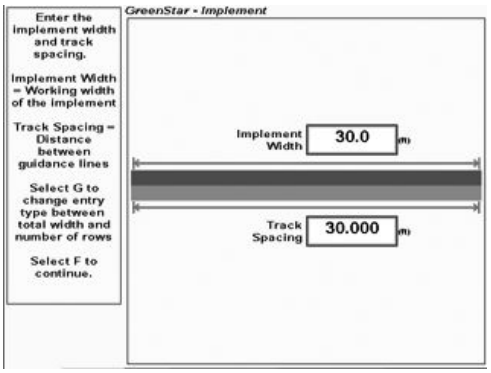
NOTE: This list box is auto-populated and disabled when the display automatically recognizes the implement controller, such as SeedStar2.

BA31779,0000192 -19-03MAY11-5/7

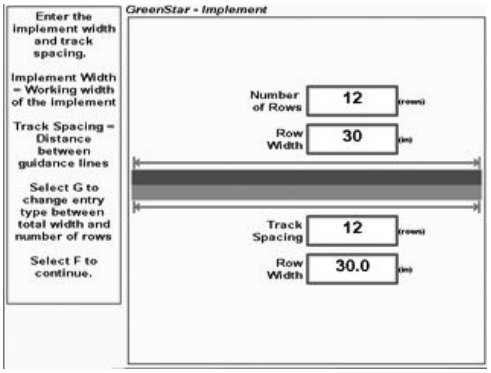
10. Enter the desired Track Spacing to be used for AutoTrac, Parallel Tracking, and Coverage mapping to define the desired overlap or skip between passes.

    For example:

    - For a total overlap of 1 foot with adjacent passes in opposite directions and a 30 foot implement, enter 29.5 feet.
    - For no overlap enter the same value as the Implement Width.



PC13552 —UN—03MAY11



PC13553 —UN—03MAY11

BA31779,0000192 -19-03MAY11-6/7

11. Select Next button.

PC10857JP —UN—13APR09

Next

BA31779,0000192 -19-03MAY11-7/7

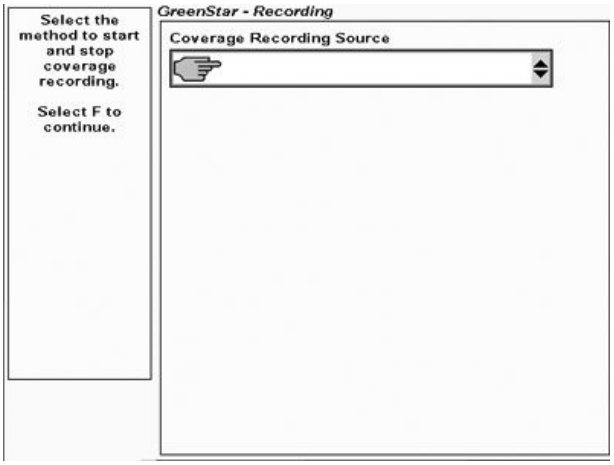
Recording Source

1. Select a Recording Source to turn Coverage recording ON and OFF. The following are the available recording source options and are dependent upon vehicle type:

   - Manual Recording
     The operator pushes Recording button on the Run page.
   - Automatic
     Recording operated by controller
   - Rear 3-point Hitch
   - SCV I – SCV VI
   - Front PTO
   - Rear PTO
   - Implement Switch Open
   - Implement Switch Closed

NOTE: Minimum ground speed to activate recording is around 1.6 km/hr (1.0 mph) and depends on the implement controller.

If your machine or implement is equipped with an automatic recording source Auto will appear in the list box and it will be disabled.



PC13554 —UN—03MAY11

Manual Recording

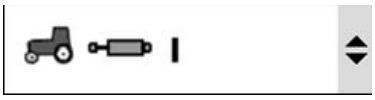
PC13203 —UN—25MAR11

Manual Recording Button

PC10857XJ —UN—16JUN10

Rear 3-point Hitch

PC13204 —UN—25MAR11



PC13205 —UN—25MAR11

Front PTO

PC13206 —UN—25MAR11

Rear PTO

PC13207 —UN—25MAR11

Implement Switch Open

PC13208 —UN—25MAR11

Implement Switch Closed

PC13209 —UN—25MAR11

Continued on next page

CZ76372,00002AC -19-03MAY11-1/2

2. Select Next button.

PC10857JP —UN—13APR09

Next

CZ76372,00002AC -19-03MAY11-2/2

Documentation Basics

NOTE: GreenStar Documentation will only be available if John Deere Documentation Basics is activated on the display. See Managing Activations section earlier in this manual.

Documentation with the GS2 1800 display can only record a single operation at a time. Multiple GreenStar Rate Controllers, multiple tanks on an air cart, or planters with fertilizer application cannot be recorded.

NOTE: Even though an Air Cart will not record because of multiple tanks, the operator can manually create an operation to record.

Manage List

Drop down lists on the Documentation screen that allow the user to create <New> entries also have the option to <Manage List>. Whenever this item is selected, a Data Cleanup screen can be used to remove items from the drop down list.

Documentation Setup

1. Select the Task for the operation being recorded.

NOTE: Task is not related to any implement type. The Task name is a free name that can be entered by the operator to define the job. The predefined names are only common job names.

2. Select either the Crop or Product Type. Once a selection is made in one of the drop downs, the other will become greyed out. Depending on your selection, choose the Variety or Product Name.

PC13210 —UN—28MAR11

NOTE: On the previous implement setup screen, if a seeding implement is selected for Implement Type, Crop will only be visible. Conversely, if a product application implement is selected, Product Type will only be visible.

3. Enter the Rate and Units for the operation.

NOTE: If connected to an ISOBUS Implement, some selections may be greyed out. Refer to the Implement interface to make any changes.

4. Lastly, enter any comments or notes for the operation.

NOTE: See section John Deere Documentation Basics for information on generating documentation reports.

CZ76372,00002AD -19-18APR11-1/2

5. Select Next button.

PC10857JP —UN—13APR09

Next Button

CZ76372,00002AD -19-18APR11-2/2

Field

Select the check box for “Select a Field”. This allows the user to enter Client, Farm, and Field Names.

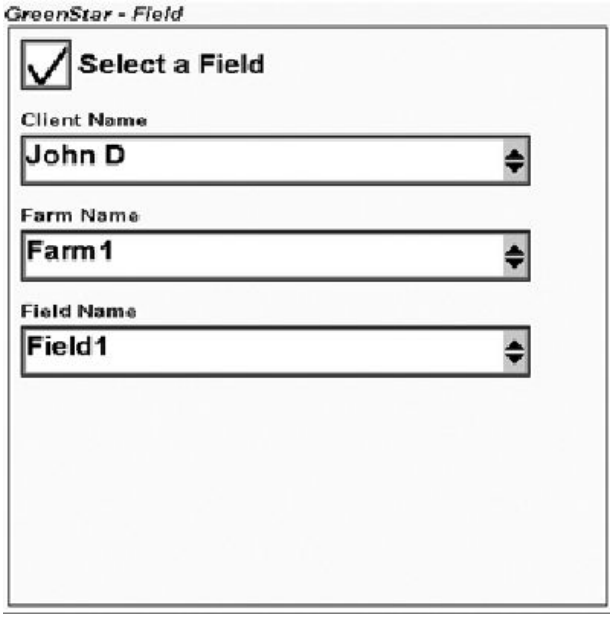
Manage List

The drop down lists on the Field screen have the option to <Manage List>. Whenever this item is selected, a Data Cleanup screen can be used to remove items from the drop down list.

Field Setup

1. Select or create Client Name. Farms and Fields are organized by Client. Clients are important for service providers, but for many operators the Client will always be the same.
2. Select or create the Farm Name.
3. Select or create the Field name. Coverage maps and guidance tracks are organized by Field.

   You may create “Global” coverage maps and guidance tracks by choosing not to select a field. Only one global coverage map may be stored at a time. Be aware that global guidance tracks can not be selected if a Field is selected.



PC13555 —UN—03MAY11

Client, Farm, and Field Name

CZ76372,00002AE -19-03MAY11-1/2

4. Select the Next button.

PC10857JP —UN—13APR09

Next Button

CZ76372,00002AE -19-03MAY11-2/2

Guidance Track Setup

Guidance Track

CAUTION: While AutoTrac is activated, operator is responsible for steering at end of path and collision avoidance. Do not attempt to turn on (Activate) AutoTrac system while transporting on a roadway.

Always turn off (Deactivate and Disable) AutoTrac system before entering a roadway. To turn off AutoTrac toggle STEER ON/OFF button until STEER OFF is displayed.

The final step of the Setup Wizard is creating, editing, or selecting a Guidance Track.

PC10857RR —UN—08OCT09

GreenStar Guidance

OUO6050,000109D -19-16JUN10-1/4

1. Select a Tracking Mode for Manual Guidance or AutoTrac. See the Operating Guidance sections for more information on Tracking Modes
   - Straight Track - Uses straight line parallel passes.
   - AB Curves - Curves uses a manually driven curved path with two end points (beginning and end) to generate parallel passes.
   - Adaptive Curves - Uses a manually driven initial pass, then guides off of previous pass
   - Circle Track (only available with Pivot Pro Activation) - Uses a center-pivot location to define concentric circles (tracks).
   - Row Finder - Used in standing row-crop applications to mark end of a pass and guide operator to next pass.

   If you do not wish to use Guidance, select Guidance OFF and select Next button.

PC10857KS —UN—14APR09

Straight Track

PC10857KT —UN—14APR09

AB Curves

PC10857KU —UN—14APR09

Adaptive Curves

PC10857KV —UN—14APR09

Circle Track

PC10857MB —UN—14APR09

Row Finder

Continued on next page

OUO6050,000109D -19-16JUN10-2/4

2. If Straight Track, AB Curves or Circle Tracking Mode was selected, select a guidance track that is stored in the memory, or name a new Guidance track to be created.

NOTE: Only the guidance tracks for the selected field appear in the list. If no field is selected, Global Tracks appear in the list or are created.

- Select the **Edit Track** checkbox if you selected a previously defined guidance track and would like to modify it.
- Select **Clear Shifts** to clear all shifts associated with the selected track.
- Select **Delete Track** to delete the selected track from memory.

PC10857KW —UN—14APR09

Clear Shifts

PC10857XK —UN—16JUN10

Delete Track

OUO6050,000109D -19-16JUN10-3/4

3. Select Next button.

See the OPERATING GUIDANCE section for the steps to create guidance tracks in each tracking mode.

PC10857JP —UN—13APR09

Next

OUO6050,000109D -19-16JUN10-4/4

Repeating Guidance Track Setup

To go back to the Guidance Track Setup page after the Setup Wizard is complete and modify or create a new guidance line, select the GUIDANCE QUICK CHANGE button on the RUN page or GreenStar MAIN page.

PC10857JN —UN—13APR09

GreenStar Main Page

PC10857JJ —UN—13APR09

Guidance Quick Change

OUO6050,000120B -19-24SEP09-1/1

GreenStar Run Page

Use the Run page to operate Guidance and Mapping after the Setup Wizard is complete. Access the Run page by selecting RUN on the GreenStar MAIN page.

Off Track Error (A) — Off Track error is numerically displayed in the box. Off Track error will be displayed in cm (inches) up to 99 cm (35 in.). If Off Track error exceeds 99 cm (35 in.), the distance displayed will change to meters (feet).

Track number (B) — Represents the track number the vehicle is guiding on. It also shows the direction that the track is located from the original Track 0 for the field.

Guidance Icon (C) — The icon represents the machine and implement in relative dimensions. The triangle on the machine represents the control point, which as used for guiding the machine and is defined by the machine offset measurements.

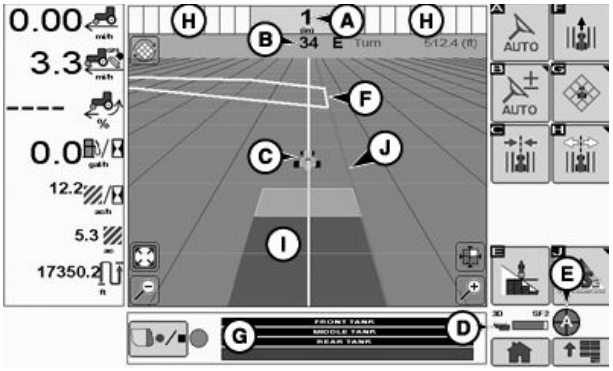
GPS Indicator (D) — Indicates what level of accuracy the StarFire receiver is currently operating at (3D, SF2, SF1, RTK). If using a GPS receiver other than a StarFire, the text 3D GPS will be displayed but the indicator bar will not fill.

AutoTrac Status Pie (E) — (See AutoTrac section)

Interior Boundary (F)

Swath Control Section Status Bar (G)

Path Accuracy Indicator (H) — Is a visual indicator of off-track error. The indicator consists of eight boxes on each side of the off-track error box. The boxes will light up indicating the direction the vehicle must be steered to get back on the AB line. Each arrow represents a distance (default is 10 cm (4 in.)). This distance and the steering direction may be defined on the Lightbar Settings Page.



PC10857QZ —UN—08OCT09

GreenStar Run Page

PC10857JI —UN—13APR09

RUN

A—Off Track Error
B—Track number
C—Guidance Icon
D—GPS Indicator
E—AutoTrac Status Pie
F—Interior Boundary
G—Swath Control Section Status Bar
H—Path Accuracy Indicator
I— Coverage
J— Exterior Boundary

Coverage (I)

Exterior Boundary (J)

NOTE: Some softkeys only appear when the hardware or functions associated with those buttons are connected or available, such as the AutoTrac controls.

OUO6050,000109E -19-16JUN10-1/21

AutoTrac Steer ON/OFF – Enables and disables AutoTrac

PC10857LA —UN—14APR09

AutoTrac Steer ON/OFF

OUO6050,000109E -19-16JUN10-2/21

Increase AutoTrac Steering Sensitivity

The Steering Sensitivity value may also be entered on the AutoTrac settings page.

PC10857LB —UN—14APR09

Increase AutoTrac Steering Sensitivity

Continued on next page

OUO6050,000109E -19-16JUN10-3/21

Decrease AutoTrac Steering Sensitivity

PC10857LC —UN—14APR09

Decrease AutoTrac Steering Sensitivity

OUO6050,000109E -19-16JUN10-4/21

Recording ON/OFF – Turns coverage recording ON and OFF when Manual recording source is selected.

PC10857XJ —UN—16JUN10

Recording ON/OFF

OUO6050,000109E -19-16JUN10-5/21

Guidance Quick Change – Quickly go to the Guidance Setup page to create or modify a Guidance Track.

PC10857JJ —UN—13APR09

Guidance Quick Change

OUO6050,000109E -19-16JUN10-6/21

ShiftTrack – Go to the following Shift Track Controls. Shift Track is used to adjust position of machine left, center, or right of the set track. Shift track can be used to compensate for GPS drift. Drift is inherent to any satellite based, differentially corrected GPS system.

PC10857NC —UN—24SEP09

ShiftTrack

OUO6050,000109E -19-16JUN10-7/21

Shift Track Left—Shifting the track left will shift all guidance tracks left.

PC10857LE —UN—14APR09

Shift Track Left

OUO6050,000109E -19-16JUN10-8/21

Shift Track Right—Shifting the track right will shift all guidance tracks right.

PC10857LF —UN—14APR09

Shift Track Right

OUO6050,000109E -19-16JUN10-9/21

Shift Track Center

PC10857LG —UN—14APR09

Shift Track Center

Continued on next page

OUO6050,000109E -19-16JUN10-10/21

Clear Shifts

PC10857LH —UN—14APR09

Clear Shifts

OUO6050,000109E -19-16JUN10-11/21

Back to Run Page Softkeys

PC10857LI —UN—14APR09

Back button

OUO6050,000109E -19-16JUN10-12/21

Map Controls – Go to the following Map Controls

PC10857LJ —UN—14APR09

Map Controls

OUO6050,000109E -19-16JUN10-13/21

Toggle Mapping Mode

PC10857LK —UN—14APR09

Toggle Mapping Mode

OUO6050,000109E -19-16JUN10-14/21

Pan Map in the direction of the arrow.

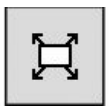
PC10857LM —UN—14APR09

Pan Map Up

OUO6050,000109E -19-16JUN10-15/21

Toggle Map Size – Selecting this button increases the map to full screen, hiding the softkeys. Select the button again to decrease the maps size and show the softkeys.

PC10857LQ —UN—14APR09



Toggle Map Size

Continued on next page

OUO6050,000109E -19-16JUN10-16/21

Zoom Out

PC10857LR —UN—14APR09

Zoom Out

OUO6050,000109E -19-16JUN10-17/21

Zoom In

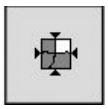
PC10857RA —UN—24SEP09

Zoom In

OUO6050,000109E -19-16JUN10-18/21

Center Map – Centers the map on the vehicle.

PC10857LT —UN—14APR09

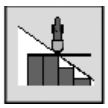


Center Map

OUO6050,000109E -19-16JUN10-19/21

Swath Control ON/OFF Toggle

PC10857LU —UN—14APR09



Swath Control ON/OFF Toggle

OUO6050,000109E -19-16JUN10-20/21

GreenStar – Go to GreenStar Main Page

PC10857JN —UN—13APR09

GreenStar Main Page

OUO6050,000109E -19-16JUN10-21/21

General GreenStar System Operations

PC10857LK —UN—14APR09

Mapping Views

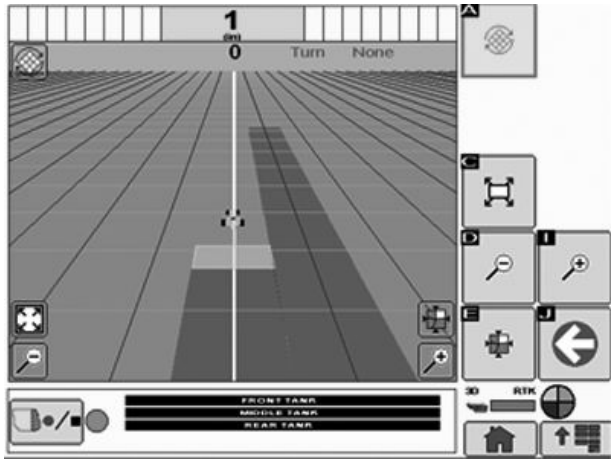
Mapping Views

The Run Page may be toggled between three views by selecting the Toggle

Mapping Mode button on the map or softkey.

CZ76372,00002C4 -19-03MAY11-1/5

Perspective View



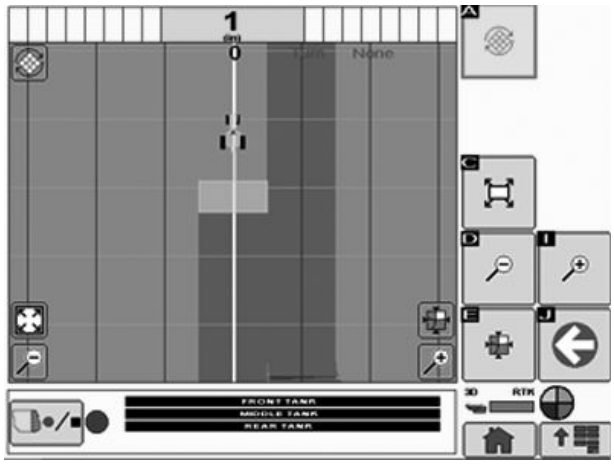
PC13556 —UN—03MAY11

Perspective View

CZ76372,00002C4 -19-03MAY11-2/5

Moving Overhead View

The map is centered on the vehicle and the direction of vehicle travel is always toward the top of the map. The Pan buttons are disabled.



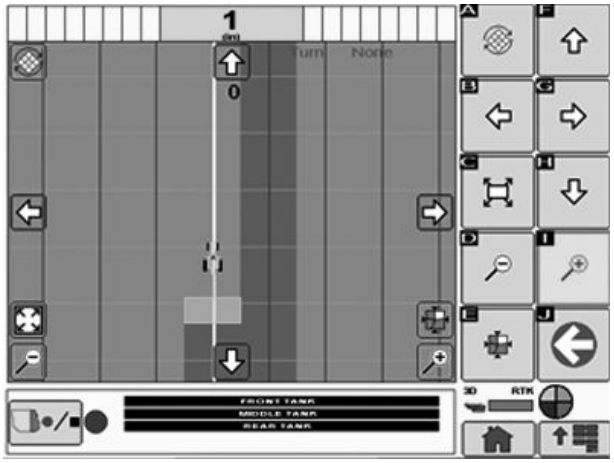
PC13557 —UN—03MAY11

Continued on next page

CZ76372,00002C4 -19-03MAY11-3/5

Fixed Overhead View

The map does not move and North is always at the top of the map. Use the Pan buttons to view other areas of the field.



PC13558 —UN—03MAY11

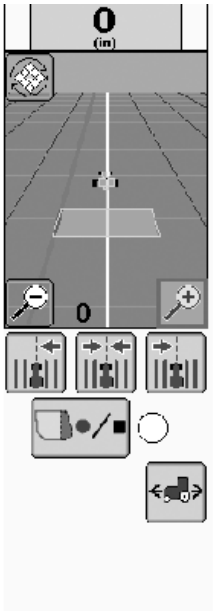
Fixed Overhead View

CZ76372,00002C4 -19-03MAY11-4/5

Left Hand Region View

The left hand region allows the operator to view the mapping view while viewing other applications on the Home Page such as SeedStar2. When the mapping view is displayed as a Home Page, it will not appear in the left hand region. The buttons will not appear on the left hand region view when they are disabled. On the GS2 1800, this view is available by selecting it in the Layout Manager.

NOTE: Options for the left hand region may be different based on the type of GreenStar display and vehicle used.



PC10857NW —UN—12MAY09

Left Hand Region View

CZ76372,00002C4 -19-03MAY11-5/5

Changing Fields

When your display is setup for an operation, you can quickly change fields and guidance tracks:

1. GreenStar Main Page

PC10857JN —UN—13APR09

GreenStar Main Page Button

Continued on next page

OUO6050,00010A1 -19-14APR09-1/4

2. Quick Change Field Softkey
3. Select or create a Client, Farm, and Field.

PC10857JK —UN—13APR09

Quick Change Field Softkey

OUO6050,00010A1 -19-14APR09-2/4

4. Select Next button.
5. Select your desired Tracking Mode.
6. Select or create a Guidance Track depending on Tracking Mode.

PC10857JP —UN—13APR09

Next Button

OUO6050,00010A1 -19-14APR09-3/4

7. Select Next button.

PC10857JP —UN—13APR09

Next Button

OUO6050,00010A1 -19-14APR09-4/4

Creating a Boundary

Internal and External Boundaries are created with similar steps. The following steps outline the process for creating a boundary while driving a vehicle. Boundaries may be created during an operation (e.g. planting), but some functions are not available.

NOTE: An Internal boundary can NOT be created without first creating an External boundary for the field.

1. Select Field Quick Change from the GreenStar Main page.

PC10857JK —UN—13APR09

Field Quick Change

2. Select or create the Client, Farm, and Field for which you would like to create the boundary.

BA31779,0000190 -19-03MAY11-1/6

3. Select the Boundaries Softkey

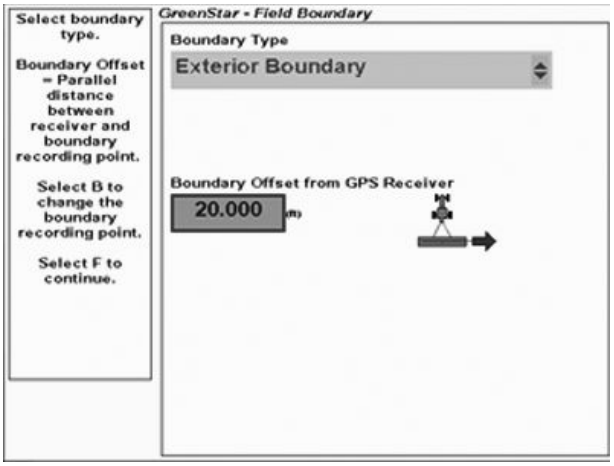
PC10857MC —UN—14APR09

Boundaries Softkey.

Continued on next page

BA31779,0000190 -19-03MAY11-2/6

4. Choose TYPE of boundary you would like to create. If you choose Interior, you must give the boundary a name. Both Exterior and Interior boundaries are associated with the field name.
5. Enter the **Boundary Offset Distance**. The distance from the center of the vehicle GPS receiver to the boundary line that will be created.



PC13559 —UN—03MAY11

GreenStar Field Boundary

BA31779,0000190 -19-03MAY11-3/6

6. Select the Boundary Offset Toggle Softkey to choose the Boundary Recording Point location:
   - Left or right of the vehicle GPS receiver
   - Left or right of the rear of a rear mounted implement or the front of a front mounted implement. This position is determined by implement offsets 1 and 2.

PC10857ME —UN—14APR09

Boundary Offset Toggle Softkey

BA31779,0000190 -19-03MAY11-4/6

7. Select Next button.

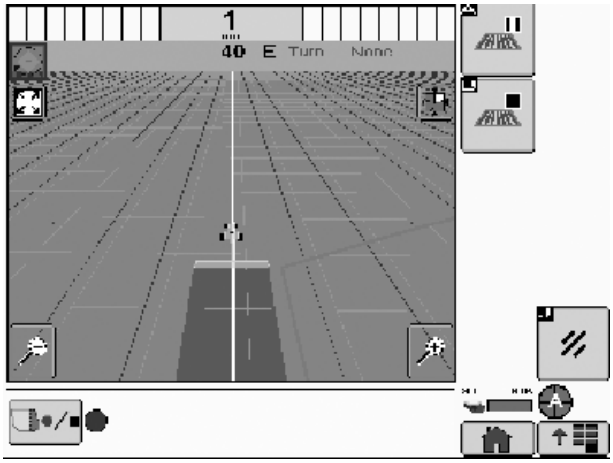
PC10857JP —UN—13APR09

Next Button

Continued on next page

BA31779,0000190 -19-03MAY11-5/6

8. Move the vehicle for at least 1 second and then select Start Boundary Recording .
   - Pause Boundary Recording is typically used to drive around an obstacle or back the implement into a field corner for a more accurate boundary. The boundary will show a straight line from where recording was paused to where it was resumed.
   - Stop Boundary Recording will stop and save the boundary.
   - Cancel Boundary Recording will cancel the boundary.
9. Stop recording just prior to the point where recording was started to complete the boundary. A straight line will be drawn between the stop point and start point.



PC13560 —UN—03MAY11

Run Page

PC10857MF —UN—14APR09

Start Boundary Recording

PC10857MH —UN—14APR09

Pause Boundary Recording

PC10857MI —UN—14APR09

Stop Boundary Recording

PC10857XQ —UN—16JUN10

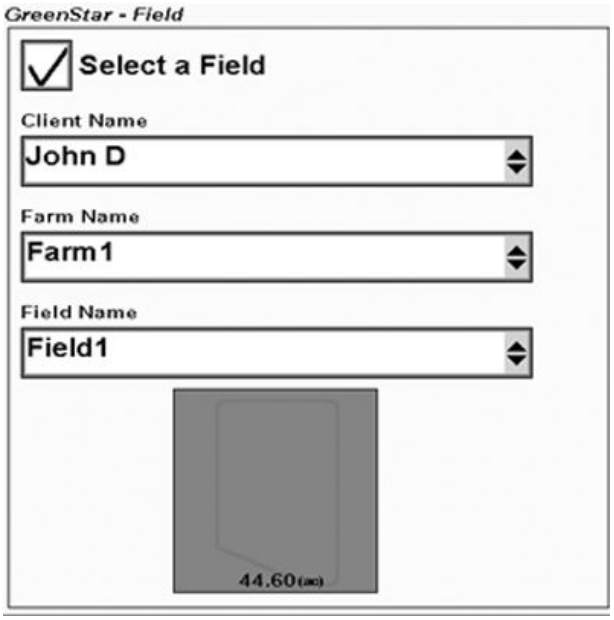
Cancel Boundary Recording

BA31779,0000190 -19-03MAY11-6/6

Calculating Area

GreenStar Main page > Field Quick Change > Select Client, Farm, and Field

This display calculates the area inside exterior boundary minus any internal boundary areas. The area value is shown on the boundary image on the Field Quick Change page after boundaries are created.



PC13561 —UN—03MAY11

PC10857JN —UN—13APR09

GreenStar Main Page Button

PC10857JK —UN—13APR09

Field Quick Change

BA31779,0000191 -19-03MAY11-1/1

Coverage Mapping

Coverage maps serve as a visual reference to the operator to ensure complete coverage of the field. One Coverage map can be saved in the internal memory for each field selected on the Field setup page. The size limit of a Coverage map is roughly 202 – 1214 hectares (500 – 3000 acres) depending on implement width, speed, and how straight the machine is driven. In some slow speed applications, the limit is reached after 30 acres.

The first Coverage point recorded for each map is the **Reference Point** for that map. If operating greater than 32 km (20 mi) away from the Reference Point, mapping may become inaccurate and erratic.

OUO6050,000120C -19-08OCT09-1/1

Recording Coverage Maps

If an **AUTO** Recording Source is being used, ALL of the following are required for Coverage Recording to function:

- Setup Wizard is complete
- GPS signal (StarFire signal required)
- Master Switch is on (if present)
- At least one section switch is ON (if present)
- Implement is in working position or solution pump is on (sprayer)

NOTE: On 50 and 60 series combines, the Header Set Point may need to be adjusted on the corner post display for the Auto Recording Source to work. On 00 and 10 series combines, the Auto Recording Source is not available.

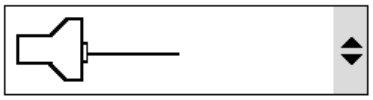
If an **Implement** ("Whisker" Switch) Recording Source is being used, ALL of the following are required for Coverage Recording to function:

- Setup Wizard is complete
- GPS signal (StarFire signal required)
- Implement is in working position

PC10857XJ —UN—16JUN10

Manual Record Button

PC10857KP —UN—13APR09



Implement "Whisker" Switch

If a **Manual** Recording Source is being used, ALL of the following are required for Coverage Recording to function:

- Setup Wizard is complete
- GPS signal (StarFire signal required)
- Manual Recording button is toggled ON

NOTE: If an AUTO or Implement Switch Recording Source is being used, the Manual Recording ON/OFF button will be disabled.

OUO6050,00010A3 -19-16JUN10-1/1

Clearing Coverage Maps

Clear (delete) Coverage maps to free up memory on the display. Coverage maps can be cleared on the Field Setup page or in Map Settings:

- GreenStar Main >> Field Quick Change >> Clear Coverage Maps
- GreenStar Main page >> Settings >> Map Settings

When clearing coverage maps, select one of the options:

- Clear All Field Maps – Deletes all Coverage data on the display.
- Clear Current Field Map – Deletes the Coverage data for the field that is selected in the Setup Wizard.
- Clear All Maps Except Current – Deletes all Coverage data on the display except for the field that is selected.

Three alarm messages also have shortcuts for clearing Coverage maps:

1. Field Coverage Map Almost Full
2. Coverage Exists for selected field

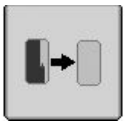
PC10857JN —UN—13APR09

GreenStar Main Page

PC10857JK —UN—13APR09

Field Quick Change

PC10857XS —UN—16JUN10



Clear Coverage Maps

3. Field Accuracy Loss due to distance from Reference Point.

OUO6050,000120D -19-16JUN10-1/1

StarFire GPS Accuracy Indicator

The StarFireTM GPS Accuracy Indicator is a bar graph next to a receiver image on the Map page and Homepages. It displays the relative quality of the current GPS signal from 0 – 100 and changes color to indicate the level of repeatable accuracy at that quality and signal type. Quality is dependant on several factorings including signal type, number of satellites, PDOP, etc. When quality equals 90-100, the accuracy should be within the specification of the signal type. The indicator only works with StarFire GPS receivers and will only display a full Green bar when any 3rd party GPS receiver is connected to the display. Read your StarFire Operator Manual for more information.

Three different colors (Red, Orange, and Green) indicate whether there is adequate repeatable accuracy for operation. Repeatable accuracy can be observed when recording next to previously recorded data on the following day.

OUO6050,0001284 -19-08JUN10-1/1

Red Bar Graph

PC10857WQ —UN—02JUN10

Red

It is NOT recommended to run GreenStar applications that require repeatable accuracy when the bar graph is Red. The bar graph will be Red in for the following conditions:

WAAS Quality = 0 – 40

SF1 Quality = 0 – 40

SF2 Quality = 0 – 40

OUO6050,0001285 -19-08JUN10-1/1

Orange Bar Graph

PC10857WR —UN—02JUN10

Orange

When the bar graph is Orange for SF1 or SF2 signal types, the calculated GPS position will have medium-level repeatable accuracy that is adequate for operations such as AutoTrac™ for tillage or broad acre seeding and Swath Control with spraying. The bar graph will be Orange in for the following conditions:

WAAS Quality = 50 – 100

SF1 Quality = 50 – 100

SF2 Quality = 50 – 80

BA31779,0000181 -19-29APR11-1/1

Green Bar Graph

PC10857WR —UN—02JUN10

Green

When the bar graph is Green, the calculated GPS position will have high-level repeatable accuracy that is adequate for operations such as AutoTrac or Swath Control for row crop planting and strip-till operations. When running operations that require high repeatable accuracy and the color is orange or red, it is recommended to stop operating until the Quality builds up to Green or watch the implement closely and manually override GreenStar applications when necessary. The bar graph will be Orange in for the following conditions:

SF2 Quality = 90 – 100

RTK or RTK Extend Quality = 0 – 100

When RTK is working properly it will always have high-level repeatable accuracy because the base station is in a fixed location.

NOTE: Only the SF2 and RTK signal types have adequate repeatable accuracy for the bar graph to turn Green. GreenStar applications are not only dependant on good GPS signal quality at the time of operation, but also on the GPS signal quality at the time the adjacent Coverage Map, Guidance Line, or Boundary was recorded. GPS accuracy may be displayed on the Coverage map for this reason.

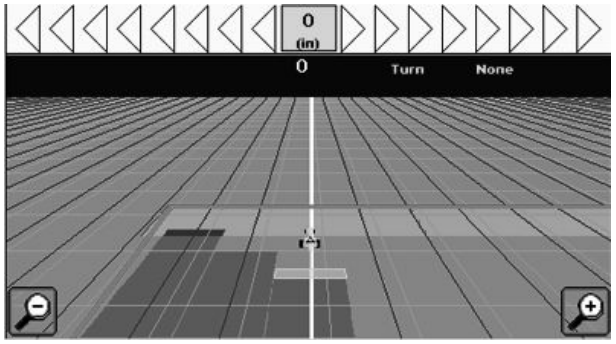
BA31779,0000182 -19-29APR11-1/1

Displaying GPS Accuracy on Coverage Map

GPS accuracy can be displayed on the ‘Coverage only’ map for the operator to know where Coverage was recorded with less than high-level repeatable accuracy. GreenStar applications are not only dependant on good GPS signal quality at the time of operation, but also on the GPS signal quality at the time the adjacent Coverage Map, Guidance Line, or Boundary was recorded.

NOTE: This feature is useful only for SF2 signal type and operations requiring high-level repeatable accuracy such as AutoTrac or Swath Control for row crop planting and strip-till operations.

Turn on the feature in Map Settings by checking the box for GPS Accuracy. The Coverage map will paint Orange whenever the StarFire GPS Accuracy Indicator is Red or Orange. Overlapping Coverage will paint dark blue regardless of GPS accuracy. View the GPS Accuracy level in the Guidance View softkey or on the Map View softkey with the Coverage map set to ‘Foreground’.



PC10857WP —UN—02JUN10

When running operations that require high repeatable accuracy and the current OR adjacent Coverage map is Orange, it is recommended to watch the implement closely and manually override GreenStar applications when necessary.

BA31779,0000183 -19-29APR11-1/1

Operating Manual Guidance

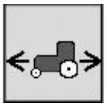
1. Complete the Setup Wizard to setup your GreenStar system for Manual Guidance and create a Guidance Track. See the GETTING STARTED section earlier in this manual.
2. Create a Guidance Track. Steps for creating guidance tracks and operating in each Tracking Mode are given later in the OPERATING GUIDANCE section.
3. See the GUIDANCE SETTINGS section of this manual to learn how to adjust your system for optimal performance.
4. ALL of the following are required for Manual Guidance to function:
   - Setup Wizard is complete
   - Tracking mode set to Straight Track, Adaptive Curve Track, AB Curve Track, Circle Track or Row Finder
   - Guidance Track 0 is setup (except Adaptive Curve Track and Row Finder)
   - GPS signal (StarFire signal required)
5. See the GREENSTAR RUN PAGE section of this manual for a description of the run page and map.
6. Drive the vehicle onto a guidance track. The closest track is highlighted with a thicker white line. Off Track error distance is shown in the path accuracy indicator. This number shows the distance from the vehicle to the closest track. Error number will count up until machine reaches point halfway between two tracks. After reaching midpoint error number will count down as machine approaches next track.

   The track number is displayed below the path accuracy indicator and is automatically updated by system as a new track is approached. Track number changes when machine is half way between two tracks.

   Use the Toggle Direction softkey to change the direction of the vehicle on the map if it is different for the direction you are traveling.

   See the GENERAL GUIDANCE section for information on Tracking Tones, Shift Track, Turning View, and Turn Predictor.

PC10857MK —UN—23APR09



Toggle Direction Softkey

OUO6050,00010A4 -19-07JUN10-1/1

Operating AutoTrac

Operate Guidance Systems Safely

Do not use AutoTrac system on roadways.

- Always turn off (Deactivate and Disable) AutoTrac system before entering a roadway.
- Do not attempt to turn on (Activate) AutoTrac system while transporting on a roadway.

The AutoTrac system is intended to aid operator in performing field operations more efficiently. Operator is always responsible for machine path. To prevent injury to operator and bystanders: Remain alert and pay attention to surrounding environment.

- Take control of steering wheel when necessary to avoid field hazards, bystanders, equipment, or other obstacles.
- Stop operation if poor visibility conditions impair your ability to operate the machine or identify people or obstacles in machine path.
- Consider field conditions, visibility, and vehicle configuration when selecting vehicle speed. For example, use duals when using AutoTrac at high speeds on tractors.

CZ76372,00001C3 -19-05OCT10-1/1

General Information

IMPORTANT: AutoTrac system relies on GPS system operated by the United States government, which is solely responsible for its accuracy and maintenance. System is subject to changes that could affect accuracy and performance of all GPS equipment.

Operator must maintain responsibility for machine and must turn at end of each track. This system will not turn at end of a track.

AutoTrac basic system is intended to be used as an assistance tool to mechanical markers. Operator must evaluate overall system accuracy to determine specific field operations where assisted steering may be used. This evaluation is necessary because accuracy required for various field operations may differ depending on farming operation. Because AutoTrac uses STARFIRE differential correction network along with Global Positioning System (GPS), slight shifts in position may occur over time.

OUO6050,00010A6 -19-12APR09-1/1

AutoTrac Accuracy

The overall AutoTrac system accuracy is dependent upon many variables. The equation looks like:

AutoTrac System Accuracy = Signal accuracy + Vehicle Setup + Implement Setup + Field/Soil Conditions.

It is very important to remember:

- Receiver has to go through a warm-up period after starting.
- Vehicle is setup properly (ballasted according to vehicle operator manual, etc.)
- Implement is setup to run properly (wear parts such as shanks, shovels, and sweeps are in good working condition and correctly spaced).
- Understand how field/soil conditions affect system (loose soil requires more steering than firm soil, but firm soil can cause uneven draft loads).

See the AUTOTRAC SYSTEM ACCURACY section in DIAGNOSTICS section of this manual for more information.

IMPORTANT: Although AutoTrac system can be activated when SF2 (or SF1 if using AutoTrac SF1 activation) correction signal is confirmed, system accuracy may continue to increase after powering up system.

AutoTrac SF2 activation will operate on a SF1, SF2, or RTK signal.

AutoTrac SF1 activation will operate on a SF1 signal only.

OUO6050,00010A7 -19-12APR09-1/1

Enabling AutoTrac

The following criteria must be met for AutoTrac to be enabled:

- Vehicle has an AutoTrac capable steering controller (SSU)
- Valid AutoTrac Activation (26digit Activation Code)
- Setup Wizard is complete and a guidance track has been created. See the GETTING STARTED section earlier in this manual for Setup Wizard information and see the sections on each Guidance Mode for information on creating guidance tracks.
- Correct StarFire signal level for AutoTrac Activation is selected (SF1, SF2, or RTK) and a valid GPS signal is acquired.
- TCM turned on and TCM message is valid

PC10857LA —UN—14APR09

Steer On/Off Softkey

- SSU has no active faults pertaining to the steering function.
- Hydraulic oil warmer than minimum temperature
- Tractors - above 20°C (68°F)
- Forward vehicle speed is less than 30 km/h (18.6 mph)
- Reverse speed is less than 10 km/h (6 mph)

To Enable AutoTrac, select the Steer On/Off softkey located on the Run Page. This softkey will disable AutoTrac if selected again.

OUO6050,00010A8 -19-28APR09-1/1

Activating AutoTrac

CAUTION: While AutoTrac is activated, operator is responsible for steering at end of path and collision avoidance.

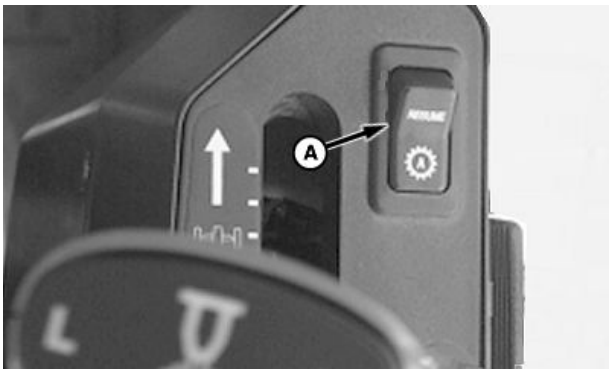
Do not attempt to turn on (Activate) AutoTrac system while transporting on a roadway.

1. ENABLE AutoTrac
2. Drive the vehicle onto a guidance track and a highlighted white navigation line will appear in front of the vehicle.
3. Manually ACTIVATE AutoTrac when steering assistance is desired by pressing the Resume Switch. This will initiate assisted steering.

NOTE: On TRACTORS, activating AutoTrac will activate automatic power shift if it has been set. In 8020T and 9020T tractors, automatic power shift (APS) must be set up after enabling AutoTrac. If AutoTrac is enabled after automatic power shift has been set, APS must be reset. APS can be set either before or after enabling AutoTrac in 8010T tractors.

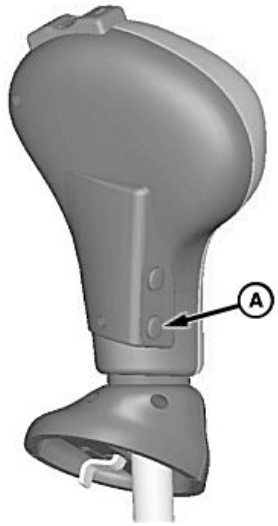
OUO6050,00010A9 -19-12APR09-1/1

Resume Switch



N63532 —UN—07AUG03

Sprayer

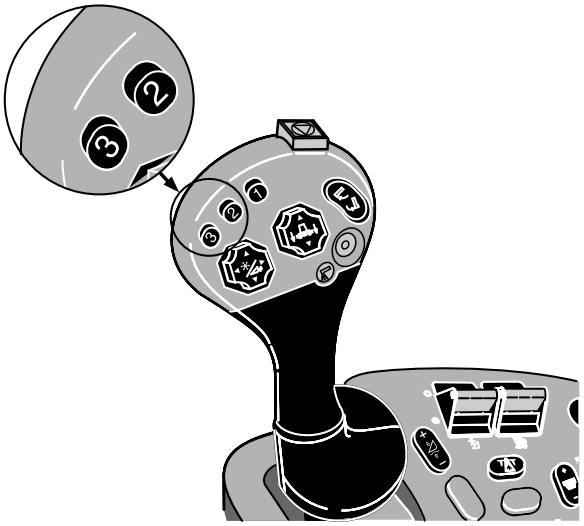


PC7989 —UN—04NOV03

Sprayer

PC8629 —UN—03AUG05

Tractor



PC7925 —UN—14OCT03

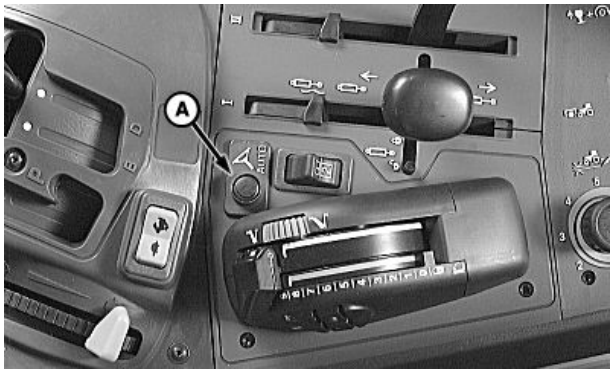
Combine

The Resume Switch (A) location may vary depending on vehicle type, model, and year. The pictures show where Resume Switch can be found on tractors, sprayers, and combines. Combines use button 2 or 3 on multifunction handle.

Resume Switch

Press the Resume Switch to move AutoTrac from the ENABLED stage to the ACTIVATED stage. Pictures show where Resume Switch can be found on tractors, sprayers, and combines. Combines use button 2 or 3 on multifunction handle.

A—Resume Switch



PC8868 —UN—02NOV05

Tractor

RN38933,000013A -19-20SEP11-1/1

AutoTrac Status Pie

The AutoTrac Status Pie is shown at the bottom of the Run Page as a quick diagnostic indicator.

INSTALLED (1/4 of pie)—AutoTrac SSU and all other necessary hardware are installed.

PC8832 —UN—25OCT05

Installed

OUO6050,00010AB -19-12APR09-1/4

CONFIGURED (2/4 of pie)—Valid AutoTrac Activation, Tracking Mode has been determined and a valid Track 0 has been established. Correct StarFire signal level for AutoTrac Activation is selected (SF1, SF2, or RTK). Vehicle conditions met.

PC8833 —UN—25OCT05

Configured

OUO6050,00010AB -19-12APR09-2/4

ENABLED (3/4 of pie)—Steer On/Off softkey has been selected.

PC8834 —UN—25OCT05

Enabled

OUO6050,00010AB -19-12APR09-3/4

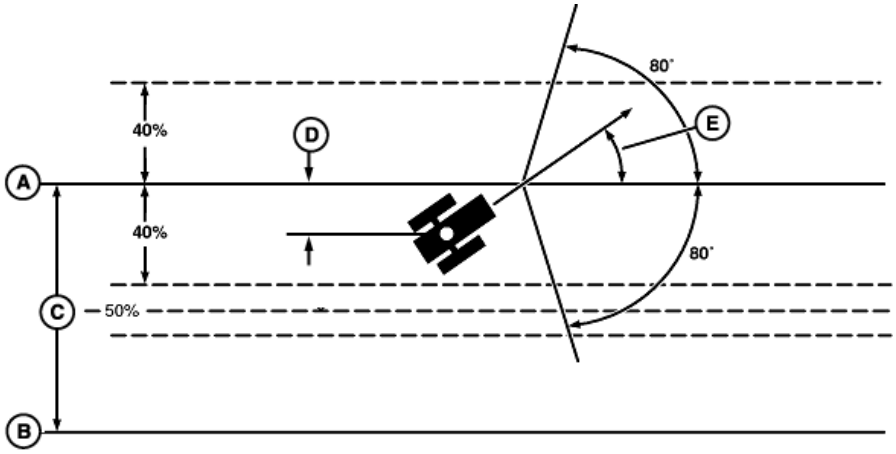
ACTIVATED (4/4 of pie with “A”)—Resume switch is pressed and AutoTrac is steering the vehicle.

PC8835 —UN—25OCT05

Activated

OUO6050,00010AB -19-12APR09-4/4

Reactivating AutoTrac on Next Pass



PC8866 —UN—02NOV05

Tracking

A—Track 0
B—Track 1 South
C—Track Spacing
D—Off-Track Lateral Error
E—Track Heading Error

Once the end of the row is reached, the operator must turn system to next pass. By turning steering wheel, AutoTrac is deactivated.

AutoTrac can be activated again by pressing Resume Switch only after following conditions are met:

- Forward vehicle speed is less than 30 km/h (18.6 mph)
- Reverse speed is less than 10 km/h (6 mph).
- In reverse AutoTrac will remain activated for 45 seconds. After 45 seconds the machine must be put in a forward gear before reverse will activate again.
- Vehicle heading is within 80° of desired track.
- The machine is within 40% of track spacing
- Operator is seated.
- TCM is on.

NOTE: The Track Number that is displayed at the top of the RUN PAGE changes at half the distance between two guidance tracks.

OUO6050,00010AC -19-12APR09-1/1

Deactivating AutoTrac

CAUTION: Always turn off (Deactivate and Disable) AutoTrac system before entering a roadway.

To turn off AutoTrac, toggle STEER ON/OFF softkey on the RUN PAGE.

AutoTrac system can be made DEACTIVE by the following methods:

- Turning steering wheel.
- Exceeding speed of 30 km/h (18.6 mph).
- Degradation of differential correction signal from SF2 or RTK to WAAS/ EGNOS for longer than 3 minutes.

PC10857LA —UN—14APR09

Steer On/Off Softkey

- Selecting the STEER ON/OFF button.
- Operator out of seat for more than 7 seconds.
- Activated in neutral longer than 30 seconds.
- In reverse for longer than 45 seconds.
- Reverse speed exceeds 9.6 km/h (6 mph).

OUO6050,00010AD -19-23APR09-1/1

AutoTrac Deactivation Message

AutoTrac deactivation message–Each time AutoTrac is deactivated text is displayed indicating the reason why AutoTrac deactivated. Messages are also displayed as to why AutoTrac did not activate. The deactivation messages display for 3 seconds and then disappear.

AutoTrac Deactivation Message	
Deactivation Message	Description
Steering wheel moved	Operator turned steering wheel
Speed too slow	Vehicle speed is below minimum required speed
Speed too fast	Vehicle speed is above maximum allowed speed
Invalid gear	Vehicle operating in an invalid gear
Track number changed	Track number changed
Invalid GPS signal	SF1, SF2, or RTK signal was lost
SSU fault	See John Deere dealer
Invalid display messages	Check display settings
Invalid display settings	Check guidance settings and Track 0 setup
No AutoTrac Activation	No AutoTrac Activation on GS2
Heading error too large	Vehicle is at an angle greater than 45 degrees from track
Offtrack error too large	Vehicle not within 40% of track spacing
Out of seat	Out of seat too long
Oil temp too cold	Hydraulic oil not above minimum required temperature
No TCM corrections	Make sure TCM is turned on
Invalid SSU activation	Need SSU activation code. See John Deere dealer.
SSU in diagnostic mode	Fuse is in diagnostic slot in vehicle fuse box. remove fuse.
Header off	Header was turned off
Road mode	In transport gear
Invalid SSU voltage	See John Deere dealer
Reverse timeout	In reverse gear for more than 45 seconds
Vehicle too slow	AutoTrac below minimum speed
Curve too sharp	Maximum curvature has been exceeded
Vehicle not moving in a forward direction	Vehicle must be in forward gear to activate
Vehicle shutting down	Vehicle is shutting down
Gear data error	See John Deere dealer
Resume switch error	See John Deere dealer
Keyswitch error	See John Deere dealer
SPFH AutoTrac switch is not on	Make sure SPFH AutoTrac switch is turned on
SPFH Quick Stop switch is on	Make sure SPFH Quick Stop switch is turned off

OUO6050,00010AE -19-12APR09-1/1

Steering Sensitivity

Steering Sensitivity adjusts the aggressiveness that AutoTrac will turn the vehicle. The higher the value, the more aggressive the turn. The vehicle's steering sensitivity may be adjusted up or down by selecting the Increase Steering Sensitivity and Decrease Steering Sensitivity softkeys on the Run Page. The current value is displayed on the softkeys.

NOTE: Valid range for steer sensitivity is 50 - 200 and the default is 70.

PC10857LB —UN—14APR09

Increase

PC10857LC —UN—14APR09

Decrease

OUO6050,00010AF -19-12APR09-1/1

Operating Guidance in Straight Track Mode

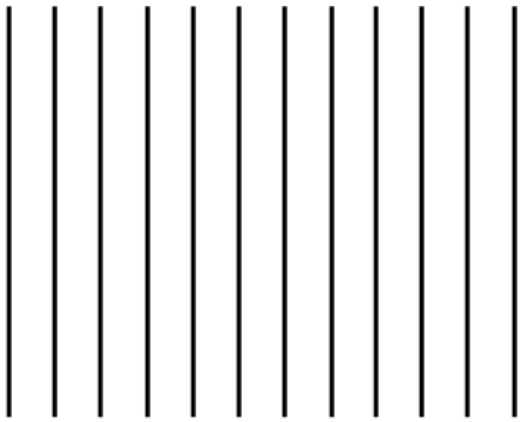
Theory of Operation

Straight Track mode assists operator in driving straight parallel paths. First setup a Track 0 (reference path) using one of several options. Once the Track 0 has been defined, all passes for the field are generated. The generated passes can be used to operate Manual Guidance or AutoTrac. Each pass is generated from the original driven pass to ensure that steering errors are not propagated through the entire field.

Passes are identical copies of the original pass.

NOTE: The terms "Guidance Track" and "AB line" are interchangeable. Track 0 is the track defined by the operator and the reference point from which all parallel passes in field are based.

The spacing between the parallel passes is the Track Spacing entered in the Setup Wizard.



PC9508 —UN—24OCT06

OUO6050,00010B0 -19-23APR09-1/1

Creating a New Straight Track

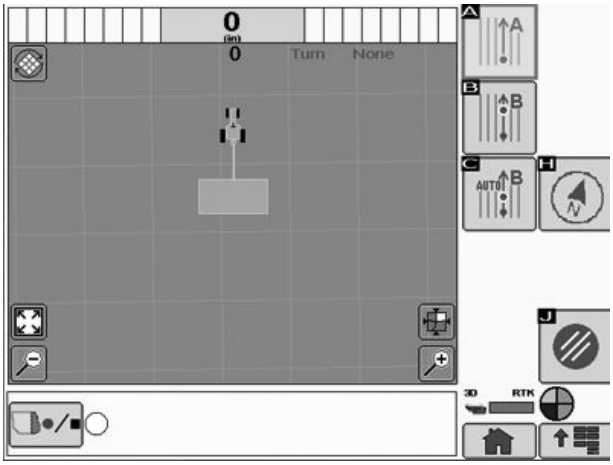
There are several methods of defining Track 0:

- A + B - Define Track 0 by driving it with the vehicle.
- A + Auto B - Define Track 0 by driving it with the vehicle.
- A + Heading - Define Track 0 by driving the vehicle to point A and entering a predefined Heading value.
- Lat/Long - Define Track 0 by entering predefined Latitude and Longitude coordinate values for the A and B points.
- Lat/Long + Heading - Define Track 0 by entering predefined Latitude and Longitude value for the A point and entering a predefined Heading value.

NOTE: Track 0 may be defined during an operation (e.g. planting), but some softkeys are not available while it is being created.

OUO6050,00010B1 -19-12APR09-1/1

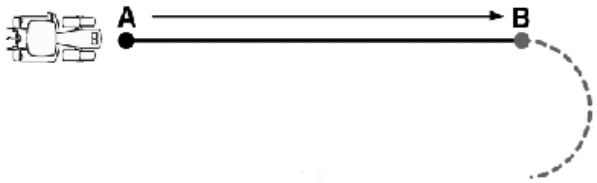
A+B, A+Auto B, and A+Heading Methods



PC10857XT —UN—16JUN10

Heading

PC10857MT —UN—23APR09



OUO6050,00010B2 -19-16JUN10-1/4

1. Choose STRAIGHT TRACK mode and select or create a Track Name on the final page in the Setup Wizard (SETUP GUIDANCE TRACK).

NOTE: This page can also be accessed with the Quick Change Guidance softkey.

GreenStar Main Page -> Guidance Quick Change

2. Drive to the desired location in the field to create the A point.

PC10857JN —UN—13APR09

GreenStar Main Page

PC10857JJ —UN—13APR09

Guidance Quick Change

OUO6050,00010B2 -19-16JUN10-2/4

3. Select the SET A softkey .

PC10857MU —UN—23APR09

Set A Softkey

Continued on next page

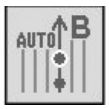
OUO6050,00010B2 -19-16JUN10-3/4

4. Define the B point using one of three options:
   - To manually set the B point, drive to the desired location in the field to create the B point and select Set B . The minimum distance is 3 m (10 feet). It is recommended to Set the B point at the far end of the field to define the desired heading.
   - To automatically set the B point, select Automatically Set B at any time. The B point will be automatically set when the vehicle drives 15 m (45 ft) away from the A point.
     This method calculates point B from the last five data points taken from the 15 m (45 ft) driven and runs a best fit line through the points to determine a heading.
   - To set the B point by entering a heading direction, select the Set Heading softkey.
     Enter the desired line heading with the numeric keypad and save the value by selecting Accept.
     0.000 indicates North, 90.000 East, 180.000 South, and 270.000 West.
     The Track 0 is now defined and the parallel tracks are created automatically. The GreenStar System is now setup for operation.

PC10857MV —UN—23APR09

Set B softkey

PC10857MW —UN—23APR09



Automatically Set B

PC10857MX —UN—23APR09

Heading softkey

To cancel setup at any time and return to the Guidance Setup page, select Cancel.

OUO6050,00010B2 -19-16JUN10-4/4

Lat/Long and Lat/Long+Heading Methods

NOTE: The Latitude and Longitude coordinates have to be entered in decimal degrees.

1. Complete the final page in the Setup Wizard (SETUP GUIDANCE TRACK).
2. Select Set A Point Lat/Long.
3. Enter the desired latitude and longitude values in decimal degrees
4. Save the values by selecting Accept.
5. Define the B point using one of two options:

   To set the B point by entering latitude and longitude coordinate values select Set B Point Lat/Long. Enter the desired latitude and longitude values and save the values by selecting Accept.

   To set the B point by entering a heading direction, select the Set Heading softkey. Enter the desired line heading with the numeric keypad and save the value by selecting Accept.

NOTE: 0.000 indicates North, 90.000 East, 180.000 South, and 270.000 West.

The Track 0 is now defined and the parallel tracks are created automatically. The GreenStar System is now setup for operation.

To cancel setup at any time and return to the Guidance Setup page, select Cancel.

OUO6050,00010B3 -19-28APR09-1/1

Guiding on a Straight Track

When operating Straight Track it is not necessary to drive tracks in a specific order. The closest track is highlighted with a thicker white line. The track number is displayed below the path accuracy indicator and is automatically updated by system as a new track is approached. Track number changes when machine is half way between two tracks.

Off Track error distance is shown in the path accuracy indicator. This number shows how far from the machine is from the closest track. Error number will count up until machine reaches point halfway between two tracks. After reaching midpoint error number will count down as machine approaches next track.

Distance to end of pass utilizing Turn Predictor is shown in the top right portion of the guidance view. Distance will count down to predicted turn and tones will sound when machine is 10 seconds from intersecting turn point and again when predicted turn point has been reached.

OUO6050,00010B4 -19-12APR09-1/1

Operating Guidance in AB Curves Mode

Theory of Operation

AB Curves Mode allows an operator to drive curved parallel passes that have end points on either end of the field. The guidance tracks will be parallel to the track in either direction and will be generated based on the original track to ensure that steering errors are not propagated through the entire field.

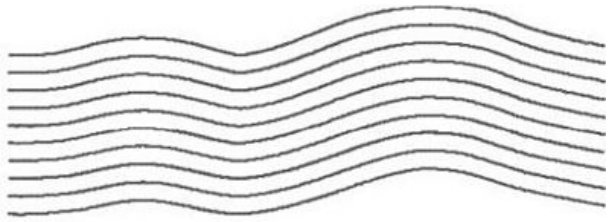
Track 0 is the reference track from which subsequent curve passes in the field are based. Once the first AB curve (Track 0) is created, 4 tracks will be generated. The system will continue to generate additional passes when the vehicle drives the last pass displayed on the screen.

NOTE: Skip pass is available in AB Curves mode.

Generating AB Curve Path Information - As the system generates the initial passes after recording Track 0 or when generating additional passes the text “Generating AB Curve” will be displayed on the perspective view. During this time you will not be able to track off of any paths.

AB Curve Generation Limits - The initially recorded AB curve must be at least 10 feet in length to be a valid AB Curve to use for guidance. The vehicle must be within 400 meters (0.25 miles) of where Track 0 was recorded for the

PC9028 —UN—16APR06



system to start generating curve paths. If the vehicle is at this outer limit it may take several minutes to generate a path that shows up on the screen. During this time “Generating AB Curve” will be displayed on the screen.

Multiple AB Curves in a field - A field can contain multiple AB Curve paths. Each AB curve for a field must be recorded and uniquely named.

Track Numbering - Tracks will be numbered to allow for skip pass and to aid in finding passes. The direction label (N,S,E, or W) is defined by the heading determined between the first and last point in the curve.

The curvature of the path changes as the subsequent paths get more convex or concave.

OUO6050,00010B5 -19-12APR09-1/1

Creating a New AB Curve Track

Use the following procedure to setup the first AB curve (Track 0) from, which subsequent curve passes in the field are based.

NOTE: Multiple AB Curves may be recorded per field. They will need to be named and recorded separately.

1. Choose AB CURVE TRACK mode and select or create a Track Name on the final page in the Setup Wizard (SETUP GUIDANCE TRACK).

NOTE: This page can also be accessed with the Quick Change Guidance softkey.

2. Drive to desired location in the field for start of Track 0.
3. Selecting the AB Curves Start Recording softkey. This softkey will be replaced by the following softkeys after it is selected:
   - Pause Recording
   - Stop Recording
   - Cancel.
4. Drive the initial pass. A blue guidance track will appear on the map.

PC10857JN —UN—13APR09

GreenStar Main Page

PC10857JJ —UN—13APR09

Guidance Quick Change

NOTE: When driving straight, the recorded path may not be shown behind the machine icon on the display. The path will appear when the machine is turned.

5. Press Stop Recording at the end of the pass and the track will be saved to memory.

NOTE: If GPS signal is lost while recording, recording is stopped and the AB curve that was recorded to that point will be saved. If the AB Curve is not what the operator intended, it may be deleted by using the Delete Track button on the SETUP GUIDANCE TRACK page of the SETUP WIZARD.

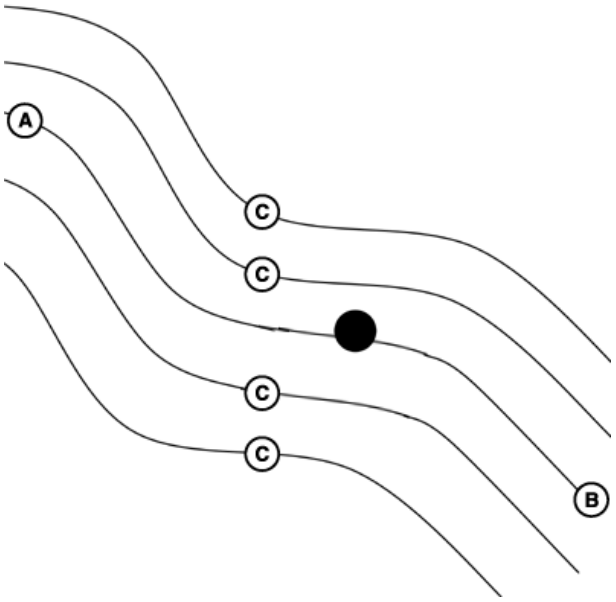
OUO6050,00010B6 -19-12APR09-1/1

Recording a Straight Path or Navigating Around Obstacles

1. Start AB Curves Recording
2. Select Pause Recording to temporary stop recording of a vehicle's path.
3. Select AB Curves Recording to resume recording the AB curve.

The distance between where recording was PAUSED and RESUMED will be connected with a straight line. This can be helpful when there is a long straight section of path or when navigating around obstacles.

NOTE: The longest bridge segment (line segment created between PAUSED and UNPAUSED) that can be created is a distance of 0.8 km (0.5 miles) (2,640ft). For a greater distance, the line segment will not connect resulting in a gap in the path.



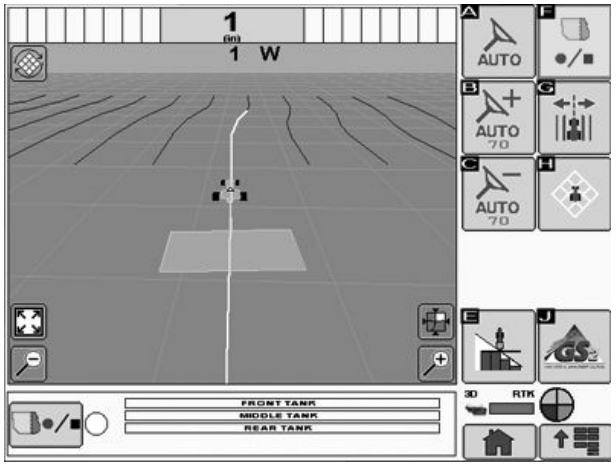
PC9030C —UN—27OCT06

A—Pause before obstacle
B—Resume after obstacle
C—Paths Generated from Track 0

OUO6050,00010B7 -19-12APR09-1/1

Straight Line Extensions

Straight Line Extensions A/B Curve paths are generated with a 91 m (300 ft) straight line extension attached to the end of the actual recorded path. This straight line extension allows the operator to get the vehicle back on the path prior to entering the field. It may also aid in continuing the guidance path when the recorded path gets shorter than the field boundary.



PC10857XU —UN—16JUN10

OUO6050,00010B8 -19-16JUN10-1/1

Guiding on an AB Curve

See CURVE SETTINGS in the GUIDANCE SETTINGS section to learn how to adjust your system for optimal performance.

The closest track is highlighted with a thicker white line. The track number is displayed below the path accuracy indicator and is automatically updated by system as a new track is approached. Track number changes when machine is half way between two tracks.

Off Track error distance is shown in the path accuracy indicator. This number shows how far from closest track machine is. Error number will count up until machine reaches point halfway between two tracks. After reaching midpoint error number will count down as machine approaches next track.

OUO6050,00010B9 -19-12APR09-1/1

Operating Guidance in Adaptive Curves Mode

Theory of Operation

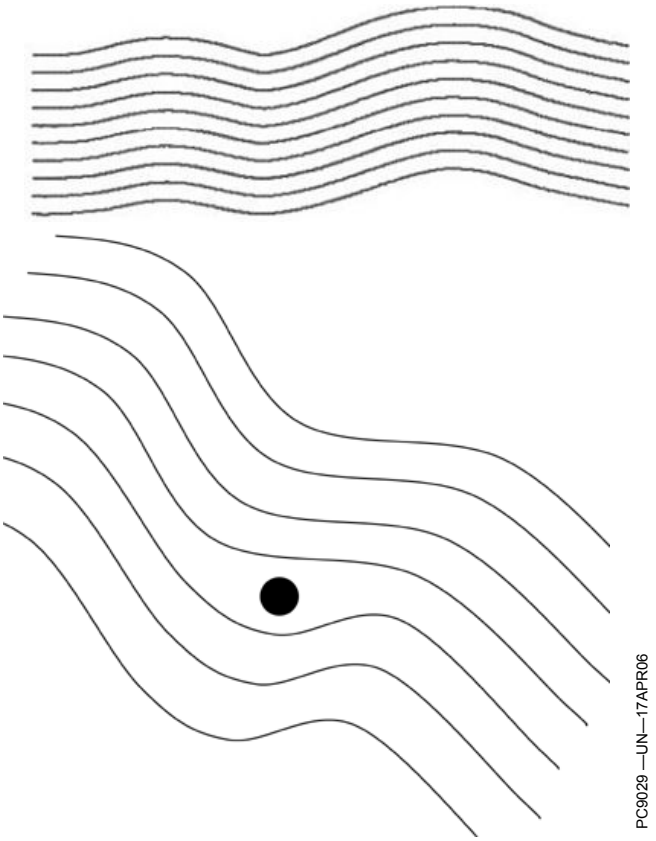
Adaptive Curves Mode allows the operator to record a manually driven curved path. Once the first curved pass has been recorded and machine is turned around, the operator can Parallel Track or activate AutoTrac once the propagated path appears. The vehicle will be guided along subsequent passes, based off of the previous recorded pass. Each pass is generated in relation to the original driven pass to ensure that steering errors are not propagated through the entire field. The passes are not identical copies of the original pass. The curvature of the pass changes to maintain pass to pass error. When necessary, the operator can change the curve path anywhere in the field by simply steering the machine off the propagated path.

NOTE: Skip pass is not available in Adaptive Curves Mode.

The curvature of the path changes as the subsequent paths get more convex or concave.

Adaptive Curve Track Mode allows an operator to drive and be guided along a variety of field patterns.

PC9028 —UN—16APR06



PC9029 —UN—17APR06

OUO6050,00010BA -19-12APR09-1/1

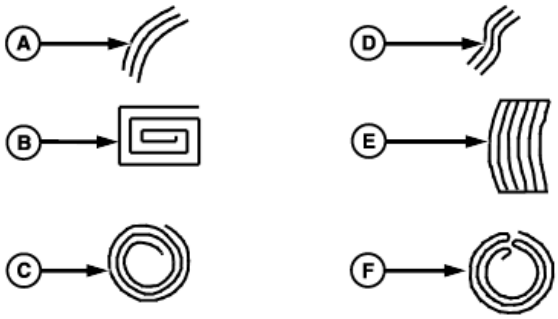
Guidance Patterns

The method of searching all line segments allows an operator to drive and be guided along a variety of field patterns:

- Simple Curve
- S-Curve
- Boxed
- Race Track
- Spiral
- Circle

Shift Track Operation

The use of shift track is not recommended when using Curve Track. Shift track will not compensate for inherent GPS drift in Curve Track mode.



PC9032 —UN—17APR06

A—Simple Curve
B—Boxed
C—Spiral
D—S-Curve
E—Race Track
F—Circle

OUO6050,00021FB -19-14NOV06-1/1

Creating a New Adaptive Curve Track

NOTE: Setup of Client, Farm, and Field is not required for Adaptive Curve Track operation but only one Global Adaptive Curve Track can be saved.

1. Choose ADAPTIVE CURVE TRACK mode on the final page in the Setup Wizard (SETUP GUIDANCE TRACK).

NOTE: This page can also be accessed with the Quick Change Guidance softkey.

2. Drive to desired location in the field for the start of the track.

PC10857JN —UN—13APR09

GreenStar Main Page

PC10857JJ —UN—13APR09

Guidance Quick Change

PC10857ND —UN—27APR09

Start Recording

Continued on next page

OUO6050,00010BB -19-28APR09-1/2

3. Start Recording.

NOTE: The Adaptive Curve recording softkey is disabled when Repeat Mode is ON. When recording new paths (i.e. Planting), Repeat Mode should be unchecked (Off). When guiding on existing paths (i.e. Spraying, Harvesting) the Repeat Mode button should be checked (On). Repeat Mode is OFF by default.

To start recording manually, select the Adaptive Curves Start Recording softkey. This softkey will be replaced by the following softkeys after it is selected:

- Pause Recording
- Stop Recording
- Cancel

NOTE: Recording only needs to be turned off if machine is driven outside of normal field pattern (i.e. refill sprayer, planter) or if you do not want to record turns at end of field.

Curve Settings—Recording may be triggered based on AutoTrac or Coverage by selecting those options in Guidance Settings

4. Drive the initial pass. A blue guidance track will appear on the map.

NOTE: When driving straight, the recorded path may not be shown behind the machine icon on the display. The path will appear when the machine is turned.

The white high-lighted navigation line will NOT appear until end of pass is reached and machine is turned around. Once machine is turned around, system will determine path to guide on. System locates a line segment that is parallel and within 1/2 to 1-1/2 track spacings. The predicted path will appear from which the operator can navigate from. Drive vehicle along desired path.

5. Turn vehicle at the end of first pass and a white navigation line for the next pass will be generated. It may take a few seconds for the navigation line to appear.

6. Once the white navigation line for the intended pass appears, press resume switch (AutoTrac only) on the machine and the machine will automatically steer on that pass. For Manual Guidance, guide on the white highlighted navigation line.

PC10857NE —UN—27APR09

Pause Recording

PC10857NF —UN—27APR09

Stop Recording

PC10857JN —UN—13APR09

GreenStar Main Page

PC10857JF —UN—13APR09

Settings

PC10857NG —UN—27APR09

Guidance Settings

7. Select Stop Recording when the field is finished.

IMPORTANT: STOP recording before entering the next field. Failure to do so may result in deleting the Adaptive Curve data from the last field before recording Adaptive Curve data in the next field.

NOTE: The stored Adaptive Curve Track data is assigned to the selected Client, Farm, Field name. It will be stored in the display's internal memory until it is cleared by the user and can be transferred from one display to another.

OUO6050,00010BB -19-28APR09-2/2

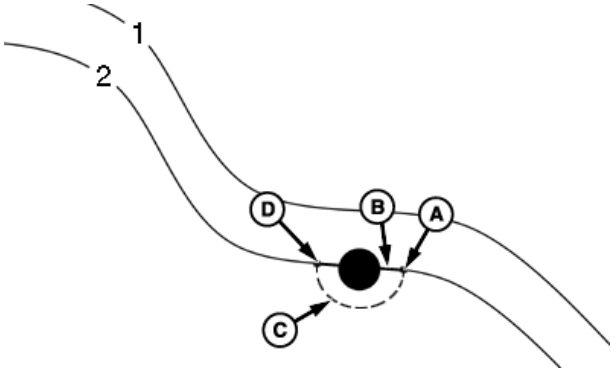
Recording a Straight Path or Navigating Around Obstacles

1. Start Recording
2. Select Pause Recording to temporary stop recording of a vehicle's path.
3. Select Recording to resume recording the Adaptive curve.

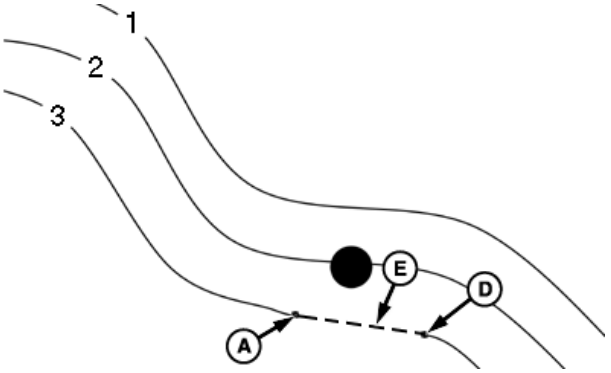
The distance between where recording was PAUSED and RESUMED will be connected with a straight line. This can be helpful when there is a long straight section of path or when navigating around obstacles.

NOTE: The longest bridge segment (line segment created between PAUSED and UNPAUSED) that can be created is a distance of 0.8 km (0.5 miles) (2,640ft). For a greater distance, the line segment will not connect resulting in a gap in the path.

A—Recording PAUSED
B—Bridge segment is generated to connect two points
C—Tractor path not recorded while paused
D—Recording UNPAUSED
E—Path recorded as a straight line between points A and D



PC9284 —UN—29JUL06



PC9285 —UN—08AUG06

OUO6050,00010BC -19-12APR09-1/1

Guiding on a Previously Recorded Track

IMPORTANT: If it is desired to have repeatability with saved Adaptive Curve Track data, it is required that the initial track data and subsequent trips across the field be created using StarFire RTK accuracy. RTK base station should be operating in Absolute Base mode.

NOTE: The track spacing for Adaptive Curve Track data is constant. If a different implement width is used when returning to the field, new data must be recorded.

1. Select a field that has previously recorded Adaptive Curve Track data associated with it. The previously track will reappear on the map.
2. Turn ON Repeat Mode in GUIDANCE SETTINGS to guide on a previously recorded Adaptive Curve Track. Repeat Mode allows the guidance track to be displayed when Recording is OFF.

   Select Curve Settings
3. Drive the vehicle onto the track and a highlighted white navigation line will appear in front of the vehicle.

PC10857JN —UN—13APR09

GreenStar Main Page

PC10857JF —UN—13APR09

Setting

PC10857NG —UN—27APR09

Guidance Settings

4. Press Resume Switch (AutoTrac only) on the machine and the machine will automatically steer on that pass. For Manual Guidance, guide on the white highlighted navigation line.

OUO6050,00010BD -19-28APR09-1/1

Shift Track

Shift Track will shift the entire recorded line left or right, based on the current direction of the machine.

OUO6050,00010BE -19-12APR09-1/1

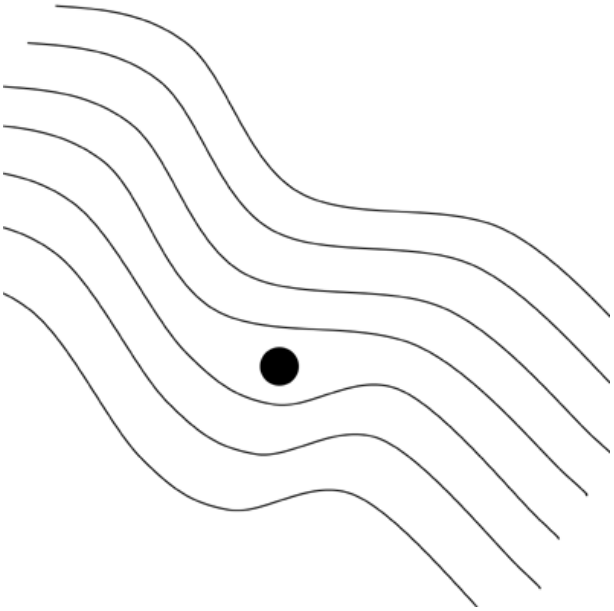
Guiding around Obstacles in Field

When operating Curve Track in a field and an obstacle is encountered such as a well head, telephone pole, or power line, the operator must drive around these obstacles.

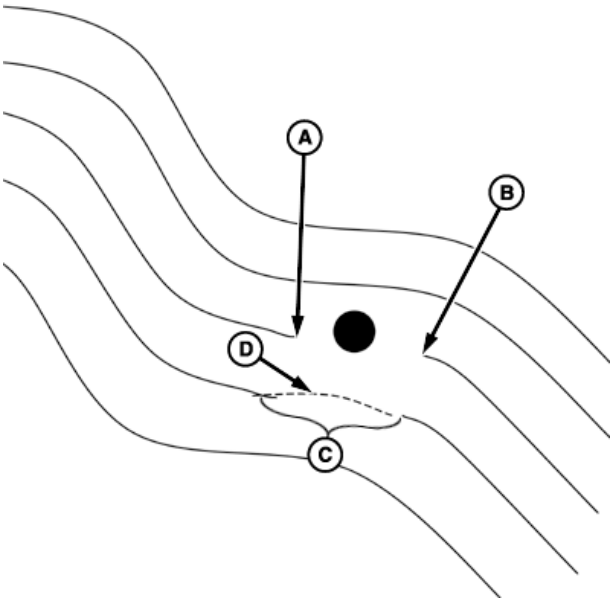
Recording ON: If recording is left on while driving around an obstacle that deviation to the propagated path will be recorded and become a part of the path. On the next pass when you approach the area in the field the propagated path for the pass that the machine is on will have incorporated that deviation and the machine will steer along that deviation. To straighten out that deviation, the operator must take over manual steering of the machine and straighten out that deviation. Once the operator has driven past the deviation in the field and reacquired the intended path the resume switch may be activated and AutoTrac will take over machine steering.

Recording OFF: If recording is turned off when the obstacle is approached and steered around and then recording turned back on once the obstacle has been navigated around and AutoTrac activated to finish the pass, there will be a gap in the recorded path where the obstacle is. On the next path when the machine approaches the gap the operator must take over manual steering of machine and navigate through the gap. Once the gap has been navigated and the propagated path is reacquired, AutoTrac can be activated and the gap will not appear in subsequent passes.

A—Turned Recording Off
B—Turned Recording On
C—Gaps Results in Next Pass
D—Manually Driven to Re-establish Path



PC9029 —UN—17APR06



PC9030 —UN—17APR06

CZ76372,00001C4 -19-05OCT10-1/1

Operating Guidance in Circle Track Mode

Theory of Operation

Circle Track helps operators drive concentric circles in a field with center pivot irrigation. Operators can create an initial circle using a variety of different methods. Once the initial circle has been defined, all the subsequent circles in the field are created.

Circle Track Mode is available for Manual Guidance; however, to AutoTrac in Circle Track mode requires both an AutoTrac and Pivot Pro activation. The Pivot Pro activation is available in North America only.

Circle Center Latitude and Longitude coordinates are saved and associated to a Field Name. If a field is not selected when the circle center is defined, Global circle centers will be saved. Circle Centers can be recalled for future use.

OUO6050,00010C1 -19-12APR09-1/1

Creating a New Circle Track

Circle Tracks are created by defining the center point of the circle. There are two methods to define the center point:

First choose CIRCLE TRACK mode and select or create a Track Name on the final page in the Setup Wizard (SETUP GUIDANCE TRACK).

NOTE: This page can also be accessed with the Quick Change Guidance softkey.

PC10857JN —UN—13APR09

GreenStar Main Page

PC10857JJ —UN—13APR09

OUO6050,00010C2 -19-12APR09-1/1

Drive Circle Method

- Drive Circles - Creates a circle track by driving at least 10 percent of the desired circle. It is recommended to drive the entire circle for optimum circle center calculation and a higher accuracy track.
- Lat/Long - Sets a circle track off a specific latitude and longitude point in the middle of the circle that is defined by the user.

1. Drive to the desired location in the field to drive a circular pass.
2. Select Start Circle Recording.
3. Drive the desired circle pass.
4. Select Stop Circle Recording. The Circle Tracks are created automatically with the Track Spacing defined in the Setup Wizard.

NOTE: The Stop Circle Recording button will appear when enough of the circle has been driven to calculate the center point.

OUO6050,00010C3 -19-12APR09-1/1

Lat / Long Method

1. Select Center Point Latitude and Longitude.
2. Enter the desired latitude and longitude values in decimal degrees for the circle center. The previous latitude and longitude values associated with the field are displayed when the entry screen is first displayed.
3. Save the values by selecting Accept. The Circle Tracks are created automatically with the Track Spacing defined in the Setup Wizard.

NOTE: It may be necessary to line the vehicle up on the center pivot tower track or use center shift track to get the tracks lined up with the vehicle.

OUO6050,00010C4 -19-12APR09-1/1

Guiding on a Circle Track

When operating Circle Track it is not necessary to drive tracks in a specific order. Depending on your zoom level all tracks that can be displayed will show up on the screen with the closest Track designated by a thicker line. The track number is displayed below the path accuracy indicator and is automatically updated by system as a new track is approached. Track number changes when machine is half way between two tracks.

Off Track error distance is shown in the path accuracy indicator. This number shows how far from closest track machine is. Error number will count up until machine reaches point halfway between two tracks. After reaching midpoint error number will count down as machine approaches next track.

Distance to end of pass utilizing Turn Predictor is shown in the top right portion of the guidance view. Distance will count down to predicted turn and tones will sound when machine is 10 seconds from intersecting turn point and again when predicted turn point has been reached.

NOTE: Track spacing may require adjustment due to operator and/or GPS error.

EXAMPLE: An operator may want to enter a slightly smaller implement width to account for operator error while steering or GPS error.

OUO6050,00010C5 -19-12APR09-1/1

Shift Track

Shift Track controls work as described in the GENERAL GUIDANCE section.

Shift Track is used to shift the tracks radially closer or further from the center point. Shift Track does not move the center point itself. This method of Shift Track allows the operator to use various implement widths, account for different lengths of center pivot towers or to account for stretching/shrinking of the center pivot irrigation sections.

IMPORTANT: When using SF2 or SF1 Differential Correction (or when using RTK Quick Survey Mode) the Circle Center may drift over time or at power cycles. In Circles Track Mode, Shift Track does not compensate for GPS drift. In order to achieve accuracy and repeatability when using SF1 or SF2 Differential Correction, the center point must be recalculated by manually driving the circle on a daily basis (see Calculating Circle Center).

NOTE: RTK Absolute Base Mode is highly recommended in high accuracy applications when using Circle Track. Only RTK Absolute Base Mode provides consistent repeatability and accuracy in Circle Track.

Example 1 - Operator makes first pass through the field saving Circle Center information to EAST FIELD (Field Name) and CENTER1 (Track Name), pulling a 4.6 m (15 ft) implement. The operator returns for second pass in same field with 9.1 m (30 ft) implement. To follow the same track stored, recall EAST FIELD and CENTER1, line up on desired track and SHIFT CENTER to allow for the difference in implement widths.

Example 2 - Operator is using SF2 and defines a circle center point by manually driving the circle. The following day, the operator returns to the field and finds that the AutoTrac is not lining up properly with the previous day's path due to GPS drift. The operator must re-drive the circle to find the Circle Center Point.

OUO6050,00010C6 -19-12APR09-1/1

Accuracy

Accuracy in Slope Conditions - Circle Track was designed for center pivot operation on ground with less than 2% slope. Customers who use circle track on slopes greater than 2% need to be aware of the performance of circle track in these conditions and why circle track performs the way that it does. In operating Circle Track in some slope conditions there are cases where the circle track spacing and the center pivot tower track will not match in tower tracks away from the center pivot. This is due to the difference between distance traveled over a hill and on a level plane. AutoTrac draws the circle spacing as if the plane were level. The tower tracks obviously go over the hill terrain. This difference in distance will increase as slope increases.

See the DIAGNOSTICS section for an overview of AutoTrac Accuracy.

OUO6050,00010C7 -19-12APR09-1/1

Operating in Row Finder Mode

Theory of Operation

Row Finder (Manual Guidance Only) mode is intended for use in row crop applications where rows are not always equally spaced. Row Finder will aid the operator in finding which set of rows to enter back into the field on after setting a reference point when coming out of the previous set of rows.

NOTE: Row Finder can only be operated in Parallel Tracking Mode.

Track Spacing must be set for operation of this mode.

OUO6050,00010C8 -19-12APR09-1/1

Row Finder Operation

To use Row Finder press SET ROW softkey at end of pass before starting turn. Track 0 will be reset based on current track spacing, position and heading. After starting turn, turning view will guide operator into next pass.

IMPORTANT: For optimal performance the SET ROW button must be pressed before machine begins making turn at end of pass.

NOTE: If SET ROW button is pressed when machine is stopped, system will reset track 0 based on a 0° heading.

OUO6050,00010C9 -19-12APR09-1/1

General Guidance

Turning On and Off

To turn guidance ON, complete the Setup Wizard or go to GreenStar Main Page -> Guidance Quick Change -> Select a Tracking Mode -> Select or create a Guidance Track

To turn guidance OFF, go to GreenStar Main Page -> Guidance Quick Change -> Select Tracking Mode = Guidance OFF

OUO6050,00010CD -19-14APR09-1/1

Clearing Guidance Tracks

Clear (delete) Guidance Tracks to free up memory on the display. Guidance Tracks are cleared on the Guidance Setup page:

GreenStar Main >> Guidance Quick Change >> Delete Track

1. Select Tracking Mode
2. Select Track Name (depending on Tracking Mode)
3. Select Delete Track

PC10857JN —UN—13APR09

GreenStar Main Page

PC10857JJ —UN—13APR09

Guidance Quick Change

PC10857XK —UN—16JUN10

Delete Track

OUO6050,0001217 -19-16JUN10-1/1

Shift Track

Shift Track is used to adjust the position of guidance tracks left or right to compensate for GPS drift. Shift Track moves Track 0 and all the tracks associated with it left or right the distance specified in Guidance Settings with each press of the SHIFT LEFT or SHIFT RIGHT buttons. Shift Track defaults to OFF and may be turned ON/OFF in Guidance Settings.

NOTE: Drift is inherent to any satellite based, differentially corrected GPS system.

Select Shift Track on the Run Page to access the Shift Track controls.

- To move tracks to left, select SHIFT LEFT .
- To move tracks to right, select SHIFT RIGHT .
- To center the tracks on the vehicle's current location select SHIFT CENTER .
- To clear all shifts and return Track 0 and all the tracks associated with it to the originally defined location, select CLEAR SHIFTS .

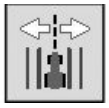
IMPORTANT: When using SF1 or SF2 differential correction (or when using RTK Quick Survey Mode) the track may drift over time or at power cycles. Shift Track can be used to compensate for GPS drift.

Anytime the North American RTK radio is reconfigured or changed, power must be cycled at the GPS receiver before continuing.

Power to the RTK radio must be turned off before unplugging RTK radio.

NOTE: CLEAR SHIFTS is disabled when AutoTrac is active.

PC10857NC —UN—24SEP09



Shift Track

PC10857LE —UN—14APR09

Shift Left

PC10857LF —UN—14APR09

Shift Right

PC10857LG —UN—14APR09

Shift Center

PC10857LH —UN—14APR09

Clear Shifts

RTK Absolute Base Mode is highly recommended in high accuracy applications when repeatability is needed. Only RTK Absolute Base Mode provides consistent repeatability and accuracy.

OUO6050,00010D1 -19-28APR09-1/1

Tracking Tones

Tracking tones can be used as an audible indication of steering direction. If the track is right of machine, two low beeps will sound, if left of machine a single high beep will sound. The alarm will repeat twice a second until the off-track error between machine and guidance track is less than value specified in Guidance Settings.

Tracking Tones default to ON and may be turned ON/OFF in Guidance Settings.

OUO6050,00010CF -19-14APR09-1/1

Turning View

NOTE: Track 0 must be established for turning view to be active.

Turning View assists the operator view the next track when turning around from one pass to the next by showing an overhead view of the field instead of the perspective view.

Turning View will appear once the vehicle has turned more than 45 degrees from the track heading. The screen will revert back to the perspective view once the vehicle is within approximately 5 degrees of the track. The operator has the ability to cancel the Turning View once the screen transitions into turning view with a cancel button that

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Cancel Turning View

appears in the top left corner of the guidance view. Once the cancel button is selected the screen will switch back to the perspective view.

Turning View defaults to ON and may be turned ON/OFF in Guidance Settings.

Select Cancel Turning View to return to the map view.

OUO6050,00010D2 -19-28APR09-1/1

Turn Predictor

Turn Predictor alerts the operator by predicting the end of pass and displays the distance to the end of pass in the top right portion of the map view. Turn Predictor defaults to ON and may be turned ON/OFF in Guidance Settings. Distance will count down to predicted turn and tones will sound when machine is 10 seconds from intersecting turn point and again when predicted turn point has been reached. A visual indicator is displayed 10 seconds before approaching a predicted turning point. When the system detects a previous turn on a previous pass, the distance to that turning point will be displayed. The visual indication on the Perspective Map is accompanied by tones.

Turn predictor is intended to only predict turn point of a vehicle using Parallel Tracking or AutoTrac. It is NOT a headland alert. Turn predictions are based solely on previous turn behavior of vehicle. Turn points are also defined when AutoTrac is deactivated and the heading error exceeds 45 degrees. Turn predictions will not coincide with field boundary if field boundary is not linear and continuous, or if operator makes turns before or after field boundary.

NOTE: If there is a seat switch timeout (operator out of seat for 7 seconds on tractors, 5 seconds on combines and sprayers), the display resets Turn Predictor back to ON.

OUO6050,00010D3 -19-14APR09-1/1

Guidance Settings

Optimal performance of the GreenStar system usually requires adjustment of settings. Access Guidance settings to customize your user experience and optimize the system performance.

General Settings

Turning View - assists the operator view the next track when turning around. To turn ON/OFF, select / unselect check box.

Turn Predictor - alerts operator by predicting the end of pass. To turn ON/ OFF, select / unselect check box.

Tracking Tones – provide an audible indication off-track error. To turn ON/ OFF, select / unselect check box. To change distance at which tracking tones make a sound, select input field, select the desired value, and select Enter. Values between 10—60 cm (4—24 in.) may be entered.

Lead Compensation – shows how far down current track guidance looks to for such things as turns. It is used with Parallel Tracking only. To turn ON/OFF, select / unselect check box.

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GreenStar Main Page

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Settings

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Guidance Settings

Continued on next page

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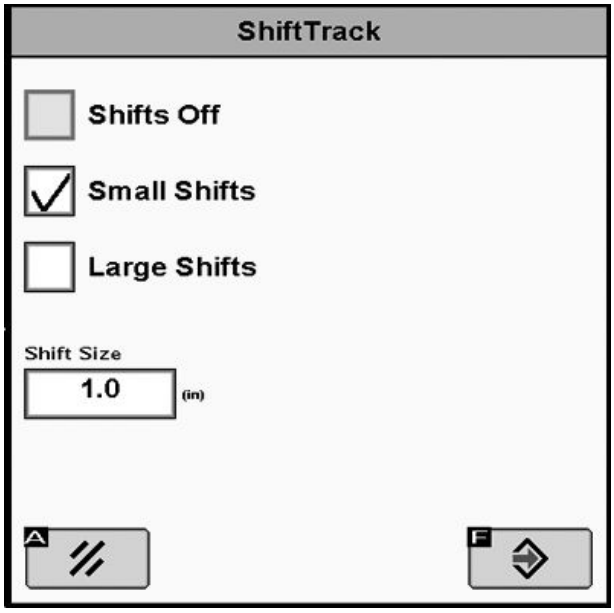
Shift Track – is used to adjust the position of guidance tracks left or right to compensate for GPS drift. This setting will turn shifts ON/OFF, select small shifts or large shifts, and change the distance of each shift.

Shifts Off – Check the box to turn shifts OFF.

Small Shifts – Select Small Shifts to use a Shift Size of 1—30 cm (0.4—12 in.).

Large Shifts – Select Large Shifts to use a Shift Size of 1— 410cm (12-161.5 in.). Large Shifts are disabled when AutoTrac is active or when operating in Adaptive Curve Track mode.

Shift Size – Distance that tracks shift when SHIFT LEFT or SHIFT RIGHT buttons are selected.



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OUO6050,00010D4 -19-07JUN10-2/2

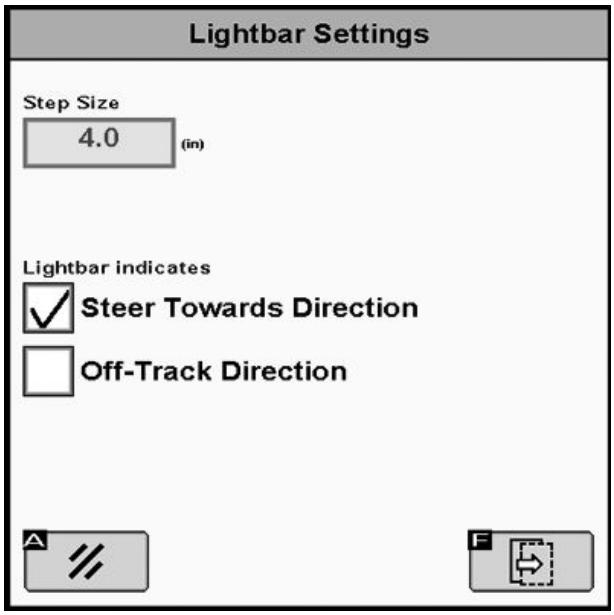
Lightbar Settings

Step Size – is used to set the value of off-track distance each box on the Path Accuracy Indicator represents. If the display is used with an external GreenStar Lightbar, the Step Size will also set the off-track distance that each light represents on the Lightbar.

Steer Towards Direction – When this option is selected, the lights illuminated to the left on the Path Accuracy Indicator and external GreenStar Lightbar mean the vehicle must be steered to the left to align with the guidance track.

Off Track Direction – When this option is selected, the lights illuminated to the left on the Path Accuracy Indicator and external GreenStar Lightbar mean the vehicle must be steered to the right to align with the guidance track.

External Lightbar On – Check the box to turn ON the External Lightbar



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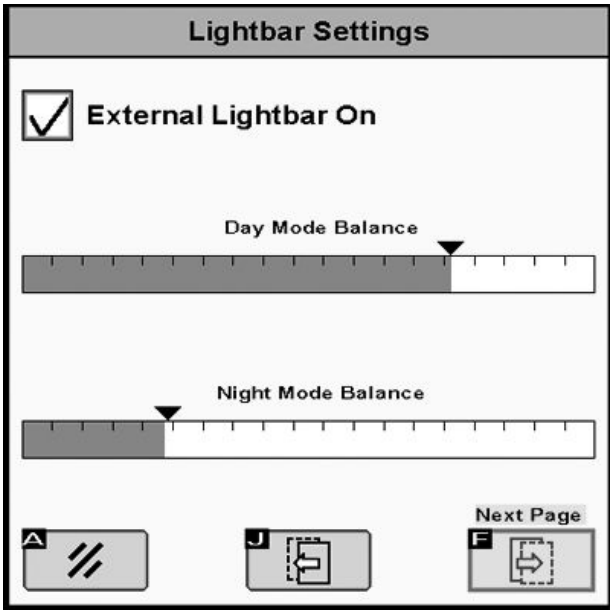
OUO6050,00010D5 -19-28APR09-1/3

Adjust Brightness of GreenStar Lightbar – The brightness of the external GreenStar Lightbar will synchronize with the brightness setting of the display. This setting is available to adjust the GreenStar Lightbar brightness relative to the brightness of the display.



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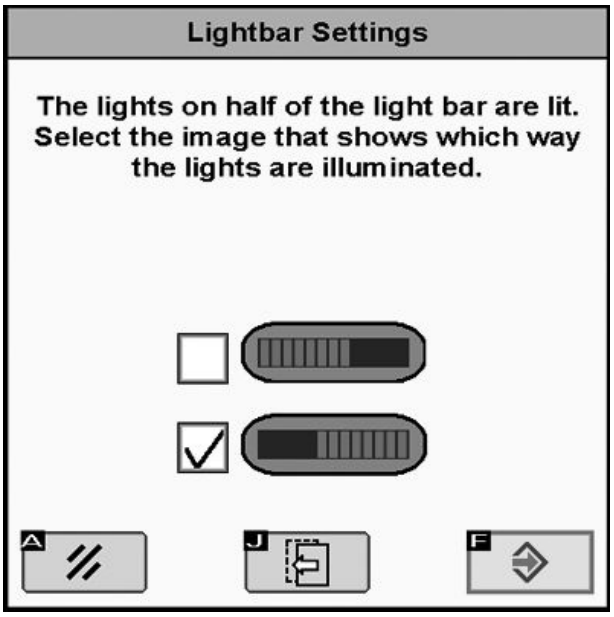
OUO6050,00010D5 -19-28APR09-2/3

Configure the Mounting Direction of the Lightbar – This setting allows the GreenStar Lightbar to be mounted upside down. When this page is open, half of the lights on the GreenStar Lightbar will light up if it is installed correctly. Simply check the box for the direction that the lights appear.

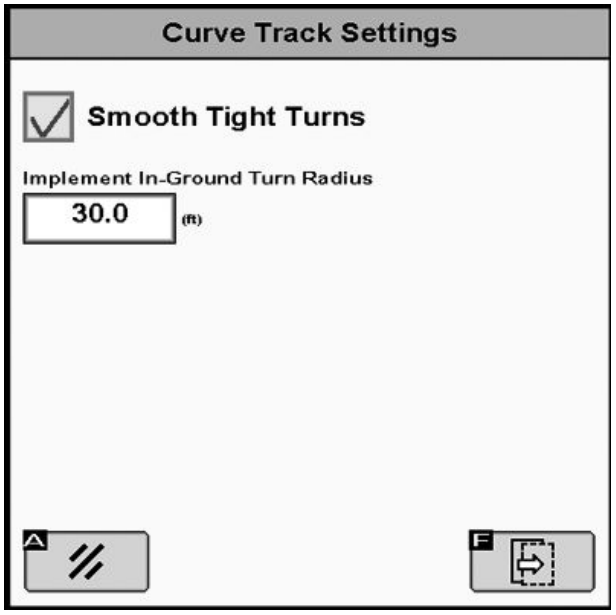


PC10857NK —UN—27APR09

OUO6050,00010D5 -19-28APR09-3/3

Curve Track Settings

Smooth Tight Turns - When box is checked the system will automatically smooth a propagated path that was becoming tight.



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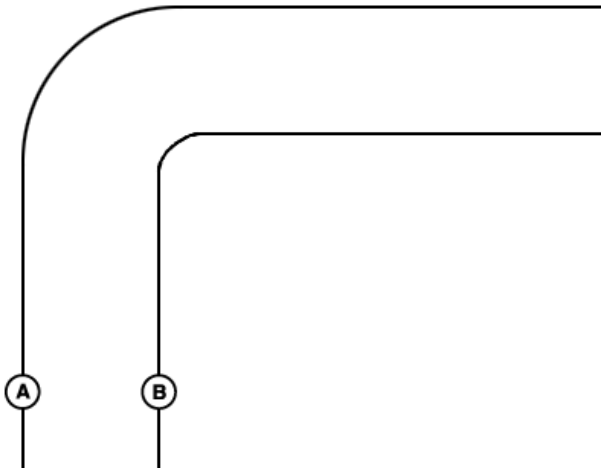
A—Previous Pass

B—Next Pass—Smoothing Tight Turns Off



PC9529 —UN—27OCT06

Smoothing Tight Turns OFF

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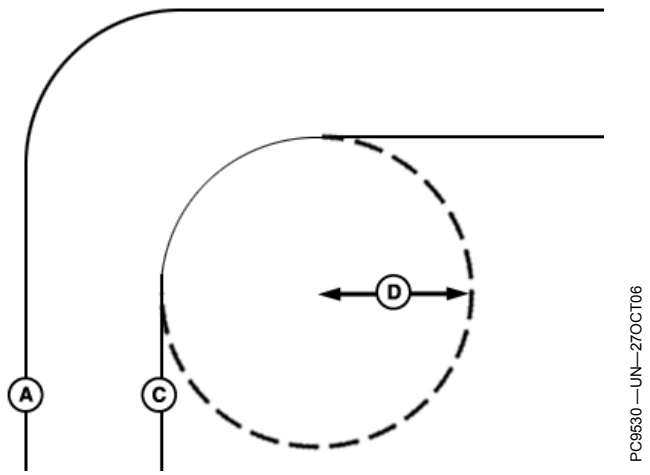
CZ76372,00001D8 -19-12OCT10-2/5

A—Previous Pass

B—Next Pass—Smoothing Tight Turns On



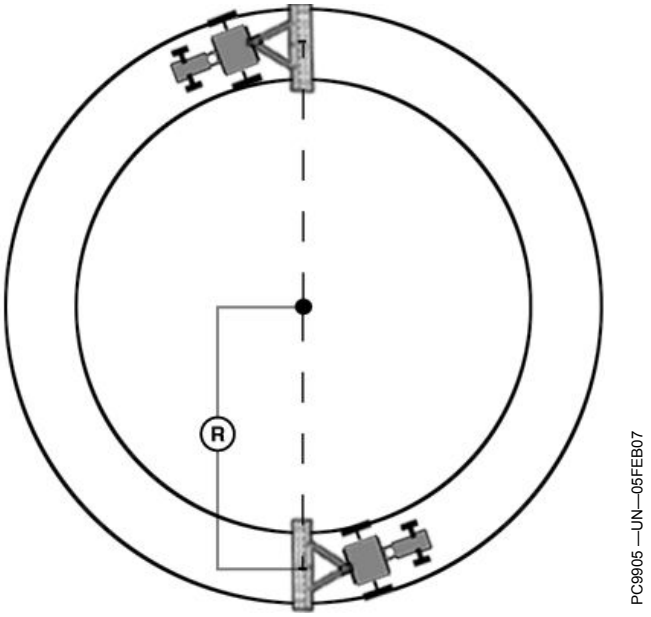
Smoothing Tight Turns ON

CZ76372,00001D8 -19-12OCT10-3/5

Implement In-Ground Turn Radius - This value is the smallest turn radius the implement can turn while in the ground.

R—Implement Turn Radius

Recording Source – Adaptive Curve Track recording may be triggered manually or based on AutoTrac or Coverage.



Radius

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CZ76372,00001D8 -19-12OCT10-4/5

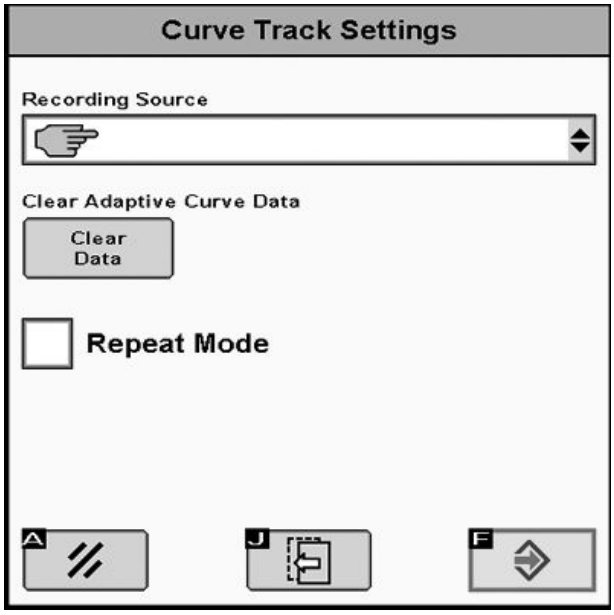
Clear Adaptive Curve Data - If Curve Track data has been recorded previously for this field and operator does not want to use it or the internal memory is full due to stored Curve Track data, the Curve Track data can be removed from the memory. There are two options for clearing Curve Track data:

For this field only—clears Curve Track data for current field only in memory

For all fields—clears Curve Track data for all fields stored in memory

Repeat Mode – Repeat Mode allows the guidance track to be displayed when Recording is OFF. Turn ON Repeat Mode to guide on a previously recorded Adaptive Curve Track. Repeat Mode is OFF by default.

The Adaptive Curve Recording softkey is disabled when Repeat Mode is ON.



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CZ76372,00001D8 -19-12OCT10-5/5

AutoTrac Settings

NOTE: AutoTrac Settings only appear on the display in machines that are AutoTrac capable.

Steering Sensitivity—Allows AutoTrac users to adjust the vehicle's steering sensitivity. To adjust steering sensitivity select the input box and enter the desired steering sensitivity value via numeric keypad and select the enter button. The sensitivity can also be adjusted up or down by selecting the Increase Steering Sensitivity and Decrease Steering Sensitivity softkeys on the Run Page.

NOTE: Valid range for steer sensitivity is 50 - 200 with 200 being the most aggressive setting.

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Increase Steering Sensitivity

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Decrease Steering Sensitivity

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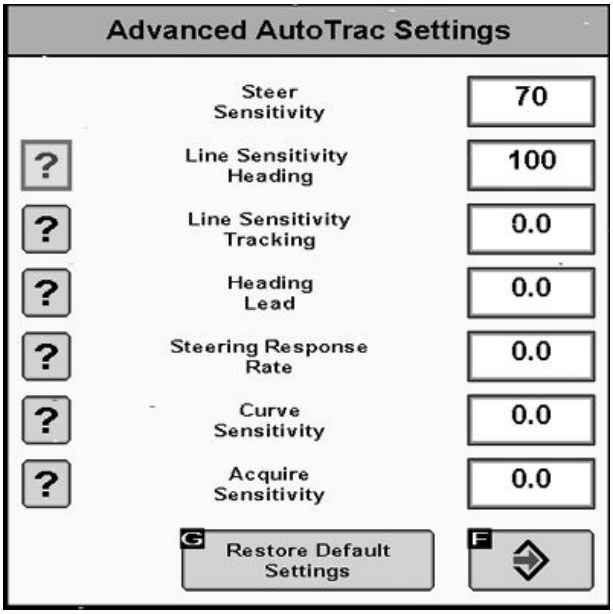
Advanced AutoTrac Settings

The AutoTrac Settings button will only be visible under Guidance Settings when an SSU that supports advanced AutoTrac Integrated settings is detected.

The Accept button saves and applies the current settings and returns the user to the previous page. The Restore Default Settings button will set all settings to the factory default value. See each setting for its default value. The '?' button will display a popup with help text for the specific setting.



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OUO6050,000108A -19-11APR09-1/1

Line Sensitivity Heading

Determines how aggressively AutoTrac responds to heading errors.

Higher settings: Result in more aggressive response to vehicle heading error.

Lower settings: Result in less aggressive response to vehicle heading error.

OUO6050,00010DB -19-14APR09-1/1

AutoTrac Universal

For instructions on operating AutoTrac Universal, see the AutoTrac Universal operator's manual.

OUO6050,00010DA -19-14APR09-1/1

External GreenStar Lightbar

The GreenStar Lightbar will operate in companion configuration with the GreenStar display when both are connected to the implement CAN bus. The GreenStar Lightbar mounts on the windshield in front of the operator, projecting the Path Accuracy Indicator from the display to the operator's line of sight. No extra setup is necessary to use the GreenStar Lightbar with the GreenStar display, but settings are available in Guidance Settings.

For instructions on proper mounting and installation, see the GreenStar Lightbar Operator Manual.

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Operating Swath Control

IMPORTANT: Some operators connect two separate fields into one using a “land bridge” between them. Product may still be applied over this strip of land if Swath Control is left on. To prevent unexpected coverage, always turn Swath Control or the master switch OFF while transporting between fields.

1. Complete the Standard Setup Wizard to setup your GreenStar system for Swath Control. See the GETTING STARTED section earlier in this manual.

NOTE: If a client, farm, and field are NOT selected, only one Coverage map can be stored in the display. Coverage can NOT be mapped 5 miles beyond the first recorded point in the map.

2. Create any necessary External and Internal Boundaries. Boundaries, though optional, can be helpful when using Swath Control. For example, with Swath Control Amount of Overlap set to 0%, an exterior boundary can help ensure there is no application outside of the field if a section extends over the boundary.
3. See the SWATH CONTROL SETTINGS section of this manual to learn how to adjust your system for optimal performance.
4. ALL of the following are required for Swath Control to function:

   Valid Swath Control activation code is entered in display

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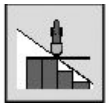

Swath Control On/Off

- Swath Control capable controller is detected and displays the appropriate machine type on the Machine Setup Page.
- Setup Wizard is complete.
- Master Switch is on.
- Section switch is in the ON position.
- GPS signal status is present (SF1, SF2, or RTK).
- Speed above 0.8 km/hr (0.5 mph)

5. Turn Swath Control ON/OFF with the Swath Control Toggle on the GreenStar Run Page.

NOTE: If the Swath Control Toggle ON/OFF button does not appear on the Run Page, check that Valid Swath Control activation code is entered in display and a Swath Control capable controller is detected by the display (Go to Menu -> Message Center -> Electronic Control Unit Info -> See that the message counts for the controller are increasing steadily).

If multiple Swath Control capable controllers are connected to the CAN Bus, they will automatically be prioritized and the highest priority will be the ONLY one that will work with Swath Control.

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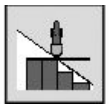
Enabling Swath Control for Sprayers

ALL of the following are required for Swath Control to function:

- Solution pump on.
- Section Switches on.
- Master switch on.
- Swath Control on.
- Speed greater than 0.8 km/h (0.5 mph).
- Vehicle within 7.64 km (4.75 miles) of the field reference point.

NOTE: If IBS (Index Boom Section) or a boom section switch has turned off a section, swath control does not turn it on. If Swath Control has turned off a section, IBS does not turn it back on.

PC10857NO —UN—28APR09



Swath Control On/Off

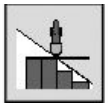
BA31779,0000168 -19-27APR11-1/1

Enabling Swath Control for Seeding Tools

ALL of the following are required for Swath Control to function:

- Implement must be lowered into ground.
- Section switches are on.
- Master switch is on.
- Swath Control is on.
- Vehicle speed must be greater than 1 km/h (0.62 m.p.h.) for Air Cart and 1990 CCS and 0.3 km/h (0.2 m.p.h.) for planters.

PC10857NO —UN—28APR09



Swath Control On/Off

- Vehicle is within 7.64 km (4.75 miles) of the field reference point.

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Section Status Bar

When Swath Control is functioning, the detected section status is displayed at the bottom of the Run Page in the Section Status Bar.

Example Status Bar for an air cart

- Green bar at bottom – Swath Control Enabled and section is on.

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Section Status Bar

- Tank bar is black – Tank is ON
- Tank bar is clear – Tank is OFF

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Example Status Bar for a sprayer

- Detected sections are displayed
- L1 – First section left of center
- R1 – First section right of center
- C – Center section
- Green or Blue triangle – Section status is ON
- Clear triangle – Section status is OFF

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BA31779,000016A -19-27APR11-2/2

Accuracy

The overall Swath Control system accuracy is dependent upon many variables.

Swath Control System Accuracy = GPS Signal Accuracy + Machine and Implement Setup + Display Setup + Field Conditions + Product Rate.

It is important to:

- Ensure Machine and Implement are set up properly (according to manufacturer's operators manual).
- Ensure the implements' wear parts are in good working condition and correctly spaced.
- Understand how field conditions and applied product rate affect machine dynamics.
- Ensure GPS Receiver went through a warmup period upon start-up to ensure Swath Control performance.
  - As the GPS Accuracy increases (SF1, SF2, and RTK), Swath Control reaction accuracy will also increase.
  - GPS shading (such as trees or buildings) affects Swath Control accuracy.
- Ensure Swath Control settings, Machine, and Implement dimensions are set up properly in the display.

BA31779,000018F -19-29APR11-1/1

Swath Control Settings

Optimal performance of the GreenStar system usually requires adjustment of settings. Access Swath Control settings to optimize your system performance.

NOTE: The Swath Control Settings button will only appear if a valid Swath Control activation code is entered in display and Swath Control capable controller is detected.

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Settings

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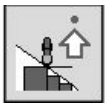

Swath Control Settings

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Turn On and Turn Off Settings

Turn on time (sec.): defaults to 1, but can be changed between 0.3—15, in increments of 0.1 seconds.

Turn off time (sec.): defaults to 0.6, but can be changed between 0.3—15, in increments of 0.1 seconds.

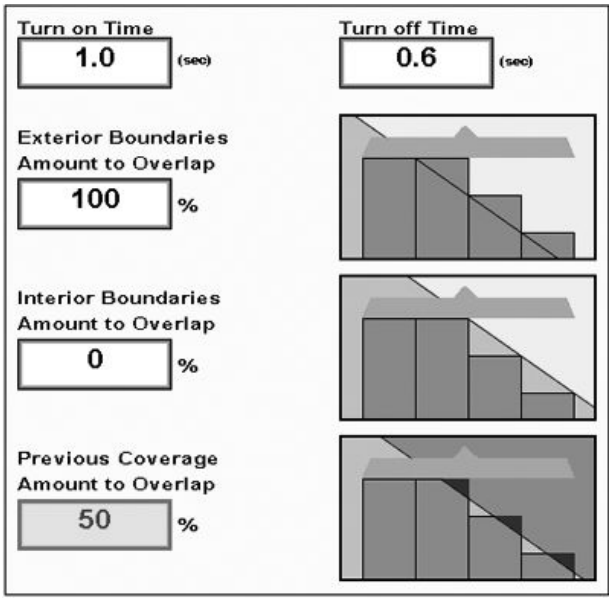
The operator can adjust the Turn on and Turn off settings to fit a specific machine. The Turn on and Turn off settings are to compensate for average physical machine reaction time (Electrical & Mechanical) for applying product. Keep in mind that the reaction time does NOT increase as ground speed increases. The physical reaction time remains constant for that machine configuration. The machine travels more, or less, distance while the reaction is taking place at different ground speeds.

NOTE: It is not recommended to utilize the Turn on and Turn off times to achieve intentional overlap; this can cause additional system complications.

The best method to determine the correct Turn on and Turn off times is to turn on or off a section manually. Measure the time from when the switch is actuated to when product starts or stops. For a sprayer measure the time from when the switch is actuated to when product starts and stops reaching the crop. Enter Turn on and off times to the nearest 0.1 of a second.

If the Turn on time is set to 0.3 seconds, the command signal is sent when the system estimates the section to be 0.3 seconds from the boundary or non covered area. The coverage map begins painting 0.3 seconds after the command signal is sent. If the actual machine reaction time is 0.8 seconds, the machine will travel 0.5 seconds past the boundary or into the non covered area before applying. In this situation the coverage map began painting before the actual application started, therefore the two did not match.

As the Turn on time increases, the command signal is sent earlier as the boundary or non-covered area is approached. If the Turn on time is 1.0 second, the command is sent 1.0 second before the implement is expected to reach the boundary or previously covered area. The coverage map will start painting 1.0 second after the command signal is sent and Swath Control expects the machine to begin applying at this time as well because the operator entered a Turn on time of 1.0 second.



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The more constant the ground speed is kept when entering or exiting boundary or previous coverage area, the more accurate Swath Control is. If the machine speed is drastically changing while entering or exiting a boundary or previous coverage area, Swath Control cannot anticipate that change because it estimates your Turn on and off position based on current position, direction, and speed.

Once a machines Turn on and Turn off time is determined, it remains the same unless a dramatic system change is made to the machine. For example, a change in system plumbing affects the average physical machine reaction time.

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Understanding Swath Control Turn On and Turn Off Settings

NOTE: The Turn on and Turn off times in the examples in this section are not true for every machine. It is important that you determine the Turn on and Turn off times for your particular machine and implement.

Swath Control operates based on the drop point and turn on and off time of the primary function.

Seeding Tools

Planters average 6—12 km/h (4—7 mph) while planting and have minimal machine electrical clutch reaction delay times (under 0.8 seconds usually). The largest delay time is usually from the time the seed leaves the meter disk, travels in the seed tube, and reaches the soil. At a 10 km/h (6 mph) planting speed, you travel 2.8 m (8.8 ft.) in one second. That's 280 mm (10.5 in.) of travel distance every one-tenth of a second. (Example - Entire seed delay time from the switch being selected in the cab, the clutch stops, the seed meter stops, and all the seed has reached the soil; time elapsed 0.8 seconds) You can see that changing 0.3—0.8 seconds on the look ahead time can dramatically change the location of your seed placement when turning on or turning off. On average, most row-crop planters generally set a turn off time to 0.3 seconds and a turn on time between 0.5—1.0 seconds. On average, most air carts set a turn off time at 0.6 seconds and a turn on time at 1.0 second.

Minimize Skip (100% overlap) on ranked tools (seeding tools with multiple ranks). Set swath settings for Minimize Skip (100% overlap) skips. Swath Control maps to the rear rank on the tool so the Turn on time must be increased to account for rank spacing. See figure at the end of this section.

The goal is to compensate for Rank Delay spacing by entering ranked turn on for the “Turn on” setting. Turn on + Rank Delay = Ranked Turn On. Maintain a constant turn around speed to keep the Turn On time accurate. Examine and adjust the settings before planting.

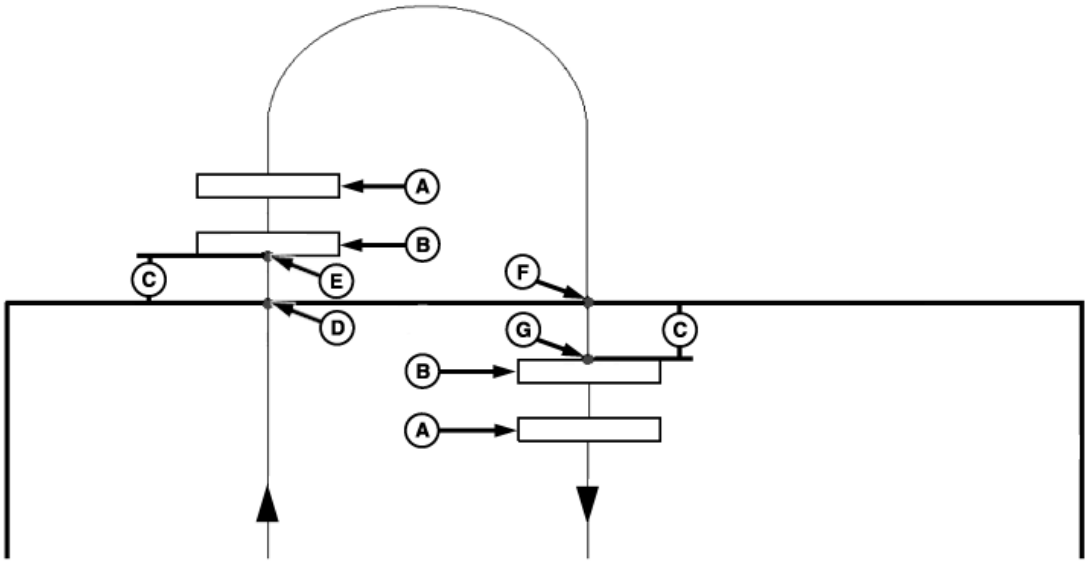
NOTE: Ranked Delay is a time, not a distance, and is affected by speed.

Sprayers

At 24 km/h (16 mph) in a self-propelled sprayer, if the average physical reaction time of the system (turn off command at the multifunction control handle, the boom valve reacts and turns off, liquid flows out of the boom freely until the check valve pressure is met) is 2.5 seconds. The liquid continues to fall to the crop canopy past the 2.5 seconds so the physical overall operational reaction time could be approximately 3.0 seconds in total.

To determine the Turn on time for a sprayer, press the master on switch and measure the amount of time until you start to see product hit the crop. To determine your Turn off time, shut the master off switch and measure the amount of time until you see product stop flowing.

As a rule of thumb, it takes a liquid handling system longer to react when turning on than when turning off due to liquid pressure differentials, so many times the turn on time is slightly greater than the turn off time. Keep in mind that your ground speed only affects the distance traveled while the machine reaction delay is taking place and that the distance traveled varies between turn on and turn off times and from operator to operator.



PC10857WT —UN—07JUN10

NO SWATH CONTROL—Two Ranked Tools Entering Then Leaving Headland

A—Rank 1
B—Rank 2
C—System Delay
D—Switch Off
E—Actual Off
F—Switch On
G—Actual On

System Delay = Overlap (A) and Overlap (B)

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System Delay = Overlap (A) and Overlap (B)

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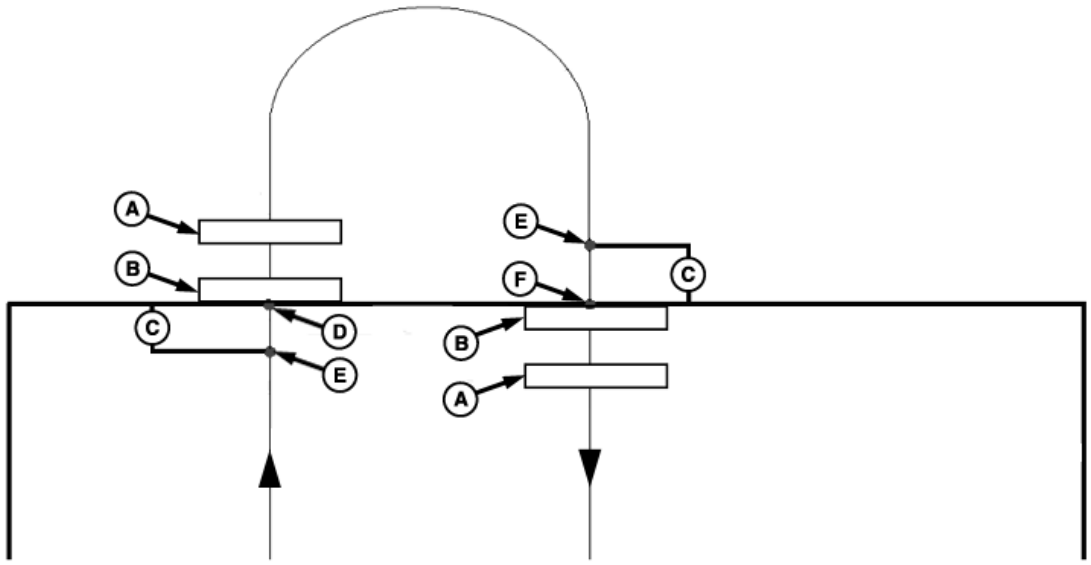

PC10857WU —UN—07JUN10

NORMAL SWATH CONTROL—Two Ranked Tools Entering Then Leaving Headland

A—Rank 1
B—Rank 2
C—System Delay
D—Actual Off
E—Swath Command
F—Actual On

System Delay = No Overlap (A) and No Overlap (B)

System Delay = Overlap (A) and No Overlap (B)

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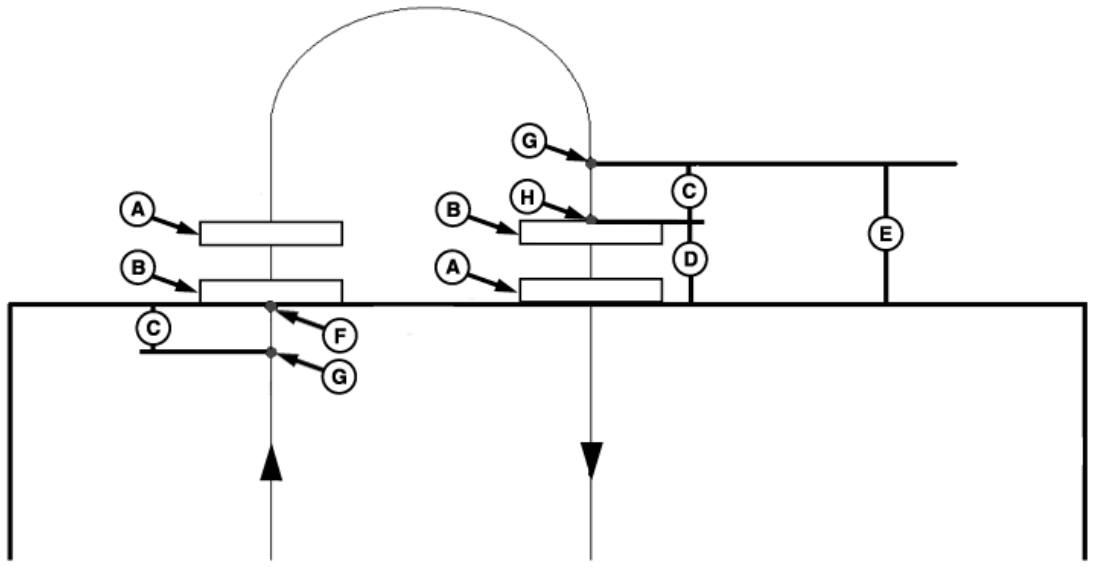


PC10857WV —UN—07JUN10

RANKED TURN ON—Two Ranked Tools Entering Then Leaving Headland

A—Rank 1
B—Rank 2
C—System Delay
D—Rank Delay
E—Ranked Turn On
F—Actual Off
G—Swath Command
H—Actual On

System Delay = No Overlap (A) and No Overlap (B)

System Delay + Ranked Delay = No Overlap (A) and No Overlap (B)

BA31779,000018C -19-29APR11-4/4

GS2 Swath Control Settings Quick Sheet—Metric

Constant Ground Speed (km/h)	Physical machine reaction delay time (seconds)	Distance traveled at given speed and time (meters)	Distance traveled per GPS update (meters)
3	1	0.83	0.17
3	2	1.67	0.17
3	3	2.50	0.17
3	4	3.33	0.17
3	5	4.17	0.17
3	10	8.33	0.17
6	1	1.67	0.33
6	2	3.33	0.33
6	3	5.00	0.33
6	4	6.67	0.33
6	5	8.33	0.33
6	10	16.67	0.33
9	1	2.50	0.50
9	2	5.00	0.50
9	3	7.50	0.50
9	4	10.00	0.50
9	5	12.50	0.50
9	10	25.00	0.50
12	1	3.33	0.67
12	2	6.67	0.67
12	3	10.00	0.67
12	4	13.33	0.67
12	5	16.67	0.67
12	10	33.33	0.67
15	1	4.17	0.83
15	2	8.33	0.83
15	3	12.50	0.83
15	4	16.67	0.83
15	5	20.83	0.83
15	10	41.67	0.83
18	1	5.00	1.00
18	2	10.00	1.00
18	3	15.00	1.00
18	4	20.00	1.00
18	5	25.00	1.00
18	10	50.00	1.00
21	1	5.83	1.17
21	2	11.67	1.17
21	3	17.50	1.17
21	4	23.33	1.17
21	5	29.17	1.17
21	10	58.33	1.17
24	1	6.67	1.33
24	2	13.33	1.33
24	3	20.00	1.33
24	4	26.67	1.33
24	5	33.33	1.33
24	10	66.67	1.33
27	1	7.50	1.50

Continued on next page

Constant Ground Speed (km/h)	Physical machine reaction delay time (seconds)	Distance traveled at given speed and time (meters)	Distance traveled per GPS update (meters)
27	2	15.00	1.50
27	3	22.50	1.50
27	4	30.00	1.50
27	5	37.50	1.50
27	10	75.00	1.50
30	1	8.33	1.67
30	2	16.67	1.67
30	3	25.00	1.67
30	4	33.33	1.67
30	5	41.67	1.67
30	10	83.33	1.67

BA31779,000018D -19-29APR11-2/2

GS 2 Swath Control Settings Quick Sheet—SAE

Constant Ground Speed (mph)	Physical machine reaction delay time (seconds)	Distance traveled at given speed and time (feet)	Distance traveled per GPS update (inches)
2	1	2.93	7.04
2	2	5.87	7.04
2	3	8.80	7.04
2	4	11.73	7.04
2	5	14.67	7.04
2	10	29.33	7.04
4	1	5.87	14.08
4	2	11.73	14.08
4	3	17.60	14.08
4	4	23.47	14.08
4	5	29.33	14.08
4	10	58.67	14.08
6	1	8.80	21.12
6	2	17.60	21.12
6	3	26.40	21.12
6	4	35.20	21.12
6	5	44.00	21.12
6	10	88.00	21.12
8	1	11.73	28.16
8	2	23.47	28.16
8	3	35.20	28.16
8	4	46.93	28.16
8	5	58.67	28.16
8	10	117.33	28.16
10	1	14.67	35.20
10	2	29.33	35.20
10	3	44.00	35.20
10	4	58.67	35.20
10	5	73.33	35.20
10	10	146.67	35.20
12	1	17.60	42.24
12	2	35.20	42.24
12	3	52.80	42.24
12	4	70.40	42.24
12	5	88.00	42.24
12	10	176.00	42.24
14	1	20.53	49.28
14	2	41.07	49.28
14	3	61.60	49.28
14	4	82.13	49.28
14	5	102.67	49.28
14	10	205.33	49.28
16	1	23.47	56.32
16	2	46.93	56.32
16	3	70.40	56.32
16	4	93.87	56.32
16	5	117.33	56.32
16	10	234.67	56.32
18	1	26.40	63.36

Continued on next page

BA31779,000018E -19-29APR11-1/2

Constant Ground Speed (mph)	Physical machine reaction delay time (seconds)	Distance traveled at given speed and time (feet)	Distance traveled per GPS update (inches)
18	2	52.80	63.36
18	3	79.20	63.36
18	4	105.60	63.36
18	5	132.00	63.36
18	10	264.00	63.36
20	1	29.33	70.40
20	2	58.67	70.40
20	3	88.00	70.40
20	4	117.33	70.40
20	5	146.67	70.40
20	10	293.33	70.40

BA31779,000018E -19-29APR11-2/2

John Deere Documentation Basics

Documentation on GS2 1800 display is capable of recording field totals given rates provided by ISOBUS implements, or manually entered. Feature does NOT include recording rate maps or yield maps.

1. Make sure John Deere Documentation Basic License is activated on the display. See Managing Activations section
2. Complete the Standard Setup Wizard to setup your GreenStar system for Documentation. See the Setup Wizard section earlier in this manual.

PC13211 —UN—28MAR11

Documentation Softkey

3. Select Documentation softkey.

BA31779,0000165 -19-27APR11-1/2

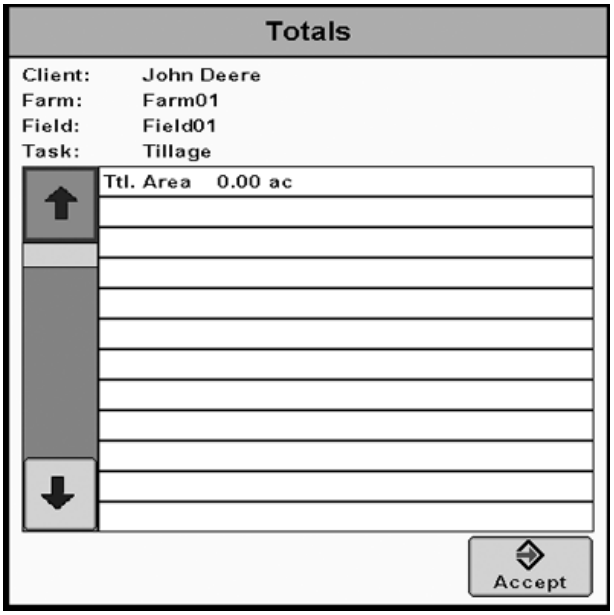
4. Select Totals softkey.

Documentation Totals displays the cumulative totals for the current Field and Task.

NOTE: Display will show totals provided by an ISOBUS implement. If no ISOBUS implement is connected, manually calculated area will be displayed

PC13212 —UN—28MAR11

Totals Softkey



PC13213 —UN—28MAR11

Totals

BA31779,0000165 -19-27APR11-2/2

Documentation Report

Documentation Report data will include:

- Date
- Client, Farm, Field
- Task
- Start/Stop Time
- Machine/Implement
- Product
- Rate

Additional information may be available depending on the connected ISOBUS implement.

Totals from the display are saved as both .pdf and .csv files whenever settings are saved from the display to the USB drive. See Data Management section for information on saving settings.

The Documentation data is saved in an ISO.XML format to the USB drive for importing into Desktop Software. Consult your desktop software documentation for information on importing.

.pdf and .csv files will be saved to *GS2_1800*\<*Name of dataset*>*Reporting* folder on USB drive in the following format:

- TSK_<Task name>_<date>_<time>.pdf
- TSK_<Task name>_<date>_<time>.csv

BA31779,0000176 -19-29APR11-1/1

Data Management

Data and settings may be transferred to or from a USB storage device to

- Backup your data
- Transfer to desktop software
- Transfer to another display

The following types of data may be transferred between displays:

- Client, Farm, Field
- Machine and Implement Resources
- Guidance Lines
- Interior / Exterior boundaries
- Coverage maps

The display will not transfer to Apex:

- Prescription Maps
- Aerial Images
- Background Images
- Variety Locator Maps

NOTE: The GS2 1800 display has two USB ports for redundancy. Only one USB storage device may be inserted at a time. The USB ports are meant for data transfer and reprogramming only and should not be used to recharge electronic devices.

CZ76372,00001C6 -19-05OCT10-1/1

Transferring Data

1. Turn off Recording and stop the vehicle.
2. Insert a USB storage device into the display. The USB should have at least 512 MB of free storage space.

NOTE: Most types of USB devices that fit in the USB opening will work with the display. Large USB storage devices, around 30GB, might be formatted to NTSF. The display is not compatible with NTSF. Reformat the USB storage device to FAT. If you do not see the USB Detected message, try the other USB port or another USB device.

3. A **USB Detected** message will appear if the display recognizes the USB. Read and Accept it.
4. Select Home button.
5. Navigate to the GreenStar application, if GreenStar is not already open.
6. Read and Accept any alert messages that may appear.
7. A USB Detected screen will appear on 1800 display. Read it and select **Transfer Data**.

NOTE: GreenStar applications are disabled while a USB device is inserted.

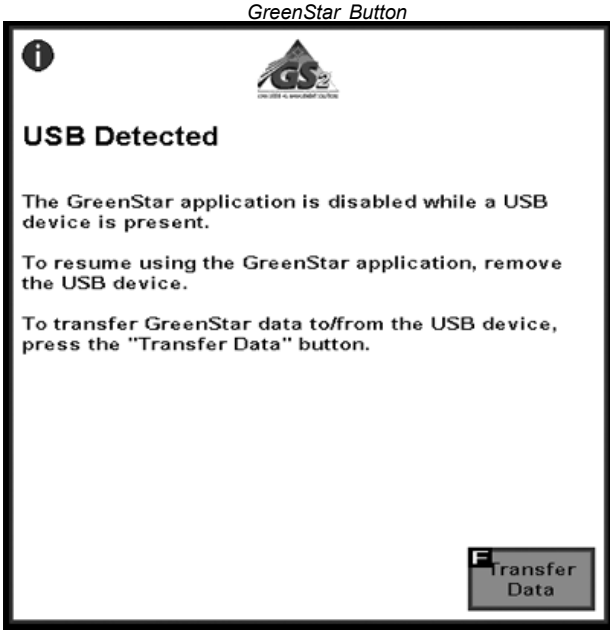
8. Select whether you would like to Backup data to the USB or Import data to the display.
9. Select Next button.

PC10857JC —UN—13APR09

Menu Button

PC10857JN —UN—13APR09

GreenStar Button



PC14399 —UN—13DEC11

PC10857JP —UN—13APR09

Next button

RN38933,0000184 -19-13DEC11-1/1

Backup Data to a USB storage device

1. Select or create a Profile name to store the data under. Profiles already on the USB storage device will appear in the list.

IMPORTANT: If you choose a previously created Profile from the USB, it will be deleted and replaced. This display does not merge or sync data. When using the same USB storage device with two or more GreenStar displays, you may wish to use separate profiles for each display to avoid losing data.

2. Enter a Check in the box if you would like to clear the internal memory of the display after data transfer.
3. Select Next button.

PC10857JP —UN—13APR09

Next button

4. A message will appear when data transfer is complete. Accept it and remove the USB storage device.

IMPORTANT: Removing the USB storage device, removing power to the display, or cranking the engine before this message appears may result in loss of data.

OUO6050,00010E6 -19-07JUN10-1/1

Importing Data from a USB storage device

1. Select a Profile name to store the data under. Profiles already on the USB storage device will appear in the list.

IMPORTANT: All data on the display will be deleted and replaced with the data from the selected Profile on the USB. This display does not merge or sync data.

2. Select Next button.
3. A message will appear when data transfer is complete. Accept it and remove the USB storage device.

PC10857JP —UN—13APR09

Next button

IMPORTANT: Removing the USB storage device, removing power to the display, or cranking the engine before this message appears may result in loss of data.

OUO6050,00010E7 -19-28APR09-1/1

Importing Data from 3rd Party Software

If 3rd party software is used to create a TASKdata.XML file for setup data, the TASKdata.XML file will need to be copied to folder on the USB drive.

Place the file in *GS2_1800\<Name of the dataset>\RCD*. The 1800 will then be able to recognize the setup data and it can be imported.

BA31779,0000177 -19-29APR11-1/1

View Amount Internal Memory Remaining

The total internal memory of the display is 512 MB and 350 MB is available for field and setup data. When it is 90% full, an alert message will appear. The amount of total internal memory space remaining can be viewed on the Recording page in GreenStar diagnostics:

GreenStar Main >> Diagnostics >> select Recording (from the drop down list)

The amount of memory space remaining is displayed in Megabytes and is also indicated by the bar graph.

PC10857JN —UN—13APR09

GreenStar Main Page

PC10857JL —UN—13APR09

OUO6050,000120F -19-24SEP09-1/1

Removing Data from the Internal Memory

There are three methods to remove data from the internal memory:

- **Clear all data and settings** during Data Backup to a USB storage device (see section on backing up data)
- **Clear Adaptive Curve data** (GreenStar Main >> Guidance Quick Change >> Delete Track)
- **Clear Coverage Map data** (GreenStar Main >> Field Quick Change >> Clear Coverage Maps)

Adaptive curves and Coverage maps can take up a significant amount of memory. The amount of memory depends on implement width, speed, and how straight the machine is driven.

OUO6050,00010E8 -19-08OCT09-1/1

Clearing Guidance Tracks

Clear (delete) Guidance Tracks to free up memory on the display. Guidance Tracks are cleared on the Guidance Setup page:

GreenStar Main >> Guidance Quick Change >> Delete Track

1. Select Tracking Mode
2. Select Track Name (depending on Tracking Mode)
3. Select Delete Track

PC10857JN —UN—13APR09

GreenStar Main Page

PC10857JJ —UN—13APR09

Guidance Quick Change

PC10857XK —UN—16JUN10

Delete Track

OUO6050,0001210 -19-16JUN10-1/1

Data Cleanup

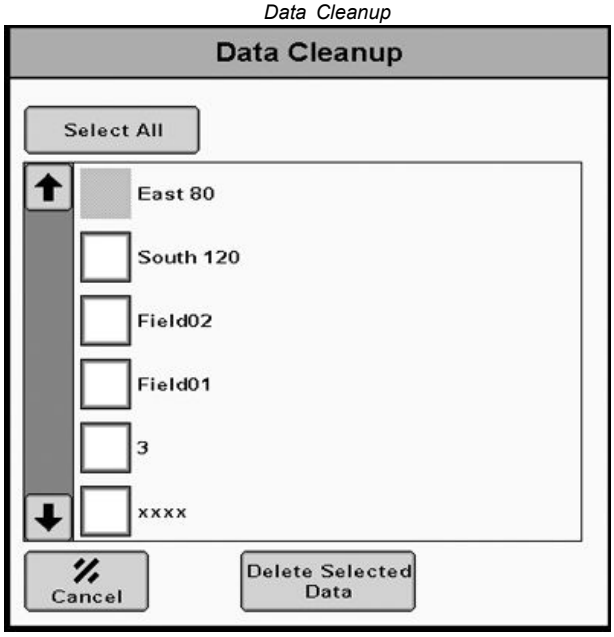
Client, Farm, Field, and other setup data can only be deleted using Data Cleanup.

1. Select what kind of data you want to delete (client, farm, field, etc).
2. Select the specific data to be deleted by selecting the check boxes
3. Press Delete Selected Data button

NOTE: Greyed out items can not be deleted because they may be related to other data or were created using desktop software.

PC14415 —UN—14DEC11

Data Cleanup



PC13233 —UN—31MAR11

Data Cleanup Selection

RN38933,0000186 -19-14DEC11-1/1

Alarm - GreenStar Setup Information Corrupt

Every time the display loads setup data when it successfully boots up, it also creates/updates a backup of that setup data.

If the setup data in the internal memory becomes corrupt, the display will try to load the backup setup data.

If the backup file is good, all the user needs to do is acknowledge that the backup has been loaded.

NOTE: Any modifications since last successful startup may have been lost.

PC13673 —UN—12DEC11

Backup File Loaded

Continued on next page

CZ76372,00003B1 -19-12DEC11-1/2

No Good Backup Available

Recovery in Progress

If the backup file is missing or corrupt, the display will load default setup data. The user will need to save setup data to the USB drive and load it to the display.

Default Setup Loaded

CZ76372,00003B1 -19-12DEC11-2/2

Performance Monitor

Performance Monitor

The GS2 1800 Display comes standard with Basic Performance Monitor (BPM), which provides productivity information such as vehicle speeds, acre counters, and fuel efficiency data.

BPM is disabled on late model John Deere vehicles and is replaced by a feature called Advanced Performance Monitor (APM). Check your vehicle's operator's manual to determine whether your machine is compatible with APM or not.

PC8658 —UN—05AUG05

BPM Performance Monitor Icon

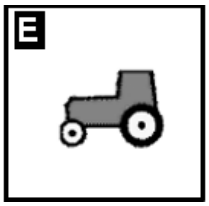
OUO6050,000101C -19-30OCT08-1/4

APM is very similar to BPM, but provides additional vehicle statistics such as engine and transmission oil pressure.

The available functions may vary depending on vehicle platform. Reference your vehicle Operator's Manual for Advanced Performance Monitor information. Units may be set to Metric, US, or Imperial in Display Settings. All functions available in BPM are also available in APM.

Performance Monitor allows you to monitor the following real-time functions:

PC9046 —UN—17APR06

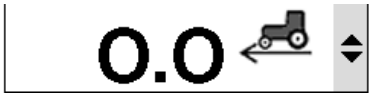


APM Performance Monitor Icon

OUO6050,000101C -19-30OCT08-2/4

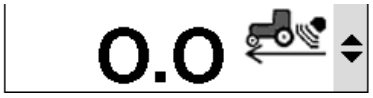
With APM, GPS Speed will use the Radar speed icon.

PC9047 —UN—17APR06



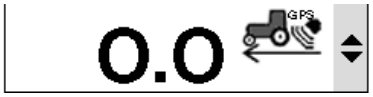
Wheel Speed

PC9048 —UN—17APR06



Radar Speed

PC9049 —UN—17APR06



GPS Speed

Continued on next page

OUO6050,000101C -19-30OCT08-3/4

Front and Rear PTO RPM

Wheel Slip will only be available if a radar sensor is installed. Wheel Slip is calculated as the difference between the wheel speed and radar speed, divided by the wheel speed

Fuel Per Hour is not available on all vehicles.

Fuel Per Area is not available on all vehicles.

Instantaneous Productivity is zero when Recording is off.

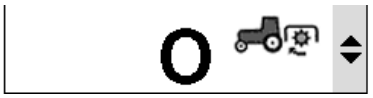
Area is calculated from the implement/header width setting, the speed (priority is GPS speed, radar speed, wheel speed), and the recording status. If Recording is off, area will not accumulate. If the value exceeds 9999.9, the counter will reset to zero.

The Distance Counter will accumulate any time the vehicle is moving (regardless of Recording status) and will use the same speed as the area counter to calculate the distance.

PC9050 —UN—17APR06

Front PTO

PC9051 —UN—17APR06

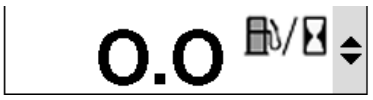


Rear PTO

PC9052 —UN—17APR06

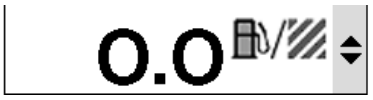
Wheel Slip (%)

PC9053 —UN—17APR06



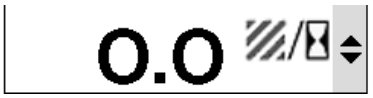
Fuel Per Hour

PC9054 —UN—17APR06



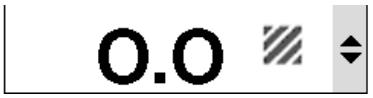
Fuel Per Area

PC9055 —UN—17APR06



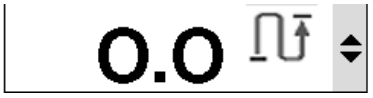
Instantaneous Productivity (Area / Hour)

PC9056 —UN—17APR06



Area Counter

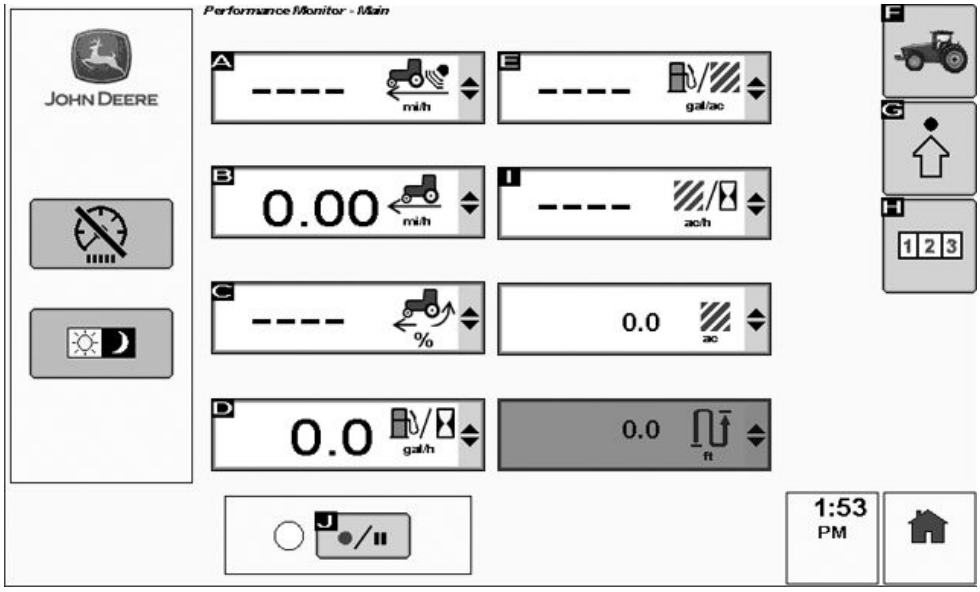
PC9057 —UN—17APR06



Distance Counter

OUO6050,000101C -19-30OCT08-4/4

Configuring the Performance Monitor



PC10857GE —UN—28OCT08

To view the Basic Performance Monitor main page select: Menu > Performance Monitor

Performance Monitor may be configured to display the most commonly viewed information.

To change the type of information shown in a particular box, select the box and choose one of the other options from the drop-down list. The available options will be dependent upon vehicle type.

PC10857GJ —UN—28OCT08

Menu Button

PC8658 —UN—05AUG05

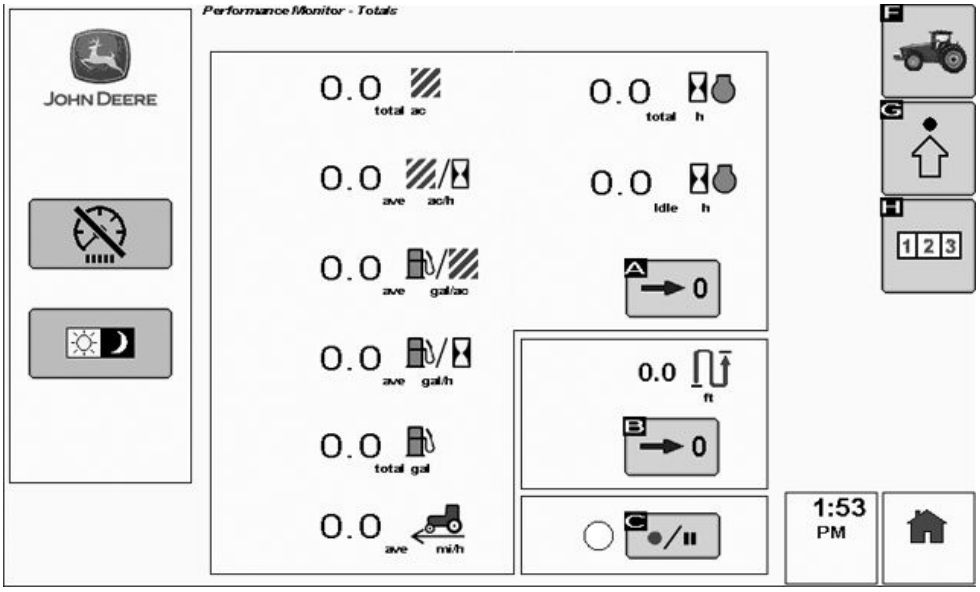
BPM Performance Monitor Icon

PC8791 —UN—18OCT05

Performance Monitor softkey

OUO6050,000101D -19-30OCT08-1/1

Viewing Performance Monitor Totals



PC10857GF —UN—28OCT08

To view the Performance Monitor Totals page select: Menu > Performance Monitor > Totals

The Performance Monitor Totals screen shows averages for many of the instantaneous values shown on the Main screen.

All Totals data will be retained when the display is shut off.

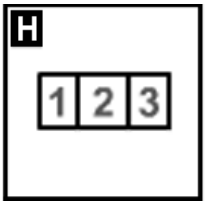
PC10857GJ —UN—28OCT08

Menu Button

PC8658 —UN—05AUG05

BPM Performance Monitor Icon

PC8793 —UN—18OCT05

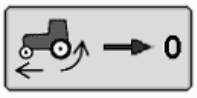


Totals softkey

OUO6050,000101E -19-30OCT08-1/2

Use the Reset buttons to reset all totals to 0.

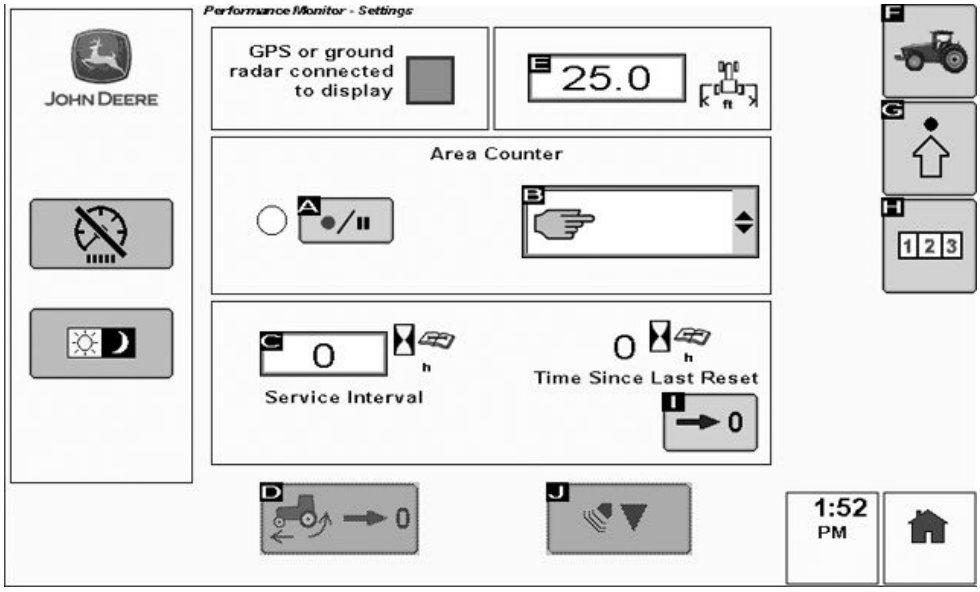
PC9118 —UN—17APR06



Zero Slip Button

OUO6050,000101E -19-30OCT08-2/2

Changing Performance Monitor Settings



PC10857GG —UN—28OCT08

To view the Performance Monitor Settings page select: Menu > Performance Monitor > Settings

Use the Performance Monitor Settings screen to configure how system productivity is measured.

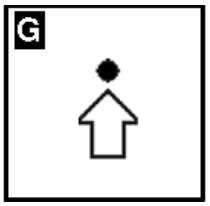
PC10857GJ —UN—28OCT08

Menu Button

PC8658 —UN—05AUG05

BPM Performance Monitor Icon

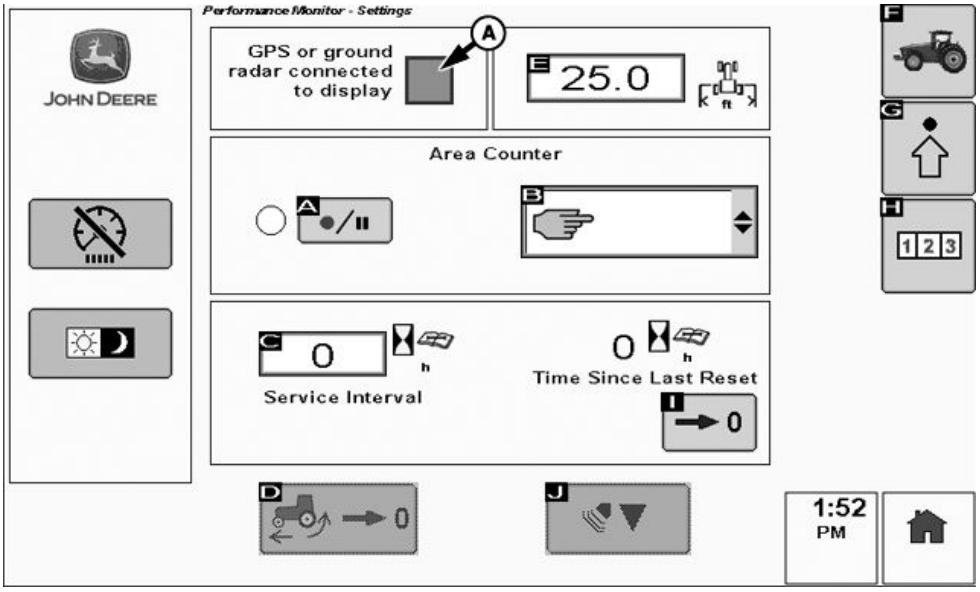
PC8792 —UN—18OCT05



Settings softkey

OUO6050,000101F -19-30OCT08-1/1

Connecting a Speed Source to the Display



PC10857GH —UN—28OCT08

A—Check Box

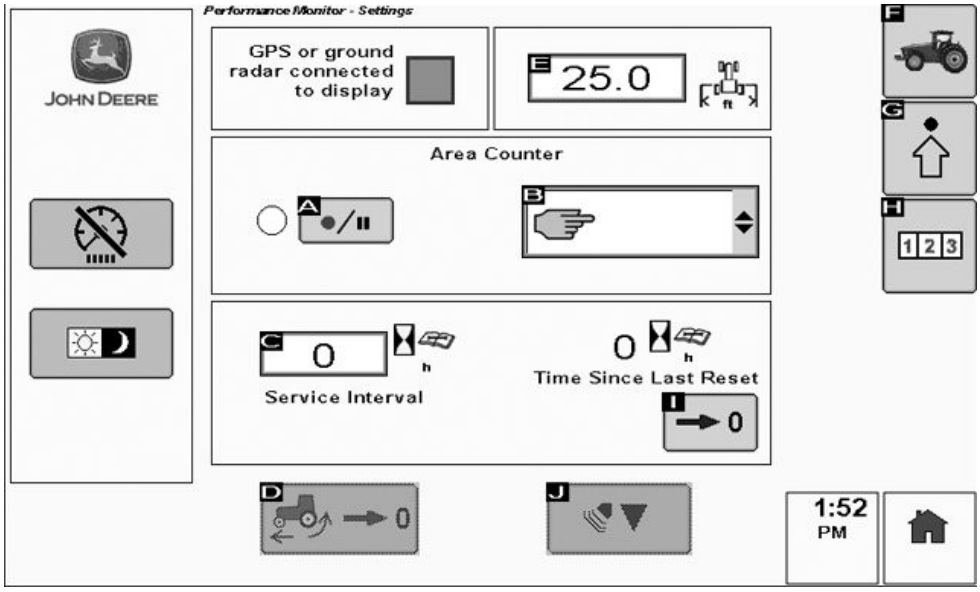
If necessary, the GS2 1800 display can be wired directly to a ground radar speed sensor, or to third-party GPS receivers that communicate via an RS232 serial port.

Check the box on the Settings page if either of these speed sources are connected directly to the display.

NOTE: Do not check this box if the display uses speed data from a John Deere GPS receiver or from a factory installed John Deere radar sensor. Doing so could cause inconsistent data and alarms to display.

OUO6050,0001020 -19-30OCT08-1/1

Setting the Implement (or Header) Width



PC10857GG —UN—28OCT08

To view the Performance Monitor Settings page select: Menu > Performance Monitor > Settings

Rotate the thumb wheel until the Implement Width input box is highlighted.

Select the check button and use the number pad to enter the implement width.

NOTE: Implement width setup here is not align with the setup in the GS2 pro menu.

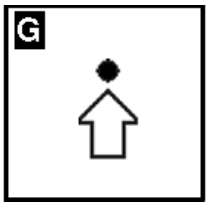
PC10857GJ —UN—28OCT08

Menu Button

PC8658 —UN—05AUG05

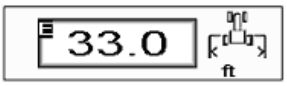
BPM Performance Monitor Icon

PC8792 —UN—18OCT05



Settings softkey

PC9096 —UN—17APR06



Implement/Header Width

OUO6050,0001021 -19-12MAY09-1/1

Choosing a Recording Source

To view the Performance Monitor Settings page select: Menu > Performance Monitor > Settings

The Performance Monitor area counters will turn on and off based upon a recording source. To choose the Performance Monitor recording source:

Select check button to expand the list and choose the recording source.

The recording source is set to manual by default. In manual mode, the record button (which can be found on each of the Performance Monitor screens) must be manually toggled with the display controls to turn the area counters on and off.

The following are the available recording source options and are dependent upon vehicle type:

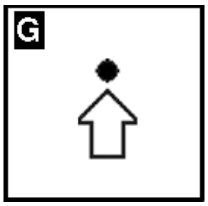
PC10857GJ —UN—28OCT08

Menu Button

PC8658 —UN—05AUG05

BPM Performance Monitor Icon

PC8792 —UN—18OCT05



Settings softkey

PC9058 —UN—17APR06

Drop-Down List

OUO6050,0001022 -19-30OCT08-1/7

PC9058 —UN—17APR06

Manual

OUO6050,0001022 -19-30OCT08-2/7

PC9059 —UN—17APR06

Rear Hitch

OUO6050,0001022 -19-30OCT08-3/7

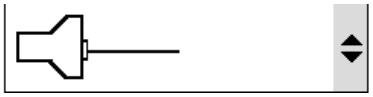
PC9060 —UN—17APR06

Front PTO

Continued on next page

OUO6050,0001022 -19-30OCT08-4/7

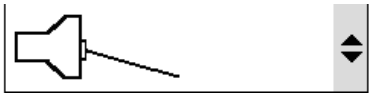
PC9062 —UN—17APR06



Implement Switch Closed

OUO6050,0001022 -19-30OCT08-5/7

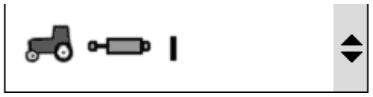
PC9063 —UN—17APR06



Implement Switch Open

OUO6050,0001022 -19-30OCT08-6/7

PC9065 —UN—17APR06



SCV I-VI

OUO6050,0001022 -19-30OCT08-7/7

Using Service Interval Reminders

The operator is able to view and change the Service Intervals Field. The valid range is 0 - 990 hours. Setting the interval to 0 disables the function.

When “Service Interval-Hours Since Service” is less than 20 hours to next service, the operator will see this notification.

The operator is able to manually reset the hours since service value, at which time an alarm will display confirming that the total should be reset. On CAN-Based vehicles, the operator will need to select and HOLD the reset button for 3 seconds.

Calibrating Wheel Slip and Radar

Calibrating wheel sleep and radar is only necessary if a radar speed source is wired directly to the GS2 1800 display. It is not required if the display is installed in a late model CAN based John Deere vehicle.

OUO6050,0001023 -19-30OCT08-1/1

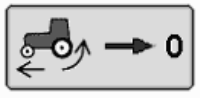
Calibrating Wheel Slip and Radar

Calibrating wheel sleep and radar is only necessary if a radar speed source is wired directly to the GS2 1800 display. It is not required if the display is installed in a late model CAN based John Deere vehicle.

Wheel Slip

1. Select: Menu > Performance Monitor > Settings > Wheel Slip
2. Drive the vehicle on a hard, level surface at a constant speed of 8 kph (5 m.p.h.).

PC9118 —UN—17APR06



Zero Slip Button

3. Follow on-screen instructions for competing the calibration process.

Continued on next page

OUO6050,000100D -19-30OCT08-1/2

Radar Sensor:

1. Select: Menu > Performance Monitor > Settings > Radar)
2. Select the F button to begin the calibration process and drive 122 m (400 ft) at 3.2 kph (2 mi/h) as indicated by the on-screen instructions.
3. Select the F button again at the end of the process.

NOTE: The radar cannot be calibrated unless on a CCD based vehicle. The only exception to this is if you directly hook the radar to the display via the GreenStar harness direct radar connection, then radar calibration is possible on a CAN based vehicle. See notes below for configuring radar on a CAN based tractor

PC9119 —UN—17APR06

Radar Calibration button

OUO6050,000100D -19-30OCT08-2/2

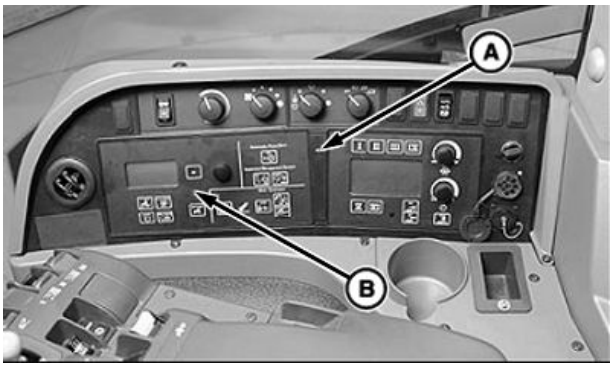
Configuring Tractor For DIRECT GPS or Ground Based Radar Feed (CAN-Based Vehicles ONLY)

NOTE: If you have any questions, your John Deere dealer can assist in field installing GPS or a radar device. CAN-Based tractors equipped with radar must be re-configured when switching to GPS receiver as the true ground speed input signal or vice versa for calibrating the ground based radar.

Certain CAN-Based vehicles will need CCU and TECU vehicle address configuration changes to enable radar operation. Please see your John Deere Dealer for service support.

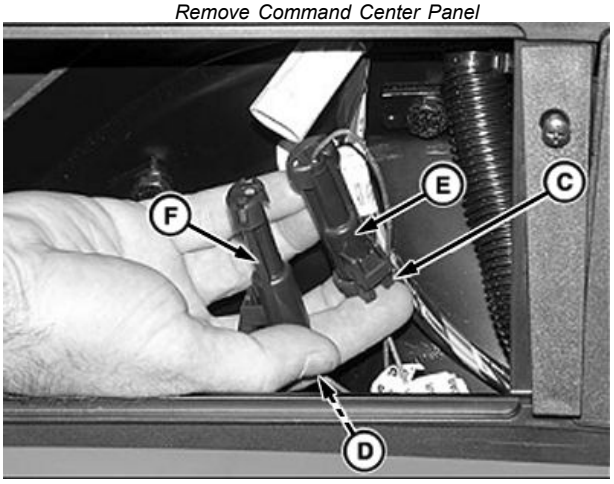
1. Remove screw (A) and Command Center (B).
2. Inside right-hand console locate console one wire lead marked ”GPS” and one marked ”Radar”.
3. Remove radar plug (C) from wiring connector (E).
4. Remove GPS plug (D) from dust cap (F).
5. Install GPS plug into connector and radar plug into dust cap.
6. Install Command Center with previously removed screw.

A—Screw
B—Command Center
C—Radar Plug
D—GPS Plug
E—Connector
F—Dust Cap



PC9120 —UN—17APR06

Remove Command Center Panel



PC9121 —UN—17APR06

Connect GPS side of Harness

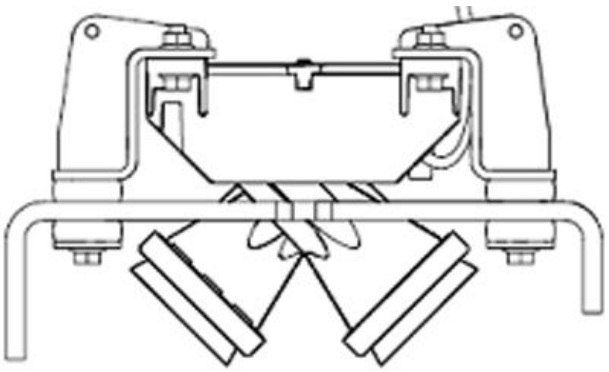
OUO6050,0000CDB -19-08NOV07-1/1

Dual Beam Radar Sensor Only (Automatic Calibration)

On tractors equipped with factory or dealer installed dual beam radars, it is not necessary to calibrate vehicle speed. Reset % wheel slip value if:

- Wheel speed and radar speed are not equal when slip is not present
- Wheel slip is displayed where slip should not be present
- Change tire size

Reset % slip value by driving tractor on a hard level surface at a constant speed of 8 kph (5 mph). Press and hold % Slip Switch (A) for a minimum of 3 seconds to zero out slip. It is recommended to have an implement connected to the tractor but not engaged in the ground (no load).



PC9122 —UN—17APR06

OUO6050,0000CDC -19-31OCT07-1/1

RADAR CONNECTION SIGNAL VALIDATION (BPM MODE ONLY)

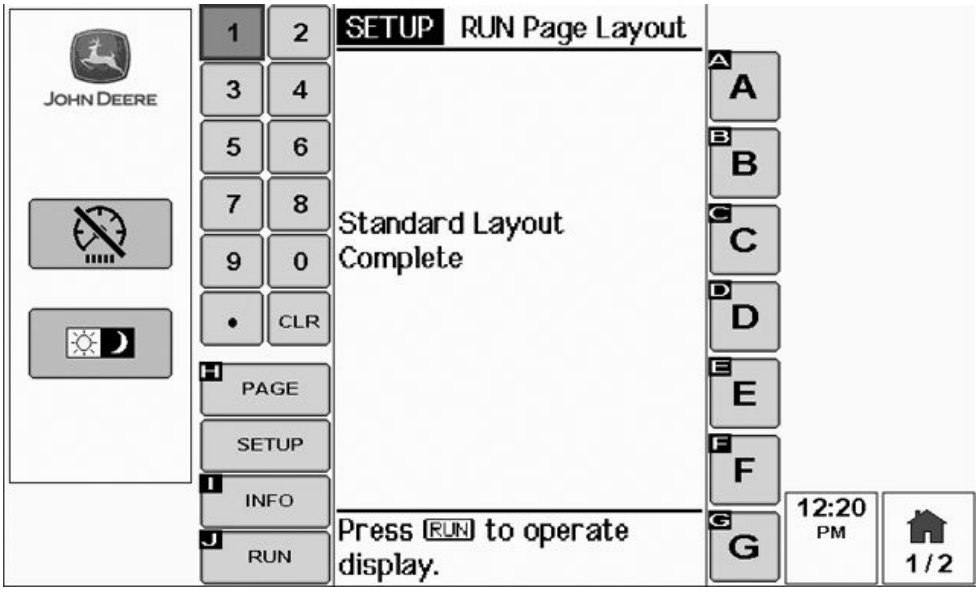
Ensure the radar connected check box is checked in the BPM setup screen. This check box will only display in BPM mode. In APM mode, radar feed is designated by the wire connection behind the command center denoted in the Configuring Tractor section. The GS2 display will display the GPS radar feed value when connected. This value should be 57.42 during normal operation. To view this value once connected:

1. Select Menu > Message Center > Diagnostic Addresses (Softkey G).
2. In the Device drop down list, select VTi.001 Implement.
3. Scroll down to Address 60.
4. Address 60 should display 57.42 if radar is feeding from the iTC GPS receiver If this value is 57.42, you are directly feeding GPS radar signal. Ground based radars will display approximately the same values when connected.

If zero is displayed, no radar signal is being seen, GPS nor Ground Based.

OUO6050,00010F3 -19-12MAY09-1/1

Operating Original GreenStar Monitor Function



PC10857GI —UN—28OCT08

To access the Original GreenStar Monitor application select: Menu > Original GreenStar Monitor

The Original GreenStar Monitor application is used to display information from controllers that are designed for use with the original GreenStar display.

See the implement's Operator's Manual for operating implements using Original GreenStar display. Monitor application is compatible with following John Deere 2.5 v controllers:

- SeedStar Gen 1 Seed Monitor and Variable Rate Drive
- SeedStar Gen 2 Seed Monitor and Variable Rate Drive
- SeedStar Air Cart
- SprayStar
- Accu-Depth
- Original StarFire Receiver
- TCM
- European Drill
- European Sprayer
- European Spreader European Wrapping Baler

PC10857GJ —UN—28OCT08

Menu Button

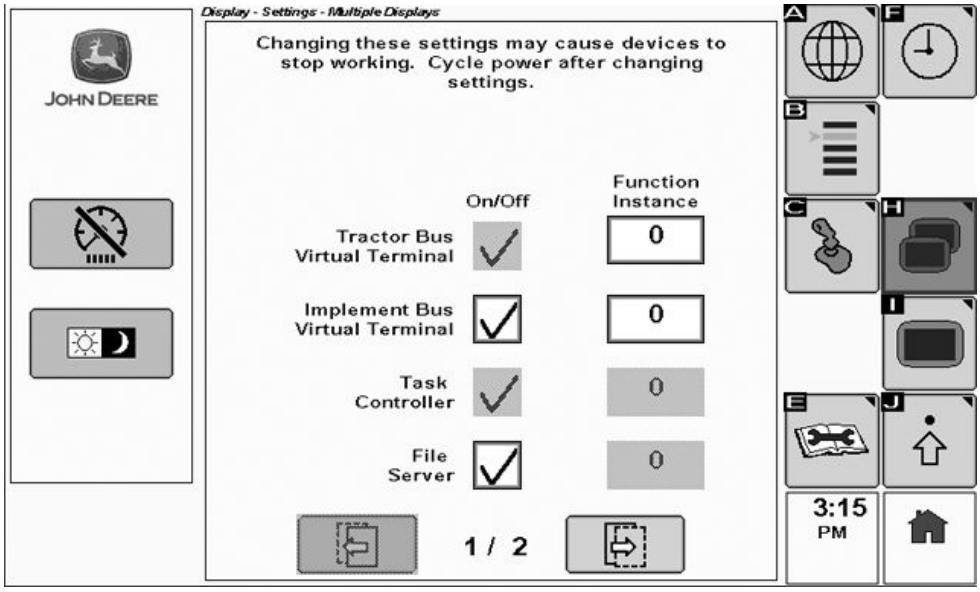
PC8657 —UN—05AUG05

ORIGINAL GREENSTAR MONITOR button

- Rauch Axera Fertilizer Spreader
- Harvest Monitor (Except 70 Series Combines)
- Self Propelled Forage Harvester

OUO6050,0000FDB -19-29OCT08-1/1

Operating With More Than One Virtual Terminal Display



Display

PC10857GL —UN—29OCT08

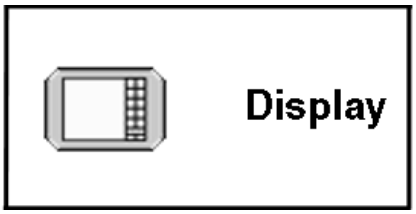
To modify settings for multiple display operation select: Menu > Display > Settings > Multiple Displays

In some cases, it may be desirable to operate the GS2 1800 in tandem with another virtual terminal display (such as an 8R tractor CommandCenter). This type of scenario requires that the display be configured to recognize and operate in conjunction with the second display.

PC10857GJ —UN—28OCT08

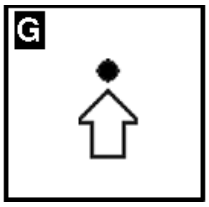
Menu button

PC8654 —UN—05AUG05



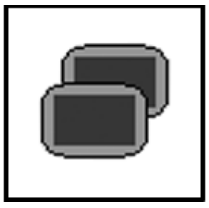
Display button

PC8792 —UN—18OCT05



Settings button

PC10857GK —UN—29OCT08



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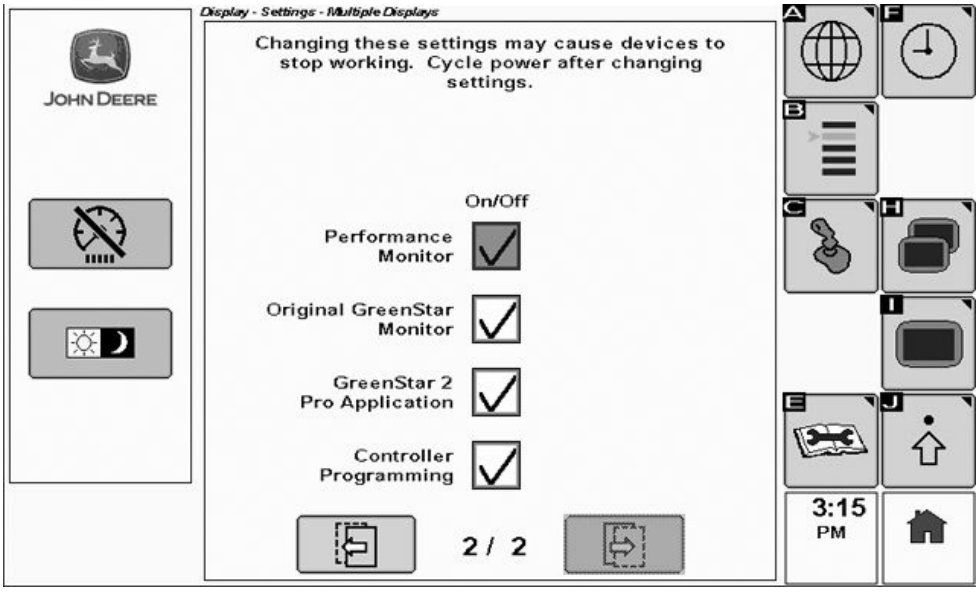
OUO6050,000100E -19-02JUN10-1/2



PC10857GM —UN—29OCT08

The following table gives guidelines for disabling the various display features

Tractor Bus Virtual	Terminal Tractor Bus Virtual Terminal cannot be disabled. No adjustment required.
Implement Bus Virtual Terminal	Disable the Implement Bus Virtual Terminal in order to force external controllers to use an alternate display. For example, disable this feature on the GS2 1800 in order to make devices such as StarFire and GS2 Rate Controller operate on the 8R CommandCenter.
Task Controller	Task Controller is enabled / disabled automatically based on vehicle type. No adjustment required.
File Server	Disable this feature if the Implement Bus Virtual Terminal is disabled.
Performance Monitor	Performance Monitor cannot operate simultaneously on two displays. Disable this feature to view Performance Monitor data on an alternate display.
Original GreenStar Monitor	Original GreenStar Monitor cannot operate simultaneously on two displays. Disable this feature to view Original GreenStar Monitor on an alternate display. Original GreenStar Monitor must be checked to run AutoTrac on 20 series (CCD bus) tractors.
GreenStar 2 Pro Application	GreenStar 2 Pro Applications cannot operate simultaneously on two displays. Disable this feature to operate GreenStar 2 Apps on an alternate display.
Controller Programming	Controller Programming can only be conducted via one display. Disable this feature to program external controllers via an alternate display.

NOTE: The Virtual Terminal function instance settings can be modified for the Virtual Terminal on each CAN bus. Some external controllers take function instance into account when determining which display to interact with. As a general rule, setting function instance to a number other than zero will indicate it is a lower priority display.

OUO6050,000100E -19-02JUN10-2/2

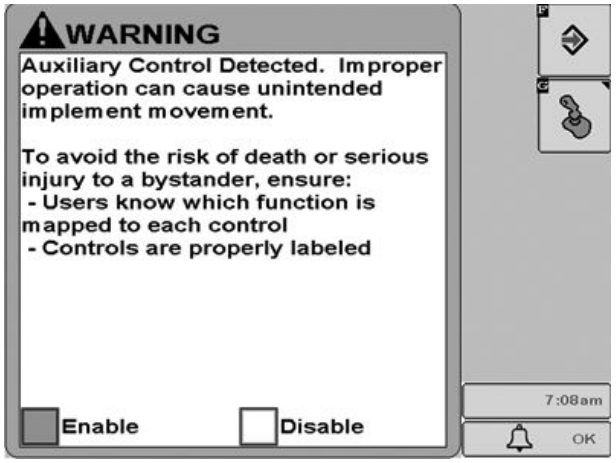
Auxiliary Control Safety Signs

Auxiliary Control Detected

This message occurs when the system detects an Auxiliary Control. Press ”Enter” key **F** to navigate to the home page. Go to the Auxiliary Controls page by pressing the ”Mapping” key **G** to review or change the Auxiliary Control assignments.

If ”**Disable**” is selected (default), all Auxiliary Controls will be disabled.

If ”**Enable**” is selected, all Auxiliary Controls will be enabled.



PC13154 —19—17FEB11

RN38933,000013B -19-21SEP11-1/6

Auxiliary Control Detected

IMPORTANT: Auxiliary Control is disabled because requested assignments could not be completed. Go to the Auxiliary Controls page to enable.

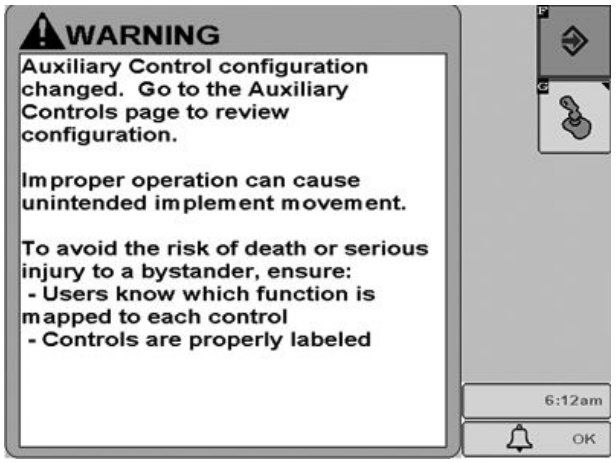
This message occurs when the system detects an Auxiliary Control and at least one of the requested assignments could not be completed. It is necessary to check the Auxiliary Controls page by pressing the ”Mapping” key **G** and review the assignments before Auxiliary Control can be enabled.

PC10857SV —UN—01MAR10

RN38933,000013B -19-21SEP11-2/6

Auxiliary Control Configuration Changed

This message occurs when the system detects an Auxiliary Control and that configuration has been modified during run time (e.g. additional input and/or implement added). Press ”Enter” key **F** to navigate to the home page. Go to the Auxiliary Controls page by pressing the ”Mapping” key **G** to review or change the Auxiliary Control assignments.



PC13155 —19—17FEB11

Continued on next page

RN38933,000013B -19-21SEP11-3/6

Auxiliary Control Configuration Changed

IMPORTANT: Auxiliary Control configuration changed. Auxiliary Control is disabled because requested assignments could not be completed. Go to the Auxiliary Controls page to enable.

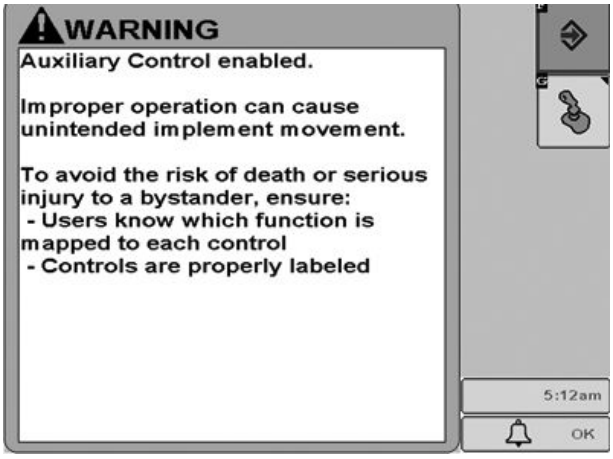
This message occurs when the Auxiliary Control configuration has been modified during run time (e.g. additional input and/or implement added) and at least one of the requested assignments could not be completed. It is necessary to check the Auxiliary Controls page by pressing the ”Mapping” key **G** and review the assignments before Auxiliary Controls can be enabled.

PC10857SW —UN—01MAR10

RN38933,000013B -19-21SEP11-4/6

Auxiliary Control Enabled

This message occurs when the operator enables the Auxiliary Control manually. Press ”Enter” key **F** to navigate to the home page. Go to the Auxiliary Controls page by pressing the ”Mapping” key **G** to review or change the Auxiliary Control assignments.



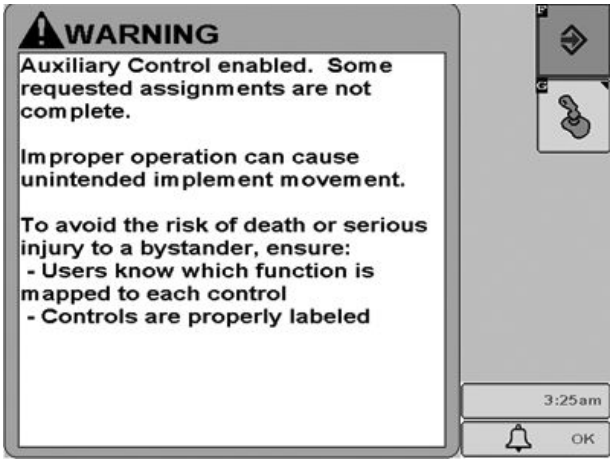
PC13146 —19—17FEB11

RN38933,000013B -19-21SEP11-5/6

Auxiliary Control Enabled

This message occurs when Auxiliary Control has been enabled manually, however, not all assignments have been completed successfully. Press ”Enter” key **F** to navigate to the home page. Go to the Auxiliary Controls page by pressing the ”Mapping” key **G** to review or change the Auxiliary Control assignments.

IMPORTANT: If the ”Enter” key F is selected, the implement only follows the assignments which have been completed successfully, however, there are still assignments which are not complete. It is necessary to review the Auxiliary Controls mapping screen by pressing the ”Mapping” key G and complete all assignments before enabling Auxiliary Controls.



PC13153 —19—17FEB11

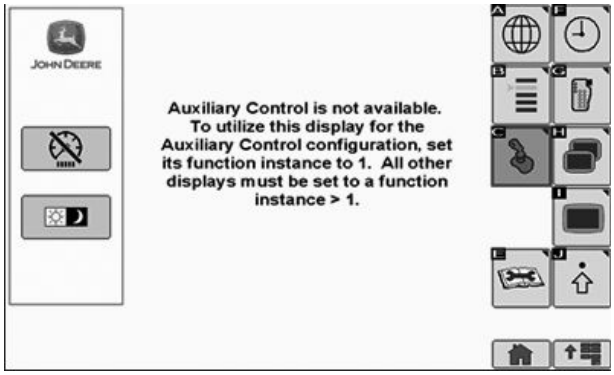
RN38933,000013B -19-21SEP11-6/6

Auxiliary Control Alerts

Auxiliary Control Not Available

IMPORTANT: Auxiliary Control is not available. To utilize this display for the Auxiliary Control configuration, set its function instance to 1. All other displays must be set to a function instance >1.

This message occurs when the system detects that the display on which the Auxiliary Control function runs is not set as the primary Virtual Terminal (Function Instance 1).



PC10857SX —UN—01MAR10

PC10857SY —UN—01MAR10

OUO6050,0001240 -19-02MAR10-1/3

Auxiliary Control Not Available

IMPORTANT: Auxiliary Control is not available. The connected auxiliary input device does not meet the implement function requirements.

This message occurs if an input device cannot control any of the requested implement functions due to an incompatibility (e.g. the input sends analog signals and the implement sends digital signals).

PC10857SZ —UN—01MAR10

Continued on next page

OUO6050,0001240 -19-02MAR10-2/3

Communication Error

IMPORTANT: Communication Error

Communication problem with auxiliary input.

Communication may be lost.

Check connections to controller.

This message occurs when the system detects a communication problem with auxiliary input (i.e. the joystick is disconnected). Press ”Enter” key **F** to quit this error message, then check all connections.

PC10857TA —UN—01MAR10

OUO6050,0001240 -19-02MAR10-3/3

Configuring Auxiliary Controls

To view the Auxiliary Controls page select: Menu > Display > Settings > Auxiliary Controls

Avoid death or serious injury to a bystander from unintended implement movement by understanding how this display operates the functions of each implement.

Read the Operator’s Manual for each implement.

ISO compliant auxiliary controls may be used to control ISO compliant implement functions.

Auxiliary Controls feature is used to configure implement functions to available controls. The display does not operate the implement functions, but is used as an interface to map functions to input controls.

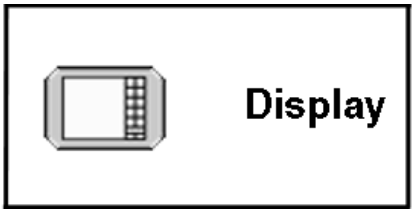
Example: A tractor has a display with a two-switch control box connected to the CAN system. A chemical sprayer is attached to the tractor and it's ECU connected to the network. The sprayer has two controlled functions: pump on/off and nozzles on/off. Using the Auxiliary Control feature, each device (function) is mapped to one of the input control switches, to operate that implement function.

When a different implement's ECU is connected to the network, Auxiliary Control is used to reassign the switches to control the functions of that implement (cultivator raise/lower, wing fold/unfold).

PC8663 —UN—05AUG05

MENU button

PC8654 —UN—05AUG05



DISPLAY button

PC8691 —UN—16OCT07

AUXILIARY CONTROLS softkey

OUO6050,0001029 -19-29OCT08-1/1

Enable, Disable, or Change Auxiliary Controls

If a different control is installed on the tractor, such as a joystick, Auxiliary Control will need to be re-configured to introduce new control inputs to implement functions

When Auxiliary Controls are detected or have changed, the operator is responsible to ensure:

All users know which function is mapped to each control.

Controls are properly labeled.

Controls provide safe implement operation.

Highlight and check button to enable or disable auxiliary controls.

Return to Auxiliary Control Setup and remap controls.

OUO6050,000102B -19-30OCT08-1/1

AUXILIARY CONTROLS softkey

This screen allows mapping of ISO compliant implement functions to ISO compliant auxiliary controls.

Example:

The display has been set up in a tractor that is attached to a sprayer.

A switch box has been installed in the tractor containing two switches: Switch 1 and Switch 2.

The sprayer has two functions that can be controlled by the switch box: turning the pump on and off, and turning the nozzles on and off.

The operator can choose which switch will turn the pump on and off and which switch will turn the nozzles on and off.

The tractor could be attached to a different implement and the switches could be assigned to control functions of that implement.

Also, a different input device, such as a joystick, could be installed and that device could be assigned control over the sprayer's functions.

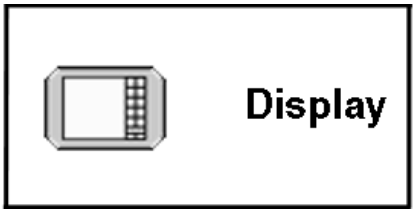
To assign an input function to an implement function using the Auxiliary screen:

1. Choose the implement and implement function.
2. Choose an input device from the drop-down box.
3. Choose an input device function from the second drop-down box.

PC8663 —UN—05AUG05

MENU button

PC8654 —UN—05AUG05



DISPLAY button

PC8691 —UN—16OCT07

AUXILIARY CONTROLS softkey

Device function is assigned to auxiliary control function.

OUO6050,0001027 -19-30OCT08-1/1

Auxiliary Controls Page

The following screens allow mapping of ISO compliant auxiliary/implement functions to ISO compliant auxiliary controls.

Example:

The display has been set up in a tractor that is attached to a sprayer.

A switch box has been installed in the tractor containing two switches: Switch 1 and Switch 2.

The sprayer has two functions that can be controlled by the switch box: turning the pump on and off, and turning the nozzles on and off.

The operator can choose which switch will turn the pump on and off and which switch will turn the nozzles on and off.

The tractor could be attached to a different implement and the switches could be assigned to control functions of that implement.

Also, a different input device, such as a joystick, could be installed and that device could be assigned control over the sprayer's functions.

PC8663 —UN—05AUG05

MENU button

ZX1042167 —UN—14OCT08

DISPLAY button

ZX1042166 —UN—14OCT08

AUXILIARY CONTROLS button

OUO6050,0001241 -19-02MAR10-1/1

Auxiliary Controls Page—Implement Function Mapping

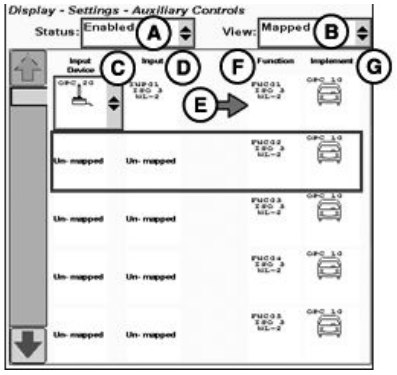
IMPORTANT: Before using Auxiliary Controls, read the operator manual provided by the implement manufacturer and observe all safety messages in the manual and on the implement prior to use. When using Auxiliary Controls, information and control functions placed on this display are provided by the implement.

AUXILIARY CONTROLS softkey **H**

This screen allows the mapping of an ISO compliant implement functions to ISO compliant Auxiliary Input devices.

An auxiliary input device (C) consists of a number of "**Inputs**" (D). These inputs may be buttons, switches, dials, etc.

This Auxiliary Controls page allows the user to match these inputs with various implement functions. This process is called "**Mapping**" an input to a function. Once this "**Mapping**" is completed, a function (F) may be performed by activating the associated input.



PC10857TB —UN—02MAR10

A—Status Selection
B—View Selection
C—Input Device Selection
D—Input Selection
E—Status Indicator
F—Implement Function
G—Implement Type

The available functions (F) and inputs (D) depend on the ISO compliant implements/controls (G) that are currently connected.

Continued on next page

OUO6050,0001242 -19-27MAY10-1/4

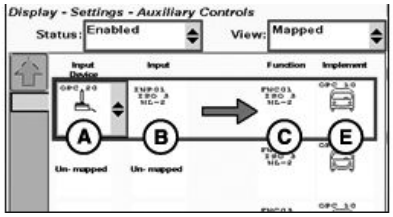
To assign one of an input device's input controls to one of an implement's functions perform the following steps:

1. Select an implement function (C) by using the up and down arrow buttons located on the left hand side of the screen.
2. The row that contains the currently selected implement function will be indicated by a cursor colored rectangle.
3. Select the list control under the "**Input Device**" column (A) in the currently selected row.
4. Choose an "**Input Device**" (A) by selecting one of the items listed in this control.
5. Another list control will appear in the "**Input**" column (B).
6. Select an item from this list to select the specific input to map to the currently selected implement "**Function**" (C).

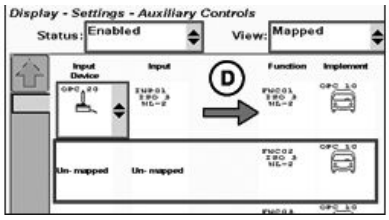
IMPORTANT: The input device selection list only shows inputs which are compatible to the implement functions.

7. A status indicator (D) will appear to indicate if the input device's input (B) control was successfully mapped to the implement "**Function**" (C) or not.
   - A green status indicator (D) indicates that the mapping is completed successfully.

PC10857TC —UN—02MAR10



PC10857TD —UN—02MAR10



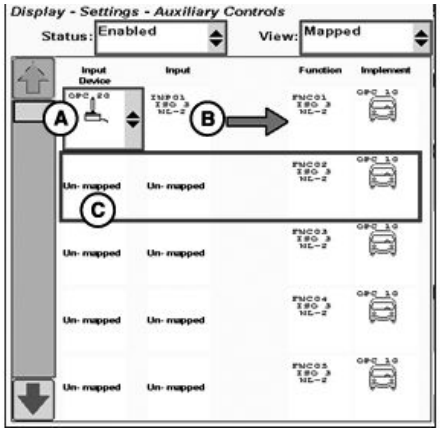
A—Input Device Selection
B—Input Selection
C—Implement Function
D—Status Indicator (green=mapped/red=un-mapped)
E—Implement Type

   - A red status indicator (D) indicates that the mapping was not successful. In this case, check the assignments and change as necessary.
8. Repeat steps 1 to 7 to map as many controls as is needed.

OUO6050,0001242 -19-27MAY10-2/4

To remove an existing assignment perform the following steps:

1. Select an existing assignment by using the up and down arrow buttons located on the left hand side of the screen.
2. The row that contains the currently selected assignment will be indicated by a cursor colored rectangle.
3. Select one of the list controls from the selected row. Either the "**Input Device**" (A) or "**Input**" (B) lists will suffice.
4. From the selected list, choose the "**Unmapped**" item (C).
5. The assignment arrow will be removed and the controls will be set to "**Unmapped**" (C).



PC10857TE —UN—02MAR10

A—Input Device Selection
B—Input Selection
C—Unmapped

Continued on next page

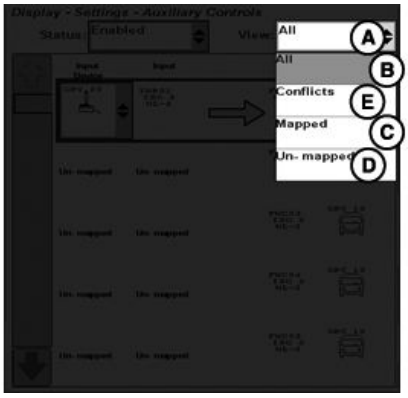
OUO6050,0001242 -19-27MAY10-3/4

To filter the current list of "Mappings":

1. Select the "**View**" list control (A).

NOTE: "View" list control is only available when Auxiliary Control is enabled.

2. Choose the "**All**" item (B) to see all "**Mapped**" (C) and "**Unmapped**" (D) implement functions and "**Conflicts**" (E). This is the default selection.
3. Choose the "**Mapped**" item (C) to see only the "**Mapped**" implement functions.
4. Choose the "**Unmapped**" item (D) to see only the implement functions that have not yet been "**Mapped**" to input controls on an input device.
5. Choose the "**Conflicts**" item (E) to see only the implement function assignments in conflict to each other. See Auxiliary Controls—Conflicts and Disable Functions in this Section.



PC10857TF —UN—02MAR10

A—View Selection
B—All
C—Mapped
D—Unmapped
E—Conflicts

OUO6050,0001242 -19-27MAY10-4/4

Auxiliary Controls—Assignment Error Messages

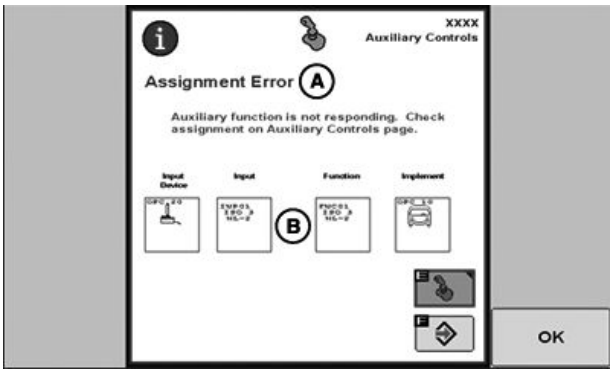
While assigning functions, some assignment error messages may appear.

When an auxiliary function is not responding to an assignment request, the error message (A) appears:

Auxiliary function is not responding. Check assignment on Auxiliary Controls page.

The related assignment (B) is displayed. Press key **E** to reach the Auxiliary Controls page or enter key **F** to return to the previous screen.

IMPORTANT: It is recommended to press key E to reach the Auxiliary Controls page and check the auxiliary function assignment.



PC10857TG —UN—02MAR10

A—Assignment Error
B—Assignment
E—Auxiliary Controls Page Access Key
F—Enter Key

Continued on next page

OUO6050,0001243 -19-01JUN10-1/4

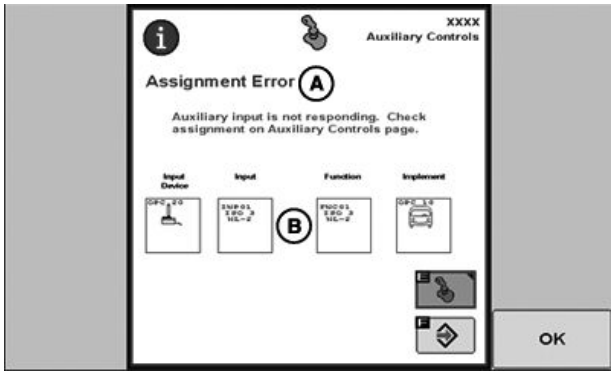
When an auxiliary input is not responding to an assignment request, the error message (A) appears:

Auxiliary input is not responding. Check assignment on Auxiliary Controls page.

The related assignment (B) is displayed. Press key **E** to reach the Auxiliary Controls page or enter key **F** to return to the previous screen.

IMPORTANT: It is recommended to press key E to reach the Auxiliary Controls page and check the auxiliary input assignment.

A—Assignment Error
B—Assignment
E—Auxiliary Controls Page Access Key
F—Enter Key



PC10857TH —UN—02MAR10

OUO6050,0001243 -19-01JUN10-2/4

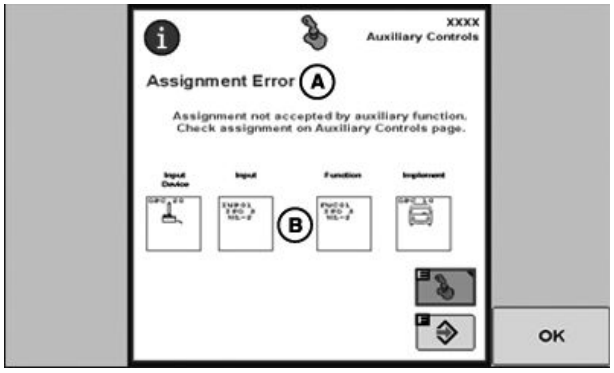
When an implement rejects an assignment, the error message (A) appears:

Assignment not accepted by auxiliary function. Check assignment on mapping screen.

The related assignment (B) is displayed. Press key **E** to reach the Auxiliary Controls page or enter key **F** to return to the previous screen.

IMPORTANT: It is recommended to press key E to reach the Auxiliary Controls page and check the auxiliary input assignment.

A—Assignment Error
B—Assignment
E—Auxiliary Controls Page Access Key
F—Enter Key



PC10857TI —UN—02MAR10

OUO6050,0001243 -19-01JUN10-3/4

When the selected auxiliary input does not match the implement functions while the learn mode is active (thus the assignment was not successful), the error message (A) appears:

The requested auxiliary input does not meet the implement function requirements. The assignment cannot be made.

Press enter key **F** to reach the Auxiliary Controls page and check the auxiliary input assignment.

A—Assignment Error
F—Enter Key

PC10857TJ —UN—02MAR10

OUO6050,0001243 -19-01JUN10-4/4

Auxiliary Controls—Preferred Assignments

Auxiliary Controls allow an implement to request a preferred assignment for a specific input. The preferred assignment depends on the input device and implement configuration.

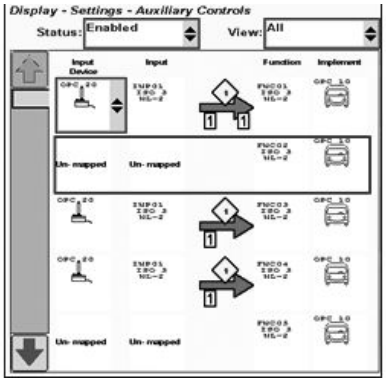
Example:

A joystick (4 inputs) and an implement (4 functions) are connected to the vehicle.

- Input 1 = function 1
- Input 2 = function 3
- Input 3 = function 2 and 4
- Input 4 = not assigned

In this example the implement **requests** function 3 to be mapped to input 2 and both functions 2 and 4 to be mapped on input 3. Input 4 remains blank.

This is called a preferred assignment and is requested by the implement as soon as implement and input device



PC10857TK —UN—01MAR10

are connected. Once an assignment has been changed by the operator, the implement may store the mapping as the new preferred assignment for this particular configuration. If joystick and implement are disconnected and reconnected at a later date, the implement is able to reload the assignments again.

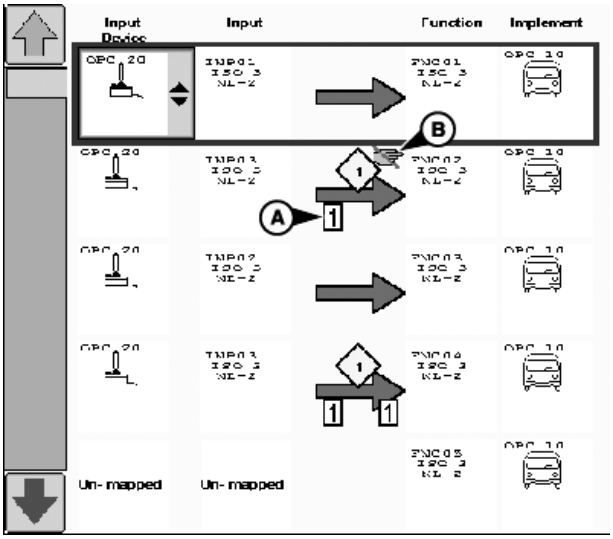
OUO6050,0001244 -19-01JUN10-1/2

Based on input device and/or implement requirements the assignments may be limited:

- The single assignment icon (A) can be set by an auxiliary function and/or input.
  - If an implement function sets a single assignment icon, it can only be mapped separately to ONE button of the input device and no additional function can be assigned to this button.
  - If an input sets a single assignment icon, it can only be mapped to ONE implement function.
- The assignment lock icon (B) states that the assignment is requested automatically by the implement and can not be set manually by the operator.

NOTE: Depending on the implement functions, the preferred assignment can also differ between the implement manufacturers.

A—Single Assignment Icon **B—Assignment Lock Icon**



PC10857WM —UN—01JUN10

Display Settings - Auxiliary Controls

OUO6050,0001244 -19-01JUN10-2/2

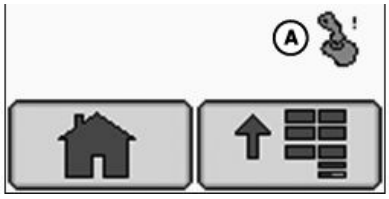
Auxiliary Controls—Conflicts and Disabled Functions

Auxiliary Controls—Conflicts:

When a conflict occurs, the GS2 display shows a yellow square (A) next to the Auxiliary Control symbol in the message center button. This allows the operator to recognize conflicts at any time independently from the screen he is working on.

NOTE: The joystick icon appears only if Auxiliary Controls has been enabled.

PC10857TL —UN—02MAR10



A—Conflict Occurrence Alert

OUO6050,0001245 -19-01JUN10-1/5

From the Auxiliary Controls page, the operator can select the mapped (C) and unmapped (D) functions and conflicts (B) from the drop-down list of view selection (A).

All conflicts are grouped together in the conflicts filter and marked with yellow square and numbers (E). All conflicts with the same number are related to each other.

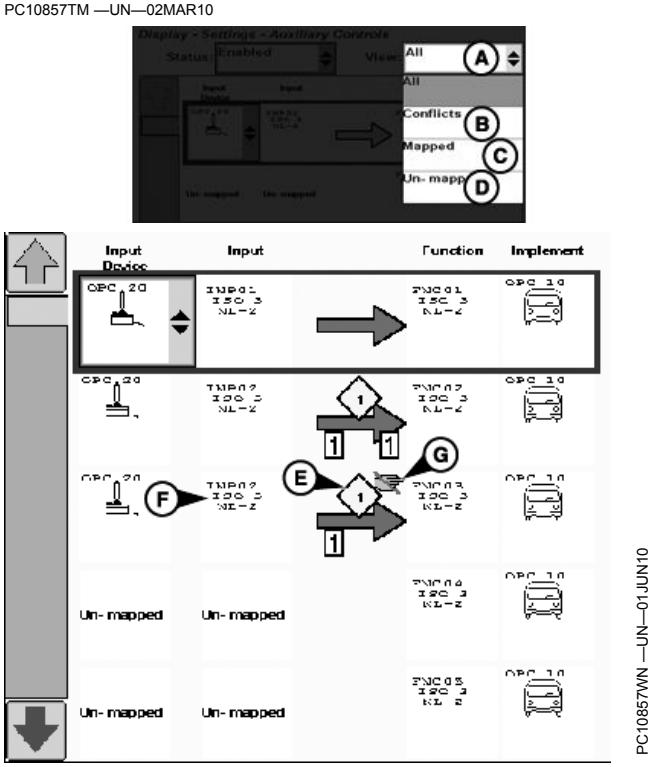
The conflict square icon (E) will appear on all related assignments even if they have been completed successfully or not.

In this example (see illustration), functions 2 and 3 have been requested to be assigned to the same input (F) although this input is set with a single assignment icon. In addition, the third function (STOP) is set with an assignment lock icon (G) and can not be set manually.

To resolve the conflict the second function **MUST** be remapped.

A—View Selection
B—Conflicts
C—Mapped
D—Unmapped
E—Conflict Number
F—Input
G—Assignment Lock Icon

PC10857TM —UN—02MAR10



PC10857WN —UN—01JUN10

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OUO6050,0001245 -19-01JUN10-2/5

Auxiliary Controls—Enabled Functions:

The status selection drop-down list (A) allows the operator to enable (B) or disable (C) the Auxiliary Control functions and to enable the learn mode (D).

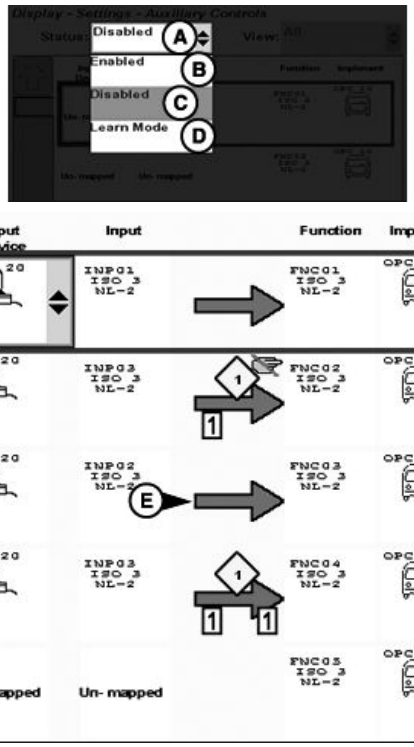
All active assignments are shown with a constant status indicator (E). In case of a conflict, the status indicator (E) switches from green to red color.

NOTE: If disabled is selected, Auxiliary Controls will be disabled and all mappings will show up with a dashed status indicator independent from if an assignment has been completed successfully or not. See Auxiliary Controls—Disabled Functions hereafter.

Selecting the "**Learn Mode**" allows the operator to map the functions by selecting the respective input controls for the referring assignment. See Auxiliary Controls—Learn Mode hereafter.

A—Status Selection
B—Enabled
C—Disabled
D—Learn Mode
E—Status Indicator—Constant

PC10857TO —UN—02MAR10



PC10857WO —UN—01JUN10

OUO6050,0001245 -19-01JUN10-3/5

Auxiliary Controls—Disabled Functions:

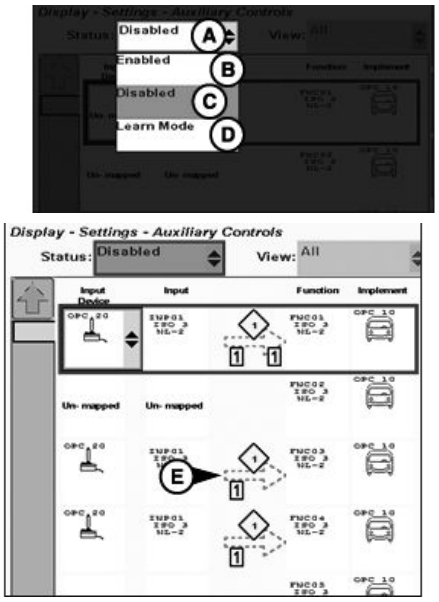
The status selection drop-down list (A) allows the operator to enable (B) or disable (C) the Auxiliary Control functions and to enable the learn mode (D).

If Auxiliary Controls is "**Disabled**" all assignments are shown with a dashed status indicator (E). In case of a conflict, the status indicator (E) switches from green to red color.

Selecting the "**Learn Mode**" allows the operator to map the functions by selecting the respective input controls for the referring assignment. See Auxiliary Controls—Learn Mode hereafter.

A—Status Selection
B—Enabled
C—Disabled
D—Learn Mode
E—Status Indicator—Dashed

PC10857TQ —UN—02MAR10



PC10857TR —UN—01JUN10

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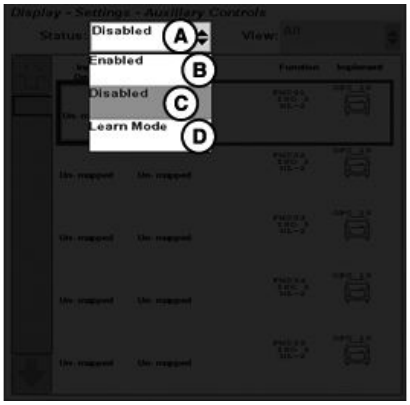
OUO6050,0001245 -19-01JUN10-4/5

Auxiliary Controls—Learn Mode:

The status selection drop-down list (A) allows the operator to enable (B) or disable (C) the Auxiliary Control functions and to place the system under learn mode (D).

- If the "**Learn Mode**" is selected and the operator leaves the Auxiliary Controls page without any action, the Auxiliary Controls status (enable/disable) will remain as set prior to entering the "**Learn Mode**".
- If an assignment has been completed successfully in the "**Learn Mode**", the cursor colored rectangle switches to the next possible assignment. During the assignment process, the implement **does NOT** follow any functions which have been assigned before. As long as the "**Learn Mode**" is selected, Auxiliary Controls is in a pending status (neither enabled, nor disabled).
- If Auxiliary Controls was in "**Enabled**" status before selecting the "**Learn Mode**", all additional assignments can be used as soon as they have been completed successfully. If Auxiliary Controls was in "**Disabled**" status before selecting the "**Learn Mode**", the system has to be enabled again before the new/additional assignments can be used.

Selecting the "**Learn Mode**" allows the operator to map the functions semi-automatically. Therefore it is necessary to select the implement specific function on the Auxiliary Controls page and set any input device function.



PC10857TS —UN—02MAR10

A—Status Selection
B—Enabled
C—Disabled
D—Learn Mode

IMPORTANT: The preferred assignments which have been requested automatically by an implement with an assignment lock icon can not be changed manually in the "Learn Mode".

OUO6050,0001245 -19-01JUN10-5/5

ISO Virtual Terminal

ISO Display

IMPORTANT: Before using display to control ISOBUS implements, read operator manual provided by implement manufacturer and observe all safety messages in manual and on implement prior to use. When used with ISOBUS implements, information and control functions placed on this display are provided by implement and are the responsibility of implement manufacturer.

One function of the GS2 1800 is to operate as an ISO virtual terminal. This means any brand of implement that is an ISOBUS Virtual Implement can be plugged in and run through the GS2 1800 display. One example of an ISOBUS implement is the SeedStar™ 2 system for new John Deere planters and air seeding equipment.

To control an ISO implement with the GS2 1800 display:

1. Connect the ISO implement to the vehicle and power-up the display.
2. Select the Menu button.
3. Choose the icon associated with the ISO implement.
4. Control the implement according the operator's manual for that device.

OUO6050,000102C -19-30OCT08-1/1

Connecting RS232 GPS Receivers

RS232 Serial Port Setup

RS232 devices must be assigned to a serial port. Navigate to the Port Settings page in GreenStar settings.

Devices that are connected and recognized by the display will appear in the drop down list. Assign each device to one port. GreenStar Main Page > Settings > Port Settings

OUO6050,00010F5 -19-12MAY09-1/1

Connecting RS-232 GPS Receivers

NOTE: AutoTrac requires CAN GPS messages from a StarFire receiver. Manual Guidance and Swath Control Pro may be used with an RS-232 GPS signal input.

Non-John Deere GPS receivers that output correct NMEA 0183 standard messages can be used for documentation and manual guidance on GreenStar application. It is critical that receiver is setup to output following messages:

- GGA
- GSA
- RMC setup at 19200 baud (This is fixed and Non-adjustable)
- Data Bits 8
- Parity none
- Stop 1
- Flow Control none
- 1 or 5 Hz output rate (Recommend operation at 5 Hz. Guidance requires 5 Hz.)

Without these messages, receiver will not function with GreenStar application.

A harness and installation instructions are available to connect DB9 port of receiver to correct pins of display connector. See a John Deere dealer for more information.

BA31779,0000166 -19-27APR11-1/1

Updating Software

GreenStar Live Update

John Deere AMS periodically develops software updates to your GreenStar system to deliver new system enhancements, or performance improvements. This could include updated software for your GreenStar display, as well as many other components.

The GreenStar Live Update is a desktop software application that will automatically alert you of recent updates to your GreenStar system, and walk you through the downloading process. To install the GreenStar Live Update, download the software from StellarSupport.com.

CZ76372,00002FE -19-03MAY11-1/1

Loading Software

IMPORTANT: Do not turn off power or remove USB drive while display is reprogramming. Doing so can damage display and put software in an irrecoverable state.

Verify that display has the latest software available. To acquire the latest software visit www.StellarSupport.com or contact a John Deere dealer.

After new software has been downloaded to USB drive, simply insert USB drive in to USB port on the display and system will show a screen prompting operator to reprogram display. If operator does not choose to reprogram system, reprogramming alarm will appear during every power-up cycle if the USB drive is still inserted.

To install this software update, select the button to continue. The following messages will appear on the screen:

- Updating software - Warning: Do not power down display or remove USB drive.
- The update was successfully installed. Select the button to continue. - Please cycle power.
- The system is restarting, please wait.
- If software update was unsuccessful this message will be given: The software update was unsuccessfully. See the message center.

To manually load a different software version to a component:

- Choose component from list on Message Center - Reprogram Device Screen
- Push REPROGRAM DEVICE button
- Choose software version from the drop-down box and select enter.

OUO6050,000100C -19-12MAY09-1/1

Guidance Alarms

SSU Communication Error	No communication with vehicle steering controller (SSU). Check vehicle for diagnostic codes and contact your John Deere Dealer.
Multiple SSUs Detected	Two Steering Controllers (SSU) present. Disconnect one SSU and cycle power.
No ATU Activation	ATU has not been activated. Enter an activation code below or disconnect the ATU unit to access the GreenStar 2 Pro application.
Turn Predictor Turned On	Turn predictor is turned ON. Use the check box to turn it OFF
AutoTrac Deactivated	AutoTrac system deactivates when operator is out of seat for more than 5 seconds
AutoTrac	The operator is responsible for collision avoidance. Turn AutoTrac OFF before entering roadways.
AutoTrac Detected	Automatic Guidance System Detected. Activating a guidance system on roadways may cause loss of vehicle control. To avoid death or serious injury, disable the guidance system before entering roadways.
AutoTrac SSU Software Incompatible	AutoTrac has detected an incompatible SSU (Vehicle Controller) version. Contact your John Deere Dealer to obtain the latest software updates for your SSU in order to operate AutoTrac.
Unknown Direction of Travel	The System was not able to detect the vehicle direction of travel. Please select your direction of travel.
Operator Detection Timeout	The system has not detected any recent operator activity. AutoTrac will disengage in: XX sec Press the ATU Resume Switch or acknowledge this alarm to prevent disengagement.
No Setup Data!	Setup data for the GreenStar application could not be found in memory. The GreenStar application will not be available until setup data is available.
Communication Error	No communication with vehicle steering controller. Check vehicle for diagnostic codes and contact your John Deere Dealer. Note: It is normal for communication to be lost during reprogramming. Do not disconnect power during reprogramming.
Mobile Processor Detected	Mobile Processor Detected on CAN Bus. GreenStar Application is disabled. Remove mobile processor and cycle power to enable GreenStar application.
GPS Communication Problem	No communication with GPS receiver. Check connections at GPS receiver and perform operation again.
Tracking Inaccurate	The GPS receiver must be set to report at the 5Hz message output rate. Confirm settings on GPS receiver and change output to 5Hz,
Invalid Boundary	An invalid boundary has been recorded. You may continue recording or clear the current boundary and start recording again.
Activation Error	Invalid activation code. Please reenter activation code.
Invalid Filter	All the fields that are required to be filled out based on the Totals Type Selected have not been filled out.
Flags of Same Selection	Selected the Flags of same name and mode.
Name Already Exists	The name you have entered already exists in this list. Please enter a new name.
Approaching Maximum Distance	You are too far away from the selected field. Choose a new field or clear your coverage data to continue using Swath Control.
Swath Control Disabled	You are too far away from the selected field. Choose a new field or clear your coverage data to continue. Swath Control has been disabled.
File Encoding Does Not Match Selected Language	The language selected does not match the encoding of the setup data. Certain text may appear incorrectly.
Curve Data Found	This field has adaptive curves previously recorded. Choose one of the following actions: Enter Repeat Mode to guide from these previously recorded curves Continue recording additional Adaptive Curves (Recording must be turned on) Delete the existing Adaptive Curves for this field. This option will permanently delete the Adaptive Curve data for this field.
Internal Memory Full	The internal memory is full. Please insert a USB device to transfer and remove data from the internal memory. Clearing Guidance Curve Track data may also create space in memory. Alternatively, select 'A' to use the Data Cleanup tool to create additional space.
USB Detected	GreenStar data cannot be transferred to/from the USB device. Please check that: Coverage recording is stopped, Guidance track recording is stopped, Boundary track recording is stopped, and AutoTrac is disengaged Remove the USB device to resume using the GreenStar application.
USB Device Removed	The USB device was removed while data was being transferred. Data may be corrupt or incomplete.
Data Transfer in Progress	Data Transfer in progress. Do not remove USB device.
Incomplete Data Transfer	The system was shut down before a data transfer was complete. Please verify all data.

Alarms

Continued on next page

StarFire Receiver Detected	A new StarFire receiver has been detected. Please go to the StarFire application and calibrate the receiver.
GPS Communication Problem	No communication with GPS receiver. Check connection at GPS receiver and perform operation again.
GPS Communication Problem	No GPS position available. Verify GPS receiver has clear view of sky.
GPS Communication Problem	No GPS differential correction available. Verify GPS receiver has clear view of sky.
GPS Communication Problem	2D GPS in use. Verify GPS receiver has clear view of sky.
Curve Track Memory Full	Internal memory available for Curve Track is full. Data must be cleared to continue Curve Track Operation. Clear curved track data from system
AutoTrac Disabled	AutoTrac SF1 license cannot operate with current StarFire software. Update StarFire software to operate AutoTrac.
AutoTrac Disabled	AutoTrac SF1 license cannot operate while SF2 corrections are turned on. Turn SF2 corrections off to operate AutoTrac.
License Problem	No license available for the selected tracking mode. Previous tracking mode will be selected.
Duplicate Name	Name already exists. Select another name.
Curve Track Recording	Curve Track recording in progress. Cannot perform operation until recording is turned off.
Curve Track Memory Low	The internal memory available for Curve Track is almost full. Clear curve track data.
AB Curve Too Far	Vehicle must be within 1/4 mile (400m) of recorded AB Curve to generate path.
Circle Definition Problem	There was an internal error during Circle definition. Redefine the circle.
Circle Definition Problem	Communication with GPS receiver was lost during circle definition. Redefine the circle once communication has been re-established.
Circle Definition Problem	Center point is too far. Select another center point.
Circle Definition Problem	The distance from the vehicle to the center point is greater than 1 mile. Select another center point or drive another circle.
A-B Line Definition Problem	There was an internal error during A-B line definition. Redefine the A-B line.
A-B Line Definition Problem	A timeout occurred during A-B line definition. Redefine the A-B line.
A-B Line Definition Problem	A and B points of the AB Line are too close. Must have 10 ft (3 m) between point A and B. Perform operation again.
Invalid GPS Coordinate	The entry is invalid. Enter a value between -90.0 and 90.0 for Latitude and between -180.0 and 180.0 for Longitude.
Loss of GPS While Recording Boundary	GPS has been lost while recording the boundary. Point logging will resume when the GPS signal returns. This may result in an inaccurate boundary.
Processing Data	Processing data. Please wait...
Internal Memory Full	The internal memory is almost full. Please insert a USB device to transfer and remove data from the internal memory. Clearing Guidance Curve Track data may also create space in memory. Alternatively, select 'A' to use the Data Cleanup tool to create additional space.
No Memory	No Memory available for Curve Track. Unload data to USB drive or clear space in memory.
No Memory	No Memory available for Straight Track. Unload data to USB drive or clear space in memory
No Memory	No Memory available for Circle Track. Unload data to USB drive or clear space in memory
Low Memory	Low Memory available for Curve Track. Unload data to USB drive or clear space in memory
Zero All Totals	You have decided to zero all totals for the selected filter.
Prescription Error	Controller is not setup to accept prescriptions.
Prescription Error	Controller is setup to accept prescriptions. No controller prescription has been selected.
Prescription Error	Prescription rate is out of controller range.
Controller Unit of Measure Error	Controller will only operate when using metric units.
Controller Unit of Measure Error	Controller will only operate when using English (US) units.
Controller Unit of Measure Error	Controller will only operate when using metric or English (US) units.
Prescription Alert	Out of field prescription rate is now being applied.
Prescription Alert	Loss of GPS signal has occurred. Loss of GPS prescription rate is now being applied.
Prescription Alert	Controller does not support selected prescription.
New Implement Detected	A new implement has been detected that requires a different documentation task. Please revisit the setup wizard to use documentation.
Controller Operation Error	Invalid operation selected for controller.
Implement Documentation Not Supported	The system does not support documentation for multiple-operation implements. Documentation can be performed for a single task only.
Unsupported Implement	The current implement does not support Swath Control Pro
Unsupported Operation	Current SprayStar Software does NOT support Swath Control Sections. Please contact your local John Deere Dealer to obtain the latest SprayStar software updates.

Continued on next page

BA31779,000018B -19-29APR11-2/3

Field Coverage Map Almost Full	The coverage map memory is almost full. When completely full, coverage will no longer be recorded. To record new coverage, perform one of the following as soon as possible: To save coverage for this field, pause recording and change to a new field (Recommended). To continue with current guidance lines and/or boundaries, delete coverage by pressing the "Clear Current Field Map" button below.
Field Coverage Map Full	Coverage map memory is full. Coverage will no longer be recorded. To record new coverage, perform one of the following: To save coverage for this field, pause recording and change to a new field (Recommended). To continue with current guidance lines and/or boundaries, delete coverage by pressing the "Clear Current Field Map" button below.
Accuracy Loss	You have recorded a GPS point farther than 20 miles away. Coverage accuracy will decrease. Clear your coverage map, create a new field, or change to a different field to restore accuracy.
Accuracy Loss	You are more than 20 miles away from your selected guidance track. Guidance accuracy will decrease. Create a new guidance track or change to a different track to restore accuracy.
Accuracy Loss	You have recorded a GPS point farther than 20 miles away. Coverage and guidance accuracy will decrease. Create a new field or change to a different field to restore accuracy.
Coverage Recording Disabled	Coverage recording is disabled during data transfers
USB Detected	The GreenStar application is disabled while a USB device is present. To resume using the GreenStar application, remove the USB device. To transfer GreenStar data to/from the USB device, press the “Transfer Data” button.
Cannot Backup File	There is not enough space on the USB device to backup data. Please delete data from the USB device or insert a different USB device.

INFO

BA31779,000018B -19-29APR11-3/3

Message Center

Message Center is used to access detailed diagnostic information and to manually initiate re-programming sessions. Message Center can also display detailed diagnostic information such as Control Unit Information and CAN Bus Information, used by your John Deere ™ Dealer for advanced troubleshooting.

Soft Keys are listed below:

- A-Message Center Reprogramming Page
- B-Transfer Debug Files
- C-Messages
- D-Diagnostic Addresses
- E-Trouble Codes
- F-Control Unit Information
- G- Bus Information

Message Center screen can be reached by selecting the MENU button then MESSAGE CENTER button (With Info Icon).

PC8663 —UN—05AUG05

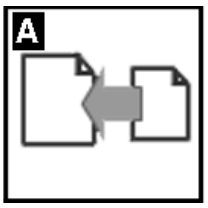
MENU button

PC8655 —UN—05AUG05

MESSAGE CENTER button (With Info Icon)

Continued on next page

OUO6050,0002327 -19-19JUL10-1/7

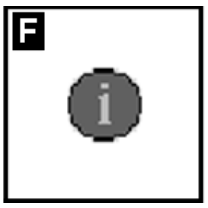


PC8665 —UN—05AUG05

COMPONENTS AND SOFTWARE VERSIONS button

PC8666 —UN—05AUG05

SOFTWARE INFORMATION button



PC8667 —UN—05AUG05

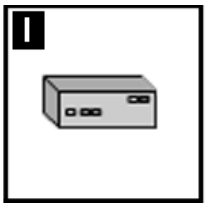
MESSAGES button

PC8668 —UN—05AUG05

DIAGNOSTIC ADDRESSES button

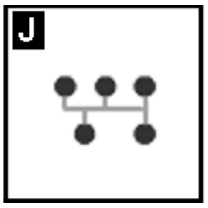
PC8669 —UN—05AUG05

TROUBLE CODES button



PC8670 —UN—05AUG05

Electronic CONTROL UNIT INFORMATION button



PC8671 —UN—05AUG05

BUS INFORMATION button

Message center will display all active alarms, alert messages and icons.

OUO6050,0002327 -19-19JUL10-2/7

Message Center Icons

These icons are used throughout Message Center.

PC8582 —UN—01NOV05

CANCEL

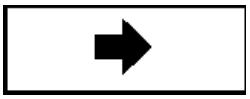
PC8648 —UN—01NOV05

CLEAR

PC8649 —UN—01NOV05

ENTER

PC8650 —UN—01NOV05

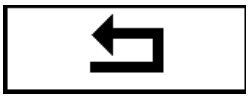


GOTO

PC8651 —UN—01NOV05

NEXT CAL

PC8652 —UN—01NOV05



RETURN

Continued on next page

OUO6050,0002327 -19-19JUL10-3/7

COMPONENTS AND SOFTWARE VERSIONS button will allow users to view all components on the network and the software versions loaded to them. You may also use the reprogram device button to reprogram a specific controller if necessary.

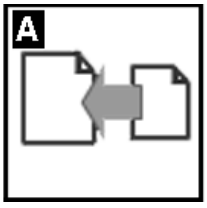
PC8663 —UN—05AUG05

MENU button

PC8655 —UN—05AUG05

MESSAGE CENTER button (With Info Icon)

PC8665 —UN—05AUG05



COMPONENTS AND SOFTWARE VERSIONS button

OUO6050,0002327 -19-19JUL10-4/7

Diagnostic Addresses

NOTE: Diagnostic addresses are available to access specific diagnostic information. This information can assist the John Deere Dealer in diagnosing problems. Different device controllers can be selected from drop-down box, as shown.

Select DIAGNOSTIC ADDRESSES button. The number of devices available will depend upon machine configuration. The list of addresses can be scrolled up or down with rotary thumb wheel. Selecting an address will show data for that address.

PC8663 —UN—05AUG05

MENU button

PC8655 —UN—05AUG05

MESSAGE CENTER button (With Info Icon)

PC8668 —UN—05AUG05

DIAGNOSTIC ADDRESSES button

Continued on next page

OUO6050,0002327 -19-19JUL10-5/7

Trouble Codes

Select TROUBLE CODES button, a list of controllers will appear and controllers with diagnostic codes are indicated.

Individual controllers can be accessed by navigating with rotary thumb wheel and selected by selecting ENTER button, to view codes for that controller.

Codes can also be displayed for all controllers by selecting SHOW ALL button with rotary thumb wheel and selecting ENTER button. Codes can be relayed to a John Deere dealer to assist in diagnosing machine problems.

PC8663 —UN—05AUG05

MENU button

PC8655 —UN—05AUG05

MESSAGE CENTER button (With Info Icon)

PC8669 —UN—05AUG05

TROUBLE CODES button

Continued on next page

OUO6050,0002327 -19-19JUL10-6/7

Device Info and Bus Status

When DEVICE INFO button is selected, controllers communicating on CANBUS communication system will be indicated. Message counts indicate quantity of communications from controller. When BUS STATUS button is selected, status of various communication networks will be indicated.

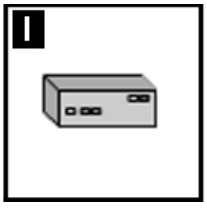
PC8663 —UN—05AUG05

MENU button

PC8655 —UN—05AUG05

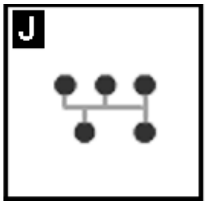
MESSAGE CENTER button (With Info Icon)

PC8670 —UN—05AUG05



Electronic CONTROL UNIT INFORMATION button

PC8671 —UN—05AUG05



BUS INFORMATION button

OUO6050,0002327 -19-19JUL10-7/7

Reprogramming Error Codes

Error Number	Meaning	What to Do
8	Directory creation error	Reprogramming could not create a directory on the internal file system. User should try again, but the session may fail again.
12	Missing update file	Check that all update files have been correctly saved to the USB drive (all files listed in ManifestFile.sdm should be on the drive in their proper path).
14	File read error	Reprogramming was not able to read one of the update files. Check for file corruption when the files were saved to the USB drive.
16	File write error	Reprogramming was not able to write one of the update files to internal flash. File system cleanup problem, reboot the display and try again.
37	Invalid file handle	Reprogramming received a file handle that was not valid, check validity of USB drive to make sure it matches the original image.
44	Checksum failed	Reprogramming calculated a checksum that did not match the expected checksum. Check that all files match the original image.
45	Controller file invalid	Reprogramming parsed a file for a PF controller that was invalid. Check that all files match the original image.
47	Incompatible hardware	Customer is using an incorrect hardware revision version as the reprogramming image for the display. Make sure you have the correct image for the display hardware.
48	Update file invalid	The reprogramming ManifestFile.sdm file has been corrupted. Make sure the file matches the original image.
51	User aborted	User removed the USB drive during a reprogramming session. Repeat the reprogramming process with the drive inserted the entire session.
55	Controller flash erase failed	A PF controller could not erase its flash memory.
56	Message missing colon	A PF controller received a record that was missing a colon. Customer could try reprogramming the controller again in case of a bus error.
57	Record too long	A PF controller received a record that was too long. Customer could try reprogramming the controller again in case of a bus error.
58	Invalid record length	A PF controller received a record that was not the expected length. Customer could try reprogramming the controller again in case of a bus error.
59	Sequence error	A PF controller received a record that was out of the expected sequence. Customer could try reprogramming the controller again in case of a bus error.
60	Controller received odd address	A PF controller received a record that had an invalid address. Customer could try reprogramming the controller again in case of a bus error.
61	Controller timed out	A PF controller stopped responding to the display during a reprogramming session. Check connection to the controller, may require a power cycle. If communication is resumed, repeat the reprogramming session.
62	NOR flash reprogramming problem	There was an error with trying to reprogram the NOR flash boot application image.
63	Unknown controller response	A PF controller returned a response that the display did not know how to interpret.
81	Reprogramming session failed	Generic notification that some part of the reprogramming session failed. Another error will be reported in addition to this one to indicate the specific failure mode.

This table contains the error codes that GS2 reprogramming software could report if a reprogramming session fails. In the case of an error, reprogramming will post an alarm indicating the failure, and an error code, and text of the problem will be placed in the message center.

CZ76372,00001D9 -19-12OCT10-1/1

Alarm Screens

SPN.FMI	Applicable Failure Mode	Recommended Solutions
158.3	VTI Switched Supply Voltage Too High	The voltage level of the switched power is greater than the nominal. Turn off the ignition key, then turn it back on. If this diagnostic code shows up again, check power supply wiring. Please contact your John Deere dealer.
158.4	VTI Switched Supply Voltage Too Low	The switched power voltage is below the nominal. Turn off the ignition key and turn it back on. If this diagnostic code shows up again, check the battery. Please contact your John Deere dealer.
168.3	Unswitched Supply Voltage Too High	The voltage level of from the battery power supply is greater than the nominal. Cycle power on the display. If this diagnostic code shows up again, check wiring. Please contact your John Deere dealer.
168.4	Unswitched Supply Voltage Too Low	The voltage level from the battery is lower than the nominal. Cycle power on the display. If this diagnostic code shows up again, check battery power and recharge it as needed. Please contact your John Deere dealer.
609.12	Controller #2	A permanent channel down condition detected on SPI communication lines. Please contact your John Deere dealer.
1386	Display Unit Temperature Too High	The LCD backlight was not turned off when the temperature was above the highest limit. Please contact your John Deere dealer.
1386.1	Display Unit Temperature Too Low	The LCD backlight was not turned off when the unit temperature was below the lowest limit. Contact you John Deere Dealer.
2040.9	Source Address 40	Heartbeat message from PDU has been missing for more than 60 seconds. Recheck the connection. Please contact your John Deere dealer.
3597.2	Regulate Voltage 5.0 v Abnormal	The 5.0 v regulated power is out of range. Click Cancel if it occurs occasionally. If it occurs continually, contact your John Deere Dealer.
3598.2	Regulated Voltage 1.5 v Abnormal	The 1.5 v regulated power is out of range. Click Cancel if it occurs occasionally. If it occurs continually, contact your John Deere Dealer.
3599.2	Regulated Voltage 3.3 v Abnormal	The 3.3 v regulated power is out of range. Click Cancel if it occurs occasionally. If it occurs continually, contact your John Deere Dealer.
521780.12	USB Network	Overcurrent condition detected on USB circuit. Please contact your John Deere dealer.
523310.12	Non-Volatile Memory Read/Write Failure	Failed to read/write from/to the NOR flash. See your John Deere dealer.
523771.3	CCD+ Line Voltage Too High	The voltage on the CCD_HIGH line of the CCD network is above the nominal. Cycle power on the display. If this diagnostic code shows up again, check the harness wiring.
523771.3	CCD+ Line Voltage Too Low	The voltage level on the CCD_HIGH line of the CCD network is below the nominal. Cycle power on the display. If this diagnostic code shows up again, check the battery and harness wiring.
523772.4	CCD- Line Voltage Too High	The voltage on the CCD_Low line of the CCD network is above the nominal. Cycle power on the display. If this diagnostic code shows up again, check the harness wiring.
523772.4	CCD- Line Voltage Too Low	The voltage level on the CCD_Low line of the CCD network is below the nominal. Cycle power on the display. If this diagnostic code shows up again, check the battery and harness wiring.
523773.3	Vehicle CAN+ Line Voltage Too High	The voltage on the CAN_HIGH line of the Vehicle Bus (Tractor Bus) is above the nominal. Cycle power on the display. If this diagnostic code shows up again, check the harness wiring.
523773.4	Vehicle CAN+ Line Voltage Too Low	The voltage level on the CAN_HIGH line of the Vehicle CAN Bus (Tractor CAN Bus) is below the nominal. Cycle power on the display. If this diagnostic code shows up again, check the battery and harness wiring.
523774.3	Vehicle CAN- Line Voltage Too High	The voltage on the CAN_LOW line of the Vehicle Bus (Tractor Bus) is above the nominal. Cycle power on the display. If this diagnostic code shows up again, check the wiring.
523774.4	Vehicle CAN- Line Voltage Too Low	The voltage level on the CAN_LOW line of the Vehicle CAN Bus (Tractor CAN Bus) is below the nominal. Cycle power on the display. If this diagnostic code shows up again, check the battery and harness wiring.
524050.12	Real Time Clock Malfunction	Real Time Clock malfunctioned. It may be caused by the damage on the RTC chip or no power applied to the chip.
524215.3	Implement CAN+ Line Voltage Too High	The voltage on the CAN_HIGH line of the Implement Bus is above the nominal. Cycle power on the display. If this diagnostic code shows up again, check the harness wiring.
524215.4	Implement CAN+ Line Voltage Too Low	The voltage on the CAN_HIGH line of the Implement Bus is below 0.5 v Cycle power on the display. If this diagnostic code shows up again, check the battery power and recharge the battery as needed.

Continued on next page

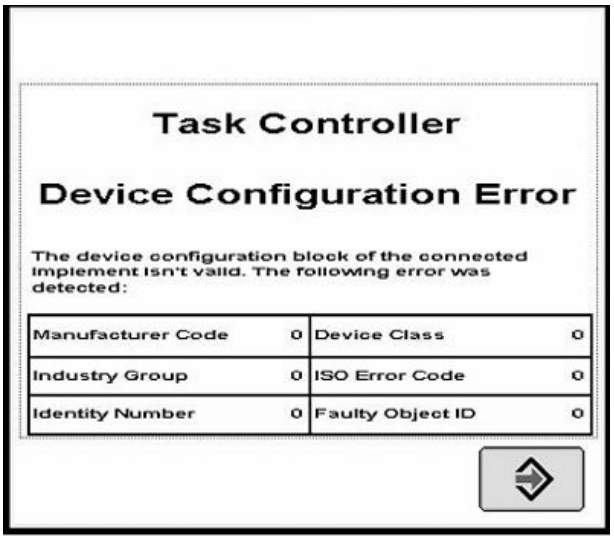
524217.3	Implement CAN+ Line Voltage Too High	The voltage on the CAN_HIGH line of the Implement Bus is above nominal. Cycle power on the display. If this diagnostic code shows up again, check wiring.
524217.4	Implement CAN+ Line Voltage Too Low	The voltage on the CAN_LOW line of the Implement Bus is below the nominal. Cycle power on the display. If this diagnostic code shows up again, check the battery power and recharge the battery as needed.

CZ76372,00001D7 -19-11OCT10-2/2

Task Controller Alarms

Alarm, Task Controller, Device Configuration Error, The device configuration block of the connected implement isn't valid. The following error was detected: Manufacturer Code:, Industry Group:, Identity Number:, Device Class:, ISO Error Code:, Faulty Object ID:

This alarm screen will be displayed whenever an error in the received Device Configuration Description of the ISO implement was detected. Please contact your John Deere Dealer or the manufacturer of the implement.



PC9745 —UN—24SEP09

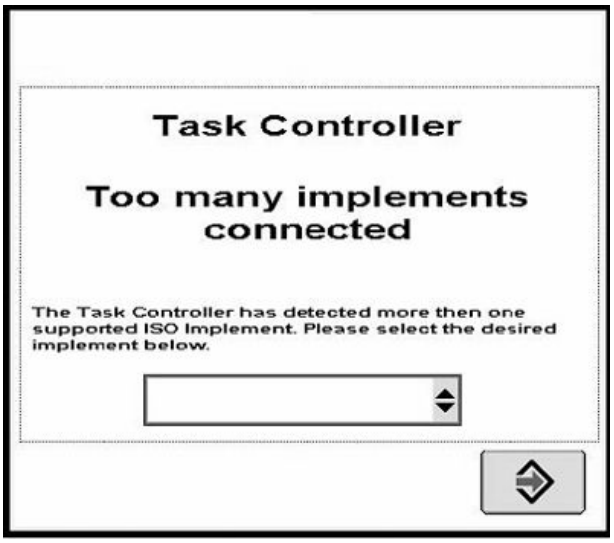
Device Configuration Error

OUO6050,0000CF8 -19-13OCT09-1/6

Alarm, Task Controller, Too Many Implements Connected, The Task Controller has detected more than one supported ISO implements. Please select the desired implement below.

This alarm screen will be displayed whenever the ISO Task Controller unit detects more then one compatible ISO implement on the ISOBUS. The pull down list will contain all found ISO implements which can be used for documentation purposes. Each ISO Implement is listed in the following format: 10 chars of manufacturer name + 10 chars of the implement type + ISO network address in the hex format.

Example: John Deere Sprayer with ISO Network Address 0x81: John Deere-Sprayer-81x



PC9746 —UN—24SEP09

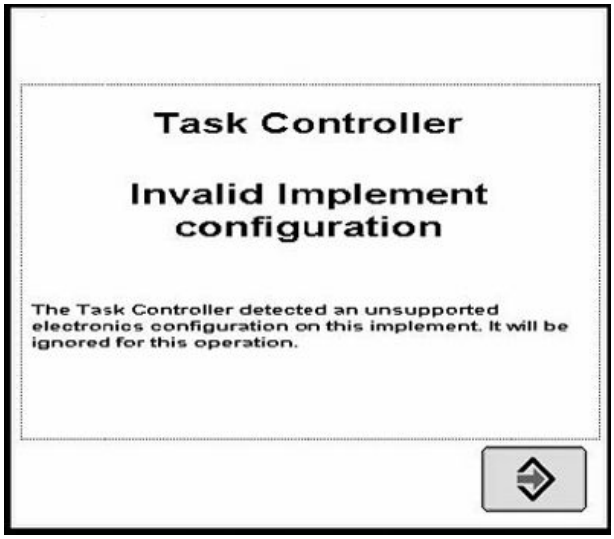
Too Many Implements Connected

Continued on next page

OUO6050,0000CF8 -19-13OCT09-2/6

Alarm, Task Controller, Invalid Implement Configuration, The task controller detected an unsupported electronics configuration on this implement. It will be ignored for this operation.

This alarm screen will be displayed whenever an ISO implement is detected, which has member controllers. The John Deere Task controller does only support ISO implements with a master controller and no member controllers.



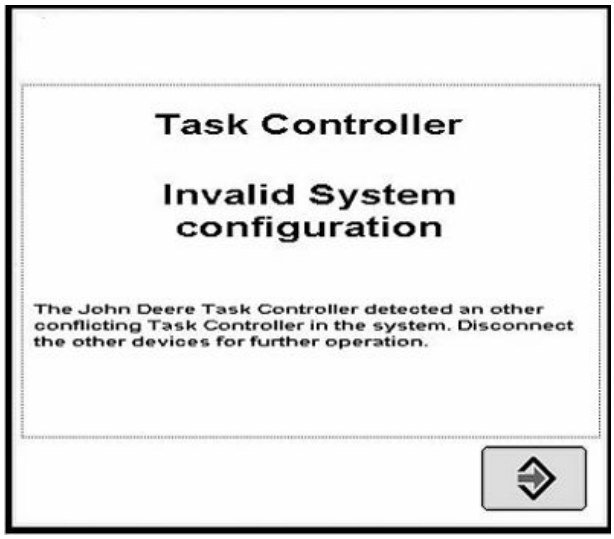
PC9747 —UN—24SEP09

Invalid Implement Configuration

OUO6050,0000CF8 -19-13OCT09-3/6

Alarm, Task Controller, Invalid System Configuration, The John Deere task controller detected an other conflicting task controller in the system. Disconnect the other device for further operation.

This alarm screen will be displayed whenever another ISO Task Controller is found on the ISOBUS. Disconnecting of the other Task Controllers is required because an ISO implement can only work with one Task Controller, which is in most cases the first one. When this alarm screen is displayed the John Deere Task Controller is not the first one, and cannot use the ISO implements for documentation purposes.



PC9748 —UN—24SEP09

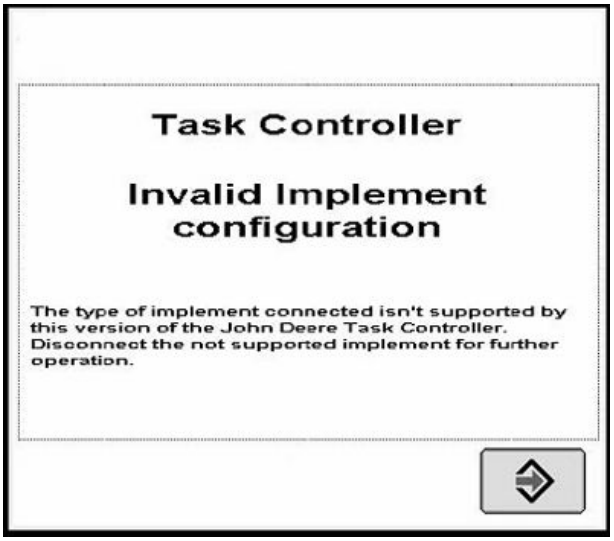
Invalid System Configuration

Continued on next page

OUO6050,0000CF8 -19-13OCT09-4/6

Alarm, Task Controller, Invalid Implement Configuration, The type of implement connected isn't supported by this version of the John Deere task controller. Disconnect the not supported implement for further operation.

This alarm screen will be displayed whenever an ISO implement is detected which is not from type sprayer or seeder/planter. All other ISO implement types are ignored by the John Deere Task Controller and cannot be used for documentation purposes.



PC9749 —UN—24SEP09

Invalid Implement Configuration

OUO6050,0000CF8 -19-13OCT09-5/6

Task Controller, Configuration of the connected implement not compatible, The configuration of the connected implement isn't compatible for the documentation purposes, because the following information isn't available:

This alarm screen will be displayed whenever an implement is detected which is not compatible with Field Doc, because some information is missing from the ISO implement which is required for automatically setup of Field Doc for documentation purposes. The missed information is displayed in the message box of the alarm screen. Please contact your John Deere Dealer or the manufacturer of the implement.

PC9750 —UN—24SEP09

Configuration of Connected Implement Not Compatible

OUO6050,0000CF8 -19-13OCT09-6/6

Diagnostic Addresses

MESSAGE CENTER button > DIAGNOSTIC ADDRESSES button > DEVICE drop down box > “VT;.001 Implement”

PC8655 —UN—05AUG05

MESSAGE CENTER button

PC8668 —UN—05AUG05

DIAGNOSTIC ADDRESSES button

Address Number	Address Name
008	Unswitched Power Supply Voltage
009	Switched Power Supply Voltage
010	Unit Internal Temperature
011	Vehicle CAN - Bus Status
012	Vehicle CAN - CAN HIGH Voltage
013	Vehicle CAN - CAN LOW Voltage
015	Implement CAN - Bus Status
016	Implement CAN - CAN HIGH Voltage
017	Implement CAN - CAN LOW Voltage
018	Flash Wear Count
019	Hours of Operation
020	1.5 v Regulated Power Supply Voltage
021	3.3 v Regulated Power Supply Voltage
022	5.0 v Regulated Power Supply Voltage
023	Radar Input Status
024	Implement Switch Status
025	External Analog Input Voltage
026	Compact Flash Drive Status
028	CCD Bus - Bus Status
029	CCD Bus - Positive Voltage
030	CCD Bus - Negative Voltage
031	Bezel Key Status
032	Real Time Clock (RTC)
033	Maximum Sleep Time
038	Synchronize Brightness
039	Daytime Luminance
040	Daytime Luminance Balance Ratio
041	Nighttime Luminance
042	Nighttime Luminance Balance Ratio
043	Internal Speaker Volume
044	Display ISO Function Instance
045	Settings - Country Code
046	Settings - Language Code

Continued on next page

CZ76372,00001C8 -19-05OCT10-1/2

Address Number	Address Name
047	Settings - Numeric Format
048	Settings - Date Format
049	Settings - Time Format
050	Settings - Units of Distance
051	Settings - Units of Area
052	Settings - Units of Volume
053	Settings - Units of Mass
054	Settings - Units of Temperature
055	Settings - Units of Pressure
056	Settings - Units of Force
057	Settings - GPS Time Sync
058	Settings - Current Date
059	Settings - Current Time
060	Radar Calibration Constant
062	Access Manager password (CommandCenter only)
227	Boot Block Program Part Number (Software)
228	Boot Block Program Version Number (Software)
231	Board Service Package Part Number (Software)
232	Board Service Package Version Number (Software)
233	Virtual Terminal Part Number (Software)
234	Virtual Terminal Version Number (Software)
235	Device Part Number (Hardware)
236	Device Serial Number (Hardware)
247	Current Vehicle Model Number
248	Current Vehicle Serial Number
249	Original Vehicle Model Number
250	Original Vehicle Serial Number

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Trouble Code Pop-Up Boxes—Platform Core Software

FAULT CONDITION FAULT DESCRIPTION	ALARM TEXT
CAN bus inbound communications overload.	CAN bus communications overload. Reset the display or turn the power off and then back on.
When an implement's object pool is rejected by the VT	There is a technical problem preventing proper operation of the display with the following implement. Please contact implement manufacturer with this information:
A valid USB drive is inserted that contains bad setup data.	The setup data on the USB drive is invalid. Please resave the setup data to the drive from your computer.
A valid USB drive is inserted that contains bad setup data that cannot be read by this version of the display software.	The setup data on the USB drive can not be read by the display. Please update your display software.
A USB drive is inserted that can not be used by the display	The USB drive is not compatible with the display. Please use a different drive.
If the user is in the middle of setting up a new operation and they switch to the homepage, the apps on the homepage would be disabled in that case. Similarly, if the user was changing the status of a job, the apps on the homepage would be disabled. In both of these cases there is no error	There is an alarm or pop-up within the GreenStar 2 application that requires your attention.
USB Drive 90% Full	Unload and cleanup USB drive or insert new drive soon.
USB Drive Full	Unload and cleanup USB drive or insert new drive.
VI Implement is removed	Communication lost with ISO implement. If implement was not disconnected, check connections and cycle power.
Internal Memory Full--From VI Object Pools	Internal memory dedicated to ISO implements is full. Remove implements to free memory space.
Internal Memory Full-From Documentation and Curved Track data	Internal memory is full.
New software found for display	New software found for display. (This alarm will re-appear at every power cycle or if USB drive is re-inserted.)
The following VI(s) are no longer communicating with the display. Check the indicated device(s) and CAN bus wiring.	Some device(s) are no longer communicating with the display. Check the CAN Bus wiring.
CAN bus inbound communications overload.	CAN Bus communications overload. Reset the display or turn the power off and then back on.
A failure has been detected in the display's internal memory. (Reprogramming)	An error occurred during reprogramming. Perform reprogramming process again. If problem reoccurs contact your John Deere dealer.
Legacy device reprogramming error. Device not reporting version info	An error occurred during reprogramming. Perform reprogramming process again. If problem reoccurs contact your John Deere dealer.
Legacy device not found while programming product	Device not found while programming product. Check wiring and connectors.
Attempt to copy the setup data to a "new" drive that already has setup data on it	Prior setup data found on USB drive. Select CONTINUE button to overwrite this data. Select CANCEL button to abort the copy to drive operation. (If the user decides to continue, there will be a second popup) "Are you sure you want to overwrite?"
Wrong activation code	Invalid activation code. Please reenter activation code.
Customer attempts to record boundary when one already exists	Are you sure you want to redefine the boundary?
All New/Edit Screens: User attempts to create a duplicate name in any of the New/Edit screens	This entry is already being used. Please select a new entry or cancel to modify the entry.
This alarm will be shown after we have received a touch event for 60 seconds.	The touchscreen is malfunctioning. Try to reboot the device, utilize an external display control, or the bezel keys on the backside of this display for screen response. If problem persists, please contact your John Deere Dealer.
This alarm will be shown after we have received a touch event for 60 seconds.	A button is malfunctioning. Try to reboot the display. If the problem persists, please contact your John Deere Dealer.
GPS Alarms For GreenStar Basic/Deluxe	
200 GPS communications failure	No communication with GPS receiver. Check connections at GPS receiver.
No GPS. Tracking Disabled	No GPS position available. Verify GPS receiver has clear view of sky.
No Diff. Tracking Disabled.	No GPS differential correction available. Verify GPS receiver has clear view of sky.
2D GPS in use.	2D GPS in use. Verify GPS receiver has clear view of sky.

Continued on next page

FAULT CONDITION FAULT DESCRIPTION	ALARM TEXT
Tracking Inaccurate The GPS receiver must be set to report at the 5Hz. Rate. Confirm settings on receiver.	The GPS receiver must be set to report at the 5Hz message output rate. Confirm settings on GPS receiver and change output to 5Hz. (For 3rd-Party Controllers) *NOTE: 3rd-Party controllers are controllers using RS232 connection (Field Doc Connect) and ISOBUS compliant controllers supporting Task Controller functionality.*
Language Loading Errors:	
CRC bad, missing a colon, bad prep header, etc.	Language load detected corrupt file. Reload software to USB drive.
Hardware compat. version mismatch.	Invalid hardware for language file. Reload software to USB drive.
Software version mismatch.	Language file incompatible with application. Reload software to USB drive.
Timeout waiting for CAN62 Response To Request	Device failed to start programming language. Reload software to USB drive.
Target sent FAIL in CAN62 Response To Request	Device failed to continue programming language. Reload software to USB drive.
Timeout waiting for CAN62 Response To Checksum	Device failed to report a language checksum. Reload software to USB drive.
Target sent FAIL in CAN62 Response To Checksum	Device reported an invalid language checksum. Reload software to USB drive.
Timeout waiting for CAN62 Response To Remove	Device didn't respond to the request to remove language. Reload software to USB drive.
Target sent FAIL in CAN62 Response To Remove	Device failed to remove a language. Reload software to USB drive.
Flash Write Failure.	Device failed while writing language to memory. Reload software to USB drive.
Timeout waiting for CAN62 Response To New Data	Device stopped programming language prematurely. Reload software to USB drive.
Product ID mismatch	Language is incompatible with loaded product. Reload software to USB drive.

Platform Core Software

CZ76372,00001DA -19-12OCT10-2/2

Trouble Code Pop-Up Boxes—Documentation Software

FAULT CONDITION FAULT DESCRIPTION	ALARM TEXT
Task selected, recording is on, the operation mandatory details are not defined.	No operation details defined. Go to GreenStar setup and enter operation info.
Invalid prescription	Prescription file is invalid. -Verify rate units on prescription are correct.
Totals: Client Undefined	Alarm issued stating that the user must select a Client to view totals.
Totals: Client and Farm defined, Field undefined.	Alarm issued stating that the user must select a Field to view Field, Task, or Load Totals.
Totals: CFF, Task, and Operation defined, Crop/Product Type undefined.	No Alarm. Operation defaulted to “” and Task Totals are listed.
Totals: CFF and Crop/Product Type defined, Task and/or Operation undefined.	Alarm issued stating that the user must select a Task and Operation to view Field or Load Totals.
Totals: Client, Crop and Task defined, Farm and Field undefined.	No Alarm. Task and Operation defaulted to “” and Crop Totals are listed.
Reset totals to zero	Are you sure you want to zero the totals listed below?
In order to record a product application, you must choose a product type and product name on one of the ADD PRODUCT boxes. Choices will be CHANGE, which takes the user to the product summary screen, or REMOVE OPERATION which will flash up the "Are you sure you want to delete this operation" message.	In order to record a product application, you must choose a product type and product name on one of the Add Product boxes.
When no products are specified in an application	No products are specified, please select a product.
An alarm shall be issued if there is a prescription selected in Field Doc but not selected in the planter/sprayer setup.	Prescription available but not selected. Go to implement setup to select the prescription as the rate.
An alarm will be issued if Field Doc has a prescription selected, but the planter/sprayer is outside the field boundary for the prescription. "Default Rx Rate Used.	Machine outside the field boundary for the prescription. Default Prescription rate being used.
At power-up, An alarm will be issued if a prescription is being used and the prescription multiplier for an operation is not set to 100%.	Prescription Multiplier not 100%.
Implement width set to zero.	Implement width is set to zero. Implement width is required to record data.
Anywhere: User selects the DOCUMENTATION button before filling out CFFT	You must choose a Client, Farm, Field, Task from the Resources button
Communication lost with a connected controller.	Communication lost with controller. If controller was not disconnected, check connections and cycle power. If controller was disconnected please review operations selected.
Field Doc didn't get some periodic messages	Communication lost with controller. If controller was not disconnected, check connections and cycle power. If controller was disconnected please review operations selected.
	Prescription available but not selected. Check setup on the implement to ensure prescription is selected as the rate.
Air Cart Setup: Air cart is on the bus, 1st tank has been defined with an operation, Second tank is created with the same operation type as the first tank.	You are creating another seeding (application) operation. Would you like this to be the same as the Front (Middle)(Rear) Tank seeding (application) operation?
Air Cart Setup: User selects enter for the previous message	Please enter the tank ratios for each tank. (if applicable)
Air Cart Setup: User enters tank ratios that do not add to 100	Tank ratios must add to 100
SeedStar selects Rx but Documentation doesn't have Rx selected.	No prescription file for selected field. -Verify field and operation are correct. -Verify prescription is on USB drive. -Resave prescription to drive if necessary.
Tank Mix Screen: User attempts to add a second ingredient in a tank mix without a carrier or base solution rate	You must enter a carrier and base solution rate before building a tank mix
Incorrect model is possibly selected	The RS232 controller model selected is incorrect. Please verify and reenter manufacturer and model number.
Recording is not currently allowed	Recording is not currently allowed. Verify settings on RS232 controller.
Alarm for manual controller when target rate changes	Target rate has changed. Alarm for manual controller.
Alarm when Raven is communicating everything but an actual rate	Raven controller not communicating actual rate. Verify Raven controller settings and connections to the display.
Special handling will be needed for each controller to monitor the health of the connection	Communication problem with controller. Check connections to controller.

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GreenStar Diagnostics

Required Items for Documentation

The following items are required for documentation to function:

- Client, Farm and Field
- Task
- Operation
- Operation Details
- Product Type/Name
- Target Rate/Rate Units
- Recording Source
- Implement Width/Offsets
- Controller Setup (when using 3rd-Party controllers)

NOTE: 3rd- controllers are controllers using RS232 connection (Field Doc Connect) and ISOBUS compliant controllers supporting Task Controller functionality.

Required Items for Guidance

The following items are required for guidance to function:

- Tracking mode set to Straight Track, Curve Track, Circle Track (only available with optional PivotPro module) or Row Finder
- Track spacing (See equipment section of GreenStar Basics/Pro General Setup)
- Track 0 (Except for Curve Track and Row Finder)
- GPS signal (StarFire signal required)

OUO6050,000232E -19-01SEP09-1/1

Troubleshooting And Diagnostics

Contacting Technical Support

If you have a question related to your GreenStar products and you can not find the information in your product publications, please contact the Stellar Support Contact Center at

E-mail GreenStar@JohnDeere.com

North America 1-888-GRN-STAR

Australia 0011-800-0000-3333

New Zealand 00-800-0000-3333

Or visit www.StellarSupport.com

OUO6050,000108D -19-12MAY09-1/1

GS2 1800 Connector Pinout

Pin	Signal Name	Description
J1.1	Ignition Switched Battery	Ignition Sense – Active high signal used by the GS2 1800 to detect power on conditions.
J1.2	RS232 Port 0 GND	RS232 Return 1 – Signal return and ground reference for Port 1 RS-232 signals.
J1.3	Implement Switch	Implement Detect – Active low input signal used by the GS2 1800 to detect the state of an implement in the system.
J1.4	RS232 Port 1 GND	RS232 Return 2 – Signal return and ground reference for Port 2 RS-232 signals.
J1.5	Boot Hold	Boot Hold Input - Digital input signal that is used so the GS2 1800 can be reprogrammed in the event of a corrupted or invalid application.
J1.6	CCD+	Chrysler Collision Detection Positive Output – Positive signal of the differential communications signal that the GS2 1800 uses to communicate with other system modules.
J1.7	CCD-	Chrysler Collision Detection Negative Signal – Negative signal of the differential communications signal that the GS2 1800 uses to communicate with other system modules.
J1.8	Unswitched Battery	Power – Main unregulated supply that the GS2 1800 uses as a power source.
J1.9	Reserved	
J1.10	RTC Power	Power – Backup power input for maintaining RTC power when the main power source is disconnected.
J1.11	RADAR Speed Input	Radar – Input signal with frequency proportional to ground speed.
J1.12	Vehicle CAN -	System CAN Bus Negative Signal – Negative signal of the system CAN differential communications signal that the GS2 1800 uses to communicate with other system modules.
J1.13	Vehicle CAN +	System CAN Bus Positive Signal – Positive signal of the system CAN differential communications signal that the GS2 1800 uses to communicate with other system modules.
J1.14	GND	Power Ground – Power return for the main supply, V+, and signal return for the ign_sns, radar, mute, and /imp_act signals.
J1.15	RS232 Port 1 RX	RS232 Receive 2 – Port 2 RS-232 receive signal that the GS2 1800 uses to communicate with other system modules.
J1.16	RS232 Port 1 RTS	RS232 Request To Send 2 – Port 2 hardware flow control RS-232 signal used by the GS2 1800 to indicate it is available to receive data.
J1.17	RS232 Port 1 CTS	RS232 Clear To Send 2 – Port 2 hardware flow control RS-232 signal used by the GS2 1800 to indicate the attached peripheral can receive data.
J1.18	Implement CAN +	Auxiliary CAN Bus Positive Signal – Positive signal of the auxiliary CAN differential communications signal that the GS2 1800 uses to communicate with other system modules.
J1.19	Implement CAN -	Auxiliary CAN Bus Negative Signal – Negative signal of the auxiliary CAN differential communications signal that the GS2 1800 uses to communicate with other system modules.
J1.20	Reserved	
J1.21	Reserved	
J1.22	RS232 Port 0 TX	RS232 Transmit 1 – Port 1 RS-232 transmit signal that the GS2 1800 uses to communicate with other system modules.
J1.23	RS232 Port 0 RX	RS232 Receive 1 – Port 1 RS-232 receive signal that the GS2 1800 uses to communicate with other system modules.
J1.24	RS232 Port 0 RTS	RS232 Request To Send 1 – Port 1 Hardware flow control RS-232 signal used by the GS2 1800 to indicate it is available to receive data.
J1.25	RS232 Port 0 CTS	RS232 Clear To Send 1 – Port 1 Hardware flow control RS-232 signal used by the GS2 1800 to indicate the attached peripheral can receive data.
J1.26	RS232 Port 1 TX	RS232 Transmit 2 – Port 2 RS-232 transmit signal that the GS2 1800 uses to communicate with other system modules.

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Device Name, Source Address, and File Directory

File Directory—GS2 claims multiple CAN addresses, some of which are inherited from legacy system to be more compatible with legacy controllers.

Device Name	Source Address
GS2 Basic Perf Monitor (PrF)	0x18
GS2 Virtual Terminal on Implement Bus (VTi)	0x26
GS2 Virtual Terminal on Vehicle Bus (VTv)	0x26
GS2 Guidance (NAV)	0x2a
GS2 Mobile Processor App (MPD)	0x2b
GS2 GSD4 Emulator (OGM)	0x80
GS2 Documentation (TSK)	0xd2
GS2 KeyCard App (KCA)	0xfc
Mobile Processor	0xD2
GreenStar Display 4 (GSD4)	0x80
StarFire Receiver	0x1C, 0x?1C, 0x9C
TCM	0x92
Harvest Monitor for Combines (Gen II Moisture Sensor)	0xD3
Combine Yield Monitor (Gen I Moisture Sensor)	0xD3
Harvest Monitor for Cotton	0xD3
Cotton Mass Flow Sensor	0xB1—0xB8
SPFH Monitor	0xB0
AirCart Controller	0xC4
Planter Controller - SMVR	0xC0
Planter Controller - VRF	0xCE
Sprayer Controller - Liquid	0xE1
Sprayer Controller - Dry	0xCE
SSU	0x13

OUO6050,0000FA8 -19-30OCT08-1/1

EC Declaration of Conformity

Deere & Company
Moline, Illinois U.S.A.

The person named below declares that

Product: John Deere GreenStar 2 Display 1800

Fulfills all relevant provisions and essential requirements of the following directives:

Directive	Number	Certification Method
Electromagnetic Compatibility (EMC)	2004/108/EC	Annex II

Name and address of the person in the European Community authorized to compile the technical construction file:

Brigitte Birk
Deere & Company European Office
John Deere Strasse 70
Mannheim, Germany D-68163
EUConformity@JohnDeere.com

Place of declaration: Kaiserslautern, Germany

Date of declaration: 6 March 2009

Manufacturing unit: John Deere Intelligent Solutions Group

Name: John H. Leinart

Title: Engineering Manager

John Deere Intelligent Solutions Group

CE

DXCE01—UN—28APR09

CZ76372,00003B4 -19-13DEC11-1/1

Safety Note Regarding the Subsequent Installation of Electrical and Electronic Appliances and/or Components

The machine is equipped with electronic components whose function may be influenced by electromagnetic radiation from other appliances. Such influences may be hazardous, so take the following safety instructions into account:

If electrical and electronic appliances are subsequently installed on the machine and connected to the onboard system, the user must verify whether the installation affects the electronics or other components. This applies particularly to:

- Personal Computer
- GPS (Global Positioning System) receiver

Subsequently installed electrical/electronic components must comply with all relevant EMC directives and be CE marked.

Wiring, installation and maximum permissible current supply must be as stated in the installation instructions of the machine manufacturer.

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Continued on next page

John Deere Service Literature Available

Technical Information

Technical information can be purchased from John Deere. Some of this information is available in electronic media, such as CD-ROM disks, and in printed form. There are many ways to order. Contact your John Deere dealer. Call **1-800-522-7448** to order using a credit card. Search online from http://www.JohnDeere.com. Please have available the model number, serial number, and name of the product.

Available information includes:

- PARTS CATALOGS list service parts available for your machine with exploded view illustrations to help you identify the correct parts. It is also useful in assembling and disassembling.
- OPERATOR'S MANUALS providing safety, operating, maintenance, and service information. These manuals and safety signs on your machine may also be available in other languages.
- OPERATOR'S VIDEO TAPES showing highlights of safety, operating, maintenance, and service information. These tapes may be available in multiple languages and formats.
- TECHNICAL MANUALS outlining service information for your machine. Included are specifications, illustrated assembly and disassembly procedures, hydraulic oil flow diagrams, and wiring diagrams. Some products have separate manuals for repair and diagnostic information. Some components, such as engines, are available in separate component technical manuals
- FUNDAMENTAL MANUALS detailing basic information regardless of manufacturer:
  - Agricultural Primer series covers technology in farming and ranching, featuring subjects like computers, the Internet, and precision farming.
  - Farm Business Management series examines "real-world" problems and offers practical solutions in the areas of marketing, financing, equipment selection, and compliance.
  - Fundamentals of Services manuals show you how to repair and maintain off-road equipment.
  - Fundamentals of Machine Operation manuals explain machine capacities and adjustments, how to improve machine performance, and how to eliminate unnecessary field operations.

TS189 —UN—17JAN89

TS191 —UN—02DEC88

TS224 —UN—17JAN89

TS1663 —UN—10OCT97

DX,SERVLIT -19-31JUL03-1/1

John Deere Service Keeps You On The Job

John Deere Parts

We help minimize downtime by putting genuine John Deere parts in your hands in a hurry.

That's why we maintain a large and varied inventory—to stay a jump ahead of your needs.

TS100 —UN—23AUG88

JS56696,0000239 -19-08FEB08-1/1

The Right Tools

Precision tools and testing equipment enable our Service Department to locate and correct troubles quickly . . . to save you time and money.

TS101 —UN—23AUG88

JS56696,000023A -19-08FEB08-1/1

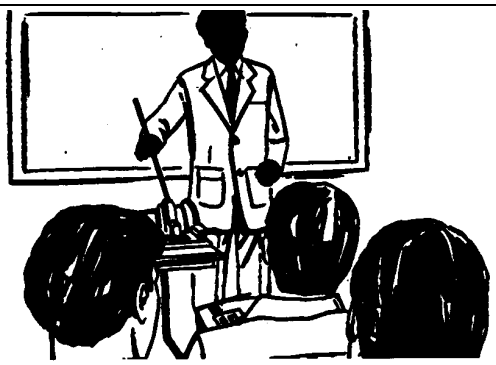
Well-Trained Technicians

School is never out for John Deere service technicians.

Training schools are held regularly to be sure our personnel know your equipment and how to maintain it.

Result?

Experience you can count on!



TS102 —UN—23AUG88

JS56696,000023B -19-08FEB08-1/1

Prompt Service

Our goal is to provide prompt, efficient care when you want it and where you want it.

We can make repairs at your place or at ours, depending on the circumstances: see us, depend on us.

JOHN DEERE SERVICE SUPERIORITY: We'll be around when you need us.

TS103 —UN—23AUG88

JS56696,000023C -19-08FEB08-1/1