

John Deere AutoTrac™ Controller—Reichhardt®



OPERATOR'S MANUAL John Deere AutoTrac™ Controller—Reichhardt® OMPFP16942 ISSUE I6 (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
PRINTED IN U.S.A.



Introduction

Foreword

THANK YOU for purchasing a John Deere product.

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

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your product and should remain with the product 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 the machine or implement will travel when going forward.

WRITE PRODUCT IDENTIFICATION NUMBERS (P.I.N.) in the Operator's Manual. Accurately record all the numbers to help in tracing the product should it be stolen.

Serial Number:

Your dealer also needs these numbers when you order parts. File a backup of the identification numbers in a safe location off the machine or away from the product.

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 or statement 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.

If you are not the original owner of this product, it is in your interest to contact your local John Deere dealer to inform them of this unit's serial number. This will help John Deere notify you of any issues or product improvements.

JS56696,0000C4C -19-26JUN15-1/1

John Deere Technical Information Bookstore

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 prior to operation. To obtain a copy, see your dealer or visit www.deere.com and use the 'Search for Agricultural Equipment Operator's Manuals' link to locate the John Deere Technical Information Bookstore.

CZ76372,000071F -19-20APR15-1/1

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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.

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Moline, Illinois
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A John Deere ILLUSTRATION™ Manual

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Safety

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.



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

T81389 —UN—28JUN13

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.

 **DANGER**

 **WARNING**

 **CAUTION**

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

TS187 —19—30SEP88

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.



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

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

TS201 —UN—15APR13

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.



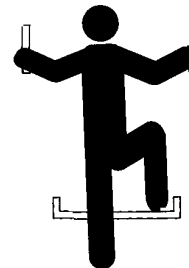
TS218 —UN—23AUG88

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

Use Steps and Handholds Correctly

Prevent falls by facing the machine when getting on and off. Maintain 3-point contact with steps, handholds, and handrails.

Use extra care when mud, snow, or moisture present slippery conditions. Keep steps clean and free of grease or oil. Never jump when exiting machine. Never mount or dismount a moving machine.



T133468 —UN—15APR13

DX,WWW,MOUNT -19-12OCT11-1/1

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.



TSS249 —UN—23AUG88

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

Use Electronic Display Properly

Electronic displays are secondary devices intended to aid the operator in performing field operations, increase comfort and provide entertainment. Displays offer a wide range of functionality, are used in many different machine system applications and can be used with other secondary devices such as handheld electronic devices.

A secondary device is any device that is not required to operate your machine for its primary use. The operator is always responsible for safe operation and control of the machine.

To prevent injury while operating the machine:

- Position the display according to the installation instructions. Ensure that the device is secured and does not obstruct the driver's view or interfere with the machine operating controls.
- Do not become distracted by the display. Stay alert. Pay attention to the machine and surrounding environment.

- Do not change settings or access any functions that require prolonged use of the display controls while machine is moving. Stop the machine in a safe location and place in park position before attempting such operations.
- Never set the volume so high that you cannot hear outside traffic and emergency vehicles.

To promote safe operation, certain functions of displays may be disabled unless the machine movement is restricted and/or has been placed in the park position. Overriding this safety feature may violate applicable law and can result in damage, serious injury, or death.

Only use available display functionality when conditions permit you to do so safely and in accordance with instructions provided. Always observe safe driving rules, state, or local laws and traffic regulations when using any secondary device.

DX,ELEC,DISPLAY -19-13JAN15-1/1

Operate Guidance Systems Safely

Do not use guidance systems on roadways. Always turn off (disable) guidance systems before entering a roadway. Do not attempt to turn on (activate) a guidance system while transporting on a roadway.

Guidance systems are intended to aid the operator in performing field operations more efficiently. The operator is always responsible for the machine path. Guidance systems do not automatically detect or prevent collisions with obstacles or other machines.

Guidance Systems include any application that automates machine steering. This includes, but may not be limited to, AutoTrac™, iGuide™, iTEC™ Pro, AutoTrac™ Universal (ATU), RowSense™, and Machine Sync.

To prevent injury to the operator and bystanders:

- Never get on or off a moving machine.

AutoTrac is a trademark of Deere & Company

iGuide is a trademark of Deere & Company

iTEC is a trademark of Deere & Company

RowSense is a trademark of Deere & Company

- Verify the machine, implement, and guidance system are set up correctly.
 - If using iTEC™ Pro, verify accurate boundaries have been defined.
 - If using Machine Sync, verify the follower's home point is calibrated with sufficient space between the machines.
- Remain alert and pay attention to the surrounding environment.
- Take control of the 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 the machine path.
- Consider field conditions, visibility, and machine configuration when selecting machine speed.

JS56696,0000ABC -19-02DEC13-1/1

Use Seat Belt Properly

Avoid crushing injury or death during rollover.

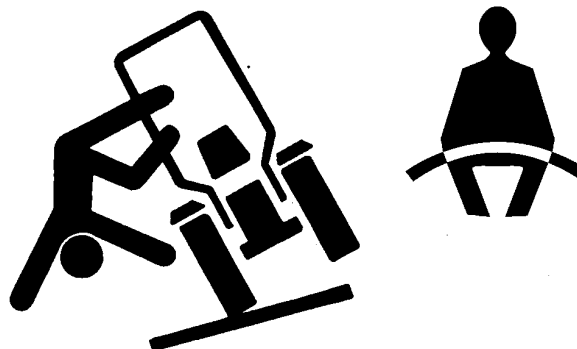
This machine is equipped with a rollover protective structure (ROPS). USE a seat belt when you operate with a ROPS.

- Hold the latch and pull the seat belt across the body.
- Insert the latch into the buckle. Listen for a click.
- Tug on the seat belt latch to make sure that the belt is securely fastened.
- Snug the seat belt across the hips.

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.



TS1729—JUN—24MAY13

DX,ROPS1 -19-22AUG13-1/1

Use AutoTrac Controller on Approved Vehicles

Use AutoTrac Controller only on Approved Vehicles—see StellarSupport.Deere.com for list of approved vehicles.

When activity monitor is selected, AutoTrac Controller looks for operator activity every seven minutes. Operator

will receive a time-out warning 15 seconds before AutoTrac deactivates. Pressing Resume will reset activity monitor timer.

JS56696,0000615 -19-14SEP11-1/1

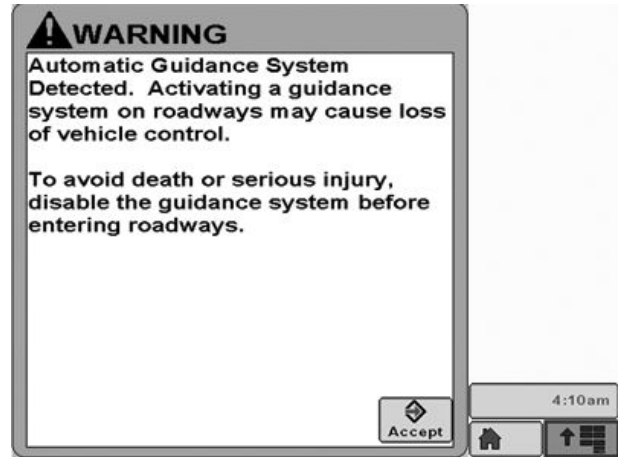
Safety Signs

Automatic Guidance System Detected

This message occurs during startup on vehicles with AutoTrac installed.

The master switch removes power from the EH Valve to prevent AutoTrac from being unintentionally activated. The master switch is intended for use on roadways or when the operator does not want AutoTrac able to be activated.

Ensure AutoTrac is disabled by turning the Master Switch to the OFF position.



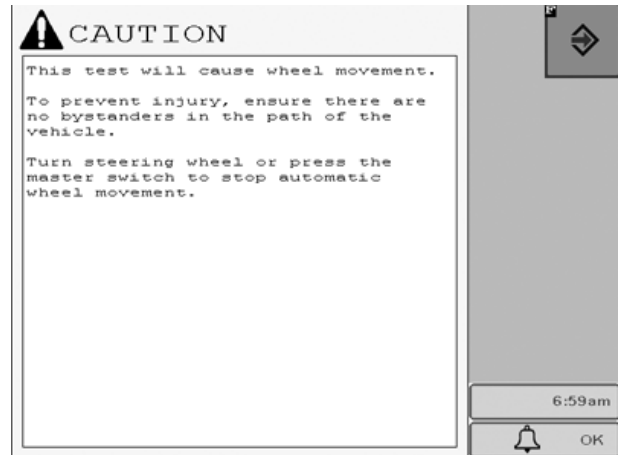
Automatic Guidance

JS56696,0000A3B -19-14JUN11-1/1

PC13157 —19—17FEB11

Wheel Movement

This message occurs when selecting Step Response Test softkey in AutoTrac™ Controller menu.



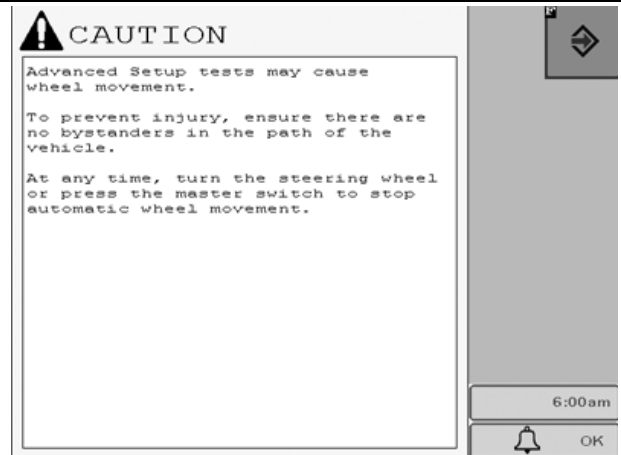
Wheel Movement

HC94949,000099E -19-29MAR16-1/1

PC20272 —19—18NOV14

Wheel Movement

This message occurs when selecting Tool Box softkey in AutoTrac™ Controller menu.



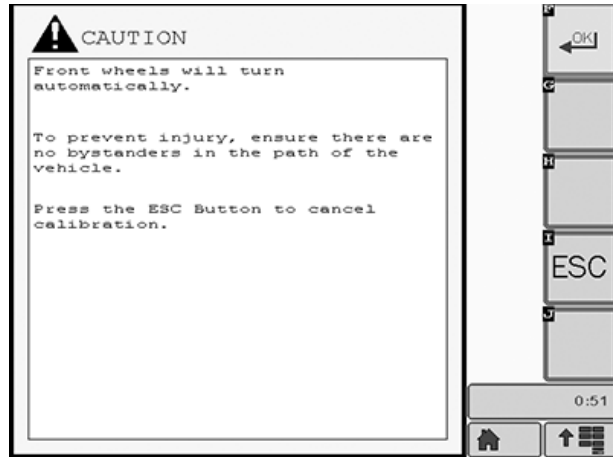
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AL70325,00001A1 -19-14NOV14-1/1

PC20271 —19—18NOV14

Wheel Movement

This message occurs after saving wheelbase measurement.



Safety Sign

PC22364 —19—28SEP16

HC94949,00009A2 -19-01APR16-1/1

Regulatory and Compliance Information

EU Declaration of Conformity

Deere & Company
Moline, Illinois U.S.A.

The undersigned hereby declares that

Product Name: John Deere AutoTrac™ Controller-Reichhardt®

fulfills all relevant provisions and essential requirements of the following directives:

DIRECTIVE	NUMBER	CERTIFICATION METHOD
Directive on the harmonization of the laws of the Member States relating to electromagnetic compatibility	2014/30/EU	Self certified, per Annex II of the Directive
Machinery Directive	2006/42/EC	Internal checks on the manufacture of machinery, per Annex VIII of the Directive

The product is in conformity with the following standards and / or other normative documents:

EN ISO 14982:2009
EN 61000-6-1:2007
EN 61000-6-2:2005
EN 61000-6-3:2007/A1:2011
EN 61000-6-4:2007/A1:2011
EN 55011:2007+A2
EN 55022:2010
EN 55024:2010
EN 55032:2010/AC:2011
EN 60950-1: 2006 + A11:2009 + A1:2010 + A2:2013 + AC: 2011 + A12: 2011
EN ISO 13849-1:2008 + EN ISO 13849-2:2012
EC Type approval 2009/19/EC

Notified bodies involved:

CETECOM ICT Services GmbH
Untertürkheimerstraße 6-10
D-66171 Saarbrücken, Germany

CSA Group Bayern GmbH
Ohmstraße 1-4
D-94342 Strasskirchen

Name and address of the person in the European Community authorized to compile the technical construction file:

Brigitte Birk
John Deere GmbH & Co. KG
Mannheim Regional Center
John Deere Straße 70
Mannheim, Germany D-68163

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Place of declaration: Urbandale, Iowa U.S.A.

Name: Aaron Senneff

Date of declaration: 7 July 2016

Title: Manager—Software Development

DXCE01 —UN—28APR09



Reichhardt is a trademark of Reichhardt GmbH

AE77568,000020F -19-11JUL16-1/1

System Overview

Theory of Operation

AutoTrac™ Controller-Reichhardt® is a hydraulic steering system designed to provide automated guidance while using a GreenStar™ Display and StarFire™ Receiver. Controller sends adjustments to steering valve based on inputs from GreenStar™ Display, StarFire™ Receiver, and wheel angle sensor to keep machine on predetermined

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Reichhardt is a trademark of Reichhardt GmbH
GreenStar is a trademark of Deere & Company
StarFire is a trademark of Deere & Company*

guidance lines. System uses hardware and software from John Deere and Reichhardt®. The system is capable of using factory installed electro-hydraulic valves, wheel angle sensors, and steering input devices. Once the controller is installed, the GreenStar™ Display is used to calibrate system and set up guidance.

HC94949,000098A -19-02MAR16-1/1

AutoTrac™ Reichhardt® Requirements

Hardware:

- GreenStar™ 2 1800 Display or GreenStar™ 3 2630 Display
- StarFire™ 3000 Receiver
- Reichhardt® steering controller
- Steering input device
- Electro-hydraulic valve

*GreenStar is a trademark of Deere & Company
StarFire is a trademark of Deere & Company
Reichhardt is a trademark of Reichhardt GmbH
AutoTrac is a trademark of Deere & Company*

- Wheel angle sensor
- Resume switch
- Master switch
- Seat switch (if seat switch option is selected)
 - Some applications use a door switch in place of seat switch.

Software:

- AutoTrac™ activation on display

HC94949,000098B -19-13APR16-1/1

AutoTrac™ Accuracy

IMPORTANT: John Deere AutoTrac™ system relies on the global positioning system (GPS) network operated by of 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.

Overall AutoTrac™ system accuracy is dependent on many variables.

AutoTrac™ System Accuracy = Signal accuracy + Machine Setup + Implement Setup + Field and Soil Conditions.

It is very important to remember:

- Receiver has to go through a warm-up period after starting.
- Machine must be set up properly (for example, ballasted machine according to Operator's Manual).

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- Mechanical steering system needs to be in good condition (tight steering with minimal play in steering axle).
- Implement must be set up to run properly (wear parts, such as shanks, shovels, and sweeps, are in good working condition and correctly spaced).
- How field and soil conditions affect system (loose soil requires more steering than firm soil, and firm soil can cause uneven draft loads).

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 operates on SF1, SF2, or RTK signal.

AutoTrac™ SF1 activation operates on SF1 signal only.

RW00482,000054E -19-06OCT15-1/1

Softkey Legend

StarFire™ Receiver—StarFire™ Softkey

PC21154 —UN—11MAY15

- Info Tab—View general StarFire™ and global positioning system (GPS) information.
- Setup Tab—Set up StarFire™ mount direction, fore/aft, height, optimize shading, SF2 fallback, hrs. on after shutdown, and calibrate terrain compensation module (TCM).
- Activations Tab—Enter StarFire™ Receiver activations codes.

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StarFire™ Softkey

- Serial Port Tab—Set up or change serial port settings.

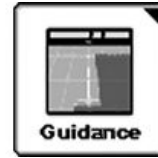
RW00482,00004F5 -19-04MAY16-1/1

GreenStar™—Guidance Softkey

PC21148 —UN—11MAY15

- View Tab—View map, select track name, change steering sensitivity, view AutoTrac™ pie chart, or turn AutoTrac™ steering on or off.
- Guidance Settings Tab—Set up tracking mode, general guidance settings, track settings, AutoTrac™ advanced settings, and lightbar settings.
- Shift Track Settings Tab—Set up shift track settings and turn shifts on or off.

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Guidance Softkey

RW00482,00004F4 -19-29JUL15-1/1

AutoTrac™ Controller Menu Softkey

PC22401 —UN—01APR16

- Calibration
- Health Test



Menu Softkey

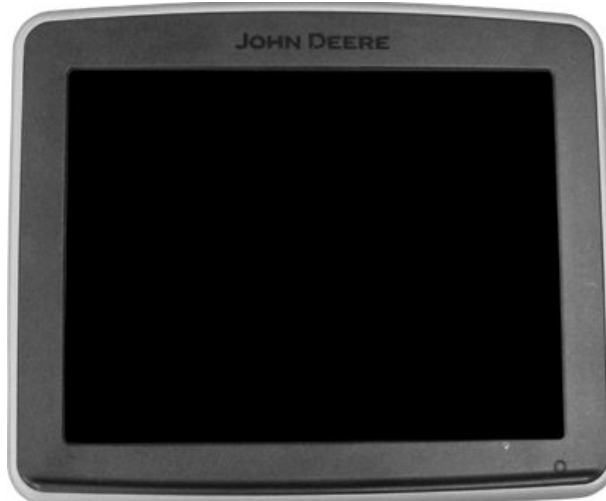
HC94949,00009AD -19-01APR16-1/1

Component Overview

GreenStar™ Display

GreenStar™ Display is a user interface used by the operator to:

- Configure and calibrate system components.
- Monitor system performance.
- Make system adjustments.
- Program software.
- View diagnostic tests.



PC13407 —UN—20APR11

GreenStar™ 3 2630 Display

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HC94949,00006C8 -19-01OCT15-1/1

StarFire™ 3000 Receiver

StarFire™ 3000 Receiver uses navigation satellites with StarFire™ correction satellites to determine machine location and direction of travel. An integrated terrain compensation module (TCM) adjusts machine position to compensate for uneven terrain. A StarFire™ signal activation is required to operate AutoTrac™.



PC13406 —UN—20APR11

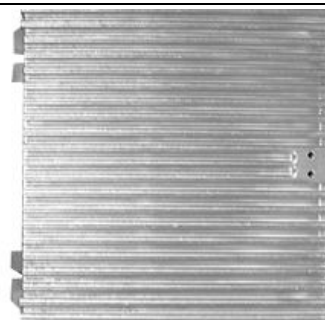
StarFire™ 3000 Receiver

StarFire is a trademark of Deere & Company

AL70325,0000177 -19-06NOV14-1/1

Reichhardt™ Steering Controller

Reichhardt® Steering Controller is an electronic control unit (ECU) which stores Reichhardt® steering settings used to control machine. Steering controller communicates with display and receiver to steer machine to a guidance line set by operator using the GreenStar™ Display. Steering controller is required with every installation.



PC22147 —UN—07MAR16

Reichhardt® Steering Controller

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GreenStar is a trademark of Deere & Company*

HC94949,0000992 -19-15MAR16-1/1

Electro-Hydraulic Valve

Electro-Hydraulic Valve receives input and directs flow of hydraulic fluid to steer machine. Valve must be installed if factory-installed valve is not present.

HC94949,00009AA -19-01APR16-1/1

Steering Input Device

NOTE: Steering input device varies by machine model.

Steering Input Device is either a pressure transducer or steering wheel encoder which monitors for manual disengagement by operator. When operator turns steering wheel, device detects a hydraulic pressure spike, electronic pulse, or change in encoder counts. Message is sent to steering controller to disengage AutoTrac™.



Pressure Transducer

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AL70325,000017B -19-06NOV14-1/1

PC20016—UN—16SEP14

Resume Switch



Tractor



Windrower

A—Resume Switch

Resume Switch is an electronic switch used to activate AutoTrac™ after system is enabled. Resume switch must be installed if factory installed switch is not present.

NOTE: Resume switch and mounting location vary by machine model.

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AL70325,000017C -19-06NOV14-1/1

PC20011—UN—11SEP14

PC20037—UN—24SEP14

Master Switch

NOTE: Mounting location varies by machine and operator preference.

Master Switch is used when transporting machine. When switch is set to off position, no power is supplied to electro-hydraulic valve. This ensures AutoTrac™ is disabled while driving on roads or when operator does not want AutoTrac™ to be activated. Switch is also referred to as Road Mode or Road Switch.



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AL70325,000017D -19-12NOV14-1/1

PC20010—UN—11SEP14

Seat Switch and Activity Monitor

Seat Switch is used to detect operator presence. Switch is connected to machine wiring harness during component installation. If no seat switch is available for machine, Activity Monitor detects operator presence. Some applications use a door switch in place of seat switch.

Activity Monitor detects operator presence if seat switch is not available or operational. An on-screen alert appears if operator has not interacted with display within the last seven minutes. Operator accepts warning to let system know they are in seat.

- **Operator Detection Timeout**

The system has not detected any recent operator activity. AutoTrac™ will disengage in:

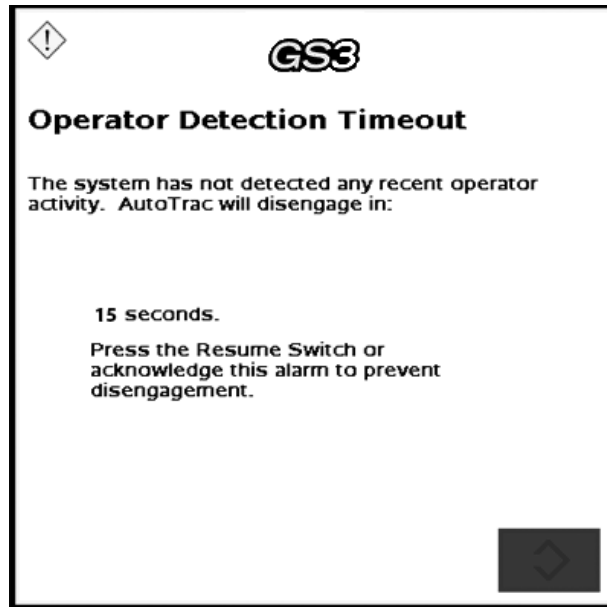
15 seconds.

Press the Resume Switch or acknowledge this alarm to prevent disengagement.

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PC13872—UN—20JUL11



Operator Detection Timeout

Setting Up—AutoTrac™-Reichhardt®

GreenStar™ Display and StarFire™ Receiver Software Activations

NOTE: John Deere AutoTrac™ Controller requires a valid AutoTrac™ software activation for assisted steering.

GreenStar™ Display

To view or activate software on GreenStar™ 3 2630 Display, select:

1. Menu button
2. GreenStar™ button
3. GS3 softkey
4. Activations tab (A)

To view or activate software on GreenStar™ 2 1800 Display, select:

1. Menu button
2. GreenStar™ button
3. GreenStar™ softkey
4. Settings softkey
5. Activate softkey

A—Activations Tab

PC8663 —UN—29APR15



Menu Button

PC12685 —UN—29APR15



GreenStar™ Button

PC12686 —UN—14JUL10



GS3 Softkey

Setup	Summary	A Activations	Memory
Serial Number: PCGU2UA000000 Challenge Code: abcdefg Confirmation Code: 1234			
Enter Code			
Component		Status	
↑ ↓	AutoTrac SF2 Demo	15.0 hrs left	☒
	This software was activated on 09-29-2010		☒
	PivotPro Demo	15.0 hrs left	☒
	This software was activated on 09-29-2010		☒
	iTEC Pro Demo	15.0 hrs left	☒
This software was activated on 09-29-2010		☒	
iGuide Demo		15.0 hrs left	☒
This software was activated on 09-29-2010		☒	
AutoTrac RowSense GS3 Demo		15.0 hrs left	☒
This software was activated on 09-29-2010		☒	

GreenStar™ Display Activations

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GreenStar is a trademark of Deere & Company*

Continued on next page

HC94949,00009AF -19-04APR16-1/2

PC20355 —UN—01DEC14

NOTE: Verify proper activation and SF2 license is active and meets expected accuracy levels for operation. Contact your John Deere dealer to obtain a StarFire™ license or RTK activation.

StarFire™ 3000 Receiver

To view or activate signal on StarFire™ 3000 Receiver, select:

1. Menu button
2. StarFire™ button
3. Main softkey
4. Activations tab (A)

A—Activations Tab

PC8663 —UN—29APR15



Menu Button

PC13006 —UN—05NOV14



StarFire™ Button

PC21154 —UN—11MAY15



Main Softkey

Info	Setup	A Activations	Serial Port
Activations SF1, SF2 Ready, RTK		Activation Code Enter	
SF2 License No SF2 End Date StarFire SN 3285780000963			
<i>Activation / License Status Window</i>			

StarFire™ Receiver Activations

PC20332 —UN—01DEC14

StarFire is a trademark of Deere & Company

HC94949,00009AF -19-04APR16-2/2

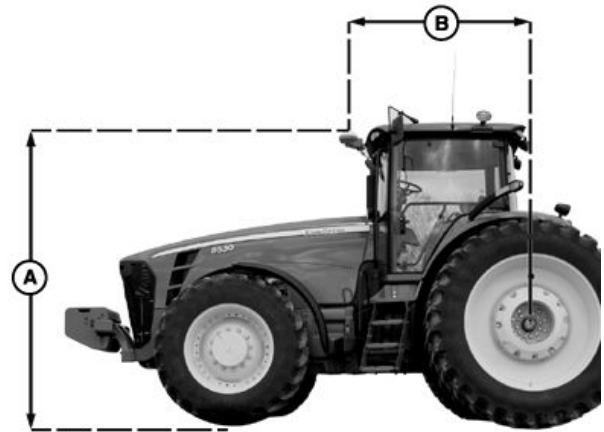
StarFire™ Height and Fore-Aft

StarFire™ Height—Enter the height of the StarFire™ Receiver. Height is measured from the ground to the top of the dome.

StarFire™ Fore-Aft—Enter the fore-aft measurement (the distance from the fixed axle of the machine to the receiver). The fixed axle is the rear axle on a row-crop tractor in front of rear axle.

A—Height

B—Fore-Aft



Fixed-Axle Machines
(Row Crop Tractors)

StarFire is a trademark of Deere & Company

HC94949,00009B0 -19-04APR16-1/1

PC8995—UN—07MAR06

StarFire™ Height and Fore-Aft Measurements Table

Use the following table to record the height and fore-aft of the StarFire™ Receiver.

StarFire™ Height and Fore-Aft Measurements		
Machine	Height	Fore-Aft

StarFire is a trademark of Deere & Company

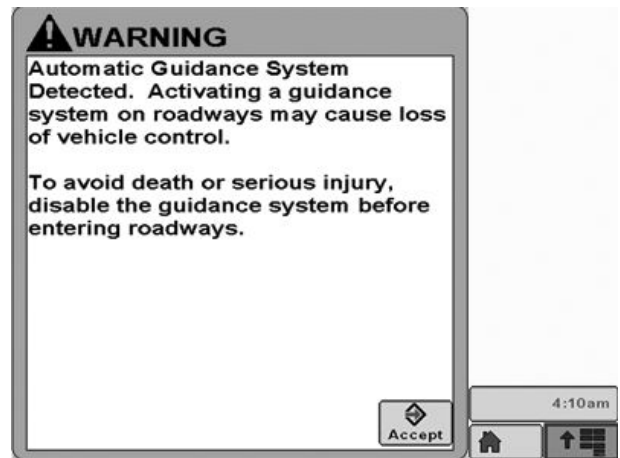
HC94949,00008B6 -19-27JAN16-1/1

Read and Accept Warning on GreenStar™ Display

IMPORTANT: When starting machine with AutoTrac™ installed and start-up screen is not displayed, update software on StellarSupport.com.

Each time a machine equipped with AutoTrac™ is started, start-up screen appears as a reminder of operator responsibilities when using AutoTrac™ steering system.

Operator must select Accept before display will move on to next page.



AutoTrac is a trademark of Deere & Company

HC94949,000060C -19-20NOV14-1/1

PC13157—19—17FEB11

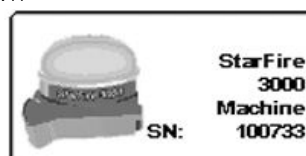
Optimize Terrain Compensation Module (TCM)

PC8663 —UN—29APR15

PC13006 —UN—05NOV14



Menu Button



StarFire™ Button

Optimize TCM calibration by allowing inertial measurement unit (IMU) to measure Roll Angle (A) and Yaw Rate (B) before performing the TCM calibration.

PC21154 —UN—11MAY15



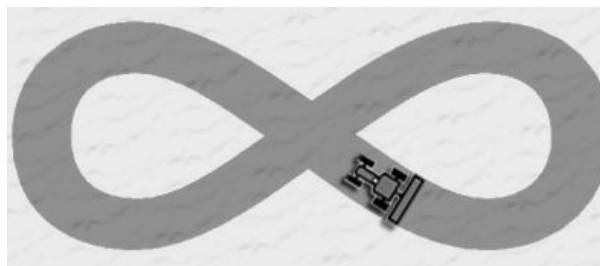
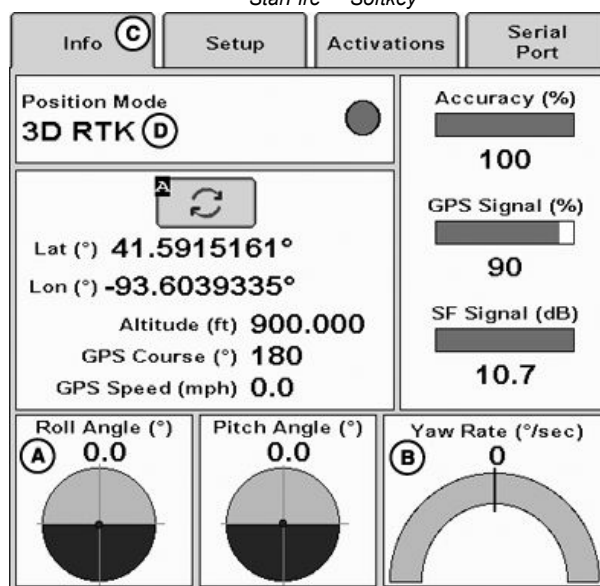
StarFire™ Softkey

1. Select Menu button.
2. Select StarFire™ button.
3. Select StarFire™ softkey.
4. Select Info tab (C).
5. Verify 3D position mode (D) has established SF1 signal or better.
6. Drive machine in TCM optimization drive pattern two times to allow IMU to initialize.
7. Complete TCM calibration.

(Reference Calibrate Terrain Compensation Module [TCM].)

A—Roll Angle
B—Yaw Rate

C—Info Tab
D—Position Mode



TCM Optimization Drive Pattern

StarFire is a trademark of Deere & Company

RW00482,0000525 -19-04MAY16-1/1

PC21396 —UN—27JUL15

PC21419 —UN—30JUL15

Set Up Terrain Compensation Module (TCM)

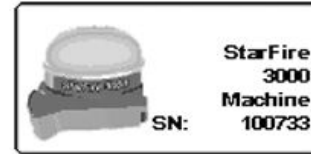
1. Select Menu button.
2. Select StarFire™ button.
3. Select Setup tab.

PC8663 —UN—29APR15



Menu Button

PC13006 —UN—05NOV14



StarFire™ Button

PC20199 —UN—05NOV14



Setup Tab

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HC94949,00009B2 -19-04APR16-1/1

Calibrate Terrain Compensation Module (TCM)

Select TCM toggle button (A) to turn TCM on and off. When TCM is turned off, StarFire™ global positioning system (GPS) message is not corrected for machine dynamics or side slopes. TCM defaults to on when cycling power.

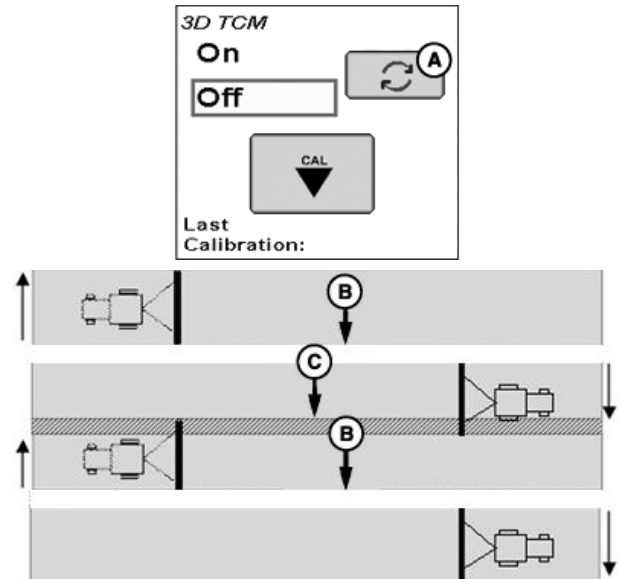
NOTE: TCM must be turned on for AutoTrac™ to activate.

Calibrate TCM so receiver can determine zero degree roll angle and pitch angle.

Before calibrating, ensure machine and implement are in proper working condition and ready for field work. Machine must be ballasted and tires properly inflated. Lower implement as close as possible to working position when calibrating.

Calibrate TCM every time receiver is removed from machine and reattached or if TCM angle in relation to machine has changed. Changes in TCM angle in relation to machine can create an offset and look like a consistent skip (B) or overlap (C) in pass-to-pass operation. Possible causes of this offset could be StarFire™ mounting bracket is slightly offset, machine cab is slightly offset, or uneven tire pressures from one side to other.

To eliminate offset, position machine and calibrate TCM, drive down a pass, turn around, and drive down same pass in opposite direction. If machine does not



A—TCM Toggle Button
B—Skip

C—Overlap

follow same pass, measure offset distance and enter in implement offset.

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AutoTrac is a trademark of Deere & Company

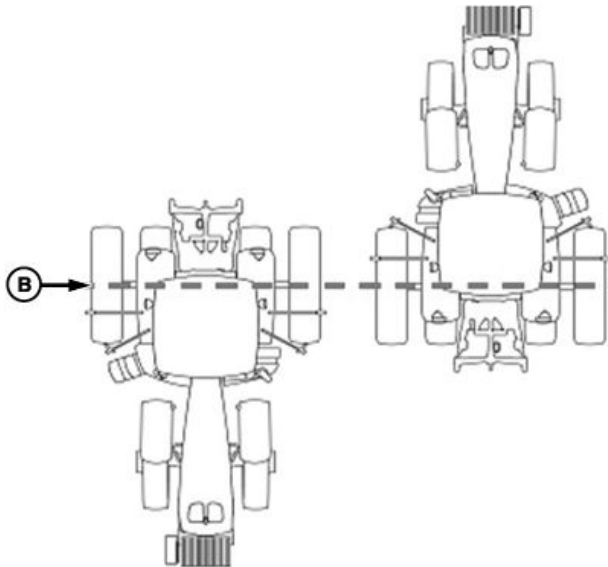
Continued on next page

DK01672,000019E -19-14MAR16-1/2

PC19992 —UN—04SEP14

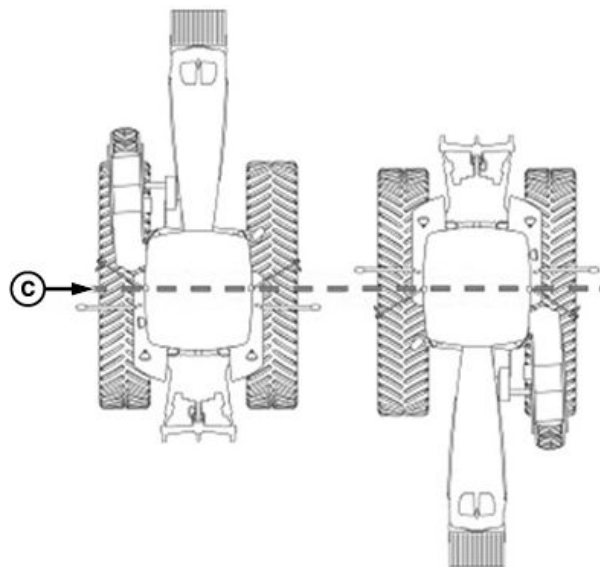
PC19993 —UN—03SEP14

Position Machine and Calibrate Terrain Compensation Module (TCM)



Floating Front Axle Machines

PC19995 —UN—03SEP14

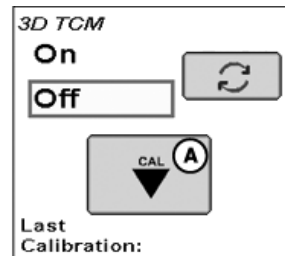


Fixed Axle Wheels Or Tracks Machines

PC19996 —UN—03SEP14

1. Park machine on a hard, level surface and come to a complete stop (cab is not rocking).
2. Mark location of tires or tracks on ground to note location of axle.
3. Select Calibration button (A).
4. Select Accept button. Calibrating status bar appears, then disappears when finished.
5. Turn machine 180 degrees to face opposite direction. Ensure tires are in proper location for fixed or floating front axle and machine has come to a complete stop (cab is not rocking).
 - For floating front axle machines (MFWD (mechanical front wheel drive), ILS™ (Independent Link Suspension), TLS™ (Triple-Link Suspension)), place wheels so rear axle (A) is in same location when performing 2-point calibration.
 - For fixed-axle wheels or tracks machines (track tractors, 47X0 and 49X0 series sprayers, 9000, and 9020 series wheel tractors), place wheels or tracks so machine pivot point (C) is in same location when facing either direction.
6. Select Accept button. Calibrating status bar appears, then disappears when finished.

ILS is a trademark of Deere & Company
 TLS is a trademark of Deere & Company



PC22267 —UN—14MAR16



Accept Button

A—Calibration Button
 B—Rear Axle

C—Machine Pivot Point

7. Select Accept button to return to Setup tab. If calibration was unsuccessful, re-calibrate the TCM.

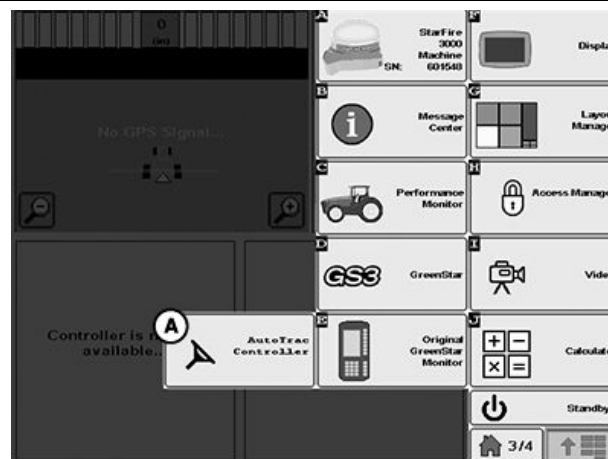
PC19994 —UN—04SEP14

DK01672,000019E -19-14MAR16-2/2

AutoTrac™ Controller– Reichhardt® Main Menu

1. Select AutoTrac™ Controller (A).

A—AutoTrac™ Controller Button



AutoTrac™ Controller Button

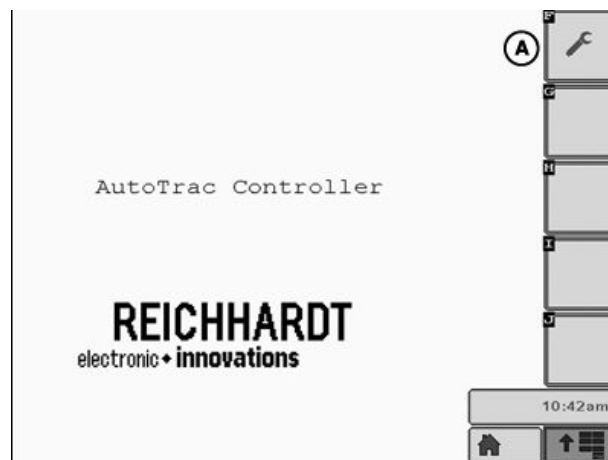
AutoTrac is a trademark of Deere & Company

HC94949,0000999 -19-23MAR16-1/3

PC22152—UN—18FEB16

2. Select Main Menu softkey (A).

A—Main Menu Softkey

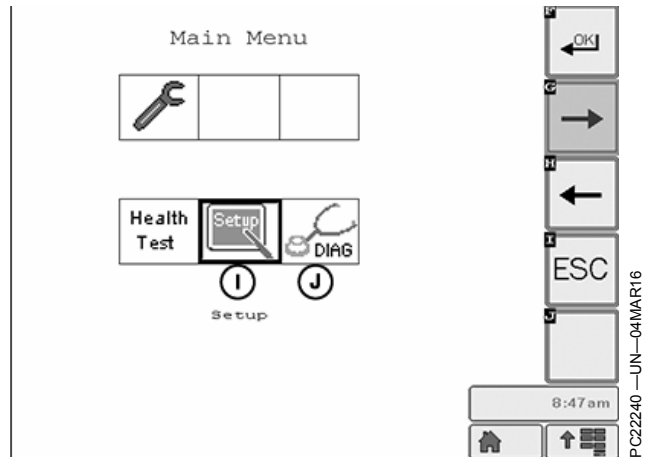
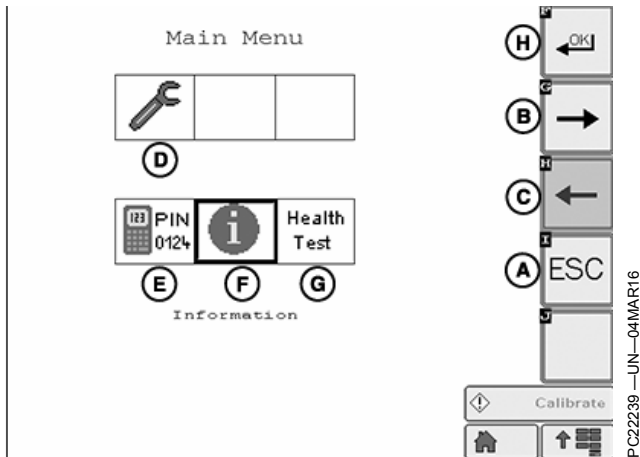


Reichhardt® Welcome Screen

Continued on next page

HC94949,0000999 -19-23MAR16-2/3

PC13831—UN—03AUG11



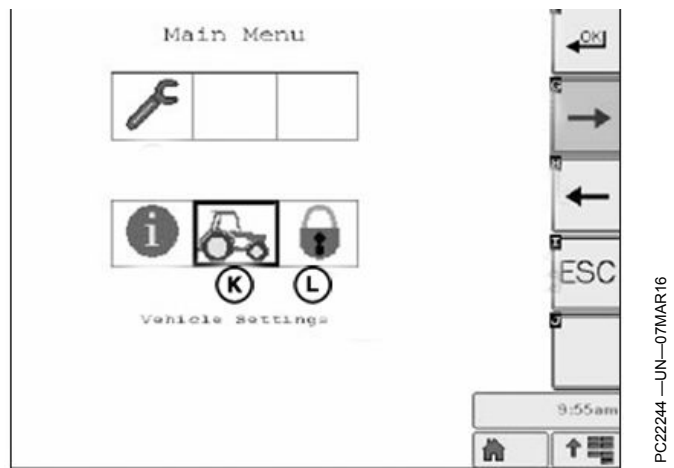
IMPORTANT: Read all instructions before calibrating the AutoTrac™ Controller.

AutoTrac™ calibration should be completed without an implement connected to avoid damage to the tractor or implement.

NOTE: Press ESC softkey (A) at any time to cancel the calibration.

Use the forward (B) and backward (C) softkeys to scroll through the Main Menu icons.

- | | |
|---------------------|------------------------|
| A—ESC Softkey | G—Health Test |
| B—Forward Softkey | H—OK Softkey |
| C—Backward Softkey | I—Setup |
| D—Main Menu Softkey | J—Diagnosis |
| E—Access Codes | K—Vehicle Settings |
| F—Information | L—Steering System Lock |



HC94949,0000999 -19-23MAR16-3/3

Determine Turning Diameter

NOTE: When using a StarFire™ iTC Receiver, manual measurement is the only method to determine the turning diameter.

Two methods can be used to determine the turning diameter of the machine.

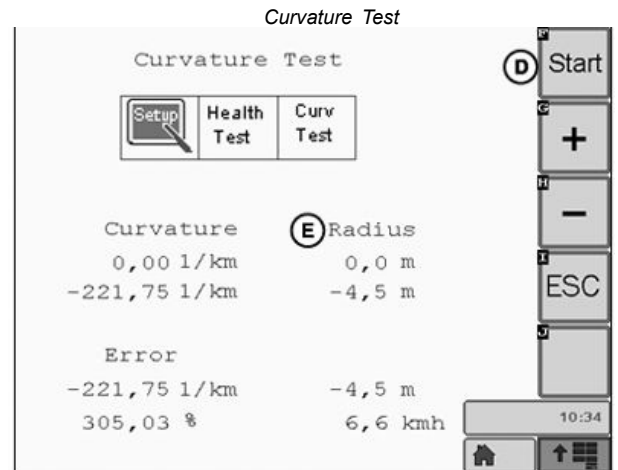
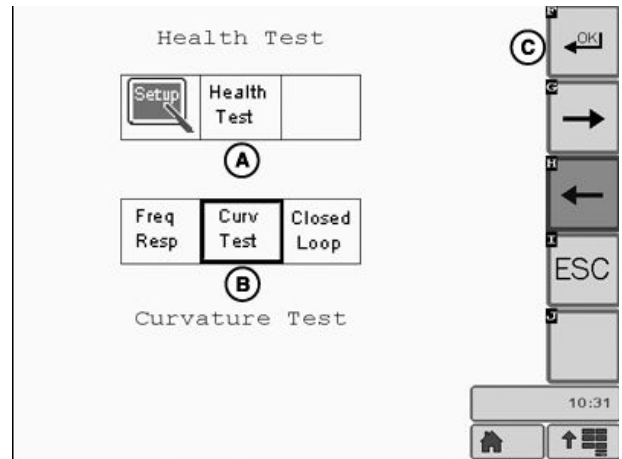
Curvature Test

Use the Health Test (A) functionality to determine the turning diameter.

1. Select Main Menu > Health Test > OK.
2. Select Curvature Test (B) and then OK (C).
3. Select Start (D).
4. Turn wheel completely in one direction, and drive until radius (E) is stable and does not change.
5. Double radius to determine the left or right turning diameter.
6. Write down direction and diameter.
7. Repeat steps 3-6 in the opposite direction of travel to determine the other turning diameter.

A—Health Test Icon
B—Curvature Test
C—OK Softkey

D—Start Softkey
E—Radius



Curvature Test

StarFire is a trademark of Deere & Company

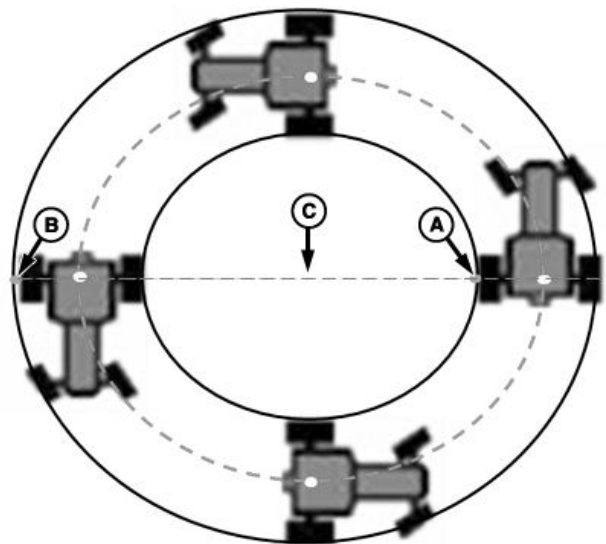
HC94949,000099A -19-24MAR16-1/2

Manual Measurement

1. Mark point (A) on ground next to left-hand rear wheel.
2. Turn wheel completely in one direction, and drive in a half circle.
3. Mark second point (B) next to the right-hand rear wheel.
4. Continue driving in the circle.
5. Measure distance (C) between the two points to determine left or right turning diameter.
6. Write down direction and diameter.
7. Repeat steps 1-6 in opposite direction to determine other turning diameter.

A—Starting Point
B—End Point

C—Turning Diameter



Turning Diameter

HC94949,000099A -19-24MAR16-2/2

Calibrate AutoTrac™ Controller—Reichhardt®

Setup Menu

NOTE: Calibration procedure requires a large, open, and level surface to complete the required steps.

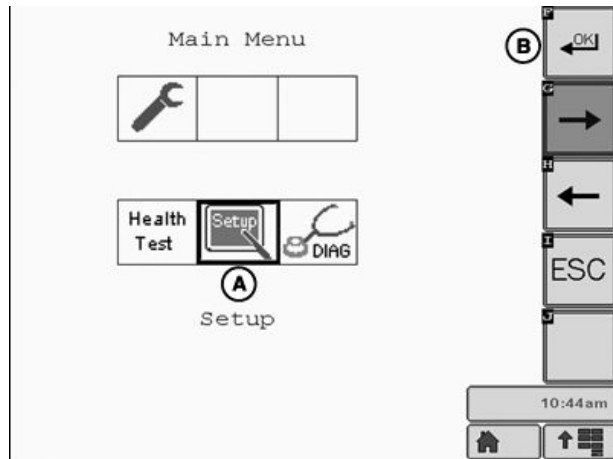
Complete calibration procedure with a passing status before using AutoTrac™. If a passing status is not achieved, AutoTrac™ does not work.

1. Drive tractor slowly at full throttle for approximately 2–5 min to bring hydraulic fluid to operating temperature before beginning calibration procedure.
2. Select Setup icon (A).
3. Select OK (B).

A—Setup Icon

B—OK Softkey

AutoTrac is a trademark of Deere & Company



Main Menu—Setup

PC22188—UN—03MAR16

Continued on next page

HC94949,000099B -19-28MAR16-1/14

1. Enter Vehicle Code.

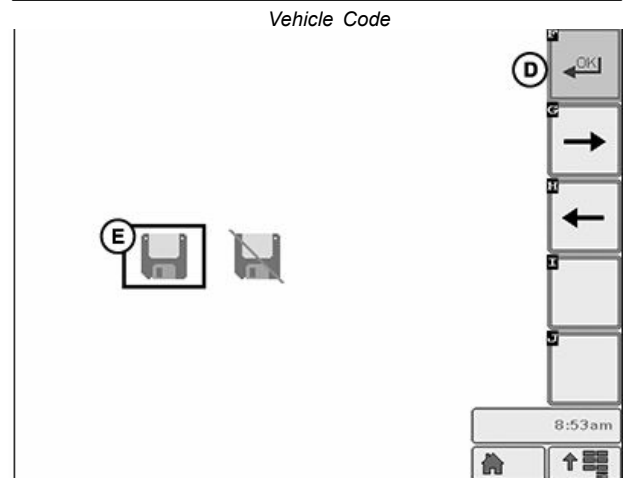
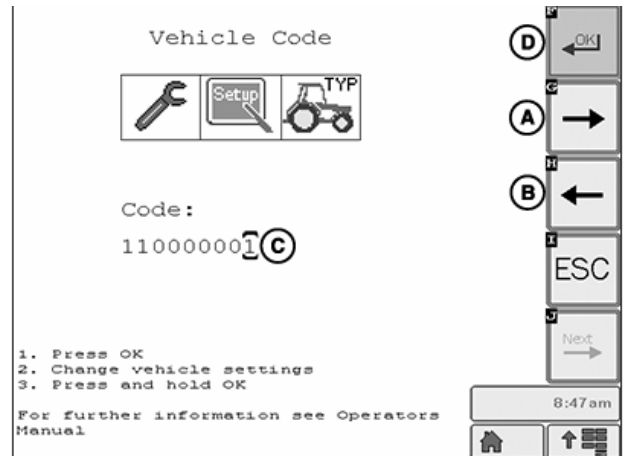
NOTE: Vehicles codes are located in the John Deere AutoTrac™ Controller Reichhardt® Kits Installation Instructions. For more information, see your John Deere dealer or qualified service provider.

Make sure resume switch on Reichhardt® main harness is in ON position.

- Select forward and backward softkeys (A and B) to move marker (C) to desired digit.
- Select OK (D) to change softkeys to increase and decrease softkeys.
- Select softkeys to increase or decrease the marked number.
- Select OK to change softkeys back to forward and backward softkeys.
- Repeat steps a–d as needed.
- After updating vehicle code, press and hold OK until audible sound is heard.
- Move marker to Save File (E), and select OK button.

A—Forward Softkey
B—Backward Softkey
C—Vehicle Code Marker

D—OK Softkey
E—Save File



Save File

Reichhardt is a trademark of Reichhardt GmbH

HC94949,000099B -19-28MAR16-2/14

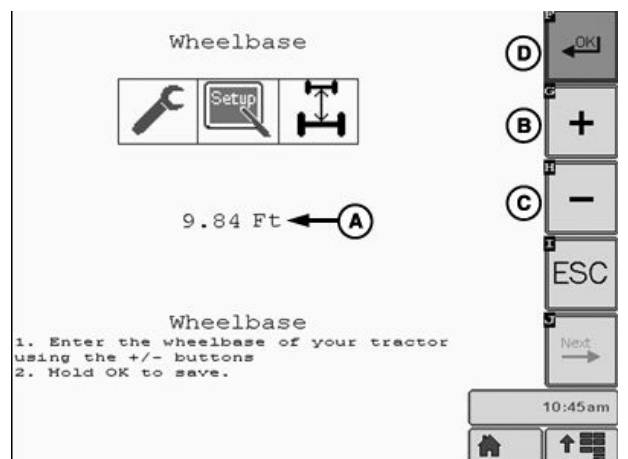
2. Measure Wheelbase.

Wheelbase must be measured for each machine. Use a tape measure to measure wheelbase accurately.

- Enter wheelbase (A) of tractor using increase and decrease (B and C) softkeys.
- Press and hold OK (D) to save.

A—Wheelbase Value
B—Increase Softkey

C—Decrease Softkey
D—OK Softkey



Wheelbase

Continued on next page

HC94949,000099B -19-28MAR16-3/14

CAUTION:

Front wheels will turn automatically.

To prevent injury, ensure there are no bystanders in the path of the vehicle.

Press the ESC Button to cancel calibration.

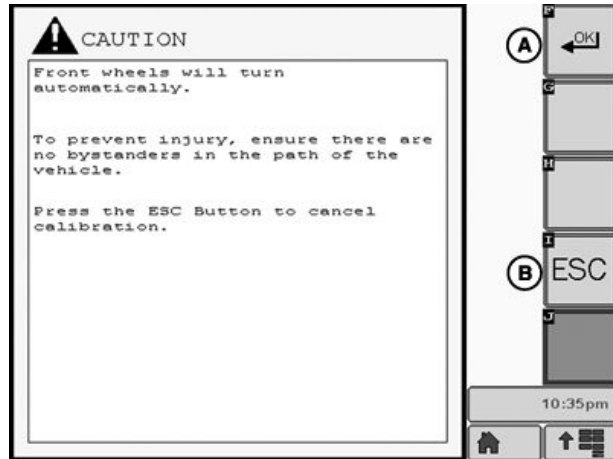
Some of the following calibration procedures require controller to take control of steering system. Ensure machine is on a large, open, and level surface.

Read caution message, and select OK softkey (A) to continue with calibration.

Select ESC softkey (B) to cancel calibration.

A—OK Softkey

B—ESC Softkey



Caution

PC13870—UN—20JUL11

HC94949,000099B -19-28MAR16-4/14

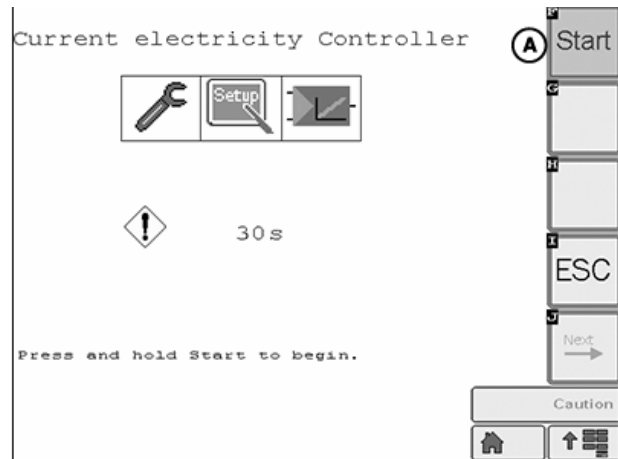
3. Automatically Calibrate Controller.

NOTE: Ensure front wheels can turn in both directions.

Once calibration is started, Start softkey changes to Stop until calibration is completed.

- Press and hold Start (A) to begin calibration.
- Wait for calibration to complete.

A—Start Softkey



Current Controller

PC22156—UN—22FEB16

Continued on next page

HC94949,000099B -19-28MAR16-5/14

4. Calibrate Left Valve Deadband.

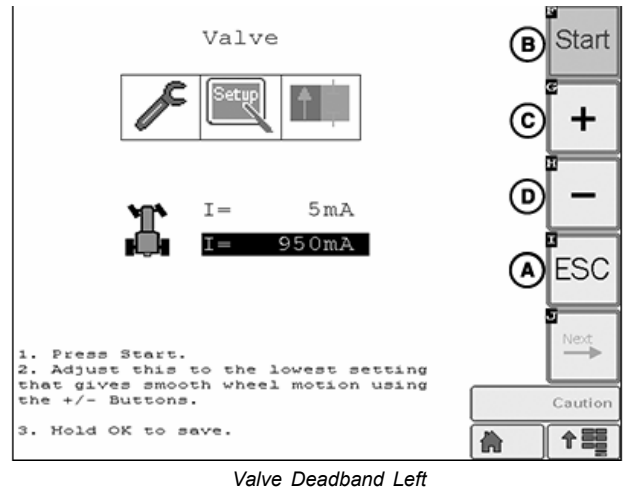
Left valve deadband calibration commands the wheels to turn left. Adjust value to the lowest setting that generates smooth wheel motion.

NOTE: Before calibration is complete, pressing ESC softkey (B) is the only way to stop wheel movement.

It is possible to control steering by taking control of steering wheel. Once steering wheel is released, calibration steers to the left again.

NOTE: Once test is started, Start softkey (A) changes to an OK softkey.

- Press Start.
- Use increase and decrease softkeys (C and D) to adjust value to lowest setting that generates smooth wheel motion.
- Press and hold OK to save.



A—Start Softkey
B—ESC Softkey

C—Increase Softkey
D—Decrease Softkey

HC94949,000099B -19-28MAR16-6/14

PC22158 —UN—23MAR16

5. Calibrate Right Valve Deadband.

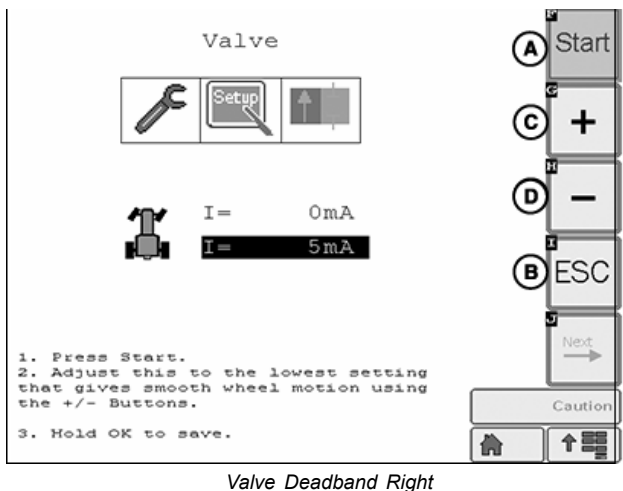
Right valve deadband calibration commands the wheels to turn right. Adjust value to the lowest setting that generates smooth wheel motion.

NOTE: Before calibration is complete, pressing ESC softkey (B) is the only way to stop wheel movement.

It is possible to control steering by taking control of steering wheel. Once steering wheel is released, calibration steers to the right again.

NOTE: Once test is started, Start softkey (A) changes to an OK softkey.

- Press Start.
- Use increase and decrease softkeys (C and D) to adjust value to lowest setting that generates smooth wheel motion.
- Press and hold OK to save.



A—Start Softkey
B—Increase Softkey

C—Decrease Softkey
D—ESC Softkey

Continued on next page

HC94949,000099B -19-28MAR16-7/14

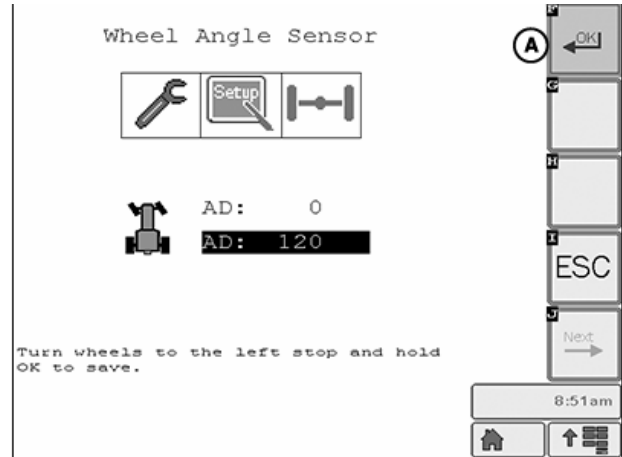
PC22157 —UN—16MAR16

6. Calibrate Wheel Angle Sensor Left Limit.

NOTE: It is important that wheels are turned all the way to the left during calibration or undesired AutoTrac™ performance may occur.

- Turn wheels all the way to the left and hold steering wheel.
- Press and hold OK (A) to save.

A—OK Softkey



Wheel Angle Sensor Left Calibration

HC94949,000099B -19-28MAR16-8/14

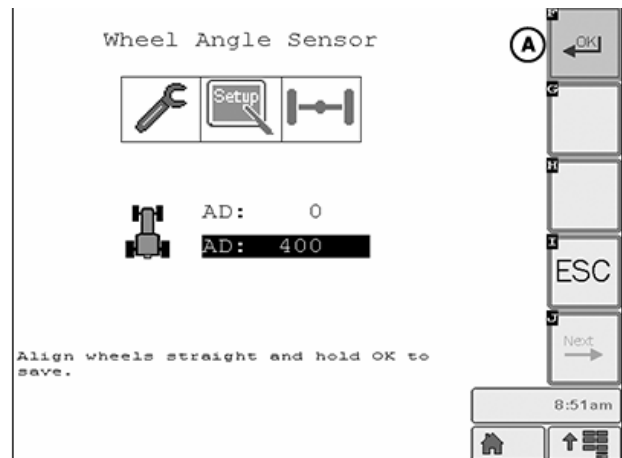
PC22159—UN—22FEB16

7. Calibrate Wheel Angle Sensor Center Position.

NOTE: An accurate center calibration is critical for AutoTrac™ performance. Drive a short distance looking down the center of the machine toward a fixed point on the horizon to help align wheels.

- Align wheels straight ahead and hold steering wheel.
- Press and hold OK (A) to save.

A—OK Softkey



WAS Center Calibration

HC94949,000099B -19-28MAR16-9/14

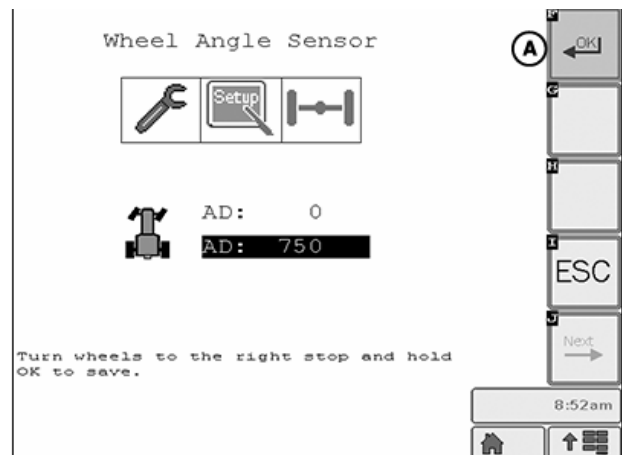
PC22160—UN—22FEB16

8. Calibrate Wheel Angle Sensor Right Limit.

NOTE: It is important that wheels are turned all the way to the right during the calibration or undesired AutoTrac™ performance may occur.

- Turn wheels all the way to the right and hold steering wheel.
- Press and hold OK (A) to save.

A—OK Softkey



WAS Right Calibration

HC94949,000099B -19-28MAR16-10/14

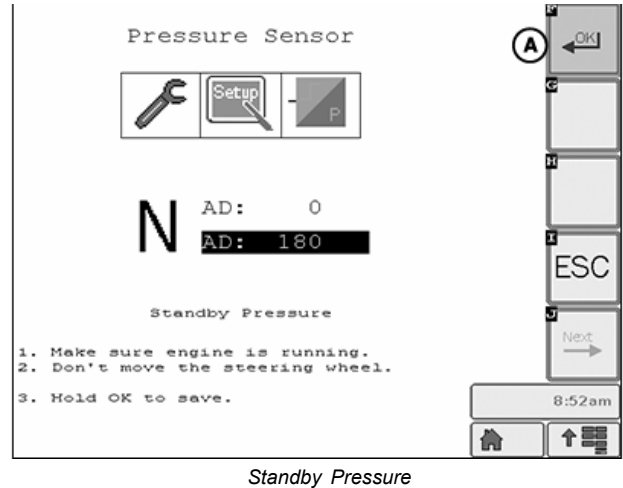
PC22161—UN—22FEB16

Continued on next page

9. Calibrate Pressure Sensor.

- Make sure engine is running.
- Do not move the steering wheel.
- Press and hold OK (A) to save.

A—OK Softkey



Standby Pressure

HC94949,000099B -19-28MAR16-11/14

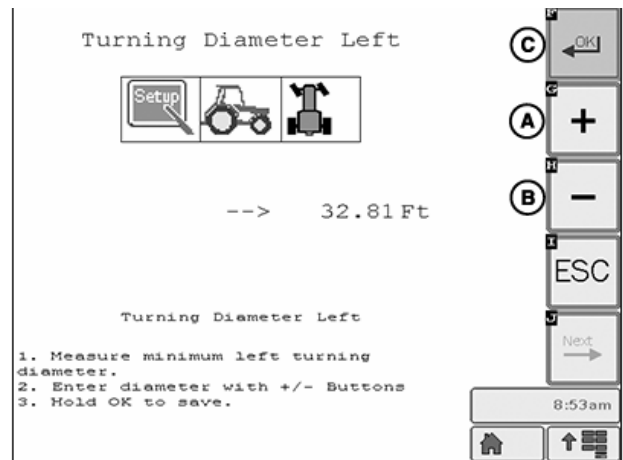
PC22162 —UN—22FEB16

10. Enter Left Turning Diameter.

- Enter previously measured left turning diameter using increase and decrease softkeys (A and B).
- Press and hold OK (C) to save.

A—Increase Softkey
B—Decrease Softkey

C—OK Softkey



Tractor Turning Diameter – Left

HC94949,000099B -19-28MAR16-12/14

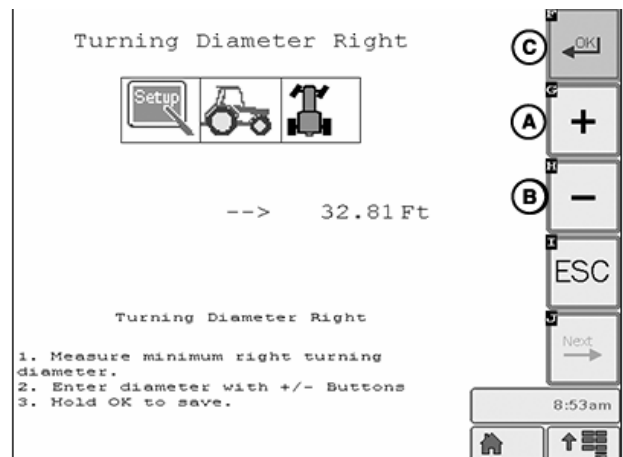
PC22165 —UN—24FEB16

11. Enter Right Turning Diameter.

- Enter the previously measured right turning diameter using increase and decrease softkeys (A and B).
- Press and hold OK (C) to save.

A—Increase Softkey
B—Decrease Softkey

C—OK Softkey



Tractor Turning Diameter – Right

Continued on next page

HC94949,000099B -19-28MAR16-13/14

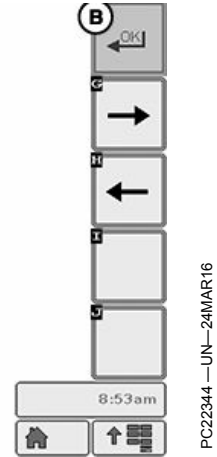
PC22164 —UN—22FEB16

12. Save Calibration Settings.

- Move marker to Save File (A).
- Select OK button (B) to complete calibration.

A—Save File

B—OK Softkey



HC94949,000099B -19-28MAR16-14/14

Failed Calibrations

If calibration failure persists, check Message Center.

A failed calibration may be result of:

- Incorrect inputs provided by operator
- Not enough area to complete calibration without stopping during calibration
- Grabbing steering wheel to avoid obstacles
- Wheel angle sensor not responding
- Valve not responding
- Machine hardware failure

HC94949,00000E7 -19-17AUG12-1/1

Operating—GreenStar™ 3 2630 Display

Create Guidance Line

*NOTE: Instructions are for a basic guidance line.
For complete guidance setup instructions, see
GreenStar™ 3 2630 Display Operator's Manual.*

1. Select Menu button.
2. Select GreenStar™ button.
3. Select Guidance softkey.

PC8663 —UN—29APR15



Menu Button

PC12685 —UN—29APR15



GreenStar™ Button

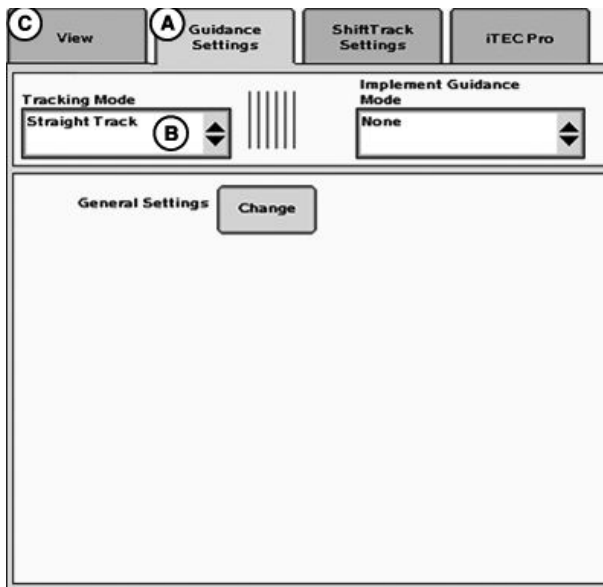
PC21148 —UN—11MAY15



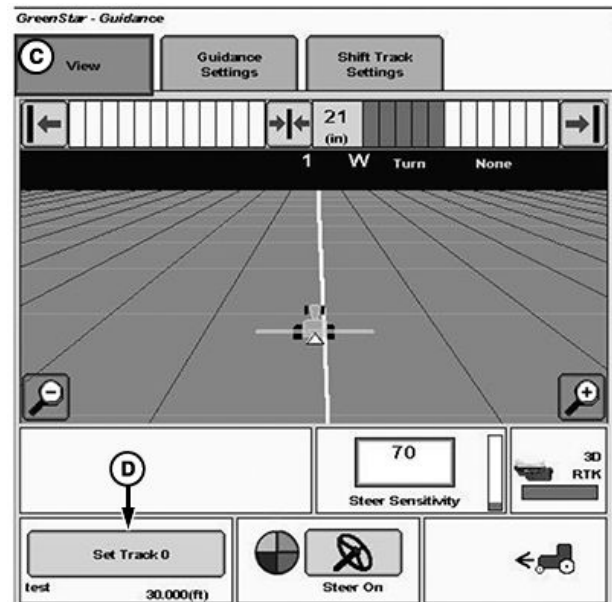
Guidance Softkey

GreenStar is a trademark of Deere & Company

HC94949,00009B5 -19-04APR16-1/3



Guidance Settings



Guidance View

A—Guidance Settings Tab

B—Tracking Mode Drop-Down Menu

C—View Tab

D—Set Track 0 Button

4. Select Guidance Settings tab (A).
5. Select Straight Track mode (B).
6. Select View tab (C).

7. Select Set Track 0 button (D).

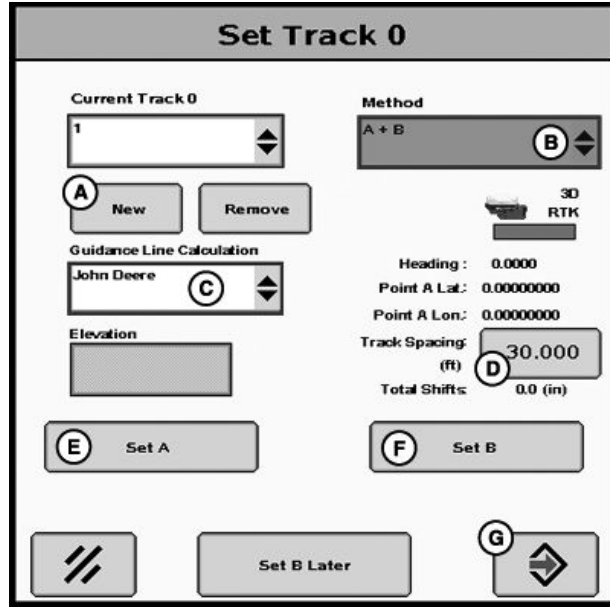
Continued on next page

HC94949,00009B5 -19-04APR16-2/3

8. Select New button (A).
9. Enter a name for Track 0 using keypad. Select Enter button to accept and return to Track 0 setup.
10. Select A + B option from Method drop-down menu (B).
11. Select John Deere from Guidance Line Calculation drop-down menu (C).
12. Enter desired track spacing (D).
13. Drive machine to the desired location in the field, and select Set A button (E).
14. Drive machine to the desired point B, and select Set B button (F).
15. To complete Track 0 setup, select Enter button (G).

NOTE: To set B, it is required to drive more than 3 m (10 ft).

- | | |
|--|----------------|
| A—New Button | E—Set A Button |
| B—Method Drop-Down Menu | F—Set B Button |
| C—Guidance Line Calculation Drop-Down Menu | G—Enter Button |
| D—Track Spacing Button | |



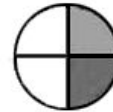
Set Track 0

HC94949,00009B5 -19-04APR16-3/3

Enable AutoTrac™

When AutoTrac™ status pie has two pieces filled in, the hardware and software requirements to AutoTrac™ have been met.

PC8833 —UN—25OCT05



Stage 2—CONFIGURED

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HC94949,00009B6 -19-04APR16-1/3

1. Select Steer ON and OFF button to enable and disable AutoTrac™. Three pieces of the pie fill-in when steering is on.

PC20221 —UN—10NOV14



Steer ON and Off Button

Continued on next page

HC94949,00009B6 -19-04APR16-2/3

If any of the hardware and software requirements have not been met, a Diagnostic Wrench button is displayed instead of the Steer ON and OFF button. Select button to view AutoTrac™ Diagnostics. The diagnostics page indicates the requirements for each of the four pie pieces and the status of all requirements.

NOTE: AutoTrac™ may not become available until hydraulic fluid has reached the required temperature (only one pie piece until fluid is warm). This

PC11973 —UN—09APR09



AutoTrac™ Diagnostics Wrench

issue does not display a diagnostic code or show in the status menu.

HC94949,00009B6 -19-04APR16-3/3

Activate System

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.

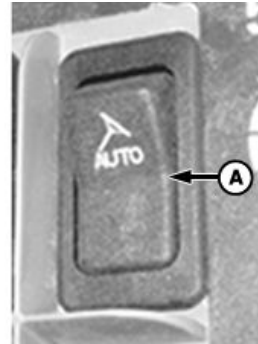
After system has been Enabled, operator must manually change system to Activated status when steering assistance is desired.

1. Press resume switch (A) to initiate assisted steering.

To activate system, the following criteria must be met:

- Machine speed is greater than 0.5 km/h (0.3 mph).
- Machine is within 45 degrees of desired track.
- Machine speed is less than 30 km/h (18.6 mph).
- Master switch in On position.
- Terrain compensation module (TCM) is on.

AutoTrac is a trademark of Deere & Company



Resume Switch

A—Resume Switch

- In reverse, AutoTrac™ remains activated for 45 seconds. After 45 sec, machine must be put in a forward gear before reverse activates again.

HC94949,00009B7 -19-04APR16-1/1

Deactivate System

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

To turn off AutoTrac™ from Guidance View tab, toggle Steer ON and OFF button until Steer OFF is displayed.

AutoTrac™ system is deactivated by the following methods:

- Turning steering wheel.

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- Slowing to speeds less than 0.5 km/h (0.3 mph).
- Toggle Steer ON and OFF button until Steer OFF is displayed in Guidance View tab.
- No activity detected by operator presence monitor for 7 minutes.
- Turn master switch to Off position.
- Exceeding reverse speed of 9.7 km/h (6 mph).
- Remain stopped for more than 30 seconds.
- Exceeding forward speeds of 30 km/h (18.6 mph).

HC94949,00009B8 -19-04APR16-1/1

Adjust Advanced AutoTrac™ Settings—GreenStar™ 3 2630 Display

1. Select Menu button.
2. Select GreenStar™ button.
3. Select Guidance softkey.

PC8663 —UN—29APR15



Menu Button

PC12685 —UN—29APR15



GreenStar™ Button

PC21148 —UN—11MAY15



Guidance Softkey

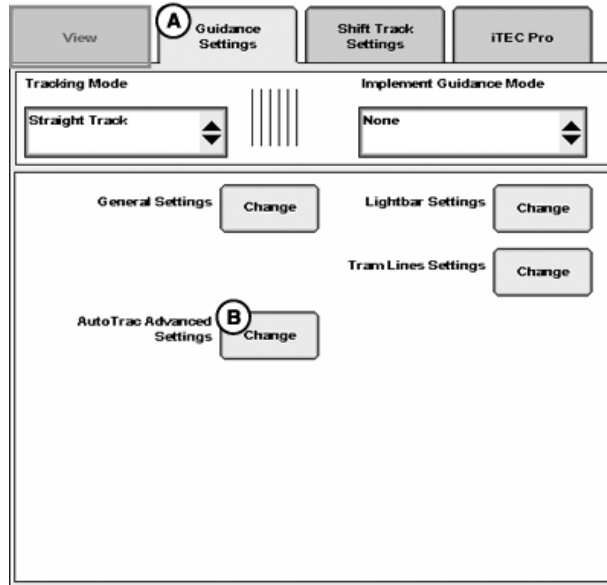
GreenStar is a trademark of Deere & Company

HC94949,00009B9 -19-04APR16-1/3

4. Select Guidance Settings tab (A).
5. Select AutoTrac™ Advanced Settings (B).

A—Guidance Settings Tab

B—AutoTrac™ Advanced Settings Button



Guidance Settings Tab

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Continued on next page

HC94949,00009B9 -19-04APR16-2/3

PC21523 —UN—09SEP15

6. Adjust Advanced AutoTrac™ Settings to fine-tune performance.

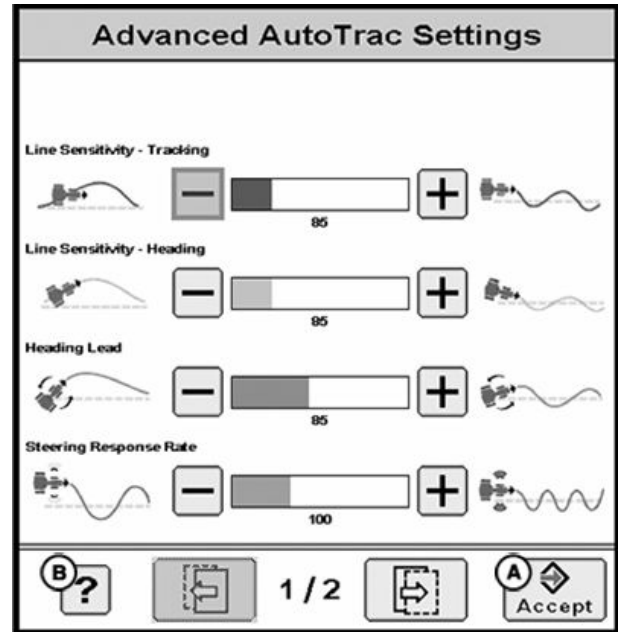
(Reference Optimize AutoTrac™ Controller Performance for instructions to adjust each of the settings.)

NOTE: Adjustments take effect immediately, without pressing Accept button (A).

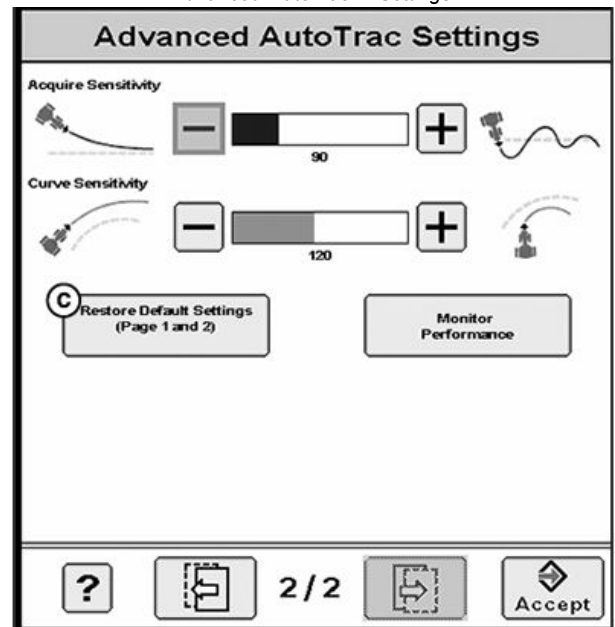
7. Select “?” button (B) to display information about each setting.
8. Select Restore Default Settings button (C) to clear any adjustments that have been made.

A—Accept Button
B—Help Button

C—Restore Default Settings Button



Advanced AutoTrac™ Settings—1/2



Advanced AutoTrac™ Settings—2/2

HC94949,00009B9 -19-04APR16-3/3

PC22394 —UN—01APR16

PC22395 —UN—01APR16

Operating—GreenStar™ 2 1800 Display

Create Guidance Line

*NOTE: Instructions are for a basic guidance line.
For complete guidance setup instructions, see
GreenStar™ 2 1800 Display Operator's Manual.*

1. Select Menu button.
2. Select GreenStar™ button.
3. Select Guidance softkey.

PC8663 —UN—29APR15



Menu Button

PC10857JE —UN—13APR09



GreenStar™ Button

PC10857JJ —UN—13APR09



Guidance Softkey

GreenStar is a trademark of Deere & Company

HC94949,00009BA -19-04APR16-1/3

4. Select Straight Track mode (A). Select or create a Track Name (B).

A—Straight Track Mode
Drop-Down Menu

B—Track Name Drop-Down
Menu

Tracking Mode

Straight Track (A)

Track Name

a (B) **New Track**

A Point Latitude: **45.00000000**

A Point Longitude: **-90.00000000**

Heading: **0.0000**
(deg)

PC21743 —UN—14OCT15

HC94949,00009BA -19-04APR16-2/3

5. Drive machine to the desired location in the field, and select Set A button.

NOTE: To set B, it is required to drive more than 3 m (10 ft).

6. Drive machine to the desired point B, and select Set B button.

PC10857MU —UN—23APR09



Set A Button

PC10857MV —UN—23APR09



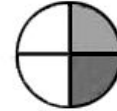
Set B Button

HC94949,00009BA -19-04APR16-3/3

Enable AutoTrac™

When AutoTrac™ status pie has two pieces filled in, the hardware and software requirements to AutoTrac™ have been met.

PC8833 —UN—25OCT05



Stage 2—CONFIGURED

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HC94949,00009BB -19-04APR16-1/3

1. Select Steer ON and OFF button to enable and disable AutoTrac™. Three pieces of the pie fill-in when steering is on.

PC20221 —UN—10NOV14



Steer ON and Off Button

HC94949,00009BB -19-04APR16-2/3

If any of the hardware and software requirements have not been met, a Diagnostic Wrench button is displayed instead of the Steer ON and OFF button. Select button to view AutoTrac™ Diagnostics. The diagnostics page indicates the requirements for each of the four pie pieces and the status of all requirements.

PC11973 —UN—09APR09



AutoTrac™ Diagnostics Wrench

NOTE: AutoTrac™ may not become available until hydraulic fluid has reached the required temperature (only one pie piece until fluid is warm). This

issue does not display a diagnostic code or show in the status menu.

HC94949,00009BB -19-04APR16-3/3

Activate System

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.

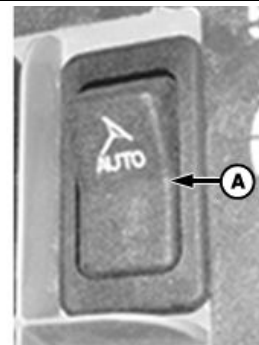
After system has been Enabled, operator must manually change system to Activated status when steering assistance is desired.

1. Press resume switch (A) to initiate assisted steering.

To activate system, the following criteria must be met:

- Machine speed is greater than 0.5 km/h (0.3 mph).
- Machine is within 45 degrees of desired track.
- Machine speed is less than 30 km/h (18.6 mph).
- Master switch in On position.
- Terrain compensation module (TCM) is on.

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Resume Switch

A—Resume Switch

- In reverse, AutoTrac™ remains activated for 45 seconds. After 45 sec, machine must be put in a forward gear before reverse activates again.

HC94949,00009BC -19-04APR16-1/1

PC21691 —UN—06OCT15

Deactivate System

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

To turn off AutoTrac™ from Guidance View tab, toggle Steer ON and OFF button until Steer OFF is displayed.

AutoTrac™ system is deactivated by the following methods:

- Turning steering wheel.

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- Slowing to speeds less than 0.5 km/h (0.3 mph).
- Toggle Steer ON and OFF button until Steer OFF is displayed in Guidance View tab.
- No activity detected by operator presence monitor for 7 minutes.
- Turn master switch to Off position.
- Exceeding reverse speed of 9.7 km/h (6 mph).
- Remain stopped for more than 30 seconds.
- Exceeding forward speeds of 30 km/h (18.6 mph).

HC94949,00009BD -19-04APR16-1/1

Adjust Advanced AutoTrac™ Settings - GreenStar™ 2 1800 Display

1. Select Menu button.
2. Select GreenStar™ button.
3. Select GreenStar™ Main softkey.
4. Select Settings button.

PC8663 —UN—29APR15



Menu Button

PC10857JE —UN—13APR09



GreenStar™ Button

PC21732 —UN—13OCT15



GreenStar™ Main Softkey

PC21731 —UN—13OCT15

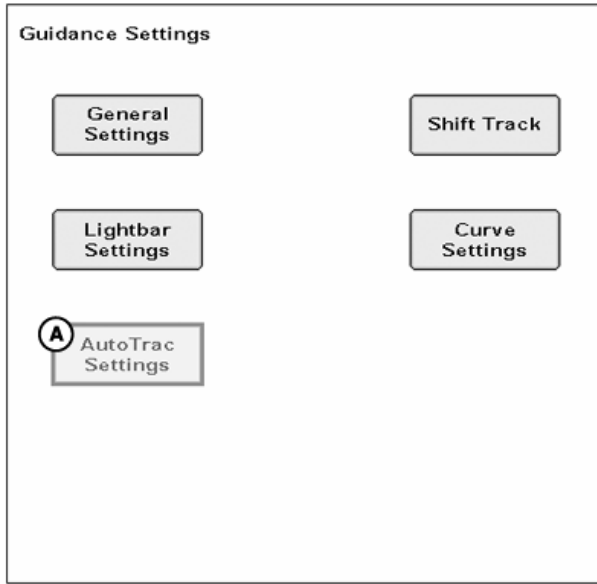


Settings Button

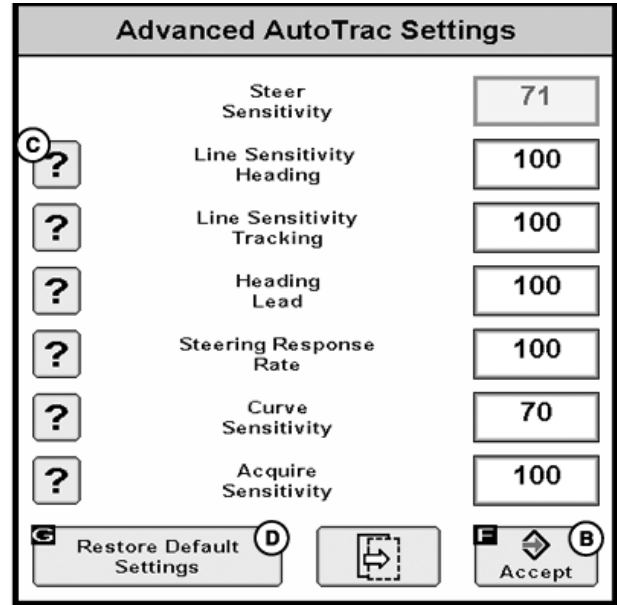
GreenStar is a trademark of Deere & Company

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HC94949,00009BE -19-04APR16-1/2



AutoTrac™ Settings



Advanced Settings

A—AutoTrac™ Settings Button B—Accept Button
C—Help Button

D—Restore Default Settings Button

5. Select AutoTrac™ Settings button (A).
6. Adjust Advanced AutoTrac™ Settings to fine-tune performance.
(Reference Optimize AutoTrac™ Controller Performance for instructions to adjust each of the settings.)

7. Select “?” button (C) to display information about each setting.
8. Select Restore Default Settings button (D) to clear any adjustments that have been made.

NOTE: Adjustments take effect after selecting Accept button (B).

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HC94949,00009BE -19-04APR16-2/2

Operating–Optimizing AutoTrac™ Controller

Optimize AutoTrac™ Controller Performance

NOTE: AutoTrac™ Controller has been tuned to perform in most field conditions using various implements. For conditions outside of normal, Advanced Settings allows operator to fine-tune system for specific field conditions and implements.

Read this information in its entirety before tuning AutoTrac™ Advanced Settings.

1. **Check and fix problems before tuning.** Perform necessary mechanical checks and calibrations on machine. Tuning without fixing problems can mask actual machine faults and cause issues later.
2. **Access Advanced AutoTrac™ Settings page.** (See Adjust Advanced AutoTrac™ Settings.)
3. **Start with factory default settings.** Steering Sensitivity value correlates to value on Guidance View tab. Use a value for current conditions (70 for concrete, 100 for most conditions, and 120 for soft ground). Adjust number to fine-tune system as needed.
4. **General Tuning Instructions**
 - Attempt to adjust settings in problem field conditions while AutoTrac™ is active. Adjust one value at a time. Reset to factory defaults if settings do not correct performance.
 - If adjusting one value does not give satisfactory performance, try different combinations of parameters.

Adjustment Recommendations:

- **Steering Sensitivity**—Set at 100 before making other adjustments, then adjust in increments of 10.
- **Line Sensitivity Tracking**—Adjust in increments of 20.
- **Line Sensitivity Heading**—Adjust in increments of 10.
- **Heading Lead**—Adjust in increments of 10.
- **Steering Response Rate**—Adjust in increments of 10.
- **Acquire Sensitivity**—Adjust in increments of 20.
- **Curve Sensitivity**—Adjust in increments of 20.

NOTE: If desired performance is not achieved, see *Troubleshooting AutoTrac™ Controller-Reichardt®* for more detail.

Steering Sensitivity

Determines aggressiveness of AutoTrac™ steering system. A high steering sensitivity setting is more aggressive to allow system to handle tough manual steering conditions such as integral implements with a heavy draft load. A low steering sensitivity setting is less aggressive to allow system to handle lighter draft loads and higher speeds.

Optimize Line Sensitivity

A: Line Sensitivity—Heading

PC19658 —UN—21MAY14



Line Sensitivities Too Low

PC19659 —UN—21MAY14



Line Sensitivities Too High

PC8999 —UN—08MAR06



A—Desired Track—Broken Line

B—Actual Track—Solid Line

Determines how aggressively AutoTrac™ responds to heading error.

- Tune line sensitivity—heading while operating on AB line.
- If front of machine wanders too far from track direction, adjust line sensitivity—heading higher.
- If machine becomes unstable, adjust line sensitivity—heading lower.

B: Line Sensitivity—Tracking

Determines how aggressively AutoTrac™ responds to off-track (lateral) error.

- Tune line sensitivity—tracking while operating on AB line.
- If machine wanders too far from the AB line, adjust line sensitivity—tracking higher.
- If machine becomes unstable around AB line, adjust line sensitivity—tracking lower.

NOTE: Line sensitivities work together. If both are set too high, machine becomes unstable. If both are set too low, machine wanders around AB line.

Optimize Heading Lead

Determines impact of yaw rate (machine rate of turn) on tracking performance. This can be thought of as a look-ahead setting. Large adjustments may result in poor performance.

- Higher settings result in more aggressive response to changes in machine direction.
- Lower Settings result in less aggressive response to changes in machine direction.

Optimize Steering Response Rate

Adjusts rate of machine steering in order to maintain tracking performance. Increasing steering responsiveness generally results in better tracking performance.

Continued on next page

HC94949,00009BF -19-04APR16-1/4

- Tune speed by operating parallel to and 1.2 m (4 ft) off the AB line.

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Reichardt is a trademark of Reichardt GmbH*

- While tuning, adjust in increments of 10 between range of 50 to 200.

HC94949,00009BF -19-04APR16-2/4

Optimize Acquire Sensitivity

Determines how aggressively machine acquires track. This setting affects performance while acquiring track only.

- Tune speed by operating parallel to and 1.2 m (4 ft) off the AB line.
- Tune acquire sensitivity until machine acquires line smoothly.

A—Desired Track—Broken Line

B—Actual Track—Solid Line

PC19661 —UN—21MAY14



Acquire Sensitivity Too Low

PC19662 —UN—21MAY14



Acquire Sensitivity Too High

PC8999 —UN—08MAR06



Legend

HC94949,00009BF -19-04APR16-3/4

Curve Sensitivity

Determines how aggressively AutoTrac™ responds to a curve in track. This setting affects performance in curve track guidance only. Start with curve sensitivity equal to optimized acquire sensitivity.

- Tune curve sensitivity while operating in curve track.
- If machine turns outside of curve, adjust sensitivity higher.
- If machine turns inside of curve, adjust sensitivity lower.

A—Desired Track—Broken Line

B—Actual Track—Solid Line

PC8944 —UN—21FEB06



Curve Sensitivity Too Low

PC8943 —UN—21FEB06



Curve Sensitivity Too High

PC8999 —UN—08MAR06



Legend

HC94949,00009BF -19-04APR16-4/4

Monitor AutoTrac™ Performance

GreenStar™ 3 2630 Display

1. Select Guidance Settings tab.
2. Select AutoTrac™ Advanced Settings button.
3. Select page 2 (A).
4. Select Monitor Performance button.

GreenStar™ 2 1800 Display

1. Select AutoTrac™ Settings button.
2. Select Advanced Settings button.
3. Select page 2.

A—Next Page Button

PC11948 —UN—30JUN09

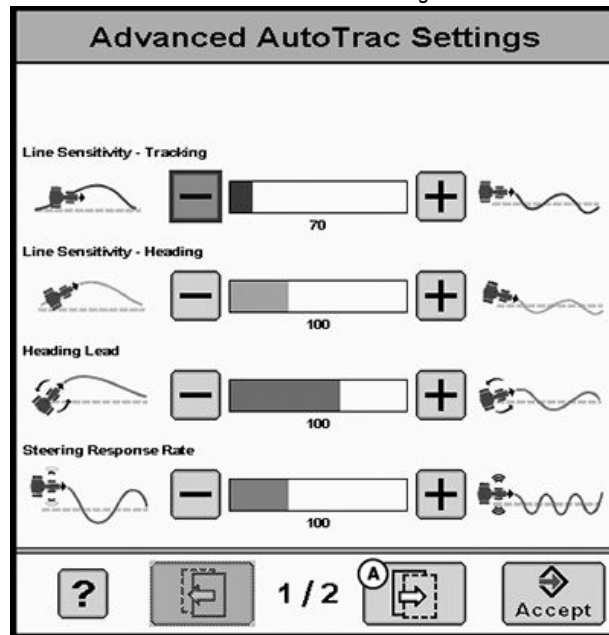


Guidance Settings Tab

PC21902 —UN—03DEC15



AutoTrac™ Advanced Settings Button



Advanced AutoTrac™ Settings—Page 1

PC22002 —UN—07JAN16



Monitor Performance Button

PC22098 —UN—28JAN16

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AutoTrac is a trademark of Deere & Company

Continued on next page

AE77568,0000198 -19-26FEB16-1/2

Use the two graphs to monitor tracking (A) and heading (B) error.

1. Acquire line and drive for 30 seconds.
2. Monitor both values for 30 seconds.

NOTE: Values closest to zero error are preferred and indicate better system performance.

Adjust steering sensitivity to preferred performance before adjusting line sensitivity tracking and heading settings.

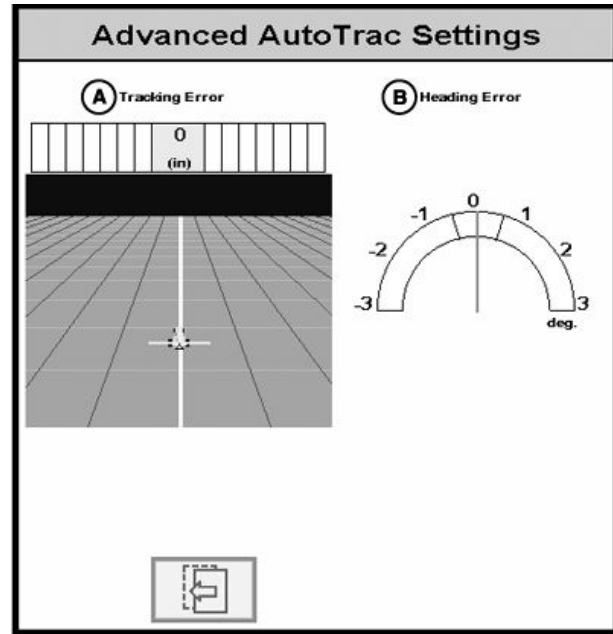
3. Adjust settings until preferred performance is achieved based on signal accuracy and overall machine condition and health.

NOTE: Adjust Line Sensitivity—Tracking for tracking error.

Adjust Line Sensitivity—Heading for heading error.

A—Tracking Error

B—Heading Error



Tracking and Heading Error

AE77568,0000198 -19-26FEB16-2/2

PC21971—UN—04JAN16

Optimize AutoTrac™ Performance

AutoTrac™ performance can be optimized for commonly used operations and speeds. When optimizing AutoTrac™ on a tractor, it is recommended to first

optimize performance without an implement to set baseline. Use the following chart to record values of AutoTrac™ advanced settings so they can be referenced when changing operations.

Operation / Speed	Steer Sensitivity	Line Sensitivity —Tracking	Line Sensitivity —Heading	Heading Lead	Steering Response Rate	Acquire Sensitivity	Curve Sensitivity

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HC94949,00009C0 -19-04APR16-1/1

Troubleshooting

AutoTrac Controller

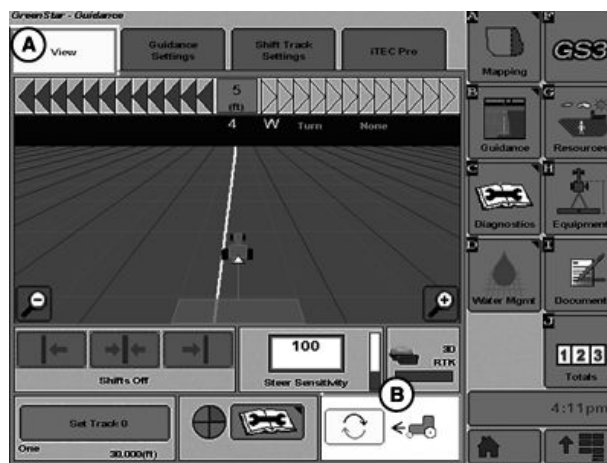
Symptom	Problem	Solution
AutoTrac Controller won't activate. AutoTrac will not resume.	Stop Code encountered	See list of stop codes to find issue
AutoTrac Controller does not appear on INFO or SETUP screens	System not recognizing AutoTrac Controller on CAN bus line	Ensure AutoTrac Controller is connected to GreenStar Harness and receiving power Check for blown fuses in AutoTrac Controller wiring harness
Direction can not be determined	Old TCM Software	Update TCM Software to newest software (Version 1.08 or greater)
	No differential Correction	Establish differential correction
	No GPS	Establish signal
	AutoTrac Controller did not establish direction correctly	Drive forward at a speed greater than 1.6 km/h (1 mph) and turn steering wheel greater than 45 degrees in one direction
Tractor acquires guidance line but tracks 25 to 518 cm (10 to 204 in.) to right or left of line.	AutoTrac Controller has encountered a bad wheel angle sensor calibration and has an incorrect wheel angle sensor bias.	Recalibrate wheel angle sensor and reacquire line to ensure problem is corrected.

Direction Change Toggle

If the direction of travel is determined to be incorrect, Select the View Tab (A) then select Direction Change Toggle Button (B) to change the displayed direction of travel.

A—View Tab

B—Direction Change Toggle Button



Home Screen

PC13566 —UN—04MAY11

CF86321,000035D -19-23MAY11-1/1

AutoTrac™ Controller Diagnostic Readings

Select Menu button > GreenStar™ button > Diagnostics softkey > AutoTrac™ Controller from View drop-down menu (A).

AutoTrac™ Controller View displays:

- Software Version (B)—Software version on controller.
- Hardware Version (C)—Hardware part number.
- Serial Number (D)—Serial number of controller.
- Mode (E)—Status of AutoTrac™ on controller. Status corresponds with AutoTrac™ status pie.

---	0 of 4 Pieces
Disabled	1 of 4 Pieces
Disabled	2 of 4 Pieces
Enabled	3 of 4 Pieces
Active	4 of 4 Pieces

(See AutoTrac™ Status Pie Diagnostic Readings.)

- Total Hours (F)—Number of hours controller was powered on.
- AutoTrac™ Hours (G)—Number of hours AutoTrac™ was engaged on controller.
- Resume Switch (H)—Status of resume Switch. Select resume switch and verify functionality.
- Seat Switch (I)—Status of seat switch. Verify functionality by sitting down in seat. Some applications use a door switch in place of seat switch.
- Stop Code (J)—Last stop code.
(Reference AutoTrac™ Controller Stop Codes for more information.)
- Wheel Angle Sensor (WAS) Type (K)
- WAS Calibration (L)—Displays values for:
 - Left (M): 0.1–1
 - Right (N): 4–4.8
 - Center (O): 2–3
- Calibration Complete (P)—Status of WAS calibration. If status is No, calibrate WAS.
- Valve Calibration (Q)—Displays values for:
 - Left (R)
 - Right (S)
- Calibration Complete (T)—Status of valve calibration. If status is No, calibrate valve.

A—View Drop-Down Menu

PC8663 —UN—29APR15



Menu Button

PC17340 —UN—24OCT13



GreenStar™ 3 Pro Button

PC20267 —UN—14NOV14



Diagnostics Softkey

GreenStar - Diagnostic Readings

Due to software changes, read the latest Operator Manual prior to operation. To obtain a copy, see your dealer or visit www.deere.com.

View **AutoTrac Controller** (A)

Software Version	1.11B	(B)
Hardware Version	RAVB	(C)
Motor Serial Number	100016	(D)
Mode	---	(E)
Total Hours	387.3	(F)
AutoTrac Hours	0.0	(G)
Resume Switch	On	(H)
Seat Switch	Off	(I)
Stop Code	Road Mode	(J)
Wheel Angle Sensor Type	Potentiometer	(K)
WAS Calibration	Left 0.6	(M)
	Right 4.5	(N)
	Center 2.5	(O)
Calibration Complete	Yes	(P)
Valve Calibration	Left 32	(R)
	Right 6	(S)
Calibration Complete	Yes	(T)

Diagnostic Readings - AutoTrac™ Controller View

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AutoTrac is a trademark of Deere & Company

HC94949,00009C4 -19-13APR16-1/1

PC21726 —UN—13OCT15

AutoTrac™ Status Pie Diagnostic Readings

Select Menu button > GreenStar™ button > Diagnostics softkey > AutoTrac™ from View drop-down menu (A).

AutoTrac™ View displays the status of required conditions for each pie state.

Pie State	Conditions
1 piece out of 4	Steering Controller Capabilities (Curve, Reverse, and Steer Sensitivity) AutoTrac™ License
2 pieces out of 4	Global Positioning System (GPS) Valid Differential Correction Differential Mode Selected Tracking Mode Selected Pivot Pro Licensed AB Line Defined Free of Steer Control Trouble Codes Valid Implement Guidance Configuration
3 pieces out of 4	Steer On-Off Button
4 pieces out of 4	Machine Gear Selected Speed Within Range Within 80 Degrees of Line Within 40% Tracking Width

If AutoTrac™ disengages, check Last Exit Code (B). If AutoTrac™ does not engage, verify conditions of first 3 pieces of pie are met.

A—View Drop-down Menu

B—Last Exit Code Issued

PC8663 —UN—29APR15



Menu Button

PC17340 —UN—24OCT13



GreenStar™ 3 Pro Button

PC20267 —UN—14NOV14



Diagnostics Softkey

Read the latest Operator Manual prior to operation. To obtain a copy, see your dealer or visit www.StellarSupport.com.

View AutoTrac A

Last Exit Code Issued: N/a B

Time of Last Exit Code: 00: 00: 00 00/ 00/ 0000

State	Conditions	Status
	Steer Ctrl Capabilities (Curve, Reverse, Steer Sensitivity) AutoTrac License	No, No, No SF2
	GPS Valid Differential Correction Differential Mode Selected Tracking Mode Selected Pivot Pro License AB Line Defined Free of Steer Ctrl Trouble Codes Valid Implement Guidance Configuration	Yes No None Straight Track No --- Yes N/a
	Steer On/Off Button	No
	Vehicle Gear Selected Speed Within Range Within 80 Degrees of Line Within 40% Tracking Width	Neutral --- --- ---

Diagnostic Readings - AutoTrac View

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AutoTrac is a trademark of Deere & Company

AL70325,00001B2 -19-21NOV14-1/1

PC20269 —UN—14NOV14

AutoTrac™ Controller–Reichardt® Stop Codes

Select Menu button > GreenStar™ button > Diagnostics softkey > AutoTrac™ Controller drop-down menu. The following Stop Codes can be displayed.

PC8663 —UN—29APR15



Menu Button

PC17340 —UN—24OCT13



GreenStar 3 Pro Button

PC20267 —UN—14NOV14



Diagnostics Softkey

Stop Code	Description	Solution
None	Nothing has been checked yet.	
Steering Wheel	Steering wheel has moved to deactivate AutoTrac™.	Press resume switch to re-activate AutoTrac™.
Too Slow	Vehicle speed too slow to use AutoTrac™.	Increase speed over 0.5 km/h (0.3 mph).
Too Fast	Vehicle Speed too high to use AutoTrac™.	Reduce Speed below platform limit. Tractor - 30 km/h (18.6 mph) Sprayer - 37 km/h (23 mph) Harvester - 22 km/h (13.7 mph) Reverse speed on all machines – 10 km/h (6 mph)
Unknown Direction	Unknown direction.	Drive forward greater than 1.6 km/h (1 mph) and turn steering wheel greater than 45°.
Track Changed	Track number changed.	Align vehicle on desired track and press resume.
Lost Dual GPS	SF1, SF2, or RTK signal was lost.	Establish signal.
Steer Control Fault	A steering control fault severe enough to disable AutoTrac™.	Cycle tractor power.
OK	Last state upgrade was successful.	
PT Turned Off	Tracking not turned on.	Turn tracking on in Setup - Tracking.
Heading Error	Heading error is out of range.	Align tractor within heading limit (80° of track).
Lateral Error	Lateral error is out of range.	Align tractor within lateral limit (40% of track spacing).
No Operator	Operator presence switch is open.	Operator in seat or press resume for activity monitor to reset time. Door is not closed (door switch option).
No TCM	Either no TCM present or TCM is turned off.	Turn TCM on, or install TCM.
Voltage Unstable	Voltage Too Low.	Check harnessing.
Reverse Timeout	Reverse Timeout (greater than 45 seconds).	Cycle direction forward before resuming in reverse.
0 Speed Timeout	0 Speed Timeout.	Increase speed over 0.5 km/h (0.3 mph).
Curvature	Curve Track radius tighter than AutoTrac™ allows.	Manually drive through tight radius curves.
Tracking on Line	Vehicle is driving on line.	
Acquiring Line	Vehicle is acquiring line.	

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Continued on next page

HC94949,00009C1 -19-15APR16-1/2

Troubleshooting

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HC94949,00009C1 -19-15APR16-2/2

AutoTrac™ Exit Codes and Deactivation Messages

Each time AutoTrac™ is deactivated, text is displayed indicating the reason why it deactivated. Messages are also displayed when AutoTrac™ does not activate.

Select Menu > GreenStar™ > Diagnostics > AutoTrac™ from View drop-down menu. The following Exit Codes can be displayed.

Select Menu > GreenStar™ > Guidance > View tab. The following deactivation messages are displayed for 3 s and then disappear.

Exit Code	Deactivation Message	Description	Solution
None	None	Nothing has been checked yet.	Boot-up code. System has not been checked for errors.
Wheel Speed Too Slow	Speed too slow	Machine speed too slow to use AutoTrac™.	Increase speed over 0.5 km/h (0.3 mph).
Wheel Speed Too Fast	Speed too fast	Machine Speed too high to use AutoTrac™.	Reduce speed below platform limit. Tractor — 30 km/h (18.6 mph) Windrower — 19.3 km/h (12 mph) Reverse speed on row-crop tractors only — 10 km/h (6 mph)
Track Changed	Track number changed	Track number changed.	Align machine on desired track and press resume.
Lost Dual GPS	Invalid GPS signal	SF1, SF2, or RTK signal was lost.	Establish signal.
RSC Fault	Steering Controller fault	A steering control fault severe enough to disable AutoTrac™.	Cycle tractor power.
OK	None	Last state upgrade was successful.	
PT Turned Off	None	Tracking not turned on.	Turn tracking on in Guidance Settings > Tracking Mode.
Steering Wheel	Steering wheel moved	Steering wheel has moved to deactivate AutoTrac™.	Press resume switch to reactivate AutoTrac™. If steering wheel was not moved, increase SID disengage setting.
Heading Error	Heading error too large	Heading error is out of range.	Align tractor within heading limit: • 80 degree below 6 mph • 45 degree above 6 mph
Lateral Error	Off track error too large	Lateral error is out of range.	Align tractor within lateral limit (40% of track spacing).
No TCM	No TCM corrections	Either no terrain compensation module (TCM) present or TCM is turned off.	Turn on TCM, or install TCM.
Master Switch	Road mode	Machine master switch is off.	Set switch status to on.
Reverse Timeout	Reverse timeout	Reverse timeout (greater than 45 seconds).	Select forward gear before resuming in reverse.
Incorrect Direction	Vehicle not moving in a forward direction	Machine is not traveling in a forward direction.	Machine must be in forward gear to activate.
Bad Resume Data Received	Resume switch error	Reichardt® steering controller (RSC) sending bad data from resume switch.	See John Deere dealer.
Unknown Direction	Unknown direction	Unknown direction.	Drive forward faster than 1.6 km/h (1 mph) and turn steering wheel greater than 45°.
Curvature Mismatch	Curve too sharp	Curve Track radius is tighter than AutoTrac™ allows.	Manually drive through tight radius curves.

Continued on next page

HC94949,00009C2 -19-15APR16-1/2

Troubleshooting

Exit Code	Deactivation Message	Description	Solution
Bad Seat Data Received	Out of seat Door not closed (door switch option)	RSC sending bad data from seat switch.	Operator in seat or press resume for activity monitor to reset time. If not resolved, see John Deere dealer.
Bad Wheelbase Data	None	RSC sending bad wheelbase data.	Bad wheelbase for machine class. See John Deere dealer to obtain latest steering controller software.

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AutoTrac is a trademark of Deere & Company
Reichhardt is a trademark of Reichhardt GmbH

HC94949,00009C2 -19-15APR16-2/2

Guidance Alarms

ACI Communication Error	No communication with vehicle steering controller (Steering Controller). Check vehicle for diagnostic codes, and contact your John Deere dealer.
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 s, or when door is not closed (door switch option).
AutoTrac™	The operator is responsible for collision avoidance. Turn AutoTrac™ OFF before entering roadways.
Data Card Problem!	A data card must be inserted in the compact flash drive with the door closed to use the GreenStar™ 2 Pro application.
No Setup Data!	Setup data for the GreenStar™ 2 Pro application could not be found on the data card. The GreenStar™ 2 Pro application will not be available until a data card with setup data is inserted.
AutoTrac™ Steering Controller Software Incompatible	See your John Deere Dealer for Steering Controller update.
Communication Error	Communication problem with controller. Check connections to controller.
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.
Tracking Inaccurate	The GPS receiver must be set to report at the 5 Hz message output rate. Confirm settings on GPS receiver and change output to 5 Hz.
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.

Alarms

GPS Communication Problem	No communication with GPS receiver. Check connection at GPS receiver and perform operation again.
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.
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.
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 A-B line are too close. Perform operation again.
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.
Data Card Full	Unload and cleanup data card or insert new data card.
Data Card 90% Full	Unload and cleanup data card or insert new data card.
No Memory	No Memory available for Curve Track. Unload and cleanup data card or insert new data card.
Low Memory	Low Memory available for Curve Track. Unload and cleanup data card or insert new data card.
No Memory	No Memory available for Straight Track. Unload and cleanup data card or insert new data card.
No Memory	No Memory available for Circle Track. Unload and cleanup data card or insert new data card.
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.
Zero All Totals	You have decided to zero all totals for the selected filter.
Incorrect RS232 Controller Model Selected	The RS232 controller model selected is incorrect. Please verify and reenter manufacturer and model number.

Continued on next page

HC94949,00009C5 -19-15APR16-1/2

Troubleshooting

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.
Controller Operation Error	Invalid operation selected for controller.
Prescription Warning	Out of field prescription rate is now being applied.
Prescription Warning	Loss of GPS signal has occurred. Loss of GPS prescription rate is now being applied.
Prescription Warning	Controller does not support selected prescription.

INFO

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HC94949,00009C5 -19-15APR16-2/2

AutoTrac Controller—Reichhardt Diagnostic Addresses

Diagnostic Addresses

Select Diagnostic Address button and a list of controllers will appear and controllers with diagnostic codes are indicated.

Individual controllers can be accessed by pressing ENTER button to view codes for that controller.

To view the AutoTrac Controller Reichhardt select ACI.001 Implement from the device drop down menu.

Codes can also be displayed for all controllers by selecting SHOW ALL button and pressing ENTER button. Codes can be relayed to a John Deere dealer to assist in diagnosing machine problems.

All diagnostic codes below are specific to AutoTrac Controller—Reichhardt.

PC8663 —UN—29APR15



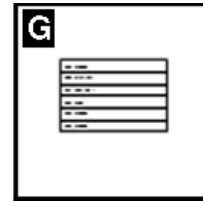
MENU button

PC8655 —UN—05AUG05



MESSAGE CENTER button (With Info Icon)

PC8668 —UN—05AUG05



Diagnostic Addresses

Diagnostic Address	Description
001	Recall Trouble Codes
003	ELX Voltage
004	Battery voltage
005	5V Regulator Voltage at the Regulator
008	LS pressure Sensor Voltage
009	LS Pressure Sensor-Measured pressure in kpa
010	WAS/Gyro Sensor Voltage
013	WAS Calibrated Center Voltage
014	WAS Calibrated Full-Left Voltage
015	WAS Calibrated Full-Right Voltage
016	WAS Actual Wheel Angle
019	GPS Speed kph
023	Max Flow Rate Test
025	Closed-loop Step Response Test
031	Adjustable Parameter-Heading Lead
037	AutoTrac Aggressiveness
048	Adjustable Parameter-Inner-Loop Gain
051	Adjustable Parameter-Heading Gain
052	Adjustable Parameter-Curvature Sensitivity
053	Adjustable Parameter-Acquisition Sensitivity
054	Adjustable Parameter-Lateral Gain
056	Auto Trac Hours
060	Auto Trac Exit Code
061	Steer Switch-Resume Switch-Auto Trac State
062	Parallel Tracking-Keycard Present-TCM State
063	Seat/Track Number/GPS Status
065	Lateral Error
067	Heading Error
071	Lateral Error Accumulator
076	Engineering Diagnostics Enable/Disable

Continued on next page

BA31779,000021F -19-08JUL11-1/2

Troubleshooting

Diagnostic Address	Description
077	Actual Curvature
078	Target Curvature
079	Yaw-Rate
080	Inner loop Gain Proportional
081	Inner Loop Gain Integral
082	Inner Loop Gain Derivative
083	Inner Loop Filtered Constant 1
084	Inner Loop Filtered Constant 2
085	Valve Left Gain
086	Valve Right Gain
087	Valve Left Deadband (%)
088	Valve Right Deadband (%)
089	Signal to valve (%)
090	Current draw from valve (Power line) (mA)
091	Pressure Sensor 2 Voltage
092	Pressure Transducer 2 (kPa)
093	Pressure Differential (kPa)
110	Steering Override Setting - SID Disengage Pressure Setting (kPa)
219	Controller Configuration Data Part Number
220	Controller Configuration Data Version Number

BA31779,000021F -19-08JUL11-2/2

AutoTrac™ Controller—Reichhardt® Diagnostic Trouble Codes

Select Trouble Codes button, a list of controllers appears, and controllers with diagnostic codes are indicated.

Individual controllers can be accessed by pressing Enter button to view codes for that controller.

Codes can also be displayed for all controllers by selecting Show All button and pressing Enter button. Codes can be relayed to a John Deere dealer to assist in diagnosing machine problems.

PC8663 —UN—29APR15



Menu Button

PC8655 —UN—05AUG05



Message Center Button (With Info Icon)

PC8669 —UN—05AUG05



Trouble Codes Softkey

SPN	FMI	Description
168	3	Steering Controller unswitched supply voltage (cc# 182) out of range high
168	4	Steering Controller unswitched supply voltage (cc# 182) out of range low
232	9	Loss of StarFire™ Differential Status Message (PGN 65535/0x53)
517	9	GPS Speed Message Missing
628	12	Indicates control unit Steering Controller being reprogrammed (boot block generated). Reprogram control unit Steering Controller. Replace control unit Steering Controller if condition persists.
630	13	Indicates incomplete calibration of steering valve. Wheel Angle Sensor calibration incomplete. AutoTrac™ remains disabled until successful calibration of system.
1504	9	Operator out of seat during AutoTrac™. Door not closed (door switch option).
1504	14	Operator out of seat during AutoTrac™. Door not closed (door switch option).
1504	31	Operator out of seat during AutoTrac™ - within 2–7s. Door not closed (door switch option).
3509	3	Indicates sensor supply voltage (cc# 733) for steering wheel pressure sensor and (or) wheel angle position sensor out of range high.
3509	4	Indicates sensor supply voltage (cc# 733) for steering wheel pressure sensor and (or) wheel angle position sensor out of range low.
3509	5	Steering Wheel Position Sensor 1 Circuit Current Low
3509	6	Steering Wheel Position Sensor 1 Circuit Current High
1807	5	Steering Wheel Angle
1807	6	Steering Wheel Angle
520431	5	Isolation Shutoff Valve Circuit Current Low
520431	6	Isolation Shutoff Valve Circuit Current Current High
522385	1	Indicates that the AutoTrac™ Controller ON/OFF switch on vehicle is not ON. Switch AutoTrac™ master switch to ON position.
522387	7	Indicates control unit Steering Controller not receiving wheel angle position sensor signal.
522390	9	Abnormal Update Rate
522394	9	TCM Messages Missing
523698	9	IVS Display Message Missing
523767	2	AutoTrac™ Resume Switch Circuits Conflict
523795	2	Indicates steering valve orientation incorrect. Check steering valve right/left circuit codes switched.
523795	11	Indicates steering valve deadbands inconsistent.
523795	13	The deadband is out of range.

Continued on next page

HC94949,00009C6 -19-15APR16-1/2

Troubleshooting

SPN	FMI	Description
523795	12	EH Valve or harness fault
523824	5	Controller - Not in FMEA
523824	6	Controller - Not in FMEA
523826	0	Wheel Angle Sensor Primary Signal High
523826	1	Wheel Angle Sensor Primary Signal Low
523826	2	Steering Controller Calibration / Wheel Angle Sensor Polarity
523826	7	Wheel Angle Sensor Primary Fault/No Motion
523826	10	Wheel Angle Sensor Fault/No SID Motion
523826	14	Primary and Secondary Wheel Angle Sensor Conflict
524221	9	Vehicle Yaw Rate Message Missing

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AutoTrac is a trademark of Deere & Company

HC94949,00009C6 -19-15APR16-2/2

Checklists

Preseason Checklist

Before start of season, it is recommended that machine operator performs the following software updates, inspections, and calibrations:

- ☐ Reference electronic Operator's Manual from Manuals.Deere.com or contact your John Deere dealer for downloadable versions.
- ☐ Update equipment software. Visit StellarSupport.com for latest software.
 - ☐ Display
 - ☐ Receivers
 - ☐ Controller
 - ☐ Other AMS equipment
- ☐ Contact your dealer to inquire about steering controller software updates. AutoTrac™ Controller—Reichhardt® software can only be updated by a John Deere dealer.

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Reichhardt is a trademark of Reichhardt GmbH*

- ☐ Inspect wiring harness for wear and damage around pinch points, corners, edges, and harness support locations.
- ☐ Inspect wiring harness at connectors for wear on exposed wires.
- ☐ Inspect connector seals and latching mechanisms.
 - ☐ Receivers
 - ☐ Displays
 - ☐ Steering Controller
- ☐ Inspect mechanical steering system for wear.
- ☐ Inspect hydraulic system for leaks.
- ☐ Calibrate receiver terrain compensation module (TCM).
- ☐ Operate AutoTrac™ and recalibrate if necessary.

HC94949,00009B4 -19-04APR16-1/1

Postseason Checklist

After conclusion of season it is recommended that machine operator performs the following inspections:

- ☐ Inspect wiring harness for wear and damage around pinch points, corners, edges, and harness support locations.
- ☐ Inspect wiring harness at connectors for wear on exposed wires.

- ☐ Inspect mechanical steering system for wear.
- ☐ Inspect hydraulic system for leaks.
- ☐ Inspect connector seals and latching mechanisms.
- ☐ Inspect connector pins for wear, debris, and corrosion.
 - ☐ Receivers
 - ☐ Displays
 - ☐ Steering Controllers

AL70325,0000149 -19-01DEC14-1/1

Daily Checklist

It is recommended that machine operator performs the following inspections daily:

- ☐ Inspect wiring harness for wear and damage around pinch points, corners, edges, and harness support locations.

- ☐ Inspect wiring harness at connectors for wear on exposed wires.
- ☐ Inspect hydraulic system for leaks.
- ☐ Inspect mounting hardware.
 - ☐ Displays
 - ☐ Receivers

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John Deere Service Literature Available

Technical Information

Technical information can be purchased from John Deere. Publications are available in print or CD-ROM format.

Orders can be made using one of the following:

- John Deere Technical Information Store:
www.JohnDeere.com/TechInfoStore
- Call 1-800-522-7448
- Contact your John Deere dealer

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.
- **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 a separate component technical manual.
- **EDUCATIONAL CURRICULUM** including five comprehensive series of books detailing basic information regardless of manufacturer:
 - Agricultural Primer series covers technology in farming and ranching.
 - 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.
 - Fundamentals of Compact Equipment manuals provide instruction in servicing and maintaining equipment up to 40 PTO horsepower.



TS189 —UN—17JAN89



TS191 —UN—02DEC88



TS224 —UN—17JAN89



TS1663 —UN—10OCT87

DX,SERV LIT -19-21APR16-1/1

John Deere Service Keeps You On Job

John Deere Is At Your Service

CUSTOMER SATISFACTION is important to John Deere.

Our dealers strive to provide you with prompt, efficient parts and service:

- Maintenance and service parts to support your equipment.
- Trained service technicians and the necessary diagnostic and repair tools to service your equipment.



TS201 —UN—15APR13

CUSTOMER SATISFACTION PROBLEM RESOLUTION PROCESS

Your John Deere dealer is dedicated to supporting your equipment and resolving any problem you may experience.

1. When contacting your dealer, be prepared with the following information:

- Machine model and product identification number
- Date of purchase
- Nature of problem

2. Discuss problem with dealer service manager.

3. If unable to resolve, explain problem to dealership manager and request assistance.

4. If you have a persistent problem your dealership is unable to resolve, ask your dealer to contact John Deere for assistance. Or contact the Ag Customer Assistance Center at 1-866-99DEERE (866-993-3373) or e-mail us at www.deere.com/en_US/ag/contactus/.

DX,IBC,2 -19-02APR02-1/1

