

AutoTrac™ Universal (ATU)



OPERATOR'S MANUAL AutoTrac™ Universal (ATU) OMPFP16468 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

Read This Manual

Before operating this system, familiarize yourself with components and procedures required for safe and proper operation.

IMPORTANT: The following GreenStar™ components are not weather-proof and should only be

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AutoTrac is a trademark of Deere & Company*

**used on machines equipped with a cab.
Improper use may void warranty.**

- GreenStar™ Displays
- AutoTrac™ Universal Steering Kit

JS56696,0000C3A -19-17NOV14-1/1

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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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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.



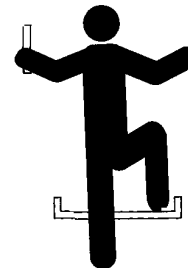
TS218 —UN—23AUG88

DX,SERV -19-17FEB89-1/1

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 can 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 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.

RR94114,0001FFA -19-18DEC14-1/1

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.

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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.

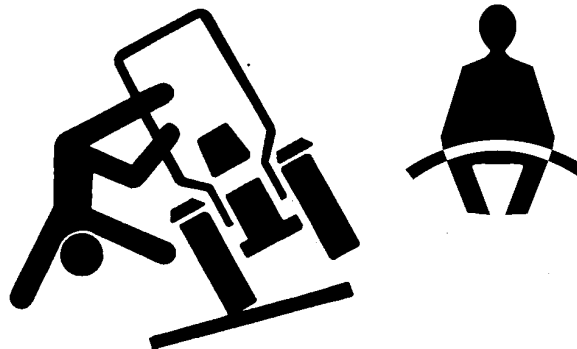
This machine is equipped with a rollover protective structure (ROPS). USE a seat belt when you operate with a ROPS.

- 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

Operate AutoTrac™ Universal Safely

Use AutoTrac™ Universal (ATU) only on approved machines – see www.StellarSupport.com for a list of approved machines.

When initially setting up an ATU system, carefully optimize all settings for best performance. Incorrect settings affect steering, possibly resulting in erratic or unexpected behavior while AutoTrac™ is active.

ATU utilizes an operator presence system. If seat switch is selected, external seat switch must be connected to

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ATU wiring harness. If operator leaves seat for more than 7 seconds, AutoTrac™ is deactivated.

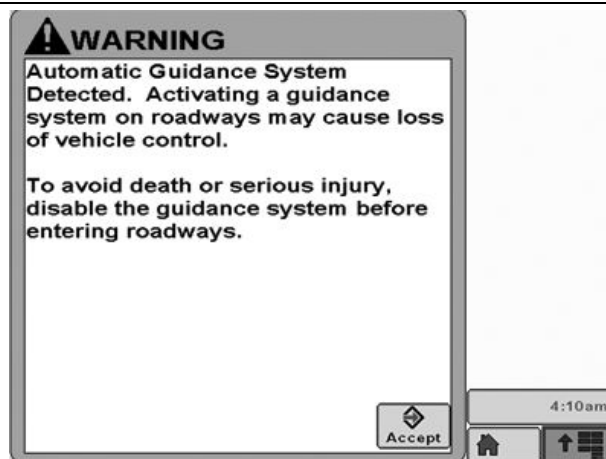
If activity monitor is selected, AutoTrac™ Universal requires operator interaction with display every 7 minutes. Operator is alerted 15 seconds before AutoTrac™ is deactivated. Before deactivation, press resume switch to reset activity monitor timer.

RW00482,0000224 -19-05NOV13-1/1

Safety Signs

AutoTrac Detected

This message occurs during start-up on vehicles with AutoTrac installed.



PC13157 —19—17FEB11

BA31779,000023C -19-26JUL11-1/1

Regulatory and Compliance Information

EC Declaration of Conformity

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

The undersigned hereby declares that

Product: John Deere AutoTrac™ Universal

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

DIRECTIVE	NUMBER	CERTIFICATION METHOD
Electromagnetic Compatibility Directive	2014/30/EU	Annex II of the Directive

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

ISO 14982: 1998
EN 55022: 2010/AC:2011
EN 55024: 2010
EN 13309

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

Name: Aaron Senneff

Date of declaration: 27 April 2016

Title: Manager – Software Development

DXCE01 —UN—28APR09



HC94949,0000A17 -19-15AUG16-1/1

Identify Date Code

Use the date code (A) on the product label to identify the date of manufacture. “YY” (B) identifies the last two numbers of the year of manufacture; “WW” (C) identifies the week number of calendar year of manufacture.

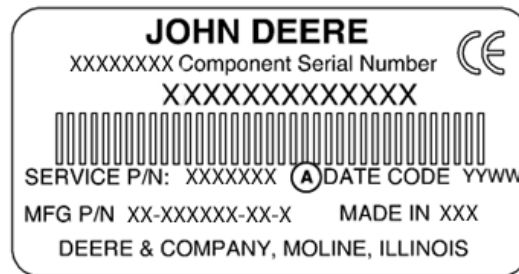
NOTE: The week number of manufacture ranges between 01-53.

Date Code		
YY	Last Two Numbers of Year of Manufacture	Example: 11 = 2011 12 = 2012 13 = 2013
WW	Week Number of Calendar Year of Manufacture	Example: 01, 02, 03...53

A—Date Code (Date of Manufacture)

B—Last Two Numbers of Year of Manufacture

C—Week Number of Calendar Year of Manufacture



Product Label Example

PC17574 —UN—16AUG13

DATE CODE **YY** **WW**
 (B) (C)

Date Code Example

HC94949,0000599 -19-15AUG14-1/1

Customs Union—EAC (English, Russian, and Kazakh)

Customs Unions—EAC

Information for products that bear conformity mark of the Customs Union member states

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

Model: AutoTrac Universal
Made in USA

Name and address of the authorized representative in the Customs Union of Russia, Belarus, and Kazakhstan:
Limited Liability Company "John Deere Rus"

Address: 142050, Russia, Moscow region, Domodedovo district, Domodedovo, Beliy Stolbi micro district, vladenye "Warehouse 104," Building 2.

For technical support, please contact your dealer.



Таможенный союз—EAC

Информация об изделиях, которые имеют знак соответствия требованиям технических регламентов Таможенного союза

Производитель: Компания Deere & Company
г. Молин, Штат Иллинойс, США

модель: Универсальная система автоматического вождения AutoTrac Universal (ATU)
Сделано в США.

Наименование и адрес уполномоченного представителя на территории Таможенного союза России, Белоруссии и Казахстана: Общество с ограниченной ответственностью "Джон Дир Русь"

Адрес: 142050, Россия, Московская область, Домодедовский район, г. Домодедово, микрорайон "Белые столбы", владение "Склады 104," стр. 2.

Для получения технической поддержки обращайтесь к дилеру, обслуживающему вашу организацию.



Continued on next page

JS56696,0000C43 -19-17DEC14-1/2

PC20605 —UN—17DEC14

PC20606 —UN—17DEC14

Кеден одағы—Еуразия одағы

Кеден Одағы мүшелерінің ережелеріне сәйкестік белгісі бар өнімдер туралы ақпарат

Өндіруші: Deere & Company
Молин, Иллинойс, АҚШ

Модель: AutoTrac™ Universal
АҚШ-та жасалған

Ресей, Беларусь және Қазақстан кеден одағындағы авторластырылған өкілінің атауы және мекенжайы:
Жауапкершілігі Шектеулі Серіктестік "John Deere Rus"

Мекенжайы: 142050, Ресей, Мәскеу облысы, Домодедово қаласы, Белые столбы ықшам ауданы,
"Склады 104," қожалығы, 2 үй.

Техникалық қолдау алу үшін дилеріңізбен хабарласыңыз.



PC20807 — UN—17DEC14

JS56696,0000C43 -19-17DEC14-2/2

Toxic or Hazardous Substances or Elements Disclosure

The Environment Friendly Use Period (EFUP) marked on this product refers to the safety period of time in which the product is used under the conditions specified in the product instructions without leakage of noxious and harmful substances.
The EFUP relates only to the environmental impact of the product in normal use, it does not imply product life.

PC15290 —UN—31OCT12



In accordance with the requirements specified in SJ/T11364-2006, all AutoTrac Universal kits sold in the People's Republic of China are marked with the following pollution control logo.

Part Name	Toxic or hazardous substances and elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr (VI))	Polybrominated biphenyls (PBB)	Polybrominated dephenyl ethers (PBDE)
Brackets	O	O	O	O	O	O
Chain	O	O	O	O	O	O
Electric Motor	O	O	O	O	O	O
Hardware	O	O	O	X	O	O
Housing	O	O	O	O	O	O
Labels	O	O	O	O	O	O
Steering Wheel	O	O	O	O	O	O
Support Plates	O	O	O	O	O	O
Wiring Harnesses	X	O	O	X	O	O

O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.
X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials for this part is above the limit requirement in SJ/T11363-2006.

CZ76372,0000703 -19-15JAN14-1/1

System Overview

Theory of Operation

Guidance – Parallel Tracking™

Parallel Tracking™ requires:

- Display
 - GreenStar™ 2 1800 Display
 - GS2 2100 Display
 - GS2 2600 Display
 - GS3 2630 Display
- GPS Receiver
 - StarFire™ 6000 Receiver
 - StarFire™ 3000 Receiver
 - StarFire™ iTC Receiver
 - Original StarFire™ Receiver with optional Terrain Compensation Module (TCM)
- Harnesses

Parallel Tracking™ provides the operator with a visual indicator for driving equally spaced parallel paths (straight, curved, or circles). When using Straight and Circle Track modes, a vertical line (navigation bar) helps the operator stay on the desired track. For Curve Track mode, an additional look ahead feature alerts the operator of the direction and degree of an approaching curve. System also has a Row Finder mode to help the operator locate the start of the next pass.

Parallel Tracking™ includes:

- Turning View: Assists when turning into a new track.

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

- Shift Track: Allows the operator to compensate for GPS drift.
- Aerial View: An overhead view provides visual aid in curved track operation.

AutoTrac™ Universal (ATU) system enables global positioning system (GPS) guided automatic steering of machine. When AutoTrac™ is not activated, the operator steers machine manually. ATU system controls machine steering based on location and heading information from StarFire™ Receiver.

ATU Steering Unit

ATU steering unit replaces the factory-installed machine steering wheel. The ATU includes a 12 V stepper motor, steering wheel, steering control unit (SSU), and resume switch. The ATU is installed with a matching spline that allows the ATU to fit the steering column. When engaged, ATU steers the machine and maintains the desired track until ATU is disengaged. When disengaged, ATU puts no resistance on steering wheel, allowing machine to be driven manually.

When AutoTrac™ is activated, the ATU uses position data from the GPS receiver and guidance information from the display to steer the machine and maintain the desired track.

HC94949,0000A03 -19-30AUG16-1/1

AutoTrac™ Universal Requirements

Hardware:

- GreenStar™ Display
- AutoTrac™ Universal (ATU)
- StarFire™ 3000, StarFire™ 6000, StarFire™ iTC, or Original StarFire™ Receiver equipped with a terrain compensation module (TCM).
- Seat switch (if seat switch option is selected).
- On a non-GreenStar™ Ready machine, it is recommended that ATU 200 is powered using GreenStar™ Ready universal guidance kit.
- On a GreenStar™ Ready John Deere machine, power ATU 200 using 2-pin and 4-pin power and CAN bus connectors. (Refer to ATU 200 Installation Instructions for details.)

Software:

Update software with GreenStar™ update found on StellarSupport.com.

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AutoTrac is a trademark of Deere & Company

StarFire is a trademark of Deere & Company

Power Supply:

ATU 200 requires a steady power source with 12.5 V and 4.0 A while engaged. If there is inadequate current, ATU 200 disengages due to ATU temperature exit code or invalid steering control unit (SSU) voltage exit code.

Activation Criteria:

- To activate system, the following criteria must be met:
 - Machine speed is greater than 0.5 km/h (0.3 mph).
 - Reverse machine speed is less than 10 km/h (6.0 mph).

In reverse, AutoTrac™ remains activated for 45 seconds. After 45 s, place machine in a forward gear before reverse activates again.
- Machine is within 45 degrees of the desired track.
- Operator is seated.
- Terrain compensation module (TCM) is on.
- Receiver activation required for SF2, SF3, or real-time kinematics (RTK).

HC94949,00009FF -19-30AUG16-1/1

AutoTrac™ Accuracy

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

The overall AutoTrac™ system accuracy is dependent on many variables. The equation is:

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

It is important to remember:

- Receiver has to go through a warm-up period after starting machine.

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- For proper machine ballast, see machine Operator's Manual.
- Implement is set up to run properly (wear parts such as shanks, shovels, and sweeps are in good working condition and correctly spaced).
- Understand how field and soil conditions affect system (loose soil requires more steering than firm soil, but firm soil can cause uneven draft loads).

IMPORTANT: Although AutoTrac™ system can be activated when SF1, SF2, or SF3 correction signal is confirmed, system accuracy may continue to increase after signal is acquired.

AutoTrac™ SF2 activation operates using SF1, SF2, SF3, or RTK signal.

AutoTrac™ SF1 activation operates using SF1 signal only.

HC94949,0000A04 -19-30AUG16-1/1

AutoTrac™ Status Pie

PC8832 —UN—25OCT05

NOTE: Both steering control unit (SSU) and AutoTrac™ activation must be detected to display status pie and steer icon.

AutoTrac™ icon has four stages as shown in the AutoTrac™ Status Pie:

- INSTALLED
- CONFIGURED
- ENABLED
- ACTIVATED

- SSU is detected

Stage 1 **INSTALLED** (1/4 of pie)—SSU and all other hardware necessary for use are installed.

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Stage 1—INSTALLED

HC94949,00008DA -19-09OCT15-1/5

Stage 2 **CONFIGURED** (2/4 of pie)—Guidance and StarFire™ Receiver are configured, and machine conditions are met.

PC8833 —UN—25OCT05

- Guidance system has been turned ON in the display.
- Guidance Track 0 has been defined.
- AutoTrac™ activation detected.
- StarFire™ signal is present. Correct StarFire™ signal level for AutoTrac™ activation is selected.
- SSU has no active faults pertaining to the steering function.
- Hydraulic oil warmer than minimum temperature.

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Stage 2—CONFIGURED

- Speed is less than maximum limit.
- TCM message is valid.
- Machine in proper operating gear.

HC94949,00008DA -19-09OCT15-2/5

Steer On/Off—Press the steer on/off button to move AutoTrac™ from the CONFIGURED stage to the ENABLED stage.

PC20221 —UN—10NOV14



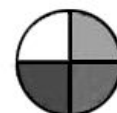
Steer On/Off

HC94949,00008DA -19-09OCT15-3/5

Stage 3 **ENABLED** (3/4 of pie)—Steer button has been pressed. All conditions are met for AutoTrac™ to operate and system is ready to be activated.

PC8834 —UN—25OCT05

- Select Steer On/Off button once to turn “Steer On”.



Stage 3—ENABLED

Continued on next page

HC94949,00008DA -19-09OCT15-4/5

System Overview

Stage 4 ACTIVATED (4/4 of pie with “A”)—Resume switch has been pressed and AutoTrac™ is steering the machine.

PC8835 —UN—25OCT05

- Press Resume Switch—AutoTrac™ has been activated.



Stage 4—**ACTIVATED**

HC94949,00008DA -19-09OCT15-5/5

System Overview—Softkey Legend

Application Controller 1100—Setup Softkey

PC21157 —UN—11MAY15

- Control Selection—Select control type for selective control valve (SCV) 1 or SCV 3.
- SCV Threshold Setup—Enter extend and retract threshold and valve test on or off.
- Serial Port Setup—Set up serial port communications.
- I/O Voltages—View Input / Output (I/O) voltage readings.
- Activation Entry—Enter Application Controller 1100 specific activations.



Setup Softkey

RW00482,00004F0 -19-29JUL15-1/1

Application Controller 1100—Main Softkey

PC21156 —UN—11MAY15

- Control Main—View information and select operational functions for selected control type (SCV 1 or SCV 3).
- Control Setup—Set up and enter required inputs for selected control type (SCV 1 or SCV 3)
- Version Information—View application controller specific information, reset factory defaults, or turn CAN bus diagnostics on or off.



Main Softkey

RW00482,00004F3 -19-29JUL15-1/1

GreenStar™—Mapping Softkey

PC21152 —UN—11MAY15

- Maps Tab—Change map settings, and view or record maps.
- Boundaries Tab—Set up client, farm, field, and boundaries.
- Flags Tab—Set up and flag point of interest.
- Multi-Machine Tab—Set up Machine Sync shared data and automation.



Mapping Softkey

RW00482,00004F1 -19-29JUL15-1/1

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.

AutoTrac is a trademark of Deere & Company



Guidance Softkey

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

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.



StarFire™ Softkey

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

StarFire is a trademark of Deere & Company

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

StarFire™ Receiver—RTK Softkey

PC21155 —UN—11MAY15

Select RTK softkey to set up real time kinematics (RTK) radios.



RTK Softkey

RW00482,00004F6 -19-04MAY16-1/1

StarFire™ Receiver—Satellite Softkey

PC21153 —UN—11MAY15

- Sky Plot Tab—View sky plot and satellite tracking information.
- Graph Tab—View satellite tracking information in a graph.



Satellite Information Softkey

RW00482,00004F6 -19-04MAY16-1/1

StarFire™ Receiver—Diagnostics Softkey

PC21158 —UN—11MAY15

- Readings Tab—View StarFire™ and real time kinematics (RTK) information.
- Data Logs Tab—View StarFire™, differential mode, and satellite information.
- Over the Air Tab—View over the air messages.



Diagnostics Softkey

StarFire is a trademark of Deere & Company

RW00482,00004F7 -19-04MAY16-1/1

Component Overview

StarFire™ Receiver

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 receiver activation is required for SF2, SF3, or real-time kinematics (RTK).



StarFire is a trademark of Deere & Company

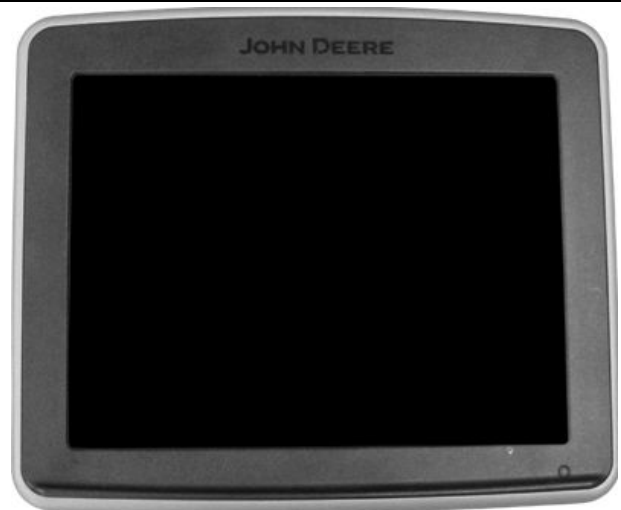
HC94949,0000A05 -19-30AUG16-1/1

PC20203 —UN—06NOV14

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.



GreenStar™ 3 2630 Display

GreenStar is a trademark of Deere & Company

RW00482,000047B -19-03FEB15-1/1

PC13407 —UN—20APR11

AutoTrac™ Universal

AutoTrac™ Universal (ATU) uses a steering wheel that resembles factory-installed machine steering wheel. Steering assembly includes a 12 V stepper motor, steering wheel, steering control unit (SSU), and resume switch.



PC8700 —UN—11AUG05

AutoTrac is a trademark of Deere & Company

HC94949,0000635 -19-16DEC14-1/1

Internal and External Resume Switch



Internal Resume Switch



External Resume Switch

PC8700 —UN—11AUG05

PC20201 —UN—10NOV14

NOTE: If necessary, an auxiliary resume switch is supplied in AutoTrac™ Universal (ATU) base kit.

AutoTrac is a trademark of Deere & Company

Press resume switch to change AutoTrac™ from Enabled to Activated status.

HC94949,0000637 -19-16DEC14-1/1

Integrated Resume Switch (W110 and W150 Windrowers Only)

Resume switch (A) is located on multi-function lever (B).

A—Resume Switch

B—Multi-function Lever



PC19752 —UN—24/JUN14

HC94949,0000638 -19-19DEC14-1/1

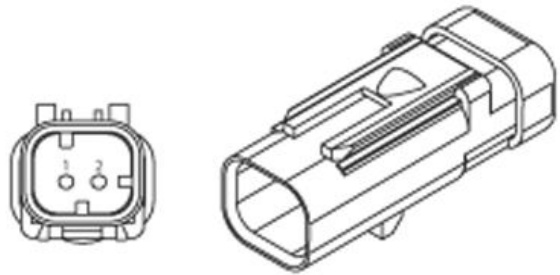
Operator Presence

Select either seat switch or operator activity monitor to detect operator presence.

When seat switch is selected, connect external seat switch to AutoTrac™ Universal (ATU) wiring harness. If operator leaves the seat for more than 7 sec., AutoTrac™ is deactivated.

When activity monitor is selected, ATU looks for operator activity every 7 minutes. Operator receives a time-out warning 15 sec. before AutoTrac™ deactivates. Select resume switch to reset activity monitor timer.

AutoTrac is a trademark of Deere & Company



PC20200 —UN—06NOV14

HC94949,000063E -19-16DEC14-1/1

Setting Up

Configure AutoTrac™ Universal

1. If using accuracy greater than SF1, ensure GreenStar™ Display and StarFire™ Receiver have correct AutoTrac™ activation.
2. Measure StarFire™ height and fore-aft (see StarFire™ Height and Fore/Aft).
3. Set up AutoTrac™ Universal for display.
Refer to appropriate section:
 - Set Up GreenStar™ 3 2630 Display
 - Set Up GreenStar™ 2 2600 Display
 - Set Up GreenStar™ 2 1800 Display
 - Set Up Original GreenStar™ Display
4. Set up terrain compensation module (TCM).

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

HC94949,00006F5 -19-21JAN15-1/1

GreenStar™ Display and StarFire™ Receiver Software Activations

NOTE: John Deere AutoTrac™ Universal 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 2600 Display, select:

1. Menu button
2. GreenStar™ button
3. GS2 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

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

AutoTrac is a trademark of Deere & Company
GreenStar is a trademark of Deere & Company

Continued on next page

HC94949,0000A0B -19-03AUG16-1/2

PC20355 —UN—01DEC14

NOTE: Verify proper activation and SF2 or SF3 license is active and meets expected accuracy levels for operation. Contact your John Deere dealer to obtain a StarFire™ license or RTK activation.

StarFire™ Receiver

To view or activate signal on StarFire™ 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

SF2 License No

SF2 End Date

StarFire SN 3285780000963

Activation / License Status Window

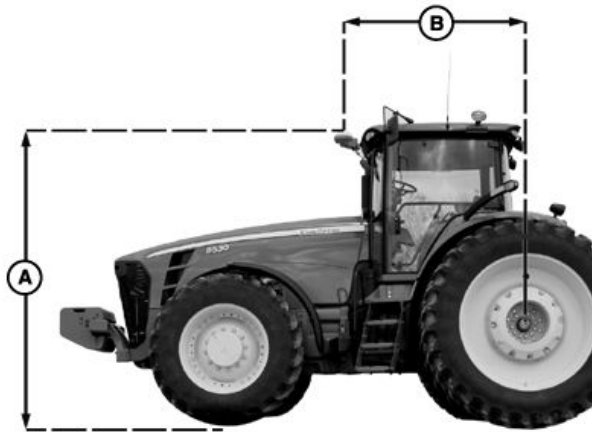
StarFire™ Receiver Activations

PC20332 —UN—01DEC14

StarFire is a trademark of Deere & Company

HC94949,0000A0B -19-03AUG16-2/2

StarFire Height and Fore-Aft



*Fixed-Axle Machines
(Row Crop, Sprayers)*

PC8995—UN—07MAR06



Articulated Machines

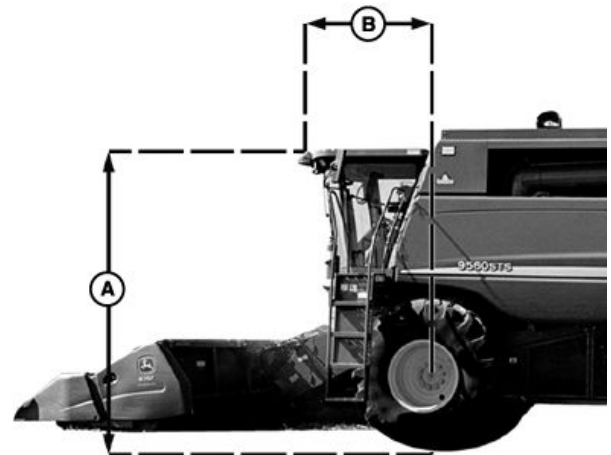
PC8996—UN—07MAR06

StarFire Height (in.) Enter the height of the StarFire receiver. Height is measured from the ground to the top of the dome.

StarFire Fore-Aft (in.) Enter the Fore-Aft measurement (the distance from the fixed axle of the vehicle to the receiver). The fixed axle is the rear axle on a row-crop tractor and sprayer, or the front axle on an articulated tractor, windrower, combine, forage harvester, and cotton harvester. For track machines, this measurement is 0. The receiver must be at or in front of the fixed axle for all machines except articulated tractors. On articulated tractors, the receiver is behind the front axle.

A—Height

B—Fore-Aft



Combines, Self-Propelled Forage Harvester, Windrower, Cotton Picker

PC8997—UN—07MAR06

OUO6050,000112B -19-08JUN09-1/1

StarFire™ Height and Fore-Aft Measurements Table

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

StarFire™ Height and Fore-Aft Measurements		
	Height	Fore-Aft
Row Crop Tractor		
Sprayers		
Articulated Tractor		
Combine		
Self-Propelled Forage Harvester		
Self-Propelled Windrower		
Cotton Picker		

StarFire is a trademark of Deere & Company

HC94949,00006F0 -19-19JAN15-1/1

Enter Machine Information and Offsets

PC8663 —UN—29APR15



Menu Button

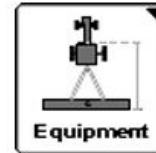
PC12685 —UN—29APR15



GreenStar™ Button

1. Select Menu button.
2. Select GreenStar™ button.
3. Select Equipment softkey.
4. Select Machine tab (A).

PC21184 —UN—20MAY15



Equipment Softkey

NOTE: Drop-down menu or input boxes may be grayed out if machine is automatically recognized.

5. Select or enter the machine information (B—G).
6. Select Change Offsets button (H).

- | | |
|--------------------------------|-------------------------|
| A—Machine Tab | E—Connection Type |
| B—Machine Type Drop-down Menu | Drop-down Menu |
| C—Machine Model Drop-down Menu | F—Machine Turn Radius |
| D—Machine Name Drop-down Menu | G—Turning Sensitivity |
| | H—Change Offsets Button |

GreenStar is a trademark of Deere & Company

Continued on next page

HC94949,0000A1D -19-19AUG16-1/2

PC22970 —UN—19AUG16

7. Select or enter the machine offsets information (A—F).
8. Select Accept button (G).

- | | |
|---|---|
| A—Lateral distance from center-line of machine to GPS receiver. | E—Left or Right Offset Toggle Button |
| B—In-line distance from non-steering axle to GPS receiver | F—Non-Steering Axle Location Drop-down Menu |
| C—In-line distance from non-steering axle to connection point | G—Accept Button |
| D—Vertical distance from GPS receiver to the ground | |

Machine Offsets

Rear Axle F

A

B

C

D

0.0 (in)

63.8 (in)

54.6 (in)

130.43 (in)

A Lateral distance from center-line of machine to GPS receiver

B In-line distance from non-steering axle (machine turning point for track tractor) to GPS receiver

C In-line distance from non-steering axle (machine turning point for track tractor) to implement connection point

D Vertical distance from the GPS receiver to the ground
Note: Only used with Surface Water Pro applications

G

PC22971 — UN — 18AUG16

HC94949,0000A1D -19-19AUG16-2/2

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.

WARNING

Automatic Guidance System Detected. Activating a guidance system on roadways may cause loss of vehicle control.

To avoid death or serious injury, disable the guidance system before entering roadways.

4:10am

PC13157 — 19 — 17FEB11

AutoTrac is a trademark of Deere & Company

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

60-7

091316
PN=28

Set Up 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

PC8673 —UN—14OCT07



Guidance Softkey

GreenStar is a trademark of Deere & Company

HC94949,0000A12 -19-22AUG16-1/4

CAUTION: AutoTrac™ Universal (ATU) does not steer properly in reverse for articulated tractors and windrowers. Do not activate AutoTrac™ in reverse for these machines.

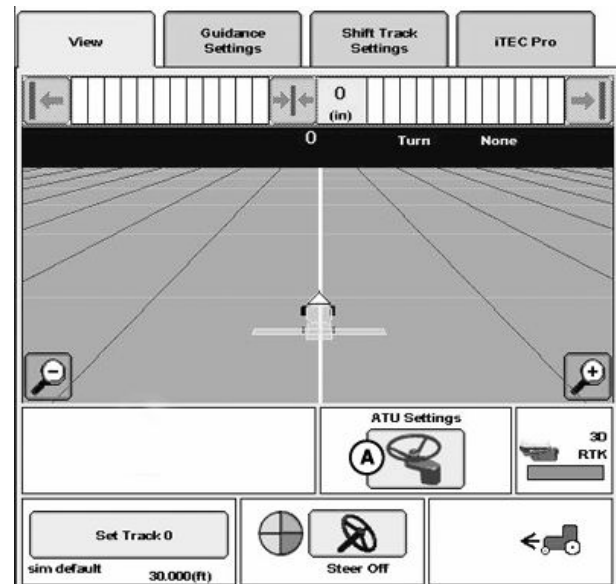
NOTE: Set StarFire™ height, fore/aft, and lateral offsets before adjusting other settings and operating ATU.

4. Select direction of travel.

NOTE: Option is not available if ATU direction is known or if AutoTrac™ is active and tracking. (See Direction of Travel in this section.)

5. Select ATU Settings (A).

A—ATU Settings Button



AutoTrac is a trademark of Deere & Company
StarFire is a trademark of Deere & Company

Continued on next page

HC94949,0000A12 -19-22AUG16-2/4

PC20127 —UN—05/JAN15

Advanced AutoTrac Settings

Machine Type: Row Crop Tractor 1 (A)

Line Sensitivity - Tracking (B): 120

Line Sensitivity - Heading (C): 120

Steering Wheel Speed (D): 190

Steer Play: 0

Buttons: ? 1/3 (G) Accept

PC20534 —UN—11DEC14

Advanced AutoTrac™ Settings for GS3 2630 Display - Page 1

6. In Machine Type (A), select machine being used.

NOTE: These recommended settings are a starting point for most machines. Check ATU Look-up Tool on StellarSupport.com for machine- and model-specific starting settings.

Steering Wheel Speed is grayed out and requires no input on ATU 200 equipped systems.

7. Refer to settings chart, and enter information using + and - buttons (B–E).

Machine Type (A)	Line Sensitivity - Tracking (Adjust in Increments of 20) (B)	Line Sensitivity - Heading (C)	Steering Wheel Speed (D)	Acquire Sensitivity (Adjust in Increments of 5) (E)
Row Crop Tractor	180	80	190	80
Track Tractor	180	80	190	80
Articulated Tractor	180	80	190	80
Sprayer	200	110	190	100
Windrower	190	110	190	90
Harvester	190	90	190	90

Settings

NOTE: Set Curve Sensitivity (F) to 100. (To fine tune performance, see Operating–Optimizing AutoTrac™ Universal.)

8. Select Next (G).
9. Enter StarFire™ height (H) and fore-aft values (I).

Advanced AutoTrac Settings

Acquire Sensitivity (E): 120

Curve Sensitivity (F): 120

Monitor Performance

Buttons: ? 2/3 (G) Accept

PC20535 —UN—10DEC14

Advanced AutoTrac™ Settings for GS3 2630 Display - Page 2

Advanced AutoTrac Settings

Receiver Position

StarFire Height (in) (H)

StarFire Fore-Aft (in) (I)

Operator Presence (J)

Asymmetric Steering Ratio (K)

Encoder: 462

Direction: N/A

Stop Code: No TCM Corrections

ATU Voltage: 12.0 V

Buttons: 3/3 (L) Accept

PC20536 —UN—10DEC14

Advanced AutoTrac™ Settings for GS3 2630 Display - Page 3

- A—Machine Type
B—Line Sensitivity - Tracking
C—Line Sensitivity - Heading
D—Steering Wheel Speed
E—Acquire Sensitivity
F—Curve Sensitivity
G—Next Button
H—StarFire™ Height
I—StarFire™ Fore-Aft
J—Operator Presence
K—Asymmetric Steering Ratio
L—Accept Button

10. Select Operator Presence (J) (for more information, see System Components section).

11. Enter asymmetric steering ratio (K) (see Configure Steer Asymmetry later in this section).

Continued on next page

HC94949,0000A12 -19-22AUG16-3/4

12. Select Accept (L).

HC94949,0000A12 -19-22AUG16-4/4

Set Up GreenStar™ 2 2600 Display

CAUTION: AutoTrac™ Universal (ATU) does not steer properly in reverse for articulated tractors and windrowers. Do not activate AutoTrac™ in reverse for these machines.

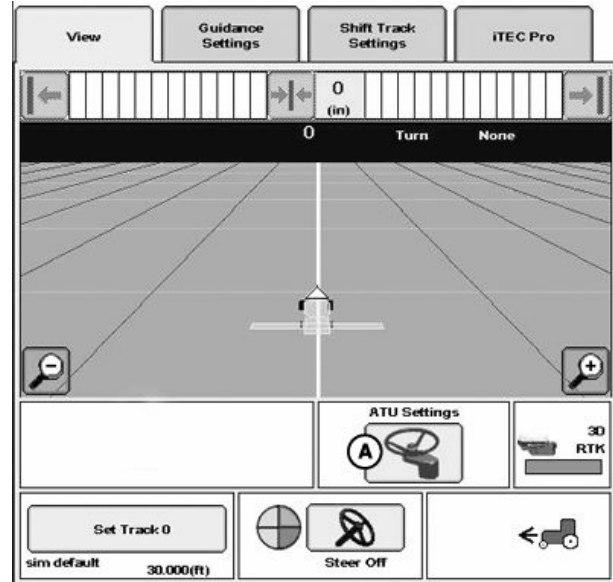
NOTE: Set StarFire™ height and fore/aft before adjusting other settings and operating ATU.

1. Select direction of travel.

NOTE: Option is not available if ATU direction is known or if AutoTrac™ is active and tracking. (See *Direction of Travel* in this section.)

2. Select ATU Settings (A).

A—ATU Settings Button



AutoTrac is a trademark of Deere & Company
StarFire is a trademark of Deere & Company

Continued on next page

HC94949,0000A13 -19-03AUG16-1/2

PC20127 —UN—05/JAN15

3. In Vehicle Type (A), select machine being used.

NOTE: These recommended settings are a starting point for most machines. Check ATU Look-up Tool on StellarSupport.com for machine and model-specific starting settings.

Steering Wheel Speed is grayed out and requires no input on ATU 200 equipped systems.

4. Refer to settings chart, and enter information using input boxes (B–E).

Vehicle Type (A)	Line Sensitivity - Tracking (Adjust in Increments of 20) (B)	Line Sensitivity - Heading (C)	Steering Wheel Speed (D)	Acquire Sensitivity (Adjust in Increments of 5) (E)
Row Crop Tractor	180	80	190	80
Track Tractor	180	80	190	80
Articulated Tractor	180	80	190	80
Sprayer	200	110	190	100
Windrower	190	110	190	90
Harvester	190	90	190	90

Settings

NOTE: Set Curve Sensitivity (F) to 100. (To fine tune performance, see Operating–Optimizing AutoTrac™ Universal.)

- Select Next (G).
- Enter StarFire™ height (H) and fore-aft values (I).
- Select Operator Presence (J) (for more information, see System Components section).
- Enter asymmetric steering ratio (K) (see Configure Steer Asymmetry later in this section).
- Select Accept (L).

A—Vehicle Type
B—Line Sensitivity - Tracking
C—Line Sensitivity - Heading
D—Steering Wheel Speed
E—Acquire Sensitivity
F—Curve Sensitivity

G—Next Button
H—StarFire™ Height
I—StarFire™ Fore-Aft
J—Operator Presence
K—Asymmetric Steering Ratio
L—Accept Button

ATU Settings

Vehicle Type Row Crop Tractor 1 A

Steering Wheel Speed 190 D

Line Sensitivity Tracking 180 B

Acquire Sensitivity 90 E

Line Sensitivity Heading 100 C

Curve Sensitivity 0 F

Steer Play 0

Direction of Travel ↺

Encoder -228
Direction Forward
Stop Code None

1 / 2
G
Accept

ATU Settings for GS2 2600 Display - Page 1

ATU Settings

StarFire Height (in) 120 H

StarFire Fore-Aft (in) 83 I

Operator Presence Activity Monitor J

Asymmetric Steering Ratio 100 K

2 / 2
L
Accept

ATU Settings for GS2 2600 Display - Page 2

PC20537—UN—10DEC14

PC20538—UN—10DEC14

Set Up GreenStar™ 2 1800 Display

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

PC8663 —UN—29APR15



Menu Button

PC12685 —UN—29APR15



GreenStar™ Button

PC8673 —UN—14OCT07



Guidance Softkey

GreenStar is a trademark of Deere & Company

HC94949,0000A14 -19-04AUG16-1/3

CAUTION: AutoTrac™ Universal (ATU) does not steer properly in reverse for articulated tractors and windrowers. Do not activate AutoTrac™ in reverse for these machines.

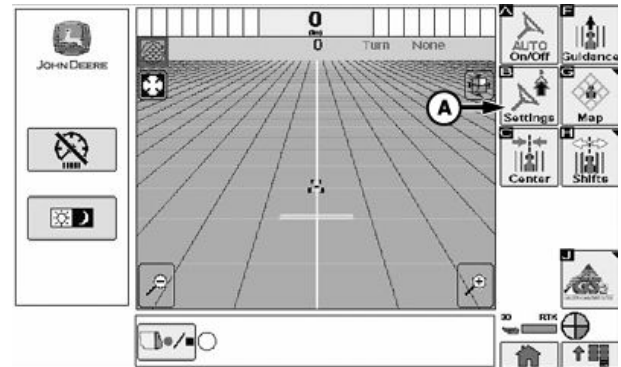
NOTE: Set StarFire™ height and fore/aft before adjusting other settings and operating ATU.

4. Select direction of travel.

NOTE: Option is not available if ATU direction is known or if AutoTrac™ is active and tracking. (See *Direction of Travel* in this section.)

5. Select ATU Settings (A).

AutoTrac is a trademark of Deere & Company
StarFire is a trademark of Deere & Company



A—ATU Settings Button

Continued on next page

HC94949,0000A14 -19-04AUG16-2/3

PC20128 —UN—21OCT14

6. In AutoTrac™ Machine Profile (A), select machine being used.

NOTE: These recommended settings are a starting point for most machines. Check ATU Look-up Tool on StellarSupport.com for machine- and model-specific starting settings.

Steering Wheel Speed is grayed out and requires no input on ATU 200 equipped systems.

7. Refer to settings chart, and enter information using input boxes (B–E).

AutoTrac™ Machine Profile (A)	Line Sensitivity - Tracking (Adjust in Increments of 20) (B)	Line Sensitivity - Heading (C)	Steering Wheel Speed (D)	Acquire Sensitivity (Adjust in Increments of 5) (E)
Row Crop Tractor	180	80	190	80
Track Tractor	180	80	190	80
Articulated Tractor	180	80	190	80
Sprayer	200	110	190	100
Windrower	190	110	190	90
Harvester	190	90	190	90

Settings

NOTE: Set Curve Sensitivity (F) to 100. (To fine tune performance, see Operating–Optimizing AutoTrac™ Universal.)

8. Select Next (G).
9. Select Operator Presence (H) (for more information, see System Components section).
10. Enter asymmetric steering ratio (I) (see Configure Steer Asymmetry later in this section).
11. Select Accept (J).

- A—AutoTrac™ Machine Profile Drop-Down Menu
 B—Line Sensitivity - Tracking Input Box
 C—Line Sensitivity - Heading Input Box
 D—Steering Wheel Speed Input Box
 E—Acquire Sensitivity Input Box
 F—Curve Sensitivity Input Box
 G—Next Button
 H—Operator Presence Drop-Down Menu
 I—Asymmetric Steering Ratio Input Box
 J—Accept Button

AutoTrac™ Settings for GS2 1800 Display - Page 1

AutoTrac™ Settings for GS2 1800 Display - Page 2

PC20545—UN—12DEC14

PC20546—UN—11DEC14

Set Up Original GreenStar™ Display

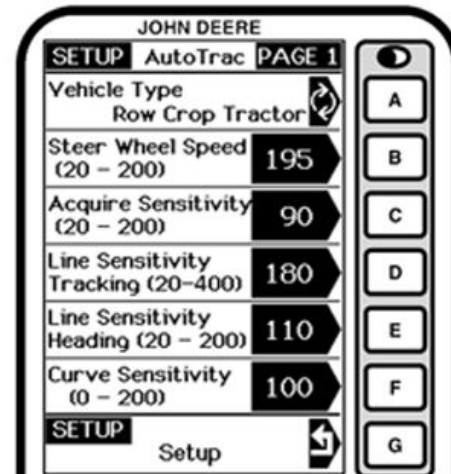
CAUTION: AutoTrac™ Universal (ATU) does not steer properly in reverse for articulated tractors and windrowers. Do not activate AutoTrac™ in reverse for these machines.

1. Select Setup button.
2. Select AutoTrac™.
3. Refer to settings chart, and enter information using input boxes (B–E).

Vehicle Type (A)	Steering Speed (B)	Acquire Sensitivity (Adjust in Increments of 5) (C)	Line Sensitivity Tracking (Adjust in Increments of 20) (D)	Line Sensitivity Heading (E)
Row Crop Tractor	190	80	180	80
Track Tractor	190	80	180	80
Articulated Tractor	190	80	180	80
Sprayer	190	100	200	110
Windrower	190	90	190	110
Harvester	190	90	190	90

Settings

AutoTrac is a trademark of Deere & Company
GreenStar is a trademark of Deere & Company



Original GreenStar™ GreenStar Display

A—Vehicle Type
B—Steering Wheel Speed
C—Acquire Sensitivity
D—Line Sensitivity Tracking
E—Line Sensitivity Heading
F—Curve Sensitivity

NOTE: Set Curve Sensitivity (F) to 100. (To fine tune performance, see *Operating—Optimizing AutoTrac™ Universal*.)

PC20116—UN—20OCT14

HC94949,0000A15 -19-04AUG16-1/1

Configure Steer Asymmetry

In certain machines, the hydraulic steering system is configured so that the machine does not steer the same in each direction.

To determine if steering asymmetry exists:

1. Turn steering wheel to full left position.
2. Count steering wheel revolutions to turn full right.
3. Count steering wheel revolutions to turn full left.

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4. If number of revolutions right is not equal to the number of revolutions left, steering asymmetry is used.
(Refer to AutoTrac™ Universal Platform Lookup for your machine on StellarSupport.com to determine the recommended steering asymmetry value.)
5. If number of revolutions right is equal to number of revolutions left, enter 100 for Asymmetric Steering Ratio.

HC94949,000063A -19-16DEC14-1/1

Set Up Terrain Compensation Module (TCM)

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

PC20197 —UN—05NOV14



Menu Button

PC20198 —UN—05NOV14



StarFire™ Button

PC20199 —UN—05NOV14



Setup Tab

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HC94949,000069E -19-10DEC14-1/1

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.

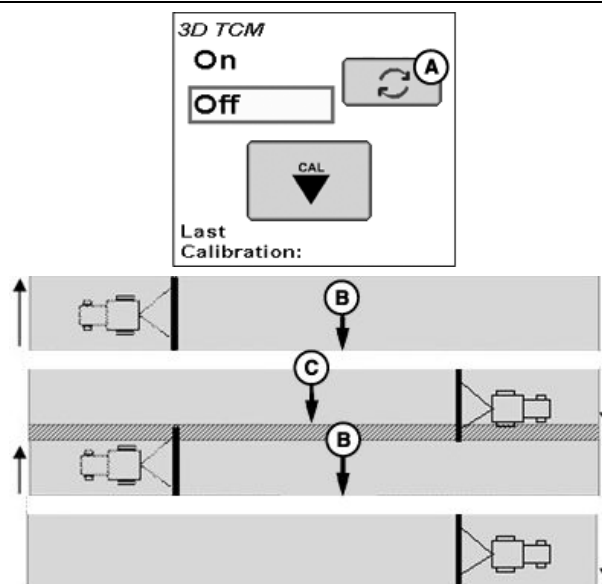
NOTE: TCM must be turned on for AutoTrac™ to activate.

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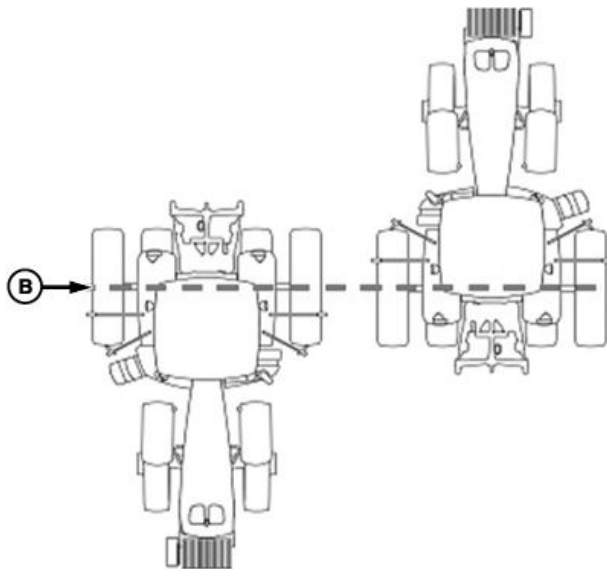
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DK01672,000019E -19-14MAR16-1/2

PC19992 —UN—04SEP14

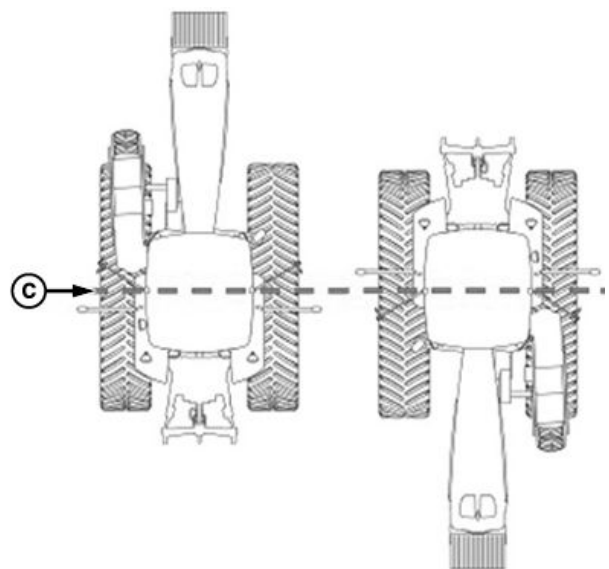
PC19993 —UN—03SEP14

Position Machine and Calibrate Terrain Compensation Module (TCM)



Floating Front Axle Machines

PC19995 —UN—03SEP14

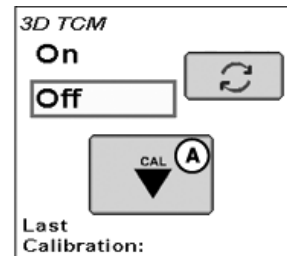


Fixed Axle Wheels Or Tracks Machines

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.

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PC22267 —UN—14MAR16



Accept Button

A—Calibration Button
B—Rear Axle

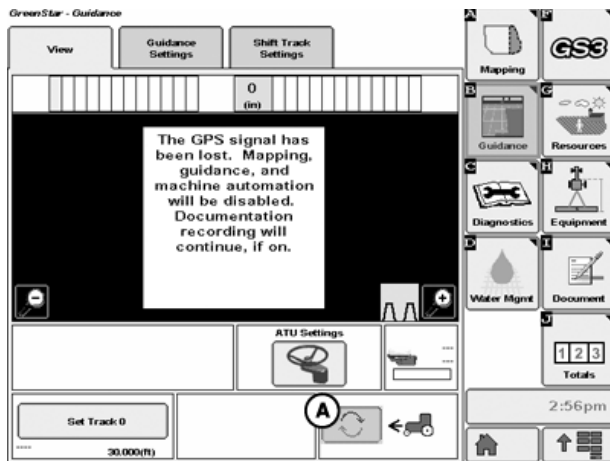
C—Machine Pivot Point

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

PC19994 —UN—04SEP14

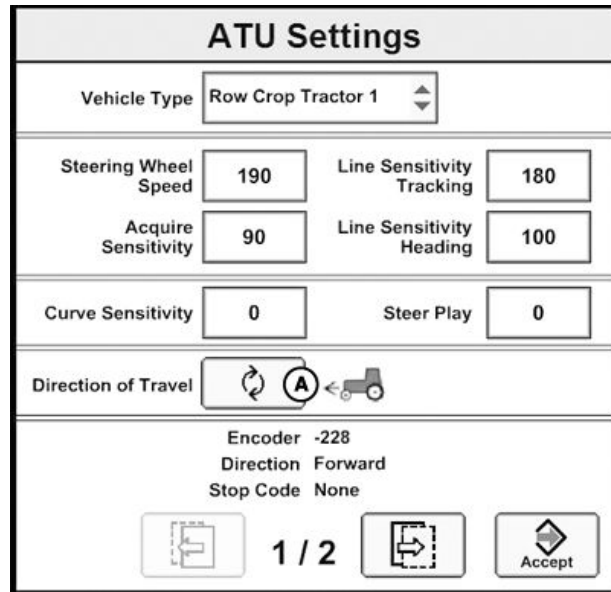
DK01672,000019E -19-14MAR16-2/2

Direction of Travel



GreenStar™ 3 2630 Display

PC20315—UN—20NOV14



GreenStar™ 2 2600 Display

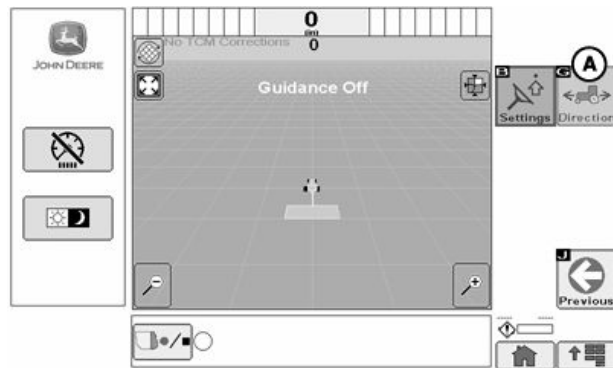
PC20316—UN—20NOV14

NOTE: Direction of travel cannot be manually set for articulated tractors and windrowers.

Option is not available if AutoTrac™ Universal (ATU) direction is known or if AutoTrac™ is active and tracking.

Direction of travel can be changed by using the toggle button (A) on the GreenStar™ 3 2630 Display, GS2 2600 Display, and GS2 1800 Display.

Operators using ATU with a StarFire™ iTC, 3000, or 6000 Receiver can change the direction of travel using the toggle button (A) on the GreenStar™ 3 2630 Display, GS2 2600 Display, and GS2 1800 Display. Toggle button appears when ATU and receiver do not agree on direction of travel. Toggle button disappears when ATU and receiver agree on direction of travel.



GreenStar™ 2 1800 Display

PC20314—UN—20NOV14

A—Direction of Travel Toggle Button

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StarFire is a trademark of Deere & Company

HC94949,0000A08 -19-25JUL16-1/1

Operating—AutoTrac™ Universal

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

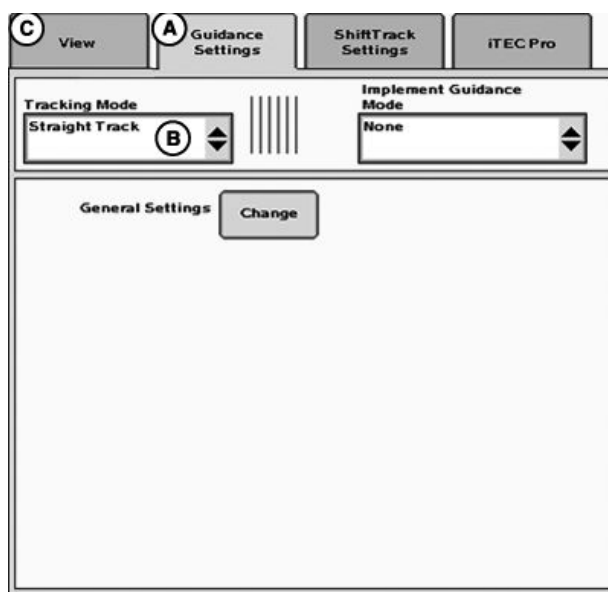
PC21148 —UN—11MAY15



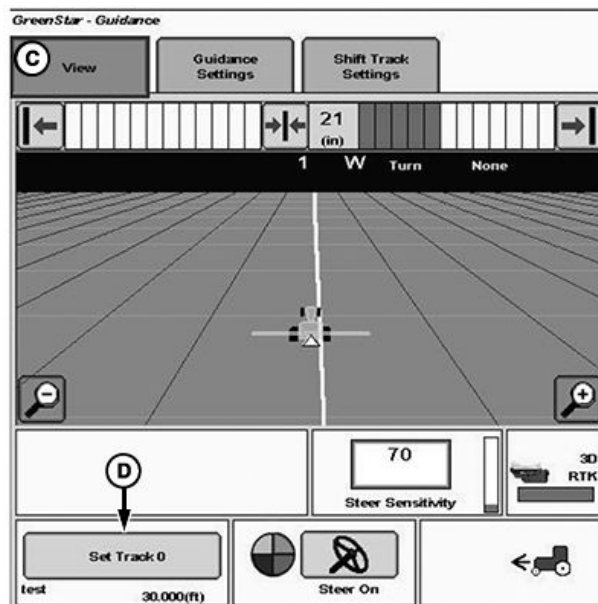
Guidance Softkey

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HC94949,0000927 -19-14OCT15-1/3



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

HC94949,0000927 -19-14OCT15-2/3

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

PC20335 —UN—25NOV14

HC94949,0000927 -19-14OCT15-3/3

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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HC94949,0000910 -19-14OCT15-1/3

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

HC94949,0000910 -19-14OCT15-2/3

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.

HC94949,0000910 -19-14OCT15-3/3

Activate System



Internal Resume Switch

PC8700—UN—11AUG05



External Resume Switch

PC20201—UN—10NOV14

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.
- Operator is seated.
- Terrain compensation module (TCM) is on.
- In reverse, AutoTrac™ remains activated for 45 seconds. After 45 sec., machine must be put in a forward gear before reverse activates again.

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Internal Resume Switch—W110 and W150 Windrowers Only

A—Resume Switch

PC19752—UN—24JUN14

HC94949,000065C -19-09JAN15-1/1

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:

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- Turning steering wheel.
- 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.
- Operator out of seat for more than 7 seconds if using seat switch, or no activity detected by operator presence monitor for 7 minutes.

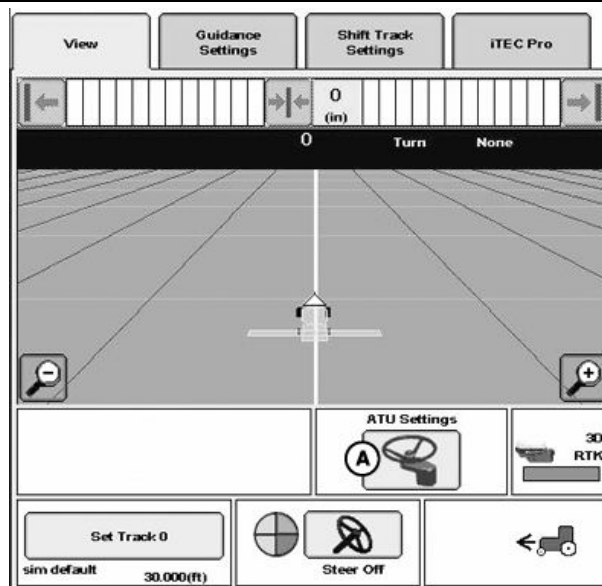
HC94949,0000677 -19-02FEB15-1/1

Operating—Optimizing AutoTrac™ Universal

AutoTrac™ Settings

1. Select ATU Settings button (A) to access setup pages.

A—ATU Settings Button

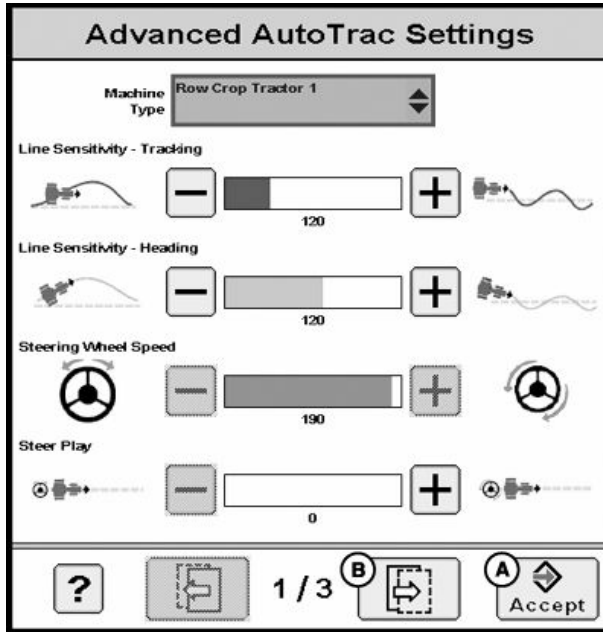


View Tab

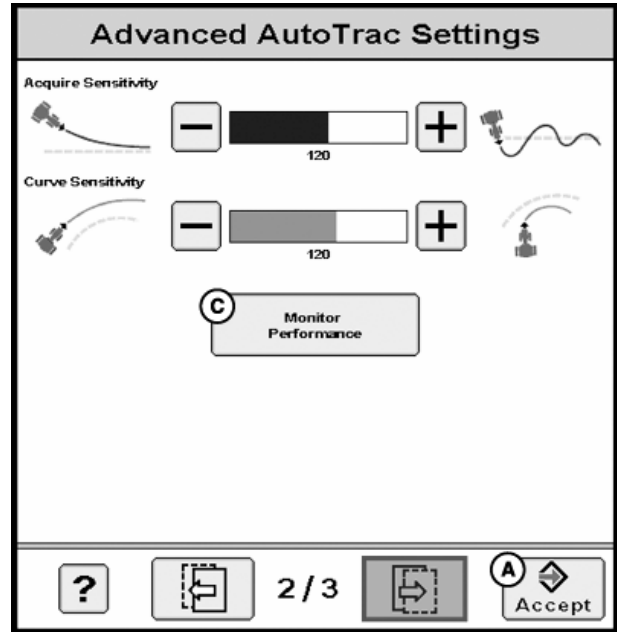
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PC20143—UN—05JAN15



Advanced AutoTrac Settings Page 1/3



Advanced AutoTrac Settings Page 2/3

CAUTION: AutoTrac™ Universal does not steer properly in reverse for articulated tractors and windrowers. Do not activate AutoTrac™ in reverse for articulated tractors and windrowers.

NOTE: Steer Wheel Speed setting is grayed out when using ATU 200. Steer Wheel Speed defaults to appropriate steering wheel speed.

Help button is only available on GreenStar™ 3 2630 Display.

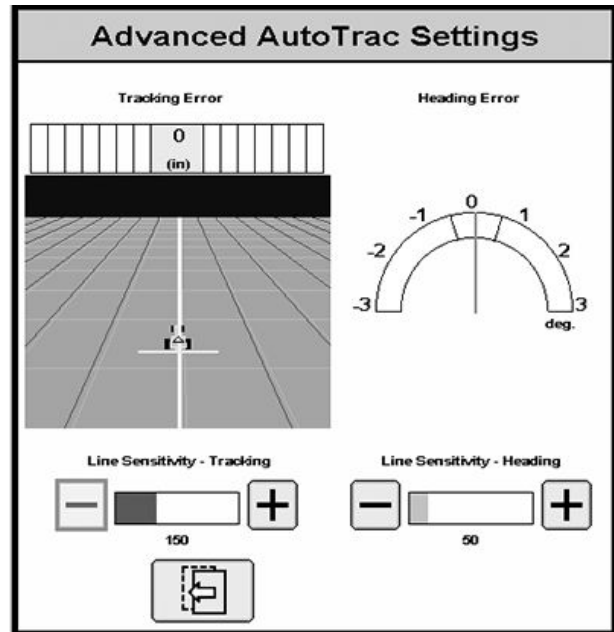
- Adjust settings. Accept button (A) saves and applies current settings and returns user to previous page.

NOTE: To advance pages, select Next (B).

For fine tuning line sensitivity tracking and heading, select Monitor Performance (C). This allows performance to be viewed using a numeric scale.

A—Accept Button
B—Next Button

C—Monitor Performance Button



Advanced AutoTrac Settings—Monitor Performance

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HC94949,0000A0C -19-30AUG16-2/3

Line Sensitivity Tracking

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

Higher settings: Results in more aggressive response to machine off-track error.

Lower Settings: Results in less aggressive response to machine off-track error.

Line Sensitivity Heading

Determines how aggressively AutoTrac™ responds to heading errors.

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

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

Steering Wheel Speed

Adjusts the rate of machine steering in order to maintain tracking performance. Increasing steering wheel speed generally results in better tracking performance. If set too high, steering column resistance can result in AutoTrac™ deactivations.

NOTE: *Steer Wheel Speed setting is grayed out when using ATU 200. Steer Wheel Speed defaults to the appropriate steering wheel speed.*

Steer Play

Some machines have excess play in their steering system, which allows the steering wheel to be turned without change in machine direction. This setting controls the distance that the steering wheel turns to take up this excess play.

Acquire Sensitivity

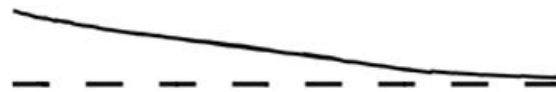
Determines how aggressively the machine acquires the track. This setting affects performance while acquiring the track only.

High settings: Results in a more aggressive track acquisition.

Lower settings: Results in a smoother entry into the next track.

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PC19661 —UN—21MAY14



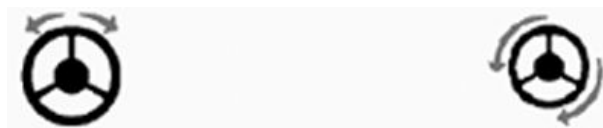
Line Sensitivity Tracking Too Low

PC19662 —UN—21MAY14



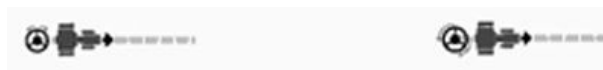
Line Sensitivity Tracking Too High

PC20345 —UN—01DEC14



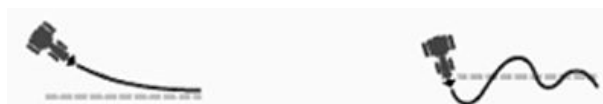
Steering Wheel Speed 3/6

PC20346 —UN—01DEC14



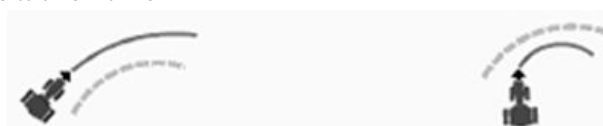
Steer Play 4/6

PC20347 —UN—01DEC14



Acquire Sensitivity 5/6

PC20348 —UN—01DEC14



Curve Sensitivity 6/6

Curve Sensitivity

Determines how aggressively AutoTrac™ responds to a curve in the track. This setting affects performance in curve track guidance only.

Higher settings: Turns the machine in a smaller radius (tighter) around the curve.

Lower Settings: Turns the machine in a larger radius around the curve.

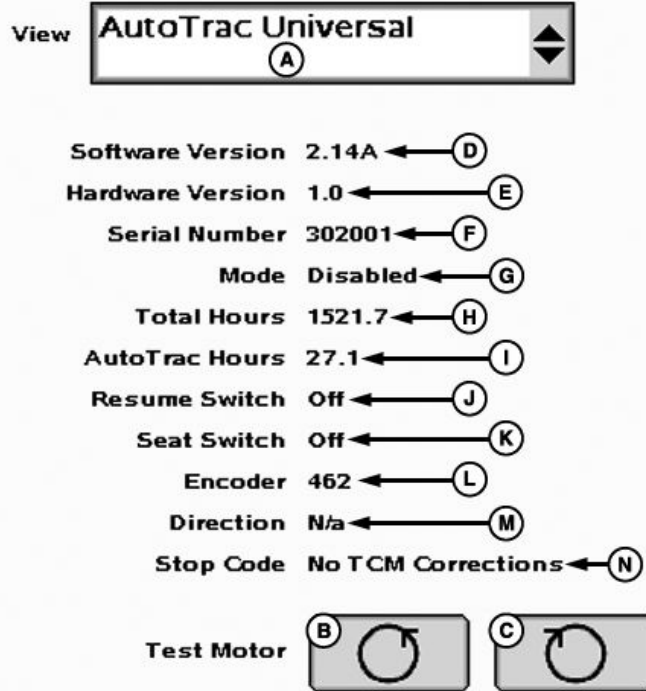
HC94949,0000A0C -19-30AUG16-3/3

Troubleshooting

Diagnostic Readings

GreenStar - Diagnostic Readings

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



GreenStar 3 Pro - Diagnostic Readings

A—View Drop-Down Menu
B—Test Motor Left
C—Test Motor Right
D—Software Version

E—Hardware Version
F—ATU Motor Serial Number
G—Mode Status
H—Total Hours

I—AutoTrac Hours
J—Resume Switch Status
K—Seat Switch Status
L—Encoder

M—Direction
N—Stop Code

Select Menu > GreenStar™ > Diagnostics > AutoTrac™ Universal (ATU) (A).

ATU is equipped with Test Motor buttons (B–C). To test system, steering wheel turns left or right.

NOTE: Run motor test with ATU removed from steering column.

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To remove message on display indicating operator presence, connect seat switch.

PC20349 —UN—01DEC14

HC94949,0000676 -19-21JAN15-1/1

Observable Symptoms

Symptom	Problem	Solution
Machine turns right or left unexpectedly when resume switch is selected and machine is already lined up on line.	Encoder out of range when wheels are pointed forward.	With front wheels pointed forward, encoder should be between +500 and -500. Drive forward with wheels pointed straight ahead until encoder is within limit. Update AutoTrac™ Universal (ATU) software if encoder does not resolve issue.
ATU disengages.	Anti-rotation device too tight, causing misalignment of ATU with steering shaft.	Reposition ATU so it slides easily on the steering shaft, then adjust anti-rotation device.
	Steering wheel speed too high on a machine with high steering resistance.	Lower steering wheel speed (ATU 100 only).
	Looseness or rotation in the steering column.	Insert shims to take out play in the steering column.
	Steering wheel turns hard after ATU installed.	Lubricate steering shaft where it goes through column.
	Unstable power source.	Check power connections.
	Incorrect steering asymmetry value entered.	Ensure that steering asymmetry is set correctly.
ATU unstable when entering track.	Acquire sensitivity too high.	Decrease acquire sensitivity.
ATU takes too long to enter next track.	Acquire sensitivity too low.	Increase acquire sensitivity.
ATU performance is unsatisfactory.	StarFire™ height or fore-aft not properly set.	Enter correct StarFire™ height and fore-aft dimension.
	StarFire™ Receiver not in front of or even with fixed axle (even with or behind for articulated tractors).	Position StarFire™ in front of or even with fixed axle (even with or behind for articulated tractors).
	Line sensitivities incorrect.	Optimize line sensitivities. (See Optimizing AutoTrac™ Universal Performance.)
	StarFire™ Receiver mount direction in Setup different from the actual mount direction.	Match terrain compensation module (TCM) mount direction on receiver Setup page with physical StarFire™ Receiver mount direction.
	ATU 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.

Continued on next page

HC94949,0000A0D -19-31AUG16-1/3

Symptom	Problem	Solution
	Looseness or rotation in steering column.	Insert shims to remove looseness in steering column.
	Loose soil.	Add ballast.
	ATU settings are incorrect.	Adjust ATU settings.
	ATU machine type is incorrect.	Select correct machine type in ATU settings.
	Machine with symmetric steering has incorrect asymmetric steering setting.	Set asymmetric steering setting to 100.
	Worn components, such as steering components, linkages, and tie rod ends.	Replace worn components.
ATU does not engage or resume.	Stop code encountered.	See list of stop codes to find the issue.
	Resume Switch failed. Resume switch status on diagnostics readings pages does not change to ON while selecting switch.	To replace the switch, see your John Deere dealer.
ATU settings do not appear on the display.	System not recognizing ATU on CAN bus.	Ensure that ATU is connected to GreenStar™ harness and receiving power. Check for bad fuses in ATU wiring harness.
Direction cannot be determined.	Old TCM software.	Update receiver, ATU, and display software.
	No differential correction.	Establish differential correction.
	No GPS.	Establish signal.
	ATU 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.
ATU works away from line.	Machine with symmetric steering has wrong asymmetric steering setting.	Set asymmetric steering setting to 100.
ATU hangs off line after headland turn.	Machine with symmetric steering has wrong asymmetric steering setting.	Set asymmetric steering setting to 100. Update ATU software.

Continued on next page

HC94949,0000A0D -19-31AUG16-2/3

Symptom	Problem	Solution
	Machine with asymmetric steering has wrong asymmetric steering setting.	Refer to machine's platform document for asymmetric setting.
	ATU encoder reading is inaccurate.	With front wheels pointing forward, encoder should be between +500 and -500. Drive forward with wheels pointed straight ahead until encoder is within limit.

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HC94949,0000A0D -19-31AUG16-3/3

Deactivation and Activation Thresholds

AutoTrac™ deactivates or will not activate when exceeding forward speed of:

- Tractor - 30 km/h (18.6 mph)
- Sprayer - 37 km/h (23 mph)
- Combine - 22 km/h (13.6 mph)
- Windrower - 26.1 km/h (16.2 mph)

AutoTrac™ deactivates when:

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- Slowing to speeds less than 0.5 km/h (0.3 mph) for more than 15 seconds.
- Toggling Steer ON and OFF button until Steer OFF is displayed in Guidance View tab.
- Operator is out of seat for more than 7 seconds if using seat switch or no activity detected by operator presence monitor for 7 minutes.
- Operating in reverse for more than 45 seconds.
- Machine is not within 45 degrees of desired track.

HC94949,000073A -19-06FEB15-1/1

Stop Codes–AutoTrac™ Universal

Alarm Text	Fault Condition Fault Description
ATU Temperature	AutoTrac™ Universal (ATU) temperature is out of range. Operating range is -35 to 100 °C. Stop operation and wait until temperature is between range. If problem persists, contact your John Deere dealer.
Acquiring Line	ATU is active and in line acquisition mode.
AutoTrac™ Not Enabled	ATU is ready to enable. Select steer icon to enable.
Heading Error Too Large	Heading error is out of range.
Invalid Display Messages	Ensure correct display settings (primary and auxiliary).
Invalid Display Settings	Parallel Tracking™ parameters are not set.
Invalid Gear	Incompatible gear selected.
Invalid GPS Signal	Loss of global positioning system (GPS) dual frequency.
Invalid SSU Activation Code	Activation code is incorrect.
Invalid SSU Voltage	Steering control unit (SSU) voltage is not stable.
No AutoTrac™ Activation	Go to StellarSupport.com and obtain activation code for GreenStar™ Display for ATU operation.
No TCM Corrections	Install and enable terrain compensation module (TCM).
Off-Track Error Too Large	Off-track error is out of range.
Out of Seat	Operator presence switch is open, or operator is out of seat.
Resume Switch Error	SSU is receiving bad data from resume switch.
Reverse Timeout	ATU has been operating in reverse for more than 45 seconds.
Sharp Curve	Curve track path is too sharp. Steering wheel cannot turn fast enough to follow this track.
Speed Too Fast	Machine speed is not within specified AutoTrac™ activation or deactivation speed limit.
Speed Too Slow	Machine speed is not within specified AutoTrac™ activation or deactivation speed limit.
SSU Diagnostic Mode	ATU controller is in diagnostic mode. Complete diagnostic mode before attempting AutoTrac™ activation.
Steering Wheel Moved	Manual movement of steering wheel deactivates AutoTrac™.
Track Number Changed	Guidance system has switched to a different guidance line.
Tracking On Line	ATU is active and has acquired line.
Vehicle Not Traveling in a Forward Direction	Machine not traveling correct direction.
Unknown Direction	SSU direction is not determined.

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 Parallel Tracking is a trademark of Deere & Company
 GreenStar is a trademark of Deere & Company

HC94949,0000618 -19-17DEC14-1/1

Guidance Warnings and Information—AutoTrac™ Universal

Warnings	
Alarm Text	Fault Condition Fault Description
SSU Communication Error	No communication with machine steering control unit (SSU). Check machine for diagnostic codes and contact your John Deere dealer. <i>NOTE: It is normal for lost communication during reprogramming. Do not remove power during reprogramming.</i>
Turn Predictor Turned On	Turn predictor is turned ON. Use check box to turn it OFF.
AutoTrac™ deactivated	AutoTrac™ system deactivates when operator is out of seat for more than 5 seconds.
Automatic Guidance System Detected	Activating a guidance system on roadways may cause loss of vehicle control. To avoid death or serious injury, disable the guidance system before entering roadways.
Data Card Problem!	Insert data card with door closed to use GreenStar™ 2 2600 Display.
No Setup Data!	Setup data for GreenStar™ application could not be found on data card. GreenStar™ application is not available until a data card with setup data is inserted in GS2 2600 Display.
AutoTrac™ SSU Software Incompatible	See your John Deere dealer for SSU update.
Communication Error	Communication problem with control unit. Check connections to control unit.
GPS Communication Problem	No communication with GPS receiver. Check connections at GPS receiver.
Tracking Inaccurate	GPS receiver must be set to 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 can continue recording or clear current boundary and start recording again.
Activation Error	Invalid activation code. Please reenter activation code.
Invalid Filter	Based on the totals type selected, all fields that are required have not been filled out.
Flags of Same Selection	Flags of the same name and mode are selected.
Name Already Exists	Name entered already exists in this list. Enter a new name.

INFO	
Alarm Text	Fault Condition Fault Description
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.
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 or SF3 corrections are turned on. Turn SF2 or SF3 corrections off to operate AutoTrac™.
License Problem	No license available for the selected tracking mode. Previous tracking mode is 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 circle.
Circle Definition Problem	Communication with GPS receiver was lost during circle definition. Redefine circle once communication has been re-established.
Circle Definition Problem	Center point is too far. Select another center point.
AB Line Definition Problem	There was an internal error during AB line definition. Redefine AB line.
AB Line Definition Problem	A timeout occurred during AB line definition. Redefine AB line.
AB Line Definition Problem	A and B points of AB line are too close. Perform operation again.
Loss of GPS While Recording Boundary	GPS has been lost while recording boundary. Point logging resumes when GPS signal returns. This can 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 unload data to USB drive.
Low Memory	Low memory available for curve track. Unload and cleanup data card or unload data to USB drive.

Continued on next page

HC94949,0000A06 -19-30AUG16-1/2

Troubleshooting

No Memory	No memory available for straight track. Unload and cleanup data card or unload data to USB drive.
No Memory	No memory available for circle track. Unload and cleanup data card or unload data to USB drive.
Circle Definition Problem	The distance from the machine to center point is greater than 1.6 km (1 mi.). 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	RS232 control unit model selected is incorrect. Please verify and reenter manufacturer and model number.
Prescription Error	Control unit is not set up to accept prescriptions.
Prescription Error	Control unit is set up to accept prescriptions. No control unit prescription has been selected.
Prescription Error	Prescription rate is out of control unit range.
Control unit Unit of Measure Error	Control unit only operates when using metric units.
Control unit Unit of Measure Error	Control unit only operates when using English (US) units.
Control unit Unit of Measure Error	Control unit only operates when using metric or English (US) units.
Control unit Operation Error	Invalid operation selected for control unit.
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	Control unit does not support selected prescription.

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StarFire is a trademark of Deere & Company

HC94949,0000A06 -19-30AUG16-2/2

Trouble Code Warnings—Guidance

Alarm Text	Fault Condition Fault Description
The operator is responsible for collision avoidance. Turn AutoTrac™ OFF before entering roadways.	Issued at power up when a steering control unit (SSU) is detected, and AutoTrac™ is activated on display (requires AutoTrac™ capable SSU).
No communication with vehicle steering control unit (SSU). Check vehicle for diagnostic codes and contact your John Deere Dealer.	Loss of SSU communication for more than 1 second.
Gap in Guidance Path	Within 5 s away of a gap in curved track data.
Approaching Sharp Curve	Within 5 s away from a curve of more than 30° between consecutive segments.
Turn predictor is turned ON. Uncheck the box to turn it OFF.	The operator leaves the seat for more than 7 seconds while in a tracking mode that supports turn predictor and turn predictor is turned ON (requires valid SSU, AutoTrac™ activation, and seat switch).
AutoTrac™ SF1 license cannot operate while SF2 or SF3 corrections are turned on. Turn SF2 or SF3 corrections off to operate AutoTrac™.	SF1 AutoTrac™ activation with SF2 or SF3 corrections turned on.
AutoTrac™ SF1 license cannot operate with current StarFire™ software. Update StarFire™ software to operate AutoTrac™.	SF1 AutoTrac™ activation with old StarFire™ software.
No License available for the selected tracking mode. Defaulting to previous tracking mode.	The operator attempts to switch to a tracking mode for which there is no valid license available.
No communication with GPS receiver. Check connection at GPS receiver and perform operation again.	The operator attempts to perform an operation that requires a GPS signal (selects SetA, SetB, Curve Track recording, or Circle Track recording buttons).
Communication with GPS receiver was lost during circle definition. Redefine the circle once GPS communication has been re-established.	The GPS signal is lost during definition of a circle using the driving method.
A and B points of the AB Line are too close. Must have 10 m (30 ft) between point A and B. Perform operation again.	The operator inputs A and B points that are too close to each other while defining an AB line (can occur using A+B, and latitude and longitude methods).
The distance from the machine to the center point is greater than 1.6 km (1 mi). Select another center point or drive another circle.	The operator defines a circle with the center point greater than 1.6 km (1 mi) from the machine location. This warning can also occur if the operator selects a circle with a center point that is far away.
A timeout occurred during AB Line definition. Redefine AB Line.	Operator has not reached the minimum Auto B distance within 45 s during AB line definition.
Curve Track recording in progress. Cannot perform operation until Curve Track recording is turned off.	The operator attempts to change the tracking mode while recording in curve track.
Clearing all shifts restores original guidance track locations for the current field. Are you sure you want to proceed?	Select clear all shifts button.
AutoTrac™ has detected a compatible SSU (Machine Controller) version. Contact your John Deere Dealer to obtain the latest software updates for your SSU in order to operate AutoTrac™.	Incompatible AutoTrac™ SSU software. AutoTrac™ deactivated (SSU exit code).

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HC94949,0000A07 -19-30AUG16-1/1

ATU Diagnostic Trouble Code Messages GS3 2630, GS2 2600, and GS2 2100 Displays

Unknown Direction of Travel

The system was not able to detect the machine direction of travel. Select your direction of travel.

If AutoTrac™ Universal cannot detect direction once operator turns steering on, a message asks operator to choose direction of travel.

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SSU Communication Error

No communication with machine steering control unit (SSU). Check machine for diagnostic codes and contact your John Deere Dealer.

HC94949,0000719 -19-27JAN15-1/1

Alert Pages—Original GreenStar™ Display

Alert pages and alarms provide operator messages to monitor system operational problems. Each page displays a diagnostic trouble code (DTC) on upper right corner (A), keyword message (B), and text message (C) (see DTC lists for specific operational problem and recommended corrective action).

Each DTC has a priority. Priority of DTC is by relevant icon displayed:

- Icon (D) belongs to full page stop alert. A full page stop overrides any other display function in progress. Audible alert sounds at highest level.

NOTE: When stop page appears, corrective action must be taken before continuing operation. Run, setup, and info buttons are not active during this alert.

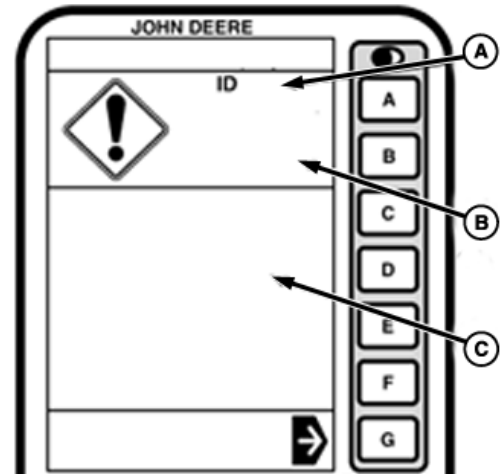
- Icon (E) belongs to full page warning alert. Warning alerts are displayed at bottom of run pages or as a full page alert if display is not on a run page.

NOTE: Run, setup, and info buttons are not active during this alert.

If a warning or info alert is in progress when a full page stop occurs, alert is interrupted and full page stop alarm sounds.

NOTE: When warning page alert appears, corrective action should be taken before continuing operation.

- Icon (F) belongs to full page info alert.



Original GreenStar™ Display



Alert Page Icons

A—Diagnostic Trouble Code (DTC)
B—Keyword Message
C—Text Message

D—Full Page Stop Icon
E—Full Page Warning Icon
F—Full Page Info Icon

PC20766—UN—02FEB15

PC20767—UN—02FEB15

HC94949,0000742 -19-06FEB15-1/1

Diagnostic Trouble Codes—Original GreenStar™ Display

Trouble Code	Key Word Strings	Text Strings	Description or Reason	Comments
100	PC Card Error	PC Data Card Error. An error has been detected. Error code is 02-02-00. Please check PC Card.	PC Data Card or KeyCard has a problem	Cycle power. If trouble code 100 appears again then contact your dealer
155	PC Card Warning	KeyCard has been removed. Please reinsert KeyCard.	KeyCard is not accessed by Mobile Processor	Check KeyCard insertion
200	CAN Bus Problem	The following Device(s) are no longer communicating with display. Check indicated device(s) and CAN Bus wiring.	Communication problem between display and one or several other devices.	Contact your dealer
201	CAN Bus Problem	Two Devices are requesting same RUN screen section. Perform RUN PAGE LAYOUT to correct conflict.	Display conflict.	Perform RUN PAGE LAYOUT
210	CAN Bus Problem	Too many devices are attempting to communicate with display. Remove 1 or more devices.	Attempted to logon more than 8 devices to CAN Bus.	Disconnect unnecessary device
211	CAN Bus Problem	CAN Bus communications overload. Reset display or turn power off and then back on.	Display keys pushed too rapidly.	Cycle power
213	Internal error	A failure has been detected in the internal memory of the display.	Internal problem with display.	Cycle power. If trouble code 213 appears again then replace display.
230	Display Address Change	You are about to change address of display. Selection of wrong address causes loss of communication with implements.	Device address change.	Make sure to set Display to PRIMARY display address
232	CAN Bus Problem	No Primary GreenStar™ Display detected. All systems require a primary display.	Wrong Display address used (that is, AUX1).	Set Display to PRIMARY display address
233	Language Selection Problem	The following device(s) do not support selected language. They continue to use previously selected language.	The system shows which component(s) do not have language loaded that is selected.	Load all necessary languages to each component of system, then select desired system language
259	KeyCard Warning	Product reprogramming Error. A PRP file specified in a BIN file is missing on card.	Program error while programming from Parallel Tracking system to Yield Mapping System using SETUP/KeyCard/YIELD MAPPING sequence.	Use INFO/KeyCard/PROG. TARGET sequence to reprogrammed system to Yield Mapping
301	Warning	StarFire™ Network Problem. Please stand by.	Receiver is not receiving correction messages from StarFire network.	Contact your dealer
302	Warning	Receiver Not Receiving on Alternate Frequency.	The receiver is not locked onto a differential signal	Switch to default frequency
303	Warning	GPS Corrections License has Expired.	Renew License	Renew license or use grace periods, if available
304	Warning	Corrected GPS Position is not Available.	Differential correction has been lost	Wait until differential correction has been recovered
305	Warning	GPS Position is not Available.	Signal is lost	Wait until signal has been recovered
306	Warning	Update StarFire™ GPS Software. Please stand by.	New StarFire software loading process	Wait until programming has completed

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HC94949,000057E -19-19NOV14-1/1

Diagnostic Trouble Codes—Original GreenStar™ Display

Trouble Code	Problem	Description or Reason	Comments
20	Implement disconnected.	A previously logged on implement has been disconnected from CAN Bus.	Check all component connectors for proper engagement.
21	Display conflict.	An implement has attempted to write to a RUN page display section it has not previously been allocated.	Make a RUN Page Layout
30	Too many devices on CAN Bus.	Attempted to log on more than 8 implements to CAN Bus.	Disconnect unnecessary implements.
31	Display overload.	Display keys pushed too rapidly.	Cycle power.
33	Memory failure.	Internal problem with display.	Cycle power. If trouble code 33 appears again then replace display.
40	No GPS Communication	Loss of communication with position receiver.	Check connection with position receiver. Contact your dealer.
41	No GPS Differential	Loss of differential signal.	Contact your dealer.
44	No KeyCard Installed	No KeyCard installed in mobile processor	Insert a KeyCard in mobile processor.
45	1 Hz GPS Operation	1 Hz GPS Operation	
46	No GPS Signal	Position receiver is not receiving a GPS signal.	Signal has been lost or position receiver is not functioning. Make sure that position receiver is not blocked.
47	Display is not functioning	Device address has been changed.	See your dealer.
48		Device Address changed	Set device address to auto.
49		No primary display address on CAN Bus.	Set display address to primary.
50	No steering control unit (SSU) Communication	Loss of CCD Communication to steering control unit	See your dealer.
51		Operator alertness check.	
52		More than one display with a primary address on bus.	Set parallel tracking display to auxiliary.
53		An AUX address detected CCD active. CCD is only active on the primary display.	See your dealer.
54		Auto-detect layer disagrees with operator selected CAN layer.	Set display CAN Bus layer to auto.
60	FLASH Erase failed.	Erasing of Curve track memory failed	See your dealer.
61	FLASH write failed	A write to Curve track memory failed	See your dealer.
110	CAN Bus problem.	Communication problem with CAN Bus.	Check CAN Bus wiring harness and terminators. Contact your dealer.
111	CCD bus problem.	CCD bus hardware or wiring errors.	Check CCD wiring between digital tach and display. Contact your dealer
112	Display conflict RUN Page Layout.	Two or more devices are requesting same screen allocation.	Make a RUN Page Layout
115	CAN Bus address conflict	Two or more devices are requesting same CAN address.	See your dealer.
126	AutoTrac™ disabled.	Using a version of mobile processor application code that is not using secure CAN.	See your dealer.

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HC94949,000057F -19-19NOV14-1/1

Original GreenStar™ Display

Symptom	Problem	Solution
Display is blank.	No power.	Check harness connections at display.
	Out of contrast or insufficient backlighting.	Adjust contrast.
		Change backlighting level.
Display audible alarm does not sound.	Possible failed alarm.	See your John Deere dealer.
Display is locked up on a certain page.	Communication problem.	Turn key switch OFF and ON.
Dual display is not operating properly.	Incorrect display address.	Make sure Parallel Tracking display is set to auxiliary 1 and main display is set to primary.
		If using a single display make sure that address is set to primary.
Parallel Tracking system is slow or sluggish.	Incorrect update rate.	Make sure receiver is set to 5 Hz.
Display does not work properly.	Incorrect display software.	See your John Deere dealer for display upgrade kit PF90091.

HC94949,0000580 -19-07AUG14-1/1

Mobile Processor–Original GreenStar™ Display

Symptom	Problem	Solution
KeyCard does not fit in slot.	KeyCard is backward.	Align arrow on KeyCard with arrow on mobile processor.
System locks up during reprogramming.	Incorrect message from display.	Turn key switch off. Disconnect wiring harness from mobile processor. Turn on key switch and reconnect mobile processor wiring harness.
		Reprogramming continues.

HC94949,0000581 -19-29OCT14-1/1

Position Receiver—Original GreenStar™ Display

Symptom	Problem	Solution
No differential correction.	Differential license has expired.	Contact GreenStar™ software support. To acquire latest version of software, visit www.StellarSupport.com or contact your John Deere dealer.
	Interference with two-way radio.	Relocate two-way radio antenna at least 2 m (6.5 ft.) from position receiver.

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HC94949,0000582 -19-14AUG14-1/1

Fault Codes—Original GreenStar™ Display

IMPORTANT: To determine if fault code conditions are still active, manually clear all fault codes and see if any fault codes appear.

Stored fault codes indicate that a problem has been detected. Stored fault codes remain in memory until they are cleared by the operator. It is possible that fault condition is no longer active.

Fault Code	Description	Problem	Solution
956.16	Roll Sensor out of range	Internal Roll Sensor is out of normal operating range. Terrain compensation module (TCM) cannot correct position for roll angles.	Contact your John Deere dealer.
2028.12	No StarFire™ communication	TCM has lost communication with receiver	Check TCM harness to ensure proper connection between receiver and TCM. Check CAN voltages. Contact your John Deere dealer.
2146.13	TCM not calibrated	TCM has not been calibrated for this machine. Please go to SETUP - TCM screen to calibrate.	See CALIBRATE in TCM or StarFire™ iTC section.
2146.14	Temp Sensor out of range	Internal Temperature Sensor is out of normal operating range.	Contact your John Deere dealer.
523309.16	Yaw Sensor out of range	Internal Yaw Sensor is out of normal operating range. TCM cannot compensate for terrain changes.	Contact your John Deere dealer.
523309.7	Yaw Sensor not responding	Internal Yaw Sensor is not responding. TCM cannot compensate for terrain changes.	Contact your John Deere dealer.
523319.18	Low switched voltage	TCM detected low voltage on key switched power supply.	Check switched battery voltage, check grounds, check harness. Contact dealer if problem persists.
523572.31	Unsafe Shutdown-parameters not stored	TCM was unable to save setup changes when key was turned off. Must have unswitched battery voltage after key off to save changes.	With the key off, check unswitched battery voltage at TCM. Check harness. Contact John Deere dealer.
523441.31	No StarFire™ Height setting	StarFire™ Height setting has not been entered for this machine. Go to SETUP - TCM screen.	See HEIGHT in TCM or StarFire™ iTC section.
523773.3	StarFire™ CAN voltage out of range	StarFire™ CAN High signal voltage is out of range high.	Check TCM harness to ensure proper connection between receiver and TCM. Check CAN StarFire™ voltages. Contact your John Deere dealer.
523773.4	StarFire™ CAN voltage out of range	StarFire™ CAN High signal voltage is out of range low.	Check TCM harness to ensure proper connection between Receiver and TCM. Check CAN voltages. Contact your John Deere dealer.
523774.3	StarFire™ CAN voltage out of range	StarFire™ CAN Low signal voltage is out of range high.	Check TCM harness to ensure proper connection between receiver and TCM. Check CAN voltages. Contact dealer.
523774.4	StarFire™ CAN voltage out of range	StarFire™ CAN Low signal voltage is out of range low.	Check TCM harness to ensure proper connection between receiver and TCM. Check CAN voltage. Contact your John Deere dealer.
523572.31	Unsafe Shutdown-parameters not stored	TCM was unable to save setup changes when key was turned off. Must have unswitched battery voltage after key off to save changes.	With the key off, check unswitched battery voltage at TCM. Check harness. Contact John Deere dealer.

Continued on next page

HC94949,0000583 -19-20NOV14-1/2

Troubleshooting

Fault Code	Description	Problem	Solution
523792.1	No unswitched voltage	TCM has detected no voltage on unswitched battery power supply. TCM is unable to save setup changes when key is turned off.	Check unswitched battery voltage, check grounds, check fuses. Contact your John Deere dealer.
523792.18	Low unswitched voltage	TCM has detected low voltage on unswitched battery power supply.	Check unswitched battery voltage, check grounds, check harness. Contact dealer if problem persists.

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HC94949,0000583 -19-20NOV14-2/2

Warning Screens—Original GreenStar™ Display

Warning Screens

Warning screens and alarms alert operator to monitor system operational problems.

NOTE: When warning screens appear, take corrective action before continuing operation.

Warning and alarms do NOT prevent machine from starting, operating, or recording data.

Each warning screen displays a specific operational problem and recommended corrective action.

Full Page Warning Screens

NOTE: The RUN, SETUP, and INFO keys are not active while full page warning screen is present.

Full page warning overrides any other display function in progress.

Audible alarm sound at highest level. If a CAUTION or ADVISORY alarm is in progress when a full page warning occurs, that alarm is interrupted and full page warning alarm sounds.

Full Page Caution Screens

Cautions are displayed at bottom of RUN screens or as a full screen if not on a RUN screen.

Symptom	Problem	Solution
KeyCard error warning screen.	Mobile processor does not recognize KeyCard in slot.	Verify that KeyCard is securely in slot and black eject button is popped up.
Communication problem warning screen.	Data network communication problem.	Cycle power, if problem persists see your John Deere dealer.
Program not found warning screen.	Programs are not found on KeyCard.	Verify that programs are in correct directory on KeyCard.
No communication screen.	Position receiver communication problem.	Check all connections indicated on screen. Cycle power, if problem persists see your John Deere dealer.
Battery voltage low.	Battery voltage too low at mobile processor.	Check battery voltage. Check machine fuses. Replace as needed. If problem persists, see your John Deere dealer.
Battery voltage low at mobile processor.	Battery voltage too low.	Check battery voltage. Check machine fuses. Replace as needed. Check system ground. If problem persists, see your John Deere dealer.

HC94949,0000584 -19-20NOV14-1/1

Maintenance

Preseason Checklist

- ☐ See Operator's Manual found on manuals.deere.com, or see your John Deere dealer for downloadable versions.
- ☐ Update software. Refer to StellarSupport.com for latest software.
 - Display
 - Receiver
 - AutoTrac™ Universal
- ☐ Inspect machine steering linkage and steering components for wear. (See machine Operator's Manual.)
- ☐ Inspect wiring harness for wear and damage around pinch points, corners, edges, and harness support locations. Repair as necessary.

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- ☐ Inspect wiring harness at connectors for wear on exposed wires. Repair as necessary.
- ☐ Inspect connector seals and latching mechanisms. Repair as necessary.
- ☐ Inspect connector pins for wear, debris, and corrosion. Clean and (or) repair as necessary.
 - Receivers
 - Display
 - AutoTrac™ Universal
- ☐ Calibrate receiver terrain compensation module (TCM).
- ☐ Operate AutoTrac™ Universal and adjust advanced AutoTrac™ settings based on field conditions.

HC94949,000052B -19-19DEC14-1/1

Post-season Checklist

- ☐ Inspect wiring harness for wear and damage around pinch points, corners, edges, and harness support locations. Repair as necessary.
- ☐ Inspect wiring harness at connectors for wear on exposed wires. Repair as necessary.
- ☐ Inspect connector seals and latching mechanisms. Repair as necessary.

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- ☐ Inspect connector pins for wear, debris, and corrosion. Clean and (or) repair as necessary.
 - Receivers
 - Display
 - AutoTrac™ Universal

HC94949,000052C -19-19NOV14-1/1

Daily Checklist

- ☐ Inspect machine steering linkage and steering components for wear. (See machine Operator's Manual.)
- ☐ Inspect wiring harness for wear and damage around pinch points, corners, edges, and harness support locations. Repair as necessary.

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- ☐ Inspect wiring harness at connectors for wear on exposed wires. Repair as necessary.
- ☐ Inspect mounting hardware. Retorque as necessary.
 - Receivers
 - Display
 - AutoTrac™ Universal anti-rotation bracket

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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

