



DCY

# iSteer

## OPERATOR'S MANUAL

### iSteer

OMPFP10862 ISSUE K0 (ENGLISH)

#### CALIFORNIA

#### Proposition 65 Warning

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

If this product contains a gasoline engine:

### **WARNING**

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

The State of California requires the above two warnings.

Additional Proposition 65 Warnings can be found in this manual.

**John Deere Ag Management Solutions**

(This manual replaces OMPC21748)

North American Edition

LITHO IN U.S.A.



OMPFP10862

# Introduction

## **www.StellarSupport.com**

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

KR43067,00004CF -19-19NOV09-1/1

## **Foreword**

WELCOME TO THE GreenStar™ System offered by John Deere.

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

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

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

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

WRITE PRODUCT IDENTIFICATION NUMBERS (P.I.N.) in the Specification or Identification Numbers section.

*GreenStar is a trademark of Deere & Company*

Accurately record all the numbers to help in tracing the components should it be stolen. Your dealer also needs these numbers when you order parts. File the identification numbers in a secure place off the machine.

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

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

KR43067,0000471 -19-10SEP09-1/1

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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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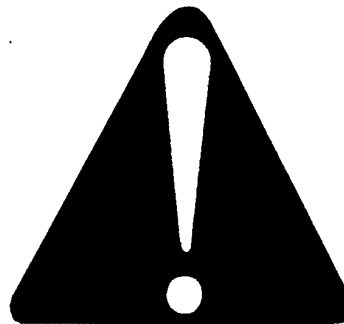


# Safety

## 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.



T81389 —UN—07DEC88

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

## Understand Signal Words

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

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



TS187 —19—30SEP88

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

## Follow Safety Instructions

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

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

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

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



TS201 —UN—23AUG88

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

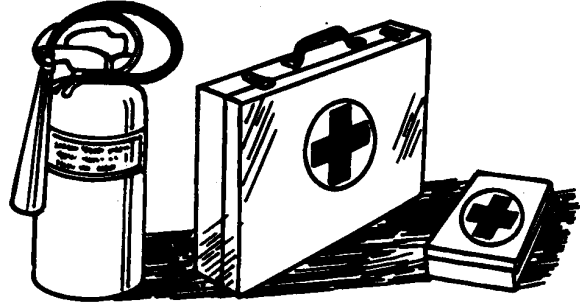
DX,READ -19-16JUN09-1/1

### Prepare for Emergencies

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



TS291 —UN—23AUG88

DX,FIRE2 -19-03MAR93-1/1

### Practice Safe Maintenance

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

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

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

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

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

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



TS218 —UN—23AUG88

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

### Handle Electronic Components and Brackets Safely

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

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

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



T S249 —UN—23AUG88

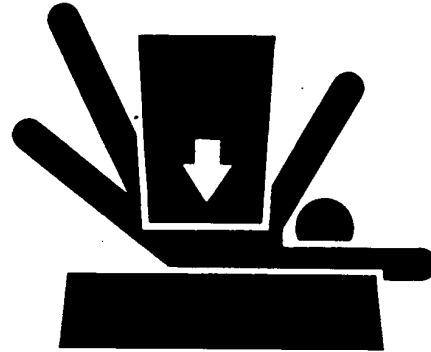
DX,WWW,RECEIVER -19-24AUG10-1/1

### Support Machine Properly

Always lower the attachment or implement to the ground before you work on the machine. If the work requires that the machine or attachment be lifted, provide secure support for them. If left in a raised position, hydraulically supported devices can settle or leak down.

Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load. Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.

When implements or attachments are used with a machine, always follow safety precautions listed in the implement or attachment operator's manual.



T S229 —UN—23AUG88

DX,LOWER -19-24FEB00-1/1

### Operate Guidance Systems Safely

Do not use AutoTrac system on roadways.

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

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

*AutoTrac is a trademark of Deere & Company*

- Verify the machine, implement, and iSteer are set up correctly. Verify accurate boundaries have been defined.
- Remain alert and pay attention to surrounding environment.
- Take control of steering wheel when necessary to avoid field hazards, bystanders, equipment, or other obstacles.
- Stop operation if poor visibility conditions impair your ability to operate the machine, identify people or see obstacles in machine path.

KR43067,000045B -19-19AUG09-1/1

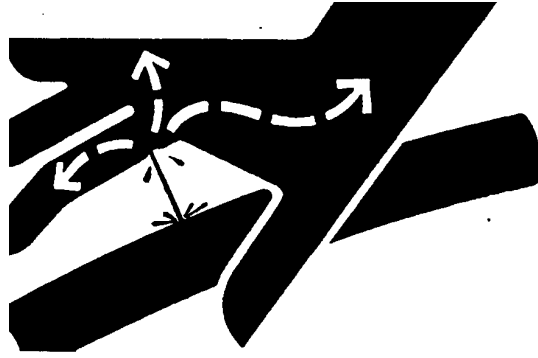
### Avoid High-Pressure Fluids

Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available in English from Deere & Company Medical Department in



Moline, Illinois, U.S.A., by calling 1-800-822-8262 or +1 309-748-5636.

X9811—UN—23AUG88

DX,FLUID -19-20AUG09-1/1

# Introduction

## Theory of Operation

iSteer is an active implement guidance system which allows a symmetric implement and tractor to be independently steered onto a common track. It does this with a StarFire™ GPS receiver mounted on both the tractor and implement. By knowing the location of the tractor and implement, iSteer enables operators to automate the steering along a preset line. This automation allows operators to focus more on the equipment and task at hand and less on the mechanics of operating the machine.

iSteer guidance can be used for pull-type and integral implements.

*NOTE: iSteer performance is limited to the ability of the steering system used. Use the proper steering system for your conditions.*

*StarFire is a trademark of Deere & Company*

*NOTE: iSteer will operate in reverse for 45 seconds. After 45 seconds, AutoTrac and iSteer will both disengage, removing their control of tractor and implement.*

**IMPORTANT: Performance of reverse operation is limited by the characteristics of each implement steering system. In most cases, reverse operation is not recommended at this time. To avoid performance issues or possible damage to machines, know and understand the limitations of your system before attempting to use iSteer in reverse.**

KR43067,000042B -19-17NOV10-1/1

## Activating iSteer

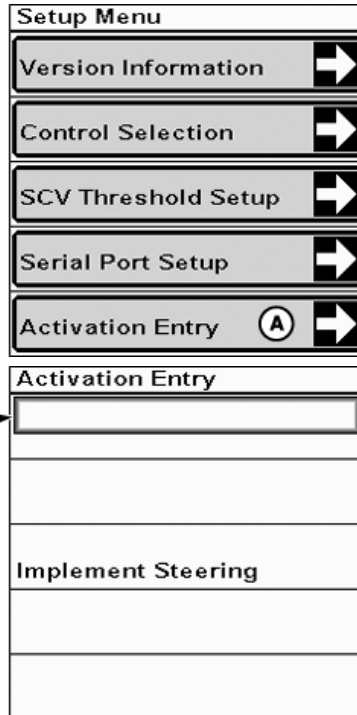
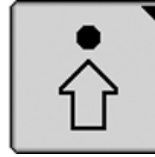
iSteer controllers require a 26 digit activation code once installed. Use the following steps to activate controller.

1. Visit [www.StellarSupport.com](http://www.StellarSupport.com) or call 1-888-953-3373
2. Using the controller serial number and the COMAR order number, a 26 digit activation code will be generated.
3. On the display, select APPLICATION CONTROLLER from the main menu.
4. Select SETUP softkey.
5. Select ACTIVATION ENTRY (A) button.
6. Enter 26 digit code (B).

PC13071 —UN—16NOV10



PC12961 —UN—01NOV10



PC12965 —UN—26OCT10

PC12966 —UN—26OCT10

CZ76372,00001E7 -19-16NOV10-1/1

## To Make iSteer Operate

### iSteer Functional Requirements:

#### Hardware:

- GreenStar 2600 or 2630 display console mounted in machine.
- John Deere StarFire GPS receiver mounted on tractor.
- John Deere StarFire GPS receiver and bracket mounted on implement.
- iSteer controller installed on tractor.
- Implement-mounted steering angle sensor.

*NOTE: Wheel angle Sensor is not required for some implement shifting applications.*

- Hydraulic steering mechanism mounted on implement.
- Various harnesses associated with power supply, controller integration, sensor communication, and steering control.

#### Software:

- iSteer operation requires both receivers to have an RTK signal level.

- Updated StarFire receiver software (iSteer only).

*NOTE: When updating the receiver software, only one receiver can be connected to the CAN bus. Software updates for both receivers must be performed at the vehicle receiver location.*

*It is not possible to reprogram an implement receiver using a Original GreenStar Display.*

- Machine receiver setup including TCM calibration.
- Implement receiver setup including TCM calibration.
- AutoTrac activation on display (not required to run system manually or to run in Follow Mode).
- AutoTrac and iSteer setup complete (incomplete AutoTrac setup would prevent operator from activating guidance).
- Other setup complete including Client, Farm, Field, etc.

*NOTE: Currently, iSteer does not support:*

- SF1 and SF2 Signal Level

KR43067,000042E -19-11NOV10-1/1

## Machine Compatibility

John Deere Tractor Model	Features	Additional Requirements
7030 Series	Large frame with MFWD	
8X00 Series	Wheeled and tracked	Updated software for Tractor Hydraulic Controller
8010 Series	Wheeled and tracked	Updated software for Tractor Hydraulic Controller
8020 Series	Wheeled and tracked with MFWD	
8030 Series	Wheeled and tracked with MFWD	
9X00 Series		Updated software for Tractor Hydraulic Controller
9020 Series	Wheeled and tracked	
9030 Series	Wheeled and tracked	
8R Series	Wheeled and tracked	

The guidance portion of iSteer is compatible on vehicles installed with AutoTrac Universal or AutoTrac Controller.

Though, vehicle must have compatible hydraulic controls for iSteer to function.

KR43067,0000473 -19-16NOV10-1/1

## Replacing Eproms

On some early models of 8000/9000 Series tractors it will be necessary to replace or upgrade the tractor hydraulic controller.

Contact your John Deere dealer for assistance with early model machines.

*NOTE: To replace eproms in your tractor control unit, making it compatible with iSteer, see your John Deere dealer.*

*8020/9020 Series tractors are factory compatible with iSteer.*

KR43067,000046A -19-14OCT09-1/1

# System Components

## Monitor and Control System

Because the monitor and control systems are an integral part of the machine, operations involving displays and electronic controllers are shown throughout the manual, in their respective sections.

**Monitor portion of the system:** takes signals from the wheel angle sensors along with relevant implement GPS information and displays the activity on the cab-mounted console. The active display informs the operator of

machine activities before they can be seen from the operator seat.

**Control portion of the system:** used to steer implement along the desired guidance line. Control system continually adjusts the implement steering cylinder to maintain zero off-track error. A continuous system adjustment compensates for external disturbances to the system that would normally cause implement to track off the desired path.

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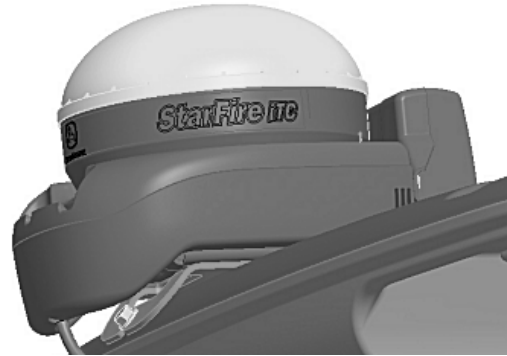
## StarFire GPS Receiver

iSteer requires two GPS receivers for operation.

- One John Deere StarFire GPS receiver must be mounted and operating on the tractor with a second receiver located on the implement.
- Both receivers must use an RTK signal level. Tractor receiver RTK (iTC or 3000) and implement receiver RTK (iTC or 3000).

*NOTE: For optimal performance, both receivers need to be the same model.*

- Implement receiver should not be mounted higher than 4.0 m (13.1 ft.) above ground level.
- Implement receiver must be connected to tractor's implement CAN bus through ISO connector.



PC12210—UN—14AUG09

KR43067,000047F -19-16NOV10-1/1

## GreenStar Display

Operator is informed of machine activity by observing display screen.

- Machine functions are selected or turned ON/OFF using touchscreen display or display controls.
- Display can be set to English or Metric units of measure.
- Operator entries must be made in same units of measure as display readout.
- Tractor Radar setting, units of measure and language selection are stored within display console.

*NOTE: If new or different display console is used with machine, tractor radar setting must be retrieved from old display and manually entered into new display, or recalibrated and stored.*

*Units of measure and language selection must be reset on new display if different than factory defaults.*



GreenStar 2 2600 Display

PC12187—UN—06AUG09

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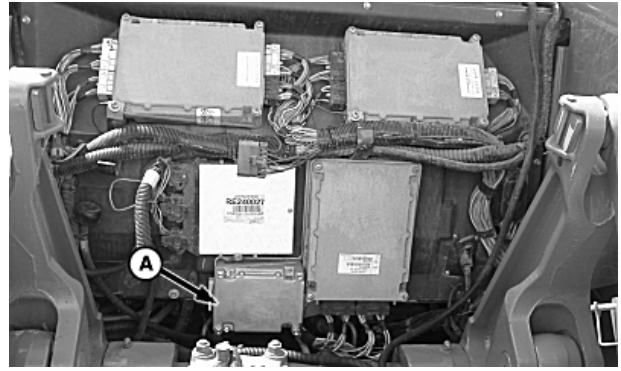
### Implement Controller

The implement controller (A) is located on rear of tractor, under cab rear cover.

*NOTE: Controller location and alignment may differ for each model of tractor. Picture is for general reference only.*

The implement controller contains:

- *Display Software* - used by the cab-mounted console
- *Microprocessor* - translates signals from wheel angle sensors into information displayed on the console
  - uses wheel angle sensor signals to control valve drivers, responsible for controlling current to proportional valve
- *Non-volatile Memory* - factory defaults and operator entered settings are stored here



PC12186 —UN—07OCT09

A—Controller

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### Wheel Angle Sensor

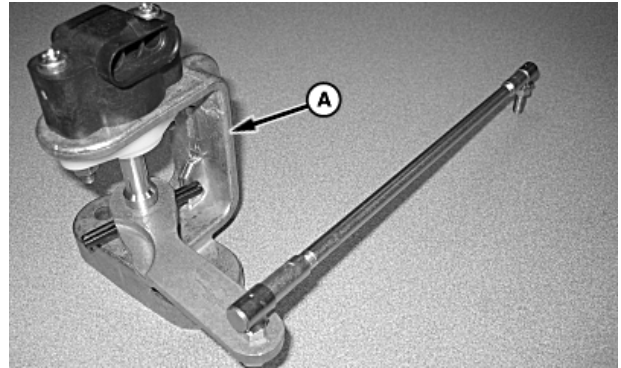
At an indicative location for the implement steering system, a potentiometer (A) is used as a wheel angle sensor.

As the steering control cylinder extends or retracts, the feedback signal from the potentiometer changes to reflect the position of the implement steering mechanism. This signal is used as an input to control wheel angle, and feedback for tracking and accumulated sensitivities which are used to fine tune steering aggression.

*NOTE: Some implement steering devices have a wheel sensor incorporated into the equipment.*

*Wheel angle sensor must be mounted and calibrated so its range of motion is aligned and symmetrical. Failure to properly mount sensor will result in poor performance. Refer to sensor installation instructions for proper procedure.*

*Verify hydraulic and mechanical steering linkage is properly adjusted per manufacturer's specifications. Refer to manufacturer's Operators Manual for your specific steering system.*



PC12344 —UN—19OCT09



PC12189 —UN—14OCT09

A—Potentiometer

KR43067,0000476 -19-19OCT09-1/1

# Setup

## Startup Requirements

PC13071 —UN—16NOV10

- StarFire RTK receivers installed and functioning on machine and implement.
- iSteer hardware installation complete.
- Updated to latest StarFire Receiver software.
- Machine receiver TCM calibration complete.
- Implement receiver setup (including offsets) and TCM calibration complete.
- AutoTrac setup complete and activated on display.



KR43067,0000479 -19-16NOV10-1/1

## Implement Receiver Lateral Offset

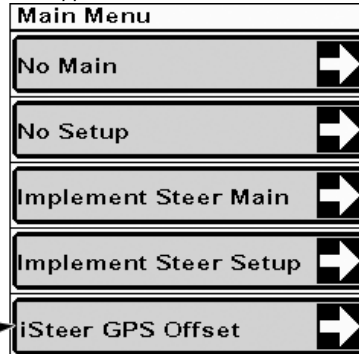
PC13072 —UN—16NOV10

On equipment where the implement receiver cannot be mounted in the center line of the implement, a Lateral Offset can be entered to account for the shifted location.

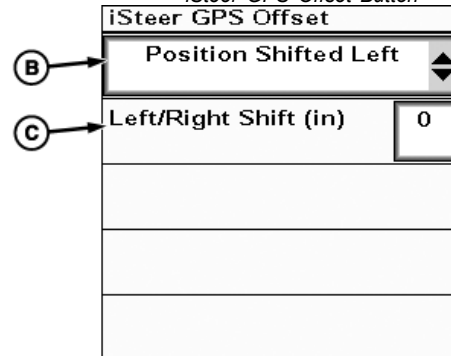
1. Select MAIN softkey.
2. Select iSTEER GPS OFFSET (A).
3. Select offset direction by choosing either POSITION SHIFTED RIGHT or POSITION SHIFTED LEFT from the drop-down (B).
4. Enter the distance from the receiver to the center line of the implement in the LEFT/RIGHT SHIFT box (C)



Application Controller Main Softkey



iSteer GPS Offset Button



iSteer GPS Offset Screen

PC12967 —UN—18NOV10

PC12968 —UN—18NOV10

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### SCV Control Assignments

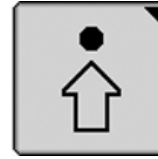
*NOTE: For ease of instruction, this manual will use SCV III for the iSteer system. Operator may choose to use SCV I if preferred.*

#### Allocate Control Type and GPS to SCV III:

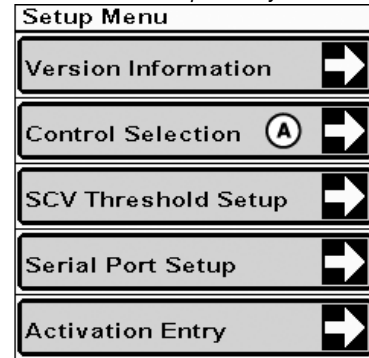
1. Select SETUP softkey
2. Select CONTROL SELECTION (A).
3. Under SCV3 Control Type, select *Implement Steering* from drop-down list (B).
4. SCV Control allocation is now complete. Select SETUP MENU (C).

*NOTE: If implement steers away from guidance line, hydraulic hoses to steering cylinder may be hooked up in reverse (see TROUBLESHOOTING section in this manual).*

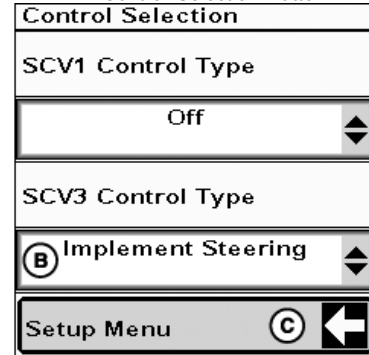
**A—CONTROL SELECTION Button**      **C—RETURN TO SETUP MENU Button**  
**B—SCV Selection Drop Down**



Setup Softkey



Control Selection Button



SCV Control Screen

## Implement Steering Calibration

Once SCV Control and GPS has been allocated, additional PAGES become available for iSteer setup.

**CAUTION:** Implement will move during calibration. Verify all people and obstructions are clear of immediate area during all procedures. Read and follow OPERATE GUIDANCE SYSTEMS SAFELY in SAFETY section prior to performing calibration.

### Calibrate implement wheel steering:

1. Select MAIN softkey
2. Select IMPLEMENT STEER SETUP (A).

*NOTE: The first two lines of this page are reserved for SCV1. The next two lines are reserved for SCV3.*

3. Manually move steered axle to the steered right limit and select SET MAX RIGHT POSITION (B).
4. Manually move steered axle to the steered left limit and select SET MAX LEFT POSITION (C).
5. Manually move steered axle to center position and select SET CENTER POSITION (D).

**IMPORTANT:** Center position setting is critical to accurate line acquisition and operation. Driving machine and implement forward before setting position may be required for proper calibration.

*NOTE: Desired voltage range from full left limit to right limit is 0.5 - 4.5 volts. Voltage when centered should be near 2.5 volts.*

*If voltage difference from either left to center or right to center movement totals less than 1 volt, wheel angle sensor may need to be repositioned to increase range of motion.*

Implement steering calibration is now complete.



Application Controller Main Softkey

Main Menu	
No Main	➔
No Setup	➔
Implement Steer Main	➔
Implement Steer Setup	➔
iSteer GPS Offset	➔

(A) →

Implement Steer Setup Button

Implement Steer Setup	
Wheel Angle	-1940
Sensor Voltage	0.0
Set Max Right Position	
Set Max Left Position	
Set Center Position	
Wheel Angle	1200
Sensitivity	

(B) →

(C) →

(D) →

Set Position Screen

- A—IMPLEMENT STEER SETUP Button
- B—SET MAX RIGHT POSITION Button
- C—SET MAX LEFT POSITION Button
- D—SET CENTER POSITION Button

PC12958 —UN—18NOV10

PC12959 —UN—27OCT10

## SCV Threshold Calibration

PC12961 —UN—01NOV10

**CAUTION:** To avoid serious injury, keep area around equipment clear. This procedure requires vehicle to move forward.

Implement will move during calibration. Read and follow **OPERATE GUIDANCE SYSTEMS SAFELY** in **SAFETY** section prior to performing calibration.

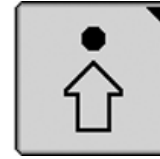
Each time iSteer is installed on a different tractor, an SCV Threshold Calibration should be performed. Without SCV Threshold Calibration, the steering mechanism may steer significantly faster in one direction, under steer, over steer, or not perform as expected due to hydraulic limitations. These factors will make it difficult for the controller to maintain an off-track error of 0.

**NOTE:** To calibrate the SCV Threshold, the vehicle must be slowly moving forward (greater than 0.5 kph) with selected SCV (SCV I or III) detented to "AC" or "AUTO", as displayed by SCV indicators. The implement **does not** need to be in the lowered (working) position for calibration.

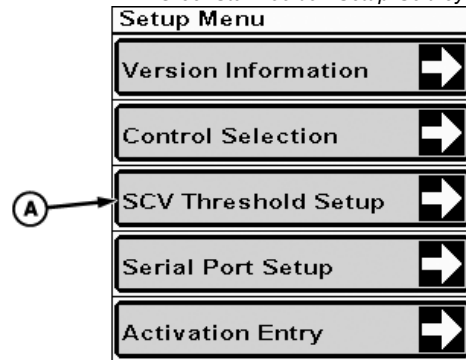
If vehicle is not moving faster than 0.5 kph, SCV control **will not** produce hydraulic flow.

### Calibrate SCV Thresholds

1. Select SETUP softkey.



GreenStar Toolbox Setup Softkey



SCV Threshold Setup Button

**A—SCV THRESHOLD SETUP Button**

2. Select SCV THRESHOLD SETUP (A).

Continued on next page

KR43067,00004A9 -19-16NOV10-1/2

PC12962 —UN—27OCT10

3. Select the correct SCV (B) from the drop-down for the THRESHOLD SETUP
4. Select VALVE TEST menu button (C) and VALVE TEST EXTEND ON (D) from drop-down menu.
5. Adjust the EXTEND THRESHOLD Value (E) to lowest possible setting that still produces a steady, consistent motion.
  - If Sensor Voltage (F) does not change significantly, the Extend Threshold value must be increased.
  - If Sensor Voltage moves quickly or erratically, the Extend Threshold value must be decreased.
  - Repeat procedure as required to obtain a smooth, constant change in sensor voltage.

*NOTE: Some implements may require sensor to be fully retracted to increase range of extend motion.*

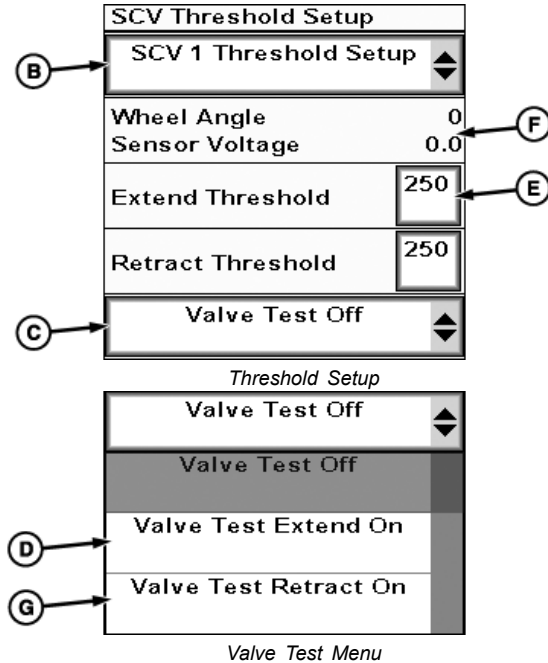
6. Select VALVE TEST menu button (C) and VALVE TEST RETRACT ON (G) from drop-down menu.
7. Repeat adjustment procedures used in Valve Test Extend calibration.

*NOTE: Sensor Voltage will move in opposite direction of Valve Test Extend procedure.*

Once constant movement is detected at wheel angle, threshold is set properly. Wheel angle should now cycle left to right in an equal and constant manner.

Wheel Angle Sensitivity may require adjusting, allowing flow to be decreased or increased on tractor Right-Hand Display. Adjusting threshold down should only be necessary on small cylinder or low flow mechanisms. Small cylinder = 1000 Larger cylinder = 6000

*NOTE: After calibration is complete, it is important to measure guess rows or implement performance,*



- |                                      |                                       |
|--------------------------------------|---------------------------------------|
| <b>B—SCV SELECTION Button</b>        | <b>E—EXTEND THRESHOLD Value</b>       |
| <b>C—VALVE TEST Menu Button</b>      | <b>F—SENSOR VOLTAGE Value</b>         |
| <b>D—VALVE TEST EXTEND ON Button</b> | <b>G—VALVE TEST RETRACT ON Button</b> |

*with implement lowered into working (ground contact) position. Verify proper performance before using iSteer in actual field operation.*

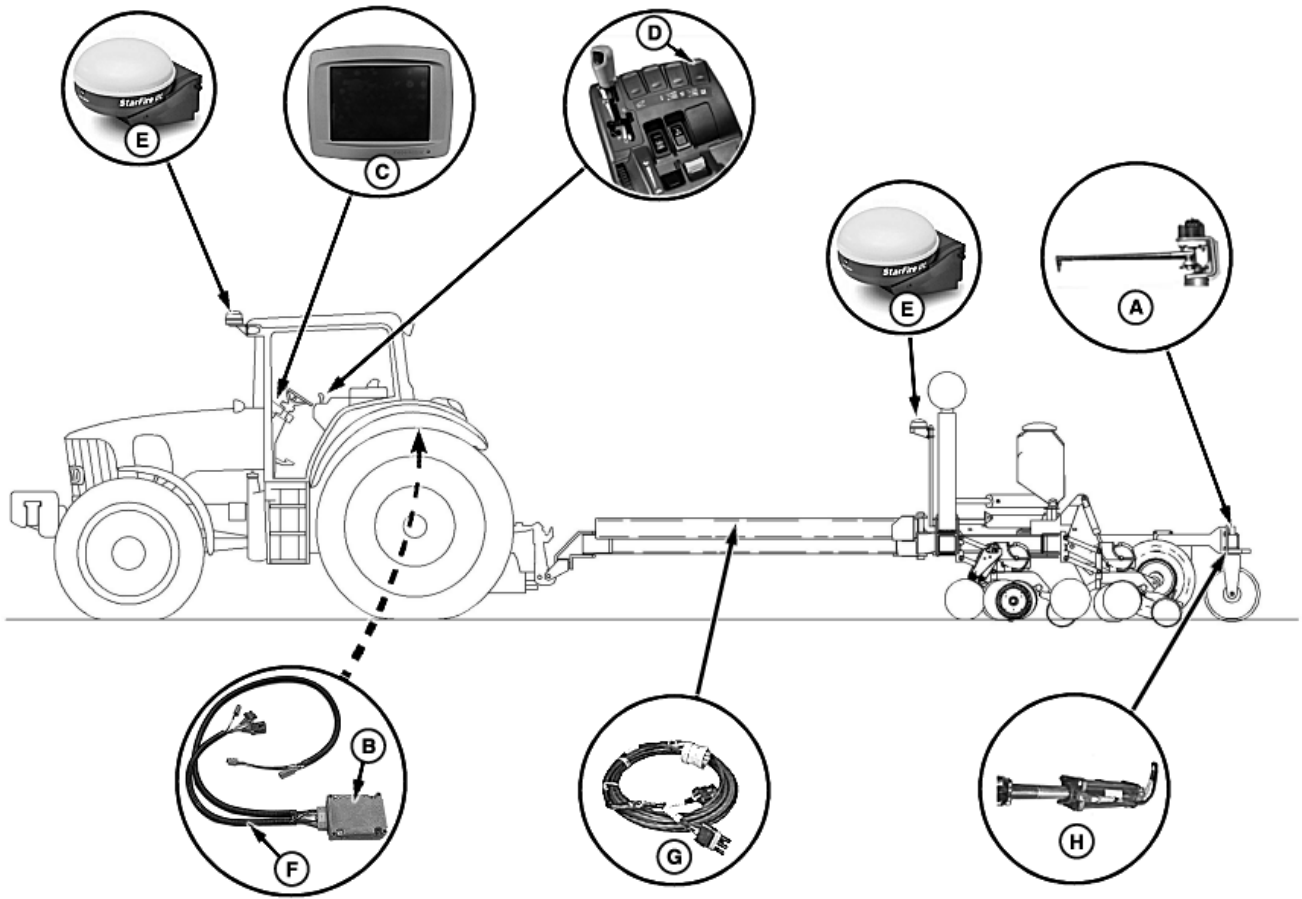
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# Operation

## Basic Operation of iSteer System



A—Wheel Angle Sensor  
B—iSteer Controller

C—Display  
D—SCV Control Lever

E—StarFire RTK GPS Receivers  
F—UCC Harness

G—Implement Feedback Sensor Harness  
H—Hydraulic Steering Cylinder

- SCV controller is set to auto (AC) mode.
- A wheel angle sensor (A) communicates the steered angle of implement to the controller (B) with signals carried through the controller harness (G).
- This implement steering angle information is calibrated for the controller by the operator, using display (C) and SCV control lever (D).
- The iSteer controller calculates an implement off-track error using location of StarFire RTK GPS receivers (E), with guidance line values set in tractor for AutoTrac.
- When AutoTrac is *enabled* and *activated*, and *if* machine requires steering adjustment to bring it back on guidance line, a signal is sent from iSteer controller, through the UCC harness (F), to tractor SCV controller.

- The SCV controller communicates instructions for sending hydraulic fluid to the implement steering cylinder (H).
- This entire process returns to the first step to continually monitor for any implement off-track error. Constant adjustments are made to keep the implement steering towards the currently active guidance line.

**NOTE:** *iSteer will operate in reverse for 45 seconds. After 45 seconds, AutoTrac and iSteer will both disengage, removing their control of tractor and implement.*

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## Engaging iSteer

**IMPORTANT:** iSteer does not use an implement height sensor, so when engaged iSteer will begin steering regardless of ground contact. If the steering device is not in contact with ground, iSteer will not be able to effectively steer the implement.

1. Set up guidance lines on GreenStar display.
2. Using SCV controls, press SCV III lever (A) to detent position to activate implement guidance.

*NOTE: SCV III should only be pressed once at beginning of each field, not every pass.*

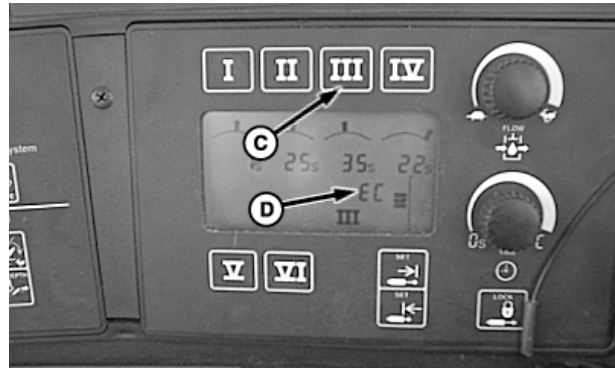
3. Select SCV III button (C) on right-hand display.
4. Verify that "EC" (manual SCV control) on Right-Hand Display (D) changes to "AC" (auto SCV control).

**IMPORTANT:** iSteer will begin acquiring line immediately after AutoTrac Resume button is selected. With implements using a coulter steering system, movement will start even if implement is not in contact with the ground.

5. Press AutoTrac resume switch (B) on tractor to activate AutoTrac and iSteer simultaneously. You should see tractor and implement both steer toward current guidance line.

*NOTE: iSteer will operate in reverse for 45 seconds. After 45 seconds, AutoTrac and iSteer will both disengage, removing their control of tractor and implement.*

A—SCV III Control Lever      C—SCV III Selection Button  
 B—AutoTrac Resume Switch    D—SCV Right-Hand Display

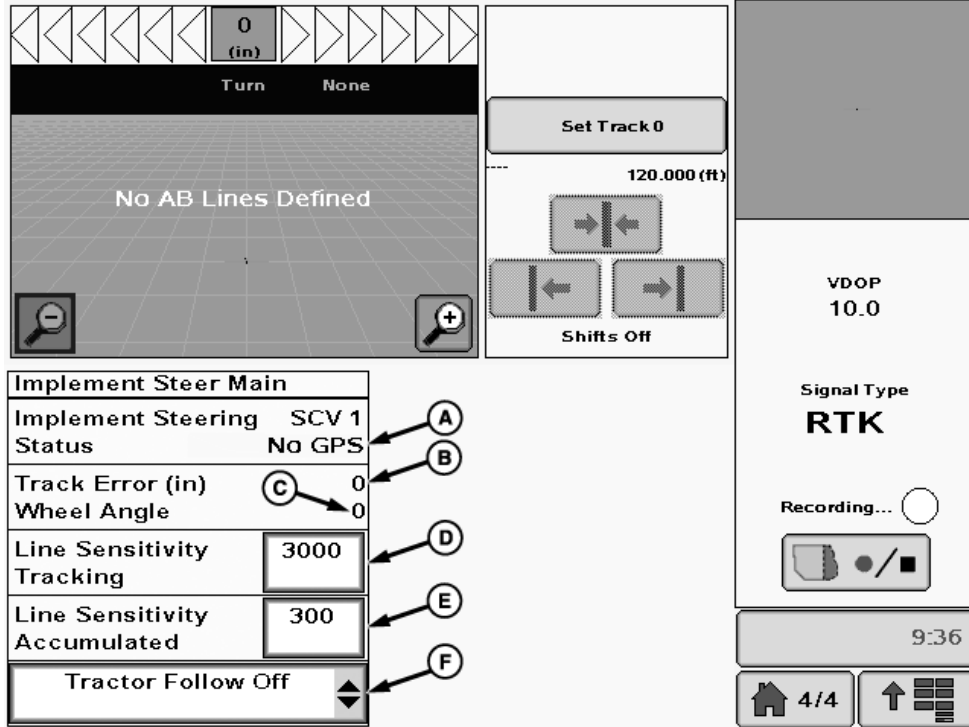


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KR43067,000046B -19-18NOV10-1/2



- A—SCV Control Assignment and Status
- B—Off-Track Error (Distance)
- C—Wheel Angle (Implement)
- D—Line Sensitivity Tracking
- E—Line Sensitivity Accumulated
- F—Tractor Follow On/Off

**IMPORTANT:** Illustrated display screen is for reference only. Actual screens may appear differently due to connection of optional devices and/or software version in use.

See your GreenStar display Operator's Manual for information on page layout and display adjustments.

**iSteer Display Information:**

- (A) *SCV Control Assignment and Status* - SCV control type is identified along with status of that SCV. Status will alert operator to current condition of control system. Status can guide operator to any unresolved issues that prevent iSteer operation.
- (B) *Off-Track Error (Distance)* - Distance the implement is off-track from current guidance line. A properly balanced implement will see off-track errors + and - each side of 0.
- (C) *Wheel Angle (Implement)* - Amount of corrective wheel movement to keep Off-Track Error at 0. Wheel angle will see + and - on each side of 0. A wheel angle consistently on one side or other indicates system is steering one way to shift machine. This may indicate operation on a hillside, or if on flat ground, may be the result of an incorrect CENTER calibration or poor implement balance.
- (D) *Line Sensitivity — Tracking* - Line acquisition only – Determines how aggressively iSteer responds to tracking errors while vehicle is acquiring the track. Tracking error is the distance between implement location and desired track. Setting this number higher will cause iSteer to respond more aggressively to match implement location to desired track. Higher numbers will result in more aggressive corrections. Lower gains may result in reduced accuracy. This setting affects performance while on track only (see IN-FIELD ADJUSTMENTS/TUNING in this section). Value Range: 10 - 10000. Default setting: 3000.
- (E) *Line Sensitivity — Accumulated* - On-line performance only – How fast or aggressively the system commands the wheels to react to off-line errors while on hills and slopes (see IN-FIELD ADJUSTMENTS/TUNING in this section). Value Range: 10 - 10000. Default setting: 300.
- (F) *Tractor Follow On/Off* - Allows the operator to turn Follow Mode On/Off

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## In-Field Adjustments/Tuning

With AutoTrac and iSteer engaged in the field, line sensitivities and SCV flow rates can be fine-tuned for optimum performance.

### Adjusting Sensitivity Settings:

1. **Line Sensitivity Tracking:** Line acquisition – How fast or aggressively the wheel steers towards guidance line.

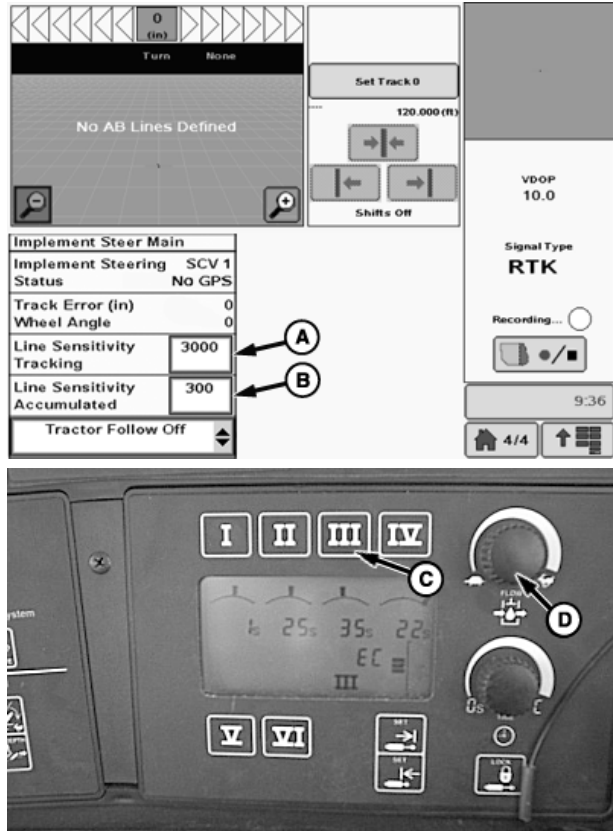
*Tracking* value (A) is listed and adjusted at this screen. Range is 10 - 10000 with typical setting between 1500 - 5000. Increasing the setting will increase aggressiveness of the steering.

2. **Line Sensitivity Accumulated:** On-line performance – How quickly the system reacts to errors while off-line on hills and slopes.

*Accumulated* value (B) is listed and adjusted at this screen. Range is 10 - 1000 with typical setting between 150 - 500. Increasing the setting will increase reaction speed during off-track conditions.

### Tuning SCV Controller Flow Rates:

1. Select SCV III on right-hand display (D).
2. Use flow adjustment dial (E) to increase SCV flow until steering mechanism is unstable and banging.
3. From this point, decrease flow until steering mechanism stabilizes.



A—Line Sensitivity Tracking Input  
 B—Line Sensitivity Accumulated Input

C—SCV III Selection Button  
 D—Flow Adjustment Dial

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### Follow Mode

Follow Mode sets the implement guidance path in the same path as the machine receiver. This allows iSteer to operate without a guidance line defined and the operator driving the machine. This is especially useful during the first pass through a field when the guidance line is being defined.

**CAUTION:** Do not operate Follow Mode on roadways.

*NOTE: Follow Mode will turn off above 35 kph (21.7 mph)*

*Follow Mode will also turn off if speed drops below 0.5 kph (0.3 mph) for longer than 30 seconds.*

To turn Follow Mode On/Off:

1. Select MAIN softkey
2. Select IMPLEMENT STEER MAIN (A)
3. In the Drop-Down box (B), Select either TRACTOR FOLLOW ON or OFF



Application Controller Main Softkey

Main Menu	
No Main	➔
No Setup	➔
Implement Steer Main	➔
Implement Steer Setup	➔
iSteer GPS Offset	➔

(A)

Implement Steer Main Button

Implement Steer Main	
Implement Steering Status	SCV 3 No GPS
Track Error (In)	0
Wheel Angle	-1939
Line Sensitivity Tracking	1500
Line Sensitivity Accumulated	300
Tractor Follow Off	⬇

(B)

Implement Steer Main

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PC12995 —UN—18NOV10

PC12996 —UN—01NOV10

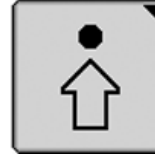
## Disabling iSteer

PC12961 —UN—01NOV10

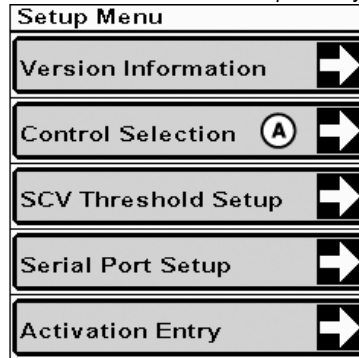
**CAUTION:** iSteer is not meant for road transport.  
To prevent serious injury, disable iSteer by removing SCV control before entering roadways.

To disable iSteer by removing SCV control:

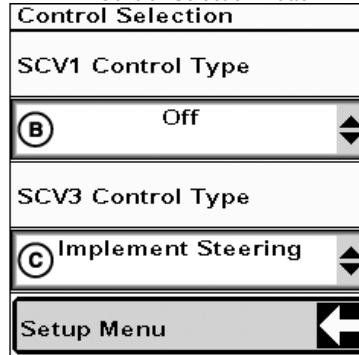
1. Select SETUP softkey
2. Select CONTROL SELECTION (A)
3. Set SCV1 (B) and SCV3 (C) CONTROL TYPE to **OFF**



GreenStar Toolbox Setup Softkey



Control Selection Button



SCV Control Screen

PC12966 —UN—27OCT10

PC12997 —UN—01NOV10

CZ76372,000020F -19-18NOV10-1/1

# Disconnecting iSteer

## Disconnecting the iSteer System

*NOTE: If an electronic failure occurs, hydraulic control can be set to operate in normal, manual mode.*

*Without electronic control, automatic implement steering adjustments are not possible.*

### Disconnection Procedure for Changing Tractor or Implement:

1. Shut OFF machine, set parking brake, and remove key.
2. Disconnect implement receiver harness at ISO 9 pin connector (A).
3. Disconnect constant power harness (harness not shown).

*NOTE: Once completed, tractor SCV control will revert to normal manual operation.*

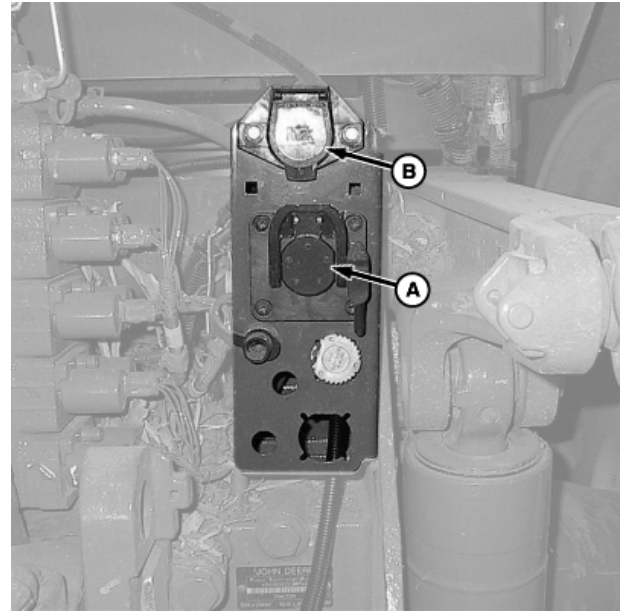
4. Disconnect lighting connector (B) and all other implement connections related to releasing equipment from tractor.

### Disconnection Procedure for Electronic Failure:

- On iSteer *Setup Menu*, select CONTROL SELECTION.
- On CONTROL SELECTION drop-down menu, select OFF.
- After OFF has been selected, cycle vehicle power and iSteer will be disabled.

### Disconnection Procedure for Permanent Removal:

- Shut OFF machine, set parking brake, and remove key.



Rear of Tractor Shown

A—ISO Connector

B—Lighting Connector

- Disconnect iSteer controller from rear of ISO connector.
- Remove controller and components following procedures in iSteer installation instructions.

PC12191 —UN—05OCT09

KR43067,000046C -19-03NOV09-1/1

# Troubleshooting

## Troubleshooting — iSteer System

Implement Steer Main	
Implement Steering	SCV 1
Status	(A) → No GPS
Track Error (in)	0
Wheel Angle	0
Line Sensitivity Tracking	5000
Line Sensitivity Accumulated	1000
Wheel Angle Sensitivity	2500

PC12183—UN—10SEP09

A—Status Code Location

Status Code	Description	Solution
No GPS	No GPS visible on system at location specified in control selection area for this SCV.	Change control selection for GPS to correct location or install GPS.
Cycle Power	Controller must be restarted to communicate with new function.	Shut OFF tractor and start again.
No RTK	No RTK correction seen on selected GPS, or RTK not currently available.	Activate RTK on implement GPS and/or machine GPS.
Update GPS SW	Incompatible software loaded.	Update software on GPS receiver(s) to compatible version.
OK	System is ready to be operated. Any faults still occurring are likely to be independent of iSteer control system and on tractor or implement.	System is working properly.

Symptom	Problem	Solution
<b>Monitor Screen not Readable on hookup to Machine</b>	No communications with implement controller.	<p>Shut OFF power, check connections, and power up to reboot system.</p> <p>Check 4 pin DEUTSCH connector at back of ISO implement connector on tractor for cleanliness and proper attachment.</p> <p>Verify connector at head of implement is seated and tight.</p>

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## Troubleshooting — Machine

Symptom	Problem	Solution
<b>AC (Auto Control) not showing on SCV Display</b>	Dirty or loose 10-pin connector at rear of tractor.	Clean connectors and reconnect tightly.  Verify correct control type and SCV are selected in iSteer setup and power has been cycled.
	Implement steers away from line when AutoTrac Resume Button is Pressed	SCV hoses hooked up in reverse.  Implement steering calibration was done with right and left limits reversed.
<b>Machine not Steering to Line</b>	EC displayed on SCV display.	Push correct SCV control lever into detent to bring up AC mode.
<b>Hydraulic Steering not Responding Well</b>	Steering cylinder leaking fluid.	Check for leakage (see SERVICE SECTION).  Repair or replace cylinder (see your John Deere dealer).
	Insufficient tractor hydraulic pressure.	Check tractor hydraulic pressure (see tractor Operator's Manual for reference).  Ensure hydraulic oil is warmed up.
	Hydraulic hoses connected improperly or poorly.	Use correct size hydraulic cylinders for tractor pressure.  Check hose O-rings, connect properly and tighten connections.
	Valve is frozen.	Cycle hydraulic cylinders manually, to the full right and left. If condition repeats, oil may be contaminated causing plugging or SCV may require a shuttle valve to prevent it from going into Desilting Mode during low flow conditions.
<b>Loss of Display and Operation of Implement</b>	Dirty or loose 4-pin connection at rear of tractor.	Clean connectors and reconnect tightly.
	GreenStar harness improperly connected.	Disconnect harness, clean, and install properly.
	Electrical short in harness.	Check electrical wiring for breaks, shorts, and damage.

KR43067,000046D -19-11NOV10-1/1

# Service

## iSteer System

Being an electronic controller, there is minimal service required to maintain performance levels. However, the John Deere IVS commitment to continued improvement and quality may lead to periodical software updates available for this controller. To maintain optimum performance, these updates should be loaded.

For the GS2 system this is accomplished when you perform a “live update” using a connection to the StellarSupport™ website ([www.stellarsupport.com](http://www.stellarsupport.com)). Updates, once downloaded must be loaded onto your memory device (A). After updating the memory device, the next time you insert the card into your display console (B) the operating system will prompt you that updates are available. Accepting the updates will automatically update your iSteer system to the most recent version.

A—Compact Flash Card

B—GS2 Console



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*StellarSupport is a trademark of Deere & Company*

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## Machine

Refer to manufacturer of implement steering module for servicing procedures.

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# John Deere Service Literature Available

## Technical Information

Technical information can be purchased from John Deere. Some of this information is available in electronic media, such as CD-ROM disks, and in printed form. There are many ways to order. Contact your John Deere dealer. Call **1-800-522-7448** to order using a credit card. Search online from <http://www.JohnDeere.com>. Please have available the model number, serial number, and name of the product.

Available information includes:

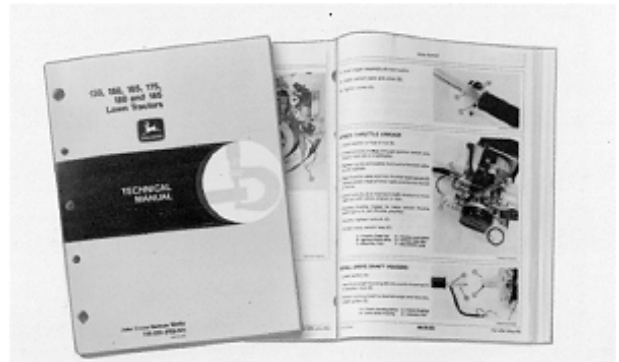
- **PARTS CATALOGS** list service parts available for your machine with exploded view illustrations to help you identify the correct parts. It is also useful in assembling and disassembling.
- **OPERATOR'S MANUALS** providing safety, operating, maintenance, and service information. These manuals and safety signs on your machine may also be available in other languages.
- **OPERATOR'S VIDEO TAPES** showing highlights of safety, operating, maintenance, and service information. These tapes may be available in multiple languages and formats.
- **TECHNICAL MANUALS** outlining service information for your machine. Included are specifications, illustrated assembly and disassembly procedures, hydraulic oil flow diagrams, and wiring diagrams. Some products have separate manuals for repair and diagnostic information. Some components, such as engines, are available in separate component technical manuals
- **FUNDAMENTAL MANUALS** detailing basic information regardless of manufacturer:
  - Agricultural Primer series covers technology in farming and ranching, featuring subjects like computers, the Internet, and precision farming.
  - Farm Business Management series examines "real-world" problems and offers practical solutions in the areas of marketing, financing, equipment selection, and compliance.
  - Fundamentals of Services manuals show you how to repair and maintain off-road equipment.
  - Fundamentals of Machine Operation manuals explain machine capacities and adjustments, how to improve machine performance, and how to eliminate unnecessary field operations.



TS189 —UN—17JAN89



TS191 —UN—02DEC88



TS224 —UN—17JAN89



TS1663 —UN—10OCT97

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# John Deere Service Keeps You on The 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.



## 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/](http://www.deere.com/en_US/ag/contactus/).

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