DCY

iGuide

OPERATOR'S MANUAL

iGuide

OMPFP10808 ISSUE J0 (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 OMPC21775)
Printed in U.S.A.

OMPFP10808

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

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

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.

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

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

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

GreenStar is a trademark of Deere & Company

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

Read The Guidance Manual

Before attempting to operate Parallel Tracking or AutoTrac™, fully read the Guidance manual to understand components and procedures required for safe and proper operation.

The Guidance manual is for both Parallel Tracking and AutoTrac guidance systems applications.

AutoTrac is a trademark of Deere & Company

JS56696,000039F -19-23SEP09-1/1

Contents

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.

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

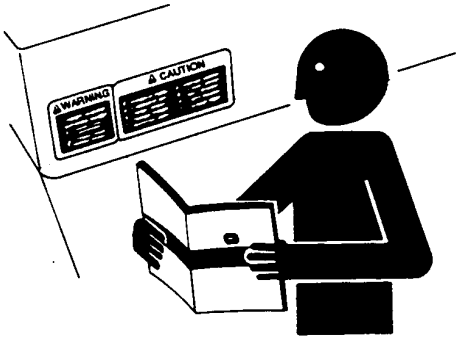
Follow Safety Instructions

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

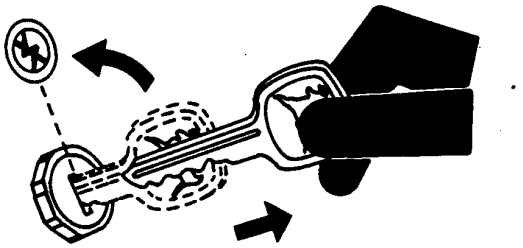
If you do not understand any part of this manual and need assistance, contact your John Deere dealer.

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

Park Machine Safely

Before working on the machine:

- Lower all equipment to the ground.
- Stop the engine and remove the key.
- Disconnect the battery ground strap.
- Hang a "DO NOT OPERATE" tag in operator station.



TS230 —UN—24MAY89

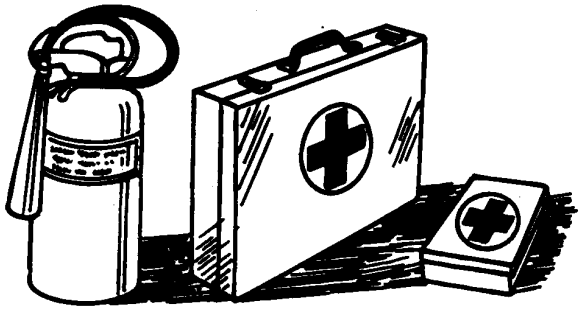
DX,PARK -19-04JUN90-1/1

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

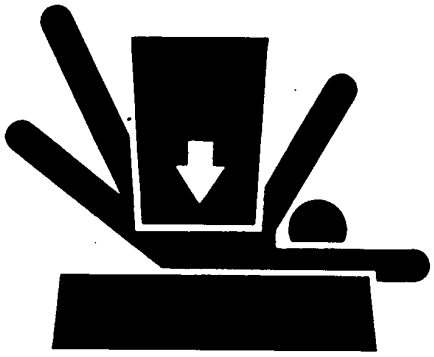
DX,SERV -19-17FEB99-1/1

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.



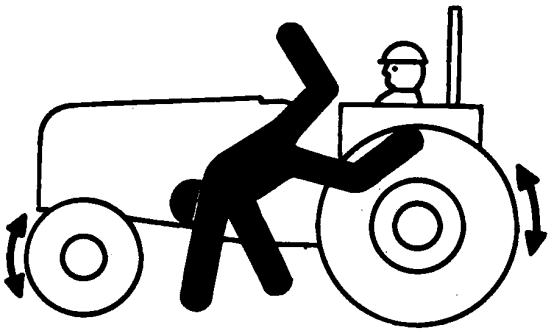
TS229 —UN—23AUG88

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

Keep Riders Off Machine

Only allow the operator on the machine. Keep riders off.

Riders on machine are subject to injury such as being struck by foreign objects and being thrown off of the machine. Riders also obstruct the operator's view resulting in the machine being operated in an unsafe manner.



TS290 —UN—23AUG88

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

Handle Electronic Components and Brackets Safely

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

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

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

TS249 —UN—23AUG88

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

Operate Guidance Systems Safely

Do not use AutoTrac system on roadways.

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

AutoTrac and iGuide 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:

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

JS56696,00003A0 -19-22JUL08-1/1

Theory of Operation

iGuide is a passive implement guidance system which allows a machine to be driven in such a way as to keep the implement on its desired track. It is able to do this with a StarFire™ GPS receiver on both the machine and the implement.

The following criteria are required:
- Machine receiver (iTC only or SF3000)
- Implement receiver (iTC only or SF3000)

iGuide requires a second receiver installed on the implement and connected to the machine's Implement CAN Bus through the ISO connector. The following items need to be included:

Hardware Needed:

- Constant power harness on machine
- Front Extension harness
- Center Extension harness (as needed for long implements)
- Rear Extension harness (as needed for tow behind air cart)
- Implement Harness(s) for receiver (quantity may vary)
- Implement GPS Bracket and receiver
- Compatible only with GreenStar™ 2 2600 display (GS2) and GreenStar™ 3 2630 (GS3)

Software and Settings:

- Update StarFire receiver software.

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

- Updated GreenStar display software
- Machine and implement setup
- Machine receiver TCM calibration
- Implement receiver setup including offsets and TCM calibration
- Other setup including AutoTrac™, Client, Farm, Field and so on

CZ76372,00001CA -19-12OCT10-1/1

Making Implement Guidance Function

Implement Guidance will work with pull type implements only.

The following criteria are required:
- In iGuide mode, both receivers must have the same receiver level (RTK)
- iGuide software installed on the GreenStar display
- iGuide activation for the GreenStar display
- AutoTrac SF2™ activation on display
- AutoTrac and iGuide setup complete (incomplete setup would prevent operator from activating guidance)
- Updated StarFire iTC™ software on the implement

Implement Guidance is designed to give implement control for the first implement.

iGuide does not support:
- AutoTrac SF1™ Signal Level
- AutoTrac SF2™ Signal Level
- Tow Between Air Carts
- Integral Implements (3-pt)
- Balers
- Mowers and Mower-Conditioners that can swing left and right behind the machine (unless using a fixed offset)
- Wide-swinging drawbar on 9X00T tractors
- AutoTrac Universal Steering Kit™ (Original or 200)
- Bedded Crops
- Standing row crop applications
- Bedded crop applications (see iSteer if this is needed)
- Circle Track
- Original GSD4 Displays
- GreenStar 2 1800 Display
- Original StarFire Receivers
- NH3 Cart behind Air Cart

AutoTrac SF2 is a trademark of Deere & Company
StarFire iTC is a trademark of Deere & Company
AutoTrac SF1 is a trademark of Deere & Company
AutoTrac Universal Steering Kit is a trademark of Deere & Company
AutoTrac RTK is a trademark of Deere & Company

NOTE: Make sure AutoTrac is properly setup and adjustments are completed prior to using iGuide.

NOTE: iGuide performance is contingent upon the ability of the machine to compensate for the implement. If the machine is not weighted properly or slippage is excessive, iGuide performance may be degraded.

NOTE: It is recommended to always save a backup copy of AB lines from the data card to your computer. This best practice will ensure data will be safe in case of Data Card or Compact Flash Card problems.

NOTE: Always verify implement dimensions are correct when using the “out of box” dimensions from the GreenStar display or Apex.

NOTE: iGuide does not support the use of the 7.6 cm (3 in.) extension with the 22.9 cm (9 in.) antennas on the implement AutoTrac RTK™ radio. iGuide will support only the 30.5 cm (12 in.) RTK antenna or the high gain antennas to be used on the RTK radio at the implement.

NOTE: iGuide will not support reverse mode, this functionality is exclusive to AutoTrac.

NOTE: iGuide performance is degraded when the machine is in a "crabbing" condition with the front wheels parallel or near parallel to the guidance path and the rear wheels at an angle to the line.

NOTE: Do not mount the implement receiver higher than 4.0 m (13.1 ft.) for transportation purposes.

CZ76372,00001C9 -19-06OCT10-1/1

Accuracy

A GreenStar AutoTrac RTK Assisted Steering System with iGuide may provide up to a 60% improvement in implement accuracy versus a GreenStar AutoTrac RTK Assisted Steering System without iGuide.

- Accuracy is measured at the implement and may be affected by various factors, including ground conditions, implement performance, tractor performance, ballasting, and speed. The performance of the AutoTrac RTK system with iGuide is contingent upon the tractor’s ability to effectively locate the implement. Therefore, if the tractor is not weighted properly or wheel slippage is excessive, the system’s performance and accuracy may be degraded.
- Stated implement accuracy improvement is the improvement in the total percentage of seed placed within +/- 5 cm (2 in.) of its desired location, as measured in field tests.

JS56696,000052E -19-01APR09-1/1

iGuide Activation

See GreenStar Display Operator Manual for activating.

To activate iGuide, please visit www.StellarSupport.com or call our Customer Contact Center with the following items in hand:

- iGuide Order Number
- GreenStar display Serial Number
- GreenStar display Challenge Code

CZ76372,00001CB -19-12OCT10-1/1

Useful Buttons and Icons

The MENU Softkey allows access to all display applications. The MENU Softkey will be on every display screen.

PC8663 —UN—05AUG05

MENU Softkey

CZ76372,00001CC -19-12OCT10-1/11

The HOME Softkey allows accessing the currently defined home page.

PC9033 —UN—17APR06

HOME Softkey

CZ76372,00001CC -19-12OCT10-2/11

Press the GREENSTAR Softkey to access GreenStar applications.

PC12685 —UN—14JUL10

GREENSTAR 3 Softkey

CZ76372,00001CC -19-12OCT10-3/11

Use the STARFIRE MACHINE Softkey to setup the vehicle StarFire Receiver and start the TCM calibration for this receiver.

NOTE: The machine receiver must be a StarFire iTC.

PC9965 —UN—09FEB07

STARFIRE MACHINE Softkey

Continued on next page

CZ76372,00001CC -19-12OCT10-4/11

Use the STARFIRE IMPLEMENT Softkey to setup the implement Receiver and start the TCM calibration for this receiver. The Serial Number of the receiver is shown on this button.

NOTE: The implement receiver must be a StarFire iTC.

PC9966 —UN—09FEB07

STARFIRE IMPLEMENT Softkey

CZ76372,00001CC -19-12OCT10-5/11

Press the GUIDANCE Softkey to input required information on desired Guidance Operation.

PC12947 —UN—12OCT10

Guidance Softkey

CZ76372,00001CC -19-12OCT10-6/11

Press the EQUIPMENT Softkey to define Machine, Implement and Implement receiver offsets.

PC12948 —UN—12OCT10

EQUIPMENT Softkey

CZ76372,00001CC -19-12OCT10-7/11

Use CANCEL button to ignore the changes made to this page.

PC8582 —UN—01NOV05

CANCEL Button

CZ76372,00001CC -19-12OCT10-8/11

Use ENTER button to accept the current changes and get back to the last page.

PC8649 —UN—01NOV05

ENTER Button

Continued on next page

CZ76372,00001CC -19-12OCT10-9/11

Use Offset Toggle button to toggle lateral offset from left to right and vice versa.

PC10846 —UN—07DEC07

Offset Toggle Button

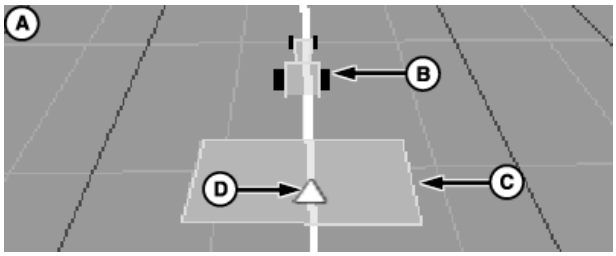
CZ76372,00001CC -19-12OCT10-10/11

Machine icon on guidance screen represents the location of the machine.

Implement icon on guidance screen represents the location of the implement.

Guidance reference point on guidance screen represents the location of the guidance point for the system.

A—Guidance Screen
B—Machine Icon
C—Implement Icon
D—Guidance Reference Icon



PC11041 —UN—19FEB08

Guidance Screen Icons

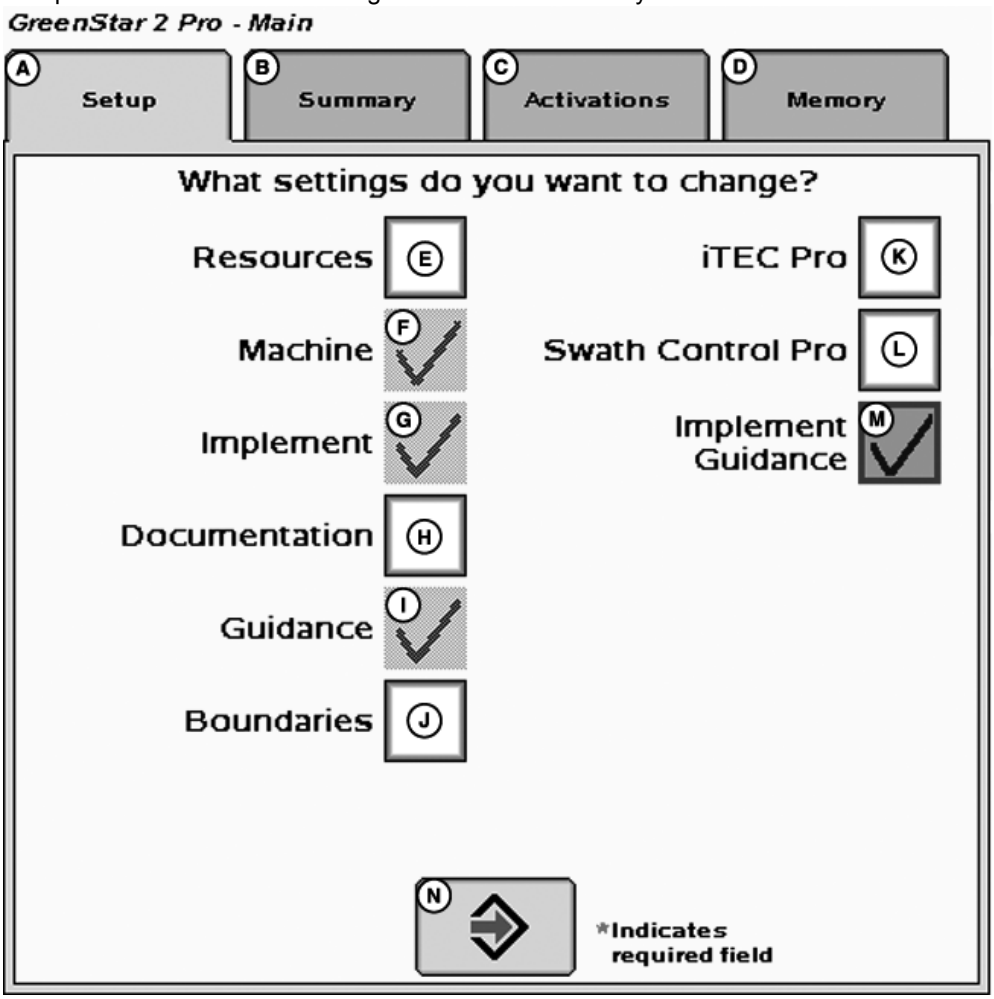
CZ76372,00001CC -19-12OCT10-11/11

Getting Started

To make iGuide function, the following criteria are required to be setup:

- Machine setup and offsets
- Implement setup and offsets
- Machine GPS receiver settings under StarFire softkey
- Implement GPS receiver settings under StarFire softkey
- Guidance Setting—Tracking mode, Implement Guidance Mode, and iGuide settings

These items can be set up separately or the Setup Wizard can be used by checking the Implement Guidance option (M). To access the Setup Wizard, select Softkey (F) (GreenStar).



PC11791 —UN—09MAR09

Setup Wizard

A—Setup Tab
B—Summary Tab
C—Activations Tab
D—Memory Tab
E—Resources Check Box
F—Machine Check Box
G—Implement Check Box
H—Documentation Check Box
I— Guidance Check Box
J— Boundaries Check Box
K—iTEC Pro Check Box
L— Swath Control Pro Check Box
M—Implement Guidance Check Box
N—Next Page

CZ76372,00001CD -19-06OCT10-1/1

Machine Setup

MENU >> GREENSTAR >> EQUIPMENT allows access to MACHINE and IMPLEMENT setup screens.

PC8663 —UN—05AUG05

MENU Softkey

PC12685 —UN—14JUL10

GREENSTAR 3 Softkey

PC12948 —UN—12OCT10

EQUIPMENT Softkey

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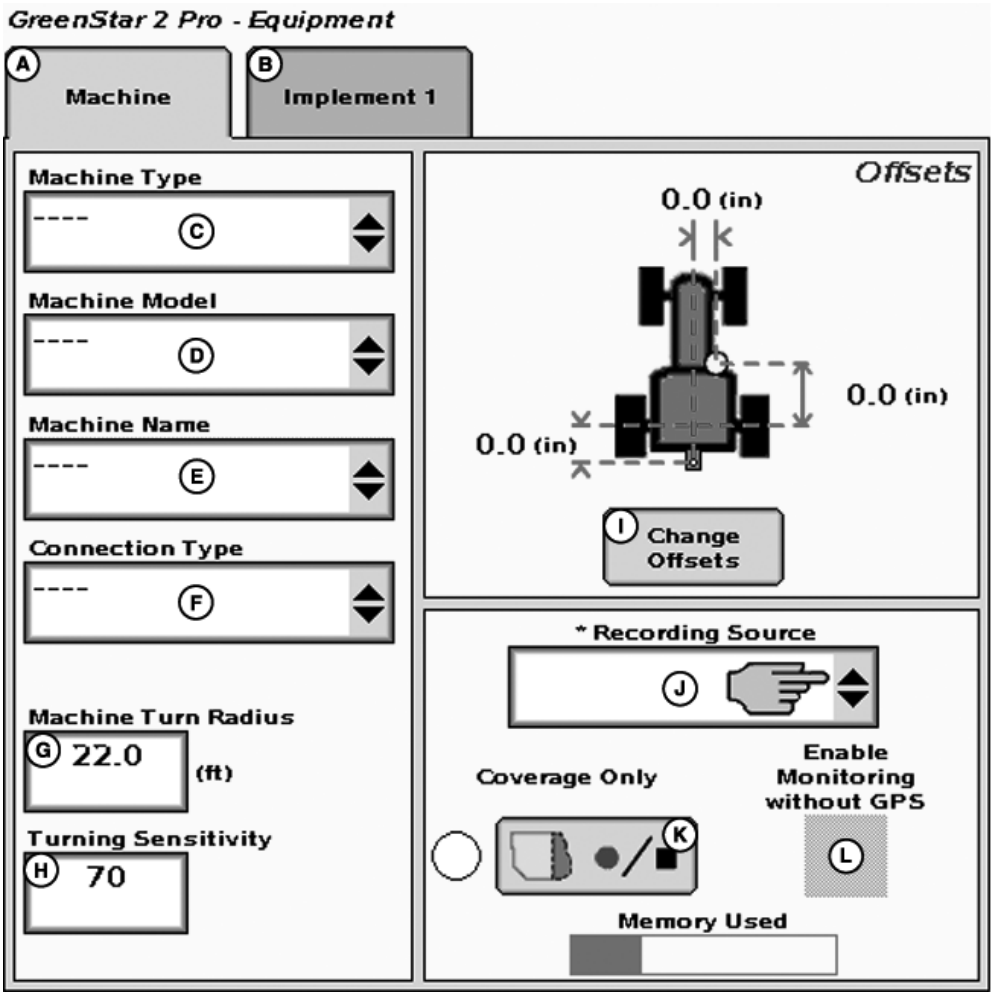
CZ76372,00001CE -19-12OCT10-1/2



PC10802 —UN—08JUL08

Machine Tab

A—Machine Tab
B—Implement 1 Tab
C—Machine Type Drop-Down Menu
D—Machine Model Drop-Down Menu
E—Machine Name Drop-Down Menu
F—Connection Point Drop-Down Menu
G—Machine Turn Radius Input-Box
H—Turning Sensitivity Input-Box
I— Change Offsets Button
J— Recording Source Drop-Down Menu
K—Record/Pause Button
L—Enable Monitoring Without GPS Check Box

NOTE: Machine name must be defined in order to change offsets. All offsets will be saved under the current machine name.

The Machine tab is required to be populated with the following equipment information:

- Machine Type—Vehicle type being used (Example: Tractor).
- Machine Name—Allows the operator to save vehicle-specific offsets.
- Connection Type—Defines how the implement is attached to the machine.
  - Rear Rigid 3-pt (not compatible with iGuide)
  - Rear Pivot 2-pt
  - Rear Pivot Drawbar
  - Rear Pivot Wagon Hitch (for European use)
  - Front Rigid 3-pt (not compatible with iGuide)
- Machine Offsets—modify by pressing Change Offsets button (I).
- Verify offsets correspond to the machine selected.

Machine Model—Model number of the vehicle being used. For John Deere vehicles, model numbers will be available from the drop-down list.

NOTE: Machine Model is not required for iGuide operation.

NOTE: Machine Turn Radius and Turning Sensitivity are for use with iTEC Pro only.

CZ76372,00001CE -19-12OCT10-2/2

Machine Offsets

Change Offsets

MENU >> GREENSTAR2 PRO Softkey >> EQUIPMENT Softkey

Press CHANGE OFFSET button on Machine Setup screen.

Enter machine offsets:

PC8663 —UN—05AUG05

MENU Softkey

PC12685 —UN—14JUL10

GREENSTAR 3 Softkey

PC12948 —UN—12OCT10

EQUIPMENT Softkey

PC11204 —UN—14JUL08

CHANGE OFFSETS Button

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CZ76372,00001DC -19-12OCT10-1/3

In-Line distance from non-steering axle to GPS receiver (B) will be

- Row crop tractors—rear axle
- Articulated tractors—front axle
- Track tractors—rear axle

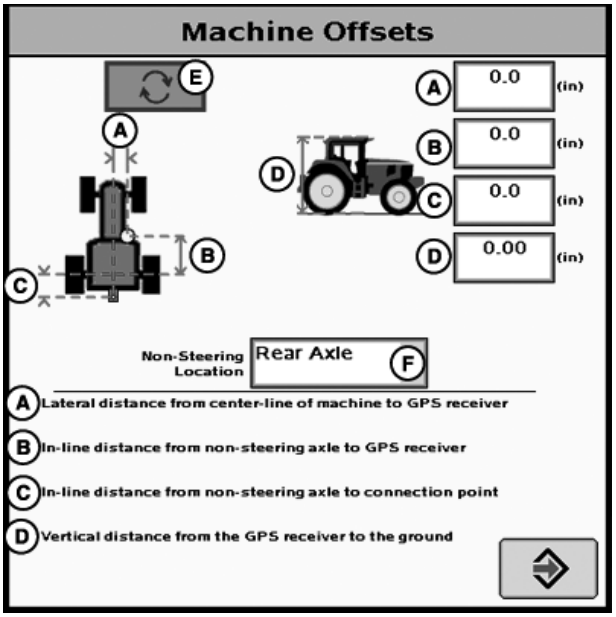
NOTE: Offset (B) for track tractors should be measured from the receiver to the pivot point.

Offset Toggle button (E) toggles the receiver from the left side of machine to the right side.

Verify that the correct connection point is selected and measure from the center of non-steering axle to the center of connection point (Example: center of drawbar pin or lower links, except in the case of a rear pivot 2-pt mount—measure to the pivot point of the implement tongue).

NOTE: Offset (C) will change when the connection point changes.

IMPORTANT: Offsets must be accurate because they will be used to calculate the guidance path for iGuide.



Machine Offsets

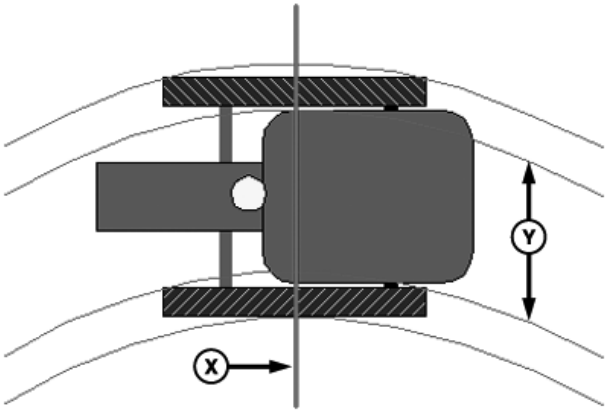
A—Lateral distance from center-line of machine to GPS receiver
B—In-line distance from non-steering axle to GPS receiver
C—In-line distance from non-steering axle to connection point
D—Vertical distance from the GPS receiver to the ground
E—Offset Toggle Button
F—Non-Steering Location Drop-Down Menu

CZ76372,00001DC -19-12OCT10-2/3

Machine Offsets—The machine and implement offsets are important for implement guidance to function properly.

1. On Track machines, the non-steering axle should be selected as rear axle.
2. Offsets B and C should be measured to the turning point or pivot point of the machine. For example: when turning machine, it usually does not rotate on the rear axle but somewhere in front of the rear axle.

This dimension can be measured by turning the machine in a fairly tight turn, such as an end turn. Stop half way through the turn. Looking at the inside track and its relationship to the tracks on the ground, determine the pivot point of the machine. Vehicle ballasting and drawbar load could affect these offsets.



Track Machines

X—Pivot Point **Y—Tractor Tracks**

CZ76372,00001DC -19-12OCT10-3/3

Implement Setup

NOTE: The implement setup should be verified before operating iGuide.

MENU >> GREENSTAR >> EQUIPMENT >> Then press Implement Tab

PC8663 —UN—05AUG05

MENU button

PC12685 —UN—14JUL10

GREENSTAR 3 Softkey

PC12948 —UN—12OCT10

EQUIPMENT Softkey

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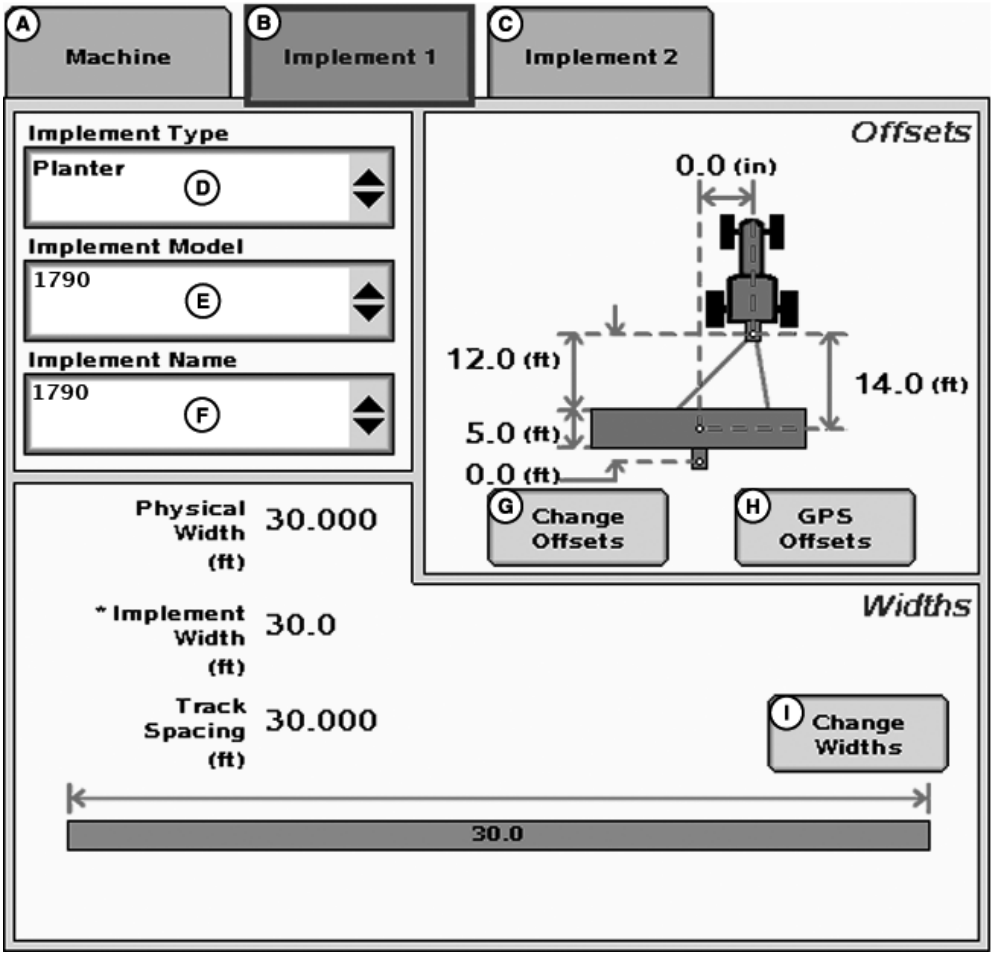
CZ76372,00001CF -19-12OCT10-1/2



PC11178 —UN—14JUL08

Implement Tab

A—Machine Tab
B—Implement 1 Tab
C—Implement 2 Tab
D—Implement Type Drop-Down Menu
E—Implement Model Drop-Down Menu
F—Implement Name Drop-Down Menu
G—Change Offsets Button
H—GPS Offsets Button
I— Change Widths Buttons

Press Implement 1 tab to get to the implement setup page.

NOTE: All offsets including GPS offsets on the implement will be stored to the implement name.

The name will also be the base for transferring data to the desktop software.

For the implement setup, the following information is required to be populated:

- Implement Type (D)
- Implement Name (F)

CZ76372,00001CF -19-12OCT10-2/2

Implement Offsets

Press CHANGE OFFSET button on Implement Setup screen.

Implement name must be defined to save implement offsets.

Implement Offsets—Used to define the actual implement position relative to the machine.

Control Point—The location around which the implement rotates.

Enter Implement Offsets:

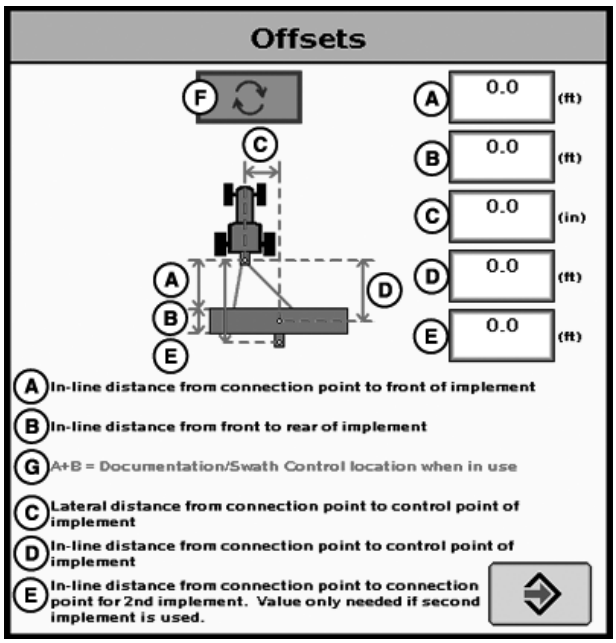
- A) In-line distance from connection point to front of implement. On pull-type implements, think of this as the tongue. This would be the distance from the connection point to the first point of ground engagement (front ranks of field cultivator, seed drop point on a planter). For planters with a 2-pt mount, measure from where the planter pivots just behind the 2-pt.
- B) In-line distance from front to rear of implement. On ground engaging tools, this is the distance from the front rank of sweeps or points to the rear rank. On a standard pull type sprayer, this offset would be 0 and the sprayer has nozzles at the same point along the boom.
- C) Lateral distance from connection point to control point of implement. This is the lateral distance from the center of the machine to the center of the implement, which will be 0.0 for most common implements.

  NOTE: Examples of equipment that will not be centered include most split row planters with an even number of 38 cm (15 in.) rows, (Examples: 1790 12/24, 16/32 CCS, 24R15 or 32R15) unless using an adjustable hitch crossbar.

  For the implements listed, it is required to enter an implement offset dimension C on the implement offset page. By entering implement offset dimension C, iGuide will make the necessary adjustments for the system to perform accurately.

  Another example of this scenario is a planter with a 2-pt hitch offset of 19 cm (7.5 in.) to the right. This planter must have an offset of 19 cm (7.5 in.) entered for dimension C on the implement offsets page.

  NOTE: When using an adjustable hitch crossbar, a lateral offset for the machine and implement is needed.



PC11838 —UN—20MAR09

Offsets

A—In-line distance from connection point to front of implement.
B—In-line distance from front to rear of implement.
C—Lateral distance from connection point to control point of implement.
D—In-line distance from connection point to control point of implement.
E—In-line distance from connection point to connection point for second implement. Value only needed if second implement is used.
F—Offset Toggle Button
G—A+B Documentation/Swath Control location when in use.

- D) In-line distance from connection point to control point of implement. In many cases, this distance will be from the connection point to the carrying wheels. For proper turns, measure this distance with implement at the height it typically will be at while in the lower position. For planters with a 2-pt mount, measure from where the planter pivots just behind the 2-pt.
- E) In-line distance from connection point to connection point for second implement. *Value only needed if second implement is used.*

See MACHINE IMPLEMENT DIMENSIONS section.

Continued on next page

Change Widths—Used to enter implement width and track spacing for guidance. Change implement width and track spacing when changing implements. Implement width and track spacing are independent of each other.

NOTE: IMPLEMENT tab will show HEADER for Combines, ROW UNITS for Cotton Pickers, and BOOM for Sprayer.

NOTE: Implement width may come from certain controllers such as SeedStar.

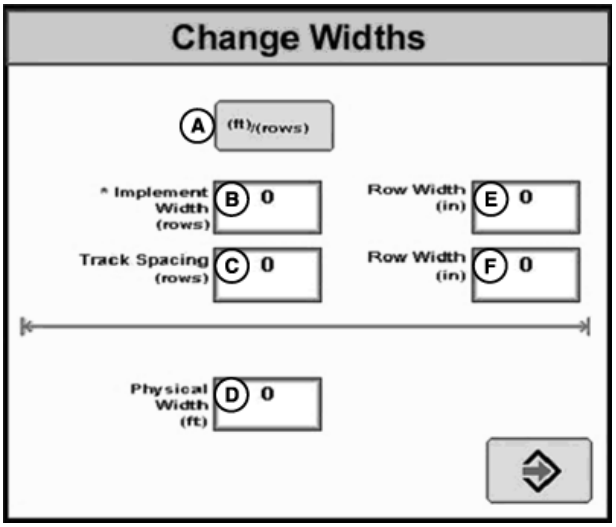
Defining Implement Width and Track Spacing. Implement Width and Track Spacing can be defined two ways: enter the working width of the implement, or enter the number of rows and the row spacing. To toggle between these two, press the cm (ft)/(rows) button (A).

Implement Width cm (ft)/(rows)—enter total implement working width or the number of rows and row spacing distance.

This value is used to calculate total area when documenting the operation.

Track Spacing—Used in guidance for how far each pass is from the last pass. It is entered the same way as Implement Width. For “perfect” guess rows, this distance will be the same as Implement Width. To ensure some overlap for tillage or spraying, or to account for some GPS drift, you may choose to make the Track Spacing somewhat less than the Implement Width.

Physical Width—The actual width of the entire implement when being used in the field when the implement is raised. It is sometimes larger than Implement Width.



Change Widths

A—Toggle Button
B—Implement Width Input-Box
C—Track Spacing Input-Box
D—Physical Width Input-Box
E—Row Width Input-Box
F—Row Width Input-Box

NOTE: Physical Width is not used for Implement Guidance.

There are certain value constraints to make Implement Guidance work - refer to APPENDIX - Valid Configuration.

JS56696,0000503 -19-02APR09-2/2

Implement GPS Offsets

Press GPS OFFSET button on Implement Setup screen. This button will only be active if an implement GPS receiver is connected to the CAN Bus.

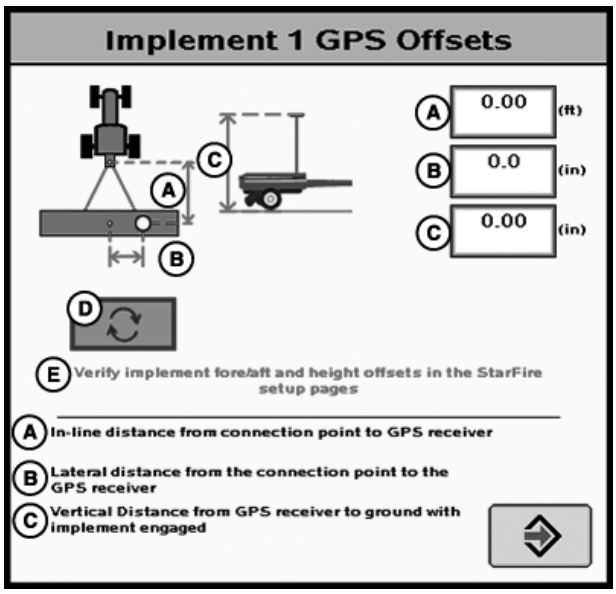
Enter Implement GPS Offsets:

IMPORTANT: Drive a vehicle forward and have the vehicle & implement in a straight line before measuring and calculating these dimensions. This is very important for accurate measurements.

IMPORTANT: Values must be accurate because they will be used to calculate the track for implement guidance and documentation.

NOTE: Minor adjustments to dimension B on the Implement 1 GPS Offsets page can result in measurable changes in off-track error performance. When modifying this value, minor increment changes 1 cm (0.5 in.) is recommended.

There are certain value constraints to make iGuide work - refer to APPENDIX—VALID CONFIGURATION.



PC11841 —UN—23MAR09

GPS Offsets

A—In-line distance from connection point to GPS receiver.
B—Lateral distance from implement center to GPS receiver.
C—Vertical distance from GPS receiver to ground with implement engaged.
D—Lateral offset toggle button
E—Verify implement fore/aft and offsets in the StarFire setup pages.

CZ76372,00001D0 -19-06OCT10-1/1

Measuring in line dimension from receiver to receiver

Measure the distance between the vehicle receiver to the implement receiver and then compare to the total of dimensions "B" and "C" from Machine Offsets Page (section 15-5), and dimension "A" from the Implement GPS Offsets Page (section 15- 10). The physical distance between the receivers should match the distance found in adding these three dimensions.

Example:

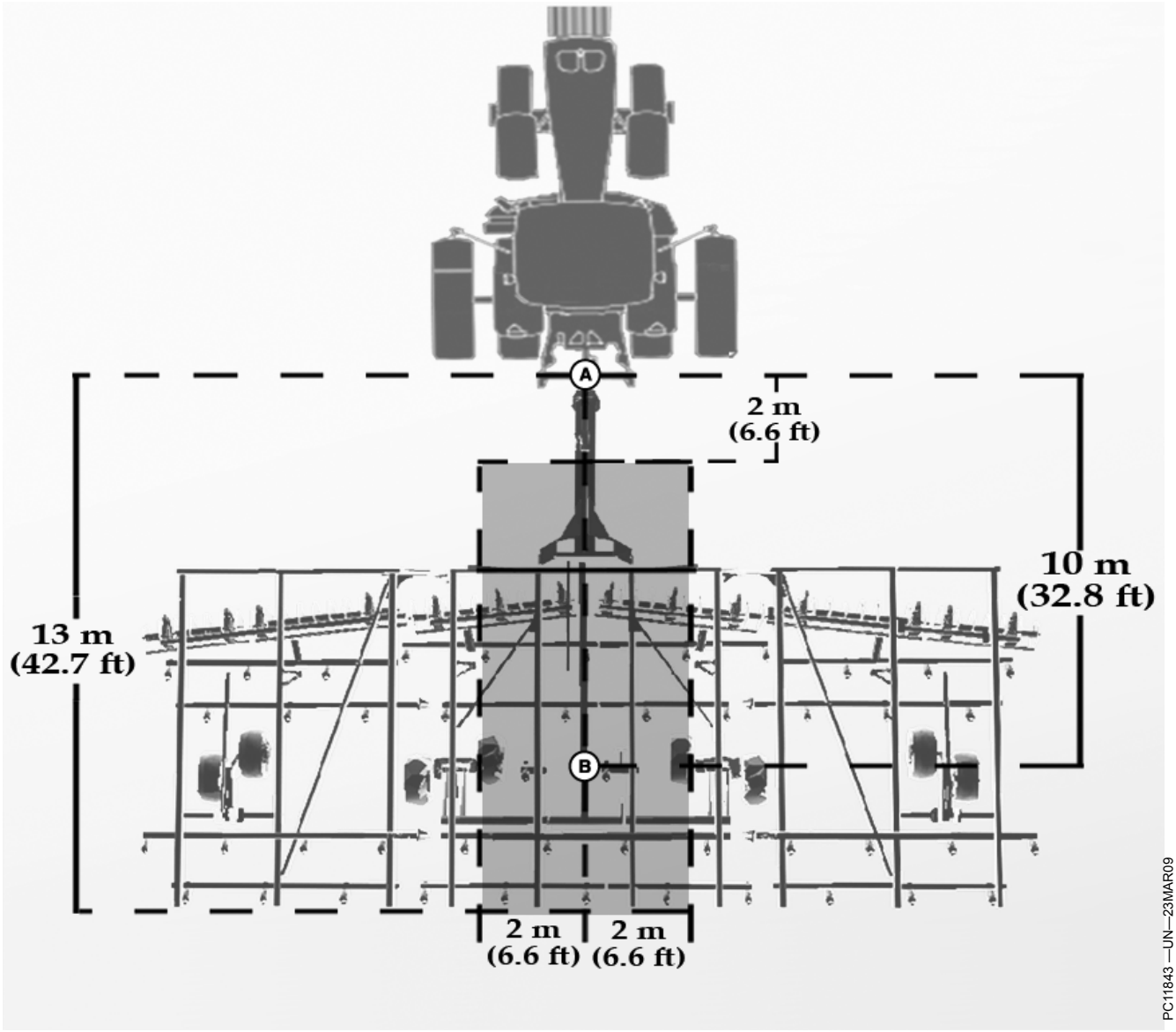
- Distance between vehicle and implement receivers = 255 inches
- Dimensions "B" in Vehicle offset page = 55, "C" in Vehicle offset page = 65, and "A" in Implement receiver offset page = 135 in. In total equaling, 255 inches.

NOTE: Measure from middle of vehicle receiver to middle of implement receiver.

NOTE: For articulated tractors, the distance from receiver to connection point is B subtracted from C. (i.e. distance = "C" - "B" + "A")

CZ76372,00001D1 -19-06OCT10-1/1

Receiver Installation



Possible Mounting Location

A—Connection Point **B—Control Point**

The mounting example diagram has a distance of 10 m (32.8 ft) from the connection point (A) to the control point (B).

The minimum distance needed between the connection point and the GPS receiver of 2 m (6.6 ft) incorporated with the maximum of 2 m (6.6 ft) to left or right from center gives possible mounting location (dark shaded portion in example diagram).

The ideal mounting location should be as close as possible to the control point (B) on the implement.

JS56696,0000510 -19-11DEC08-1/1

GPS Receiver Setup

MENU >> STARFIRE iTC Implement >> SETUP tab allows access to StarFire iTC setup on the implement.

NOTE: The implement receiver will detect its position automatically when it is attached to the implement receiver application harness. If there is no implement receiver shown on the CAN bus, check implement harness connection.

NOTE: Original StarFire receivers cannot be used on the implement or machine for iGuide.

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

The number below the text on the StarFire iTC Softkey shows the serial number of the receiver.

On the StarFire Main page the receiver definition (Machine or Implement) is shown in the headline.

PC8663 —UN—05AUG05

MENU Softkey

PC9966 —UN—09FEB07

StarFire iTC Implement Softkey

PC9965 —UN—09FEB07

StarFire iTC Machine Softkey

JS56696,0000505 -19-01APR09-1/4

PC12310 —UN—28SEP09

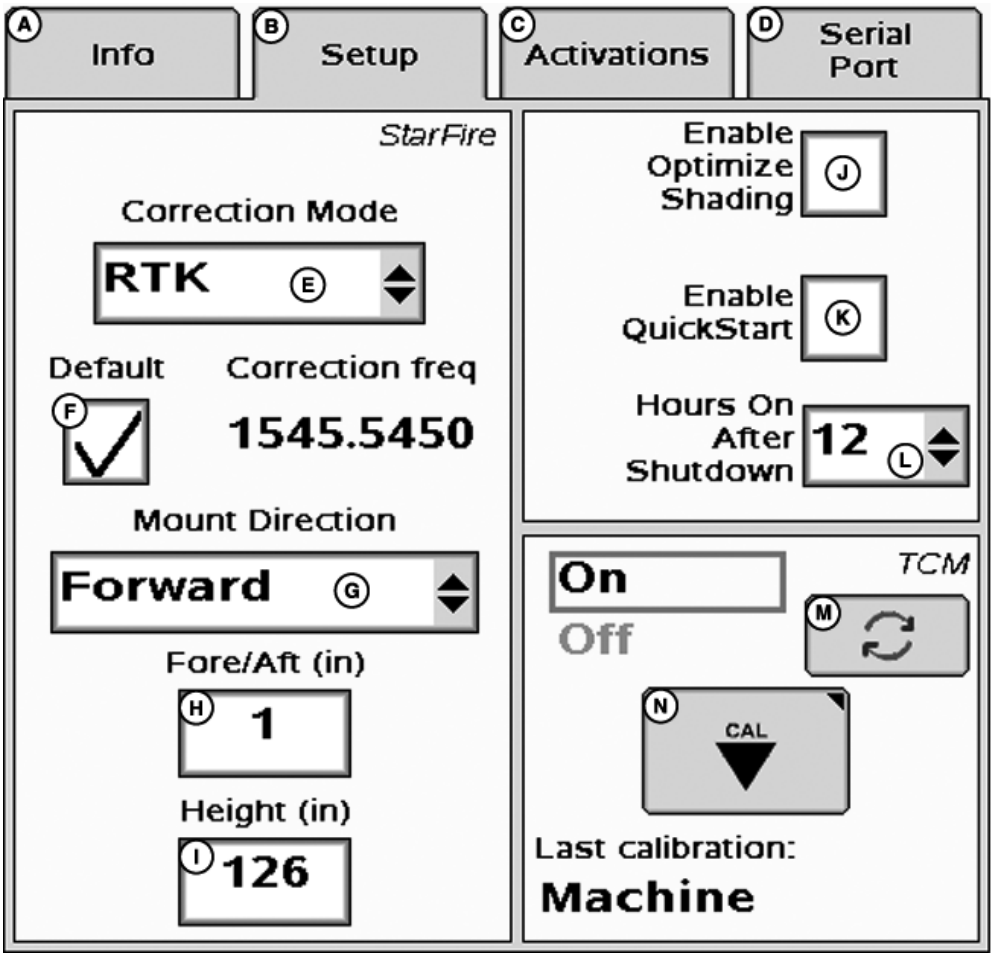
Machine iTC Receiver

PC11529 —UN—10DEC08

Implement iTC Receiver

Continued on next page

JS56696,0000505 -19-01APR09-2/4



StarFire iTC Implement—Main

A—Info Tab
B—Setup Tab
C—Activations Tab
D—Serial Port Tab
E—Correction Mode Drop-Down Menu
F—Correction Default Check-Box
G—Mount Direction Drop-Down Menu
H—Fore/Aft Input-Box
I— Height Input-Box
J— Enable Optimize Shading Check-Box
K—Enable QuickStart Check-Box
L— Hours On After Shutdown Drop-Down Menu
M—TCM On/Off Toggle Button
N—TCM Calibrate Button

Select Correction Mode to match the desired correction mode. iGuide requires both receivers to have the same RTK differential correction level (SF1 and SF2 are not compatible with iGuide).

See APENDIX—VALID CONFIGURATION for more information.

Select the correct mounting direction. The preferred mounting direction for the implement is forward.

NOTE: Face receiver directly straight forward or backward.

Continued on next page

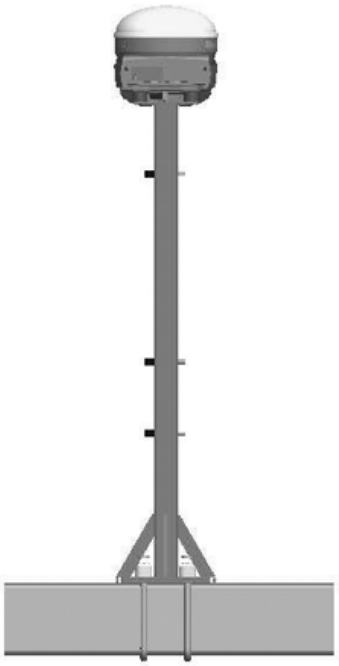
Enter the correct receiver height above the ground. To measure the receiver height, put the implement at its working depth (if possible) and measure the height. If this is not possible, lower the implement to the ground, and subtract the desired working depth to get the value to be entered.

Example: 2210 field cultivator—Lower the implement so the sweeps are on the ground. Measure the height from the ground to the top of the receiver. Subtract the working depth from this number and enter as the receiver height. If the height measured equals 180 cm (71 in.) and your desired working depth is 10 cm (4 in.), enter 170 cm (67 in.) as the receiver Height.

NOTE: Enter 0 for the Fore/Aft offset for the implement receiver.

Hours After Shutdown— The use of this feature is recommended when two StarFire receivers are connected on the CAN Bus to prevent excessive battery discharge. Set hours after shutdown between 3 and 12 hours.

For optimized performance make the Hours On After Shutdown the same value as on the machine receiver.

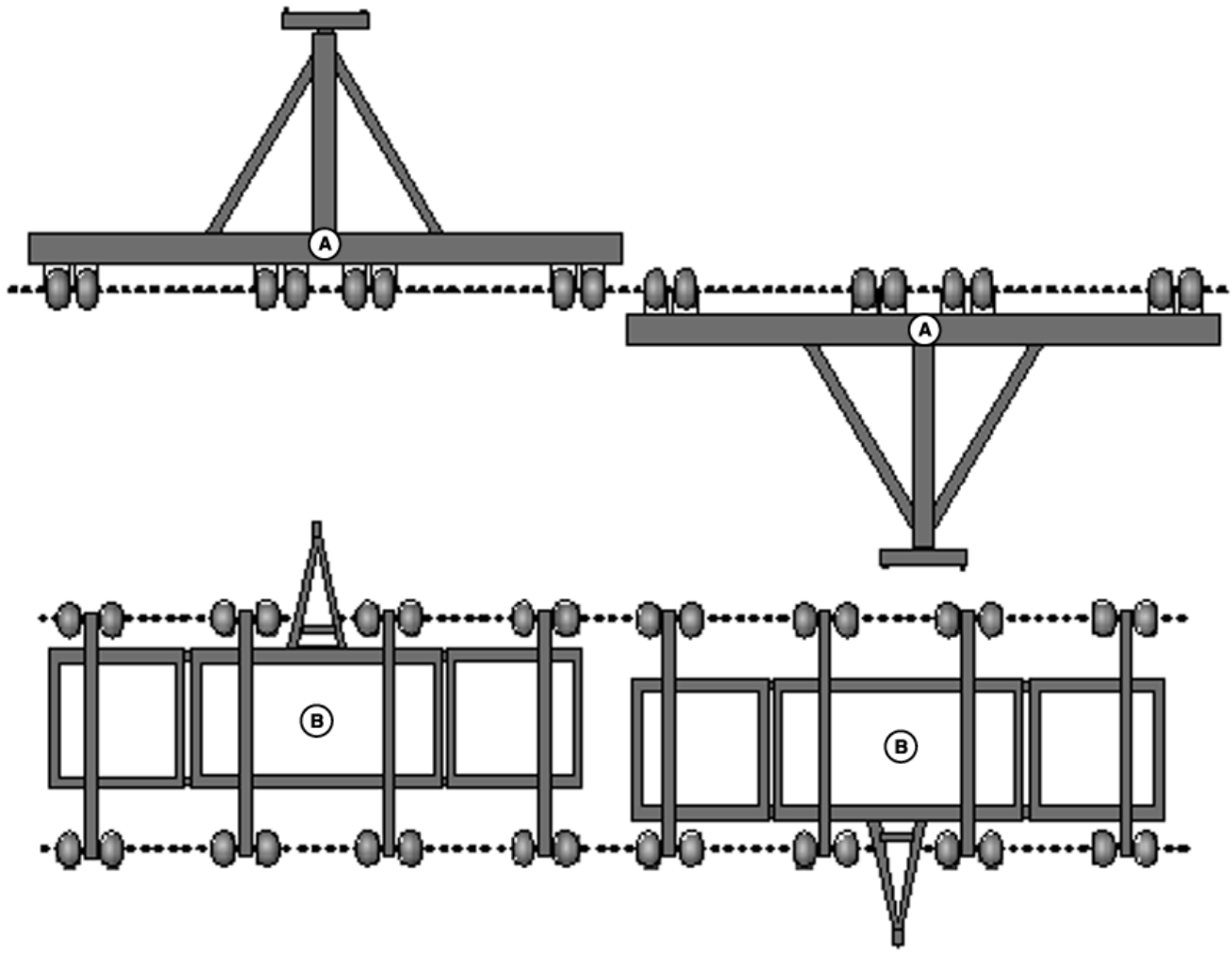


PC11208 —UN—14JUL08

Rear View Of Mast

JS56696,0000505 -19-01APR09-4/4

TCM Calibration



TCM Calibration

A—Implement with one main axle B—Implement with carrying wheels at the front and rear

One of the most important steps in making iGuide function at its peak performance is the TCM Calibration for both the machine and implement. If the TCM calibration is not performed correctly then a bias could occur in the machine, implement or both. A bias is when the machine AutoTracs down and back on the same path and the wheel tracks do not line up. This can be caused by a poor TCM calibration or the receiver is not centered on the machine. A bias can be fixed by either re-calibrating the TCM or entering a machine or implement GPS lateral offset.

NOTE: When checking for bias, turn iGuide to "none" and use AutoTrac to check the machine bias. If you need to check implement bias, use iGuide. Use Straight track only.

NOTE: When performing a TCM calibration on the implement receiver, the wheels of the main frame need to be in the same location after turning implement around so that the right-hand wheels are in the same place as where the left-hand wheels were.

NOTE: A TCM calibration should be performed each time the receiver is moved to a different implement or vehicle.

Tips for a good TCM calibration:

- Let the receiver warm up for 10—15 minutes, especially if the air temperature is cold.
- Calibrate on a flat surface.
- Make sure the machine or implement are level with respect to the ground by having proper tire inflation, correct ballasting, and the same tire sizes.
- Follow diagram example for proper rotation of implement during the calibration process.

For more information refer to your StarFire iTC users manual.

Continued on next page

JS56696,0000506 -19-09DEC08-1/3

Adjusting Lateral Offsets

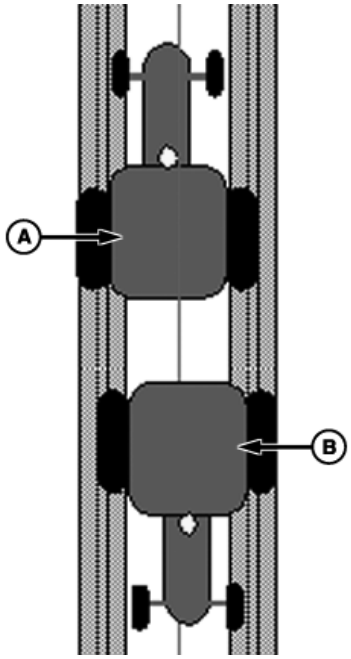
If TCM's have been properly calibrated and machine or implement still cannot track on same line going both directions, a lateral offset should be entered.

NOTE: Remember, when checking bias on machine, use AutoTrac. When checking bias on implement, use iGuide.

1. The offset will be half the distance the two paths were offset and in the same direction.
2. When entering lateral offset for implement, enter a GPS offset on GPS offsets page.
3. Remember, when looking at tracks on the ground, machine and implement must be symmetrical. Tires must have same spacing from center of machine or implement.
4. Another way of getting the correct lateral offset for the implement is to measure guess rows. This method will work with the implement in the ground and will also achieve good guess rows.
   Before measuring guess rows, make sure row units are correctly spaced from center of implement.
   Make three adjacent passes (preferably in straight track mode with iGuide on). Make sure passes are long enough so system has time to become stable.
   Measure distance between guess rows in the middle of pass.

   NOTE: Do not measure the ends of the passes.

   NOTE: Wheels must be accurately spaced on vehicle axles. This is critical for calibration accuracy .



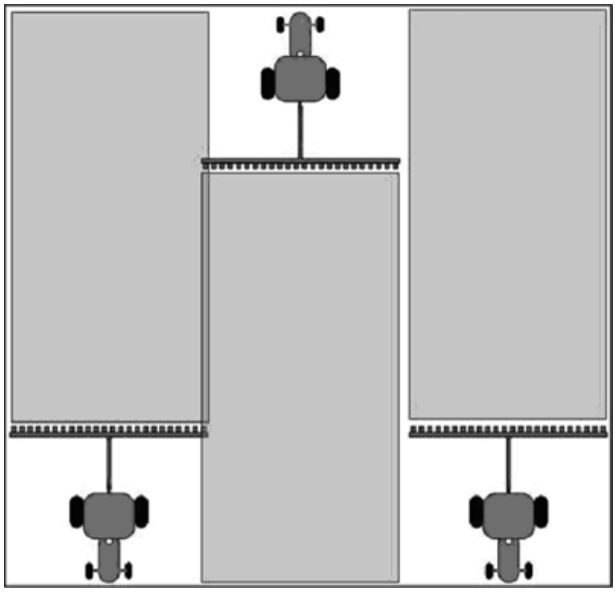
PC11507 —UN—09DEC08

Lateral Offsets

A—Second Pass **B—First Pass**

JS56696,0000506 -19-09DEC08-2/3

5. **Implement GPS Lateral Offset Example—** Using the Lateral Offsets 2 graphic and trying to get 762 mm (30 in.) guess rows. The guess row that is too narrow (overlap), was measured at 64 cm (25 in.). The wide side guess row was measured at 89 cm (35 in.). Therefore a 6.4 cm (2.5 in.) GPS offset to the left (narrow side) should be entered in the GPS Offsets page.



PC11067 —UN—29FEB08

Lateral Offsets 2

JS56696,0000506 -19-09DEC08-3/3

Guidance Setup

Guidance Setup

MENU >> GREENSTAR >> GUIDANCE softkey >> GUIDANCE SETTINGS tab (A)

Select desired Tracking Mode first (refer to AutoTrac Operators Manual). If Curve Track was selected, check Curve Track settings.

Set Implement Guidance Mode (B) to iGuide.

Select iGuide Settings (C) to define Slope Compensation and iGuide sensitivity.

For information on Turning View, Turn Predictor, Lead Compensation, Arrow Segments, and Tracking Tones refer to the AutoTrac Operators Manual.

A—Guidance Settings Tab
B—Implement Guidance Mode
C—iGuide Settings

PC8663 —UN—05AUG05

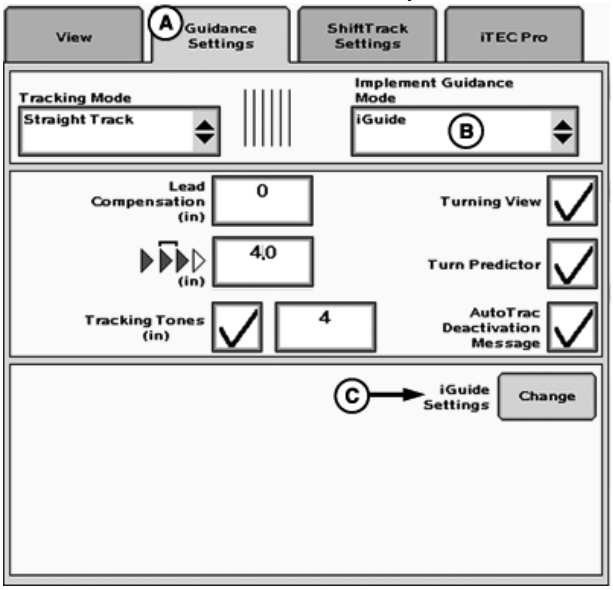
MENU button

PC12685 —UN—14JUL10

GREENSTAR 3 Softkey

PC12947 —UN—12OCT10

GUIDANCE Softkey



PC11792 —UN—09MAR09

Guidance Settings

Continued on next page

CZ76372,00001DD -19-12OCT10-1/6

Slope compensation aids in helping drive the machine up a hill to account for implement drift. It looks at the machine roll angle and slope compensation value to determine the amount to move the machine up hill. On a 5 degree slope with a value of 2.54 cm (1.0 in.)/degree this will move the machine 12.7 cm (5 in.) up the hill to compensate for the implement drifting down hill. If the implement drifts more than that, increase the slope compensation value. If the implement drifts less than that, decrease the slope compensation value.

Recommendation for use:

- Unless the field is completely flat, the slope compensation value can aid in keeping the implement on line.
- 0-2 degrees—Slope compensation may not be needed. Recommended starting value 1.3 cm (0.5 in.)/degree.
- 2-5 degrees—Slope compensation provides a moderate amount of machine correction and is recommended to be turned on. Typical values of 1.3 to 3.8 cm (0.5 to 1.5 in.)/degree.
- 5 degrees and above—Slope compensation is recommended to be on. Typical values can range from 2 to 7.6 cm (0.8 to 3.0 in.)/degree.

NOTE: Values above 7.6 cm (3 in.)/degree should be used with caution. On a 10 degree slope with a value of 7.6 cm (3 in.)/degree, the system will try to move the machine 76 cm (30 in.) up hill to compensate for implement drift.

Using the Calibration Feature:

- Machine and Implement should be tracking on line with iGuide activated. Do not perform the calibration during line acquisition.
- If the current slope compensation value is more than 1.3 cm (0.5 in.)/degree difference, it may be better to enter the value manually with the increment and decrement buttons. If a large change is made, it could cause some system instability until the system has time to react to the large changes.
- Calibrations made at roll angles between 2-5 degrees may not be ideal for larger roll angles and vice versa.

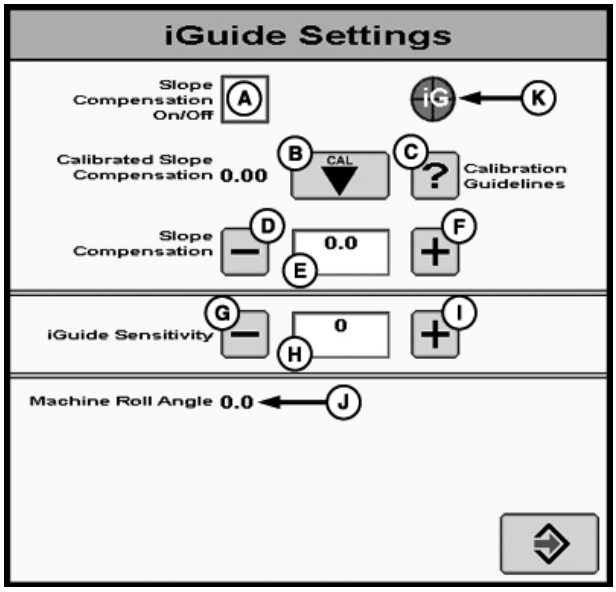
NOTE: You cannot navigate away from the iGuide screen while calibrating slope compensation. Stop calibration then navigate to other screens.

Adjusting the value manually:

- When transiting to a hillside and implement error is showing the implement needs to move down hill, slope compensation needs to be reduced.
- If the implement error is showing implement needs to move up hill, slope compensation value should be increased.

When slope compensation (A) is checked, slope compensation will be turned on.

Calibrated slope compensation displays the last slope compensation value created during calibration.



PC11793 —UN—10MAR09

A—Slope Compensation On/Off
B—Calibrated Slope Compensation Button
C—Slope Calibration Help Button
D—Decrease Slope Compensation Value
E—Calibrated Slope Compensation Value
F—Increase Slope Compensation Value
G—Decrease iGuide Sensitivity
H—iGuide Sensitivity Input
I— Increase iGuide Sensitivity
J— Machine Roll Angle
K—iGuide Status Pie

Slope compensation (E) is an input field allowing for manual adjustment of the slope compensation value and shows current compensation value.

Adjusting Slope Compensation Value

Slope Compensation can be changed by three methods:

1. Calibrate slope compensation by pressing (B). Also see GUIDANCE SETUP for detailed information.
2. Use decrement (D) and increment (F) buttons to change slope compensation value (E).
3. Manually enter Slope Compensation value (E).

Adjustment for slope compensation using decrement (D) and increment (F) buttons is 0.01 cm (0.01 in.)/degree.

NOTE: Average slope compensation range is 1.3 to 8.9 cm/degree (0.5 to 3.5 in./degree). If value is higher, re-calibrate. If value is still too large, turn off slope calibration. This can typically be seen on flat ground.

NOTE: If upon calibration, slope compensation value is above 4.00, calibrate again. Re-calibration is recommended to verify a consistent slope compensation value. If a consistent value is not achieved, review the slope compensation guidelines in the GUIDANCE SETUP section.

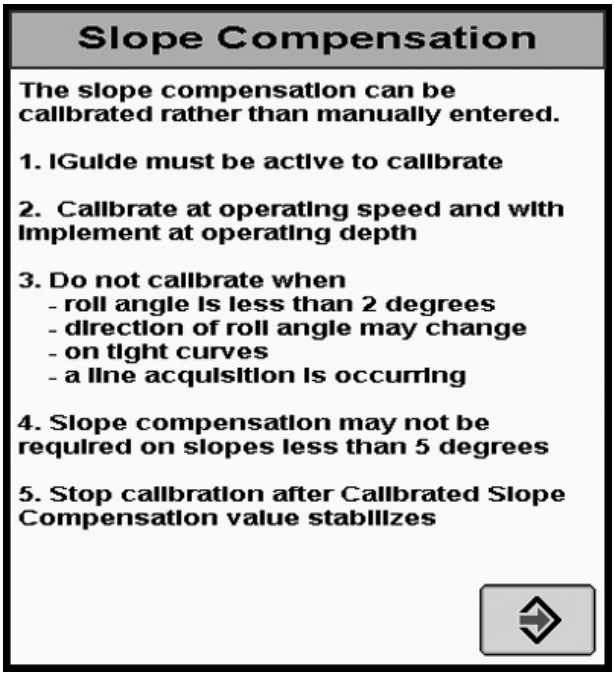
Continued on next page

CZ76372,00001DD -19-12OCT10-2/6

CZ76372,00001DD -19-12OCT10-3/6

The slope compensation can be calibrated rather than manually entered.

1. iGuide must be active to calibrate
2. Calibrate at operating speed and with implement at operating depth
3. Do not calibrate when
   - Roll angle is less than 2 degrees
   - Direction of roll angle may change
   - On tight curves
   - A line acquisition is occurring
4. Slope compensation may not be required on slopes less than 5 degrees
5. Stop calibration after calibrated slope compensation value stabilizes



PC11794 —UN—09MAR09

Slope Compensation

CZ76372,00001DD -19-12OCT10-4/6

The slope compensation value has changed. Please accept the new value or cancel the changes to keep the previous value.

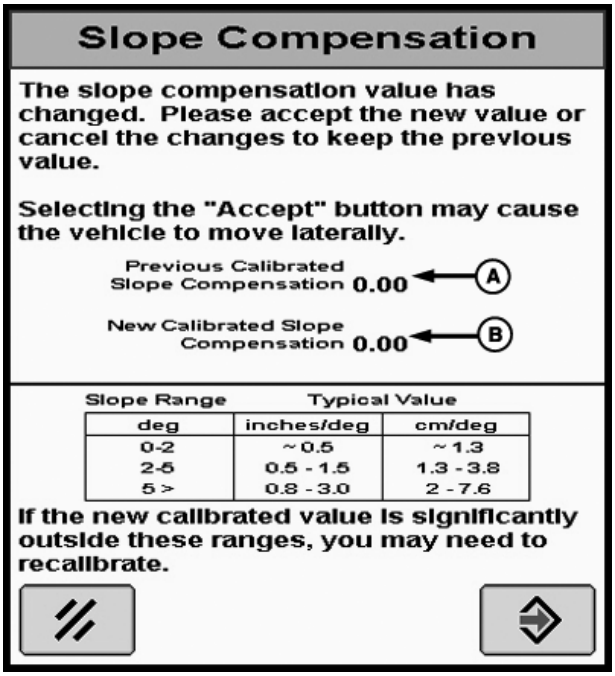
Selecting the “Accept” button may cause the vehicle to move laterally.

Slope Range	Typical Value	
Degree	Inches / Degree	Centimeter / Degree
0 - 2	~ 0.5	~ 1.3
2 - 5	0.5 - 1.5	1.3 - 3.8
5 >	0.8 - 3.0	2 - 7.6

If the new calibrated value is significantly outside these ranges, you may need to recalibrate.

A—Previous Calibrated Slope Compensation

B—New Calibrated Slope Compensation



PC11795 —UN—09MAR09

Slope Compensation

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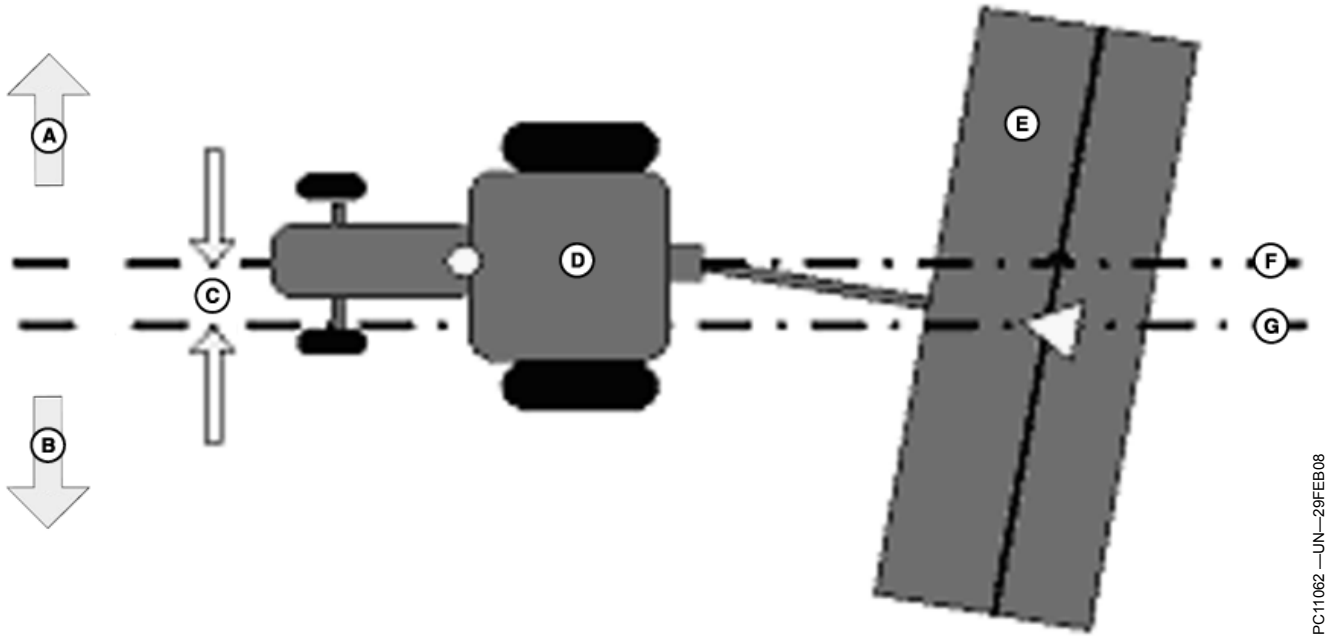
CZ76372,00001DD -19-12OCT10-5/6



10 Degree Slope Compensation

A—Up Hill
B—Down Hill
C—25.4 cm (10 in.)
D—Tractor
E—Implement
F—Desire Path
G—Implement Drift Path

Calculating Slope Compensation Manually

If the center of the machine and center of the implement positions are 25.4 cm (10 in.) apart on a slope with a roll angle of 10 degrees, the slope compensation value should be set to 2.54 cm (1 in.) per degree (25.4 cm (10 in.) of drift divided by 10 degrees of roll angle). If there is a 25.4 cm (10 in.) difference on a slope with a 5 degree roll angle, then the value would be 5.1 cm (2 in.)/degree.

Implement Error / Roll Angle = Slope Compensation

NOTE: Recommended adjustment in 0.2 cm (0.05 in.)/deg.

iGuide Sensitivity

iGuide Sensitivity affects how aggressively the system responds to implement error. This function is similar to AutoTrac steer sensitivity.

- iGuide Sensitivity allows the system to respond to implement errors. Higher sensitivity enables iGuide to quickly react to implement error.
- Too high of a value may cause the system to oscillate around the intended path. Too low of a value may cause the implement to react slow when trying to maintain the implement on the guidance path.
- A starting value of 15 is recommended. Adjust the sensitivity in small increments until optimal tracking performance is achieved.

NOTE: Machine steer sensitivity may need to be increased or decreased to keep the machine on the guidance path. iGuide is dependent on the machines ability to track accurately on the intended guidance path.

CZ76372,00001DD -19-12OCT10-6/6

Operation of iGuide

MEMU >> GREENSTAR >> GUIDANCE allows access to Guidance Settings and Shift Track Settings.

PC8663 —UN—05AUG05

MENU Softkey

PC12685 —UN—14JUL10

GREENSTAR 3 Softkey

PC12947 —UN—12OCT10

GUIDANCE Softkey

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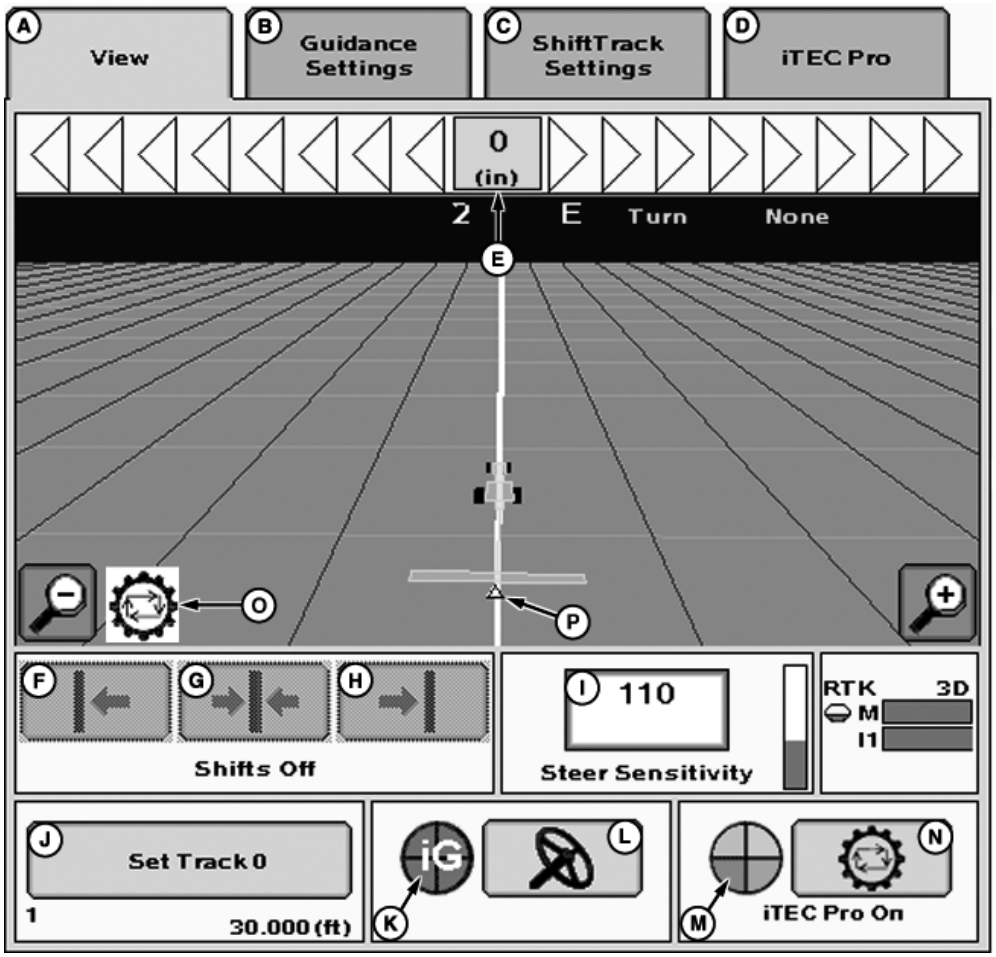
CZ76372,00001DE -19-12OCT10-1/2



PC11899 —UN—01APR09

GreenStar—Guidance

A—View Tab
B—Guidance Setting Tab
C—Shift Track Settings Tab
D—iTEC Pro Tab
E—Path Accuracy Indicator
F—Shift Track Left Button
G—Shift Track Center Button
H—Shift Track Right Button
I— Steer Sensitivity Input-Box
J— Set Track 0 Button
K—iGuide Status Pie
L— Steer On/Off button
M—iTEC Pro Status Pie
N—iTEC Pro Enable Button
O—iTEC Pro Icon
P—Implement Receiver Location Icon

In order to operate iGuide, a valid setup must be available (see APPENDIX—VALID CONFIGURATION). AutoTrac can be engaged when the “steering wheel” icon is visible in the AutoTrac enable button.

While in iGuide mode, machine and implement icons are displayed in the perspective view. The implement will have the guidance triangle. The error bar (D) at the top of the page will display the error at the implement.

- Blue line—recorded implement path
- White line—implement tracking line

For all other settings refer to the GreenStar Display operator’s manual.

If iGuide is not set up correctly, the AutoTrac steer on/off button will be shown as a wrench. If the diagnostic wrench is pressed, the AutoTrac diagnostic pages will appear to indicate which items are not properly set up. Once iGuide is properly configured, the steer on/off button will replace the diagnostic wrench.

When the AutoTrac diagnostic wrench button is selected, the AutoTrac diagnostic page will be displayed. If the valid configuration is not valid, select implement guidance from the drop-down menu on the diagnostic page to view implement guidance diagnostics.

NOTE: For Line acquisition, the vehicle must be within the 40% of the tracking width and within 80 degrees of the line.

CZ76372,00001DE -19-12OCT10-2/2

Integrating iGuide and iTEC Pro

Hardware and Software Requirements

In order to run iTEC Pro and iGuide simultaneously, the following hardware and software are required:

1. Both receivers must be iTC receivers
2. RTK GPS signal level on both receivers
3. Vehicle must have integrated AutoTrac components
4. GreenStar 2 2600 display must have AutoTrac SF2 activation
5. GreenStar 2 2600 display must have iGuide and iTEC Pro software activation
6. Drawn implements

NOTE: Please check the iGuide OM for a complete list of supported and not supported implements and applications.

JS56696,0000522 -19-23APR09-1/1

Hardware and Software Requirements

In order to run iTEC Pro and iGuide simultaneously, the following hardware and software are required:

1. Both receivers must be iTC receivers
2. RTK GPS signal level on both receivers
3. Vehicle must have integrated AutoTrac components
4. GreenStar Display must have AutoTrac SF2 activation
5. GreenStar Display must have iGuide and iTEC Pro software activation
6. Drawn implements

NOTE: Please check the iGuide OM for a complete list of supported and not supported implements and applications.

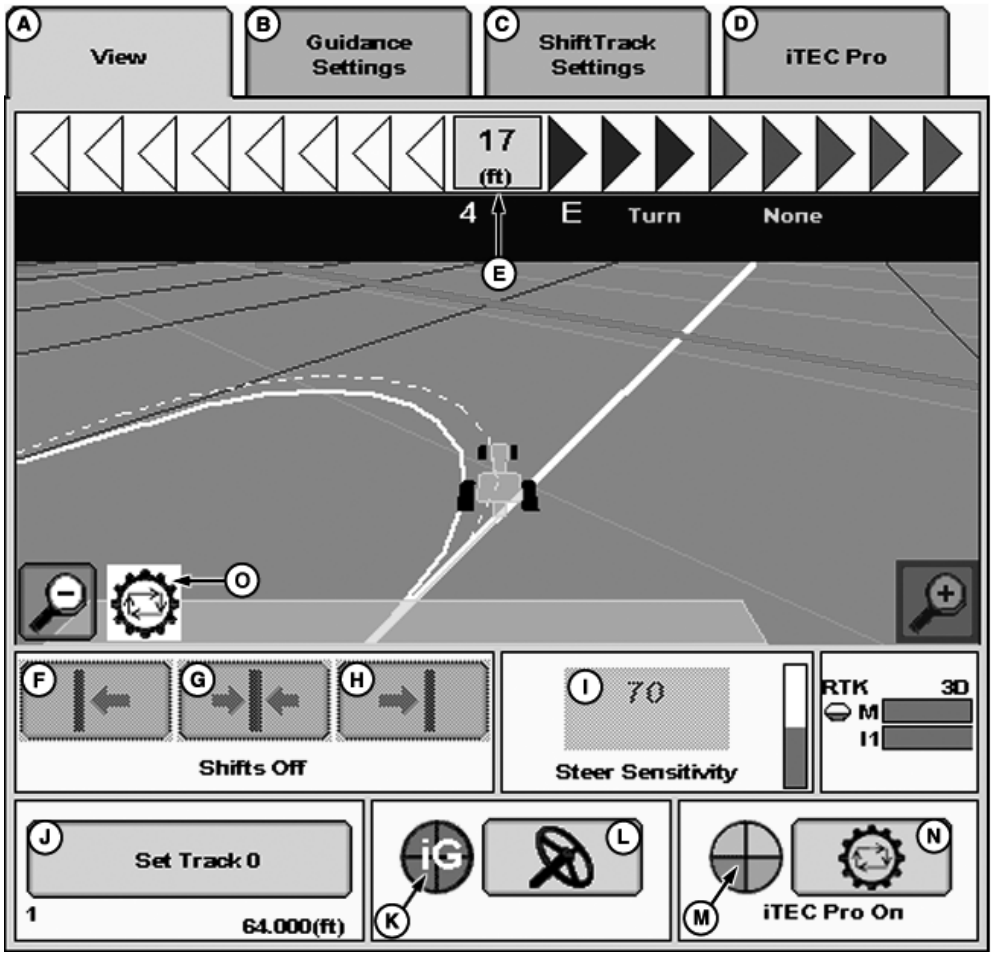
CZ76372,00001DF -19-12OCT10-1/1

Setup

1. Complete iTEC Pro and iGuide vehicle and implement setup as described in their separate Operator's Manual.
2. Control point distance should be set for optimal iGuide performance.

JS56696,0000523 -19-23MAR09-1/1

Operation



PC11845 —UN—23MAR09

GreenStar—Guidance

A—View Tab
B—Guidance Setting Tab
C—Shift Track Settings Tab
D—iTEC Pro Tab
E—Path Accuracy Indicator
F—Shift Track Left Button
G—Shift Track Center Button
H—Shift Track Right Button
I— Steer Sensitivity Input-Box
J— Set Track 0 Button
K—iGuide Status Pie
L—Steer On/Off button
M—iTEC Pro Status Pie
N—iTEC Pro Enable Button
O—iTEC Pro Icon

1. Tracking Mode—The operation of iGuide and iTEC Pro will be available only on straight tracking mode.
2. End of Turn Performance
   a. When both systems are activated, the operator will see two paths on the screen.
   b. The solid white line is the implement path and current guidance path.
   c. The dashed white line is the projected vehicle path and is shown as a reference for the operator.
   d. If iTEC Pro detects a collision with an impassable boundary, both solid and dashed line paths will turn red until the collision is passed.

CZ76372,00001E0 -19-12OCT10-1/1

Using Implement Receiver for Documentation and Coverage Map

When using iGuide guidance mode, the documentation and coverage map will use the implement receiver position as a reference point.

When iGuide is not in use and the implement receiver is connected to the CAN bus, the system will use the implement receiver position for documentation and coverage map purposes.

NOTE: If you are not using iGuide guidance mode and do not want to use the Implement Receiver position as a reference point for documentation and coverage map, unplug the implement receiver from the CAN Bus. After unplugging the Implement Receiver from the CAN Bus, the GreenStar Display will use the Machine Receiver position as a reference point for documentation and coverage map.

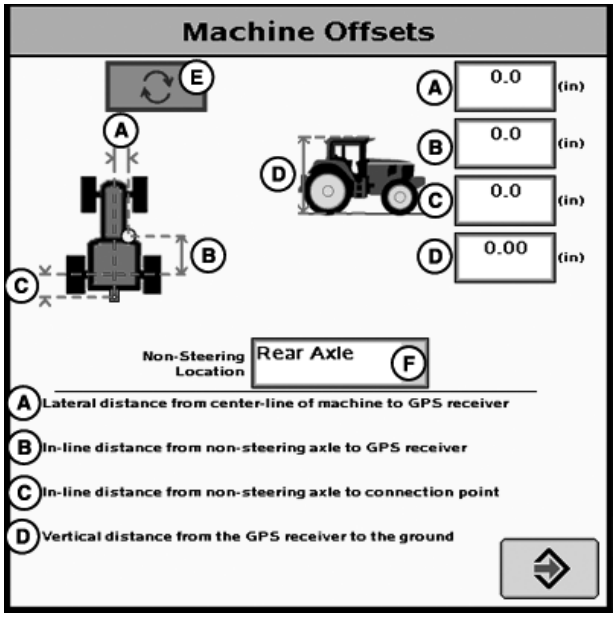
CZ76372,00001E1 -19-12OCT10-1/1

Setting Up Vehicle Offsets

Vehicle Offsets

Offsets “A”, “B”, “C”, and “D” are critical for iGuide to operate efficiently.

A—Lateral distance from center-line of machine to GPS receiver
B—In-line distance from non-steering axle to GPS receiver
C—In-line distance from non-steering axle to connection point
D—Vertical distance from the GPS receiver to the ground
E—Offset Toggle Button
F—Non-Steering Location Drop-Down Menu



PC11898 —UN—01APR09

Machine Offsets

JS56696,00006D7 -19-31AUG09-1/2

Offset “D” should match Receiver Height from Machine Receiver softkey.

PC9965 —UN—09FEB07

StarFire iTC Machine

JS56696,00006D7 -19-31AUG09-2/2

Setting Up Implement Offsets

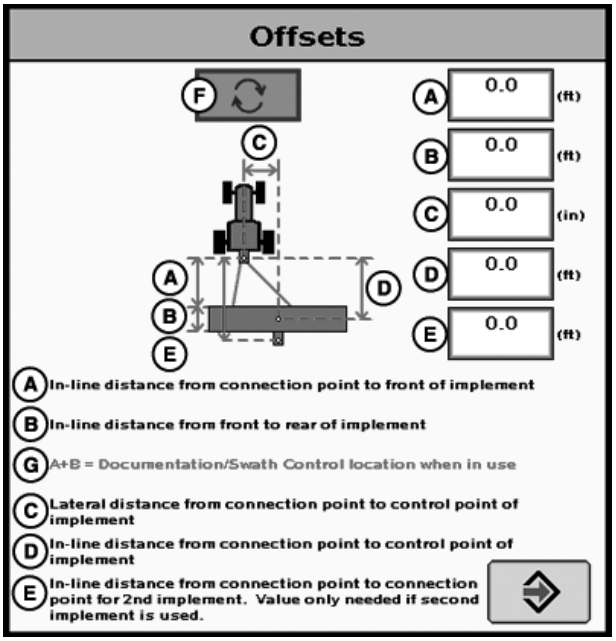
Implement Offsets

Offsets “A”, “B”, and “D” are critical for iGuide to operate efficiently.

Offset “E” is not required for iGuide.

NOTE: Offset “C” is required when using a non centered implement.

A—In-line distance from connection point to front of implement.
B—In-line distance from front to rear of implement.
C—Lateral distance from connection point to control point of implement.
D—In-line distance from connection point to control point of implement.
E—In-line distance from connection point to connection point for second implement. Value only needed if second implement is used.
F—Offset Toggle Button
G—A+B Documentation/Swath Control location when in use.



PC11838 —UN—20MAR09

Offsets

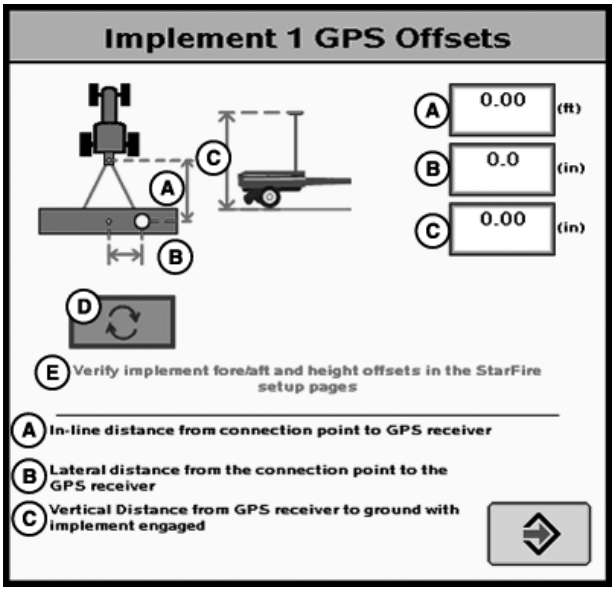
JS56696,00006D8 -19-31AUG09-1/1

Setting Up Implement GPS Offsets

Implement GPS Offsets

Offsets “A”, “B”, and “C” are critical for iGuide to operate efficiently.

A—In-line distance from connection point to GPS receiver.
B—Lateral distance from implement center to GPS receiver.
C—Vertical distance from GPS receiver to ground with implement engaged.
D—Lateral offset toggle button
E—Verify implement fore/aft and offsets in the StarFire setup pages.



PC11841 —UN—23MAR09

GPS Offsets

Continued on next page

CZ76372,00001E2 -19-12OCT10-1/3

Offset “C” should match Receiver Height from Implement Receiver softkey.

PC9966 —UN—09FEB07

StarFire iTC Implement Softkey

CZ76372,00001E2 -19-12OCT10-2/3

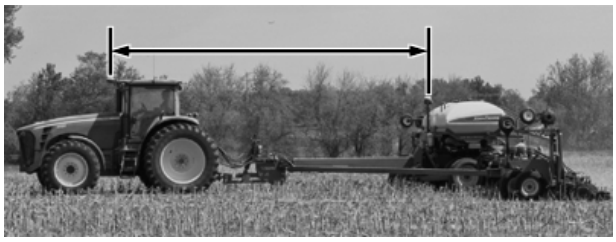
Check the GreenStar Display for correct in-line distance between vehicle receiver and implement receiver.

Measuring in line dimension from receiver to receiver:

Measure the distance between the vehicle receiver to the implement receiver and compare with the sum of offsets “B” and “C” from Vehicle Offset page and dimension “A” from the Implement Receiver Offset page. The distance between and the distance found in adding these three offsets, should match.

Example:

- Distance between vehicle and implement receivers is 647.7 cm (255 in.).
- Offsets:
  Offset “A” is 342.9 cm (135 in.)
  Offset “B” is 139.7 cm (55 in.)
  Offset “C” is 165.1 cm (65 in.)
  Total: 647.7 cm (255 in.)



PC12219 —UN—19AUG09

Receiver Offsets

NOTE: When measuring distance between vehicle and implement receivers, measure from middle of vehicle receiver to middle of implement receiver.

NOTE: For articulated tractors, distance from receiver to connection point is “B” subtracted from “C” (Example: distance = “C” – “B” + “A”).

CZ76372,00001E2 -19-12OCT10-3/3

Tuning Slope Compensation

Slope Compensation works as a look-ahead for the vehicle. Slope Compensation helps aids in moving the vehicle up the hill to keep the implement on the guidance line.

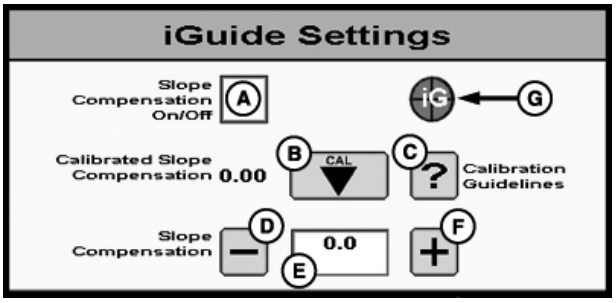
Slope Range	Typical Value	
Degree	Cm/Degree	Inches/Degree
0—2	1.3	0.5
2—5	1.3—3.8	0.5—1.5
Greater Than 5	2.0—8.9	0.8—3.5

- 0—2 degrees - Slope Compensation may not be needed
- 2—5 degrees - Use of Slope Compensation is recommended to provide moderate amount of machine correction
- Greater than 5 degrees - Use of Slope Compensation is recommended

NOTE: If slope compensation value is above 4.00 after calibration, calibrate again. Recalibration is recommended to verify a consistent slope compensation value. If a consistent value is not achieved, review the slope compensation guidelines.

General Slope Compensation Guidelines:

1. iGuide must be active to calibrate
2. Calibrate at operating speed with implement at operating depth



PC12220 —UN—27AUG09

A—Slope Compensation On/Off
B—Calibrated Slope Compensation Button
C—Slope Calibration Help Button
D—Decrease Slope Compensation Value
E—Calibrated Slope Compensation Value
F—Increase Slope Compensation Value
G—iGuide Status Pie

3. Do not calibrate when:
   - Roll angle is less than 2 degrees
   - Direction of roll angle may change
   - On tight curves
   - A line acquisition is occurring
4. Slope compensation may not be required on slopes less than 5 degrees
5. Stop calibration after calibrated slope compensation value stabilizes

JS56696,00006D4 -19-26AUG09-1/1

Tuning iGuide Sensitivity

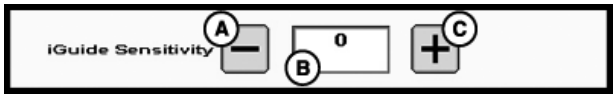
Tuning iGuide Sensitivity properly will ensure the system responds quickly to line and heading acquisition.

iGuide Sensitivity works in a similar way as the AutoTrac Sensitivity and will be different according to the soil conditions, machine, and implement models. iGuide Sensitivity is lower when soil condition is harder and is higher when soil condition is softer.

Adjust AutoTrac Steering sensitivity for the vehicle.

- Verify Implement Guidance Mode is set to “None”
- Refer to GreenStar Display Operator’s Manual for process of tuning steering sensitivity

PC12221 —UN—27AUG09



A—Decrease iGuide Sensitivity
B—iGuide Sensitivity Input-Box
C—Increase iGuide Sensitivity

NOTE: For some platforms, such as four wheel drive tractors, use a higher AutoTrac Sensitivity for best performance.

CZ76372,00001D2 -19-12OCT10-1/1

Troubleshooting Tips

1. Implement receiver not showing up in the GreenStar Display
   - Check if Constant Power Extension harness (PF90550 or PF90551) is installed.
   - Check for latest software (version 2.3.1385 or higher) on Implement Receiver.
   - Check if receiver is receiving Switched, Unswitched, CAN Low and CAN High power.
   - Check machine fuse panel for blown fuses
2. Implement GPS loses RTK signal more often than machine receiver
   - Check antenna on GPS receiver for tight connection.
   - Verify receiver has good line of sight to the base station.
   - Set machine to Vehicle Repeater. Only one Repeater or Vehicle Repeater can be used for selected base station ID.
3. Implement Error is not reduced in a reasonable amount of time
   - Incorrect machine or implement offsets.
   - iGuide sensitivity is set too low.
   - Incorrect Slope compensation value.
   - Engage iGuide closer to desired path.
   - Adjust control point.
4. Machine or implement is “S’ing” around the line
   - iGuide sensitivity is too high.
   - Steer sensitivity is too high.
5. Guess rows having a reoccurring skip/overlap pattern
   - Calibrate TCM on implement and machine receivers.
   - Change Implement GPS offsets.
   - Implement row units not properly spaced.
6. Reduced Accuracy
   - If possible, mount the implement receiver as close as possible to the control point. Mounting receiver too close to rear of machine may result in less accurate performance. Mounting receiver too far from control point may also cause poor performance.
     Control Point— location around which the implement rotates. This is typically the axle of the implement.
7. Adjusting the Control Point offset (examples)
   - If the implement consistently tracks inside curve, increase control point offset.
   - If the implement consistently tracks outside curve, decrease control point offset.
8. Slow to line acquisition and S-ing when re-entering passes at headlands
   - Resume switch should be activated when making the turn.

     NOTE: Do not wait until implement is aligned to push the resume switch as this may cause S-ing at the beginning of passes.

9. After unloading data in Apex and saving setup back to the data card, iGuide produces wide and narrow guess rows
   - Make sure the offsets saved in Apex are the same as when you measured the vehicle, implement, and implement receiver offsets.
   - If the offsets are the same, create a new machine name, machine model, implement name, and implement model. Then enter the measured offsets.
   - Recalibrate both TCMs (vehicle and implement). For best results, calibrate the TCM on a flat surface.

     NOTE: If the problem still exists, format or use a new data card. Then enter the correct offsets for the vehicle offset page, implement offset page, and implement receiver offset page.

     NOTE: If keeping the measured offsets, create a unique vehicle and implement name to store them under. If unique vehicle and implement names are not used, GSDNet updates will overwrite offsets.

10. iGuide is over-steering on flat ground (less than 2 degrees)
    - Verify Slope Compensation is off.
    - Lower iGuide Sensitivity.
11. iGuide respond for lateral implement draft is too slow
    - Verify Slope Compensation is on.
    - Recalibrate Slope Compensation.
    - Increment Slope Compensation value using the increment button until the proper value is found.
    - Raise iGuide Sensitivity.
12. iGuide calculates a high value after Slope Compensation Calibration
    - Check if iGuide was active during the calibration.
    - Check if calibration was performed on ground with less than 2 degree of roll angle.
13. iGuide does not work properly with row crop cultivation
    - iGuide is not designed to work on row crop cultivation.
14. Poor performance on articulated tractors
    - Verify if front axle has been selected as Non Steer Axle and re-measure vehicle offsets.
15. Points to Remember
    - In iGuide mode, remember error on the display is error at the implement. Error for iGuide may be higher on the display than machine error was when the system was in normal AutoTrac mode.
    - iGuide may not perform as well in tight turns or end turns as it does on more gradual curves; especially on severe slopes when the implement is sliding down hill.
    - iGuide is a reactive system and can only respond to implement errors.
    - System performance can be affected by several factors on the machine and implement. Examples: ballasting, tire inflation, hitch play, amount of weight on the implement (seed, fertilizer, chemical), second implement (air cart, tank), ground engaging equipment in proper working order, and offsets, values, and sensitivities in the GreenStar Display.

Continued on next page

- Always verify correct implement dimensions when using the “out of box” dimensions from the GreenStar Display or Apex.

CZ76372,00001E3 -19-12OCT10-2/2

Valid Configuration

iGuide requires certain settings to be available and certain offsets need to be within a defined range. If one of these constraints is not given, tracking cannot be activated. For a new, unknown implement, all offset will be zero as a default.

General constraints:

- Will not work with 3-pt implements.
- Implement receiver installed and set up to be an implement receiver.
- Both receivers need to have the same differential correction level (RTK).

The following settings and constraints are mandatory for the machine:

- Machine type and name selected.
- Rear pivot connection type selected.
- Distance between connection point and non steering axle is larger than 30 cm (11.8 in.).

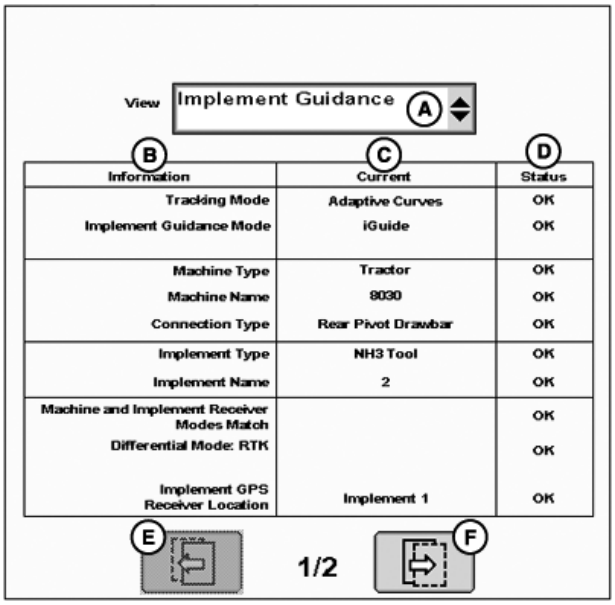
The following settings and constraints are mandatory for the implement:

- Implement type, name, and model are selected.
- Distance between connection point and control point shall be larger than 49 cm (1.6 ft).
- Location of implement receiver is defined.
- The distance between the connection point and the implement GPS receiver needs to be larger than 201 cm (79 in.).
- Lateral offset from control point to implement GPS receiver shall be less than 201 cm (79 in.).

The following settings and constraints are mandatory for the implement GPS receiver:

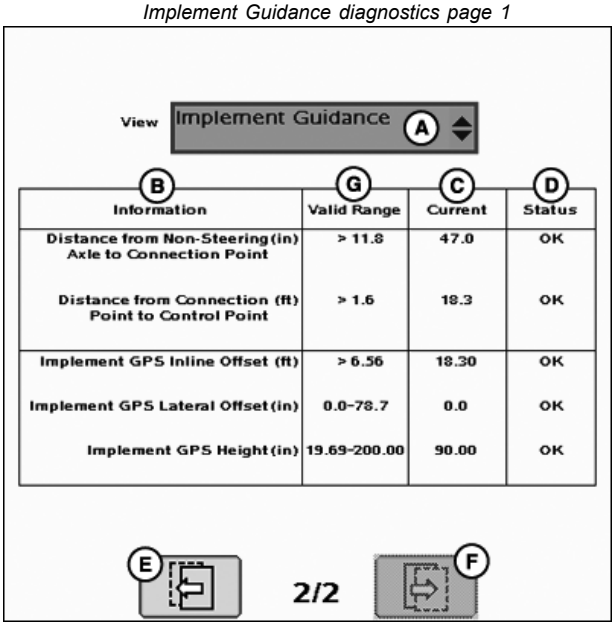
- Implement receiver height should be between 50 cm (20 in.) and 508 cm (200 in.).

A—View Drop-Down Menu
B—Information Column
C—Current Column
D—Status Column
E—Previous Page
F—Next Page
G—Valid Range Column



PC11846 —UN—24MAR09

Implement Guidance diagnostics page 1



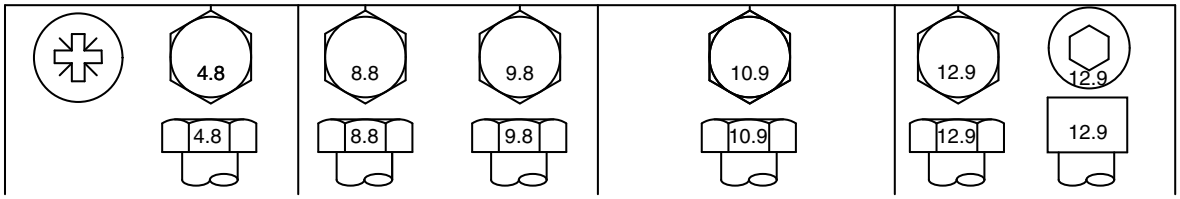
PC11797 —UN—09MAR09

Implement Guidance diagnostics page 2

JS56696,000050A -19-10DEC08-1/1

Metric Bolt and Screw Torque Values

TS1670 —UN—01MAY03



Bolt or	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
Screw	Lubricated[a]		Dry[b]		Lubricated[a]		Dry[b]		Lubricated[a]		Dry[b]		Lubricated[a]		Dry[b]	
Size	N·m	lb-in	N·m	lb-in	N·m	lb-in	N·m	lb-in	N·m	lb-in	N·m	lb-in	N·m	lb-in	N·m	lb-in
M6	4.7	42	6	53	8.9	79	11.3	100	13	115	16.5	146	15.5	137	19.5	172
									N·m	lb-ft	N·m	lb-ft	N·m	lb-ft	N·m	lb-ft
M8	11.5	102	14.5	128	22	194	27.5	243	32	23.5	40	29.5	37	27.5	47	35
			N·m	lb-ft	N·m	lb-ft	N·m	lb-ft								
M10	23	204	29	21	43	32	55	40	63	46	80	59	75	55	95	70
	N·m	lb-ft														
M12	40	29.5	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	46	80	59	120	88	150	110	175	130	220	165	205	150	260	190
M16	100	74	125	92	190	140	240	175	275	200	350	255	320	235	400	300
M18	135	100	170	125	265	195	330	245	375	275	475	350	440	325	560	410
M20	190	140	245	180	375	275	475	350	530	390	675	500	625	460	790	580
M22	265	195	330	245	510	375	650	480	725	535	920	680	850	625	1080	800
M24	330	245	425	315	650	480	820	600	920	680	1150	850	1080	800	1350	1000
M27	490	360	625	460	950	700	1200	885	1350	1000	1700	1250	1580	1160	2000	1475
M30	660	490	850	625	1290	950	1630	1200	1850	1350	2300	1700	2140	1580	2700	2000
M33	900	665	1150	850	1750	1300	2200	1625	2500	1850	3150	2325	2900	2150	3700	2730
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2770	4750	3500

Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For stainless steel fasteners or for nuts on U-bolts, see the tightening instructions for the specific application. Tighten plastic insert or crimped steel type lock nuts by turning the nut to the dry torque shown in the chart, unless different instructions are given for the specific application.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class. Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original. Make sure fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

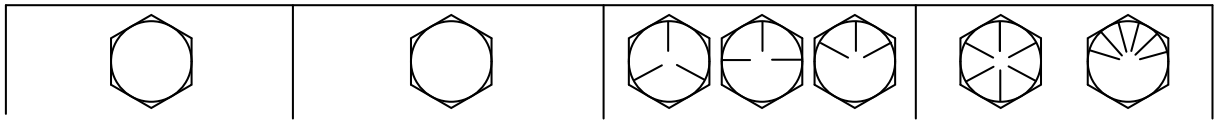
[a] *"Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or M20 and larger fasteners with JDM F13C zinc flake coating.*

[b] *"Dry" means plain or zinc plated without any lubrication, or M6 to M18 fasteners with JDM F13B zinc flake coating.*

JS56696,0000237 -19-22JUL08-1/1

Unified Inch Bolt and Screw Torque Values

TS1671 —UN—01MAY03



Bolt or	SAE Grade 1				SAE Grade 2[a]				SAE Grade 5, 5.1 or 5.2				SAE Grade 8 or 8.2			
Screw	Lubricated[b]		Dry[c]		Lubricated[b]		Dry[c]		Lubricated[b]		Dry[c]		Lubricated[b]		Dry[c]	
Size	N·m	lb-in	N·m	lb-in	N·m	lb-in	N·m	lb-in	N·m	lb-in	N·m	lb-in	N·m	lb-in	N·m	lb-in
1/4	3.7	33	4.7	42	6	53	7.5	66	9.5	84	12	106	13.5	120	17	150
													N·m	lb-ft	N·m	lb-ft
5/16	7.7	68	9.8	86	12	106	15.5	137	19.5	172	25	221	28	20.5	35	26
									N·m	lb-ft	N·m	lb-ft				
3/8	13.5	120	17.5	155	22	194	27	240	35	26	44	32.5	49	36	63	46
			N·m	lb-ft	N·m	lb-ft	N·m	lb-ft								
7/16	22	194	28	20.5	35	26	44	32.5	56	41	70	52	80	59	100	74
	N·m	lb-ft														
1/2	34	25	42	31	53	39	67	49	85	63	110	80	120	88	155	115
9/16	48	35.5	60	45	76	56	95	70	125	92	155	115	175	130	220	165
5/8	67	49	85	63	105	77	135	100	170	125	215	160	240	175	305	225
3/4	120	88	150	110	190	140	240	175	300	220	380	280	425	315	540	400
7/8	190	140	240	175	190	140	240	175	490	360	615	455	690	510	870	640
1	285	210	360	265	285	210	360	265	730	540	920	680	1030	760	1300	960
1-1/8	400	300	510	375	400	300	510	375	910	670	1150	850	1450	1075	1850	1350
1-1/4	570	420	725	535	570	420	725	535	1280	945	1630	1200	2050	1500	2600	1920
1-3/8	750	550	950	700	750	550	950	700	1700	1250	2140	1580	2700	2000	3400	2500
1-1/2	990	730	1250	930	990	730	1250	930	2250	1650	2850	2100	3600	2650	4550	3350

Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For plastic insert or crimped steel type lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application. Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Replace fasteners with the same or higher grade. If higher grade fasteners are used, tighten these to the strength of the original. Make sure fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

[a] Grade 2 applies for hex cap screws (not hex bolts) up to 6. in (152 mm) long. Grade 1 applies for hex cap screws over 6 in. (152 mm) long, and for all other types of bolts and screws of any length.

[b] "Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or 7/8 in. and larger fasteners with JDM F13C zinc flake coating.

[c] "Dry" means plain or zinc plated without any lubrication, or 1/4 to 3/4 in. fasteners with JDM F13B zinc flake coating.

JS56696,0000238 -19-22JUL08-1/1

Index

John Deere Service Keeps You On The Job

John Deere Parts

We help minimize downtime by putting genuine John Deere parts in your hands in a hurry.

That's why we maintain a large and varied inventory—to stay a jump ahead of your needs.

TS100 —UN—23AUG88

JS56696,0000239 -19-08FEB08-1/1

The Right Tools

Precision tools and testing equipment enable our Service Department to locate and correct troubles quickly . . . to save you time and money.

TS101 —UN—23AUG88

JS56696,000023A -19-08FEB08-1/1

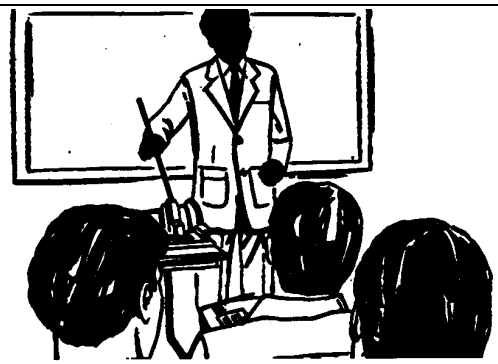
Well-Trained Technicians

School is never out for John Deere service technicians.

Training schools are held regularly to be sure our personnel know your equipment and how to maintain it.

Result?

Experience you can count on!



TS102 —UN—23AUG88

JS56696,000023B -19-08FEB08-1/1

Prompt Service

Our goal is to provide prompt, efficient care when you want it and where you want it.

We can make repairs at your place or at ours, depending on the circumstances: see us, depend on us.

JOHN DEERE SERVICE SUPERIORITY: We'll be around when you need us.

TS103 —UN—23AUG88

JS56696,000023C -19-08FEB08-1/1