



iTEC™ Pro



OPERATOR'S MANUAL iTEC™ Pro OMPFP14700 ISSUE I4 (ENGLISH)

CALIFORNIA Proposition 65 Warning

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

If this product contains a gasoline engine:

⚠ WARNING

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

The State of California requires the above two warnings.

Additional Proposition 65 Warnings can be found in this manual.

John Deere Ag Management Solutions
PRINTED IN U.S.A.



Introduction

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 prior to operation. To obtain a copy, see your dealer or visit www.StellarSupport.com

CZ76372,000071F -19-18JUN14-1/1

Foreword

WELCOME TO 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.

RM72004,000014E -19-25JAN13-1/1

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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.



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

T81389 —UN—28JUN13

Understand Signal Words

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

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

 **DANGER**

 **WARNING**

 **CAUTION**

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

TS187 —19—30SEP88

Follow Safety Instructions

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

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

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

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



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

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

TS201 —UN—15APR13

Practice Safe Maintenance

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

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

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

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

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

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



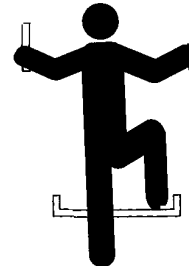
TS218 —UN—23AUG88

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

Use Steps and Handholds Correctly

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

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



T133468 —UN—15APR13

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

Handle Electronic Components and Brackets Safely

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

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

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



TSS249 —UN—23AUG88

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

Operate Guidance Systems Safely

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

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

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

To prevent injury to the operator and bystanders:

- Never get on or off a moving machine.

AutoTrac is a trademark of Deere & Company

iGuide is a trademark of Deere & Company

iTEC is a trademark of Deere & Company

RowSense is a trademark of Deere & Company

- Verify the machine, implement, and guidance system are set up correctly.
 - If using iTEC™ Pro, verify accurate boundaries have been defined.
 - If using Machine Sync, verify the follower's home point is calibrated with sufficient space between the machines.
- Remain alert and pay attention to the surrounding environment.
- Take control of the steering wheel, when necessary, to avoid field hazards, bystanders, equipment, or other obstacles.
- Stop operation if poor visibility conditions impair your ability to operate the machine or identify people or obstacles in the machine path.
- Consider field conditions, visibility, and machine configuration when selecting machine speed.

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

Use Seat Belt Properly

Avoid crushing injury or death during rollover.

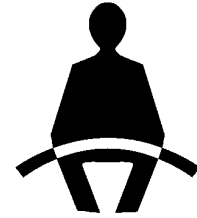
This machine is equipped with a rollover protective structure (ROPS). USE a seat belt when you operate with a ROPS.

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

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

Inspect seat belt and mounting hardware at least once a year. Look for signs of loose hardware or belt damage, such as cuts, fraying, extreme or unusual wear,

discoloration, or abrasion. Replace only with replacement parts approved for your machine. See your John Deere dealer.



TS1729—UN—24MAY13

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

Operating the Tractor Safely

You can reduce the risk of accidents by following these simple precautions:

- Use your tractor only for jobs it was designed to perform, for example, pushing, pulling, towing, actuating, and carrying a variety of interchangeable equipment designed to conduct agricultural work.
- This tractor is not intended to be used as a recreational vehicle.
- Read this operator's manual before operating the tractor and follow operating and safety instructions in the manual and on the tractor.
- Follow operation and ballasting instructions found in the operator's manual for your implements/attachments, such as front loaders
- Make sure that everyone is clear of machine, attached equipment, and work area before starting engine or operation.
- Keep hands, feet, and clothing away from power-driven parts

Driving Concerns

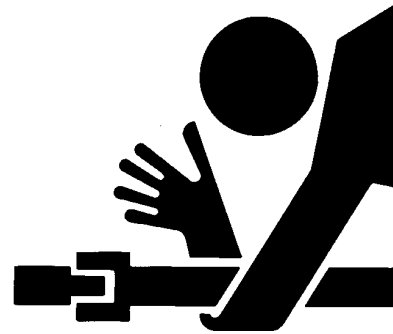
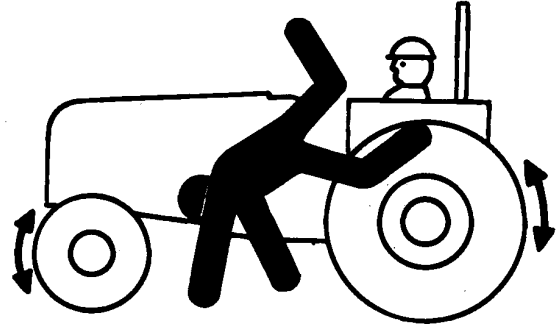
- Never get on or off a moving tractor.
- Keep all children and nonessential personnel off tractors and all equipment.
- Never ride on a tractor unless seated on a John Deere approved seat with seat belt.
- Keep all shields/guards in place.
- Use appropriate visual and audible signals when operating on public roads.
- Move to side of road before stopping.
- Reduce speed when turning, applying individual brakes, or operating around hazards on rough ground or steep slopes.
- Couple brake pedals together for road travel.
- Pump brakes when stopping on slippery surfaces.

Towing Loads

- Be careful when towing and stopping heavy loads. Stopping distance increases with speed and weight of towed loads, and on slopes. Towed loads with or without brakes that are too heavy for the tractor or are towed too fast can cause loss of control.
- Consider the total weight of the equipment and its load.
- Hitch towed loads only to approved couplings to avoid rearward upset.

Parking and Leaving the Tractor

- Before dismounting, shut off SCVs, disengage PTO, stop engine, lower implements/attachments to ground



and securely engage park mechanism, including the park pawl and park brake. In addition, if tractor is left unattended, remove key.

- Leaving transmission in gear with engine off will NOT prevent the tractor from moving.
- Never go near an operating PTO or an operating implement.
- Wait for all movement to stop before servicing machinery.

Common Accidents

Unsafe operation or misuse of the tractor can result in accidents. Be alert to hazards of tractor operation.

The most common accidents involving tractors:

- Tractor rollover
- Collisions with motor vehicles
- Improper starting procedures
- Entanglement in PTO shafts
- Falling from tractor
- Crushing and pinching during hitching

DX,WW,TRACTOR -19-21AUG09-1/1

TS290 —UN—23AUG88

TS276 —UN—23AUG88

Operate Implement Automation Systems Safely

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

Implement automation systems are intended to aid the operator in performing field operations more efficiently. The operator is always responsible for the machine path.

Implement automation systems include any application that automates implement movement. This includes, but may not be limited to, iGrade™ and Active Implement Guidance.

To prevent injury to the operator and bystanders:

- Verify the machine, implement, and automation systems are set up correctly.
- Remain alert and pay attention to the surrounding environment.
- Take control of the machine, when necessary, to avoid field hazards, bystanders, equipment, or other obstacles.

iGrade is a trademark of Deere & Company



PC13793 —UN—25MAY11

- Stop operation if poor visibility conditions impair your ability to operate the machine or identify people or obstacles in the machine path.

CF86321,0000366 -19-19DEC13-1/1

Avoid High-Pressure Fluids

Inspect hydraulic hoses periodically – at least once per year – for leakage, kinking, cuts, cracks, abrasion, blisters, corrosion, exposed wire braid or any other signs of wear or damage.

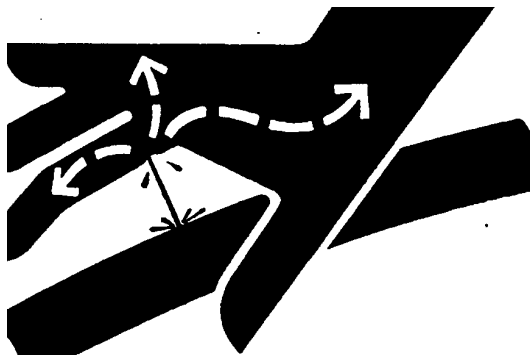
Replace worn or damaged hose assemblies immediately with John Deere approved replacement parts.

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



X9811 —UN—23AUG88

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.

DX,FLUID -19-12OCT11-1/1

Safety Signs

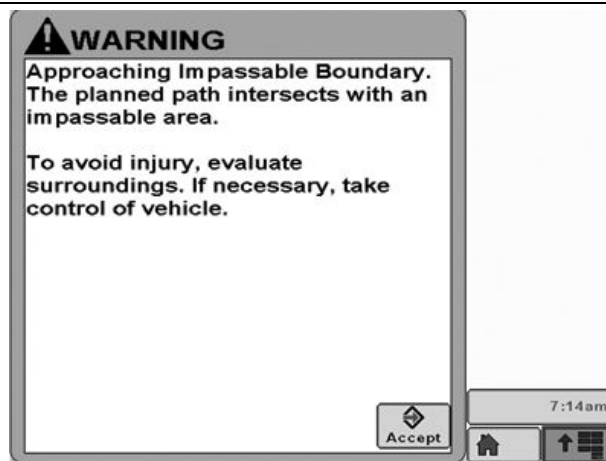
Approaching Impassable Boundary

This message indicates a part of the vehicle and/or implement will intersect or has crossed an impassable boundary. This message will also appear when the vehicle path is very close to an impassable boundary because iTEC Pro adds a buffer to the physical width of implements (see Implement Setup in Machine and Implement Setup Section).

NOTE: The Impassable boundary message will not appear in the following conditions:

- iTEC Pro turn pattern is set to off.
- AutoTrac is not active.

NOTE: The line showing the trajectory of the vehicle on the GS2/GS3 screen will turn RED whenever the vehicle or implement is expected to intersect an impassable boundary.



Approaching Impassable Boundary

PC13150 —19—17FEB11

BA31779,0000197 -19-05MAY11-1/1

Introduction

Theory of Operation

intelligent Total Equipment Control (iTEC) Pro is a system which coordinates machine/implement functions and end turns. By knowing machine and implement location, field boundaries, and function sequences, iTEC Pro enables operators to automate many in-cab tasks. This automation allows operators to focus on equipment and task at hand and less on mechanics of operating equipment.

In order for the iTEC Pro system to perform this automation, the system needs to have several items set up on the GS2/GS3 display. These items include:

- Machine Setup: type, dimensions, offsets, and connection type (hitch/drawbar)
- Implement Setup: type, dimensions, and offsets
- Boundary Setup: exterior/interior and headland boundaries where sequences and turns will be executed
- iTEC Pro Setup
 - Sequence Setup: Definition of what vehicle functions will execute when a boundary is crossed. Example: first slow down then raise the implement
 - Turn Setup
 - Boundary to Sequence Assignment: Assigning the sequences to the different types of boundaries
- Other Setup, such as Guidance and StarFire

RM72004,000014B -19-18FEB13-1/1

To Make iTEC Pro Operate

- iTEC Pro software installed (GS2/GS3, vehicle)
- iTEC Pro activation on display
- AutoTrac activated on display (required for automated headland turns)
- Vehicle, implement setup complete
- AutoTrac, iTEC Pro setup complete
- Boundaries properly defined, selected
- iTEC Pro status pie indicating “enabled” state
- AutoTrac status pie indicating “enabled” state (required for automated headland turns)
- StarFire setup complete

NOTE: *iTEC Pro is not compatible with AutoTrac Universal.*

For iTEC Pro updates, go to stellarsupport.deere.com.

RM72004,000012C -19-18FEB13-1/1

iTEC Pro Setup Checklist

Customer Name _____

GS2/GS3 s/n _____

Challenge Code _____

COMAR Order Number _____

Activation Code _____

NOTE: The following MUST be performed before iTEC Pro will work properly. Due to intricacies of iTEC Pro, time spent setting it up correctly will ensure a positive experience.

Software, Activation Required

- ☐ GS2 software version 2.0.1222 or higher and GS3 Software version 3.1.1475 or higher (Check for software updates available using GreenStar Update Tool and stellarsupport.deere.com)
- ☐ iTEC Pro activation
- ☐ Machine software (Not included in price of iTEC Pro activation)—All machine controllers must be updated with current software

In Apex (Suggested)

- ☐ Name Clients, Farms, Fields
- ☐ Go to GSDNet within Apex. Select tractors, implements. Check machine/implement dimensions (Not all models are available)
- ☐ Name tractors, implements to use iTEC Pro
- ☐ Select or create field external boundaries where iTEC Pro will be used (Driven boundaries will generally

provide better accuracy than boundaries created in Apex)

- ☐ Save setup data to card

In Cab

Use Advanced Setup Tool (button F); select iTEC Pro to complete:

- ☐ Client, Farm, Field, Task (Task required only if using Documentation)
- ☐ Machine Type, Model, Name, Connection type, Turn Radius, dimensions (Auto-filled if from GSDNet)
- ☐ Implement Type, Model, Name, dimensions (Auto-filled if from GSDNet)
- ☐ Straight track and other AutoTrac settings
- ☐ Select or create iTEC Pro Sequences; associate them to proper boundaries
- ☐ Select iTEC Pro settings to pick Turn Pattern, desired number of tracks, implement Turn Radius, Minimize Skips or Overlaps
- ☐ Set up Home pages, as desired. iTEC Pro has several specific pages available for operating and tuning as ¼ and ½ pages and softkey areas

In Field

- ☐ Create or select Exterior Boundary (Interior Boundaries are optional)
- ☐ Create or select Exterior Headland Boundary
- ☐ Operate iTEC Pro. Modify any settings (machine/implement dimensions, turn radius, function distances, etc.) for proper operation
- ☐ See iTEC Pro Quick Reference Guide, iTEC Pro Tips

RM72004,0000136 -19-30JAN13-1/1

iTEC Pro Activation

See GS2/GS3 Display—Basic Applications Operator Manual for activation. To receive a demonstration of iTEC Pro, please contact your John Deere dealer.

RM72004,000014C -19-18FEB13-1/1

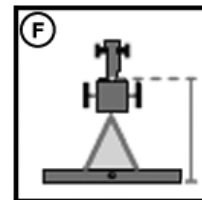
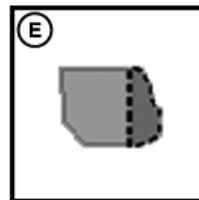
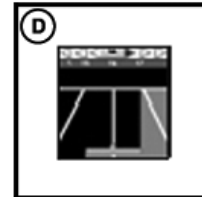
Getting Started

MENU softkey (A) allows access to display applications. MENU appears on every display screen.

Select GREENSTAR softkey (B) to access GS Pro applications.

Select GS Main softkey (C) to access the Advanced Setup Tool. Select other softkeys (D, E, F) to input required information:

- | | |
|--------------------------|----------------------------|
| A—MENU Softkey | D—GUIDANCE Softkey |
| B—GREENSTAR Softkey | E—MAPPING/BOUNDARY Softkey |
| C—GREENSTAR MAIN Softkey | F—EQUIPMENT Softkey |

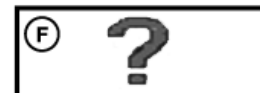


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Useful Buttons

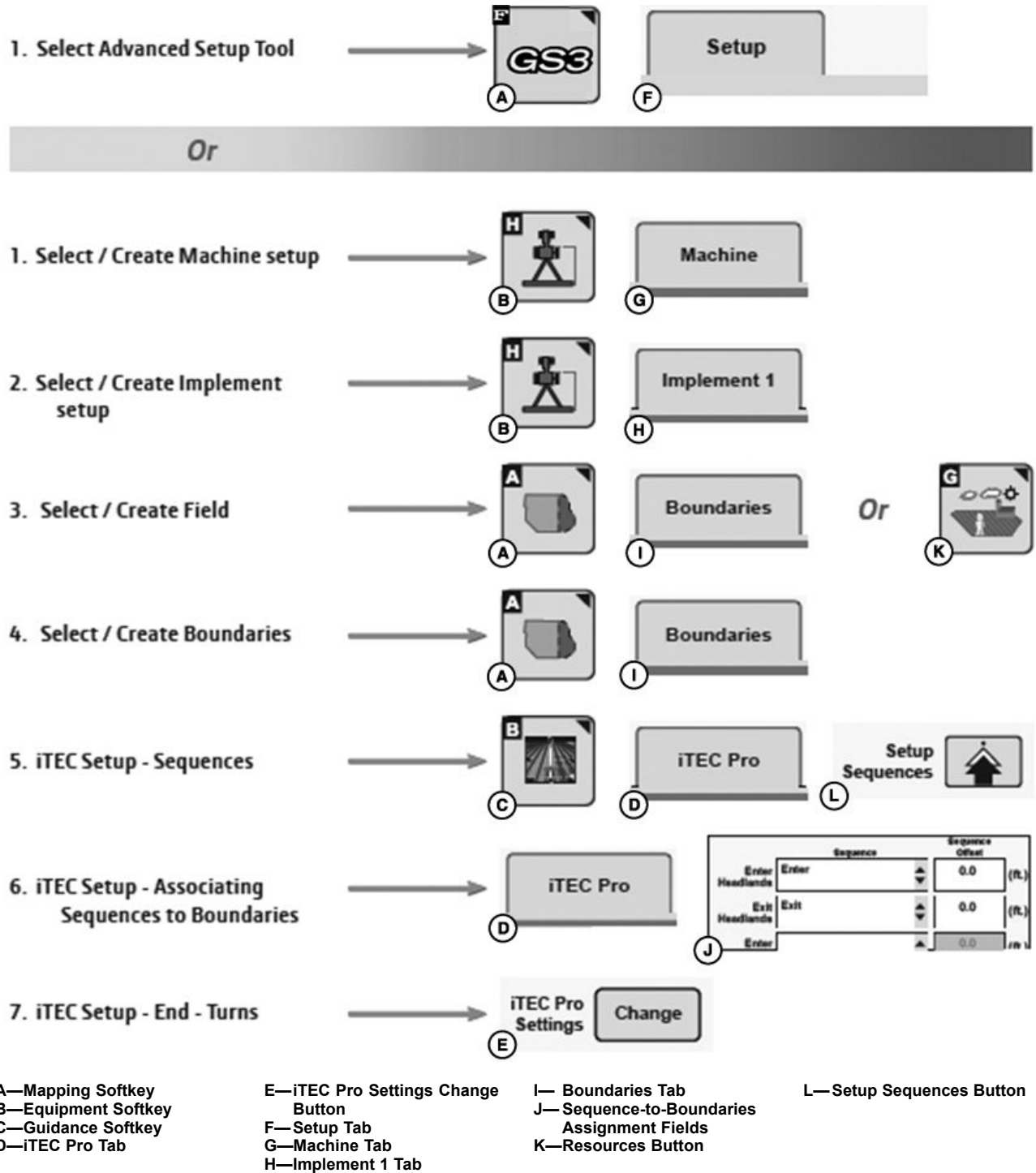
- | | |
|----------------------------|--------------------------|
| A—Cancel Button | E—Record Sequence Button |
| B—Enter Button | F—Help Button |
| C—Setup Sequence Button | G—Diagnostics Button |
| D—Automation On/Off Button | |



PC9915—UN—03OCT07

RM72004,0000138 -19-17JAN13-1/1

iTEC Pro Setup Flowchart



PC16486—UN—12FEB13

RM72004,000012D -19-31JAN13-1/1

Advanced Setup Tool

MENU Softkey >> GREENSTAR Softkey >> GREENSTAR
MAIN Softkey >> Setup Tab

PC8663 —UN—05AUG05



MENU Softkey

PC13432 —UN—21APR11



GREENSTAR Softkey

PC13434 —UN—21APR11



GREENSTAR MAIN Softkey

PC10629 —UN—10OCT07



Setup Tab

Continued on next page

RM72004,000012E -19-25JAN13-1/3

GreenStar - Main

iTEC Pro

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—Water Management Check Box

Advanced Setup Tool is intended to simplify initial configuration of GS2/GS3 applications while also helping operators become familiar with settings required for full functionality. After using the tool, operators should be able to successfully start and run desired operations and also change settings.

Advanced Setup can be used to change individual settings as the operator progresses through day-to-day operations.

While using Advanced Setup, the operator can select which functions must be configured.

- Resources
- Machine
- Implement
- Documentation
- Guidance
- Boundaries
- iTEC Pro
- Swath Control Pro

Select any combination of functions. If a function is dependent on other functions for the system to be fully operational, the system shall automatically select the

required functions and the operator will not be able to deselect those functions. For example, if the operator selected the Boundaries function, the Resources function would be automatically selected to force the operator to select a Client, Farm, and Field.

The functions that the operator selects will determine which pages will be included in Advanced Setup. Only screens associated with functions selected by the user shall be included.

For each function, there is a list of required fields that must be complete and valid before the system will work as expected. Red asterisks indicate required fields.

Based on the functions the operator has selected for setup, the GS2/GS3 applications shall determine which fields are required for successful setup and visually indicate those fields to the operator. Operator may progress through Advanced Setup without completing required fields, but system may not function correctly if required fields do not contain valid data.

Advanced Setup example, next.

Continued on next page

RM72004.000012E -19-25JAN13-2/3

GreenStar - Equipment

Machine Type

Tractor

Machine Model

8x30

Machine Name

8430

Connection Type

Rear Pivot Drawbar

Machine Turn Radius

22.0 (ft)

Turning Sensitivity

70

COM Port

0.0 (in)

70.9 (in)

36.9 (in)

Change Offsets

Recording Source

AUTO

Documentation and Coverage

Memory Used

Machine

Input machine type and name. Enter GPS receiver offsets. Select connection type to your implement and select a Recording Source to use Documentation.

2 / 8

A

B

C

Exit Setup

3:48pm

Home

Back

A—Previous Page Button

B—Next Page Button

C—Exit Setup Button

Display pages using Previous, Next (A, B). Instructions appear in top right-hand corner.

Page count (2/8) displays above Previous, Next. Return to Advanced Setup home using Next or Exit Setup (C). Skip

required fields by selecting Next (B). However, system may not function correctly if required fields do not contain valid data.

RM72004,000012E -19-25JAN13-3/3

Machine and Implement Setup

Machine Setup

MENU Softkey >> GREENSTAR Softkey >> EQUIPMENT Softkey allows access to Machine and Implement tabs.

NOTE: Machine and implement dimensions, including offsets, must be measured by the operator and entered according to instructions in this manual. Precise measurements of machine dimensions and offsets are critical for successful iTEC Pro operations.

9030, 9R Wheel Tractors

NOTE: Off-track errors, resulting in end-of-turn errors or disengagement of the iTEC Pro system, may occur when the iTEC Pro system is used to execute automatic end-of-row turns on 9030 and 9R Wheel tractors.

9030 and 9R Wheel tractors do not make automatic turns as fast as a manual turn. Off-track errors may occur during automatic end-of-row turns. Errors are most significant during lightbulb turns while towing smaller implements. Minimize errors and maintain optimal guess row spacing by:

- reducing machine speed during end-of-turn execution
- using a turn pattern that allows for skip passes and creation of simple turns

Contact your John Deere dealer for assistance with turn automation on 9030 and 9R Wheel tractors.

NOTE: The iTEC Pro system is not approved for use when 9030 and 9R Wheel tractors pull specific multiple-implement configurations.

PC8663 —UN—05AUG05



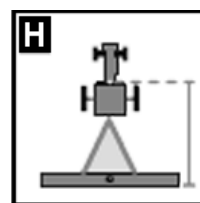
MENU Softkey

PC13432 —UN—21APR11



GREENSTAR Softkey

PC8677 —UN—05AUG05



EQUIPMENT Softkey

The iTEC Pro system is not approved for use when 9030 and 9R Wheel tractors pull air seeders with tow-behind air carts in situations that do not allow skipped tracks. Turn path accuracy and general field performance may not be acceptable with multiple-implement configurations unless the situation allows for at least one track to be skipped.

Contact your John Deere dealer for assistance with turn automation on 9030 and 9R Wheel tractors when using multiple-implement configurations.

Continued on next page

RM72004,0000127 -19-18FEB13-1/5

Machine Tab

- A—Machine Tab
 B—Implement 1 Tab
 C—Implement 2 Tab (not used by iTEC Pro)
 D—Machine Type Drop-Down Menu
 E—Machine Model Drop-Down Menu
 F—Machine Name Drop-Down Menu
 G—Connection Type Drop-Down Menu
 H—Machine Turn Radius Input Box
 I—Turning Sensitivity Input Box
 J—COM Port Button
 K—Change Offsets Button
 L—Recording Source Drop-Down Menu
 M—Record/Pause Button

NOTE: Before setting up iTEC Pro, create a new machine name (F). Machine data entered into iTEC Pro is stored to the machine name.

Measure dimensions and offsets on the machine selected.

Machine tab (A) requires information such as:

- Type
- Model
- Name
- Offsets

Machine Type—Select “Tractor.”

Machine Model—Select or enter model number.

Machine Name—Enter a unique name to clearly identify the machine in use. If there are two 8430 tractors in operation, the machine names may be “John” and “Deere,” “8430-1” and “8430-2,” or “1” and “2”. Settings pertaining to the tractor such as turning radius, turn sensitivity, and dimensions are stored to the machine name.

Connection Type—Select front or rear connector.

Continued on next page

RM72004,0000127 -19-18FEB13-2/5

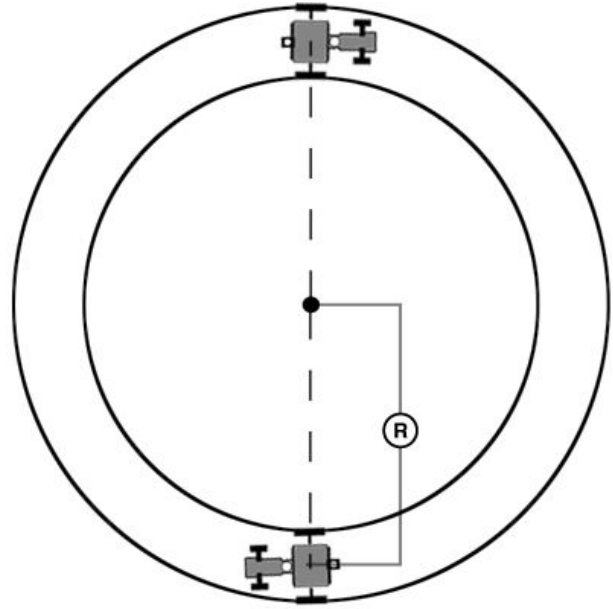
PC13411 —JUN—20APR11

Machine Turn Radius—How sharp the machine can turn without an implement attached and without applying brake pressure. The turn radius is half the diameter as measured at the center of the rear axle of a row crop tractor, and the pivot point on tracks and 4WD tractors. Example: 8030 wheel tractors have a minimum turn radius of 6.1—6.7 m (20—22 ft.). Choose a number to start with and change as needed for accuracy. See scenarios in Turn Patterns and Types section for more information.

iTEC Pro will make turns based on the larger of the machine turn radius and the implement turn radius. Example: if the tractor's turn radius is 6.7 m (22 ft.), but the implement's turn radius is 7.6 m (25 ft.), iTEC Pro will make a 7.6 m (25 ft.) radius turn.

Turning Sensitivity—AutoTrac gain setting when the machine is in an automated turn. This is adjustable by the operator to improve performance (default 70). Lower sensitivities are less aggressive and higher sensitivities are more aggressive.

R—Machine Turn Radius



PC10634—UN—10OCT07

Continued on next page

RM72004,0000127 -19-18FEB13-3/5

Machine Offsets

Machine Offsets

E

Non-Steering Location

Rear Axle **F**

A

0.000

 (m)

B

0.00

 (m)

C

0.00

 (m)

D

0.00

 (m)

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

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

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

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

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

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

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

D—Vertical distance from GPS receiver to ground (used with Surface Water Pro applications only)

E—Offset Toggle Button

F—Non-Steering Location Drop-Down Menu

NOTE: Machine and implement dimensions, including offsets, must be measured by the operator and entered according to instructions in this

manual. Precise measurements of machine dimensions and offsets are critical for successful iTEC Pro operations.

Continued on next page

RM72004,0000127 -19-18FEB13-4/5

1. Press Change Offsets button on Machine Setup screen.
2. Enter machine offsets:

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

NOTE: The implement connection point (C) is the tractor-to-implement connection (drawbar, hitch)

except on 2-point pivoting implements (large planter). In this case, measure the distance back to the pivot point behind the hitch.

- In-line distance from non-steering axle (machine turning point for track tractor) to implement connection point (C)
- Vertical distance from GPS receiver to ground (D) (used with Surface Water Pro applications only)

RM72004,0000127 -19-18FEB13-5/5

Implement Setup

NOTE: Check implement setup including hydraulic hookups before operating iTEC Pro. Changes to implement setup could cause unexpected behavior while iTEC Pro is in use.

Use Implement 1 tab when entering data. iTec Pro does not use data entered in Implement 2 tab.

MENU Softkey >> GREENSTAR Softkey >> EQUIPMENT Softkey >> Implement 1 tab (A)

IMPORTANT: Machine and implement dimensions including offsets must be measured by the operator and entered according to instructions in this manual. Precise measurements of machine dimensions and offsets are critical for successful iTEC Pro operations.

A—Implement 1 Tab

PC8663 —UN—05AUG05



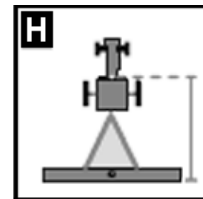
MENU Softkey

PC13432 —UN—21APR11



GREENSTAR Softkey

PC8677 —UN—05AUG05



EQUIPMENT Softkey

PC16487 —UN—28JAN13



Implement Tabs

Continued on next page

RM72004,0000149 -19-28JAN13-1/6

Implement Tab

GreenStar - Equipment

A Machine **B** Implement 1 **C** Implement 2

Implement Type
Planter **D**

Implement Model
1790 **E**

Implement Name
1790 - 12R30 Drawbar **F**

Physical Width 9.97 (m)

Implement Width 12 (rows)

Track Spacing 12 (rows)

Row Width 76 (cm)

Row Width 76.2 (cm) **H** Change Widths

Offsets

0.00 (m)

4.66 (m)

1.19 (m)

7.92 (m)

G Change Offsets

~12

A—Machine Tab
 B—Implement 1 Tab
 C—Implement 2 Tab (not used by iTEC Pro)
 D—Implement Type Drop-Down Menu
 E—Implement Model Drop-Down Menu
 F—Implement Name Drop-Down Menu
 G—Change Offsets Button
 H—Change Widths Button

NOTE: Before setting up iTEC Pro, create a new Implement Name (F). Implement data entered into iTEC Pro is stored to the implement name.

Measure dimensions and offsets for the implement selected.

Implement 2 tab is not used for iTEC Pro. It is shown for reference purposes only.

Implement 1 tab requires information such as:

- Type

- Model
- Name
- Offsets

Implement Type—Select type from drop-down list.

Implement Model—Select model number or enter it.

Implement Name—Enter a unique name to clearly identify the implement in use. Implement data is stored to the implement name.

PC13440—UN—21APR11

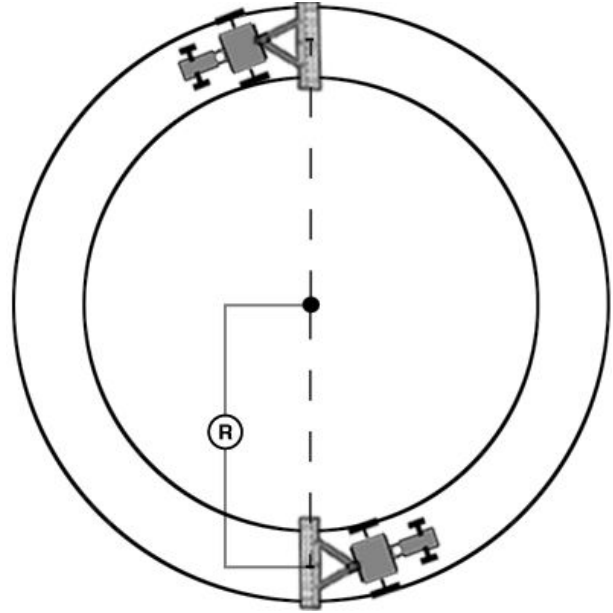
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RM72004,0000149 -19-28JAN13-2/6

Implement Turn Radius—The distance given for the Implement Turn Radius tells iTEC Pro how tight of a turn a machine can make with an attached implement. The Implement Turn Radius determines what type of turn will be used at the end of a pass.

To obtain radius, determine the diameter of the turn and divide by 2. iTEC Pro will compare Tractor Turn Radius and Implement Turn Radius and use the larger of the two.

R—Implement Turn Radius



PC9905—UN—05FEB07

Continued on next page

RM72004,0000149 -19-28JAN13-3/6

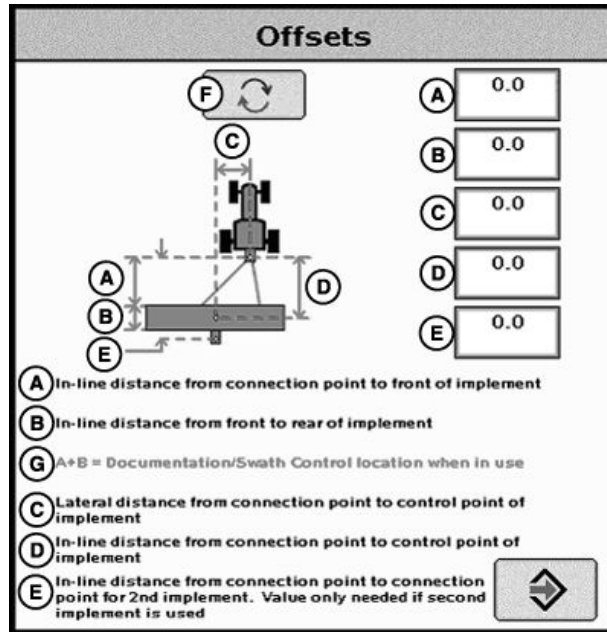
Implement Offsets

Implement Offsets—Used to define the actual implement position relative to the tractor. This is important for ensuring the implement is lined up to the field at the end of turns and in determining where the implement is for the Minimize Skips and Minimize Overlaps feature (see Change Settings on Machine tab).

- In-line distance from connection point to front of implement (A). For pull-type implements, think of this as the tongue. For more precision, it is actually the dimension from the pinbolt to the front side of where the work gets done (example: front ranks of field cultivator, seed drop point on a planter). For planters with a 2-point mount, measure from where the planter pivots just behind the 2-point.
- Working length of the implement (B). For ground engagement tools, this is the distance from the front rank of sweeps or points to rear rank. On a standard planter or pull-type sprayer, this dimension would be 0—the seed is dropped at the same point on every row and sprayer has nozzles at the same point along the boom. Dimension (A) would then need to extend to the location of the seed drop point or sprayer boom.
- Lateral distance from connection point to control point of implement (C). This is the lateral distance from the center of the tractor to the center of the implement, which will be 0.0 for most common implements. This dimension is used to alert the operator to potential collisions. This is critical for proper end-turn performance and may need to be adjusted.

NOTE: Examples of equipment that will not be centered include mower-conditioners and most split-row planters with an even number of 15" rows, (example: 24R15 or 32R15) unless you have an adjustable hitch crossbar.

- In-line distance from connection point to control point of implement (D). In many cases, this distance will be from the connection point to the carrying wheels. For



- 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

proper turns, measure this distance with implement at travel height while turning

NOTE: These dimensions may need to be adjusted for fine-tuning performance in the field.

Continued on next page

RM72004,0000149 -19-28JAN13-4/6

PC11071 —UN—29FEB08

Change Widths

← **A**

← **B**
 Implement Width
 (ft)

← **C**
 Track Spacing
 (ft)

← **D**
 Physical Width
 (ft)

← **E**
 Number of Drive
 Sections

PC13471—UN—25APR11

Change Widths

← **A**

← **F**
 Implement Width
 (rows)

← **H**
 Row Width
 (in)

← **G**
 Track Spacing
 (rows)

← **I**
 Row Width
 (in)

← **D**
 Physical Width
 (ft)

← **E**
 Number of Drive
 Sections

PC13472—UN—25APR11

Track Spacing

Track Spacing

- A**—Track Spacing Button
B—Implement Width
C—Track Spacing
D—Physical Width
E—Number of Drive Sections
F—Implement Width (Number of Rows)
G—Track Spacing (Number of Rows)
H—Row Width
I—Row Width

Change Widths—Used to enter implement width and track spacing for guidance. This value is also used to calculate total area when documenting the operation. Verify implement type, model, name, implement width and track spacing when changing implements. Implement width and track spacing are independent of each other.

NOTE: Implement width may come from controller on select 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 (ft.)/(rows) button (A).

- **Implement Width (ft.)**—enter total implement working width.
- **Implement Width (rows)**—enter number of rows and the row spacing.

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 or rows between passes, the distance will be the same as implement width. To ensure overlap for tillage or spraying, or to account for some GPS drift, you may choose to make the track spacing 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. Example: The marker arms on a planter are wider than the working width of the implement.

IMPORTANT: Width measurements are used by the iTEC Pro system to help alert an operator of potential intersections between the implement and an impassable boundary. The operator still needs to be aware of potential collisions if there are times the implement is wider than the dimension entered (example: marker arm lowered). If markers are used in the field, add the width of both markers to ensure warnings of possible intersections.

NOTE: If end turns are turned OFF or parallel tracking is being used, Intersection Detection will not be displayed.

As a buffer to avoid obstacles, iTEC Pro will add additional physical width to each side of the implement to compensate for several things, one being GPS drift.

Signal	Approximate Physical Width added to Implement
RTK	0.6 m (2 ft)
SF2	0.9 m (3 ft)
SF1	3.4 m (11 ft)

Physical Width Table

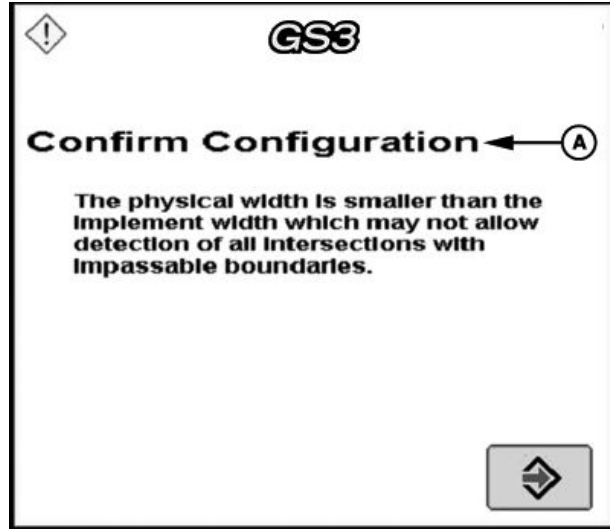
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RM72004,0000149 -19-28JAN13-5/6

NOTE: If the physical width is less than the implement (working) width, a message will appear as a reminder that this is not usually correct. Example: a 16R30 planter is physically wider than its 12.2 m (40 ft.) working width.

An example where the working width is wider than the physical width is a dry fertilizer spreader—it spreads much farther than the physical width of the buggy.

A—Confirm Configuration—
The physical width is smaller than the implement width which may not allow detection of all intersections with impassable boundaries.



PC13477 —JUN—25APR11

RM72004,0000149 -19-28JAN13-6/6

Boundary Setup

Boundary Type Description

NOTE: Accurate iTEC Pro operations require accurate boundary descriptions. Verify boundaries before operating iTEC Pro.

Available Boundary Types

- Exterior (Required)
 - Exterior Headland (Required)
- Interior (Optional)
 - Passable Interior

- Impassable Interior
- Interior Headlands (Required if Impassable Interiors are used)

Headlands are used to trigger sequences and end turns. Passable Interiors are also used to trigger sequences. When iTEC Pro is operating with AutoTrac and end turns, intersections with impassable boundaries are monitored and the operator is alerted ahead of time to allow evasive action, if necessary.

RM72004.000012F -19-18FEB13-1/1

Boundaries Tab

NOTE: Boundaries need to be accurate for the iTEC Pro system to execute functions accurately on the ground.

The BOUNDARIES tab allows you to record exterior field boundaries as well as interior and headland boundaries. Boundaries calculate acreage and are saved on the data card to be unloaded in John Deere's APEX desktop software. Headlands and other boundaries need to be accurate for iTEC Pro to properly perform its functions. For best accuracy, exterior boundaries should be driven.

In the HEADLAND INDICATOR check box, mark whether you want the indicator on or off. This will count down the distance to the next headland on the Guidance map.

Headland Boundary—Headlands will show on the Guidance View tab as dashed pink lines to show where the headlands exist in maps and perspective views. Only

PC16540 —UN—01FEB13



Exterior Boundaries and Impassable Interior Boundaries can have a Headland Boundary. Headlands are required near the Exterior boundary, and around any Impassable Interior boundary, and these are what the distances in Sequences, Functions, and Turn Offsets are based off.

Headland Boundaries can either be driven or entered as an offset from the Exterior or Interior Boundary. iTEC Pro will execute sequences more accurately if the Headlands are created accurately.

RM72004.0000135 -19-18FEB13-1/1

Boundaries Screen

MENU Softkey >> GREENSTAR Softkey >> MAPPING Softkey >> BOUNDARIES Tab

Use Boundaries to set up the following information:

NOTE: Client, Farm, and Field can also be created on screen by selecting NEW from the drop-down menu.

- Client (set up in Apex or as Custom Name)
- Farm (set up in Apex or as Custom Name)
- Field (set up in Apex or as Custom Name)
- Type
- Headland Group
- Creation Method
- Headland Indicator
- Name
- Passable/Impassable Check Box (for Interiors)
- Boundary Offset
- Boundary Map
- Recording

When iTEC Pro is operating with AutoTrac and end turns, intersections with impassable boundaries are monitored and the operator is alerted ahead of time to allow evasive action, if necessary.

PC8663 —UN—05AUG05



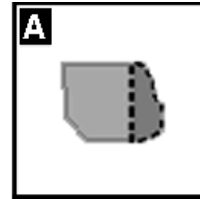
MENU Softkey

PC13432 —UN—21APR11



GREENSTAR Softkey

PC8672 —UN—05AUG05



MAPPING Softkey

PC10632 —UN—15JUL08



Boundaries Tab

RM72004,0000130 -19-18FEB13-1/1

Boundary Type

NOTE: The defined Headlands need to be large enough for machine and implement to turn around without the use of brakes.

Exterior Boundary (required)—Perimeter of field

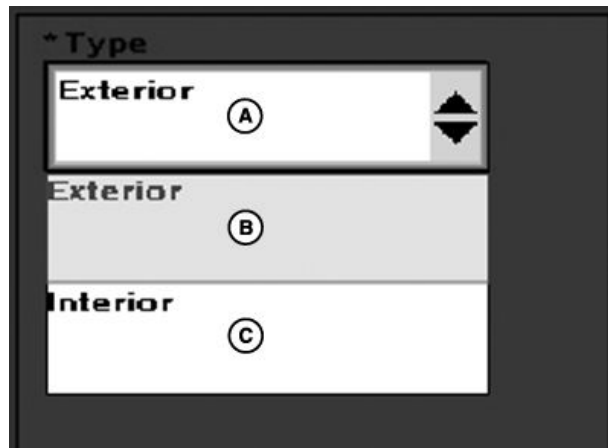
Exterior Headland (required)—End rows along sides of field where end-turns occur

Boundary type can be changed to HEADLAND when either an Exterior or Interior Boundary has been selected. If one of these is selected, the screen changes to the following screens.

Passable Interior Boundary—Perimeter of an area inside field which is not farmed, but can be crossed by machine and implement. Example: waterway.

Impassable Interior Boundary—Perimeter of an area inside field which is not farmed and cannot be crossed by machine and implement

Interior Headland—End rows or turn rows around an Impassable Interior Boundary



A—Boundary Type Drop-Down Menu
B—Exterior Boundary Selection
C—Interior Boundary Selection

PC16516 —UN—28JAN13

Continued on next page

RM72004,000017E -19-18FEB13-1/2

A—Maps Tab
B—Boundaries Tab
C—Flags Tab
D—Client Drop-Down Menu
E—Farm Drop-Down Menu

F—Field Drop-Down Menu
G—Type Drop-Down Menu
H—Headland Group Drop-Down Menu
I—Creation Method Drop-Down Menu

J—Headland Indicator Check-Box
K—Boundary Offset Input-Box
L—Receiver Offset Toggle

M—Record/Pause
N—Stop Recording

Headland Group—Combination of one or more related headland boundaries. Different operations may use different headland groups. For instance, there may be a Planter group where the headlands are 36.6 m (120 ft.) and a Field Cultivator group where the headlands are 27.4 m (90 ft.). Different field operations can require different headlands.

Creation Method—Exterior headland options are:

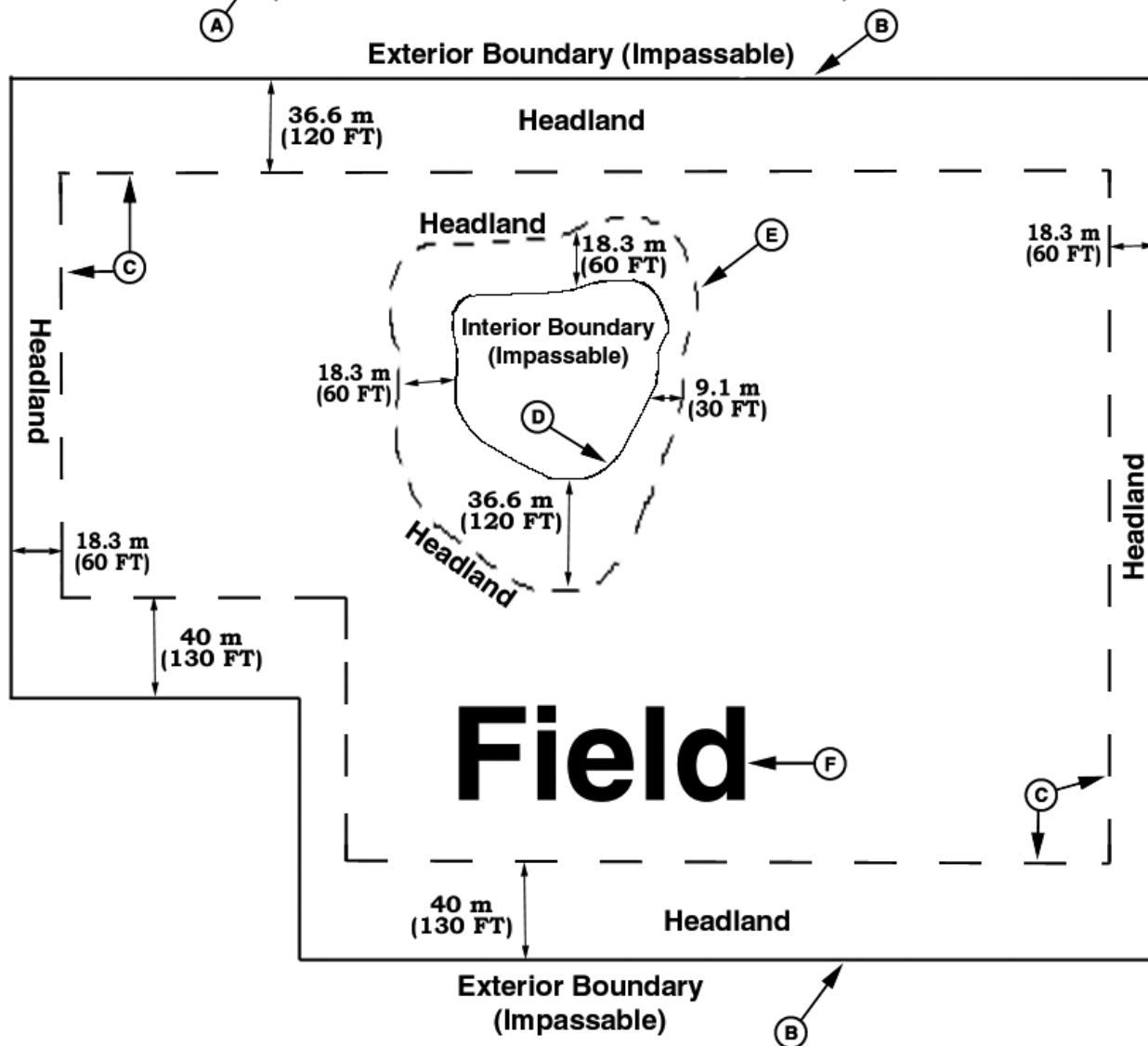
- Top and Bottom Offsets: set row heading (degrees), top/bottom exterior headland offset distances
- Constant Offset: set one offset distance for any exterior headland
- Driven: drive machine along exterior headland boundary

RM72004,000017E -19-18FEB13-2/2

PC14179—UN—08NOV11

Driven Headland Offset Boundary

Driven Headland Boundary (Different Size Boundaries)



A—Driven Boundary (Different Size Boundaries)

B—Exterior Boundary (Impassable)
C—Exterior Headland

D—Interior Boundary (Impassable)
E—Interior Headland

F—Field

Creating a Driven Boundary

1. Select MAPPING softkey >> BOUNDARIES tab.
2. Select the Client, Farm, and Field from the drop-down menus.
3. Choose TYPE of boundary you want to drive from the drop-down menu.
4. Select DRIVEN from the creation method drop-down menu for Exterior Headlands or place a check in the DRIVE BOUNDARY check-box for Interior Headlands.
5. Enter the distance from the GPS receiver to the edge of the field. This can be done during the first pass around the field and then the distance would be half the implement width.

Continued on next page

RM72004,0000132 -19-18FEB13-1/3

PC10493 —UN—18FEB13

6. Choose whether the boundary will be left or right of the tractor's receiver, or left or right of the implement's calculated position.
7. Press Record/Pause button one or more seconds after machine begins moving forward around field section for boundary being recorded. Record light should blink red and pink when recording is on. If you need to pause recording to drive around an obstacle, press the Record/Pause button. Record light will show solid red. When Record/Pause button is pressed again, recording will resume. The boundary will show a straight line from where recording was paused to where it was resumed.

NOTE: Boundary should be recorded around an obstacle so iTEC Pro can alert operator of these obstacles.

8. If recording was started along a straight section of the boundary, Stop button can be pressed after turning last corner near straight section. If recording was started in a corner, press Stop button just prior to point where recording was started. Make sure point where recording was stopped does not intersect point where it was started. Pressing Stop button will complete boundary by showing a straight line between the point where it was stopped and starting point.

RM72004,0000132 -19-18FEB13-2/3

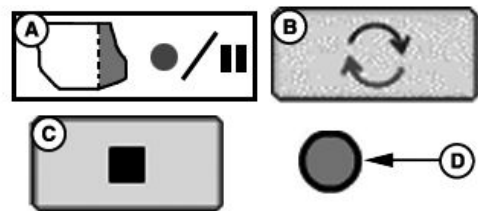
NOTE: When toggling the button to change the recording position, recording must be **PAUSED** or **OFF**.

Select toggle button to record left or right of tractor receiver or implement. If set from implement, the location will be left or right of rear of implement.

A—Record/Pause Button
B—Toggle Button

C—Stop Recording Button
D—Recording Indicator Light

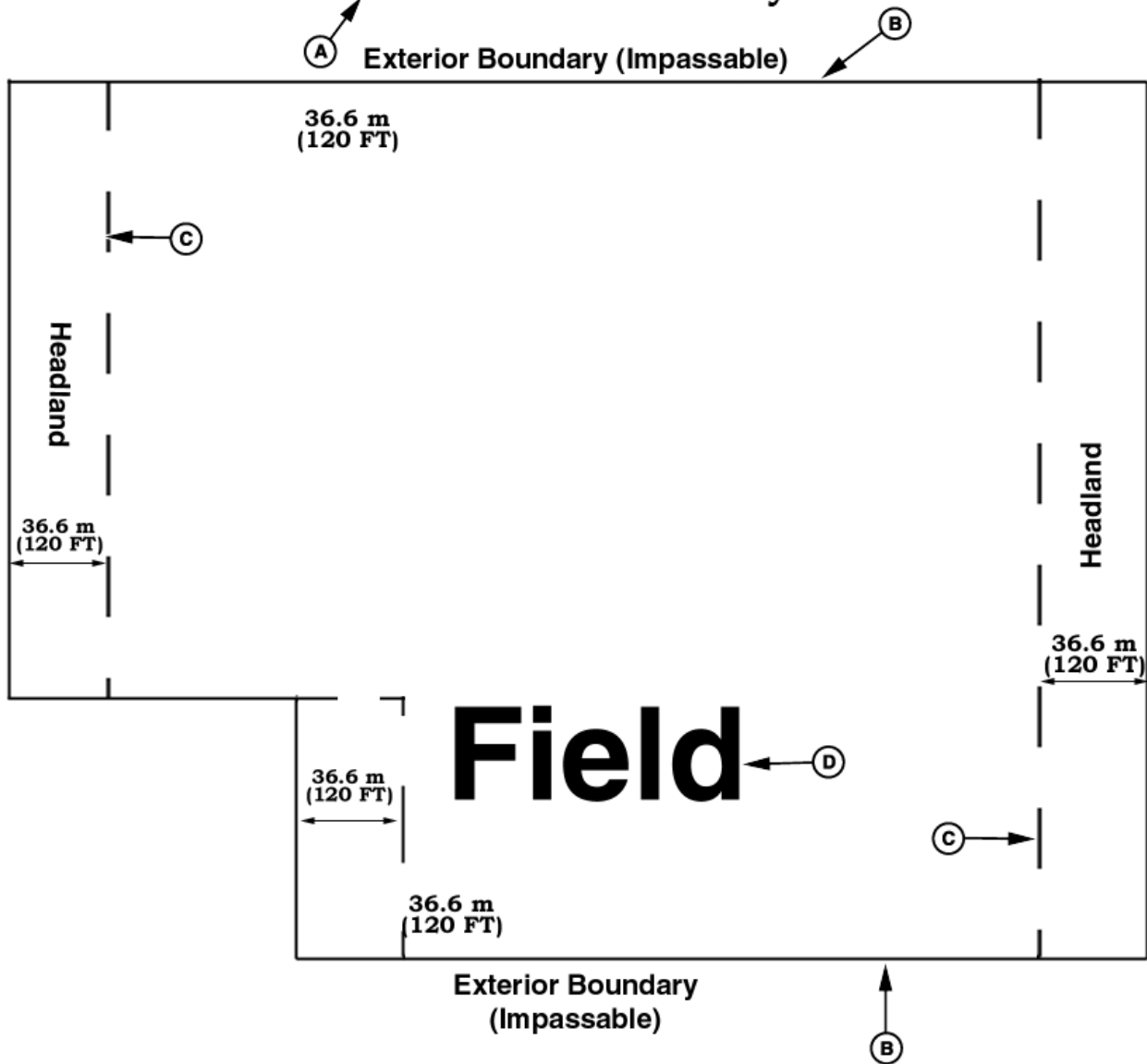
PC10501A —UN—21OCT08



RM72004,0000132 -19-18FEB13-3/3

Top and Bottom Offsets Boundary

Top and Bottom Offset Headland Boundary



A—Top and Bottom Offset
Headland Boundary

B—Exterior Boundary
(Impassable)

C—Exterior Headland
D—Field

Continued on next page

RM72004,0000133 -19-24JAN13-1/3

PC-10567A—UN—21OCT08

A—Maps Tab

B—Boundaries Tab

C—Flags Tab

D—Client Drop-Down Menu

E—Farm Name Drop-Down Menu

F—Field Name Drop-Down Menu

G—Boundary Type Drop-Down Menu

H—Headland Group Name Drop-Down Menu

I—Creation Method Drop-Down Menu

J—Headland Indicator Check Box

K—Headland Settings Button

Creating Top and Bottom Headlands

1. Create or select an exterior boundary.
2. Choose Exterior Headland from the TYPE drop-down box.

NOTE: Creation Method option (I) is not available when Interior Headland is selected in TYPE drop-down menu (G).

3. Enter headland boundary name in HEADLAND GROUP drop-down box. Several headland boundaries may be saved per field for different implement widths. Example: Planting headland group would be 24.4 m (80 ft.) for a 16R30, if two passes are being made.

Continued on next page

RM72004,0000133 -19-24JAN13-2/3

PC13410—UN—20APR11

4. Select HEADLAND SETTINGS to make adjustments to Row Heading, Offset X, and Offset Y. These are default settings for approximate heading of rows in the field and width of headlands on X and Y ends of field.

The heading that is entered does not need to be the exact heading. In the example, if the heading of your AutoTrac A-B line is 85 degrees, entering 90 degrees creates headlands on the east and west ends of the field. During tillage work, if the work is being done at 30 degrees from east and west, entering 120 degrees will give headlands on all sides of the field. In this case, Constant Offset headlands could also be used.

Efforts have been made to make the most logical headlands based on the way the field normally is farmed. If desired headlands are not coming out as expected, change the Row Heading to several angles close to the direction of travel. If still not satisfactory, a Driven Headland boundary will need to be recorded.

NOTE: Headlands will be created when the Row Heading is more than 15 degrees from any side of the field. Top and bottom headlands are calculated as offsets and may not be appropriate for all fields.

When using top and bottom headland offsets, the generated sidelines will prompt the operator to complete a turn.

Defaults for Offsets X and Y are twice the implement width, as entered from Machine or Implement pages. Width of each headland can be changed. Example: if

The image shows a 'Headland Settings' screen. On the left is a diagram of a rectangular field with a vertical line through the center. The top and bottom horizontal segments are labeled 'X' and the left and right vertical segments are labeled 'Y'. To the right of the diagram are three input fields: 'Row Heading' with a value of '0.0000 (deg)' and a circled 'A' below it; 'Offset X' with a value of '90.000 (ft)' and a circled 'B' below it; and 'Offset Y' with a value of '90.000 (ft)' and a circled 'C' below it. At the bottom left is a 'Cancel' button with a diagonal line icon, and at the bottom right is an 'Accept' button with a checkmark icon.

A—Row Heading
B—X Offset

C—Y Offset

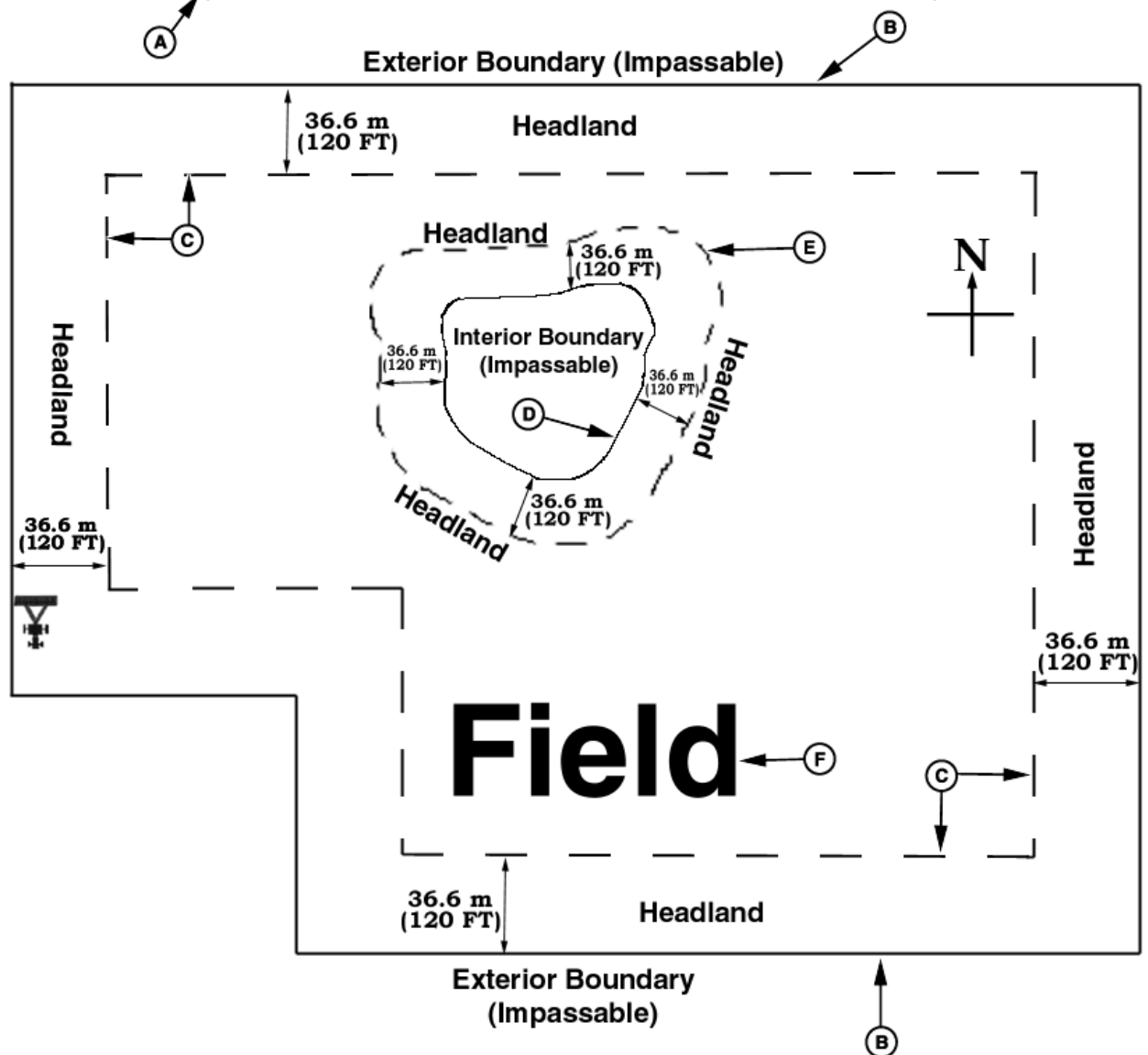
west end has thirty-two, 76.2 cm (30 in.) headland rows, and east end has forty-eight, 76.2 cm (30 in.) headland rows, enter 24.4 m (80 ft.) for X and 36.6 m (120 ft.) for Y.

PC13412—UN—20APR11

RM72004,0000133 -19-24JAN13-3/3

Constant Offset Boundary

Constant Offset Headland Boundary (not driven—same size on all sides)



A—Constant Offset Headland Boundary (not driven—same size on all sides)

B—Exterior Boundary (Impassable)
C—Exterior Headland

D—Interior Boundary (Impassable)
E—Interior Headland

F—Field

Headland Constant Offset Boundary

NOTE: Headland Boundary Offsets will create the same sized headland around the entire field. iTEC Pro will not function in the areas where a headland is not crossed (in the corners of the field). For example, looking at the field in the screenshot, if the tractor is driving south along the side of the field, it will not cross the southern headland boundary line. Therefore, iTEC Pro will not

perform the desired sequence and will not turn around. If this is not desirable, the Headland Boundary should be created by using Top and Bottom Headlands or Driven Headlands.

1. An Exterior Boundary must exist for field.
2. Choose Exterior Headland from TYPE drop-down menu.

Continued on next page

RM72004,0000134 -19-24JAN13-1/2

PC10500A—UN—21OCT08

Boundary Setup

3. Enter headland boundary name in HEADLAND GROUP drop-down menu. You can save several headland boundaries for a field for different implement widths.
4. In Boundary Offset input box, indicate distance from headland to exterior boundary. Example: if the planter is a 16R30 and two passes are planted in the headland, enter 24.4 m (80 ft.).
5. Repeat steps 2—4 for Impassable Interior Headlands. Change type and other settings as necessary for next boundary being created.

RM72004,0000134 -19-24JAN13-2/2

Sequences

Sequences

NOTE: Check sequence entries whenever machine operations or field conditions change. Adjust sequences after moving from one field to another or year-to-year even when used by the same machine. SCV hydraulic oil flow rates, 3-point hitch drop rates, and other outputs may have changed.

Sequences are a group of functions that perform when the implement crosses a headland or Interior Boundary. For instance, functions within Raise Planter sequence may include changing ground set speed, extending SCV1, extending SCV2, turning Diff Lock off, turning MFWD off, etc. Up to 20 functions can be entered for each sequence.

The Raise Planter sequence could be programmed to happen every time the planter enters a headland or Passable Interior boundary.

Name the sequence to include the implement. If a field cultivator is selected instead of a planter, name the sequence Raise FC instead of Raise Planter because functions within each sequence may be different (speed may be different, no markers on the field cultivator, etc.). Similarly, if two different tractors will be pulling the same implement, it may be beneficial to include tractor name or model in the sequence. That way, it will be known this is a sequence for that implement when an 8030 is being used instead of a 9030 tractor.

RM72004,0000125 -19-24JAN13-1/1

Setup Sequences

Select Menu button > GreenStar™ button > Guidance softkey > iTEC™ Pro tab (A).

Functions within sequences can be created manually using Create or Edit Sequences or can be recorded while actually performing functions in cab using Sequence Learning.

NOTE: iTEC™ Pro Diagnostics button (B) replaces iTEC™ Pro Enable button when only one or two pieces of pie (C) are filled.

1. Select Setup Sequences (D).
2. Select sequence functions.

A—iTEC™ Pro Tab
B—iTEC™ Pro Diagnostics Button
C—iTEC™ Pro Pie
D—Setup Sequences Button

PC8663 —UN—05AUG05



Menu Button

PC13432 —UN—21APR11



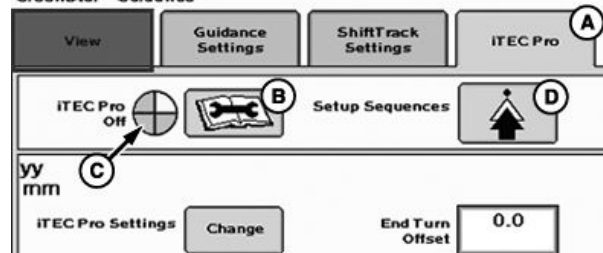
GreenStar™ Button

PC8673 —UN—14OCT07



Guidance Softkey

GreenStar - Guidance



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

Continued on next page

RW00482,00003B5 -19-28AUG14-1/3

PC19938 —UN—22AUG14

NOTE: Sequences must contain from 1 to 20 functions.

Function – A single machine parameter that undergoes a change. For example, changing mechanical front wheel drive (MFWD) from On to Off or changing Set Speed to 4.8 km/h (3 mph).

Sequence – Group of functions that are executed in order when a boundary is crossed.

Sequence Name – Sequences must be named. Use a name that is meaningful to anyone that uses iTEC™ Pro, such as Raise 1770 or Raise 16R30.

- | | |
|---------------------------|--------------------------|
| A—Sequence Drop-down Menu | E—Distance |
| B—Record/Stop Button | F—Previous Function Page |
| C—Function | G—Next Function Page |
| D—Action | |

Sequence	Function	Value	Distance
1	Tractor	3.5 (km/h)	-12.0 (m)
2	Extend	Extend	-10.0 (m)
3	Extend	Extend	-2.0 (m)
4	Off	Off	0.0 (m)
5	Off	Off	2.0 (m)

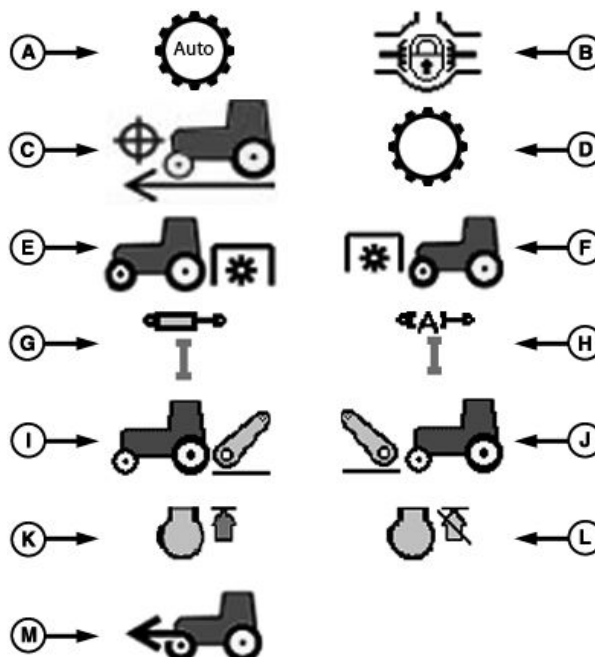
RW00482,00003B5 -19-28AUG14-2/3

PC13413 —UN—21APR11

Sequence functions available for iTEC™ Pro:

NOTE: On a powershift transmission tractor, Ground Speed function chooses the gear that most closely matches the ground speed chosen at current throttle position. Ground Speed Gear function selects gear entered regardless of throttle position. Speed changes created in a learned sequence shows only as ground speed changes, not as Ground Speed Gear changes. Ground Speed Gear function is only available with powershift tractors.

- | | |
|---|-----------------------------|
| A—Automatic Powershift (APS) Resume | H—AccuDepth SCV I-VI, XI-XV |
| B—Differential Lock | I—Rear Hitch Position |
| C—Set Ground Speed | J—Front Hitch Position |
| D—Set Gear | K—FieldCruise™ On |
| E—Rear Power Takeoff (PTO) | L—FieldCruise™ Off |
| F—Front PTO | M—MFWD |
| G—Selective Control Valve (SCV) I-VI, XI-XV | |



FieldCruise is a trademark of Deere & Company

RW00482,00003B5 -19-28AUG14-3/3

PC19937 —UN—21AUG14

Create or Edit Sequences

The functions are selected along with the distance they occur from the headland boundary.

1. Select name from Sequence drop-down menu (A) or create name by selecting <New> and typing using on-screen keyboard. Accept to close keyboard.
2. Select function to be performed first from function drop-down menu (C).

NOTE: Either Set Speed OR Set Gear can be in any one sequence—not both.

3. Select from Action drop-down menu (D). Set ground speed and enter gear number in Ground Speed Gear input box.
4. Enter distance to set headland boundary starting point.

NOTE: Set distance up to 30.5 m (100 ft.) between first and last functions.

Negative numbers occur before boundary. Positive numbers occur after boundary.

Several things will affect what distance is appropriate to enter: SCV Flow rates, hydraulic oil temperature, 3-point hitch raise and drop speeds, and engine RPM on IVT transmissions. Adjust distances in the field.

5. Repeat steps 1—4 until all desired functions are defined for sequence. Press the next page button if more than five functions are needed. iTEC Pro will allow up to 20 functions to be entered for each sequence.

NOTE: After pressing Accept, the display will sort the offsets from smallest to largest (negative to positive).

Set Up Sequences

Sequence: **Raise Planter** (A)

1. (C) 3.5 (km/h) (D) -12.0 (m) (E)

2. (C) Extend (D) -10.0 (m) (E)

3. (C) Extend (D) -2.0 (m) (E)

4. (C) Off (D) 0.0 (m) (E)

5. (C) Off (D) 2.0 (m) (E)

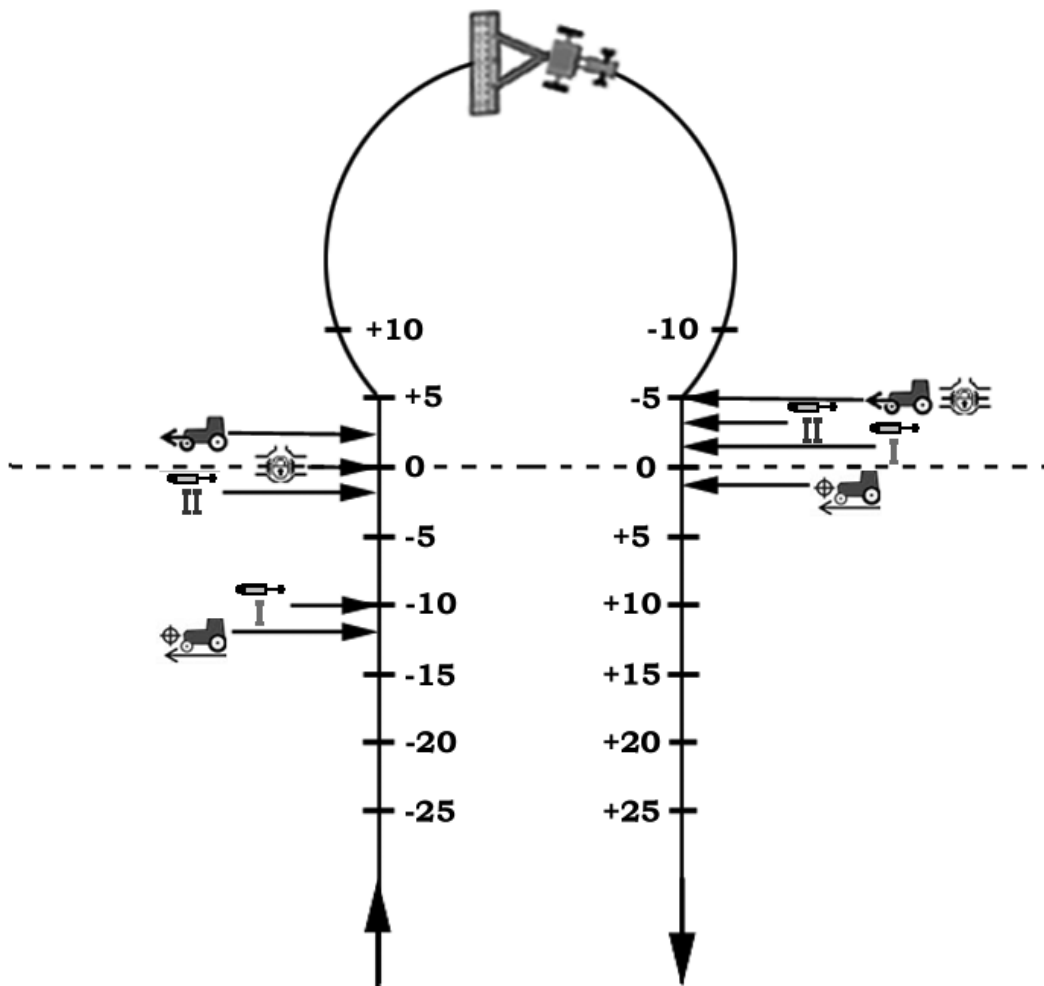
Manual Entry Method: (F) (G)

A—Sequence Drop-Down Menu
 B—Record/Stop Button
 C—Function Drop-Down Menu
 D—Action Drop-Down Menu

E—Distance
 F—Previous Function Page
 G—Next Function Page

6. Press Accept button to save.

Setup Sequence Example



NOTE: This diagram shows how Raise Planter and Lower Planter will be performed in the field.

To make it occur sooner, increase the distance. To make it occur later, decrease the distance.

Sequence Offset—Change the distance the function occurs from the Headland or Passable Interior Boundary.

Continued on next page

RM72004,0000128 -19-24JAN13-1/2

PC13414—UN—21APR11

Set Up Sequences

Sequence **Raise Planter** **A** **B** 

	C	D	E
1		3.5 (km/h)	-12.0 (m)
2		Extend	-10.0 (m)
3		Extend	-2.0 (m)
4		Off	0.0 (m)
5		Off	2.0 (m)

Cancel **F**  1/2  **G** **Accept**

Raise Planter Sequence

A—Sequence Drop-Down Menu C—Function
 B—Record/Stop Button D—Action
 E—Distance

Set Up Sequences

Sequence **Lower Planter** **A** **B** 

	C	D	E
1		On	-5.0 (ft)
2		On	-5.0 (ft)
3		Retract	-4.0 (ft)
4		Extend	-2.0 (ft)
5		5.5 (mi/h)	1.0 (ft)

Cancel **F**  1/2  **G** **Accept**

Lower Planter Sequence

F—Previous Function Page
 G—Next Function Page

RM72004,0000128 -19-24JAN13-2/2

Sequence Learning

The fields are automatically populated as the function change occurs.

1. Select or create name of sequence.
2. Drive tractor in field or any open area.
3. Select the record button to begin recording.
4. Manually perform desired functions.
5. Functions and function options are automatically populated.

NOTE: All functions for a sequence must be defined within 30.5 m (100 ft) from beginning to end. The distances shown during recording will appear different than when they are saved.

6. Select the record button to stop recording.
7. Press accept button to save.
8. The distances can now be edited if needed.

NOTE: A minimum speed of 0.5 km/h (0.3 mph) is required before recording button (B) can be pressed.

NOTE: Only one Ground Set Speed is allowed per learned sequence. If more than one speed change is desired, sequence must be manually created or edited.

A—Sequence Drop-Down Menu
B—Record/Stop Button
C—Function
D—Action

E—Distance
F—Previous Function Page
G—Next Function Page

Tractor Function	Switch Position when using iTEC Pro	Available Functions
SCVs	Center Position (detent to learn)	Extend, Retract, Float, Neutral
MFWD (3 Position Rocker Switch)	ON or Auto	Auto, ON, OFF
MFWD (3 Push Button)	ON or Auto	Auto, ON, OFF
PTO	ON	ON, OFF
Diff Lock	No Requirement	ON, OFF
Hitch	Up/Down switch must be in center position	Raise, Lower
Ground Set Speed	Between 0.5 - 48 km/h (0.4 - 30 mph)	Speed Up or Slow Down
APS	Active	Resume

Switch Positions Table

Continued on next page

RM72004,0000129 -19-15JAN13-1/2

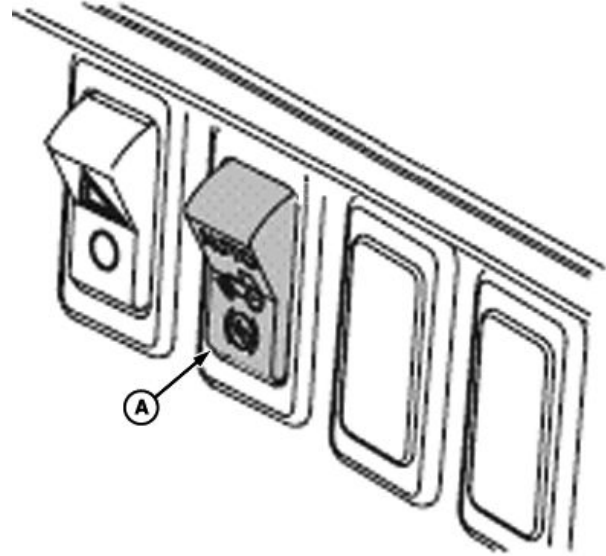
PC13416—UN—21APR11

⚠ CAUTION: To avoid bodily injury, always check for bystanders before engaging the PTO.

NOTE: Once the sequence is defined, the Functions must be set to these positions for iTEC Pro to command their execution in a sequence.

NOTE: If sequence was setup on a tractor with a MFWD rocker switch set in the ON position, it will default to AUTO after upgrading software.

A—MFWD Rocker Switch



PC11423—UN—22OCT08

RM72004,0000129 -19-15JAN13-2/2

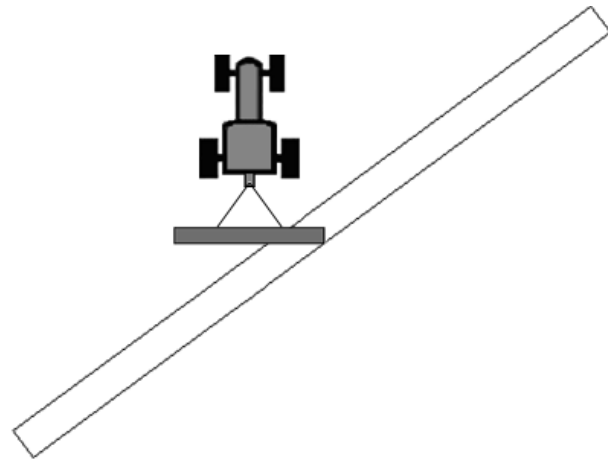
Associating Sequences to Boundaries

Once functions and sequences have been created, Headlands and Passable Interior Boundaries need to have a sequence assigned to them, both for entering and exiting these boundaries. The sequence for Enter Headlands may be the same as the one for Enter Passable Interiors, if desired, and the Sequence Offset may be the same or could be different. The same is true for Exiting.

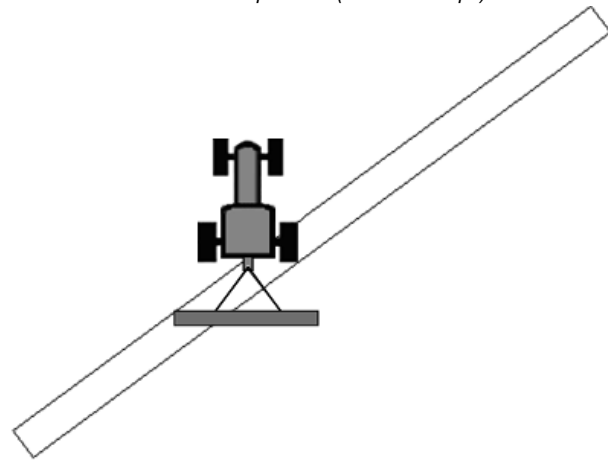
NOTE: *Entering an offset will affect all functions within the sequence. If you do not want all functions to change by the amount entered, leave the Sequence Offset at 0.0, and change only the distance for the individual functions.*

Sequence Offsets are used if you need to fine-tune the distances where the sequence actually starts or stops. They shift function distances that were entered previously. For instance, if you want the implement to raise 0.6 m (2 ft.) sooner than it currently does at the headlands, enter a -0.6 m (-2 ft.) offset for Enter Headlands. If you want it to raise 0.6 m (2 ft.) later than it does, enter a 0.6 m (2 ft.) offset.

NOTE: *There may be situations on angled Passable Interior boundaries where the implement needs to be in the ground on both sides of the boundary at the same time. This can happen when crossing narrow waterways with a wide implement at a steep angle. When set to Minimize Skips, the implement needs to stay lowered until the entire implement is into the waterway, but it cannot raise because the implement needs to be lowered for the other side of the waterway. The end result is both 'Raise' and 'Lower' sequences will be skipped. In this case, prepare to manually control operations (slow down, raise the marker, etc.).*



Raise Implement (Minimize Skips)



Lower Implement (Minimize Skips)

PC11082 —UN—08APR08

PC11098 —UN—08APR08

Continued on next page

RM72004,000012A -19-24JAN13-1/3

iTEC Pro Tab

MENU Softkey >> GREENSTAR Softkey >> GUIDANCE Softkey >> iTEC Pro tab

A—View Tab
B—Guidance Settings Tab

C—Shift Track Settings Tab
D—iTEC Pro Tab

PC8663 —UN—05AUG05



MENU Softkey

PC13432 —UN—21APR11



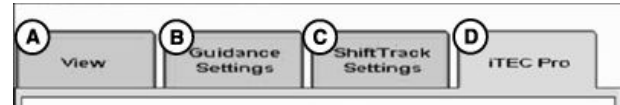
GREENSTAR Softkey

PC8673 —UN—14OCT07



GUIDANCE Softkey

PC9949 —UN—08FEB07



iTEC Pro Tab

RM72004,000012A -19-24JAN13-2/3

Sequence Examples

These examples show typical sequences. Adapt examples to your situation.

Raise Planter (Entering Headland with planter)

- Set Speed = 7.2 km/h -3.7 m (4.5 mph -12 ft.)
- SCV2 = Extend -3 m (-10 ft.) (raise marker arm)
- SCV1 = Extend -0.6 m (-2 ft.) (raise planter)
- DIFF Lock = Off 0 m (0 ft.)
- MFWD = Off 0.6 m (2 ft.)

Lower Planter (Exiting Headland with planter)

- MFWD = ON -1.5 m (-5 ft.)
- DIFF Lock = ON -1.5 m (-5 ft.)
- SCV2 = Retract -1.2 m (-4 ft.) (lower marker arm)
- SCV1 = Retract -0.6 m (-2 ft.) (lower planter)
- Set Speed = 8.9 km/h 0.3 m (5.5 mph 1 ft.)

Enter Waterway (Entering Passable Interior with pull-type sprayer)

- Set Speed = 8 km/h -6 m (5 mph -20 ft.)
- SCV1 = Extend 0 m (0 ft.) (raise boom)
- SCV2 = Extend 0 m (0 ft.) (raise LH boom section)
- SCV3 = Extend 0 m (0 ft.) (raise RH boom section)

Run Sprayer (Exiting Passable Interior with pull-type sprayer)

	Sequence	Sequence Offset	
Enter Headlands	----- (A) -----	(B) 0.0 (ft)	
Exit Headlands	----- (C) -----	(D) 0.0 (ft)	
Enter Passable Interiors	----- (E) -----	(F) 0.0 (ft)	
Exit Passable Interiors	----- (G) -----	(H) 0.0 (ft)	
NOTE: A negative offset will begin the sequence earlier. A positive offset will delay the start of the sequence. ← (I)			

Sequence Settings

A—Enter Headlands Drop-Down Menu
B—Sequence Offset Input-Box
C—Exit Headlands Drop-Down Menu
D—Sequence Offset Input-Box
E—Enter Passable Interiors Drop-Down Menu

F—Sequence Offset Input-Box
G—Exit Passable Interiors Drop-Down Menu
H—Sequence Offset Input-Box
I— NOTE: A negative offset will begin the sequence earlier. A positive offset will delay the start of the sequence.

- SCV1 = Extend -2.1 m (-7 ft.) (lower boom)
- SCV2 = Extend -2.1 m (-7 ft.) (lower LH boom section)
- SCV3 = Extend -2.1 m (-7 ft.) (lower RH boom section)
- Set Speed = 16.1 km/h -3 m (10 mph 0 ft.)

RM72004,000012A -19-24JAN13-3/3

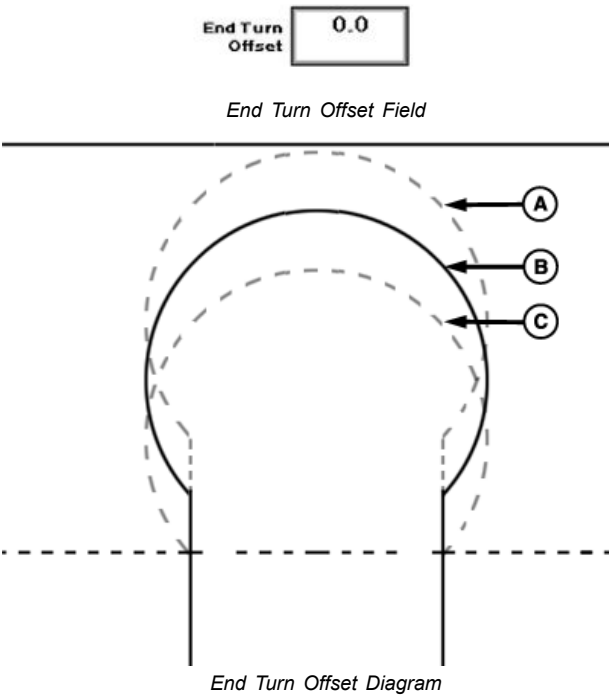
PC11424 —UN—22OCT08

End Turn Offset

The End Turn Offset value can be changed to adjust where the beginning of the turn occurs. To make the tractor turn later, make the value larger. To make the tractor turn earlier, make the value smaller.

- A—Larger Offset Value—Later Turn
- B—Initial Turn
- C—Smaller Offset Value—Earlier Turn

PC10525 —UN—12SEP07



RM72004,000012B -19-24JAN13-1/1

Turn Patterns and Types

iTEC Pro Settings Screen

MENU Softkey >> GREENSTAR Softkey >> GUIDANCE Softkey >> iTEC Pro Tab (D) >> iTEC Pro Settings Change Button (H)

NOTE: Diagnostic button will change to iTEC Pro Enable button when two pieces of the status pie are complete.

- | | |
|---------------------------|-----------------------------------|
| A—View Tab | F—iTEC Pro Diagnostics Button |
| B—Guidance Settings Tab | G—Setup Sequences Button |
| C—ShiftTrack Settings Tab | H—iTEC Pro Settings Change Button |
| D—iTEC Pro Tab | I—End Turn Offset Input Box |
| E—iTEC Pro Pie | |

PC8663 —UN—05AUG05



MENU Softkey

PC13432 —UN—21APR11

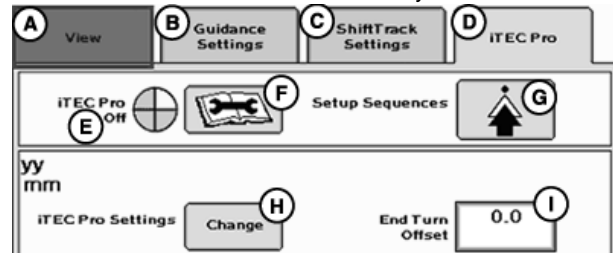


GREENSTAR Softkey

PC8673 —UN—14OCT07



GUIDANCE Softkey

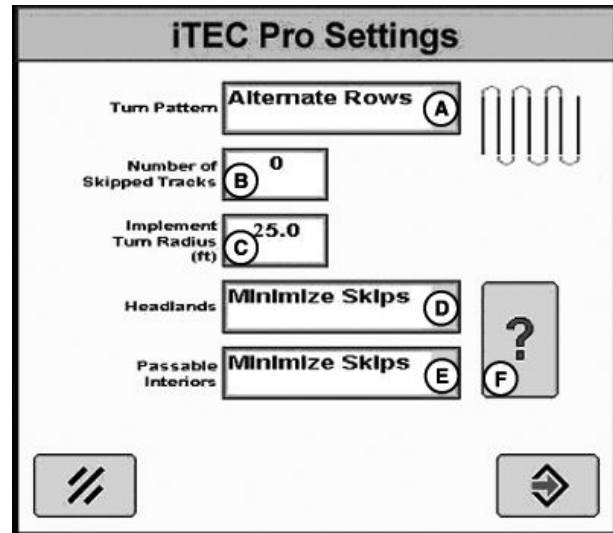


iTEC Pro Tab

PC10641 —UN—11OCT07

RM72004,000014A -19-18FEB13-1/2

- | | |
|--------------------------------------|---|
| A—Turn Pattern Drop-Down Menu | D—Minimize Skips and Overlaps for Headlands Drop-Down Menu |
| B—Number of Skipped Tracks Input-Box | E—Minimize Skips and Overlaps for Passable Interiors Drop-Down Menu |
| C—Implement Turn Radius Input-Box | F—Link to Help on Setting Minimize Skips or Minimize Overlaps |



iTEC Pro Settings

PC13441 —UN—21APR11

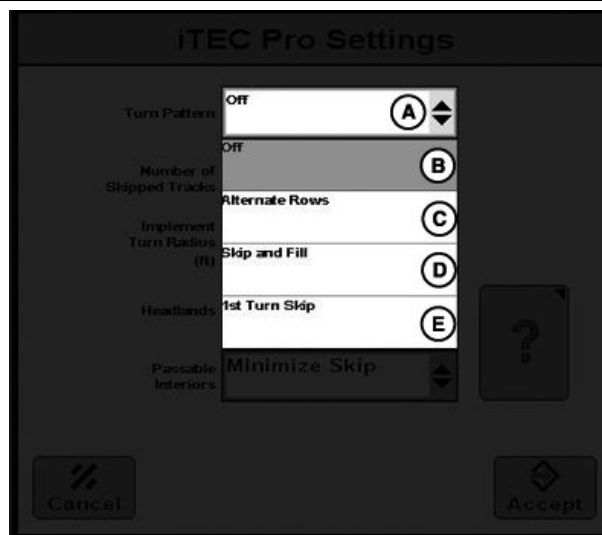
RM72004,000014A -19-18FEB13-2/2

Turn Patterns and Types

NOTE: Unless noted by either machine or implement, "Turn Radius" refers to the larger of either the machine or implement turn radius. For example, if the machine has a 6.096 m (20 ft.) turn radius and the implement has a 9.144 m (30 ft.) turn radius, the 9.144 m (30 ft.) turn radius will be used.

A—Turn Pattern Drop-Down Menu
B—Off
C—Alternate Rows

D—Skip and Fill
E—1st Turn Skip



PC13442—UN—21APR11

RM72004,0000139 -19-18FEB13-1/3

When used with AutoTrac, iTEC Pro automatically performs turns at the ends of fields or when coming up to a pre-defined impassable boundary.

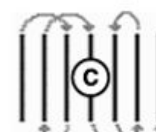
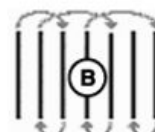
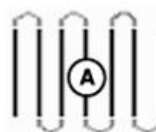
Turn Patterns

- Off—No turn pattern created
- Alternate Rows—For use in typical back and forth operations
- Skip and Fill—For use when always turning in the same direction or keeping draft load the same on both sides
- First Turn Skip—For skipping a set number tracks in a pattern or land, then repeating in the adjacent land. For each pattern, one side of the field will skip one less track than the other.

Turn Types

- Simple Turn

PC10506 —UN—11SEP07



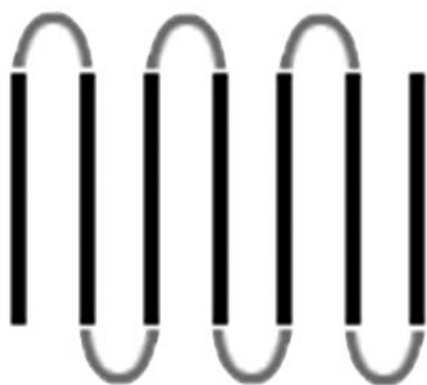
A—Alternate Rows
B—Skip and Fill

C—1st Turn Skip

- Extended Turn
- Light Bulb Turn

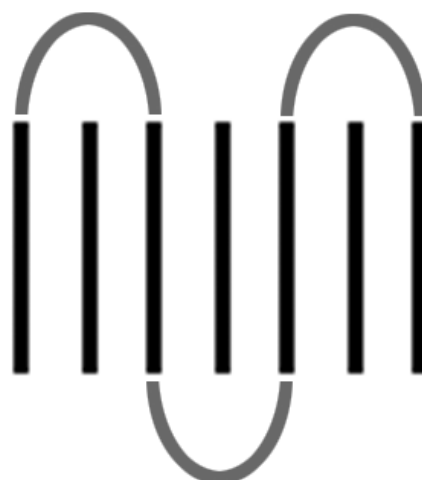
Continued on next page

RM72004,0000139 -19-18FEB13-2/3



No Tracks Skipped

PC12308 —UN—23SEP09



1 Track Skipped

PC12309 —UN—23SEP09

iTEC Pro is not approved for use with 9X30 and 9R Series wheel tractors operating air seeders with tow-behind air carts in situations that do not allow skipped tracks. Turn path and performance may not be acceptable with multiple implement configuration unless one track is skipped.

For more information on implement compatibility, see your local John Deere dealer.

RM72004,0000139 -19-18FEB13-3/3

Number of Skipped Tracks

NOTE: When using iTEC Pro on a 9030 or 9R Series wheel tractor with narrow track spacings, the tractor may not stay on the turn as desired. In the worst cases, AutoTrac may de-activate.

If desired, in low-accuracy applications (tillage), adjust the turn pattern to skip a track or two in alternate rows or set number of skipped tracks to 2 or 3 in first turn skip.

In high-accuracy applications (small planters), the ground speed may be slowed down at the beginning and end of the turn and/or the turn radius may be adjusted larger to allow better turn performance. The speed may be increased for the middle of the turn.

When the Turn Pattern is Alternate Rows (A), you will keep moving across the field. If the Number of Skipped Tracks (B) equals one, the track numbers you will follow would be track 0, 2, 4, 6, and so on. Set skipped tracks to zero to follow track 0, 1, 2, 3, etc.

For turn patterns of Alternate Rows and First Turn Skip, values of 0-10 can be entered. In Skip and Fill, the value will default to one and cannot be changed.

When the turn pattern is First Turn Skip, you will be working in "lands." Example: using the diagrams for First Turn Skip.

- Number of skipped tracks = 1, the track numbers you will follow would be track 0, 2, 1, 4, 3, 6, etc.
- Number of skipped tracks = 3, the track numbers you will follow would be track 0, 5, 1, 6, 2, etc. and finish

A—Turn Pattern Drop-Down Menu

B—Number of Skipped Tracks Input-Box

C—Implement Turn Radius Input-Box

D—Headlands Drop-Down Menu

E—Passable Interiors Drop-Down Menu

F—Link to Help on Setting Minimize Skips and Minimize Overlaps

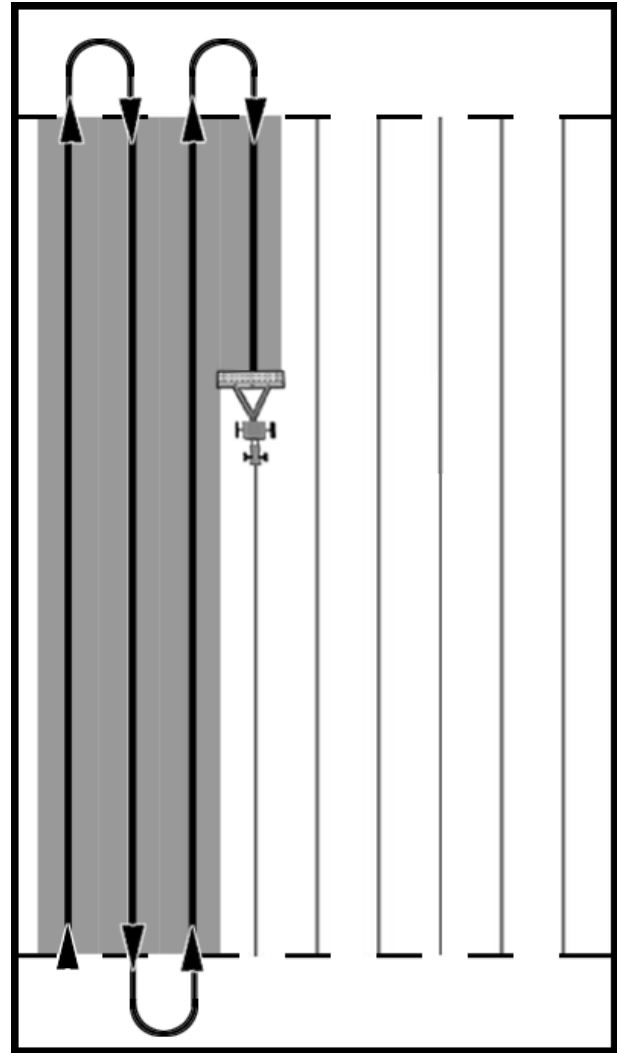
the land on track 4 heading North. From there, it would come down track 9 and start over again—track 9, 14, 10, 15, etc.

RM72004,000013A -19-18FEB13-1/1

PC13443—UN—21APR11

Simple Turn

If the track spacing is equal to twice the turn radius, a simple turn will be made—for example, if the implement is 15.2 m (50 ft.) wide and requires a 7.6 m (25 ft.) turning radius.

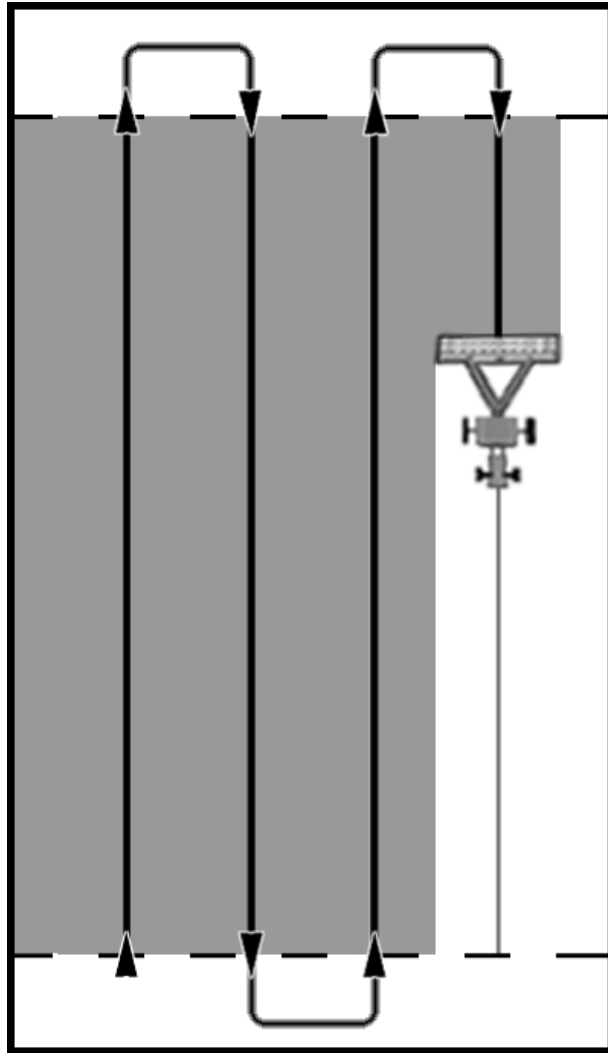


PC9845—UN—22JAN07

RM72004,000013B -19-17JAN13-1/1

Extended Turn

If the track spacing is more than twice the turn radius, an extended turn will be made—for example, if the implement is 18.3 m (60 ft.) wide and requires a 7.6 m (25 ft.) turning radius.

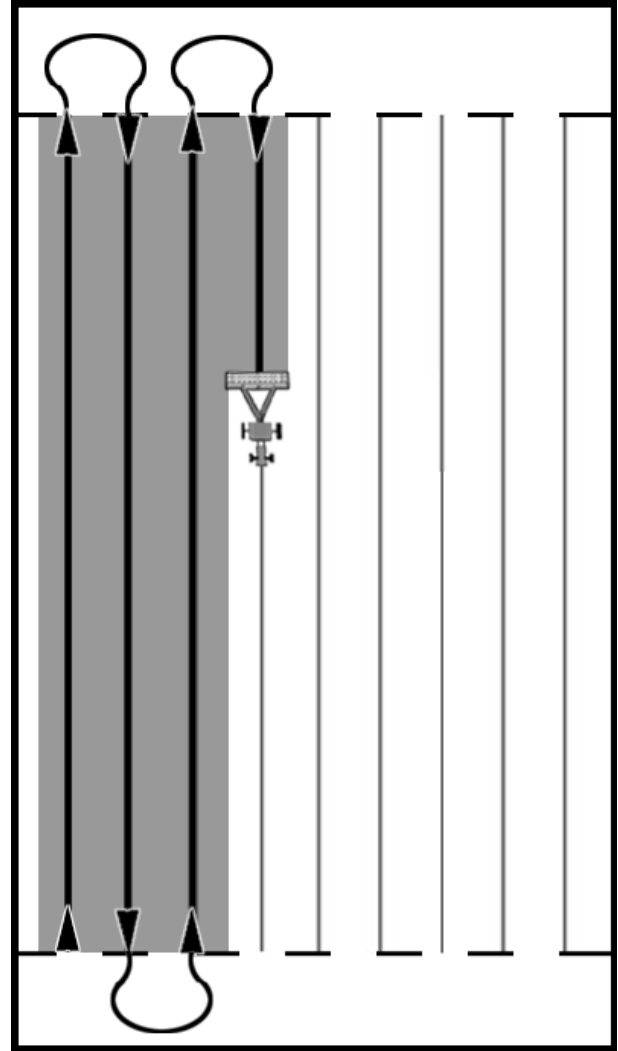


PC9907—UN—05FEB07

RM72004,000013C -19-17JAN13-1/1

Light Bulb Turn

If the track spacing is less than twice the turn radius, a light bulb turn will be made—for example, if the implement is 12.2 m (40 ft.) wide and requires a 7.6 m (25 ft.) turning radius.



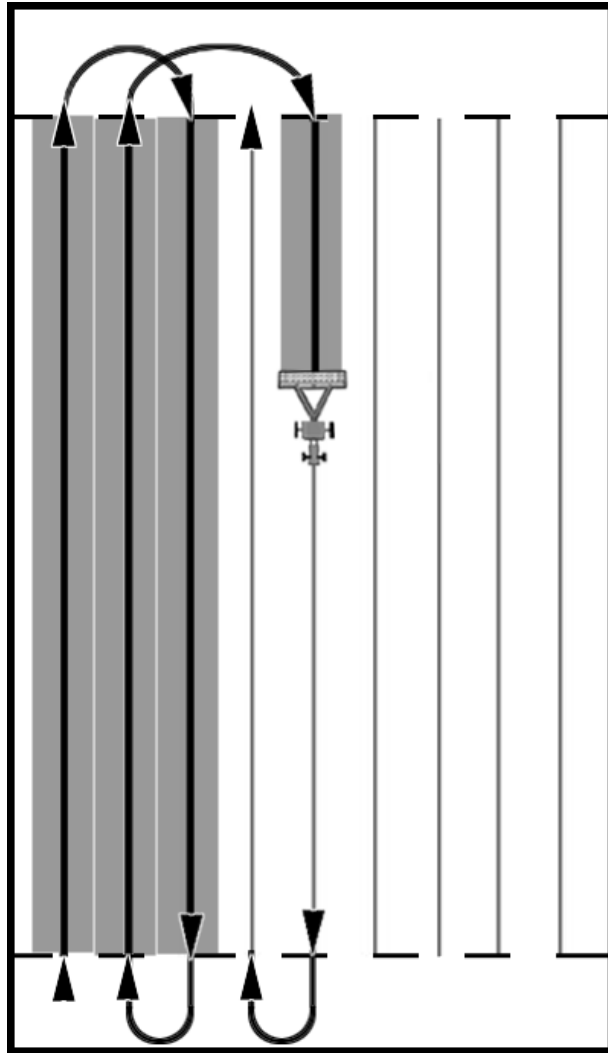
PC9908 —UN—22JAN07

RM72004,000013D -19-17JAN13-1/1

Skip and Fill

For use when always turning in the same direction (right or left) or for keeping the draft load equal on both sides of the implement.

Notice it skips one pass on the opposite side of the field and fills in the skip on the initial side of the field.

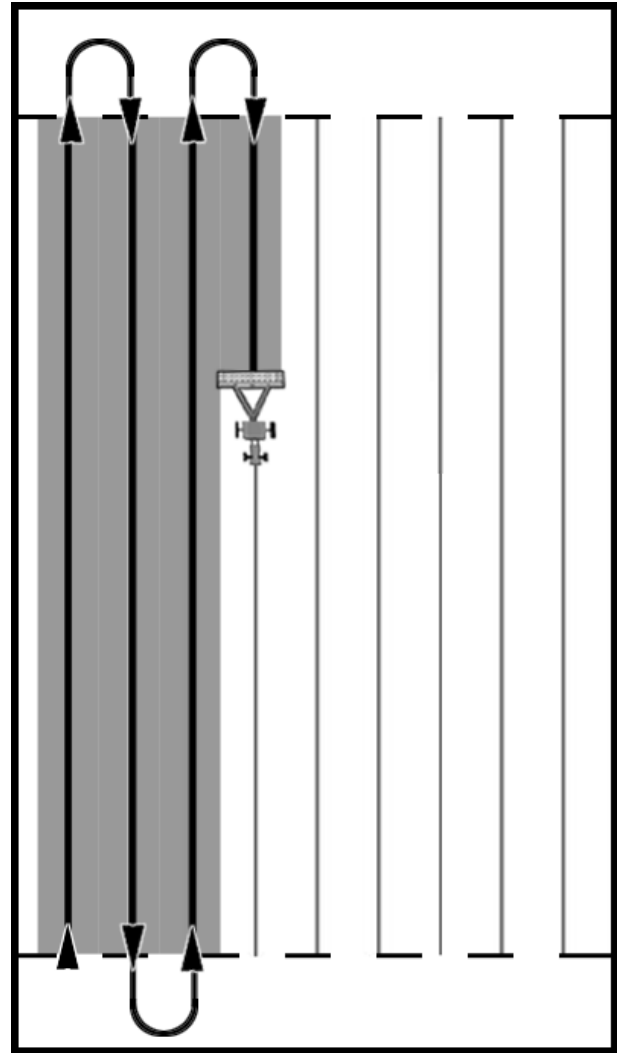


PC9921 —UN—22JAN07

RM72004,000013E -19-17JAN13-1/1

Alternate Rows

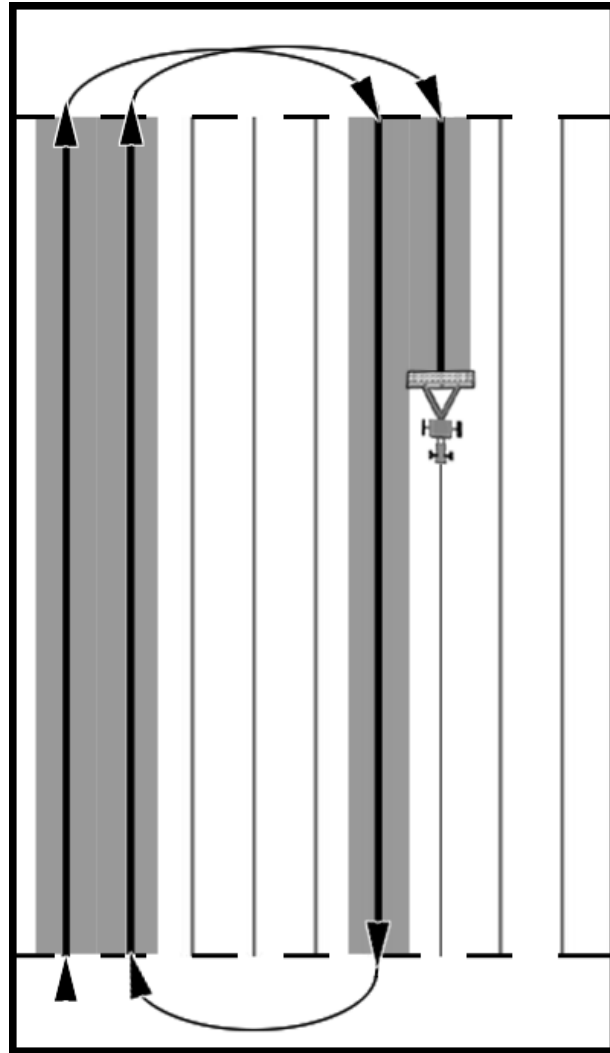
Each pass is next to the previous pass if number of skipped passes is 0. Change to a different number to skip that many passes on each turn.



PC9845 —UN—22JAN07

RM72004,000013F -19-17JAN13-1/1

First Turn Skip

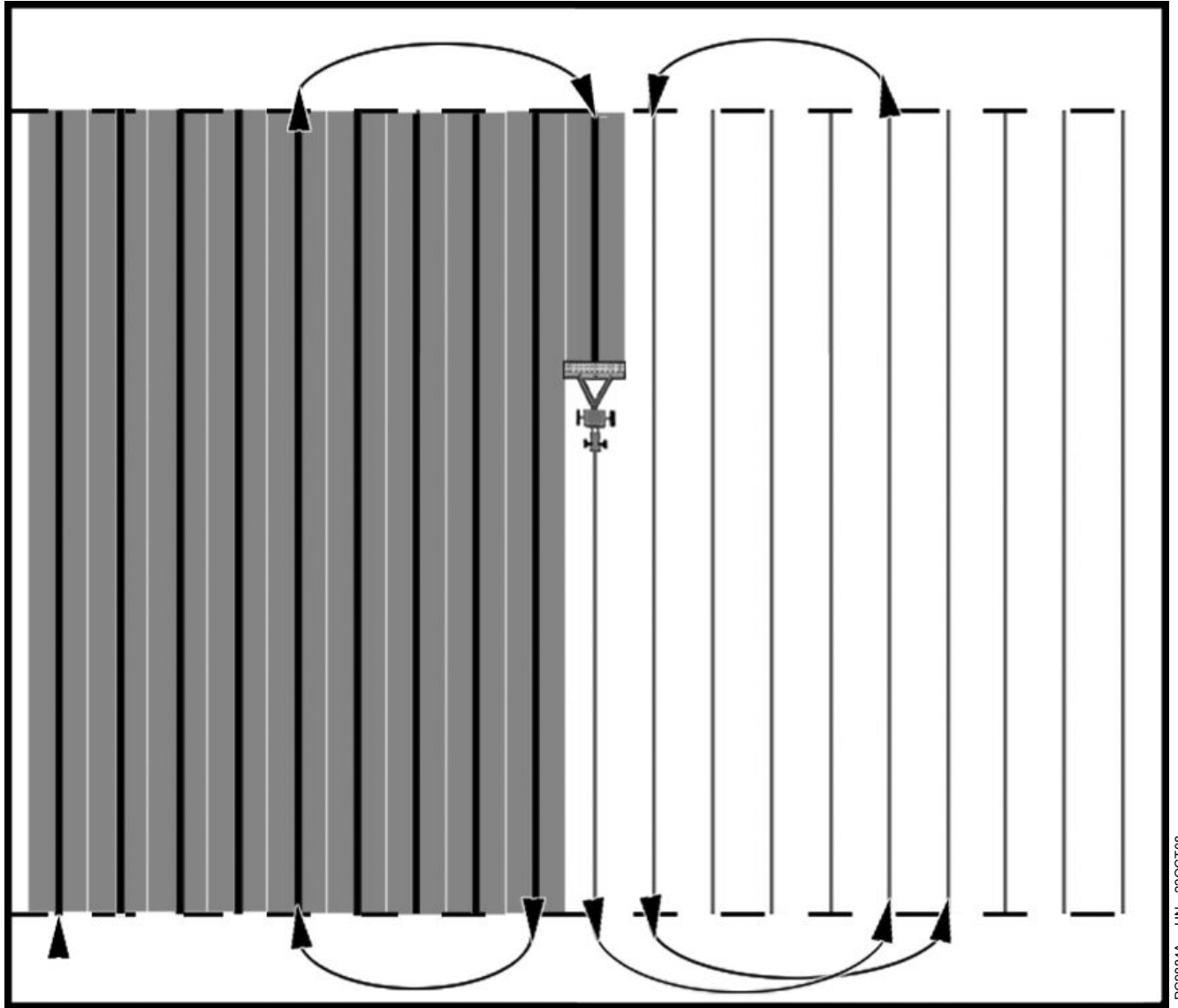


First Turn Skip When Number of Skips = 4

Continued on next page

RM72004,0000140 -19-17JAN13-1/2

PC9843 —UN—22JAN07



PC9884A —UN—22OCT08

First Turn Skip When Number of Skips = 4

Enter the number of tracks you want the first turn to skip (in this case number of skips = 4). The field was started in the SW corner of the field. It will skip 4 tracks on the North end of the field (the first turn) in the diagram, and only 3 on the South end, going North again adjacent to the first

pass. When this 'land' is complete, it will start the next 'land' adjacent to the furthest pass already complete (The location of the tractor/implement in the diagram is in the first pass of this new 'land'). Now the First Turn is on the South end of the field. This pattern repeats across the field.

RM72004,0000140 -19-17JAN13-2/2

Skips and Overlap

Minimize Skips or Overlap

MENU Softkey >> GREENSTAR Softkey >> GUIDANCE Softkey >> iTEC Pro Tab (D) >> iTEC Pro Settings Change Button (H)

NOTE: Diagnostic button will change to iTEC Pro Settings Change button (H) when two pieces of the status pie icon are complete.

- | | |
|--|-----------------------------------|
| A—View Tab | F—iTEC Pro Diagnostics Button |
| B—Guidance Settings Tab | G—Set Up Sequences Button |
| C—ShiftTrack Settings Tab | H—iTEC Pro Settings Change Button |
| D—iTEC Pro Tab | I— End Turn Offset Input Box |
| E—iTEC Pro Status Indicator (Pie Icon) | |

PC8663 —UN—05AUG05



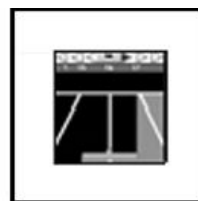
MENU Softkey

PC13432 —UN—21APR11

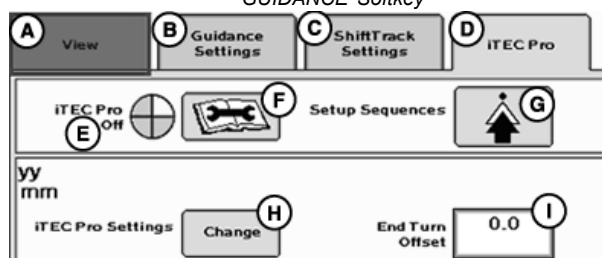


GREENSTAR Softkey

PC8673 —UN—14OCT07



GUIDANCE Softkey



iTEC Pro Tab

PC10641 —UN—11OCT07

Continued on next page

RM72004,0000141 -19-18FEB13-1/2

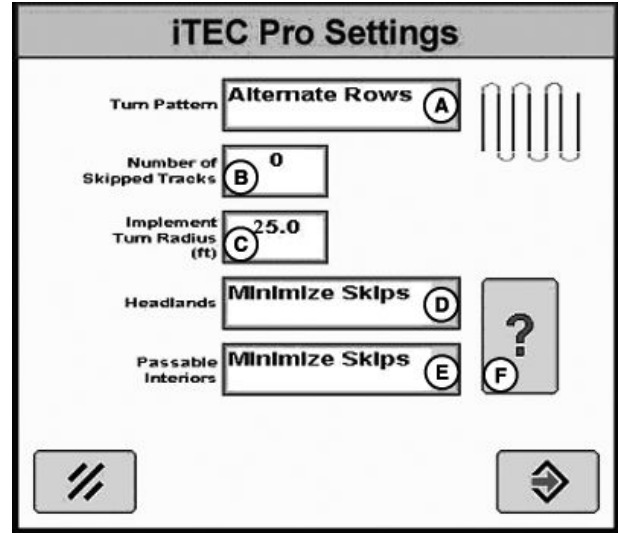
Minimize Skips

Minimize skips will ensure product coverage or ground engaging equipment extends into headlands or passable interior boundaries. It does this by knowing where the 'zero point' of the implement is in relation to the headland. The zero point with minimize skips is the rear end of the implement (the back side of dimension B in implement offsets) when entering headlands and the front side of dimension B when exiting headlands. In the case of a field cultivator or disk, iTEC Pro will think the implement is at the headland when the rear end starts to cross into the headland. This setting may cause overlaps along these boundaries, especially when angled, but helps ensure there are not skips, such as planting into waterways or headlands.

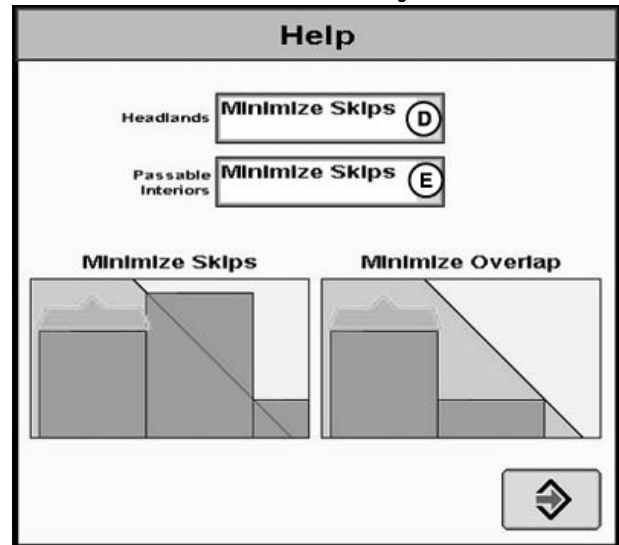
Minimize Overlap

Minimize overlap will ensure product coverage or ground engaging equipment does not extend into headlands or passable interior boundaries. It does this by knowing where the 'zero point' of the implement is in relation to the headland. The zero point with minimize overlap is the front end of the implement (the front side of dimension B in implement offsets) when entering headlands and the rear side of dimension B when exiting headlands. In the case of a field cultivator or disk, iTEC Pro will think the implement is at the headland when the front end starts to cross into the headland. This setting may cause skips along boundaries, especially when angled, but will help reduce overlapping areas, such as disking into a waterway.

- | | |
|--------------------------------------|--|
| A—Turn Pattern Drop-Down Menu | D—Headlands Drop-Down Menu |
| B—Number of Skipped Tracks Input-Box | E—Passable Interiors Drop-Down Menu |
| C—Implement Turn Radius Input-Box | F—Link to Help on Setting Minimize Skips and Minimize Overlaps |



iTEC Pro Settings



Help

RM72004,0000141 -19-18FEB13-2/2

PC13443—UN—21APR11

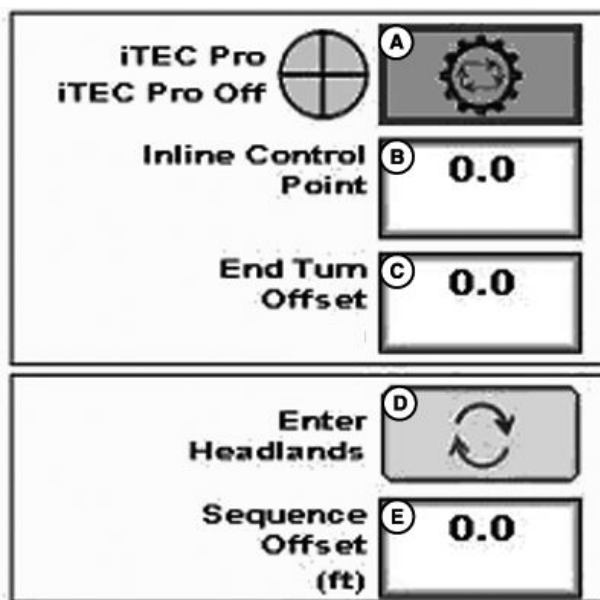
PC10637—UN—10OCT07

Home Pages

Home Pages

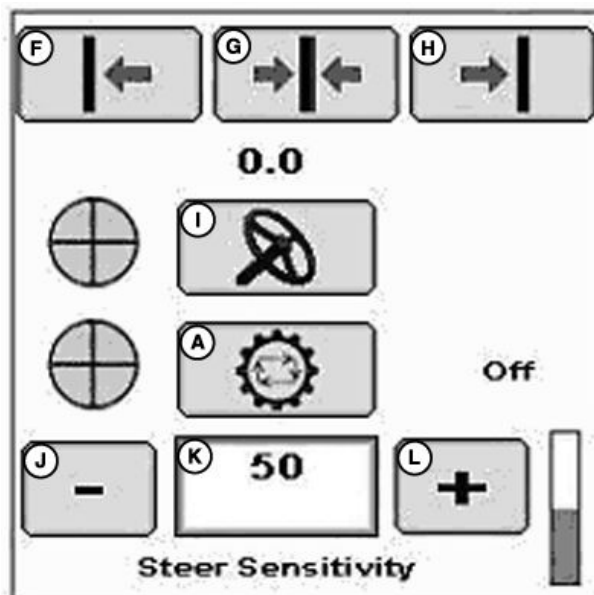
iTEC Pro has specific home pages available that may be useful in making adjustments to the system when in the

field. Please reference GS2/GS3 BASICS Operator's Manual for information on how to select these.



1/4 Page

PC16521—UN—28JAN13



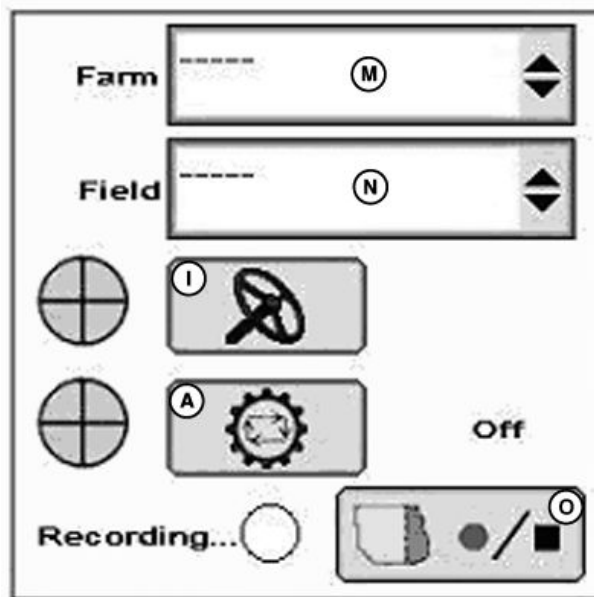
1/4 Page

PC10513—UN—11OCT07

(D) Toggles between Enter Headlands, Exit Headlands, Enter Passable Interiors, and Exit Passable Interiors

NOTE: iTEC Pro Enable Button will show the wrench when only one or two pieces of the pie are filled.

- | | |
|----------------------------------|-------------------------------------|
| A—iTEC Pro Enable Button | I—AutoTrac Enable Button |
| B—Inline Control Point Input Box | J—Decrease Steer Sensitivity Button |
| C—End Turn Offset Input Box | K—Steer Sensitivity Input Box |
| D—Toggle Button | L—Increase Steer Sensitivity Button |
| E—Sequence Offset Input Box | M—Farm Name Drop-Down Menu |
| F—Shift Track Left Button | N—Field Name Drop-Down Menu |
| G—Shift Track Center Button | O—Record/Stop Record Button |
| H—Shift Track Right Button | |

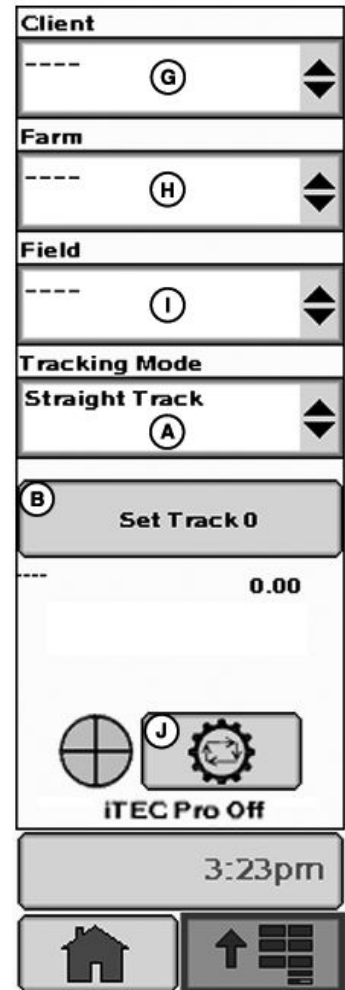
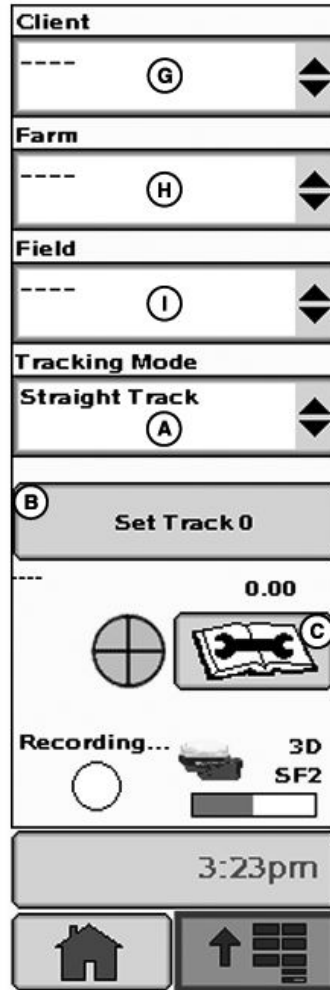
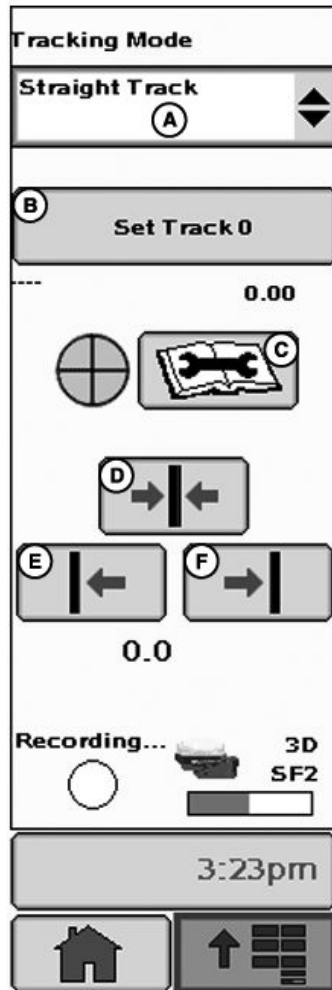


1/4 Page

PC10514—UN—11OCT07

Continued on next page

RM72004,000014F -19-28JAN13-1/6



A—Tracking Mode Drop-Down Menu
B—Set Track 0 Button
C—iTEC Pro Diagnostics Button

D—Shift Track Center Button
E—Shift Track Left Button
F—Shift Track Right Button

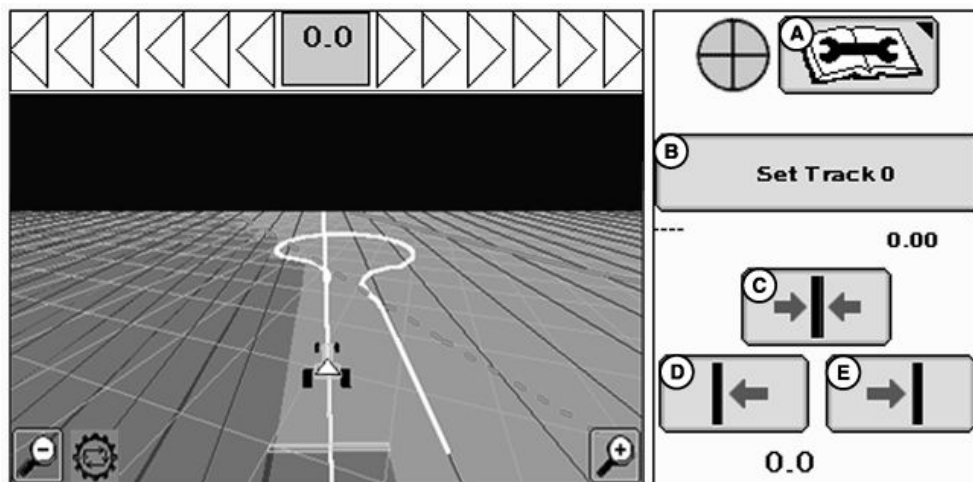
G—Client Drop-Down Menu
H—Farm Drop-Down Menu
I—Field Drop-Down Menu

J—iTEC Pro Enable Button

Continued on next page

RM72004.000014F -19-28JAN13-2/6

PC16522—UN—28JAN13

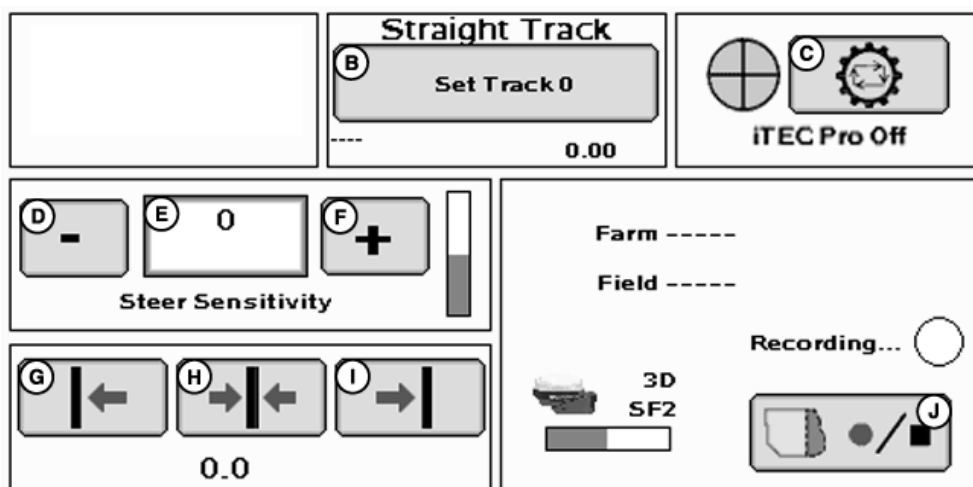


1/2 Page

A—iTEC Pro Diagnostics Button
B—Set Track 0 Button
C—Shift Track Center Button
D—Shift Track Left Button
E—Shift Track Right Button

PC10582 —UN—15OCT07

RM72004,000014F -19-28JAN13-3/6



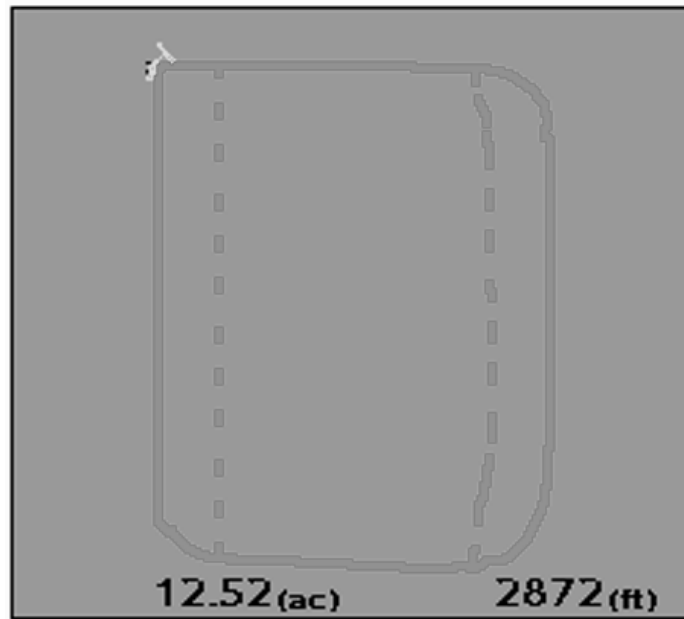
1/2 Page

A—iTEC Pro Diagnostics Button
B—Set Track 0 Button
C—iTEC Pro ON/OFF Button
D—Decrease Steer Sensitivity Button
E—Steer Sensitivity Input Box
F—Increase Steer Sensitivity Button
G—Shift Track Left Button
H—Shift Track Center Button
I—Shift Track Right Button
J—Record/Stop Record Button

PC16523 —UN—28JAN13

Continued on next page

RM72004,000014F -19-28JAN13-4/6



iTEC Pro On  iTEC Pro Off		(A) 
Inline Control Point		(B) 21.4
End Turn Offset		(C) 0.0
Enter Headlands		(D) 
Sequence Offset (ft)		(E) 0.0

PC16524 —UN—28JAN13

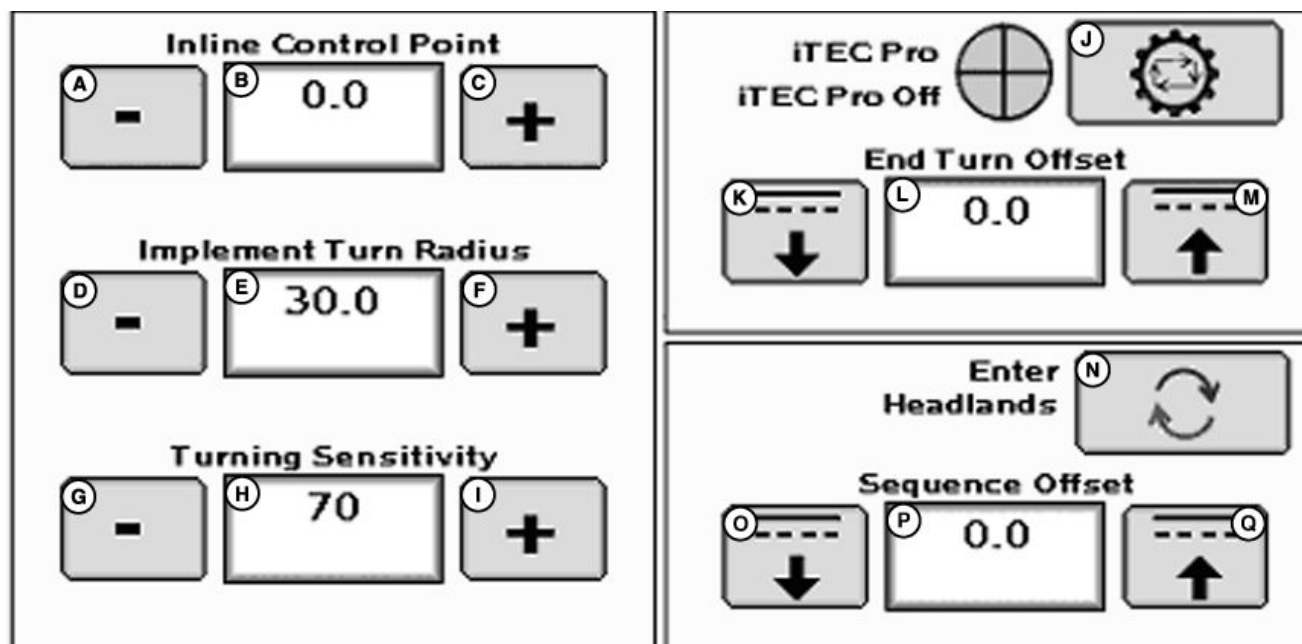
1/2 Page

A—iTEC Pro ON/OFF Button C—End Turn Offset Input Box E—Sequence Offset Input Box
 B—Inline Control Point Input Box D—Enter Headlands Toggle Button

(D) Toggles between Enter Headlands, Exit Headlands, Enter Passable Interiors, and Exit Passable Interiors.

Continued on next page

RM72004,000014F -19-28JAN13-5/6



1/2 Page

- | | | | |
|----------------------------------|--------------------------------|---------------------------------|-----------------------------|
| A—Decrease Inline Control Point | E—Implement Turn Radius Input | I— Increase Turning Sensitivity | N—Toggle Button |
| B—Inline Control Point Input Box | Box | J— iTEC Pro ON/OFF Button | O—Decrease Sequence Offset |
| C—Increase Inline Control Point | F—Increase Implement Turn | K—Decrease End Turn Offset | P—Sequence Offset Input Box |
| D—Decrease Implement Turn | Radius | L—End Turn Offset Input Box | Q—Increase Sequence Offset |
| Radius | G—Decrease Turning Sensitivity | M—Increase End Turn Offset | |
| H—Turning Sensitivity Input Box | | | |

(N) Toggles between Enter Headlands, Exit Headlands, Enter Passable Interiors, and Exit Passable Interiors

RM72004,000014F -19-28JAN13-6/6

Operation

Turning Offsets

Adjust turns (start/finish) for headland or passable interior boundaries using Begin Turn and Finish Turn buttons. Selecting a button changes a turn by 25 cm (1 ft.). Select input box to enter a specific value.

PC10517 —UN—12SEP07



Begin Turn Sooner

PC10518 —UN—12SEP07



Begin Turn Later

PC10519 —UN—12SEP07



Finish Turn Sooner

PC10520 —UN—12SEP07



Finish Turn Later

RM72004,0000145 -19-22JAN13-1/1

iTEC Pro Status Indicator (Pie Icon)

MENU Softkey >> GREENSTAR Softkey >>
DIAGNOSTICS Softkey >> View drop-down menu >>
iTEC Pro

Four status areas appear:

Page 1/2

- Machine s/w installed
- Configured

Page 2/2

- Enabled
- Active

State icon (left column) tells status. When iTEC Pro conditions are OK, each icon shows green.

PC8663 —UN—05AUG05



MENU Softkey

PC13432 —UN—21APR11



GREENSTAR Softkey

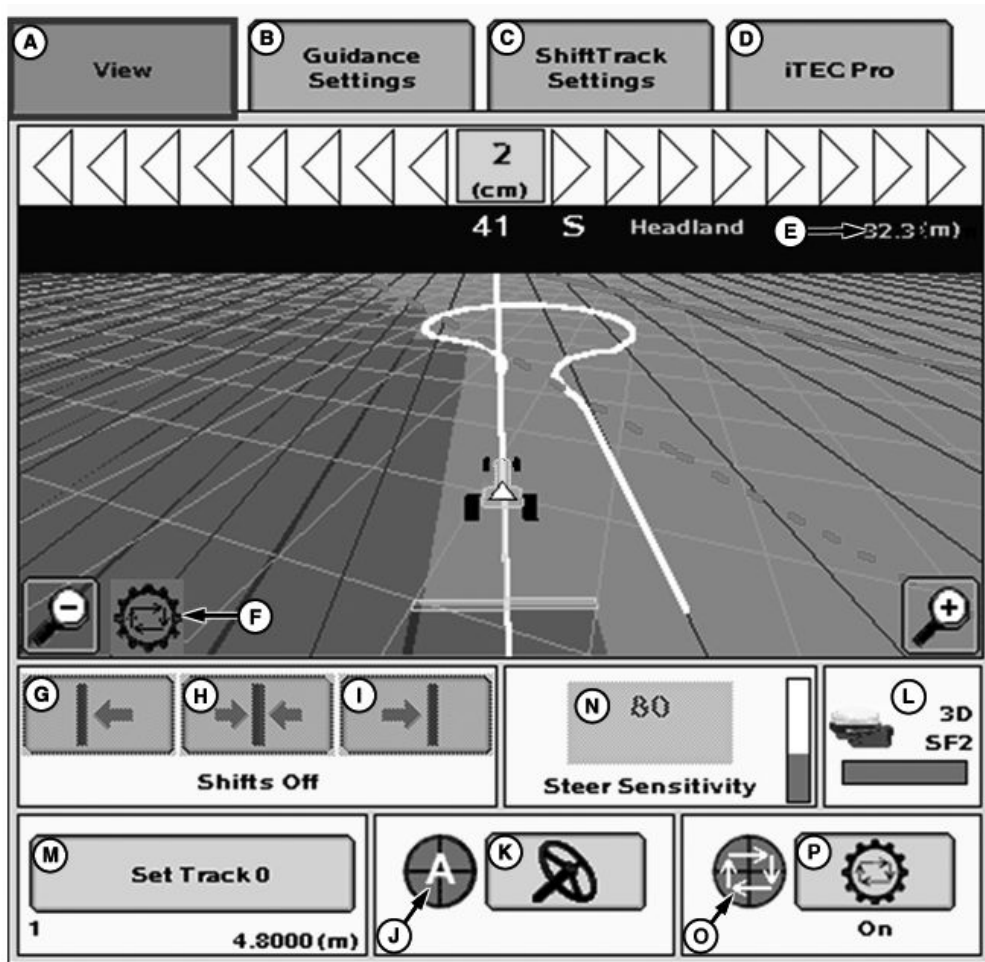
PC9936 —UN—31JAN07



DIAGNOSTICS Softkey

RM72004,0000146 -19-20FEB13-1/1

iTEC Pro Operation



iTEC Pro Operation

- A—View Tab
- B—Guidance Settings Tab
- C—Shift Track Settings Tab
- D—iTEC Pro Tab
- E—Headland Distance Counter
- F—iTEC Pro Status Gear Icon
- G—Shift Track Left
- H—Shift Track Center
- I—Shift Track Right
- J—AutoTrac Status Pie
- K—AutoTrac Enable Button
- L—Receiver Signal Strength
- M—Set Track 0 Button
- N—Steer Sensitivity Input-Box
- O—iTEC Pro Status Pie
- P—iTEC Pro Enable Button

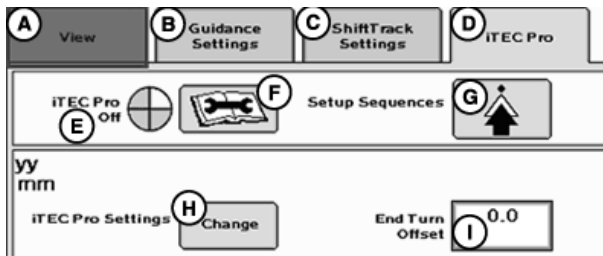
iTEC Pro Status	Gear Icon Status
Enabled	White
Active	Green
Sequence Running	Rotating

iTEC Pro Status Gear Icon Table

PC14178—UN—08NOV11

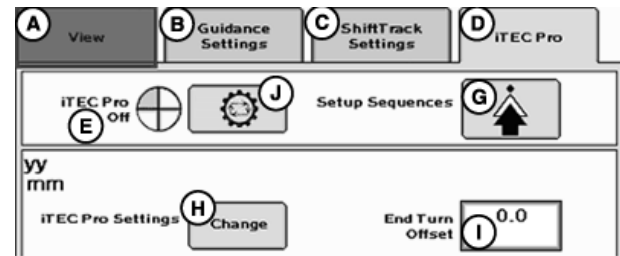
BA31779,00002C6 -19-08NOV11-1/1

Diagnostics



iTEC Pro Tab, Diagnostics Button (F)

PC10523 —UN—12SEP07



iTEC Pro Tab, Enable Button (J)

PC10524 —UN—04OCT07

A—View Tab
B—Guidance Settings Tab
C—ShiftTrack Settings Tab

D—iTEC Pro Tab
E—iTEC Pro Status Indicator (Pie Icon)
F—Diagnostics Button

G—Set Up Sequences Button
H—Settings Change Button
I—End Turn Offset Input Box

J—Enable Button

Selecting the Diagnostics button (F) will display the GreenStar 2 Pro Diagnostics screen with “iTEC Pro” selected in the “View” list box. This button is shown when the iTEC Pro Status Indicator (Pie Icon) shows zero or

one piece. For two or more pieces, the normal iTEC Pro Enable button (J) is shown. The iTEC Pro Active button will enable iTEC Pro.

RM72004,0000182 -19-20FEB13-1/1

Diagnostic Pages

View **iTEC Pro** A

Last Exit Code Issued:

Time of Last Exit Code:

B State	C Conditions	D Status
	E → <u>Vehicle s/w installed</u> F → iTEC Pro Ready	
	G → <u>Configured</u> H → IMS Off I → No Active iTEC Exit/Stop Codes J → Field Boundary Defined K → Headland Boundary Defined L → Machine and Implement Defined M → GPS status is SF1, SF2, or RTK N → Defined Sequences valid O → Tracking Mode selected P → Tracking path defined	OK OK OK OK OK OK OK OK


1/2


iTEC Pro Diagnostics 1/2

A—View Drop-Down Menu
 B—Status Pie State Column
 C—Conditions Column
 D—Status Column
 E—Vehicle S/W Installed

F—iTEC Pro Ready
 G—Configured Column
 H—IMS Off
 I—No Active iTEC Pro Exit/Stop Codes
 J—Field Boundary Defined

K—Headland Boundary Defined
 L—Machine and Implement Defined
 M—GPS Status is SF1, SF2, RTK
 N—Defined Sequences Valid

O—Tracking Mode Selected
 P—Tracking Path Defined

Continued on next page

RM72004,0000183 -19-20FEB13-1/2

PC11435—UN—23OCT08

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

View iTEC Pro A

Last Exit Code Issued: N/a

Time of Last Exit Code: 00:00:00

00/00/0000

B State	C Conditions	D Status
	E → <u>Enabled</u> F → Enabled button pressed	---
	G → <u>Active</u> H → Machine not in Park I → Resume switch pressed J → Operator in seat K → Speed greater than 0.5 kph	--- --- --- --- ---



2/2



iTEC Pro Diagnostics 2/2

A—View Drop-Down Menu
B—Status Pie State Column
C—Conditions Column

D—Status Column
E—Enabled
F—Enable Button Pressed
G—Active

H—Machine Not In Park
I—Resume Switch Pressed
J—Operator In Seat

K—Speed Greater Than 0.5 kph

Status for each condition will be either “OK” or “- -”, meaning the condition has not been satisfied.

Resume Switch—Press the Resume Switch to move from the ENABLED stage to the ACTIVATED stage.

RM72004,0000183 -19-20FEB13-2/2

PC12313 —UN—01OCT09

End Turns

Turn Confirmation—A visual indicator is displayed up to 20 seconds before approaching a predicted headland. When the system detects a predicted headland, the distance to that headland will be displayed and will count down the intersection to that headland. The visual indication is accompanied by tones.

The Turn Confirmation will only appear if AutoTrac is active, and a turn pattern is selected that has iTEC Pro automating end-turns.

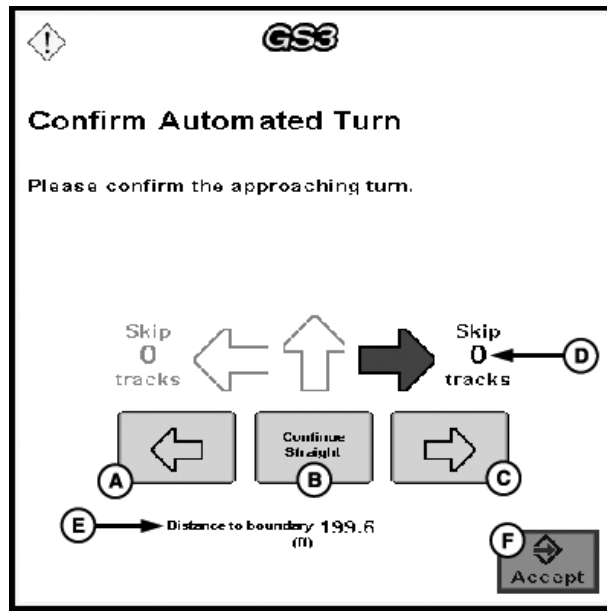
NOTE: Ten seconds before the headland, the turn first shown will be used in the turn if the OK button has not been pressed.

The next turn is indicated by the top arrow and by how many tracks it will skip. If the next turn and track spacing are acceptable, press the OK button.

NOTE: Pressing the resume switch can be done instead of pressing the OK button. The resume switch can also be pressed to clear other popup windows.

If the next turn needs to be changed, press A, B, or C, then press the OK button.

- Pressing Continue Straight will cause the tractor to keep going straight. If the Continue Straight option is pressed, the corresponding "enter headland" sequence will not execute and the vehicle will not turn. Any subsequent sequences on the same pass will execute, but the next desired turn must be performed manually if iTEC Pro encounters another 'Enter Headland' transition before 20 seconds. If the next desired turn is after 20 seconds of exiting the headland, the Turn Confirmation indicator will be displayed and an automated turn may be completed.
- Press the left arrow button to increase the number of tracks the turn will skip when turning to the left, or decrease the number of tracks the turn will skip when turning to the right.



Turn Confirmation

- | | |
|----------------------------|-------------------------|
| A—Turn Left Button | D—Number of Skip Tracks |
| B—Continue Straight Button | E—Distance to Boundary |
| C—Turn Right Button | F—OK Button |

- Press the right arrow button to increase the number of tracks the turn will skip when turning to the right, or decrease the number of tracks the turn will skip when turning to the left.

NOTE: When working next to a headland, the vehicle may enter and exit the headland in the same pass. In this situation, continue straight may be selected on the turn confirmation page to continue on the current pass. The turn confirmation page will then not appear again unless the vehicle travels for 20 seconds without intersecting a border.

BA31779,000011D -19-21APR11-1/1

PC13419—UN—21APR11

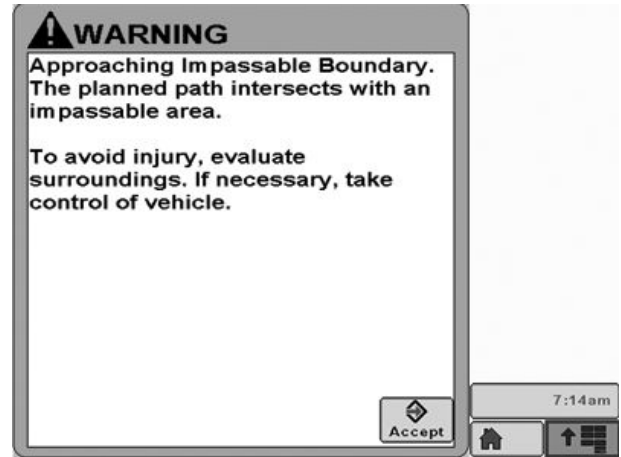
Approaching Impassable Boundary

This message indicates a part of the vehicle and/or implement will intersect or has crossed an impassable boundary. This message will also appear when the vehicle path is very close to an impassable boundary because iTEC Pro adds a buffer to the physical width of implements (see Implement Setup in Machine and Implement Setup Section).

NOTE: The Impassable boundary message will not appear in the following conditions:

- iTEC Pro turn pattern is set to off.
- AutoTrac is not active.

NOTE: The line showing the trajectory of the vehicle on the GS2/GS3 screen will turn RED whenever the vehicle or implement is anticipated to intersect an impassable boundary.



Approaching Impassable Boundary

PC13150—19—17FEB11

BA31779.0000139 -19-09MAY11-1/1

Deactivating iTEC Pro

The operator can deactivate iTEC Pro at anytime by pushing the iTEC Pro On/Off button. If AutoTrac and iTEC Pro are both active, then any action that deactivates AutoTrac will also deactivate iTEC Pro. This means when operating iTEC Pro and AutoTrac together, the operator can deactivate both systems by taking control of the steering wheel.

When iTEC Pro deactivates, the system will not create new end-turn paths, execute sequences or check for intersections with impassable boundaries. If an end-turn has already been generated when the system deactivates, the end-turn will remain and the vehicle will guide along the turn if AutoTrac is active.

If iTEC Pro deactivates while a sequence is executing, the functions that have already occurred within that sequence will be aborted.

The behavior of a function aborting is as follows:

- Front and Rear Hitch—Stop movement
- SCV—Stop flow
- PTO—PTO off
- MFWD—Returns to state of switch
- Differential Lock—Differential Lock off
- Gear/Shift (non-IVT)—Stays in current gear

NOTE: If the operator manually executes a function while the sequence is executing, that function will not be aborted. Functions set to occur in the sequence after iTEC Pro deactivates will not be executed.

BA31779.000011F -19-21APR11-1/1

Helpful Tips and Adjustments

Turns

- If tractor is turning too soon, increase the End Turn Offset (or create a positive number).
- If tractor is turning too late, decrease the End Turn Offset (or create a negative number).
- Beginning of the turn is determined by the following crossing the headland:
 - Minimize Skips
The rear of the implement (dimensions A+B) when entering headland.
The front of the implement (dimension A) when exiting the headland.
 - Minimize Overlap
The front of the implement (dimension A) when entering headland.
The rear of the implement (dimensions A+B) when exiting the headland.
- The system looks at the larger of the machine or implement Turn Radius. If the smaller Turn Radius is changed, there will be no change to the turn.
- Guess Row Accuracy for large implements (approximately 12.2 m (40 ft) and larger)
 - Pull type implement

If the guess row is too wide, decrease the Control Point.

If the guess row is too narrow, increase the Control Point.

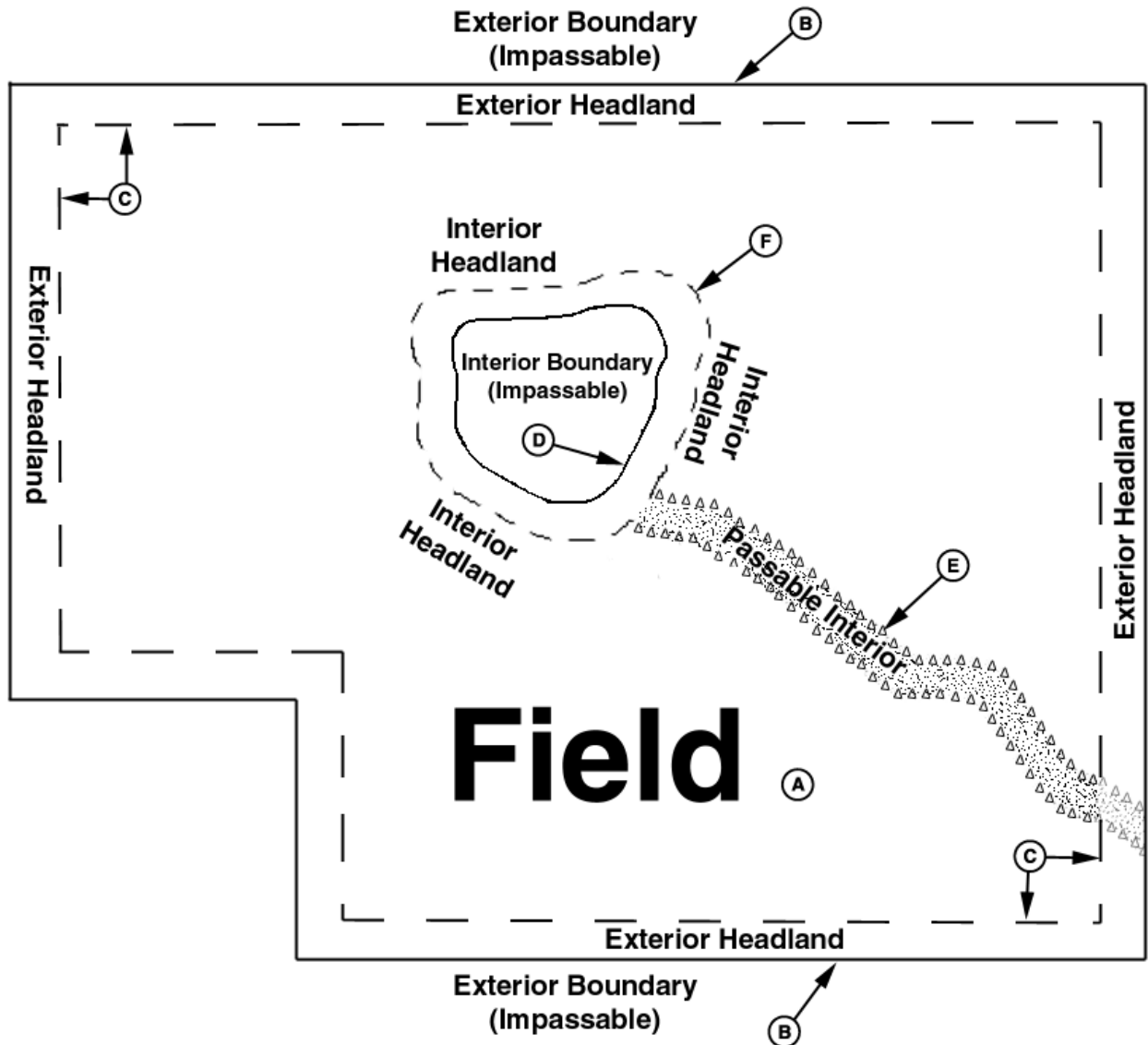
- 3-point mounted implement
Adjust the End Turn Offset or implement dimensions A+B to allow the tractor to be lined up on the AB line sooner.
- Guess Row Accuracy for small implements (approximately 12.2 m (40 ft) and smaller)
 - Pull type implement
If the guess row is too wide, increase the Control Point.
If the guess row is too narrow, decrease the Control Point.
 - 3-point mounted implement
Adjust the End Turn Offset or implement dimensions A+B to allow the tractor to be lined up on the AB line sooner.

Sequences and Functions

- If happening too soon, increase the Function distance or the Sequence Offset.
- If happening too late, decrease the Function distance or the Sequence Offset.

BA31779,0000120 -19-21APR11-1/1

Overlapping Boundary and Sequence Priority



Overlapping Boundary Priority Diagram

A—Field
B—Exterior Boundary
(Impassable)

C—Exterior Headland
D—Interior Boundary
(Impassable)

E—Passable Interior
F—Interior Headland

Overlapping Boundary Priority

If multiple boundary regions overlap, iTEC Pro will treat the overlapping regions as a single region. The regions are prioritized in the following order:

1. Impassable
2. Headland
3. Passable

4. Field

If iTEC Pro detects overlapping boundaries—if the implement is in two areas at once (in a headland and a passable boundary)—iTEC Pro will prioritize them.

For instance, if the implement is in both a Headland and an Impassable Interior Boundary, iTEC Pro will indicate an Impassable Interior Boundary.

Continued on next page

RM72004,0000147 -19-20FEB13-1/2

PC10627 —UN—04OCT07

Overlapping Sequence Priority

If sequences overlap in a region such that the Exit Region sequence (Headland or Passable) will start before

the Enter Region sequence (Headland or Passable) is complete, then the Enter Region sequence will cancel and the Exit Region sequence will execute.

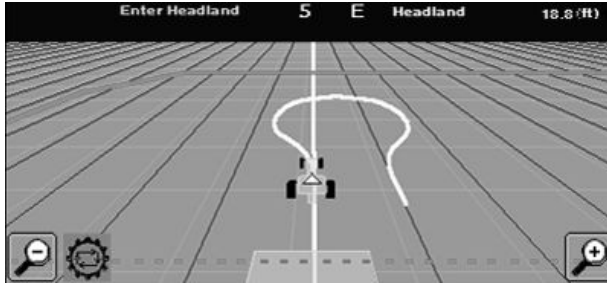
RM72004,0000147 -19-20FEB13-2/2

Troubleshooting

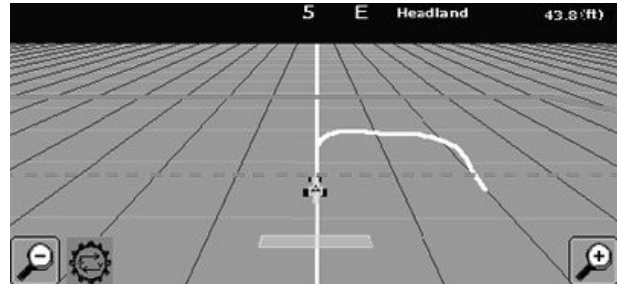
Troubleshooting and Optimization Guide

1. iTEC Pro Turns
2. Implement Turn Radius Versus Machine Turn Radius
3. Impassable Boundary Warning
4. Required Headland Size

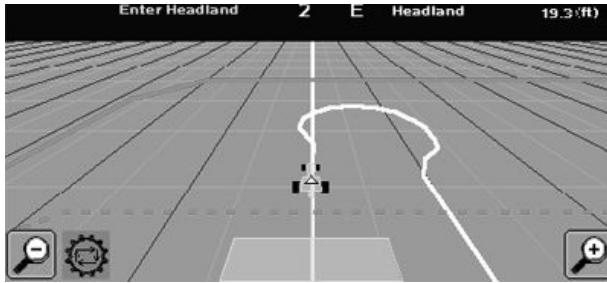
5. Tractor Off-track Error
6. Guess Rows at Headland Boundary (Drawn Implements)
7. Inconsistent Headland Implement Action
8. Implement Action Location



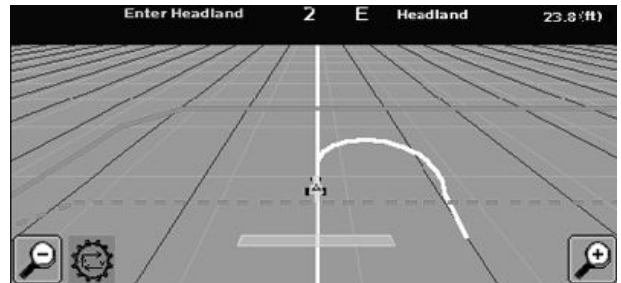
Symmetrical Light Bulb Turn (Control Point at 0 m (0 ft.) or Using 3-Point Hitch) (Turn Radius is Greater Than half of Track Spacing)



Extended Simple Turn (Turn Radius is Less Than Half of Track Spacing)



Non-symmetrical Light Bulb Turn (Normal Control Point) (Turn Radius is Greater Than Half of Track Spacing)



Simple Turn (Turn Radius Equals Half of Track Spacing)

1. iTEC Pro Turns

- Here are iTEC Pro end turns referenced in this document.

Continued on next page

RM72004,0000142 -19-11FEB13-1/6

2. Implement Turn Radius Versus Machine Turn Radius

- iTEC Pro uses the largest of these two values to generate the end turn in the headlands. For example, the machine's turn radius of 7 m (23 ft.) would be used with the settings shown in "Extended Simple Turn" and "iTEC Pro Settings" figures.
- Keep this in mind when trying to raise or lower the Turn Radius for tuning purposes. In the iTEC Pro Settings figures, no adjustment to the turn will be made by changing the Implement Turn Radius unless it is greater than 7 m (23 ft.).

The iTEC Pro Settings screen displays the following controls:

- Turn Pattern:** A drop-down menu set to "Alternate Rows" (labeled A), with a diagram of a zigzag turn pattern to its right.
- Number of Skipped Tracks:** An input box set to "0" (labeled B).
- Implement Turn Radius (ft):** An input box set to "15.0" (labeled C).
- Headlands:** A drop-down menu set to "Minimize Skip" (labeled D).
- Passable Interiors:** A drop-down menu set to "Minimize Skip" (labeled E).
- Help Link:** A button with a question mark icon (labeled F).
- Navigation:** Buttons for back, forward, and a home/exit button at the bottom.

iTEC Pro Settings

The "Approaching Impassable Boundary" warning screen contains the following text:

WARNING
Approaching Impassable Boundary.
 The planned path intersects with an impassable area.

To avoid injury, evaluate surroundings. If necessary, take control of vehicle.

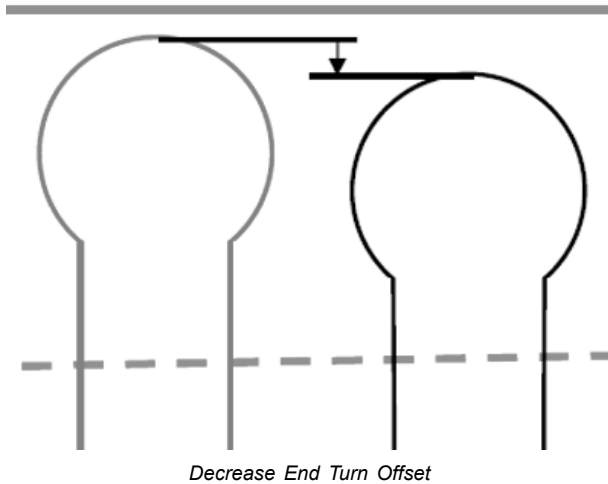
At the bottom, there is an "Accept" button, a home button, and a status bar showing the time "7:14am".

Approaching Impassable Boundary

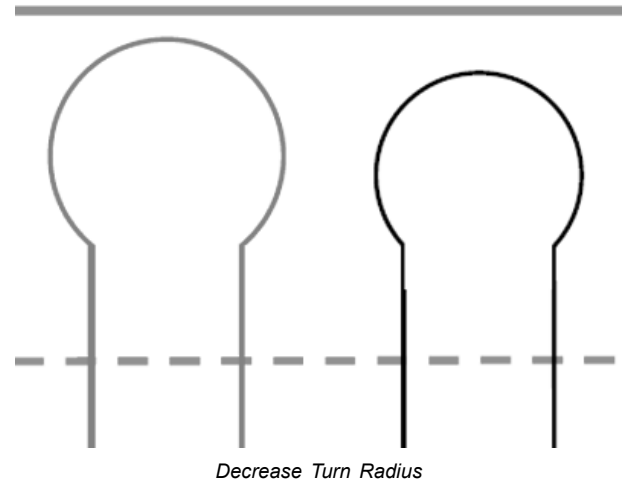
- | | |
|--------------------------------------|--|
| A—Turn Pattern Drop-Down Menu | D—Headlands Drop-Down Menu |
| B—Number of Skipped Tracks Input-Box | E—Passable Interiors Drop-Down Menu |
| C—Implement Turn Radius Input-Box | F—Link to Help on Setting Minimize Skips and Minimize Overlaps |

PC11436—UN—23OCT08

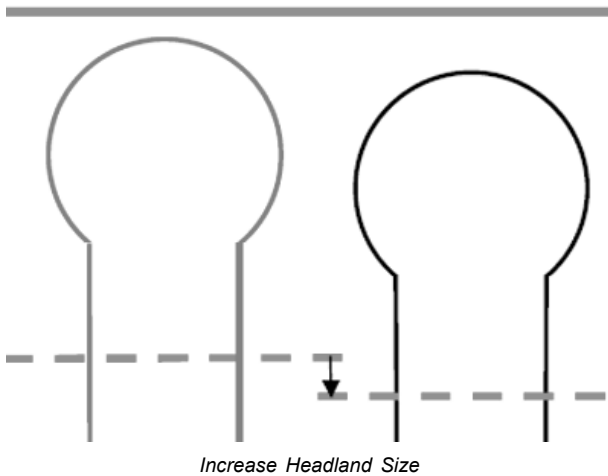
PC13150—19—17FEB11



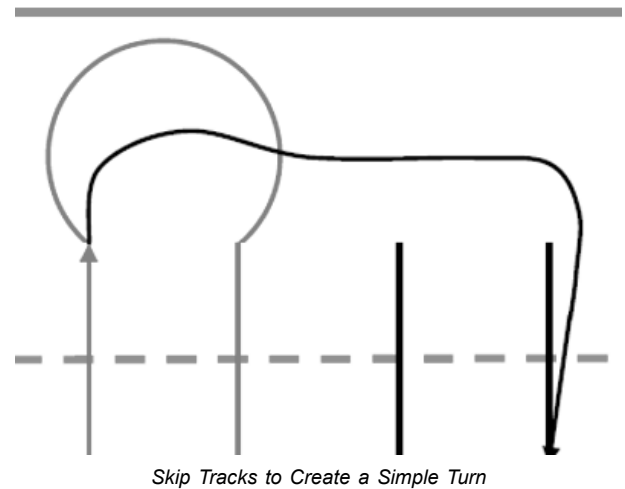
PC11088 —UN—19MAR08



PC11089 —UN—19MAR08



PC11090 —UN—19MAR08



PC11091 —UN—19MAR08

3. Impassable Boundary Warning

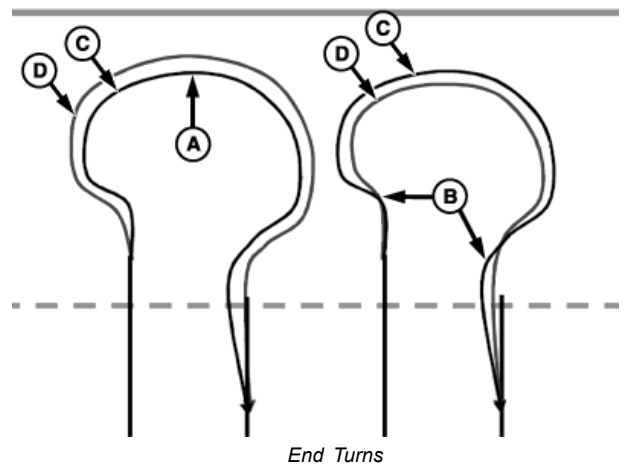
- Decrease end turn offset ("Decrease End Turn Offset" figure).
- Decrease turn radius ("Decrease Turn Radius" figure).
- Increase headland size ("Increase Headland Size" figure).
- Skip tracks to create a "simple" turn ("Skip Tracks to Create a Simple Turn" figure).

4. Required Headland Size

- If possible, use "Simple" turns. Use smallest turn radius (see "Simple Turn" and "Extended Simple Turn" figures). Skip enough tracks to obtain a "simple" turn (see "Skip Tracks to Create a Simple Turn" figure).
- Use an End Turn Offset to shift the turn into the field (see "Decrease End Turn Offset" figure).

5. Tractor Off-track Error

NOTE: iTEC Pro end turns will be more consistent when the off-track error is minimized throughout the end turns, and especially near the end of the turn.



PC11092 —UN—19MAR08

A—Point A
B—Point B

C—Original Tractor Path
D—Tractor Path After Changing Setting

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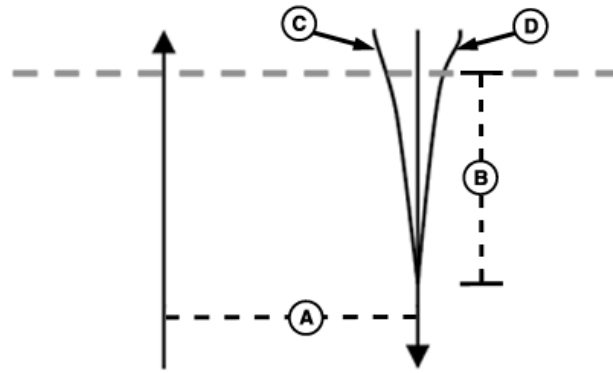
RM72004,0000142 -19-11FEB13-3/6

- If tractor is getting off-track in the middle of the turn (see point A in "End Turns" figure), increase the Turn Radius until the tractor is able to stay on track.
- If tractor is getting off-track at the beginning or end of the turn (see point B in "End Turns" figure), try decreasing the Turn Radius until the tractor is able to stay on track. If the Turn Radius is decreased too far, it may start to get off track in the middle of the turn.

Decreasing the control point offset (D) will also create end turns that are easier for the tractor to track on at the start and end of the turns with pull type implements. However, this can result in undesirable guess row performance. An increased End Turn Offset may help eliminate a bad guess row.

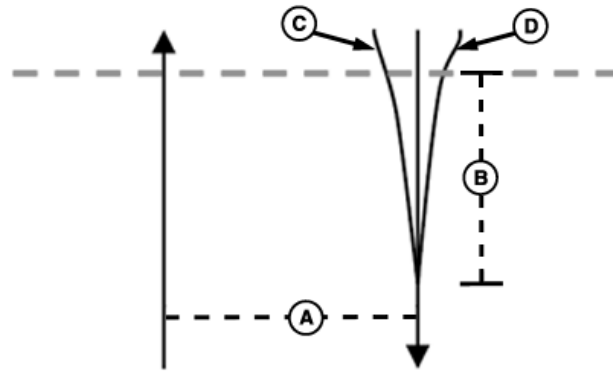
6. Guess Rows at Headland Boundary (Drawn Implements)

- For "simple" turns, increase the control point to widen guess rows and decrease the control point to narrow them.
- For light bulb turns, increase the control point to narrow the guess rows and decrease to widen the guess rows.
- Additionally, the End Turn Offset can be adjusted to improve guess row performance.



Simple Turn Example

A—Guess Row
B—Add This Distance To End Turn
C—Control Point Too Small
D—Control Point Too Large



Light Bulb Turn Example

A—Guess Row
B—Add This Distance To End Turn
C—Control Point Too Large
D—Control Point Too Small

7. Inconsistent Headland Implement Action

- Slower speeds while approaching and crossing the headland will result in better implement action (raise/lower the implement) accuracy and end-turn performance.
- Multiple speed and/or gear changes can be configured in each sequence as shown in the Enter Headland and Exit Headland figures.

Setup Sequences

Sequence Enter Headland ●/■ ○

1		4.0 (mi/h)	-35.0 (ft)
2		2.0 (mi/h)	-10.0 (ft)
3		Extend	0.0 (ft)
4		4.0 (mi/h)	10.0 (ft)
5	----		

1/1

Enter Headland

Setup Sequences

Sequence Exit Headland ●/■ ○

1		2.0 (mi/h)	-10.0 (ft)
2		Retract	-5.0 (ft)
3		4.0 (mi/h)	10.0 (ft)
4		6.0 (mi/h)	30.0 (ft)
5	----		

1/1

Exit Headland

PC13420 —UN—21APR11

PC13431 —UN—21APR11

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8. Implement Action Location

- Adjust the Function Distance for controlling implement action (raise/lower the implement) in the Setup Sequences to optimize where the implement will go in and out of the ground. Sequence Offset may be changed instead of Function Distance, if desired, but this will shift each Function Distance by that amount.
- Changing the machine speed and the SCV or 3-point hitch flow rate will also affect where the implement goes in and out of the ground.
- Example: You notice the planter should come out of the ground 1.5 m (5 ft.) earlier when entering the headland and you are using the settings in the Enter Headland and iTEC Pro Sequences figures. Change the SCVI function offset (see Enter Headland figure) to -1.5 m (-5 ft.) or change the Sequence Offset (see iTEC Pro Sequences figure) to -1.5 m (-5 ft.).

The screenshot shows the 'Setup Sequences' screen for machine 1770NT 24R30. At the top, there are tabs for 'View', 'Guidance Settings', 'ShiftTrack Settings', and 'iTEC Pro'. Below these, there's a status bar with 'iTEC Pro Off', a compass icon, a 'Setup Sequences' button, and an upward arrow icon. The main area is titled '1770NT 24R30' and contains a 'Change' button for 'iTEC Pro Settings'. Below this, there are five rows of settings, each with a 'Sequence' dropdown and a 'Sequence Offset' value of 0.0 (ft):

Function	Sequence	Sequence Offset (ft)
End Turn Offset		0.0
Enter Headlands	Enter Headland	0.0
Exit Headlands	Exit Headland	0.0
Enter Passable Interiors	----	0.0
Exit Passable Interiors	----	0.0

NOTE: A negative offset will begin the sequence earlier. A positive offset will delay the start of the sequence.

PC11097—UN—24MAR08

9. iTEC Pro Sequences

Possible sequences on iTEC Pro (scope limited to Gear and Speed Changes only):

PST Tractor

- Speed Change
- Gear Change

IVT Tractor

- Speed Change only

AGT Tractor

- Mode: Auto
- Speed Change only
- Mode: Manual
- Gear Change only

Exit Code on PST Tractor

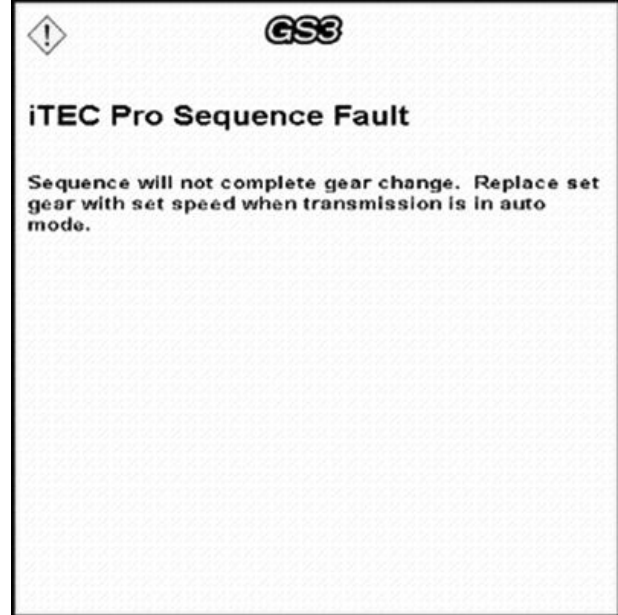
- Speed overridden and Gear overridden exit code should not show up on PST Tractor.

Exit Code on IVT Tractor.

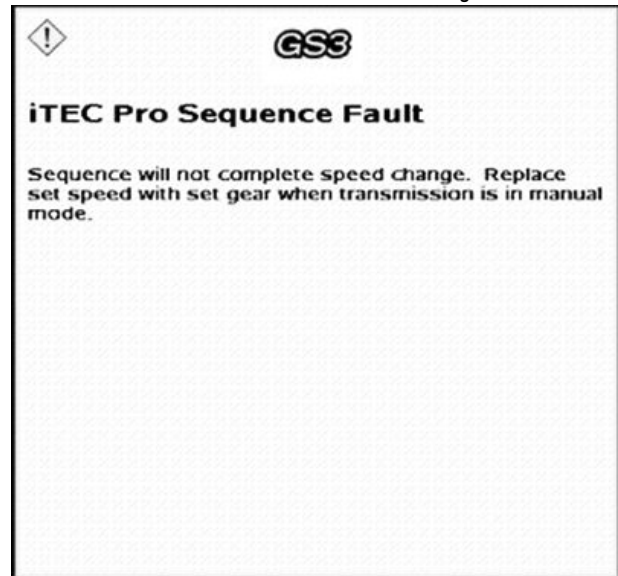
- Gear overridden exit code should show up when user tries to execute gear change operation on IVT tractor.

Exit Code on AGT Tractor

- Gear overridden exit code should show up when user tries to execute gear change operation on AGT tractor in Auto mode.
- Speed overridden exit code should show up when user tries to execute speed change operation on AGT tractor in Manual mode.
- Along with exit code, pop up alert is shown on AGT tractor for the invalid sequence.



AGT Tractor Alert–Gear Change



AGT Tractor Alert–Speed Change

PC13498 —UN—27APR11

PC13499 —UN—01FEB13

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Exit Codes

Troubleshooting exit codes will be displayed in the same location (upper left of perspective view) as shown for AutoTrac exit codes. These are the specific iTEC Pro exit codes.

The last issued exit code is also shown on the iTEC Pro Diagnostic page (MENU Softkey >> GREENSTAR Softkey >> DIAGNOSTICS Softkey >> View (drop-down menu). >> iTEC Pro

PC8663 —UN—05AUG05



MENU Softkey

PC13432 —UN—21APR11



GREENSTAR Softkey

PC9936 —UN—31JAN07



DIAGNOSTICS Softkey

Fault Source	Fault Number	On-Screen Text	Descriptions
AutoShift (APS)	1	Resume Switch Fault	Resume Switch Fault. Troubleshoot machine DTCs.
AutoShift (APS)	2	APS unavailable	Incompatible Transmission Type. Most likely cause is executing a PST sequence on an IVT tractor.
AutoShift (APS)	3	APS Fault 3	Lost Comm. with ACU. Troubleshoot machine DTCs.
AutoShift (APS)	4	APS Gear Not Set	APS Commanded Gear not Set. Set APS Gear on machine per Operator's Manual.
AutoShift (APS)	5	Machine In Reverse	Tractor is in Reverse. Make sure the machine is in the Forward gear and re-activate iTEC Pro.
AutoShift (APS)	6	APS Fault 6	Lost comm. with the PTP. Troubleshoot machine DTCs.
AutoShift (APS)	13	APS Timeout	iTEC Pro command message timeout caused by rejection of command by the machine. Make sure sequence functions are applicable for the machine. Troubleshoot machine DTCs.
AutoShift (APS)	14	APS Fault 14	GS2/GS3 and machine software version mismatch. Make sure both are up-to-date with the latest available.
Diff Lock	1	Diff Lock Fault 1	Diff lock command was rejected because there is a fault with the Diff Lock switch on the tractor. Troubleshoot machine DTCs.
Diff Lock	2	Diff Lock Fault 2	Diff Lock command was rejected because there is a fault with the Diff Lock driver (circuit) on the tractor. Troubleshoot machine DTCs.
Diff Lock	3	Brake Switch Fault	Diff Lock command was rejected because there is a fault with the brake switch on the tractor. Troubleshoot machine DTCs.
Diff Lock	13	Diff Lock Timeout	iTEC Pro command message timeout caused by rejection of command by the machine. Make sure sequence functions are applicable for the machine. Troubleshoot machine DTCs.

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Troubleshooting

Fault Source	Fault Number	On-Screen Text	Descriptions
Diff Lock	14	Diff Lock Fault 14	GS2/GS3 and machine software version mismatch. Make sure both are up-to-date with the latest available.
Ground Speed	1	Machine In Reverse	Command direction is opposite current direction. Make sure machine is in Forward gear.
Ground Speed	2	Machine Speed Fault 2	Command direction is not allowed. Make sure machine is in Forward gear.
Ground Speed	3	Machine Speed Fault 3	Command direction is not allowed. Make sure machine is in Forward gear.
Ground Speed	13	Machine Speed Timeout	iTEC Pro command message timeout caused by rejection of command by the machine. Make sure sequence functions are applicable for the machine. Troubleshoot machine DTCs.
Ground Speed	14	Machine Speed Fault 14	GS2/GS3 and machine software version mismatch. Make sure both are up-to-date with the latest available.
Hitch	13	Hitch Timeout	iTEC Pro command message timeout caused by rejection of command by the machine. Make sure sequence functions are applicable for the machine. Troubleshoot machine DTCs.
Hitch	14	Hitch Fault 14	GS2/GS3 and machine software version mismatch. Make sure both are up-to-date with the latest available.
MFWD	1	MFWD Switch Fault	MFWD command was rejected because there is a fault with the MFWD switch on the tractor. Troubleshoot machine DTCs.
MFWD	2	MFWD Circuit Fault	MFWD command was rejected because there is a fault with the MFWD circuit on the tractor. Troubleshoot applicable machine DTCs.
MFWD	3	MFWD Switch Off	MFWD could not turn on because the MFWD switch is off. Turn MFWD Switch to ON or Auto.
MFWD	13	MFWD Timeout	iTEC Pro command message timeout caused by rejection of command by the machine. Make sure sequence functions are applicable for the machine. Troubleshoot applicable machine DTCs.
MFWD	14	MFWD Fault 14	GS2/GS3 and machine software version mismatch. Make sure both are up-to-date with the latest available.
PTO	2	PTO Enable Fault	PTO command was rejected because there is a fault with the Remote PTO Enable switch.
PTO	3	PTO Switch Fault	PTO command was rejected because there is a fault with the Remote PTO switch.
PTO	4	PTO Circuit Fault	PTO command was rejected because there is a fault with the PTO engagement circuit. Troubleshoot machine DTCs.
PTO	5	PTO Overspeed	An overspeed fault is caused by the PTO exceeding the rated speed by more than 17%. Common causes: over-revving the engine by downshifting or in a PTO economy mode.
PTO	6	PTO Underspeed	PTO not engaging. Troubleshoot machine DTCs.
PTO	7	Remote PTO Enabled	Remote (fender) switch has been selected from the operator station so iTEC Pro cannot control the PTO. Turn Remote Enable switch OFF.

Continued on next page

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Troubleshooting

Fault Source	Fault Number	On-Screen Text	Descriptions
PTO	8	PTO Fault 8	PTO command rejected due to an invalid PTO configuration. Troubleshoot machine DTCs.
PTO	9	PTO Switch Off	PTO could not be turned on because the PTO switch is OFF. Turn PTO Switch to ON.
PTO	10	PTO Fault 10	PTO Switch conflict - the ACU and the CCU do not agree on the PTO switch position. Troubleshoot machine DTCs.
PTO	11	PTO Not Calibrated	PTO Not calibrated. Troubleshoot machine DTCs.
PTO	12	PTO Fault 12	PTO not enabled in current gear. Troubleshoot machine DTC. Usually caused by engaging PTO in high reverse gear.
PTO	13	PTO Timeout	Message Timeout. Troubleshoot GS2/GS3 Implement CAN Bus. If other components are on on Implement Bus (ie StarFire Receiver), troubleshoot machine CAN Bus.
PTO	14	PTO Fault 14	iTEC Pro command message timeout caused by rejection of command by the machine. Make sure sequence functions are applicable for the machine. Troubleshoot machine DTCs.
PTO	15	PTO Re-engagement Fault	Re-engagement Fault is caused by quickly toggling on/off the PTO switch before the PTO has completed movement.
SCV	13	SCV (SCV #) Timeout	iTEC Pro command message timeout caused by rejection of command by the machine. Make sure sequence functions are applicable for the machine. Troubleshoot machine DTCs.
SCV	14	SCV Fault 14	GS2/GS3 and machine software version mismatch. Make sure both are up-to-date with the latest available.
Sequence Error		Sequence Skipped	iTEC Pro activated beyond the start position of the sequence. Back up the implement to before the sequence start position, re-activate iTEC Pro and then commence forward operation.
Sequence Error		Sequence Skipped	Straight Path Confirmed so sequence was skipped.
Sequence Error		iTEC Pro Not Active	iTEC Pro not active. Push the AutoTrac Resume button to activate iTEC Pro.
Sequence Error		Sequence Overlap	Boundaries or Sequences overlapped.
Sequence Error		Sequence Aborted	Sequence aborted by machine.
Sequence Error		(Function) Overridden	Operator has taken control of a function that is being or going to be executed in a sequence by iTEC Pro.
Sequence Error		Track Number Changed	Track Number Changed. Commit to a guidance path and re-activate iTEC Pro.
Machine Function State	0000-bin; 0-dec	(Function) Overridden	Operator has taken control of a function that is being or going to be executed in a sequence by iTEC Pro.
Machine Function State	0100-bin; 4-dec	(Function) Overridden	Disconnect or disable the external control of functions and re-activate iTEC Pro.
Machine Function State	0110-bin; 6-dec	(Function) Ext. Controlled	Disconnect or disable the external control of functions and re-activate iTEC Pro.

Continued on next page

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Troubleshooting

Fault Source	Fault Number	On-Screen Text	Descriptions
Machine Function State	0111-bin; 7-dec	(Function) Ext. Overridden	Operator has taken control of a function that is being or going to be executed in a sequence.
Machine Function State	1000-bin; 8-dec	(Function) Fault - Locked	A fault condition causing iTEC Pro to be locked out. Troubleshoot machine DTCs.
Machine Function State	1001-bin; 9-dec	(Function) Fault - Cancelled	A fault condition causing iTEC Pro to cancel sequence. Review iTEC Pro Settings to ensure they are appropriate and have not changed, then diagnose machine DTCs, if necessary.
Machine Function State	1010-bin; 10-dec	(Function) Overridden	Operator has taken control of a function that is being or going to be executed in a sequence by iTEC Pro.
Machine Function State	1100-bin; 12 dec	(Function) Fault - Ext. Locked	A fault condition causing external control of function to be locked out. Diagnose machine DTCs.
Machine Function State	1101-bin; 13-dec	(Function) Fault Detected	A serious fault has been detected with a function on the machine. Diagnose machine DTCs.
Machine Function State	1110-bin; 14-dec	(Function) Fault - Ext. Suspend	External Control is suspended. Diagnose vehicle DTCs.
Machine Function State	1111-bin; 15-dec	(Function) Unavailable	Function Not Available. Review associated sequence functions, be sure they are appropriate for the machine being used. Diagnose machine DTCs, if necessary.
Machine Status	1	IMS Active	iTEC Pro cannot function when IMS is active. Turn IMS OFF and re-enable iTEC Pro.
Machine Status	2	Machine Too Slow	iTEC Pro deactivates if over 30 sec with speed below 0.5 kph. Reactivate and increase forward speed above 0.5 kph.
Machine Status	3	Machine in Park	iTEC Pro will not operate if machine is in Park. Place in forward gear and re-active iTEC Pro.
Machine Status	4	Machine in Neutral	machine in Neutral Gear. Place machine in forward gear and re-activate iTEC Pro.
Machine Status	5	IMS Shutting Down	IMS in process of shutting down. Make sure IMS is OFF and re-activate iTEC Pro.
Machine Status	6	GS2/GS3 Comm. Fault	Message Timeout. Troubleshoot GS2/GS3 Implement CAN Bus. If other components are on Implement Bus (i.e., StarFire receiver), troubleshoot machine CAN Bus.
Machine Status	7	ACU Comm. Fault	machine Communication Problem between ACU and TECU. Troubleshoot machine DTCs.
Machine Status	8	VIN Fault	Fault with machine Identification Number. Troubleshoot machine DTCs.
Machine Status	16	Abort: GS2/GS3 Comm.	Message Timeout. Troubleshoot GS2/GS3 Implement CAN Bus. If other components are on Implement Bus (i.e., StarFire receiver), troubleshoot machine CAN Bus.
Machine Status	17	Abort: Out of Seat	Detected operator out of seat for more than 7 seconds. Re-activate iTEC Pro after operator is seated.
Machine Status	18	Abort: 60Sec Timeout	Sequence execution took longer than 60 seconds. Sequence must be shortened or speed increased during sequence execution.

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Troubleshooting

Fault Source	Fault Number	On-Screen Text	Descriptions
Machine Status	19	Abort: IMS Activated	IMS button pushed by operator - Sequence aborted. Turn IMS OFF and re-activate iTEC Pro.
Machine Status	20	Abort: VIN Fault	Fault with machine Identification Number. Troubleshoot machine DTCs.
Machine Status	21	Abort: Machine in Park	iTEC Pro will not operate if machine is in Park. Place in forward gear and re-active iTEC Pro.
Machine Status	22	Abort: Engine Speed	Engine Speed Too Low. Increase engine speed and re-activate iTEC Pro.
Machine Status	23	Sequence Aborted	GS2/GS3 Aborted Sequence Execution. Common cause is changing an iTEC Pro setting during execution of a sequence. When changes are made, re-activate iTEC Pro.
Machine Status	24	Abort: ACU Comm. Fault	Machine communication problem between ACU and TECU. Troubleshoot machine DTCs.

Exit Codes

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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

DX,SERVIT -19-31JUL03-1/1

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.



TS201 —UN—15APR13

CUSTOMER SATISFACTION PROBLEM RESOLUTION PROCESS

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

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

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

2. Discuss problem with dealer service manager.

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

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

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

