



John Deere Machine Sync



JOHN DEERE

OPERATOR'S MANUAL

John Deere Machine Sync

OMPFP18250 ISSUE L7 (ENGLISH)



CALIFORNIA

Proposition 65 Warning

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

If this product contains a gasoline engine:



WARNING

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

The State of California requires the above two warnings.

Additional Proposition 65 Warnings can be found in this manual.

John Deere Ag Management Solutions

Printed in U.S.A.



Introduction

Foreword

THANK YOU for purchasing a John Deere product.

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

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

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

RIGHT-HAND AND LEFT-HAND sides are determined by facing in the direction the machine or implement will travel when going forward.

WRITE PRODUCT IDENTIFICATION NUMBERS (P.I. N.) in the Operator's Manual. Accurately record all the numbers to help in tracing the product should it be stolen. Your dealer also needs these numbers when you order parts. File a backup of the identification numbers in a safe location off the machine or away from the product.

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

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

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

Serial Number: _____

JS56696,0000C4C-19-03FEB17

John Deere Technical Information Bookstore

Product functionality may not be fully represented in this document due to product changes occurring after the time of printing. Read the latest Operator's Manual prior to operation. To obtain a copy, see your dealer or visit www.deere.com and use the 'Search for Agricultural Equipment Operator's Manuals' link to locate the John Deere Technical Information Bookstore.

CZ76372,000071F-19-17FEB17

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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.

Safety

Recognize Safety Information



T81389—UN—28JUN13

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

Follow Safety Instructions



TS201—UN—15APR13

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

Understand Signal Words



⚠ WARNING

⚠ CAUTION

TS187—19—30SEP88

DANGER; The signal word DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING; The signal word WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION; The signal word CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. CAUTION may also be used to alert against unsafe practices associated with events which could lead to personal injury.

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.

DX,SIGNAL-19-05OCT16

Practice Safe Maintenance



TS218—UN—23AUG88

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 away 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.

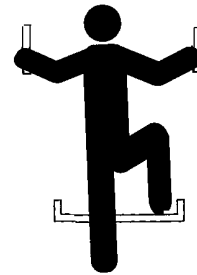
On self-propelled equipment, disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

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

Falling while cleaning or working at height can cause serious injury. Use a ladder or platform to easily reach each location. Use sturdy and secure footholds and handholds.

DX,SERV-19-28FEB17

Use Steps and Handholds Correctly



T133468—UN—15APR13

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.

DX,WW,MOUNT-19-12OCT11

Handle Electronic Components and Brackets Safely



TS249—UN—23AUG88

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.

DX,WW,RECEIVER-19-24AUG10

Use Electronic Display Properly

Electronic displays are secondary devices intended to

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

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

To prevent injury while operating the machine:

- Position the display according to the installation instructions. Ensure that the device is secured and does not obstruct the driver's view or interfere with the machine operating controls.
- Do not become distracted by the display. Stay alert. Pay attention to the machine and surrounding environment.
- Do not change settings or access any functions that require prolonged use of the display controls while machine is moving. Stop the machine in a safe location and place in park position before attempting such operations.
- Never set the volume so high that you cannot hear outside traffic and emergency vehicles.

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

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

DX,ELEC,DISPLAY-19-13JAN15

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 is a trademark of Deere & Company
iGuide is a trademark of Deere & Company
iTEC is a trademark of Deere & Company*

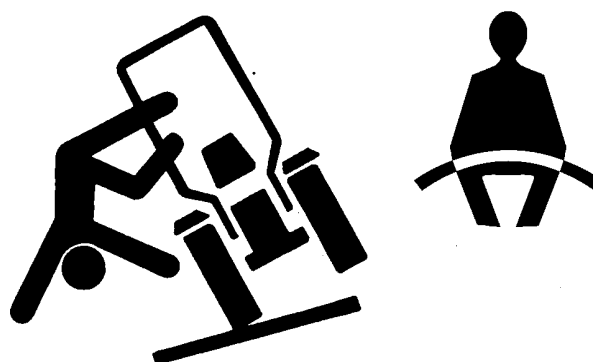
AutoTrac™ Universal (ATU), RowSense™, and Machine Sync.

To prevent injury to the operator and bystanders:

- Never get on or off a moving machine.
- 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

Use Seat Belt Properly



TS1729—UN—24MAY13

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,

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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.

DX,ROPS1-19-22AUG13

Prevent Electrical Shock and Fires



PC12631—UN—04JUN10

Battery-powered equipment or other electric power sources produce an electrical shock, sparks, or arcs if a short circuit occurs. Electrical short circuits can reach temperatures high enough to burn people, or ignite or melt common materials.

To prevent injury from electrical shock, burns, or potential fire hazards, always disconnect battery power or other electric power source on equipment before installing or servicing:

- Remove ground (negative terminal [-]) battery clamp.
- Detach and remove battery.
- Switch off main battery or other electric power source.
- Unplug electric power source from equipment.

Understand and follow all local codes and regulations when installing electrical equipment.

HC94949,0000487-19-27JAN14

Avoid Exposure to High Radio Frequency Fields



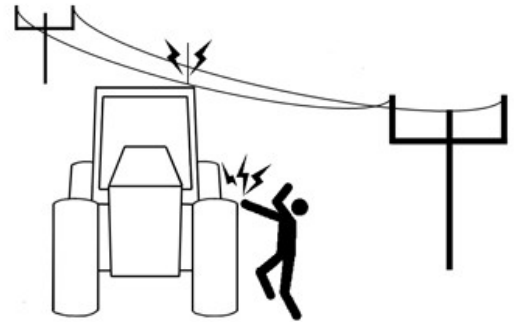
PC12632—UN—04JUN10

Prevent injury from exposure to high radio frequency fields at the antenna. Do not touch antenna while the system is transmitting. Always disconnect power to the antenna before installing or servicing.

The antenna should always be separated from the operator or nearby persons by a minimum distance of 20 cm (8 in.).

JS56696,0000C0E-19-11DEC12

Avoid Electrical Power Lines



PC13658—UN—08NOV11

Machine antenna may be high enough to come in contact with low-hanging electrical cables. Avoid severe electrical shock injury:

- Keep away from all low-hanging electrical cables while operating or transporting machine.

HC94949,0000488-19-24JAN14

Machine Sync Audible Tones

An audible tone will sound when Machine Sync disengages. Take control of steering when Machine Sync disengagement audible tone sounds to avoid field hazards, bystanders, equipment, or other obstacles.

CZ76372,0000534-19-31OCT12

Regulatory and Compliance Information

EU Declaration of Conformity

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

The undersigned hereby declares that:

Product: John Deere Machine Sync

fulfill(s) all relevant provisions and essential requirements of the following directives:

DIRECTIVE	NUMBER	CERTIFICATION METHOD
Electromagnetic Compatibility (EMC)	2004/108/EC	Annex II
Radio and Telecommunications Terminal Equipment Directive (R&TTE)	1999/5/EC	Annex III

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

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

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

Place of Declaration: Kaiserslautern, Germany

Date of Declaration: 9 December 2011

Manufacturing Unit: John Deere Intelligent Solutions Group

Name: Aaron Senneff

Title: Engineering Manager, John Deere Intelligent Solutions Group



DXCE01—UN—28APR09
HC94949,0000AF5-19-15FEB17

System Overview

Theory of Operation

NOTE: For John Deere Machine coverage map and guidance line sharing data functionality, the accuracy of shared coverage maps and guidance lines is related to the StarFire™ Receiver accuracy level. As the accuracy level increases, coverage map and guidance lines sharing accuracy also increases.

John Deere Machine Sync enables wireless communication between GreenStar™ 3 2630 Displays and enables synchronized movements between compatible machines.

- Machine communication radio (MCR) operated Machine Sync can share information with a machine that is within line of sight.
- Modular telematics gateway (MTG) operated Machine Sync can share information over a cellular network through John Deere to multiple machines, regardless of location.

Machine Sync Functionality	MCR	MTG
Combine Harvest Automation	Yes	No
Harvest Logistics	Yes	No
Coverage Map Sharing	Yes	Yes
Guidance Line Sharing	Yes	Yes

Machine Sync Automation

- **Combine Harvest Automation** guides tractor and grain cart to a preset position for unloading relative to a specific combine. Combine Harvest Automation contains three important areas:
 - **Operational zone** is the area that allows for automation to take over.
 - **Calibration zone** is the area that allows for calibration of home point.
 - **Home point** is the inline and lateral offset location that a tractor returns to every time it synchronizes with a specific combine.

Machine Sync Automation, when engaged, guides tractor and grain cart to home position set in relation to each specific combine. Tractor and grain cart maintain that position during operation. Machine Sync Automation utilizes AutoTrac™ and its advanced settings to control the tractor. Machine Sync Automation maintains inline and lateral offset between combine and tractor using information from StarFire™ 3000 Receivers. Information is transmitted between machines using MCRs.

(For more information, refer to Machine Communication Radio Operator's Manual.)

- **Harvest Logistics** enables communication of combine grain tank levels to all GS3 2630 Displays within a Machine Sync network. GS3 2630 Display map page shows machine names (up to five characters) and machine locations within the Machine Sync network. Information is transmitted between machines using MCRs.

Machine Sync Shared Data

- **Coverage Map Sharing** allows machines operating in the same field to share coverage data. This information improves efficiency by allowing multiple machines to operate in the same field in closer proximity more efficiently. Using Coverage Map Sharing with Section Control reduces input costs by applying product where needed, regardless of which machine applied product.
- **Guidance Line Sharing** allows wireless sharing of straight track guidance lines between machines. The receiving GS3 2630 Display populates guidance lines from Track 0. Machines can use guidance lines for Parallel Tracking™ and AutoTrac™ guidance.

HC94949,0000AF6-19-10FEB17

Machine Sync Automation Compatibility

Machine Sync Automation is compatible with:

NOTE: Update software to the newest version.

- GreenStar™ 3 2630 Display
- Machine Communication Radio (MCR)
- StarFire™ 3000 Receiver with Shared Signal
- StarFire™ 6000 Receiver with Shared Signal

John Deere Tractor Compatibility:

- 6R (IVT™)
- 7R (IVT™, CQT, and e23™)
- 8R (IVT™, PST, and e23™)
- 8RT (IVT™, PST [S. N. 902501-], and e23™)
- 8x30 (IVT™ and PST)
- 9R (PST)
- 9RT (PST)
- 9RX (PST)
- 9x30 (PST)

IVT™ (Infinitely Variable Transmission)

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

Parallel Tracking is a trademark of Deere & Company
IVT is a trademark of Deere & Company
e23 is a trademark of Deere & Company

CQT (CommandQuad™ II Transmission)

PST (PowerShift Transmission)

e23™ (23 Speed PowerShift Transmission with Efficiency Manager™)

John Deere Combine Compatibility:

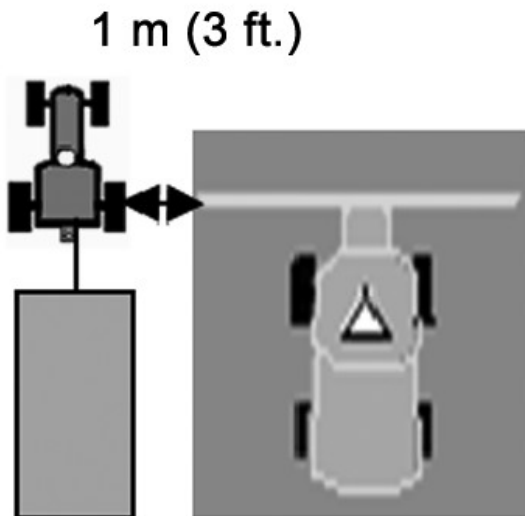
- S-Series
- T-Series
- W-Series (S. N. 730101-)
- C-Series (S. N. 730101-)
- 70 Series (additional kit required to see grain tank fill information)
- 60 Series (does not provide grain tank fill information)

Machine Sync is not compatible with:

- Original GreenStar™, GreenStar™ 2 1800, and GreenStar™ 2 2600 Displays
- Original StarFire™, StarFire™ 300, and StarFire™ iTC Receivers

Disclaimers:

CAUTION: Machine Sync does not detect or avoid obstacles and bystanders. To prevent injury, remain alert and take control of steering wheel, when necessary, to avoid collisions.



PC17944—UN—04NOV13

- Machine Sync Automation is not designed for end turns.
- Machine Sync Automation does not compensate for slope differences between the machines.

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 Efficiency Manager is a trademark of Deere & Company
 GreenStar is a trademark of Deere & Company
 StarFire is a trademark of Deere & Company

- Machine Sync Automation does not support operation with any part of the machine or equipment closer than 1 m (3 ft) to the other machine or equipment.
- Machine Sync Automation does not support operation when combine speed exceeds 16.0 km/h (10 mph).

NOTE: Minimum speed requirement for 9xxx series articulated tractors is 2 km/h (1.2 mph) when acquiring, tracking, and setting Home Point.

For best Machine Sync Automation performance:

- Straight track is more accurate than curve track.
- Slower speeds are more accurate than faster speeds when not using straight track.
- Gentle curves are more accurate than tight turn radius curves.
- Articulated tractors exhibit the previously mentioned performance variations more than other platforms.
- Machine Sync requires adjustment of advanced AutoTrac™ settings for optimal performance.

Shared signal allows two receivers to share correctional signal in dual receiver applications. This improves overall system accuracy by using the best activation on either receiver and reducing variance between the two receivers.

Shared signal is compatible with different model receivers, but the StarFire™ 3000 Receiver must be set as the Leader and the StarFire™ 6000 Receiver as the Follower.

If using shared signal with AutoTrac™, ensure displays have correct AutoTrac™ activation for the signal level. An AutoTrac™ SF1 activation does not work if the receiver has higher accuracy from shared signal.

Purchase the Machine Sync activation and install the MCR kit on every machine that is expected to operate within the same network.

HC94949,0000C91-19-21NOV17

Machine Sync Shared Data Compatibility

NOTE: Complete all field operations before performing software updates. Performing software update before completing operation results in lost coverage maps.

To operate John Deere Machine Sync, GreenStar™ 3 2630 Displays must operate with matching software versions. Update all required components software to the newest version.

Requirements

AutoTrac is a trademark of Deere & Company

- GS3 2630 Display
- Communication Device
 - Machine Communication Radio (MCR)
 - 3G Modular Telematics Gateway (MTG)
- StarFire™ 3000 Receiver
- StarFire™ 6000 Receiver

Machine Sync Shared Data supports two machines in sync at the same time. Desired performance cannot be guaranteed beyond the recommended two machines.

Additional machines may be added depending on the number of GreenStar™ applications in use on the GS3 2630 Display.

Examples of applications that may influence performance:

- Utilizing variety locator
- Viewing as-applied maps
- Utilizing implement guidance
- Map-based prescriptions
- Third-party ISO control units

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Machine Sync Activation

Activations needed for Leader machine:

- Machine Sync

Activations needed for Follower machine:

- Machine Sync
- AutoTrac™
- Vehicle speed automation

Software activations are required to operate Machine Sync Automation and must be purchased from a John Deere dealer.



Menu Button

PC8663—UN—29APR15

1. Select Menu button.



GreenStar™ Button

PC17340—UN—24OCT13

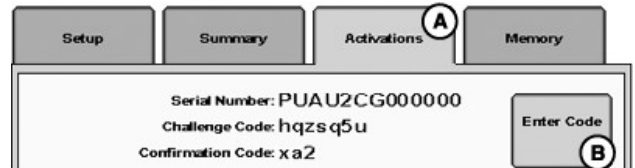
2. Select GreenStar™ button.



GreenStar™ Softkey

PC21183—UN—20MAY15

3. Select GreenStar™ softkey.



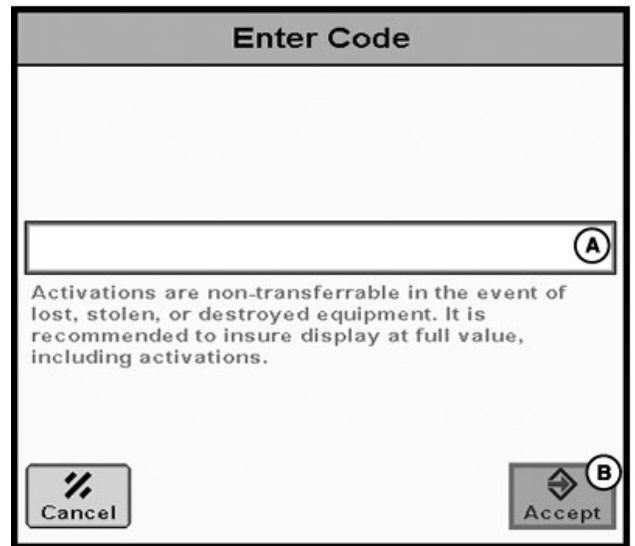
Activations Tab

PC24983—UN—16NOV17

A—Activations Tab
B—Enter Code Button

4. Select Activations tab (A).

5. Select Enter Code button (B).



Enter Code

PC23704—UN—10FEB17

A—Enter Code Input Box
B—Accept Button

6. Enter code (A).

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

7. Select Accept button (B).

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Setting Up—Configuring Machine Communication Radio Network

Set Up Network

Set up each GreenStar™ 3 2630 Display that is intended to be on the same network.



Menu Button

PC8663—UN—29APR15

1. Select Menu button.



GreenStar™ Button

PC12685—UN—29APR15

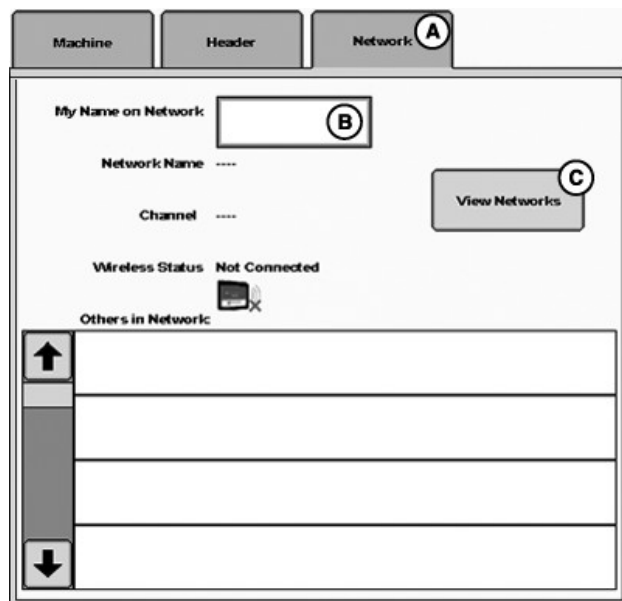
2. Select GreenStar™ button.



Equipment Softkey

PC21184—UN—20MAY15

3. Select Equipment softkey.



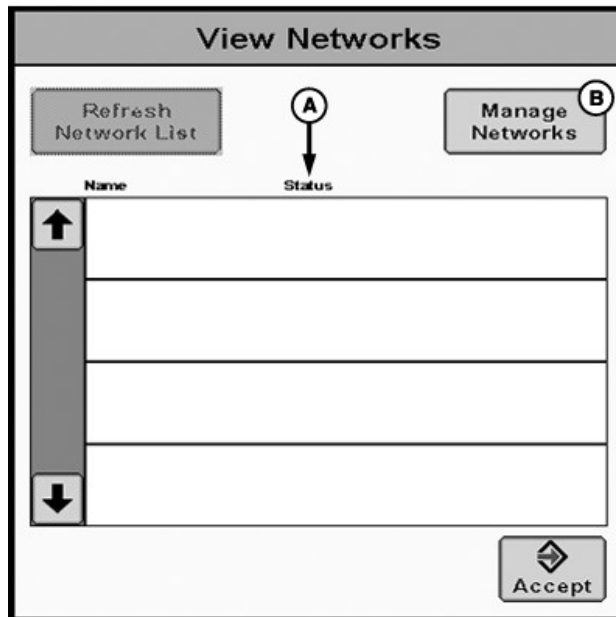
PC21918—UN—09DEC15

- A—Network Tab
B—My Name on Network Input Box
C—View Networks Button

4. Select Network tab (A).

NOTE: My Name on Network (B) is limited to eight characters. Only five characters are displayed on maps.

5. Enter My Name on Network.
6. Select View Networks button (C).

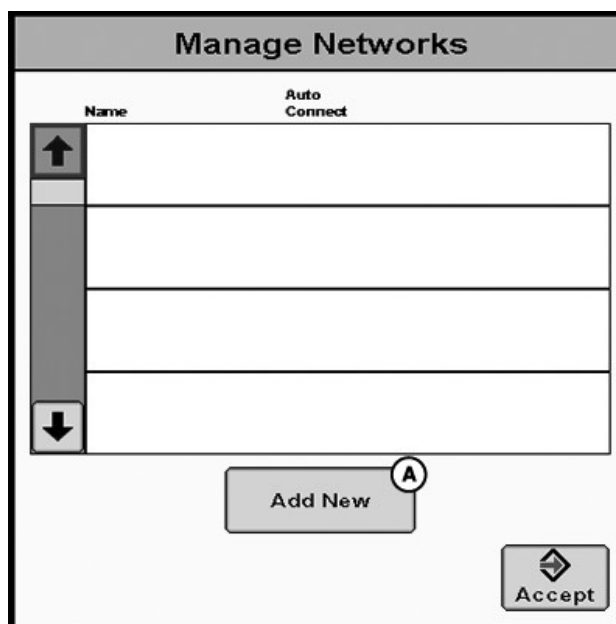


PC21889—UN—25NOV15

- A—Status
B—Manage Networks Button.

NOTE: Status (A) displays wired connection status between machine communication radio (MCR) and GS3 2630 Display.

7. Select Manage Networks button (B).

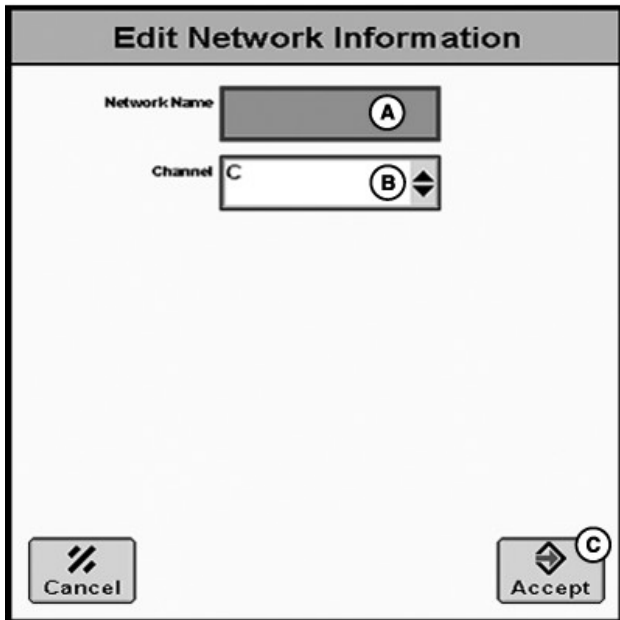


PC14346—UN—08DEC11

- A—Add New Network Button

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8. Select Add New Network button (A).



The 'Edit Network Information' screen has a title bar. Below it, there are two input fields: 'Network Name' with a text box and a 'Manage Networks' button (A) to its right, and 'Channel' with a drop-down menu showing 'C' and a 'Connect' button (B) to its right. At the bottom, there are two buttons: 'Cancel' on the left and 'Accept' (C) on the right.

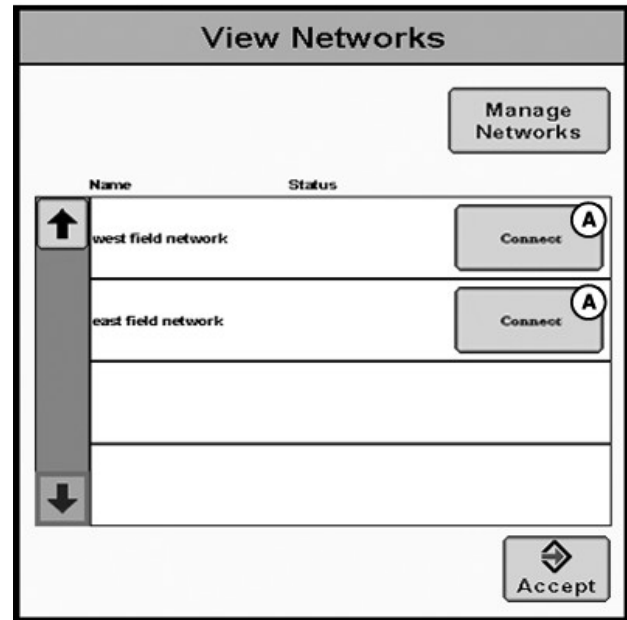
- A—Network Name
B—Channel Drop-down Menu
C—Accept Button

NOTE: Network Name must be entered identically for all machines in same network. Network Name must be between 6 through 20 characters.

9. Enter Network Name (A).
10. Select Channel from drop-down menu (B).

NOTE: If operators experience radio interference during operation, select a different channel from drop-down menu.
(For more information, refer to Machine Communication Radio Operator's Manual.)

11. Select Accept button (C).
12. Select Accept button on Manage Network page.



The 'View Networks' screen has a title bar. Below it, there is a 'Manage Networks' button. A table lists networks with columns 'Name' and 'Status'. The first two rows are 'west field network' and 'east field network', both with 'Connect' buttons (A). Below the table is an 'Accept' button (C).

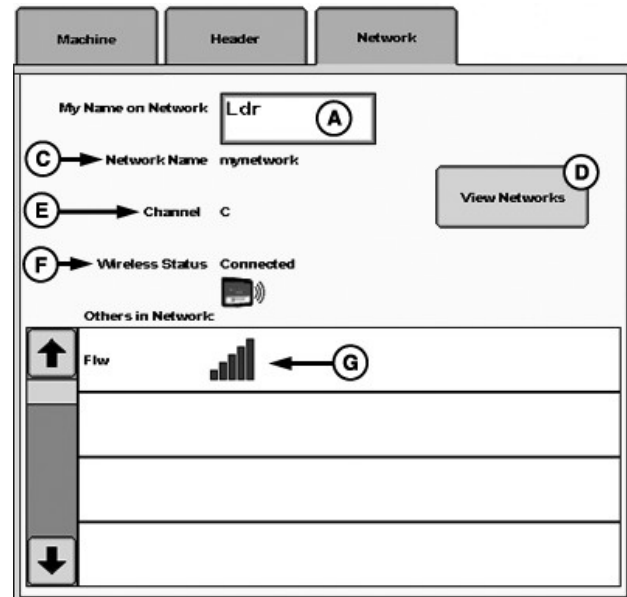
PC21891—UN—30NOV15

- A—Connect Button

NOTE: The display automatically connects to last used network. Operator input is required to switch or enter new networks. Connecting to a network can take up to 3 minutes.

13. Select a network Connect button (A).

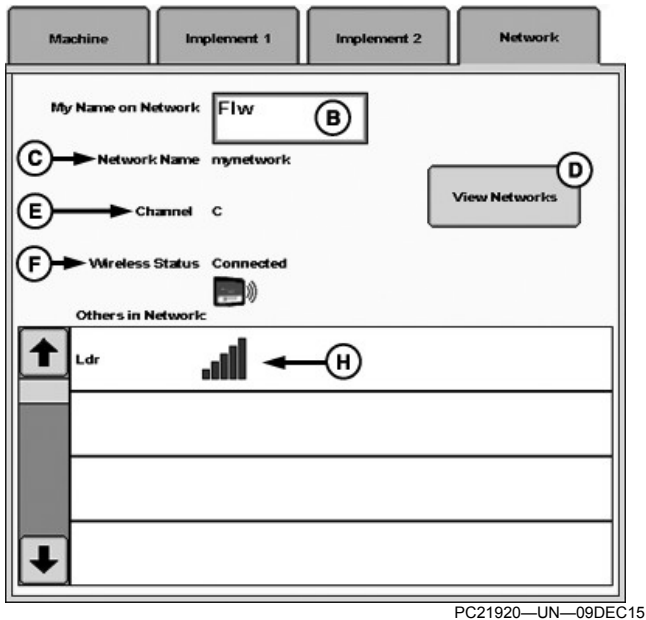
NOTE: To disconnect network, return to View Networks page and select Disconnect button.



The 'Machine 1 Network Page' has a title bar with 'Machine', 'Header', and 'Network' tabs. Below the title bar, there are several sections: 'My Name on Network' with a text box 'Ldr' (A) and a 'View Networks' button (D); 'Network Name' with a text box 'mynetwork' (C); 'Channel' with a drop-down menu 'C' (E); 'Wireless Status' with a 'Connected' status and a signal icon (F); and 'Others in Network' with a list of names and signal strength bars (G).

PC21919—UN—09DEC15

Machine 1 Network Page



PC21920—UN—09DEC15

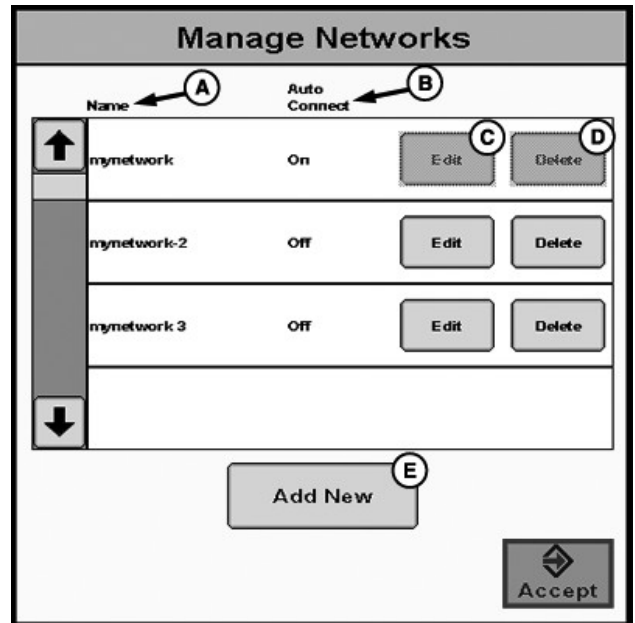
Machine 2 Network Page

- A—Machine 1 Name on Network
- B—Machine 2 Name on Network
- C—Network Name
- D—View Networks Button
- E—Network Channel
- F—Wireless Status
- G—Machine 2 Name on Machine 1 Network Page
- H—Machine 1 Name on Machine 2 Network Page

After a network has been successfully set up and connected on both machine displays, Machine 1 name on network appears on Machine 2 display. Machine 2 name on network appears on Machine 1 display.

HC94949,0000AF4-19-30MAR17

Manage Networks



PC14373—UN—08DEC11

Multiple Networks

- A—Network Name
- B—Auto Connect
- C—Edit Network Button
- D—Delete Network Button
- E—Add New Network Button

- If multiple networks are needed, they appear on Manage Networks page. Operator selects desired network from list.
- Only one network shows Auto Connect (B) turned On at one time. The last network used defaults to Auto Connect. If a different network is desired, operator must manually connect to that network, and it becomes new Auto Connect network.
- To change network settings, select Edit (C).
- To delete a network, select Delete button (D).

NOTE: A network cannot be edited or deleted while display is connected to a network. Disconnect from network to enable Edit and Delete buttons.

HC94949,0000AF8-19-30MAR17

Wired Network Connection Lost



PC14371—UN—08DEC11

Wired Network Connection Lost

This alert displays if connection to other vehicles on wireless network has been lost.

The connection between all other vehicles in the network has been lost. Possible causes:

- All other vehicles have left network area or changed networks
- All other vehicles have powered off
- This vehicle has left the network area

NOTE: Machine communication radio (MCR) requires line-of-sight radio visibility to maintain wireless connection.

SF04007,0000740-19-04DEC14

This alert displays if connection to radio has been lost.

The wired network connection from the display to the radio has been lost. Please check your power and Ethernet cable connections and try connecting again.

NOTE: If utilizing an Ethernet switch, verify connections.

SF04007,000073F-19-12DEC14

Wireless Network Connection Lost



PC16213—UN—05NOV12

Setting Up—Configuring Machine Sync Automation—Leader (Combine)

Equipment Setup



Menu Button

PC8663—UN—29APR15

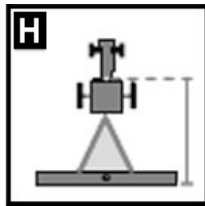
1. Select Menu button.



GS3 Button

PC12685—UN—29APR15

2. Select GS3 button.



Equipment Softkey

PC8677—UN—05AUG05

3. Select Equipment softkey.

Tractor Setup

PC14335—UN—07DEC11

Grain Cart Setup

PC14336—UN—07DEC11

- A—Machine Tab
- B—Implement 1 Tab
- C—Implement 2 Tab
- D—Network Tab
- E—Machine Type
- F—Machine Model
- G—Machine Name
- H—Connection Type
- I—Machine Turn Radius
- J—Turning Sensitivity
- K—COM Port
- L—Change Machine Offsets
- M—Recording Source
- N—Implement Type
- O—Implement Model
- P—Implement Name
- Q—Change Implement Offsets
- R—Change Widths

Fill in all Machine and Implement equipment setup information.

NOTE: All items and changes are saved under current machine name.

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

Machine Type (E) — Type of machine being used (for example tractor).

Machine Model (F) — Model number of machine being used. For John Deere machines, model numbers are available from drop-down.

Machine Name (G) — Used to clarify which machine is being used.

Offsets (L) — Used to define actual grain cart position relative to tractor.

HC94949,0000AF9-19-16FEB17

Guidance Settings



Menu Button

PC8663—UN—29APR15

1. Select Menu button.



GS3 Button

PC12685—UN—29APR15

2. Select GS3 button.

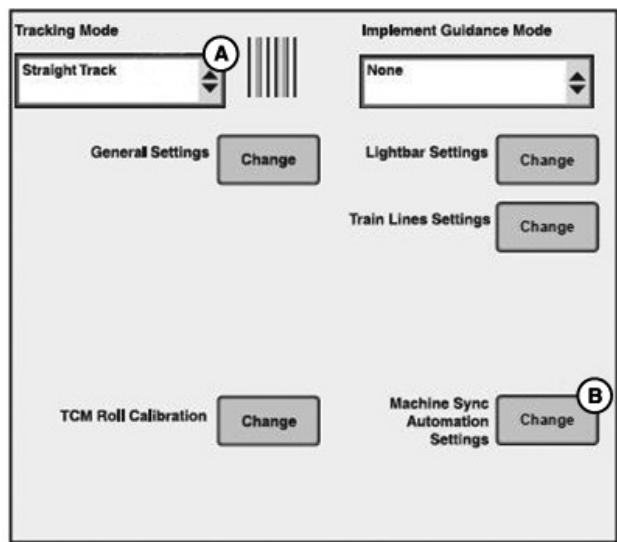


Guidance Softkey

PC8673—UN—14OCT07

3. Select Guidance softkey.
4. Select Guidance Settings tab.

NOTE: Machine Sync Automation requires a precise Leader (combine) terrain compensation module (TCM) calibration to track accurately and perform properly.



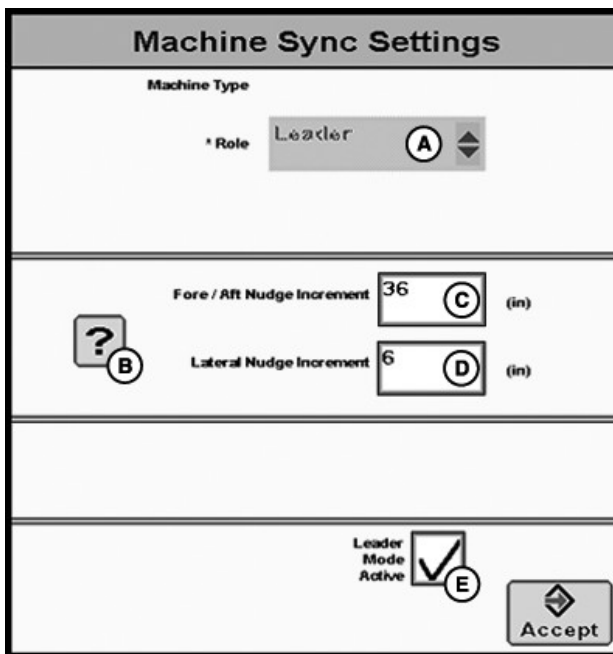
PC20584—UN—15DEC14

- A—Tracking Mode
B—Machine Sync Automation Settings

Select desired Tracking Mode (A) for normal harvesting operation.

Select Machine Sync Automation Settings button (B).

Machine Sync Automation Settings



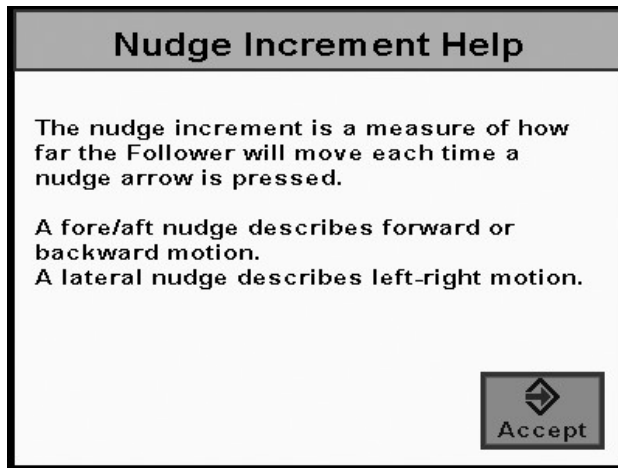
PC14339—UN—07DEC11

- A—Role
B—Nudge Increment Help
C—Fore/Aft Nudge Increment
D—Lateral Nudge Increment
E—Leader Mode Active

Leader Role (A) is pre-populated in Machine Sync Settings when Combine is selected for Machine Type in machine setup.

Leader Mode Active (E) must be checked for Machine Sync operation. Checking this box allows a paired operation between Leader and Follower. Leave box unchecked to disable paired operation with a Follower (tractor).

Nudge Increment Help



PC14340—UN—07DEC11

Nudge Increment Help

Nudge increment is a measure of how far Follower moves each time a nudge arrow is pressed.

- Fore/aft nudge defines distance Follower (tractor) moves forward and backward in relation to combine when selecting Nudge button.
- Lateral nudge defines distance Follower (tractor) moves laterally in relation to combine when selecting Nudge button.

Nudge increment values only affect synchronized machine.

HC94949,0000AFA-19-14FEB17

Setting Up—Configuring Machine Sync Automation—Follower (Tractor)

Equipment Setup



Menu Button

PC8663—UN—29APR15

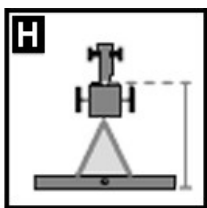
1. Select Menu button.



GS3 Button

PC12685—UN—29APR15

2. Select GS3 button.



Equipment Softkey

PC8677—UN—05AUG05

3. Select Equipment softkey.

The Tractor Setup screen displays the following fields and options:

- Machine Tab (A)**: Machine Type (Tractor), Machine Model (8345r), Machine Name (8345r), Connection Type (Rear Pivot Drawbar), Machine Turn Radius (22.0 ft), Turning Sensitivity (70), and COM Port.
- Implement 1 Tab (B)**: Implement Type (Cart), Implement Model (J8M), and Implement Name (1050).
- Implement 2 Tab (C)**: Implement Type (Cart), Implement Model (J8M), and Implement Name (1050).
- Network Tab (D)**: Network.
- Offsets (L)**: A diagram showing the grain cart position relative to the tractor with dimensions: 0.0 (in), 71.7 (in), and 49.9 (in).
- Recording Source (M)**: A dropdown menu with options: Coverage Only, Memory Used, and a third option (represented by a hand icon).

Tractor Setup

PC14335—UN—07DEC11

The Grain Cart Setup screen displays the following fields and options:

- Machine Tab (A)**: Machine Type (Cart), Machine Model (J8M), and Machine Name (1050).
- Implement 1 Tab (B)**: Implement Type (Cart), Implement Model (J8M), and Implement Name (1050).
- Implement 2 Tab (C)**: Implement Type (Cart), Implement Model (J8M), and Implement Name (1050).
- Network Tab (D)**: Network.
- Offsets (Q)**: A diagram showing the grain cart position relative to the tractor with dimensions: 0.0 (in), 8.0 (ft), 22.0 (ft), and 20.0 (ft).
- Widths (R)**: Physical Width (12.000 ft), Implement Width (12.0 ft), and Track Spacing (16.000 ft).

Grain Cart Setup

PC14336—UN—07DEC11

- A—Machine Tab
- B—Implement 1 Tab
- C—Implement 2 Tab
- D—Network Tab
- E—Machine Type
- F—Machine Model
- G—Machine Name
- H—Connection Type
- I—Machine Turn Radius
- J—Turning Sensitivity
- K—COM Port
- L—Change Machine Offsets
- M—Recording Source
- N—Implement Type
- O—Implement Model
- P—Implement Name
- Q—Change Implement Offsets
- R—Change Widths

Fill in all Machine and Implement equipment setup information.

NOTE: All items and changes are saved under current machine name.

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

Machine Type (E) — Type of machine being used (for example tractor).

Machine Model (F) — Model number of machine being used. For John Deere machines, model numbers are available from drop-down.

Machine Name (G) — Used to clarify which machine is being used.

Offsets (L) — Used to define actual grain cart position relative to tractor.

HC94949.0000AFB-19-16FEB17

Guidance Settings



Menu Button

PC8663—UN—29APR15

1. Select Menu button.



GS3 Button

PC12685—UN—29APR15

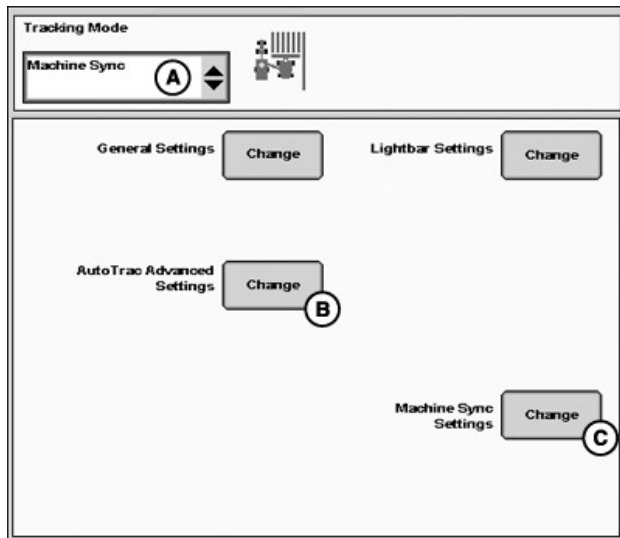
2. Select GS3 button.



Guidance Softkey

PC8673—UN—14OCT07

3. Select Guidance softkey.
4. Select Guidance Settings tab.



PC16094—UN—22OCT12

- A—Tracking Mode
B—AutoTrac™ Advance Settings
C—Machine Sync Automation Settings

NOTE: Machine Sync requires precise calibration of Follower (tractor) terrain compensation module (TCM) to track accurately and perform properly.

AutoTrac is a trademark of Deere & Company

Select Machine Sync Tracking Mode (A).

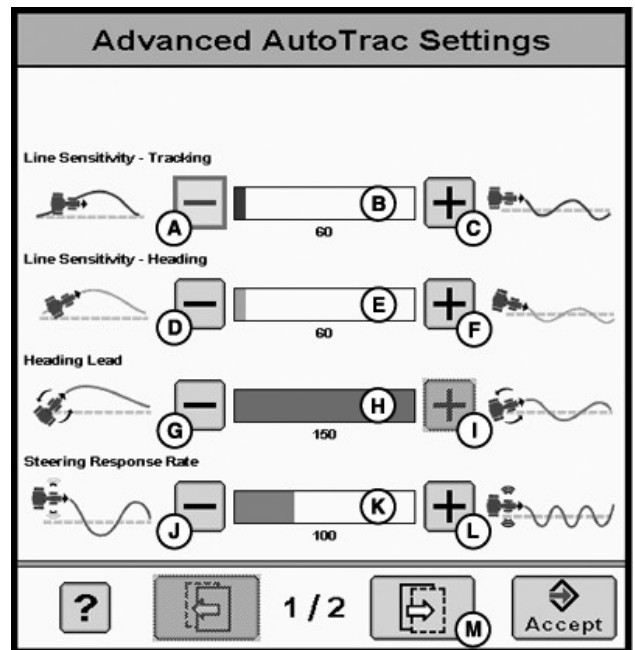
NOTE: Machine Sync Tracking Mode is only utilized during use of Machine Sync Automation. This tracking mode allows Leader (combine) to command guidance of Follower (tractor). It has no impact on wireless sharing of guidance lines.

Machine Sync Tracking Mode is greyed out when connected to a network.

Select AutoTrac™ Advance Settings button (B) to adjust AutoTrac™ sensitivities.

Select Machine Sync Settings button (C) to configure Machine Sync settings.

Advance AutoTrac™ Settings Page 1



PC16108—UN—23OCT12

- A—Decrease Line Sensitivity—Tracking
B—Line Sensitivity—Tracking Value
C—Increase Line Sensitivity—Tracking
D—Decrease Line Sensitivity—Heading
E—Line Sensitivity—Heading Value
F—Increase Line Sensitivity—Heading
G—Decrease Heading Lead
H—Heading Lead Value
I—Increase Heading Lead
J—Decrease Steering Response Rate
K—Steering Response Rate Value
L—Increase Steering Response Rate
M—Next Page

NOTE: Before changing settings, write down current values for planting and tillage operations.

Use first two pages of AutoTrac™ Advanced Settings as starting points. Adjust settings to fine-tuning equipment for desired performance.

NOTE: All machines require different sensitivity values to achieve optimal performance.

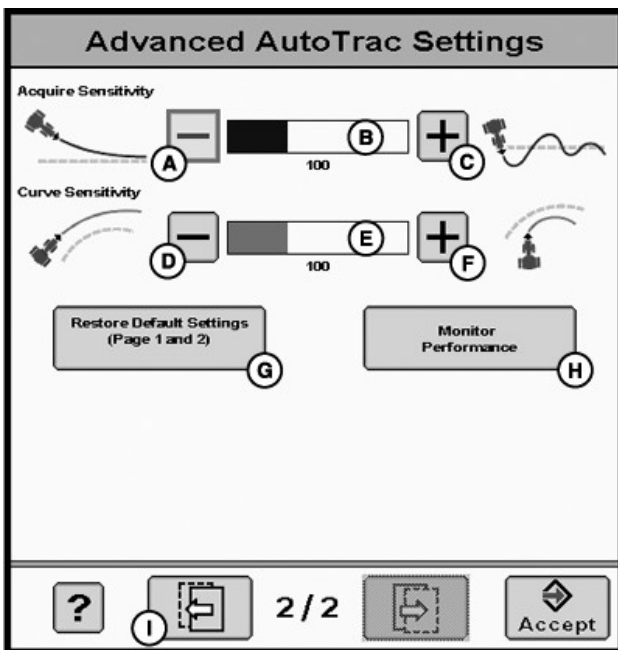
Wheeled Machines:

- Line Sensitivity—Tracking – 50 to 70
- Line Sensitivity—Heading – 50 to 70
- Heading Lead – maximum value
- Steering Response Rate – default set at 100

Tracked Machines:

- Begin at Default Settings (100).
- If default settings are not adequate:
 - Decrease Line Sensitivity – Heading value in rough terrain.
 - Increase Line Sensitivity – Heading value in smooth terrain.
- Adjust sensitivities for optimal performance. Adjust in small increments until desired performance is reached.

Advance AutoTrac™ Settings Page 2



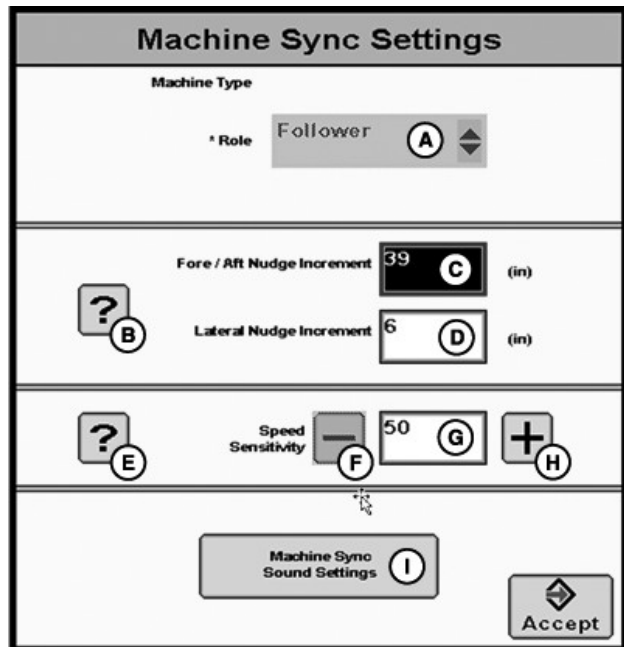
PC16109—UN—23OCT12

- A—Decrease Acquire Sensitivity
- B—Acquire Sensitivity Value
- C—Increase Acquire Sensitivity
- D—Decrease Curve Sensitivity
- E—Curve Sensitivity Value
- F—Increase Curve Sensitivity
- G—Restore Default Settings
- H—Monitor Performance
- I—Previous Page

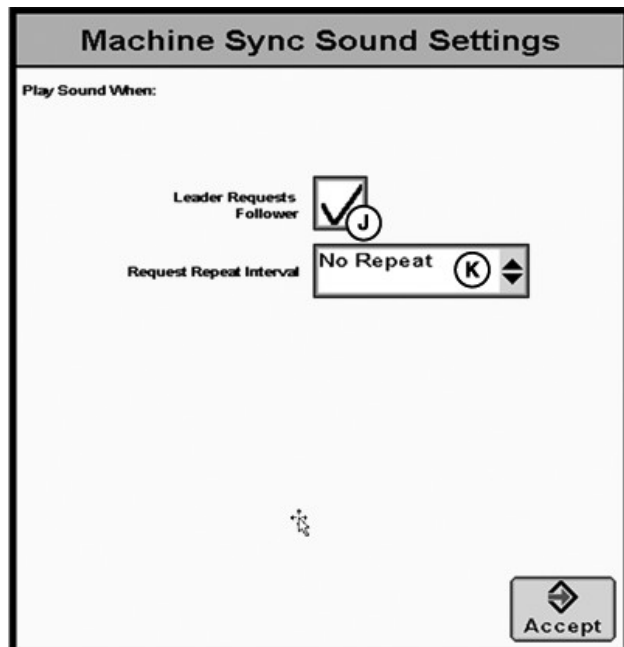
NOTE: If switching to a curve track, adjust acquire and curve sensitivity settings to higher values.

- Acquire Sensitivity – default set at 100
- Curve Sensitivity – default set at 100

Machine Sync Automation Settings



PC16300—UN—26NOV12



PC16301—UN—27NOV12

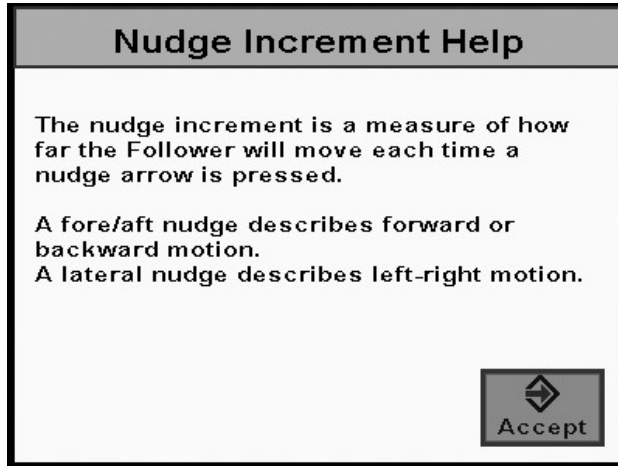
- A—Role
- B—Nudge Increment Help
- C—Fore/Aft Nudge Increment
- D—Lateral Nudge Increment
- E—Speed Sensitivity Help
- F—Decrease Speed Sensitivity
- G—Speed Sensitivity Value
- H—Increase Speed Sensitivity
- I—Machine Sync Sound Settings
- J—Leader Requests Follower
- K—Request Repeat Intervals

Follower Role (A) is pre-populated in Machine Sync Settings when Tractor is selected as the Machine Type in machine setup.

Select Machine Sync Sound Settings button (I) to adjust notification sounds.

Place check mark next to Leader Requests Follower (J) to play a sound when the combine requests to unload. Select time interval from drop-down (K) to adjust when sound repeats.

Nudge Increment Help



PC14340—UN—07DEC11

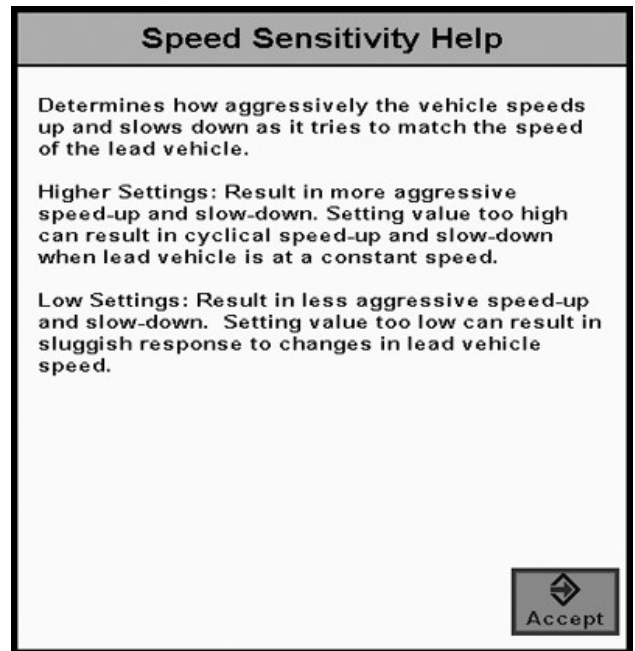
Nudge Increment Help

Nudge increment is a measure of how far the Follower moves each time a nudge arrow is pressed.

- Fore/aft nudge defines distance Follower (tractor) moves forward and backward in relation to combine when selecting Nudge button.
- Lateral nudge defines distance Follower (tractor) moves laterally in relation to combine when selecting Nudge button.

Nudge increment values only affect synchronized machine.

Speed Sensitivity Help



PC16150—UN—29OCT12

Determines how aggressively the vehicle speeds up and slows down as it tries to match the speed of the lead vehicle.

Higher Settings: Result in more aggressive speed-up and slow-down. Setting value too high results in cyclical speed-up and slow-down when lead vehicle is at a constant speed.

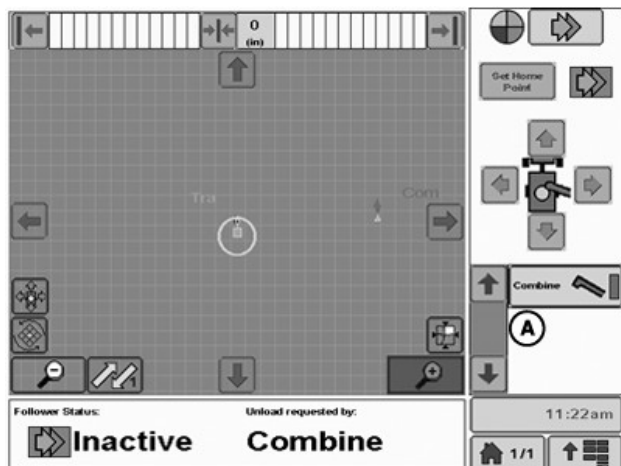
Low Settings: Result in less aggressive speed-up and slow-down. Setting value too low results in sluggish response to changes in lead vehicle speed.

HC94949,0000C93-19-04DEC17

Setting Up–Configuring Machine Sync Automation Home Pages

Setting Up Home Pages

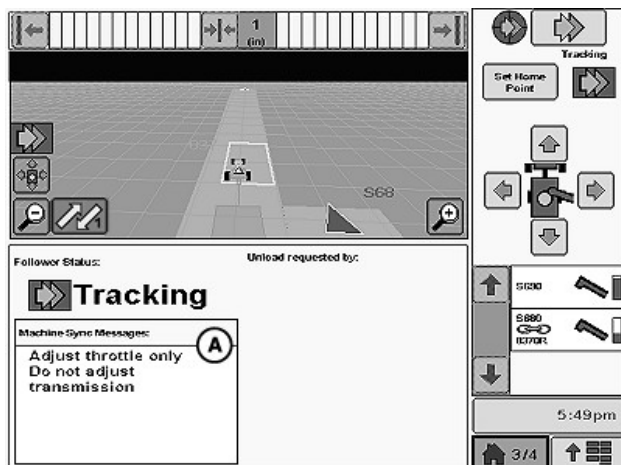
Logistics Home Page



A—Bin-Fill Status

Logistics home page allows operator in any machine in network to view spatial arrangement of other machines and bin-fill status (A) on leader machines. Leader and follower machines are designated by their network names and an arrow indicating their direction of travel. Bin-fill status allows tractor operators to view the status of each follower in the field and prioritize unloading operations.

Message Center Home Page

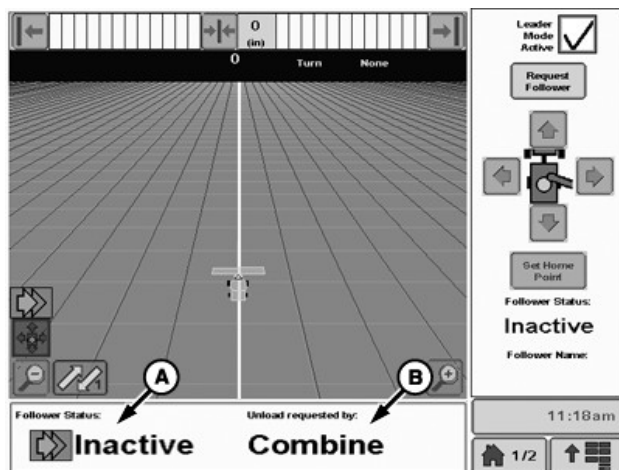


A—Machine Sync Messages

Message Center home page allows leader and follower operators to view Machine Sync Messages (A) created by the system.

Message Center is useful for new follower operators who need extra coaching as they get accustomed to Machine Sync.

Guidance Home Page



PC21367—UN—01OCT15

A—Follower Status

B—Unload Requested By

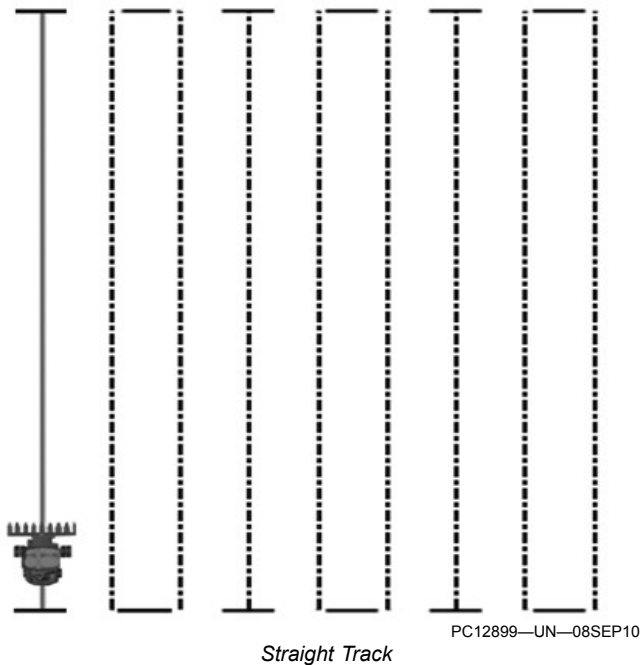
Guidance home page displays Follower Status (A) and Unload requested by (B).

HC94949,0000AFD-19-10FEB17

Operating—Machine Sync Automation

Operating Machine Sync Automation— Guidance Mode

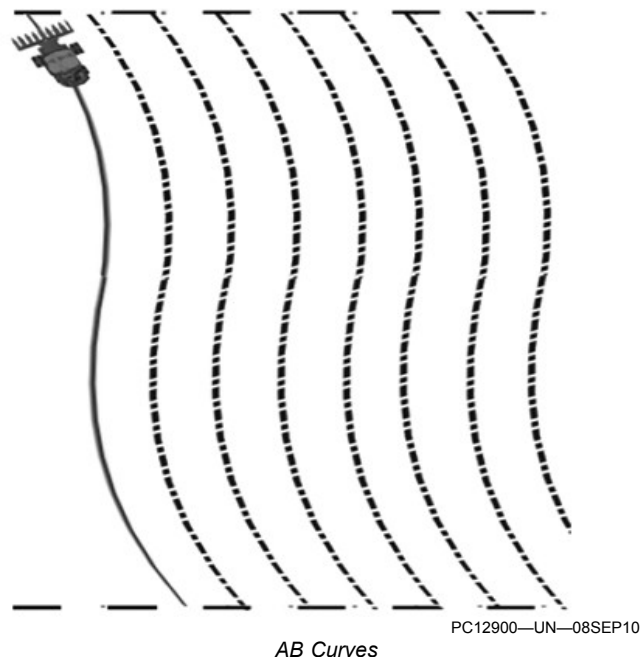
Straight Track



Machine Sync Automation operates with any available guidance modes.

Use Straight Track when rows are straight and do not vary by more than 1 m (3.3 ft). Straight Track projects all lines parallel to original line.

AB Curve

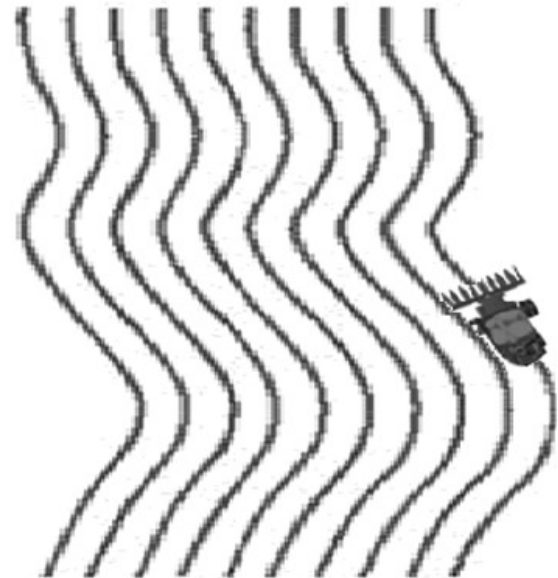


Use of AB Curves is recommended when there is a

continuous curve throughout field. AB Curves have the advantage of projecting a curved track across a field as parallel lines but curve shape is same on each pass.

NOTE: The system does not support curves greater than 1° per meter.

Adaptive Curves



Adaptive curves can be used in all fields but is recommended when track heading changes significantly, or guidance curve is shaped.

NOTE: The system does not support curves greater than 1° per meter.

Circle Track



Circle Track

Use of Circle Track is recommended when crop is planted in a center pivot field.

NOTE: The system does not support circles with curvature greater than 1° per meter.

If Leader (combine) is operating under a sharp curve or is changing track direction, Follower (tractor) is unable to track. Machine Sync deactivates.

HC94949,0000AFE-19-10FEB17

C—Leader Mode Active

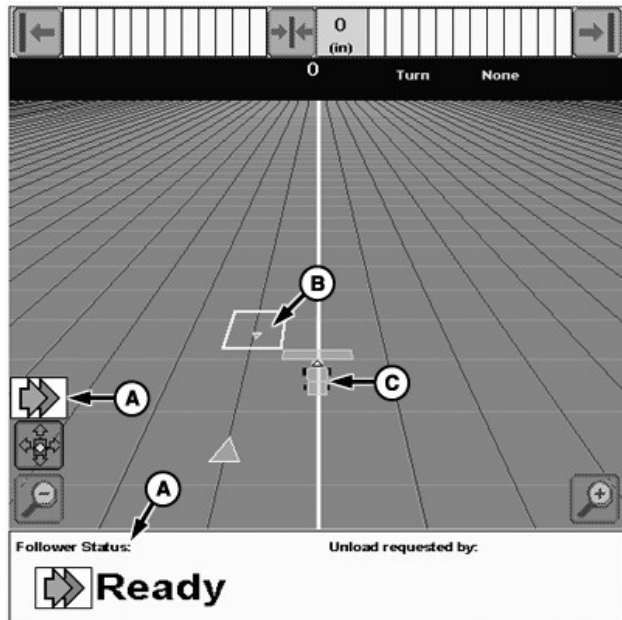
Machine Sync Automation status remains Inactive until Follower (tractor) is inside of Operational Zone.

NOTE: Operational Zone is not seen on Leader (combine) display. It only is shown on Follower (tractor) display.

Leader Mode Active (C) must be selected for Machine Sync Automation to function.

Request Follower button (B)—alerts all Followers in the network that Leader is in need of unloading its grain hopper. The Leader's network name appears at bottom of home screen. Select Request Follower button at any time if Leader and Follower are connected to same network.

Leader (Combine)—Ready



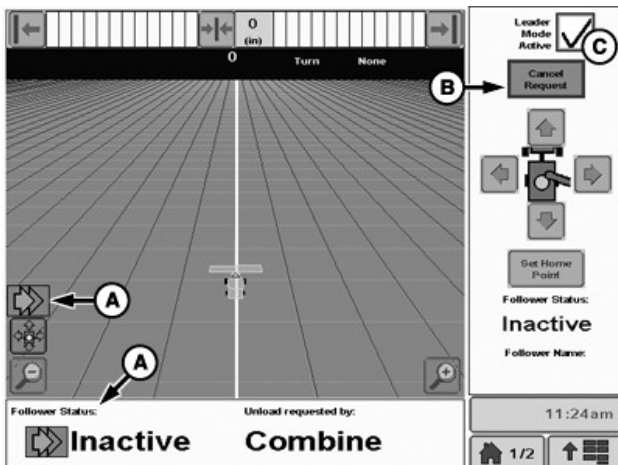
PC16142—UN—26OCT12

A—Follower Status: Ready
B—Home Point Calibration Zone
C—Leader (Combine)

After Follower has crossed Operational Zone and tractor operator selects Machine Sync Enable button, Machine Sync Automation status changes to Ready (A). Status indicator changes to a white backfill color.

Operating Machine Sync Automation—Leader (Combine)

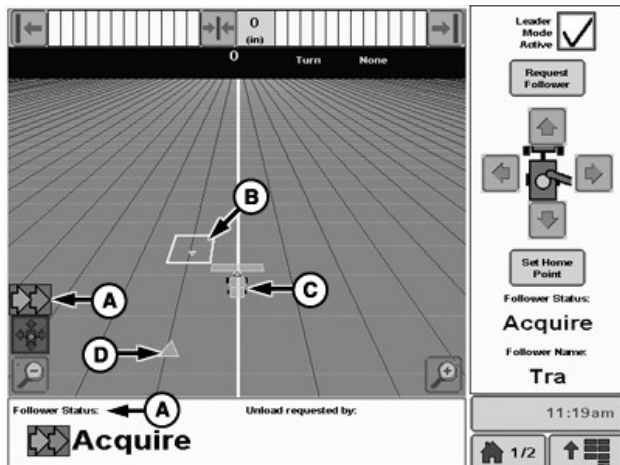
Leader (Combine)—Inactive



PC16143—UN—26OCT12

A—Follower Status: Inactive
B—Request Follower Button

Machine Sync Automation—Acquire



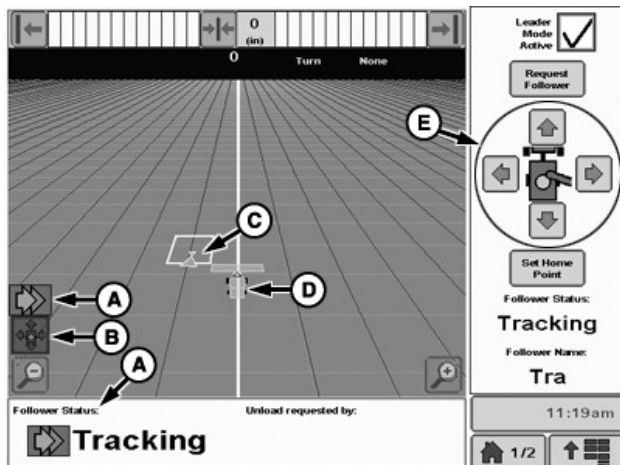
PC16141—UN—29OCT12

- A—Follower Status: Acquire
- B—Home Point Indicator
- C—Leader (Combine)
- D—Follower (Tractor)

Machine Sync Automation status changes to Acquire (A) when Follower (tractor) (D) is within Operational Zone and tractor resume switch has been pressed, completing fourth piece of status pie.

Status indicator changes to a green backfill color and arrows animate.

Leader (Combine)—Tracking



PC16138—UN—26OCT12

- A—Follower Status: Tracking
- B—Machine Sync Controls Button
- C—Follower (Tractor) on Home Point
- D—Leader (Combine)
- E—Nudging Buttons

Machine Sync Automation status changes to Tracking (A) after Follower (tractor) reaches its Home Point (C).

Follower is tracking Leader. As Leader changes direction or speed, Follower matches Leader changes.

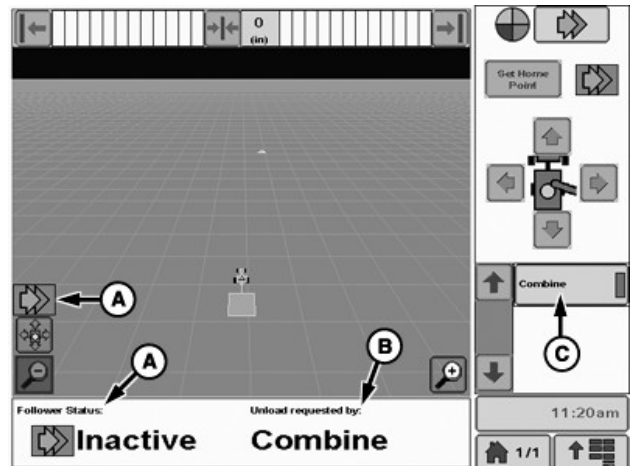
If needed, select Nudging buttons to adjust Follower position (E). Nudging buttons are also found by selecting Machine Sync Controls button (B).

Leader (combine) is now able to unload into Follower grain cart.

HC94949,0000B1B-19-17FEB17

Operating Machine Sync Automation—Follower (Tractor)

Follower (Tractor)—Inactive



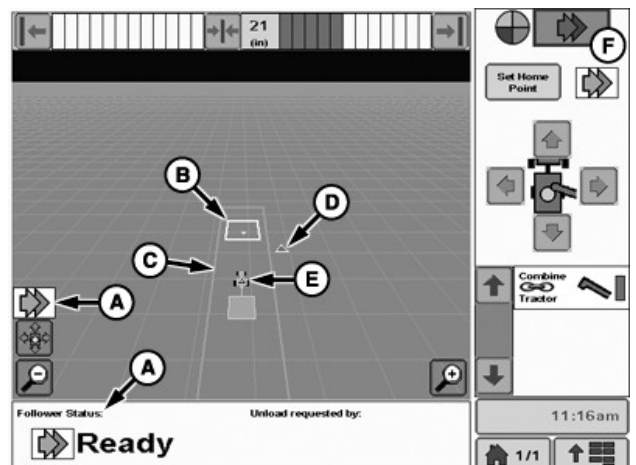
PC16136—UN—26OCT12

- A—Follower Status: Inactive
- B—Unload Request Notification
- C—Leader (Combine) Bin Level Status

When Leader (combine) selects Request Follower button, Follower (tractor) receives a request notification (B) on display. Request is indicated by an audible tone and Leader Bin Level Status (C) begins to flash.

NOTE: Operational Zone only appears when Follower heading is within +/- 45 degrees of Leader heading. Operational Zone is only seen on Follower (tractor) display. It does not show on Leader (combine) display.

Follower (Tractor)—Ready



PC16132—UN—26OCT12

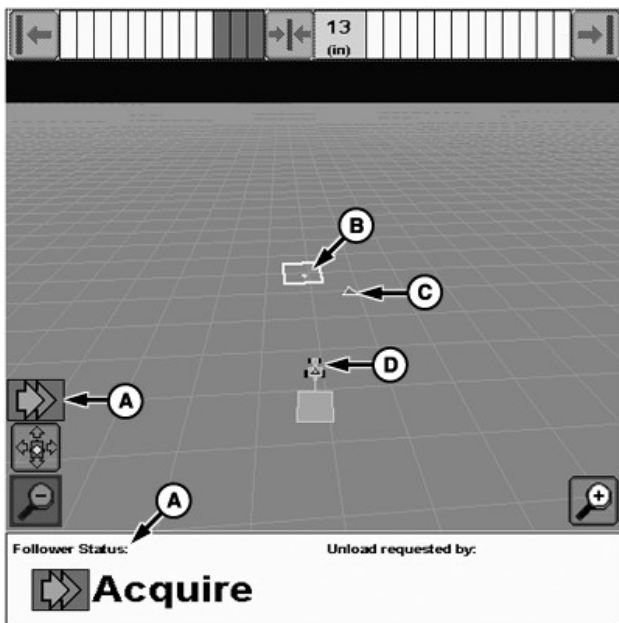
- A—Follower Status: Ready
- B—Home Point Calibration Zone

- C—Operational Zone
- D—Leader (Combine)
- E—Follower (Tractor)
- F—Machine Sync Enable Button

NOTE: When using any type of correction on machine besides real-time kinematic (RTK), wait 10–15 sec. before pressing resume switch.

After Follower has crossed Operational Zone (C) and tractor operator selects Machine Sync Enable button (F), Machine Sync status changes to Ready (A). Status indicator changes to a white backfill color. Ensure Machine Sync Automation status is Ready before pressing resume switch.

Follower (Tractor)—Acquire



PC16133—UN—26OCT12

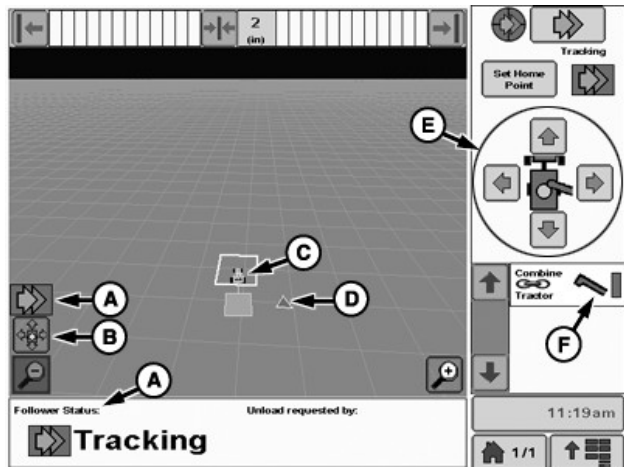
- A—Follower Status: Acquire
- B—Home Point Indicator
- C—Leader (Combine)
- D—Follower (Tractor)

Machine Sync Automation status changes to Acquire (A) when Follower (tractor) (D) is in Ready state and tractor resume switch has been pressed, completing fourth piece of status pie.

Status indicator changes to a green backfill color and arrows animate.

NOTE: Operational Zone disappears when Follower presses resume switch and Machine Sync Automation status changes to Acquiring.

Follower (Tractor)—Tracking



PC16131—UN—25OCT12

- A—Follower Status: Tracking
- B—Machine Sync Automation Controls Button
- C—Follower (Tractor) on Home Point
- D—Leader (Combine)
- E—Nudging buttons
- F—Combine Unloading Status

Machine Sync Automation status changes to Tracking (A) after Follower (tractor) reaches its Home Point (C).

Follower is tracking Leader. As Leader changes direction or speed, Follower matches Leader change in position and speed.

Leader (combine) is now able to unload into Follower grain cart (F).

If needed, select Nudging buttons to adjust Follower position (E). Nudging buttons are also found by selecting Machine Sync Automation Controls button (B).

During operation, adjust speed using the throttle only. Shifting transmission during operation disengages Machine Sync Automation. System speed automation is governed by the transmission setting when resume switch was pressed.

Due to speed automation characteristics of 9R and 6R tractors, it is recommended that these machines be operated at full throttle when using Machine Sync Automation.

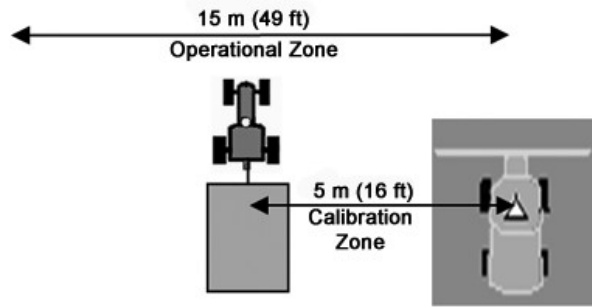
To disengage, tractor operator may turn steering wheel, increase machine transmission speed setting, or stop machine.

NOTE: Ensure that Follower (tractor) transmission is set high enough for Follower to catch and maintain Leader speed.

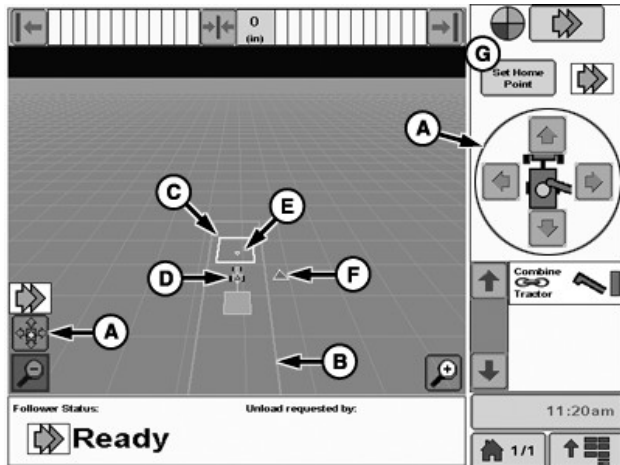
If surging issues occur on Follower, adjust speed sensitivity setting in Machine Sync Automation settings.

HC94949,0000B1C-19-17FEB17

Home Point Calibration



PC16145—UN—26OCT12



PC16144—UN—30OCT12

- A—Nudging Buttons
- B—Operational Zone
- C—Calibration Zone
- D—Follower (Tractor)
- E—Home Point Icon
- F—Leader (Combine)
- G—Set Home Point Button

Home Point—the point where the system will guide the Follower (Tractor) to unload product into the grain cart.

NOTE: A Home Point must be set up before Machine Sync will function.

Setting a Home Point is subject to the heading of the Leader and Follower being very similar to each other. If Leader and Follower headings are not similar, Machine Sync will not allow operator to set a Home Point.

NOTE: If Leader and Follower headings are not within +/- 5 degrees, a Heading Mismatch exit code will be displayed.

IMPORTANT: To avoid equipment collision, the Home Point should not be calibrated with any part of the vehicle or equipment overlapping. Always maintain a buffer area between equipment.

Machine Sync does not support operation with any part of the machine/equipment closer than 1.0 m (3 ft) to other machine/equipment.

1. Verify pairing between Leader (Combine) and Follower (Tractor) has occurred.

When the yellow box and/or orange box appear on the guidance map, pairing is successful.

2. Drive Follower (Tractor) (D) until receiver position is within the yellow Calibration Zone (C).

3. Speed for Leader and Follower should be above 0.8 km/h (0.5 mph) in a forward gear.

NOTE: Minimum speed requirement for 9xxx series articulated tractors is 2 km/h (1.2 mph) in acquiring, tracking, and setting Home Point.

4. Select Set Home Point button (G) on the Leader or Follower. After a Home Point is set, it is marked by a small orange inverted triangle (E).

Machine Sync will maintain the Home Point Calibration until power is cycled (key-off). The Home Point will be stored for use at a later time if the operator has set up the combine header and grain cart identification information under the initial setup page.

Please ensure Home Point Calibration is correct whenever changing combine header.

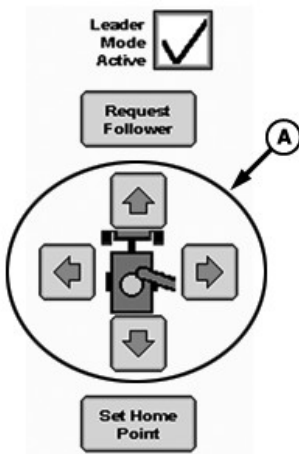
An existing Home Point Calibration can be reset any time the setup conditions are met by selecting the Set Home Button again (G).

NOTE: The use of 40 ft heads requires the extended auger and recalibrating of all Home Point locations for each Follower.

CAUTION: Machine Sync does not detect or avoid obstacles and bystanders. To prevent injury, remain alert and take control of the steering wheel, when necessary, to avoid collisions.

HC94949,0000B1D-19-17FEB17

Nudging



PC14393—UN—09DEC11

Home Page Nudging Buttons

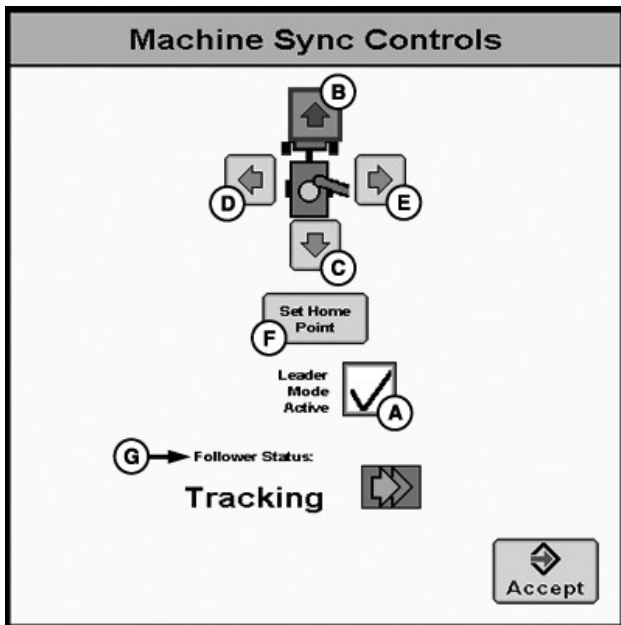


PC14394—UN—09DEC11

Shortcut on Guidance Page or Home Page for Machine Sync Controls

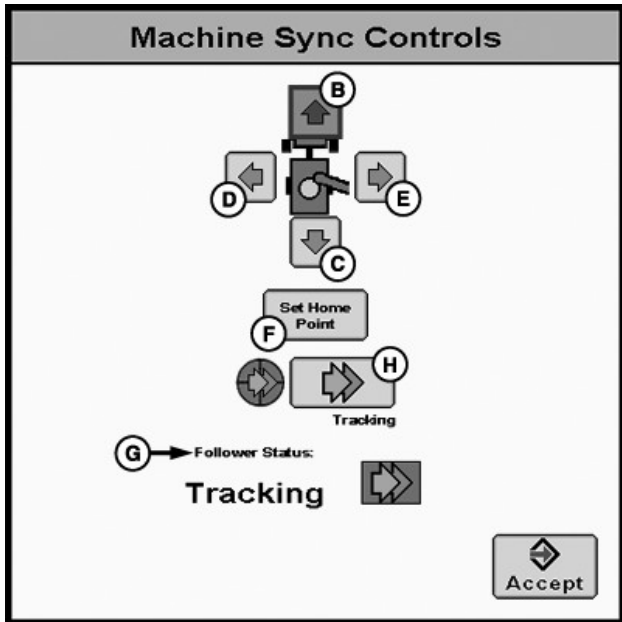
A—Nudging buttons on Home Page

To access the Nudging buttons, select the Nudging button on the Guidance page or on the Home Page (A).



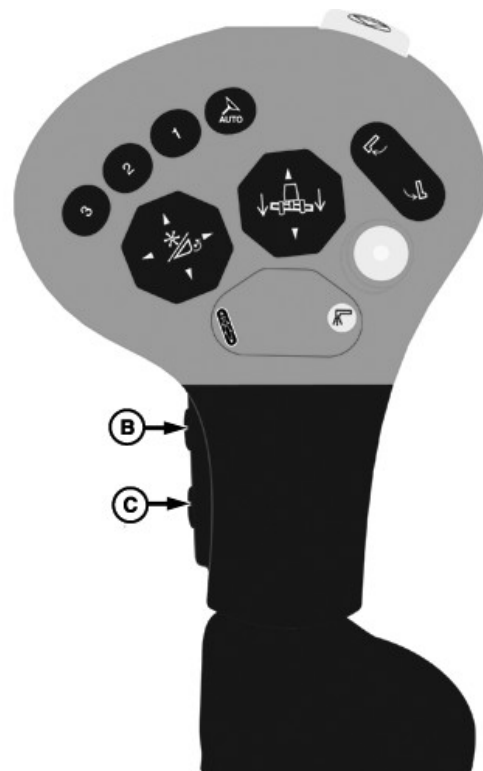
PC21652—UN—30SEP15

Leader Nudging Controls



PC21653—UN—30SEP15

Follower Nudging Controls



PC16294—UN—19NOV12

- A—Leader Mode Active Checkbox
- B—Nudge Follower Forward
- C—Nudge Follower Backward
- D—Nudge Follower Left
- E—Nudge Follower Right
- F—Set Home Point Button
- G—Follower Status
- H—Machine Sync Enable Button

Machine Sync Controls allow leader (combine) and follower (tractor) operators to nudge the follower position to evenly distribute product into the grain cart.

NOTE: To make Machine Sync function, ensure Leader Mode Active (A) has a check in the box.

Nudging only moves follower, not the leader.

The distance the follower moves forward, backward, or lateral is defined on the Machine Sync Settings page.

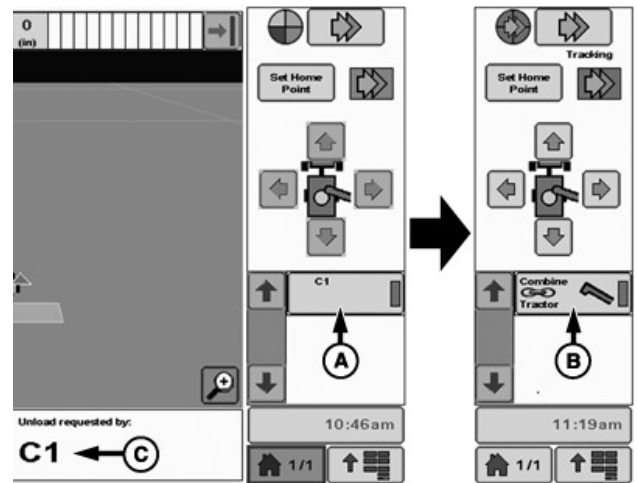
While the follower is tracking, the leader can nudge follower to a position offset both fore/aft and lateral using the Nudging buttons on the Home page.

After a follower leaves the leader and is no longer paired, nudges are erased and home point position returns to last saved location when Set Home Point button was selected. If the leader or follower would like to retain the nudged position, the Set Home Point button must be selected again before exiting tracking.

NOTE: Nudge buttons on multifunction control lever (B and C) are not available on all machines.

RW00482,000052C-19-07OCT15

Unload Request – Follower



PC16313—UN—29NOV12

A—Request Unload Button
B—Linked Button
C—Follower Status Bar

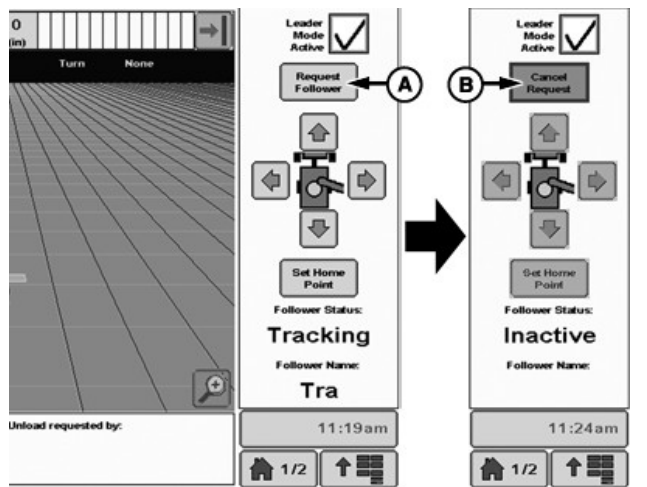
A request button (A) appears once a leader requests a follower for an unload.

NOTE: The leader name is displayed under Unload Requested By (C).

The follower accepts the request by selecting the request button. Once accepted, the request button (A) changes to a linked button (B) showing that combine has been accepted by tractor. The request can be canceled by pressing the linked button.

RW00482,00000BB-19-29NOV12

Request Unload – Leader



PC16318—UN—03DEC12

A—Request Follower Button
B—Cancel Request Button

When an unload is needed, the leader selects the Request Follower button (A) to alert the follower(s). A follower needs to accept the request to link tractor and combine.

The leader can stop the request by selecting the Cancel Request button (B).

RW00482,00000BF-19-03DEC12

Setting Up—Configuring Machine Sync Shared Data

Set Up Resources



Menu Button

PC8663—UN—29APR15

1. Select Menu button.



GreenStar™ Button

PC12685—UN—29APR15

2. Select GreenStar™ button.



Resources Softkey

PC8676—UN—05AUG05

3. Select Resources softkey.

Client, farm, field, and task must be identical between displays before map coverage and guidance lines can be sent and received. Global clients, farms, or fields (- -) are not supported for shared data features. The Documentation Off-task does not allow sharing of data.

NOTE: Operations (Documentation softkey) are not required to be identical in order to share map coverage and guidance lines.

All GS3 2630 Displays intending to share, should utilize the same language settings (Ex: English) to avoid keyboard and spelling differences.

HC94949,0000AFF-19-17FEB17

Set Up Machine Sync Shared Data

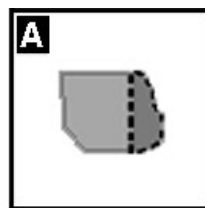


Menu Button

PC8663—UN—29APR15

1. Select Menu button.
2. Select GreenStar™ button.

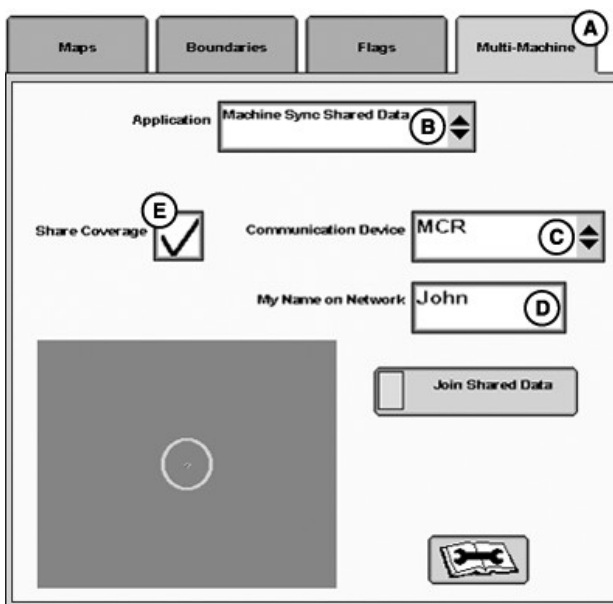
GreenStar is a trademark of Deere & Company



Mapping Softkey

PC8672—UN—08DEC14

3. Select Mapping softkey.



PC21349—UN—13JUL15

- A—Multi-Machine Tab
- B—Application Drop-Down Menu
- C—Communication Device Drop-Down Menu
- D—My Name on Network
- E—Share Coverage Checkbox

4. Select Multi-Machine tab (A).

NOTE: Selecting dashes (- -) or Machine Sync Automation from Application drop-down does not disable Machine Sync Shared Data features.

5. Select Machine Sync Shared Data from Application drop-down menu (B).
6. Select Communication Device from drop-down menu (C).

- Select MCR to share on a machine communication radio (MCR) network.
- Select MTG to share on the JDLink™ network using a modular telematics gateway (MTG).

NOTE: MTG requires JDLink™ subscription. For more information, contact your John Deere dealer.

7. Enter My Name on Network (D).

JDLink is a trademark of Deere & Company

NOTE: Selecting Share Coverage (E) immediately broadcasts coverage map to other machines. Ensure client, farm, field, and task are selected, and coverage is up to date before selecting Share Coverage.

8. To allow map coverage and guidance lines to be sent and received on the display, select Share Coverage checkbox.

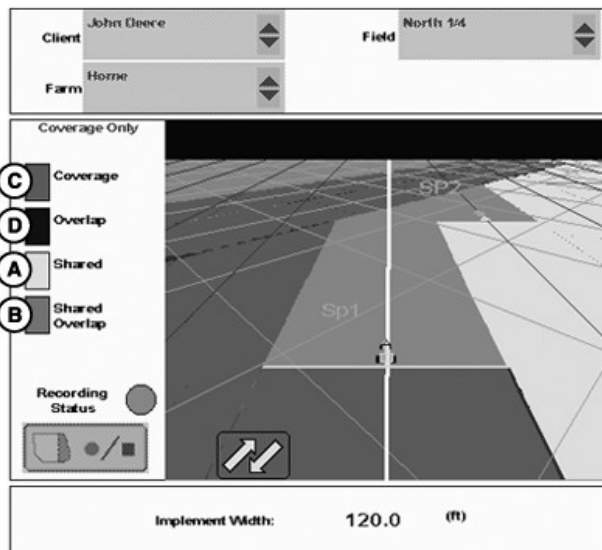
HC94949,0000B00-19-17FEB17

Share Map Coverage



PC20617—UN—18DEC14

Share Coverage Checkbox



PC21643—UN—23SEP15

- A—Shared Coverage
- B—Shared Overlap
- C—Coverage
- D—Overlap

When Share Coverage checkbox is selected, the map legend shows additional colors for shared coverage and shared overlap. Legend colors cannot be changed.

Field boundaries are not shared through Machine Sync. Section Control is able to operate without a boundary, but Headland Control requires a boundary stored on the display. Each display requires the same setup information to use boundaries.

With boundaries, acres remaining calculation do not calculate for shared coverage. Totals and acres remaining are based on a single machines coverage stored on the display.

RW00482,000051E-19-30NOV15

Operating–Machine Sync Shared Data

Join Shared Data

Name on Network	Operator	Last Updated	Age	Client	Farm	Field	Task
C2	rrr			Jensen	Jensen Farm	Jensen Field	g

PC21379—UN—17JUL15

MCR – Join Shared Data

Name on Network	Operator	Last Updated	Age	Client	Farm	Field	Task
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PC21380—UN—17JUL15

MTG – Join Shared Data

- A—Join Button
- B—Refresh Button
- C—Filter/Sort Button
- D—Timer

Join Shared Data allows operator to search machine communication radio (MCR) or modular telematics gateway (MTG) networks for other machines, and connect to a network that has the same client, farm, field, and task settings. Once a network is found, select Join button (A). Join Shared Data reduces amount of time required to manually enter client, farm, field, and task information. It also avoids connection issues due to

misspellings, operators unfamiliar with geographic location, or operators unable to communicate.

NOTE: Join Shared Data is only available with an active Machine Sync activation. Field Locator relies upon exterior field boundaries to notify an operator of field entry or exit. Join Shared Data provides different functionality than Field Locator.

The three ways to Join Shared Data:

- Select any client, farm, or field drop-down menu, and select Join.
- Select status indicator button, and select Join Shared Data button.
(Reference Status Indicator for more information.)
- Select Menu button > GreenStar™ button > Mapping softkey > Multi-Machine tab > Machine Sync Shared Data from Application drop-down menu > Join Shared button.

Name on Network	Operator	Last Updated	Age	Client	Farm	Field	Task
R4038		03-30-2017	0 minutes	big farm	north	2m2a	Pre-emerge Spraying
R4045		03-30-2017	2 minutes	big farm	north	2m3	Pre-emerge Spraying
R4045		03-30-2017	4 minutes	big farm	north	2m2	Pre-emerge Spraying
R4045		03-30-2017	4 minutes	big farm	north	2m2a	Pre-emerge Spraying

PC24000—UN—30MAR17

Network List

A—Join Button

Join Shared Data page automatically refreshes network list after opening. Allow time for display to request available client, farm, field, and task data from others in network. Selecting Join button (A) copies client, farm, field, and task information from shared display to local display.

Refresh Time

- MCR can take up to 3 seconds. Refresh button is disabled during the refresh.
- MTG can take up to 2.5 minutes. Refresh and Filter /

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Sort buttons are disabled during refresh. A timer displays remaining refresh time.

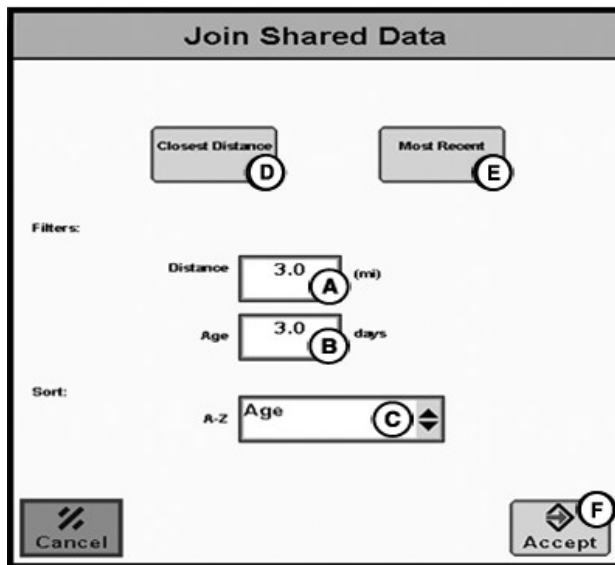
Filter / Sort List



Filter/Sort Button

PC21648—UN—29SEP15

Filter / Sort button is only available for MTG networks and allows operator to search for other machines based on their distance, age, or field and task. Results are displayed based on age, distance, or alphabetically by client, farm, field, and task.



PC24001—UN—30MAR17

- A—Distance Entry Box
- B—Age Entry Box
- C—Sort Drop-Down Menu
- D—Closest Distance Button
- E—Most Recent Button
- F—Accept Button

To filter / sort the shared data list, either:

Manually enter parameters.

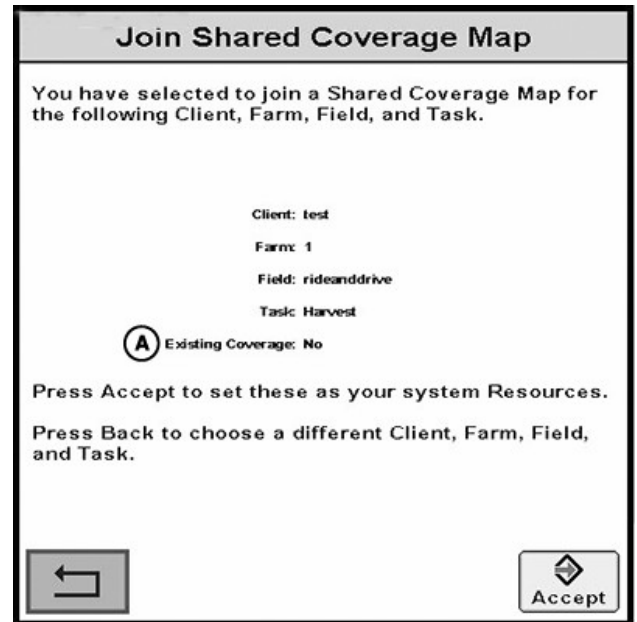
1. Enter Distance (A).
2. Enter Age (B).
3. Select an option from Sort drop-down menu (C).
4. Select Accept (F).

Select a preset filter. These buttons have the following parameters:

- Closest Distance button (D)
 - Age = 60 days
 - Distance = 10 mi
 - Sort = Distance
- Most Recent button (E)

- Age = 14 days
- Distance = 60 mi
- Sort = Age

Join Shared Coverage Map



PC24880—UN—18OCT17

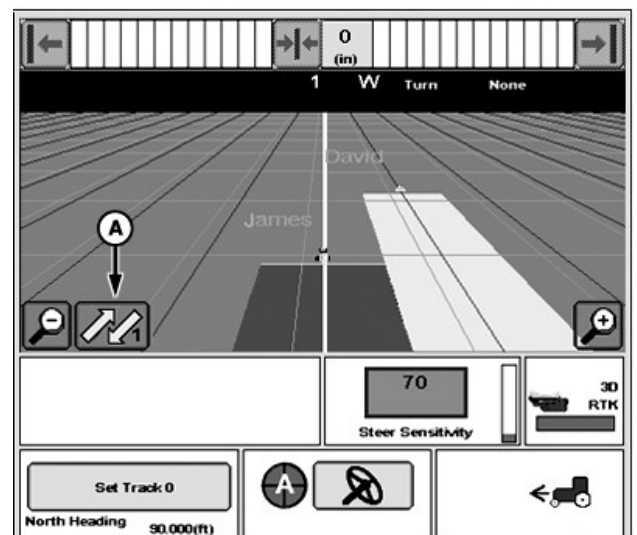
Join Shared Coverage Map

A—Existing Coverage

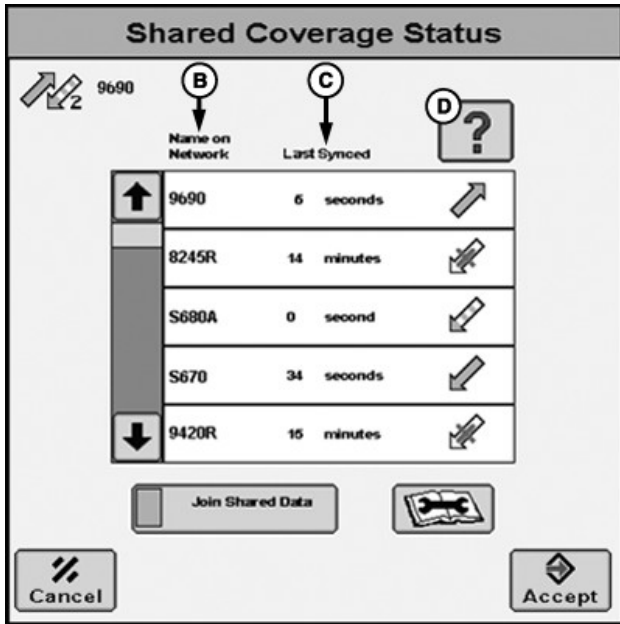
After manually entering client, farm, field, and task information, the operator is prompted to join Shared Coverage. If Existing Coverage (A) states “No”, the operator’s local display does not have coverage.

HC94949,0000C94-19-21NOV17

Status Indicator



PC21358—UN—16JUL15



PC21360—UN—14JUL15

- A—Status Indicator
B—Name on Network
C—Last Synced
D—Help (?) Button

Status indicator (A) displays two arrows and the number of machines currently sharing. Left arrow represents outgoing shared data and the right arrow represents incoming shared data. To open Shared Coverage Status page, select status indicator.

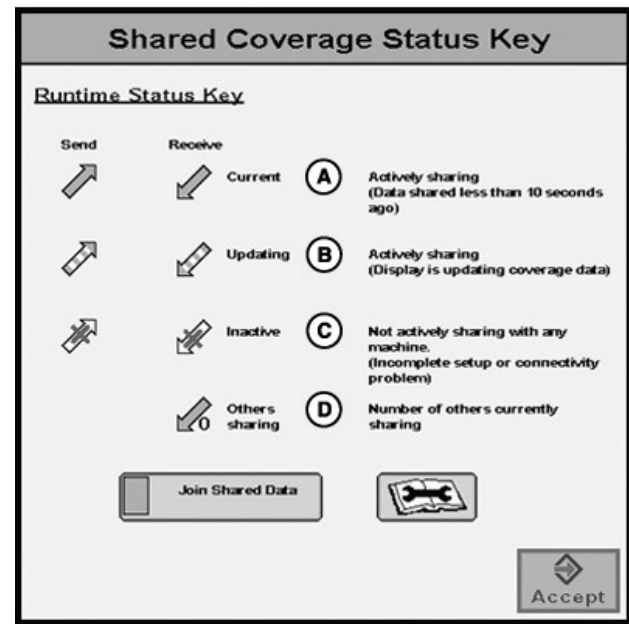
Shared Coverage Status

Shared Coverage Status displays machines by Name on Network (B) (up to eight characters) and Last Synced (C). Last Synced is the elapsed time since messages were sent or received. Machines are sorted by the following criteria:

1. First sort:
 - a. Your Machine
 - b. Machines not connected for less than 15 min (900 sec)
 - c. Machines updating
 - d. Machines currently connected
 - e. Machines not connected for more than 15 min (900 sec)
2. Second sort:
 - Alphabetical order (Name on Network)
3. Third sort:
 - Serial number

To display Shared Coverage Status Key, select Help (?) button (D).

Shared Coverage Status Key



PC21359—UN—14JUL15

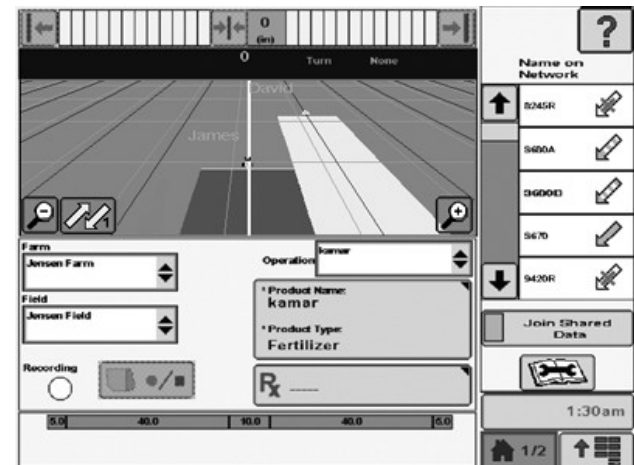
- A—Current
B—Updating
C—Inactive
D—Others Sharing

- Current (A)—Actively sharing. Data shared less than 10 sec ago.
- Updating (B)—Actively sharing. Display is sending or receiving coverage data.
- Inactive (C)—Not actively sharing with machine. Incomplete setup or connectivity problem.
- Others Sharing (D)—Number of others currently sharing.

(Refer to Diagnostics for details and troubleshooting.)

HC94949,0000B02-19-10FEB17

Layout Manager



PC21361—UN—15JUL15

For ease of operation, use the Layout Manager to configure display home page for specific operations.

(Reference the GreenStar™ 3 2630 Display Operator's Manual for more information.)

RW00482,000051C-19-01OCT15

Clear Shared Coverage Maps

Clearing coverage only clears local and shared coverage on that specific display. Due to the likelihood of multiple operators and machines in one field, there is a risk of a machine accidentally sharing an old or unwanted coverage map to other machines.

Machine Communication Radio (MCR)

Coverage data is retained on individual displays. Clear coverage on all displays within an MCR network at the same time to eliminate accidental sharing of old or unwanted coverage maps.



Menu Button

PC8663—UN—29APR15

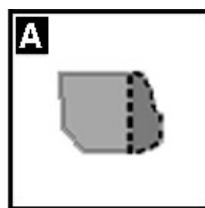
1. Select Menu button.



GreenStar™ Button

PC12685—UN—29APR15

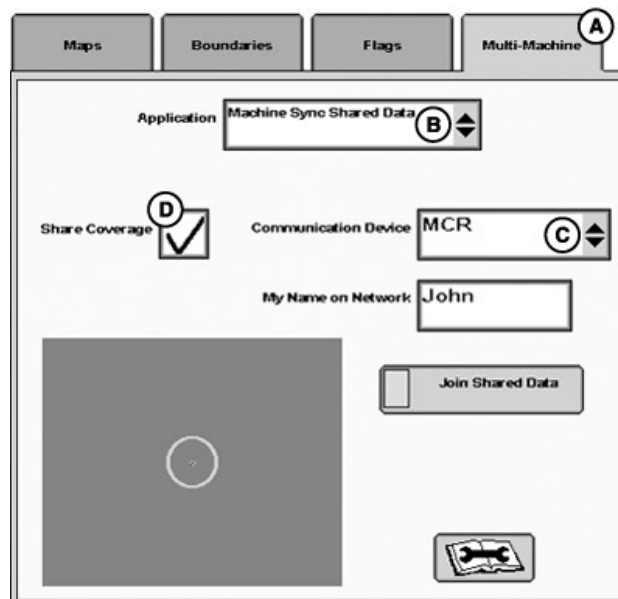
2. Select GreenStar™ button.



Mapping Softkey

PC8672—UN—08DEC14

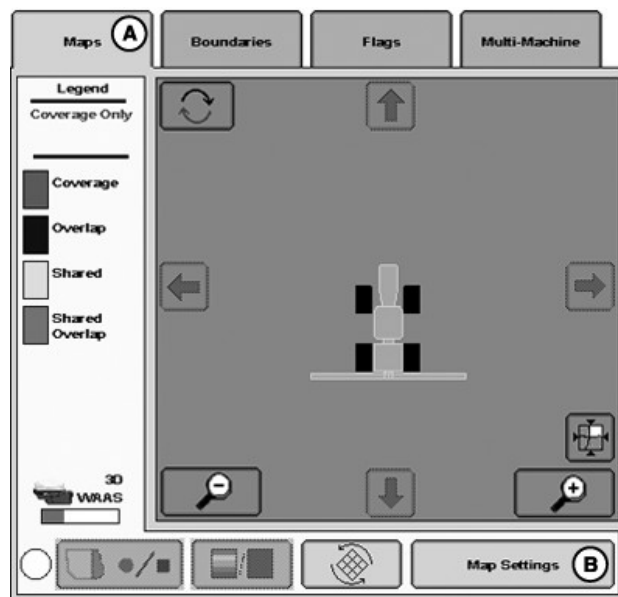
3. Select Mapping softkey.



PC21657—UN—01OCT15

- A—Multi-Machine Tab
- B—Application Drop-Down Menu
- C—Communication Device Drop-Down Menu
- D—Share Coverage Checkbox

4. Select Multi-Machine tab (A).
5. Select Machine Sync Shared Data from Application drop-down menu (B).
6. Select MCR from Communication Device drop-down menu (C).
7. Uncheck Shared Coverage (D).



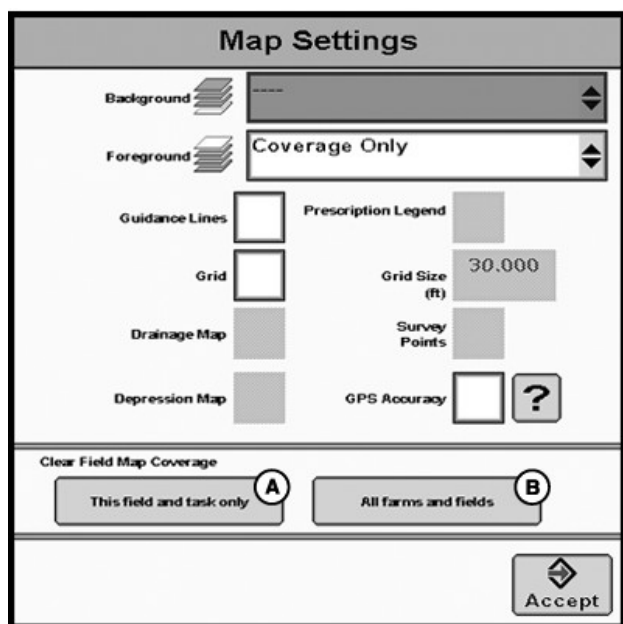
PC23701—UN—10FEB17

Maps Tab

- A—Maps Tab
- B—Map Settings Button

8. Select Maps tab (A).

9. Select Map Settings button (B).



PC23700—UN—10FEB17

Map Settings

A—This field and task only Button

B—All farms and fields Button

10. Select either This field and task only button (A) or All farms and fields button (B).



PC23702—UN—10FEB17

Clear Field Map Coverage

A—Accept Button

11. Select Accept button (A).

Once all displays in network are cleared, select Shared Coverage checkbox to resume sharing.

Modular Telematics Gateway (MTG)

Shared coverage data is retained for 14 days from when client, farm, field, and task was last selected and Share Coverage was enabled.

- John Deere only retains shared coverage points from individual displays.
- John Deere does not send back coverage to the display that created the coverage.
- Using the MCR method of clearing coverage does not work for the MTG. Shared coverage points are downloaded back to the display.

Recommendation:

- Do not use Clear Coverage buttons on display when using Machine Sync with an MTG.
- For multiple applications in one field, change the task name.

For example, for multiple post-emerge spraying or fertilizer applications in one field, revise task name to “Post-emerge Spraying2” or “Post-emerge Spraying 9-9-2015”. This ensures all machines have a blank coverage map and cannot accidentally share old coverage when joining the network.

HC94949.0000C63-19-04DEC17

Share Guidance Lines

NOTE: For John Deere machine coverage map and guidance line sharing data functionality, the accuracy of shared coverage maps and guidance lines is related to the StarFire™ Receiver accuracy level. As the accuracy level increases, coverage map and guidance lines sharing accuracy also increases.

Compatible Guidance Modes

Only straight track guidance lines are shared between displays with the same client, farm, field, and task. Shift track offsets are sent with the guidance line and are retained by receiving displays. Straight track guidance lines can be created using any method.

Guidance lines generate from Track 0 based on track spacing of receiving display. If machines have different track spacing, it is recommended that those machines work in different areas of the field. If machines with different track spacing must work in the same area of field, use shift track to line up each pass.

(Reference GreenStar™ 3 2630 Display Operator's Manual for instructions to create a guidance line.)

Sharing a Guidance Line



Menu Button

PC8663—UN—29APR15

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1. Select Menu button.



GreenStar™ Button

PC12685—UN—29APR15

2. Select GreenStar™ button.



Guidance Softkey

PC21148—UN—11MAY15

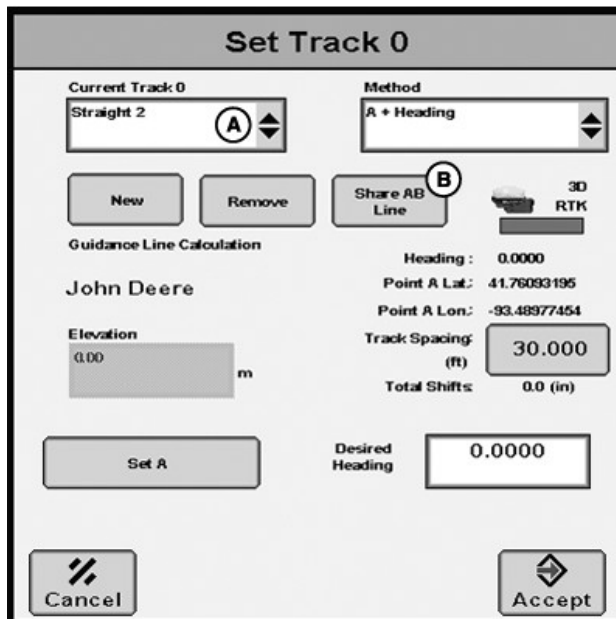
3. Select Guidance softkey.



Set Track 0 Button

PC21362—UN—08OCT15

4. Select Set Track 0 button.



PC21363—UN—15JUL15

- A—Current Track 0 Drop-Down Menu
B—Share AB Line Button

5. Select guidance line from Current Track 0 drop-down menu (A).

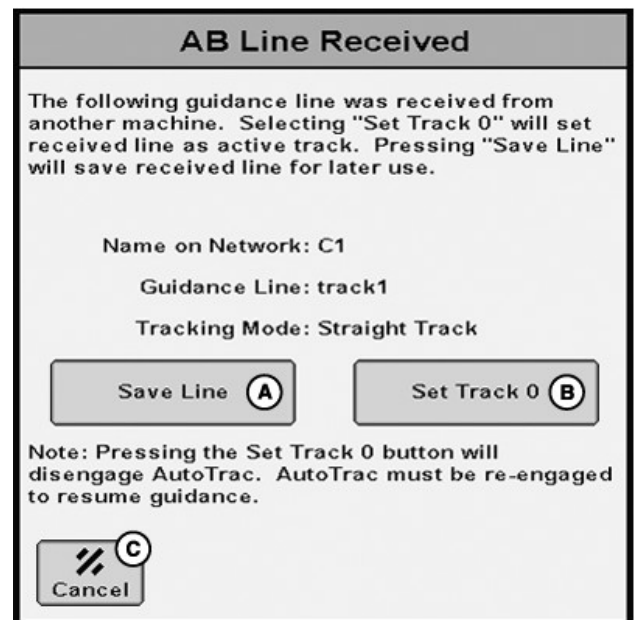
6. Select Share AB Line button (B).

For machine communication radio (MCR) networks, message center notifies operator that guidance line was sent and displays AB Shared. No acknowledgments are displayed that other displays received the guidance line due to MCR speed and reliability.

For modular telematics gateway (MTG) networks, sharing status displays in Message Center after selecting Share AB Line button.

- Sharing—Sending guidance line to John Deere so displays with matching setup can use. After selecting Share AB Line button, status is displayed for 30 s or until sending display receives an acknowledgment from receiving display.
- AB Failed—Guidance line was not received by John Deere. Status is displayed for 30 s after failure.
- AB Shared—Guidance line successfully sent. Status is displayed for 10 s after sharing is acknowledged.

Receiving a Guidance Line



PC21701—UN—08OCT15

- A—Save Line Button
B—Set Track 0 Button
C—Cancel Button

Guidance Lines are retained for 14 days from when they were last sent. Displays with matching client, farm, and field will receive the shared guidance lines. Each time an unchanged guidance line is sent, AB Line Received message is displayed. If sharing an unchanged guidance line that was previously shared, message is not displayed. If a guidance line is modified (a shift is made) and resent, AB Line Received message appears on other displays with matching setup.

After the operator using the sending display selects the Share AB Line button, AB Line Received message appears on the receiving display.

To use received guidance line later, select Save Line button (A). Guidance line is saved to list of straight track lines. AutoTrac™ continues to operate, except if saving a line that has the same name as the one that is already in use.

NOTE: If received line has same name as existing line, received line is renamed. For example, Track1 is renamed Track1_001.

To set received guidance line as active Track 0, select Set Track 0 button (B). Line is saved to list of straight track lines. Selecting Set Track 0 button deactivates AutoTrac™ and it must be activated to resume operation.

(Reference GreenStar™ 3 2630 Display Operator's Manual to use AutoTrac™.)

To ignore the shared line, select Cancel button (C).

HC94949,0000C84-19-04DEC17

Troubleshooting

Machine Sync Automation Diagnostics—Leader (Combine)

Conditions	Status
Machine Sync License	Yes
Leader Role Selected	Yes
Leader Mode Active	Yes
Network Configured Properly	Yes
Leader GPS Accuracy	Yes
Leader and Follower Communicating	Yes
Speed of Leader	Yes
Leader in Forward Gear	Yes
Road Transport Mode Off	N/A

PC14387—UN—15DEC11

Diagnostics Page

A—View
B—Conditions
C—Status

Select Menu button > GreenStar™ button > Diagnostic softkey > Machine Sync from View drop-down menu (A).

If any Conditions (B) display No or have dashed lines in the Status (C), the condition must be verified and fixed before Machine Sync functions properly.

RW00482,0000569-19-08OCT15

Machine Sync Automation Diagnostics—Follower (Tractor)

State	Conditions	Status
	Machine Sync License, AutoTrac License	Yes, Yes
	Machine Sync Mode Selected	Yes
	Follower Role Selected	Yes
	Steer Control	Yes
	TECU Communication Check	Yes
	Speed Control (Supported, Reserved, Security)	Yes, Yes, Yes
	Network Configured Properly	Yes
	AutoTrac Integrated Installed	Yes
	Operator in Seat	Yes
	Steer On/Off	Yes
	Leader and Follower Communicating	Yes
	Follower GPS Accuracy	Yes
	Follower in Forward Gear	Yes
	Heading and Speed of Follower	Yes, Yes
	Follower in Operational Zone	Yes
	Valid Home Point	Yes
	Leader Ready	Yes
	Resume Switch Pressed and Steering Ready	Yes, Yes

PC16126—UN—25OCT12

A—View
B—State
C—Conditions
D—Status

If any item contains No or has dashed lines in the status (D), item must be verified and fixed before Machine Sync functions properly.

RW00482,0000568-19-08OCT15

Machine Sync Shared Data Diagnostics

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

View: Machine Sync Shared Data (A)

Setup:

- Machine Sync License: Yes
- Shared Coverage enabled: Yes
- Communication Device: MTG
- Client, Farm, Field selected: Yes
- Task other than Documentation Off: Yes

Communication:

MCR

- Network Configured Properly: No
- MCR Network Name: ---
- MCR Channel: ---
- Connection Status: ---
- Radio Transmitting: No

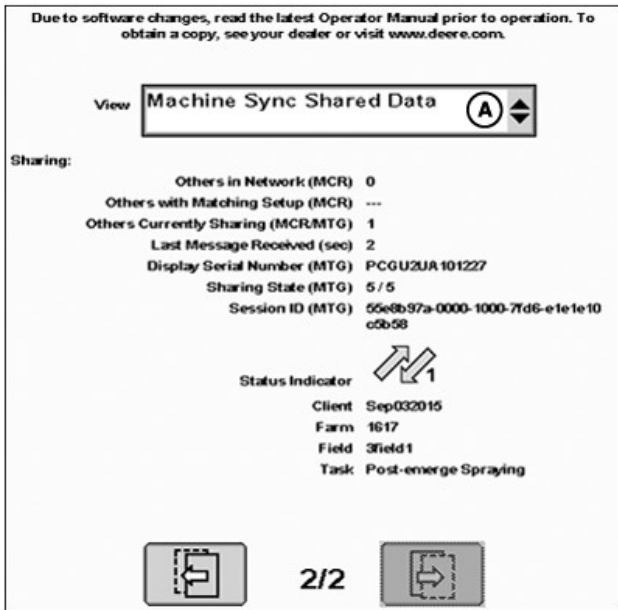
MTG

- Signal Strength: [Bar Chart]
- Call State: Call Open
- Organization ID: 2551
- Authorization: Yes 09-06-2015 15:51

1/2

PC21650—UN—01OCT15

Shared Data Diagnostics Page 1



Shared Data Diagnostics Page 2

A—View Drop-Down Menu

Select Menu button > GreenStar™ button > Diagnostic softkey > select Machine Sync Shared Data from View drop-down menu.

Setup		
Machine Sync License	Is there an active John Deere Machine Sync activation on this display?	If no, purchase John Deere Machine Sync activation from John Deere dealer.
Share Coverage enabled	Is the Share Coverage checkbox enabled?	If no, go to Mapping > Multi-Machine > Machine Sync Shared Data > select Share Coverage.
Communication Device	Which Communication Device is selected in the Shared Data setup page?	If dashes (- - -), go to Mapping > Multi-Machine > Machine Sync Shared Data > select valid communication device.
Client, Farm, Field selected	Is there valid text in Client, Farm, and Field input boxes?	If no, go to Resources > select valid Client, Farm, and Field. Dashes (- - -) do not work.
Task other than Documentation Off	Is there valid text in the Task input box other than Documentation Off?	If no, go to Resources > select valid Task. Documentation Off does not work.
Communication—MCR		
Network Configured Properly	Is the MCR Network properly configured?	If no, go to Equipment > Network > correctly set up MCR network. (Reference Configuring Network or Machine Communication Radio Operator's Manual for more information.)
MCR Network Name	MCR Network Name, as displayed on Network setup page.	If dashes (- - -), operator must properly configure network. (Reference Configuring Network or Machine Communication Radio Operator's Manual for more information.)
MCR Channel	Channel letter, as displayed on Network setup page.	If empty, operator must properly configure network. (Reference Configuring Network or Machine Communication Radio Operator's Manual for more information.)
Connection Status	Connection Status, as displayed on Network page. Status states are, Not Connected, Connecting, or Connected.	If Not Connected, operator must properly configure network. (Reference Configuring Network or Machine Communication Radio Operator's Manual for more information.)
Radio Transmitting	Is the MCR transmitting data?	If no, reference Network diagnostic page 4. Note if Packet Tx displays dashes or a value. If dashes, reference Machine Communication Radio Operator's Manual for more information.
Communication—MTG		

Signal strength	Signal strength, as shown on Network diagnostic page 2	If no signal, verify Ethernet connections and that machine has clear view of sky. Customers, contact your John Deere dealer. Dealers, reference JDLink™ Technical Manual for further diagnostics.
Call State	MTG Call State (Ready, Open, or Closed)	If dashes (- - -), contact your John Deere dealer. Dealers, reference Machine Communication Radio Technical Manual for further diagnostics.
Organization ID	JDLink™ / MyJohnDeere Organization ID the MTG is assigned to.	If dashes (- - -), verify MTG is properly configured and assigned to an organization.
Authorization	Authorization messages allow display to connect to John Deere and John Deere sends timestamp that display authorization expires. Timestamp increments as display continues to receive its security authorization.	If authorization displays no or errors, the MTG may not have a valid JDLink™ subscription or has an issue connecting to John Deere.
Sharing		
Others in Network (MCR)	Number of other machines that are connected in MCR network.	If dashes (- - -), verify other machines are properly configured. Machine details can be viewed on Equipment > Network tab.
Others with Matching Setup (MCR)	Number of machines, within the previous 10 sec, that are connected in the same MCR network, have the same Client, Farm, Field, and Task selected, and have "Share Coverage" enabled.	If dashes (- - -), verify other machines are properly configured for Machine Sync Shared Data.
Others Currently Sharing (MCR or MTG)	Number of machines, within the previous 10 sec, that are connected together, have the same Client, Farm, Field, and Task selected.	If dashes (- - -), verify other machines are properly configured for Machine Sync Shared Data.
Last Message Received	Number of seconds since any message or shared data has been received on display. Maximum of 600 seconds. When value exceeds 600 sec, ">600 seconds" is displayed.	If dashes (- - -), verify other machines are properly configured. If 0, machines which were previously sharing may have left field.
Display Serial Number (MTG)	Display serial number used to establish communication to John Deere and other machines.	Used by John Deere to troubleshoot display's connection if issue occurs.
Sharing State (MTG)	Displays the point in the John Deere network that the display is attempting to connect to.	Used by John Deere to troubleshoot display's connection if issue occurs.
Session ID (MTG)	Unique identifier of display for streaming connection to John Deere.	Used by John Deere to troubleshoot display's connection if issue occurs.

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Troubleshooting

1. **On the Follower's display, the Machine Sync state is in a persistent 1 pie state.**
 - a. Navigate to the Machine Sync diagnostic page.
 - b. Equipment must be defined as Tractor, which sets machine to Follower mode.
 - c. Perform a cold boot. Turn the tractor key to the off position. Disconnect display from corner post harness for 10 seconds. Reconnect power to display. Restart the tractor.
 - d. Verify tractor has the correct software loaded to the ACU and CLC controllers.
2. **Unable to see Machine Sync Icon on the display.**
 - a. Verify both displays have the proper role selected.
3. **Follower is unable to see the Operational Zone.**
 - a. The machine must be in a 3 pie state to see the operational zone. Select the Machine Sync state machine button to increment to 3 pie pieces or see "Follower stuck in 1 pie state."
4. **The Follower display shows "Unable to Command Speed" exit code.**
 - a. For IVT™, PST, e23, and CQT transmissions: Verify operator did not modify set speed by adjusting drive lever or encoder wheel during automation.
 - b. Turn the tractor key to the off position. Disconnect the display from the corner post harness for 10 seconds. Reconnect power to display. Restart the tractor.
5. **Follower fails to acquire target position.**
 - a. Verify Follower is traveling faster than the Leader and the Leader does not turn sharply away from the Follower during acquisition.
 - b. For IVT™ transmission: change corner post set speed to a value 3—13 km/h (2—8 mph) greater than the Leader's speed. Move the drive lever to

100% F1. Select the resume switch. Move the throttle to 100%.

6. Follower is S-ing.

- Adjust Follower Advanced AutoTrac™ settings. Recommended setting for line sensitivity heading is between 60 and 70. Start with heading sensitivity, then adjust other settings if needed.
- With Machine Sync inactive, observe Leader AutoTrac™ performance. Adjust Leader AutoTrac™ sensitivity(s) to fine-tune performance.
- Observe Follower performance with Machine Sync active, but with Leader AutoTrac™ disabled. If Follower performs well, inspect Leader for issues.

7. Follower is having trouble surging.

- Adjust speed sensitivity in Machine Sync settings.

8. Speed control is not working on IVT™ transmission.

To ensure a successful acquisition of the target point, complete the following steps on each acquire:

- Using the wheel on the drive lever, set F1 speed on the corner post to 3—13 km/h (2—8 mph) faster than the Leader speed (depending on the desired acquisition aggressiveness).
- Reduce the throttle position and increase the drive lever to 100% of F1. Use the throttle to control speed.
- Position the tractor within the operational zone heading in a similar direction to the combine.

d. Press the resume button. Move the throttle to 100%.

e. The Follower should acquire the Home Point successfully.

9. The Follower display shows an “Unable to command Steering” message when pressing resume button.

- After being kicked out from automation, wait at least two seconds for the fault to clear before re-engaging Machine Sync.

10. Tractor does not pass Speed Control Security.

- Restart the tractor.

11. Network is not operating properly

- Disconnect, then Reconnect to the network.
- Change the network channel to an unused channel to avoid radio interference.

12. Long delay when going from Inactive state to Ready state.

- If using Shared Signal, it can take longer to change status of machines. Systems with both RTK on the Leader and Follower changes states more quickly.

13. Display takes more than 5 sec to respond, and in some cases causes display to crash. For example, responding to button selections, page changes, or screen updates.

- Decrease display processor usage by not using unneeded applications.

(Reference Machine Sync Shared Data Compatibility for more information.)

RW00482.000052D-19-08OCT15

Diagnostic Trouble Codes—Armrest Control Unit (ACU)

Code Name	Description	Cause
ACU 000158.04	ACU Switched Supply Voltage Low	Armrest Control Unit switched supply voltage below 9.0 V.
ACU 000177.17	Engine Speed Limited Due to Cold Oil	Engine speed commanded above 1500 rpm and transmission oil temperature below 5 °C (23 °F).
ACU 000237.02	VIN Security Data Conflict	Vehicle Identification Number (VIN) from other control units is not the same.
ACU 000237.14	VIN Security Not Enabled	Vehicle Identification Number (VIN) security has not been enabled.
ACU 000237.31	VIN Security Messages Missing	Vehicle Identification Number (VIN) not received from other control units.
ACU 000581.07	Transmission Not Responding to Command	PTI not responding to armrest control unit requests.
ACU 000628.02	ACU EOL Data Fault	End-of-line memory failed at startup.
ACU 000628.12	ACU Programming	ACU control unit detects that it is in the process of updating software.
ACU 000629.11	ACU Control Unit Fault	Check of RAM memory failed at startup.
ACU 000629.12	ACU Control Unit Fault	Armrest control unit software failed to execute in allotted time.
ACU 000630.02	ACU Calibration Fault/Data Invalid	Armrest control unit invalid calibration values or failure of calibration memory.
ACU 000630.13	ACU Calibration Fault/Not Calibrated	Armrest control unit has never been calibrated or a faulty calibration was saved.
ACU 000974.02	Hand Throttle Sensor Circuit Voltage Conflict	Hand throttle sensor circuits 1 and 2 voltage conflict.
ACU 000974.03	Hand Throttle Sensor Circuit Voltage High	Hand throttle sensor circuit voltage high.

Troubleshooting

ACU 000974.04	Hand Throttle Sensor Circuit Voltage Low	Hand throttle sensor circuit voltage low.
ACU 001079.03	ACU Sensor Supply 1 Voltage High	Armrest control unit sensor supply voltage high.
ACU 001079.04	ACU Sensor Supply 1 Voltage Low	Armrest control unit sensor supply voltage low.
ACU 001080.03	ACU Sensor Supply 2 Voltage High	Armrest control unit sensor supply voltage high.
ACU 001080.04	ACU Sensor Supply 2 Voltage Low	Armrest control unit sensor supply 2 voltage low.
ACU 001504.31	Operator Not Present While AutoTrac™ Is Active	Operator presence not detected while AutoTrac™ is active.
ACU 001745.14	Startup Checks Not Complete	Operator moves reverser lever out of Park before all controllers have indicated that start up checks are complete. Vehicle motion is inhibited.
ACU 002000.09	ECU Message Missing	Armrest control unit not receiving required messages from the ECU.
ACU 002003.09	PTI or PTP Message Missing	Armrest control unit not receiving required messages from the PTI or PTP.
ACU 002019.09	XSA Message Missing	Armrest control unit not receiving required messages from the XSA.
ACU 002020.09	SFA Message Missing	Armrest control unit not receiving required messages from the SFA.
ACU 002049.09	CAB Message Missing	Armrest control unit not receiving required messages from CAB.
ACU 004310.09	Vehicle Automation Communication Fault	Armrest control unit not receiving required messages from implement. Return to Park and verify implement connections to attempt vehicle system recovery.
ACU 004310.11	Vehicle Automation Fault	Vehicle speed automation aborted due to stop message. Restart engine to attempt vehicle system recovery.
ACU 004310.14	Operator Not Present During Vehicle Automation	Operator presence not detected during vehicle speed automation. Restart engine to attempt vehicle system recovery.
ACU 520283.14	Automation Suspend State	Vehicle Speed Automation is active while reverser is in Park position.
ACU 522149.14	Wheel Speed Limited	A speed limiting condition is active. Restart engine for recovery.
ACU 522149.31	Wheel Speed Limited	A speed limiting condition is inactive. Reduce commanded speed by changing set speed or drive lever position, or move reverser to park or neutral for recovery.
ACU 522189.02	iTEC™ Sequence 3/4 Switch Circuit Conflict	Contacts on iTEC™ switch to select sequence 3/4 disagree.
ACU 522189.03	iTEC™ Sequence 3/4 Switch Circuits Voltage High	All three iTEC™ sequence 3/4 switch inputs are high.
ACU 522189.04	iTEC™ Sequence 3/4 Switch Circuits Voltage Low	All three iTEC™ sequence 3/4 switch inputs are low.
ACU 522388.09	Implement Communication Fault	Armrest control unit not receiving required messages from implement. Return to Park and verify implement connections to attempt vehicle system recovery.
ACU 522390.09	Implement Communication Fault	Armrest control unit not receiving required messages from implement. Return to Park and verify implement connections to attempt vehicle system recovery.
ACU 522390.11	Vehicle Automation Fault	Vehicle speed automation aborted due to stop message. Restart engine to attempt vehicle system recovery.
ACU 523664.02	Speed Band 1 and 2 Switches Conflict	Speed band 1 and 2 switches are reading same value.
ACU 523923.02	SCV I Control Lever Switch/Sensor Conflict	SCV I control lever switch and sensor voltage conflict.
ACU 523923.03	SCV I Control Lever Sensor Circuit Voltage High	SCV I control lever sensor voltage high.
ACU 523923.04	SCV I Control Lever Sensor Circuit Voltage Low	SCV I control lever sensor voltage below 0.5V.
ACU 523953.02	AutoPowr™/IVT Speed Control Lever Sensor Circuit Conflict	Speed control lever sensor voltages 1 and 2 conflict.
ACU 523953.03	AutoPowr™/IVT Speed Control Lever Sensor Voltage High	Speed control lever sensor voltage high.
ACU 523953.04	AutoPowr™/IVT Speed Control Lever Sensor Voltage Low	AutoPowr™/IVT speed control lever sensor circuit voltage low.
ACU 523954.07	Speed Band 1 Adjustment Fault	Calibration for speed band 1 not valid.
ACU 523954.11	Set Speed Adjuster Conflict	Set speed adjuster circuit voltage conflict.
ACU 523955.31	Engine Overload In Manual Mode	Engine load too high in manual mode.
ACU 523960.17	Operator Not Present At Low Speeds	Operator presence not detected at low speeds.
ACU 523960.31	Operator Not Seated During Reverser Command	Operator not present and direction commanded.
ACU 523961.02	Park Engaged While In Gear	Park on while vehicle is in gear.

Troubleshooting

ACU 523961.07	Park Lock Engagement Fault	Park state does not match the desired state.
ACU 523962.31	MFWD Speed Incorrect (AutoPowr™/IVT only)	MFWD speed invalid.
ACU 523963.02	Speed Band 1 Switch/Voltage Conflict	Speed band 1 switch does not match analog voltage.
ACU 523966.31	Transmission Come Home Mode	Transmission come home mode enabled.
ACU 523967.02	Speed Band 2 Switch/Voltage Conflict	Speed band 2 switch does not match analog voltage.
ACU 523968.02	iTEC™ 1/2 Switch Circuit Conflict	iTEC™ 1/2 switch circuits disagree.
ACU 523968.03	iTEC™ 1/2 Switch Circuits Voltage High	All three iTEC™ 1/2 switch inputs are high.
ACU 523968.04	iTEC™ 1/2 Switch Circuits Voltage Low	All three iTEC™ 1/2 switch inputs are low.
ACU 524017.31	Neutral Switch or Forward Slot Voltage Out Of Range	Switch does not clearly indicate a closed or open position.
ACU 524018.31	RHR Neutral/Park Transition Fault	Lever position transition too long.
ACU 524019.31	RHR Neutral/NotNeutral Transition Fault	Lever position transition longer than 5 seconds.
ACU 524020.31	Transmission In Gear at Power Up	RHR not in PARK at power up.
ACU 524021.31	Multiple Reverser Switches Conflict	One or more reverser lever switches have failed.
ACU 524101.02	Front Hitch Control Lever Switch/Sensor Circuit Conflict	Front hitch control lever switch conflicts with sensor voltage.
ACU 524101.03	Front Hitch Control Lever Sensor Circuit Voltage High	Front hitch control lever sensor circuit voltage high.
ACU 524101.04	Front Hitch Control Lever Sensor Circuit Voltage Low	Front hitch control lever sensor circuit voltage low.
ACU 524102.02	SCV V Control Lever Switch/Sensor Circuit Conflict	SCV V control lever switch conflicts with sensor voltage.
ACU 524102.03	SCV V Control Lever Sensor Circuit Voltage High	SCV V control lever sensor circuit voltage high.
ACU 524102.04	SCV V Control Lever Sensor Circuit Voltage Low	SCV V control lever sensor circuit voltage low.
ACU 524103.02	SCV IV Control Lever Switch/Sensor Circuit Conflict	SCV IV control lever switch conflicts with sensor voltage.
ACU 524103.03	SCV IV Control Lever Sensor Circuit Voltage High	SCV IV control lever sensor circuit voltage high.
ACU 524103.04	SCV IV Control Lever Sensor Circuit Voltage Low	SCV IV control lever sensor circuit voltage low.
ACU 524104.02	SCV III Control Lever Switch/Sensor Circuit Conflict	SCV III control lever switch conflicts with sensor voltage.
ACU 524104.03	SCV III Control Lever Sensor Circuit Voltage High	SCV III control lever sensor circuit voltage high.
ACU 524104.04	SCV III Control Lever Sensor Circuit Voltage Low	SCV III control lever sensor circuit voltage low.
ACU 524105.02	SCV II Control Lever Switch/Sensor Circuit Conflict	SCV II control lever switch conflicts with sensor voltage.
ACU 524105.03	SCV II Control Lever Sensor Circuit Voltage High	SCV II control lever sensor circuit voltage high.
ACU 524105.04	SCV II Control Lever Sensor Circuit Voltage Low	SCV II control lever sensor circuit voltage low.
ACU 524212.02	Rear Hitch Control Lever Switch/Sensor Circuit Conflict	Rear hitch control lever switch conflicts with sensor voltage.
ACU 524212.03	Rear Hitch Control Lever Sensor Circuit Voltage High	Rear hitch control lever sensor circuit voltage high.
ACU 524212.04	Rear Hitch Control Lever Sensor Circuit Voltage Low	Rear hitch control lever sensor circuit voltage low.
ACU 524222.02	Resume Switch Circuit Conflict	Resume switch ON and OFF shows same value.
ACU 524224.02	Rear PTO Switch Circuit Conflict	Rear PTO switch ON and OFF shows the same value.
ACU 524254.31	Transmission Enable Circuit Fault	Transmission enable circuit voltage incorrect.

Diagnostic Trouble Codes—Cab Load Center (CLC)

Code Name	Description	Cause
CLC 000158.00	CLC Switched Supply Voltage High	Cab Load Center (CLC) switched supply voltage is above 15.5 V while engine speed is above 512 rpm.
CLC 000158.01	CLC Switched Supply Voltage Low	Cab Load Center (CLC) switched supply voltage is below 12.5 V while engine speed is above 1500 rpm.
CLC 000158.17	CLC Switched Supply Voltage Low With Engine Off	Cab Load Center (CLC) switched supply voltage is below 11.2 V while engine speed is below 512 rpm.
CLC 000158.18	CLC Switched Supply Voltage Low With Engine Below 1500 RPM	Cab Load Center (CLC) switched supply voltage is below 11.2 V while engine speed is below 1500 rpm and above 512 rpm.
CLC 000628.02	CLC EOL Data Fault	Cab Load Center (CLC) memory has been corrupted.
CLC 000629.12	CLC Control Unit Fault	Cab Load Center (CLC) software failed to execute in allotted time.
CLC 001079.03	CLC Sensor Supply Voltage High	Cab Load Center (CLC) sensor supply voltage is above 5.25 V.
CLC 001079.04	CLC Sensor Supply Voltage Low	Cab Load Center (CLC) sensor supply voltage is below 4.80 V.
CLC 002050.06	CLC Circuit Current High	Cab Load Center (CLC) control unit detects that the entire load current on control units is above 130 amps while the circuit board temperature is below 115 °C (239 °F) or above 100 amps while the circuit board temperature is above 115 °C (239 °F), for longer than 2 seconds.
CLC 002362.05	Rear Roof Flood Lights Circuit Current Low	Cab Load Center (CLC) control unit detects that the left/right rear roof flood lights circuit is open.
CLC 002362.06	Rear Roof Flood Lights Circuit Current High	Cab Load Center (CLC) control unit detects that the left or right rear roof flood lights circuit current exceeds fuse rating of 7 amps.
CLC 002364.05	MidBody Flood Lights Circuit Current Low	Cab Load Center (CLC) control unit detects that the left or right midbody flood lights circuit is open. Attention: Open circuit is indicated by current being below 500 milliamperes (0.5 amps).
CLC 002364.06	MidBody Flood Lights Circuit Current High	Cab Load Center (CLC) control unit detects that the left or right midbody flood lights circuit current exceeds fuse rating of 7 amps.
CLC 002366.05	Front Side Roof Flood Lights Circuit Current Low	Cab Load Center (CLC) control unit detects that the front left or right side roof flood lights circuit is open.
CLC 002366.06	Front Side Roof Flood Lights Circuit Current High	Cab Load Center (CLC) control unit detects that the front left or right side roof flood lights circuit current exceeds fuse rating of 7 amps.
CLC 002368.05	Left Turn Signal Lights Circuit Current Low	Cab Load Center (CLC) control unit detects that the left turn signal light circuits are open.
CLC 002368.06	Left Turn Signal Lights Circuit Current High	Cab Load Center (CLC) control unit detects that the left fender turn signal light or left roof warning lights circuit current exceeds fuse rating of 7 amps.
CLC 002370.05	Right Turn Signal Lights Circuit Current Low	Cab Load Center (CLC) control unit detects that the right fender turn signal light or the right roof warning light circuit is open.
CLC 002370.06	Right Turn Signal Lights Circuit Current High	Cab Load Center (CLC) control unit detects that the right fender turn signal light or right roof warning lights circuit current exceeds fuse rating of 7 amps.
CLC 002372.05	Brake Lights Circuit Current Low	Cab Load Center (CLC) control unit detects that the brake lights circuit is open.
CLC 002372.06	Brake Lights Circuit Current High	Cab Load Center (CLC) control unit detects that the brake light circuit current exceeds fuse rating of 12 amps.
CLC 002378.05	Tail Light Circuit Current Low	Cab Load Center (CLC) control unit detects that the left or right tail light circuit is open.
CLC 002378.06	Tail Lights Circuit Current High	Cab Load Center (CLC) control unit detects that the left or right tail light circuit current exceeds fuse rating of 7 amps.
CLC 002598.05	Rear Side Roof Light Circuit Current Low	Cab Load Center (CLC) control unit detects that the rear left or right side roof flood lights circuit is open.
CLC 002598.06	Rear Side Roof Light Circuit Current High	Cab Load Center (CLC) control unit detects that the rear left or right side roof flood lights circuit current exceeds 7 amps.
CLC 002863.02	Front Wiper Switch Circuit Fault	Cab Load Center (CLC) control unit detects that two of the front wiper switch inputs (low, high, or intermittent) are active at the same time, for longer than 0.5 seconds.
CLC 002865.02	Rear Wiper Switch Circuit Fault	Cab Load Center (CLC) control unit detects that the rear wiper switch is commanded on while off or commanded off while on, for longer than 0.5 seconds.
CLC 002872.02	Road Light Switch Circuit Fault	Cab Load Center (CLC) control unit detects an invalid road light switch status (headlight command active without one of the other switch commands, or headlight command active with two or more of the other switch commands, or one or more switch commands active without the headlight command).
CLC 522310.05	ELX Output 1 Circuit Current Low	Cab Load Center (CLC) control unit detects that the ELX output 1 circuit is open.

Troubleshooting

CLC 522310.06	ELX Output 1 Circuit Current High	Cab Load Center (CLC) control unit detects that the ELX output 1 circuit current exceeds fuse rating of 12 amps.
CLC 522427.04	Front Wiper Motor Park input Circuit Broken	Cab Load Center (CLC) control unit detects that the feedback input from the front wiper motor that indicates the position of the wiper blade or "park" position is missing. This input will read 12V when the wiper blade has not yet completed a cycle, and will read 0V when the blade has returned to the starting position.
CLC 522433.06	Rear Wiper Motor Circuit Current High	Cab Load Center (CLC) control unit detects that the rear wiper motor circuit current exceeds fuse rating of 7 amps.
CLC 522434.06	Front Wiper Motor Low Speed Circuit Current High	Cab Load Center (CLC) control unit detects that the front wiper motor low speed circuit current exceeds fuse rating of 7 amps.
CLC 522435.06	Front Wiper Motor High Speed Circuit Current High	Cab Load Center (CLC) control unit detects that the front wiper motor high speed circuit current exceeds fuse rating of 7 amps.
CLC 524016.05	CAN Wakeup Circuit Current Low	Cab Load Center (CLC) control unit detects that its wakeup output circuit is open.
CLC 524016.06	CAN Wakeup Circuit Current High	Cab Load Center (CLC) control unit detects that its wakeup output circuit current exceeds fuse rating of 7 amps.
CLC 524259.00	CLC Temperature Above 115 Degrees Celsius	Cab Load Center (CLC) control unit detects that its own circuit board temperature is above 115 °C (239 °F), for longer than 2 seconds.
CLC 524259.15	CLC Temperature Above 85 Degrees Celsius	Cab Load Center (CLC) control unit detects that its own circuit board temperature is above 85 °C (185 °F), for longer than 2 seconds.
CLC 524259.16	CLC Temperature Above 100 Degrees Celsius	Cab Load Center (CLC) control unit detects that its own circuit board temperature is above 100 °C (212 °F), for longer than 2 seconds.

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Wired Network Connection Lost	
Wired Network Connection	60A-4
Wireless Network Connection Lost	
Wireless Network	60A-4
Wireless Status	60A-1

John Deere Service Literature Available

Technical Information

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

Orders can be made using one of the following:

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

Available information includes:



TS189—UN—17JAN89

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.



TS191—UN—02DEC88

OPERATOR'S MANUALS providing safety, operating, maintenance, and service information.



TS224—UN—17JAN89

TECHNICAL MANUALS outlining service information for your machine. Included are specifications, illustrated assembly and disassembly procedures, hydraulic oil flow diagrams, and wiring diagrams. Some products have separate manuals for repair and diagnostic information. Some components, such as engines, are available in a separate component technical manual.



TS1663—UN—10OCT97

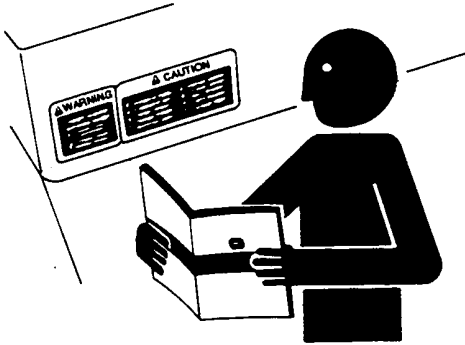
EDUCATIONAL CURRICULUM including five comprehensive series of books detailing basic information regardless of manufacturer:

- Agricultural Primer series covers technology in farming and ranching.
- Farm Business Management series examines “real-world” problems and offers practical solutions in the areas of marketing, financing, equipment selection, and compliance.
- Fundamentals of Services manuals show you how to repair and maintain off-road equipment.
- Fundamentals of Machine Operation manuals explain machine capacities and adjustments, how to improve machine performance, and how to eliminate unnecessary field operations.
- Fundamentals of Compact Equipment manuals provide instruction in servicing and maintaining equipment up to 40 PTO horsepower.

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John Deere Service Keeps You On The Job

John Deere Is At Your Service



TS201—UN—15APR13

CUSTOMER SATISFACTION is important to John Deere.

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

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

CUSTOMER SATISFACTION PROBLEM RESOLUTION PROCESS

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

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

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

2. Discuss problem with dealer service manager.

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

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

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