SeedStar™ 2 and SeedStar™ XP Monitor for Planters

OPERATOR'S MANUAL

SeedStar™ 2 and SeedStar™ XP Monitor for Planters

OMA102656 ISSUE J4 (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 Seeding Group
North American Edition

PRINTED IN U.S.A.

Introduction

Foreword

READ THIS MANUAL carefully to avoid personal injury or equipment damage. Learn how to operate and service the machine correctly. If desired, see your John Deere dealer to determine if this manual and safety signs on the machine are available in other languages.

CONSIDER THIS MANUAL a permanent part of the machine and include the manuals with the machine when sold.

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 require a specific metric or inch wrench.

RIGHT-HAND AND LEFT-HAND sides are determined by facing the direction the implement travels when moving forward.

WRITE PRODUCT IDENTIFICATION NUMBERS (P.I.N.) in the Specification section. Accurately record all the numbers to help trace the machine if stolen. Your dealer also needs these numbers to order parts. File the identification numbers in a secure place away from machine.

OUO6074,0001041 -19-03OCT07-1/1

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Original Instructions. All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

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Monitor's

A71621 —UN—20MAY11

GreenStar™ 2630 Touch Screen Monitor

A61842 —UN—22JAN08

GreenStar™ 2100 and GreenStar™ 2600 Touch Screen Monitor

A61843 —UN—22JAN08

GreenStar™ 1800 Control Pad Monitor

GreenStar is a trademark of Deere & Company

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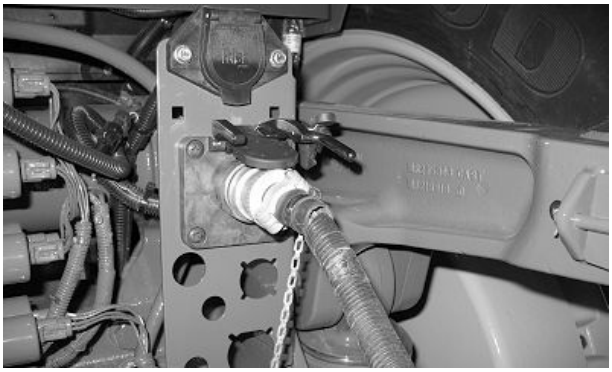
OUO6074,0000E2E -19-10OCT14-1/7

SeedStar™ 2 Seed Monitoring

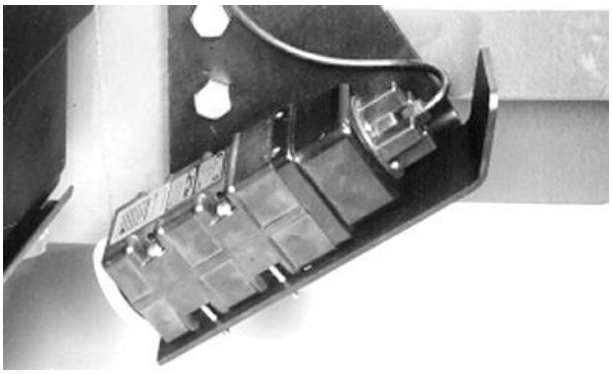


A62921 —UN—23JUL08

CAN Harness Connection

A50167 —UN—09SEP02

Planter Main 1 Controller (PM1)



A48199 —UN—26OCT01

External Radar (Optional)

A67664 —UN—11JUN10

Dual Radar

A67665 —UN—11JUN10

GPS Receiver

A67677 —UN—11JUN10

Seed Tube with Seed Sensor

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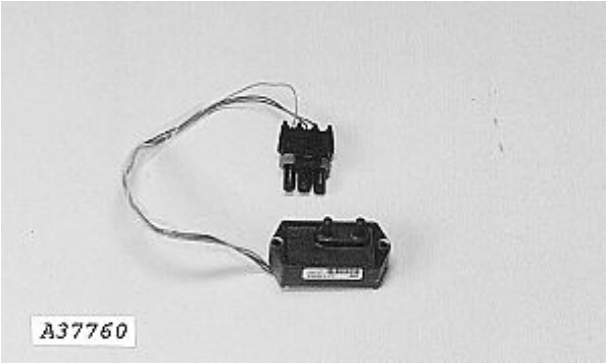
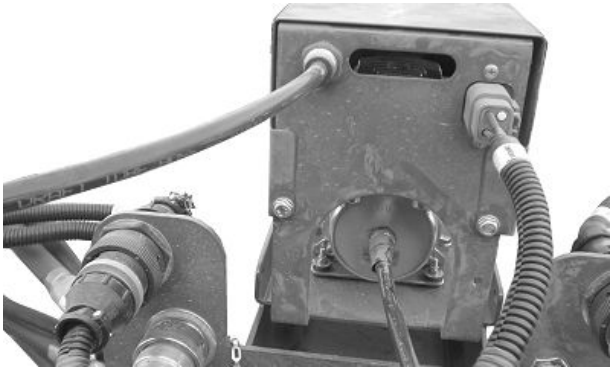
OUO6074,0000E2E -19-10OCT14-2/7



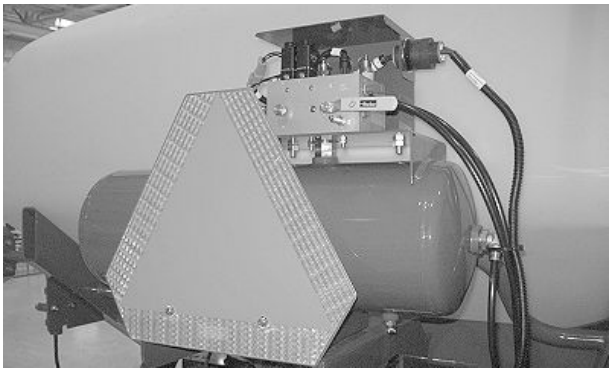
A37760 —UN—06SEP95

Vacuum Sensor



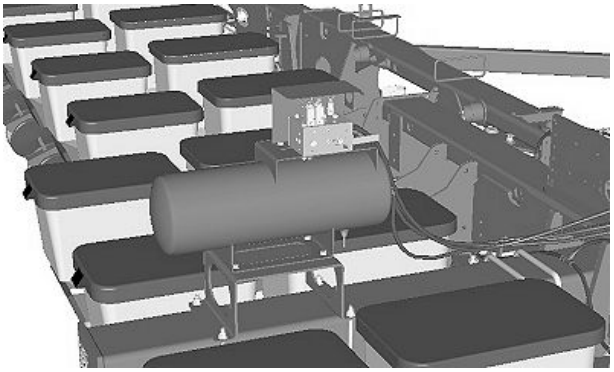
A71679 —UN—01JUN11

Air Compressor (Single Set-Point Down Force)



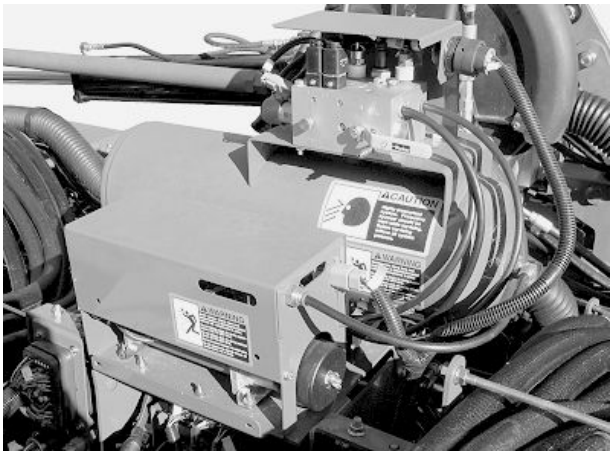
A68066 —UN—07JUL10

Pneumatic Down Force Air Tank and Solenoid Control Valve - Drawn Planters With CCS™ (Single Set-Point Down Force)



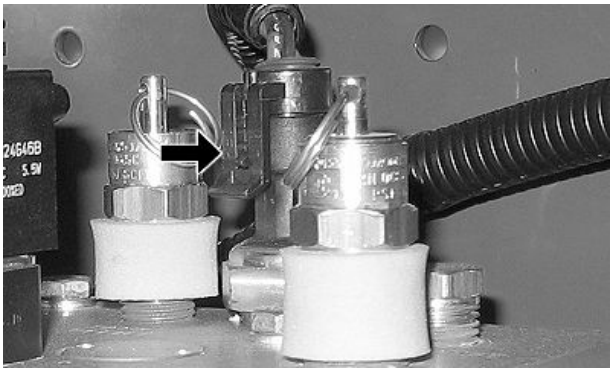
A70520 —UN—25JAN11

Pneumatic Down Force Air Tank and Solenoid Control Valve - Drawn Planters Without CCS™ (Single Set-Point Down Force)



A68994 —UN—08OCT10

Pneumatic Down Force Air Tank and Solenoid Control Valve - Integral Planters (Single Set-Point Down Force)



A67679 —UN—30JUN10

Pneumatic Down Force Pressure Sensor

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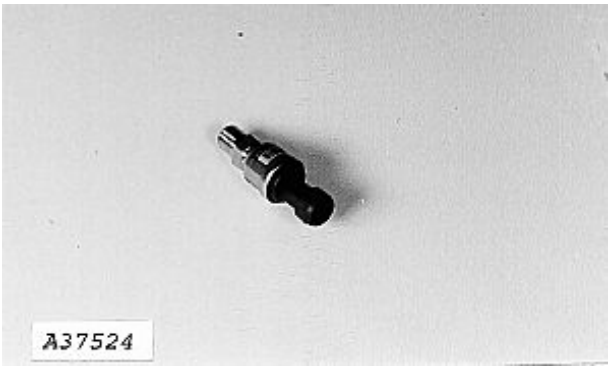
OUO6074,0000E2E -19-10OCT14-3/7



A37524 —UN—13SEP95

Fertilizer Pressure Sensor (Optional)

CCS is a trademark of Deere & Company

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OUO6074,0000E2E -19-10OCT14-4/7

SeedStar™ XP Seed Monitoring

A66613 —UN—22FEB10

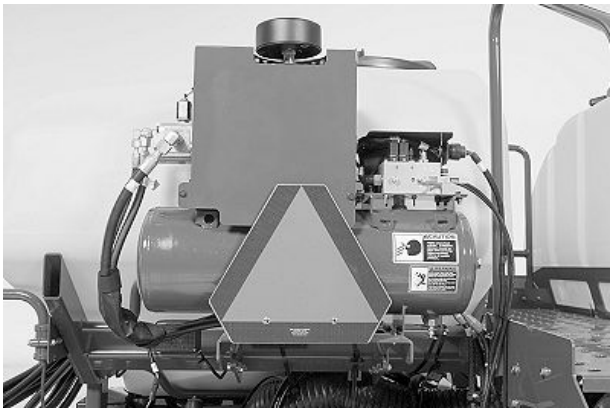
Planter Main 2 Controller

A66615 —UN—22FEB10

Ride Dynamic Sensor

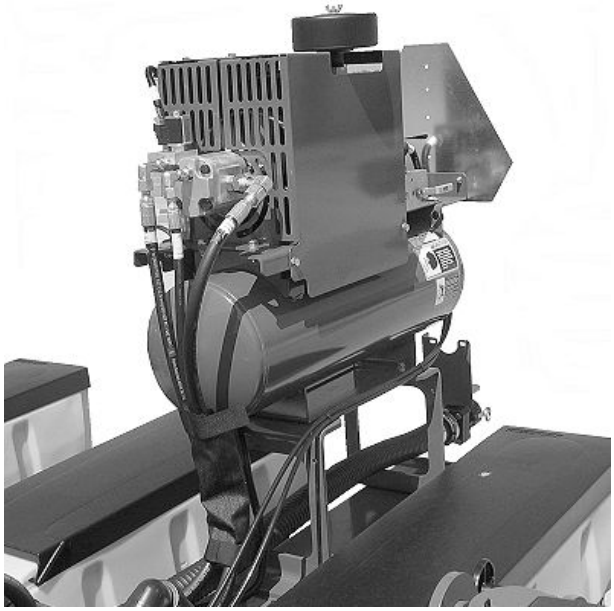
A66614 —UN—22FEB10

Gauge Wheel Down Force Sensor



A72531 —UN—12SEP11

Pneumatic Down Force Air Compressor, Air Tank, and Solenoid Control Valve - Drawn Planters With CCS™ Active Down Force)



A72532 —UN—12SEP11

Pneumatic Down Force Air Compressor, Air Tank, and Solenoid Control Valve - Drawn Planters Without CCS™ (Active Down Force)

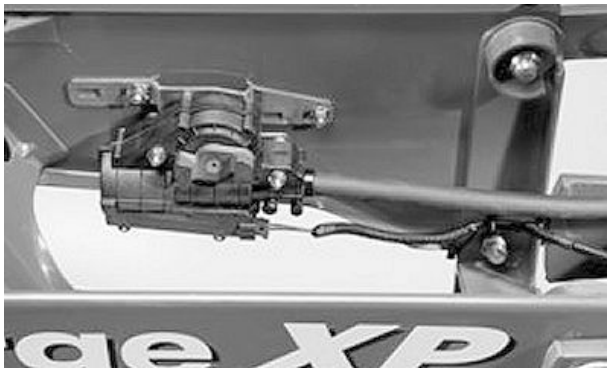
Continued on next page

OUO6074,0000E2E -19-10OCT14-5/7

RowCommand™

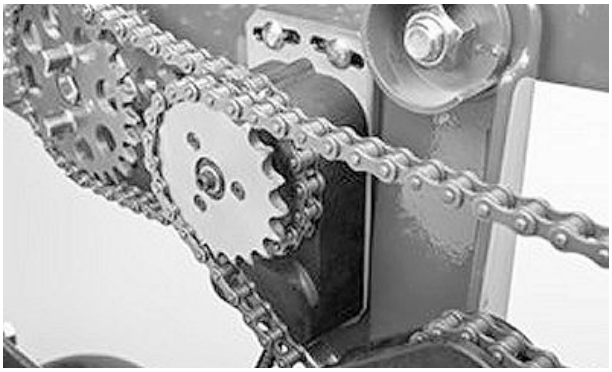
A63336 —UN—02OCT08

RowCommand™ Electronic Power Module (EPM)



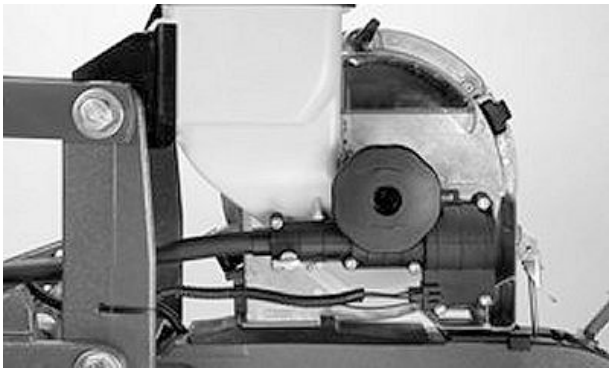
A67674 —UN—11JUN10

Pro-Shaft™ RowCommand™ Clutch



A67675 —UN—11JUN10

Chain Driven RowCommand™ Clutch



A67676 —UN—11JUN10

Pro-Shaft™ RowCommand™ Clutch

RowCommand is a trademark of Deere & Company
Pro-Shaft is a trademark of Deere & Company

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OUO6074,0000E2E -19-10OCT14-6/7

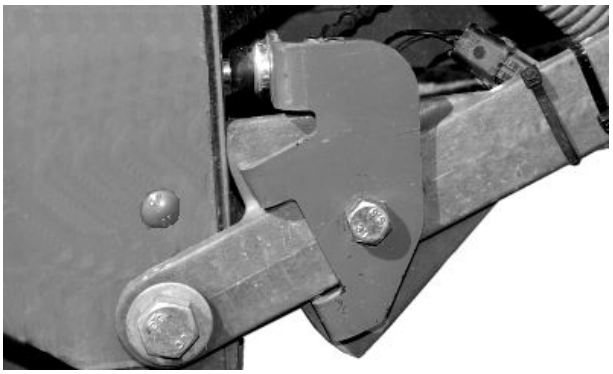
Variable Rate Drive

A44950 —UN—17JUL98

Variable Rate Drive Motor and Valve

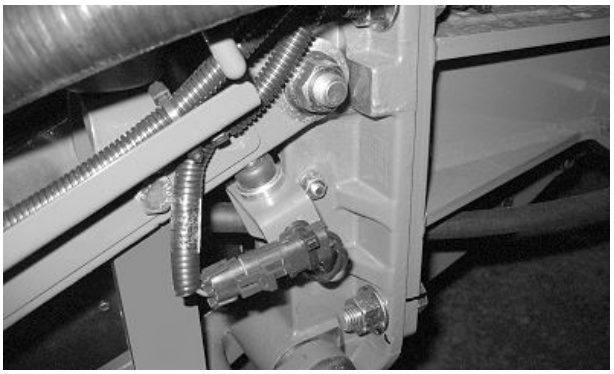
A48171 —UN—19OCT01

Variable Rate Drive Motor Speed Sensor



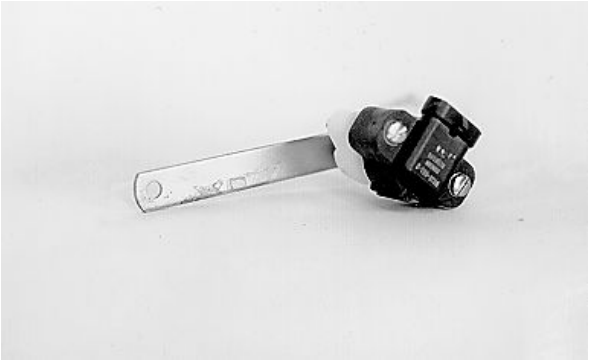
A48170 —UN—19OCT01

Parallel Arm Height Switch for Most Integral Planters



A69030 —UN—12OCT10

Parallel Arm Height Switch for Twin Row Integral Planters



A45210 —UN—27NOV98

Height Sensor for Drawn Planters

A44952 —UN—17JUL98

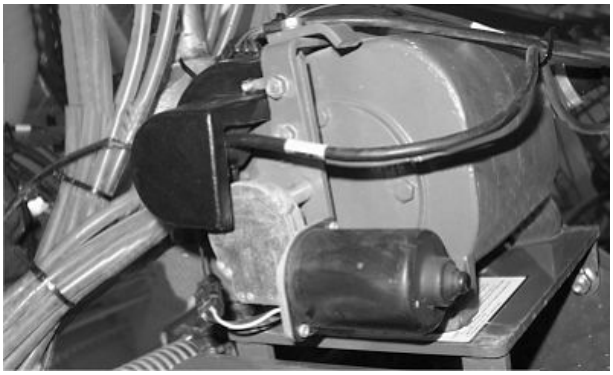
Variable Rate Drive Wheel Motion Sensor

OUO6074,0000E2E -19-10OCT14-7/7

Variable Rate Fertilizer

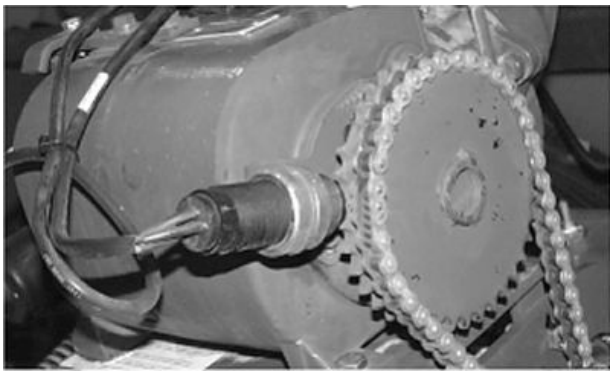
A68007 —UN—20JUL10

Variable Rate Fertilizer Controller



A67690 —UN—11JUN10

Variable Rate Fertilizer Pump Displacement Actuator and Sensor



A67691 —UN—11JUN10

Variable Rate Fertilizer Sprocket Speed Sensor

OUO6074,0000E2E -19-10OCT14-8/7

Safety

Recognize Safety Information

This is a safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.

T81389 —UN—28JUN13

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

Understand Signal Words

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

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

TS187 —19—30SEP88

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

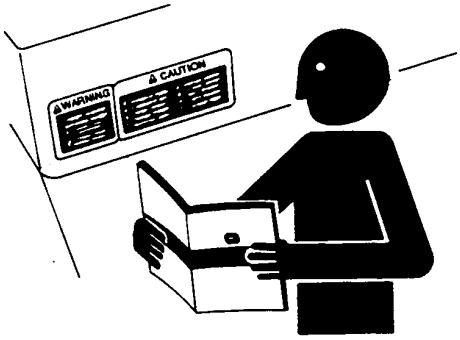
Follow Safety Instructions

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

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

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

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



TS201 —UN—15APR13

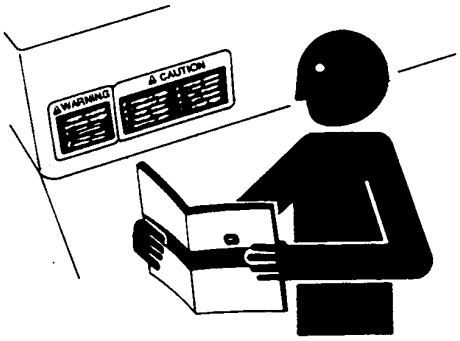
If you do not understand any part of this manual and need assistance, contact your John Deere dealer.

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

Replace Safety Signs

Replace missing or damaged safety signs. Use this operator's manual for correct safety sign placement.

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



TS201 —UN—15APR13

DX,SIGNS -19-18AUG09-1/1

Prevent Machine Runaway

Avoid possible injury or death from machinery runaway.

Do not start engine by shorting across starter terminals. Machine will start in gear if normal circuitry is bypassed.

NEVER start engine while standing on ground. Start engine only from operator's seat, with transmission in neutral or park.

TS177 —UN—11JAN89

DX,BYPAS1 -19-29SEP98-1/1

Avoid High-Pressure Fluids

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

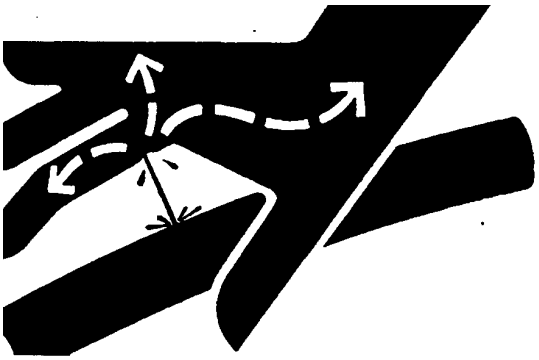
Replace worn or damaged hose assemblies immediately with John Deere approved replacement parts.

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

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

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

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available in English from Deere & Company Medical Department in Moline, Illinois, U.S.A., by calling 1-800-822-8262 or +1 309-748-5636.



X9811 —UN—23AUG88

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

Prevent Battery Explosions

Keep sparks, lighted matches, and open flame away from the top of battery. Battery gas can explode.

Never check battery charge by placing a metal object across the posts. Use a volt-meter or hydrometer.

Do not charge a frozen battery; it may explode. Warm battery to 16°C (60°F).

TS204 —UN—15APR13

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

Welding Near Electronic Control Units

IMPORTANT: Do not jump-start engines with arc welding equipment. Currents and voltages are too high and may cause permanent damage.

1. Disconnect the negative (-) battery cable(s).
2. Disconnect the positive (+) battery cable(s).
3. Connect the positive and negative cables together. Do not attach to vehicle frame.
4. Clear or move any wiring harness sections away from welding area.
5. Connect welder ground close to welding point and away from control units.

TS953 —UN—15MAY90

6. After welding, reverse Steps 1—5.

DX,WW,ECU02 -19-14AUG09-1/1

Keep Electronic Control Unit Connectors Clean

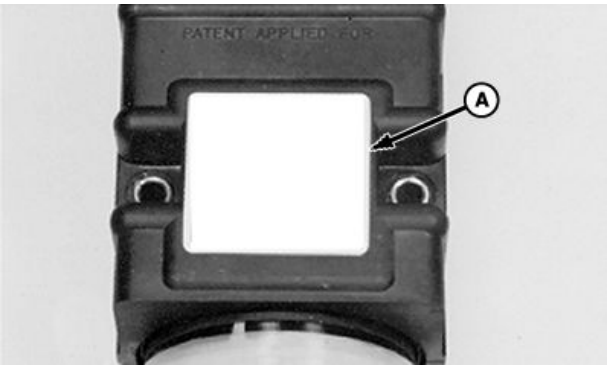
IMPORTANT: Do not open control unit and do not clean with a high-pressure spray. Moisture, dirt, and other contaminants may cause permanent damage.

1. Keep terminals clean and free of foreign debris. Moisture, dirt, and other contaminants may cause the terminals to erode over time and not make a good electrical connection.
2. If a connector is not in use, put on the proper dust cap or an appropriate seal to protect it from foreign debris and moisture.
3. Control units are not repairable.
4. Since control units are the components LEAST likely to fail, isolate failure before replacing by completing a diagnostic procedure. (See your John Deere dealer.)
5. The wiring harness terminals and connectors for electronic control units are repairable.

DX,WW,ECU04 -19-11JUN09-1/1

Safety Signs

A—Warning: To avoid possible eye damage from microwave signals emitted by this radar sensor, DO NOT look directly into sensor face.



A68532 —UN—02AUG10

External Radar (Optional)

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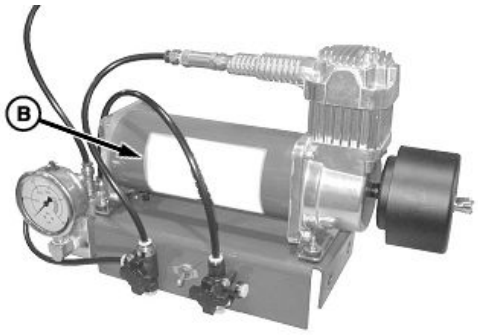
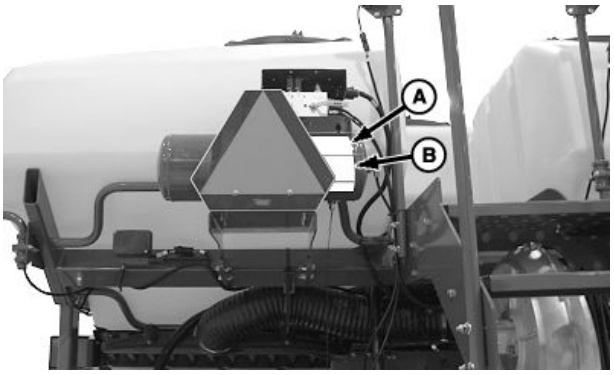
OUO6074,0000C0E -19-24APR12-1/3



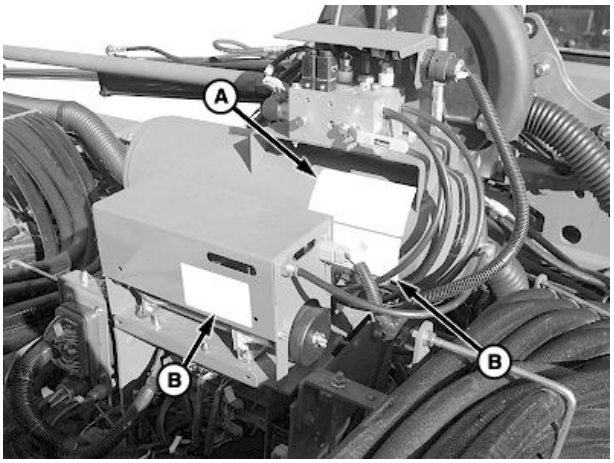
A70521 —UN—25JAN11

Pneumatic Down Force Compressor (SeedStar™ 2 Without On-Screen PDF Control)



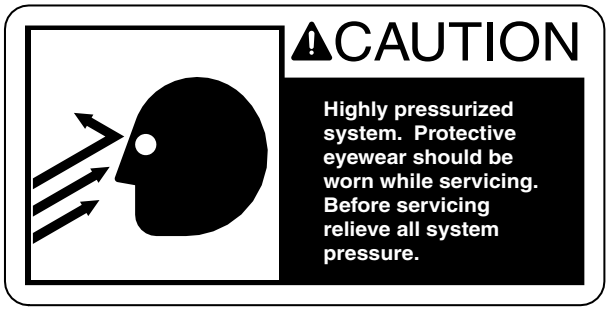
A67775 —UN—17JUN10

Pneumatic Down Force Air Tank - Drawn Planters (Single Set-Point Down Force)



A68927 —UN—30SEP10

Pneumatic Down Force Air Tank - Integral Planters (Single Set-Point Down Force)



SSA89518 —19—14JUN10

A—Caution

SSA90364 —19—02JUL10

B—Warning

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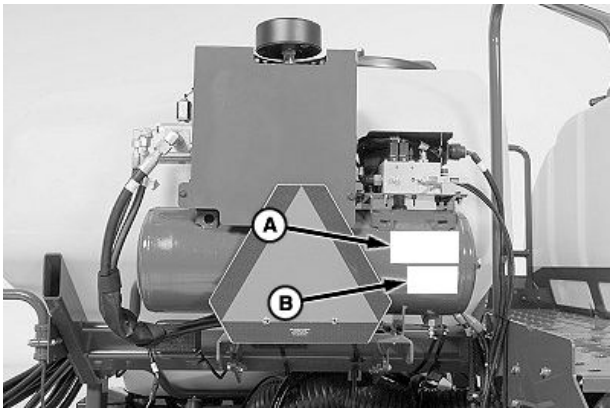
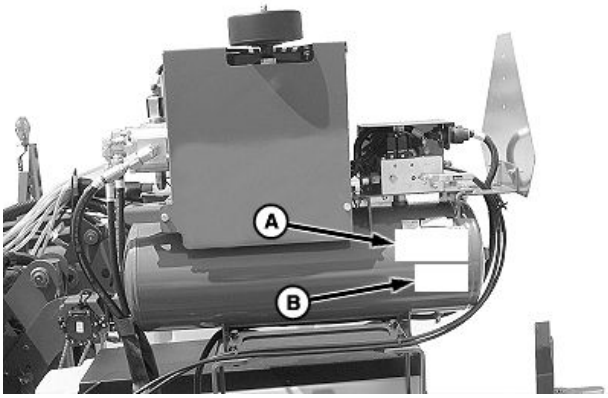
OUO6074,0000C0E -19-24APR12-2/3



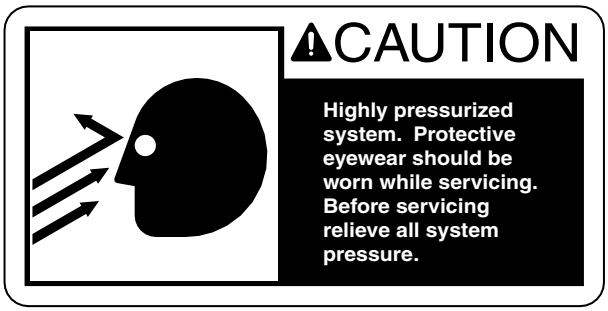
A72535 —UN—12SEP11

Pneumatic Down Force Air Compressor and Air Tank - With CCS (Active Down Force)



A72536 —UN—12SEP11

Pneumatic Down Force Air Compressor and Air Tank - Without CCS (Active Down Force)



SSA89518 —19—14JUN10

A—Caution

SSA90364 —19—02JUL10

B—Warning

OUO6074,0000C0E -19-24APR12-3/3

Use with GreenStar™ Monitors

The information presented in this manual describes how to use John Deere™ displays. Learning Seedstar is best accomplished when the display is connected to an operational system.

A61843 —UN—22JAN08

Control Pad Monitor

A71621 —UN—20MAY11

GreenStar™ 2630 Touch Screen Monitor

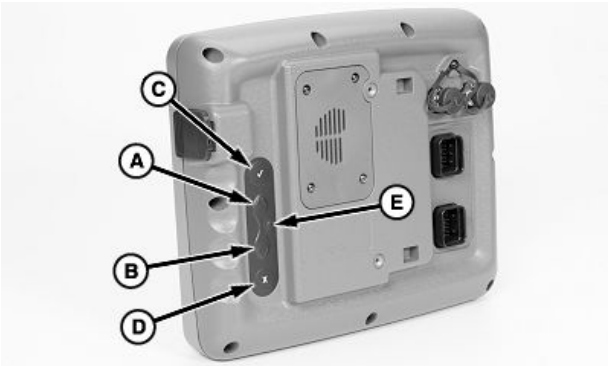
John Deere is a trademark of Deere & Company

LD45720,00004D1 -19-12NOV12-1/1

Monitor Controls

A71621 —UN—20MAY11

GreenStar™ 2630 Touch Screen Monitor



A71622 —UN—20MAY11

GreenStar™ 2630 Touch Screen Monitor

A—Up Arrow
B—Down Arrow
C—Check Mark
D—Clear or Cancel
E—Reset

With the touchscreen monitor, touch the screen over the image of the item to activate. The following pages describe the types of items that are selectable.

If the touchscreen malfunctions or if fingers are greasy or dirty, use manual control on back of monitor. Use the up arrow (A) and down arrow (B) to toggle through the screen selections. Use the check mark (C) to select a highlighted selection on the screen. Use the X (D) to clear a selection or cancel an entry. If the screen fails to respond, hold the reset (E) until monitor restarts.

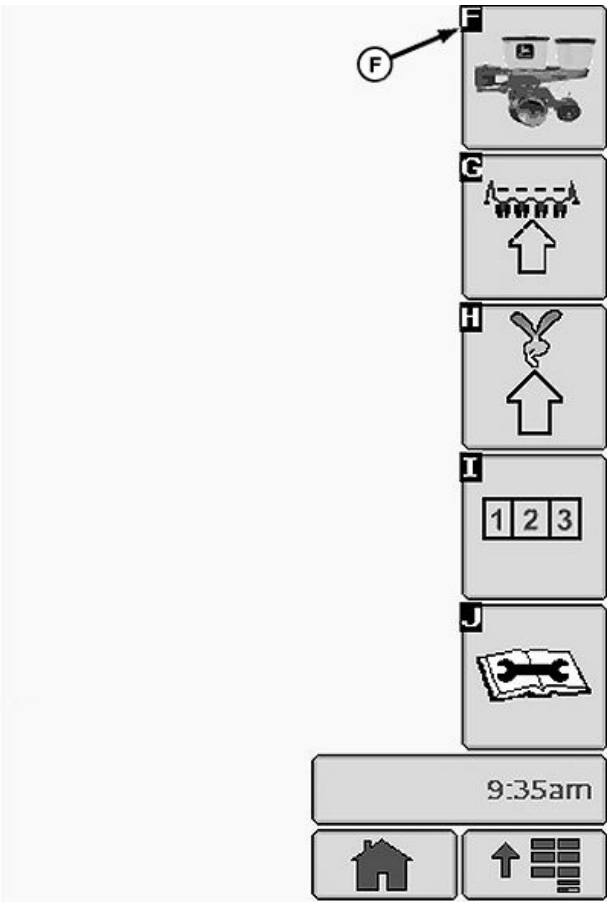
Continued on next page

OUO6064,00004CF -19-12NOV12-1/2

With the control pad monitor, use the thumbwheel (A) to scroll through selectable items on screen. Each item highlights as the wheel is turned. Use the enter button (B) to activate a highlighted item. Use the cancel button (C) to cancel the previous action. Use the menu button (D) to return to the main menu screen. Use the home button (E) to return to the home screen. Use the quick selection buttons (F) to select an item, with the same letter on screen, without using the thumbwheel to highlight the item first.

A—Thumbwheel
B—Enter
C—Cancel
D—Menu
E—Home
F—Quick Select Buttons

A62351 —UN—29MAR08



A62354 —UN—29MAR08

OUO6064,00004CF -19-12NOV12-2/2

Monitor Power Up and Power Down

Upon power up, wait for display to detect data from implement control unit and adjust screens before working with display.

If the last programmed home page is for an implement not currently connected to tractor, the monitor defaults to Layout Manager screen.

IMPORTANT: Avoid data loss. Do not cycle power quickly. Wait 30 seconds after power down before data card is removed or before another power up.

If power is cycled too quickly data loss is possible. Upon power down, wait for power light on monitor to go out and wait an additional 30 seconds before another power up.

OUO6074,0000FA4 -19-24OCT08-1/1

Virtual Terminal Displays

When using only the John Deere Tractor CommandCenter™ to display planter monitor:

1. Turn on key power and allow the application to load. Select Main menu, then select Display (button I).
2. Select Settings button (button J), then select the Multiple Displays button (button H)
3. On the multiple displays setup page, check the box next to “Implement Bus Virtual Terminal” to allow the CommandCenter to communicate on the Implement Bus.
4. Once this box is checked, turn off key power, allowing the display to save the changes.
5. Turn of key power, allow application to load, and press the main menu button. Allow main menu to be displayed on the screen for several seconds. An hour glass flash indicates that the planter software is loading on the display. After the hour glass flash, the planter icon appears on the main menu.

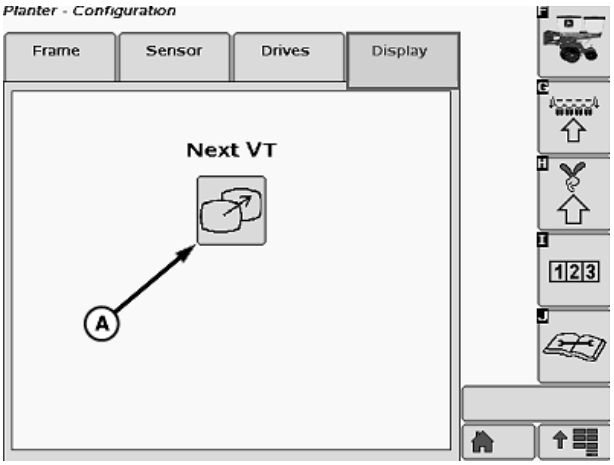
When using the John Deere Tractor CommandCenter™ display and an additional GreenStar™ display:

1. Turn on key power and allow both displays to load. Select Menu on the CommandCenter, then select Display icon (button I).
2. Select Settings button (button J), then select the Multiple Displays button (button H)
3. For SeedStar™ to communicate with the GreenStar™ display. On the Multiple Displays setup page, make sure “Implement Bus Virtual Terminal” box is not checked.
4. Turn off key power to save changes.
5. Turn on key power, allow application to load, select Menu on GreenStar™ display. Allow menu to be displayed on the screen for several seconds. An hour glass flash indicates that the planter software is loading on the display. After the hour glass flash, the planter icon appears on the main menu.

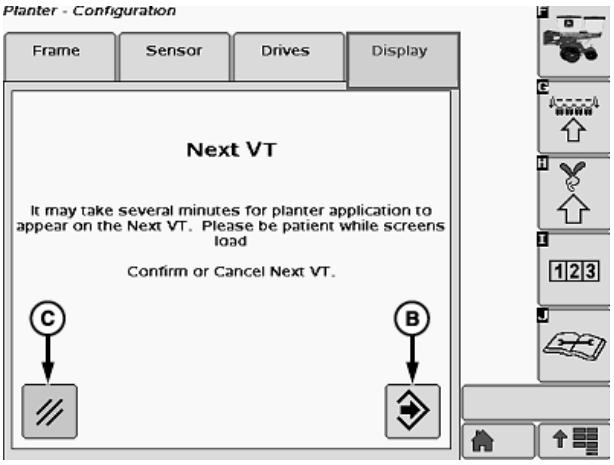
To move planter application from one display to another:

1. With tractor power off, ensure GreenStar™ monitor (2630, 2600, or 1800) is connected to tractor corner post.
2. Make sure that all electrical connections have been made between tractor and planter.
3. Turn on key power. Allow both CommandCenter™ display and GreenStar™ to load. Select main menu button on CommandCenter™ display and select the planter application.

   NOTE: The Display tab only appears if two or more ISO compatible displays are on the implement CAN bus. Next VT feature is not available when actively planting.



A68119 —UN—13JUL10



A68120 —UN—13JUL10

A—Next VT (Next Virtual Terminal)
B—Confirm
C—Cancel

4. Once on planter home page, select Planter Setup button (button G). Select Display tab.
5. Select “Next VT” button (A) (this stands for Next Virtual Terminal) to move planter information to the GreenStar™ display.
6. Select Confirm (B) or Cancel (C). Controller will restart.

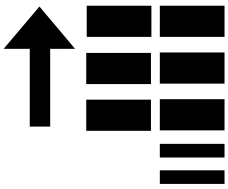
NOTE: Depending on display configuration it can take up to 255 seconds for planter application to appear on desired display.

OUO6064,00004D0 -19-20MAY11-1/1

Standard Buttons

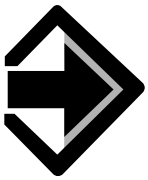
Become familiar with these buttons. These buttons have standard functions and are used periodically throughout the screens.

- **Primary Menu:** Displays primary menu showing buttons for various functions.
- **Enter:** Enter a value or selection into memory. Continue to next step of procedure.
- **Cancel:** Cancels the current screen or selection.
- **Clear:** Clears a value to zero or erases a selection.
- **Previous:** Returns to previous screen or selection.
- **Back:** Moves cursor back one space.
- **Toggle:** Alternates a selection back and forth.



Primary Menu

A59325 —UN—19FEB07



Enter or Continue

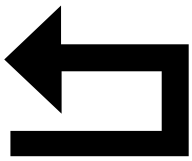
H85801 —UN—14JUN06

Cancel

H85814 —UN—14JUN06

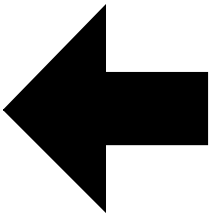
Clear

H85815 —UN—14JUN06



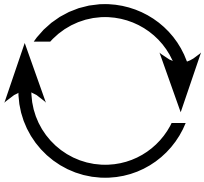
Previous

H85816 —UN—14JUN06



Back

A59323 —UN—22FEB07



Toggle

A59322 —UN—19FEB07

OUO6074,0000FA6 -19-16OCT08-1/1

Input Entry Methods

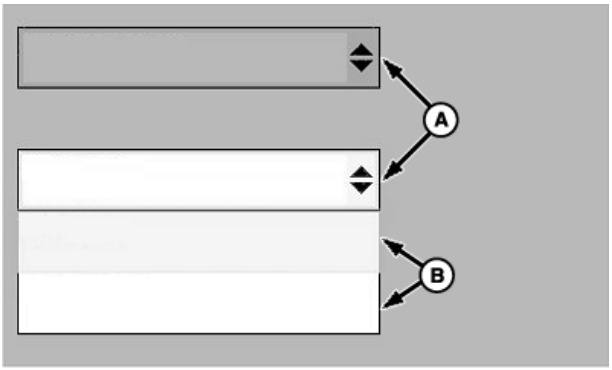
There are various ways the monitor accepts data entry. Following are some examples:

Drop-Down Box

A drop-down box (A) contains a list (B) of items. Select a drop-down box to see list. Select an item from the list to make it the active item in the drop-down box.

To close a drop-down list without selecting a new item, select the current selection or touch (touchscreen only) an empty screen location.

A scroll bar, with up and down arrows, appears next to a list when it is longer than screen area. Select an arrow to scroll up or down.



A59311 —UN— 15FEB07

A—Drop-Down Box **B—List**

Continued on next page

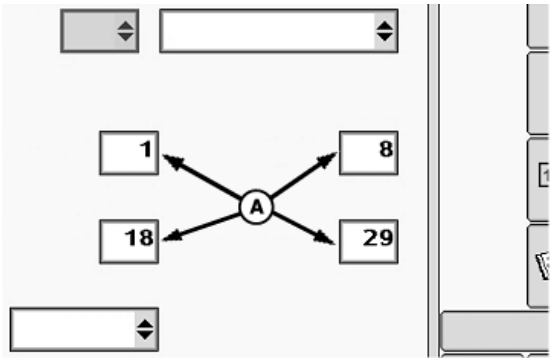
OUO6074,0000FA5 -19-16OCT08-1/5

Input Box

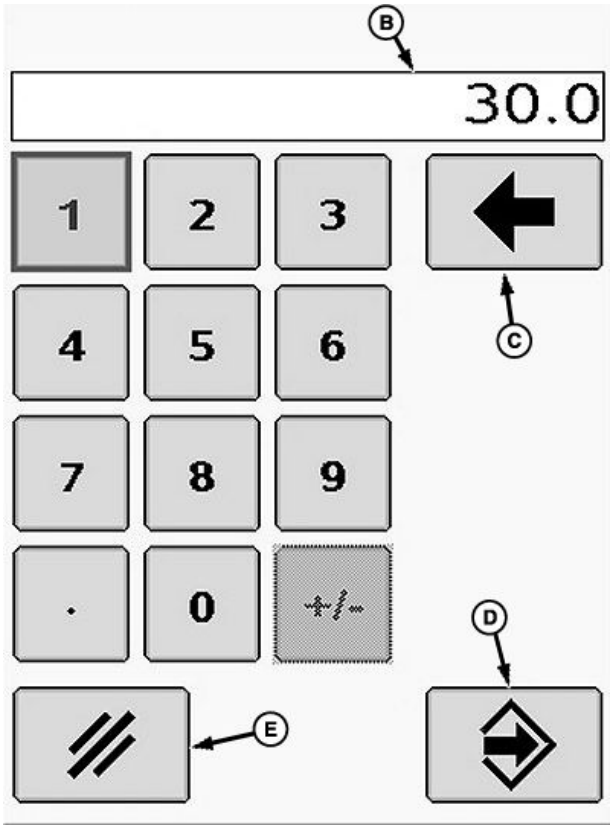
Input boxes (A) allow numeric value entries.

- Select an **Input Box** to see the numeric keypad. Select desired value. Entered value appears in bounding box (B).
- Select **Back Arrow** (C) button to clear a selected value.
- Select **Enter** (D) button to confirm value.
- Select **Clear** (E) button to deactivate keypad without confirming a new value.

A—Input Box
B—Bounding Box
C—Back Arrow
D—Enter
E—Cancel



A59312 —UN—11NOV08



A59357 —UN—21MAR07

Numeric Keypad

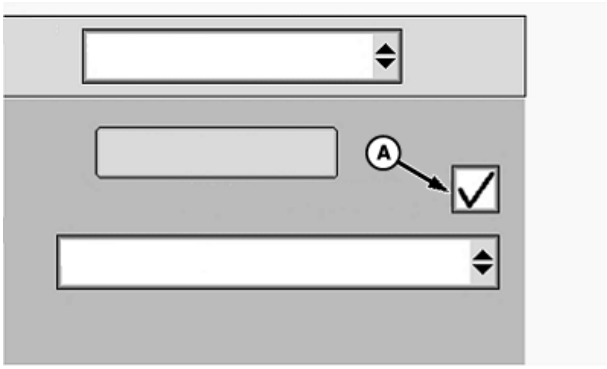
Continued on next page

OUO6074,0000FA5 -19-16OCT08-2/5

Check Box

A check box (A) allows activation and deactivation of single items. A check mark indicates an active feature. An empty box indicates a deactivated feature.

A—Check Box



A59313 —UN—15FEB07

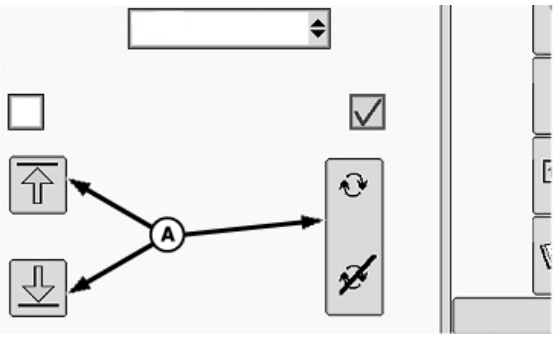
Check Box Example

OUO6074,0000FA5 -19-16OCT08-3/5

Button

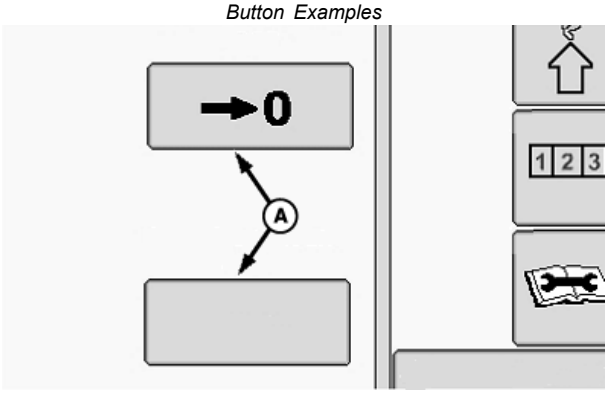
Buttons have different shapes, sizes, and images. Some have text on them. Select any button (A) to activate its feature.

A—Button



A59314 —UN—11NOV08

Button Examples

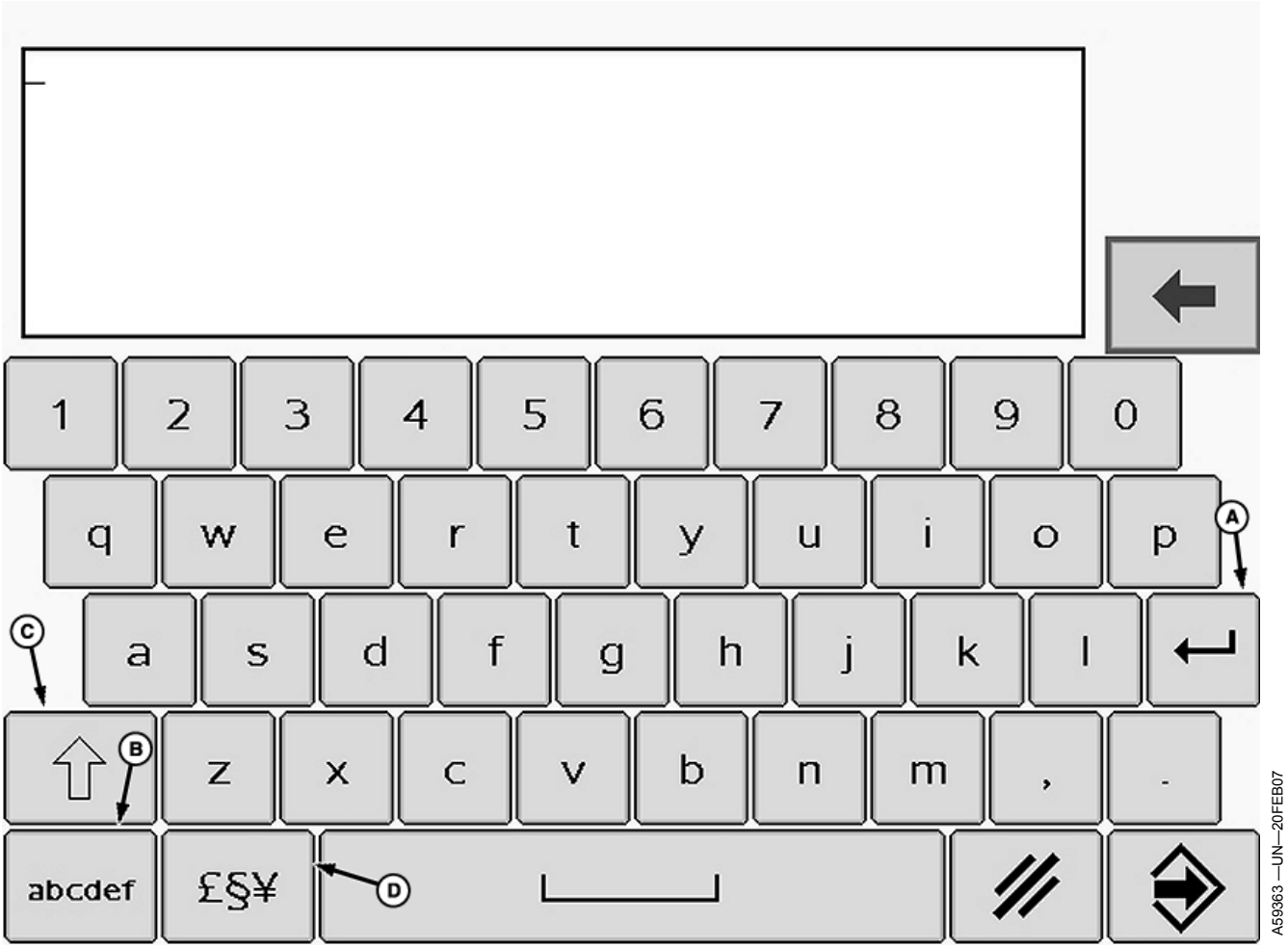


A59315 —UN—15FEB07

Button Examples

Continued on next page

OUO6074,0000FA5 -19-16OCT08-4/5



Custom Input Keypad

A—Return
B—Appearance
C—Case
D—Symbols

Custom Input Keypad

Some input or drop-down boxes have an Edit or Custom option. When Edit or Custom is selected, a keypad appears for data entry. The **Return** (A) button moves cursor to the next line down. The **Appearance** (B) button toggles between a standard **qwerty** keypad layout and an alphabetical keypad layout. The **Case** (C) button toggles between upper and lower case letters. The **Symbols** (D) button toggles between a keypad with letters and a keypad with symbols.

OUO6074,0000FA5 -19-16OCT08-5/5

Screen Layout Manager

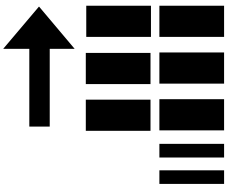
IMPORTANT: Planter screen is only available in full screen or half screen. Error messages do not appear on half screen layout. Return to full screen to see messages when an audible alert signals an error.

1. Select **Primary Menu** button.
2. Select **Layout Manager** button.
3. Select a page number from the drop down menu.
4. Select a layout pattern (A) from right side of screen.
5. Select **Include in Home Page Collection** check box (D). Add a check to include this page. Clear the box to remove a page from the collection.
6. Select an area of screen (B) to change.

NOTE: If single-window layout is selected, select **Enter** *button after option is chosen. No need to select preview.*

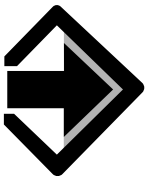
7. Only the options allowed in this area of screen appear. Select an **option** or select **Previous** button.
8. If an option is selected, a preview of selection appears. Select the **preview** to verify it is correct or select **Previous** button.
9. Select **Enter** button.
10. Select another area of screen to change. Continue until all areas are chosen.
11. To view all active home pages, repeatedly select the **Home** button (C).

A—Layout Patterns
B—Selection Areas
C—Home Page
D—Home Page Collection Box



Primary Menu

A59325 —UN—19FEB07

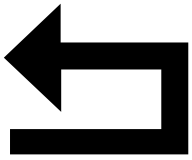


Enter

H85801 —UN—14JUN06

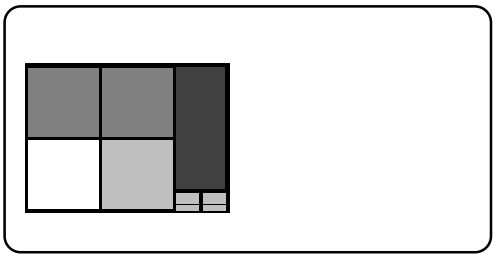
Cancel

H85814 —UN—14JUN06



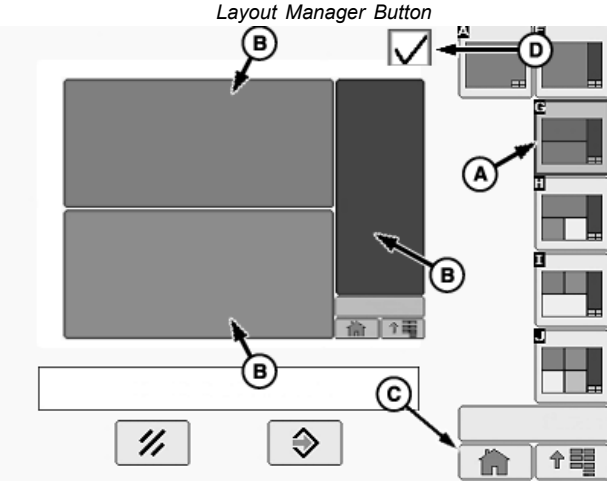
Previous

H85816 —UN—14JUN06



A61062 —UN—09OCT07

Layout Manager Button



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OUO6074,0001045 -19-11MAR09-1/1

Screen Navigation

NOTE: Although information appears similar on competitive displays, the navigational steps can be different. Refer to the operator's manual for your display for specific instructions.

Main Menu

Buttons and Softkeys appear similar. Buttons simply activate a feature or transfer to a new screen. Softkeys open screens where set up and data entry are possible.

The **Primary Menu** (A) button transfers to a screen with selectable buttons for each monitor.

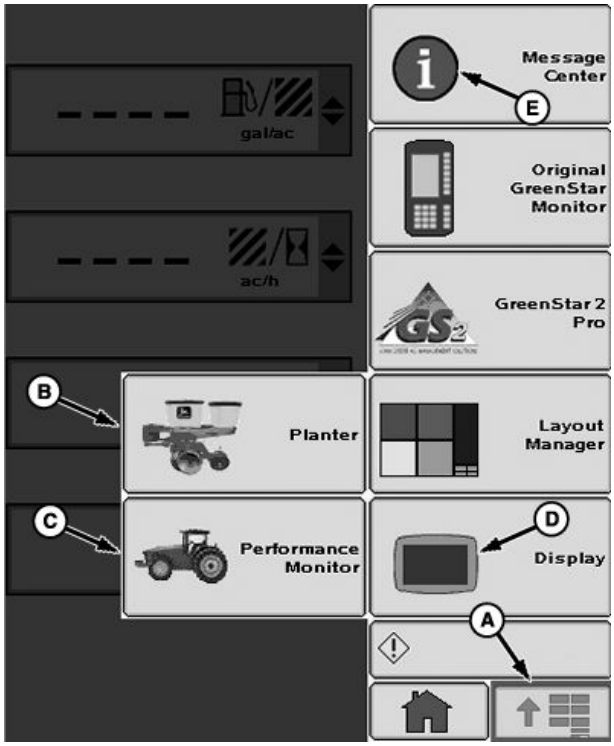
Select a button to transfer to the desired application. The following are a few examples.

- (B) Opens Planter application page. Various planter functions are available.
- (C) Opens Performance Monitor Totals page. Various tractor performance values are available.
- (D) Opens Display Main page. Various monitor functions are available.
- (E) Opens Message Center page. Various messages are available.

The following screen area information is for translation purposes to assist an operator using a screen with English text when the operator does not read English. The left side of the list remains English to match the screen and the right side of the list is translated along with the rest of this manual. The operator matches the English words on screen with English words listed on left side of list and views the translated meaning.

Screen Area Information

Planter — Planter
Performance Monitor — Performance Monitor
Message Center — Message Center
Original GreenStar Monitor — Original GreenStar Monitor



Menu Buttons

A—Primary Menu
B—Planter Application Button
C—Performance Monitor Button
D—Display Button
E—Message Center Button

GreenStar 2 Pro — GreenStar 2 Pro
Layout Manager — Layout Manager
Display — Display

Continued on next page

OUO6074,0000FA7 -19-11MAR09-1/5

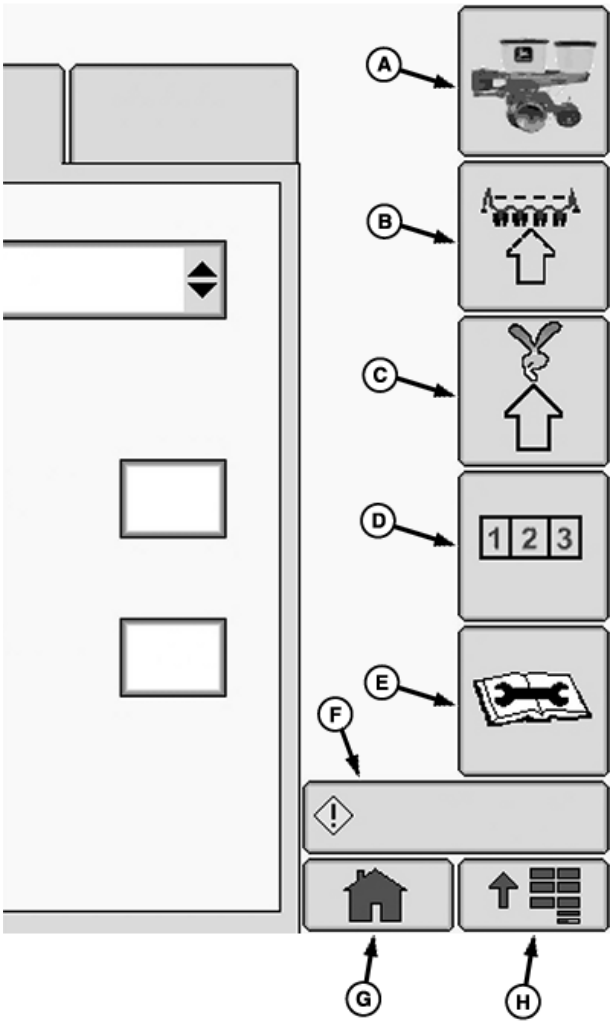
Planter Application Screens

Select **Softkeys** (A) through (E) to transfer to various planter screens. A title (I) at the top of each screen matches the name of the softkey.

Once any screen is displayed, it is not necessary to return to the primary menu before selecting another softkey in the same application. Example: Assume that the current screen is already Planter - Rates screen. If a procedure indicates to select the **Primary Menu** button (H), then the **Planter** button, then the **Configuration** softkey (B) to reach Planter - Configuration screen, simply select the **Configuration** softkey instead. The display is already on a Planter screen. There is no need to start from the Primary Menu again.

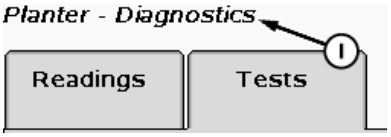
- (A) Transfers to Main planter screen, often referred to as the Run page.
- (B) Transfers to configuration screen for frame, sensor, and drives set up.
- (C) Transfers to configuration screen with Crops and Rates.
- (D) Transfers to screen with Totals and Calculators.
- (E) Transfers to diagnostic screen for Readings and Tests.
- (F) Transfers to Message Center.
- (G) Transfers to Home screen.
- (H) Transfers to primary Menu screen with buttons for different applications.

A—Main Softkey
B—Configuration Softkey
C—Rates Softkey
D—Totals Softkey
E—Diagnostics Softkey
F—Message Center Button
G—Home Button
H—Menu Button
I— Title



A59326 —UN—15FEB07

A64358 —UN—11MAR09



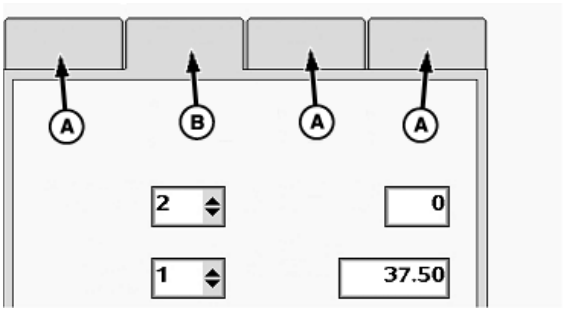
Softkey Title

OUO6074,0000FA7 -19-11MAR09-2/5

Function Tabs

Select **Tabs** to activate various options on a screen.

A—Inactive Tab
B—Active Tab



A59328 —UN—11NOV08

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OUO6074,0000FA7 -19-11MAR09-3/5

Navigation Example A:

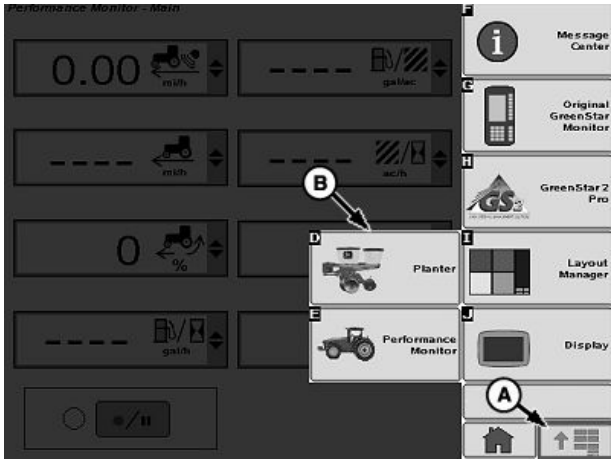
Refer to the following procedure using an active monitor.

1. Select **Primary Menu** button (A).
2. Select **Planter Application** button (B).
3. Select planter **Configure** softkey (C). Planter - Configuration (D) screen title is now displayed.
4. Select **Sensor** tab (E).
5. Select drop-down box (F) and choose **Seed**.
6. Select **Row** input box (G) and enter an individual row number.
7. Select **On** or **Off** check box (H) to configure selected row.

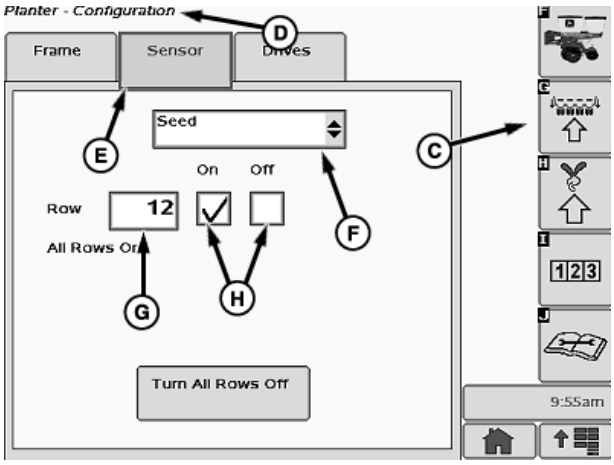
Screen Area Information

Planter Configuration — Planter Configuration
Sensor — Sensor
Seed — Seed
Row — Row
On — On
Off — Off

A—Primary Menu Button
B—Planter Application Button
C—Configure Softkey
D—Planter Configuration Screen
E—Sensor Tab
F—Drop Down Box
G—Row Input Box
H—On and Off Check Boxes



A59588 —UN—12MAR07



A64363 —UN—11MAR09

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OUO6074,0000FA7 -19-11MAR09-4/5

Navigation Example B:

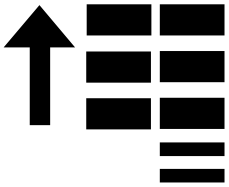
All procedures in this manual use a condensed version of Navigation Example A shown on previous page. The following steps are an example of Navigation Example A, simplified. Each **bold** word is a selectable screen item. The arrows (>>) indicate each screen item to select in sequence. Once common buttons, softkeys, and screen titles become familiar, this technique shortens the reading time needed to accomplish a task. It is not necessary to begin at the Primary Menu if the display is already on the destination screen.

Use an active monitor to become familiar with the display and this style of navigation. If needed, refer back to previous descriptions in this section while learning screen items.

1. Select **Primary Menu** >> **Planter** button >> **Configuration** softkey >> **Sensor** tab.
2. Select **Seed** from drop-down box.
3. Select **Row** input box and enter an individual row number. Select **On** or **Off** check box to configure selected row.

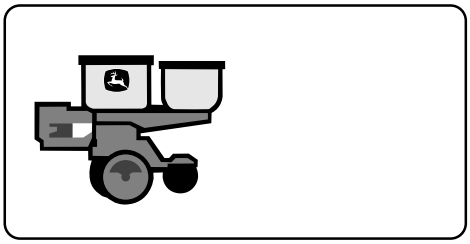
Screen Area Information

Planter Configuration — Planter Configuration
Sensor — Sensor
Seed — Seed
Row — Row
On — On
Off — Off



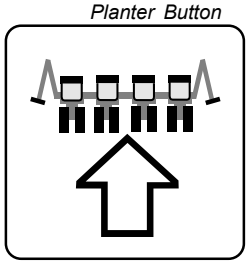
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59172 —UN—29JAN07

Configuration Softkey

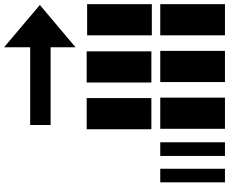
OUO6074,0000FA7 -19-11MAR09-5/5

Configure Brightness, Volume, and Color

1. Select **Menu** >> **Display** button >> **Display** softkey.
2. Two brightness levels are available. Select **Day/Night** button to toggle screen brightness between day level and night level. Sun and moon images at top left of screen alternately highlight to show active selection. Select **+ plus** and **- minus** buttons to adjust backlight level for Day selection. Toggle to Night selection and adjust a different backlight level with plus and minus buttons.
3. Select **Instant Darken** button to completely darken screen. Touch any part of screen (touchscreen only) or select any button to brighten again.
4. Select plus and minus buttons to adjust **Volume** indicator.
5. Select a check box to choose a **Highlight Color** an item changes to when selected.
6. When monitor is installed in a compatible cab, a (Synchronize) **Sync With Cab** check box is available. When checked, this display controls interior cab lights as well.

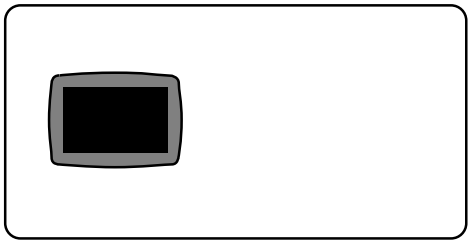
Screen Area Information

Display Main — Display Main
Backlight — Backlight
Volume — Volume
Highlight Color — Highlight Color
Sync With Cab — Synchronize With Cab



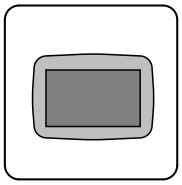
A59325 —UN—19FEB07

Menu



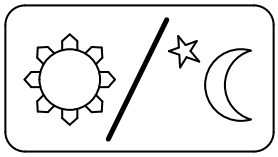
A59565 —UN—08MAR07

Display Button



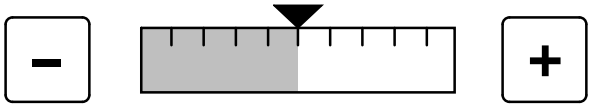
Display Softkey

A59591 —UN—15MAR07



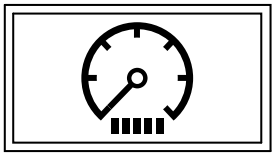
A59594 —UN—15MAR07

Day / Night Button



A59595 —UN—15MAR07

Scale Indicator



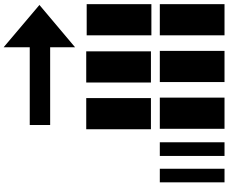
A59593 —UN—15MAR07

Instant Darken Button

OUO6064,00001EA -19-29JUN10-1/1

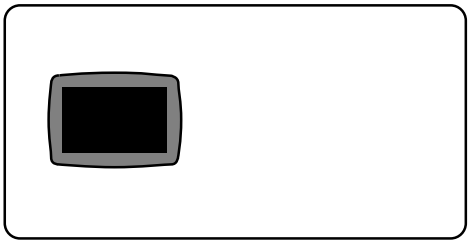
Configure Language and Units of Measure

1. Select **Menu** >> **Display** button >> **Settings** softkey.
2. Select **Regional** tab.
3. Select each drop-down box and choose a **Country**, **Language**, **Numeric Format**, and the **Units** of measure. To select different units of measure for different options, proceed as follows.
4. Select **Units** tab.
5. Select each drop-down box and choose a unit of measure. To change all units back to a single type, select **Regional** tab >> **Units** >> any option.



A59325 —UN—19FEB07

Menu



A59565 —UN—08MAR07

Display Button

A59592 —UN—15MAR07

Settings Softkey

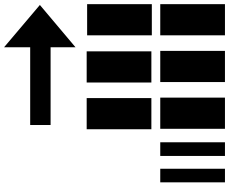
Screen Area Information

Display Settings — Display Settings
Regional — Regional
Country — Country
Language — Language
Numeric Format — Numeric Format
Units — Units
Metric — Metric
Imperial — Imperial
US — United States
Units of Measure — Units of Measure
Distance — Distance
Area — Area
Volume — Volume
Mass — Mass
Temperature — Temperature
Pressure — Pressure
Force — Force

OUO6064,00001EB -19-29JUN10-1/1

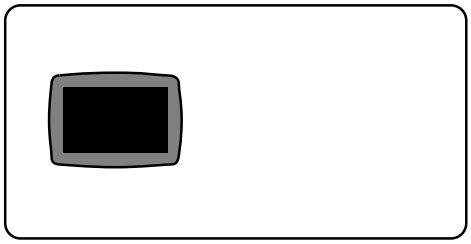
Configure Date and Time

1. Select **Menu** >> **Display** button >> **Settings** softkey.
2. Select **Time/Date** tab.
3. Select each **Date** drop down box and choose the month, day, and year.
4. Select **Date Format** drop down box and choose desired format.
5. If area is currently observing daylight saving time, select **Daylight Savings Time** check box to display a check. When daylight saving changes, select this box to change hour reading instantly.
6. To use a 24 hour clock, select **24 Hour Clock** check box to display a check.
7. Select **Time** input boxes and enter an hour and minute. Select **a.m.** or **p.m.** from drop-down box.
8. If equipped with GPS, perform the following:
   a. Select **GPS Time Sync** check box to synchronize time.
   b. Select **GMT Offset** drop down box and select a number representing the number of hours current location varies from Greenwich Mean Time.
   c. Select **Local Offset** drop down box and enter the number of minutes current location is past local time zone.



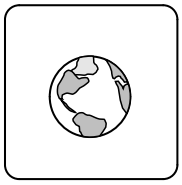
A59325 —UN—19FEB07

Menu



A59565 —UN—08MAR07

Display Button



A59592 —UN—15MAR07

Settings Softkey

Screen Area Information

Display Settings — Display Settings
Time/Date — Time and Date
Date — Date
Date Format — Date Format
MM — Month
DD — Day
YYYY — Year
Time — Time
24 Hour Clock — 24 Hour Clock
Daylight Savings Time — Daylight Savings Time
GMT Offset — Greenwich Mean Time Offset
Local Offset — Local Offset
GPS Time Sync — Global Positioning System Synchronization

OUO6064,00001EC -19-29JUN10-1/1

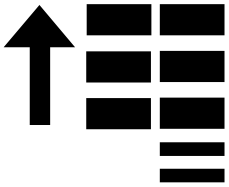
Touchscreen Calibration

1. Select **Menu** >> **Display** button >> **Diagnostic** softkey.
2. Select **Tests** tab.
3. Select **Color Test** button. Three distinct colors appear for 5 seconds (Red, Blue, and Green). If three colors do not appear, contact your John Deere™ dealer.
4. Select **Touchscreen Test** and touch the screen in area of suspected malfunction. A target image appears under tip of finger. If target image does not appear when screen is touched, contact a John Deere™ dealer.
5. Select **Touchscreen Calibration** button.
6. Touch the screen over each X symbol as it appears on screen. Several X symbols appear in sequence, then a screen appears to indicate calibration was successful or unsuccessful.

Select primary menu button to end the touch screen test and navigate back to desired screen or application.

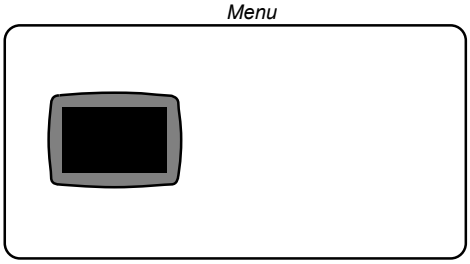
Screen Area Information

Display — Display
Display Diagnostics — Display Diagnostics
Tests — Tests
Color Test — Color Test
Touchscreen Test — Touchscreen Test
Touchscreen Calibration — Touchscreen Calibration
Calibration Successful — Calibration Successful
Calibration Unsuccessful — Calibration Unsuccessful
Reset Touchscreen Calibration — Reset Touchscreen Calibration



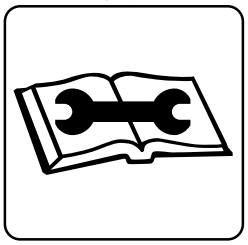
A59325 —UN—19FEB07

Menu



A59565 —UN—08MAR07

Display Button



A59567 —UN—08MAR07

Diagnostic Softkey

OUO6064,00001ED -19-29JUN10-1/1

Check Implement Width in Performance Monitor

To view current width in Performance Monitor, select **Menu** >> **Performance Monitor** application >> **Settings** softkey.

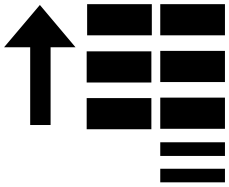
IMPORTANT: If implement width is changed in the tool application, (for example when changing from corn to soybeans on a split row planter), cycle the display power to update the new settings.

Implement width appears next to implement width icon.

The Performance Monitor operates in two modes on the GreenStar™ Display. Basic Performance Monitor mode (BPM) is included in base equipment with every GreenStar™ Display. Advanced Performance Monitor (APM) is a tractor application and is only available when connected to specific John Deere™ tractors.

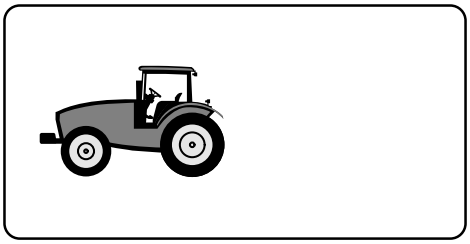
Implement width is sent to the Basic Performance Monitor by the planter and cannot be changed as long as the planter is connected to the tractor.

Refer to your GreenStar™ Display operator's manual for more information.



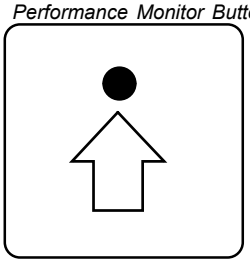
A59325 —UN—19FEB07

Menu



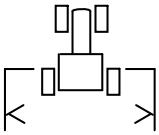
A59552 —UN—08MAR07

Performance Monitor Button



A59377 —UN—23FEB07

Settings Softkey



A59378 —UN—22FEB07

Implement Width

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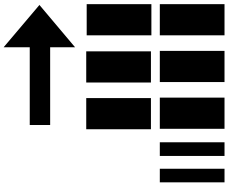
OUO6064,00001FC -19-10OCT14-1/1

Radar Configuration

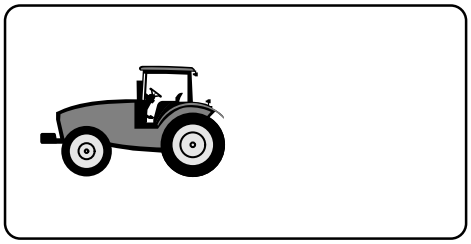
Select **Menu** >> **Performance Monitor** button >> **Settings** softkey.

- Clear the **GPS or Ground Radar Connected to Display** check box for John Deere™ 00, 10, and 20 Series Tractors with factory equipped tractor radar.
- Place a check in the **GPS or Ground Radar Connected to Display** check box for John Deere™ tractor models earlier than 00 Series with radar connected directly to the GreenStar™ Cab Harness.
- Place a check in the **GPS or Ground Radar Connected to Display** check box for competitive tractors with radar connected directly to the GreenStar™ Cab Harness.
- For John Deere 30 Series and newer tractors, this step is not required and it is not possible to check this box.
- For (ISO 11783 compliant) competitive tractors with a TECU, this step is not required and it is not possible to check this box.
- If using GPS as a ground speed source refer to your GreenStar™ Display Operator's Manual or see your John Deere™ dealer. Many configurations are possible.



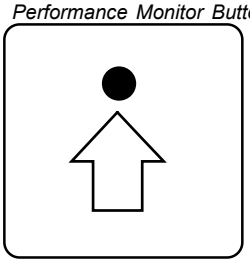
A59325 —UN—19FEB07

Menu



A59552 —UN—08MAR07

Performance Monitor Button



A59377 —UN—23FEB07

Settings Softkey

A67704 —UN—14JUN10

GPS or Ground Radar Connected to Display Check Box

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OUO6064,00001EF -19-30JUN10-1/1

Radar Calibration

IMPORTANT: Perform calibration in the field under seeding conditions. Inflate all tires to specifications given in operator's manuals. Do not inflate to level given on tire sidewall.

Accurate system performance is dependant upon accurate radar calibration.

Some radars are integrated into tractor system. Calibrate these according to tractor operator's manual.

A radar that is connected directly to the GreenStar™ harness is calibrated using the following procedure. Dickey John™ Radar is an example of a radar that is connected directly to the GreenStar™ harness.

1. Select **Menu** >> **Performance Monitor** button >> **Settings** softkey.
2. Select **Radar Connected To Display** check box and mark with a check.
3. Select **Radar Calibration** button.
4. Follow the three step procedure listed on screen.

   Step 1: Measure and mark a 122 m (400 ft.) course. Drive tractor approximately 3.2 km/h (2 mph) without pulling a load. Select **Radar Calibration** button as front tires cross mark at one end of course.

   Step 2: Maintain speed. Select **Radar Calibration** button as front tires cross mark at other end of course.

   Step 3: Calibration is either successful or unsuccessful. Either a **Previous** button appears to repeat the procedure or an **Enter** button appears to complete the procedure.

Radar connected to display — Radar connected to display
Calibrate Radar — Calibrate Radar
Start Calibration at beginning of course — Start Calibration at beginning of course
Stop Calibration at end of course — Stop Calibration at end of course

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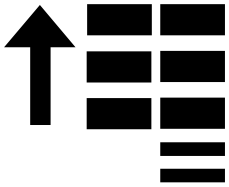
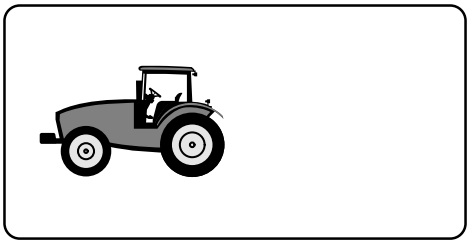


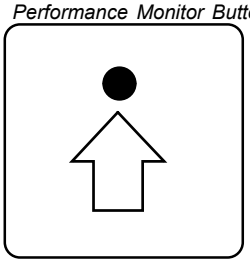
A59325 —UN—19FEB07

Menu



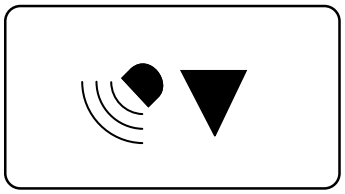
A59552 —UN—08MAR07

Performance Monitor Button



A59377 —UN—23FEB07

Settings Softkey



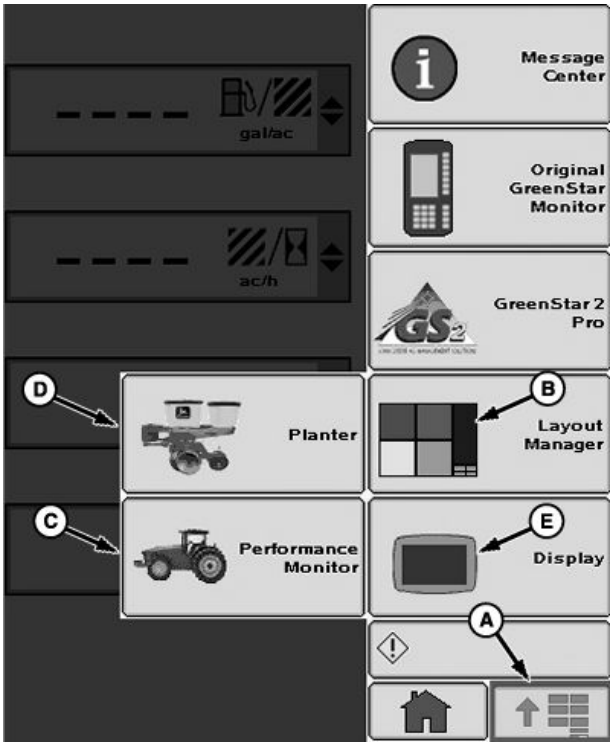
A59379 —UN—23FEB07

Radar Calibration Button

Calibration not successful. Repeat process — Calibration not successful. Repeat process
Calibration successful — Calibration successful

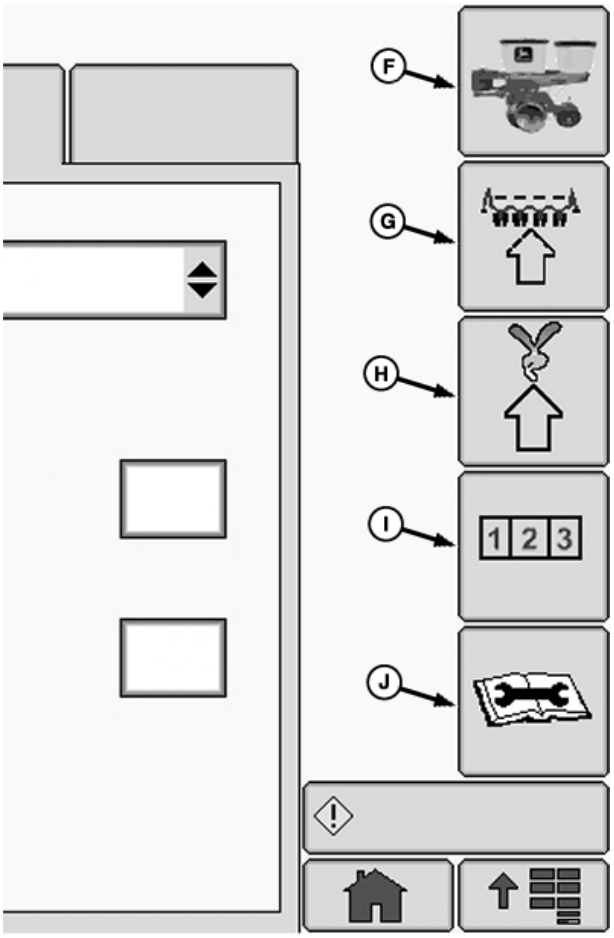
OUO6064,00001F0 -19-29JUN10-1/1

Quick Reference Setup for Ground Driven Machines



A61139 —UN—12OCT07

Main Menu Screen



A61140 —UN—15OCT07

Planter Application Screen

A—Main Menu
B—Layout Manager
C—Performance Monitor
D—Planter Application
E—Display Application
F—Planter Main
G—Planter Configuration
H—Planter Rates
I— Planter Totals
J— Planter Diagnostics

The following reference assumes that the operator has read and understands this manual. Some button images are given on this page as a reminder. Some entries require certain information be set up first. Follow quick reference in sequence.

Quick Reference		
Screen Layout		Select Menu >> Layout Manager button >> Select a layout pattern.
	>> Screen Area	Select a screen area to assign an application.
	>> Application Button	Only applications allowed in chosen area appear as selections. Select one.
	>> Application Screen	Select application screen to verify. Select remaining screen areas to change. Select enter when done.
Performance Monitor		Select Menu >> Performance Monitor button >> Settings button. If monitor reset button is ever pressed, these values are erased.
	>> Check Box	Select GPS or radar connected directly to planter application or not. Check indicates connected. Empty indicates radar is part of tractor system.
	>> Input Box	Verify implement width matches planter width shown on planter monitor. Cycle power if they do not match.
	>> Calibrate Button	Follow calibration procedure if radar is connected to display.
Planter Drive Configuration		Select Menu >> Planter button >> Configure softkey >> Drives tab >> Drive Configuration drop-down >> Settings button.
	>> Drive Source	Ground Driven. If the drive source is changed, all setup data is lost.

Continued on next page

OUO6064,00005B3 -19-01MAR13-1/3

Quick Reference			
	>> Meter Type	Vacuum or Mechanical	
Planter Drive Section Configuration		Select Menu >> Planter button >> Configure softkey >> Drives tab >> Drive Sections drop-down box >> Settings button.	
	>> Number of Sections	Enter number of sections on machine.	
	>> RowCommand™	Place a Check Mark in Box to activate.	
		>> Select Enter button	
Planter RowCommand™ Configuration		Select Menu >> Planter button >> Configure softkey >> Drives tab >> Drive Section >> Row Control Sections drop-down >> Settings button.	
	>> Number of Sections Input Box	Enter desired number of RowCommand™ sections on machine.	
	>> Next Page Button	Enter end row for current section.	
	>> Next Page Button	Enter values for additional sections.	
	>> Enter Button		
Frame Configuration		Select Menu >> Planter button >> Configuration softkey >> Frame tab>>Frame Configuration.	
	>> Row Configuration Drop-Down Box	Select single row, split row, or twin row depending on planter design.	
	>> Rows Input Box	Enter total number of rows. Total means all rows, even if planter is a split row or twin row machine, and half the rows are currently inactive.	
	>> Row Spacing Input Box	Enter row spacing. Spacing is the distance between rows side by side. Do not skip an inactive row and measure to the next active row on split row or twin row machines.	
	>> Planter Width	Enter planter width in unit of measure shown. Cycle power.	
	>> Clutch Disconnect Warning	Check this box if machine is equipped with multiple width disconnects and a warning is desired when some rows are inactive.	
	>> Transport Mode Button	Press this button when machine is in transport to put the planter controller in quiet mode. There are no warnings from planter and no functionality from planter until Transport Mode is disabled.	
Planter Sensor Configuration		>> Sensor Tab	
	>> Seed	>> Row Input Box	Use this box to set specific row sensors. Do not change for split row or twin row configuration on this page. Enter row number and select row On or Off check box. Repeat for additional rows. Turn all row sensors on or off at once with button on bottom of page.
		>> Headland Suppression Warning Check Box	Check this box to suppresses rows not planting warning when planter is raised.
	>> Vacuum	>> Sensors: Drop Down	Select number of vacuum sensors on machine.
		>> Sensor	Vacuum must be off. Select each sensor, one at a time, and enter Calibration Value in input box. John Deere sensors are 5.66. Select zero button to zero sensor reading. Select next sensor and repeat.
	>> Fertilizer	>> Sensors: Drop Down	Select number of fertilizer sensors on machine.
		>> High Pressure	Enter a value to trigger an alarm.
		>> Sensor	Residual fluid pressure must be released from system. Select each sensor, one at a time, and enter Calibration Value in input box. John Deere sensors are 37.50. Select zero button to zero sensor reading. Select next sensor and repeat.
	>> Height (Only if RowCommand™ is enabled.)	>> Common or Separate Check Box	Common sets a single height to start and stop variable rate motors. Separate sets individual start and stop heights for variable rate motors.
		Calibrate full up and full down	Fully raise machine and select Raised button (up arrow). Select Enter. Fully lower machine while driving forward in field and select Lowered button (down arrow). Select Enter.
		Set start and stop point	**Common**: Select Start/Stop button. Raise machine to correct height and select Start/Stop Height button or enter a value in Input box. Select Enter. **Separate**: Select Start/Stop button. From lowered position, raise machine to motor stop point and select Stop Height button or enter value in Input box. From raised position, lower machine to motor start point and select Start Height button or enter value in Input box. Select Enter.
	>> Tractor Speed	Select Auto check box to allow display to determine optimal ground speed source (recommended). If unchecked, a drop-down appears. Select drop-down menu and chose sensor source.	
Seed Rate Configuration		>> Rates Softkey	
	>> Crop Name Drop Down	Select corn, soybeans or one of the custom crop names.	
	>> Edit Crop Name	Select to edit names of crops in crop name drop down.	

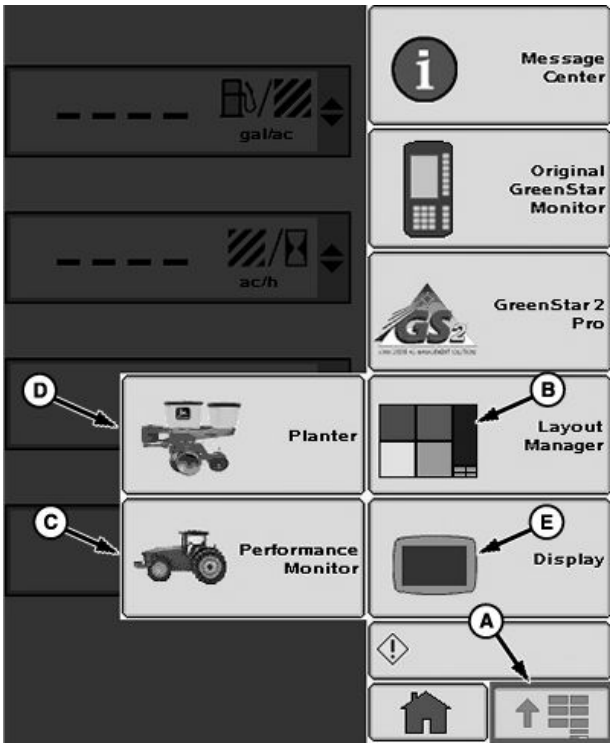
Continued on next page

OUO6064,00005B3 -19-01MAR13-2/3

Quick Reference			
	>> Target Input Box	Program target rate.	
	>> High and Low Input Box	Automatically sets ten percent over and under. Select box to change.	
	>> Population Adjust	Enter correction value after performing seed rate check in field.	
	>> Rows Planting Check Box	Only visible on split row and twin row machine configurations. These boxes are where rows actively planting is selected.	
Planter Calculators		>> Totals Softkey	
	>> Seed Estimator	>> Calculators Tab >> Seed Estimator	Select one of three estimators; Bag, Unit, or Weight. Enter all values and view result. See Counters and Calculators section for details.
	>> Transmission Sprocket Calculator	>> Calculators Tab >> Seed Transmission	
		>> Target Population Input Box	Enter target population.
		>> Disk Type Drop Down	Select vacuum disk type installed in meter or select finger pickup or radial bean at bottom of list.
		>> Seed Disk Drop Down (Vacuum Only)	Select disk installed in meter.
	>> Vacuum Calculator (Vacuum meters only when vacuum meters are set up)	>> Calculators Tab >> Vacuum	
		>> Top Drop Down	Select Vacuum
		>> Seeds per kg (lb.) Input Box	Enter number of seeds per kg (lb.)
		>> Disk Type Drop Down	Select type of disk in meter.
		>> Seed Disk Drop Down	Select disk. Set vacuum to suggested value as a starting point.
	Area Calculators	>> Totals Tab	Select any input box. Change values or zero with Zero button.
Diagnostics			
	>> Diagnostic Softkey >> Readings tab	>> Hardware/Software	Provides system data. On large frame planters with more than one controller, select each controller separately from the drop-down.
		>> Sensors/Status Drop Down	Observe readings of programmed sensors.
		>> System Voltages	Provides system data.
	>> Tests >> Top Drop Down	>> Seed Tube Sensor	Tests the seed sensors detected by the monitor.
		>> Seed Drop	Tests if a seed sensor is detecting seeds accurately.
		>> Timed Seed Drop	Tests the seed rate of a single row unit.
		>> VRD Events Log	
		>> VRD Motor/Valve Flush	Used to flush air from VRD hydraulic system.
		>> Diagnostics Code	
		>> Rotate Meters	Verify drillshaft and meters turn without pulling machine through field.
		Row Clutches test	Used to test each RowCommand™ row clutch circuit.
		Row Clutch Self-test	Used to test all RowCommand™ clutches.

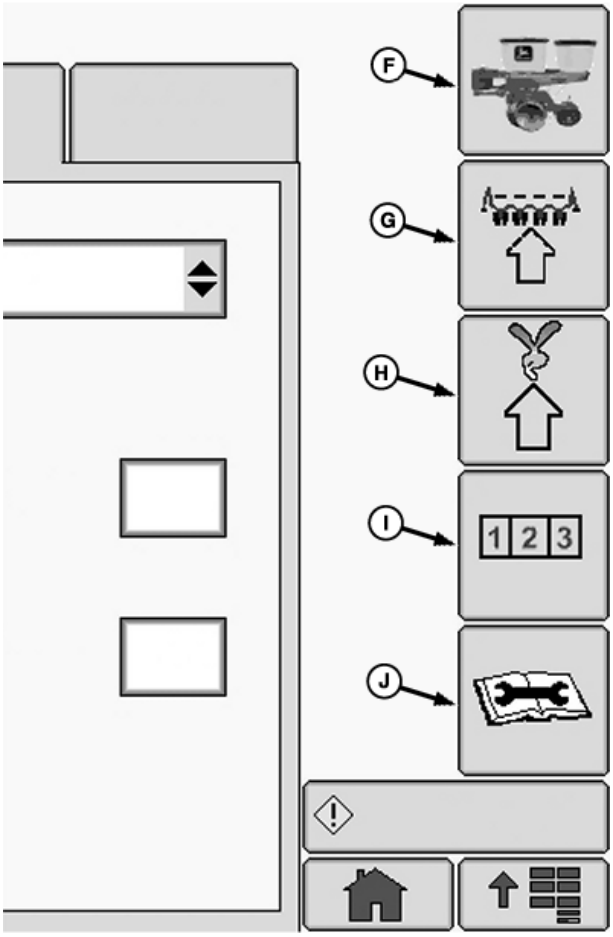
OUO6064,00005B3 -19-01MAR13-3/3

Quick Reference Setup for VRD Machines



A61139 —UN—12OCT07

Main Menu Screen



A61140 —UN—15OCT07

Planter Application Screen

A—Main Menu
B—Layout Manager
C—Performance Monitor
D—Planter Application
E—Display Application
F—Planter Main
G—Planter Configuration
H—Planter Rates
I— Planter Totals
J— Planter Diagnostics

The following reference assumes that the operator has read and understands this manual. Some button images are given on this page as a reminder. Some entries require certain information be set up first. Follow quick reference in sequence.

Quick Reference		
Screen Layout		Select Menu >> Layout Manager button >> Select a layout pattern.
	>> Screen Area	Select a screen area to assign an application.
	>> Application Button	Only applications allowed in chosen area appear as selections. Select one.
	>> Application Screen	Select application screen to verify. Select remaining screen areas to change. Select enter when done.
Performance Monitor		Select Menu >> Performance Monitor button >> Settings button. If monitor reset button is ever pressed, these values are erased.
	>> Check Box	Select GPS or radar connected directly to planter application or not. Check indicates connected. Empty indicates radar is part of tractor system.
	>> Input Box	Verify that Implement Width matches planter width shown in planter monitor. Cycle power if they do not match.
	>> Calibrate Button	Follow calibration procedure if radar is connected to display.
Planter Drive Configuration		Select Menu >> Planter button >> Configure softkey >> Drives tab >> Drive Configuration drop-down box >> Settings button.
	>> Drive Source	>> Variable Rate. If the drive source is changed, all setup data is lost.
	>> Meter Type	Vacuum or Mechanical

Continued on next page

OUO6064,00005B4 -19-01MAR13-1/4

Quick Reference			
	>> Row Unit Type	MaxEmerge™ or Pro-Series™	
	>> QS Enabled	Check indicates Quick Start enabled (recommended). Empty indicates disabled.	
Planter Drive Section Configuration		Select Menu >> Planter button >> Configure softkey >> Drives tab >> Drive Sections drop-down box >> Settings button.	
	>> Number of Sections Input Box	Enter number of variable rate motors on planter if different than shown.	
	>> RowCommand™	Check indicates RowCommand™ enabled. Empty indicates disabled.	
	>>Dual Range Drive System	Check indicates Dual Rate Drive System enabled. Empty indicates disabled. (Twin row machines only)	
	>> Next Page Button	Enter values for first motor in input boxes.	
	>> Start Row	Enter row number. (Only available as a selection when more than one motor is present, default is row one.)	
	>> End Row	Enter row number.	
	>> Motor Sprocket	Enter number of teeth on motor sprocket.	
	>> Middle Driven. (Only appears when Dual Rate Drive System is enabled.)	Enter number of teeth on sprocket.	
	>> Middle Driver (Only appears when Dual Rate Drive System is enabled.)	Enter number of teeth on sprocket.	
	>> Final Driven	Enter number of teeth and final sprocket.	
	>> Clutch Disconnect	Select left, right, either, or none.	
	>> Next Page Button	Enter values for additional motors.	
	>> Enter Button		
Planter RowCommand™ Configuration		Select Menu >> Planter button >> Configure softkey >> Drives tab >> Row Control Sections drop-down >> Settings button.	
	>> Number of Sections Input Box	Enter desired number of RowCommand™ control sections on machine.	
	>> Next Page Button	Enter end row for current section.	
	>> Next Page Button	Enter values for additional sections.	
	>> Enter Button		
Frame Configuration		Select Menu >> Planter button >> Configuration softkey >> Frame tab>>Frame Configuration.	
	>> Row Configuration Drop-Down Box	Select single row, split row, or twin row depending on planter design.	
	>> Rows Input Box	Enter total number of rows. Total means all rows, even if planter is a split row or twin row machine, and half the rows are currently inactive.	
	>> Row Spacing Input Box	Enter row spacing. Spacing is the distance between rows side by side. Do not skip an inactive row and measure to the next active row on split row or twin row machines.	
	>> Planter Width	Enter planter width in unit of measure shown. Cycle power.	
	>> Clutch Disconnect Warning	Check this box if machine is equipped with multiple width disconnects and a warning is desired when some rows are inactive.	
	>> Transport Mode Button	Press this button when machine is in transport to put the planter controller in quiet mode. There are no warnings from planter and no functionality from planter until Transport Mode is disabled.	
Planter Sensor Configuration		>> Sensor Tab	
	>> Seed	>> Row Input Box	Use this box to set specific row sensors. Do not change split row or twin row configuration on this page. Enter row number and select row on or off check box. Repeat for additional rows. Turn all row sensors on or off at once with button on bottom of page.
		Headland Suppression Warning Check Box	Check this box to suppresses rows not planting warning when planter is raised.
	>> Vacuum	>> Sensors: Drop Down	Select number of vacuum sensors on machine.
		>> Sensor	Vacuum must be off. Select each sensor, one at a time, and enter Calibration Value in input box. John Deere sensors are 5.66 (English units) or 143.76 (Metric units). Select zero button to zero sensor reading. Select next sensor and repeat.
	>> Fertilizer	>> Sensors: Drop Down	Select number of fertilizer sensors on machine.

Continued on next page

OUO6064,00005B4 -19-01MAR13-2/4

Quick Reference			
		>> Sensor	Residual fluid pressure must be released from system. Select each sensor, one at a time, and enter Calibration Value in input box. John Deere sensors are 37.50 (English units) or 258.55 (Metric units). Select zero button to zero sensor reading. Select next sensor and repeat.
	>> Height	>> Common or Separate Check Box	Common sets a single height to start and stop variable rate motors. Separate sets individual start and stop heights for variable rate motors.
		Calibrate full up and full down	Fully raise machine and select Raised button (up arrow). Select Enter. Fully lower machine while driving forward in field and select Lowered button (down arrow). Select Enter.
		Set start and stop point	**Common**: Select Start/Stop button. Raise machine to correct height and select Start/Stop Height button or enter a value in Input box. Select Enter. **Separate**: Select Start/Stop button. From lowered position, raise machine to motor stop point and select Stop Height button or enter value in Input box. From raised position, lower machine to motor start point and select Start Height button or enter value in Input box. Select Enter.
	>> Tractor Speed	Select Auto check box to allow display to determine optimal ground speed source (recommended). If unchecked, a drop-down appears. Select drop-down menu and choose sensor source.	
Seed Rate Configuration		>> Rates Softkey	
	>> Crop Name Drop Down	Select corn, soybeans or one of the custom crop names.	
	>> Edit Crop Name Button	Select to edit names of crops in crop name drop down.	
	>> Show Rates Button	(1 rate for all motors or rates for each motor.)	
		>>Change Rates Button	To change any rate.
		>> Rate Drop Down	Select rate to change. Use rate 6 for RX.
		>> Motor Drop Down	When equipped with multiple motors and different rates for each motor. Select motor to set a rate. Only visible if box **Use one rate for all motors** is not selected.
		>> On - Off Drop Down	Set rate to appear or run screen or not.
		>> Target Input Box	Program target rate for selected motor.
		>> High and Low Input Box	Automatically sets ten percent over and under. Select box to change.
		>> Enter Button	Saves program.
	>> Use One Rate for All Motors Check Box	Only visible if multiple motors on machine. Check for one rate across machine. Empty for different rates on each motor.	
	>> Disk Type Drop Down	Select type of disk or meter. If custom is chosen, enter number of seeds/holes per revolution.	
	>> Seed Disk Drop Down (Vacuum only)	Select disk installed in meter.	
	>> Population Adjust Input Box	Enter correction value after performing seed rate check in field.	
	>> Rows Planting Check Box	Only visible on split row and twin row machine configurations. These boxes are where rows actively planting is selected.	
Planter Calculators		>> Totals Softkey	
	Area Calculators	>> Totals Tab	Select any input box. Change values or zero with Zero button.
	Seed Estimator	>> Calculators Tab >> Seed Estimator	Select one of three estimators; Bag, Unit, or Weight. Enter all values and view result. See Counters and Calculators section for details.
	Vacuum Calculator (Vacuum meters only when vacuum meters are set up)	>> Calculators Tab >> Vacuum	
		>> Top Drop Down	Select Vacuum
		>> Seeds per kg (lb.) Input Box	Enter number of seeds per kg (lb.)
		>> Disk Type Drop Down	Select type of disk in meter.
		>> Seed Disk Drop Down	Select disk. Set vacuum to suggested value as a starting point.
Diagnostics			
	>> Diagnostic Softkey >> Readings tab.	>> Hardware/Software	Provides system data. On large frame planters with more than one controller, select each controller separately from the drop-down.

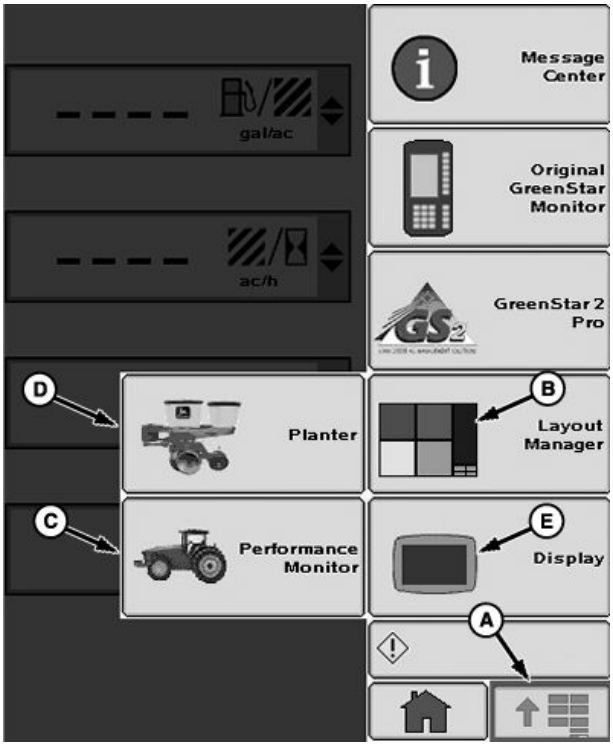
Continued on next page

OUO6064,00005B4 -19-01MAR13-3/4

Quick Reference			
		>> Sensors/Status Drop Down	Observe readings of programmed sensors.
		>> System Voltages	Provides system data.
		>> VRD Data Drop Down	Review sensor readings. If Target RPM displays CAL, operate machine in the field a short distance with VRD active. This procedure calibrates motors.
	>> Tests >> Top Drop Down	>> Seed Tube Sensor	Tests the seed sensors detected by the monitor.
		>> Seed Drop	Tests if a seed sensor is detecting seeds accurately.
		>> Timed Seed Drop	Tests the seed rate of a single row unit.
		>> VRD Events Log	
		>> VRD Motor/Valve Flush	Used to flush air from VRD hydraulic system.
		>> Diagnostics Code	
		>> Rotate Meters	Verify drillshaft and meters turn without pulling machine through field.
		Row Clutches test	Used to test each RowCommand™ row clutch circuit.
		Row Clutch Self-test	Used to test all RowCommand™ clutches.

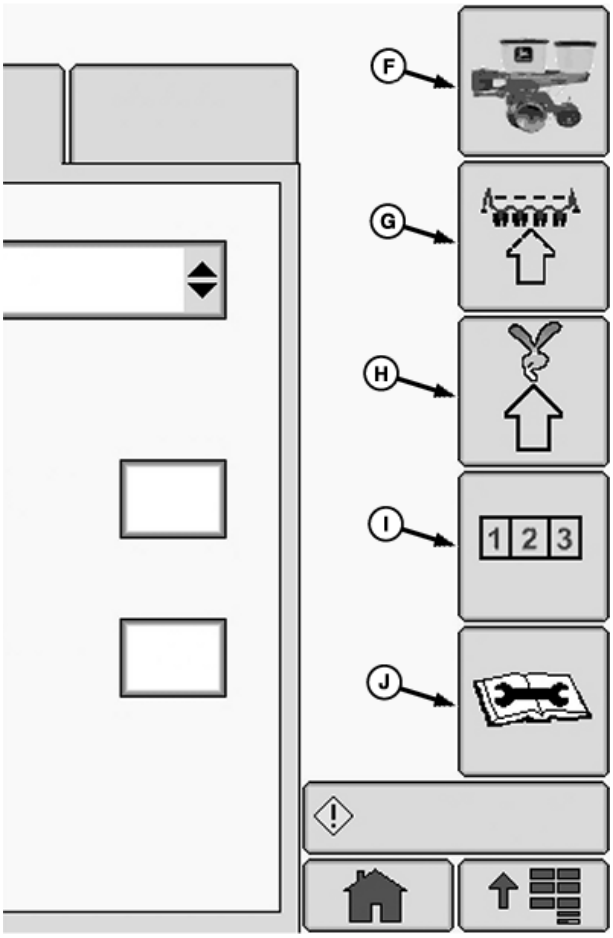
OUO6064,00005B4 -19-01MAR13-4/4

Additional Quick Reference Setup for Seedstar™ XP



A61139 —UN—12OCT07

Main Menu Screen



A61140 —UN—15OCT07

Planter Application Screen

A—Main Menu
B—Layout Manager
C—Performance Monitor
D—Planter Application
E—Display Application
F—Planter Main
G—Planter Configuration
H—Planter Rates
I— Planter Totals
J— Planter Diagnostics

The following reference assumes that the operator has read and understands this manual. Some button images are given on this page as a reminder. Some entries require certain information be set up first. Follow quick reference in sequence.

Quick Reference			
Down Force at a Glance Run Screen		>>Active PDF Check Box.	Select to enable or disable Active Down Force Visible in Active PDF capable planters only. When disabled, down force display values switch to the readings taken from the PDF air pressure sensors.
Planter Sensor Configuration		>> Sensor Tab	
	>> Down Force	>> Sensors: Drop Down	Select number of down force sensors on machine.
		>> Sensor Drop Down	Select sensor.
		>> Row Drop Down	Select row.
		>>Rank Drop Down	Select rank. The rank drop down box is only visible when Split Row is selected on the Frame Configuration screen.
		>> Check Box	Enable or disable sensor.
		>>Calibration Value Input Box	Enter calibration value for each gauge wheel down force sensor. John Deere™ sensors are 1394.

Continued on next page

OUO6064,00005B5 -19-10NOV11-1/2

Quick Reference			
		>>Zero Button	Zero each gauge wheel down force sensor.
	>> Ride Quality	>> Sensors: Drop Down	Select number of ride quality sensors on machine.
		>> Sensor Drop Down	Select sensor.
		>> Row Drop Down	Select row.
		>> Check Box	Enable or disable sensor.
	PDF Air Pressure (Set-Point Down Force)	>>Calibration Value Input Box	Configures the value used by the air pressure sensor to determine actual air pressure value. John Deere™ sensor calibration value is 494.
		>>Continue Button	Select this button to zero air pressure sensor.
	PDF Air Pressure (Active Down Force Single Rank)	>>Number of Ranks Drop Down Box	Select rank.
		>>Calibration Value Input Box	Configures the value used by the air pressure sensor to determine actual air pressure value. John Deere™ sensor calibration value is 494.
		>>Continue Button	Select this button to zero air pressure sensor.
	PDF Air Pressure (Active Down Force Dual Rank)	>>Number of Ranks Drop Down Box	Select rank.
		>>Sensor Drop Down Box	Select Sensor.
		>>Calibration Value Input Box	Configures the value used by the air pressure sensor to determine actual air pressure value. John Deere™ sensor calibration value is 494.
		>>Continue Button	Select this button to zero air pressure sensor.
Diagnostics			
	>> Diagnostic Softkey >> Readings tab	>> Sensors/Status	Observe readings of programmed sensors.
		>> System Voltages	Provides system data.
		Down Force	Displays down force sensor pressure and voltage.
		Ride Quality	Displays ride quality sensor percentages.
Planter at a Glance — User Settings		>> Select and hold the Screen Scan button for 4 seconds.	
Alarms and Limits Setup Page		>> Select and hold any of the SeedStar™ XP buttons for 4 seconds.	

OUO6064,00005B5 -19-10NOV11-2/2

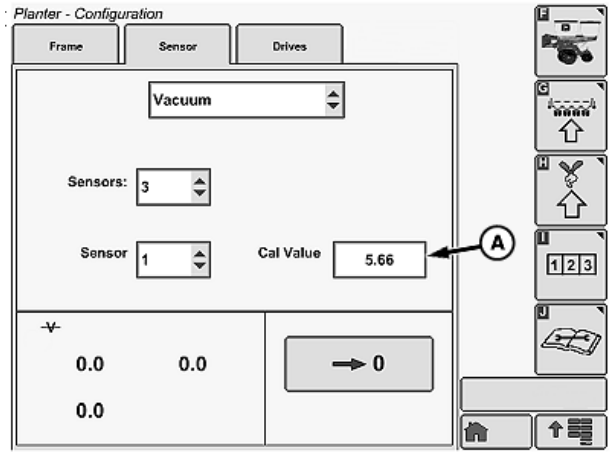
Planter Defaults

Vacuum Sensors

Default calibration value for John Deere™ vacuum sensors is 5.66.

Screen Area Information

Planter Configuration — Planter Configuration
Frame — Frame
Sensor — Sensor
Drives — Drives
Vacuum — Vacuum
Sensors: — Sensors:
Cal Value — Calibration Value



A—Calibration Value

Continued on next page

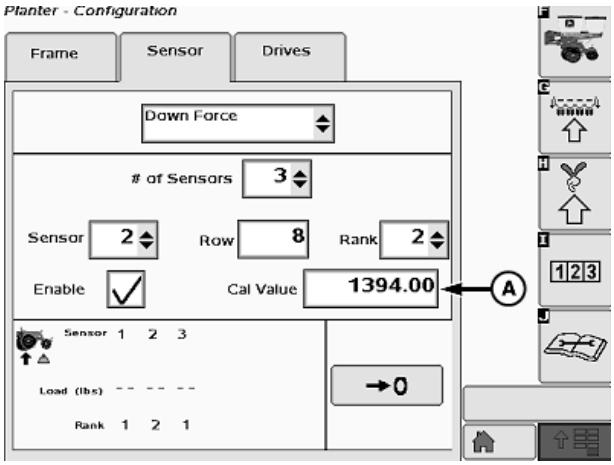
OUO6064,00005F4 -19-25JUN14-1/5

Down Force Sensors

Default calibration value for John Deere™ down force sensors is 1394.00.

Screen Area Information

Planter Configuration — Planter Configuration
Frame — Frame
Sensor — Sensor
Drives — Drives
Down Force — Down Force
# of Sensors — Number of Sensors
Sensors — Sensors
Row — Row
Rank — Rank
Enable — Enable
Cal Value — Calibration Value
Load — Load



A—Calibration Value

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OUO6064,00005F4 -19-25JUN14-2/5

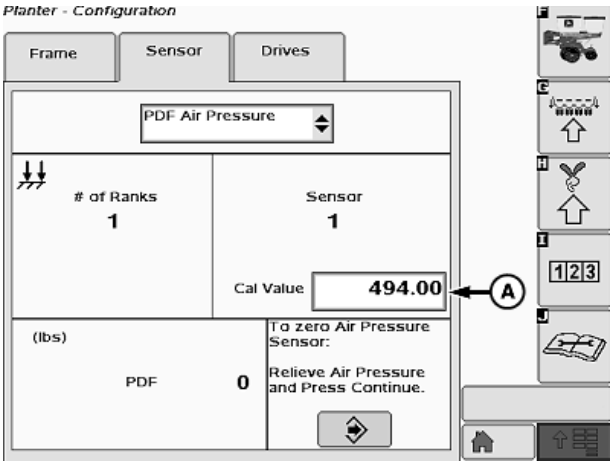
Pneumatic Down Force Air Pressure Sensors

Default calibration value for John Deere™ pneumatic down force air pressure sensors is 494.00.

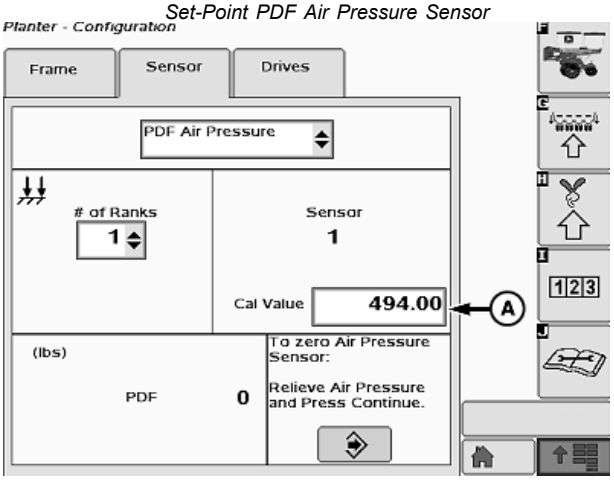
Screen Area Information

Planter Configuration — Planter Configuration
Frame — Frame
Sensor — Sensor
Drives — Drives
PDF Air Pressure — Pneumatic Down Force Air Pressure
# of Ranks — Number of Ranks
Cal Value — Calibration Value
PDF 1 — Pneumatic Down Force Sensor 1
PDF 2 — Pneumatic Down Force Sensor 2
To Zero Air Pressure Sensor: — To Zero Air Pressure Sensor:
Relieve Air Pressure and Press Continue — Relieve Air Pressure and Press Continue

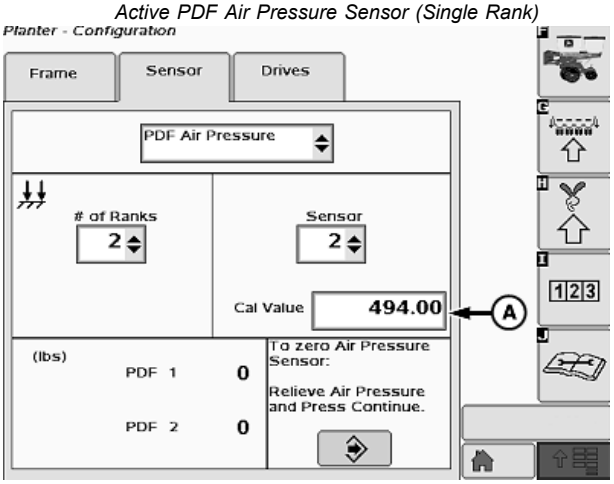
A—Calibration Value



Set-Point PDF Air Pressure Sensor



Active PDF Air Pressure Sensor (Single Rank)



Active PDF Air Pressure Sensors (Dual Rank)

Continued on next page

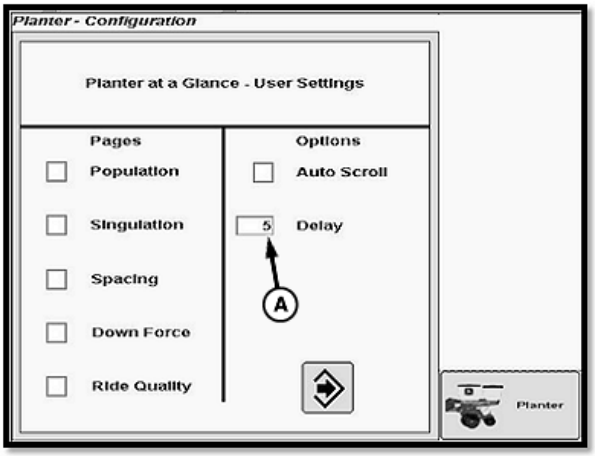
OUO6064,00005F4 -19-25JUN14-3/5

Planter at a Glance - User Settings

Default setting for screen scan delay 5 seconds.

Screen Area Information

Planter Configuration — Planter Configuration
Planter at a Glance - User Settings — Planter at a Glance - User Settings
Pages — Pages
Population — Population
Singulation — Singulation
Spacing — Spacing
Down Force — Down Force
Ride Quality — Ride Quality
Options — Options
Auto Scroll — Auto Scroll
Delay — Delay



A72650 —UN—20SEP11

A—Screen Scan Delay

OUO6064,00005F4 -19-25JUN14-4/5

Alarms and Limits Setup

Default singulation alarm setting is 92 percent.

Default seed spacing coefficient of variation alarm setting is 0.35.

Default ride quality alarm setting is 90 percent.

Default step value setting is 5.

Default active PDF pause timer is 5 seconds.

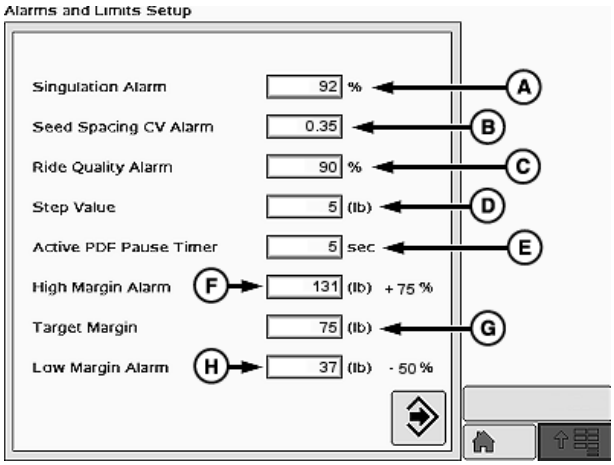
Default high margin alarm setting is 75 percent (131 lb.).

Default target margin setting is 75 lb.

Default low margin alarm setting is 50 percent (37 lb.).

Screen Area Information

Planter Configuration — Planter Configuration
Alarms and Limit Setup — Alarms and Limit Setup



A73151 —UN—19OCT11

A—Singulation Alarm
B—Seed Spacing CV Alarm
C—Ride Quality Alarm
D—Step Value
E—Active PDF Pause Timer
F—High Margin Alarm
G—Target Margin
H—Low Margin Alarm

OUO6064,00005F4 -19-25JUN14-5/5

SeedStar™ 2 Initial System Configuration

SeedStar™ 2 System Overview

The SeedStar™ 2 monitoring system is a full-featured, color planter monitor that works with your GreenStar™ 2 or ISO 11783 compliant display to provide all vital planting information in one location.

SeedStar™ 2 provides the following information:

- Planter average and individual row seed population.
- Vacuum level monitoring.
- Fertilizer pressure monitoring.
- Area counters and productivity monitoring.
- RowCommand™ control and monitoring.
- Variable rate drive (VRD) control and monitoring.
- Single Set-point integrated pneumatic down force control and monitoring.
- Alarms, cautions, and diagnostics.

The SeedStar™ 2 planter monitoring system works with a GreenStar™ 2 or competitive ISO 11783 compliant display and is fully compatible with John Deere™ AMS applications such as Field Doc™, Swath Control Pro™ for planters, GreenStar™, AutoTrac™ Assisted Steering System, Apex™ Farm Management Software, Field Doc™ Data Collection, iGuide™, and others.

The Planter Main 1 (PM1) controller accepts signals from the controllers and sensors on the tractor and planter and communicates them via CAN Bus communication to the display in the tractor cab.

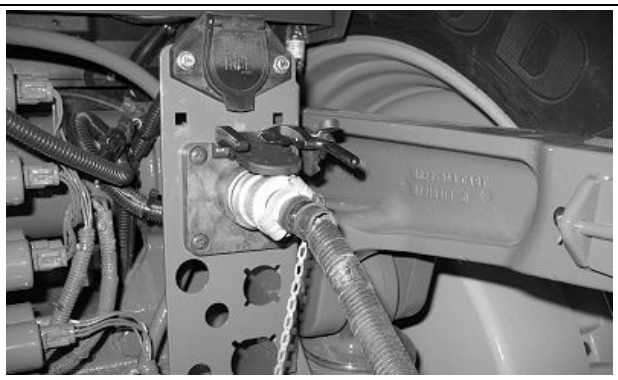
Machines equipped with Set-Point Integrated Pneumatic Down Force have an additional controller to adjust and monitor the pneumatic row unit down force system. The Planter Main 2 (PM2) controller receives inputs from the GreenStar™ display and controls the solenoid valves at the air storage tank to achieve faster changes in row unit down force from the cab. A low-pressure alarm is provided to alert the operator of system leaks.

OUO6064,00005B6 -19-01MAR13-1/1

System Components

CAN Harness Connection

The ISO standard Controller Area Network (CAN) Harness connection is the primary connection between the implement and the tractor for the SeedStar™ monitor system.



A62921 —UN—23JUL08

CAN Harness Connection

OUO6064,00005B7 -19-10NOV11-1/12

Planter Main 1 Controller (PM1)

This control unit:

- Provides the main planter software application and user interface on the GreenStar™ display.
- Contains all the setup information for the planter.
- Receives and processes signals from the seed sensors.
- Controls the variable rate drive system (if equipped).
- Controls the RowCommand™ system (if equipped).

A50167 —UN—09SEP02

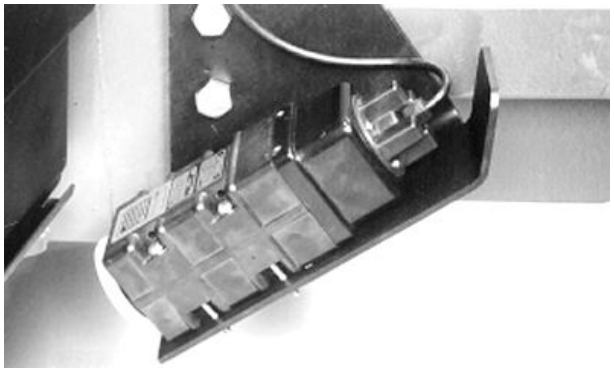
Planter Main 1 Controller (PM1)

Continued on next page

OUO6064,00005B7 -19-10NOV11-2/12

External Radar (Optional)

An external radar unit can be used to provide the ground speed signal for the SeedStar™ monitoring system. If the tractor is not equipped with a GPS receiver or a factory-installed radar see RADAR CONFIGURATION in the Performance Monitor Section.



A48199 —UN—26OCT01

External Radar (Optional)

OUO6064,00005B7 -19-10NOV11-3/12

Factory Installed Radar

The John Deere™ dual beam radar is an example of a factory installed tractor radar. The radar provides the ground speed signal for the SeedStar™ monitoring system. Refer to your tractor operator's manual for calibration information.

A67664 —UN—11JUN10

John Deere Dual Beam Radar

OUO6064,00005B7 -19-10NOV11-4/12

GPS Receiver

Certain Global Positioning System (GPS) receivers can also be used to provide a ground speed signal for the SeedStar™ monitoring system. Since many configurations are possible, please refer to your GreenStar™ operators manual or see your John Deere™ dealer.

A67665 —UN—11JUN10

Global Positioning System (GPS) Receiver

Continued on next page

OUO6064,00005B7 -19-10NOV11-5/12

Seed Tube with Seed Sensor

The seed sensor is used to monitor seed activity at each row unit. Seed information is processed with the Planter Main 1 (PM1) controller and displayed on the GreenStar™ display. SeedStar™ 2 monitoring systems use seed sensor data to calculate and display individual row and planter average seed population to the operator.

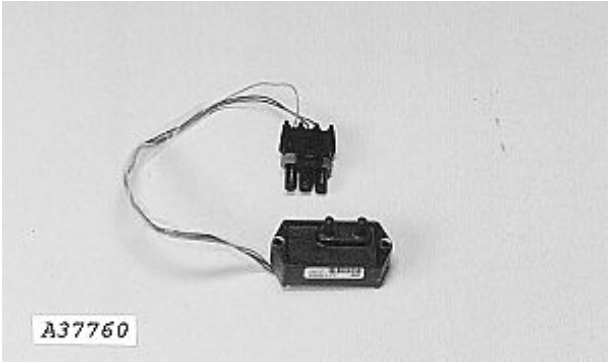
A67677 —UN—11JUN10

Seed Tube with Seed Sensor

OUO6064,00005B7 -19-10NOV11-6/12

Vacuum Sensor

The vacuum sensors provide the vacuum level signal to the Planter Main 1 (PM1) controller. There is one vacuum sensor for each vacuum fan on the planter.



A37760 —UN—06SEP95

Vacuum Sensor

OUO6064,00005B7 -19-10NOV11-7/12

Planter Main 2 (PM2) Controller (Machines With Integrated Pneumatic Down Force)

This control unit:

- Controls and monitors the pneumatic down force system.

A66613 —UN—22FEB10

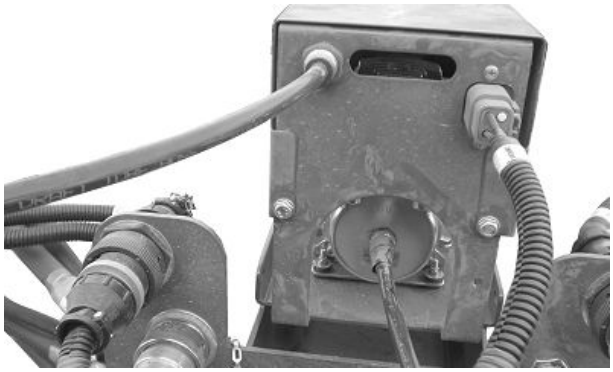
Planter Main 2 (PM2) Controller (Machines With Integrated Pneumatic Down Force)

Continued on next page

OUO6064,00005B7 -19-10NOV11-8/12

Pneumatic Down Force System Air Compressor (Machines With Single Set-Point Integrated Pneumatic Down Force)

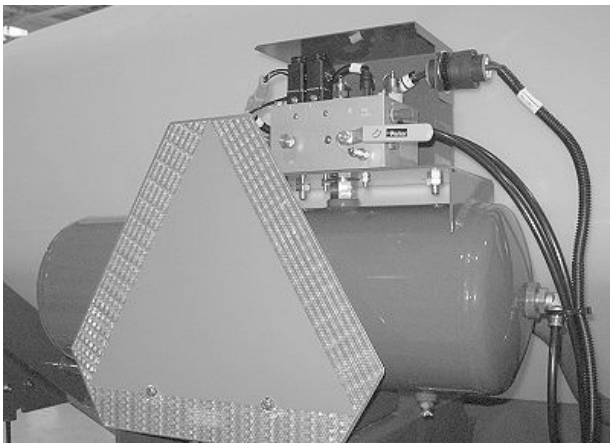
The pneumatic down force air compressor supplies pressurized air to the air storage tanks on SeedStar™ 2 Set-Point Integrated Pneumatic Down Force planters. Electrical power for the air compressor is provided using the tractor convenience outlet or directly from the tractor battery. A pressure switch located on the pneumatic down force control valve operates a relay on the compressor unit to turn the compressor on and off.



A71679 —UN—01JUN11

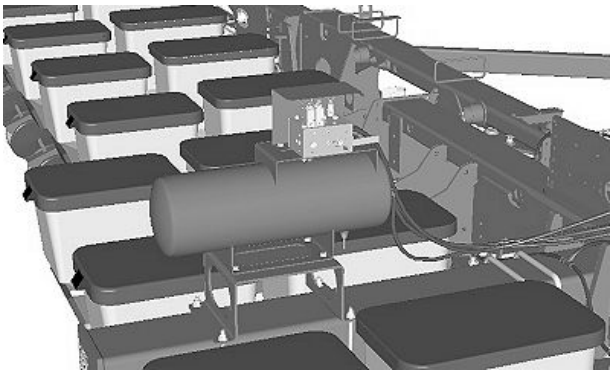
Pneumatic Down Force Air Compressor (Machines With Single Set-Point Integrated Pneumatic Down Force)

OUO6064,00005B7 -19-10NOV11-9/12



A68064 —UN—06JUL10

Pneumatic Down Force Air Tank and Solenoid Control Valve - Drawn Planters With CCS (Machines With Single Set-Point Integrated Pneumatic Down Force)

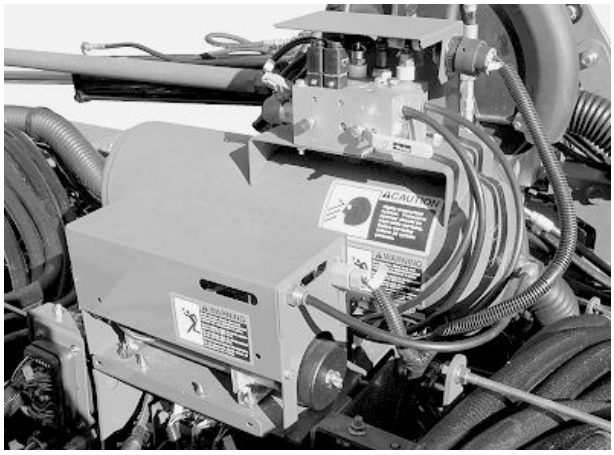


A70520 —UN—25JAN11

Pneumatic Down Force Air Tank and Solenoid Control Valve - Drawn Planters Without CCS (Machines With Single Set-Point Integrated Pneumatic Down Force)

Pneumatic Down Force Air Tank and Solenoid Control Valve (Machines With Single Set-Point Integrated Pneumatic Down Force)

The pneumatic down force air storage tanks provide extra air capacity to make fast row unit down force changes on SeedStar 2™ Single Set-Point Integrated Down Force planters. The solenoid control valve located on top of the main tank is controlled, and monitored by the Planter Main 2 (PM2) controller.



A68994 —UN—08OCT10

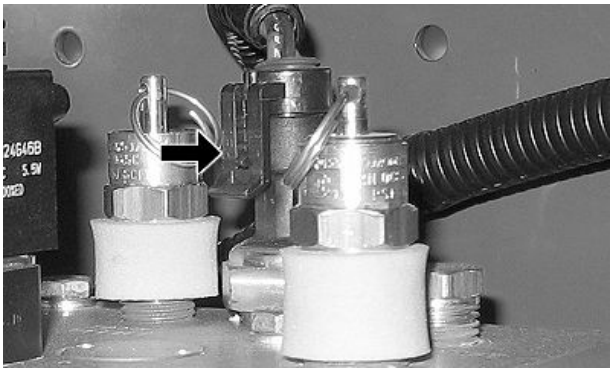
Pneumatic Down Force Air Tank and Solenoid Control Valve - Integral Planters (Machines With Single Set-Point Integrated Pneumatic Down Force)

Continued on next page

OUO6064,00005B7 -19-10NOV11-10/12

Pneumatic Down Force Pressure Sensor (Machines With Integrated Pneumatic Down Force)

The Pneumatic Down Force Pressure Sensor senses the amount of air pressure in the air spring circuit. The Planter Main 2 (PM2) controller uses the pressure sensor signal to adjust the pressure in the air spring circuit to achieve the down force setting entered by the operator.



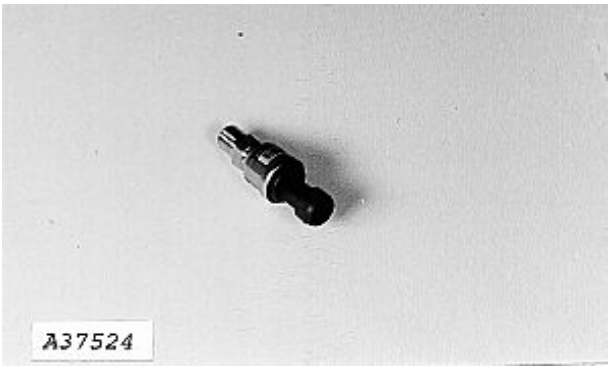
A67679 —UN—30JUN10

Pneumatic Down Force Pressure Sensor (Machines With Integrated Pneumatic Down Force)

OUO6064,00005B7 -19-10NOV11-11/12

Fertilizer Pressure Sensor (Optional)

The fertilizer pressure sensor is optional on planters equipped with a liquid fertilizer piston pump. The Planter Main 1 (PM1) controller monitors the fertilizer pressure sensor signal and displays the pressure value on the GreenStar™ display.

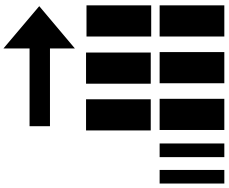


A37524 —UN—13SEP95

Fertilizer Pressure Sensor (Optional)

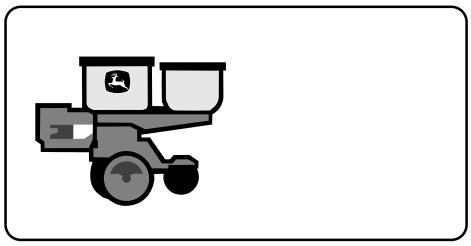
OUO6064,00005B7 -19-10NOV11-12/12

Configure Planter Drive Source



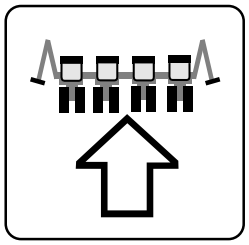
A59325 —UN—19FEB07

Menu



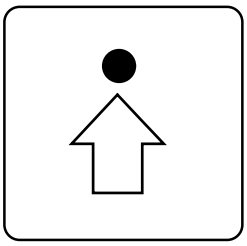
A59551 —UN—08MAR07

Planter Button



A59172 —UN—29JAN07

Configure Softkey



A59377 —UN—23FEB07

Settings Button

Drive source is configured at the factory for each planter. The only reason to change this configuration is if a different drive system has been installed on machine.

1. Select **Menu** >> **Planter** button >> **Configure** softkey >> **Drives** tab >> **Drive Configure** drop-down box >> **Settings** button.

IMPORTANT: A Drive Source change resets all planter settings to default values.

2. Select **Drive Source** drop down menu and choose type of drive source on machine.

NOTE: Selecting **Cancel** *returns you to the* **Drives** *tab.*

3. Select **Enter** button to acknowledge controller reset warning.

NOTE: Wait 30 seconds between power cycles.

4. Cycle power.

H85801 —UN—14JUN06

H85814 —UN—14JUN06

Enter *Cancel*

Screen Area Information

Planter Configuration — Planter Configuration
Drives — Drives
Drive Config — Drive Configuration
Drive Source: — Drive Source:
Ground Driven — Ground Driven
Variable Rate — Variable Rate

OUO6064,00005B8 -19-10NOV11-1/1

Set Meter Type

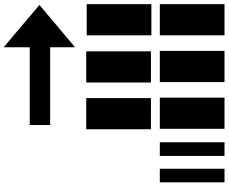
1. Select **Menu** >> **Planter** button >> **Configure** softkey >> **Drives** tab >> **Drive Configuration** >> **Settings** button.
2. Select **Meter Type** drop down menu and choose type of meter on machine.

NOTE: Selecting **Cancel** *returns you to the* **Drives** *tab.*

3. When complete select **Enter**.

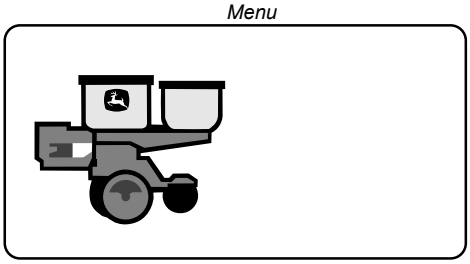
Screen Area Information

Planter Configuration — Planter Configuration
Drives — Drives
Drive Source — Drive Source
Meter Type — Meter Type
Vacuum — Vacuum
Mechanical — Mechanical



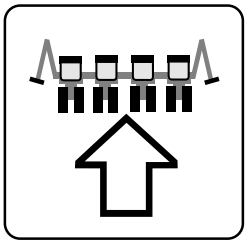
A59325 —UN—19FEB07

Menu



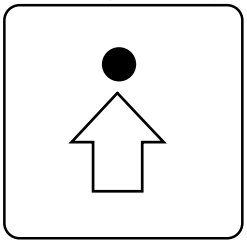
A59551 —UN—08MAR07

Planter Button



A59172 —UN—29JAN07

Configure Softkey



A59377 —UN—23FEB07

Settings Button

Enter

H85801 —UN—14JUN06

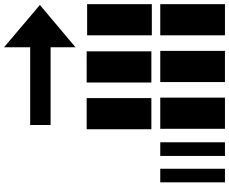
Cancel

H85814 —UN—14JUN06

OUO6064,00001A5 -19-15JUN10-1/1

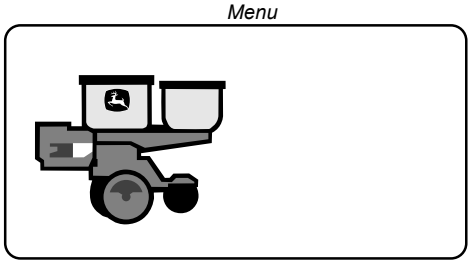
Configure Frame Layout, Row Layout, and Drive Disconnect Warning

1. Select **Menu** >> **Planter** button >> **Configuration** softkey >> **Frame** tab >> **Frame Configuration** drop-down box.



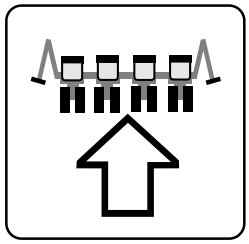
A59325 —UN—19FEB07

Menu



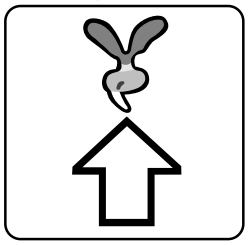
A59551 —UN—08MAR07

Planter Button



A59172 —UN—29JAN07

Configuration Softkey



A59173 —UN—29JAN07

Rates Softkey

Continued on next page

OUO6074,0000E19 -19-13OCT14-1/2

NOTE: Row configuration is the overall machine layout. Do not change this selection once set.

2. Select **Row Configuration** drop-down box and choose how rows are configured on machine.
   - Single Row Configuration (A): Row spacing is measured between each adjacent row. Example: 1775NT
   - Split Row Configuration (B): Row spacing is measured between each adjacent row even if row units are on different frame components. Example: 1795
   - Twin Row Configuration (C): Row spacing is measured from the center of each set of adjacent twin rows. Example: 1705 Twin Row

   How to Switch Between Wide and Narrow Split Rows or Single and Twin Rows:

   a. Select **Rates** softkey.

NOTE: The monitor automatically adjusts rows, spacing, and machine width based on the box checked.

To ensure that all settings update, select the rows planting check box even if a check mark is already in the box.

   b. Select **Rows Planting** check box to choose the row configuration monitored.

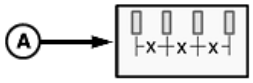
Cycle power whenever a change is made to ensure that updates are recorded.

NOTE: If number of rows is changed, RowCommand™ must be enabled again. (Refer to drive section configuration.)

3. Select **Rows** input box. Enter total number of rows on machine.
4. Select **Row Spacing** input box. Enter the spacing distance for selected configuration as determined in previous step.
5. Planter **Width** is automatically calculated. To enter the width manually, select input box and enter a value.
6. Select **Clutch Disconnect Warning** check box to enable or disable the partial width alarm. When enabled, a full page warning displays for 5 seconds whenever a clutch or drive section is disengaged. A message is displayed on Message Center softkey and monitor beeps every 15 seconds as a reminder.

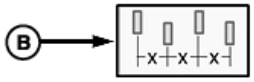
RowCommand is a trademark of Deere & Company

A72709 —UN—21SEP11



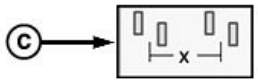
Single Row Spacing

A72710 —UN—21SEP11



Split Row Spacing

A72711 —UN—21SEP11



Twin Row Spacing

A—Single Row Configuration
B—Split Row Configuration
C—Twin Row Configuration

7. Select **Transport Mode** button to place monitor in transport mode. With transport mode active, the alarms are disabled when moving to and from fields.

Screen Area Information

Planter Configuration — Planter Configuration
Frame Configuration — Frame Configuration
Planter Data — Planter Data
Planter Dimensions — Planter Dimensions
GPS Dimensions — GPS Dimensions
Total — Total
Rows — Rows
Planter Width — Planter Width
Single Row — Single Row
Split Row — Split Row
Twin Row — Twin Row
Clutch Disconnect Warning — Clutch Disconnect Warning
Transport Mode — Transport Mode
Rows Planting — Rows Planting

OUO6074,0000E19 -19-13OCT14-2/2

Seed Sensors On/Off

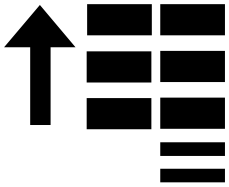
1. Select **Menu** >> **Planter** button >> **Configuration** softkey >> **Sensor** tab.

IMPORTANT: Frame configuration must be complete before seed sensor setup.

2. Select **Seed** from drop down box.
3. To change all rows at once, select button to **Turn All Rows On** or to **Turn All Rows Off**.

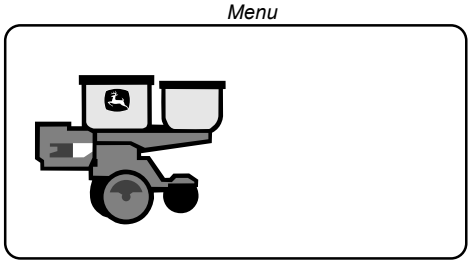
   To change one row at a time, select **Row** input box and enter row number. Select **On** or **Off** check box to configure selected row.

   On and Off selections are only available for active rows. Example: If a split row or twin row machine is set to plant in the wide row configuration, the intermediate rows are not selectable.
4. Select the Headland Warning Suppression check box to suppress warnings while making turns in headlands.



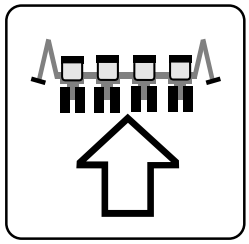
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59172 —UN—29JAN07

Configuration Softkey

Screen Area Information

Planter Configuration — Planter Configuration
Sensor — Sensor
Seed — Seed
On — On
Off — Off
Row — Row
All Rows On — All Rows On
All Rows Off — All Rows Off
Turn All Rows On — Turn All Rows On
Turn All Rows Off — Turn All Rows Off
Headland Warning Suppression — Headland Warning Suppression

OUO6064,0000494 -19-29APR11-1/1

Vacuum Sensor Configuration

NOTE: This option is only visible on run screen if one or more vacuum sensors are selected.

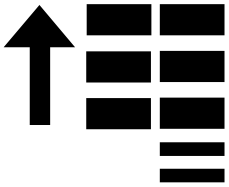
1. Select **Menu** >> **Planter** button >> **Configuration** softkey >> **Sensor** tab.
2. Select **Vacuum** from drop-down box.

NOTE: Current pressure is displayed on bottom left of screen.

3. Select number of vacuum sensors on machine from **Sensors:** drop-down box.

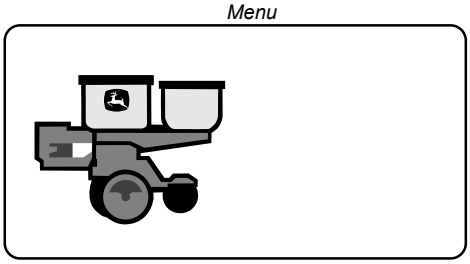
Screen Area Information

Planter Configuration — Planter Configuration
Sensor — Sensor
Vacuum — Vacuum
V (in.) — Inches of Vacuum
Sensors: — Sensors:
Sensor — Sensor
Cal Value — Calibration Value
Turn Vacuum Off — Turn Vacuum Off
Select — Select



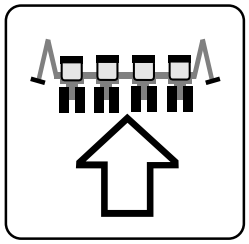
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59172 —UN—29JAN07

Configuration Softkey

A59369 —UN—20FEB07

Zero Sensor Button

OUO6064,00000F4 -19-10NOV11-1/1

Vacuum Sensor Calibration

NOTE: This option is only visible if machine is configured for one or more vacuum sensors.

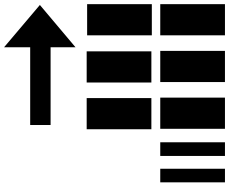
1. Select **Menu** >> **Planter** button >> **Configuration** softkey >> **Sensor** tab.
2. Select **Vacuum** from drop down box.
3. Select each sensor, one at a time, from the **Sensor** drop down box.
4. Select **Cal Value** input box and enter the number of inches of water displayed per volt from the vacuum sensor. John Deere™ planters with factory equipped sensors have a calibration value of 5.66 (English units) or 143.76 (Metric units).

NOTE: Current pressure is displayed on bottom left of screen.

5. Shut off vacuum hydraulics prior to depressing the **Zero Sensor** button.

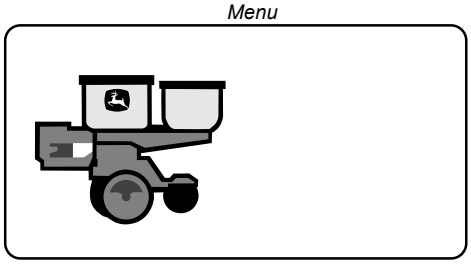
Screen Area Information

Planter Configuration — Planter Configuration
Sensor — Sensor
Vacuum — Vacuum
Cal Value — Calibration Value
Turn Vacuum Off — Turn Vacuum Off
Select — Select



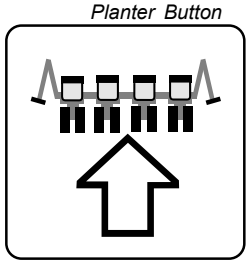
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59172 —UN—29JAN07

Configuration Softkey

A59369 —UN—20FEB07

Zero Sensor Button

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OUO6064,00000F5 -19-29JUL10-1/1

Pneumatic Down Force—Air Pressure Sensor

1. Select **Menu** >> **Planter** button >> **Configuration** softkey >> **Sensor** tab.
2. Select **PDF Air Pressure** from drop-down box.

NOTE: Step value option is only displayed in the Pneumatic Down Force—Air Pressure Sensor setup screen for Non-XP (Enhanced Monitoring) equipped machines.

3. Select **Step Value**, enter a value for the pneumatic down force system to increase or decrease when adjustment arrows (on run screen) are used for adjustment.

NOTE: PDF low alarm option is only displayed in the Pneumatic Down Force—Air Pressure Sensor setup screen for Non-XP (Enhanced Monitoring) equipped machines.

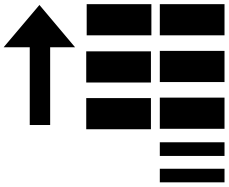
4. Select **PDF Low Alarm** to set the pressure to determine margin. the default setting from the factory is (40 lb.)
5. Select **Cal Value** input box and enter the calibration value of 494.00.

NOTE: Current down force is displayed on bottom left of screen.

6. Relieve air pressure before selecting the **Zero Sensor** button.

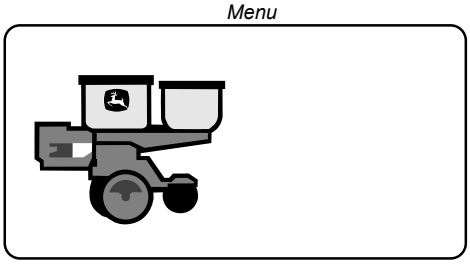
Screen Area Information

Planter Configuration — Planter Configuration
Sensor — Sensor
PDF Air Pressure — PDF Air Pressure
Cal Value — Calibration Value
To Zero Air Pressure Sensor: — To Zero Air Pressure Sensor:
Relieve Air Pressure and Press Continue — Relieve Air Pressure and Press Continue



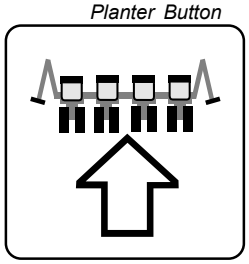
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59172 —UN—29JAN07

Configuration Softkey

H85801 —UN—14JUN06

Continue

A59369 —UN—20FEB07

Zero Sensor Button

OUO6064,00005C9 -19-10NOV11-1/1

Liquid Fertilizer Sensors

NOTE: This option is only visible if machine is configured for one or more sensors.

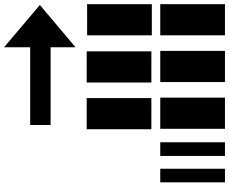
1. Select **Menu** >> **Planter** button >> **Configuration** softkey >> **Sensor** tab.
2. Select **Fertilizer** from drop down box.
3. Select number of fertilizer sensors on machine from **Sensors:** drop down box.
4. Select each sensor, one at a time, from the **Sensor** drop down box. Select **High Pressure** input box and enter a high pressure warning limit, if desired.

NOTE: Current pressure is displayed on bottom left of screen.

5. Select each sensor, one at a time, from the **Sensor** drop down box. Relieve pressure in fertilizer system and select the **Zero Sensor** button.

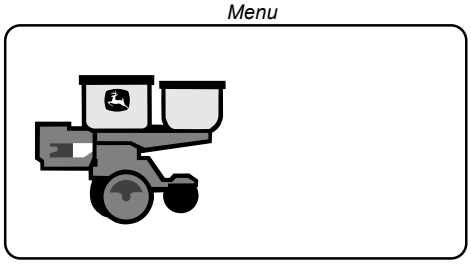
Screen Area Information

Planter Configuration — Planter Configuration
Fertilizer — Fertilizer
Sensors: — Sensors:
Sensor — Sensor
High Pressure — High Pressure
Cal Value — Calibration Value
Pressure — Pressure
Relieve Pressure — Relieve Pressure
Select — Select



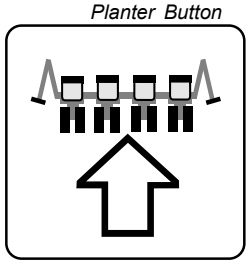
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59172 —UN—29JAN07

Configuration Softkey

A59369 —UN—20FEB07

Zero Sensor Button

OUO6064,00000F6 -19-15JUN10-1/1

Liquid Fertilizer Sensor Calibration

NOTE: This option is only visible if machine is configured for one or more sensors.

1. Select **Menu** >> **Planter** button >> **Configuration** softkey >> **Sensor** tab.
2. Select **Fertilizer** from drop down box.
3. Select each sensor, one at a time, from the **Sensor** drop down box.
4. Select **Cal Value** input box and enter the pressure per volt from the fertilizer sensor. John Deere™ planters with factory equipped sensors have a calibration value of 37.50 (English units) or 258.55 (Metric units).

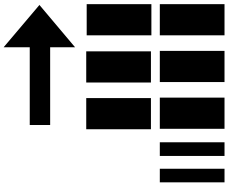
NOTE: Some pressure remains trapped in the system even after it is shut down, unless manually relieved.

NOTE: Current pressure is displayed on bottom left of screen.

5. Relieve fertilizer pressure from system and select the **Zero Sensor** button.

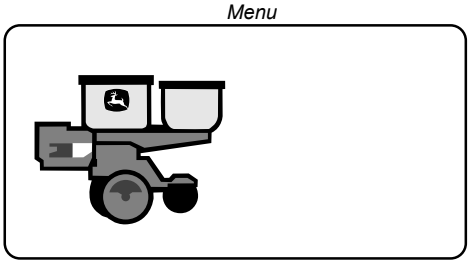
Screen Area Information

Planter Configuration — Planter Configuration
Sensor — Sensor
Fertilizer — Fertilizer
High Pressure — High Pressure
Cal Value — Calibration Value
Pressure — Pressure
Relieve Pressure — Relieve Pressure
Select — Select



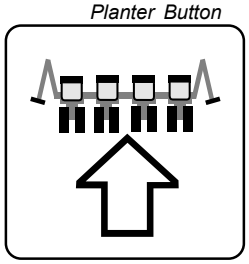
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59172 —UN—29JAN07

Configuration Softkey

A59369 —UN—20FEB07

Zero Sensor Button

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OUO6064,0000495 -19-29APR11-1/1

Calibrate Common Start and Stop Height

Use this procedure to set a single point to start and stop RowCommand™ and Variable Rate Drive (VRD) motors as the machine raises and lowers. Common start/stop points are used when machine is equipped with row unit parallel-arm height switches. Machines with a wheel frame height sensor can use separate start/stop points.

1. Select **Menu** >> **Planter** button >> **Configure** softkey >> **Sensor** tab.
2. Select **Height** from drop-down box.
3. Select **Common**.
4. Completely raise machine in field raised position.
5. Select **Planter Raised** button. Select **Enter** button.
6. Lower machine completely while driving forward under seeding conditions.
7. Select **Planter Lowered** button. Select **Enter** button.
8. Select **Start/Stop** button.

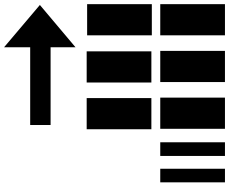
IMPORTANT: Start/stop point must be manually set to 50 for integral planters with single action height switches on row unit parallel arms.

NOTE: A set point less than 20 is not recommended with wheel frame height sensor.

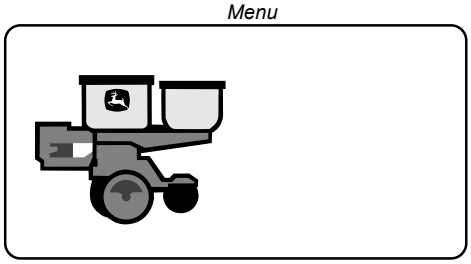
9. With Wheel Frame Height Sensor: From the fully lowered position, raise machine until the desired start/stop point is achieved and select **Set Height** button. Recommended setting is with openers at soil surface.
10. If setting needs slight adjustment after planting begins, select input box and adjust value in small increments.
11. Select **Enter** button.

Screen Area Information

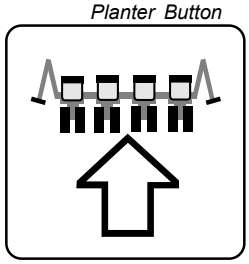
Planter Configuration — Planter Configuration
Sensor — Sensor
Height — Height
Common — Common
Separate — Separate
Motor Start/Stop Height — Motor Start/Stop Height
Current Planter Height — Current Planter Height


A59325 —UN—19FEB07

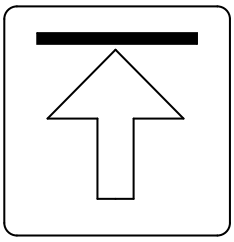
Menu


A59551 —UN—08MAR07

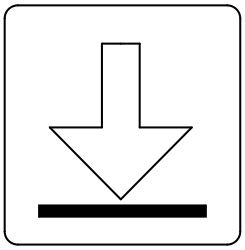
Planter Button


A59172 —UN—29JAN07

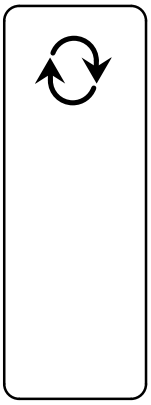
Configure Softkey


A59528 —UN—08MAR07

Planter Raised


A59529 —UN—09MAR07

Planter Lowered


A59530 —UN—08MAR07

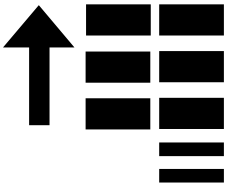
Start/Stop


H85801 —UN—14JUN06

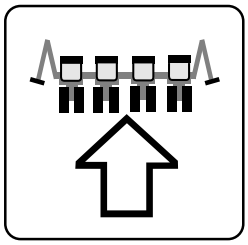
Enter

OUO6064,00001B0 -19-20JUL10-1/1

Calibrate Separate Start and Stop Height

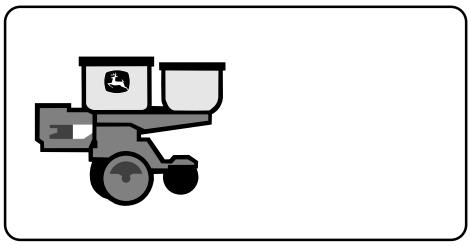


Menu



Configure Softkey

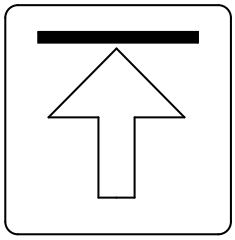
A59325 —UN—19FEB07



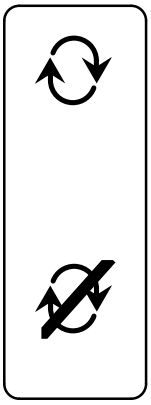
Planter Button

A59551 —UN—08MAR07

A59172 —UN—29JAN07

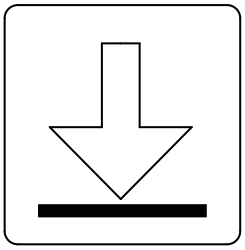


Planter Raised

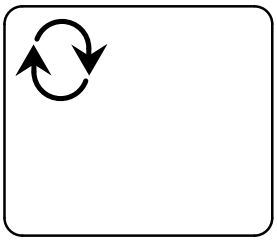


Start/Stop

A59528 —UN—08MAR07



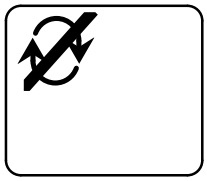
Planter Lowered



Start Height

A59529 —UN—09MAR07

A59527 —UN—08MAR07



Stop Height

Enter

Use this procedure to set separate points to start and stop Variable Rate Drive (VRD) motors as the machine raises and lowers. Machines with wheel frame height sensors use separate start/stop points. Common start/stop points are used when the machine is equipped with row unit parallel-arm height switches.

Select **Menu** >> **Planter** button >> **Configure** softkey >> **Sensor** tab.

1. Select **Height** from drop-down box.
2. Select **Separate**.
3. Completely raise machine in field raised position.
4. Select **Planter Raised** button. Select **Enter** button.
5. Lower machine completely while driving forward under seeding conditions.
6. Select **Planter Lowered** button. Select **Enter** button.

Continued on next page

OUO6064,000064C -19-10NOV11-1/2

7. Select **Start/Stop** button.

IMPORTANT: Start height must be a larger value than stop height.

NOTE: A set point less than 20 is not recommended with wheel frame height sensor.

8. From the fully lowered position, raise machine until motor stop height is achieved and select **Stop Height** button. Recommended setting is just before openers exit soil.
9. Fully raise machine.
10. From the fully raised position, lower machine until motor start height is achieved and select **Start Height** button. Recommended setting is just before openers contact soil.
11. To adjust settings slightly after planting begins, select input boxes and adjust values in small increments.
12. Select **Enter** button.

Screen Area Information

Planter Configuration — Planter Configuration
Sensor — Sensor
Height — Height
Common — Common
Separate — Separate
Motor Start Height — Motor Start Height
Motor Stop Height — Motor Stop Height
Current Planter Height — Current Planter Height

OUO6064,000064C -19-10NOV11-2/2

Ground Speed Source

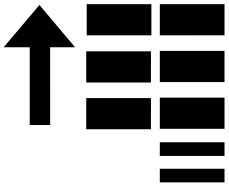
1. Select **Menu** >> **Planter** button >> **Configuration** softkey >> **Sensor** tab.
2. Select **Tractor Speed** from drop down box.
3. **Auto** box checked is the recommended option. Radar speed and tractor wheel speed are shown on bottom of screen. The active source used at this moment is displayed in the middle of the screen.
4. To force the monitor to use only one speed source, clear **Auto** check box.

IMPORTANT: Entering a manual speed is an option. A single speed value must be entered. The monitor assumes the planter is always travelling this speed. Travel at this speed for most accurate monitor readings. All rates and warnings are based on the speed entered, not the actual ground speed.

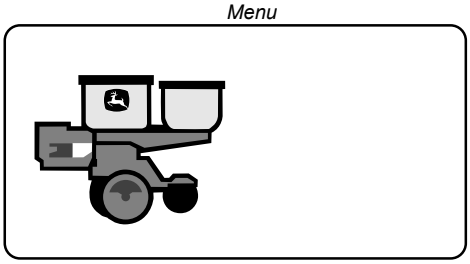
5. Select a single speed source; **Radar**, **Wheel Speed**, or **Manual**.

Screen Area Information

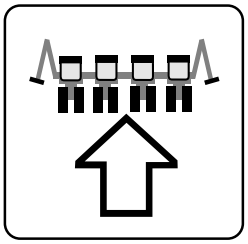
Planter Configuration — Planter Configuration
Sensors: — Sensors:
Sensor — Sensor
Tractor Speed — Tractor Speed
Auto — Auto
Select Source — Select Source
Active Source — Active Source
mph — Miles Per Hour
kph — Kilometers Per Hour


A59325 —UN—19FEB07

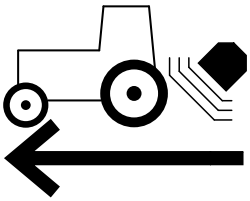
Menu


A59551 —UN—08MAR07

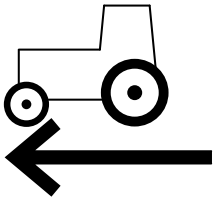
Planter Button


A59172 —UN—29JAN07

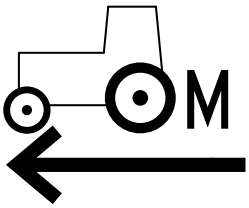
Configuration Softkey


A62104 —UN—22FEB08

Radar Speed


A62103 —UN—03MAR08

Wheel Speed



A62106 —UN—22FEB08

Manual Speed

OUO6064,00001B2 -19-15JUN10-1/1

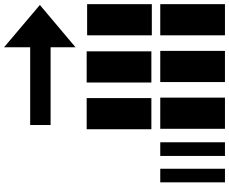
Configure Drive Sections

NOTE: Verify that Drive Source is configured to Ground Drive. (See CONFIGURE DRIVE SOURCE in Initial System Configuration.)

Configure drive sections.

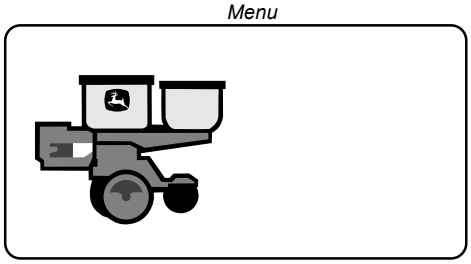
1. Select **Menu** >> **Planter** button >> **Configure** softkey >> **Drives** tab >> **Drive Sections** drop-down box >> **Settings** button.
2. Select number of sections (number of clutches) from drop-down box.
3. Select next page icon.
4. Verify that the Start and End Rows match the Left and Right clutch configuration on machine.
5. To enable Row Command, check the **Row Command** box.

Planter Configuration — Planter Configuration
Drives — Drives
Drive Sections — Drive Sections
Motor — Motor
Start Row — Start Row
End Row — End Row
Left — Left
Right — Right
Number of Sections — Number of Sections
Row Command: No — Row Command: No
Row Command: Yes — Row Command: Yes



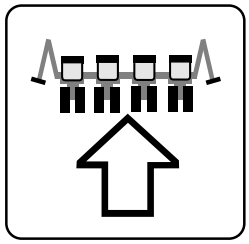
A59325 —UN—19FEB07

Menu



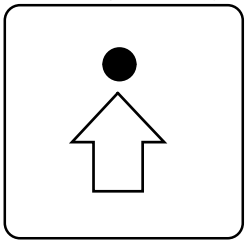
A59551 —UN—08MAR07

Planter Button



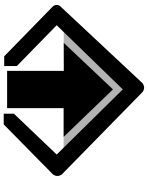
A59172 —UN—29JAN07

Configure Softkey



A59377 —UN—23FEB07

Settings Button



H85801 —UN—14JUN06

Enter

OUO6074,0000ACD -19-29APR11-1/1

Variable-Rate Drive (VRD) Overview

A Variable-Rate Drive (VRD) system uses one or more hydraulic motors to turn the seed meters. Various sensors along with data entered into the monitor by the operator determines meter speed required to achieve a chosen population.

VRD features provide additional performance over mechanical drives.

- Manually change seed rates from the cab without stopping.
- Manually change seed rates when crossing different soil types.
- Manually change seed rates when crossing transitions between irrigated and non-irrigated ground.
- Program up to five different seed rates to choose from while planting.
- Use multiple VRD motors to seed different rates with each hydraulic drive motor or select the same rate for all motors.
- Compatibility with APEX software and Map Based Planter Field Doc™ to design a prescription plan that automatically adjusts seed rates in the field.

System Components

- **Hydraulic Motor** - Motor turns planter drive shafts and meters.
- **Valve and Solenoid** - Varies oil flow to motor.
- **Motor Sensor** - Monitors motor speed.
- **Height Sensor or Switch** - Monitors frame height.
- **Motion Sensor** - Monitors planter wheel rotation.
- **Tractor Radar or GPS Receiver** - Indicates ground speed.
- **System Controller** - Processes all signals and data input.
- **Monitor Display** - Presents data and accepts operator input.

Hydraulic Requirements

Tractor must have either a load sensing hydraulic system or a closed center hydraulic system with flow control. These types of hydraulic systems usually have large oil reservoirs and increased oil cooling capacity. They only deliver the oil flow needed for the VRD motors to maintain a constant speed.

Each VRD motor requires a nominal hydraulic oil flow of 3.79 to 30.28 L/min. (1.0 to 8.0 gpm) at 3447 to 10 342 kPa (500 to 1500 psi).

NOTE: Tractors with open center hydraulic systems are not recommended for the following reasons:

- *No control of oil flow volume.*
- *Excessive oil temperature.*
- *Decreased oil flow to motor during operation of other tractor control valves.*

System Functionality

- **SeedStar™ 2 Controller (PM1):** A controller mounted on the planter frame receives power from the tractor and signals from all the system components. The controller processes all the information, controls the hydraulic motor valve, and provides information to the monitor display. The controller communicates over a CAN (Controller Area Network) system. SeedStar™2 is compatible with John Deere GreenStar™ 2 1800 and 2600 displays and ISO 11783 compliant competitive displays only.
- **Monitor Display:** A monitor accepts operator inputs and sends data to the controller. The monitor also displays data received from the controller.
- **Height Sensor:** Most drawn planters use an adjustable wheel frame height sensor to start and stop seeding at chosen points as the planter is lowered and raised. The start and stop points are input and adjusted by the operator on the GreenStar™2 display.
- **Height Switch:** Most integral planters use one or more push button switches mounted on a row unit parallel arm. The switch compresses when the planter is raised and release when lowered. **Two Switch System:** One switch is installed on the far left side of the machine, and one switch on the first row unit to the right of center. If only one switch is compressed, the drives continue to turn. Uneven ground can cause one switch to compress while one switch remains in the released position. Drives only stop when BOTH switches are compressed as planter is raised.
- A tractor mounted radar or GPS receiver determines ground speed.
- A wheel motion sensor mounted on a planter wheel detects motion and indicates the planter is moving. This is a safety feature validating the ground speed signal from the radar or GPS receiver.
- Power to the variable-rate drive motors is supplied by continuous hydraulic flow from the tractor. The controller signals a solenoid operating a hydraulic valve on the motor to control motor speed.
- A speed sensor mounted on the motor shaft detects motor speed for feedback to the SeedStar™ controller.

  NOTE: Population readings detected by seed sensors do NOT control motor speed.

- The operator enters data into the monitor for seed rates, seed disks, seed meters, row spacing, motor sprockets, and frame position. The controller uses other operator entered data to adjust motor speed and therefore meter speed.

The following components must be active for system operation:

- Monitor operation—Monitor and controller must have electrical power.
- Seed Rates—One or more must be entered and turned ON from the Planter - Rates screen.

Continued on next page

OUO6064,00001F1 -19-30JUN10-1/3

- Continuous hydraulic oil flow—Oil must be flowing to motors.
- Ground Speed from the tractor—Controller must detect ground speeds greater than 1.6 km/h (1 mph).
- Wheel motion sensor—Controller must detect planter wheel motion.
- Height Sensor or Switch—Must be calibrated and controller must detect that planter is lowered.

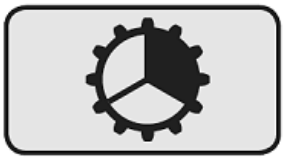
To view current status of VRD inputs, Select **Planter** >> **Diagnostics** softkey >> **Readings** tab >> **VRD Data** from drop down menu.

In order for variable-rate drive to work, seed rates must be entered and turned ON from the Planter - Rates screen.

During normal operation, a visual indicator appears on the RUN screen when motors are operational. The gear indicator sections fill in, one at a time based on system activity, then turn solid green to indicate at least one motor is operational.

A62923 —UN—23JUL08

No Activity



A62924 —UN—23JUL08

Wheel Motion Active

A62925 —UN—23JUL08

Planter Lowered

A62926 —UN—23JUL08

Drives Engaged

System Performance

Low speeds affect performance. Motor performance becomes marginal at speeds less than 3.2 km/h (2 mph) and stops at speeds below 1.6 km/h (1 mph). NO monitor warnings are given at speeds below 3.2 km/h (2 mph).

Extreme and sudden changes in speed cause a decrease in population and spacing accuracy. To start from a stopped position, use high idle and a low gear. Gradually upshift and increase speed from 3.2 km/h (2 mph) to target speed to allow the VRD system time to adjust. Use Quick Start feature to improve initial motor activation. Downshift instead of idling down to turn on ends of field. Attain 3.2 km/h (2 mph) before lowering the planter and gradually upshift to target speed.

Field Doc is a trademark of Deere & Company

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OUO6064,00001F1 -19-30JUN10-2/3

Quick Start Overview

A skip is an area where seed is expected, but has not been planted.

The Quick Start feature allows the operator to reduce a skip when the planter starts from a stop. Quick Start reduces the skip to approximately 0.3—1.2 m (1—4 ft.).

When Quick Start is selected and activates, the control unit engages the motors at the minimum operational rpm represented by a target ground speed. The motors overpopulate until actual ground speed reaches the target speed calculated by the control unit.

For example:

Population	Row Spacing	Minimum Speed
37 000 seeds/hectare (15 000 seeds/acre)	76 cm (30 in.)	4.8 km/h (3 mph)
74 000 seeds/hectare (30 000 seeds/acre)	76 cm (30 in.)	2.4 km/h (1.5 mph)

The control unit must detect the four following conditions before Quick Start activates:

- Quick Start must be enabled by selecting **Planter** application >> **Planter Configuration** softkey >> **Drives** tab >> **Settings** button >> check **QS Enabled** check box. Select **Enter** button.
- Actual measured radar speed must be less than minimum ground speed.
- Planter wheel motion must be detected.
- Planter frame height must indicate a lowered position.

To use **Quick Start**:

1. Raise planter.
2. Begin forward travel in a low gear at high idle.
3. Select QS Reset on display.

A67930 —UN—30JUN10

Quick Start Reset Button

4. Lower planter. When the height sensor indicates a lowered position “QS 6” appears on screen and begins counting down. The VRD motors engage at the minimum speed.
5. Gradually shift up to planting speed.

   When timer reaches zero, the control unit checks for a minimum ground speed of 1.6 km/h (1 mph). If minimum speed is not reached, system shuts down. If speed is over minimum, but less than target, timer resets to 6 seconds. When timer reaches zero again, the control unit checks for the minimum ground speed again. If minimum speed is not reached, system shuts down. If speed is over minimum, but less than target, motors continue to run below optimum limits and a warning is issued to increase speed. If target speed is reached at any point while timer is active, Quick Start deactivates and normal operation resumes.

OUO6064,00001B3 -19-30JUN10-1/1

Rotate Seed Meters Overview

CAUTION: Avoid injury from rotating drive components. Ensure everyone is clear of drive components before activating variable-rate drive.

The Rotate Seed Meters feature allows the operator to rotate the seed meters by activating the variable-rate drive motors while machine is stationary. The meters fill with seed as meters rotate. Full meters reduce the area traveled before seeds meet the soil when starting from a stop.

The following must occur for this feature to function:

- Planter must be unfolded.
- Planter must be in raised position.
- Planter must be stationary.
- Variable rate hydraulics must be active.
- If equipped with vacuum, vacuum must be at operating pressure to hold seeds on meter disks.

Select **Meter Rotation** button on Main Planter screen to rotate meters. An audible tone sounds when meters stop turning. Each time the icon is pressed, the meters rotate approximately one half a revolution. Select the button at least three times to completely fill seed meters. If meters fail to move, a warning screen appears.

A59898 —UN—02APR07

Meter Rotation Button

NOTE: When Rotate Meter function is used in conjunction with RowCommand™, RowCommand™ clutches will be de-energized (meters engaged).

This feature may also be used as a diagnostic tool for the variable rate drive.

OUO6074,0000F7C -19-31JUL09-1/1

System Components

Variable Rate Drive (VRD) Motor and Valve

The VRD motor turns the seed meter drives at a speed controlled with the valve. The seed population entered in the monito determines the motor speed. The solenoid valve receives electrical signals from the controller and adjusts oil flow to the motor. The planter configuration determines the quantity of VRD motors.

A44950 —UN—17JUL98

Variable Rate Drive Motor and Valve

OUO6064,00001A7 -19-10OCT14-1/6

VRD Motor Speed Sensor

A motor speed sensor is attached to the output shaft of each VRD motor. The sensor detects the exact speed of the motor for the controller.

A48171 —UN—19OCT01

Variable Rate Drive Motor Speed Sensor

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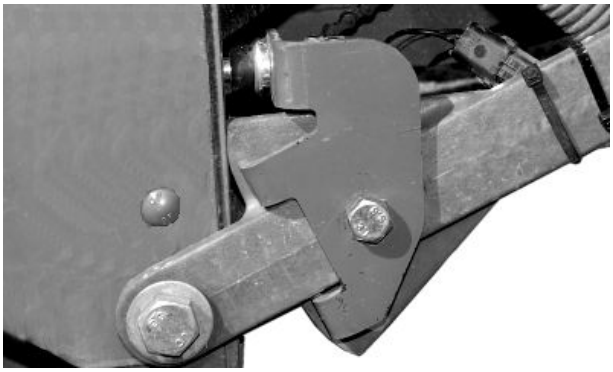
OUO6064,00001A7 -19-10OCT14-2/6

Parallel Arm Height Switch for Integral Planters

Two parallel arm height switches are used to sense when the planter is raised and lowered. Both switches must be in the same position to indicate a change of raised or lowered. When the planter is raised, the controller stops the VRD motors. (See Adjust Parallel Arm Height Switch in this section.) (See Calibrate Common Start and Stop Height in SeedStar™ 2 Basic Planter Configuration section.)



A48170 —UN—19OCT01

Parallel Arm Height Switch for Integral Planters

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OUO6064,00001A7 -19-10OCT14-3/6

Height Sensor for Drawn Planters

The height sensor switch is used to sense when the planter is raised and lowered. When the planter is raised, the controller stops the VRD motors. (See Calibrate Common Start and Stop Height or Calibrate Separate Start and Stop Height in SeedStar™ 2 Basic Planter Configuration section.)

A45210 —UN—27NOV98

Height Sensor for Drawn Planters

OUO6064,00001A7 -19-10OCT14-4/6

VRD Wheel Motion Sensor

The wheel motion sensor is used as a safety feature validating the ground speed signal from the radar or GPS receiver. The wheel motion sensor detects motion and indicates that the planter is moving.

A44952 —UN—17JUL98

Variable Rate Drive Wheel Motion Sensor

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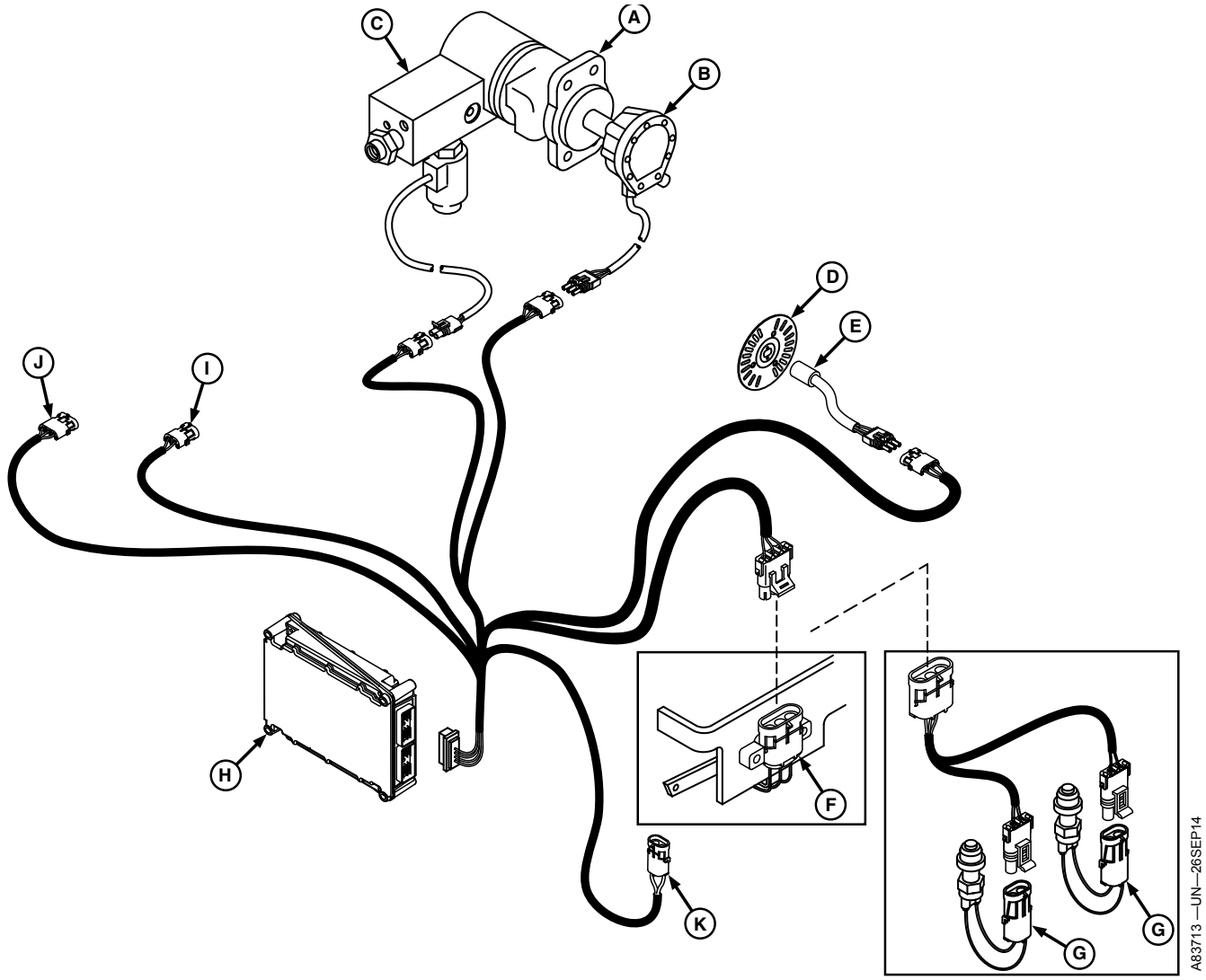
OUO6064,00001A7 -19-10OCT14-5/6



A—Motor
B—Speed Sensor
C—Speed Control Valve
D—Motion Disk
E—Motion Sensor
F—Height Sensor (Drawn Planter)
G—Height Sensors (Integral Planter)
H—Controller
I— CAN Bus Connector
J— Power Connector
K—Clutch Disconnect

OUO6064,00001A7 -19-10OCT14-6/6

Enable Variable-Rate Drive Software

NOTE: Planters are configured with the appropriate drive source from the factory.

IMPORTANT: A Drive Source change resets all planter settings to default values and requires cycling power to the display and controller.

Always configure Drive Source before planter settings are entered.

Confirm the Planter Drive source is listed as Variable-Rate from the **Planter Configuration** softkey >> **Drives** tab.

Height sensor must be calibrated and seeding rates must be defined and turned ON before operation.

OUO6064,00001F2 -19-30JUN10-1/1

Configure Planter Drive Sections

IMPORTANT: Complete the frame configuration first.

1. Select **Menu** >> **Planter** button >> **Configure** softkey >> **Drives** tab.
2. Select **Drive Sections** from the drop-down box.
3. Select **Settings** button and set the number of motors on machine.
4. To enable RowCommand™ , check the **Row Command** box.

NOTE: Dual Range Drive System check-box is only visible if monitor is configured for twin row machines. (See Configure Frame Layout, Row Layout, and Drive Disconnect Warning in SeedStar™ 2 Initial System Configuration section.)

5. Place a check in the **Dual Range Drive System** box on twin row machines that use a high-low range gear in the drive system between the VRD motor and the drillshaft.

NOTE: Adjust sprockets to match monitor on twin row machines. (See High-Low Drive Range in Seed Rate Configuration section.)

6. Select **Next Page** button. Set up one motor at a time. Perform the following:

NOTE: Row number one is always on left-hand side of machine while facing direction of travel.

- Select **End Row** input box and enter the far right row number that the selected VRD motor controls.
- Select **Disconnect** drop-down box and assign a section of the machine to selected VRD motor.

IMPORTANT: When the auto width disconnect is activated, all rows assigned to that disconnect stop planting and the monitor does not signal a failure until all rows are activated again.

IMPORTANT: When using RowCommand™, the auto width disconnect feature is turned off.

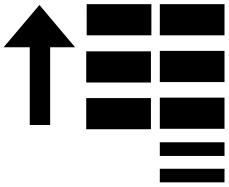
NOTE: Tooth count is stamped on the side of sprocket.

NOTE: Middle Driven and Middle Driver input boxes are only visible when Dual Range Drive System is enabled.

- Select **Motor Sprocket**, **Middle Driven**, **Middle Driver**, and **Final Driven** (Sprocket) input boxes and enter number of sprocket teeth for selected VRD motor.

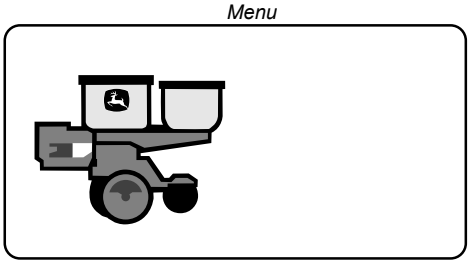
7. Repeat for each motor.
8. Select **Enter** button.

NOTE: Warning message is not displayed on half screen layout.



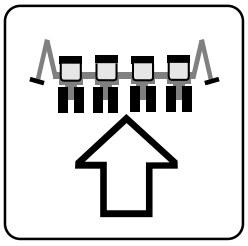
A59325 —UN—19FEB07

Menu



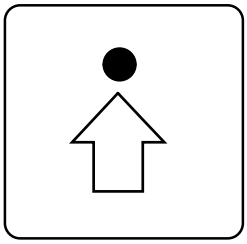
A59551 —UN—08MAR07

Planter Button



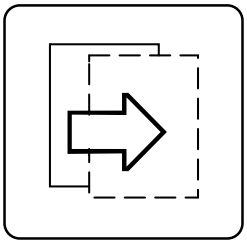
A62918 —UN—23JUL08

Configure Softkey



A62919 —UN—23JUL08

Settings Button

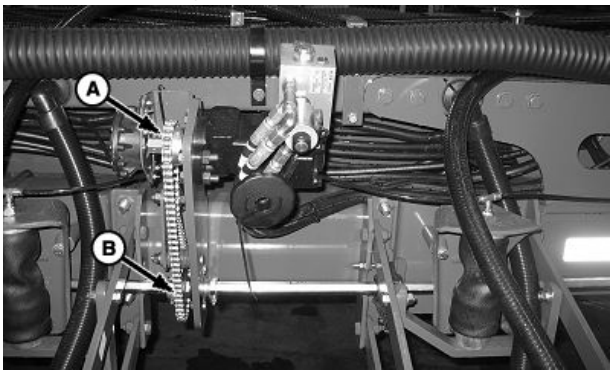


A62277 —UN—23JUL08

Next Page

A59520 —UN—23JUL08

Disconnect



A59899 —UN—02APR07

A—Drive Gear **B—Driven Gear**

Continued on next page

OUO6064,0000498 -19-13OCT14-1/2

9. Select **Menu** >> **Planter** button >> **Configure** softkey >>**Frame** softkey >> select **Clutch Disconnect Warning** check box to enable or disable the partial width alarm. If enabled, a full page warning displays for 5 seconds whenever a clutch is disengaged. A message is displayed on bottom line of full page run screen and monitor beeps every 15 seconds as a reminder.

Machine	Motor Sprocket	Middle Driven	Middle Driver	Final Driven
1720 CCS™ and 1725 CCS™ 12X2 Twin Row Machines	18	18 (High Range) 48 (Low Range)	14	29
All 1790 and 1795 Machines	18			36
1770NT and 1775NT with Mechanical Meters and Cable Drive	27			29
All Other Machines and other 1770NT and 1775NT Configurations	18			29
DB60T 72R20 Twin Row	14			35

Screen Area Information

Planter Configuration — Planter Configuration
Drives — Drives
Drive Section: — Drive Section:
RowCommand No — RowCommand No
RowCommand Yes — RowCommand Yes
Number of Motors — Number of Motors
Row Command — Row Command
Dual Range Drive System — Dual Range Drive System
Motor — Motor
Start Row — Begin Row
End Row — End Row
Motor Sprocket — Motor Sprocket
Middle Driven — Middle Driven
Middle Drive — Middle Drive
Final Driven — Final Driven
Left — Left
Right — Right
Center — Center
Either — Either
None — None
Enter — Next Screen
Continue — Save
Frame — Frame
Clutch Disconnect Warning — Clutch Disconnect Warning

RowCommand is a trademark of Deere & Company
SeedStar is a trademark of Deere & Company
CCS is a trademark of Deere & Company

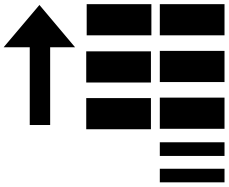
OUO6064,0000498 -19-13OCT14-2/2

Row Unit Drive Type

1. Select **Menu** >> **Planter** button >> **Configure** softkey >> **Drives** tab >> **Drive Configuration** >> **Settings** button.
2. Select **Row Unit Type** drop down menu and choose type of row unit on planter.
3. To enable QuickStart feature, check the **QS Enabled** box.
4. Select **Enter**.

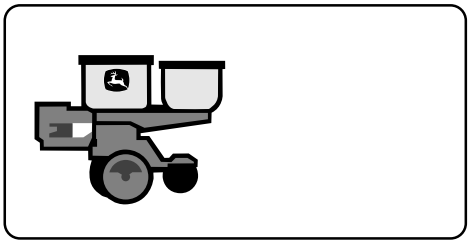
Screen Area Information

Planter Configuration — Planter Configuration
Drives — Drives
Drive Source — Drive Source
Meter Type — Meter Type
Row Unit Type — Row Unit Type
QS Enabled — Quick Start Enabled
Vacuum — Vacuum
Mechanical — Mechanical
MaxEmerge XP — MaxEmerge XP
MaxEmerge XP Pro-Shaft — MaxEmerge XP Pro-Shaft
Pro-Series — Pro-Series
MaxEmerge 5 Pro-Shaft — MaxEmerge 5 Pro-Shaft
MaxEmerge 5 Chain — MaxEmerge 5 Chain



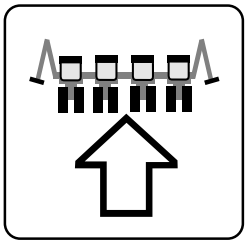
A59325 —UN—19FEB07

Menu



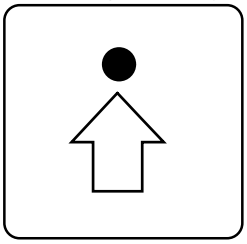
A59551 —UN—08MAR07

Planter Button



A59172 —UN—29JAN07

Configure Softkey



A59377 —UN—23FEB07

Settings Button

H85801 —UN—14JUN06

Enter

OUO6064,0000497 -19-04SEP14-1/1

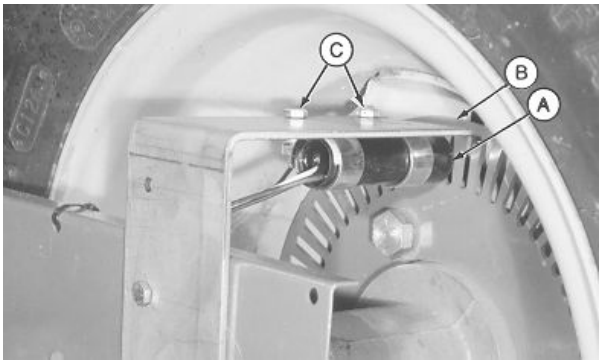
Adjust Motion Sensor Gap

Smooth Sided Sensor

IMPORTANT: Avoid damage to sensor. Rotate wheel to verify that disk (B) does not contact end of sensor (A).

Loosen cap screws (C). Adjust position of wheel motion sensor (A) until space between end of sensor and disk (B) is 2—4 mm (0.08—0.16 in.). Tighten two cap screws (C).

A—Motion Sensor
B—Disk
C—Cap Screws



A40665 —UN—09JAN97

OUO6074,0000E2F -19-13OCT14-1/2

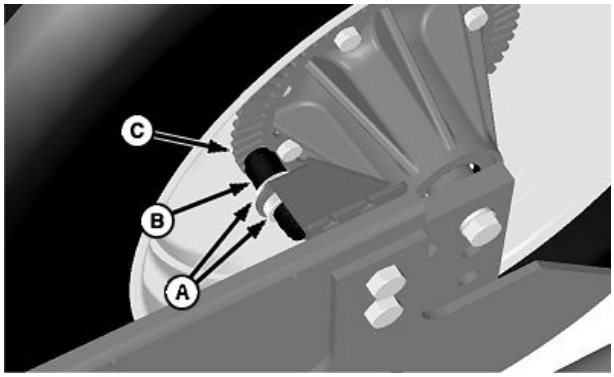
Threaded Sensor

IMPORTANT: Avoid damage to sensor. Rotate wheel to verify that disk (C) does not contact end of sensor (B).

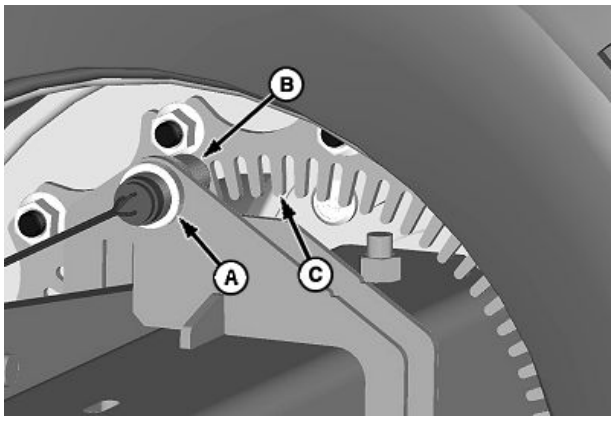
NOTE: Disks and sensor mounts vary by machine, but adjustment is the same.

Loosen lock nuts (A) and adjust position of wheel motion sensor (B) until space between end of sensor and disk (C) is 2—4 mm (0.08—0.16 in.). Tighten lock nuts.

A—Lock Nuts
B—Sensor
C—Disk



A51324 —UN—03DEC02



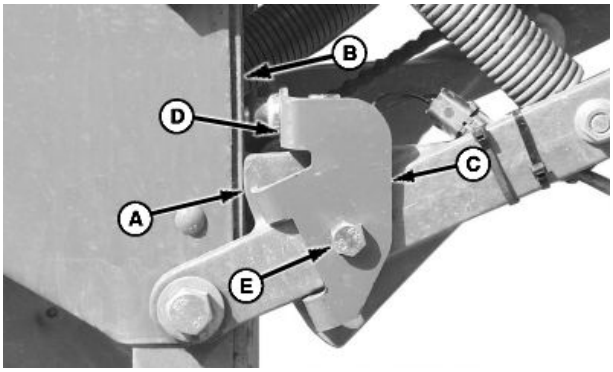
A83899 —UN—13OCT14

OUO6074,0000E2F -19-13OCT14-2/2

Adjust Parallel Arm Height Switch

This switch is used on integral planters.

1. Raise machine until lower parallel arm stop (A) contacts planting unit frame (B).
2. Loosen cap screw (E).
3. Rotate sensor bracket (C) until flat surface (D) is 20 mm (3/4 in.) from planting unit frame (B).
4. Tighten cap screw (E).
5. Repeat on other height sensor.



A48187 —UN—18OCT01

A—Stop
B—Frame
C—Bracket
D—Flat Surface
E—Cap Screw

OUO6074,0000FCA -19-15SEP14-1/1

SeedStar™ 2 RowCommand™ Configuration

RowCommand™ Overview

The RowCommand™ system uses electric clutches located at each row unit to shut off the seed meters when commanded by the operator or by SwathControl Pro™ software. RowCommand™ clutches are designed so that the seed meter turns when the clutch is not powered. To turn a row unit clutch on or off, the SeedStar™ 2 controller sends a CAN Bus message to the Electronic Power Module (EPM) for that clutch. The EPM processes the message and applies electrical power to the clutch solenoid to turn it off and removes electrical power to turn it on. The RowCommand™ system allows up to 16 control sections to be set up for the planter. Control sections cannot go across VRD drive sections and should be a minimum of 60 inches wide for best performance with SwathControl Pro™. When used with SwathControl Pro™, RowCommand™ on and off times must be calibrated for the specific tractor and planter configuration being used. Refer to the SwathControl Pro™ section of your GreenStar™ Display Operators Manual for detailed setup information.

OUO6064,00001A9 -19-08JUL10-1/1

System Components

RowCommand™ Electronic Power Module

The Electronic Power Module receives CAN bus messages from the Planter Main 1 (PM1) controller and switches electrical power to the RowCommand™ clutches on and off.

A63336 —UN—02OCT08

RowCommand™ Electronic Power Module

RowCommand is a trademark of Deere & Company

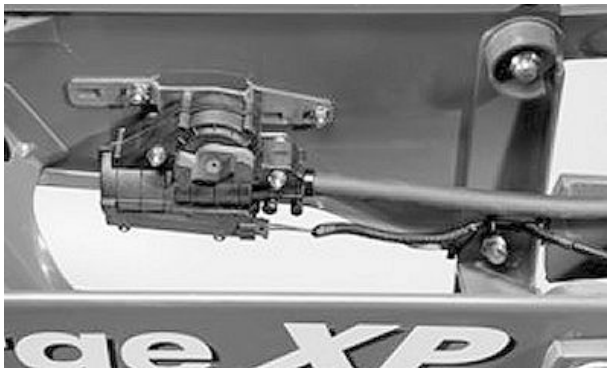
Continued on next page

OUO6064,00001AA -19-16SEP14-1/2

Pro-Shaft™ RowCommand™ Clutches are available on MaxEmerge™ XP, and MaxEmerge 5 and Pro-Series™ units.

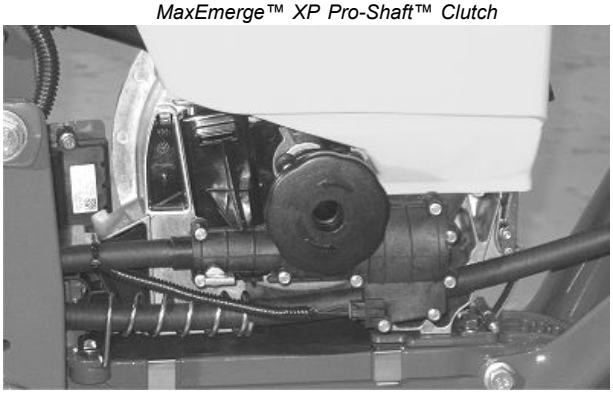
The RowCommand™ chain driven clutches are available on MaxEmerge™ XP and MaxEmerge™ 5 units.

The RowCommand™ Clutch is engaged (seed meter turning) when there is no electrical power applied to the clutch solenoid. The clutch is disengaged when the electronic power module (EPM) supplies electrical power to the clutch solenoid.



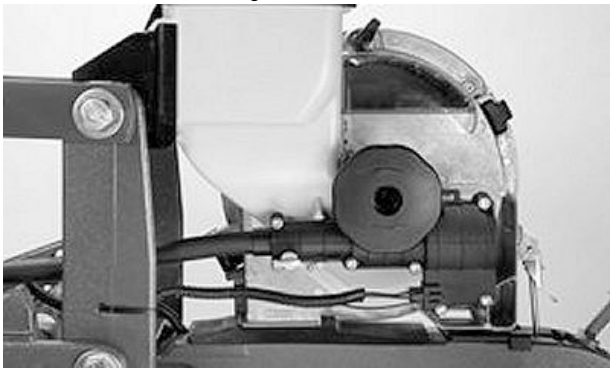
A67674 —UN—11JUN10

MaxEmerge™ XP Pro-Shaft™ Clutch



A83687 —UN—16SEP14

MaxEmerge™ 5 Pro-Shaft™ Clutch



A67676 —UN—11JUN10

Pro-Series™ Pro-Shaft™ Clutch

A67675 —UN—11JUN10

MaxEmerge™ XP Chain Driven Clutch

Pro-Shaft is a trademark of Deere & Company
Pro-Series is a trademark of Deere & Company

OUO6064,00001AA -19-16SEP14-2/2

Configure RowCommand™

1. Select **Menu** >> **Planter** button >> **Configure** softkey >> **Drives** tab >> **Drive Sections** drop-down box >> **Settings** button.
2. Check **RowCommand™** box to enable. Select **Next Page** icon.
3. If equipped with variable rate drive, the motor setup appears on-screen. Select **Next Page** icon until the setup for row control sections appears on-screen:

IMPORTANT: RowCommand™ sections must not overlap the physical drive sections on the planter. Plan the configuration appropriately.

NOTE: (See Recommended RowCommand™ Configurations in this section.)

a. Enter number of RowCommand™ control sections in input box. Select **Next Page** icon.

IMPORTANT: 152 cm (60 in.) is the minimum width of a section. If planter is on 76 cm (30 in.) row spacing a minimum of 2 rows must be entered per section.

Example: A 1795 operating on 38 cm (15 in.) spacing has four rows per 152 cm (60 in.). A minimum of four rows per section is entered.

IMPORTANT: Avoid a tractor low voltage warning. If many RowCommand™ clutches are simultaneously energized (meters disengaged), reduce the electrical load or increase engine rpm.

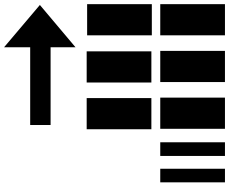
b. Enter the right-hand row number for each section using the input box. Select **Next Page** icon to toggle through each section. (See Recommended RowCommand™ Configurations in this section.)

c. When complete, a visual representation of the configuration appears. Select **Enter** to confirm setup. Select **Enter** again. Cycle power when prompted.

To edit row control sections select **Menu** >> **Planter** button >> **Configure** softkey >> **Drives** tab >> **Row Control Sections** drop-down box >> **Settings** button.

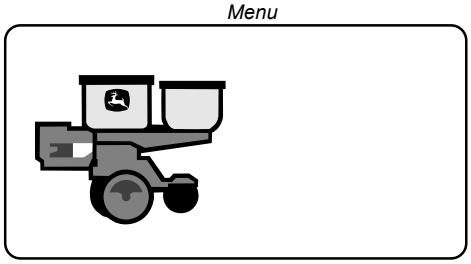
If **Row Control Sections** does not appear in drop-down box, RowCommand™ has not been enabled. Repeat RowCommand™ configuration procedure.

4. Calibrate start and stop height for planter. (See Calibrate Common Start and Stop Height or Calibrate Separate Start and Stop Height in the SeedStar™ 2 Initial System Configuration section.)



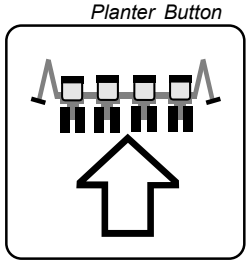
A59325 —UN—19FEB07

Menu



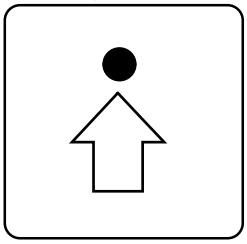
A59551 —UN—08MAR07

Planter Button



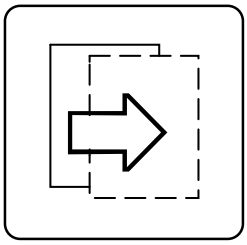
A59172 —UN—29JAN07

Configuration Softkey



A59377 —UN—23FEB07

Settings Button



A62277 —UN—23JUL08

Next Page

H85801 —UN—14JUN06

Enter

Screen Area Information

Planter Configuration — Planter Configuration

Drives — Drives
Row Command — Row Command
Number of Sections — Number of Sections
Start Row — Starting Row
End Row — Ending Row
Row Control Sections — Row Control Sections

RowCommand is a trademark of Deere & Company

OUO6064,0000499 -19-16SEP14-1/1

Recommended RowCommand™ Section Configurations

Machine	Number of Rows	Drive Sections (Variable Rate Drive)	Drive Sections (Ground Drive)	Control Sections
Custom Built 12 Row	12	3	N/A	6
Custom Built 16 Row	16	3	N/A	8
Custom Built 18 Row	18	3	N/A	9
1720 and 1725 12R30, 38, 40	12	3	1	6
1720 and 1725 16R30	16	3	1	8
1720 and 1725 CCS™ 12X2 Twin Row	24	3	1	5
1760 and 1765 12R30	12	2	2	6
1770 and 1775 12R30	12	2	2	6
1770NT and 1775NT 12R30	12	2	2	6
1770NT and 1775NT 16R30	16	2	2	8
1770NT, 1775NT, and DB60 24R30	24	2	2	12
1790 and 1795 12R23	23	2	2	6
1790 and 1795 12R24	24	2	2	6
1790 and 1795 24R20	24	2	2	8
1790 and 1795 16R31	31	2	2	8
1790 and 1795 16R32	32	2	2	8
DB44 24R22	24	3	N/A	8
DB58 32R22	32	3	N/A	8
DB60 36R20	36	3	N/A	12
DB60 47R15	47	3	N/A	12
DB60T 72R20 Twin Row	72	3	N/A	16
DB66 36R22	36	3	N/A	12
DB80 32R30	32	3	N/A	16
DB80 48R20	48	3	N/A	12
DB88 48R22	48	3	N/A	12
DB90 36R30	36	3	N/A	12
DB120 48R30	48	3	N/A	12

WP29706,000034F -19-10OCT14-1/1

SeedStar™ XP Enhanced Monitor System Configuration

SeedStar™ XP Monitoring System Overview

SeedStar™ XP is an optional monitoring system that provides more detailed information about the planting operation to the operator. SeedStar™ XP retains all the features and capabilities of SeedStar™ 2 and adds the following functions:

- Seed Singulation Monitoring
- Seed Spacing Monitoring
- Set-Point Row Unit Down Force Monitoring
- Optional Active Down Force Control
- Row Unit Ride Quality Monitoring

The Planter Main 1 controller (PM1) uses signals from the existing seed sensors to provide Seed Singulation and Seed Spacing information for a more detailed indication of seed meter and overall planter seed spacing performance.

The Planter Main 2 controller (PM2) uses data from the sensor node controllers and gauge wheel down force sensors to calculate row unit down force and row unit ride quality information. This information is sent to the Planter Main 1 controller and displayed on the monitor to enable the operator to fine-tune the planter to optimize row unit penetration, seed depth control, and seed to soil contact.

The optional Active Down Force system uses a hydraulically driven compressor that works with the SeedStar™ XP system to automate down force control. Once the operator sets the target margin value the active pneumatic down force system works automatically to make sure that the planter maintains this value achieving precise soil penetration, and consistent planting depth, without sidewall soil compaction.

This system also offers a dual rank control feature for split row planters. In addition to actively controlling the pneumatic down force system across the planter, John Deere™ active down force controls the front and rear rows of a split row planter independently. This feature compensates for differing down force requirements between the ranks and maintains an accurate planting depth and consistent margin across all the rows.

OUO6064,00005BE -19-10NOV11-1/1

System Components

Planter Main 2 (PM2) Controller

This control unit:

- Collects data from sensor node controllers.
- Communicates row unit ride dynamic and down force information to Planter Main (PM1) controller.
- Controls and monitors pneumatic down force system.

A66613 —UN—22FEB10

Planter Main 2 (PM2) Controller

OUO6064,00005BF -19-10NOV11-1/6

Sensor Node Controller

This control unit:

- Collects down force loads from gauge wheel down force sensors.
- Senses row unit ride dynamics.
- Communicates row unit dynamic and gauge wheel down force information to Planter Main 2 (PM2) controller.

Depending on planter model, there are between 3 and 7 sensor nodes on the planter, with one sensor node per frame section. In most cases, extra wiring harness length is provided to allow the sensor node to be moved one row to either side of the factory location.

A66615 —UN—22FEB10

Sensor Node Controller

Continued on next page

OUO6064,00005BF -19-10NOV11-2/6

Gauge Wheel Down Force Sensor

This component senses the amount of load that the row unit gauge wheels are carrying. The gauge wheel load signal is processed with the sensor node controller and communicated to the Planter Main 2 (PM2) controller. Depending on planter model, there are between 3 and 7 gauge wheel down force sensors on the planter, with one sensor per frame section.

A66614 —UN—22FEB10

Gauge Wheel Down Force Sensor

OUO6064,00005BF -19-10NOV11-3/6

Seed Sensor

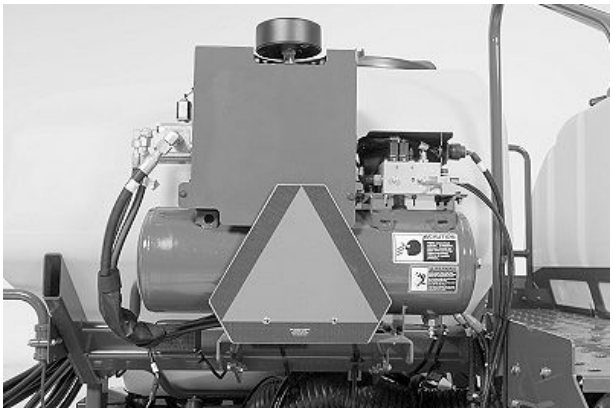
The seed sensor is used to monitor seed activity at each row unit. Seed information is processed with the Planter Main (PM1) controller and displayed on the GreenStar™ display. SeedStar™ XP monitoring systems use seed sensor data to calculate and display seed singulation and seed spacing information, in addition to seed population.

A66648 —UN—01MAR10

Seed Sensor

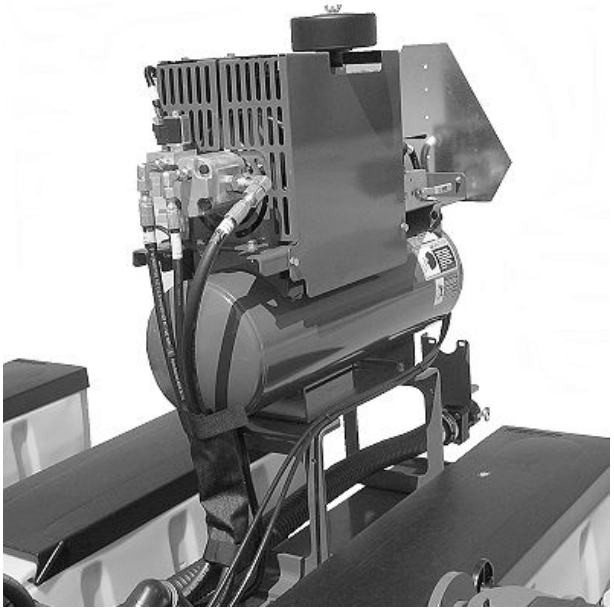
Continued on next page

OUO6064,00005BF -19-10NOV11-4/6



A72531 —UN—12SEP11

Pneumatic Down Force Air Compressor, Air Tank, and Solenoid Control Valve - Drawn Planters With CCS (Dual Set-Point and Active Down Force)



A72532 —UN—12SEP11

Pneumatic Down Force Air Compressor, Air Tank, and Solenoid Control Valve - Drawn Planters Without CCS (Active Down Force)

A hydraulic powered air compressor supplies pressurized air to the air storage tank on planters equipped with the optional Active Down Force system. Once a down force target margin (the amount of extra down force applied to the row unit, over and above what is required for the opener disks to penetrate the soil and achieve full planting depth) is set, the system uses the readings from the gauge wheel down force sensors to automatically makes pressure changes to the air spring system to maintain the target margin. As field conditions change the system automatically makes the necessary pressure adjustments to maintain the target margin.

When going through waterway or other field conditions where changes in down force can be ignored, the system can be paused so no unnecessary changes to the active pneumatic down force (PDF) system occur. For example in waterway, if pause is not activated the active PDF system reacts to the margin dropping due to hard soil and increase PDF force in the air springs. Then when exiting the waterway, it senses that the margin is now too high and have to reduce PDF down force to achieve the target margin. This overshoot, undershoot situation can be avoided by pausing the active system before entering a waterway.

The solenoid control valves located on top of the main tank are controlled and monitored with the Planter Main 2 (PM2) controller.

OUO6064,00005BF -19-10NOV11-5/6

Pneumatic Down Force Pressure Sensors (Dual Set-Point and Active Down Force)

The Pneumatic Down Force Pressure Sensors sense the amount of air pressure in the air spring circuit for single-rank and split-row (dual rank) planters. The Planter Main 2 (PM2) controller uses the pressure sensor signal to adjust the pressure in the air spring circuit to achieve the down force setting entered by the operator.

A72537 —UN—14SEP11

Pneumatic Down Force Pressure Sensors (Active Down Force) (Dual Set-Point Valve Shown)

OUO6064,00005BF -19-10NOV11-6/6

Ride Dynamics Sensor Configuration

NOTE: Changing the sensor and row values on the Ride Quality screen also changes the Down Force configuration screen.

1. Select **Menu** >> **Planter** button >> **Configuration** softkey >> **Sensor** tab.
2. Select **Ride Quality** from drop-down box.
3. Select number of ride quality sensors on machine from **Sensors:** drop-down box.

NOTE: Current load is displayed on bottom left of screen.

4. Select each sensor, one at a time, from the **Sensor** drop-down box.
5. Identify which row the first sensor is installed. See Sensor Quantities and Locations chart. Select **Row** and assign the row number to the selected sensor.

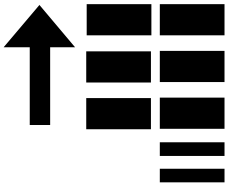
NOTE: The **Rank** *input box only appears when the Planter Main 2 (PM2) controller detects the PDF[1] enabled signal, indicating the presence of a hydraulic compressor.*

6. Select a rank for each sensor from the **Rank** drop-down box. See Sensor Quantities and Locations chart for rank information.
7. Select **Enable** check box to enable or disable the sensor.

NOTE: When planting with only the front rank of a split row planter, disable all sensors on the rear rank.

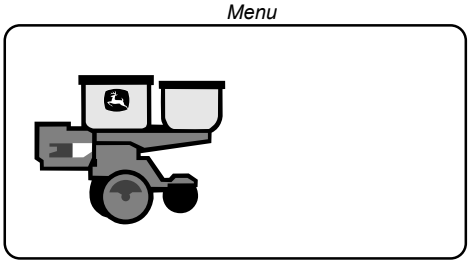
8. Repeat row assignment for additional sensors.

NOTE: Controller must be restarted when ride dynamic sensors are enabled or disabled for all settings to take effect.



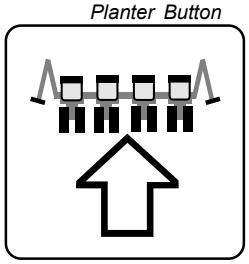
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59172 —UN—29JAN07

Configuration Softkey

9. Cycle key switch power.

Screen Area Information

Planter Configuration — Planter Configuration
Ride Quality — Ride Quality
Sensors: — Sensors:
Sensor — Sensor
Row — Row
Enable — Enable

Sensor Quantities and Locations

Planter Model	Quantity of Sensor Nodes and Down Force Sensors	Row Location of Sensor Nodes and Down Force Sensors[a]
Custom Built 12 Row	3	2, 7, 11
Custom Built 16 Row	3	3, 9, 14
Custom Built 18 Row	3	3, 10, 16
1720 and 1725 16 Row 76 cm (30 in.) spacing	3	3, 9, 14
1720 CCS and 1725 CCS 12X2 Twin Row	3	4, 14, 22
1770NT and 1775NT 12 Row 76 cm (30 in.) spacing	3	2, 7, 11
1770NT and 1775NT 16 Row 76 cm (30 in.) spacing	3	3, 9, 14
1770NT, 1775NT, and DB60 24 Row 76 cm (30 in.) spacing	5	3, 7, 13, 18, 22
1790 and 1795 12/23 Row	5	Front Rank (1) Rows 3, 13, 21 Rear Rank (2) Rows 4, 20
1790 and 1795 12/24 Row	5	Front Rank (1) Rows 4, 14, 22 Rear Rank (2) Rows 5, 21

Continued on next page

WP29706,0000352 -19-10OCT14-1/2

Sensor Quantities and Locations		
Planter Model	**Quantity of Sensor Nodes and Down Force Sensors**	**Row Location of Sensor Nodes and Down Force Sensors[a]**
1790 and 1795 16/31 Row	5	Front Rank (1) Rows 3, 17, 29 Rear Rank (2) Rows 8, 24
1790 and 1795 16/32 Row	5	Front Rank (1) Rows 4, 18, 30 Rear Rank (2) Rows 9, 25
1790 and 1795 24 Row 51 cm (20 in.) spacing	3	3, 13, 22
DB44 24 Row 56 cm (22 in.) spacing	3	3, 13, 22
DB58 32 Row 56 cm (22 in.) spacing	5	3, 10, 17, 23, 30
DB60 24R30	5	3, 7, 13, 18, 22
DB60 36 Row 51 cm (20 in.) spacing	5	3, 11, 19, 26, 34
DB60 47 Row 38 cm (15 in.) spacing	5	Front Rank (1) Rows 5, 25, 43 Rear Rank (2) Rows 14, 34
DB60 72 Row 51 cm (20 in.) Twin Row	5	6, 20, 38, 54, 68
DB66 36 Row 56 cm (22 in.) spacing	5	3, 11, 19, 26, 34
DB80 32 Row 76 cm (30 in.) spacing	7	3, 7, 12, 17, 21, 26, 30
DB80 48 Row 51 cm (20 in.) spacing	7	3, 10, 17, 25, 32, 39, 46
DB88 48 Row 56 cm (22 in.) spacing	7	3, 10, 17, 25, 32, 39, 46
DB90 36 Row 76 cm (30 in.) spacing	7	3, 8, 13, 19, 24, 29, 34
DB120 48 Row 76 cm (30 in.) spacing	7	3, 10, 17, 25, 32, 39, 46

[a]Row locations for sensor nodes and down force sensors can be moved one row-unit next to the factory-installed placement for desired application.

[1]Pneumatic Down Force

WP29706,0000352 -19-10OCT14-2/2

Integrated Pneumatic Down Force—Air Pressure Sensor

1. Select **Menu** >> **Planter** button >> **Configuration** softkey >> **Sensor** tab.
2. Select **PDF Air Pressure** from drop-down box.
3. Select **# of Ranks** drop-down box and enter the rank number for the air pressure sensor.
4. Select **Sensor** drop-down box and select sensor
5. Select **Cal Value** input box and enter the calibration value of 494.00.

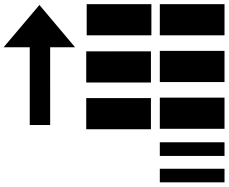
NOTE: Current down force is displayed on bottom left of screen.

6. Relieve air pressure before selecting the **Zero Sensor** button.

IMPORTANT: To ensure down force system accuracy, zero sensor annually or whenever system does not read 0 with the air bags deflated.

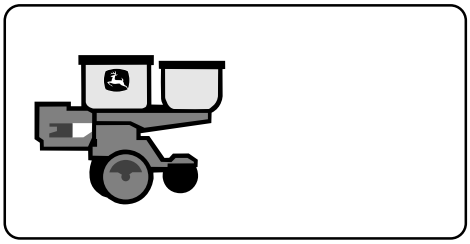
Screen Area Information

Planter Configuration — Planter Configuration
Sensor — Sensor
PDF Air Pressure — PDF Air Pressure
# of Rank — Rank Number
Sensor — Sensor
Cal Value — Calibration Value
To Zero Air Pressure Sensor: — To Zero Air Pressure Sensor:
Relieve Air Pressure and Press Continue — Relieve Air Pressure and Press Continue



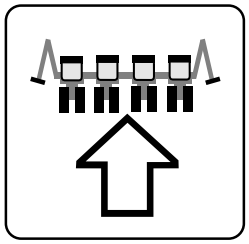
Menu

A59325 —UN—19FEB07



Planter Button

A59551 —UN—08MAR07



Configuration Softkey

A59172 —UN—29JAN07

Continue

H85801 —UN—14JUN06

Zero Sensor Button

A59369 —UN—20FEB07

WP29706,0000350 -19-01MAY12-1/1

Down Force Sensor Configuration

NOTE: Changing the sensor and row values on the Down Force screen also changes the Down Force configuration screen.

1. Select **Menu** >> **Planter** button >> **Configuration** softkey >> **Sensor** tab.
2. Select **Down Force** from drop-down box.
3. Select number of down force sensors on machine from **# of Sensors:** drop-down box.
4. Select each sensor, one at a time, from the **Sensor** drop-down box.
5. Identify which row the first sensor is installed. See Sensor Quantities and Locations chart. Select **Row** and assign the row number to the selected sensor.

NOTE: The **Rank** *input box only appears when the Planter Main 2 (PM2) controller detects the PDF[1] enabled signal, indicating the presence of a hydraulic compressor.*

6. Select a rank for each sensor from the **Rank** drop-down box. See Sensor Quantities and Locations chart for rank information.
7. Select **Enable** check box to enable or disable the sensor.

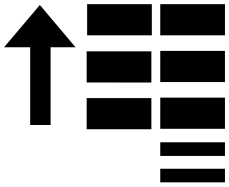
NOTE: When planting with only the front rank of a split row planter, disable all sensors on the rear rank.

8. Select **Cal Value** input box and enter the down force sensor calibration value.John Deere™ planters with factory equipped sensors have a calibration value of 1394.

NOTE: Current load is displayed on bottom left of screen.

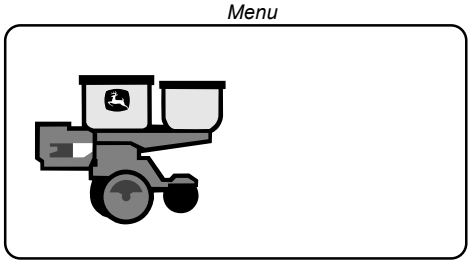
NOTE: To zero down force sensors, planter must be raised and stopped.

9. Select **Zero Sensor** button.
10. Repeat row assignment for additional sensors.



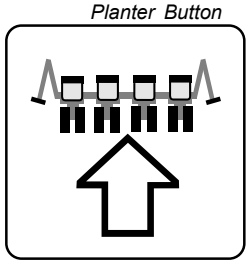
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59172 —UN—29JAN07

Configuration Softkey

A59369 —UN—20FEB07

Zero Sensor Button

Sensor Quantities and Locations		
Planter Model	**Quantity of Sensor Nodes and Down Force Sensors**	**Row Location of Sensor Nodes and Down Force Sensors[a]**
Custom Built 12 Row	3	2, 7, 11
Custom Built 16 Row	3	3, 9, 14
Custom Built 18 Row	3	3, 10, 16
1720 and 1725 16 Row 76 cm (30 in.) spacing	3	3, 9, 14
1720 CCS and 1725 CCS 12X2 Twin Row	3	4, 14, 22
1770NT and 1775NT 12 Row 76 cm (30 in.) spacing	3	2, 7, 11
1770NT and 1775NT 16 Row 76 cm (30 in.) spacing	3	3, 9, 14
1770NT, 1775NT, and DB60 24 Row 76 cm (30 in.) spacing	5	3, 7, 13, 18, 22

Continued on next page

WP29706,0000353 -19-10OCT14-1/2

Sensor Quantities and Locations		
Planter Model	**Quantity of Sensor Nodes and Down Force Sensors**	**Row Location of Sensor Nodes and Down Force Sensors[a]**
1790 and 1795 12/23 Row	5	Front Rank (1) Rows 3, 13, 21 Rear Rank (2) Rows 4, 20
1790 and 1795 12/24 Row	5	Front Rank (1) Rows 4, 14, 22 Rear Rank (2) Rows 5, 21
1790 and 1795 16/31 Row	5	Front Rank (1) Rows 3, 17, 29 Rear Rank (2) Rows 8, 24
1790 and 1795 16/32 Row	5	Front Rank (1) Rows 4, 18, 30 Rear Rank (2) Rows 9, 25
1790 and 1795 24 Row 51 cm (20 in.) spacing	3	3, 13, 22
DB44 24 Row 56 cm (22 in.) spacing	3	3, 13, 22
DB58 32 Row 56 cm (22 in.) spacing	5	3, 10, 17, 23, 30
DB60 24R30	5	3, 7, 13, 18, 22
DB60 36 Row 51 cm (20 in.) spacing	5	3, 11, 19, 26, 34
DB60 47 Row 38 cm (15 in.) spacing	5	Front Rank (1) Rows 5, 25, 43 Rear Rank (2) Rows 14, 34
DB60 72 Row 51 cm (20 in.) Twin Row	5	6, 20, 38, 54, 68
DB66 36 Row 56 cm (22 in.) spacing	5	3, 11, 19, 26, 34
DB80 32 Row 76 cm (30 in.) spacing	7	3, 7, 12, 17, 21, 26, 30
DB80 48 Row 51 cm (20 in.) spacing	7	3, 10, 17, 25, 32, 39, 46
DB88 48 Row 56 cm (22 in.) spacing	7	3, 10, 17, 25, 32, 39, 46
DB90 36 Row 76 cm (30 in.) spacing	7	3, 8, 13, 19, 24, 29, 34
DB120 48 Row 76 cm (30 in.) spacing	7	3, 10, 17, 25, 32, 39, 46

[a]Row locations for sensor nodes and down force sensors can be moved one row-unit next to the factory-installed placement for desired application.

Screen Area Information

Planter Configuration — Planter Configuration
Down Force — Down Force
Sensors: — Sensors:
Sensor — Sensor
Row — Row
Enable — Enable
Cal Value — Calibration Value
lbs — Pounds

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[1]Pneumatic Down Force

WP29706,0000353 -19-10OCT14-2/2

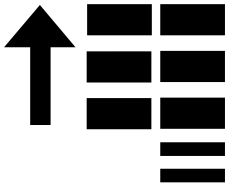
Planter at a Glance - User Settings

The Planter at a Glance - User Settings screen allows the operator to choose which SeedStar™ XP monitor features are displayed when Auto Scroll is enabled.

1. Select **Menu** >> **Planter** button >> **Screen Scan** button.
2. Select and hold **Screen Scan** button for 4 seconds.
3. Check box next to each SeedStar™ XP page that gets displayed when **Auto Scroll** is selected.
4. Check box to enable **Auto Scroll**.
5. Select **Delay** box, set page scan delay time. Value represented in seconds.
6. When complete select **Enter**.
7. When auto scroll is enabled, select Screen Scan button to engage scroll on run screen. Select Screen Scan button at any time to disengage scroll.

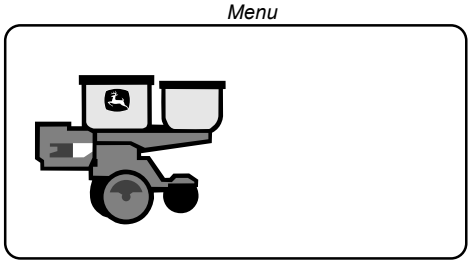
Screen Area Information

Planter Configuration — Planter Configuration
Planter at a Glance - User Settings — Planter at a Glance - User Settings
Pages — Pages
Population — Population
Singulation — Singulation
Ride Quality — Ride Quality
Spacing — Spacing
Down Force — Down Force
Options — Options
Auto Scroll — Auto Scroll
Delay — Delay



Menu

A59325 —UN—19FEB07

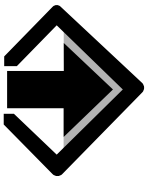


Planter Button

A59551 —UN—08MAR07

A67761 —UN—16JUN10

Screen Scan



Enter

H85801 —UN—14JUN06

OUO6064,00005C2 -19-10NOV11-1/1

Alarms and Limits Setup Page

The Alarms and Limits Setup Screen allows the operator to adjust the levels at which cautions and alarms occur for each of the SeedStar™ XP monitor features.

For Set-Point Pneumatic Down Force controlled machines Target Margin must be set and adjusted from this screen.

If any of the monitored values go beyond the alarm set point, the bar graph and background of the numerical display changes to red.

Enter “0” in any of the alarm set point boxes to disable the alarm for that function.

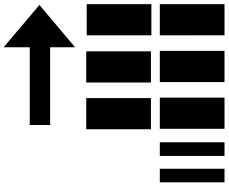
1. Select **Menu** >> **Planter** button.
2. Select and hold any **SeedStar™ XP Monitor** button for 4 seconds.
3. Select **Singulation Alarm Box** (A) to enter the minimum acceptable singulation percentage. Default singulation alarm setting is 92 percent.
4. Select **Spacing CV Alarm Box** (B) to enter the minimum acceptable coefficient of variation value. Default spacing alarm setting is 0.35.
5. Select **Ride Quality Alarm Box** (C) to enter the minimum acceptable ride quality percentage. Default ride quality alarm setting is 90 percent.
6. Select **Step Value Box** (D) to enter the incremental value the down force changes when the increase or decrease arrows are used to adjust the pneumatic down force. Increments can be set between 1 and 50.

NOTE: Active PDF pause timer box is only available for Active Pneumatic Down Force controlled machines.

7. Select **Active PDF Pause Timer Box** (I) to set the amount of time that the Active PDF system is inactive when the Pause button is depressed on the main run screen.
8. Select **High Margin Alarm Box** (F) to enter the high range for row unit down force margin. Default margin alarm setting is 75 percent above the target margin.
9. Select **Target Margin Box** (G) to set and adjust target margin from this screen. If equipped with Active Pneumatic Down Force, target margin can also be set on the run page.
10. Select **Low Margin Alarm Box** (H) to enter the low range for row unit down force margin. Default margin alarm setting is 50 percent below the target margin.
11. When complete select **Enter** (I).

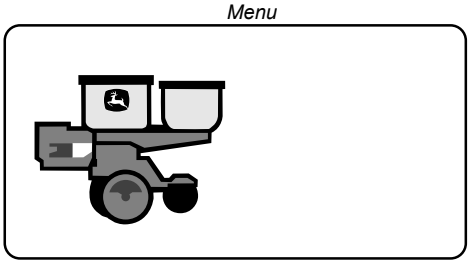
Screen Area Information

Planter Configuration — Planter Configuration



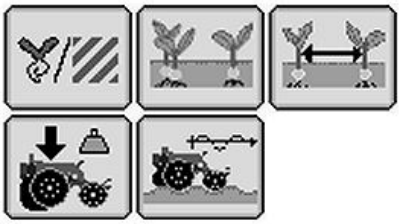
A59325 —UN—19FEB07

Menu



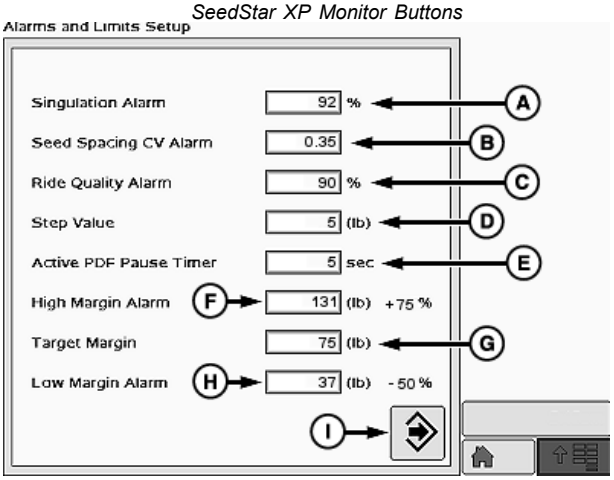
A59551 —UN—08MAR07

Planter Button



A67768 —UN—16JUN10

SeedStar XP Monitor Buttons



A73149 —UN—19OCT11

A—Singulation Alarm
B—Spacing CV Alarm
C—Ride Quality Alarm
D—Step Value
E—Active PDF Pause Timer
F—High Margin Alarm
G—Target Margin
H—Low Margin Alarm
I— Enter

Alarms and Limit Setup — Alarms and Limit Setup

OUO6064,00005D3 -19-10NOV11-1/1

Ground Driven Machines—Target Population and High-Low Warnings

IMPORTANT: Population and High-Low warnings are entered differently for variable rate drive machines. See VRD MACHINES—CONFIGURE METER, CROP, DISK, AND RATES in this section.

1. Select **Menu** >> **Planter** button >> **Rates** softkey.
2. Select **Crop Name** drop down box and choose corn, soybeans, or one of the custom crop names.
3. Select **Edit Crop Name** button to change crop name.
4. Select **Target Rate** input box and enter value.
5. High and low warning limits are automatically set to a percentage above and below the target rate. To change limits, select **High** and **Low Warning** input boxes and enter new value.

NOTE: Rates and warning setpoints are saved for each crop name.

6. Select **Population Adjust** input box and enter value.

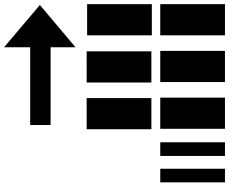
NOTE: Number of rows planting check boxes are only visible if monitor is configured for a split row and twin row machines. (See CONFIGURE FRAME LAYOUT, ROW LAYOUT, AND DRIVE DISCONNECT WARNING in SETUP Initial System Configuration section.)

NOTE: To ensure all settings update; actively select the rows planting check box even if a check mark is already in the box.

7. Select **Rows Planting** check box for appropriate rows planting configuration.

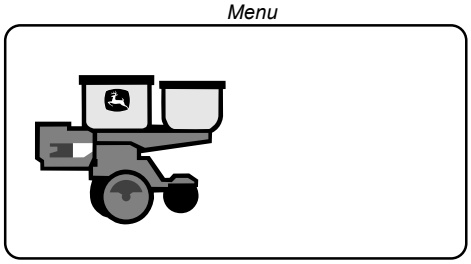
Screen Area Information

Planter Rates — Planter Rates
Crop Name — Crop Name
Corn — Corn



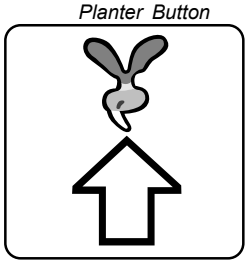
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59173 —UN—29JAN07

Rates Softkey

Soybeans — Soybeans
Custom — Custom
Edit Crop Name — Edit Crop Name
Target Rate — Target Rate
High Warning — High Warning
Low Warning — Low Warning
Population Adjust — Population Adjust
Rows Planting — Rows Planting
Avg. Spacing — Average Spacing
Seeds — Seeds
ac — Acre

OUO6064,000037F -19-01MAR13-1/1

VRD Machines—Configure Meter, Crop, Disk, and Rates

1. Select **Menu** >> **Planter** button >> **Rates** softkey.
2. Select **Crop Name** drop down box and choose corn, soybeans, or one of the custom crop names.
3. Select **Edit Crop Name** button to change crop name.
4. Select **Show Rates** button.
5. Select **Change Rates** button.
6. If setting different rates for each motor, select **Motor** drop down box to choose a motor to assign rates.

NOTE: Each motor must have a rate set for each rate selected.

7. Select **Rate** drop down box and choose a rate to assign population.
8. Select **Target** input box and enter the target population for selected rate. High and Low population (warning) limits are automatically set to a percentage above and below the target rate. Select **High** and **Low** input boxes to manually adjust warning limits.

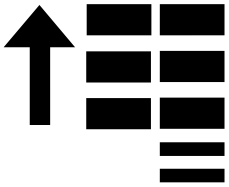
IMPORTANT: Variable Rate Drive is inoperative until at least one target rate has been defined AND turned ON.

NOTE: Rate 6 is used for map based prescription. To enable controller to use a prescription, select the "On" drop-down box under rate 6 and from RUN screen select the Rx rate. Once selected, run page has a small Rx indicator near the Target Seeds per Area icon.

9. To see a rate on the RUN page as a choice, select **On – Off** drop down box and choose **ON**.
10. Select **Enter** button.
11. Average Spacing shown on the bottom of the screen is the CALCULATED distance between plants based on the row width and target population entered in monitor
12. **Use One Rate for All Motors**
    - Select check box to enable all motors to use one rate.
    - Leave check box empty when different rates are used for each motor.
13. Select **Disk Type** drop down box.
    - If planter is configured for **mechanical meters**, plateless meter selections appear. Select the plateless meter installed on machine.

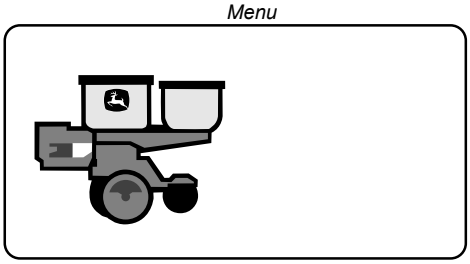
NOTE: If custom plateless is selected, select **Seeds per Rev.** *input box and enter value.*

    - If planter is configured for **vacuum**, types of vacuum disks appear. Select the type of disk installed in meters.



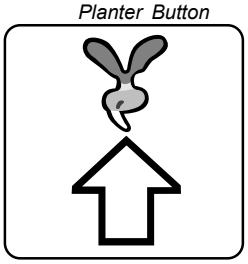
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59173 —UN—29JAN07

Rates Softkey

NOTE: If **custom vacuum***is selected, select* **Holes Per Disk** *input box and enter value.*

14. Select **Seed Disk** drop down box and select the vacuum disk used.
15. Select **Population Adjust** input box and enter value.

NOTE: Number of rows planting check boxes are only visible if monitor is configured for a split row or twin row machines. (See CONFIGURE FRAME LAYOUT, ROW LAYOUT, AND DRIVE DISCONNECT WARNING in SETUP Initial System Configuration section.)

NOTE: To ensure all settings update; actively select the rows planting check box even if a check mark is already in the box.

16. Select **Rows Planting** check box for appropriate rows planting configuration.

NOTE: High and Low Range check boxes are only visible if monitor is configured for twin row machines. (See CONFIGURE FRAME LAYOUT, ROW LAYOUT, AND DRIVE DISCONNECT WARNING in SETUP Initial System Configuration section.)

17. Select **Drive Range** check box for high or low configuration.

Screen Area Information

Continued on next page

OUO6064,0000380 -19-01MAR13-1/2

Planter Rates — Planter Rates
Crop Name — Crop Name
Corn — Corn
Soybeans — Soybeans
Custom — Custom
Edit Crop Name — Edit Crop Name
Show Rates — Show Rates
Seeds/ac — Seeds per Acre
Target Population — Target Population
Rate — Rate
Motor — Motor
Change Rates — Change Rates
On — On
Off — Off
Target — Target
High — High
Low — Low
Avg. Spacing — Average Spacing
Use One Rate for All Motors — Use One Rate for All Motors
Disk Type — Disk Type
Sweet Corn — Sweet Corn
Cotton — Cotton
Sorghum — Sorghum
Sunflower — Sunflower
Edible Beans — Edible Beans
Peanuts — Peanuts
Sugar Beets — Sugar Beets
Custom Vacuum — Custom Vacuum
Holes Per Disk — Holes Per Disk
Finger Pick-Up — Finger Pick-Up
Radial Bean — Radial Bean
Custom Plateless — Custom Plateless
Seeds per Rev. — Seeds per revolution
Seed Disk — Seed Disk
Population Adjust — Population Adjust
Rows Planting — Rows Planting
Drive Range — Drive Range

OUO6064,0000380 -19-01MAR13-2/2

Population Adjust (PA)

IMPORTANT: Ensure that seed meters are properly adjusted and perform and in field population check BEFORE using Population Adjust.

PA (POPULATION ADJUST) is beneficial when planting high population rates or planting small seeds. Under these two conditions, some sensors detect fewer seeds than are delivered. To adjust for the undetected seeds, a correction factor must be calculated and entered into the monitor to adjust the displayed population.

PA is the correction factor the operator calculates and enters into the monitor. Sensor detections are multiplied by the correction factor before display. A PA number of 1.00 displays actual sensor detections. A PA number of 2.00 displays twice the number of actual sensor detections.

A field population check MUST be performed to determine the correct PA correction factor.

Always reset Population Adjust factor back to 1.00 when changing crops, seed varieties, or populations. Calculate new PA factor only if necessary.

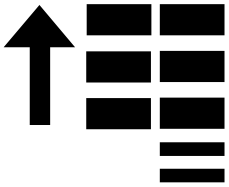
Example:

If 160 000 seeds are detected and displayed when 180 000 are planted, divide 180 000 by 160 000 to obtain a PA value (180 000 ÷ 160 000 = 1.13). Enter a PA value of 1.13 into monitor. The monitor multiplies each detected seed by 1.13 and displays an adjusted population of 180 000.

1. Select **Menu** >> **Planter** button >> **Rates** softkey.

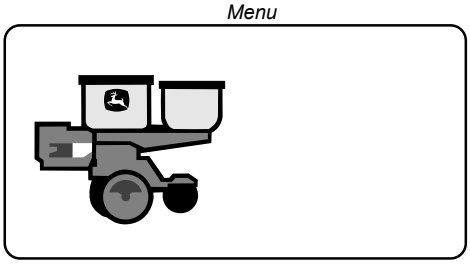
NOTE: Initial PA setting is always 1.0. PA value other than 1.0 is not needed for soybeans when AccuCount™ seed tube sensors are used. AccuCount™ sensors are identified by a red LED (A) on the outside of sensor housing.

2. Select **Population Adjust** input box.
3. Enter the calculated value. Acceptable range is between 0.1 and 2.5.
4. Perform an in field population check and adjust PA value until monitor displays the same value as actual population.



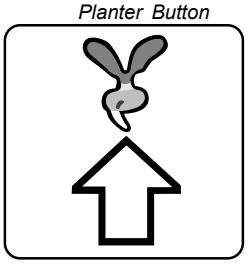
A59325 —UN—19FEB07

Menu



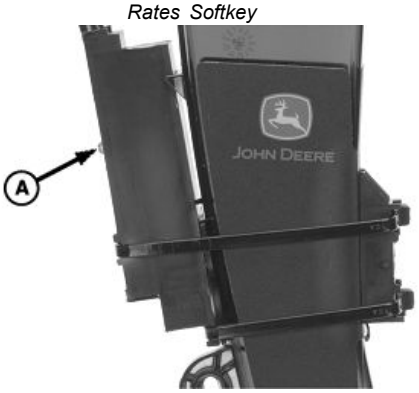
A59551 —UN—08MAR07

Planter Button



A59173 —UN—29JAN07

Rates Softkey



A61237 —UN—30OCT07

A—Sensor LED

Screen Area Information

Planter Rates — Planter Rates
Population Adjust — Population Adjust
Crop Name — Crop Name
Target Rate — Target Rate
High Warning — High Warning
Low Warning — Low Warning
Seeds — Seeds
ac — Acre
ha — Hectare

AccuCount is a trademark of Deere & Company

OUO6064,00001F6 -19-01JUL10-1/1

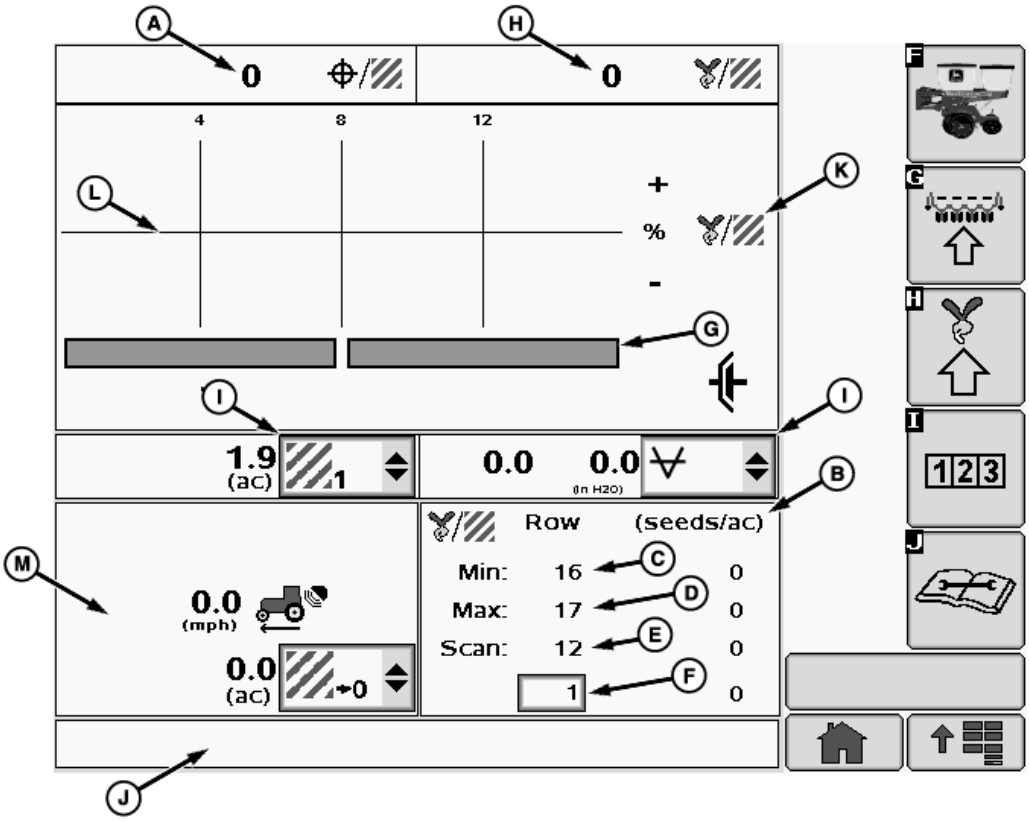
High-Low Drive Range (Twin Row Machines with Intermediate Sprockets)

Variable Rate Drive Machines Only: Configure the variable rate drive sprockets based on seed population and seed disk selection. See table below.

Variable Rate Drive Population Rates at 8 km/h (5 mph) Ground Speed								
Low Range = Large Diameter Sprocket High Range = Small Diameter Sprocket								
	Single Row Population (Seeds Per Acre)				Twin Row Population (Seeds Per Acre)			
	Low Range		High Range		Low Range		High Range	
Number of Cells in Disk	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
30	8000	37 000	21 000	98 000	16 000	74 000	42 000	196 000
40	11 000	49 000	27 000	131 000	22 000	98 000	54 000	262 000
45	12 000	55 000	31 000	147 000	24 000	110 000	62 000	294 000
48	13 000	59 000	33 000	157 000	26 000	118 000	66 000	314 000
50	13 000	61 000	34 000	164 000	26 000	122 000	68 000	328 000
64	17 000	78 000	43 000	210 000	34 000	156 000	86 000	420 000
90	23 000	111 000	61 000	295 000	46 000	222 000	122 000	590 000
108	28 000	133 000	73 000	355 000	56 000	266 000	146 000	710 000
Low Range and High Range sprockets generate population rates that overlap for a given ground speed.								
If ground speed is 8 km/h (5 mph) or slower and target population is within the low range rates shown in chart, use low range sprocket to avoid low motor speed warning.								

OUO6064,00003E6 -19-16SEP14-1/1

Ground Driven Machines



A67777 —UN—17JUN10

A—Target Population Rate
B—Seeds Per Area
C—Row With Minimum
D—Row With Maximum
E—Scanned Row Number
F—Row Selected
G—Drive Indicator
H—Area Counter
I— List Boxes
J—Planter Cautions
K—Planter-At-A-Glance
L—Target Population Bar
M—Counters and Speed

The planter main run screen monitors all critical functions on the planter and is always visible on the display while planting. The main run screen is viewable in full page as shown, half page Scan mode, or half page Planter-At-A-Glance mode. See HALF SCREEN LAYOUT in this section.

Select **Menu** button >> **Planter** button >> **Main** softkey.

(A) Target Population Rate (seeds per area).

(B) Seeds per Area for active scan row (Scan mode).

(C) Active Scan Row (Scan mode).

(D) Row number delivering minimum population.

(E) Row number delivering maximum population.

(F) Selected row.

(G) Drive Status Bar: Shows whether meter drives are active or inactive. The status bar is divided into the number of drive sections on the planter. Green is active. Gray is inactive. When a disconnect is selected, the green bar for that drive section turns gray. The meter drives stop, and the population bars turn red as the population drops to zero on the disconnected rows. The status bar turns green again and the Planter-At-A-Glance population bars become active once all rows in the disconnected drive section deliver greater than two seeds per second.

(H) Average population across entire machine (seeds per area).

(I) List boxes contain functional options for the operator to select for display.

(J) Planter Cautions.

(K) Planter-At-A-Glance screen area.

L) Target Population Bar. Bars turn orange when planting above or below alarm set points. Bars turn red when not planting.

(M) Counters and speed are displayed in lower section of screen.

Continued on next page

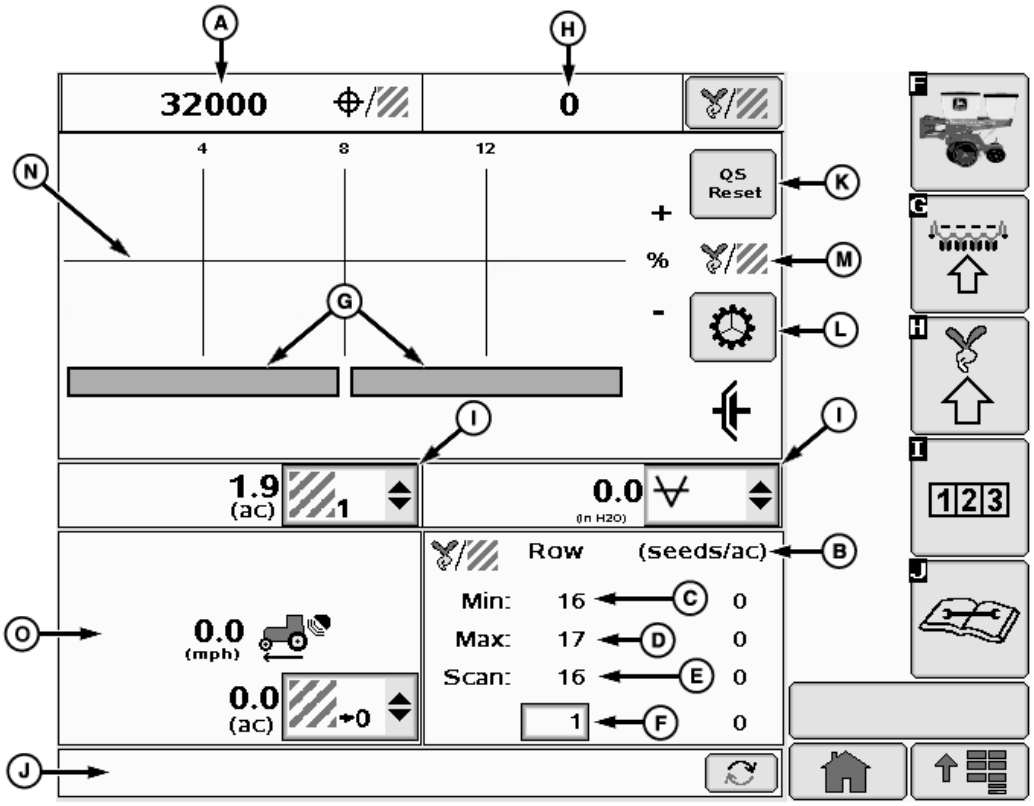
WP29706,0000373 -19-08JUN12-1/2

Planter-At-A-Glance Bar Graph: The line in the middle is the target population. When a row approaches the upper or lower alarm limit, the bar for that row turns orange and an alarm sounds along with a text message. If a row falls below two seeds per second, the bar turns red and a row failed warning appears. If ground speed falls below 2 mph (3.2 km/hr), the planter monitor will not calculate population. Field Doc™ as-applied coverage maps will not be created during these conditions. The top of the graph is the programmed upper alarm limit. The bottom of the graph is the programmed lower alarm limit. Refer to SETUP Seed Rates section.

Field Doc is a trademark of Deere & Company

WP29706,0000373 -19-08JUN12-2/2

Variable-Rate Drive Machines



A67786 —UN—18JUN10

A—Target Population Rate
B—Seeds Per Area
C—Row With Minimum
D—Row With Maximum
E—Scanned Row Number
F—Row Selected
G—Drive Indicator
H—Average Population
I— List Boxes
J—Planter Cautions
K—Quick Start Button
L—Rotate Seed Meters Button
M—Planter At A Glance
N—Population Bar
O—Counters and Speed

Select **Menu** button >> **Planter** button >> **Main** softkey.

(A) Target Population Rate (seeds per area). If multiple variable-rate motors deliver different rates, the bar is divided.

(B) Seeds per Area for active scan row (Scan mode).

(C) Active Scan Row (Scan mode).

(D) Row number delivering minimum population.

(E) Row number delivering maximum population.

(F) Selected row.

(G) Drive Status Bar: Shows whether meter drives are active or inactive. The status bar is divided into the number of drive sections on the planter. Green is active. Gray is inactive. When a disconnect is selected, the green bar for that drive section turns gray, the meter drives stop, and the population bars turn red as the population drops to zero on the disconnected rows. The status bar does not turn green again and the Planter at a Glance population bars do not become active again until all rows in the disconnected drive section deliver greater than two seeds per second.

(H) Average population across entire machine (seeds per area).

(I) List boxes contain functional options for the operator to select for display.

(J) Planter Cautions.

(K) Quick Start button appears when quick start is enabled.

(L) Rotate seed meters button.

(M) Planter at a glance screen area.

(N) Population Bar. Orange when planting above or below alarm set points. Red when not planting.

(O) Counters and speed are displayed in lower section of screen.

Continued on next page

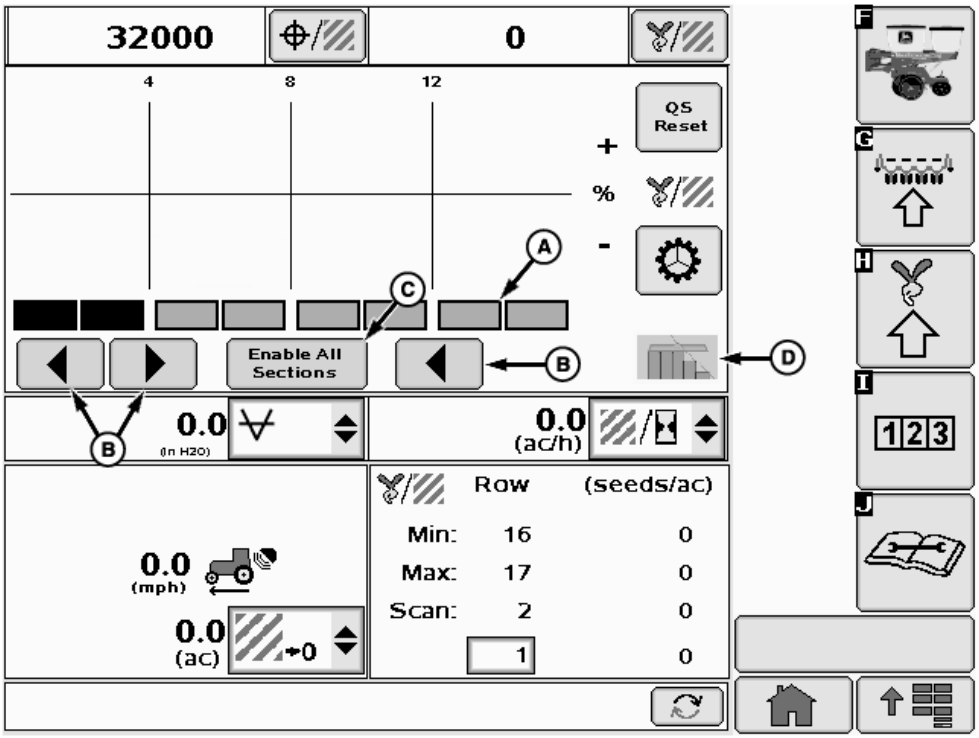
WP29706,0000374 -19-08JUN12-1/2

Planter-At-A-Glance Bar Graph The line in the middle is the target population. When a row approaches the upper or lower limit, the bar for that row turns orange and an alarm sounds along with a text message. If a row falls below two seeds per second, the bar turns red and a row failed warning appears. If ground speed falls below 2 mph (3.2 km/hr), the planter monitor will not calculate population. Field Doc™ as-applied coverage maps will not be created during these conditions. The top of the graph is the programmed upper limit. The bottom of the graph is the programmed lower limit.

Field Doc is a trademark of Deere & Company

WP29706,0000374 -19-08JUN12-2/2

Machines with RowCommand™



A67788 —UN—30JUN10

A—Drive Indicator
B—Command Buttons
C—All On Button
D—Section Control Icon (If Equipped)

Indicators (A) show activity of individual RowCommand™ sections.

Select buttons (B) to turn sections on and off manually, starting from the outside of the planter. Select button (C) to enable all sections. Section control icon (D) indicates sections controlled by John Deere Section Control™.

NOTE: If numerous RowCommand™ clutches are simultaneously energized (meters disengaged), a tractor "Low Voltage" warning can occur due to limited alternator output. Reduce electrical load or increase engine RPM.

RowCommand™ Indicators (A)	
Indicator Color	RowCommand™ Activity
Green	Section is active and detected by system. (Meter engaged)
Black	Section deactivated manually by operator using arrows or half-width disconnect switch.
Neutral With Black Border	Section deactivated by John Deere Section Control™ prescription.
Not Visible	Section is not responsive. Row continues to plant, but section cannot be controlled with RowCommand™. A warning alerts operator to failure.

OUO6064,000064F -19-10NOV11-1/1

Setting Single Set-Point Target Down Force

Setting Target Down Force

Select the down force target button (A) to open the target down force input screen.

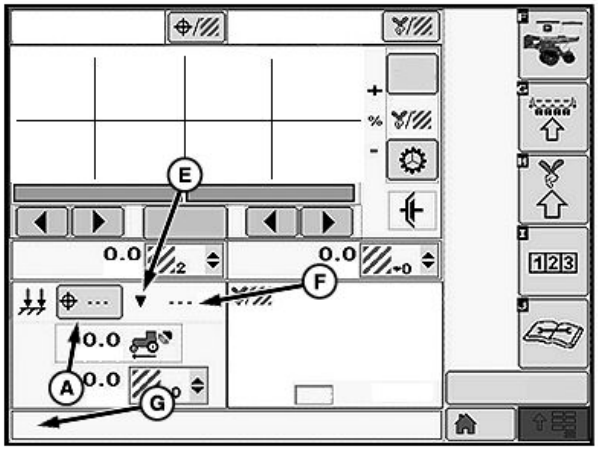
Set target row unit down force by using the target down force input box (B) or the increase or decrease arrows (C).

When complete select enter (D).

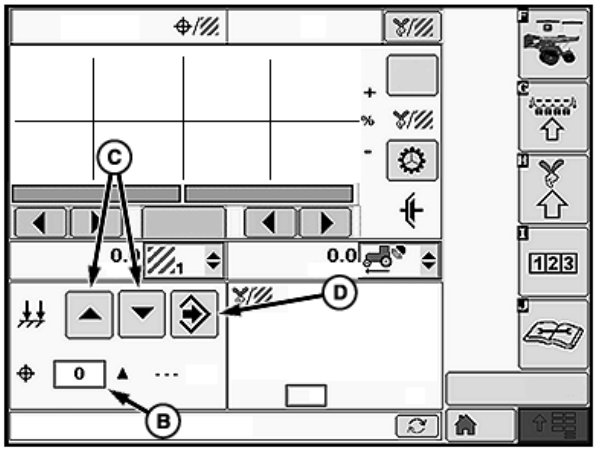
Indicator arrows (E) are displayed as a visual indication that the system is increasing or decreasing pneumatic down force pressure.

Actual down force (F) is checked on a timed interval and automatically adjusted if necessary to match the target down force. If Actual down force (F) deviates below the target at an unacceptable rate, a warning appears in the warning message area (G) stating "Check pneumatic down force for leaks". Depending on the severity of the leak, the actual down force number (F) is highlighted orange or red.

A—Down Force Target Button
B—Target Down Force Input Box
C—Increase and Decrease Arrows
D—Enter
E—Indicator Arrows
F—Actual Down Force
G—Warning Message Area



A72548 —UN—15SEP11



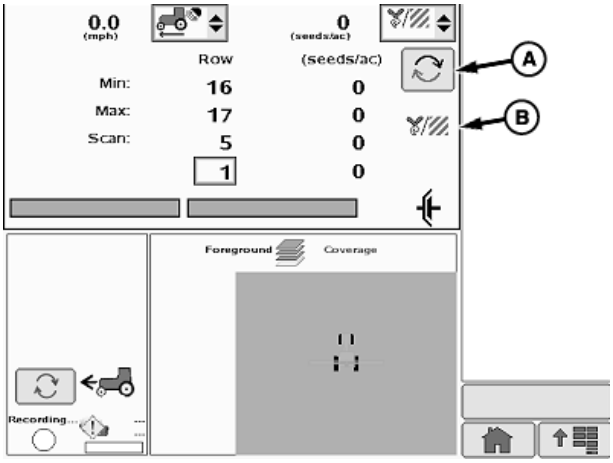
A72549 —UN—15SEP11

OUO6064,00005C7 -19-10NOV11-1/1

Half Screen Layout

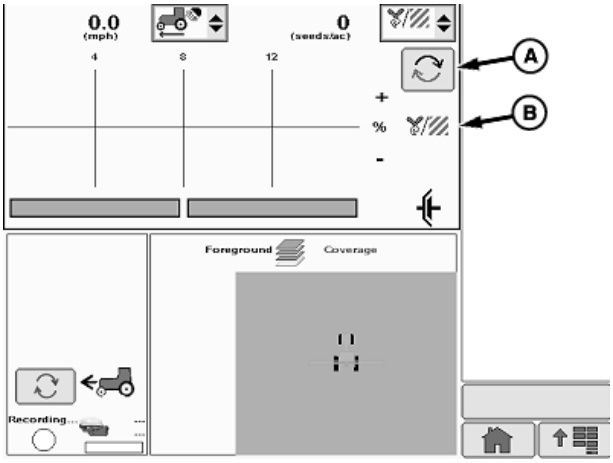
NOTE: Half screen layout and multiple home pages are only available when John Deere™ SeedStar™ 2 Monitor is used with a John Deere™ Greenstar™ display.

NOTE: Half screen layout must be set using layout manager.



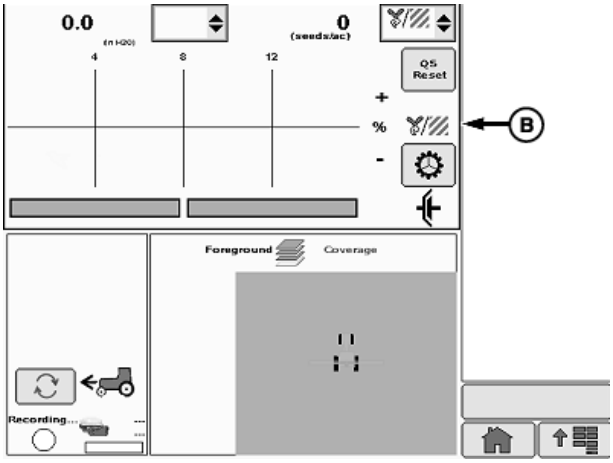
A67778 —UN—30JUN10

Scan Mode



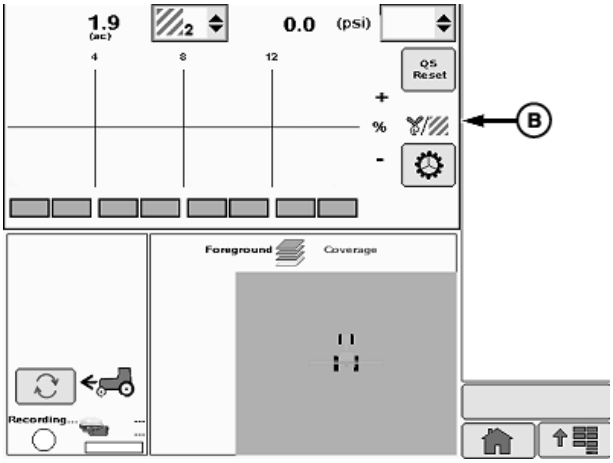
A67779 —UN—30JUN10

Planter at a Glance Mode



A67787 —UN—30JUN10

Planter at a Glance (Variable Rate Drive)



A67789 —UN—30JUN10

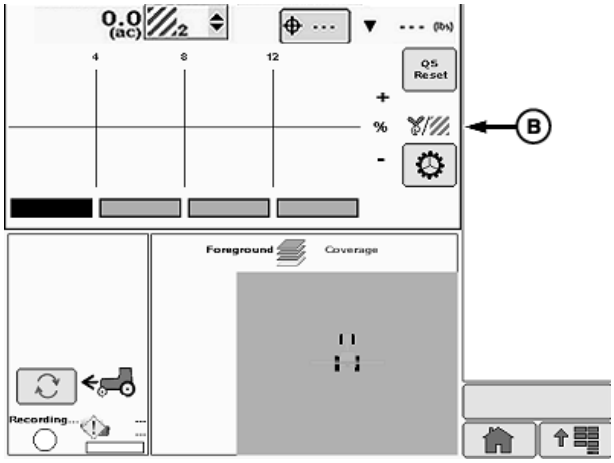
Planter at a Glance (RowCommand™)

Select toggle button (A) to switch between Scan Mode and Planter at a Glance Mode. When half screen (B) layout is selected, less information is presented in screen area. Error messages do not appear on half screen. Return to full screen mode to view error messages when an audible alert signals an error.

To set up screen layout (see SCREEN LAYOUT MANAGER in How to Use Monitor section).

To enter full screen mode and access configuration, totals, and diagnostic softkeys, select **Menu** >> **Planter** application button.

A—Toggle Button **B—Half Screen**



A72550 —UN—15SEP11

Planter at a Glance (Single Set-Point Pneumatic Down Force)

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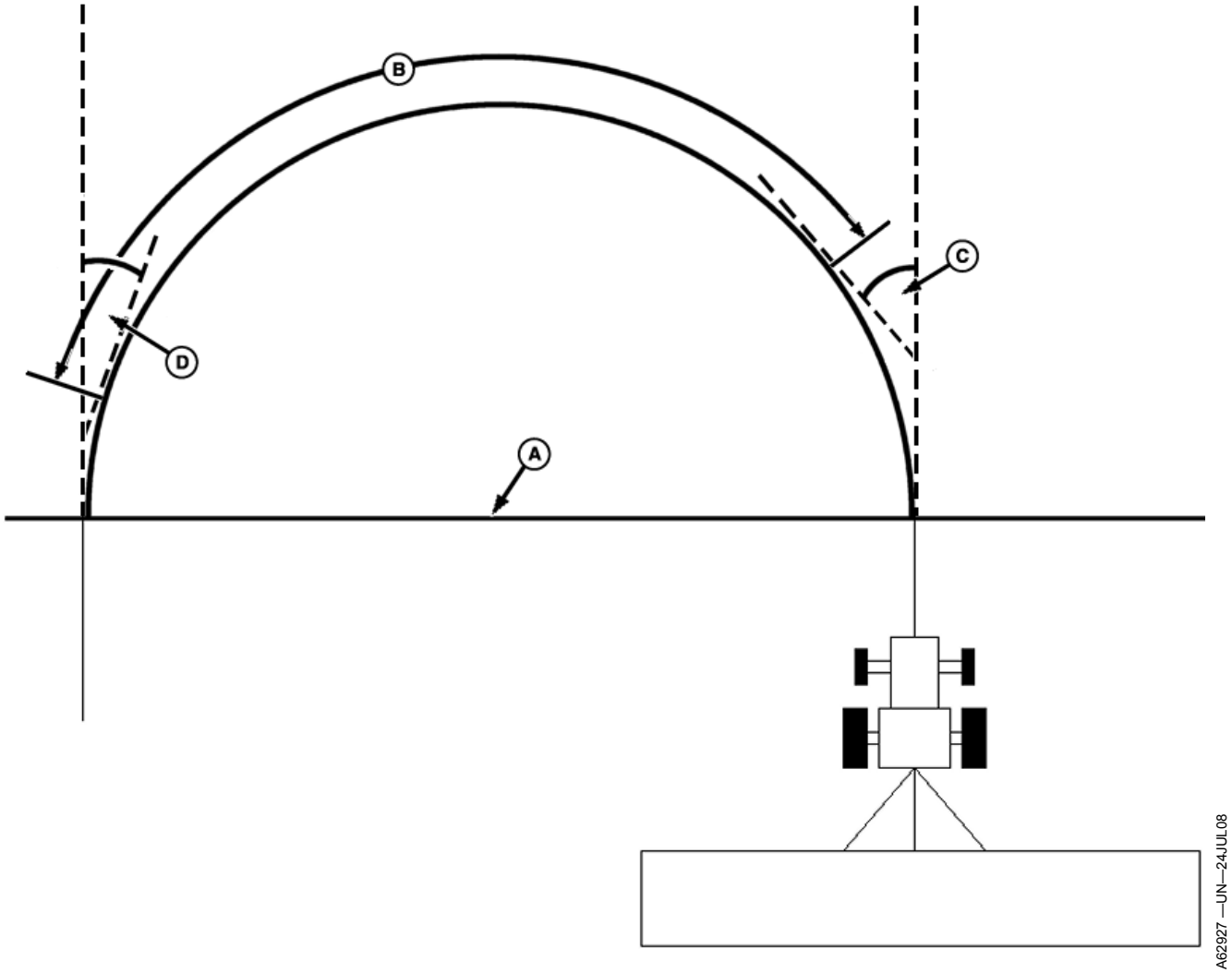
OUO6064,00005EA -19-10NOV11-1/2

OUO6064,00005EA -19-10NOV11-2/2

Turning View Warning Suppression



A—Headlands
B—Warning Suppression
C—Suppression Begins 45 Degrees Away
D—Suppression Ends 13 Degrees Away

When operating with a John Deere™ GreenStar™ display and using John Deere™ Guidance Products, full screen seed monitor warnings can be suppressed (B) when making turns on headlands (A).

To enable turning view seed warning suppression, **Turning View** check box must be checked in Greenstar™2 Pro Guidance Setup.

The following occurs when turning view is enabled:

- Seed warning suppression and turning view begin when tractor is turned 45 degrees (C) away from the current pass using Straight Track.
- Turning View ends when tractor is within 13 degrees (D) of next pass.
- Seed warning suppression ends three seconds after turning view disappears from screen.
- Warnings are suppressed for a maximum of 22 seconds.

OUO6064,00001F9 -19-09JUL10-1/1

Headland Warning Suppression

Headland Warning Suppression ONLY suppresses the Rows Not Planting warnings when the height sensor or switch indicates that the planter frame is raised. It does not disable any other planter warnings.

To enable Headland Warning Suppression:

Select **Menu** >> **Planter** button >> **Configure** softkey >> **Sensor** tab

Place a check mark in Headland Warning Suppression box (E).

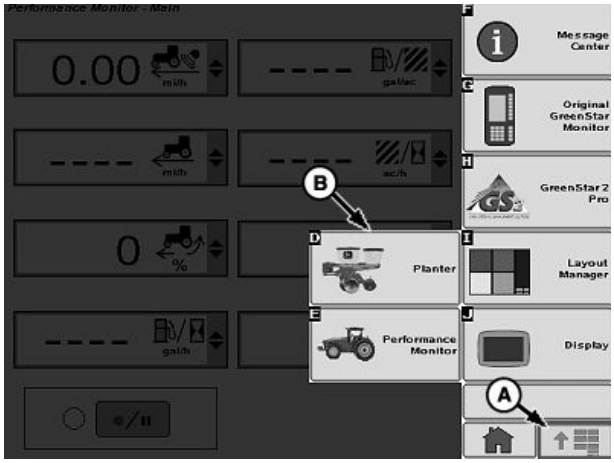
Remove check mark from box to disable Headland Warning Suppression.

On **Ground Driven planters without RowCommand™**, a height sensor MUST be installed and calibrated for Headland Warning Suppression to function. See your John Deere dealer.

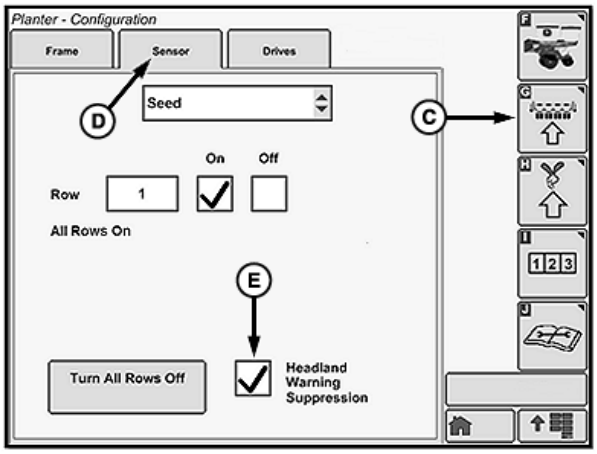
Planters equipped with Variable Rate Drive and ground driven planters equipped with RowCommand™ have a height sensor installed.

Screen Area Information

Planter Configuration — Planter Configuration
Frame — Frame
Sensor — Sensor
Drives — Drives
Seed — Seed
Row — Row
On — On
Off — Off
All Rows On — All Rows On
Turn All Rows Off — Turn All Rows Off
Headland Warning Suppression — Headland Warning Suppression



A59588 —UN—12MAR07



A72705 —UN—20SEP11

A—Menu Button
B—Planter Button
C—Configure Softkey
D—Sensor Tab
E—Box

OUO6064,00005F6 -19-10NOV11-1/1

Transport Mode

Transport Mode puts the planter controller in quiet mode. There are no warnings from planter and no functionality from planter until Transport Mode is disabled.

To enable Transport Mode:

Select **Menu** >> **Planter** button >> **Configure** softkey >> **Frame** tab

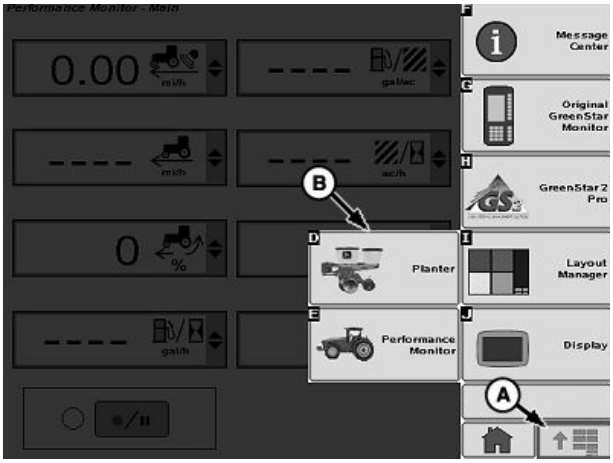
Select Transport Mode softkey (E).

To disable Transport Mode, select the Transport Mode softkey on screen, monitor then returns to run page.

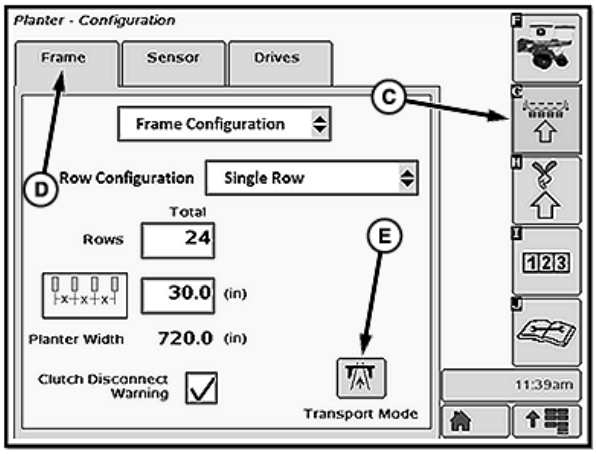
Screen Area Information

Planter Configuration — Planter Configuration
Frame — Frame
Sensor — Sensor
Drives — Drives
Frame Configuration — Frame Configuration
Row Configuration — Row Configuration
Single Row — Single Row
Rows — Rows
Total — Total
Planter Width — Planter Width
Clutch Disconnect Warning — Clutch Disconnect Warning
Transport Mode — Transport Mode

A—Menu Button
B—Planter Button
C—Configure Softkey
D—Frame Tab
E—Transport Mode Softkey



A59588 —UN—12MAR07



A72577 —UN—15SEP11

OUO6064,00005F7 -19-10NOV11-1/1

SeedStar™ XP Navigation Buttons

NOTE: This section explains the operation and features of the optional SeedStar™ XP monitoring system.

Refer to SeedStar™ 2 Main Run Screens section for basic monitor functions, Variable Rate Drive, and RowCommand™.

The SeedStar™ XP Navigation Buttons allow the operator to view detailed information for each SeedStar™ XP monitor function. Selecting each button displays graphical information in the Planter-at-a-Glance screen area and numerical information in the field to the right of the SeedStar™ XP Navigation Panel.

SeedStar™ Navigation Buttons turn orange when the monitored function nears the alarm limit and red when the monitored function goes outside of the alarm limit. This alerts the operator that a function is not performing optimally when the function is not selected for display. To adjust alarm set points, see ALARMS AND LIMITS SETUP PAGE in SeedStar™ XP SETUP Enhanced Monitor System section.

SeedStar™ XP buttons are:

(A) Seed Population button. See SEED POPULATION in this section.

(B) Seed Singulation button. See SEED SINGULATION in this section.

(C) Seed Spacing CV button. See SEED SPACING COEFFICIENT OF VARIATION in this section.

(D) SeedStar™ XP Screen Scan button. Selecting the button advances the displayed monitor page as follows.

- Seed Population
- Seed Singulation
- Seed Spacing CV
- Down Force
- Ride Dynamics

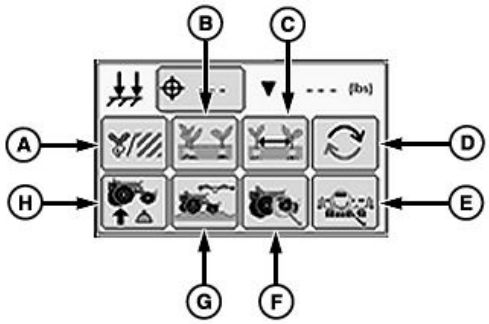
(E) Planters Details button. See PLANTER DETAILS in this section.

(F) Row Details button. See ROW DETAILS in this section.

(G) Ride Dynamics button. See RIDE DYNAMICS in this section.

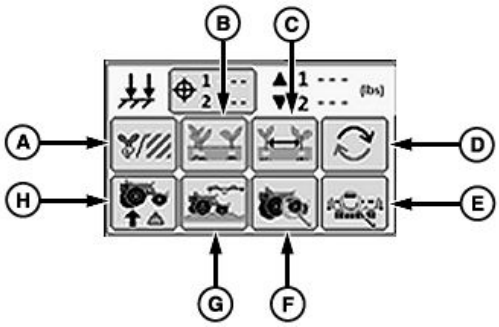
(H) Row Unit Down Force button. See DOWN FORCE in this section.

A—Seed Population Button
B—Seed Singulation Button
C—Seed Spacing CV Button
D—SeedStar™ XP Screen Scan Button
E—Planters Details Button
F—Row Details Button
G—Ride Dynamics Button
H—Row Unit Down Force Button



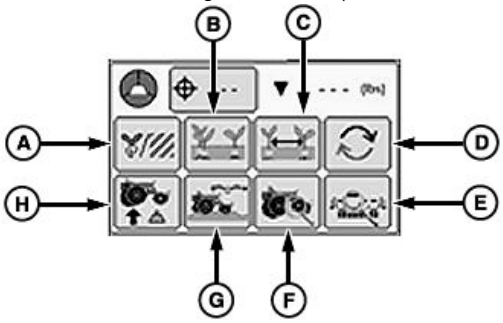
A72578 —UN—16SEP11

SeedStar™ XP Navigation Buttons (Single Set-Point PDF)



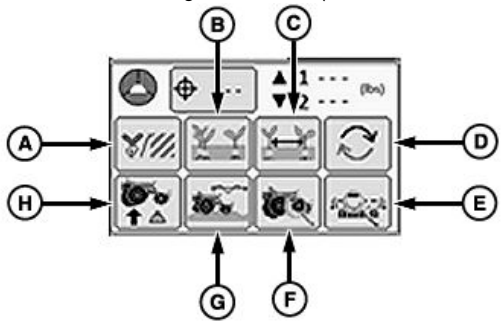
A72579 —UN—16SEP11

SeedStar™ XP Navigation Buttons (Dual Set-Point PDF)



A72580 —UN—16SEP11

SeedStar™ XP Navigation Buttons (Active PDF One Sensor)



A72581 —UN—16SEP11

SeedStar™ XP Navigation Buttons (Active PDF Two Sensors)

OUO6064,00005EC -19-10NOV11-1/1

Seed Population

Select **Menu** >> **Planter** button.

When seed population button (A) is selected the seed population run screen is displayed.

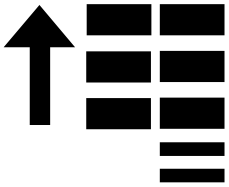
The Seed Population main run screen displays seeding rate information for the planter. The Planter Main 1 (PM1) controller receives data from the seed sensors and uses tractor speed and implement width to calculate the seed rate.

Population at a Glance bar graph:

The line in the middle is the target population. When a row approaches the upper or lower alarm limit, the bar for that row turns orange and an audible alarm sounds along with a text message.

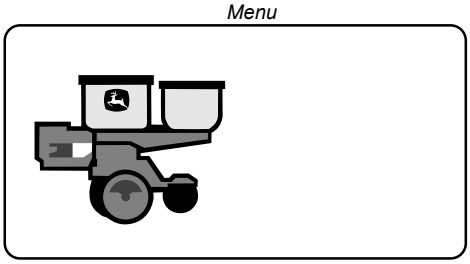
If a row falls below two seeds per second, the bar turns red and a row failed warning appears. If ground speed falls below 2 mph (3.2 km/hr), the planter monitor will not calculate population. Field Doc™ as-applied coverage maps will not be created during these conditions. The top of the graph is the programmed upper alarm limit. The bottom of the graph is the programmed lower alarm limit. Refer to SETUP Seed Rates section.

A—Seed Population Button



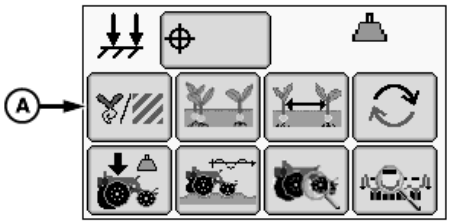
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A67120 —UN—12MAY10

Seed Population Button

Field Doc is a trademark of Deere & Company

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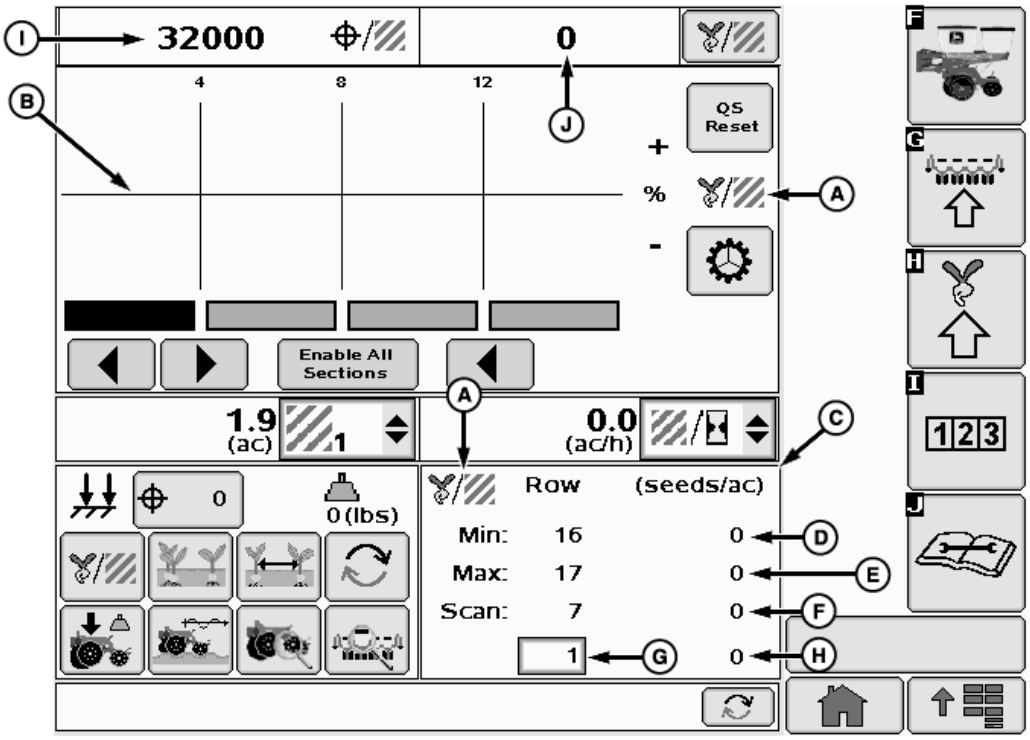
WP29706,0000375 -19-08JUN12-1/2



A67887 —UN—14JUL10

A—Seed Population Icon
B—Percent High and Low Graph
C—Seed Population Details Screen
D—Minimum Row Population
E—Maximum Row Population
F—Scan Row Population
G—Row Entry Box
H—Average Population
I— Target Population
J—Average Population

Seed Population at a Glance Screen

(A) Population icon

(B) Population At a Glance bar

(C) Seed population details screen contains the information of the current bar graph.

(D) Minimum row population

(E) Maximum row population.

(F) Scan row population.

(G) User entered row number.

(H) User entered average population

(I) Target population

(J) Average population

Screen Area Information

QS Reset — QS Reset
Enable All Sections — Enable All Sections
Row — Row

WP29706,0000375 -19-08JUN12-2/2

Seed Singulation

Select **Menu** >> **Planter** button.

NOTE: This feature is not available on planters with more than 48 rows.

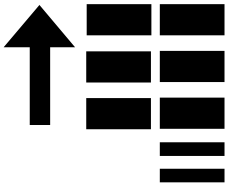
When seed singulation button (A) is selected the seed singulation at a glance screen is displayed.

NOTE: Since singulation measurements are taken at the seed sensor, the appearance of the emerged crop may not be the same as the information displayed on the monitor. For example, seed roll and bounce in the furrow due to excessive ground speed causes spacing of emerged seed to appear worse than what the monitor indicated.

The Seed Singulation run screen provides the operator with information about the performance of each seed meter. The Planter Main 1 (PM1) controller measures the timing of the counts from the seed sensors at each row to determine whether they indicate a skip, multiple, or acceptable spacing, and displays the information on the GreenStar™ Display.

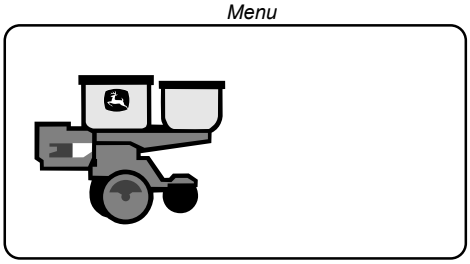
The center line of the Singulation at a Glance graph represents perfect singulation (zero skips and zero multiples). When the Singulation at a Glance bars are above the center line the percentage of doubles is increasing. When the Singulation at a Glance bars are below the center line the percentage of skips is increasing. Bars appear both above and below the center line when an improperly adjusted meter has doubles and skips.

To improve meter singulation performance, choose the correct seed disk for the crop being planted, adjust vacuum level, adjust double eliminator setting (if used), and use the correct amount of meter lubricant. Refer to your Rate Charts and Settings Manual for meter adjustments and recommendations.



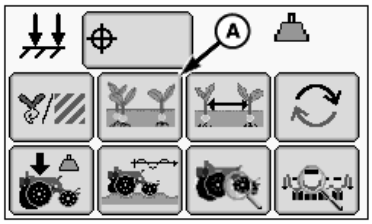
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A67121 —UN—12MAY10

Seed Singulation Button

A—Seed Singulation Button

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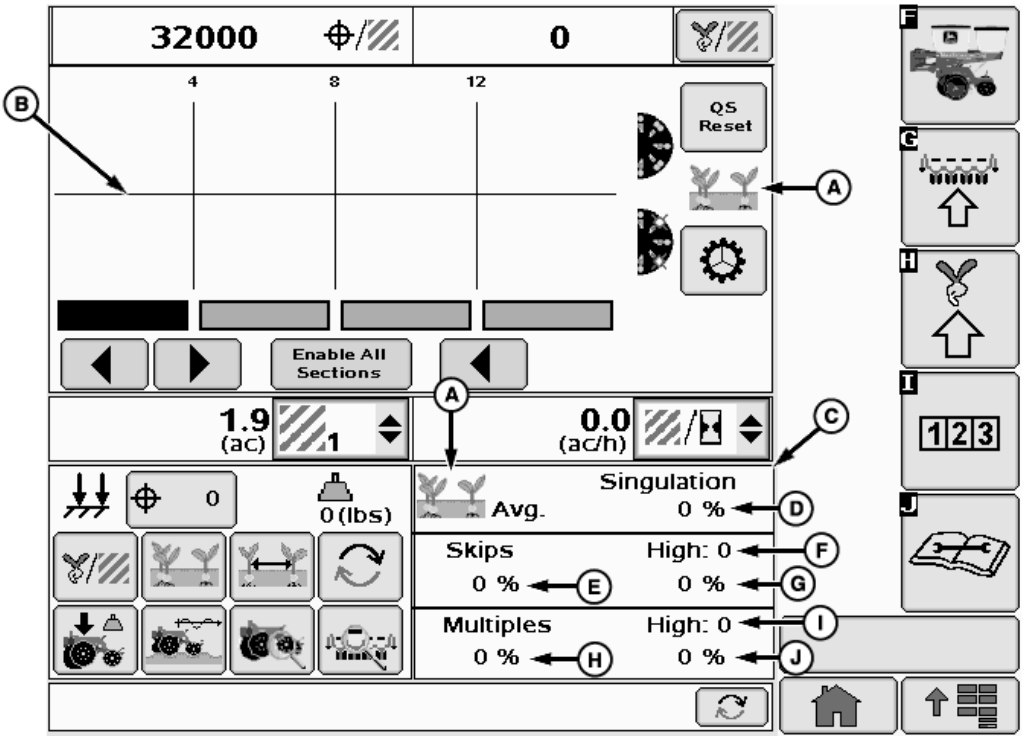
OUO6064,0000197 -19-13OCT14-1/2



A67888 —UN—28JUN10

A—Seed Singulation Icon
B—Percent Multiples and Skips Graph
C—Seed Singulation Details Screen
D—Planter Average Singulation Percentage
E—Planter Average Percent Skips
F—Row With Highest Skips
G—High Row Skip Percentage
H—Planter Average Percent Multiples
I— Row With Highest Multiples
J— High Row Multiple Percentage

Seed Singulation at a Glance Screen

(A) Seed singulation icon

(B) Percent multiples and skips graph

(C) Seed singulation details screen contains the information of the current bar graph.

(D) Planter average singulation percentage

(E) Planter average percent skips

(F) Row with highest skips.

(G) High row skip percentage

(H) Planter average percent multiples.

(I) Row with highest multiples.

(J) High row multiple percentage

Screen Area Information

QS Reset — QS Reset
Enable All Sections — Enable All Sections
Avg. — Average

OUO6064,0000197 -19-13OCT14-2/2

Seed Spacing Coefficient of Variation

Select **Menu** >> **Planter** button.

NOTE: This feature is not available on planters with more than 48 rows.

When seed spacing coefficient of variation button (A) is selected the seed spacing coefficient of variation at a glance screen is displayed.

The Seed Spacing Coefficient of Variation (CV) run screen provides information about overall planter in-row seed spacing performance.

The Planter Main 1 (PM1) controller measures the consistency of the timing of the seed counts from the seed sensors to determine seed spacing performance for the planter. These spacing measurements are used to calculate the seed spacing coefficient of variation (CV) on a whole planter average and individual row basis.

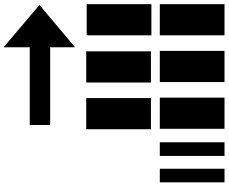
NOTE: Coefficient of Variation (CV) measurements are only available for target seed rates below 40 seeds per second at 12.9 kph (8 mph). For example, CV information is only displayed for target seed rates less than 148 250 seeds/hectare on 76 cm rows (60 000 seeds/acre on 30 inch rows). For target seed rates above 40 seeds per second at 12.9 kph (8 mph), dashes (- -) are displayed in place of CV values.

Seed spacing coefficient of variation (CV) is defined as seed spacing standard deviation divided by the average spacing. Coefficient of Variation allows the operator to evaluate planter performance over a wide range of crops and target populations. Coefficient of variation is expressed as a decimal, with lower numbers indicating better in-row seed spacing.

Coefficient of Variation at a glance bars increase in height as seed spacing consistency gets worse. Maximum bar height indicates a Coefficient of Variation (CV) of 0.50. In typical planting conditions, operators expect coefficient of variation measurements to range from 0.10 to 0.30. CV values vary with different crops, seed disks, planting conditions, and ground speeds. Verify performance of planter seed spacing with in-ground population and spacing checks.

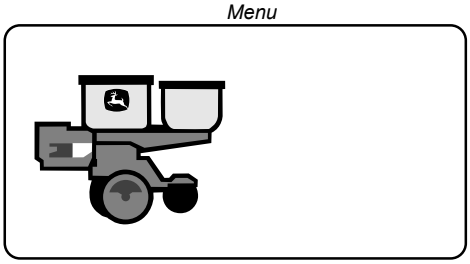
To improve overall planter seed spacing performance, ensure meter drives are operating properly, check meter settings, adjust row unit down force, and reduce ground speed.

NOTE: Since CV measurements are taken at the seed sensor, the appearance of the emerged crop may not be the same as the information displayed on the monitor. For example, seed roll and bounce in the furrow due to excessive ground speed causes spacing of emerged seed to appear worse than what the monitor indicated..



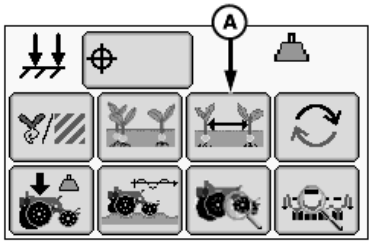
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A67122 —UN—12MAY10

Seed Spacing Coefficient of Variation Button

A—Seed Spacing Coefficient of Variation Button

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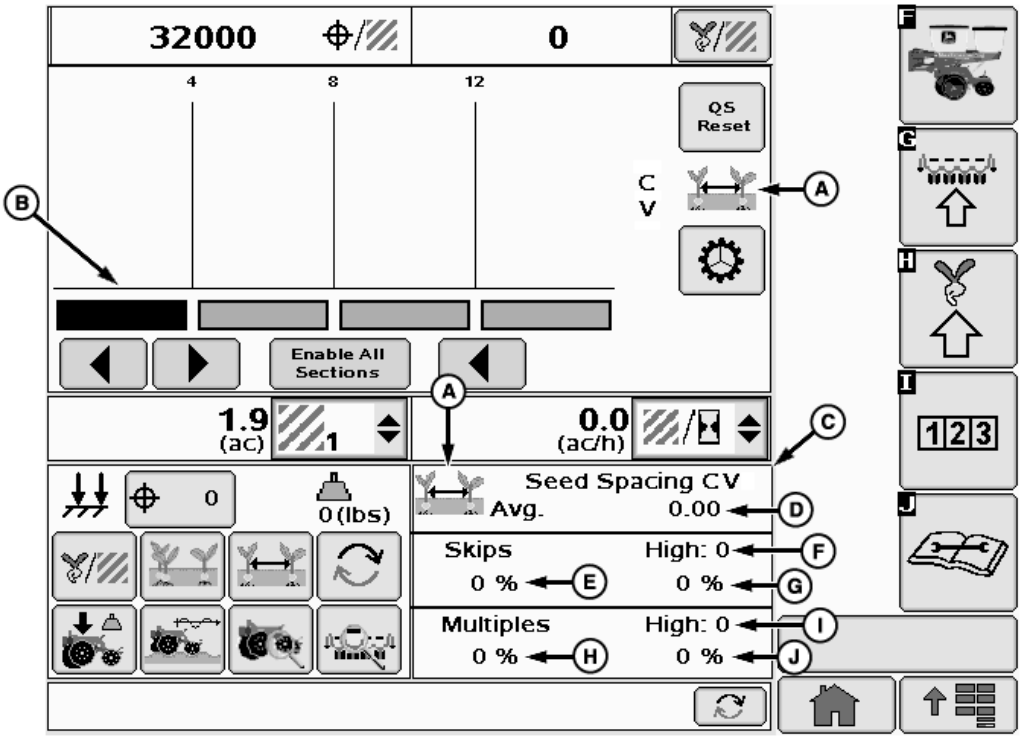
OUO6064,0000198 -19-13OCT14-1/2



A67889 —UN—28JUN10

A—Seed Spacing Coefficient of Variation Icon
B—Coefficient of Variation Bar Graph
C—Seed Spacing Coefficient of Variation Details Screen
D—Planter Average Coefficient of Variation (CV)
E—Planter Average Percent Skips
F—Row With Highest Skips
G—High Row Skip Percentage
H—Planter Average Percent Multiples
I— Row With Highest Multiples
J— High Row Multiple Percentage

Seed Spacing Coefficient of Variation at a Glance Screen

(A) Coefficient of Variation icon

(B) Coefficient of variation bar graph

(C) Seed spacing coefficient of variation details screen contains the information of the current bar graph.

(D) Good spacing.

(E) Planter average percent skips

(F) Row with highest skips.

(G) High row skip percentage

(H) Planter average percent multiples.

(I) Row with highest multiples.

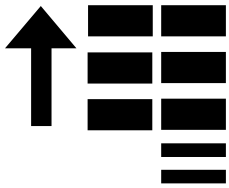
(J) High row multiple percentage

Screen Area Information

QS Reset — Quick Start Reset
Enable All Sections — Enable All Sections
Avg. — Average

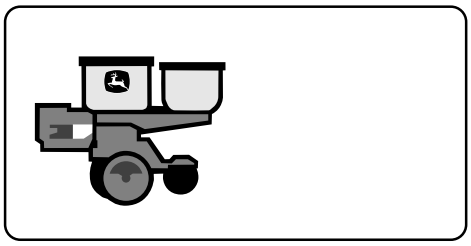
OUO6064,0000198 -19-13OCT14-2/2

Down Force



Menu

A59325 —UN—19FEB07



Planter Button

A59551 —UN—08MAR07

A72739 —UN—23SEP11

Down Force Button (Single Set-Point PDF)

A72740 —UN—23SEP11

Down Force Button (Dual Set-Point PDF)

A72767 —UN—23SEP11

Down Force Button (Active PDF One Sensor)

A72768 —UN—23SEP11

Down Force Button (Active PDF Two Sensors)

A—Down Force Button

Select **Menu** >> **Planter** button.

When down force button (A) is selected, the down force at a glance screen is displayed.

The Down Force run screen displays average gauge wheel down force margin for each row unit equipped with a sensor node controller and gauge wheel down force sensor.

The gauge wheel down force sensor measures the amount of load that the gauge wheels are carrying as the row units move through the field. The load on the gauge wheels changes frequently when the planter is in motion and is displayed as margin on the display.

Down force margin is the amount of extra down force being applied to the row unit, over and above what is required for the opener disks to penetrate the soil and achieve full planting depth. The extra down force can come from the weight of the row unit and meter, weight of seed in the seed hoppers, the pneumatic down force system, or external down force springs.

IMPORTANT: Always perform and in field check BEFORE adjusting the target down force margin. Once depth and seed furrow has been verified, target margin can be adjusted accordingly.

A **target down force margin** must be entered based on the operator's judgment of planting conditions. Refer to ALARMS AND LIMITS SETUP PAGE in SeedStar™ XP SETUP Enhanced Monitor System section. Set down force margin high enough to create a defined seed furrow but not so high that the side wall of the furrow is compacted.

High and Low Margin alarm set points are defined on the Alarms and Limits Setup Page. The margin alarm activates if the planter average down force margin goes above or below the target margin by the amount entered on the Alarms and Limits Setup Page.

The center line of the Down Force at a Glance chart is the **target margin**. Down Force at a Glance bars above the center line indicate down force margin above the target set point. Bars below the center line indicate down force margin below the target set point. If down force margin is consistently low on monitor screen, increase pneumatic row unit down force setting or reduce target margin set point based on your judgment of planting conditions and uniformity of seed depth. If down force margin is consistently high on monitor screen, decrease pneumatic row unit down force setting or increase target margin set point.

IMPORTANT: To ensure down force sensor accuracy, zero sensors annually or whenever sensors do not read 0 lbs. when planter is raised.

Continued on next page

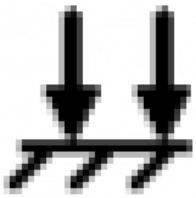
OUO6064,00005ED -19-10NOV11-1/12

Set-Point Down Force system allows the operator to adjust the force in the air spring circuit manually through the display in the cab. Data from the air pressure sensor located in the air tank valve block is sent to the Planter Main 2 (PM2) controller and then displayed as down force on the monitor.

The operator selects a desired down force target that produces the most optimal seed furrow. When soil conditions change the operator can increase or decrease the pneumatic down force to maintain target margin, depth control, and avoid compacting the furrow.

Data from the row unit gauge wheel sensors is sent to the Planter Main 2 (PM2) controller and then displayed as down force margin on the monitor.

IMPORTANT: Always perform and in field check BEFORE adjusting the target down force margin.



A72706 —UN—20SEP11

Once depth and seed furrow has been verified, target margin can be adjusted accordingly.

OUO6064,00005ED -19-10NOV11-2/12

Active Down Force system automatically adjusts the force in the air spring circuit based on soil condition information gathered from the row unit gauge wheel sensors. Data from the row unit gauge wheel sensors is sent to the Planter Main 2 (PM2) controller and then displayed as down force margin on the monitor.

The operator selects a desired target margin (the amount of extra down force applied to the row unit, over and above what is required for the opener disks to penetrate the soil and achieve full planting depth). Active Down Force automatically monitors and adjusts the air pressure in the air springs to ensure that the actual margin is equal to the target margin. When soil conditions change, the active down force system automatically adjusts the down force to achieve the target margin.

IMPORTANT: Always perform and in field check BEFORE adjusting the target down force margin.

A72708 —UN—21SEP11

Once depth and seed furrow has been verified, target margin can be adjusted accordingly.

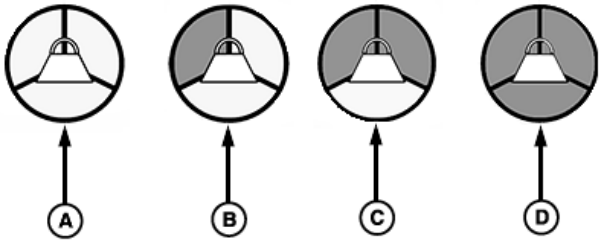
Continued on next page

OUO6064,00005ED -19-10NOV11-3/12

Three requirements must be met for the Active Down Force system to function properly.

1. Sensor diagnostic check OK.
2. Wheel motion sensor active, the machine must be moving at a least 1.6 km/h (1 mph).
3. Machine must be lowered in the planting position.

Initially, the Active Down Force icon is empty. As the three requirements are met, the corresponding segments of the icon turn from blank to gray. After all the requirements are met, the entire icon will turn green, indicating that the PDF system is enabled, and active.



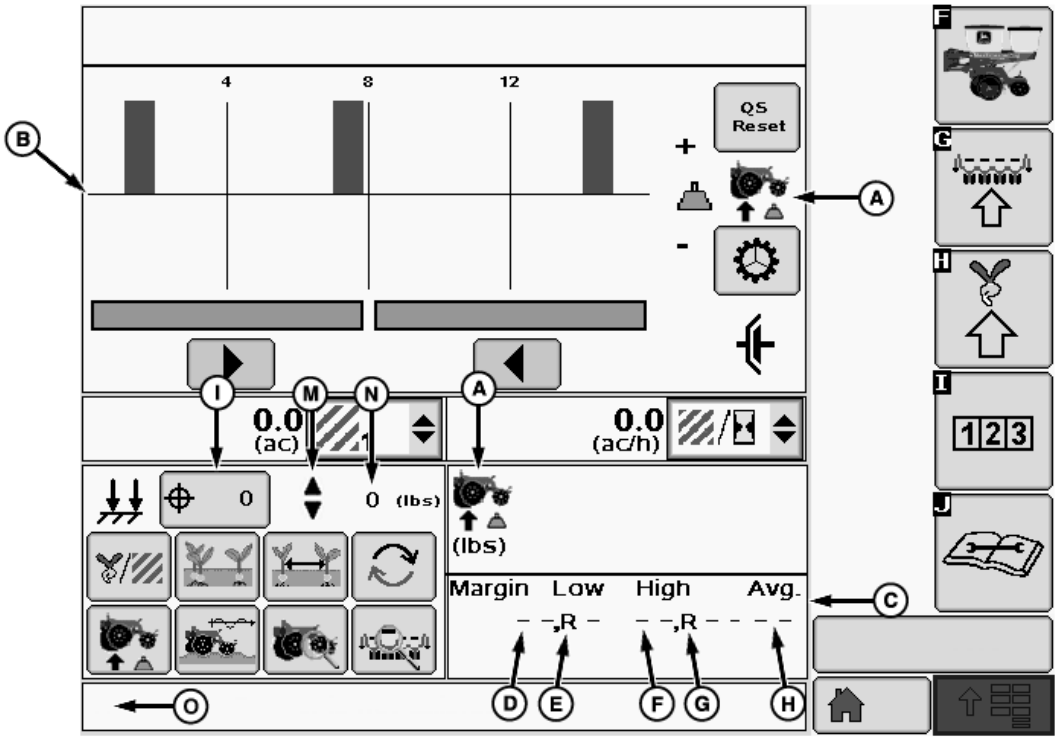
A73458 —UN—03NOV11

A—No Activity
B—Sensor Diagnostic Check OK
C—Wheel Motion Sensor Active
D—Planter Lowered (System Active)

Continued on next page

OUO6064,00005ED -19-10NOV11-4/12

Single Set-Point Pneumatic Down Force



A73029 —UN—13OCT11

(A) Down force icon.

(B) Down force margin bar graph.

(C) Numeric down force margin details contains the information of the current bar graph.

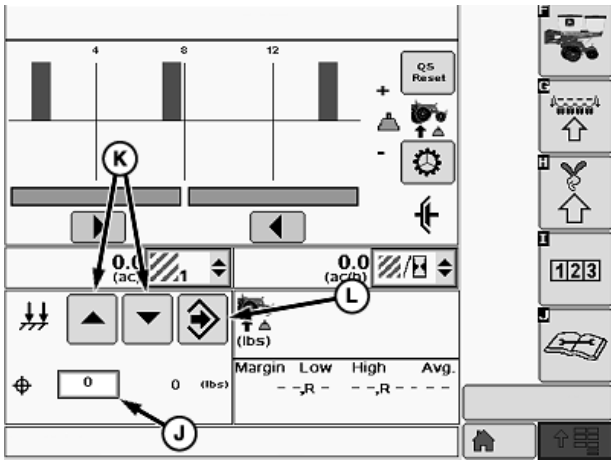
(D) Low margin value displays the lowest down force margin value obtained by the gauge wheel sensors.

(E) Low margin row displays the row unit associated with the lowest down force margin.

(F) High margin value displays the highest down force margin value obtained by the gauge wheel sensors.

(G) High margin row displays the row unit associated with the highest down force margin.

(H) Average Margin displays the average down force margin of all the gauge wheel sensor data.



A73031 —UN—13OCT11

A—Down Force Icon
B—Down Force Margin Graph
C—Numeric Down Force Margin Details
D—Low Margin Value
E—Low Margin Row
F—High Margin Value
G—High Margin Row
H—Average Margin
I— Down Force Target Button
J—Down Force Input Box
K—Increase and Decrease Arrows
L—Enter Button
M—Indicator Arrows
N—Actual Down Force
O—Warning Message Area

Setting Target Down Force

1. Select the down force target button (I) to open the target down force input screen.
2. Set target row unit down force by using the target down force input box (J) or the increase or decrease arrows (K).
3. When complete select enter (L).
4. Indicator arrows (M) are displayed as a visual indication that the system is increasing or decreasing pneumatic down force pressure.
5. Actual down force (N) is checked on a timed interval and automatically adjusted if necessary to match the target down force. If Actual down force (N) deviates below the target at an unacceptable rate, a warning appears in the warning message area (O) stating "Check pneumatic down force for leaks". Depending

Continued on next page

OUO6064,00005ED -19-10NOV11-5/12

on the severity of the leak, the actual down force number (N) is highlighted orange or red.

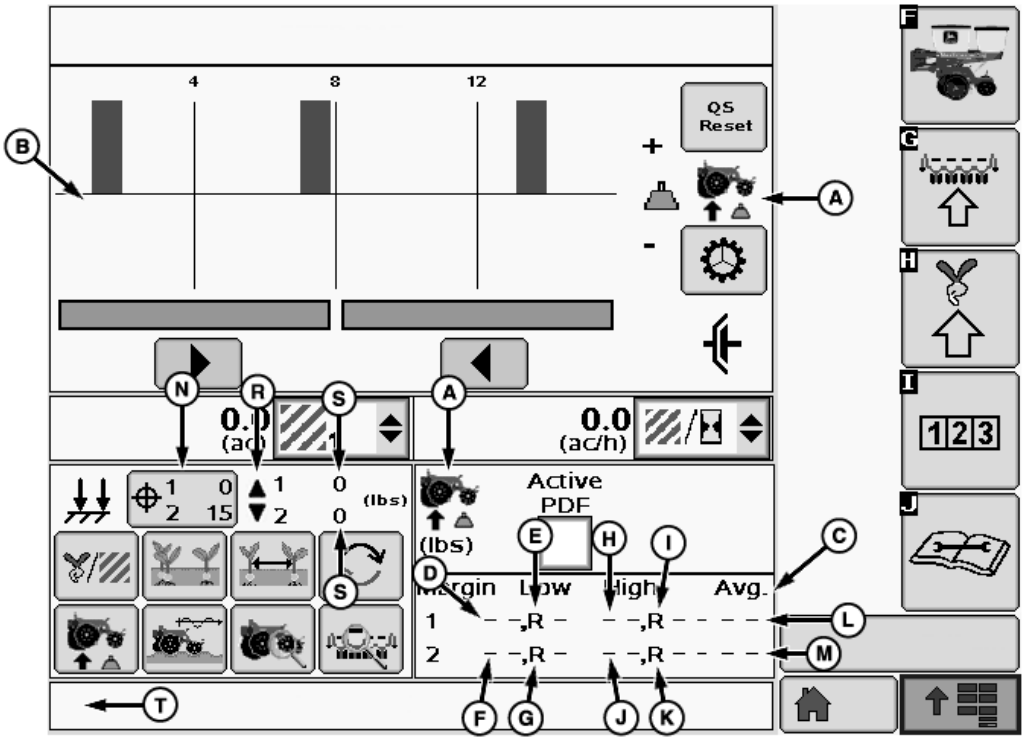
Screen Area Information

QS Reset — QS Reset

Continued on next page

OUO6064,00005ED -19-10NOV11-6/12

Dual Set-Point Pneumatic Down Force



A73032 —UN—13OCT11

(A) Down force icon.

(B) Down force margin bar graph.

(C) Numeric down force margin details contains the information of the current bar graph.

(D) Low margin value displays the lowest down force margin value obtained by the gauge wheel sensors on rank 1.

(E) Low margin row displays the row unit on rank 1 associated with the lowest down force margin.

(F) Low margin value displays the lowest down force margin value obtained by the gauge wheel sensors on rank 2.

(G) Low margin row displays the row unit on rank 2 associated with the lowest down force margin.

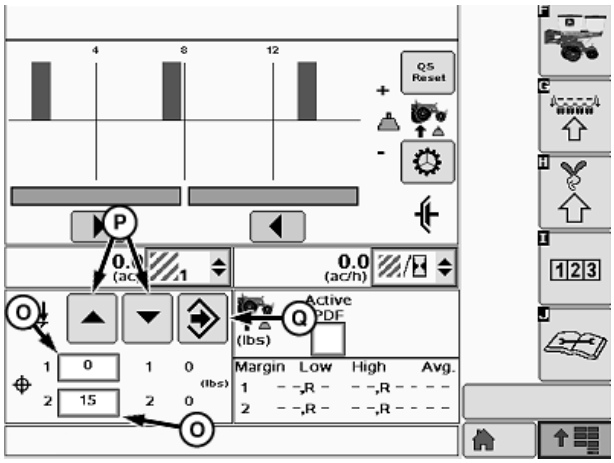
(H) High margin value displays the highest down force margin value obtained by the gauge wheel sensors on rank 1.

(I) High margin row displays the row unit on rank 1 associated with the highest down force margin.

(J) High margin value displays the highest down force margin value obtained by the gauge wheel sensors on rank 2.

(K) High margin row displays the row unit on rank 2 associated with the highest down force margin.

(L) Average Margin displays the average down force margin of all the gauge wheel sensor data on rank 1.



A73033 —UN—13OCT11

A—Down Force Icon
B—Down Force Margin Graph
C—Numeric Down Force Margin Details
D—Low Margin Value—Rank 1
E—Low Margin Row—Rank 1
F—Low Margin Value—Rank 2
G—Low Margin Row—Rank 2
H—High Margin Value—Rank 1
I—High Margin Row—Rank 1
J—High Margin Value—Rank 2
K—High Margin Row—Rank 2
L—Average Margin—Rank 1
M—Average Margin—Rank 2
N—Down Force Target Button
O—Down Force Input Box
P—Increase and Decrease Arrows
Q—Enter Button
R—Indicator Arrows
S—Actual Down Force
T—Warning Message Area

(M) Average Margin displays the average down force margin of all the gauge wheel sensor data on rank 2.

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OUO6064,00005ED -19-10NOV11-7/12

Setting Target Down Force

1. Select the down force target button (N) to open the target down force input screen.
2. Set target row unit down force by using the target down force input boxes (O) or the increase or decrease arrows (P).
3. When complete select enter (Q).
4. Indicator arrows (R) are displayed as a visual indication that the system is increasing or decreasing pneumatic down force pressure.
5. Actual down force (S) is checked on a timed interval and automatically adjusted if necessary to match the target down force. If Actual down force (S) deviates below the target at an unacceptable rate, a warning appears in the warning message area (T) stating "Check pneumatic down force for leaks". Depending on the severity of the leak, the actual down force number (S) is highlighted orange or red.

Screen Area Information

QS Reset — QS Reset

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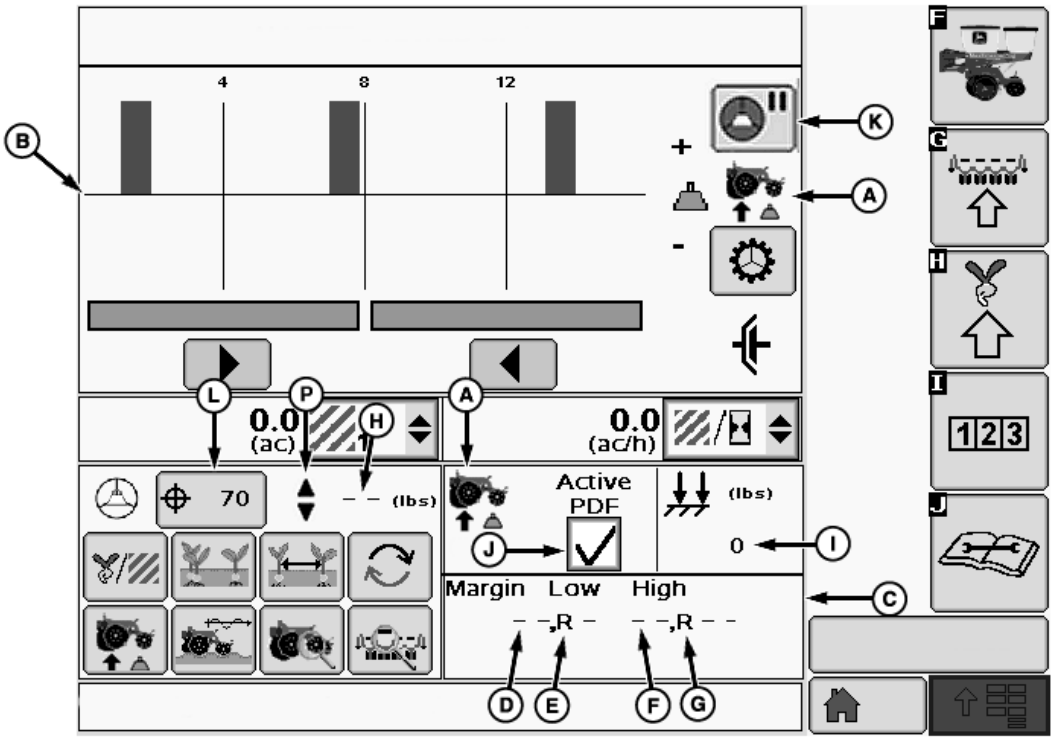
OUO6064,00005ED -19-10NOV11-8/12

Active Pneumatic Down Force (Single Rank)



A73030 —UN—13OCT11

(A) Down force icon.

(B) Down force margin bar graph.

(C) Numeric down force margin details contains the information of the current bar graph.

(D) Low margin value displays the lowest down force margin value obtained by the gauge wheel sensors.

(E) Low margin row displays the row unit associated with the lowest down force margin.

(F) High margin value displays the highest down force margin value obtained by the gauge wheel sensors.

(G) High margin row displays the row unit associated with the highest down force margin.

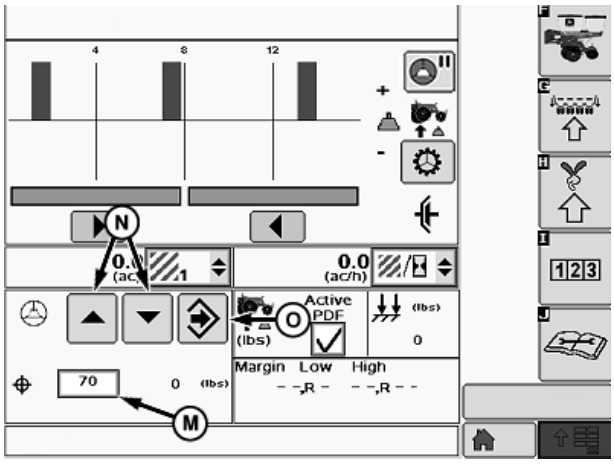
(H) Actual margin displays the average margin of all the gauge wheel down force sensor data.

(I) Actual down force

(J) Active PDF check box is used to enable and disable the active down force system. When active PDF is disabled the system operation characteristics reverts back to those characteristics of the set-point system, and does not make any automatic down force adjustments.

(K) Active PDF pause button allows the operator to disable the active pneumatic down force system temporarily for a pre-determined amount of time. Time duration is set in the Alarms and Limits Screen.

Setting Target Margin



A73028 —UN—13OCT11

A—Down Force Icon
B—Down Force Margin Graph
C—Numeric Down Force Margin Details
D—Low Margin Value
E—Low Margin Row
F—High Margin Value
G—High Margin Row
H—Actual Margin
I— Actual Down Force
J—Active PDF Check Box
K—Active PDF Pause Button
L—Margin Target Button
M—Target Margin Input Box
N—Increase and Decrease Arrows
O—Enter Button
P—Indicator Arrows

1. Select the margin target button (L) to open the target margin input screen.
2. Set target margin by using the target margin input box (M) or the increase or decrease arrows (N).

Continued on next page

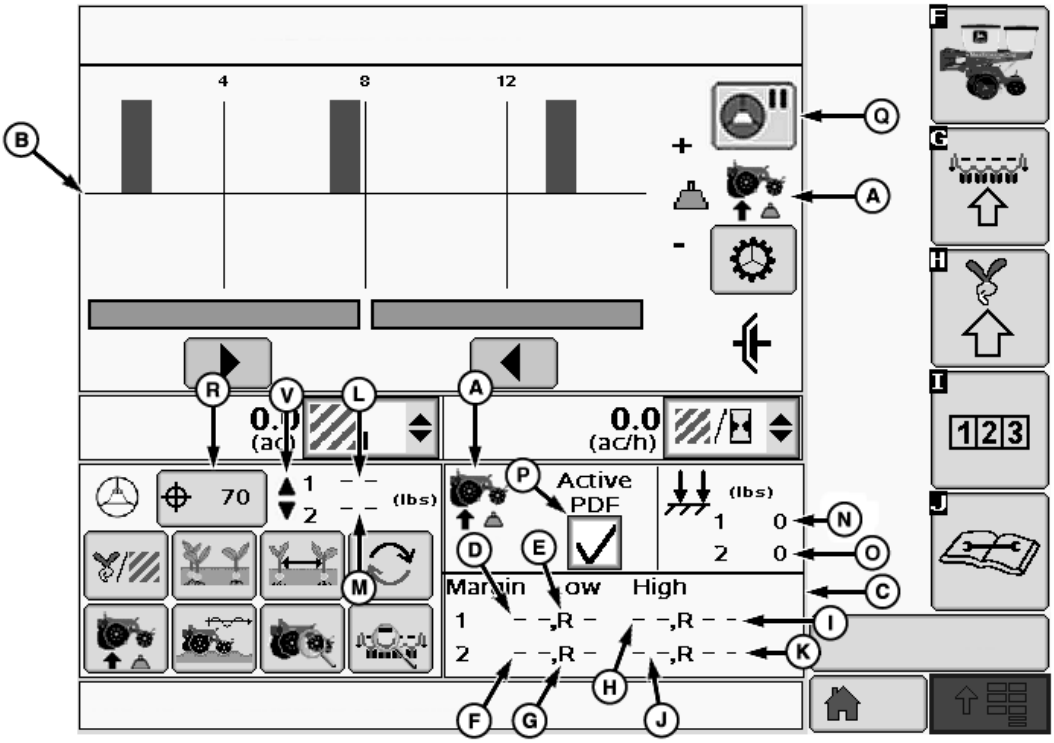
OUO6064,00005ED -19-10NOV11-9/12

3. When complete select enter (O).
4. Indicator arrows (P) are displayed as a visual indication that the system is increasing or decreasing pneumatic down force pressure.
5. In Active mode, the system automatically makes down force adjustments to compensate for variations in the soil to maintain the target margin.

Continued on next page

OUO6064,00005ED -19-10NOV11-10/12

Active Pneumatic Down Force Dual Rank (Split Row)



(A) Down force icon.

(B) Down force margin bar graph.

(C) Numeric down force margin details contains the information of the current bar graph.

(D) Low margin value displays the lowest down force margin value obtained by the gauge wheel sensors on rank 1.

(E) Low margin row displays the row unit on rank 1 associated with the lowest down force margin.

(F) Low margin value displays the lowest down force margin value obtained by the gauge wheel sensors on rank 2.

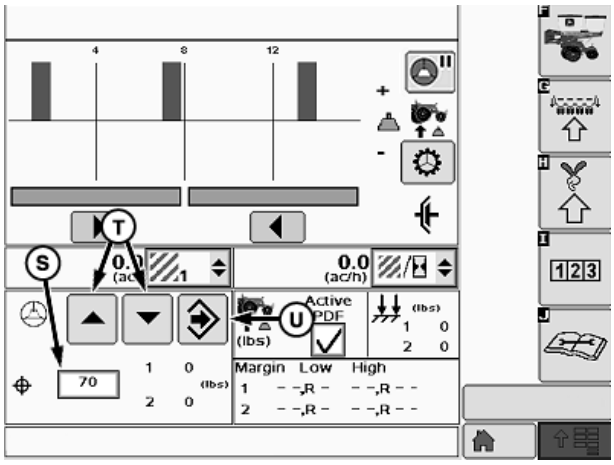
(G) Low margin row displays the row unit on rank 2 associated with the lowest down force margin.

(H) High margin value displays the highest down force margin value obtained by the gauge wheel sensors on rank 1.

(I) High margin row displays the row unit on rank 1 associated with the highest down force margin.

(J) High margin value displays the highest down force margin value obtained by the gauge wheel sensors on rank 2.

(K) High margin row displays the row unit on rank 2 associated with the highest down force margin.



A—Down Force Icon
B—Down Force Margin Graph
C—Numeric Down Force Margin Details
D—Low Margin Value—Rank 1
E—Low Margin Row—Rank 1
F—Low Margin Value—Rank 2
G—Low Margin Row—Rank 2
H—High Margin Value—Rank 1
I— High Margin Row—Rank 1
J—High Margin Value—Rank 2
K—High Margin Row—Rank 2
L—Actual Margin—Rank 1
M—Actual Margin—Rank 2
N—Actual Down Force—Rank 1
O—Actual Down Force—Rank 2
P—Active PDF Check Box
Q—Active PDF Pause Button
R—Margin Target Button
S—Target Margin Input Box
T—Increase and Decrease Arrows
U—Enter Button
V—Indicator Arrows

Continued on next page

OUO6064,00005ED -19-10NOV11-11/12

(L) Actual margin displays the average margin of all the gauge wheel down force sensor data for rank 1.

(M) Actual margin displays the average margin of all the gauge wheel down force sensor data for rank 2.

(N) Actual down force rank 1

(O) Actual down force rank 2.

(P) Active PDF check box is used to enable and disable the active down force system. When active PDF is disabled the system operation characteristics reverts back to those characteristics of the set-point system, and does not make any automatic down force adjustments.

(Q) Active PDF pause button allows the operator to disable the active pneumatic down force system temporarily for a pre-determined amount of time. Time duration is set in the Alarms and Limits Screen.

Setting Target Margin

1. Select the margin target button (R) to open the target margin input screen.
2. Set target margin by using the target margin input box (S) or the increase or decrease arrows (T).
3. When complete select enter (U).
4. Indicator arrows (V) are displayed as a visual indication that the system is increasing or decreasing pneumatic down force pressure.
5. In Active mode, the system automatically makes down force adjustments to compensate for variations in the soil to maintain the target margin.

OUO6064,00005ED -19-10NOV11-12/12

Ride Dynamics

Ride Dynamics

Select **Menu** >> **Planter** button >> **Ride Dynamics** button.

When ride dynamics button (A) is selected the ride dynamics at a glance screen is displayed.

The ride dynamics run screen displays row unit ride quality information for each row unit equipped with a sensor node controller. An accelerometer in each sensor node measures the severity of row unit movements.

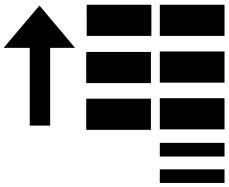
Row Unit ride information is displayed as a percentage. 100% good ride represents optimum row unit ride quality and 0% represents the poorest ride quality. The Ride Quality at a Glance bars decrease in height as row unit ride gets worse.

Excessive row unit movement and bounce can affect meter performance, in-row seed spacing, and seed depth consistency.

To improve ride quality, reduce ground speed or increase row unit down force.

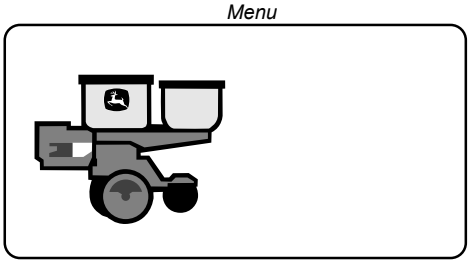
The ride quality alarm set point can be set on the Alarms and Limits Setup Page. Default value is 90 percent.

A—Ride Dynamics Button



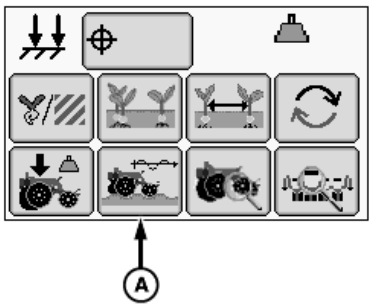
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A67118 —UN—12MAY10

Ride Dynamics Button

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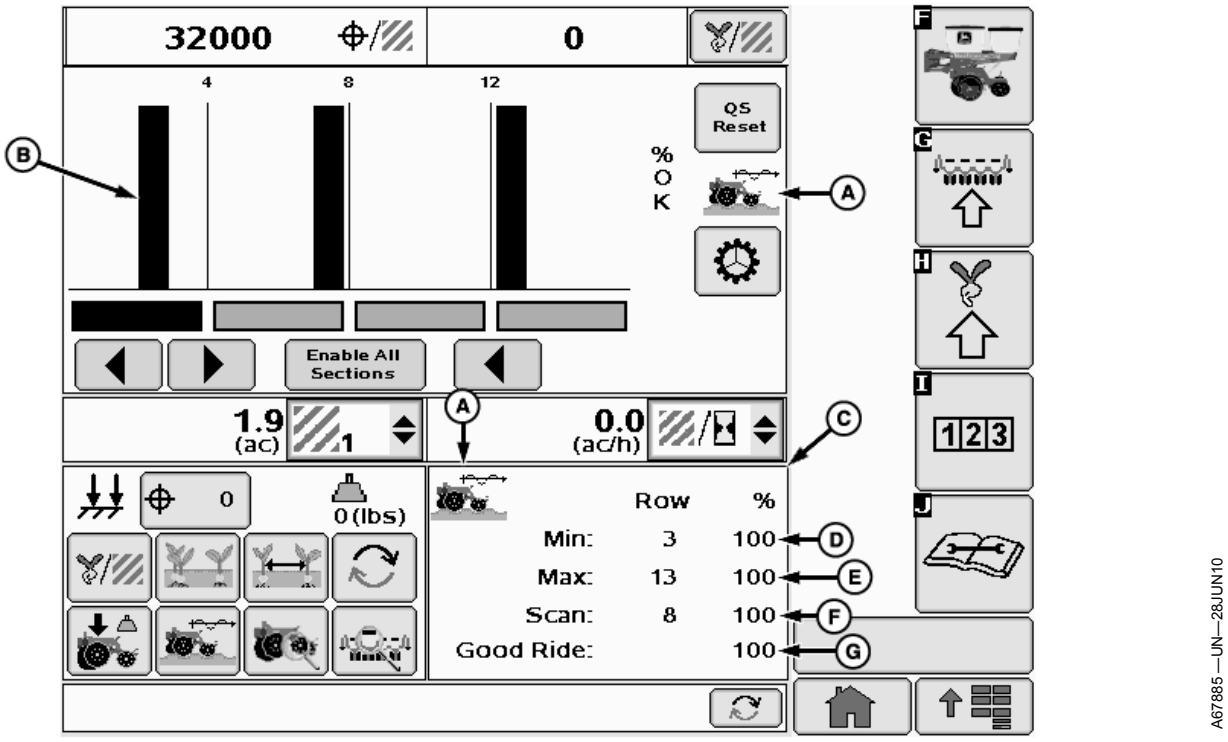
OUO6064,0000194 -19-20JUL10-1/2



A—Ride Dynamics Icon
B—Percent Good Ride Graph
C—Ride Dynamic Details Screen
D—Minimum Row Good Ride
E—Maximum Row Good Ride
F—Scan Row Good Ride
G—Planter Average Good Ride

Ride Dynamics at a Glance Screen

(A) Ride dynamics icon

(B) Percent good ride graph

(C) Ride dynamic details screen contains the information of the current bar graph.

(D) Minimum row good ride

(E) Maximum row good ride

(F) Scan row good ride

(G) Planter average good ride

Screen Area Information

QS Reset — QS Reset
Enable All Sections — Enable All Sections
Row — Row

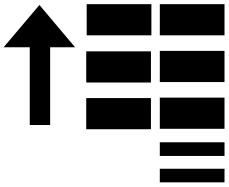
OUO6064,0000194 -19-20JUL10-2/2

Row Details

Select **Menu** >> **Planter** button.

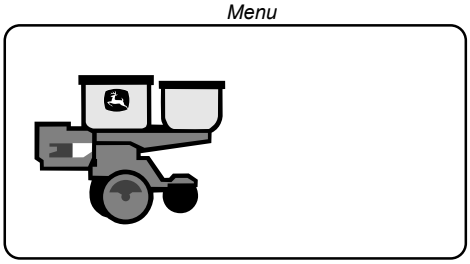
When row details page button (A) is selected the row detail page is displayed.

A—Row Details Button



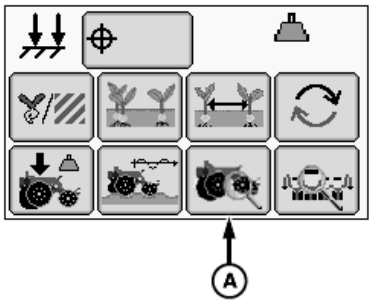
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button

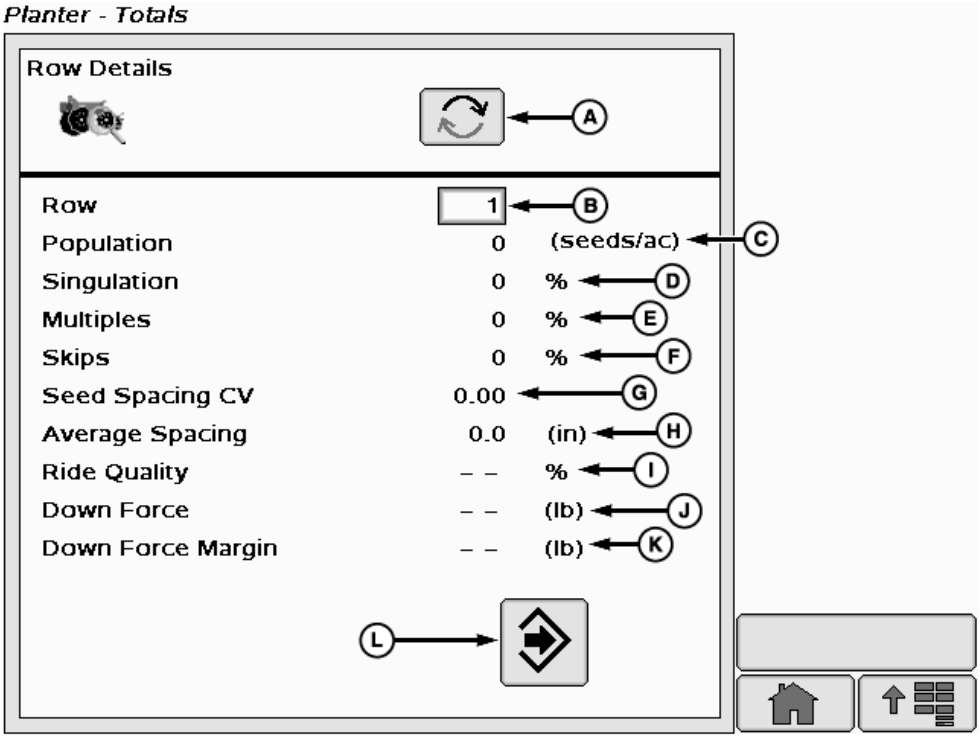


A67004 —UN—30APR10

Row Details Button

Continued on next page

OUO6064,00005F0 -19-10NOV11-1/2



A67801 —UN—02JUL10

A—Row Advance Button
B—Row Selection Input Box
C—Population Field
D—Singulation Field
E—Multiples Field
F—Skips Field
G—Seed Spacing Coefficient of Variation
H—Average Spacing Field
I— Ride Quality
J—Down Force Field
K—Down Force Margin Field
L—Return to Main Button

This screen displays active planting data on a per row basis and allows the operator to compare the operation of one row to another.

(A) Row advance button changes row details column to the next row in sequence.

(B) Row selection input box allows operator to input row number to view.

(C) Population field displays seed per area.

(D) Singulation percentage

(E) Multiples percentage

(F) Skips percentage

(G) Seed spacing Coefficient of Variation (CV)

(H) Average spacing

(I) Ride Quality

(J) Down force

(K) Down force margin

(L) Return to main button changes screen back to previous view.

Screen Area Information

Planter - Totals — Planter - Totals
Row Details — Row Details
Row — Row
Population — Population
Singulation — Singulation
Multiples — Multiples
Skips — Skips
Seed Spacing CV — Seed Spacing CV
Average Spacing — Average Spacing
Ride Quality — Ride Quality
Down Force — Down Force
Down Force Margin — Down Force Margin

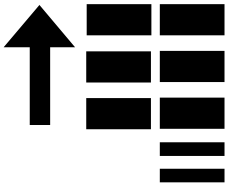
OUO6064,00005F0 -19-10NOV11-2/2

Planter Details

Select **Menu** >> **Planter** button.

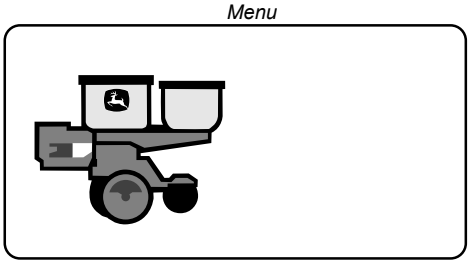
When planter details page button (A) is selected the planters detail page is displayed.

A—Planter Details Page Button



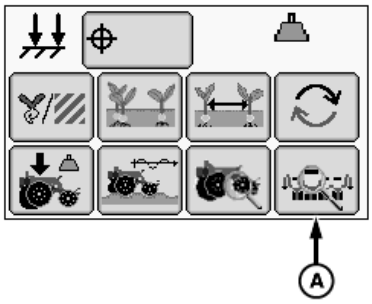
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A67003 —UN—30APR10

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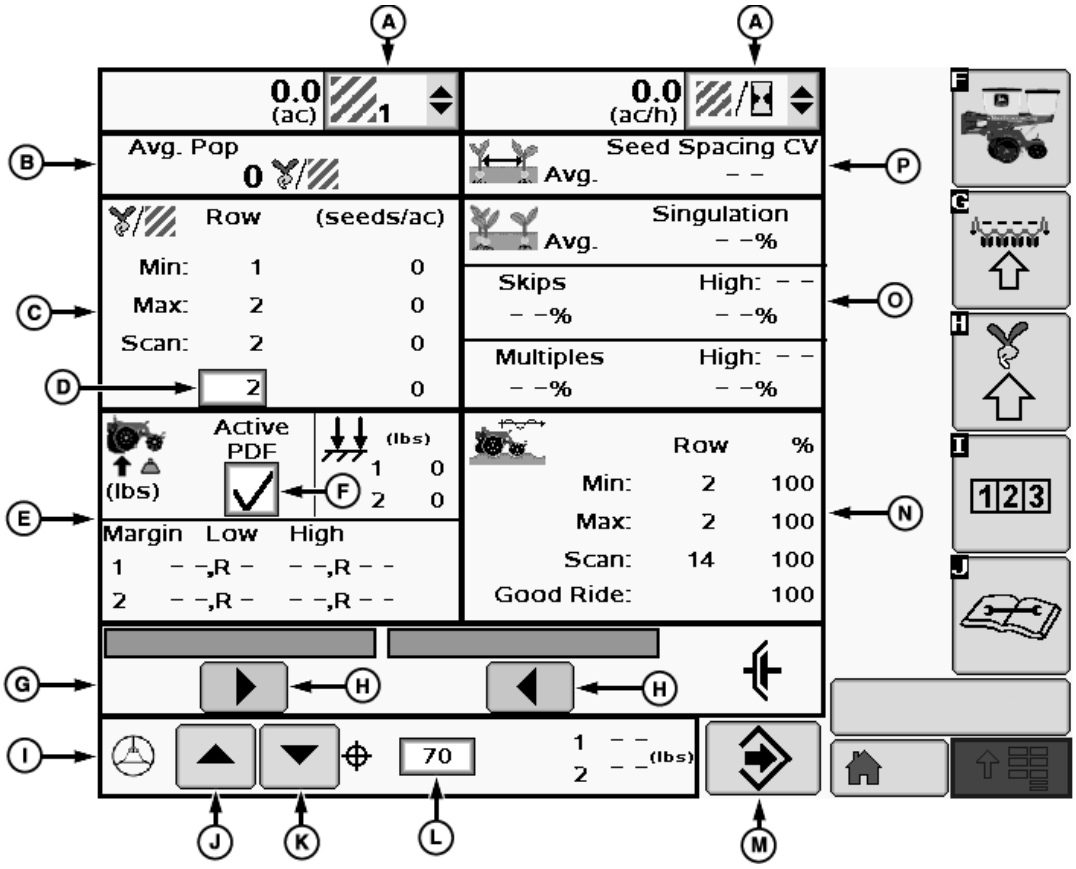
OUO6064,00005F1 -19-10NOV11-1/4



A73036 —UN—13OCT11

A—List Boxes
B—Average Population
C—Seed Population
D—Row Selection Input Box
E—Down Force (Active Down Force Shown)
F—Active PDF Check Box
G—Section Control
H—Section Control Buttons
I— Pneumatic Down Force Adjust
J— Step Increase Button
K—Step Decrease Button
L— Pneumatic Down Force Target Margin Input Box
M—Return Button
N—Ride Dynamics
O—Seed Singulation
P—Seed Spacing Coefficient of Variation

When planting, the planter details screen displays active planting information. Screens do not update while machine is stopped. Once machine begins moving, the screen resumes updating.

Planter Details page includes the following:

(A) List Boxes display the following information and options:

- Field area 0
- Field area 1
- Field area 2
- Area per hour
- Vacuum sensor readings
- Tractor speed

(B) Average Population displays the following information:

- Average population

(C) Seed Population displays the following information and options:

- Minimum row population
- Maximum row population
- Scan row population
- Row Selection Input Box

Row selection input box (D) allows operator to select an individual row to monitor population.

Continued on next page

OUO6064,00005F1 -19-10NOV11-2/4

(E) Down Force displays the following information:

- Total margin
- Low row margin
- High row margin
- Average down force margin

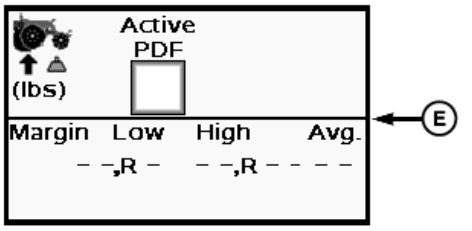
(F) Active PDF check box allows operator to enable or disable active down force (if equipped).

(G) Section Control displays the following information and options:

- Active rows planting.
- Row disabled.
- Manual Section Control buttons (H).

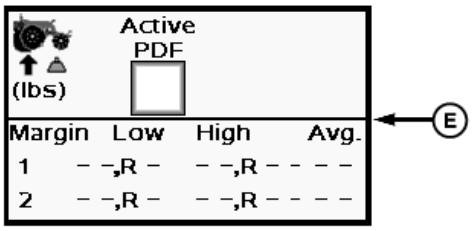
(H) Section Control buttons allow the operator to turn on and off row units manually as needed for headlands and water ways.

E—Down Force Displays



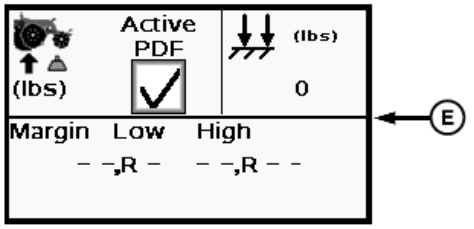
A73037 —UN—13OCT11

Single Set-Point (Active Capable)



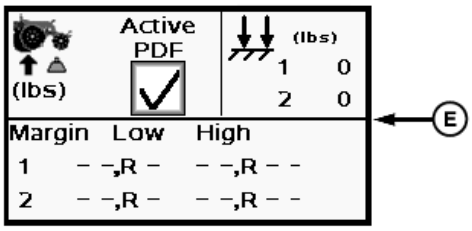
A73038 —UN—13OCT11

Dual Set-Point



A73039 —UN—13OCT11

Active Control (Single Rank)



A73040 —UN—13OCT11

Active Control (Dual Rank)

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OUO6064,00005F1 -19-10NOV11-3/4

(I) Pneumatic Down Force Adjust displays the following information and options:

- Step increase button
- Step decrease button
- Pneumatic down force target input box
- Actual pneumatic down force output field

(J) Step increase button raises down force pressure by the amount setup in the step values input box. See INTEGRATED PNEUMATIC DOWN FORCE AIR PRESSURE SENSOR in the SeedStar™ 2 SETUP Basic Planter Configuration section.

(K) Step decrease button lowers down force pressure by the amount setup in the step values input box. See INTEGRATED PNEUMATIC DOWN FORCE AIR PRESSURE SENSOR in the SeedStar™ 2 SETUP Basic Planter Configuration section.

Pneumatic down force target margin input box (L) allows the operator to input a specific target pressure for the system to monitor.

(M) Return button returns operator to main planter screen.

(N) This area displays the following Ride Dynamics percentages:

- Minimum row good ride
- Maximum row good ride
- Scan row good ride
- Total planter good ride

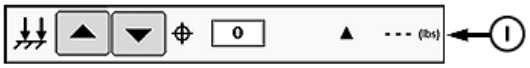
(O) This area displays the following Seed Singulation percentages:

- Total singulation
- Total skips
- Row with highest skips
- Total multiples
- Row with highest multiples

(P) Seed Spacing Coefficient of Variation (CV) displays the following information:

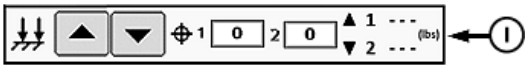
- Average Coefficient of Variation value for the whole planter.

A72946 —UN—06OCT11



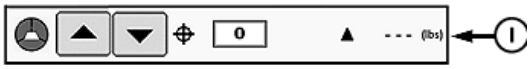
Single Set-Point Down Force

A72947 —UN—06OCT11



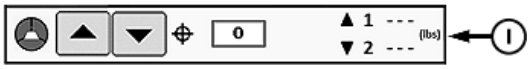
Dual Set-Point Down Force

A72949 —UN—06OCT11



Single Rank Active Margin

A72948 —UN—06OCT11



Dual Rank Active Margin

I— Pneumatic Down Force Adjust Displays

Screen Area Information

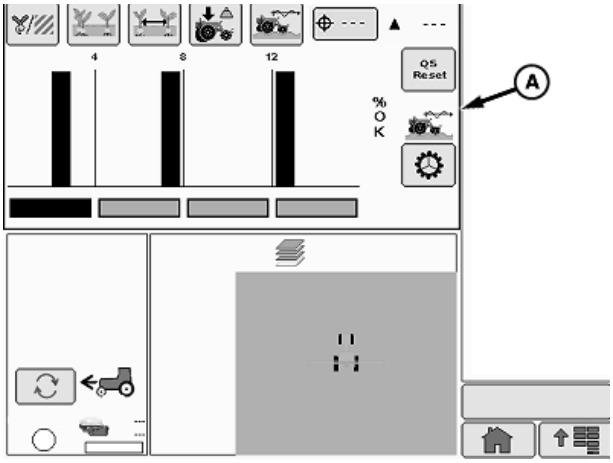
Avg. Pop — Average Population
Row — Row
Min: — Minimum
Max: — Maximum
Scan: — Scan
Active PDF — Active PDF
Low: — Low
High: — High
Avg. — Average
Seed Spacing CV — Seed Spacing CV
Singulation — Singulation
Skips — Skips
Multiples — Multiples
Good Ride: — Good Ride

OUO6064,00005F1 -19-10NOV11-4/4

Half Screen Layout

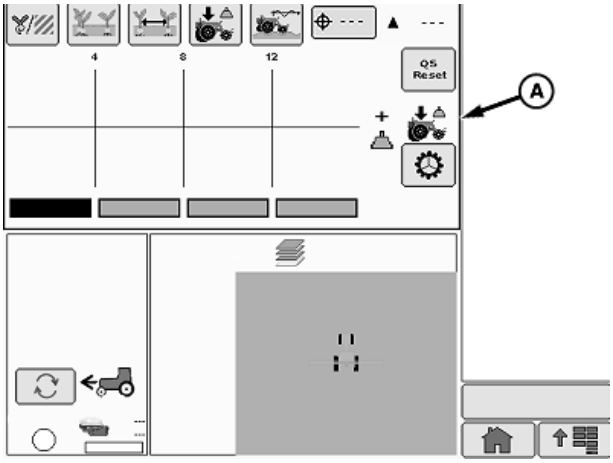
NOTE: Half screen layout and multiple home pages are only available when John Deere™ SeedStar™ 2 Monitor is used with a John Deere™ Greenstar™ display.

NOTE: Half screen layout must be set using layout manager.



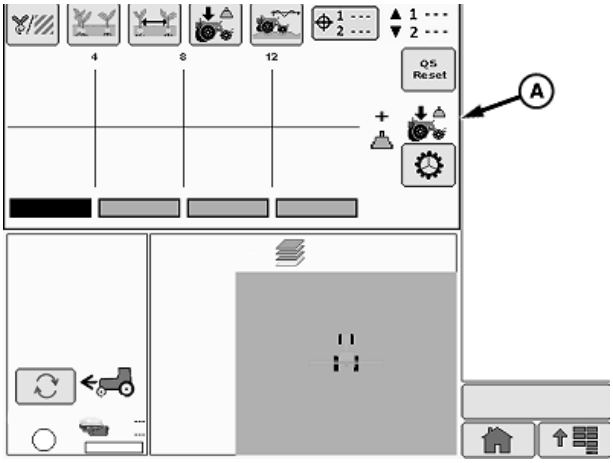
A72613 —UN—19SEP11

Planter at a Glance (Ride Dynamics)



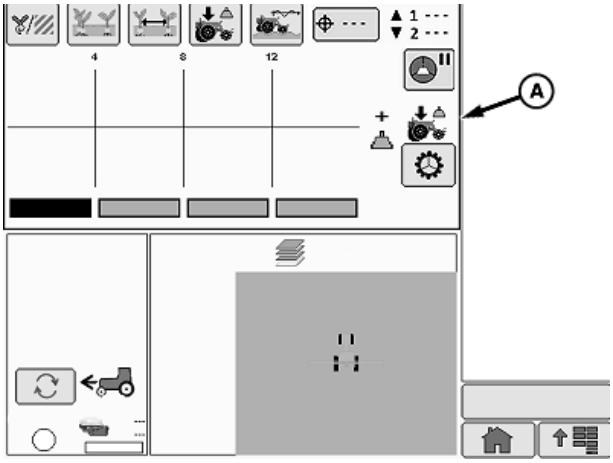
A72614 —UN—19SEP11

Planter at a Glance (Single Set-Point Down Force)



A72618 —UN—19SEP11

Planter at a Glance (Dual Set-Point Down Force)



A72619 —UN—19SEP11

Planter at a Glance (Active Down Force (2 Sensors))

A—Half Screen

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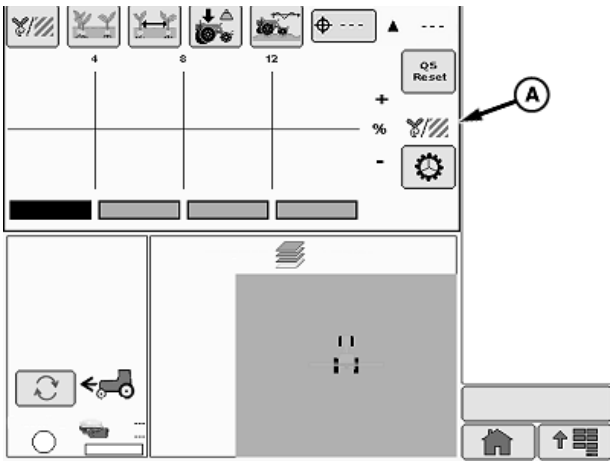
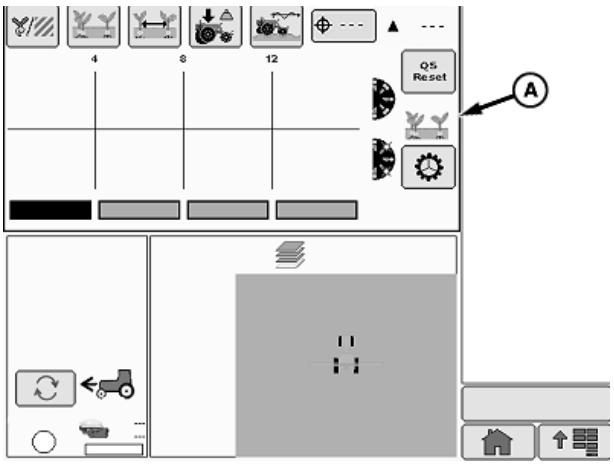
OUO6064,00005F2 -19-10NOV11-1/2



A72615 —UN—19SEP11

Planter at a Glance (Seed Population)



A72616 —UN—19SEP11

Planter at a Glance (Seed Singulation)

When half screen (A) layout is selected, less information is presented in screen area. Error messages do not appear on half screen. Return to full screen mode to view error messages when an audible alert signals an error.

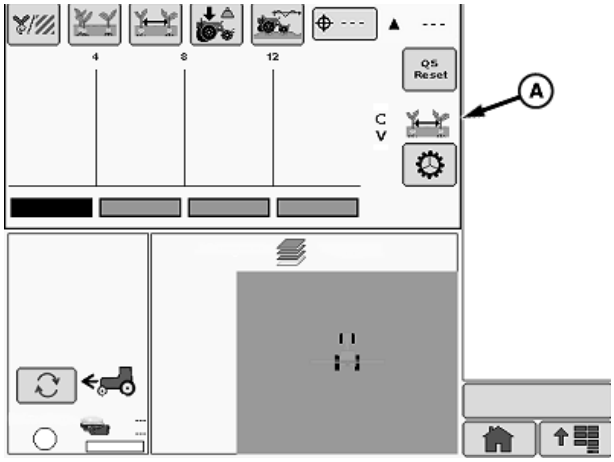
To set up screen layout (see SCREEN LAYOUT MANAGER in How to Use Monitor section).

To enter full screen mode and access configuration, totals, and diagnostic softkeys, select **Menu** >> **Planter** application button.

Screen Area Information

QC Reset — QC Reset

A—Half Screen

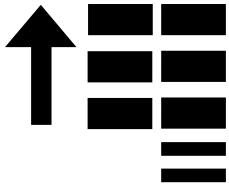


A72617 —UN—19SEP11

Planter at a Glance (Seed Spacing Coefficient of Variation)

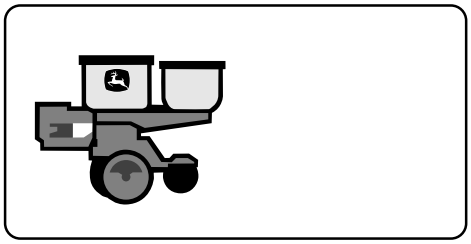
OUO6064,00005F2 -19-10NOV11-2/2

Area Counters, Seeds Per Hour, Seeds Per Area, and Area Until Empty



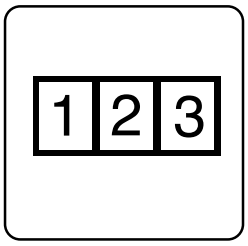
Menu

A59325 —UN—19FEB07



Planter Button

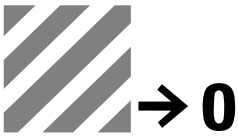
A59551 —UN—08MAR07



Totals Softkey

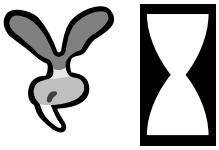
A59174 —UN—29JAN07

Area Counter

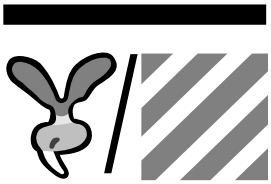


Area Until Empty

A59547 —UN—08MAR07



Seeding Hours



Average Seeds Per Area

A59548 —UN—08MAR07

Zero Button

A59369 —UN—20FEB07

1. Select **Menu** >> **Planter** button >> **Totals** softkey >> **Totals** tab.

   Screen Items:

   - Two adjustable area counters
   - A non-adjustable total area counter
   - A non-adjustable seeding hours counter
   - An average seeds per area counter
   - An adjustable counter that counts down to zero before sounding an alarm

2. Select **Area Counter** one or two input box and enter zero to clear the counter or enter a value to continue a previous count.

3. Select **Area Until Empty** input box and enter an area to count down. When count reaches zero, a full page warning appears and an audible alarm sounds. Refer to SEED ESTIMATOR CALCULATORS to calculate the area a quantity of seed covers. Enter that value in the Area Until Empty input box. To set the alarm to sound before the hoppers are empty, enter a slightly smaller value than what the seed covers.

Continued on next page

OUO6064,00001D2 -19-30JUN10-1/2

4. **Seeding Hours** records the total amount of time seed is actually planted. **Seeding Hours** only counts when seed sensors detect seed flow.
5. Select the **Zero** button to clear Average Seeds Per Area counter every time a new field is entered or crop type is changed. This counter averages the total number of actual seeds detected by the seed sensors over the actual area planted.

Screen Area Information

Planter Totals — Planter Totals
Totals — Totals
ac — Acre
ha — Hectare
h — Hours
avg sds/ac — Average Seeds Per Acre
avg sds/ha — Average Seeds Per Hectare

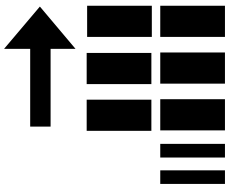
OUO6064,00001D2 -19-30JUN10-2/2

Transmission Sprocket Calculator

IMPORTANT: Monitor must be completely set up for machine and rate configurations for calculators to function properly.

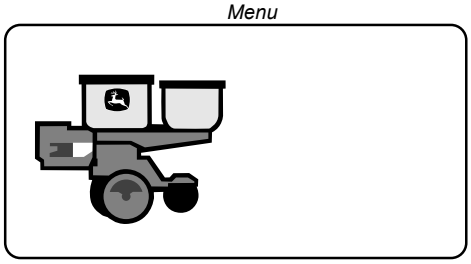
1. Select **Menu** >> **Planter** button >> **Totals** softkey >> **Calc** tab >> **Transmission** drop down.
2. Enter **Target Population** into input box.
3. Select **Disk Type** using drop-down menu.

   Recommended transmission values appear.



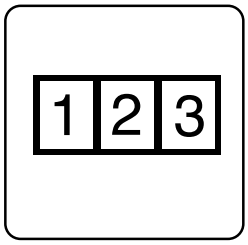
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59174 —UN—29JAN07

Totals Softkey

OUO6064,00001D3 -19-29JUN10-1/1

Seed Estimator by Bag

IMPORTANT: Monitor must be completely set up for machine and rate configurations for calculators to function properly.

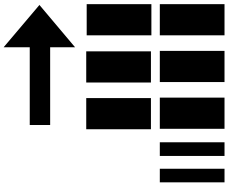
1. Select **Menu** >> **Planter** button >> **Totals** softkey >> **Calc** tab.
2. Select **Seed Estimator** in top drop down box.
3. Select **Calculated By** drop down box and choose **Bag**.
4. Select **Population** input box and enter target population.
5. Select **Seeds per Bag** input box and enter number of seeds in each seed bag.
6. Select **weight per bag** input box and enter weight of bag in units shown on screen.
7. Select **Bags:** input box and enter number of seed bags emptied into hoppers.
8. An approximate Area value is automatically calculated to show area until empty. Enter this value in **Totals** tab >> **Area Until Empty** input box to activate alarm. Enter a slightly smaller value to set alarm before hoppers are actually empty.

The lower area of screen is also used to calculate the number of seed bags needed for a given area.

1. Enter all preceding data accurately.
2. Select **Area** input box and enter the intended area to plant.
3. The approximate number of bags required to cover that much area is automatically calculated and displayed in **Bags:** box.

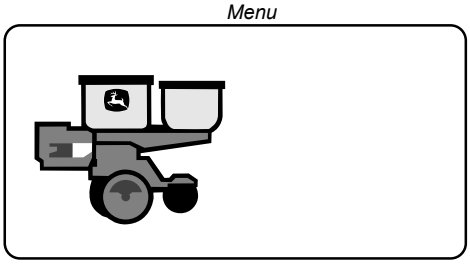
Screen Area Information

Planter Calculations — Planter Calculations
Calc — Calculator
Seed Estimator — Seed Estimator
Calculated By — Calculated By
Bag — Bag
Population — Population
seeds/ac — Seeds per Acre



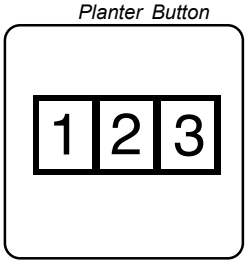
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59174 —UN—29JAN07

Totals Softkey

seeds/ha — Seeds per Hectare
Seeds/bag — Seeds per Bag
Lbs/bag — Pounds per Bag
kg/bag — Kilograms per Bag
Area — Area
Bags — Bags
ac — Acre
ha — Hectare
in/seed — Inches per Seed
cm/seed — Centimeters per Seed
seed/ft — Seeds per Foot
seed/m — Seeds per Meter
in rows — Inch Rows
cm rows — Centimeter Rows

OUO6064,00001D4 -19-29JUN10-1/1

Seed Estimator by Unit

IMPORTANT: Monitor must be completely set up for machine and rate configurations for calculators to function properly.

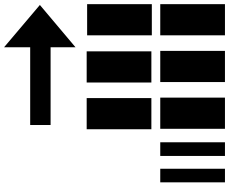
1. Select **Menu** >> **Planter** button >> **Totals** softkey >> **Calc** tab.
2. Select **Seed Estimator** in top drop down box.
3. Select **Calculated By** drop down box and choose **Unit**.
4. Select **Population** input box and enter target population.
5. Select **Seeds per Unit** input box and enter number of seeds in each seed container.
6. Select **weight per unit** input box and enter weight of seed container in units shown on screen.
7. Select **Units:** input box and enter quantity of seed containers emptied into hoppers.
8. An approximate Area value is automatically calculated to show area until empty. Enter this value in **Totals** tab >> **Area Until Empty** input box to activate alarm. Enter a slightly smaller value to set alarm before hoppers are actually empty.

The lower area of screen is also used to calculate the number of units needed for a given area.

1. Enter all preceding data accurately.
2. Select **Area** input box and enter the intended area to plant.
3. The approximate number of units required to cover that much area is automatically calculated and displayed in **Units:** box.

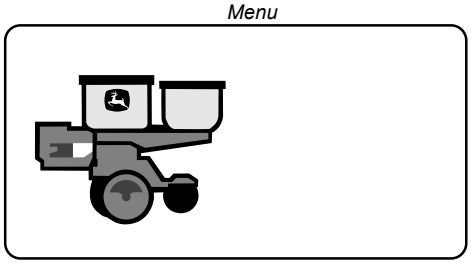
Screen Area Information

Planter Calculations — Planter Calculations
Calc — Calculator
Seed Estimator — Seed Estimator
Calculated By — Calculated By
Unit — Unit
Population — Population
seeds/ac — Seeds per Acre
seeds/ha — Seeds per Hectare
Seeds/unit — Seeds per Unit
Lbs/unit — Pounds per Unit
kg/unit — Kilograms per Unit
Area — Area
Units: — Units:
ac — Acre
ha — Hectare
in/seed — Inches per Seed
cm/seed — Centimeters per Seed
seed/ft — Seeds per Foot
seed/m — Seeds per Meter
in rows — Inch Rows
cm rows — Centimeter Rows



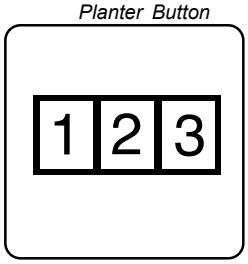
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59174 —UN—29JAN07

Totals Softkey

OUO6064,00001D5 -19-29JUN10-1/1

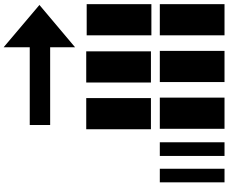
Seed Estimator by Weight

IMPORTANT: Monitor must be completely set up for machine and rate configurations for calculators to function properly.

1. Select **Menu** >> **Planter** button >> **Totals** softkey >> **Calc** tab.
2. Select **Seed Estimator** in top drop down box.
3. Select **Calculated By** drop down box and choose **Weight**.
4. Select **Population** input box and enter target population.
5. Select **Seed Size** input box and enter number of seeds per kilogram (pound).
6. Select **Total Weight** input box and enter total weight of seed placed in hoppers.
7. An approximate Area value is automatically calculated to show area until empty. Enter this value in **Totals** tab >> **Area Until Empty** input box to activate alarm. Enter a slightly smaller value to set alarm before hoppers are actually empty.

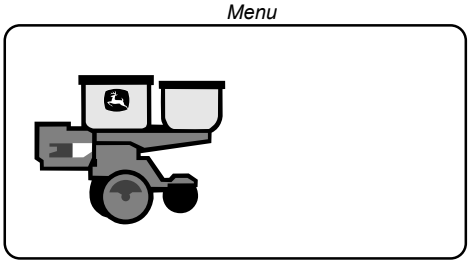
The lower area of screen is also used to calculate the weight needed for a given area.

1. Enter all preceding data accurately.
2. Select **Area** input box and enter the intended area to plant.
3. The approximate weight required to cover that much area is automatically calculated and displayed in **Total Weight** box.



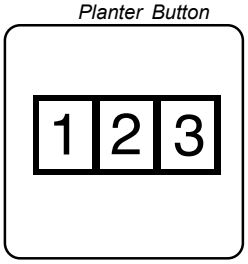
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59174 —UN—29JAN07

Totals Softkey

Screen Area Information

Planter Calculations — Planter Calculations
Calc — Calculator
Seed Estimator — Seed Estimator
Calculated By — Calculated By
Weight — Weight
Population — Population
seeds/ac — Seeds per Acre
seeds/ha — Seeds per Hectare
Seed Size — Seed Size
seeds/lb — Seeds per Pound
seeds/kg — Seeds per Kilogram
Area — Area
ac — Acre
ha — Hectare
lb — Pound
kg — Kilogram
in/seed — Inches per Seed
cm/seed — Centimeters per Seed
seed/ft — Seeds per Foot
seed/m — Seeds per Meter
in rows — Inch Rows
cm rows — Centimeter Rows
lb/ac — Pounds per Acre
kg/ha — Kilograms per Hectare
Total Weight — Total Weight

OUO6064,00001D6 -19-29JUN10-1/1

Vacuum Calculator

IMPORTANT: Monitor must be completely set up for machine and rate configurations for calculators to function properly.

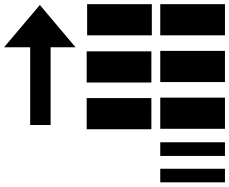
1. Select **Menu** >> **Planter** button >> **Totals** softkey >> **Calc** tab.
2. Select **Vacuum** in top drop down box.
3. Select **Seeds per kg (lb.)** input box and enter seed size.
4. Select **Disk Type** drop down box and select type of disk installed in meter.
5. Select **Seed Disk** drop down box and select disk installed in meter.

IMPORTANT: Suggested vacuum levels are starting points only. Adjust vacuum level up or down to achieve proper singulation.

Suggested vacuum and actual vacuum readings are displayed at the bottom of screen.

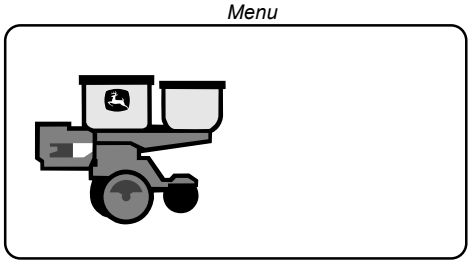
Screen Area Information

Planter Calculations — Planter Calculations
Calc — Calculator
Vacuum — Vacuum
seeds/lb — Seeds per Pound
seeds/kg — Seeds per Kilogram
Disk Type — Disk Type
Corn — Corn
Soybeans — Soybeans
Cotton — Cotton
Sorghum — Sorghum
Sunflower — Sunflower



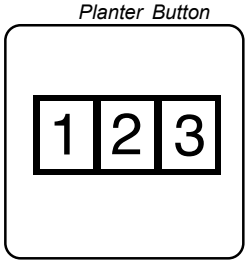
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59174 —UN—29JAN07

Totals Softkey

Edible Beans — Edible Beans
Peanuts — Peanuts
Sugar Beets — Sugar Beets
Seed Disk — Seed Disk
Suggested V — Suggested Vacuum
Actual Vacuum — Actual Vacuum

OUO6064,00001D7 -19-29JUN10-1/1

Variable Rate Fertilizer Overview

The variable rate fertilizer (VRF) system is monitored independently with the original GreenStar™ display or through the Original GreenStar™ Mode on the GreenStar™ display. To enter the Original GreenStar™ Mode, select **Menu** >> **Original GreenStar Monitor** button.

NOTE: Variable rate fertilizer does not work on competitive ISO 11783 compliant displays.

Warning messages do not appear on Original GreenStar Monitor screen. When an audible alert signals a warning, return to SeedStar™ 2 screens to view messages.

Variable Rate Fertilizer is comprised of three basic components.

1. An original GreenStar™ displays in Original GreenStar™ Mode.
2. A SeedStar™ Variable Rate Fertilizer controller mounted on the planter frame. This controller monitors pump rotational speed, piston stroke, ground speed, and distance traveled. Ground speed and distance are obtained from radar input.
3. A variable displacement piston pump for fertilizer.

The SeedStar™ Variable Rate Fertilizer system allows an operator to change the application rate from the cab while planting.

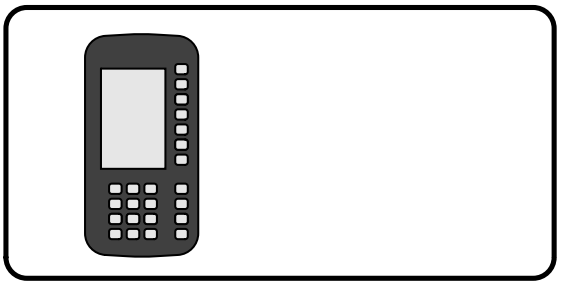
- Fertilizer rates are adjustable for different soil types or for irrigated versus dry land soils.
- Five different fertilizer rates are programmable into the system. While planting, the operator selects any one of the programmed rates to change the application.
- Two separate pumps are programmable for different rates.

A ground driven mechanism provides the power to rotate the pump. Once set, the programmed application rate is constant regardless of varying ground speeds.

Two pump output ranges are available. High and low ranges are determined using different sprocket combinations. Output rate is variable for either range.

Refer to your planter operator's manual for specific information about your model of planter pump and delivery system.

When a rate is selected, the controller monitors pump rotational speed, piston stroke, and distance traveled to calculate actual application rate. If calculated rate differs from selected rate, the controller adjusts the piston stroke to match selected rate. True ground speed is obtained with radar or GPS ground speed signal from the CAN bus. Implement speed is obtained indirectly from



A61356 —UN—13NOV07

Original GreenStar Monitor Button

pump rotational speed. The controller calculates percent slippage from the different speed readings and changes the pump stroke to compensate. If slippage exceeds a predetermined value, a warning is issued.

The following components must be active or engaged for proper system operation:

- Contact Drive or Ground Wheel Drive
- Radar or GPS Ground Speed Signal
- Pump RPM Sensor
- Pump Stroke Position Sensor

Fertilizer systems are available in two configurations; flow divider and central manifold.

- The flow divider is a device that controls product flow while maintaining constant pressure. The divider allows for maximum flexibility when changing application rates.
- The central manifold system allows some adjustment within overall system pressure limits. Orifices placed at each row control product flow. As rate is increased, pressure increases. Once pressure reaches a certain level, flow cannot be increased any further without damage to the system.

A variety of warnings and cautions are provided for customer awareness. Some examples are:

- No power detected on motor drive
- Over or under application!
- Pump position sensor not detected
- Pump 1 has no response to control
- VRF system problem detected. Pump Number 2 calculated rates inaccurate
- VRF system sprocket change detected. Pump Number 1 recalibrated
- Lost communications with mobile processor
- Battery voltage out of range

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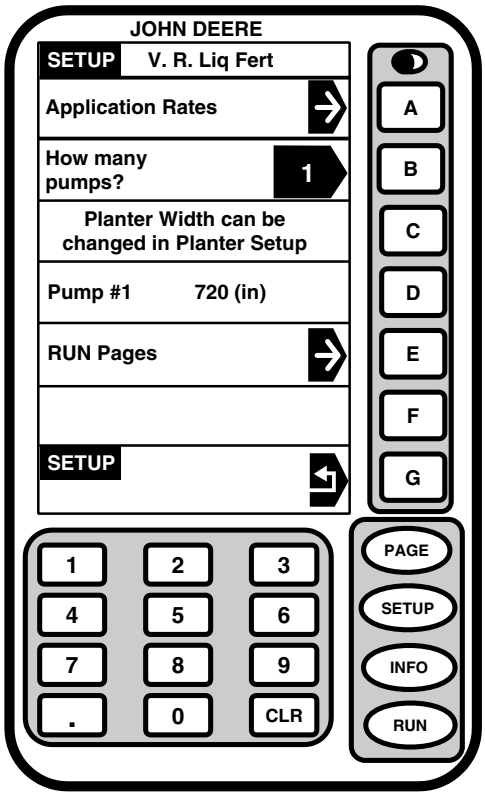
SeedStar is a trademark of Deere & Company

OUO6064,00001FA -19-09JUL10-1/1

Application Rates

1. Select **SETUP** >> **V.R. Liq Fert**.
2. Select key **B** and enter number of pumps on machine.
3. Select Application Rates option.

Screen Area Information		
SETUP	Variable Rate Liquid Fertilizer	
Application Rates		**A**
How many pumps?		**B**
Planter Width can be changed in Planter Setup		**C**
Pump Number 1 720 (inches)		**D**
RUN Pages		**E**
		F
SETUP		**G**



A65056 —UN—30JUL09

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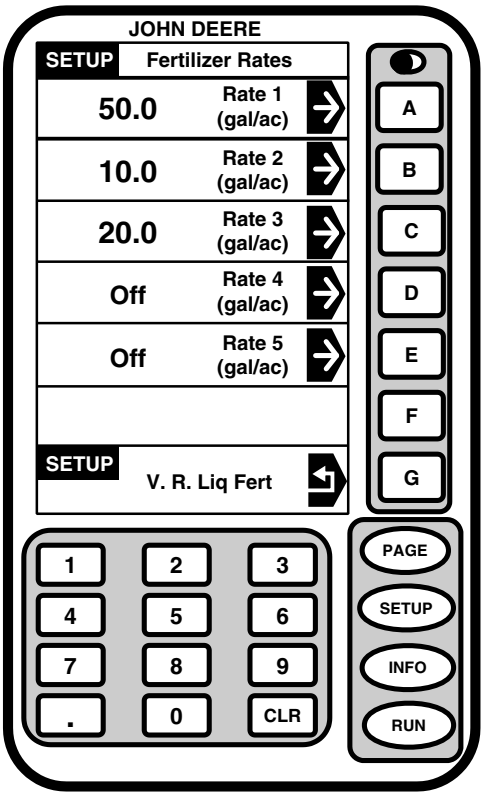
OUO6074,0001077 -19-30JUL09-1/3

NOTE: If two pumps are entered, setup pumps to apply identical rates or different rates.

4. Select keys **A—E** to setup rates.

Screen Area Information		
SETUP	Fertilizer Rates	
50.0 Rate 1 (gallons per acre)		**A**
10.0 Rate 2 (gallons per acre)		**B**
20.0 Rate 3 (gallons per acre)		**C**
Off Rate 4 (gallons per acre)		**D**
Off Rate 5 (gallons per acre)		**E**
		F
SETUP Variable Rate Liquid Fertilizer		**G**



A65057 —UN—30JUL09

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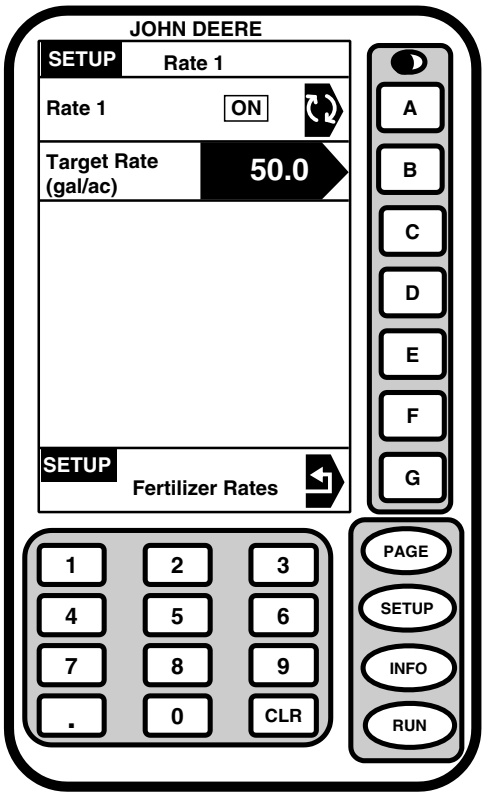
OUO6074,0001077 -19-30JUL09-2/3

5. Select key **A** to toggle rate On or Off. The rate is only available as an option on the RUN page if it is turned on.
6. Select key **B** to enter a rate with numeric keypad.

Screen Area Information		
SETUP	Rate 1	
Rate 1 [ON]		**A**
Target Rate (gallons per acre) **50.0**		**B**
		C
		D
		E
		F
SETUP Fertilizer Rates		**G**



A65058 —UN—30JUL09

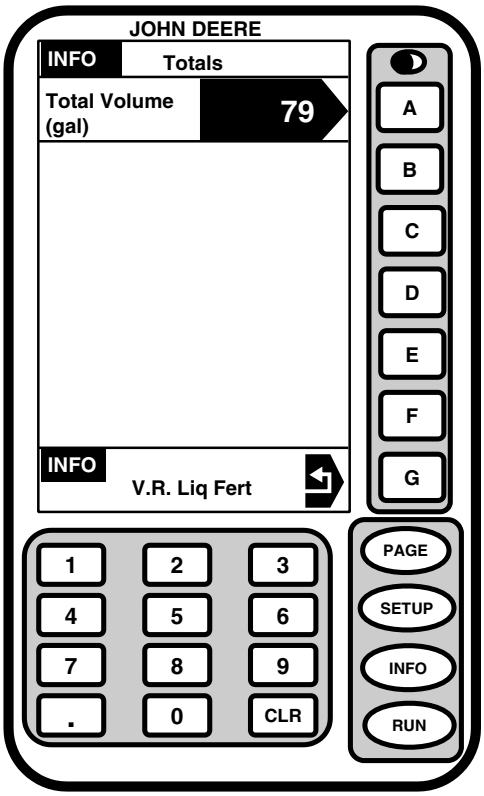
OUO6074,0001077 -19-30JUL09-3/3

VRF Volume Totals

Select **INFO** >> **V.R. Liq Fert** >> **Totals**.

The value displayed is total accumulated since last zeroed. Select key **A** and then **CLR** clear key to zero the value.

Screen Area Information		
INFO	Totals	
Total Volume (gallons) **79**		**A**
		B
		C
		D
		E
		F
INFO Variable Rate Liquid Fertilizer		**G**



A65059 —UN—30JUL09

OUO6074,0001078 -19-30JUL09-1/1

VRF System Test

This test verifies the operation of the position sensor and RPM sensor for variable rate fertilizer.

1. Select **INFO** >> **V.R. Liq Fert** >> **Diagnostics** >> **System Test**.
2. Select **Pump Direction** key until **INCREASE** is highlighted.

NOTE: Jog time is measured in milliseconds. 999 milliseconds is approximately one second.

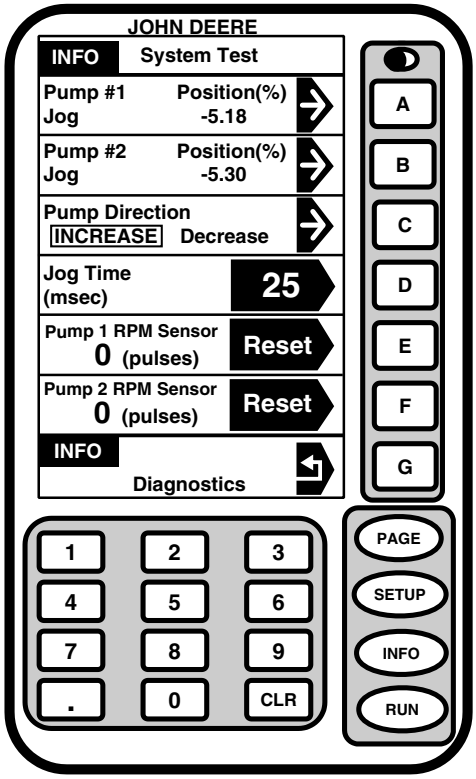
3. Select **Jog Time** key and enter 999.

NOTE: Each time the jog button is pressed the motor activates for one second.

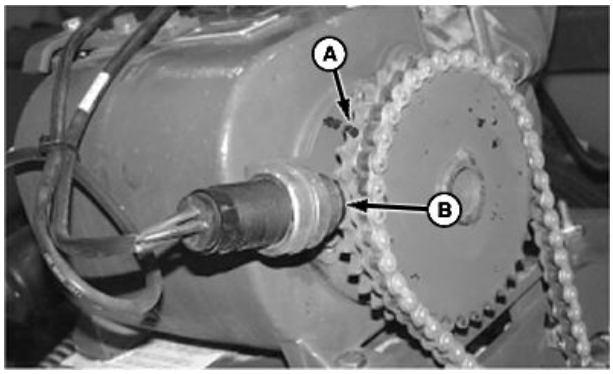
4. Select **Pump Jog** key repeatedly until motor reaches upper limit and stops. Pump Jog Position percentage is 100 percent at upper limit.
5. Select **Pump Direction** key until **DECREASE** is highlighted.
6. Select **Pump Jog** repeatedly until motor reaches lower limit and stops. Pump Jog Position percentage is zero percent at lower limit.
7. Set pump direction to increase and select **Pump RPM Sensor** reset key.
8. Mark a position sensor sprocket tooth (A) and pump housing for reference.
9. Rotate contact drive tire until pump rotates 1 revolution (black line). 35 pulses equal a full revolution.

   If RPM sensor does not record 35 pulses per sprocket revolution, adjust sensor (B) to within 2 mm (5/64 in.) of sprocket teeth. Perform the test again. If sensor does not record 35 pulses per revolution, replace sensor.

Screen Area Information		
INFO	System Test	
Pump Number 1 Jog Position (%) -5.18		**A**
Pump Number 2 Jog Position (%) -5.30		**B**
Pump Direction [INCREASE] Decrease		**C**
Jog Time (milliseconds) **25**		**D**
Pump 1 RPM Sensor **0** (pulses) **RESET**		**E**
Pump 2 RPM Sensor **0** (pulses) **RESET**		**F**
INFO Diagnostics		**G**



A65060 —UN—30JUL09



A50532 —UN—01OCT02

A—Sprocket Tooth **B—Sensor**

OUO6074,0001079 -19-30JUL09-1/1

Warning Messages

WARNINGs are generated by the individual modules and Green Star Display alerting the operator to a serious condition or "situation" which has occurred of which the operator needs to be informed. Typically the operator should stop and rectify the "condition or situation" causing the WARNING before proceeding. WARNINGs are displayed as full page displays. The title displayed in the top display section is "WARNING". Examples of WARNINGs would be the indication of a planter row(s) not planting or ground speed at zero when planter is still planting (ground speed sensor failure detection). WARNINGs are the highest level of visual alarms presented to the operator. When a WARNING is cancelled without the “condition or situation” causing it being corrected, a caution is displayed on the bottom line of the display as a continued alert to the “situation”. If more than one is occurring at the same time, key G can be used to toggle between WARNING alerts.

CAUTIONs are generated by the individual modules and Green Star Display alerting the operator to a function which is out of limits or a "situation" is or has occurred of which the operator needs to be informed. The caution message is displayed on line “G”. Examples of CAUTIONs would be the indication of a planter row's population outside of the HI/LO range specified, or a low Hopper Level indication, or a "WARNING" for which the operator has acknowledged the "WARNING" reducing it to a CAUTION message, which is then displayed on line “G”. CAUTIONs are the middle level of visual alarms presented to the operator.

Advisories are operator error messages displayed on line “G” telling the operator that an incorrect "action" has occurred such as entering a value which is out of the acceptable range for that constant. They are the lowest level of visual alarms presented to the operator.

OUO6074,0000688 -19-01NOV07-1/1

Variable Rate Fertilizer Warnings

WARNING: Over Application!

NOTE: This warning will be followed by a “Over Application! Pump #1 at min. setting.” caution on line “G”.

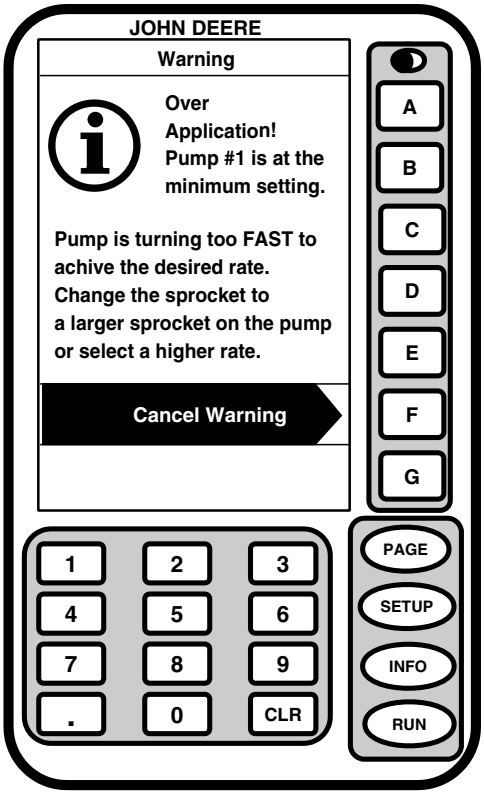
This warning is issued if the pump adjusts to its lowest setting and is still overapplying. The large sprocket should be installed to change the pump speed range or a higher rate should be selected. There is a caution associated with this warning. When the warning is cleared there is a caution issued.

Screen Area Information

Over Application! Pump #1 is at the minimum setting. — Over Application! Pump Number 1 is at the minimum setting.

Pump is turning too FAST to achieve the desired rate. Change the sprocket to a larger sprocket on the pump or select a higher rate. — Pump is turning too FAST to achieve the desired rate. Change the sprocket to a larger sprocket on the pump or select a higher rate.

Cancel Warning — Cancel Warning



A65061 —UN—30JUL09

Continued on next page

OUO6074,000068C -19-30JUL09-1/7

WARNING: Under Application!

NOTE: This warning will be followed by a "Under Application! Pump #1 at max. setting." caution on line "G".

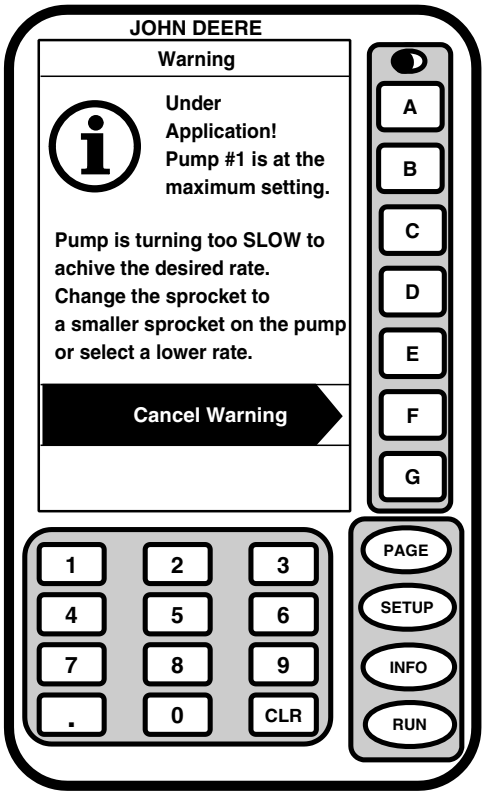
This warning is issued if the pump adjusts to its highest setting and is still underapplying. The small sprocket should be installed to change the pump speed range or a lower rate should be selected. There is a caution associated with this warning. When the warning is cleared there is a caution issued.

Screen Area Information

Under Application! Pump #1 is at the maximum setting. — Under Application! Pump Number 1 is at the maximum setting.

Pump is turning too SLOW to achieve the desired rate. Change sprocket to a smaller sprocket on the pump or select a lower rate. — Pump is turning too SLOW to achieve the desired rate. Change sprocket to a smaller sprocket on the pump or select a lower rate.

Cancel Warning — Cancel Warning



A65062 —UN—30JUL09

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OUO6074,000068C -19-30JUL09-2/7

WARNING: Pump Position Sensor Not Detected

NOTE: This warning will be followed by a "Pump Sensor Fail." caution on line "G".

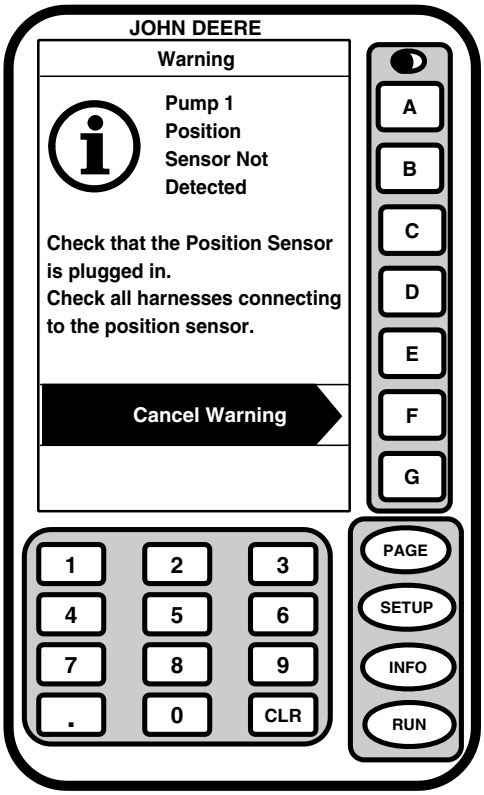
This warning is issued if no signal is received from the pump position sensor. There is a caution associated with this warning. When the warning is cleared there is a caution issued.

Screen Area Information

Pump 1 Position Sensor Not Detected — Pump 1 Position Sensor Not Detected

Check that the Position Sensor is plugged in. Check all harnesses connecting to the position sensor. — Check that the Position Sensor is plugged in. Check all harnesses connecting to the position sensor.

Cancel Warning — Cancel Warning



A65063 —UN—30JUL09

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OUO6074,000068C -19-30JUL09-3/7

WARNING: No Pump Response To Control Command

NOTE: This warning will be followed by a "Pump not responding. Check System." caution on line "G".

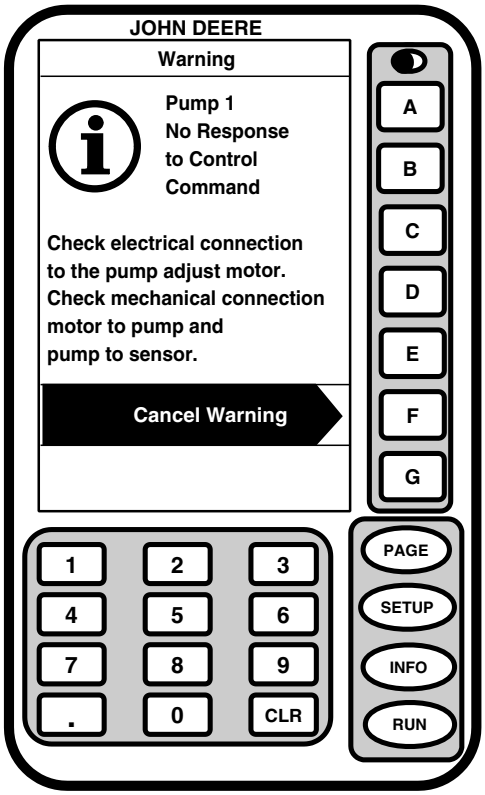
This warning is issued if no signal is received from the pump adjustment motor. There is a caution associated with this warning. When the warning is cleared there is a caution issued.

Screen Area Information

Pump 1 No Response to Control Command — Pump 1 No Response to Control Command

Check electrical connection to the pump adjust motor. Check mechanical connection motor to pump and pump to sensor. — Check electrical connection to the pump adjust motor. Check mechanical connection motor to pump and pump to sensor.

Cancel Warning — Cancel Warning



A65064 —UN—30JUL09

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OUO6074,000068C -19-30JUL09-4/7

WARNING: V.R. Fert System Problem. Calculated rates may not be accurate.

NOTE: This warning will be followed by a "Pump #1 Calculated Rate more than 10% off Target." caution on line "G".

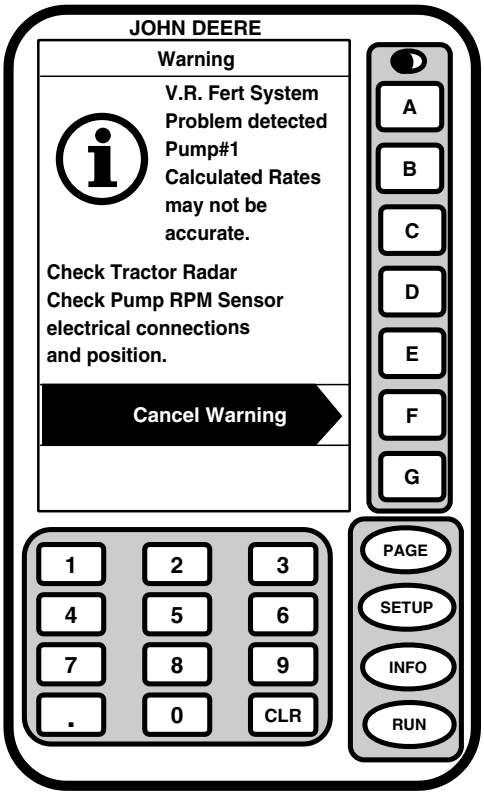
This warning is issued if calculated rate is more than 10 percent off target rate. There is a caution associated with this warning. When the warning is cleared there is a caution issued.

Screen Area Information

V.R. Fert System Problem detected Pump #1 Calculated Rates may not be accurate. — Variable Rate Fertilizer System Problem detected Pump Number 1. Calculated Rates may not be accurate.

Check Tractor Radar Check Pump RPM Sensor electrical connections and position. — Check Tractor Radar Check Pump RPM Sensor electrical connections and position.

Cancel Warning — Cancel Warning



A65065 —UN—30JUL09

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OUO6074,000068C -19-30JUL09-5/7

WARNING: V.R. Fert. System sprocket change detected.

NOTE: This warning will be followed by a "Pump #1 sprocket change detected" caution on line "G".

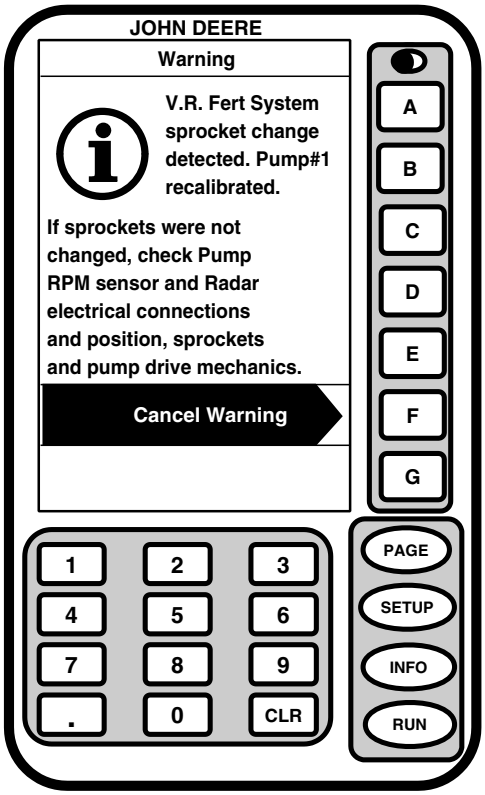
This warning is issued if the pump application changes without a sensor detecting motor adjustment. There is a caution associated with this warning. When the warning is cleared there is a caution issued.

Screen Area Information

V.R.Fert System sprocket change detected. Pump #1 recalibrated. — Variable Rate Fertilizer System sprocket change detected. Pump Number 1 recalibrated.

If sprockets were not changed, check Pump RPM sensor and Radar electrical connections and position, sprockets and pump drive mechanics. — If sprockets were not changed, check Pump RPM sensor and Radar electrical connections and position, sprockets and pump drive mechanics.

Cancel Warning — Cancel Warning



A65066 —UN—30JUL09

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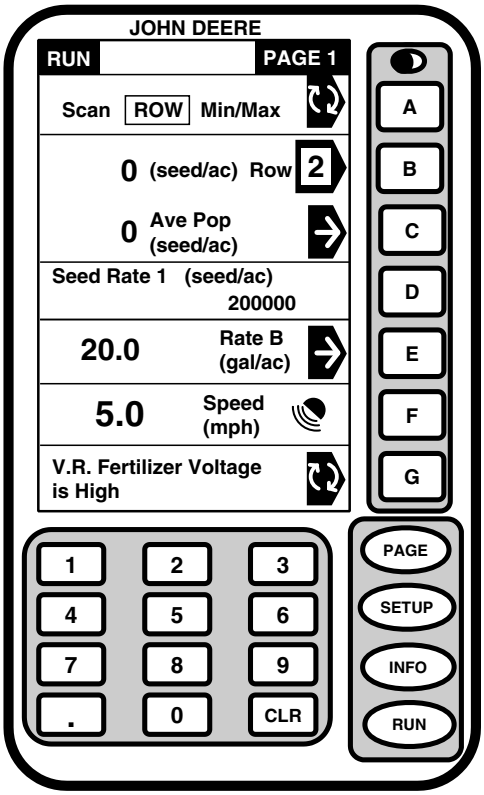
OUO6074,000068C -19-30JUL09-6/7

CAUTION: V.R. Fertilizer High/Low Voltage

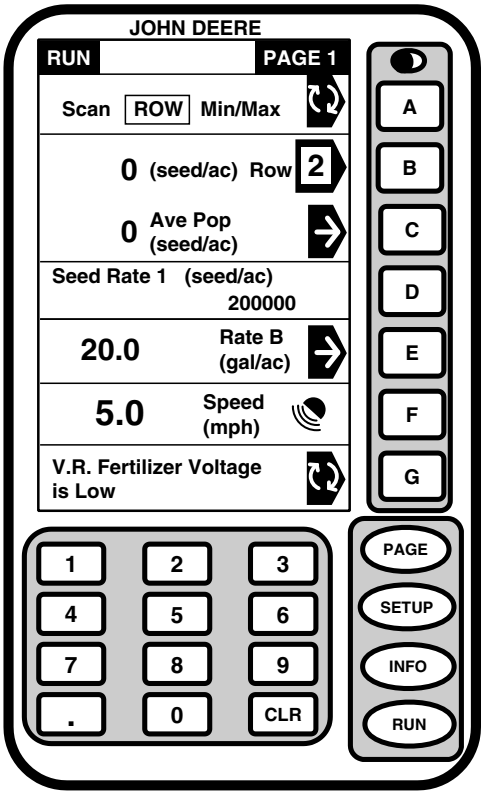
This caution is issued if variable rate fertilizer voltage is too high or too low.

Screen Area Information			
RUN		**Page 1**	
Scan [ROW] Minimum/Maximum			**A**
0 (seed per acre) Row			**B**
0 Average Population (seed per acre)			**C**
Seed Rate 1 (seed per acre) 200000			**D**
20.0 Rate B (gallons per acre)			**E**
5.0 Speed (miles per hour)			**F**
Variable Rate Fertilizer Voltage is High			**G**

Screen Area Information			
RUN		**Page 1**	
Scan [ROW] Minimum/Maximum			**A**
0 (seed per acre) Row			**B**
0 Average Population (seed per acre)			**C**
Seed Rate 1 (seed per acre) 200000			**D**
20.0 Rate B (gallons per acre)			**E**
5.0 Speed (miles per hour)			**F**
Variable Rate Fertilizer Voltage is Low			**G**



A65067 —UN—30JUL09



A65068 —UN—30JUL09

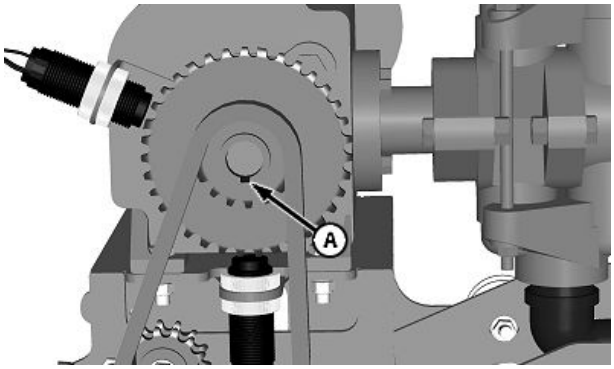
OUO6074,000068C -19-30JUL09-7/7

Disabling When Not In Use

IMPORTANT: Double pump systems, such as the 1770NT 24 row planter, must have keyways (A) timed 90 degrees to each other when pump chains are reinstalled or machine damage will result.

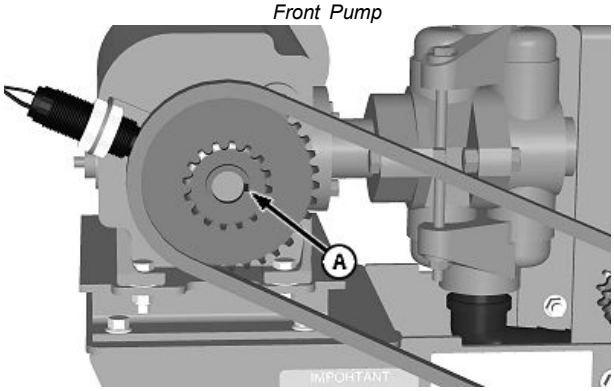
Remove drive chain from pump whenever fertilizer system is not being used.

A—Keyway



A54239 —UN—08APR04

Front Pump



A54240 —UN—08APR04

Rear Pump

OUO6074,0000C1A -19-08APR04-1/1

Manual Override

In the event of an electronic system failure, the pump may be manually set and locked to provide a fixed application rate. This feature allows the operator to continue applying product at a fixed rate.

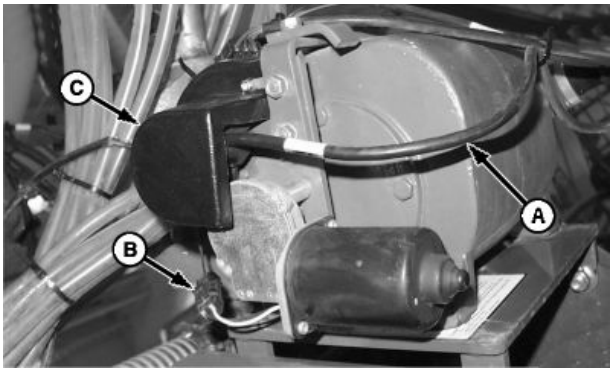
1. Determine pump setting from fertilizer rate chart in implement operator's manual.
2. Disconnect position sensor harness (A) and motor harness (B).
3. Remove cover (C).
4. Remove lock nut (D) and small sprocket (E).
5. Store cover, lock nut and small sprocket in a safe place until repairs can be made and parts reinstalled.

NOTE: If pump is already in lock down mode, lock down bracket (F) will have to be loosened.

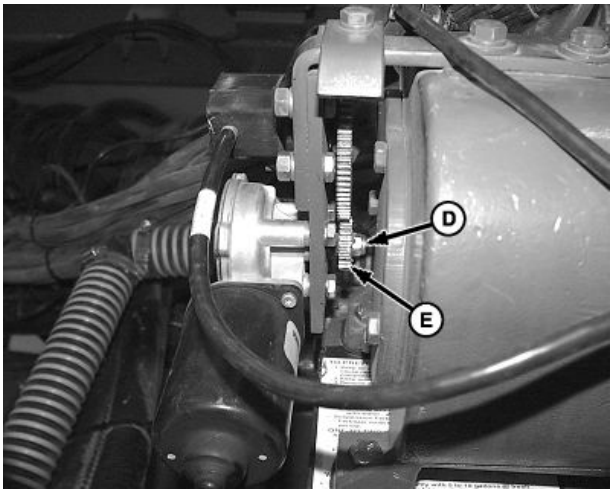
6. Rotate large gear (G) fully counter clockwise. Full counter clockwise position is pump setting “2”.
7. Sight along bracket corner (H) and mark the tooth in closest alignment with a “2”.
8. Count the number of teeth that pass bracket corner (H) as sprocket is rotated clockwise. See table for the number of teeth which represent pump setting numbers. The numbers may be marked on the sprocket, if desired.
9. Once setting is achieved, loosen cap screw (I) on lock down bracket (F) and rotate bracket into position so it engages sprocket teeth and locks sprocket into position. Tighten lock down bracket.

Pump Settings Represented by Number of Teeth Past the Zero Alignment Point	
Pump Setting Number	**Number of Teeth**
Pump Setting 2	0 Teeth Fully Counterclockwise
Pump Setting 3	7 Teeth
Pump Setting 4	14 Teeth
Pump Setting 5	21 Teeth
Pump Setting 6	28 Teeth
Pump Setting 7	36 Teeth
Pump Setting 8	45 Teeth
Pump Setting 9	56 Teeth
Pump Setting 10	Fully Clockwise

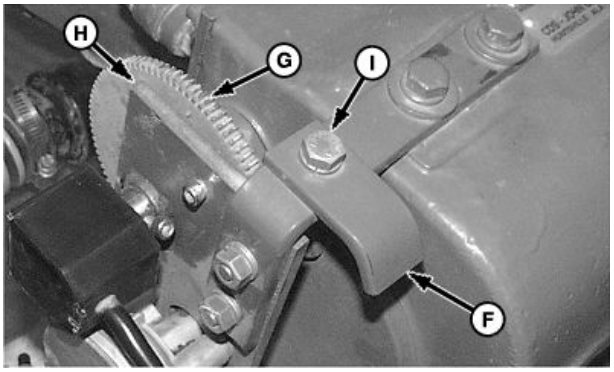
10. Verify rate after first ten minutes of use after lock down to assure lock down held and rate is as desired.



A54226 —UN—07APR04



A54227 —UN—07APR04



A54228 —UN—07APR04

A—Position Sensor Harness
B—Motor Harness
C—Cover
D—Lock Nut
E—Small Sprocket
F—Lock Down Bracket
G—Large Gear
H—Bracket Corner
I— Cap Screw

OUO6074,0000608 -19-16SEP02-1/1

Liquid Fertilizer Sensor Diagnostics

1. Turn tractor OFF. Turn key to accessory position.
2. Ensure that sensor wiring is properly connected.

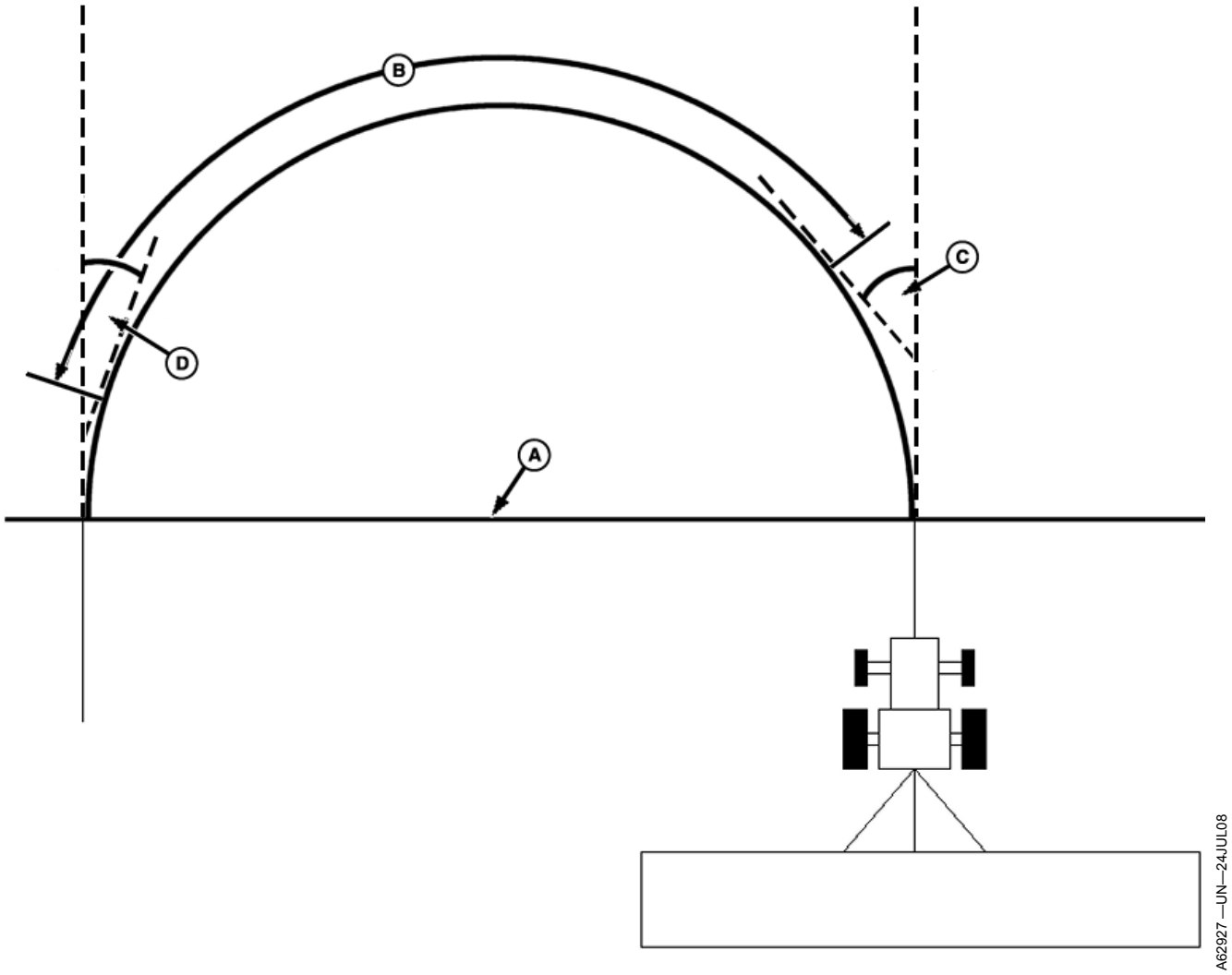
   If only one sensor is used, it MUST be connected to wire labeled LEFT FERT.
3. Ensure that correct number of sensors are selected.

   Select **Planter** button >> **Planter Configuration** softkey >> **Sensors** tab >> **Fertilizer** drop down >> **Sensors** drop down. Enter number of sensors on machine.
4. Ensure that sensors are calibrated and zeroed correctly.
   - Enter sensor calibration number of 37.5 for each sensor in calibration input box.
   - Release trapped pressure in fertilizer manifold, then press ZERO button for each sensor.
5. Ensure that voltages are correct.

   Select **Planter** button >> **Diagnostics** softkey >> **Readings** tab >> **System Voltages** drop down.
   - Controller voltage MUST be 11 V or higher.
   - Sensor supply value is 8.0 V.
   - If voltage is ZERO, check wiring.

OUO6074,000107A -19-29JUL08-1/1

Turning View Warning Suppression



A—Headlands
B—Warning Suppression
C—Suppression Begins 45 Degrees Away
D—Suppression Ends 13 Degrees Away

When operating with a John Deere™ GreenStar™ display and using John Deere™ Guidance Products, full screen seed monitor warnings can be suppressed (B) when making turns on headlands (A).

To enable turning view seed warning suppression, **Turning View** check box must be checked in Greenstar™2 Pro Guidance Setup.

The following occurs when turning view is enabled:

- Seed warning suppression and turning view begin when tractor is turned 45 degrees (C) away from the current pass using Straight Track.
- Turning View ends when tractor is within 13 degrees (D) of next pass.
- Seed warning suppression ends three seconds after turning view disappears from screen.
- Warnings are suppressed for a maximum of 22 seconds.

OUO6064,00001FB -19-09JUL10-1/1

Warning Messages

WARNINGs are the highest level of an alert. Warnings alert the operator to a serious condition. It is recommended the condition causing a warning be corrected before proceeding further. Warnings are displayed as full page messages. Rows not planting is an example of a warning. If a warning is canceled without the condition corrected, a caution is displayed on the bottom line of display as a continued alert. If more than one alert occurs at the same time, a toggle button appears so the operator is able to scroll through alerts.

IMPORTANT: Full page warnings will occur when not on main Planter RUN page to ensure that operator is aware of the issue.

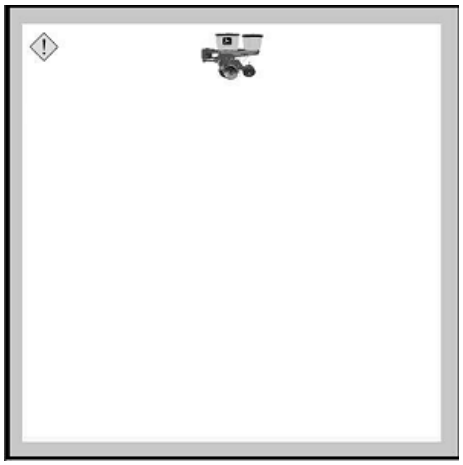
IMPORTANT: When a planter run screen is visible on the display, warning screens will be contained to the portion of the screen the planter occupies. Full screen warnings will occur when a planter RUN screen is not visible on the Display to ensure that the operator is aware of the issue.

A61394 —UN—19NOV07

OUO6064,0000204 -19-20JUL10-1/3

CAUTIONs are the medium level alert. Cautions alert the operator to conditions that are out of operational limits, but are not serious enough to stop. A population outside of the upper or lower limit is an example of a caution. A warning that has been cleared without correction also appears as a caution. Once a full page caution is cleared, the message remains on a single line at the bottom of the screen until corrected. If more than one alert occurs at the same time, a toggle button appears so the operator is able to scroll through alerts.

IMPORTANT: When a planter run screen is visible on the display, caution screens will be contained to the portion of the screen the planter occupies. Full screen cautions will occur when a planter RUN screen is not visible on the Display to ensure that the operator is aware of the issue.



A61395 —UN—19NOV07

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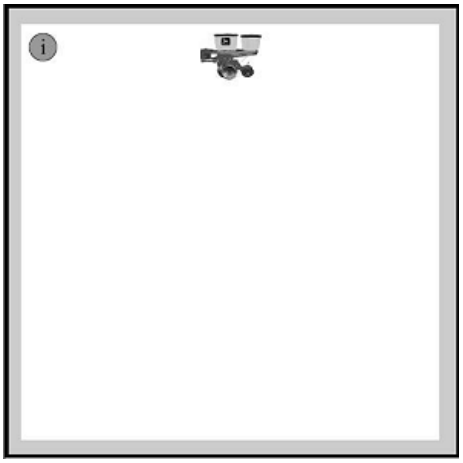
OUO6064,0000204 -19-20JUL10-2/3

Advisories are the lowest level alert. An advisory alerts the operator to valuable information that is not serious or outside a limit. When a specified target area has been met, an advisory is issued. If more than one alert occurs at the same time, a toggle button appears so the operator is able to scroll through alerts.



A61396 —UN—19NOV07

OUO6064,0000204 -19-20JUL10-3/3

Warning Screens for SeedStar™ 2

Communication error. Planter Main 2 is offline. Check wiring. Enter diagnostic code 111111 to disable this alarm check.

A67965 —UN—01JUL10

OUO6064,00005F3 -19-10NOV11-1/21

Communication error. Planter Main 2 online but not responding to CAN Bus messages. Check wiring.

A72620 —UN—19SEP11

Continued on next page

OUO6064,00005F3 -19-10NOV11-2/21

NOVRAM VALUE RESET

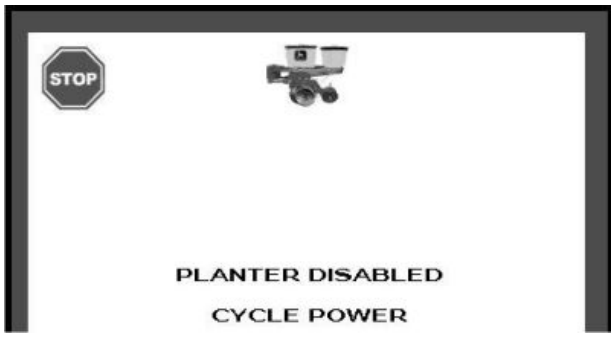
A stored value was outside its limits. The value was reset to a default value. Validate the planter settings before planting.

A61406 —UN—19NOV07

OUO6064,00005F3 -19-10NOV11-3/21

PLANTER DISABLED CYCLE POWER

Planter is not operational. To restore operation, cycle power.



A61407 —UN—19NOV07

OUO6064,00005F3 -19-10NOV11-4/21

Pressing the continue button resets the system values to default values and requires power cycling the system.

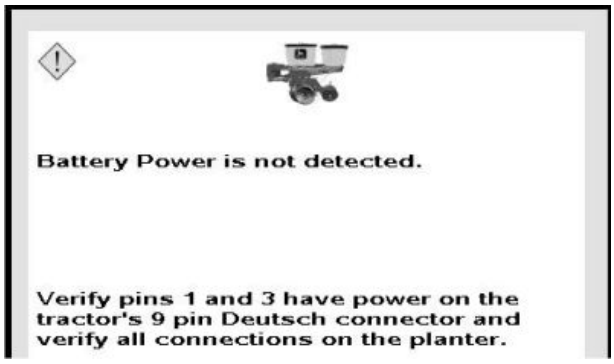
Confirms prior actions taken before storing values when power is cycled.

A61408 —UN—19NOV07

OUO6064,00005F3 -19-10NOV11-5/21

Battery power is not detected.

12 VDC is not present across pin 1 (ground) and pin 3 (12 VDC) of 9 pin ISO connector. Refer to tractor operator's manual and check fuses.



A61409 —UN—19NOV07

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OUO6064,00005F3 -19-10NOV11-6/21

Planter module 2 not responding. Planters with more than 24 rows.

Controller PA1 is not communicating. Verify all planter electrical connections are latched securely and harnesses are not damaged.

A61410 —UN—19NOV07

OUO6064,00005F3 -19-10NOV11-7/21

Planter module 3 not responding. Planters with more than 48 rows.

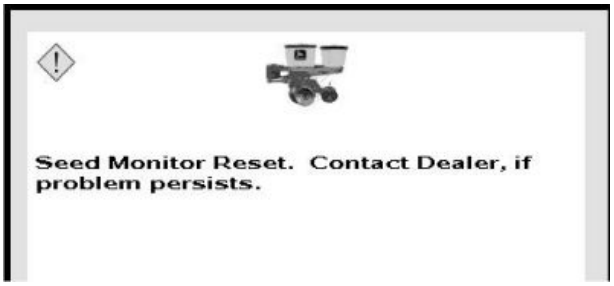
Controller PA2 is not communicating. Verify all planter electrical connections are latched securely and harnesses are not damaged.

A61411 —UN—19NOV07

OUO6064,00005F3 -19-10NOV11-8/21

Seed monitor reset. Contact dealer, if problem persists.

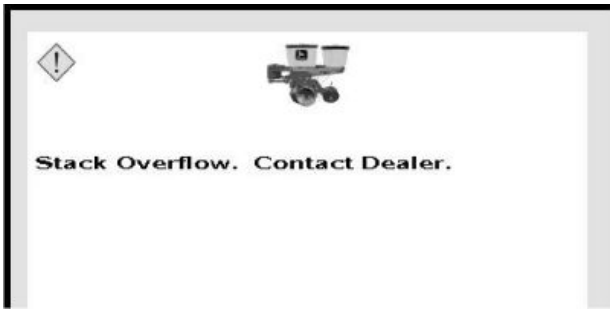
Intermittent communication problems exist. Verify all planter electrical connections are clean and latched securely and harnesses are not damaged.



A61412 —UN—19NOV07

OUO6064,00005F3 -19-10NOV11-9/21

Stack overflow. Restart controller. If problem persists contact dealer.



A61413 —UN—19NOV07

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OUO6064,00005F3 -19-10NOV11-10/21

Tractor speed source not available.

Tractor speed not available from selected speed source. Verify connection or change speed source. See operator's manual.

A61414 —UN—19NOV07

OUO6064,00005F3 -19-10NOV11-11/21

Tractor speed not detected. Tractor speed not broadcasted on CAN Bus. Check tractor speed connections. See tractor operators manual.

A61415 —UN—19NOV07

OUO6064,00005F3 -19-10NOV11-12/21

Check ground speed source.

Ground speed indicates a different speed than tractor ground speed. Check ground speed calibration or tractor speed source. See operator's manual.

A61416 —UN—19NOV07

OUO6064,00005F3 -19-10NOV11-13/21

Selected ground speed source is wheel.

Use radar for VRD and seed monitoring for best results.

A61418 —UN—19NOV07

Continued on next page

OUO6064,00005F3 -19-10NOV11-14/21

Selected ground speed source is manual.

Use radar for VRD and seed monitoring for best results.

A61419 —UN—19NOV07

OUO6064,00005F3 -19-10NOV11-15/21

These rows are not planting.

Ground speed is above 2 mph and the seed sensor counts less than two seeds per second.

On display, press OK button to ignore sensors.

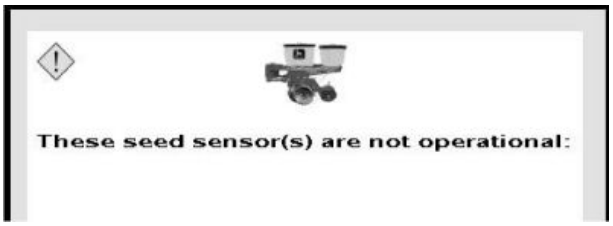
A61420 —UN—19NOV07

OUO6064,00005F3 -19-10NOV11-16/21

These seed sensors are not operational.

Perform seed sensor test or exchange with an operational sensor.

A61421 —UN—19NOV07

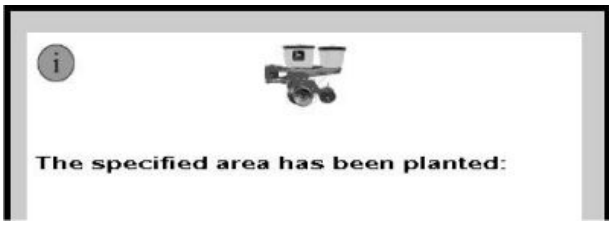


OUO6064,00005F3 -19-10NOV11-17/21

The specified area has been planted.

Navigate to **Totals** screen to reset area.

A61422 —UN—19NOV07



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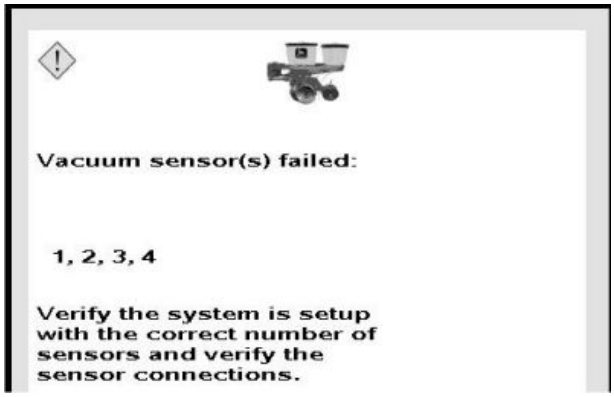
OUO6064,00005F3 -19-10NOV11-18/21

Vacuum sensor or circuit failure.

Verify that the system is set up with the correct number of sensors and verify the sensor connections.



A61423 —UN—19NOV07

OUO6064,00005F3 -19-10NOV11-19/21

Fertilizer pressure is too high.

Sensor number:

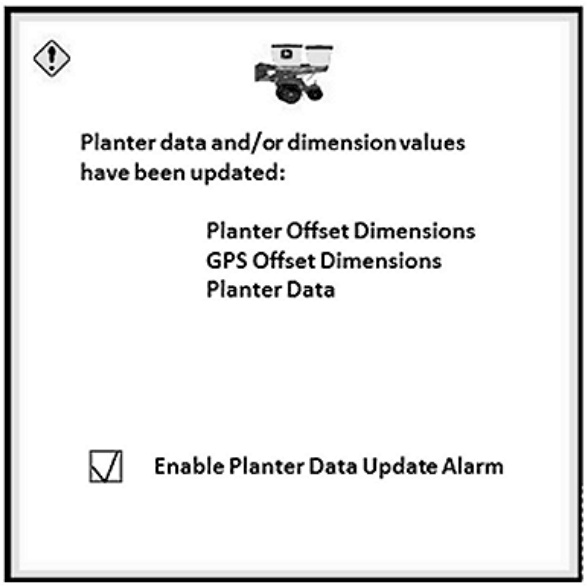
Maximum pressure has exceeded operator entered value.

A61431 —UN—19NOV07

OUO6064,00005F3 -19-10NOV11-20/21

Planter data and/or dimension values have been updated: Planter Offset Dimensions. GPS Offset Dimensions. Planter Data. Enable Planter Data Update Alarm.

Warning alerts the operator when a value associated with Planter/GPS Offset Dimensions or Planter Data has been changed.

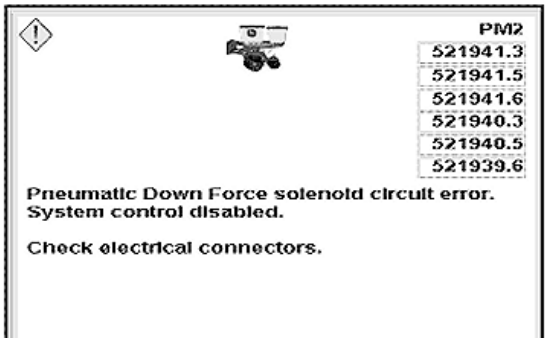


A72622 —UN—19SEP11

OUO6064,00005F3 -19-10NOV11-21/21

Warning Screens for SeedStar™ 2 (Machines with Single Set-Point Pneumatic Down Force)

Pneumatic Down Force solenoid circuit error. System control disabled. Check electrical connectors. Open circuit or short circuit in pneumatic down force solenoid circuit. Check wire harness and connectors for damage. Check continuity of solenoid coils.

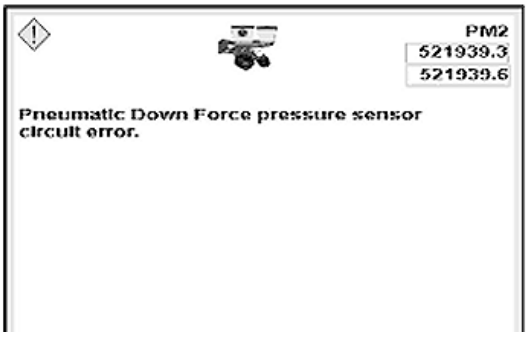


A68146 —UN—13JUL10

OUO6064,00005D4 -19-10NOV11-1/13

Pneumatic Down Force pressure sensor circuit error.

Open circuit or short circuit in pneumatic down force pressure sensor circuit. Check wire harness and connectors for damage.

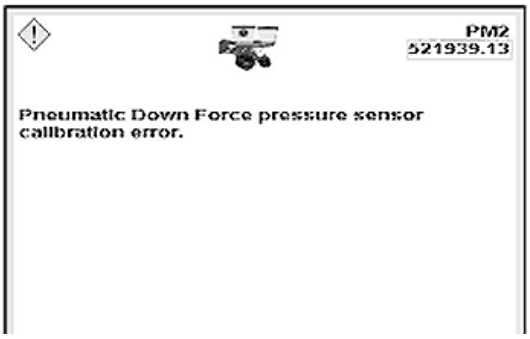


A68147 —UN—13JUL10

OUO6064,00005D4 -19-10NOV11-2/13

Pneumatic Down Force pressure sensor calibration error.

Sensor zero voltage out of range. Remove all pressure from air spring circuit and attempt to calibrate. Call your John Deere™ dealer.



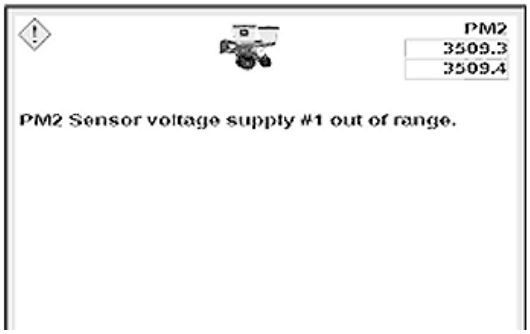
A68148 —UN—13JUL10

Continued on next page

OUO6064,00005D4 -19-10NOV11-3/13

PM2 Sensor voltage supply #1 out of range.

5 VDC sensor supply voltage on PM2 out of range high or low. Check wire harness and connectors for damage.



A68149 —UN—13JUL10

OUO6064,00005D4 -19-10NOV11-4/13

Air compressor operating time limit exceeded. Check for air leaks.

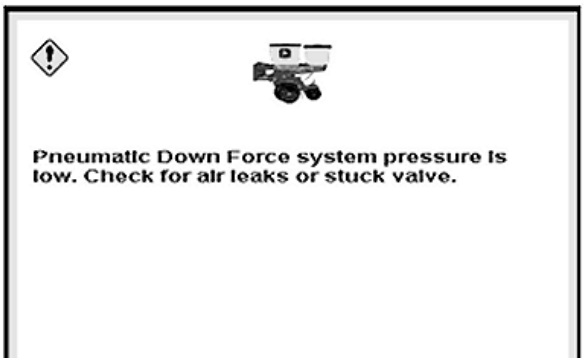
Air compressor has been operating for more than 30 continuous minutes. Check air lines between tank and compressor for leaks. Verify that tank relief valve and compressor pressure switch are not leaking.

A68150 —UN—13JUL10

OUO6064,00005D4 -19-10NOV11-5/13

Pneumatic down force system pressure is low. Check for air leaks or stuck valve.

Row unit down force pressure is not in limit set on PDF air pressure sensor setup page. Check air lines between tank and compressor for leaks. Verify that tank relief valve and compressor pressure switch are not leaking.



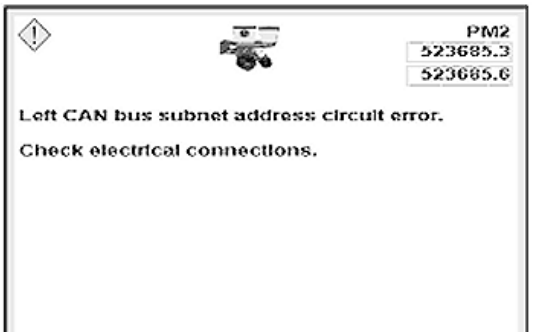
A72621 —UN—19SEP11

Continued on next page

OUO6064,00005D4 -19-10NOV11-6/13

Left CAN Bus subnet address circuit error. Check electrical connections.

Check wire harness and connectors for damage. See your John Deere™ dealer.

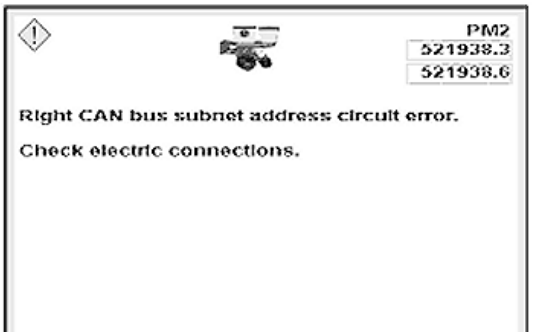


A68151 —UN—13JUL10

OUO6064,00005D4 -19-10NOV11-7/13

Right CAN Bus subnet address circuit error. Check electric connections.

Check wire harness and connectors for damage. See your John Deere™ dealer.



A68152 —UN—13JUL10

OUO6064,00005D4 -19-10NOV11-8/13

Communication error. Seed monitor is offline.

PM2 controller is online but does not detect PM1 controller on the CAN Bus. Cycle key switch power and wait for system to load. See your John Deere™ dealer.

A68153 —UN—13JUL10

Continued on next page

OUO6064,00005D4 -19-10NOV11-9/13

Communication error. Seed monitor online but not responding to CAN Bus messages.

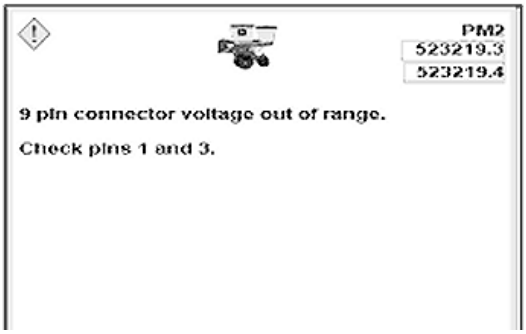
PM2 detects PM1 controller on the CAN Bus, but PM1 controller is not responding. Cycle key switch power and wait for system to load. See your John Deere™ dealer.

A68154 —UN—13JUL10

OUO6064,00005D4 -19-10NOV11-10/13

9 pin connector voltage out of range. Check pins 1 and 3.

Voltage across pin 1 (ground) and pin 3 (12 VDC) of 9 pin ISO connector is out of range high or low. Check wire harness and battery connections.

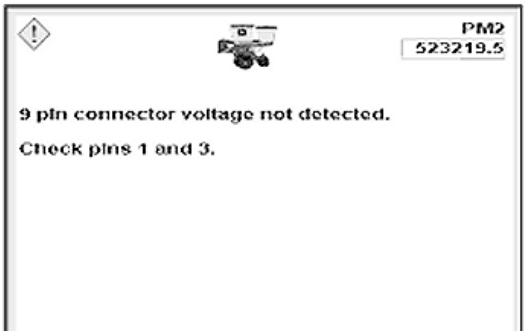


A68155 —UN—13JUL10

OUO6064,00005D4 -19-10NOV11-11/13

9 pin connector voltage not detected. Check pins 1 and 3.

No voltage is present across pin 1 (ground) and pin 3 (12 VDC) of 9 pin ISO connector. Refer to tractor operator's manual and check fuses.



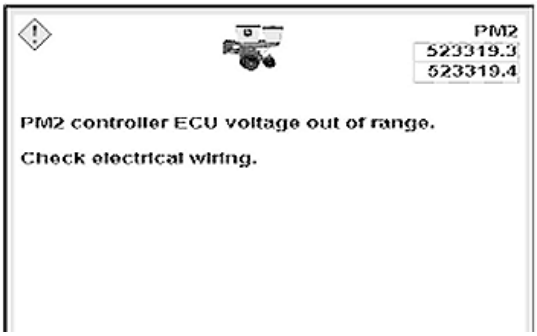
A68156 —UN—13JUL10

Continued on next page

OUO6064,00005D4 -19-10NOV11-12/13

PM2 controller ECU voltage out of range. Check electrical wiring.

12 VDC power for PM2 controller out of range high or low. See your John Deere™ dealer.



A68161 —UN—13JUL10

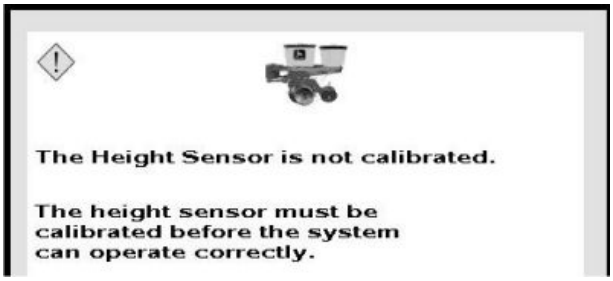
OUO6064,00005D4 -19-10NOV11-13/13

Warning Screens for RowCommand™

The height sensor is not calibrated.

The height sensor must be calibrated before the system operates correctly.

Refer to height sensor calibration procedures in SETUP BASIC PLANTER CONFIGURATION section of this manual.

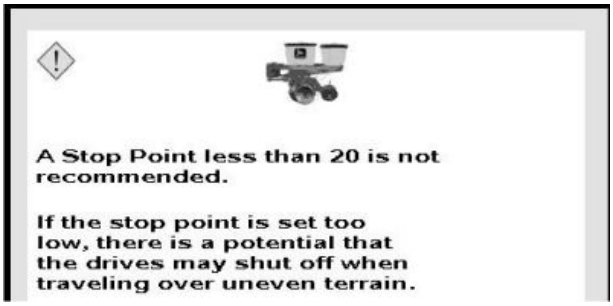


A61426 —UN—19NOV07

OUO6064,0000208 -19-21JUL10-1/8

A stop point less than 20 is not recommended.

If the stop point is set too low, there is potential for the drives to shut off when traveling over uneven terrain.



A61427 —UN—19NOV07

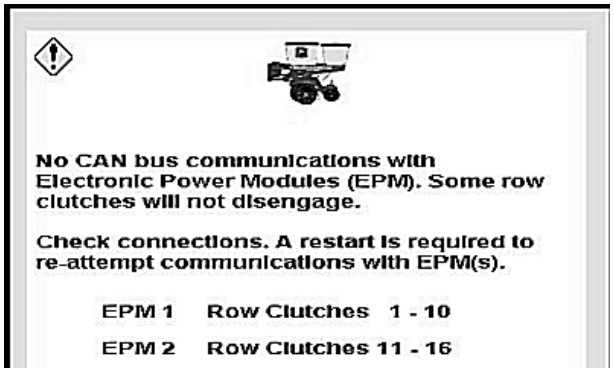
Continued on next page

OUO6064,0000208 -19-21JUL10-2/8

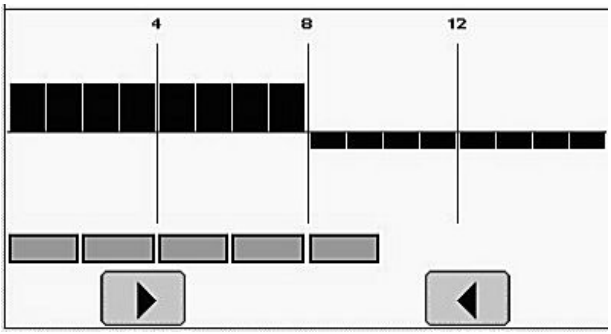
No CAN Bus communications with Electronic Power Modules (EPM). Some row clutches do not disengage.

Check connections. A restart is required to reattempt communications with EPMs.

Warning screen lists EPMs that are currently offline. Control section status bars associated with offline EPMs disappear from Main run page and half-page split run page.



A63767 —UN—07NOV08



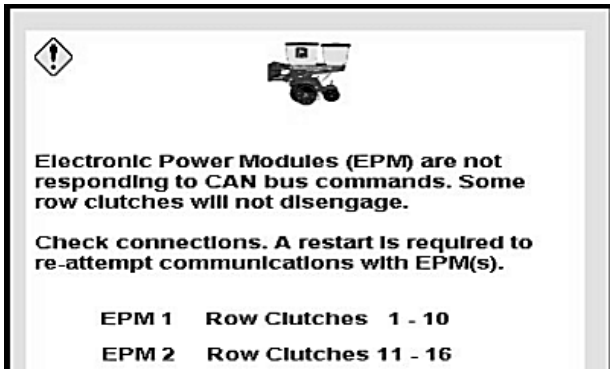
A63768 —UN—07NOV08

OUO6064,0000208 -19-21JUL10-3/8

Electronic Power Modules (EPM) are not responding to CAN Bus commands. Some row clutches do not disengage.

Check connections. A restart is required to reattempt communications with EPMs.

Warning screen lists EPMs that are currently not communicating.

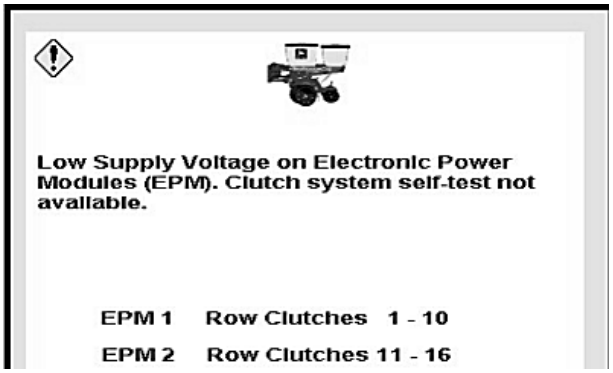


A63769 —UN—07NOV08

OUO6064,0000208 -19-21JUL10-4/8

Low Supply Voltage on Electronic Power Modules (EPM). Clutch system self-test is not available.

Warning screen lists EPMs with supply voltage less than 10.5 V.



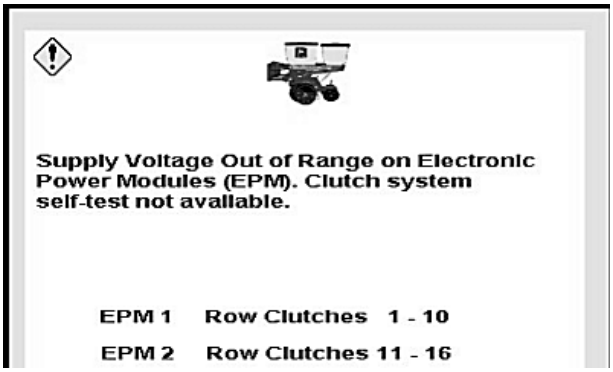
A63770 —UN—07NOV08

Continued on next page

OUO6064,0000208 -19-21JUL10-5/8

Supply Voltage Out of Range on Electronic Power Modules (EPM). Clutch system self-test is not available.

Warning screen lists EPMs with supply voltage less than 9.0 V.

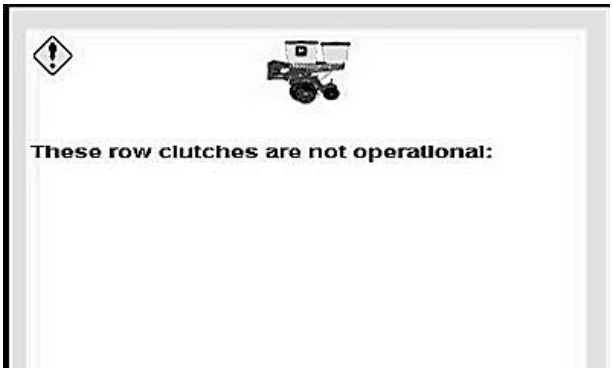


A63771 —UN—07NOV08

OUO6064,0000208 -19-21JUL10-6/8

Row Clutch Diagnostic Self-test at Startup.

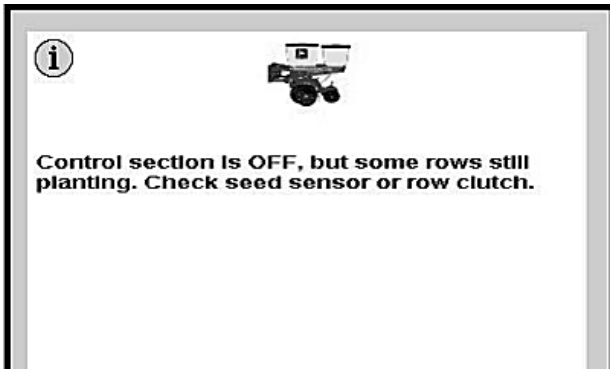
Once EPMs are determined to be online and communicating, system performs test and indicates “These row clutches are not operational”, followed by a list.



A63776 —UN—11NOV08

OUO6064,0000208 -19-21JUL10-7/8

Control section is OFF, but some rows still planting. Check seed sensor or row clutch.



A63778 —UN—10NOV08

OUO6064,0000208 -19-21JUL10-8/8

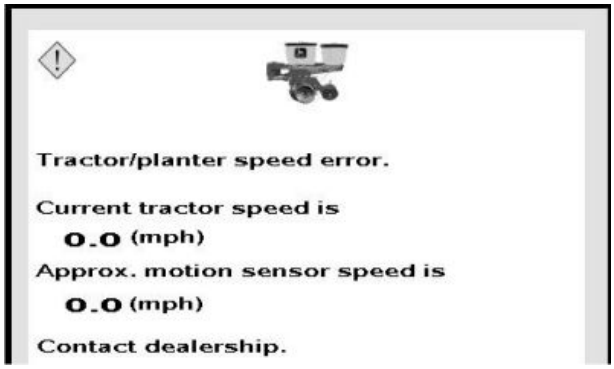
Warning Screens for Variable Rate Drive

Tractor or planter speed error.

Current tractor speed is 0.0

Approximate motion sensor speed is 0.0

Contact dealer.

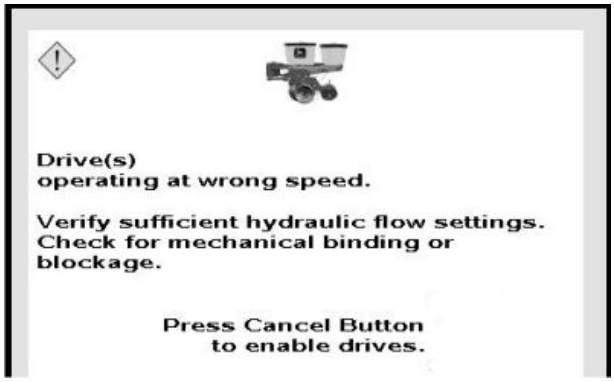


A61417 —UN—19NOV07

OUO6064,0000209 -19-21JUL10-1/8

Drives operating at wrong speed.

Verify sufficient tractor SCV hydraulic flow settings. Check for mechanical binding or blockage. Press cancel button to enable drives.

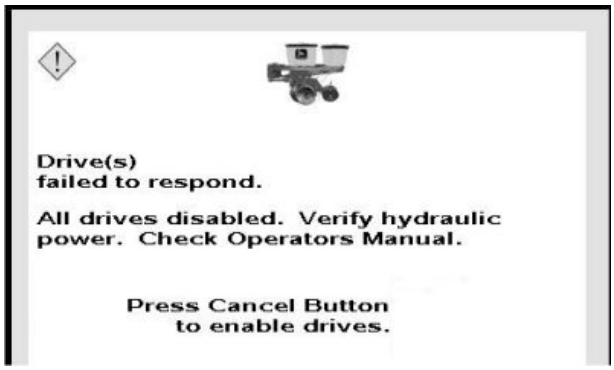


A61424 —UN—24JUL08

OUO6064,0000209 -19-21JUL10-2/8

Drives failed to respond.

All drives disabled. Verify hydraulic power and VRD sensor connections. Check operator's manual. Press cancel button to enable drives.



A61425 —UN—24JUL08

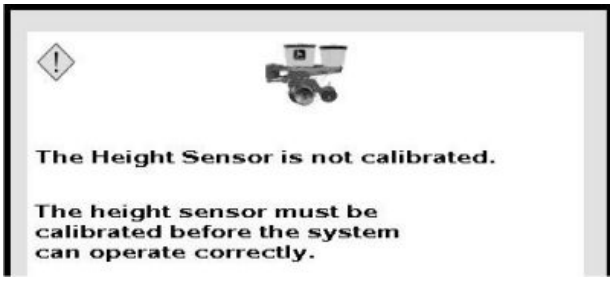
Continued on next page

OUO6064,0000209 -19-21JUL10-3/8

The height sensor is not calibrated.

The height sensor must be calibrated before the system operates correctly.

Refer to height sensor calibration procedures in SETUP BASIC PLANTER CONFIGURATION section of this manual.



A61426 —UN—19NOV07

OUO6064,0000209 -19-21JUL10-4/8

A stop point less than 20 is not recommended.

If the stop point is set too low, there is potential for the drives to shut off when traveling over uneven terrain.

A61427 —UN—19NOV07

OUO6064,0000209 -19-21JUL10-5/8

No tractor speed and planter moving. All planting has stopped.

Verify ground speed sensor status.

A61428 —UN—19NOV07

OUO6064,0000209 -19-21JUL10-6/8

Planter moving. Planter down.

Warning appears when using "Rotate Seed Meter" feature which requires planter, stopped and raised. Stop tractor and planter movement then raise the planter.

A61429 —UN—19NOV07

Continued on next page

OUO6064,0000209 -19-21JUL10-7/8

Quick start function requirements not satisfied.

Minimum ground speed not reached.

Increase or verify tractor speed.

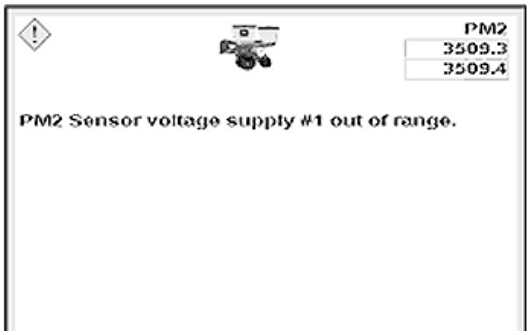
A61430 —UN—19NOV07

OUO6064,0000209 -19-21JUL10-8/8

Warning Screens for SeedStar™ XP

PM2 Sensor voltage supply #1 out of range.

5VDC sensor supply voltage on PM2 out of range high or low. Check wire harness and connectors for damage.

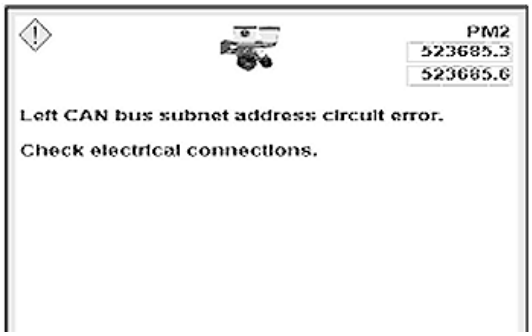


A68149 —UN—13JUL10

OUO6064,000020A -19-29JUL10-1/12

Left CAN bus subnet address circuit error. Check electrical connections.

Check wire harness and connectors for damage. See your John Deere™ dealer.



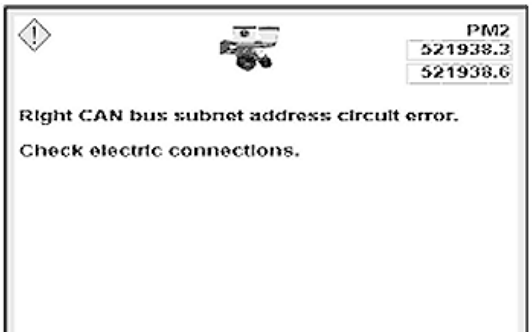
A68151 —UN—13JUL10

Continued on next page

OUO6064,000020A -19-29JUL10-2/12

Right CAN bus subnet address circuit error. Check electric connections.

Check wire harness and connectors for damage. See your John Deere™ dealer.



A68152 —UN—13JUL10

OUO6064,000020A -19-29JUL10-3/12

Communication error. Seed monitor is offline.

PM2 controller is online but does not detect PM1 controller on the CAN Bus. Cycle key switch power and wait for system to load. See your John Deere™ dealer.

A68153 —UN—13JUL10

OUO6064,000020A -19-29JUL10-4/12

Communication error. Seed monitor online but not responding to CAN bus messages.

PM2 detects PM1 controller on the CAN Bus, but PM1 controller is not responding. Cycle key switch power and wait for system to load. See your John Deere™ dealer.

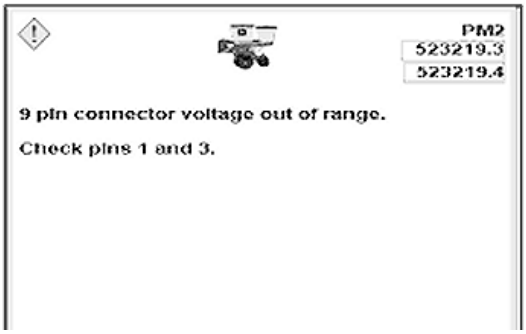
A68154 —UN—13JUL10

Continued on next page

OUO6064,000020A -19-29JUL10-5/12

9 pin connector voltage out of range. Check pins 1 and 3.

Voltage across pin 1 (ground) and pin 3 (12VDC) of 9 pin ISO connector is out of range high or low. Check wire harness and battery connections.

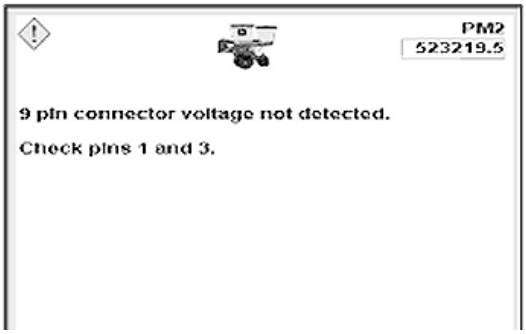


A68155 —UN—13JUL10

OUO6064,000020A -19-29JUL10-6/12

9 pin connector voltage not detected. Check pins 1 and 3.

No voltage is present across pin 1 (ground) and pin 3 (12VDC) of 9 pin ISO connector. Refer to tractor operator's manual and check fuses.



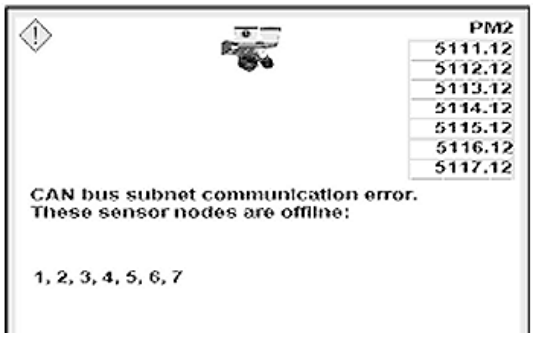
A68156 —UN—13JUL10

OUO6064,000020A -19-29JUL10-7/12

CAN bus subnet communication error. These sensor nodes are offline:

1,2,3,4,5,6,7

Sensor node controllers listed are offline. Check wire harness and connectors for damage. See your John Deere™ dealer.



A68157 —UN—13JUL10

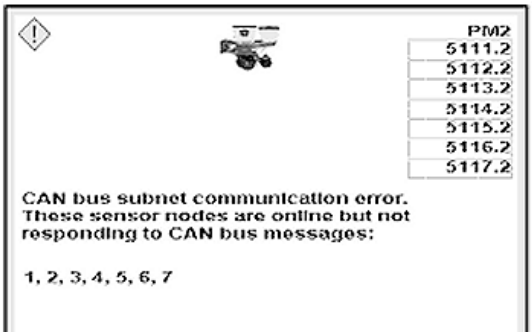
Continued on next page

OUO6064,000020A -19-29JUL10-8/12

CAN bus subnet communication error. These sensor nodes are online but not responding to CAN bus messages:

1,2,3,4,5,6,7

Sensor node controllers listed are online, but not communicating with the PM2 controller. See your John Deere™ dealer.



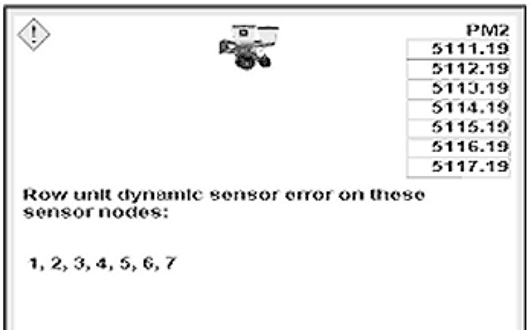
A68158 —UN—13JUL10

OUO6064,000020A -19-29JUL10-9/12

Row unit dynamic sensor error on these sensor nodes:

1,2,3,4,5,6,7

There is a problem with the dynamics sensor inside the sensor node controllers listed. See your John Deere™ dealer.



A68159 —UN—13JUL10

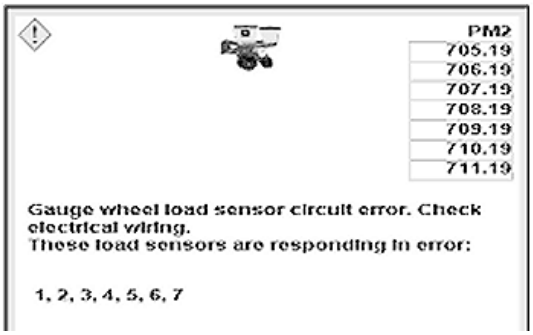
OUO6064,000020A -19-29JUL10-10/12

Gauge wheel load sensor circuit error. Check electrical wiring.

These load sensors are responding in error:

1,2,3,4,5,6,7

The sensor node controllers listed are detecting a problem with the gauge wheel load sensor. Check load sensor wire harness for damage.



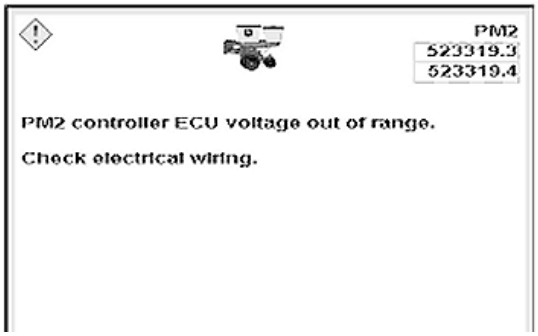
A68160 —UN—13JUL10

Continued on next page

OUO6064,000020A -19-29JUL10-11/12

PM2 controller ECU voltage out of range. Check electrical wiring.

12 VDC power for PM2 controller out of range high or low. See your John Deere™ dealer.



A68161 —UN—13JUL10

OUO6064,000020A -19-29JUL10-12/12

Warning Screens for SeedStar™ XP (Machines with Dual Set-Point or Active Pneumatic Down Force)

Air compressor operating time limit exceeded. Check for air leaks.

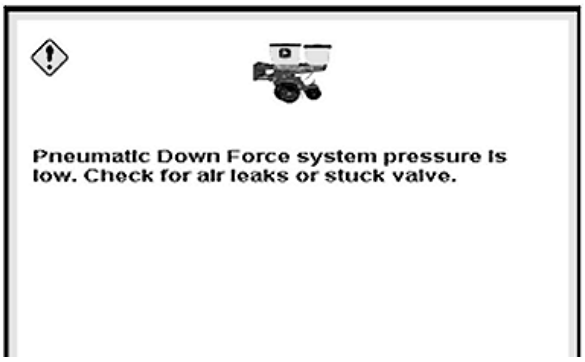
Air compressor has been operating for more than 30 continuous minutes. Check air lines between tank and compressor for leaks. Verify that tank relief valve and compressor pressure switch are not leaking.

A68150 —UN—13JUL10

OUO6064,00005D6 -19-10NOV11-1/2

Pneumatic down force system pressure is low. Check for air leaks or stuck valve.

Row unit down force pressure is not in limit set on PDF air pressure sensor setup page. Check air lines between tank and compressor for leaks. Verify that tank relief valve and compressor pressure switch are not leaking.



A72621 —UN—19SEP11

OUO6064,00005D6 -19-10NOV11-2/2

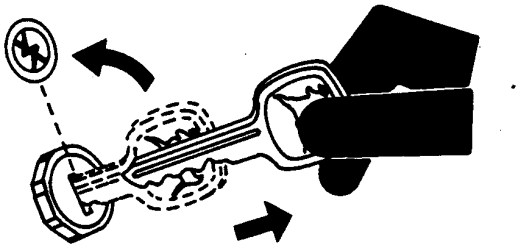
Integrated Pneumatic Down Force

Service Machine Safely

To help prevent personal injury caused by unexpected movement, be sure to service machine on level surface.

If machine is connected to tractor, engage parking brake and/or place transmission in “PARK”, shut off engine and remove key.

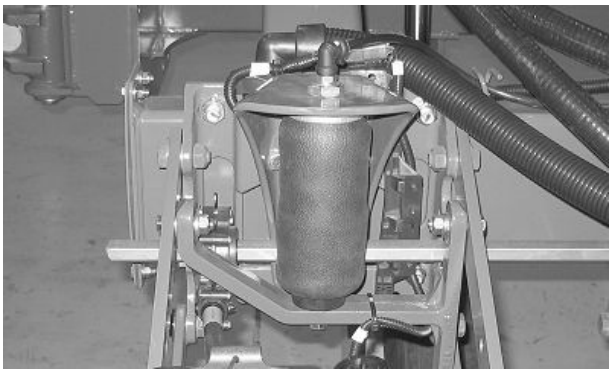
If machine is detached from tractor, block wheels and use safety stands to prevent movement.



TS230 —UN—24MAY89

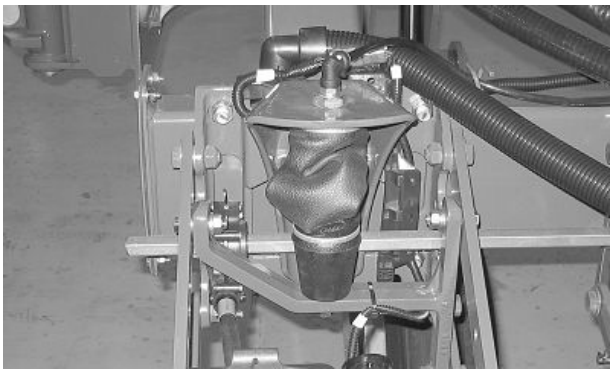
OM63945A,05F -19-20OCT98-1/1

Pneumatic Down Force



A68216 —UN—22JUL10

Properly Rolled Air Spring



A68217 —UN—22JUL10

Improperly Rolled Air Spring

CAUTION: Avoid serious injury from exploding parts due to over-pressurization or operating the system without all components in place.

- **Do not inflate air springs above 827 kPa (8.2 bar) (120 psi) air pressure or 1779 N (400 lb.) down force.**
- **Do not remove pressure relief valve.**
- **Do not pressurize system unless all row unit components are in place.**

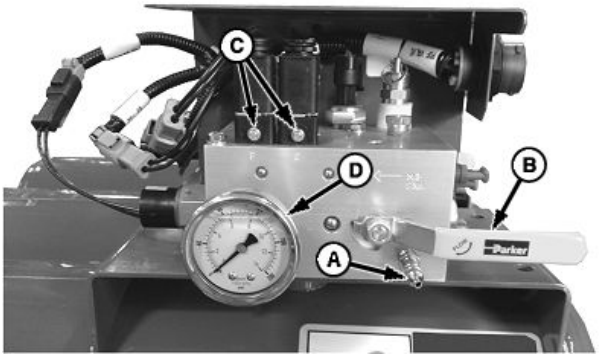
IMPORTANT: Avoid kinks in air spring. Do not lower machine with zero air pressure in the system. Maintain 34—55 kPa (0.3—0.5 bar) (5—8 psi) air pressure or 76—120 N (17—27 lb.) down force in the system. If air spring kinks, raise machine and pressurize the system until air springs straighten out.

Do not operate with a pinched or unrolled air spring. Lower system pressure to roll air springs by hand. Roll air spring over lower piston. Incremental lowering of machine is required to start air spring rolling over lower piston.

NOTE: It is normal for system air pressure to drop when frame is raised and increase when frame is lowered.

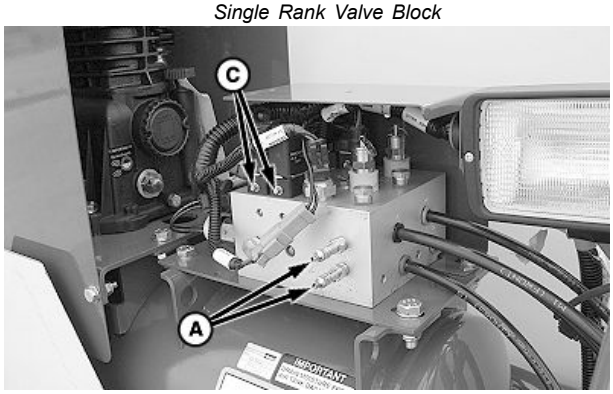
NOTE: If more down force is needed on row units that follow in tractor tire tracks, install an extra single down force spring on these row units. See your John Deere™ dealer for more information.

1. Ensure handle (B) (if equipped) is horizontal when operating planter.
2. If compressor system fails, charge the air spring circuit at fill valve (A) with shop air.
3. If down force control system fails, use manual overrides (C) to increase or decrease air spring pressure. Check air spring pressure with a tire pressure gauge at fill valve (A).



A82457 —UN—30APR14

Single Rank Valve Block



A72712 —UN—21SEP11

Dual Rank Valve Block

A—Valve Stem
B—Handle (If Equipped)
C—Manual Overrides
D—Tank Gauge

Tank gauge (D) displays pressure in tank not pressure in air springs. Normal operating range for tank pressure is 790—1000 kPa (7.9—10 bar) (115—145 psi)

For more information, see your SeedStar™ Monitor Operators Manual.

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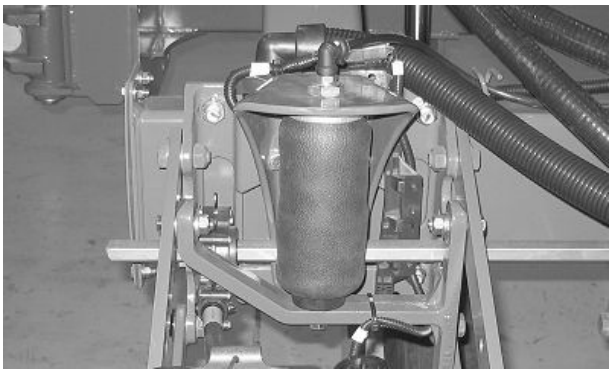
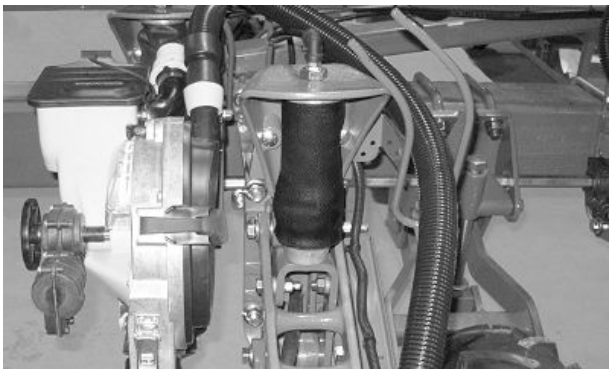
OUO6064,00005D7 -19-02OCT14-1/1

Pressurize Pneumatic Down Force System



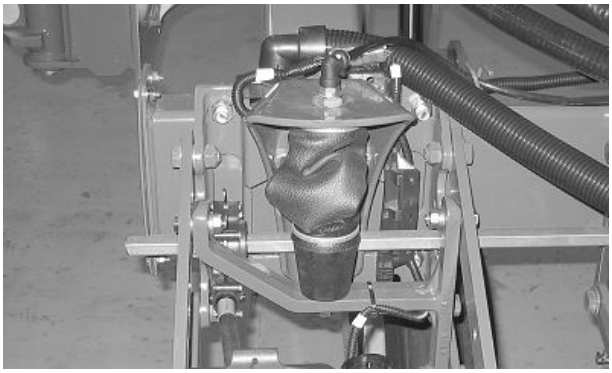
A68216 —UN—22JUL10

Properly Rolled Air Spring



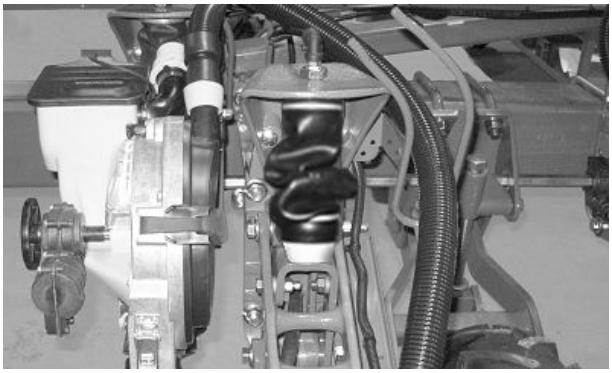
A66834 —UN—25MAR10

Properly Rolled Air Spring (Twin Row Planters)



A68217 —UN—22JUL10

Improperly Rolled Air Spring



A66835 —UN—25MAR10

Improperly Rolled Air Spring (Twin Row Planters)

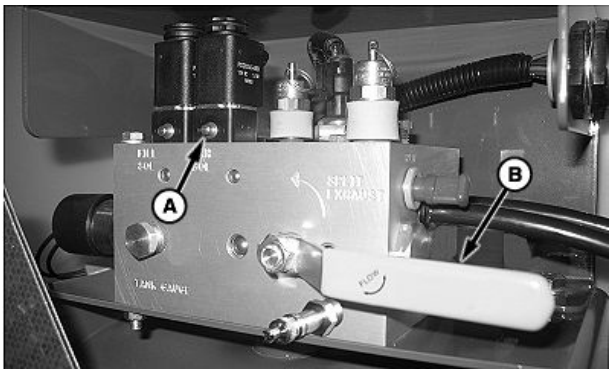
- To fill the planters down force air springs for the first time after removing from storage:
  - In Auto mode, system begins filling the air springs to achieve the target margin when lowered to planting position.
  - In Set-Point mode, system begins filling the air springs to achieve the target down force when lowered to planting position.
- Pressurize system to a minimum of 16 kg (35 lb.) of down force displayed on monitor or approximately 83 kPa (0.8 bar) (12 psi) on gauge.
- Minimum down force during operation is 16 kg (35 lb.) displayed on monitor or approximately 103 kPa (1.0 bar) (15 psi) on gauge. Failure to maintain this pressure can result in damage to air springs.

OUO6064,0000612 -19-10NOV11-1/1

Depressurize Single Rank Pneumatic Down Force System

NOTE: Location and orientation of air reservoir varies based on planter model. Procedure is similar for all models.

1. Lower planter to planting position.
2. On SeedStar™ monitor, reduce down force pressure to 66 N (15 lb.).
3. Ensure handle (B) is in position shown.
4. Press manual override button (A) to release residual air pressure from air spring circuit.



A68611 —UN—17AUG10

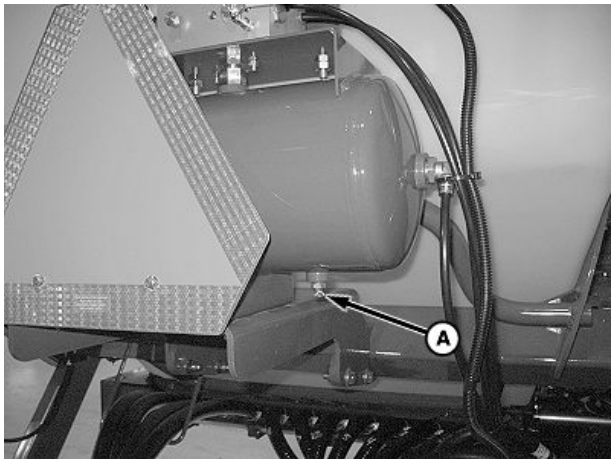
A—Manual Override Button **B—Handle**

Continued on next page

OUO6064,00005D9 -19-10NOV11-1/2

5. Release reservoir air pressure by opening drain valve (A).

A—Drain Valve



A68065 —UN—07JUL10

OUO6064,00005D9 -19-10NOV11-2/2

Depressurize Two Rank Pneumatic Down Force System

NOTE: Location and orientation of air reservoir varies based on planter model. Procedure is similar for all models.

1. Lower planter to planting position.
2. On SeedStar™ monitor, reduce down force pressure to 66 N (15 lb.).
3. Press manual override button (A) to release residual air pressure from air spring circuit.

A—Manual Override Button

A72713 —UN—21SEP11

OUO6064,00005DA -19-10NOV11-1/2

4. Release reservoir air pressure by opening drain valve (A).

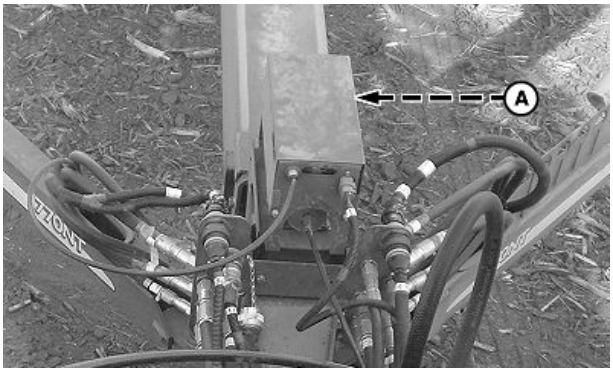
A—Drain Valve

A72714 —UN—21SEP11

OUO6064,00005DA -19-10NOV11-2/2

Single Set-Point Compressor Relay Location

A—Relay

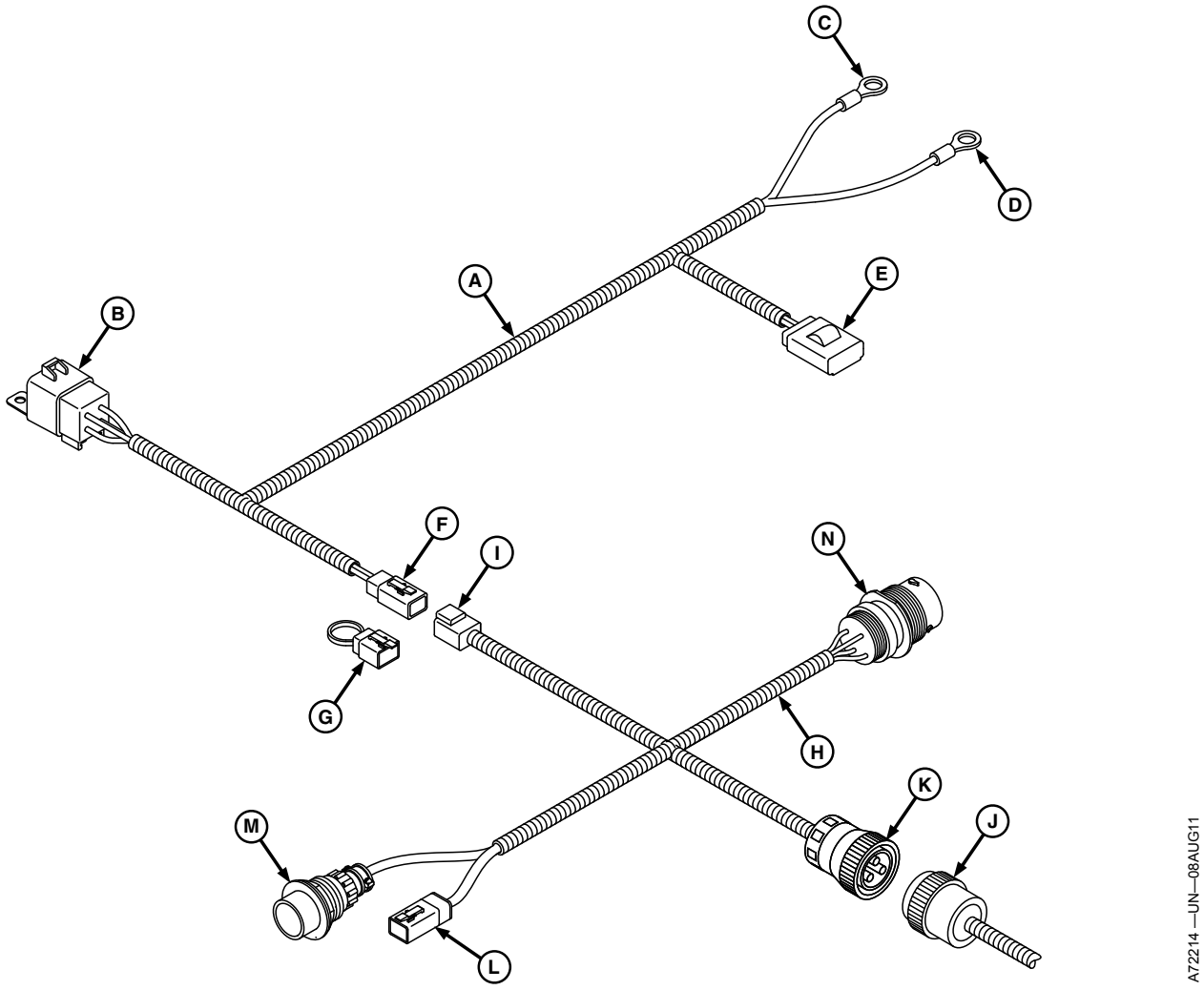


A71681 —UN—01JUN11

Compressor Relay

OUO6064,00005DC -19-10NOV11-1/1

Electric Compressor—Relay and Fuse Location for Power Harness



All Planters Except DB Series

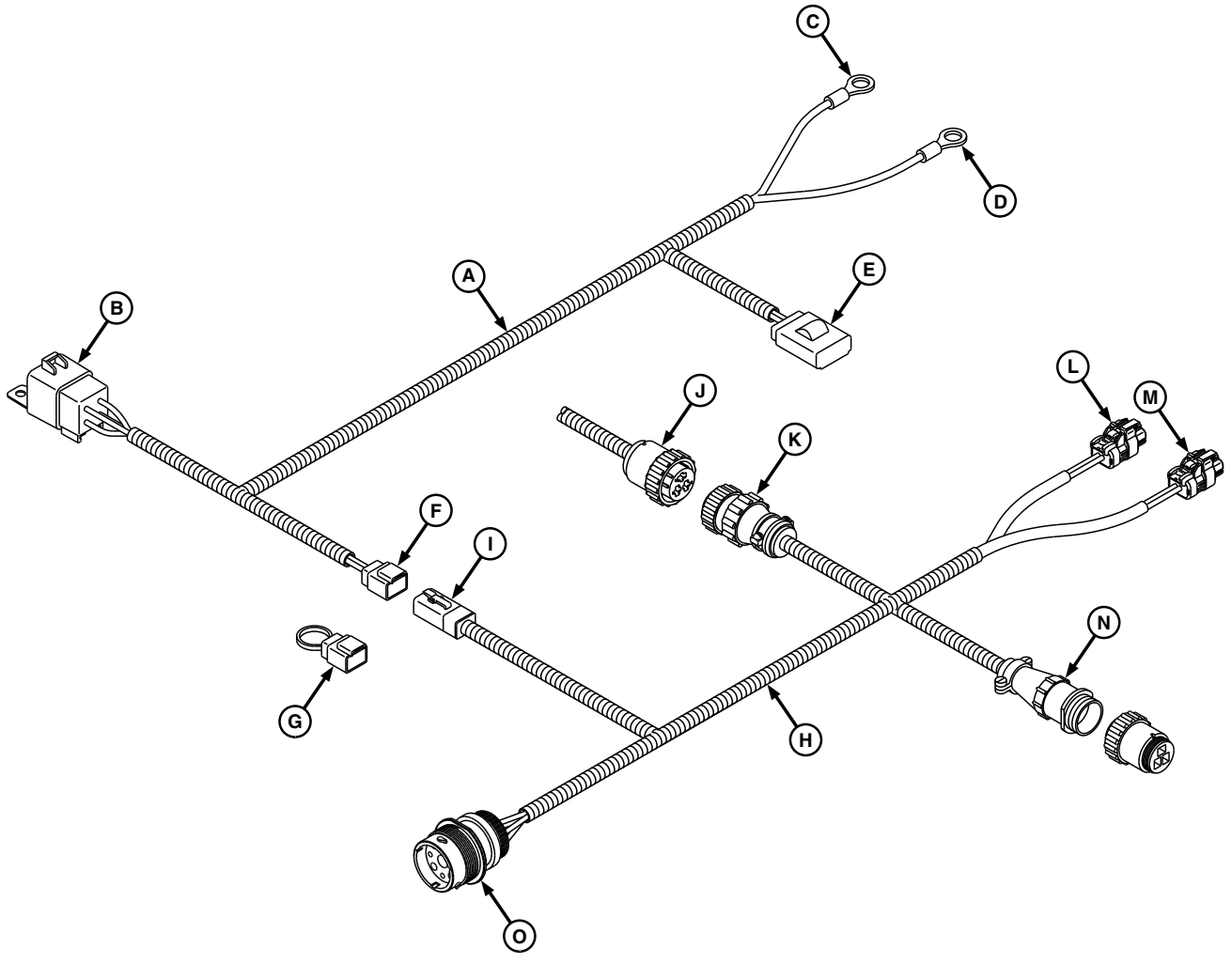
A—Compressor Battery Harness
B—40A Relay
C—Battery Terminal (+)
D—Battery Terminal (-)
E—40A Fuse
F—Convenience (4-pin)
G—Jumper Connector
H—9-Pin Bulkhead Harness
I— Battery Power
J— AMS Harness (If Equipped)
K—Unswitched Power
L—Air Compressor Connector
M—CAN Connector (Planter Bulkhead)
N—CAN Connector (Tractor)

The compressor battery harness (A) supplies power from the tractor battery to the planter 9-pin bulkhead harness (H) through connector (F) and (I).

Battery power is supplied to the compressor through connector (L).

Continued on next page

WP29706,0000351 -19-19SEP14-1/3



DB Series

A—Compressor Battery Harness
B—40A Relay
C—Battery Terminal (+)
D—Battery Terminal (-)
E—40A Fuse
F—Convenience (4-pin)
G—Jumper Connector
H—AMS and Compressor Power Harness
I— Convenience (4-pin)
J—CIS Harness (If Equipped)
K—Convenience Plug 2
L—Switch Box
M—Foot Switch
N—Convenience Plug 1
O—Convenience (9-pin)

The compressor battery harness (A) supplies power from the tractor battery to the pneumatic down force compressor and to other monitor functions (for example, GreenStar™ Rate Controller and iGuide™).

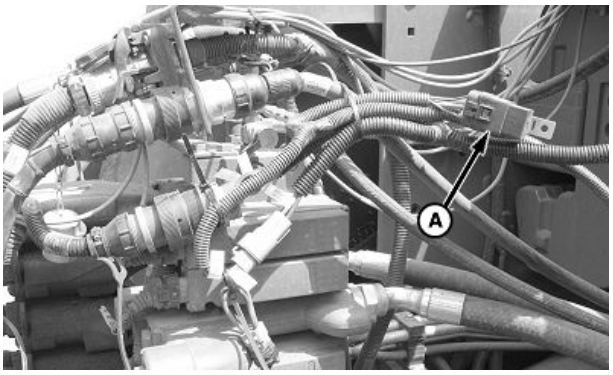
Battery power is supplied to the compressor through connector (O).

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

The following images show fuse and relay locations on the tractors.

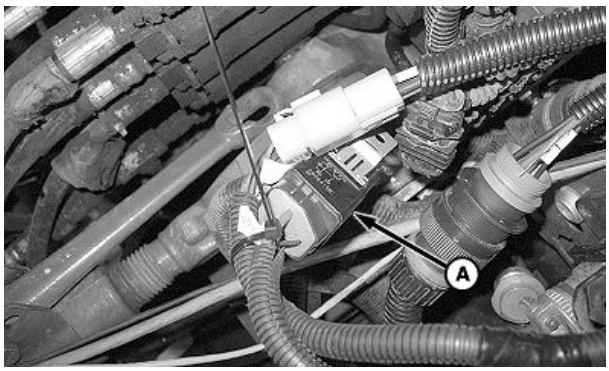
Continued on next page

WP29706,0000351 -19-19SEP14-2/3



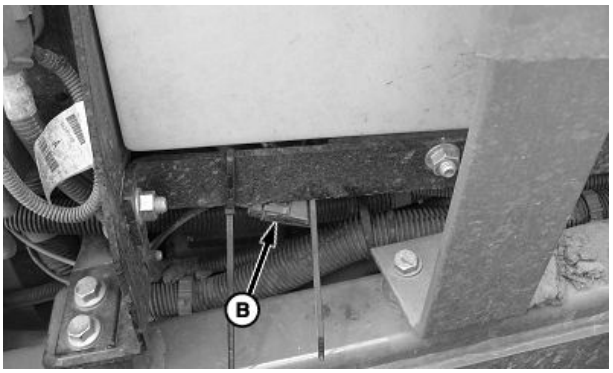
A68180 —UN—15JUL10

Relay, Four Wheel Drive Tractor



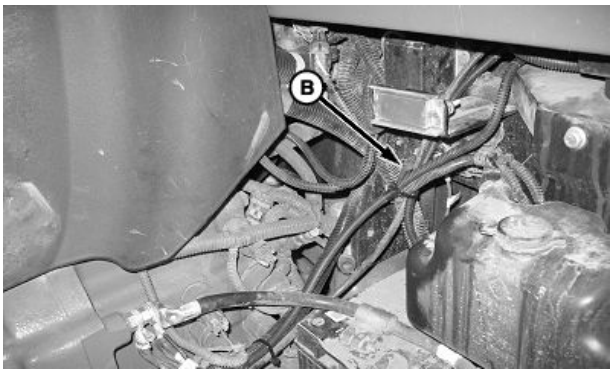
A68181 —UN—15JUL10

Relay, Row Crop Tractor



A68182 —UN—15JUL10

Fuse, Four Wheel Drive Tractor



A68183 —UN—15JUL10

Fuse, Row Crop Tractor

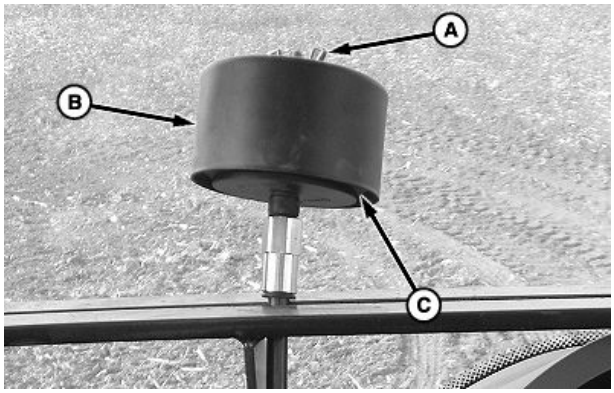
A—Relay **B—Fuse**

WP29706,0000351 -19-19SEP14-3/3

Clean or Replace Electric Air Compressor Filter

IMPORTANT: Filter cleanliness is critical to maintain the performance and service life of the air compressor. Clean or replace the air filter element yearly or at the beginning of each season.

1. Remove and retain wing nut and seal washer (A).
2. Remove weather shield (B) and filter element (C).
3. Wipe dust from filter base.
4. Replace filter and weather shield.
5. Reinstall seal washer, tighten wing nut.



A71682 —UN—01JUN11

A—Wing Nut and Seal Washer **C—Filter**
B—Weather Shield

OUO6064,00005E4 -19-10NOV11-1/1

Clean or Replace Hydraulic Air Compressor Filter

CAUTION: Deactivate SCV operating hydraulic compressor and turn off tractor before servicing.

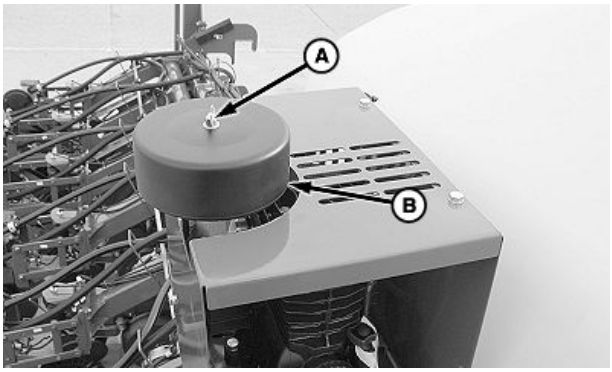
IMPORTANT: Filter cleanliness is critical to maintain the performance and service life of the air compressor. Clean air filter element every 50 hours. Replace the air filter element every 100 hours or at the beginning of each season.

1. Remove and retain wing nut and seal washer (A).
2. Remove and retain weather shield (B).
3. Remove filter element (C).

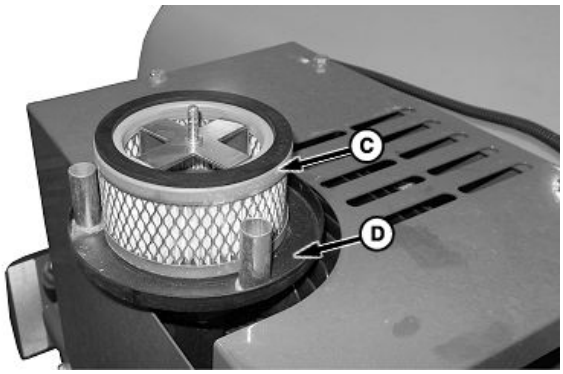
IMPORTANT: Clean all excess material from filter base (D) before installing filter.

4. Install cleaned or new filter.
5. Install previously remove weather shield, wing nut, and seal washer. Tighten wing nut.

A—Wing Nut and Seal Washer
B—Weather Shield
C—Filter Element
D—Filter Base



A72543 —UN—14SEP11



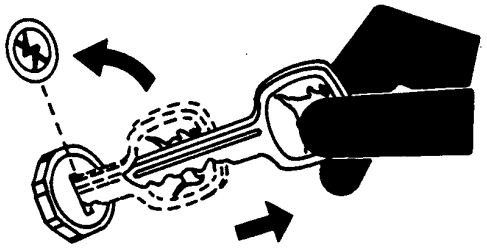
A83382 —UN—20AUG14

OUO6064,00005E5 -19-20AUG14-1/1

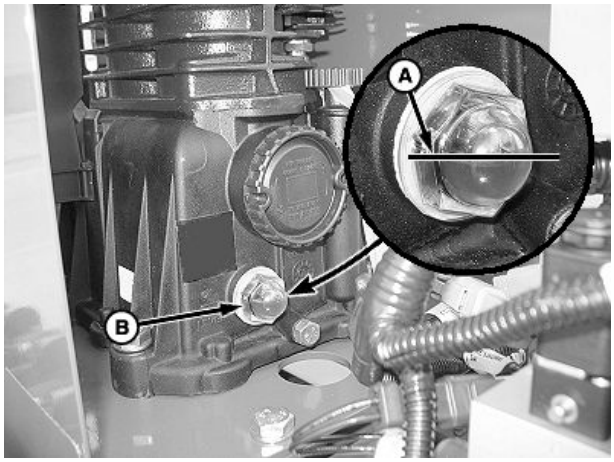
Check Hydraulic Air Compressor Oil

CAUTION: Avoid injury. Deactivate SCVs, turn off tractor, and place tractor in park before servicing.

NOTE: Park on level surface.



TS230 —UN—24MAY89



A72545 —UN—14SEP11

A—Middle **B—Sight Glass**

Item	Measurement	Specification
Check Oil Level	Interval	Daily during use. Beginning of season.

The proper oil level is in the middle (A) of the sight glass (B). Add oil as necessary. (See Fill Or Change Hydraulic Air Compressor Oil in this section.)

WP29706,00002F1 -19-26AUG14-1/1

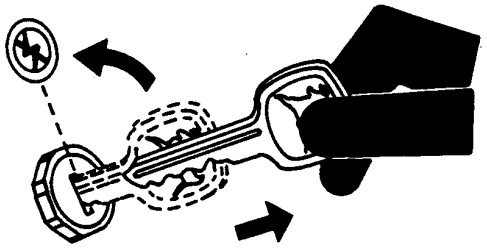
Fill or Change Hydraulic Air Compressor Oil

CAUTION: Avoid injury. Deactivate SCVs, turn off tractor, and place tractor in park before servicing.

IMPORTANT: Use non-detergent 30W synthetic air-compressor oil ISO 100 (John Deere™ TY27029 or equivalent).

NOTE: Park on level surface.

To aid filling, use a funnel.



TS230 —UN—24MAY89

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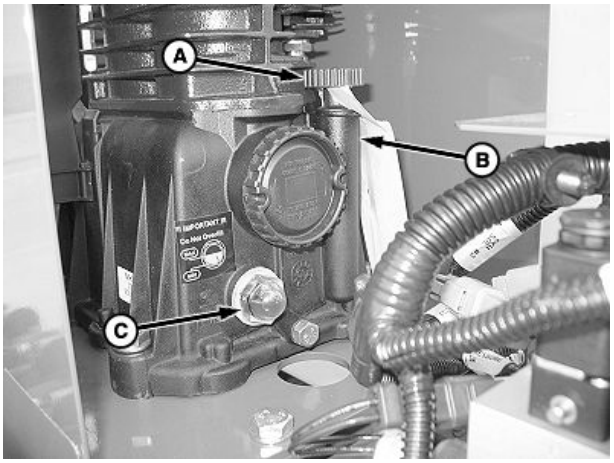
WP29706,00002F2 -19-26AUG14-1/3

Fill Compressor with Oil

1. Remove cap (A).
2. Add oil to reservoir (B) until oil is visible in the middle of the sight glass (C).
3. Reinstall cap (A).

A—Cap
B—Reservoir
C—Sight Glass



A72546 —UN—14SEP11

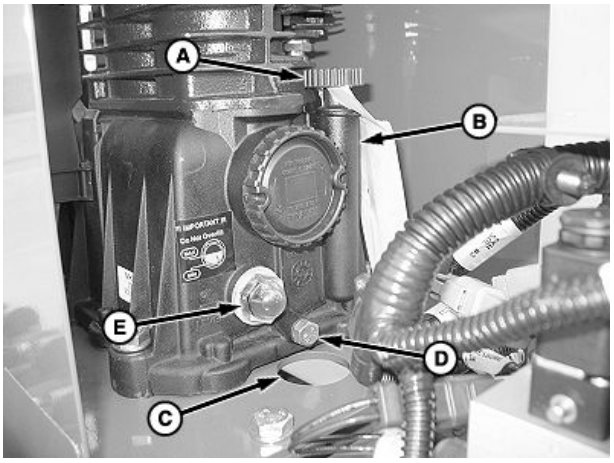
WP29706,00002F2 -19-26AUG14-2/3

Change the Compressor Oil

Item	Measurement	Specification
Compressor Reservoir	Capacity	0.5 L (16.6 oz.)

1. Remove cap (A) to help vent reservoir (B) while draining.
2. Place container under drain hole (C).
3. Remove and retain drain plug (D)
4. Install previously removed drain plug (D)
5. Add specified quantity of oil to reservoir (B) until oil is visible in the middle of the sight glass (E).
6. Reinstall cap (A).

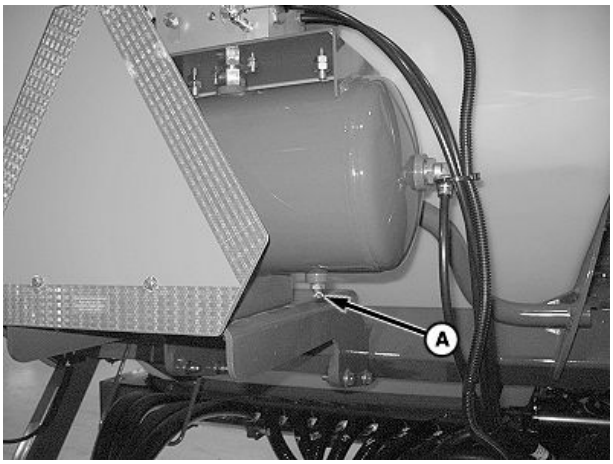
A—Cap
B—Reservoir
C—Drain Hole
D—Drain Plug
E—Sight Glass



A72547 —UN—14SEP11

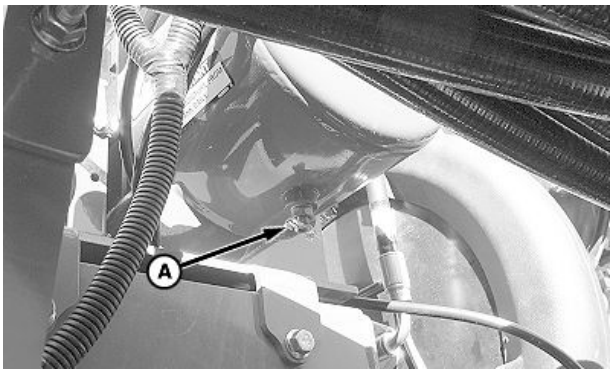
WP29706,00002F2 -19-26AUG14-3/3

Drain Air Storage Tank



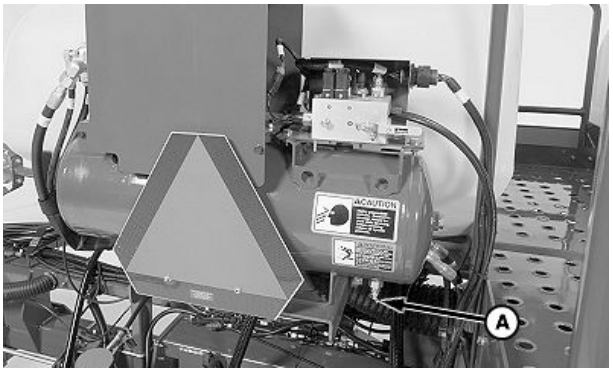
A68065 —UN—07JUL10

Single Set-Point Air Tank Drain Valve (Drawn Planters)



A68980 —UN—06OCT10

Single Set-Point Air Tank Drain Valve (Integral Planters)



A72541 —UN—14SEP11

Dual Set-Point and Active Down Force Air Tank Drain Valve (With CCS)

A72542 —UN—14SEP11

Active Down Force Air Tank Drain Valve (Without CCS)

A—Water Drain Valve

Open water drain valve (A). Keep valve open until all water is drained from tank. Drain air storage tank daily and before placing planter in storage.

OUO6064,00005E6 -19-10NOV11-1/1

Controller Hardware, Software, and Part Number Identification

There are separate hardware and software versions for the display and each controller. Use the version to identify machine controllers for your dealer. Keep both the display and planter controller(s) updated with the latest software version for best performance and latest features. Software updates are only available through your John Deere™ dealer.

Select **Menu** >> **Planter** Button >> **Diagnostic** softkey >> **Readings** tab.

Select **Hardware / Software** from top drop down box.

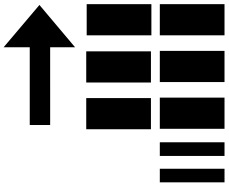
Select **Main** or **Auxiliary** from second drop down box to view data from each controller. Auxiliary is only an option if there is more than one controller installed on the machine.

- Hardware serial number and part number are displayed.
- Serial number is also on a tag (A) attached to controller.
- Software part number and version number are displayed.
- Total hour meter for controller is at bottom of screen.

Screen Area Information

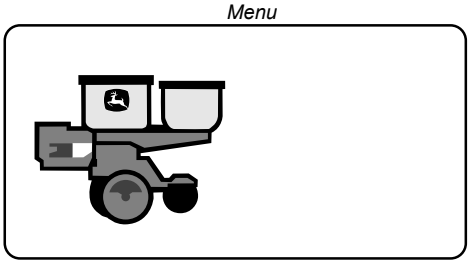
Planter Diagnostics — Planter Diagnostics
Readings — Readings
Hardware / Software — Hardware / Software
Main — Main
Auxiliary — Auxiliary
Hardware Part # — Hardware Part number
Planter — Planter
Hardware Serial # — Hardware Serial number
Software Part # — Software Part number
Software Version # — Software Version number
Hour Meter — Hour Meter
h — Hours

A—Serial Tag



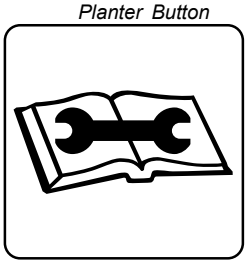
A59325 —UN—19FEB07

Menu



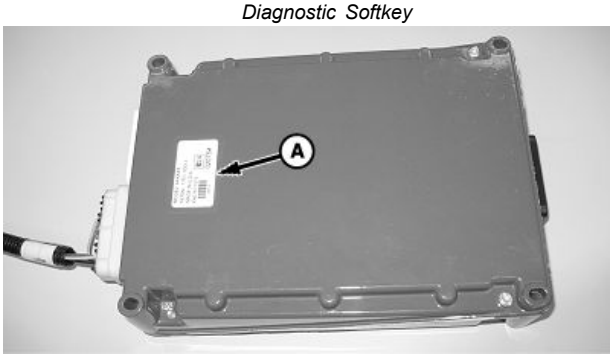
A59551 —UN—08MAR07

Planter Button



A59567 —UN—08MAR07

Diagnostic Softkey



A61129 —UN—11OCT07

Controller

John Deere is a trademark of Deere & Company

OUO6064,000020C -19-21JUL10-1/1

Display Hardware, Software, and Part Number Identification

Use this to identify display versions for your dealer.

Select **Menu** >> **Display** button >> **Diagnostic** softkey >> **Readings** tab.

This page shows data about the display. Towards the bottom of screen are; Software Part Number, Software Version Number, Hardware Part Number, and Hardware Serial Number.

Software updates are only available through your John Deere™ dealer.

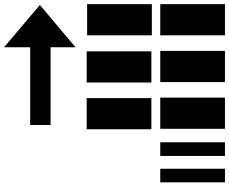
Select **About** tab to see only this information. Hardware information is also located on back of display.

Total operation hours for the display are displayed mid screen.

Screen Area Information

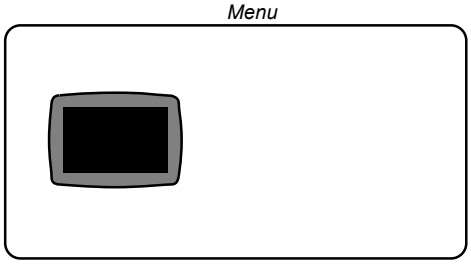
Display Diagnostics — Display Diagnostics
Readings — Readings
Software Part Number — Software Part Number
Software Version Number — Software Version Number
Hardware Part Number — Hardware Part Number
Hardware Serial Number — Hardware Serial Number
Operation Hours — Operation Hours
About — About
Application Software Build — Application Software Build
P/N — Part Number
S/N — Software Number

John Deere is a trademark of Deere & Company



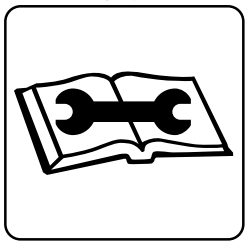
A59325 —UN—19FEB07

Menu



A59565 —UN—08MAR07

Display Button



A59567 —UN—08MAR07

Diagnostic Softkey

OUO6064,000020D -19-21JUL10-1/1

Sensor Status

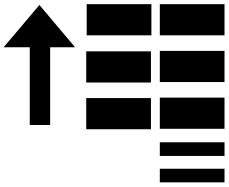
Use this to diagnose suspected problems with sensor outputs.

1. Select **Menu** >> **Planter** button >> **Diagnostics** softkey >> **Readings** tab.
2. Select **Sensor/Status** from drop-down box.

   The current readings from the sensors on the machine are shown in their respective units and voltage levels.

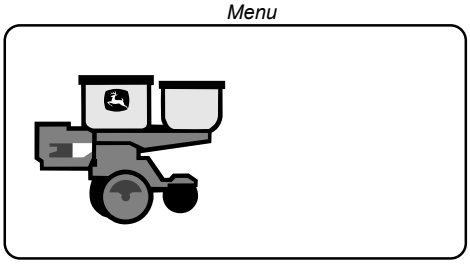
Screen Area Information

Planter Diagnostics — Planter Diagnostics
Readings — Readings
Sensor/Status — Sensor/Status
Tractor Speed — Tractor Speed
Vacuum Sensor — Vacuum Sensor
Fertilizer Sensor — Fertilizer Sensor
mph — Miles per Hour
kph — Kilometers per Hour
in — Inches
mm — Millimeters
psi — Pounds per Square Inch
kPa — Kilopascals
V — Volts



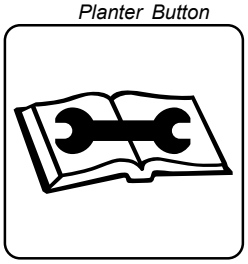
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59567 —UN—08MAR07

Diagnostic Softkey

OUO6064,000020E -19-21JUL10-1/1

System Voltages

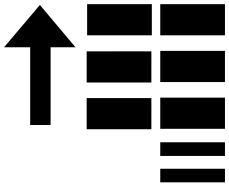
Use this to diagnose suspected power supply problems.

1. Select **Menu** >> **Planter** button >> **Diagnostics** softkey >> **Readings** tab.
2. Select **System Voltages** from drop down box.

   The voltage for various electronics on the machine are shown.

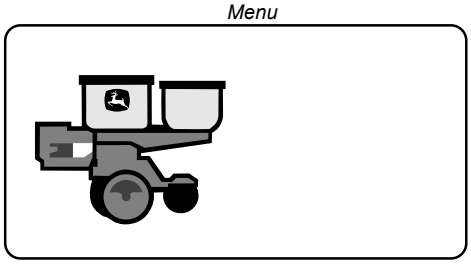
Screen Area Information

Planter Diagnostics — Planter Diagnostics
Readings — Readings
System Voltages — System Voltages
Controller Input — Controller Input
Seed Sensor Supply — Seed Sensor Supply
Vacuum Sensor Supply — Vacuum Sensor Supply
Fertilizer Sensor Supply — Fertilizer Sensor Supply
Height Sensor Supply — Height Sensor Supply
V — Volts



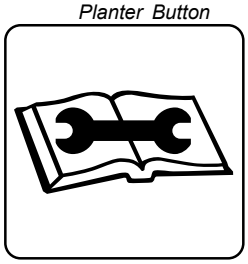
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59567 —UN—08MAR07

Diagnostic Softkey

OUO6064,000020F -19-21JUL10-1/1

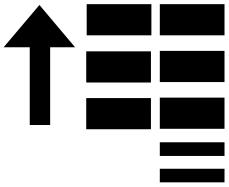
Seed Tube Sensor Test

Use this to identify the seed sensors detected by the monitor.

1. Select **Menu** >> **Planter** button >> **Diagnostics** softkey >> **Tests** tab.
2. Select **Seed Tube Sensor** from drop down box to see which sensors are operational.

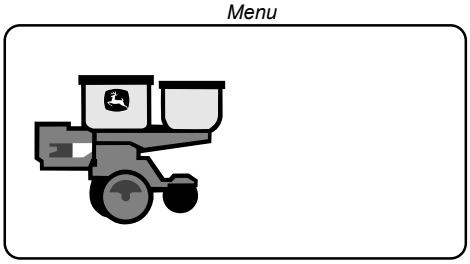
Screen Area Information

Planter Diagnostics — Planter Diagnostics
Tests — Tests
Seed Tube Sensor — Seed Tube Sensor
These seed sensors are operational — These seed sensors are operational
None — None



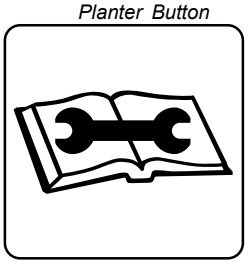
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59567 —UN—08MAR07

Diagnostic Softkey

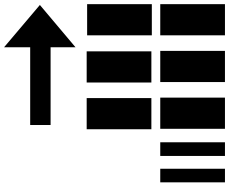
OUO6064,0000210 -19-21JUL10-1/1

Seed Drop Test

Use this to determine if a seed sensor is detecting seeds accurately.

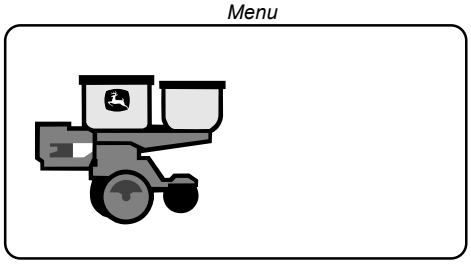
1. Select **Menu** >> **Planter** button >> **Diagnostics** softkey >> **Tests** tab.
2. Select **Seed Drop** from drop down box.
3. Select **Row** input box and enter a row unit number to observe.
4. Select **Reset** button to return a counter to zero. Select **Reset All Rows** to clear all counters.
5. Locate the row unit number identical to the number entered in input box.
6. Remove row unit meter to gain access to seed tube opening.
7. Drop a predetermined number of seeds through the seed tube, one seed at a time.
8. Observe count on monitor to verify the value is the same as number of seeds dropped.

   If values are significantly different, check wiring and clean or replace sensors.



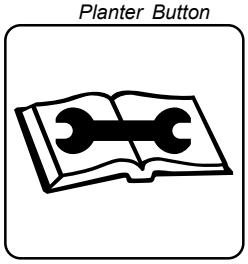
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59567 —UN—08MAR07

Diagnostic Softkey

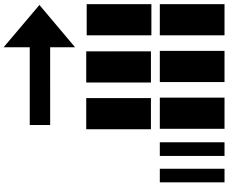
Screen Area Information

Planter Diagnostics — Planter Diagnostics
Tests — Tests
Seed Drop — Seed Drop
Row — Row
Count — Count
Reset — Reset
Reset All Rows — Reset All Rows

OUO6064,0000211 -19-21JUL10-1/1

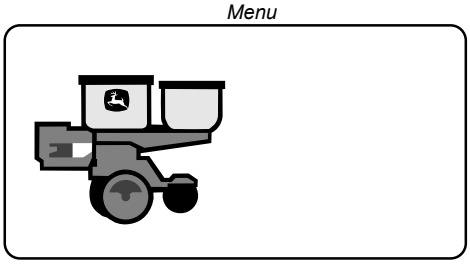
Timed Seed Drop Test

1. Select **Menu** >> **Planter** button >> **Diagnostics** softkey >> **Tests** tab.
2. Select **Timed Seed Drop** from drop down box.
3. Select **Row** input box and enter a row unit number to observe.
4. Select **Time** input box and enter number of seconds to perform test.
5. Plant at preferred speed and select **Start** button.
6. Time will count down to zero and test will stop. Select **Stop** button to stop test before time reaches zero.
7. Observe seed count on screen.



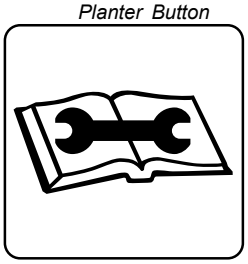
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59567 —UN—08MAR07

Diagnostic Softkey

Screen Area Information

Planter Diagnostics — Planter Diagnostics
Tests — Tests
Timed Seed Drop — Timed Seed Drop
Start — Start
Stop — Stop
Row — Row
Count — Count
mph — Miles per hour
kph — Kilometers per hour
Time — Time
sec — Seconds

OUO6064,0000212 -19-21JUL10-1/1

Vacuum Sensor

Use this to verify proper sensor connection and calibration.

1. Verify vacuum wiring is properly connected.

   If only one vacuum sensor is used, it MUST be connected to LEFT VAC wire.

2. Verify vacuum hose is properly connected.

   Connect hose to P2 port (A).

3. Check for air leaks in hose between sensor and vacuum meter.

4. Turn tractor OFF. Turn key to ACC (Accessory).

5. Verify correct number of vacuum sensors are configured.

   Select **Menu** >> **Planter** button >> **Configuration** softkey >> **Sensor** tab >> **Vacuum** drop down. **Number of Sensors** selected must match number of sensors on machine.

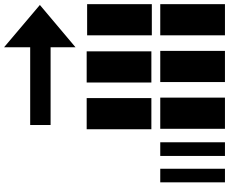
6. Select **Sensor** drop down and select each sensor one at a time. Select **Cal Value** and enter 5.66 (English units) or 143.76 (Metric units).

7. Select each sensor one at a time and select **Zero Sensor** button.

8. Verify voltages are correct.

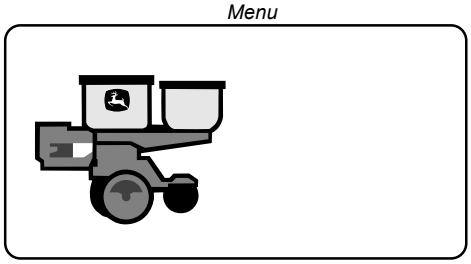
   Select **Diagnostic** softkey >> **Readings** tab >> **System Voltages** drop down.

   - Controller Input value MUST be 11 vdc or higher.
   - Vacuum Sensor Supply value is 8.0 vdc.
   - If voltage is ZERO, check wiring.



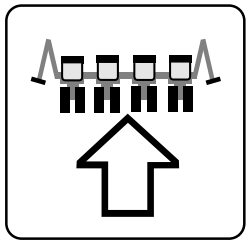
A59325 —UN—19FEB07

Menu



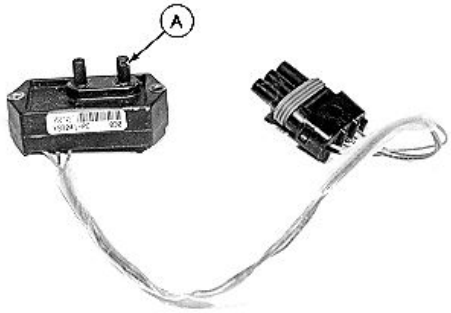
A59551 —UN—08MAR07

Planter Button



A59172 —UN—29JAN07

Configure Softkey



A40613 —UN—30DEC96

A—P2 Port

Screen Area Information

Planter Configuration — Planter Configuration
Sensor — Sensor
Vacuum — Vacuum
Sensors — Sensors
Sensor — Sensor
Cal Value — Calibration Value
V in — Inches of Vacuum
Planter Diagnostics — Planter Diagnostics
Readings — Readings
System Voltages — System Voltages
Controller Input — Controller Input
Vacuum Sensor Supply — Vacuum Sensor Supply

V — Volts

OUO6064,0000213 -19-29JUL10-1/1

Liquid Fertilizer Sensor

Use this to verify proper sensor connection and calibration.

1. Turn tractor OFF. Turn key to ACC.
2. Verify sensor wiring is properly connected.

   If only one sensor is used, it MUST be connected to LEFT FERT wire.
3. Verify correct number of sensors are selected.

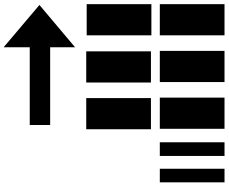
   Select **Menu** >> **Planter** button >> **Configuration** softkey >> **Sensor** tab >> **Fertilizer** drop down.

   Number of Sensors selected must match number of sensors on machine.

   Select **Sensor** drop down and select each sensor one at a time. Select **Cal Value** and enter 37.50 (English units) or 258.55 (Metric units).
4. Release trapped pressure in fertilizer system. Select each sensor one at a time and select **Zero Sensor** button.
5. Verify voltages are correct.

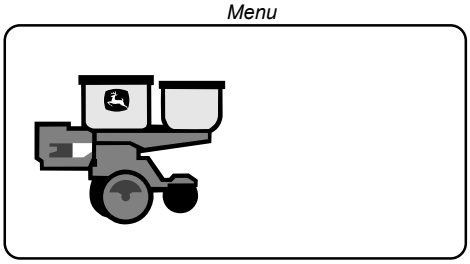
   Select **Diagnostic** softkey >> **Readings** tab >> **System Voltages** drop down.

   - Controller Input value MUST be 11 vdc or higher.
   - Fertilizer Sensor Supply value is 8.0 vdc.
   - If voltage is ZERO, check wiring.



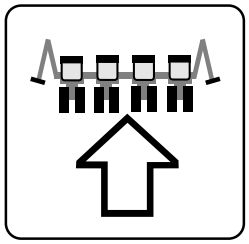
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59172 —UN—29JAN07

Configure Softkey

Screen Area Information

Planter Configuration — Planter Configuration
Sensor — Sensor
Fertilizer — Fertilizer
Sensors — Sensors
Sensor — Sensor
Cal Value — Calibration Value
Pressure — Pressure
Planter Diagnostics — Planter Diagnostics
Readings — Readings
System Voltages — System Voltages
Controller Input — Controller Input
Fertilizer Sensor Supply — Fertilizer Sensor Supply
V — Volts

OUO6064,0000214 -19-29JUL10-1/1

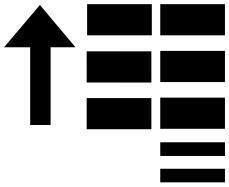
EPM Status

Use this to check the status of EPMs on the machine.

1. Select **Menu** >> **Planter** button >> **Diagnostics** softkey >> **Readings** tab.
2. Select **EPM Status** from drop down box to see which EPMs are operational. All will be displayed with online or active. Green box means true, red box means false.
3. Select drop-down to view EPMs each input status or status all to view all.

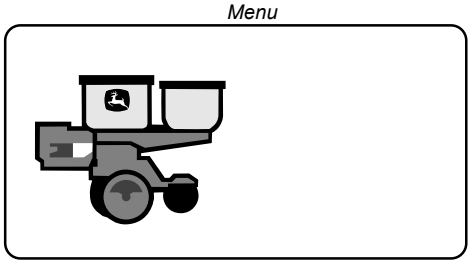
Screen Area Information

Planter Diagnostics — Planter Diagnostics
Readings — Readings
EPM Status — EPM Status
Online — Online
Active — Active
Status All — Status All



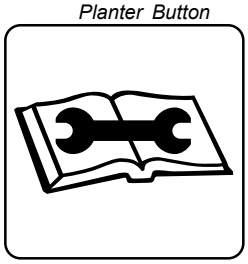
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59567 —UN—08MAR07

Diagnostic Softkey

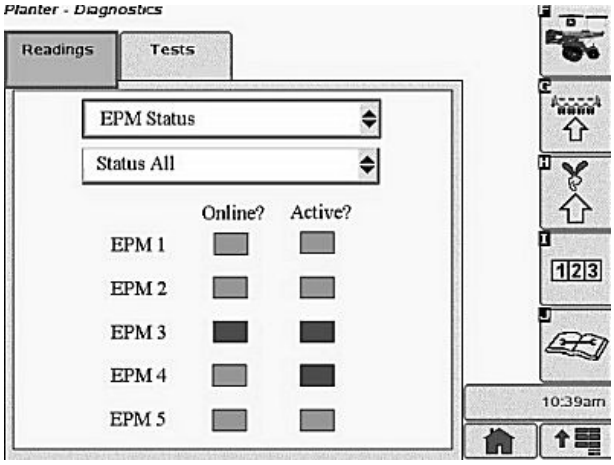
OUO6064,0000215 -19-21JUL10-1/4

EPM Status Summary Page.

This screen lists the current status for each EPM that is required for the current row configuration.

If the EPM is Online, the status box appears in green. If not online, the status box is red.

If the EPM is Active, the status box appears in green. If not active, the status box is red.



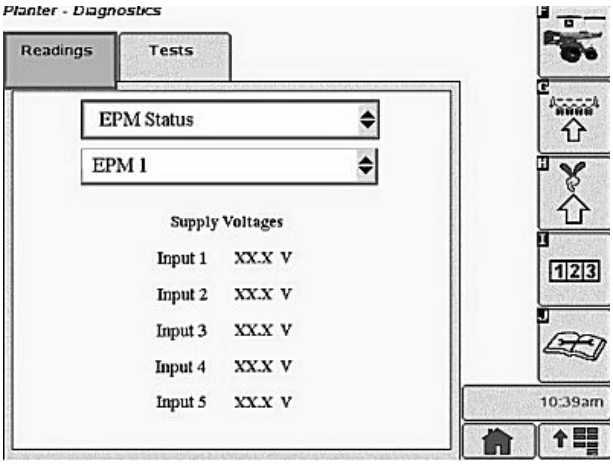
A63772 —UN—07NOV08

Continued on next page

OUO6064,0000215 -19-21JUL10-2/4

Individual EPM Status Page.

This screen lists the voltage reading from each power supply input to the EPM, as an average over approximately 3 seconds. If no readings are received from the device in 3 seconds, the reading is "— —"



OUO6064,0000215 -19-21JUL10-3/4

This screen appears when the operator selects the "Tests" tab on the diagnostics screen and EPM output is available.

Status information derived from the driver status CAN message is displayed.

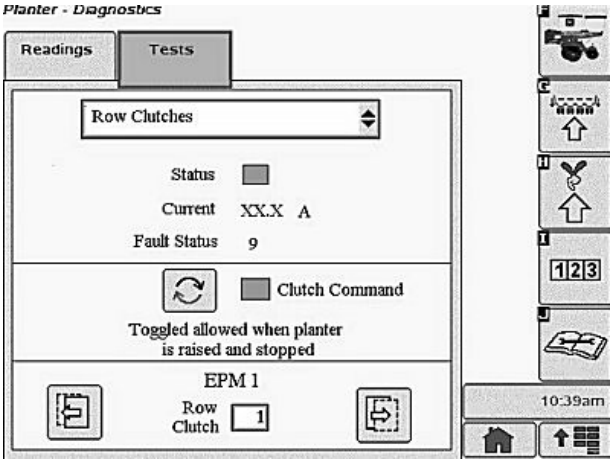
If the driver output monitor is ON, the status box appears in green.

If the driver output monitor is OFF, the status box appears in red.

The button in the center of the page is used to toggle rows on or off when the planter is stopped and raised.

The forward and backward arrows at the bottom of the page are used to select between row clutches.

A specific RowCommand™ clutch can be selected by entering a row number.



OUO6064,0000215 -19-21JUL10-4/4

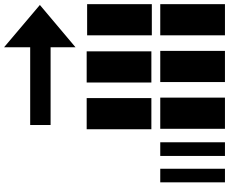
Row Clutches

Use this to identify the row clutches detected by the monitor.

1. Select **Menu** >> **Planter** button >> **Diagnostics** softkey >> **Tests** tab.
2. Select **Row Clutches** from drop down box to see status of each row clutch. Green box means true, red box means false.
3. Select toggle icon to enable clutch command. Green box means true, red box means false.
4. Select row clutch input box and enter desired row clutch to view or press next page icon and previous page icon to navigate.

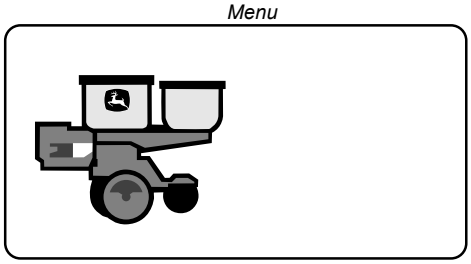
Screen Area Information

Planter Diagnostics — Planter Diagnostics
Tests — Tests
Row Clutches — Row Clutches
Status — Status
Current — Current
Fault Status — Fault Status
Clutch Command — Clutch Command
Row Clutch — Row Clutch



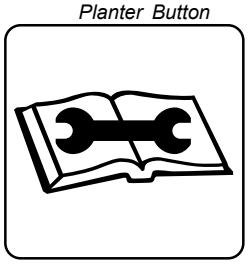
A59325 —UN—19FEB07

Menu



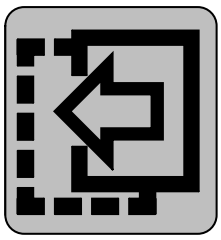
A59551 —UN—08MAR07

Planter Button



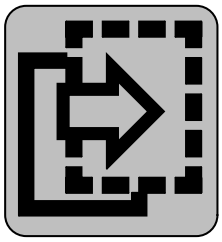
A59567 —UN—08MAR07

Diagnostic Softkey



A61134 —UN—12OCT07

Previous Page



A61135 —UN—12OCT07

Next Page

A63529 —UN—27OCT08

Toggle

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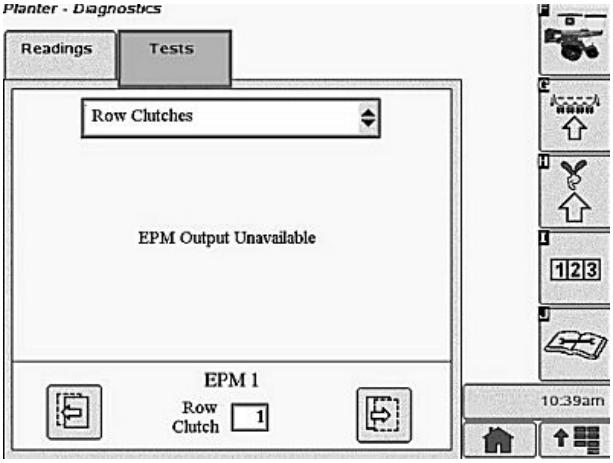
OUO6064,0000216 -19-21JUL10-1/2

Row Clutch Diagnostic Tests.

This screen appears when the operator selects the “Tests” tab on the diagnostics screen and the EPM is not available for one of the following reasons:

- EPM is offline
- EPM is not communicating
- EPM input voltage is out of range



A63774 —UN—10NOV08

OUO6064,0000216 -19-21JUL10-2/2

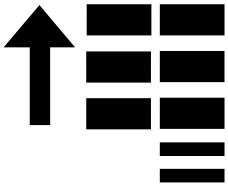
Row Clutches Self Test

Use this to identify the operational row clutches detected by the monitor.

1. Select **Menu** >> **Planter** button >> **Diagnostics** softkey >> **Tests** tab.
2. Select **Row Clutches Self Test** from drop down box to see status of each row clutch.
3. Select perform self test button and system will perform a self test on row clutches.

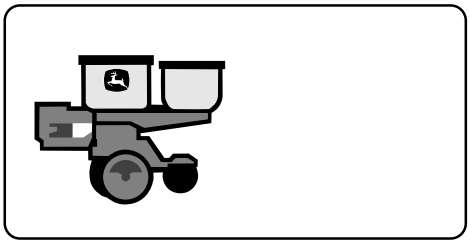
Screen Area Information

Planter Diagnostics — Planter Diagnostics
Tests — Tests
Row Clutches Self Test — Row Clutches Self Test
Perform Self Test — Perform Self Test



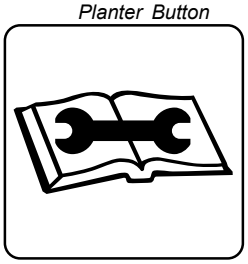
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59567 —UN—08MAR07

Diagnostic Softkey

Continued on next page

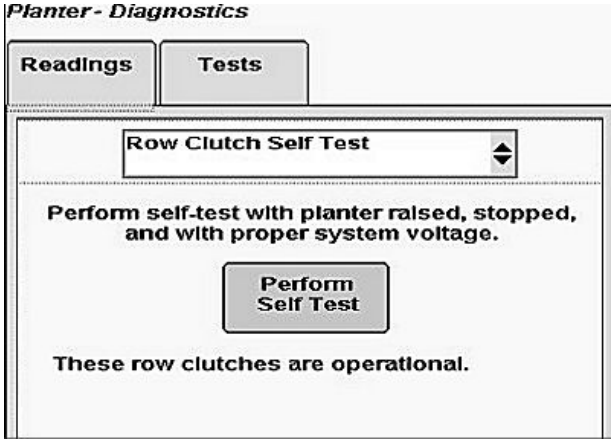
OUO6064,0000217 -19-21JUL10-1/2

NOTE: Under the diagnostic tab, the perform Self-test icon does not appear, unless planter is raised over height set point.

Row Clutch Diagnostic Self-test During Diagnostics.

Perform self-test with planter raised over height set point, stopped, and with proper system voltage.

After pressing self-test button, screen displays “These row clutches are operational”, followed by a list.



A63777 —UN—10NOV08

OUO6064,0000217 -19-21JUL10-2/2

Rotate Seed Meters

Use this to verify drillshaft and meters turn without pulling machine through a field. Planter remains stationary during this test.

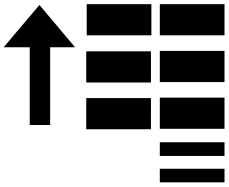
1. Select **Menu** >> **Planter** button >> **Diagnostics** softkey >> **Tests** tab.
2. Select **Rotate Meters** from drop down box.
3. Select **Motor Selection** input box and select All or any single motor to rotate.
4. The following must occur for this feature to function:
   - Planter must be unfolded.
   - Planter must be in raised position.
   - Planter must be stationary.
   - Variable rate hydraulics must be active.

Select **Meter Rotation** button. An audible tone sounds when meters stop turning. Each time the icon is pressed, the meters rotate approximately one half a revolution. If meters fail to move, a warning screen appears.

Rotate Seed Meter function can be accessed from the planter main Run page.

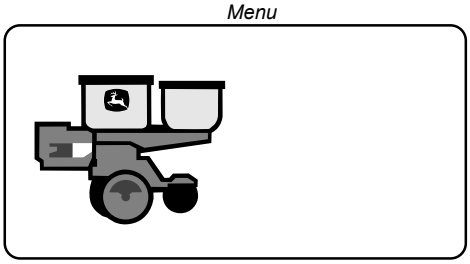
Screen Area Information

Planter Diagnostics — Planter Diagnostics
Tests — Tests
Rotate Meters — Rotate Meters
Motor Selection — Motor Selection
All — All
Ground Speed — Ground Speed
mph — Miles per hour
kph — Kilometers per hour
Wheel Sensor — Wheel Sensor
Active — Active
Inactive — Inactive
Planter Position — Planter Position
Up — Up
Down — Down
Motor — Motor
Target rpm — Target revolutions per minute
Actual rpm — Actual revolutions per minute



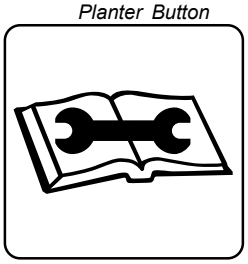
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59567 —UN—08MAR07

Diagnostic Softkey

A59898 —UN—02APR07

Meter Rotation Button

Valve % — Valve percentage

OUO6064,0000218 -19-21JUL10-1/1

Variable Rate Drive Component Activity

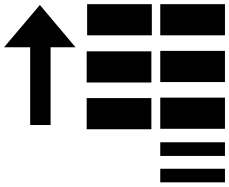
The Variable Rate Drive Data Screen is the single best source to diagnose VRD problems. The following must occur for the VRD system to operate.

- A target population must be entered and turned "ON".
- VRD hydraulics must be flowing continuously at highest flow rate.
- Planter must be unfolded and lowered to planting height.
- Height sensor must be calibrated and "Planter Position" must indicate "Down".
- Planter must be moving forward at planting speed.
- "Ground Speed" must indicate a ground speed.
- "Wheel Sensor" must indicate "Active".

NOTE: If Target RPM displays CAL, operate machine in the field a short distance with VRD active. This calibrates motors.

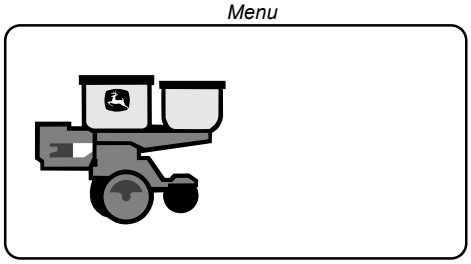
1. Select **Menu** >> **Planter** button >> **Diagnostics** softkey >> **Readings** tab.
2. Select **VRD Data** from drop down box.

   The status and activity for VRD components is shown.



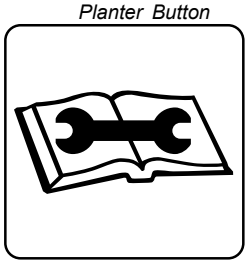
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59567 —UN—08MAR07

Diagnostic Softkey

Screen Area Information

Planter Diagnostics — Planter Diagnostics
Readings — Readings
Variable Rate Drive Data — Variable Rate Drive Data
Target Population — Target Population
seeds/ac — Seeds per acre
seeds/ha — Seeds per hectare
Ground Speed — Ground Speed
mph — Miles per hour
kph — Kilometers per hour
Wheel Sensor — Wheel Sensor
Active — Active
Inactive — Inactive
Planter Position — Planter Position
Up — Up
Down — Down
Motor — Motor
Target rpm — Target revolutions per minute
Actual rpm — Actual revolutions per minute
Valve % — Valve percentage
Left — Left
Right — Right
Open — Open
Closed — Closed

OUO6064,0000219 -19-21JUL10-1/1

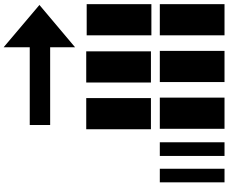
VRD Event Logs

Use this to record system activity for a period of time during an event. Your dealer uses this to diagnose the cause of the event.

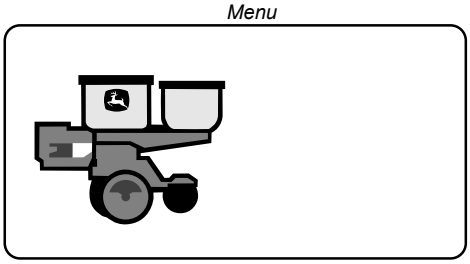
1. Select **Menu** >> **Planter** button >> **Diagnostics** softkey >> **Tests** tab.
2. Select **VRD Event Logs** from drop down box.
3. Select Zero button to clear all event logs.
4. Select **Start** button to start new event log.
5. Select **Event Log** button to view stored event log data.
6. Select **Previous Page** or **Next Page** buttons to view additional pages or select **Go to Page** input box and enter a specific page number.

Screen Area Information

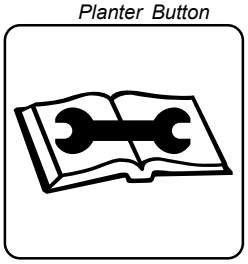
Planter Diagnostics — Planter Diagnostics
Tests — Tests
Clear all event logs — Clear all event logs
Start new event log — Start new event log
Start — Start
Stop — Stop
Event log — Event log
Hour Meter — Hour Meter
Ground Speed — Ground Speed
Wheel Sensor — Wheel Sensor
Active — Active
Inactive — Inactive
Planter Position — Planter Position
Motor — Motor
Target rpm — Target revolutions per minute
Actual rpm — Actual revolutions per minute
Valve % — Valve percentage
Target — Target
Seeds — Seeds
ac — Acre
ha — Hectare
Left — Left
Right — Right
Open — Open
Closed — Closed


A59325 —UN—19FEB07

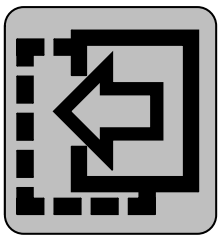
Menu


A59551 —UN—08MAR07

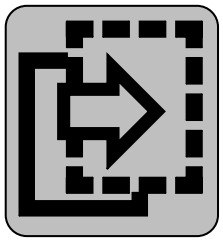
Planter Button


A59567 —UN—08MAR07

Diagnostic Softkey


A61134 —UN—12OCT07

Previous Page


A61135 —UN—12OCT07

Next Page


A59520 —UN—23JUL08

Clutch

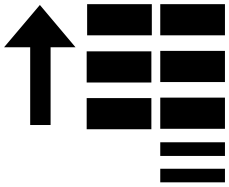
OUO6064,000021A -19-21JUL10-1/1

VRD Motor/Valve Flush

Use this to flush air from VRD hydraulic system.

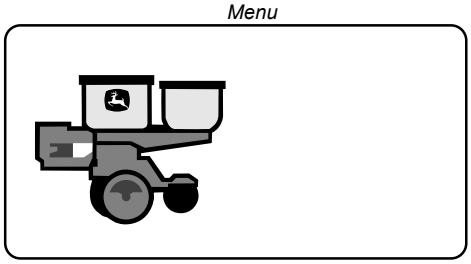
1. Select **Menu** >> **Planter** button >> **Diagnostics** softkey >> **Tests** tab.
2. Select **VRD Motor/Valve Flush** from drop down box.
3. Select **Flush Time** input box and enter a value of 1, 2, or 3 seconds.
4. Plant at a speed greater than 4 km/h (2 mph).

   Motors operate for duration indicated and flush air from system.



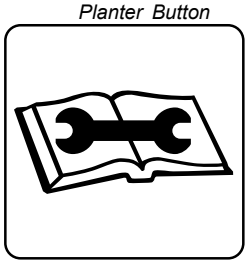
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59567 —UN—08MAR07

Diagnostic Softkey

Screen Area Information

Planter Diagnostics — Planter Diagnostics
Tests — Tests
VRD Motor/Valve Flush — Variable Rate Drive Motor/Valve Flush
Ground Speed — Ground Speed
mph — Miles per hour
kph — Kilometers per hour
Flush Time — Flush Time
secs — Seconds
Flush RPM — Flush revolutions per minute
Motor — Motor
Quick Start — Quick Start
Auto — Auto
Manual — Manual
Speed must be greater than 4 kmh (2 mph) — Speed must be greater than 4 km/h (2 mph)
speed needs to be increased — speed needs to be increased
Value out of range — Value out of range

OUO6064,000021B -19-21JUL10-1/1

Ride Dynamics Sensor Diagnostics

IMPORTANT: Remove system power before disconnecting sensor node harness.

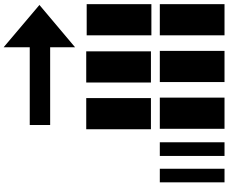
This screen is used to monitor ride dynamics sensor data for all rows on one screen.

1. Select **Menu** >> **Planter** button >> **Diagnostics** softkey >> **Readings** tab.
2. Select **Ride Dynamics** from drop down box.

   The percentage for ride quality sensors on the machine are shown. If the sensor is present but no data is being received, dashes "- -" are displayed.

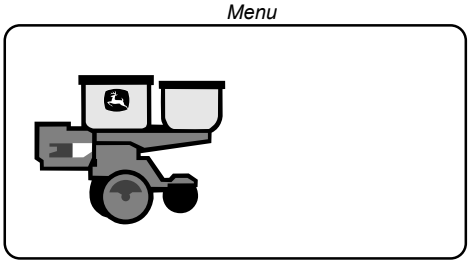
Screen Area Information

Planter Diagnostics — Planter Diagnostics
Readings — Readings
Ride Quality Sensor — Ride Quality Sensor
% — Percentages



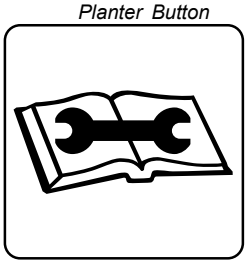
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59567 —UN—08MAR07

Diagnostic Softkey

OUO6064,000021C -19-28JUL10-1/1

Down Force Sensor Diagnostics

IMPORTANT: Remove system power before disconnecting sensor node harness.

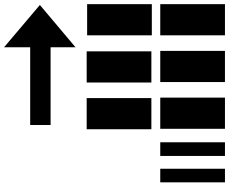
This screen is used to monitor down force sensor data for all rows on one screen.

1. Select **Menu** >> **Planter** button >> **Diagnostics** softkey >> **Readings** tab.
2. Select **Down Force** from drop down box.

   The gauge wheel load in pounds or Newtons for down force sensors on the machine is shown. If the sensor is present but no data is being received, dashes "- -" are displayed.

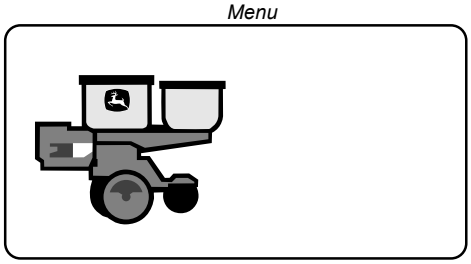
Screen Area Information

Planter Diagnostics — Planter Diagnostics
Readings — Readings
PDF Pressure Sensor — PDF Pressure Sensor
Down Force Sensor — Down Force Sensor
lbs — Pounds
N — Newtons



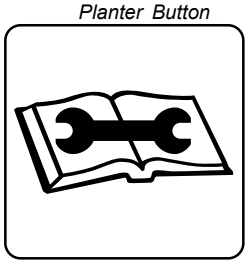
A59325 —UN—19FEB07

Menu



A59551 —UN—08MAR07

Planter Button



A59567 —UN—08MAR07

Diagnostic Softkey

OUO6064,000021D -19-28JUL10-1/1

Diagnostics Code

Diagnostics Codes should only be accessed by a trained technician. Refer to your John Deere dealer.

OUO6064,000021E -19-21JUL10-1/1

Troubleshooting

SeedStar™ 2 and SeedStar™ XP Troubleshooting

The SeedStar™ 2 and SeedStar™ XP monitoring system is equipped with a variety of self tests, diagnostic screens, diagnostic tests, and Caution and Warning Screens to help operators and dealer technicians locate the cause of a potential problem.

Familiarize yourself with the warning screens (see Warning Screens section in this manual) and diagnostics (see Diagnostics section in this manual) and perform the basic troubleshooting steps in this section before calling your John Deere™ dealer.

OUO6064,0000220 -19-29JUL10-1/1

Troubleshoot GreenStar™ Display

Symptom	Problem	Solution
Screen not readable.	Contrast incorrectly set.	Adjust contrast.
	Screen backlight set too low.	Increase backlight adjustment.
Incorrect speed displayed.	Incorrect calibration.	Enter correct radar calibration value or recalibrate on 122 m (400 ft.) course.
	Incorrect units of measure set.	Set correct units.
	Speed reading erratic.	Radar mount loose or vibrates.
No radar speed reading.	No calibration value entered.	Calibrate radar.
	Windy or dusty conditions.	Change to a different speed source.
No radar calibration value.	Display installed on 7000/8000/9000 Series or newer tractor with factory installed radar.	Calibrate radar per tractor operator's manual.

OUO6074,000106C -19-11OCT07-1/1

Troubleshoot SeedStar™ 2

Symptom	Problem	Solution
Planter icon does not appear on main menu.	Controller are not communicating on CAN bus.	Select main menu, select message center button, select CONTROL UNIT INFO button. Select implement CAN from drop-down box. Search for Control Unit PM1 (0xC0) and PA1 (0xC1). If you cannot find any of these addresses, the planter controllers are not communicating on the CAN bus. Check ECU power, ECU ground, CAN high, and CAN low at the 9-pin connector on back of tractor and planter controllers. (Use Service Advisor to find the pin locations for these connections
Warning: Verify power on pins 1 and 3.	Machine not equipped with variable rate drive.	If machine is not equipped with VRD, change drive source. (See CONFIGURE PLANTER DRIVE SOURCE in SETUP Basic Planter Configuration section.)
	Machine is equipped with variable rate drive.	Check pins 1 and 3 for 12 volt power at ISO coupler.
No vacuum reading.	Faulty wire connection.	Check wiring harness and repair.
	Vacuum blower not running.	Start vacuum blower motor.
	Vacuum line on wrong fitting on sensor.	Install vacuum line to sensor P2 fitting.
	Incorrect planter configuration.	Enter correct number of vacuum sensors. (See VACUUM SENSORS in SETUP Basic Planter Configuration section.)
	Vacuum section not displayed on RUN screen.	Enter correct number of vacuum sensors. (See VACUUM SENSORS in SETUP Basic Planter Configuration section.)
	Sensor connected to wrong wire harness lead.	If only one vacuum sensor is used, correct to wire labeled LEFT VACUUM.
Wrong vacuum reading.	Vacuum sensor not calibrated.	Stop vacuum blower motor and zero the sensor. (See VACUUM SENSORS in SETUP Basic Planter Configuration section.)
	Wrong calibration value.	Enter correct calibration value 5.66 (English units) or 143.76 (Metric units). (See VACUUM SENSOR in Diagnostics section.)

Continued on next page

OUO6064,000018B -19-29JUL10-1/4

Symptom	Problem	Solution
	Faulty vacuum sensor.	Replace sensor.
No high or low population reading.	Dirty seed tube sensors.	Clean sensors. (See Seed Tube Sensors section.)
	No radar speed.	Connect and calibrate radar or other speed source.
	Seed sensors turned off.	Turn split row option off. (See CONFIGURE FRAME, SPLIT ROW, AND DRIVE DISCONNECT WARNING in SETUP Basic Planter Configuration section.)
		Turn rows on. (See SEED SENSORS ON/OFF in SETUP Basic Planter Configuration section.)
	Faulty wire harness connection.	Check wiring harness connections.
		Correct wire harness connection. See Technical Manual TM111219.
Wrong population reading.	Dirty seed tube sensors.	Clean sensors. (See Seed Tube Sensors section.)
	Row spacing incorrect.	Enter correct row spacing. (See CONFIGURE FRAME, SPLIT ROW, AND DRIVE DISCONNECT WARNING in SETUP Basic Planter Configuration section.)
	Speed reading incorrect.	Enter correct radar calibration or troubleshoot radar.
	Windy or dusty conditions.	Change to a speed source other than radar. (See GROUND SPEED SOURCE in SETUP Basic Planter Configuration section.)
	Wrong units of measure.	Enter correct units. (See CONFIGURE LANGUAGE AND UNITS OF MEASURE in Monitor Settings section.)
	Speed reading too high.	See wrong speed reading above.
	Planting seed at a rate exceeding sensor capability.	Install AccuCount™ sensors or use Population Adjust.
	Planting Hill-Drop cotton.	Multiple seeds pass seed sensor at one time.

Continued on next page

OUO6064,000018B -19-29JUL10-2/4

Symptom	Problem	Solution
	Population Adjust value set incorrectly.	Verify actual field planting population. Compare to population reading. Adjust Population Adjust setting as needed.
Row failure warning.	Meter not planting.	Seed hopper empty, fill with seed.
	Harness problem.	Inspect harness and connections.
	Planting in rocky conditions.	Seeds knocked off disk, adjust row unit down force.
	Dirty seed tube sensors.	Clean sensors. (See Seed Tube Sensors section.)
	CCS system plugging or bridging.	Clear plug or bridge. Refer to planter operator's manual. Adjust CCS pressure as required.
Wrong area reading.	Planter width incorrect.	Enter correct planter width. (See CONFIGURE FRAME, SPLIT ROW, AND DRIVE DISCONNECT WARNING in SETUP Basic Planter Configuration section.)
	Half-width or third-width disconnect on.	Select “Reduce Area by these Rows" when using disconnect feature.
	Radar problem.	Correct radar calibration or troubleshoot radar.
No planter monitor reading.	Electrical connections not correct.	Check fuses in tractor. Check connections on back of rear tractor connector.
No liquid fertilizer reading.	There is no pressure.	Drive planter forward and verify pump is primed.
	Incorrect planter options.	Enter correct number of fertilizer sensors. (See LIQUID FERTILIZER SENSORS in SETUP Basic Planter Configuration.)
	Sensor connected to wrong wire harness lead.	If only one liquid sensor is used, it must be connected to wire labeled LEFT FERT.
	Faulty wire connection.	Check wiring harness and repair.
Wrong liquid fertilizer reading.	Wrong calibration value.	Enter calibration value 37.50 (English units) or 258.55 (Metric units). (See LIQUID FERTILIZER SENSOR in Diagnostics section.)

Continued on next page

OUO6064,000018B -19-29JUL10-3/4

Symptom	Problem	Solution
	Erroneous ZERO value.	Relieve trapped pressure in fertilizer manifold. ZERO sensor. (See LIQUID FERTILIZER SENSORS in SETUP Basic Planter Configuration section.)
	Faulty liquid fertilizer sensor.	Replace sensor.
	Sensor plugged.	Remove sensor and flush with warm water. Do NOT insert hard objected into sensor when cleaning. Sensing unit may be damaged.

OUO6064,000018B -19-29JUL10-4/4

Troubleshoot Variable Rate Drive

Symptom	Problem	Solution
Warning: Verify power on pins 1 and 3.	No 12 volt power on ISO coupler pins 1 and 3.	Check pins 1 and 3 for 12 volt power.
WARNING SCREEN: Motor 1, 2 disabled. Drive failed to respond. Verify hydraulic power. Check operator's manual. *NOTE: This warning occurs when motor speed should be greater than 18 rpm and the motors are currently not turning.*	No hydraulic pressure or flow.	Make sure hoses are correctly plugged into tractor SCV or power beyond. Verify correct location of pressure and return lines. A one way check valve is installed in the return line hose tip. Set tractor SCV time to continuous detent and flow. (See MAKING PROPER HOSE CONNECTIONS in the ATTACH AND DETACH VARIABLE RATE DRIVE section.) Activate tractor SCV.
	Low hydraulic pressure or flow to variable drive motors.	Maintain full tractor engine rpm. Increase tractor SCV flow setting. Minimize flow to other hydraulic functions. Verify tractor hydraulic system performance.
	No motor speed detected by variable drive controller.	Verify motor speed sensor electrical connections. Note: If this condition exists, the motor without any speed sensor feedback will rotate at a very high RPM for several seconds before full page warning is issued. Verify set screw in motor coupler in tightened to motor speed shaft. Verify hydraulic valve electrical connection.
	Mechanical binding causing high torque.	Wing to mainframe drive shaft couplers misaligned. Align drive shaft couplers. Failed drive shaft support bearings. Replace failed bearings. Misaligned seed meter and/or chemical hopper disconnects. Inspect and adjust seed meter and/or chemical hopper disconnects. Identify and repair any other sources of mechanical binding.

Continued on next page

OUO6074,000106E -19-13MAR09-1/8

Symptom	Problem	Solution
	A one hydraulic motor system is setup for two hydraulic motors.	Set number of hydraulic motors to one. (See ASSIGN MOTOR—ROWS, SPROCKETS, AND WIDTH DISCONNECT in SETUP Variable Rate Drive section.)
WARNING SCREEN: Motor 1,2 disabled. Drive failed to respond. Verify hydraulic power. Check operators manual. Minimum ground speed is. *NOTE: This warning occurs when motor speed is expected between 11.5 RPM and 18 RPM, but not occuring.*	Motors are not designed to operate less than 18 RPM. For motors to operate above 18 RPM, the ground speed must be above the minimum. The minimum ground speed varies depending on SETUP.	Operate planter above minimum ground speed.
	No hydraulic pressure or flow.	Make sure hoses are plugged into tractor SCV or power beyond. Verify correct location of pressure and return lines. A one way check valve is installed in the return line hose tip. Set tractor SCV to continuous detent and flow. Activate tractor SCV.
	Low hydraulic pressure or flow to variable drive motors.	Maintain full tractor engine RPM. Increase tractor SCV flow setting. Minimize flow to other hydraulic functions. Verify tractor hydraulic system performance.
	No motor speed detected by variable drive controller.	Verify motor speed sensor electrical connection. Note: If this condition exists, the motor without any speed sensor feedback will rotate at a very high RPM for several seconds before a full page warning is issued. Verify set screw in motor coupler is tightened to motor speed shaft. Verify hydraulic valve electrical connection.

Continued on next page

OUO6074,000106E -19-13MAR09-2/8

Symptom	Problem	Solution
	Mechanical binding causing high torque.	Wing to mainframe drive shaft couplers misaligned. Align drive shaft couplers.
		Failed drive shaft support bearings. Replace failed bearings.
		Misaligned seed meter or chemical hopper disconnects. Inspect and adjust seed meter and/or chemical hopper disconnects.
		Identify and repair any other sources of mechanical binding.
	A one hydraulic motor system is setup for two hydraulic motors.	Set number of hydraulic motors to one. (See ASSIGN MOTOR—ROWS, SPROCKETS, AND WIDTH DISCONNECT in SETUP Variable Rate Drive section.)
WARNING SCREEN: Motor 1,2 is operating at wrong speed. *NOTE: This warning occurs when the motor speed is less than 70 percent or greater than 120 percent of the correct motor speed for the selected population rate.*	Proportional valve contaminated.	Perform hydraulic motor/valve flush. (See VRD MOTOR/VALVE FLUSH in Diagnostics section.)
	Motors are not designed to operate less than 18 RPM. For motors to operate above 18 RPM, the ground speed must be above mph shown in Configuration Summary. The minimum ground speed varies depending on variable setup.	Operate planter above minimum ground speed.
	Mechanical binding causing torque/speed fluctuations.	Loose chain on drive system causing chain to jump sprocket teeth. Tighten chain idler.
		Misaligned chains causing chain to jump sprocket teeth. Align drive and driven sprockets. Align chain idler.
		Wing to mainframe drive shaft couplers misaligned. Align drive shaft couplers.
		Failed drive shaft support bearings. Replace failed bearings.
		Misaligned seed meter and/or chemical hopper disconnects. Inspect and adjust seed meter and/or chemical hopper disconnects.
		Identify and repair any other sources of mechanical binding.

Continued on next page

OUO6074,000106E -19-13MAR09-3/8

Symptom	Problem	Solution
Seed rate selection line appears black with white lettering.	Motor speed sensor detects no motion/motors are not turning.	Check connection to speed sensor.
	Faulty motor speed sensor.	Replace motor speed sensor.
	Seal blown in motor.	See your John Deere dealer.
	Hose clamps on motor speed sensor coupler loose.	Tighten clamps.
	Valve on hydraulic motor not getting any power.	Check connection to valve.
WARNING SCREEN: STOP. Power Interruption. Possible skip.	Electrical power lost to controller.	Check connection of 30-way METRAPAK™ connector on controller.
		Check 9-pin connector.
		Check 3-pin convenience outlet connector.
		See your John Deere dealer.
WARNING SCREEN: No Tractor Speed, Planter Moving.	The radar signal has been lost for a period of three seconds.	Verify radar connection.
WARNING SCREEN: Tractor/Planter Speed Error.	Faulty radar.	Verify radar connection.
NOTE: This warning occurs when radar speed is significantly different from planter motion sensor speed.		
Extremely windy, dusty conditions will give radar false readings and cause this warning.		
Excessive wheel slippage on tire with motion sensor mounted to it, will cause this warning.		
		Consult dealer or technical manual for further diagnostics.
	Faulty motion sensor.	Verify motion sensor connection.
		Verify motion sensor-to-disk clearance is 2—4 mm (0.08—0.16 in.) and wheel bearing is tight. Verify wheel is turning.
		Consult dealer or technical manual for further diagnostics.
No row failed warnings from planter monitor when drive motors stop.	Normal condition for planter monitor not to issue row failed warning below two mph.	Operate planter above two mph.

Continued on next page

OUO6074,000106E -19-13MAR09-4/8

Symptom	Problem	Solution
Hydraulic motors do not turn or stop turning.	Normal condition when ground speed is less than one mph under all conditions/setup. Depending on variable drive setup, the minimum speed the system will function at may be higher. Note: Planter monitor will not provide row failure warning under 3 km/h (2 mph).	Operate planter at ground speeds greater than minimum ground speed.
	A population of zero has been selected.	Population set rate must be greater than zero.
	No hydraulic pressure or flow.	Make sure hoses are correctly plugged into tractor SCV or power beyond. Verify correct location of pressure and return lines. A one way check valve is installed in the return line hose tip. Set tractor SCV to continuous flow. Activate tractor SCV.
	Low hydraulic pressure/flow to variable drive motors.	Maintain full tractor engine RPM. Increase tractor SCV flow setting. Minimize flow to other hydraulic functions. Verify tractor hydraulic system performance.
	Height sensor not calibrated.	Calibrate height sensor. (See height sensor calibration in SETUP Variable Rate Drive section.)
	Height sensor STOP position set too low (drawn machines).	Set height sensor STOP position at a frame height that allows the row unit opener blades to just touch the ground. If the stop position is set too low, the drive motors may turn on/off while planting due to wheel module float over rough ground conditions.
	Height sensor bracket not adjusted to specification (integral machines).	Adjust height switches. (See ADJUST PARALLEL ARM HEIGHT SWITCH in SETUP Variable Rate Drive section.)

Continued on next page

OUO6074,000106E -19-13MAR09-5/8

Symptom	Problem	Solution
	Planter motion sensor not active when planter is moving.	Verify motion sensor is active when planter is operating. (See VARIABLE RATE DRIVE COMPONENT ACTIVITY in Diagnostics section.)
		Verify electrical connections to motion sensor.
		Check 2 mm (0.08 in.) gap between motion sensor and tone wheel bolted to the wheel.
		Wheel bearings may be loose or failed causing an increasing/decreasing gap on wheel motion sensor.
	Mechanical binding causing high torque.	Wing to mainframe drive shaft couplers misaligned. Align drive shaft couplers.
		Failed drive shaft support bearings. Replace failed bearings.
		Misaligned seed meter and/or chemical hopper disconnects. Inspect and adjust seed meter and/or chemical hopper disconnects.
		Identify and repair any other sources of mechanical binding.
Hydraulic motor(s) continue to turn when planter is raised.	Motor proportional valve stuck from hydraulic oil contamination.	Perform flush motor procedure.
		Consult dealer or Technical Manual for proportional valve cleaning procedure.
		Replace hydraulic oil and oil filters in tractor.
Only one hydraulic motor of a two hydraulic motor system is turning.	Half width disconnect OPEN on either left or right side.	Close half width disconnect switch.
	Variable drive setup for only one motor. This condition will only engage the right hand side of the machine.	Set number of hydraulic motors to two. (See ASSIGN MOTOR—ROWS, SPROCKETS, AND WIDTH DISCONNECT in SETUP Variable Rate Drive section.)
Motors turning backwards.	Full tractor pressure is being applied to the “T” port on the hydraulic valve manifold.	Plumb hydraulic lines so hydraulic pressure is applied to the port labeled “P”.
	Motor orientation on planter backwards.	See installation instructions for correct orientation.
	Valve manifold orientation on motor backwards.	See installation instructions for correct orientation.

Continued on next page

OUO6074,000106E -19-13MAR09-6/8

Symptom	Problem	Solution
Hydraulic motors turn at an erratic speed.	Proportional valve contaminated.	Perform hydraulic motor/valve flush. (See VRD MOTOR/VALVE FLUSH in Diagnostics section.)
	Low hydraulic pressure/flow to variable drive motors.	Maintain full tractor engine rpm. Increase tractor SCV flow setting. Minimize flow to other hydraulic functions. Verify tractor hydraulic system performance.
	Mechanical binding causing torque/speed fluctuations.	Loose chain on drive system causing chain to jump sprocket teeth. Tighten chain idler. Misaligned chains causing chain to jump sprocket teeth. Align drive and driven sprockets. Align chain idler. Wing to mainframe drive shaft couplers misaligned. Align drive shaft couplers. Failed drive shaft support bearings. Replace failed bearings. Misaligned seed meter and/or chemical hopper disconnects. Inspect and adjust seed meter and/or chemical hopper disconnects. Identify and repair any other sources of mechanical binding.
	Motors are not designed to operate less than 18 rpm. For motors to operate above 18 rpm, the ground speed must be above the minimum. The minimum ground speed varies depending on SETUP.	Operate planter above minimum ground speed.
When starting to plant from a stopped position, hydraulic motor(s) do not turn for a brief period. This creates a seeding gap in the field.	Normal operation to have an approximate 0.9 m (3 ft) seeding gap using Quick Start or a 9 m (10 ft) skip without Quick Start.	Lower planter a short distance ahead of where seed must reach the ground. This may require backing up, if planter is stopped in the middle of the field. Do not back up while planter is lowered.
	NOTE: These approximate distances will be longer if seed is not loaded on the seed meter disk.	Use Quick Start feature to minimize skip. Load seed on the seed meter disk prior to the start of productive seeding by lowering the planter into the DOWN position and driving forward with the vacuum on if required.

Continued on next page

OUO6074,000106E -19-13MAR09-7/8

Symptom	Problem	Solution
		When using Quick Start, begin forward travel in a low gear to take off slower. By taking off slow and then shifting gear to speed up, the skip becomes smaller.
Many seeds on end of row when stopping abruptly.	VRD system requires a brief delay to shut off.	Start downshifting prior to end of row to reduce forward travel speed prior to stopping at end. This will allow VRD system more time to slow down and reduce the amount of seeds dropped at end when planter is stopped.
Set population does not match monitored population.	Vacuum set too low/high.	Adjust vacuum to appropriate level.
	Problem with seed meter.	See operator manual for troubleshooting solutions.
	Wrong seed disk selected in variable drive setup.	Enter correct seed disk or meter. (See VRD MACHINES—CONFIGURE METER, CROP, DISK, AND RATES in SETUP Seed Rates section.)
	Wrong sprocket combination selected in variable drive setup.	Enter correct sprocket combination. (See ASSIGN MOTOR—ROWS, SPROCKETS, AND WIDTH DISCONNECT in SETUP Variable Rate Drive section.)
	Wrong row spacing.	Enter correct row spacing. (See CONFIGURE FRAME, SPLIT ROW, AND DRIVE DISCONNECT WARNING in SETUP Basic Planter Configuration section.)
	Wrong units of measure.	Enter correct units. (See CONFIGURE LANGUAGE AND UNITS OF MEASURE in Monitor Settings section.)
	Wrong row unit type selected.	Select correct row unit type. (See SET METER TYPE AND ROW UNIT DRIVE TYPE in SETUP Variable Rate Drive section.)
	Seed sensors can not count seeds passing through sensors at high rates.	Normal operation of planter monitor. (See POPULATION ADJUST in the SETUP Seed Rates section.)
Wrong seed population based on seed used/acre but selected rate and planter monitor agree.	Radar not calibrated.	Calibrate radar. (See RADAR CALIBRATION in Performance Monitor section.)

OUO6074,000106E -19-13MAR09-8/8

Symptom	Problem	Solution
Calculated acres do not match actual acreage.	Machine width not correct in planter monitor setup.	Verify machine width. (See CONFIGURE FRAME, SPLIT ROW, AND DRIVE DISCONNECT WARNING in SETUP Basic Planter Configuration section.)
	When row failed warning was issued, seed sensors were ignored and machine width reduced.	This is a normal planter monitor mode selected by the operator. This is a temporary condition that resets when ground speed is reduced below 3 km/h (2 mph) then increases above 3 km/h (2 mph).
	Radar not calibrated.	Calibrate radar. (See RADAR CALIBRATION in Performance Monitor section.)
Radar speed displayed on GreenStar™ display different than tractor performance monitor/corner post display.	Either the GreenStar™ display or tractor performance monitor/corner post display not calibrated for radar.	Calibrate radar. (See RADAR CALIBRATION in Performance Monitor section.) See tractor operators manual to calibrate tractor performance monitor/corner post display.

OUO6074,000106E -19-13MAR09-9/8

Troubleshoot RowCommand™

Symptom	Problem	Solution
Caution: No CAN Bus communications with Electronic Power Modules (EPM). Some row clutches will not disengage.	EPM is off line and not communicating with controller.	Check all connections on EPM that is not communicating.
Check Connections. A restart is required to attempt communications with EPMs.		
		See your John Deere dealer.
Caution: Electronic Power Modules (EPM) are not responding to CAN Bus commands. Some row clutches will not disengage.	EPM has failed to respond to CAN Bus commands.	Check all harness connections to EPM that is not responding.
Check connections. A restart is required to attempt communications with EPMs.		
	EPMs not active	Switch failed EPM with known EPM that is functioning and retest.
		See your John Deere dealer.
Caution: Low Supply Voltage on Electronic Power Modules (EPM). Clutch system self-test not available.	Voltage has fallen below 10.5 V on any input supply on individual EPM.	Check EPM fuse.
		Check all harness connections on EPM with low voltage.
		Increase engine speed to increase alternator output.
		See your John Deere dealer.
Caution: Supply Voltage Out of Range on Electronic Power Modules (EPM). Clutch system self-test not available.	Voltage has dropped below 9.0 V on any input supply on individual EPM.	Check EPM fuse.
		Check all harness connections to EPM that has low voltage.
		Increase engine speed to increase alternator output.
		See your John Deere dealer.
Clutch self-test at start up does not function.	An EPM is not communicating or voltage feed out of range, and clutch test is not available.	Check EPM fuse.
		Check harness connections to non responsive EPM. See your John Deere dealer.

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NS43404,00000EE -19-13MAR09-1/3

Symptom	Problem	Solution
RowCommand™ row sections for rows 1-10 not visible on display.	EPM 1 not communicating or not active.	Inspect fuse for EPM 1 (10 amp) on EPM harness. Determine if EPM 1 is operational. Refer to Diagnostics tab, Tests, EPM status. Inspect harness from EPM to appropriate rows for loose connections or damage. Exchange EPM with a functional EPM to verify harness or EPM problem. Contact your John Deere dealer.
	Supply voltage out of range.	Inspect fuse for EPM 1 (10 amp) on EPM harness. Determine if EPM 1 is operational. Refer to Diagnostics tab, Tests, EPM status. Inspect harness from EPM to appropriate rows for loose connections or damage. Exchange EPM with a functional EPM to verify harness or EPM problem. Contact your John Deere dealer.
RowCommand™ row sections for rows 11-20 not visible on display.	EPM 2 not communicating or not active.	Inspect fuse for EPM 2 (10 amp) on EPM harness. Determine if EPM 2 is operational. Refer to Diagnostics tab, Tests, EPM status. Inspect harness from EPM to appropriate rows for loose connections or damage. Exchange EPM with a functional EPM to verify harness or EPM problem. Contact your John Deere dealer.
RowCommand™ row sections for rows 21-30 not visible on display.	EPM 3 not communicating or not active.	Inspect fuse for EPM 3 (10 amp) on EPM harness. Determine if EPM 3 is operational. Refer to Diagnostics tab, Tests, EPM status.

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NS43404,00000EE -19-13MAR09-2/3

Symptom	Problem	Solution
		Inspect harness from EPM to appropriate rows for loose connections or damage. Exchange EPM with a functional EPM to verify harness or EPM problem. Contact your John Deere dealer.
RowCommand™ row sections for rows 31-40 not visible on display.	EPM 4 not communicating or not active.	Inspect fuse for EPM 4 (10 amp) on EPM harness. Determine if EPM 4 is operational. Refer to Diagnostics tab, Tests, EPM status. Inspect harness from EPM to appropriate rows for loose connections or damage. Exchange EPM with a functional EPM to verify harness or EPM problem. Contact your John Deere dealer.
RowCommand™ row sections for rows 41-48 not visible on display.	EPM 5 not communicating or not active.	Inspect fuse for EPM 5 (10 amp) on EPM harness. Determine if EPM 5 is operational. Refer to Diagnostics tab, Tests, EPM status. Inspect harness from EPM to appropriate rows for loose connections or damage. Exchange EPM with a functional EPM to verify harness or EPM problem. Contact your John Deere dealer.
Low voltage warning when all RowCommand™ clutches are powered (meter disengages).	Excessive electrical load.	Decrease electrical load. Increase engine RPM to increase alternator output. Verify that alternator output is within specifications.

NS43404,00000EE -19-13MAR09-3/3

Troubleshoot SeedStar™ XP

IMPORTANT: Remove system power before disconnecting sensor node harness.

Symptom	Problem	Solution
Gauge wheel load sensor circuit error.	Sensor node controller on the rows listed has detected an open circuit or short circuit in the gauge wheel load sensor circuit.	Check wiring harness and electrical connectors from gauge wheel load sensor to sensor node controller. See your John Deere™ dealer.
Seed Singulation percentage low.	Meter not adjusted properly.	Refer to Rate Charts and Settings Manual. Confirm correct disk type and vacuum level for seed being used. Confirm brush type and meter hub adjustment. Confirm correct talc usage and mixing. Check and adjust double eliminator setting (if used).
	Excessive ground speed.	Increase row unit down force first. If singulation does not improve, reduce ground speed.
	Excessive row unit dynamics (bounce).	Increase row unit down force first. If singulation does not improve, reduce ground speed.
	Erratic Drive line Operation.	Check meter drive line. Check chains, bearings, drill shaft bearings, drill shaft couplers for proper alignment, lubrication, and smooth operation. Refer to planter operator's manual.
	Alarm setpoint too high.	Reduce alarm set point. Factory default setting is 92 percent. Press and hold Singulation button for 4 seconds to go to Alarms and Limits Setup Screen. Enter "0" to turn off singulation alarm.
Seed Spacing Coefficient of Variation (CV) percentage high.	Excessive ground speed.	Increase row unit down force first. If singulation does not improve, reduce ground speed.
	Excessive row unit dynamics (bounce).	Increase row unit down force first. If singulation does not improve, reduce ground speed.
	Erratic Driveline Operation.	Check meter drive line. Check chains, bearings, drill shaft bearings, drill shaft couplers for proper alignment, lubrication, and smooth operation. Refer to planter operator's manual.

Continued on next page

OUO6064,0000651 -19-10NOV11-1/2

Symptom	Problem	Solution
	Meter not adjusted properly.	Refer to Rate Charts and Settings Manual. Confirm correct disk type and vacuum level for seed being used. Confirm brush type and meter hub adjustment. Confirm correct talc usage and mixing. Check and adjust double eliminator setting (if used).
	Alarm set point too low.	Increase alarm set point. Factory default setting is 0.35. Press and hold Seed Spacing CV button for 4 seconds to go to Alarms and Limits Setup Screen. Enter "0" to turn off Seed Spacing alarm.
Down force margin too low.	Pneumatic down force setting exceeds frame or wing weight and cause planter frame to "float".	Reduce down force setting if possible. See your John Deere dealer for frame ballast options.
	Target margin set point too high for planting conditions.	Reduce target margin set point. Press and hold any SeedStar™ XP button for 4 seconds to access Alarms and Limits Setup Screen.
Down force margin too high.	Pneumatic down force setting too high for planting conditions.	Reduce pneumatic down force setting.
	Target margin set point too low for planting conditions.	Increase target margin set point.
	Row unit weight exceeds down force margin requirement.	Install up force springs to reduce row unit down force.

OUO6064,0000651 -19-10NOV11-2/2

Troubleshoot Single Set-Point Pneumatic Down Force System

Symptom	Problem	Solution
Compressor does not run.	Blown Fuse.	Check and replace tractor convenience outlet fuse and compressor battery power harness fuse (if used).
	No electrical power at compressor.	Inspect compressor wiring harness and battery harness (if used) and connectors for damage. Repair or replace as required.
	Bad pressure switch.	Remove all air pressure from air storage tank. Unplug pressure switch. Check continuity across switch wires. If no continuity, replace switch.
	Bad relay.	Replace relay.
Row unit down force does not increase or decrease.	Increase or decrease solenoid valve stuck closed.	Actuate manual override for increase or decrease solenoid valve several times. Remove all air pressure from system. Clean or replace solenoid valves. Shop air and tire pressure gauge can be used to adjust air pressure in air spring circuit manually until problem can be fixed.
	Open circuit on solenoid wires (caution screen appears on GreenStar™ display and diagnostic trouble code is set).	Check and repair wiring harness.
	Open circuit within solenoid (caution screen appears on GreenStar™ display and diagnostic trouble code is set).	Check continuity of solenoid coil. Replace solenoid.
Air spring circuit relief valve opens.	Increase solenoid valve stuck open.	Actuate manual override for increase solenoid valve several times. Relieve all pressure from system. Clean or replace solenoid valve.
	Weak relief valve spring.	Replace relief valve.
Tank circuit relief valve opens.	Pressure switch stuck ON.	Turn tractor key switch OFF. With pressure in tank, unplug pressure switch connector. Check continuity across switch wires. If there is continuity, replace switch.
Incorrect down force reading displayed on monitor.	Pressure sensor not calibrated.	Calibrate sensor. Refer to INTEGRATED PNEUMATIC DOWN FORCE AIR PRESSURE SENSOR in SeedStar™ 2 SETUP Basic Planter Configuration section.

Continued on next page

OUO6064,00005DE -19-10NOV11-1/2

Symptom	Problem	Solution
Pneumatic Down Force solenoid circuit error.	PM2 controller has detected an open circuit or short circuit in the pneumatic downforce increase or decrease solenoid circuit.	Check wiring harness and electrical connectors from PM2 controller to pneumatic downforce solenoids. Check continuity of solenoid coils.
Incorrect down force margin reading displayed on monitor.	Gauge wheel sensor not calibrated.	Raise planter to remove load and zero all sensors.
	Gauge wheel arms binding	Grease gauge wheel arm pivots.
		Replace worn parts if binding occurs.

OUO6064,00005DE -19-10NOV11-2/2

Troubleshoot Dual Set-Point and Active Pneumatic Down Force System

Symptom	Problem	Solution
Compressor does not run.	No hydraulic pressure or flow.	Tractor raise/lower hydraulic circuit must be in the continuous retract detent position.
	Planter raised	Planter must be lowered in plant position.
	Row unit height switch not functioning.	Properly adjust row unit height switch.
		Verify wiring harness connections to row unit height switch.
	Hydraulic motor solenoid valve not functioning.	Verify hydraulic motor solenoid electrical connection.
		Check and repair solenoid wiring harness.
		Check continuity of solenoid coil. Replace coil.
	Bad pressure switch.	Remove all air pressure from air storage tank. Unplug pressure switch. Check continuity across switch wires. If no continuity, replace switch.
Row unit down force does not increase or decrease.	Increase or decrease solenoid valve stuck closed.	Actuate manual override for increase or decrease solenoid valve several times. Remove all air pressure from system. Clean or replace solenoid valves. Shop air and tire pressure gauge can be used to adjust air pressure in air spring circuit manually until problem can be fixed.
	Open circuit on solenoid wires (caution screen appears on GreenStar™ display and diagnostic trouble code is set).	Check and repair wiring harness.
	Open circuit within solenoid (caution screen appears on GreenStar™ display and diagnostic trouble code is set).	Check continuity of solenoid coil. Replace solenoid.
Air spring circuit relief valve opens.	Increase solenoid valve stuck open.	Actuate manual override for increase solenoid valve several times. Relieve all pressure from system. Clean or replace solenoid valve.
	Weak relief valve spring.	Replace relief valve.

Continued on next page

OUO6064,00005DF -19-10NOV11-1/2

Symptom	Problem	Solution
Tank circuit relief valve opens.	Pressure switch stuck ON.	Turn tractor key switch OFF. With pressure in tank, unplug pressure switch connector. Check continuity across switch wires. If there is continuity, replace switch.
Incorrect down force reading displayed on monitor.	Pressure sensor not calibrated.	Calibrate sensor. Refer to INTEGRATED PNEUMATIC DOWN FORCE AIR PRESSURE SENSOR in SeedStar™ 2 SETUP Basic Planter Configuration section.
Pneumatic Down Force solenoid circuit error.	PM2 controller has detected an open circuit or short circuit in the pneumatic downforce increase or decrease solenoid circuit.	Check wiring harness and electrical connectors from PM2 controller to pneumatic downforce solenoids. Check continuity of solenoid coils.

OUO6064,00005DF -19-10NOV11-2/2

Troubleshoot Variable Rate Fertilizer

Symptom	Problem	Solution
WARNING Screen: Pump Motor Drive Power is not detected. Turn off all power. Connect the 7-pin connector. Restart.	Power lost to motor.	Ensure 7-pin connector is plugged into tractor.
	Loose connector or pin.	Check 7-pin connector for proper voltage and inspect pins. See your John Deere dealer.
	Pinched wires in harness.	Inspect harness for damage. See your John Deere dealer.
	Blown fuse.	Check tractor fuses.
WARNING Screen: Pump # Position Sensor not detected. Unable to adjust rate/ calculated rate goes to zero.	Pump position sensor harness lead has an open or short.	Inspect position sensor leads for damage and proper connection.
		Check position sensor circuit on wiring harness. See your John Deere dealer for sensor diagnostics.
Unable to adjust rate. Calculated rate goes to zero.	Pump RPM sensor harness has an open or short.	Inspect pump RPM sensor leads for damage and proper connection.
		Check pump RPM sensor lead wiring harness. See your John Deere dealer.
WARNING Screen: Pump # No Response to Control Command. Unable to adjust rate.	Pump position sensor harness has an open or short.	Check pump position sensor leads for damage and proper connection.
		Check pump position sensor circuit on wiring harness. See your John Deere dealer.
	Loose set screw on sensor.	Check motor set screw for tightness.
	Motor does not turn.	See your John Deere dealer for motor diagnostics.
		Check motor wiring harness for damage.
GreenStar™ display shows “Controller Disconnected”.	Signal lost after power up.	Perform CAN diagnostics. See your John Deere dealer.
WARNING Screen: All Devices Unable to Communicate.	CAN signal lead short to power or ground.	Perform CAN diagnostics. See John Deere dealer.
Motor does not adjust or blown fuse.	Pinched wires.	Inspect for pinched wires and repair.
	Damaged connector pin.	Inspect connector pins and repair.

Continued on next page

OUO6074,000106F -19-13MAR09-1/2

Symptom	Problem	Solution
	Stretched wires due to improper routing.	Inspect for damaged wires and repair.
WARNING Screen: Over Application.	Small rate sprocket used on pump.	Use large sprocket.
WARNING Screen: Under Application.	Large rate sprocket used on pump.	Use small sprocket.
WARNING Screen: V.R. Fert System Problem. Calculated rates may not be accurate.	Drive wheel slippage.	Increase pressure in variable rate fertilizer pneumatic contact wheel spring.
	Incorrect RPM sensor signal.	Adjust sensor for correct gap. If gap is correct, replace sensor.

OUO6074,000106F -19-13MAR09-2/2

Beginning of the Season Service

Before using the monitor after it has been stored, inspect for cleanliness and damage.

Thoroughly inspect monitor display, controller wedgebox, harnesses, radar and sensors for loose parts and adjust as necessary.

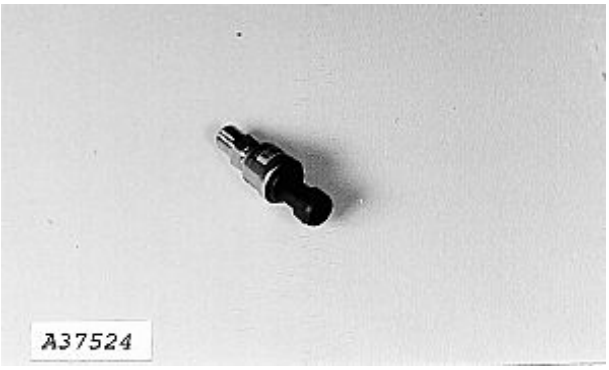
Clean any dirt or grease that may have accumulated before operating.

AG,OUO1074,1591 -19-12MAY04-1/1

Liquid Fertilizer Sensor

Remove sensor and flush with clean water.

Do not insert any object or tool into fluid port.



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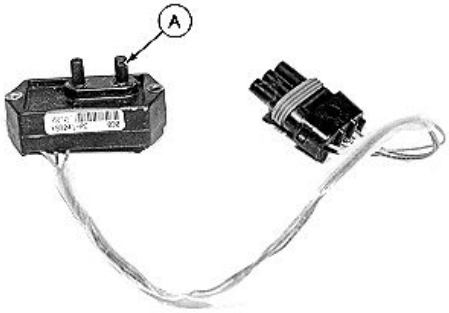
AG,OUO1074,1592 -19-24APR00-1/1

Vacuum Sensor

NOTE: P2 port (A) used for hose connection.

Protect when using water to wash planter.

A—P2 Port



A40613 —UN—30DEC96

AG,OUO1074,1593 -19-24APR00-1/1

Pneumatic Down Force Air Spring Storage Procedures

When Storing Machine

IMPORTANT: Do not remove air from system. Air spring must be pressurized and allowed to leak down slowly to 0 psi.

- Park machine with 11 kg (25 lb.) of down force displayed on monitor or approximately 55 kPa (0.5 bar) (8 psi) on gauge.

When removing from storage:

CAUTION: Avoid serious injury from exploding parts due to over-pressurization or operating the system without all components in place.

Do not inflate system above 827 kPa (8.2 bar) (120 psi).

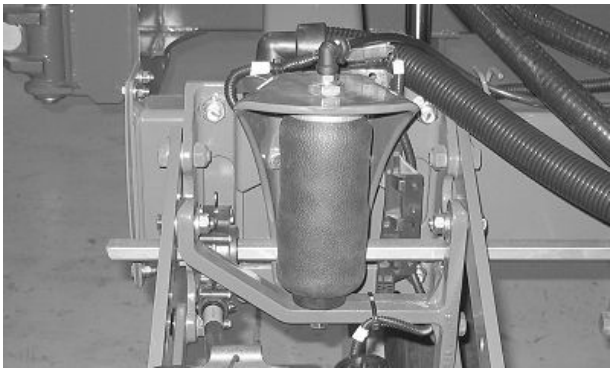
Do not remove pressure relief valve.

Do not pressurize system unless all row unit components are in place.

IMPORTANT: Do not operate if a pinched or unrolled air spring occurs. Lower system pressure until air spring can be rolled by hand. Roll air spring back over lower piston. Incremental lowering of machine is required to start air spring rolling over lower piston.

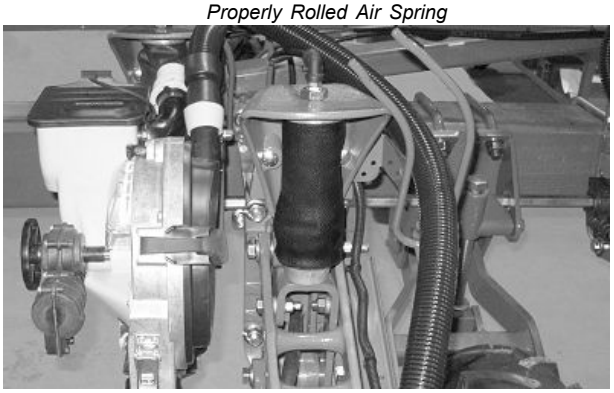
When Removing Machine From Storage

- To fill the planters down force air springs for the first time after removing from storage:
  - In Auto mode, system begins filling the air springs to achieve the target margin when lowered to planting position.
  - In Set-Point mode, system begins filling the air springs to achieve the target down force when lowered to planting position.
- Pressurize system to a minimum of 16 kg (35 lb.) of down force displayed on monitor or approximately 83 kPa (0.8 bar) (12 psi) on gauge.
- Minimum down force during operation is 16 kg (35 lb.) displayed on monitor or approximately 103 kPa (1.0 bar) (15 psi) on gauge. Failure to maintain this pressure can result in damage to air springs.



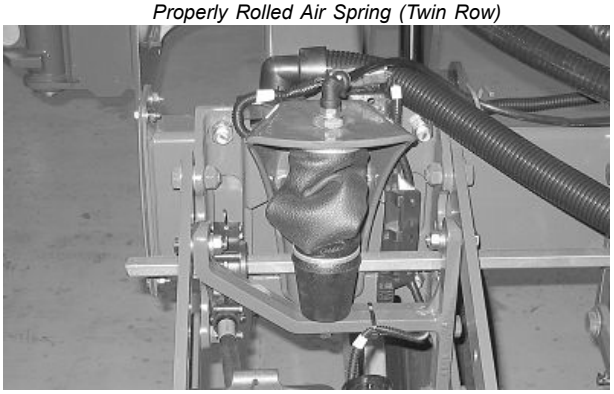
A68216 —UN—22JUL10

Properly Rolled Air Spring



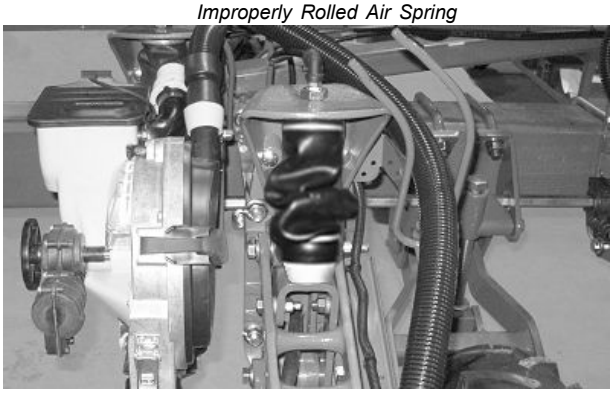
A66834 —UN—25MAR10

Properly Rolled Air Spring (Twin Row)



A68217 —UN—22JUL10

Improperly Rolled Air Spring

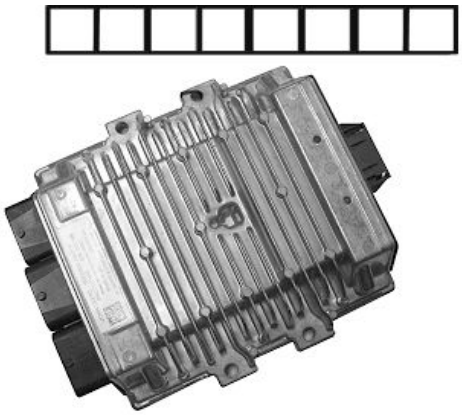


A66835 —UN—25MAR10

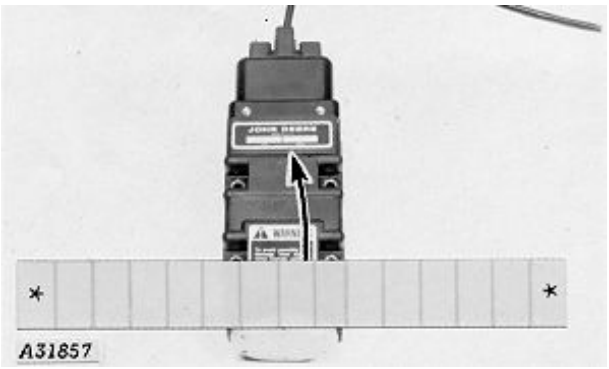
Improperly Rolled Air Spring (Twin Row)

OUO6064,00005E0 -19-10NOV11-1/1

Record Serial Numbers



A68393 —UN—28JUL10



A31857 —UN—13MAR89

Radar Serial Number

A50245 —UN—12SEP02

Seed Monitor/Variable Rate Drive Controller

A50245 —UN—12SEP02

Second Seed Monitor/Variable Rate Drive Controller on Machines Over 24 Rows

OUO6064,0000221 -19-21JUL10-1/1

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