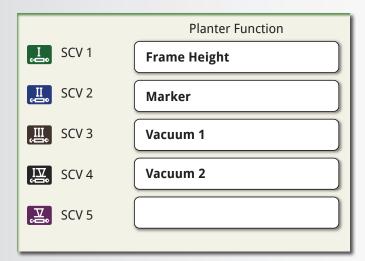






CAUTION: Review, understand, and follow all procedures and safety messages in the operator's manual. This guide is not a replacement for the operator's manual.

NOTE: The 4640 Universal Display is only compatible with John Deere GPS receivers.



Verify the hydraulic connections. See the connection recommendations in the planter operator's manual. Record the hose functions and SCV number. Vacuum and frame control automation depend upon the correct SCV assignment. Other functions depend upon the correct setup. Activate the Tractor Implement Automation for Easy Fold with 2-point hitch planters.





Turn OFF (disengage) the electric power generation (EPG) using the toggle before deactivating the tractor or planter power generation.



To access the SCV Assignments, select the Advanced Settings button in the SeedStar™ application.

NOTE: If the planter is moved to a new tractor, install the planter application from the Software Manager onto the tractor display.

NOTE: To perform a Runoff procedure through a mobile device, download the PlanterPlus™ application from the Apple™ App Store™ or the Google Play™ store.



Help information is available from the pages accessed through the SeedStar $^{\text{\tiny{M}}}$ application.

(

Advanced Settings



SeedStar™



Equipment Manager



PlanterPlus™

Pre-Operational Checks (30 Series or Newer Tractors)

Select the Advanced Settings button in the SeedStar[™] application and verify the basic parameters for various systems. Verify the SCV connections to the tractor and the SCV assignments. See the planter operator's manual for connection recommendations.

Select the Equipment Manager application and verify the implement profile settings for the planter.

Select the SeedStar™ application and then select the Setup screen area. Verify the crop type and seed variety within the Work Setup. Select the seed disk used for the crop. See the seed meter settings in the planter operator's manual. Verify the Product Alarms and the Gauge Wheels downforce settings.

Select the Target Population screen area and establish the targets for this crop.

Verify that the planter is ready (tire pressure, frame height, lubrication, service, and other adjustments). Refer to the planter operator's manual or the PlanterPlus™ application.

Select the Diagnostics and Calibrations. Select the Calibrations tab. To determine if calibrations are needed, review the application Help.

Activate the tractor or planter power generation and then engage the EPG system.

Engage the vacuum and select the Fill button.

Select the Vacuum and establish the targets for this crop. See the planter operator's manual for vacuum recommendations.

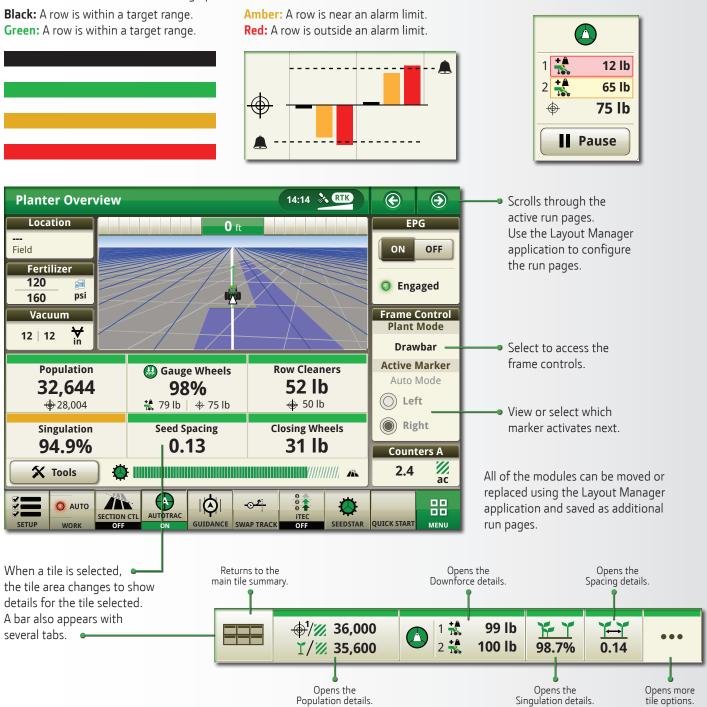
Select the Diagnostics and Calibrations. Select the Procedures tab. Perform a runoff, make the required meter adjustments, and then conduct performance testing as required. See the planter operator's manual for settings and adjustments.

PlanterPlus[™] helps with setup and configuration. It also allows Runoff and Meter Performance tests to be controlled from a mobile device. Download the application from the Apple[™] AppStore[™] or the GooglePlay[™] store.

Run Pages

Color Indicators:

Colors are used on the tiles, the bar graphs, and the value readouts.



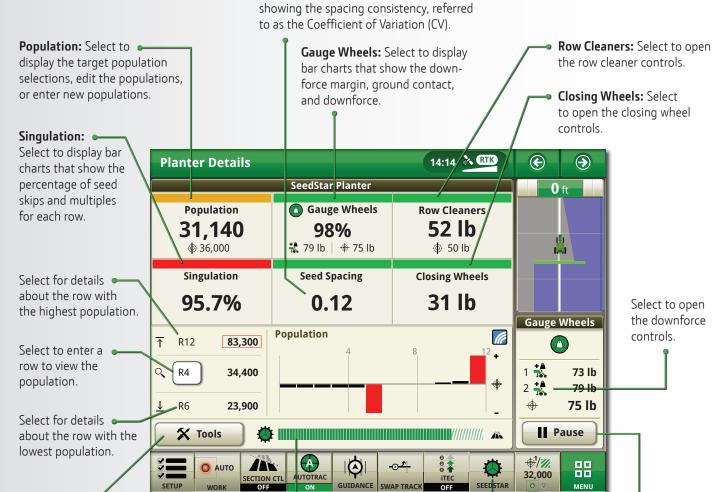
Layout Manager — Run Pages



Layout Manager

To add shortcut keys, select the Menu, Applications tab, Layout Manager application, and the Active Set or All Run Pages tab.

- Select a run page to edit or select Add New.
- Select the Add Module. After selecting Add, choose an application to see the associated modules available.
- Save the edited or new run page. Select the Active Set tab and add the new run page. To arrange the order displayed using the arrow buttons, select a page on the list.



Access to quick link buttons for helpful features.

Operational status of each meter

manually or by section control.

that is commanded ON or OFF either

- Seed disk, crop variety alarm settings, and drives status.
- Basic or advanced target population option.
- Speed source, planter height, and downforce settings.
- Population at a glance.

• Meter fill and electric power generation.

Add the SeedStar™ shortcut

keys using the Layout Manager

- Diagnostic link.
- Tractor hydraulic assignments for automation.

application.

• Frame folding controls.

 Vacuum, row cleaner, and closing wheel settings.

Select to pause the active

downforce adjustment while

in the active downforce mode.

- Fast Start.
- Planter and row Runoff.
- Various calibration and diagnostic screens

Layout Manager — Shortcut Bar



Layout Manager

To add shortcut keys, select the Menu, Applications tab, Layout Manager application, and the Shortcut Bars tab.

- Select the shortcut bar to edit.
- Select the shortcut keys to remove or add. After selecting Add, choose an application to see the associated shortcuts available.
- Select a shortcut key to add and save the edited shortcut bar.

Run Page Modules

Electric Power Generation



Engages and disengages power to the row unit motors. This does not control the tractor PTO or hydraulics that run the power generator.



Generator is not detected.

The generator is on and functioning normally.

An error is detected.

Error

Vacuum



Manual vacuum control engaged.



Vacuum sensor error.



Hydraulics are not engaged.



Automated vacuum engaged.



Tractor hydraulics are incompatible.



Tractor is compatible. Vacuum sensor error.



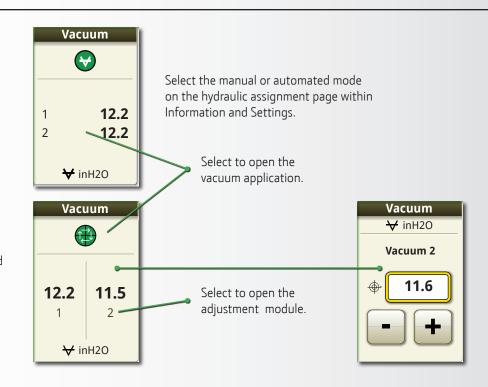
Tractor hydraulics are configured



Tractor hydraulics are not engaged.



The seed meters are not filled with seed.



Gauge Wheel Downforce



Active Downforce engaged.



Downforce sensor error.



Downforce system is ready.



Planter is lowered.



Ground speed met.



is paused.



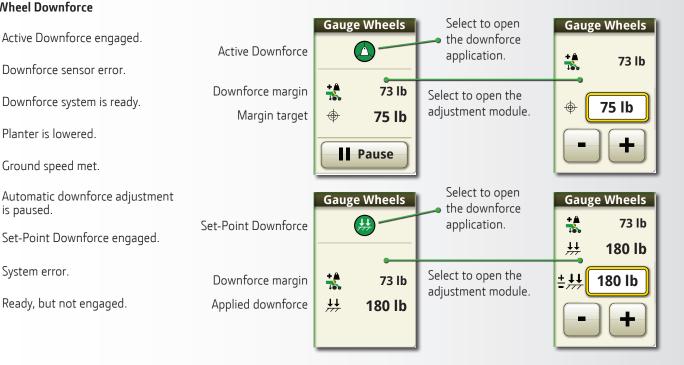
Set-Point Downforce engaged.



System error.



Ready, but not engaged.



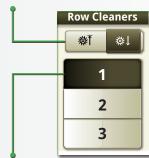
Row Cleaners (if equipped)



Select to open the Row Cleaner control screen in the SeedStar™ application.

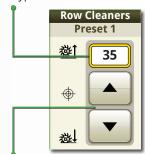
Run Page Modules

Select to engage or disengage the row cleaners.



Select to choose one of the preset pressures. Adjust the pressure for each preset in the SeedStar™ application.

Select to enter a pressure using the keypad.



Select to adjust the pressure by the increment set on the Information and Settings screen.

Section Control

To command the sections ON and OFF, select the Section Control area of the Run Page or enter the SeedStar™ application.

To group the outer rows if the GPS signal is weak, select the Equipment Manager application.

Enable or disable the alarm for rows commanded OFF in the Advanced Settings.



Indicates the drive status of the seed metering system.



Indicates sections that are actively delivering seed.



Indicates inactive sections that were commanded OFF with the arrow buttons.

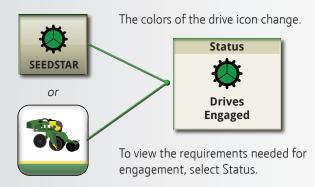


Indicates inactive sections that were commanded OFF by Section Control.



Indicates that a section is commanded ON and the planter is ready to plant.

Indicates that a meter drive section is disabled.





Select to access manual control of the sections.



Use the buttons for manual command of the sections.



Indicates that the Section Control application is in command of the sections.



Indicates that Section Control is disabled.



Indicates that Section Control is not available or not activated.



Error detected. Messages appear.



The electric power generation is OFF.



The electric power generation is ON.



The ground speed requirement is met.



The planter is lowered.



All sections are commanded off, but all the drive requirements are met and ready.

Short Keys

The SeedStar[™] shortcut key provides access to the SeedStar[™] application. The icon alters appearance according to the status of the seed meter drives. Select the drives status on the SeedStar[™] application main page for details.

The Target Population shortcut key shows the selected target population. When only two target populations are loaded, the key toggles between the two populations. When three or more target populations are loaded, the key provides direct access to the target population selection and setup page.

If the meter drives requirements are met (except motion and ground speed) the Fast Start shortcut key engages the seed meters, at the target population, for six seconds. This provides immediate seed delivery when the planter is motionless. If the ground speed requirement is met within the six seconds, normal operation resumes.

To auto-enable Fast Start when the planter is lowered, select the Advanced Settings within the SeedStar™ application.

The Transport Mode shortcut key indicates if this function is ON or OFF. Transport Mode is only available on planters using both a frame control box and Individual Row Hydraulic Downforce.









Frame Control

(if equipped)

Access the frame control through a run screen module or the Frame Control button on the main page of the SeedStar $^{\text{M}}$ application.

The Frame Control module shows the main control mode and the current function. To adjust all frame functions, select the module screen area.

The Marker area shows the current mode of operation and which marker is active. To switch the active marker, select a button.

Do not detent the selective control valves (SCV) while controlling the Transport frame functions.



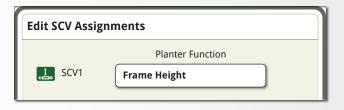
Edit SCV Assignments

If equipped with Easy Fold, verify the SCV assignments and height settings through the advanced settings in the SeedStar™ application before use.

Tractor Implement-Automation Activation:

- 8R and 9R (IT4 or newer tractors)
- **6R and 7R** (FT4 tractors)

The automation feature must be activated to use Easy Fold with planters that connect to a tractor 2-point hitch. Drawbar planters do not use the tractor implement automation. Engage the tractor auto-resume to activate the Easy Fold feature. If the 2-point hitch movement is interrupted by the operator, the tractor Auto Resume must be selected to resume the Easy Fold control of the hitch.



Tractor Implement-automation activation requirements for EasyFold:

- Install the Implement Automation.
- Set the tractor upper hitch-limit to 98%.
- Set the tractor lower hitch-limit to 0%.
- Match the planter SCV assignments and hydraulic connections. Extend and retract must also be correctly aligned.
- Set the planter transport height to 96%.
- Set the planter Folding and Plant height accurately.
- Engage the Auto Resume.

NOTE: The Frame Control must be set on Automated SCV Control with Easy Fold.



Auto Resume

Tiles and Tabs

Population: Shows the planter average (actual) and the current target (the average target with advanced populations). To open a target population selections area, select the tile or tab. The bar graph shows the actual population per row and is selectable for expanded detail.

NOTE: If low limit alarms occur consistently with wide rows and high population, input a Population Adjustment in the seed set up area of the application.

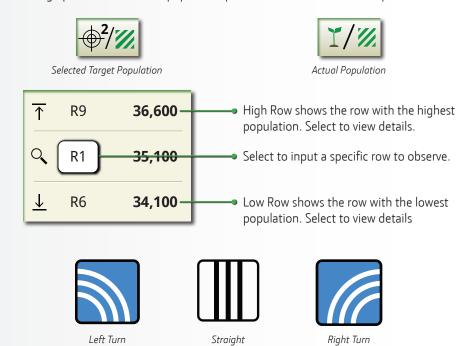
Field Check ÷ Display Population = Population Adjustment Value.

Population
35,400

+ 36,000

⊕²/*‰* 34,000 1/*‰* 34,000

To edit the seed variety layout when using the advanced seed populations, select the Work Setup application.



The Curve Compensation icon appears above the bar graph when the feature is turned ON. Select the More Features tab (available after selecting a tile) to access the curve compensation feature.

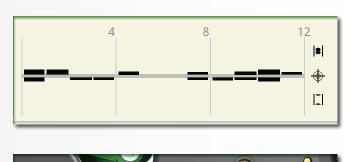


Singulation: Shows the average seed singulation for all rows. To open a bar graph that shows the percentage of multiples across the top of the graph and the percentage of skips across the bottom, select the tile or tab.

Singulation 98.0%

<u>↓</u> R12 **76.3%**

The row with the lowest singulation percentage is shown above the graph.



O



Multiples: Shows the average percentage of multiple seed drops and the row with the highest percentage of multiple seed drops.

Skips: Shows the average percentage of seed skips and the row with the highest percentage of seed skips.

Easy Adjust Row Cleaners: The tile shows the target and current down pressure. Depending on the setup, the tile either shows the pressure for the entire planter or shows the wing frames and center frame separately. To open a screen area for row cleaner control, select the tile. The screen area for row cleaner control provides information and control of the row cleaner system.





To view or hide the Up Pressure, choose the option on the advanced settings page in the SeedStar™ application.







Indicates the status. Select to view a status page.

Wings	Center	Up Pressure
⊕ 35	⊕ 35	⊕ 35
₩↓ +36	☆↓ ↑36	₩ ↓ +36

Unsynchronized View

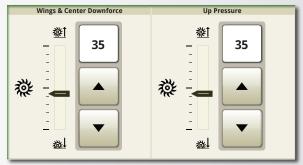
In general, adjust the down pressure alone to move the row cleaners up and down. To increase the flotation, equally reduce the down pressure and up pressure. To decrease the flotation, equally increase the down pressure and up pressure.



Toggles the row cleaners down into the active position or up into the inactive position.



Select a preset. The target pressures and actual pressures appear. To make adjustments to the preset selected, select the pressure screen area. Any adjustment is automatically saved to the preset selected. To reset the defaults, see the Advanced Settings.



Synchronized View

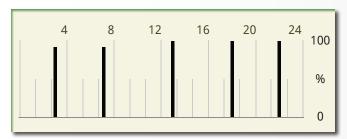
The slide bar represents the pressure value, not the row cleaner position.



Ride Quality: The tile shows the average ride quality for all rows. To open a bar graph, select the tile.

Ride Quality	
↑ R36	100%
<u>↓</u> R45	91%

The values next to the graph show the row with the highest ride quality and the row with the lowest ride quality.



The solid bars show the ride quality for the rows equipped with sensors. The quantity of sensors vary by model and configuration.





Ride quality can affect seed spacing and depth (especially for MaxEmerge™ planters). Increasing the downforce improves the ride quality, but too much downforce reduces the quality of the seed furrow. Once the downforce is optimized, if the readings remain too low, reduce the ground speed to improve the ride quality.

Gauge Wheels: Both the tile and tab indicate if the downforce system is in Active or Set-Point mode. The tile shows the percentage of ground contact, the downforce margin, and the target margin. The tab shows the downforce margin. To open bar graphs for downforce and ground contact, select the tile or tab. The readings are only available from rows with downforce sensors.

NOTE: Before setting the downforce, set the frame weight distribution (if equipped), the row cleaners (if equipped), and the closing wheels.

To access the adjustment page, select the icon left of the bar graph, the bar graph, or the run page module (Gauge Wheels).





The downforce margin is shown in the upper bar chart. The target margin is displayed as well as the two rows with the highest and lowest reading.





Applied Downforce: The bars show the applied downforce for each row unit that has a downforce sensor. The average force is shown next to the toggle button.





Ground Contact: The bars show the percent of good ground contact. The percentage is also shown for the overall average and the row with the lowest value.

To verify the correct downforce as the field conditions change, use field checks. Plant a short distance with a closing wheel held above the soil (use a chain or strap with the closing force at zero). Inspect the seed furrow. Adjust the target margin or applied force accordingly.



Too Much Downforce: The furrow walls are compacted, root growth is impeded, and the furrow is difficult to close.



Too Little Downforce: The furrow walls crumble and seed placement is inconsistent.







The toggle button alternates the lower bar chart between Ground Contact and Applied Downforce.



Set-Point Mode: In this mode, the applied force is adjustable and remains at the set level. The downforce margin is displayed. The icon turns green when the downforce is engaged.



Active Mode: In this mode, the target margin is adjustable and the system automatically sets the applied force. Areas of the icon turn green as the conditions are met for engagement. To view the status indicators, select the icon.



Ideal Downforce: The furrow walls are firm, but not compacted.

NOTE: With the row units in the planting position with downforce applied, attempt to rotate the depth gauge wheels by hand. Wheels that turn too easily are a sign of too little downforce. Wheels that are impossible to turn are a sign of too much downforce.

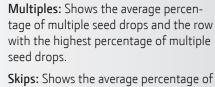
Seed Spacing
0.12



Seed Spacing: Both the tile and tab show the average seed spacing for all rows. To open a bar graph that shows the consistency of seed spacing, select the tile or tab. Spacing is less consistent as the bar height increases. The degree of consistent spacing is displayed as the coefficient of variation (CV).

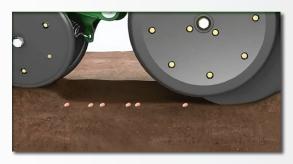
Multiples	
Avg	1.1%
↑ R7	6.3%
Skips	
Avg	1.3%
↑ R12	5.8%

↑ R10 **0.18**



Skips: Shows the average percentage of seed skips and the row with the highest percentage of seed skips.

The row with the least consistent spacing is shown above the graph.



- Zero CV is perfect spacing.
- 0.35 CV is the default setting.

Pneumatic Closing Wheels: The tile shows the current setting. The setting numbers represent the four positions of mechanical closing wheels and add a fifth position. The fifth position provides 32 kg (75 lb) more down pressure than mechanical closing wheels produce. **NOTE:** The zero setting maintains a minimum air pressure and down pressure. Zero is not a float position.





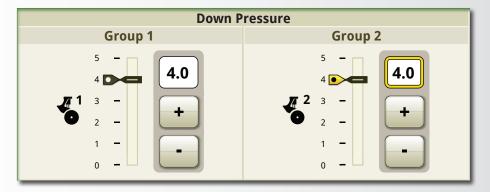
To enable or disable the closing wheel groups or the leak detection alarm, see the advanced settings page in the SeedStar™ application.







Indicates the status. Select to view a status page.



The closing wheel groups can be adjusted separately or synchronized to respond identically to a single adjustment. The groups are factory plumbed (typically separated for the wings and main frame).

Curve Compensation: The tile shows the status of the feature. To open the feature control, select the tile.







Straight



Right Turi

The status is shown next to the on-off toggle button when the feature is ON.

The bar graph displays the ground speed for each row unit. The ground speed for the tractor and for the row units with the highest and lowest speed is shown above the graph.

The meter motors adjust to the ground speed for an accurate population at every row.



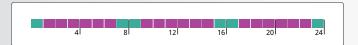
The indicator on the gauge shows the current degree of turn.

Other Settings

Advanced Target Populations: Allows you to assign different populations for each row.



The Advanced Target Population must be selected in the Advanced Settings.



Access the target-population set up page from the Population screen area on the run page or application overview or from a Target Population module. Select the screen area for the variety layout.



- Select the Work Setup application and select the crop variety.
- Select a single, dual, or custom layout.
- Enter each variety with a corresponding color designation.
- Access the target population Set up and edit the target population for each color designation.

Settings Manager: Saves the values and settings entered by the operator. The application saves things like the seed disk and crop settings, alarm limits, population targets, planter configurations, advanced planter settings, Implement Profile settings, downforce, row cleaner, and pneumatic closing wheel settings, and tractor settings like SCV and transmission.

NOTE: To save settings, the planter must be actively planting.

To overwrite an existing configuration or create a configuration, select Save Current Settings, choose the settings to save, and select Save.

To Load (recall) an existing configuration, select the configuration, select OK, choose the settings to recall, and select OK.

To edit a configuration title, select the configuration, select Edit, change the title, and select OK.

To recall settings correctly, the planter must be attached to the same tractor with the same hitch configuration. When connecting to another tractor, either save a new configuration or overwrite a current configuration using the new tractor parameters.



To choose one of the following actions, select the Settings Manager application.

- Select a saved configuration to initiate those settings.
- Edit a configuration title.
- Either create a configuration or overwrite the selected configuration with the current settings.

Split Row Alternation: Quickly alternate between narrow and wide row spacing.





- Select the Planter Application.
- Select the Setup screen area.
- Select the Seed tab and change the number of rows enabled.

Other things to remember when you change crops are target populations, seed meter settings, alarm settings, marker length, hitch position, vacuum settings, and more. The Settings Manager is a good place to save the wide and narrow row configurations.

How to Find Topics

SeedStar[™] Application: **Select**



Onscreen Help: Select







or and then the Help tab.

Implement Profile: Select



then Planter:

All navigation begins from the SeedStar $\!\!^{\mathtt{m}}$ application main page unless otherwise noted by the * symbol. Most items are also accessible from the run page modules.

Topic	Item	Navigation to Item	
Advanced Settings Help	Information and Settings Help	From a SeedStar™ App screen > select the Help Information or Advanced Settings button > select Help tab > scroll to and select the Advanced Settings link > select a topic link for Help.	
		From a SeedStar™ App screen > select the Help Information or Advanced Settings button > select Help tab > select SeedStar™ quick link > select SeedStar™ link > scroll to and select the Advanced Settings link > select a topic link for Help	
	On-off toggle	EPG screen area	
	Motor speed gauge		
	Hydraulic pressure gauge	Diagnostics and Calibrations button > EPG > Overview with	
EL D	Component status	the planter power generation system	
Electric Power Generation	System voltages		
Generation	Main voltage gauge		
	Gearbox temperature	Diagnostics and Calibrations button > EPG > Overview with	
	Component status	the tractor power generation system	
	System voltages		
	Drive status	Status	
Seed Meter Motor	Rotate to fill the seed disk	Meter Fill button	
	Rotate to purge the brush	Brush Purge button	
	Cran coloction	Setup > Work Setup button > Crop and Variety input boxes	
Sood Motor	Crop selection	*Work Setup application > Crop and Variety input boxes	
Seed Meter	Seed disk (bowl) selection	Setup > Seed tab > Seed Disk input box	
	Split row enable/disable	Setup > Seed tab > Number of rows enabled	
Seed Motor Starts and Stops (Frame Height)	Common or separate heights	Advanced Settings button > Seed Motor > Edit Settings > Common Threshold checked or unchecked	
	Set the position	Advanced Settings button > Seed Motor > Edit Settings > input box or set current position button	
Fast Start	Automatically enable as planter lowers	Advanced Settings button > Fast Start > check or uncheck Auto-Enable	
	Override section control during Fast Start	Advanced Settings button > Fast Start > check or uncheck Override	
	Manually activate Fast Start	Shortcut key	
Seed Meter Runoff	Meter, row, and planter runoff	Diagnostics and Calibrations button > Procedures tab > Runoff	

Topic	ltem	Navigation to Item
Basic Target Population	Choose the basic populations method	Advanced Settings button > Population Setup unchecked
		Target Population > radio button
	Select another target	Population screen area (*or run page overview) > Population tab > radio buttons
	Change or enter a target negulation	Target Population > input box
	Change or enter a target population or prescription	Population screen area (*or run page overview) > Population tab > Edit button > input boxes
	Choose the advanced populations method	Advanced Settings button > Population Setup checked
	Load seed varieties and assign varieties to rows	Setup > Work Setup > Crop input > Variety > Single, Dual, or Custom tab > seed variety selections > select, add, edit, or delete a variety > Assign variety to row > OK
		*Menu > Work Setup application > Variety > Single, Dual, or Custom tab > seed variety selections > select, add, edit, or delete a variety > Assign variety to row > OK
Advanced Target		Overview > Population tab > Population screen > radio buttons or edit
Population	Select or enter target populations and prescriptions	Target Population > radio buttons or edit
	prescriptions	*Run page module or overview > Population tab > Population screen > radio buttons or edit
	Change crop varieties	Overview > Population tab > Population screen > variety assignments > configuration > variety selection or assignment
		Target Population > variety assignments > configuration > variety selection or assignment
		*Run page module or overview > Population tab > Population screen > variety assignments > configuration > variety selection or assignment
Frame Control	Height sensor calibration	Diagnostics and Calibrations button > Diagnostics > Height - Drives > Calibrate
	Height setting for seed meter start/stop	Advanced Settings button > Seed Motor > Edit Settings
	Automation on-off	Vacuum > SCV Settings > Manual SCV Control or Automated SCV Control
	Automation on-off	Advanced Settings button > SCV Settings > Manual SCV Control or Automated SCV Control > Edit button > input boxes
Vasuum	Adjustment (with automation ON)	Vacuum > input box or +/- buttons
Vacuum	Adjustment increment (with automation ON)	Advanced Settings button > Vacuum Automation > Increment Adjust > input box
	Adjustment (with automation OFF)	Tractor hydraulic flow (on-screen or manual valve)
	System status	Vacuum > mode icon
	Sensor setup	*Equipment Manager application > Sensor Setup > input box
	Seed Population	Setup > Product Alarms tab > input boxes
Alarms	Population Adjust	Setup > Product Alarms tab > input box
	Seed Singulation	Setup > Product Alarms tab > input box
	Seed Spacing	Setup > Product Alarms tab > input box
	Liquid Fertilizer	Setup > Product Alarms tab > input box
	Downforce Margin	Setup > Gauge Wheels tab > input boxes
	Ground Contact	Setup > Gauge Wheels tab > input boxes
	Ride Quality	Setup > Gauge Wheels tab > input boxes

Торіс	ltem	Navigation to Item
	Access all downforce	Population screen area (*or run page overview) > Gauge Wheels tab > Margin, Contact, or Downforce screen area
		Setup > Gauge Wheels tab > Downforce Settings button *Run page module > Status icon (available on some modules
	Active or Setpoint on-off toggle	See the Access all downforce item
	Davida kiinaa	See Access all downforce item
	Pause timer	*Available on some run page modules
Downforce	Pause timer duration	Advanced Settings button > Gauge Wheels > Pause Timer > input box
	D ():	See the Access all downforce item
	Downforce adjustment	*Available on some run page modules
	Downforce adjustment increment	Advanced Settings button > Gauge Wheels > Increment Adjust > input box
	System status	See the Access all downforce item
	A1	Setup > Gauge Wheels tab > input boxes
	Alarms	See the Access all downforce item
Bar Graphs	Population	Population screen area (*or run page overview) > Population tab
	Downforce (Setpoint and Margin)	Population screen area (*or run page overview) > Downforce tab
	Seed Singulation	Population screen area (*or run page overview) > Singulation tab
	Seed Spacing	Population screen area (*or run page overview) > Spacing tab
	Ride Quality	Population screen area (*or run page overview) > Other tiles tab > Ride Quality tab
	Seed Meter and belt revolutions	Population screen area (*or run page overview) > Other tiles tab > rpm tab
	Seed Motor and belt motor torque	Population screen area (*or run page overview) > Other tiles tab > Torque tab
Row Cleaners	Control screen	Population screen area (*or run page overview) > Other tiles tab > Row Cleaners tab
		*Run screen module
	Enable and disable	Advanced Settings button > Row Cleaners > toggle button
	Adjustment increments	Advanced Settings button > Row Cleaners > Step Size input box
	Reset to defaults	Advanced Settings button > Row Cleaners > Reset button
Closing Wheels	Control screen	Population screen area (*or run page overview) > Other tiles tab > Closing Wheels tab
		*Run screen module
	Group enable and disable	Advanced Settings button > Closing Wheels > toggle button
Curve Compensation	Details screen	Population screen area (*or run page overview) > Other tiles tab > Curve Compensation tab
		*Run screen module
	Enable and disable	Toggle button on the Details screen





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