

JOHN DEERE S7 and X9 Combines
Model Year 2025
Harvest Automation
User Guide



Helpful Resources

YouTube Links

[Harvest Automation Videos - Playlist](#)

[Pre-Harvest Setup with Ops Center](#)

[Harvest Automation In-Cab Display - Setup and Review](#)

[Predictive Ground Speed Automation](#)

[Harvest Settings Automation](#)

[Machine Sync and Unloading-on-the-Go](#)

Getting Started Landing Pages

[Ultimate Landing Page](#)

[Premium Landing Page](#)

Other Important Resources

[Getting Started Checklist](#)

[Forward Camera Calibration Video](#)

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WHY Harvest Tech



PLAN Harvest



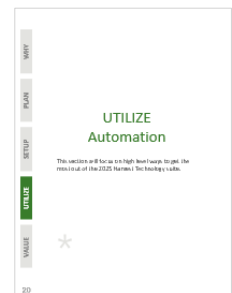
Auto Send

Calibrations

SETUP Automation



UTILIZE Automation



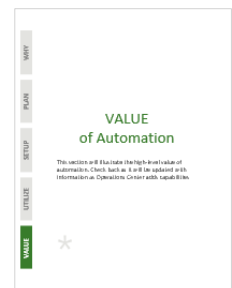
Predictive Ground
Speed Automation

Harvest Settings
Automation

Reasons for
Change

Good Limits
and Practices

VALUE of Automation



WHY

Harvest Technology

MY25 Harvest Automation is a leap forward in technology. The Ultimate Technology Package offers a 20% increase in productivity while maintaining desired job quality and instilling high customer confidence and comfort.



Predictive Ground Speed Automation

Predictive Ground Speed Automation incorporates two additional sensing inputs into the software logic for automatically controlling the combine's ground speed during harvest: Satellite Views and Forward Cameras. Individually, these technologies predict crop biomass by detecting crop variability ahead of the combine and thereby providing necessary ground speed adjustments where identified. Working dually together, both subsystems enable uptime performance as they can supply crop predictions throughout every possible key corner condition during harvest. Bring this industry exclusive harvesting automation system to your customer's operation to realize higher productivity gains from their model year 2025 combine unlike before. Plus, customers utilizing Predictive Ground Speed Automation will be able to focus more on other harvesting tasks, such as monitoring header height or on-the-go unloading, and less concern towards controlling speed with having these new sense and act technologies.

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Harvest Settings Automation

Crop conditions vary throughout the day and often change over the course of the entire harvest season depending on crop type, variety, terrain, humidity, temperature, weather events, and various other factors. Differing crop conditions are also likely to exist between finishing one field to opening the next. Therefore, having the combine properly optimized will ensure that all captured grains are properly threshed, resulting in minimized grain loss and cleaner tank samples which customers seek and their buyers monetize upon quality.

Available for all model year 2025 and newer S7 and X9 combines, Harvest Settings Automation advances from the past Combine Advisor™ solution by providing the operator with automatic adjustments during harvest of five fundamental internal combine settings - threshing clearance, rotor speed, fan speed, sieve clearance, and chaffer clearance. With this technology in control, automatic combine setting adjustments can occur precisely at the right place, at the right time, and consistently throughout the long harvest days of the season.

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PLAN Harvest

This section will contain the necessary steps on:

- Preparing software
- Preparing offboard technology
- Familiarize with new technology



Pre-Harvest Activities

To get the most out of your Harvest Technology, update to the latest software

From the release notes:



Get Your Combine Ready with the 2025 Pre-Harvest Software Update

Your combine is about to get even smarter. When you accept this year's Pre-Harvest Software. Update for your John Deere Model Year 2025 combine, you'll unlock new and expanded features for an even more productive harvest this summer/fall.

For 2025, verify with your dealer that the machine has received the Pre-Harvest Software Update

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Pre-Harvest Activities

Verify your boundaries to ensure your combine is ready to utilize its predictive inputs. Satellite View files enable the combine to build a predictive yield map for your field.

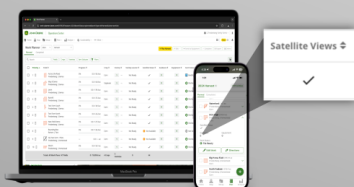
What you need to do:

Understand the following scenarios to take the appropriate next steps enabling Satellite Views

Scenario 1 – Field has both an active boundary & seeding/planting data
(i.e. Progressive Customer with good Operations Center data management and organization)



No User Action is needed!



Work Plan is automatically created from planting/seeding doc data earlier in the season

Auto-Send
using Work Planner



Work Plans are automatically sent to Combine(s) with activated Ultimate License once Satellite Views are READY

Pre-Harvest Activities

Scenarios, continued

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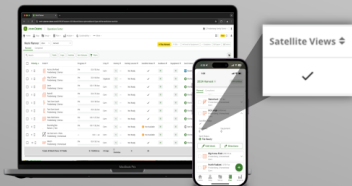
VALUE

Scenario 2 – Field does not have any previous data nor an active boundary (i.e. a customer new to Operations Center, custom harvester working on behalf of a client, etc.)



User Action Needed:

1. Draw Field Boundaries
2. Create a Harvesting Work Plan with crop type specified (don't need to send)



Auto-Send
using Work Planner



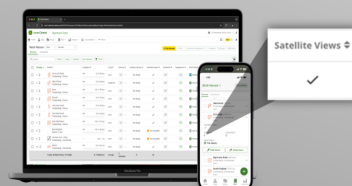
Work Plans are automatically sent to Combine(s) with activated Ultimate License once Satellite Views are READY

Scenario 3 – Field has active boundary, but NO planting/seeding data (i.e. customer using older / competitive equipment, or was planted by a different customer or org)



User Action Needed:

1. Create a Harvesting Work Plan with crop type specified (don't need to send)



Auto-Send
using Work Planner



Work Plans are automatically sent to Combine(s) with activated Ultimate License once Satellite Views are READY

Pre-Harvest Activities

Scenarios, continued

Scenario 4 – Field has planting data documented but NO active boundary

(i.e. newer customer to Operations Center, infrequently managed boundaries, etc.)



Crop Type



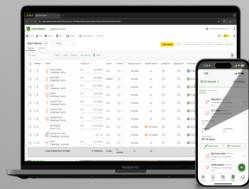
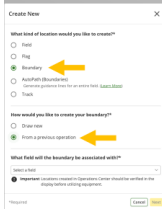
Boundary

Work Plan Requirements



User Action Needed:

1. Draw Field Boundaries in Land
(recommended from previous coverage)



Auto-Send
using Work Planner



Work Plans are automatically sent to
Combine(s) with activated Ultimate License
once Satellite Views are READY

Verify that files have been sent to machine

John Deere Operations Center

Home Map Setup **Plan** Analyze Sustainability More

Welcome Harvester

Fields **Equipment**

Search

Make Type Model Tags

Inactive Equipment (20)

Equipment ID	Fuel %	Oil %
1H0X910XCR0835004	30%	33%
1H0X911XHR0835007	11%	38%
1RW8410DERB242319	30%	21%

Plan

- Maintenance
Plan equipment maintenance intervals and repairs.
- TELUS Agronomy
Prescription Creator
Create agronomic recommendations for field work.
- Work Planner**
Plan work and prescriptions to send to your equipment.

Sent Status

Sent Status	Work Order #	Time to Complete
Imported 1 of 1		29 h 50 min
Imported 1 of 2		9 h 35 min
Imported 1 of 2		4 h 20 min
Imported 2 of 2		16 h 40 min
Imported 1 of 2		---
Imported 1 of 2		---
Imported 1 of 2		---
Imported 1 of 2		---
Imported 1 of 2		---
Imported 1 of 2		---
Imported 1 of 2		---

Pre-Harvest Calibrations

Make sure the Forward Camera Calibration and Advanced TCM Calibration have been completed.

[Link to Forward Camera Calibration Video](#)

Forward Camera Calibration Setup

Option 1:
Calibrations at dealership or farm

1 Find textured flat ground such as gravel, dirt, or grass

With head off, move machine to center-back of this section

2

Option 2:
In-Field Calibration

55+ feet

Shaved Crop
As Level Ground as Possible

40+ feet

1 Find a level spot Shave rectangle of crop with very low stubble as shown above

2 Remove head and move machine to center-back of shaved section

Option 1 or 2:
Calibration

3

- Navigate to Menu → Machine Settings → Calibrations & Procedures
- Select Harvest → Forward Camera Calibration
- Follow Calibration Procedures

HARVESTING SOLUTIONS

[Link to video for Advanced TCM](#)

Menu ?

Machine Settings

Applications

System

StarFire Device List ?

Connected Receivers

Status

StarFire 7500 Integrated
SW Version: 2.22C.0
SN: 115932

Advanced TCM Calibration

Video VIL Work Monitor

Menu ?

Machine Settings

Applications

System

Advanced TCM Calibration ?

Calibration Process

Calibration may be needed if:
This procedure calibrates the TCM for all connected, compatible receivers, SF6000 and newer.

Note

Calibration requires tracking 165 ft, turning, and returning. Ensure 330 ft of open space is available.

• Message has appeared stating that TCM Calibration is required

50 m

Connected Receivers

Status

Starfire 7500
Last Calibrated (UTC): 04-17-2024 03:59PM

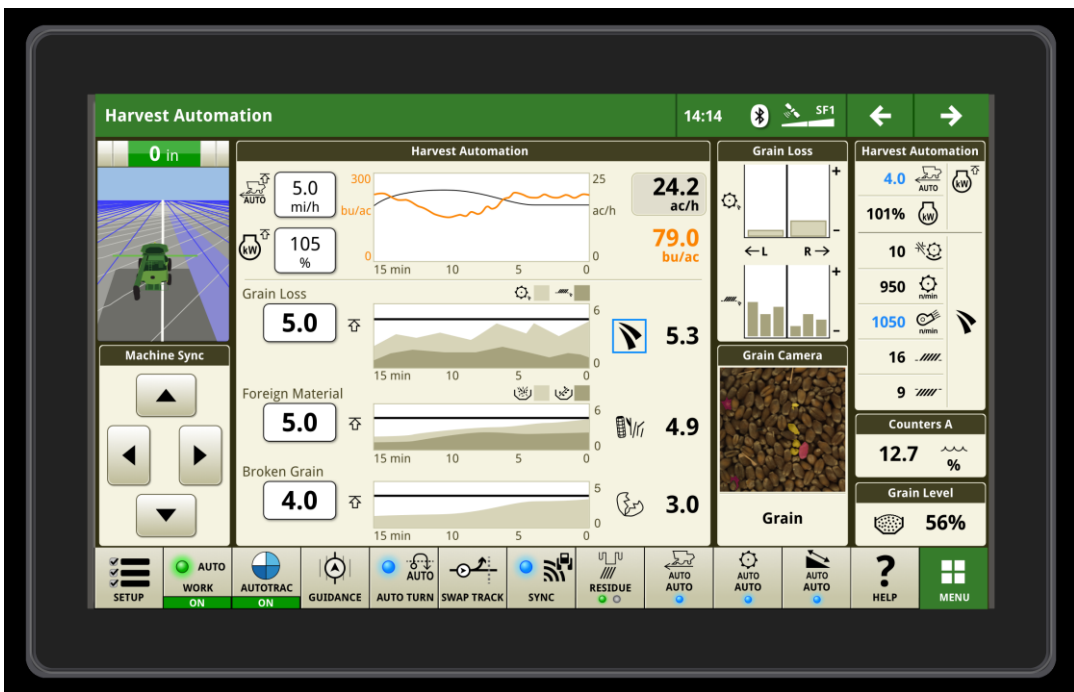
Ready to Calibrate

CAL Begin Calibration

Learn the new Harvest Automation Experience

2025 Harvest Technology comes with an updated Harvest Automation Experience

Iterated over years of development with customers to align with the mental models of farmers



The updated UI integrates the automation subsystems to better act as your teammate

Helpful Link:

[Harvest Automation In-Cab Display Setup and Review](#)

PLAN

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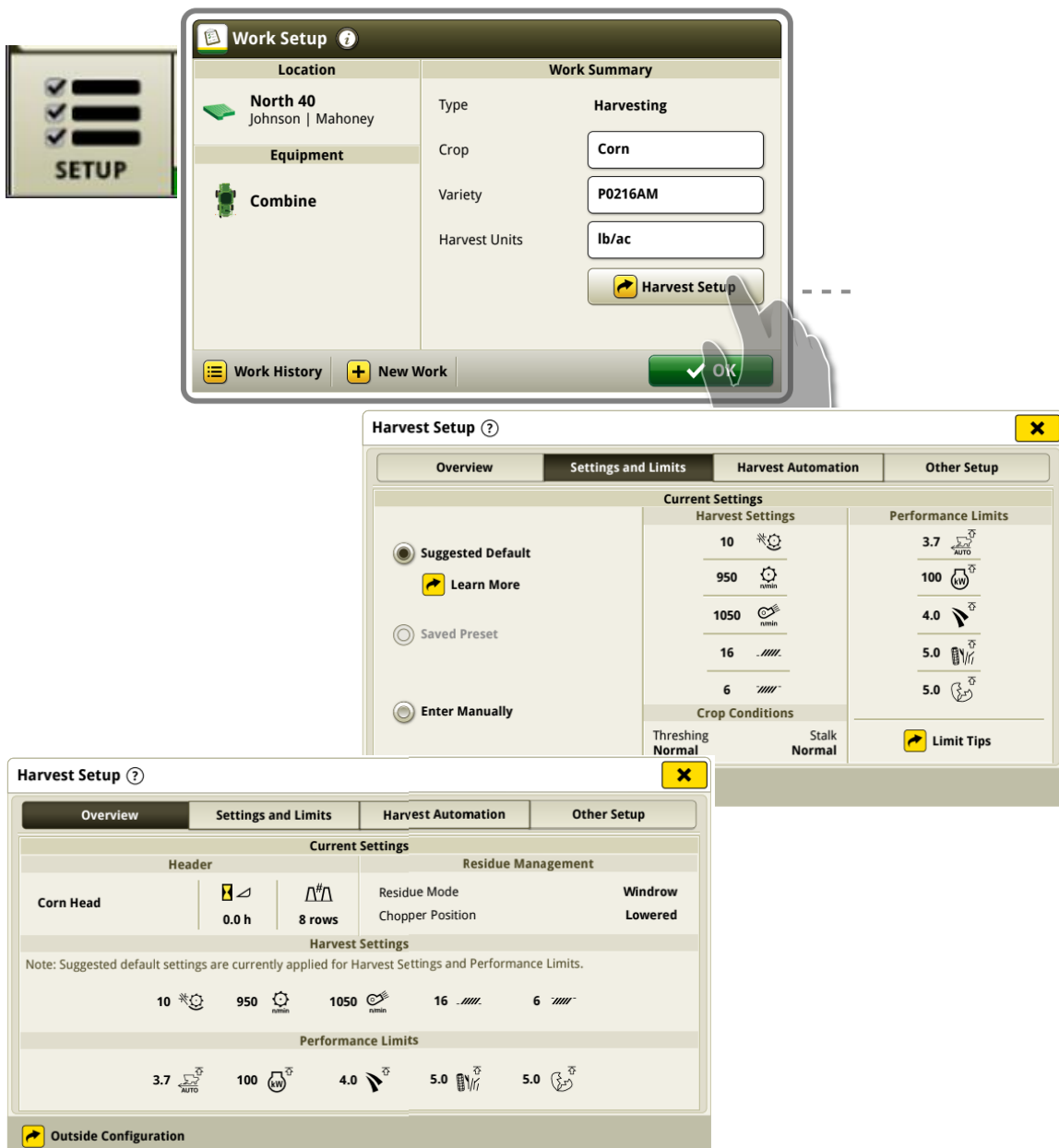
SETUP Automation

Any time invested into understanding and setting up the system correctly before getting into crop will pay dividends when harvesting.



Harvest Setup

There are additional adjustments in the Harvest Setup pages to prepare for Automation



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Configure Buttons to Personal Preference

Recommended assigned buttons for Harvest Automation



SETUP

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UTILIZE

Automation

This section will focus on high level ways to get the most out of the 2025 Harvest Technology suite.



Predictive Ground Speed Automation

PGSA leverages predictive inputs to see and know what is coming to maximize machine productivity.

Helpful Link:

[Predictive Ground Speed Automation Setup](#)

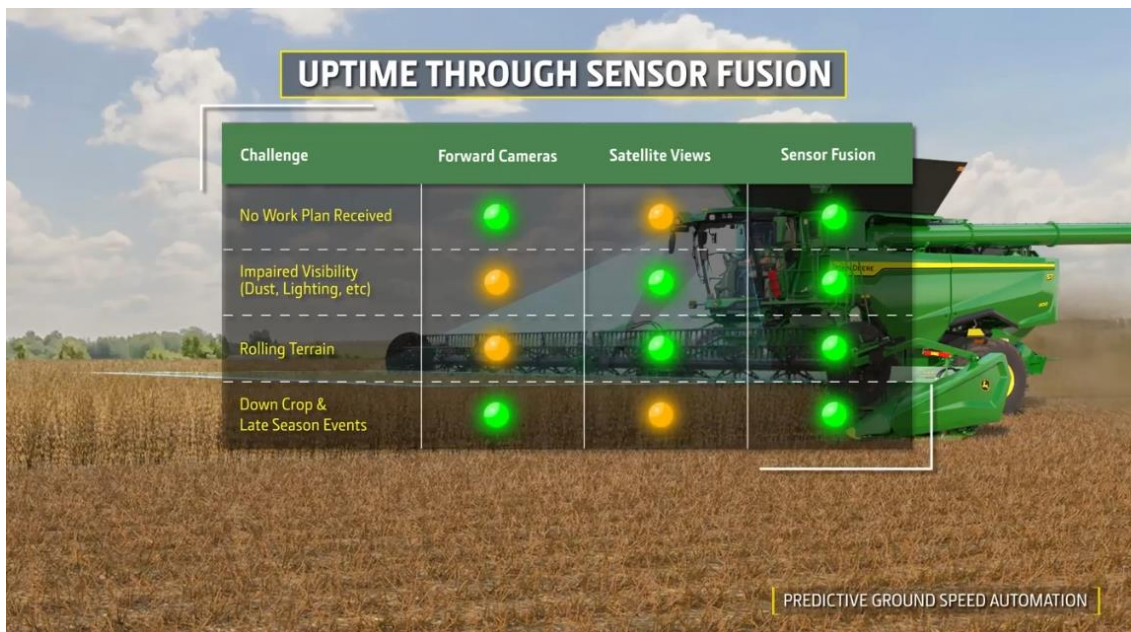
WHY

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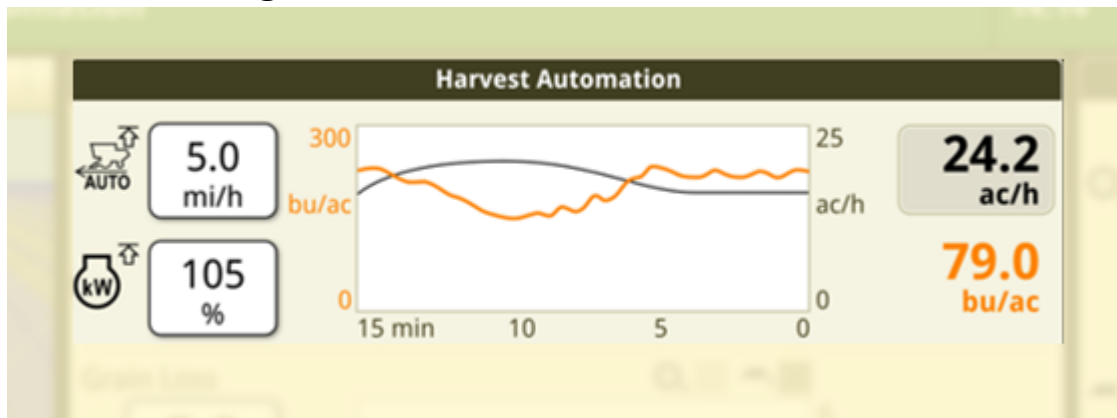
UTILIZE

VALUE



Predictive Ground Speed Automation

The top center section of the Harvest Automation run pages focuses on Productivity. The operator inputs, or limits, are editable boxes on the left side. The resulting outputs are shown in the time series and numbers to the right.



The limiting factor for Ground Speed Automation is shown to the right of the GSA icon when Automation is in control (blue text).



Automation Tip:

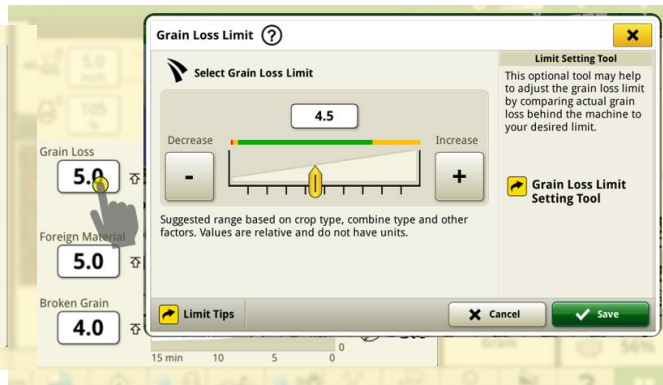
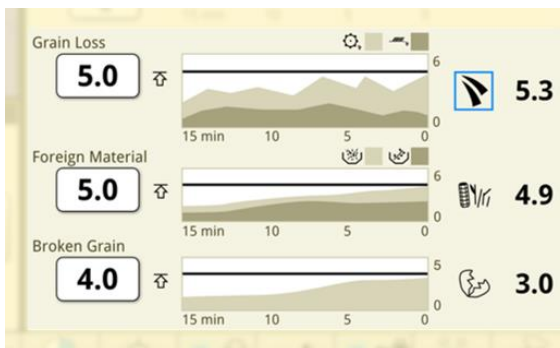
Start with Max Ground Speed Limit and Engine Load Limit lower and raise up as you get comfortable with system

Harvest Settings Automation

The bottom center section of the Harvest Automation run pages focuses on Job Quality. The operator inputs, or limits, are editable boxes on the left side. The resulting outputs are shown in the time series and numbers to the right.

Understanding Limits:

Unitless	No unit attached to loss and grain quality such as %, bu/ac, or kg/ha
Relative	Sensor strength lies in directional changes in performance up and down
Linear	If a number doubles on the screen, it doubles in actual value



Automation Tip:

Start with Job Quality Limits higher and lower down as needed to meet loss and quality goals

Harvest Settings Automation



Approach to Loss:

I want to see 2 kernels or less when I check a square foot on the ground

I like to keep loss under 1.5 bu./acre



Approach to Loss:

Desired limit is given by operator to automation.

Automation works to keep loss under that value.



Approach to Grain Quality:

I have a picture in my mind of how clean my tank should be.

I want to keep my tank clean enough that I do not get docked when it is sold.



Approach to Grain Quality:

Desired limit is given by operator to automation for Foreign Material and Broken Grain.

Automation works to keep performance under those values.

Harvest Settings Automation

Leverage Trust-Building tools

Grain Loss Limit Setting Tool ?

Use the Input Field to Enter the Acceptable Grain Loss
Select "Next" to continue.

Enter Acceptable Grain Loss

1.5 bu/ac

Measured Grain Loss

1.0 bu/ac

Cancel « Back

Grain Loss Limit Setting Tool ?

Grain Loss Limit Calculation

A new grain loss limit has been calculated. Select "Next" to update to the new grain loss limit. Select "Cancel" to cancel and exit the grain loss limit tool.

Current Loss Limit: 5.5

5.0 Captured Current Loss Value

1.5 bu/ac Acceptable Grain Loss Value

1.0 bu/ac Measured Loss Value

7.5 New Loss Limit

Cancel « Back Next »

Loss Limit Tip:

Perform loss checks in normal yielding, flat areas for best results

Helpful Link:

[Harvest Settings Automation](#)

Foreign Material Limit ?

Select Foreign Material Limit

5.0

Decrease Increase

Suggested range based on crop type, machine type, and other factors. Values are relative and do not have units.

Grain Sample

This limit drives the amount of Foreign Material in the grain sample. Use "Set Grain Quality Limits" to view the amount of Foreign Material and update limit as needed.

Set Grain Quality Limits

Limit Tips Cancel Save

Set Grain Quality Limits ?

Live Camera

Set Foreign Material Limit

Actual 1.0 5.0

Set Broken Grain Limit

Actual 3.0 5.0

Note: Current values shown for Foreign Material and Broken Grain Limits are a recent average, not instantaneous.

Cancel Save

WHY

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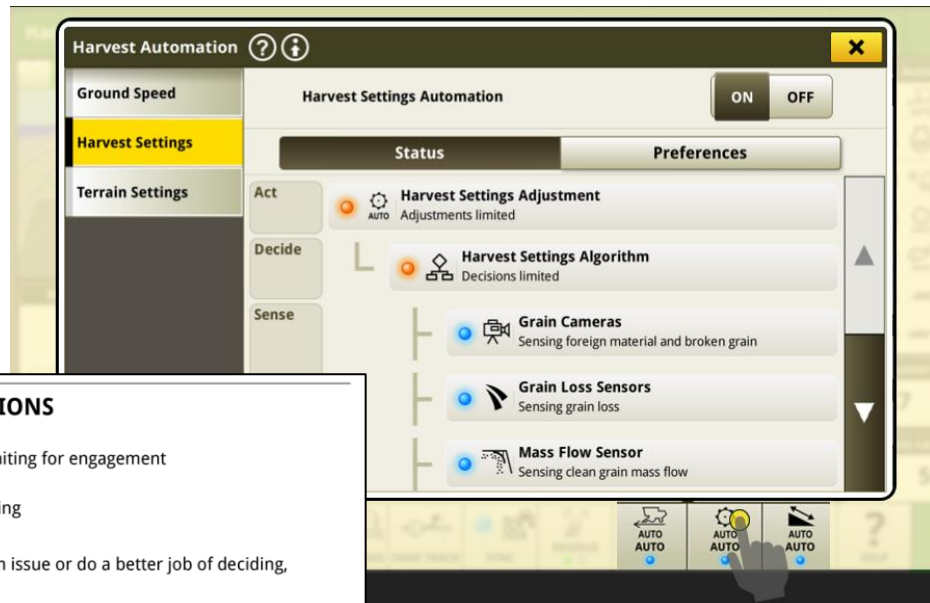
SETUP

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Sense – Decide – Act

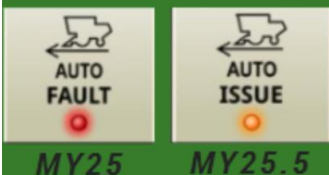
An additional step forward for the Harvest Automation Experience is the inclusion of Sense – Decide – Act to help operators stay up to date on Automation Performance.



STATUS INDICATION DEFINITIONS

- Automation System ready and waiting for engagement
- Automation System ON and sensing
- Automation System could have an issue or do a better job of deciding, action needed to resolve
- Automation System is faulted and not sensing, action needed to resolve
- Automation System OFF or crop type not supported

From the release notes:



MY25

MY25.5

What In MY25, the LED color used in communicating system status from shortcut buttons reflected the most severe sensor status. In MY25.5 software, this LED color now reflects the Decide status, which more accurately depicts the actual state from a systems perspective.

Why Sharing the most severe sensor status was confusing for operators as with automation systems comprising of multiple sensor inputs and functions, it was possible for particular sensors to be in a faulted state (red LED) yet the automation could be engaged and in operation.

Reasons for Change

The right side of the Harvest Automation run page keeps the operator in the loop

Automation Tip:
Automation is making a change
→ Blue Text

Limit being passed driving change
→ Icon

Grain Loss		Material Other than Grain		Unthreshed		Broken Grain	
Harvest Automation	4.0 AUTO	Harvest Automation	4.0 AUTO	Harvest Automation	4.0 AUTO	Harvest Automation	4.0 AUTO
101%	101%	101%	101%	101%	101%	101%	101%
10	10	10	10	10	10	10	10
950	950	950	950	950	950	950	950
1050	1050	1050	1050	1050	1050	1050	1050
16	16	16	16	16	16	16	16
9	9	9	9	9	9	9	9

Harvest Settings Automation

Pitch		Tallings		Manual Control	
Harvest Automation	4.0 AUTO	Harvest Automation	4.0 AUTO	Harvest Automation	4.0 AUTO
101%	101%	101%	101%	101%	101%
10	10	10	10	10	10
350	350	350	350	950	950
1050	1050	1050	1050	1050	1050
16	16	16	16	16	16
9	9	9	9	9	9

Power Limit		Grain Loss		Down Crop		Speed Limit	
Harvest Automation	4.0 AUTO	Harvest Automation	4.0 AUTO	Harvest Automation	4.0 AUTO	Harvest Automation	4.0 AUTO
101%	101%	101%	101%	101%	101%	101%	101%
10	10	10	10	10	10	10	10
950	950	950	950	950	950	950	950
1050	1050	1050	1050	1050	1050	1050	1050
16	16	16	16	16	16	16	16
9	9	9	9	9	9	9	9

Predictive Ground Speed Automation – May vary depending on country

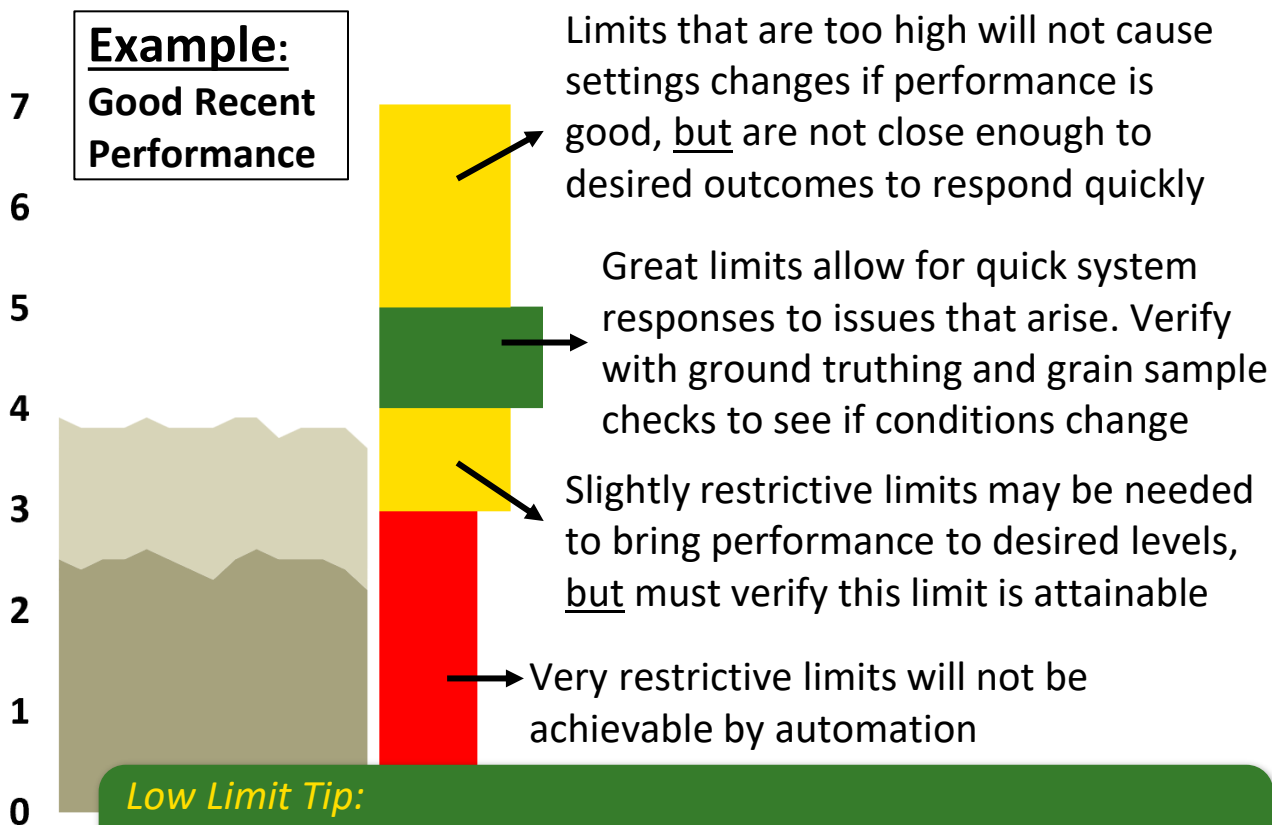
Manual		Terrain		Maintaining		Unload	
Harvest Automation	4.0 AUTO	Harvest Automation	4.0 AUTO	Harvest Automation	4.0 AUTO	Harvest Automation	4.0 AUTO
101%	101%	101%	101%	101%	101%	101%	101%
10	10	10	10	10	10	10	10
950	950	950	950	950	950	950	950
1050	1050	1050	1050	1050	1050	1050	1050
16	16	16	16	16	16	16	16
9	9	9	9	9	9	9	9

Setting Good Limits and Best Practices

Harvest Settings Automation

What Makes a Good Limit:

- Reasonable — Make sure the limit is reasonable for your crop and conditions (i.e., Loss limit \neq 0)
- Real — Utilize the Grain Loss and Grain Quality Limit Setting Tools to make sure your outcomes match expectations
- Revisited — Nudge grain quality limits as needed throughout harvest day



Low Limit Tip:

If Grain Loss Limit Setting Tool gives unreasonably low New Limit for later part of field, it may be time for another loss check

Setting Good Limits and Best Practices

Predictive Ground Speed Automation

Engage Ground Speed Automation near “normal” harvest speed. This may increase as you get more comfortable with the system.

Why this way: When you disengage the system by pulling back on handle, speed will not drop dramatically leading to a smoother experience

Example:

Good, Smooth Engagement

Engage Ground Speed:
3.0 mph

Harvest Ground Speed:
3.7 mph

Disengage Difference:
0.7 mph

Result:



Gradual, controlled
slowdown



Example:

Bad, Abrupt Engagement

Engage Ground Speed:
1.5 mph

Harvest Ground Speed:
3.7 mph

Disengage Difference:
>2.2 mph

Result:



Feels like slamming
on brakes

Ground Speed Limit Tips:

Good limits for Max Ground Speed and Engine Load are productive, comfortable, not contributing to loss, and pushing the machine

Pay attention to Reason for Change Icons

Engage within 1 mph or 1.5 kph of harvest speed

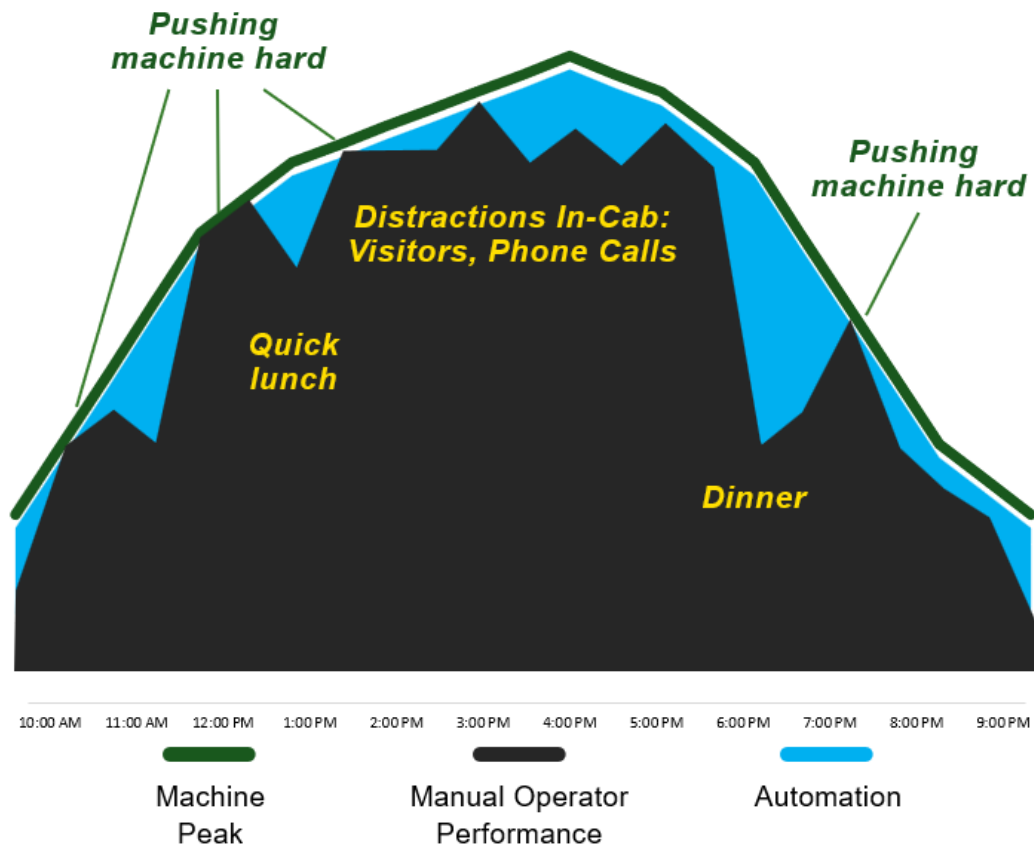
VALUE of Automation

This section will illustrate the high-level value of automation. Check back as it will be updated with information as Operations Center adds capabilities



Value Story for Harvest Technology

Harvest Automation is a teammate to let the operator get the most out of the machine. It is not trying to beat expert operators pass-to-pass or minute to minute



EXAMPLE PRODUCTIVITY THROUGH THE DAY

This is an example of a very good operator trying very hard to get productivity out of their machine.

WHY

PLAN

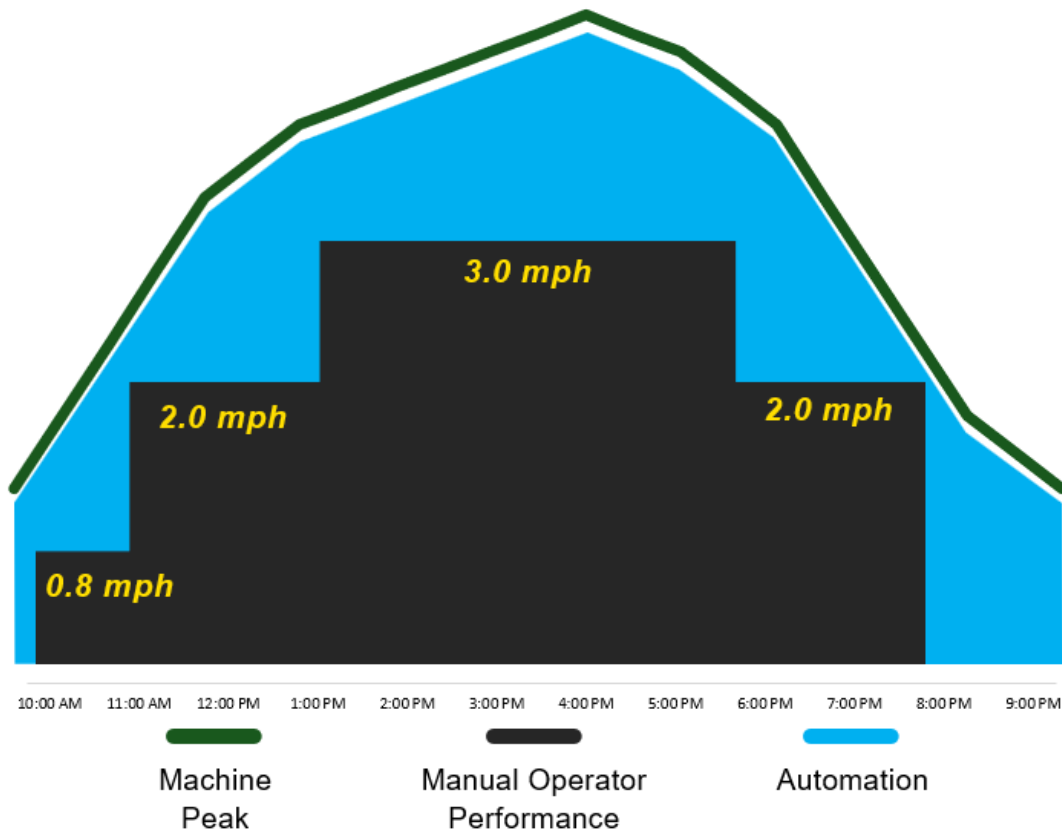
SETUP

UTILIZE

VALUE

Value Story for Harvest Technology

The true value comes across days, weeks, and months of harvest. Not only will the productivity increase become more pronounced over time, but workload and fatigue reduction will become more noticeable.

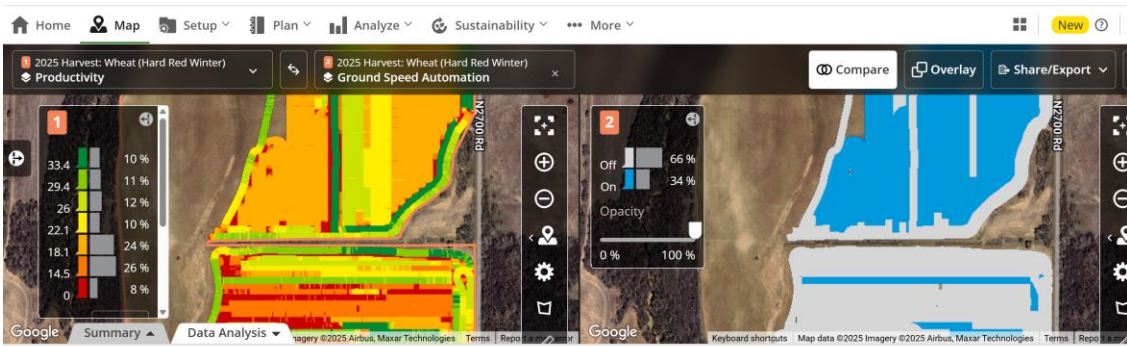


EXAMPLE PRODUCTIVITY THROUGH THE DAY

This is an example of an expert operator later in season or novice operator who will typically pick a steady speed

Value Story for Harvest Technology

Field Analyzer Utilization Layer



WHY

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1 Productivity — 2 Ground Speed Automation		Work Totals ✓ Performance						
<input type="checkbox"/> Ground Speed Automation	Harvest Time	Speed	Productivity	Total Fuel	Throughput (Dry)	Throughput (Wet)	Fuel Efficiency	
<input type="checkbox"/> On	2 hr 14 min	3.8 mi/hr	21.5 ac/hr	35.2 gal	769 bu/hr	46,939.7 lb/hr	49.1 bu/gal	
<input type="checkbox"/> Off	5 hr 21 min	3.6 mi/hr	17.6 ac/hr	79.3 gal	668 bu/hr	40,703.7 lb/hr	45.2 bu/gal	
<input type="checkbox"/> Unavailable	1 min	0.2 mi/hr	0.9 ac/hr	0.2 gal	0 bu/hr	18.6 lb/hr	0 bu/gal	
Totals/Averages		7 hr 38 min	3.7 mi/hr	114.7 gal	696 bu/hr	42,414.3 lb/hr	46.3 bu/gal	

Work Analyzer

Work Analyzer

Ground Speed Automation

Map

Harvest Automation Report

Edit

Delete

Work

Varieties

Equipment

Operators

Search

Fields

Varieties

Filters

Work	Crop Type	Area Harvested		Productivity		Speed		
		On	Off	On	Off	On	Off	
Harvest Wheat (Hard Red Winter) Jun 11, 2025	Wheat (Hard Red ...)	102.3 ac	60.9 ac	19.1 ac/hr	13.5 ac/hr	3.2 mi/hr	2.6 mi/hr	5 hr 21
Totals/Averages	1 Crop	102.3 ac	60.9 ac	19.1 ac/hr	13.5 ac/hr	3.2 mi/hr	2.6 mi/hr	5 hr 21

Varieties		Filters		Work Totals ✓ Performance						
Fuel Rate (Area)		Fuel Rate (Time)		Throughput (Dry)		Throughput (Wet)		Fuel Efficiency		
On	Off	On	Off	On	Off	On	Off	On	Off	
1.3 gal/ac	1.6 gal/ac	24.3 gal/hr	21 gal/hr	1,447 bu/hr	1,049 bu/hr	87,422.2 lb/hr	63,845 lb/hr	59.4 bu/gal	49.9 bu/gal	
1.3 gal/ac	1.6 gal/ac	24.3 gal/hr	21 gal/hr	1,447 bu/hr	1,049 bu/hr	87,422.2 lb/hr	63,845 lb/hr	59.4 bu/gal	49.9 bu/gal	

WHY

Notes

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