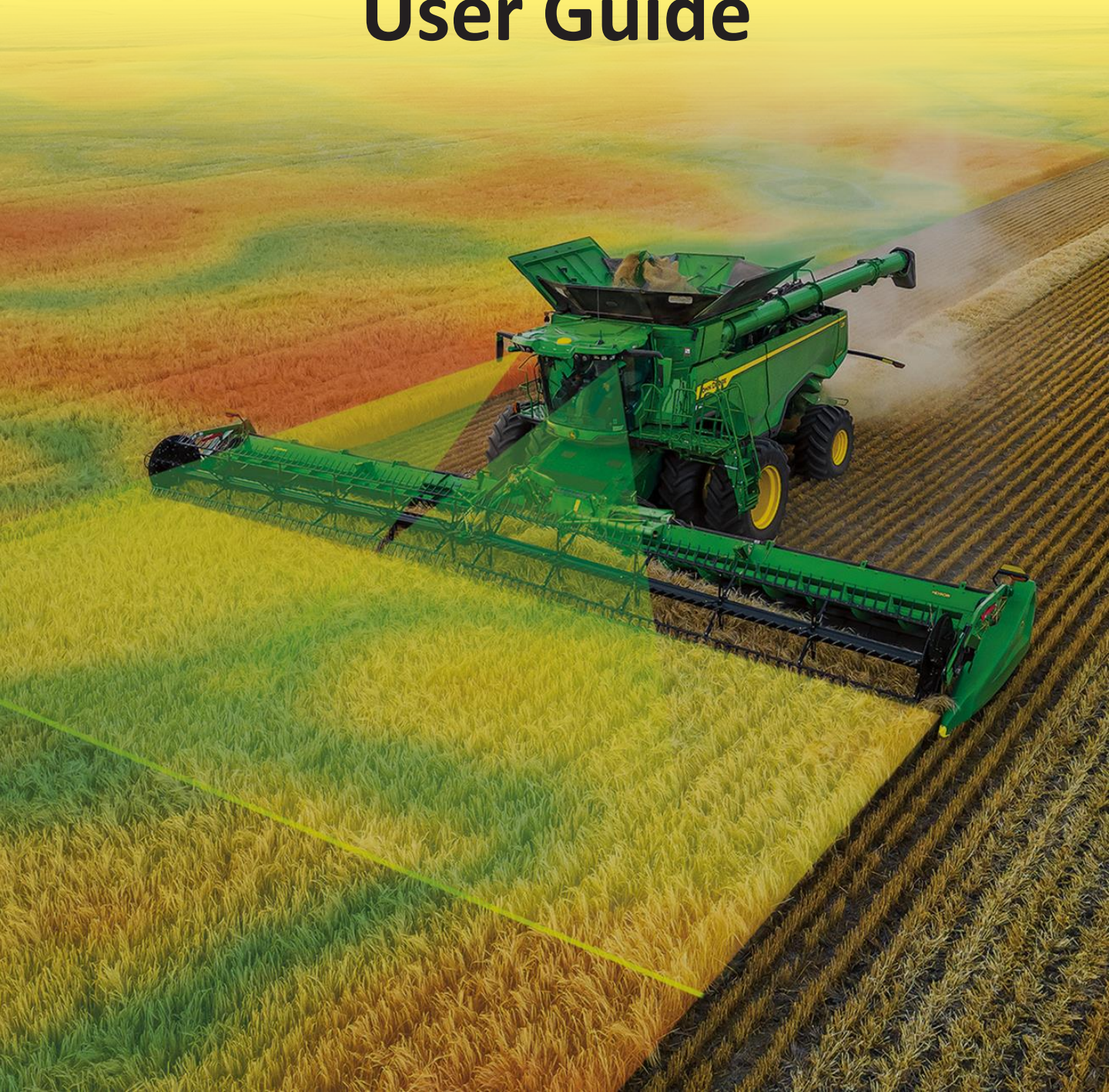
JOHN DEERE S7 and X9 Combines

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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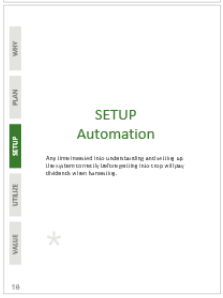
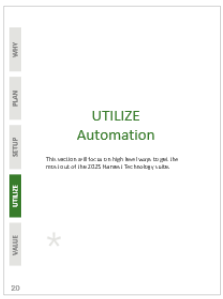
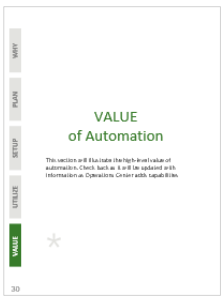






WHY

Harvest 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.

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.

WHY

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.

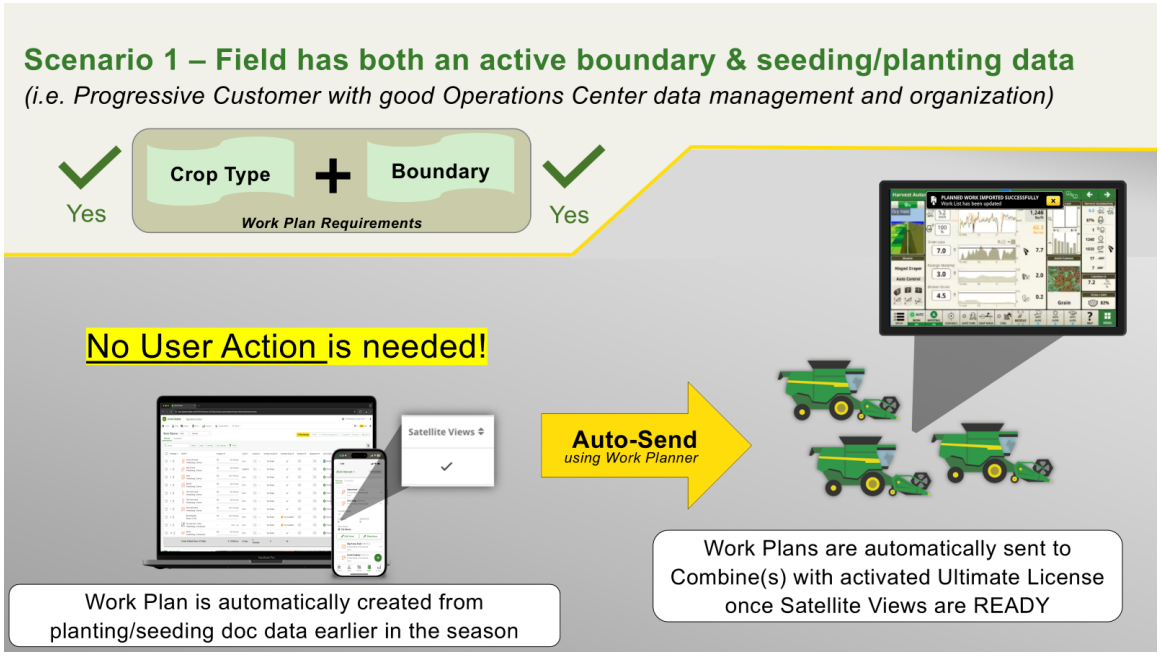
For 2025, verify with your dealer that the machine has received the Pre-Harvest Software Update

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

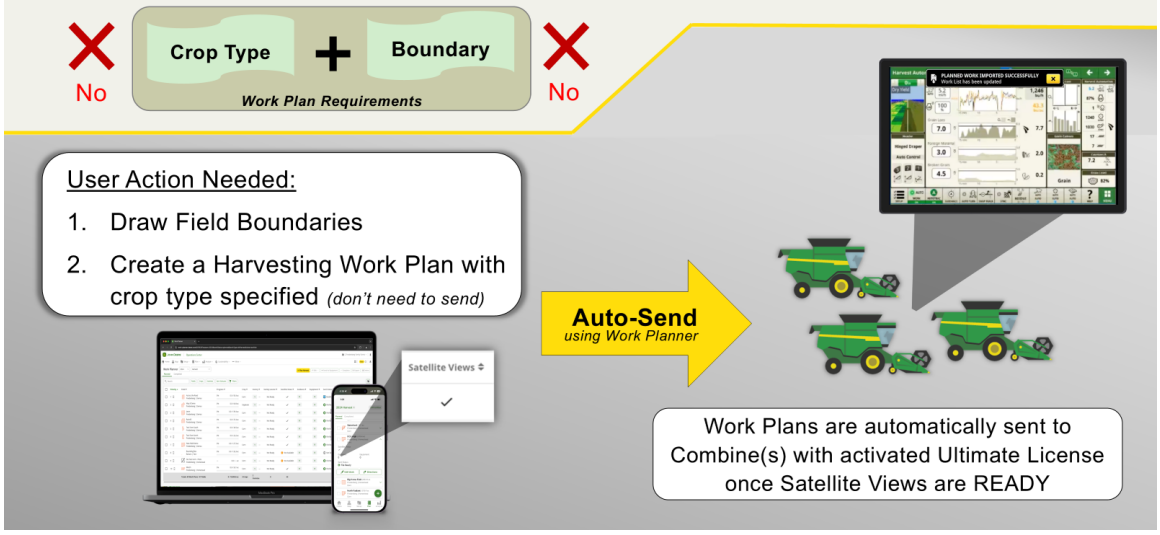


Pre-Harvest Activities

Scenarios, continued

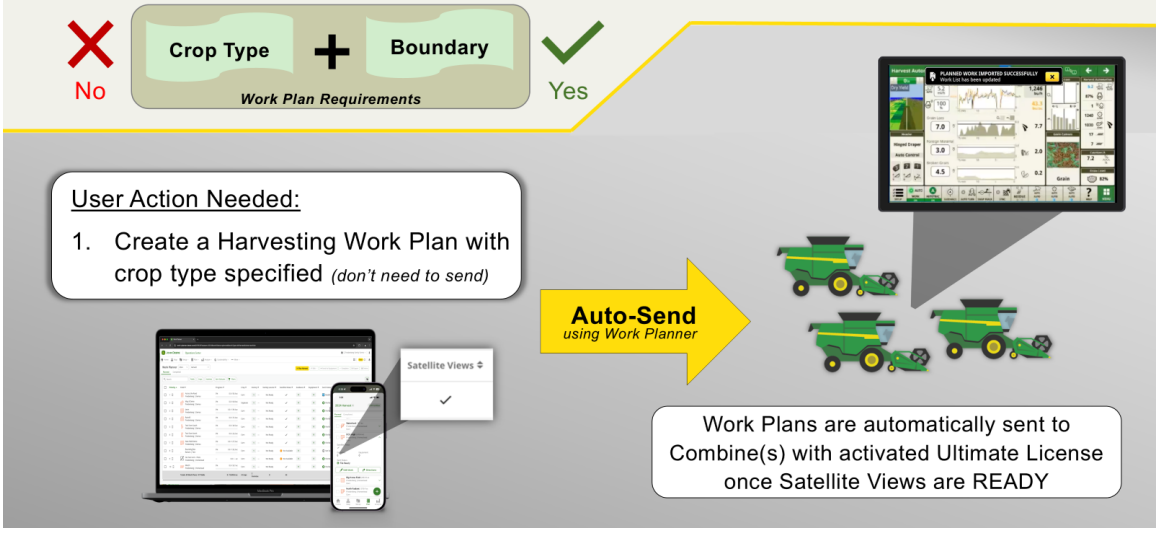
Scenario 2 – Field does not have any previous data nor an active boundary

(i.e. a customer new to Operations Center, custom harvester working on behalf of a client, etc.)



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)



WHY

PLAN

SETUP

UTILIZE

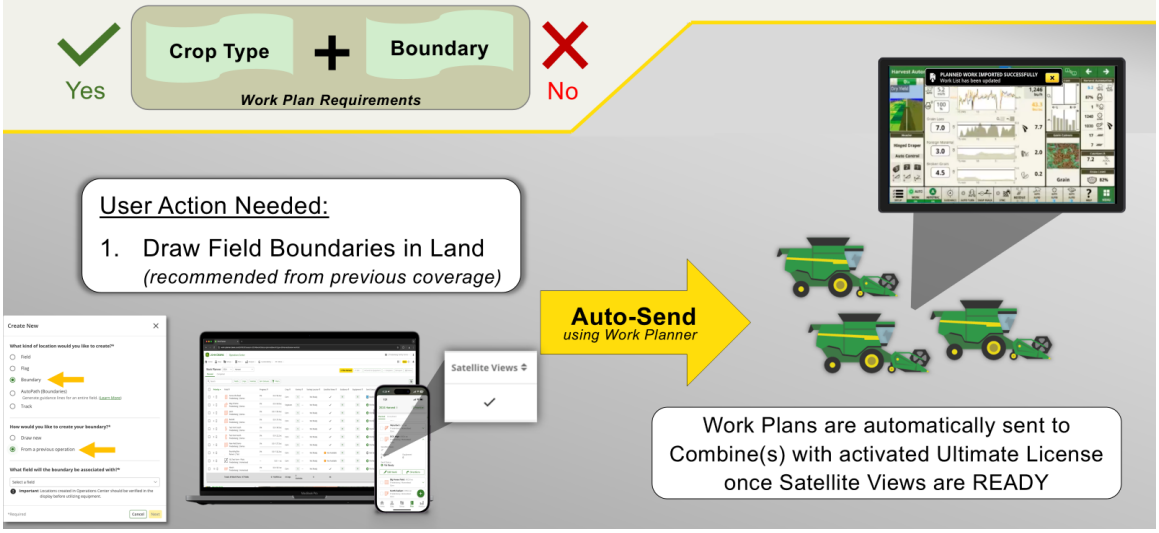
VALUE

Pre-Harvest Activities

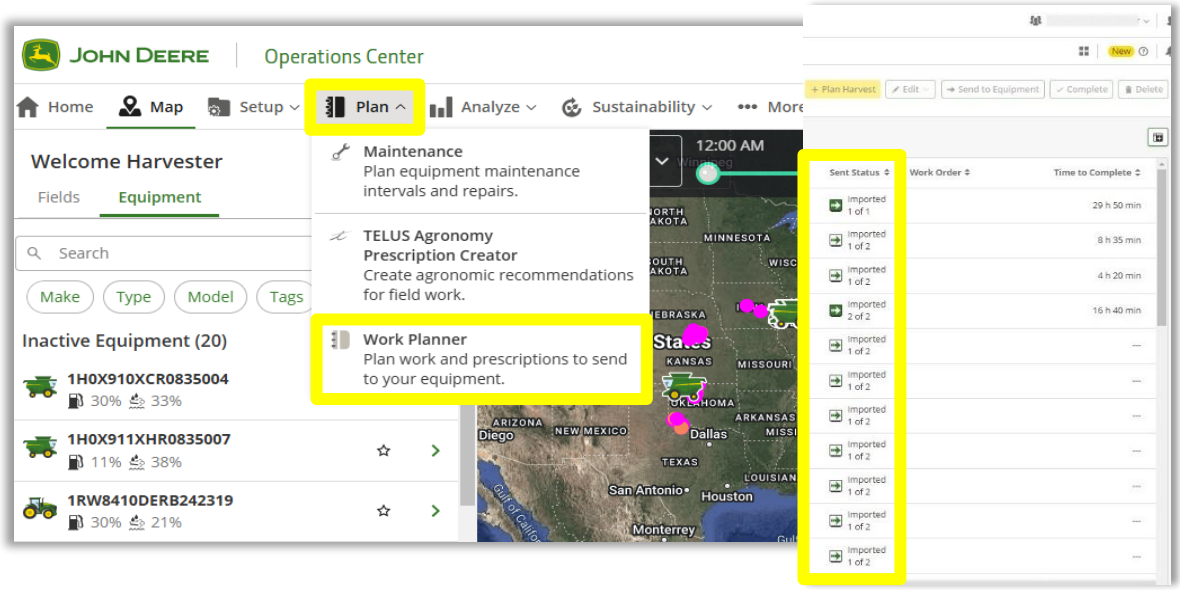
Scenarios, continued

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

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



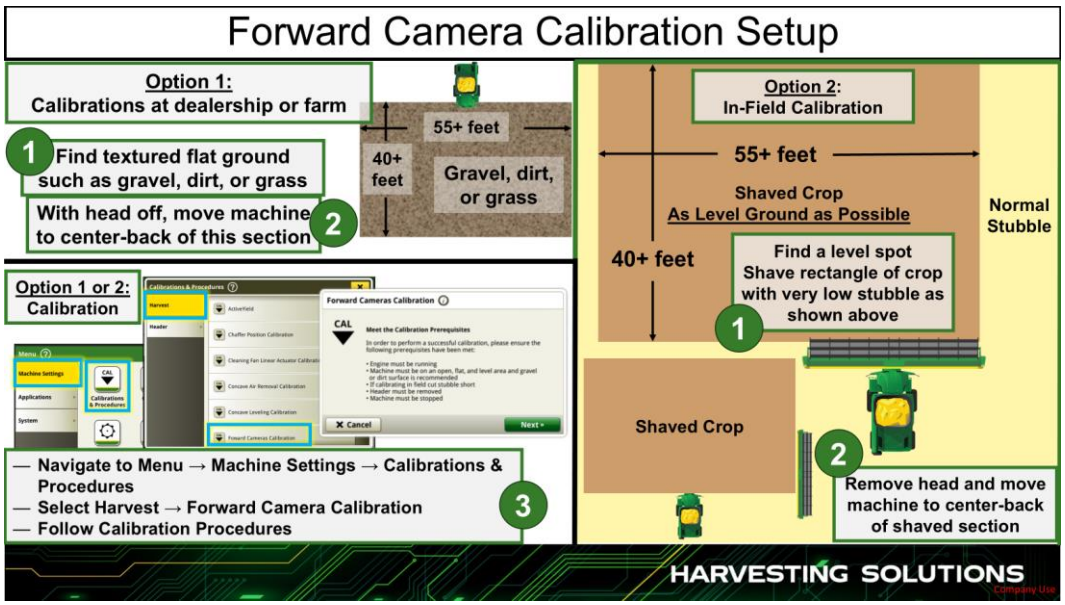
Verify that files have been sent to machine



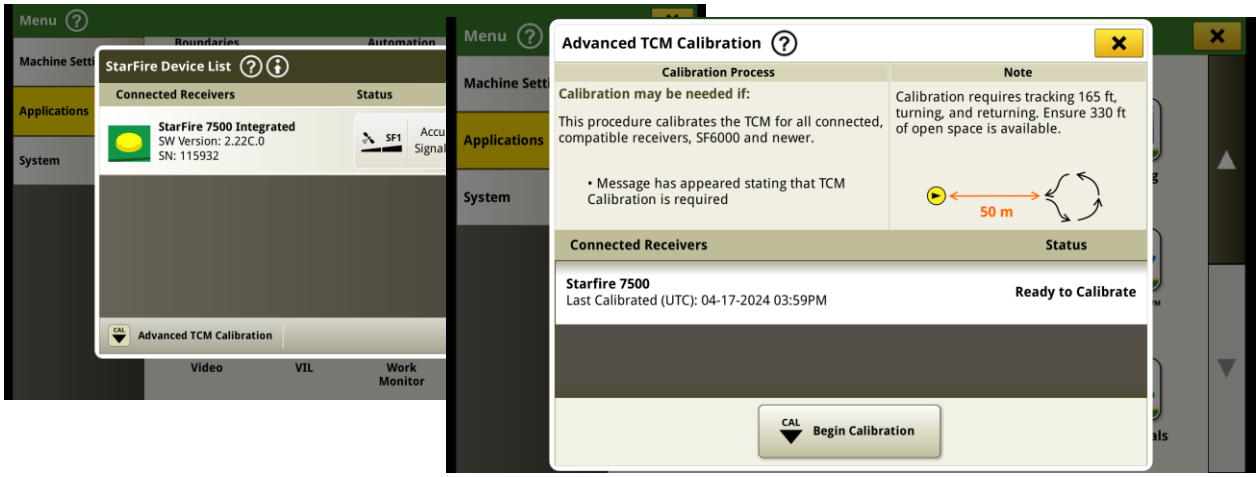
Pre-Harvest Calibrations

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

Link to Forward Camera Calibration Video



Link to video for Advanced TCM



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

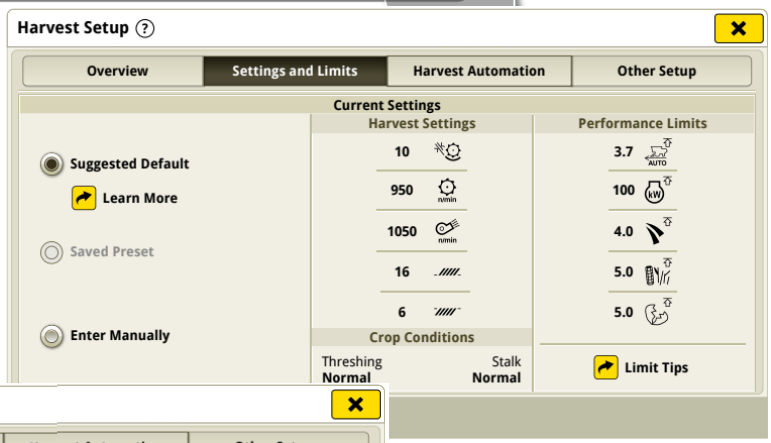
PLAN

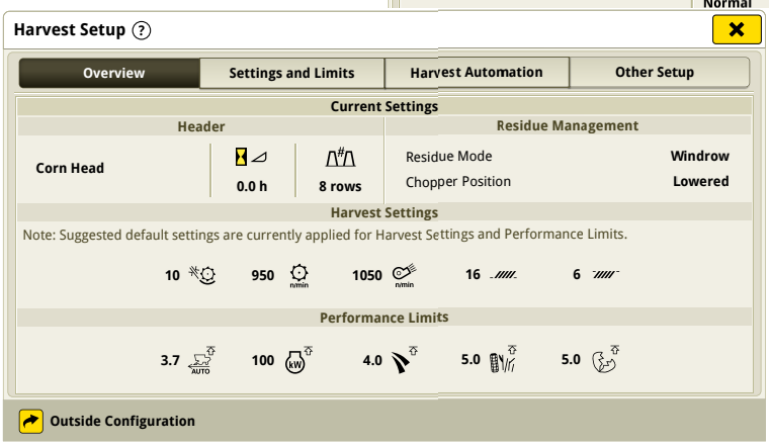
SETUP
Automation

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

Harvest Setup

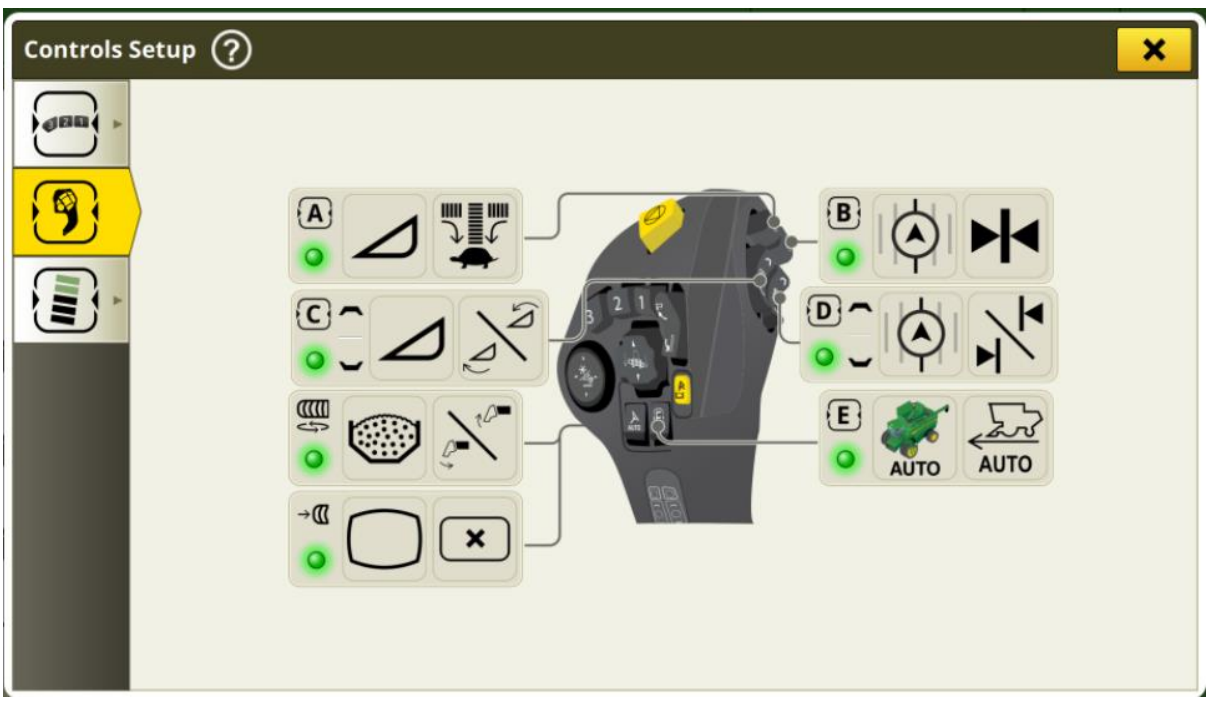
There are additional adjustments in the Harvest Setup pages to prepare for Automation





Configure Buttons to Personal Preference

Recommended assigned buttons for Harvest Automation



SETUP

UTILIZE
Automation

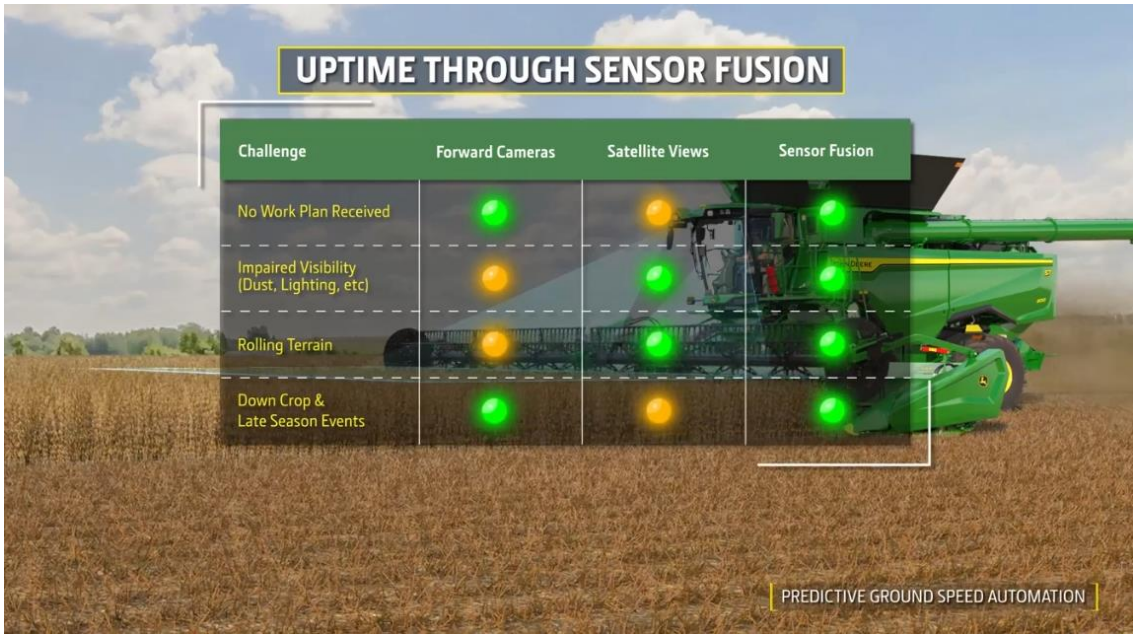
This section will focus on high level ways to get the most out of the 2025 Harvest Technology suite.

Predictive Ground Speed Automation

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

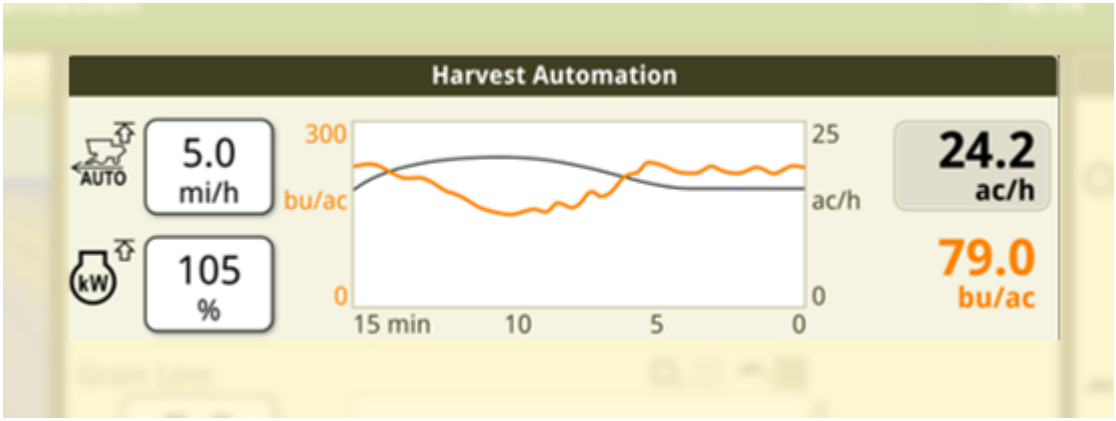
Helpful Link:

Predictive Ground Speed Automation Setup

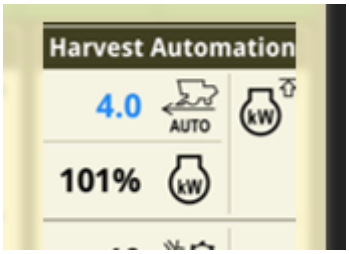


Predictive Ground Speed Automation

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:

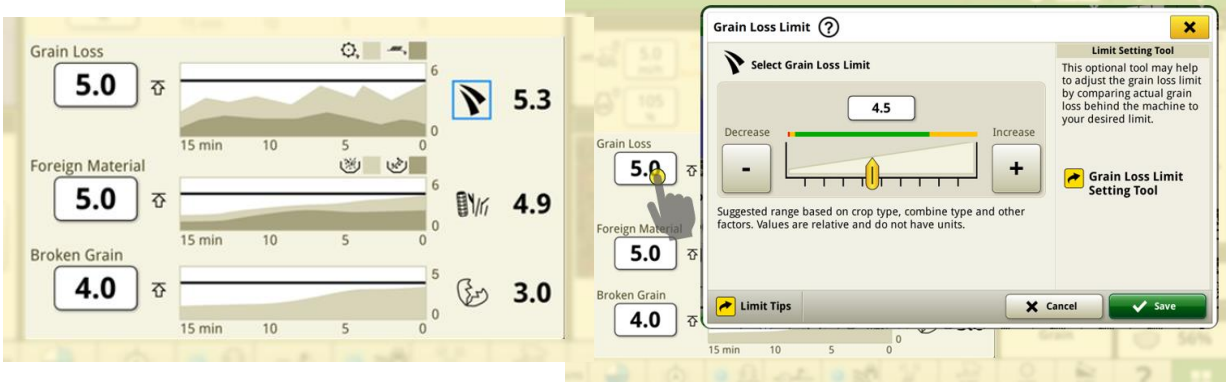
Start with Max Ground Speed Limit and Engine Load Limit lower and raise up as you get comfortable with system

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 <u>higher</u> and <u>lower down</u> as needed to meet loss and quality goals

WHY

PLAN

SETUP

UTILIZE

VALUE

Harvest Settings Automation

Aligning to Operator Mindset

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.

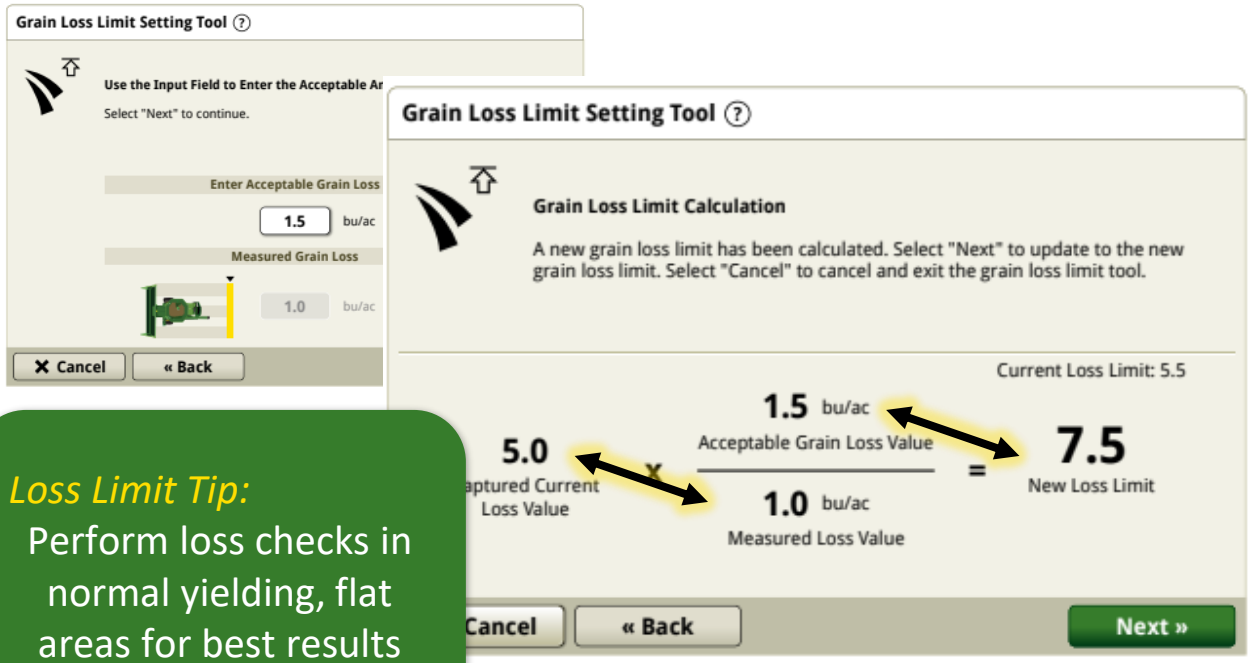
Approach to Grain Quality:

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

Automation works to keep performance under those values.

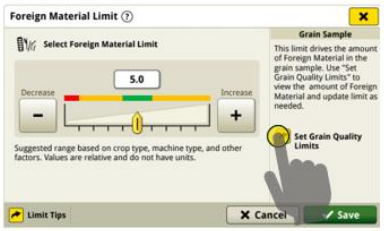
Harvest Settings Automation

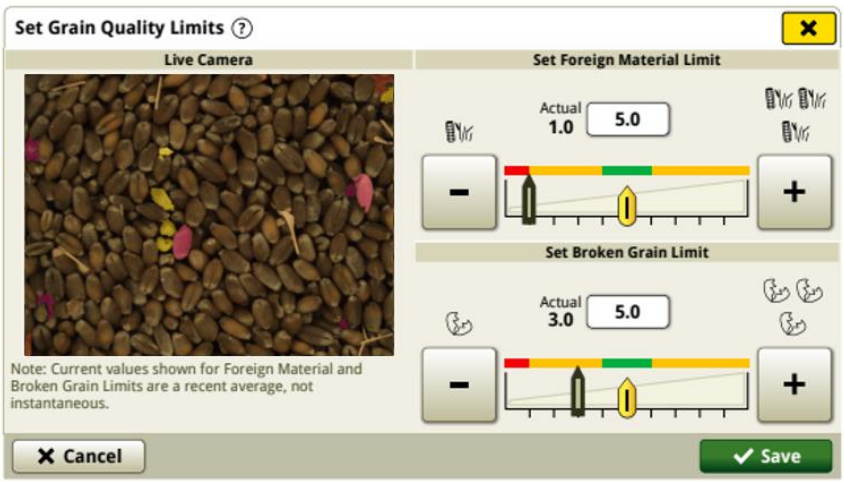
Leverage Trust-Building tools



Loss Limit Tip:
Perform loss checks in normal yielding, flat areas for best results

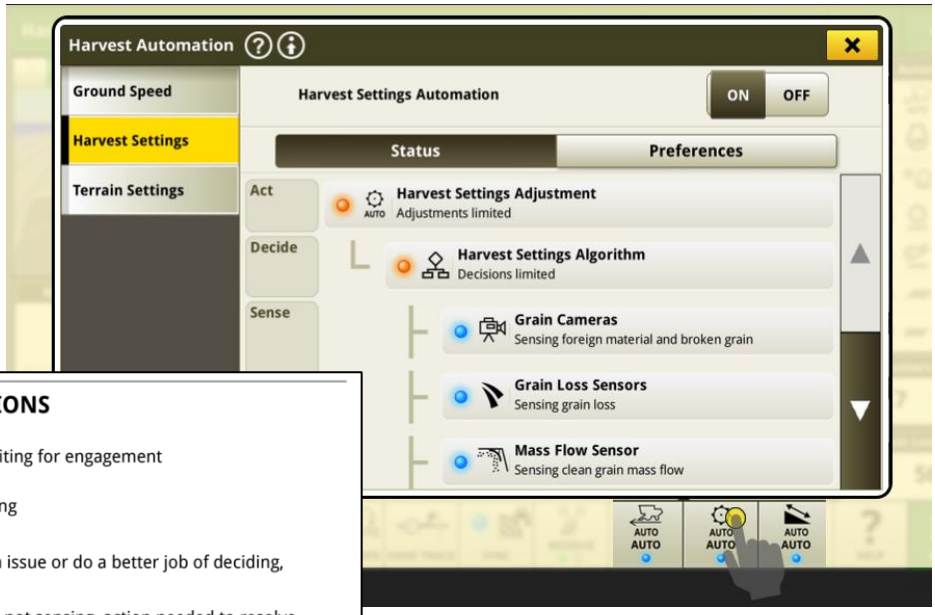
Helpful Link:
Harvest Settings Automation





Sense – Decide – Act

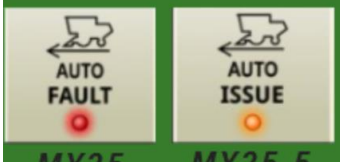
An additional step forward for the Harvest Automation Experience is the inclusion of Sense – Decide – Act to help operators stay up to date on Automation Performance.



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:



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.

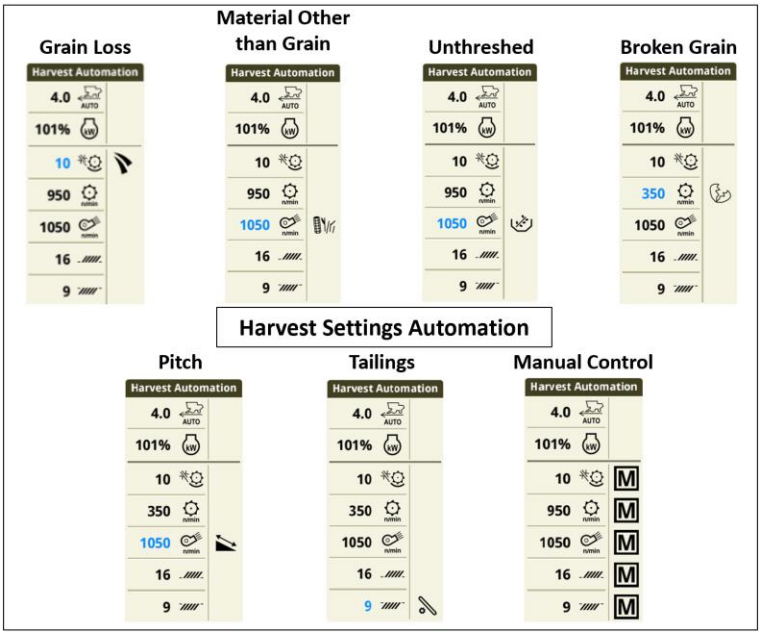
Why Sharing the most severe sensor status was confusing for operators as with automation systems comprising of multiple sensor inputs and functions, it was possible for particular sensors to be in a faulted state (red LED) yet the automation could be engaged and in operation.

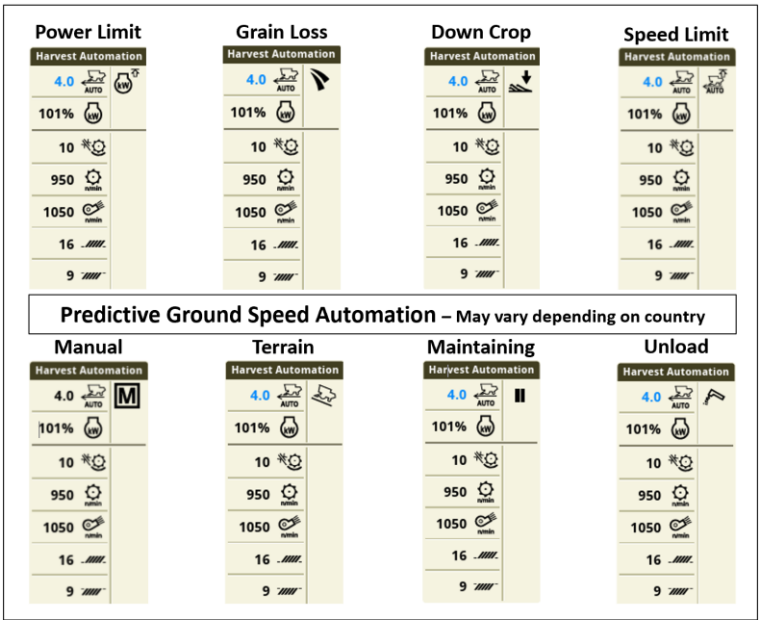
Reasons for Change

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





Setting Good Limits and Best Practices

Harvest Settings Automation

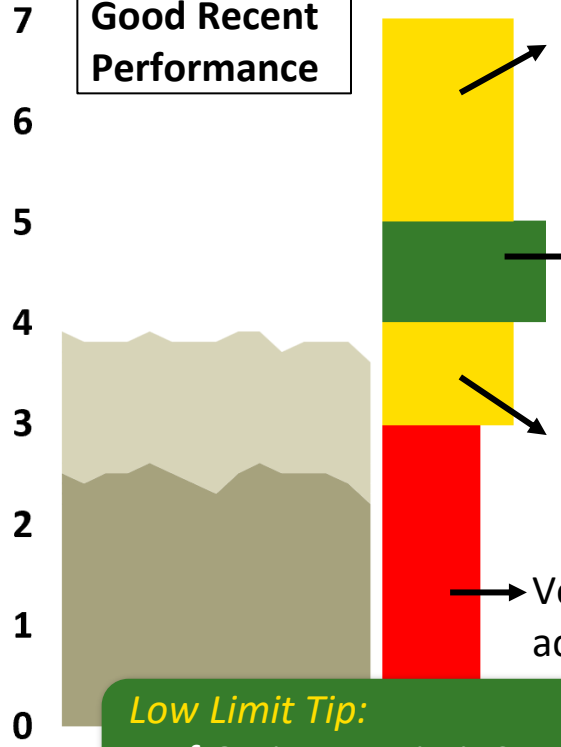
What Makes a Good Limit:

Reasonable — Make sure the limit is reasonable for your crop and conditions (i.e., Loss limit ≠ 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

Example:
Good Recent Performance



Limits that are too high will not cause settings changes if performance is good, but are not close enough to desired outcomes to respond quickly

Great limits allow for quick system responses to issues that arise. Verify with ground truthing and grain sample checks to see if conditions change

Slightly restrictive limits may be needed to bring performance to desired levels, but must verify this limit is attainable

Very restrictive limits will not be achievable by automation

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

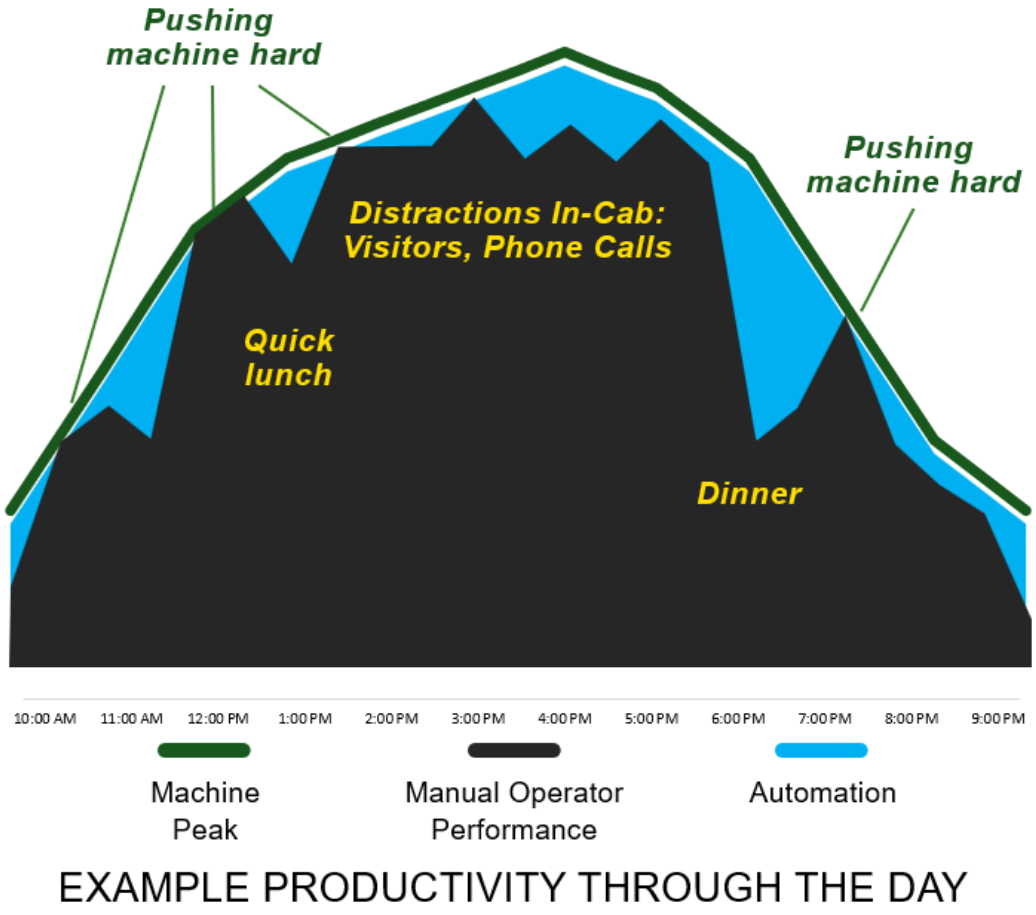
Engage within 1 mph or 1.5 kph of harvest speed

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

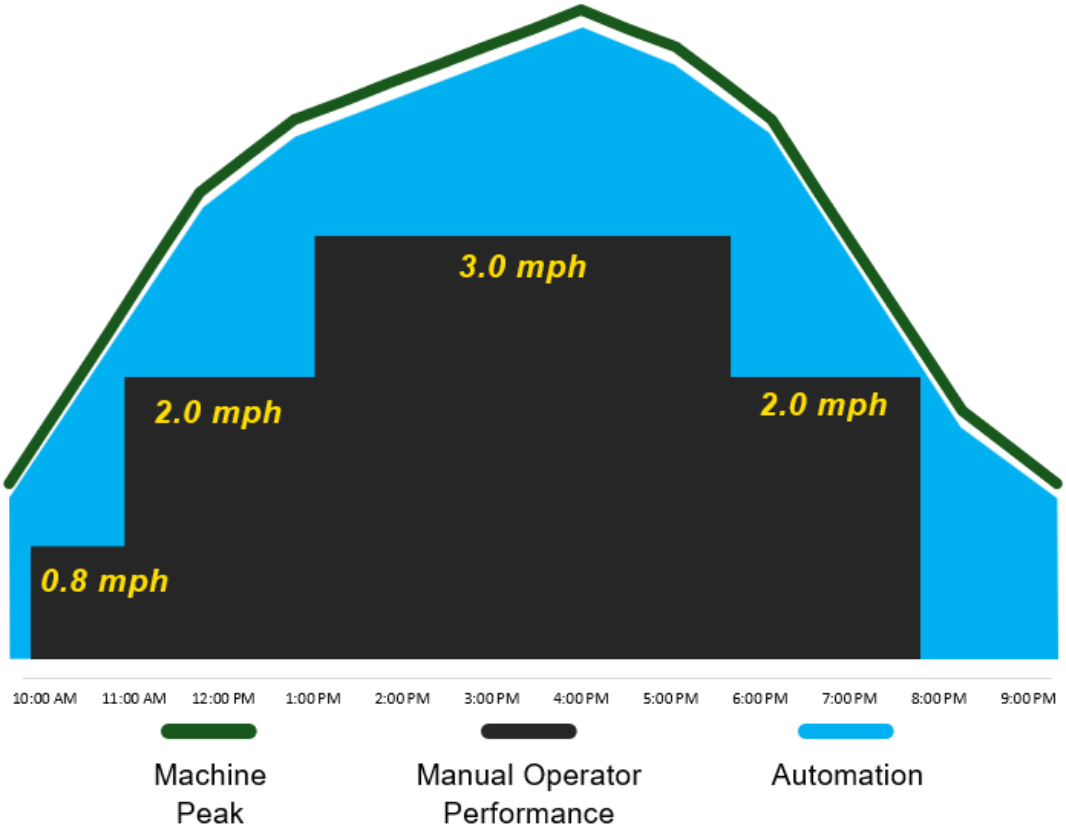


EXAMPLE PRODUCTIVITY THROUGH THE DAY

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

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.

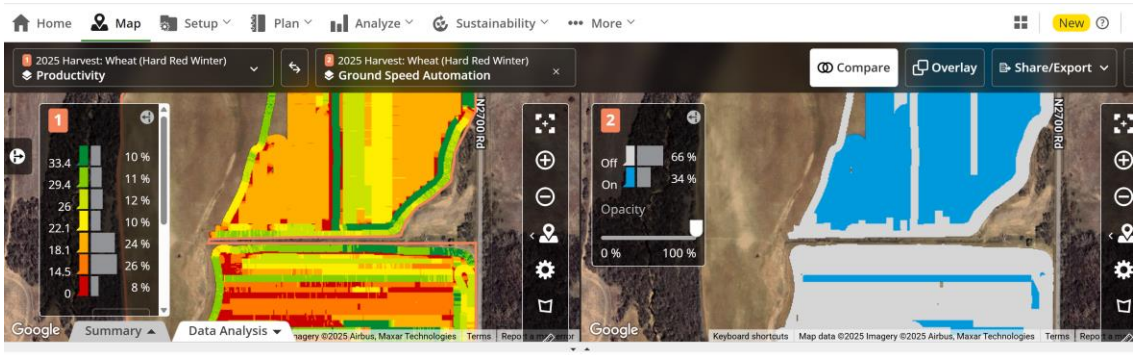


EXAMPLE PRODUCTIVITY THROUGH THE DAY

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

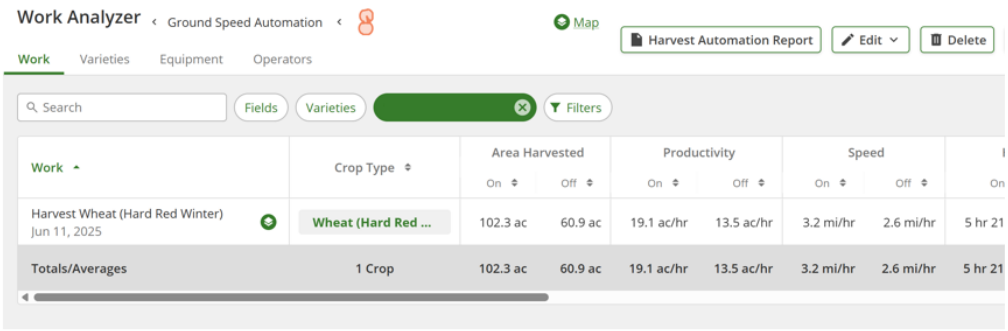


1 Productivity — 2 Ground Speed Automation

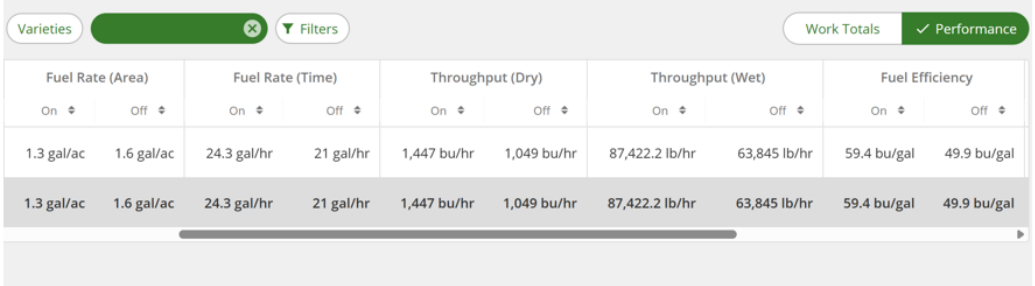
Work Totals | ✓ Performance

Ground Speed Automation	Harvest Time	Speed	Productivity	Total Fuel	Throughput (Dry)	Throughput (Wet)	Fuel Efficiency
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
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
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**	**18.7 ac/hr**	**114.7 gal**	**696 bu/hr**	**42,414.3 lb/hr**	**46.3 bu/gal**

Work Analyzer



Work	Crop Type	Area Harvested On	Area Harvested Off	Productivity On	Productivity Off	Speed On	Speed Off	On
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



Fuel Rate (Area) On	Fuel Rate (Area) Off	Fuel Rate (Time) On	Fuel Rate (Time) Off	Throughput (Dry) On	Throughput (Dry) Off	Throughput (Wet) On	Throughput (Wet) Off	Fuel Efficiency On	Fuel Efficiency 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**

Notes

Notes

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