See & Spray Select

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Agenda

General information

Tips and tricks

See and spray setup and operation

Calibrations

Diagnostics

Last years experiences

Walk around

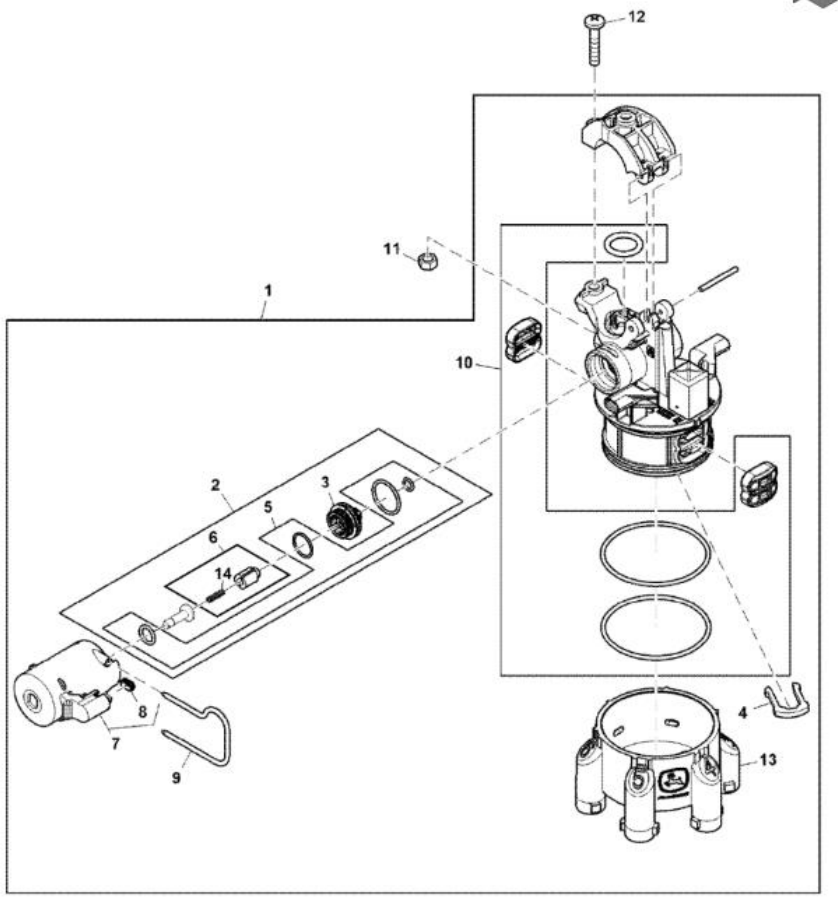
Ops centre chat with Nims

Delete data

- Clear work data. Ops is sorting out everything now so once a season clear the work data.

New plunger spring part

Springs for plungers KK114043 Pack of 10 springs 25% more spring force than previous. Combats dripping nozzles.



Start up DTC

Mobile weather causing MNA 2028.09 DTC on startup

- Update receiver to latest software.

-7000 = 6.75B

-7500 = 2.22C

-Check DA address 96 in MG2 controller is set to 0.

-Check software on mobile weather is 3.21P.

If the above is done you should not see this code anymore.

While checking your receivers are up to date, check your display. Latest update is 24-2.

See & Spray harnessing

We have seen multiple machines recently with the solution hose rubbing on cameras 8 & 30.

Have seen this cause issues with the cameras dropping offline.

Best practice would be to cable tie the solution hose out of the way.

Have also seen the solution hose blocking the cameras vision in the same area.

Nozzle Tip and Speed update

The use of rearward facing nozzles will allow you to run at 24 kph.

If you are going to use straight nozzle tips (i.e.ES80 tip), speed will remain at current threshold of 18 kph.

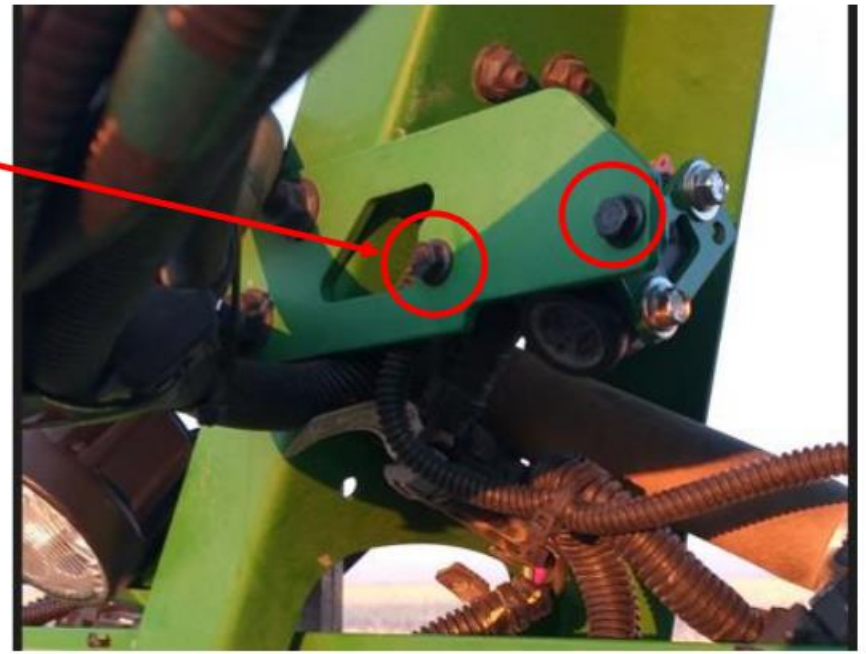
The only rearward facing nozzles that can be used are the ones already programmed into the display.

Rearward facing tip part number AKK53214

A key cycle is required when changing nozzle tips in the display on See & Spray™ Select machines, as the VSM only captures the nozzle tip information on startup. This is important when changing from straight tips to rearward facing nozzles.

See & Spray System Function

- Key Items
  - Cameras located behind the tires are set a different angle than others across the boom. Do not change the angle of the camera.
    - Do not remove the silver screws attaching the camera to the L brackets.
  - When changing/removing cameras, only remove the two black bolts holding the camera assembly to the boom bracket. (procedure outlined in the OM and RTM).



See & Spray Select-Lights

Plants reflect different colours depending on what light is shining on them, natural vs. artificial

See & Spray uses two different algorithms depending on the light spectrum it expects to see When boom lights are on, S&S assumes that it is nighttime, and expects to see the light reflections from the artificial lighting

If it is daytime and the lights are on, S&S ‘looks’ for different colours in the image to indicate plants. The different colours in sunlight can cause errors in the plant detection.

It is not recommended to use lights during the day to reduce false triggering, as some weeds may be missed.

AutoTrac Advanced Tuning

There is no ‘one size fits all’ for tuning these machines. But a good starting point is

Steering Sensitivity – Adjust this first. Whilst operating the machine at spraying speed. Make large adjustments first and work back towards the default. Usually decreasing the number has worked better in this section.

Heading lead – After adjusting Steering sensitivity, then adjust heading lead in the same way. Usually decreasing the number has worked better in this section.

Steering response rate – Lastly adjust this setting. Usually decreasing the number has worked better in this section.

All other settings can also be tuned but read the information on the screen or in the ops manual for each setting before adjusting.

Exact Apply Rinsing

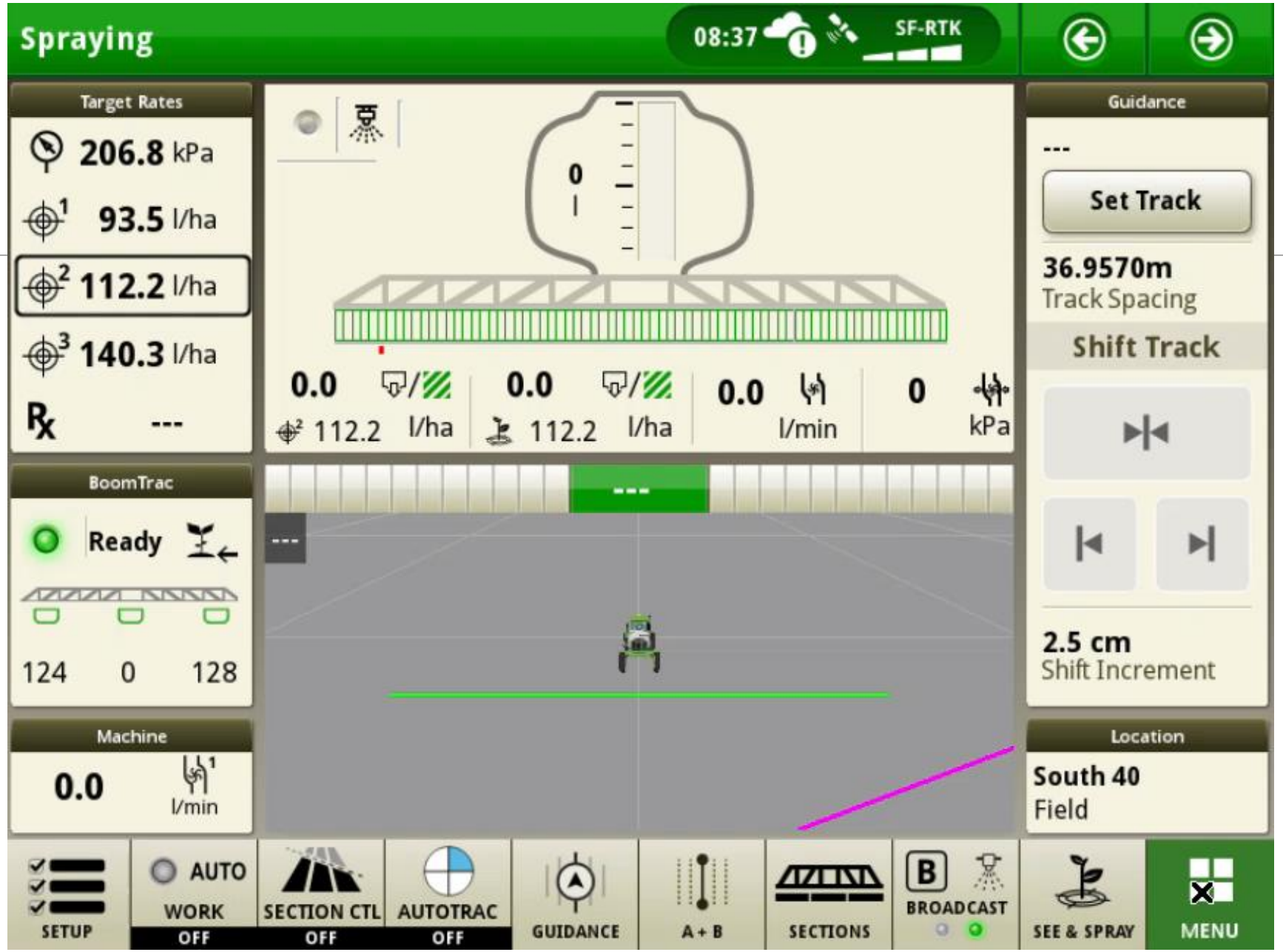
Perform a boom rinse procedure daily to help prevent nozzle plugging and solenoid malfunctions. Spray rinse water through both solenoids A and B.

Exact Apply nozzle bodies require additional care and maintenance to ensure proper function of the system. The nozzle bodies require both A and B solenoids to be rinsed, even if one channel has not been used during spray operation. Nozzle bodies must be rinsed daily when a chemical has been used. Do not allow spray cleaners/tank cleaners to sit in the system for longer than label recommendations or one day at most.

Follow the steps outlined in the machine Operator's Manual to begin a boom rinse.

Verify that a nozzle tip is assigned in the display to A + B nozzle selection (if not in Combined A + B nozzle selection). Verify that the spray pulsing mode is set to fixed and the nozzle flow is set to 75%.

Verify that settings are returned to original before spraying again


Spraying
08:37
SF-RTK
Target Rates
206.8 kPa
93.5 l/ha
112.2 l/ha
140.3 l/ha
Rx ---
0
0.0
112.2 l/ha
0.0
112.2 l/ha
0.0 l/min
0 kPa
BoomTrac
Ready
124 0 128
Machine
0.0 l/min
Guidance

Set Track
36.9570m
Track Spacing
Shift Track
2.5 cm
Shift Increment
Location
South 40
Field
SETUP
AUTO WORK OFF
SECTION CTL OFF
AUTOTRAC OFF
GUIDANCE
A + B
SECTIONS
BROADCAST
SEE & SPRAY
MENU

Rinsing means check filters too!!

Propel Line Block Clamp Hardware Failing

Hardware (KK81128) that secures ball clamps to propel hoses inside block clamps is failing or coming loose, If left loose or failed, hose can move inside ball and damage to hoses can occur

Field repairs/replacements will require external clamp to be used to fully compress ball clamp halves prior to installing hardware

Breakaway ground strikes

During ground strikes there are possibilities for these bolts to snap off or go missing.

The bolts in the circles below were missing and that forced the load to go through the remaining hardware locations and the casting is not strong enough to take those stresses at the reduced number of connection points.

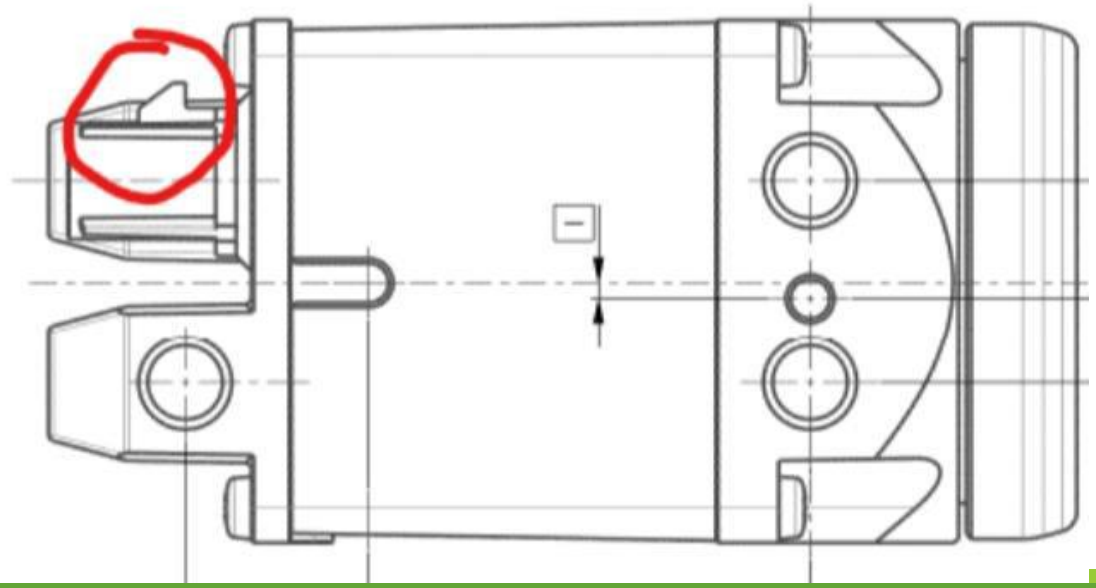
In the image below, the bolt in the red circle shows as missing and the bolt in the blue circle is sheared off and judging from the picture it looks rusty and dirty like it had been broken for some time. The raw casting edges where the break occurred are pretty clean in contrast.

Recommendation is to do a walk around inspection to check these bolts, especially after a ground strike to avoid major failure

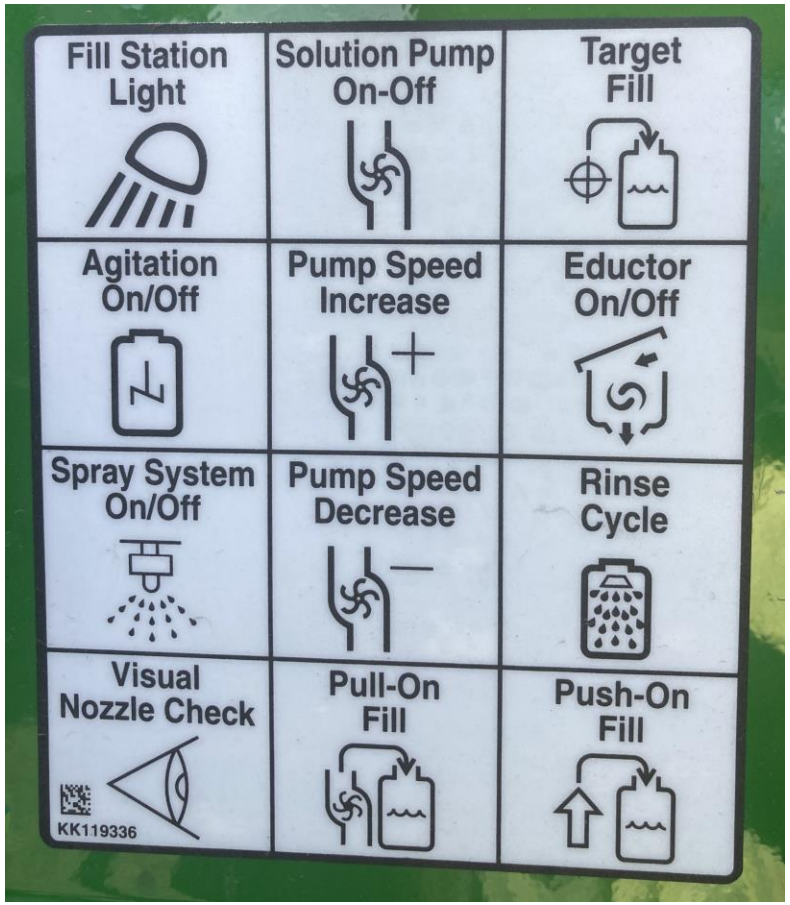
Removing Fakra Connectors from Cameras/VSMs

Fakra connectors are very delicate and hard to remove. Camera is not serviceable, so if tab is broken, camera needs replacing.

Best Practice: Push fakra connector in firmly, then use a small tool (e.g. small screwdriver) to depress the latch, then gently pull the connector out.



New solution fill panel sticker



KK119336
$15.00

See & Spray Setup

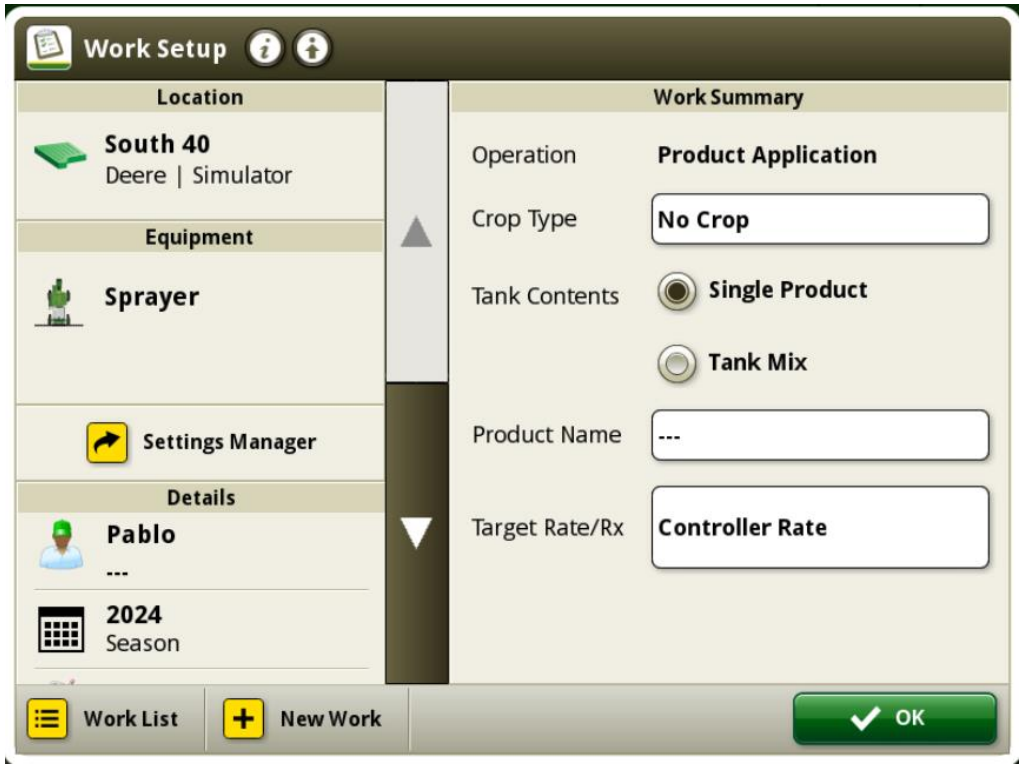
How see and spray works

1. Camera is monitored by the Vision spray module (VSM) for the colour green.
2. When the VSM detects green colour it analyses the size of the object.
3. If the size exceeds the threshold which is the sensitivity selected.
4. VSM commands a message to the nozzle body for that respective location to enable.
5. If the size of the object is less than the threshold it ignores the green detection.

24-2 Software with S&S Select

New with 24-2, the crop type ‘No Crop’ will need to be selected in the setup page.

See & Spray WILL NOT work without this being selected.



See and Spray™ Select

System Capabilities

- Fallow ground only (green on brown)
- Day & Night operation
- 18 kph max speed nozzle over ground straight tip
  - MY24 25 kmh with the use in rearward facing nozzle tips AKK53214.
- ≤ 16 Kph wind; w/buffer
- Detects weeds as small as 15mm*
- Dust Detection

System Benefits

- Chemical savings with system
- Target weeds directly

Machine Status

- Engine > 890 RPM
- BoomTrac installed and no faults
- ExactApply™ Setup
- Proper lighting
- Calibrations completed successfully

System Requirements

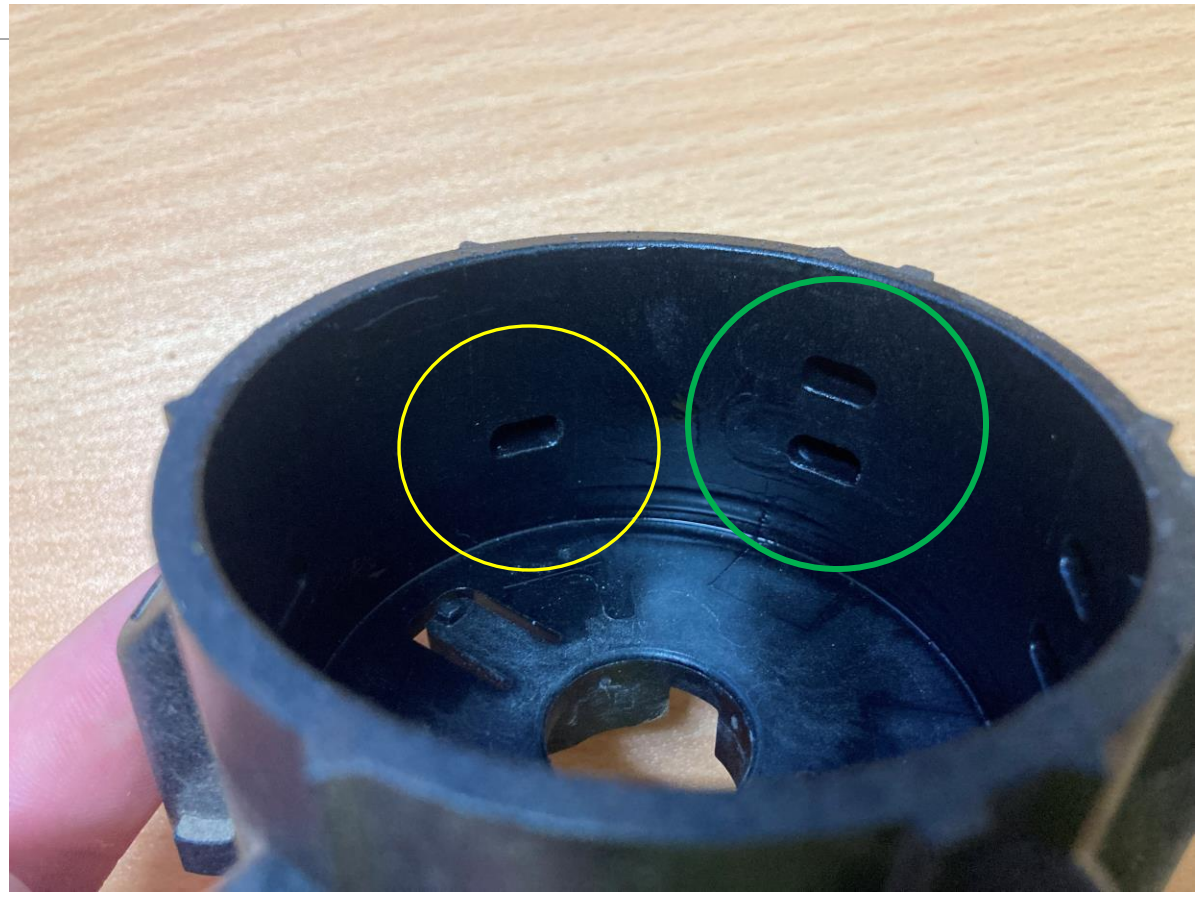
Machine Configuration

- ✓ SF7000/SF7500 Receiver with accuracy of RTK or SF RTK
- ✓ Nozzle turret 4, 5, 6, in the rearward facing position (B nozzle)
- ✓ See and Spray Rate entered in spray system application and Target Rate if using A+B PWM
- ✓ Configure ExactApply™ manual turret setup page to “See and Spray™” spray method with tips assigned properly
- ✓ Orifice Valve in the fully open position

Operational Conditions:

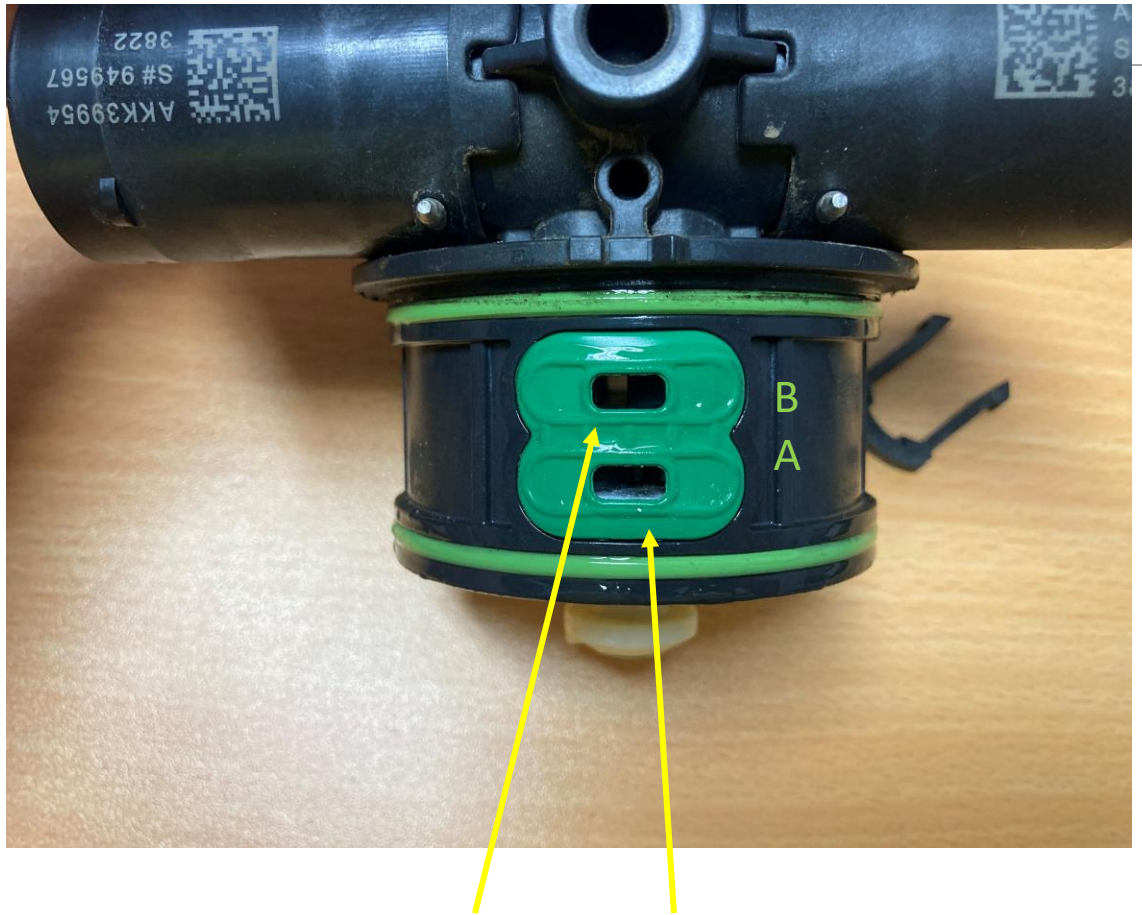
- ✓ Less than16kph wind
- ✓ 1 kph – 19 kph operating speed, forward direction only
- ✓ Boom Height 50 cm-120 cm *(BT not required to be activated)*

See & Spray turret positioning



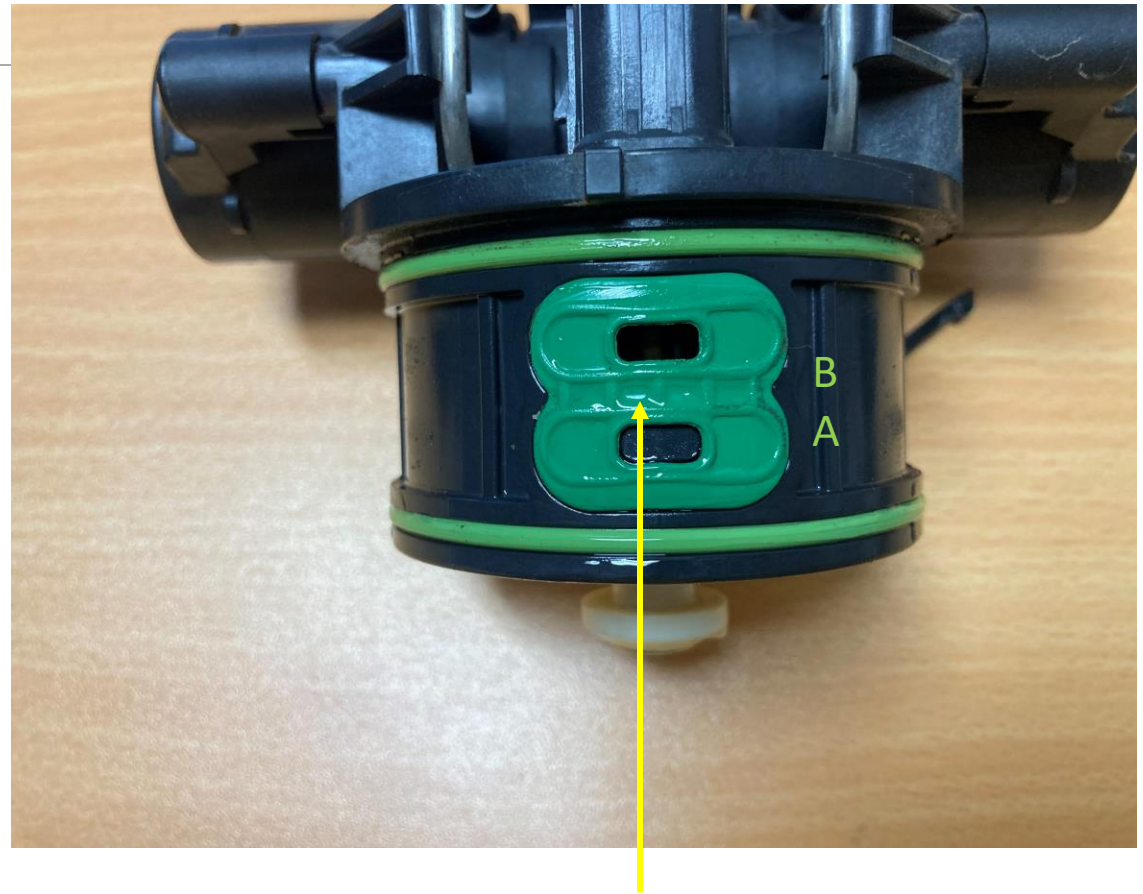
See & Spray needs turret 4, 5, or 6 rearward facing.
Only using B solenoid.

Front Side A ONLY



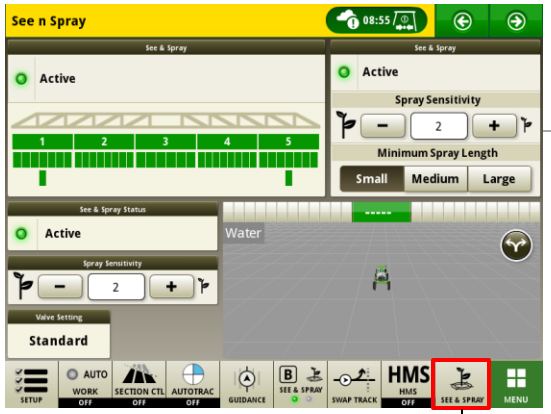
Two open ports

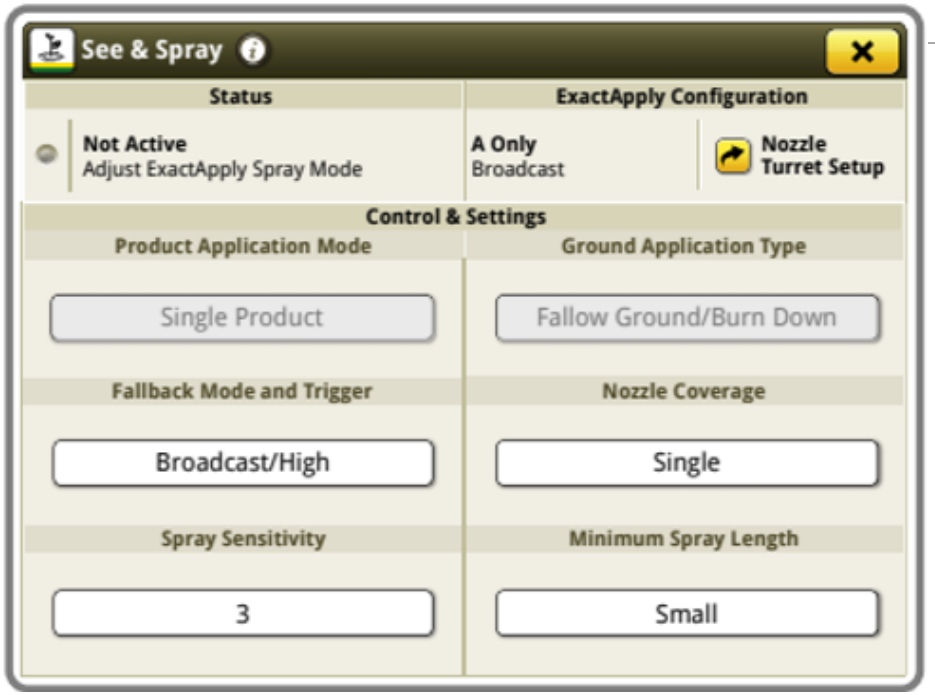
Back Side B ONLY



One open port

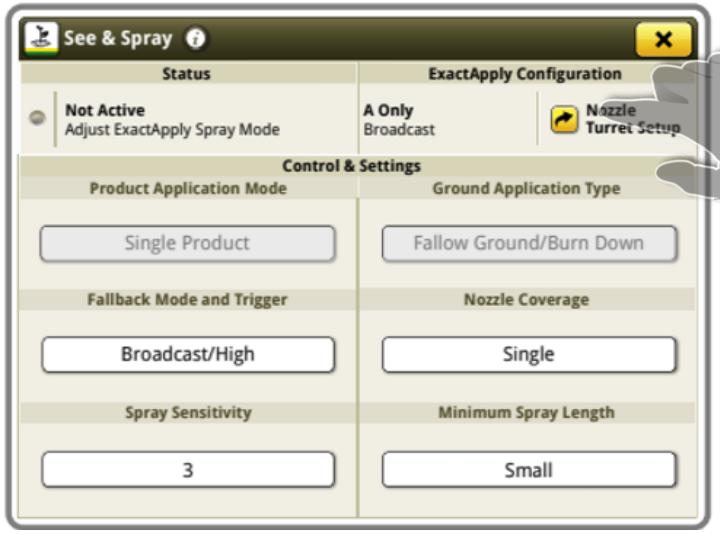
See and Spray™ Select Screen Flows

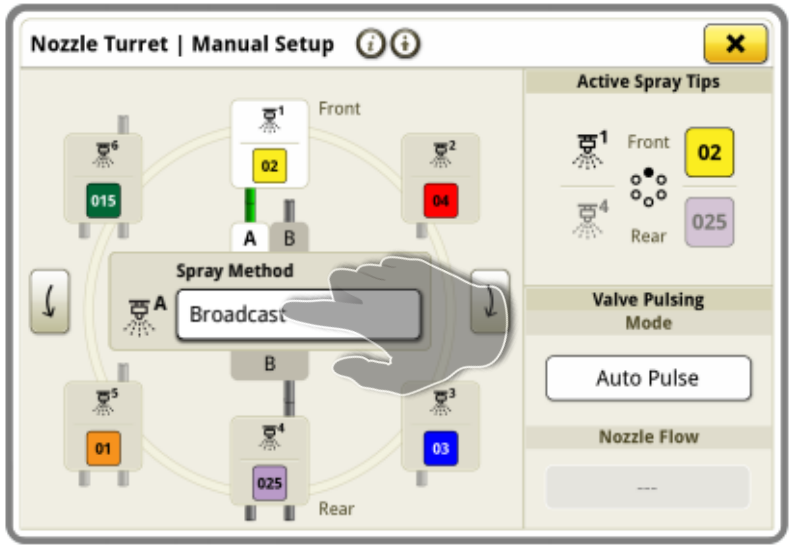


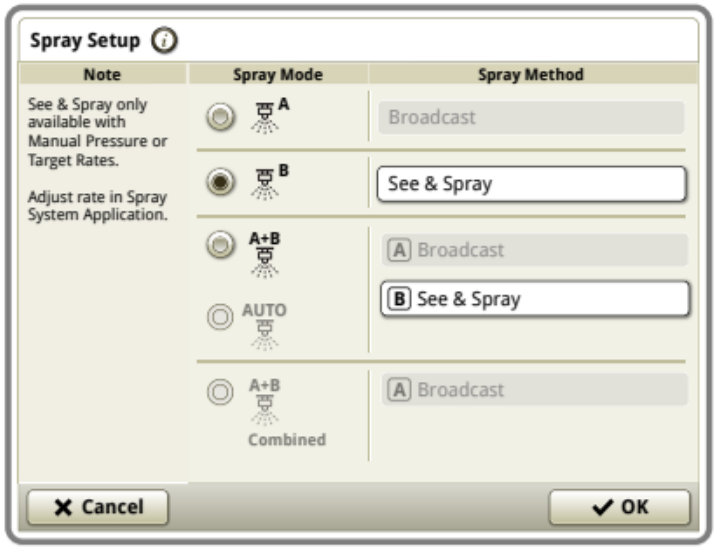


- See and Spray setup w/ EA
- Fallback mode and Trigger
- Spray Sensitivity
- Nozzle Coverage
- Minimum Spray Length
- Status

Exact Apply Set up

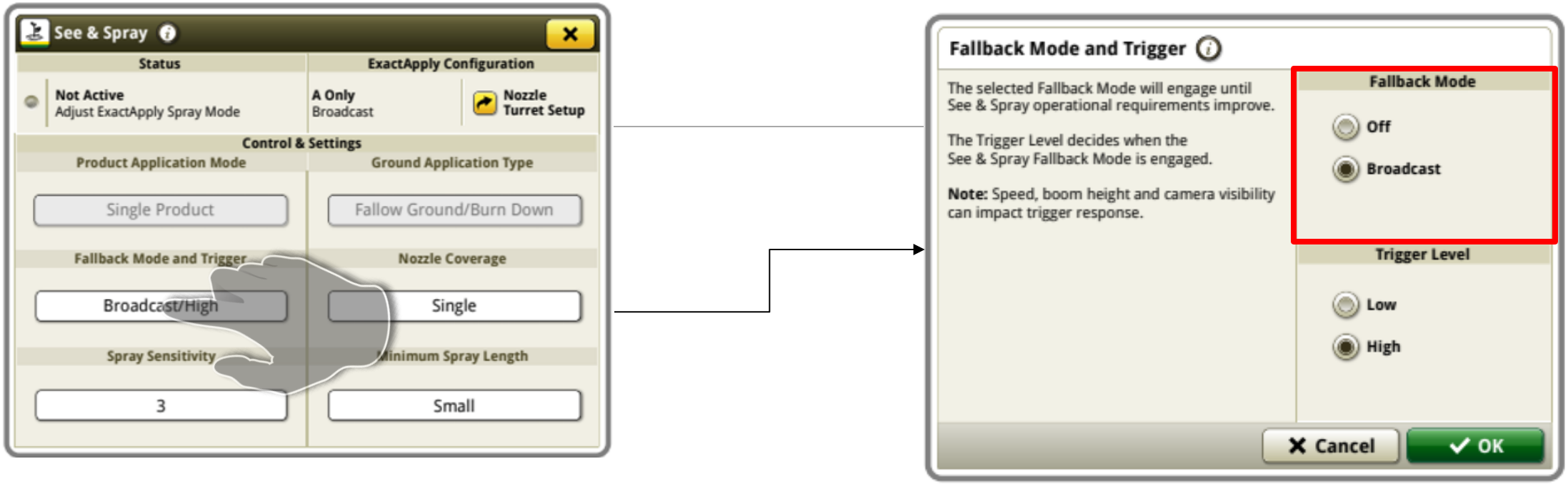






- Verify nozzle 4, 5, or 6 is facing rearward both physically and in display.
- Set spray method, with nozzle B set to See and Spray
- Set Valve Pulsing Mode to AUTO or OFF if using A+B

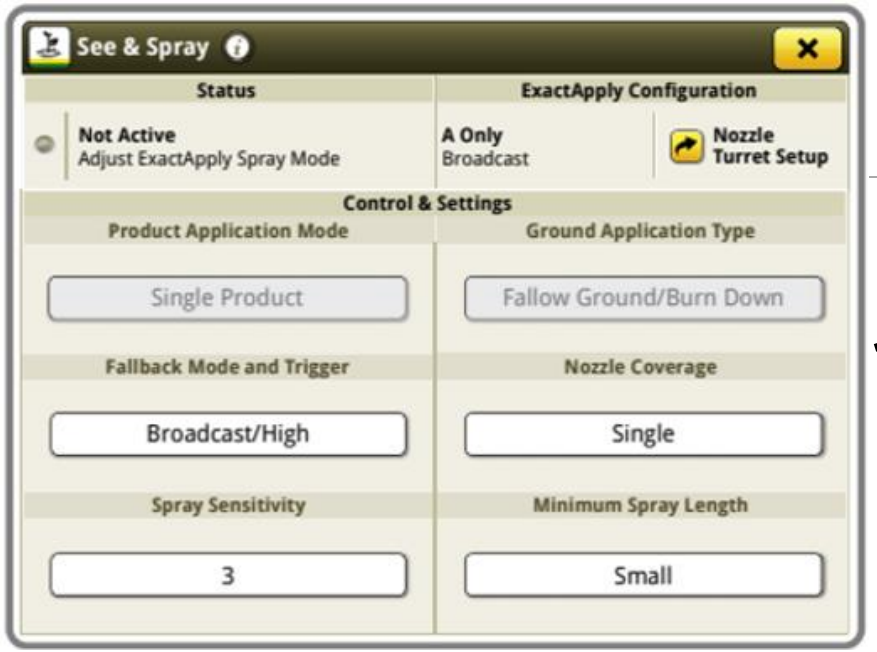
Screen Flows: Fallback Mode

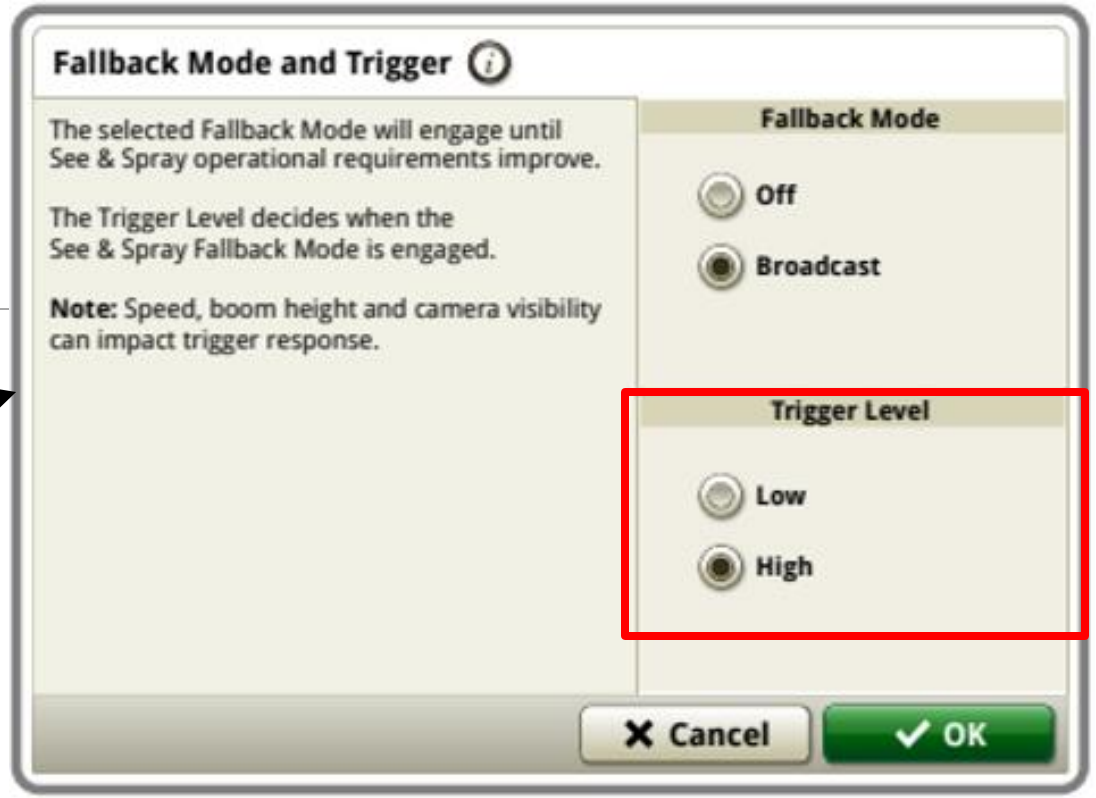


What is the customer's top priority?

- Hitting weeds in the field, then use BROADCAST Fallback Mode. Most will use this setting
- Chemical savings, then use OFF Fallback Mode. This makes the affected nozzles not spray when it is outside the S&S ranges

Screen Flows: Trigger Level



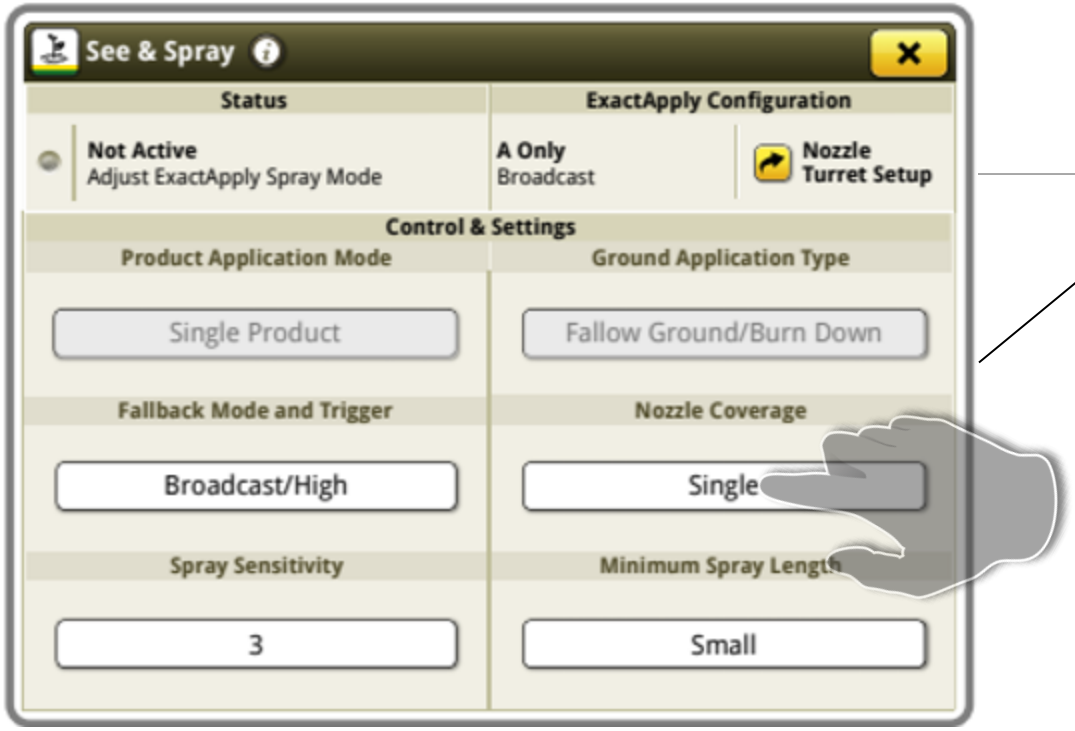


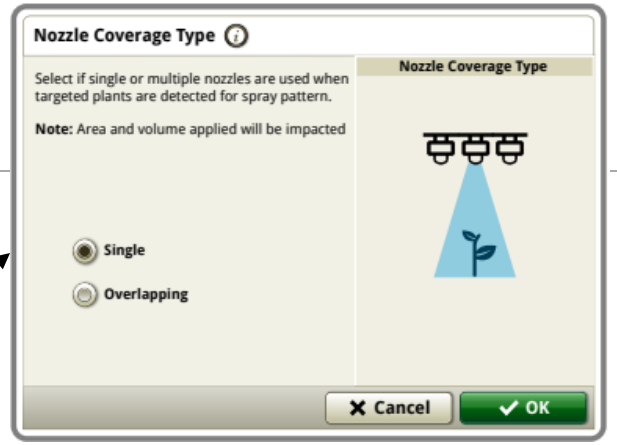
Trigger Level is affected by boom operating height 50-120cm S&S Select, camera health (debris or obstructions), and nozzle speed over ground 1-19 kph for S&S Select.

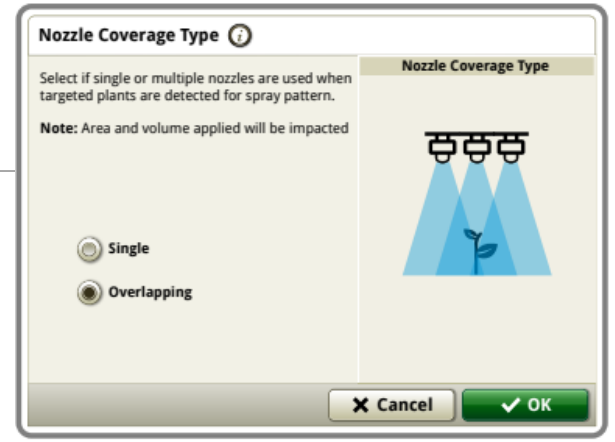
HIGH Trigger Level: system remains engaged in above thresholds, will enable previously user selected fallback mode per affected nozzles if it falls outside these ranges and show orange status.

LOW Trigger Level: system remains engaged +/-8” on boom height range 30-140 cm or if there is a minor obstruction on affected cameras. Nozzle speed is either fully met or not met which means it goes to previously selected user fallback mode of OFF or BROADCAST

Screen Flows: Nozzle Coverage







Single Nozzle Coverage: minimum of 1 nozzle enabled, can be up to 2.

Overlapping Nozzle Coverage: minimum of 3 nozzles enabled, can be up to 4.

Spraying at lower boom heights 50 cm and there is no wind? Recommend

Single Nozzle Coverage

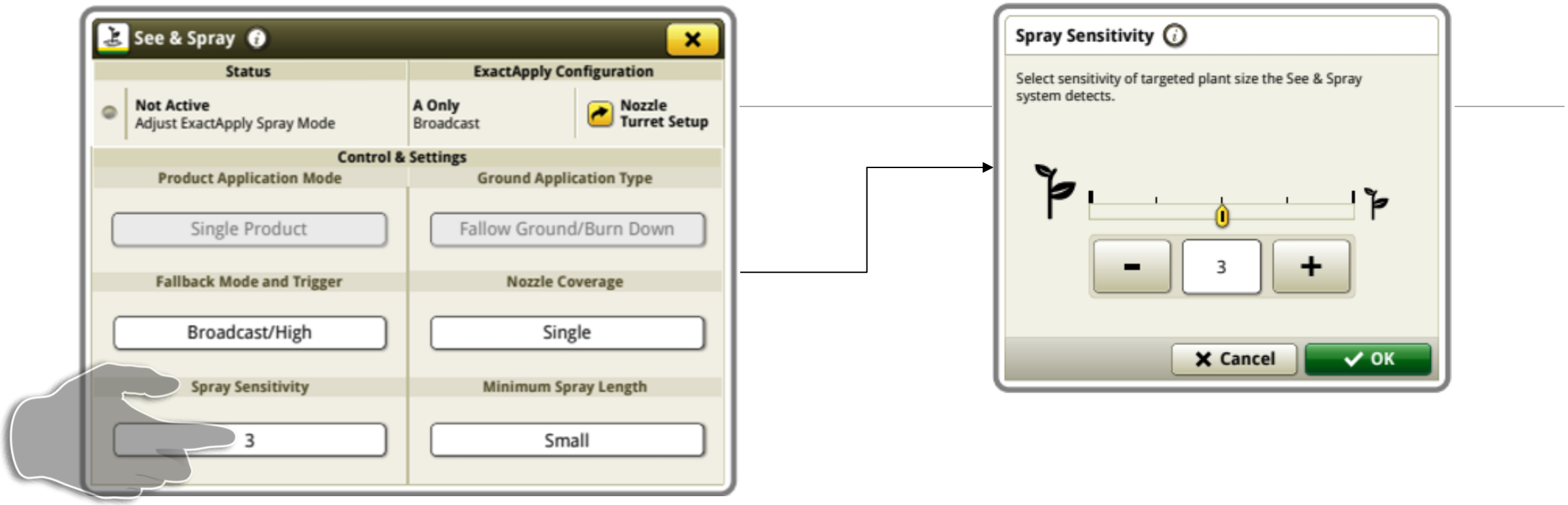
Spraying at higher boom heights 120cm and there are winds more than 12kph? Recommend

Overlapping Nozzle Coverage

Are there lateral winds? Likely to recommend

Overlapping Nozzle Coverage

Screen Flows: Spray Sensitivity



Spray sensitivity has settings of 1-5. The higher the spray sensitivity setting, your target size will decrease (smaller targets detected)

Where have people had success?

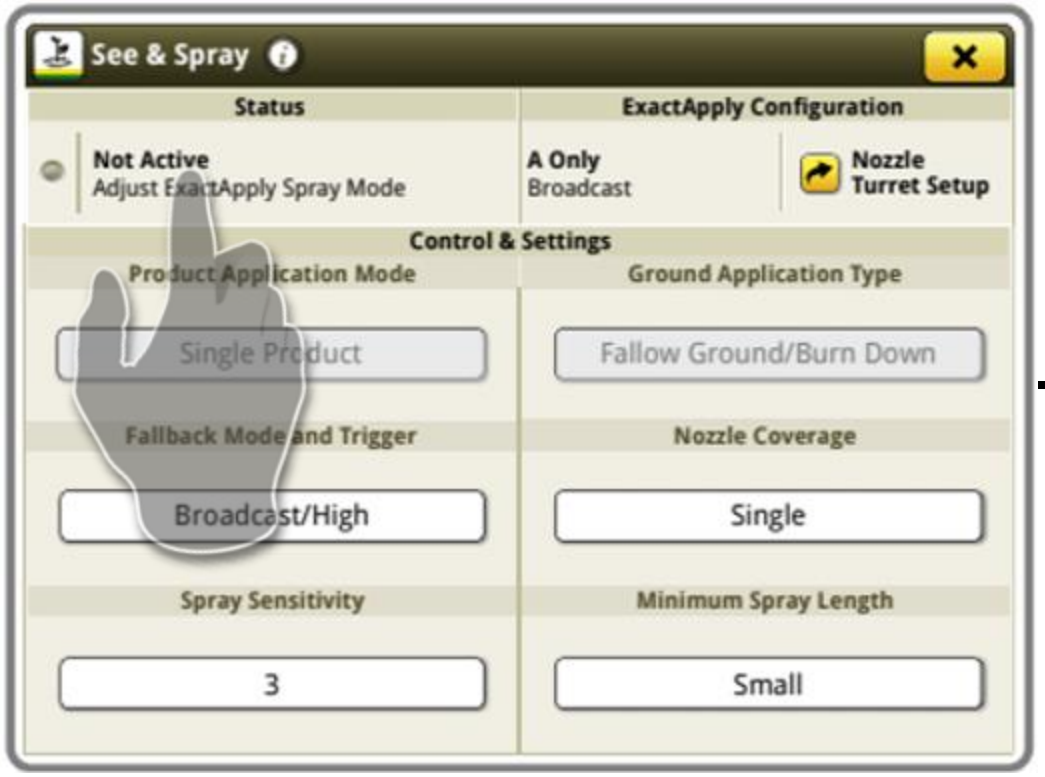
This number is driven by what you are seeing on the ground

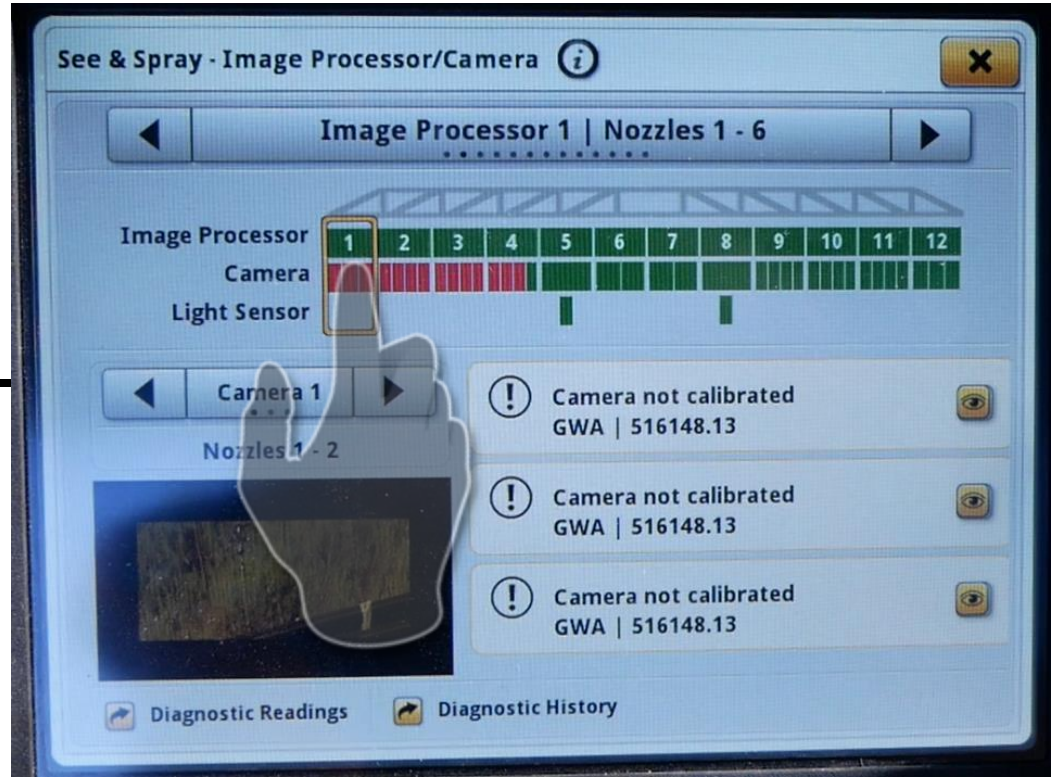
Spray Sensitivity

-Adjust sensitivity

-Obtain a sample of the desired target, place it under a camera.

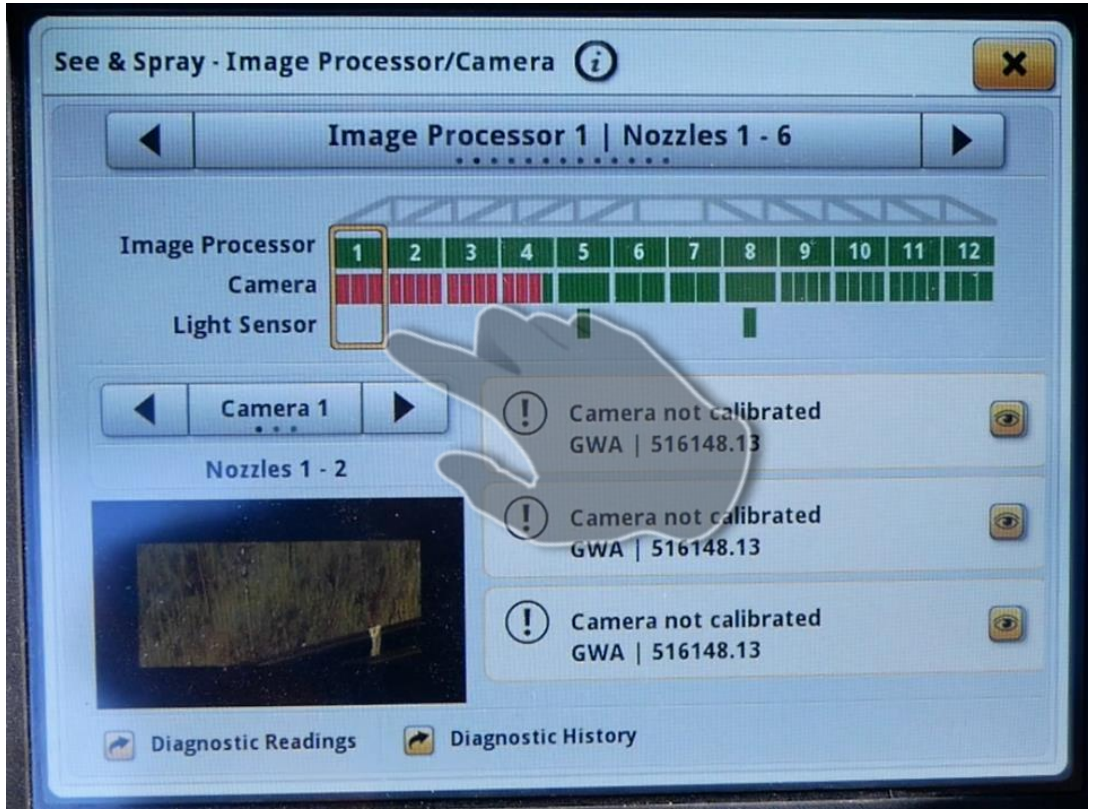
-Navigate to the VSM via L/R arrows or click on the VSM.

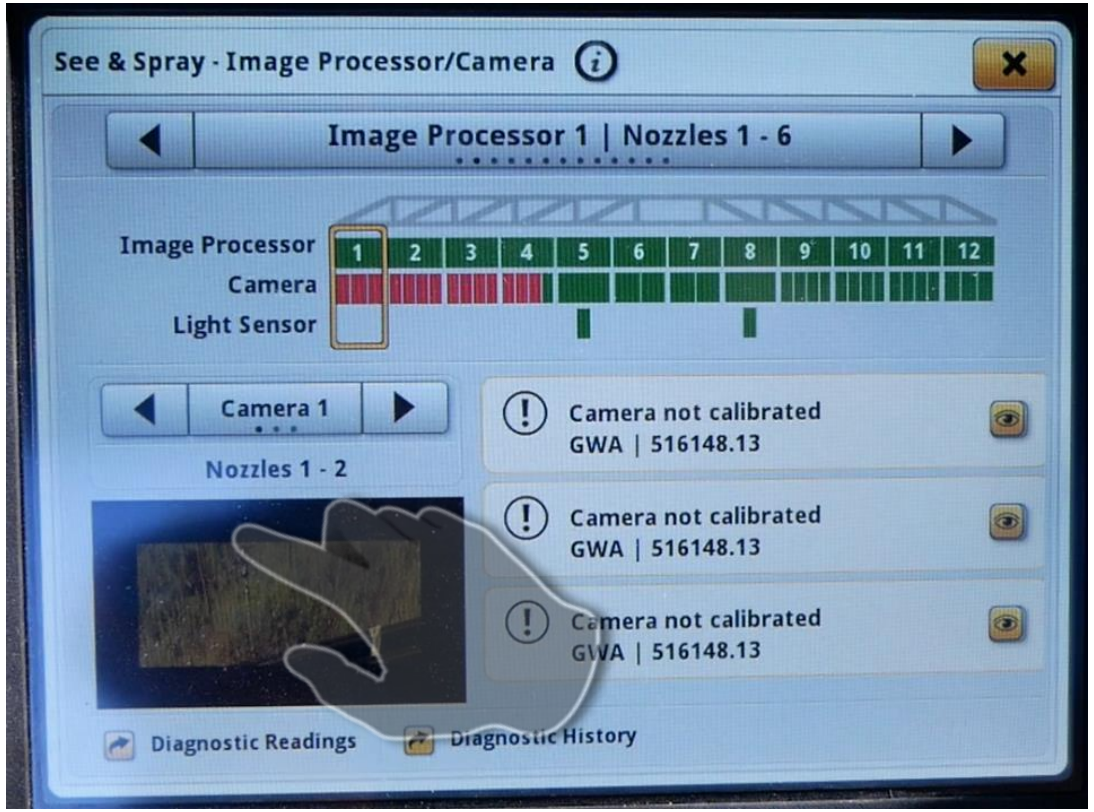




Spray Sensitivity

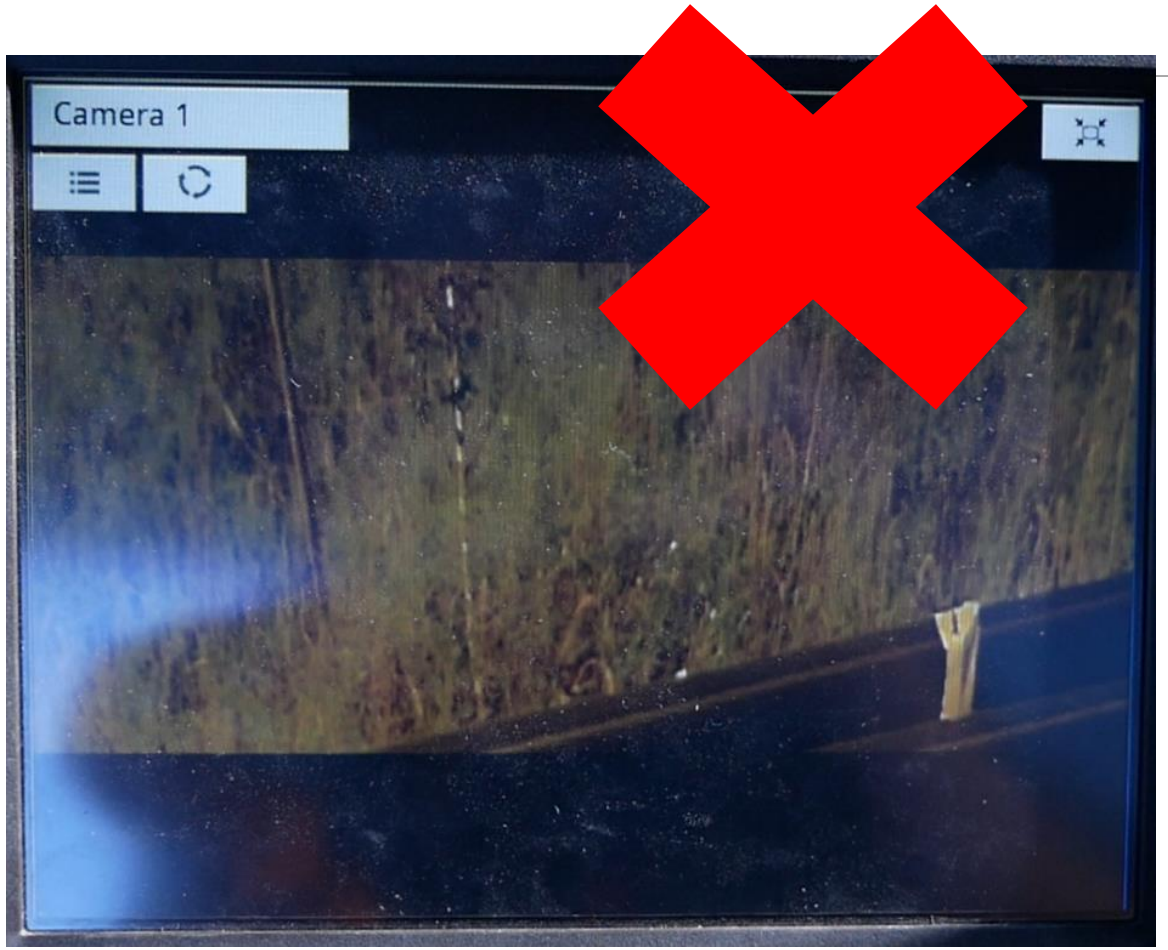
- Once on correct VSM, use arrows to view camera that target is under.
- See if desired target is highlighted on video feed, if not, adjust sensitivity until target becomes highlighted.





Spray Sensitivity

View in video feed of camera detecting targets.



Not Detecting Green Pixels

Detecting Green Pixels

SnapCard 4+

Department of Primary Industries and Regional Development

Designed for iPad

★★★★★ 5.0 • 1 Rating

Free

How else can we confirm results?

Wait 2-10 days depending on what chemical was used?

% of paddock sprayed?

Physical checks are best

Water sensitive paper on select targets

Use the SnapCard app to get a % of card contacted

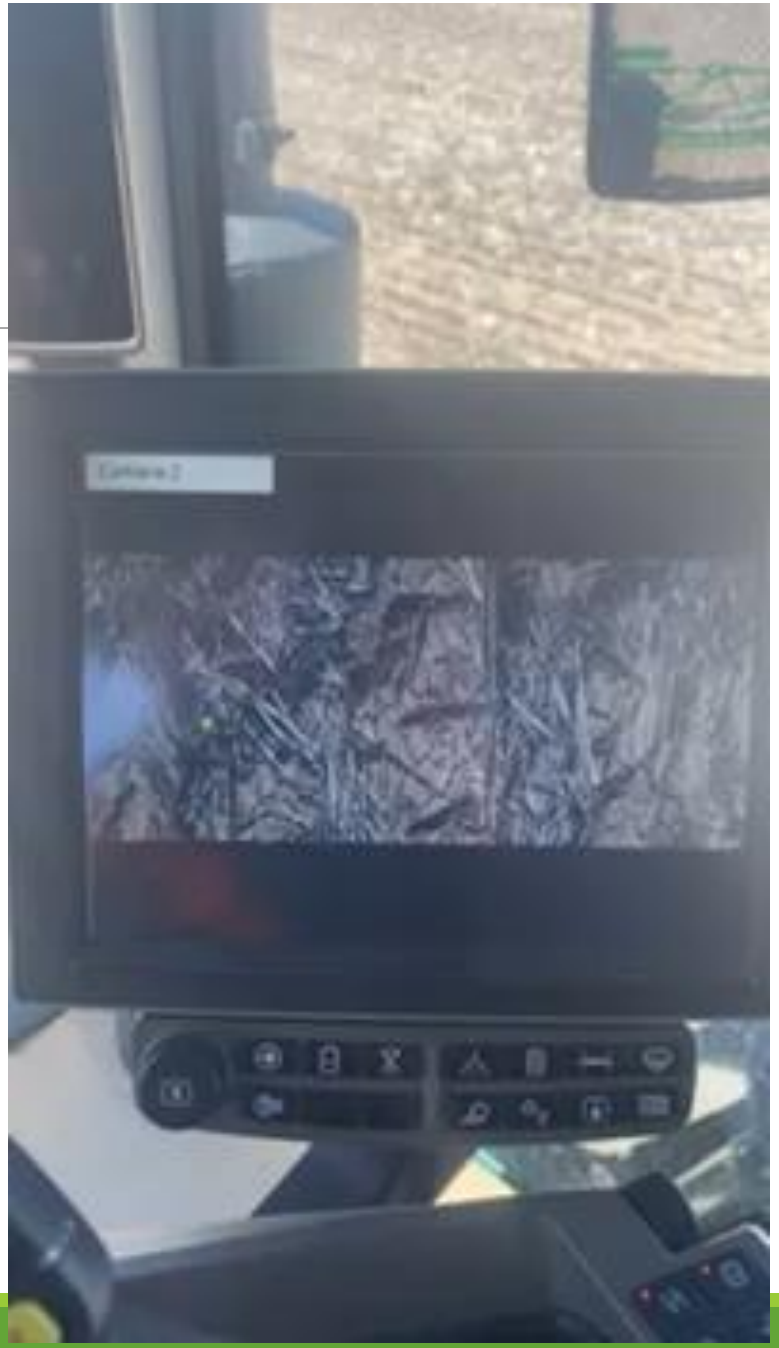
Water sensitive paper

Picking up shadows

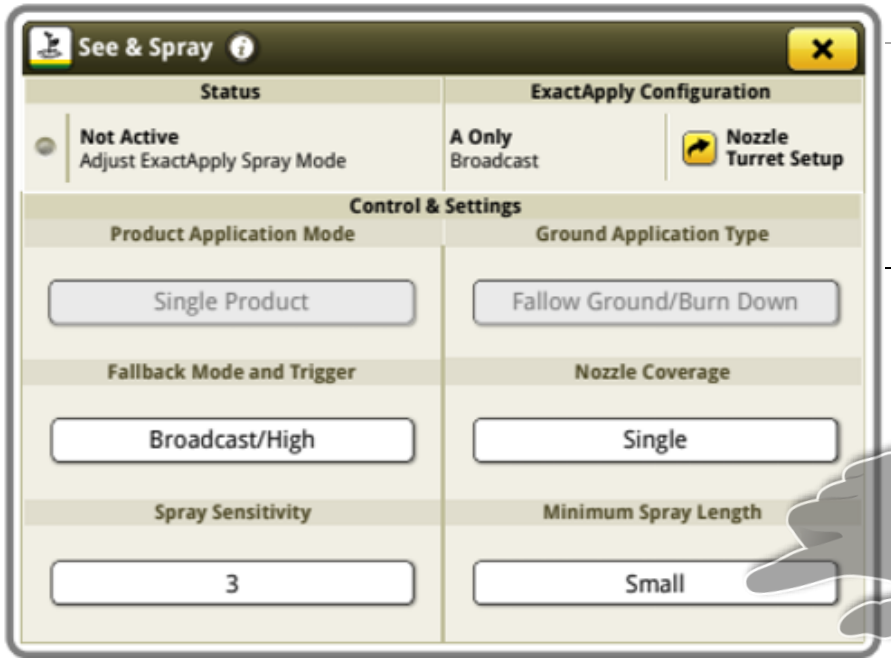
We have been having an issue with one machine where it is picking up shadows as green area.

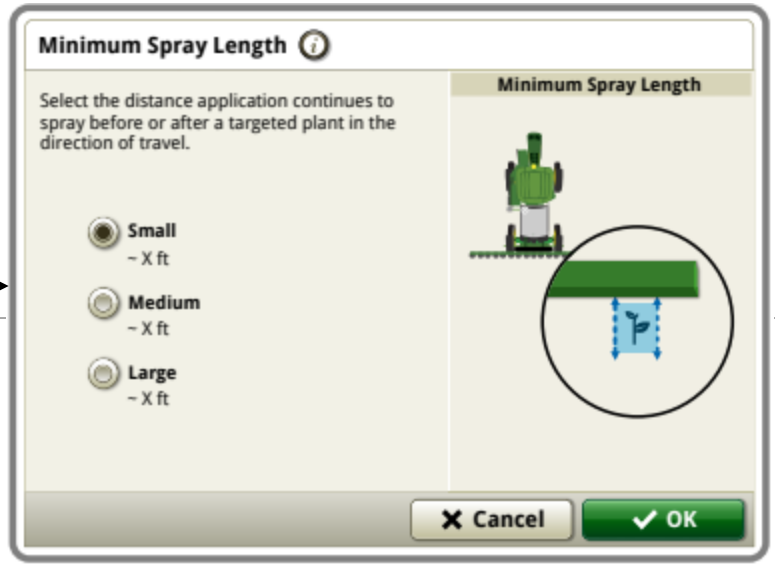
Currently there is no fix for this, Deere is aware of the issue.

There is a work around with applying camera filters through addresses in the system but will need to be done every key cycle.



Screen Flows: Spray length





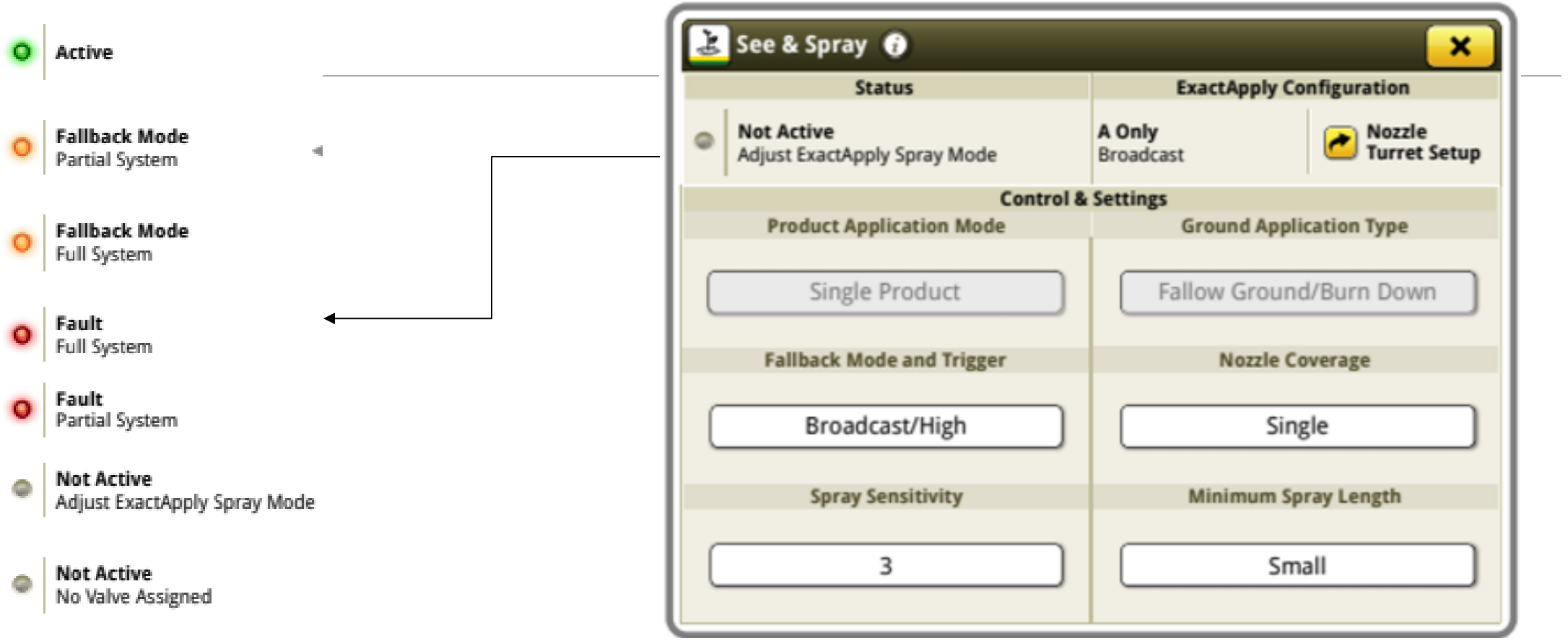
Spray Length options

- Small ~.7m
- Medium ~1m
- Large ~1.5m

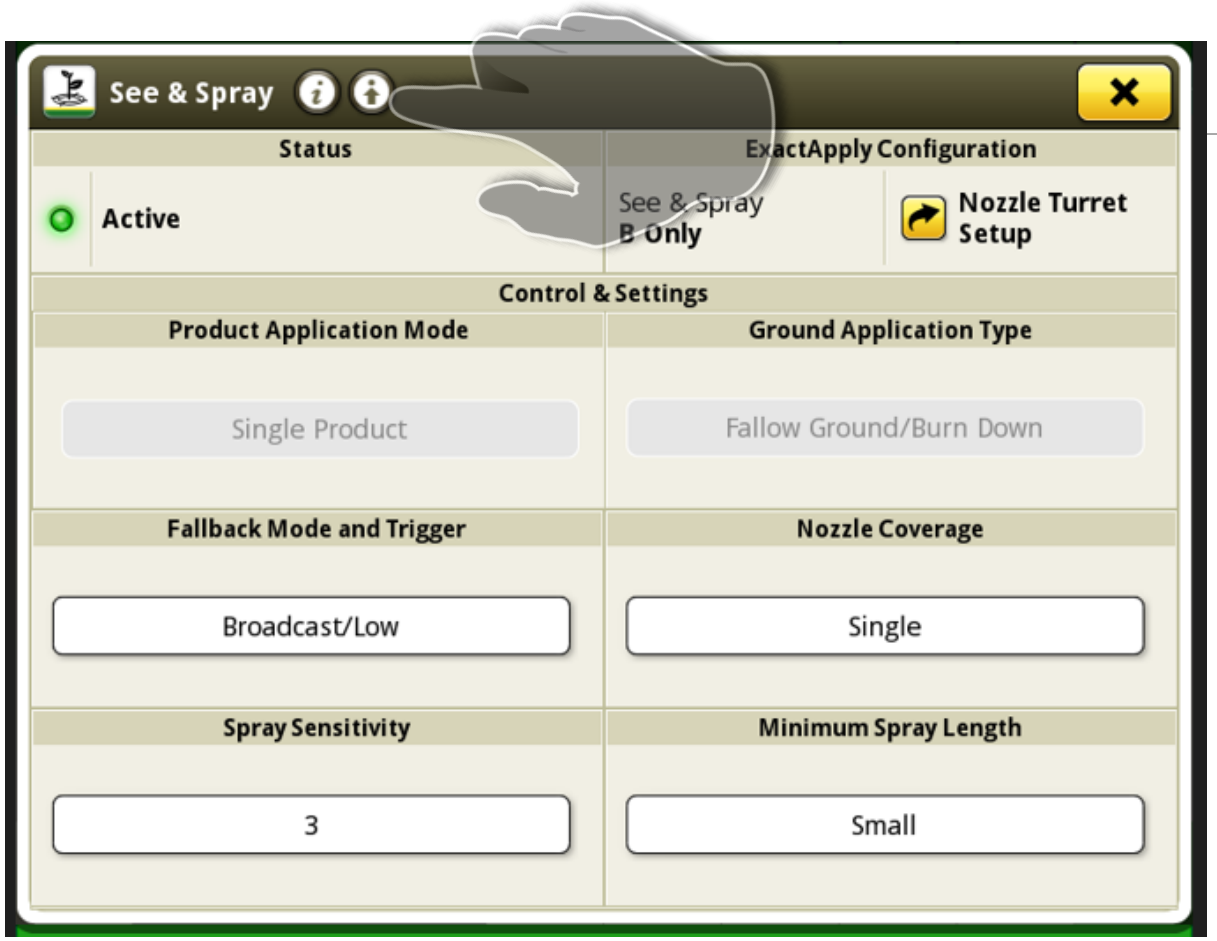
- Medium at a minimum for anything over 20kph.

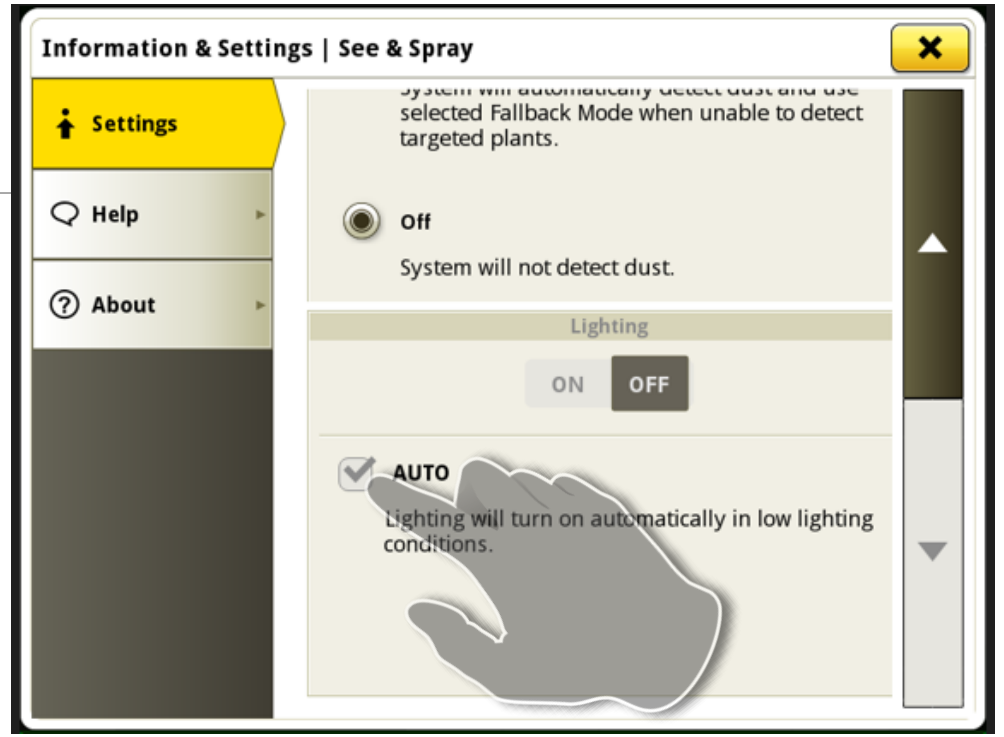
Minimum Spray Length determines the time Nozzle B is commanded to ON when a green target is detected, which equates to an approximate distance. There are Small, Medium, and Large settings.

Screen Flow: Status Information



How to get to light configuration

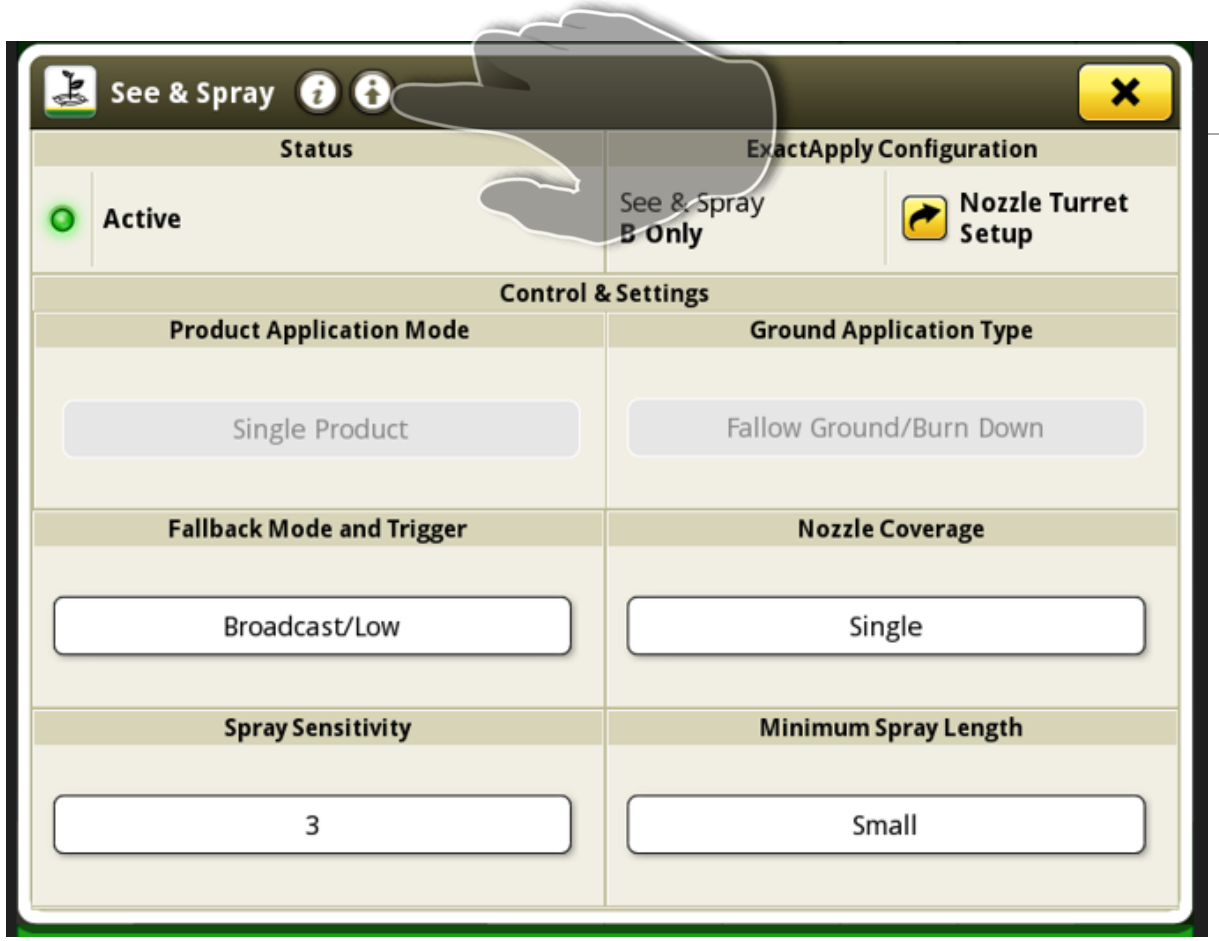


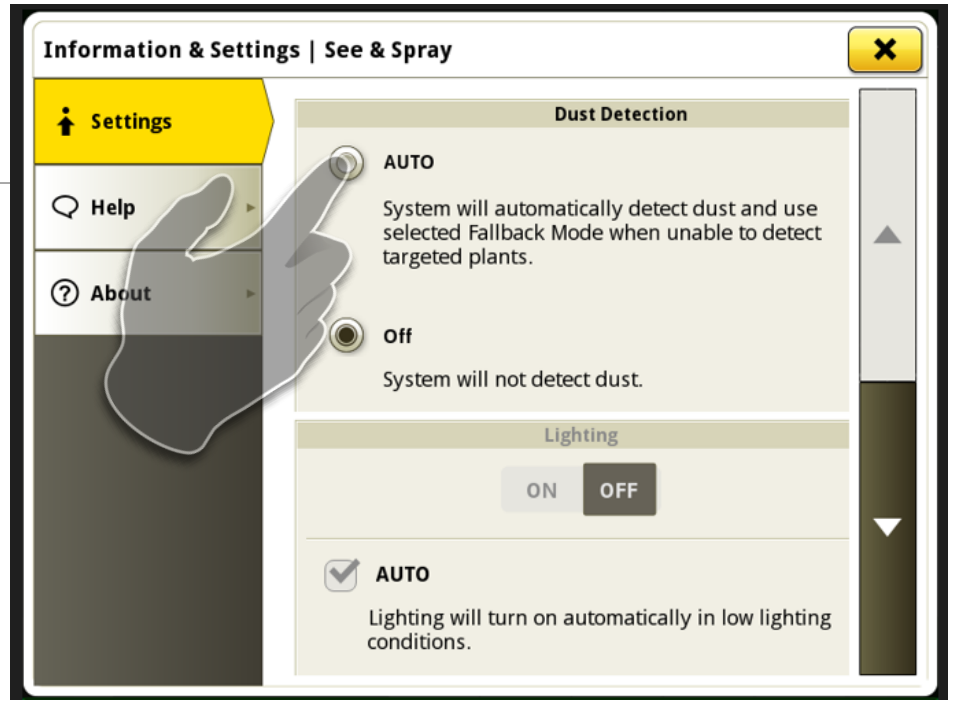


Three light configurations

1. On
2. Off
3. Auto

Dust Detection





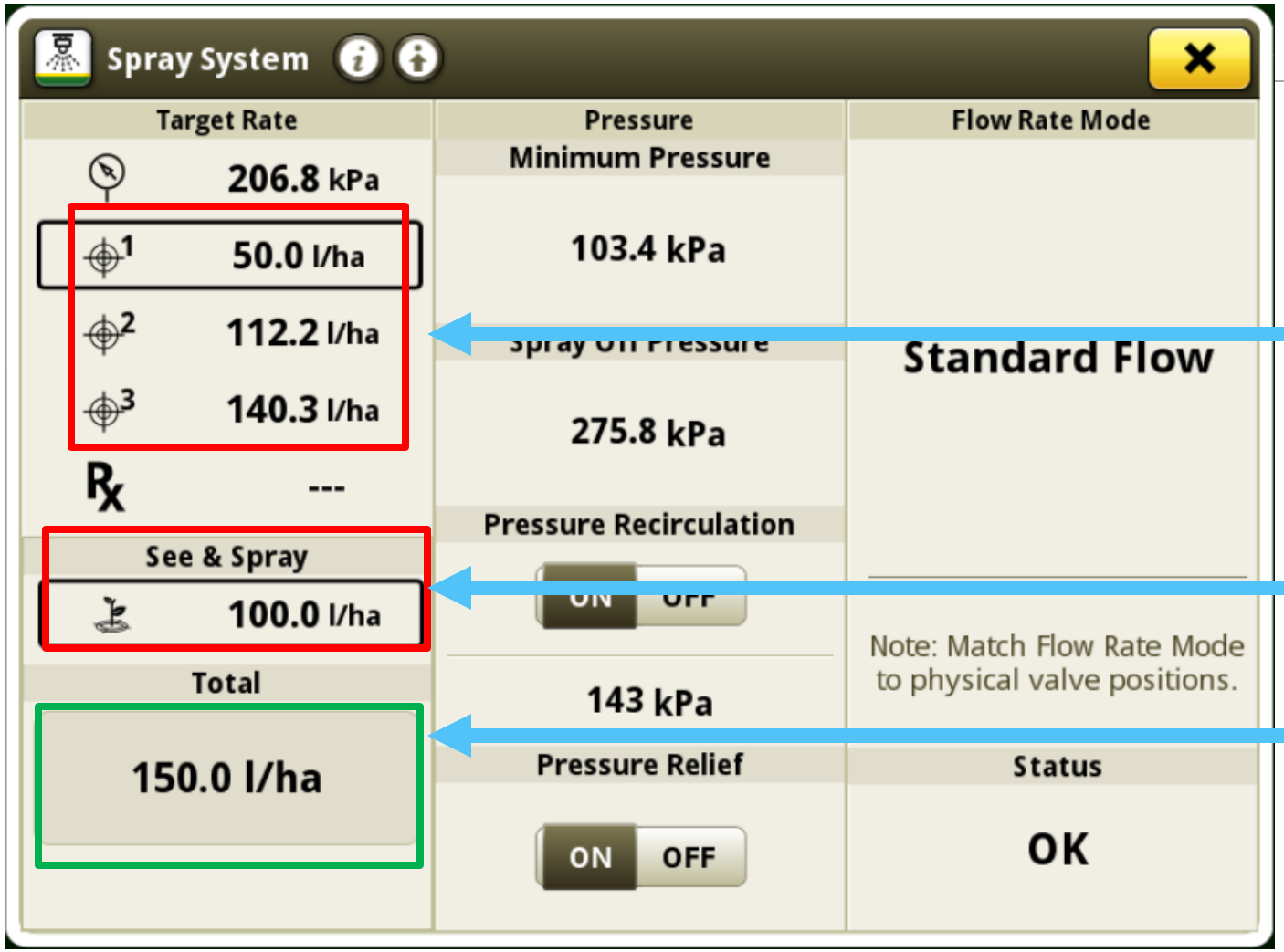
Dust Detection: This allow the cameras associated to Vision Spray Module 3 to go to fallback if dust is detected. Dust trigger levels can be set to the below criteria.

- Trigger level set to low-only the camera detecting dust will go to fallback.
- Trigger level set to high-All cameras associated to Vision Spray Module 3 will go to fallback.

See & Spray™ Select – Default Settings

System Setting	Default	Reason For Change
Fallback	Broadcast/Low	Chemical Savings/Constant spraying during fallback (broadcast vs. off)
Sensitivity	3	Weed pressure/lighting/Time of day/field to field differences
Spray length	Medium	Wind/Speed/Chemical Savings
Nozzle Coverage	Single	Wind/Chemical Savings/Weed pressure

Set your Rate in the Spray System page



Target presets 1, 2, 3 are for Nozzle A if utilizing A+B with auto-pulsing

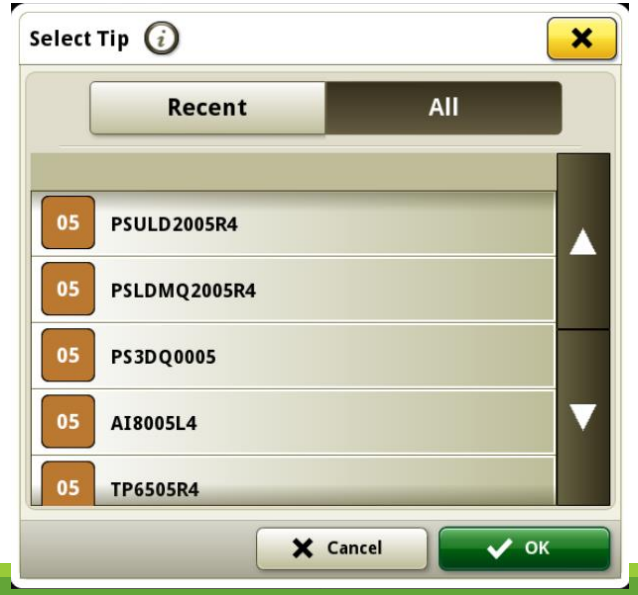
See and Spray rate is for Nozzle B

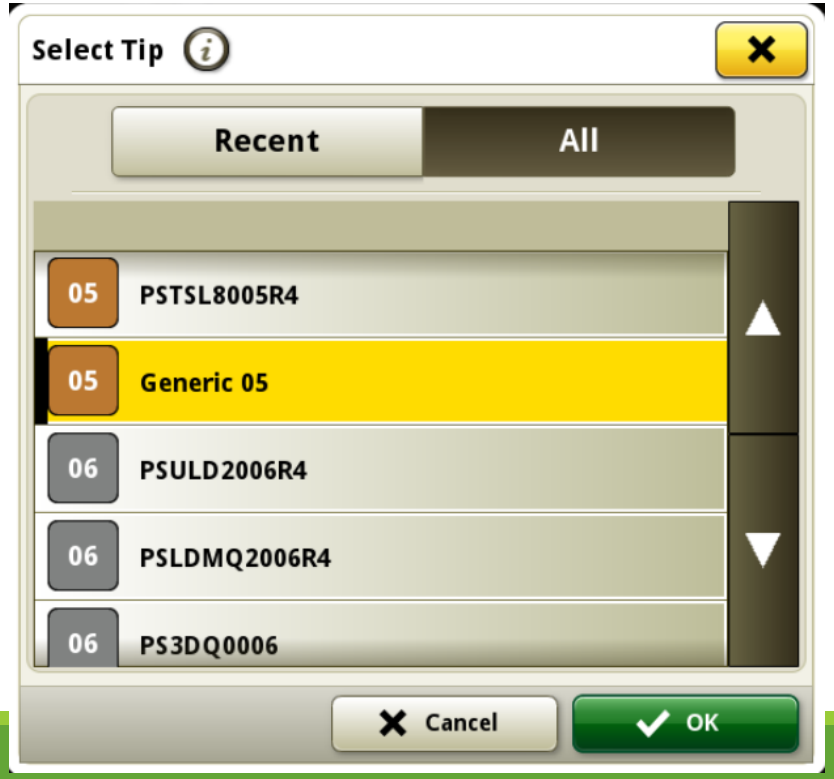
Total of selected Target Rate and See and Spray Rate

Nozzle setup

In the nozzle selection you will have a lot of different nozzle options. Only select something ending in R4 if you are using the rearward facing nozzle cap. This changes the timing of the nozzle firing and will lead to poor performance if you are not running a rearward facing tip.

Select ‘Generic’ if using a straight down tip.





NOZZLE RECOMMENDATIONS

SEE & SPRAY™ SELECT APPROVED NOZZLES FOR UP TO 16 MPH

CHEMICAL SAVINGS PRIORITIZED ← → **COVERAGE PRIORITIZED**









Nozzle Tips	Agrotop SpotFan *SF40*	TeeJet *TP65*	TeeJet *AI80*	John Deere Extended Range *ER80*	TeeJet DriftGuard *DG80*	TeeJet *AIXR110*	John Deere 3D	John Deere Ultra Low-drift *ULD120*	John Deere Low-drift Max *LDM120*
Spray Angle	40 degree	65 degree	80 degree	80 degree	80 degree	110 degree	100 degree	120 degree	120 degree
Application	**Fallow Only** Boom height of >30" to reduce streaking	Contact and systemic herbicides	Systemic herbicides Dicamba approved for some products, follow label	Contact and systemic herbicides		Systemic herbicides 2,4-D approved for some products, follow label	Contact herbicides	Systemic herbicides Dicamba and 2,4-D approved for some products, follow label directions	
PWM target	No	No	No	No	No	No	No	No	No
PWM broadcast	Yes	Reference TeeJet	Reference TeeJet	Yes	Reference TeeJet	Reference TeeJet	Yes	No	Yes
Rearward Angle	Use R4 "regular tip" 40° incline cap (AKK53214)		Use L4 "long tip" 40° incline cap (AKK53216)	Use R4 "regular tip" 40° incline cap (AKK53214)			Built-in 38°	Use R4 "regular tip" 40° incline cap (AKK53214)	
Sourcing	Aftermarket through Greenleaf**	Aftermarket** through TeeJet		Aftermarket** through John Deere	Aftermarket** through TeeJet		John Deere		
Approved Part Numbers as shown in the Gen 4 display*	SF4003R4 SF4004R4	TP6503R4 TP6504R4 TP6505R4 TP6506R4	AI8003L4 AI8004L4 AI8005L4 AI8006L4	PSER8003R4 PSER8004R4 PSER8005R4 PSER8006R4	DG8003R4 DG8004R4 DG8005R4	AIXR11003R4 AIXR11004R4 AIXR11005R4 AIXR11006R4	PS3DQ0003 PS3DQ00035 PS3DQ0004 PS3DQ0005 PS3DQ0006 PS3DQ0008	PSULD2003R4 PSULD2004R4 PSULD2005R4 PSULD2006R4 PSULD2008R4	PSLDMQ2003R4 PSLDMQ2004R4 PSLDMQ2005R4 PSLDMQ2006R4 PSLDMQ2008R4

Always follow product label recommendations when selecting nozzles *Nozzle Part Numbers have a R4 or L4 appended to them indicating they must be installed in a R4 or L4 Cap
**Aftermarket nozzles will need to be assembled by customer with L4 Caps (Order AKK53216) or R4 Caps (Order AKK53214). These are packs of Qty.10.

Last Revised: November 2023

John Deere ES Sprayer Nozzles

JOHN DEERE

Size	Tip Part Number	Cap Part Number
03	PSES8003	PS90003
04	PSES8004	PS90004
05	PSES8005	PS90005
06	PSES8006	PS90006
08	PSES8008	PS90008

Features	
Common Use	Weeds
Pattern	Even Flat Fan
Technology	Eliptical Orifice
Material	Polyacetal
Spray Angle	80°
Pressure Range	2.0 - 4.1 Bar (30 - 60 PSI)
Configuration	Tip

Application Selection Guide	
Foliar Contact	Very Good
Foliar Systemic	Very Good
Soil Applied	Very Good
Drift Control	Fair

Service Parts	
Cap Gasket (EPDM)	PM200040-1
Cap Gasket (Viton)	PM200040V1

Visit your local dealer and ask for genuine John Deere ES sprayer nozzles.

Even Spray (ES) 80° spray angle - ASABE droplet size classification chart

Tip Size	Droplet Size	Bar / PSI	Flow (LPM)	Litres Per Hectare 25cm Band				Litres Per Hectare 30cm Band				Litres Per Hectare 38cm Band				Litres Per Hectare 50cm Band			
				Speed (Km/h)				Speed (Km/h)				Speed (Km/h)				Speed (Km/h)			
				12	15	18	20	12	15	18	20	12	15	18	20	12	15	18	20
03	C	2.0 / 30	0.98	196.7	157.3	131.1	118.0	163.9	131.1	109.3	98.3	129.4	103.5	86.3	77.6	98.3	78.7	65.6	59.0
	M	2.8 / 40	1.14	227.1	181.7	151.4	136.3	189.3	151.4	126.2	113.6	149.4	119.5	99.6	89.6	113.6	90.8	75.7	68.1
	M	3.4 / 50	1.27	253.9	203.1	169.3	152.3	211.6	169.3	141.1	127.0	167.0	133.6	111.4	100.2	127.0	101.6	84.6	76.2
	M	4.1 / 60	1.39	278.1	222.5	185.4	166.9	231.8	185.4	154.5	139.1	183.0	146.4	122.0	109.8	139.1	111.3	92.7	83.4
04	C	2.0 / 30	1.31	262.2	209.8	174.8	157.3	218.5	174.8	145.7	131.1	172.5	138.0	115.0	103.5	131.1	104.9	87.4	78.7
	M	2.8 / 40	1.51	302.8	242.2	201.9	181.7	252.3	201.9	168.2	151.4	199.2	159.4	132.8	119.5	151.4	121.1	100.9	90.8
	M	3.4 / 50	1.69	338.5	270.8	225.7	203.1	282.1	225.7	188.1	169.3	222.7	178.2	148.5	133.6	169.3	135.4	112.8	101.6
	M	4.1 / 60	1.85	370.9	296.7	247.2	222.5	309.0	247.2	206.0	185.4	244.0	195.2	162.7	146.4	185.4	148.3	123.6	111.3
05	C	2.0 / 30	1.64	327.8	262.2	218.5	196.7	273.2	218.5	182.1	163.9	215.7	172.5	143.8	129.4	163.9	131.1	109.3	98.3
	C	2.8 / 40	1.89	378.5	302.8	252.3	227.1	315.4	252.3	210.3	189.3	249.0	199.2	166.0	149.4	189.3	151.4	126.2	113.6
	C	3.4 / 50	2.12	423.2	338.5	282.1	253.9	352.6	282.1	235.1	211.6	278.4	222.7	185.6	167.0	211.6	169.3	141.1	127.0
	C	4.1 / 60	2.32	463.6	370.9	309.0	278.1	386.3	309.0	257.5	231.8	305.0	244.0	203.3	183.0	231.8	185.4	154.5	139.1
06	C	2.0 / 30	1.97	393.3	314.7	262.2	236.0	327.8	262.2	218.5	196.7	258.8	207.0	172.5	155.3	196.7	157.3	131.1	118.0
	C	2.8 / 40	2.27	454.2	363.4	302.8	272.5	378.5	302.8	252.3	227.1	298.8	239.1	199.2	179.3	227.1	181.7	151.4	136.3
	C	3.4 / 50	2.54	507.8	406.2	338.5	304.7	423.2	338.5	282.1	253.9	334.1	267.3	222.7	200.5	253.9	203.1	169.3	152.3
	C	4.1 / 60	2.78	556.3	445.0	370.9	333.8	463.6	370.9	309.0	278.1	366.0	292.8	244.0	219.6	278.1	222.5	185.4	166.9
08	VC	2.0 / 30	2.62	524.5	419.6	349.6	314.7	437.1	349.6	291.4	262.2	345.0	276.0	230.0	207.0	262.2	209.8	174.8	157.3
	C	2.8 / 40	3.03	605.6	484.5	403.7	363.4	504.7	403.7	336.4	302.8	398.4	318.7	265.6	239.1	302.8	242.2	201.9	181.7
	C	3.4 / 50	3.39	677.1	541.7	451.4	406.2	564.2	451.4	376.2	338.5	445.4	356.4	297.0	267.3	338.5	270.8	225.7	203.1
	C	4.1 / 60	3.71	741.7	593.4	494.5	445.0	618.1	494.5	412.1	370.9	488.0	390.4	325.3	292.8	370.9	296.7	247.2	222.5

Droplet data sourced at Pentair Hypro in a steady state condition per ASABE S572.3 Standard.

Even Spray (ES) 80° spray angle - ASABE droplet size classification chart

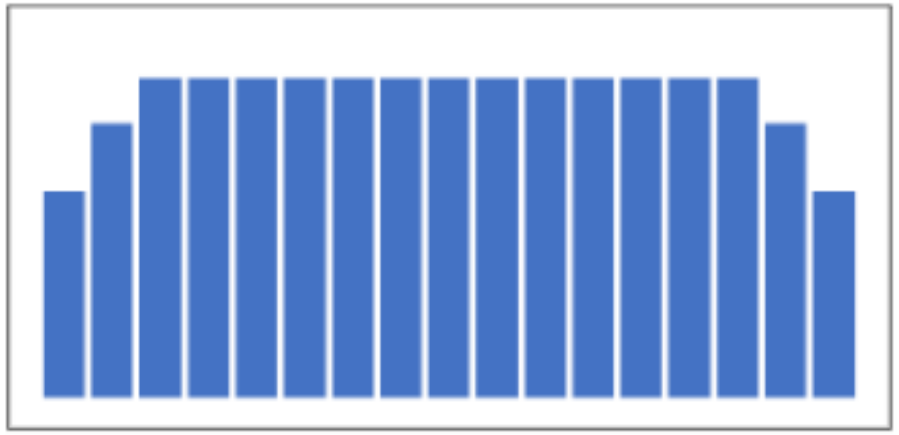
Tip Size	Droplet Size	Bar / PSI	Flow (LPM)	Litres Per Hectare 50cm Band			
				Speed (Km/h)			
				12	16	18	20
03	C	2.0 / 30	0.98	98.3	78.7	65.6	59.0
	M	2.8 / 40	1.14	113.6	90.8	75.7	68.1
	M	3.4 / 50	1.27	127.0	101.6	84.6	76.2
	M	4.1 / 60	1.39	139.1	111.3	92.7	83.4
04	C	2.0 / 30	1.31	131.1	104.9	87.4	78.7
	M	2.8 / 40	1.51	151.4	121.1	100.9	90.8
	M	3.4 / 50	1.69	169.3	135.4	112.8	101.6
	M	4.1 / 60	1.85	185.4	148.3	123.6	111.3
05	C	2.0 / 30	1.64	163.9	131.1	109.3	98.3
	C	2.8 / 40	1.89	189.3	151.4	126.2	113.6
	C	3.4 / 50	2.12	211.6	169.3	141.1	127.0
	C	4.1 / 60	2.32	231.8	185.4	154.5	139.1
06	C	2.0 / 30	1.97	196.7	157.3	131.1	118.0
	C	2.8 / 40	2.27	227.1	181.7	151.4	136.3
	C	3.4 / 50	2.54	253.9	203.1	169.3	152.3
	C	4.1 / 60	2.78	278.1	222.5	185.4	166.9
08	VC	2.0 / 30	2.62	262.2	209.8	174.8	157.3
	C	2.8 / 40	3.03	302.8	242.2	201.9	181.7
	C	3.4 / 50	3.39	338.5	270.8	225.7	203.1
	C	4.1 / 60	3.71	370.9	296.7	247.2	222.5

Droplet data sourced at Pentair Hypro in a steady state condition per ASABE S572.3 Standard.

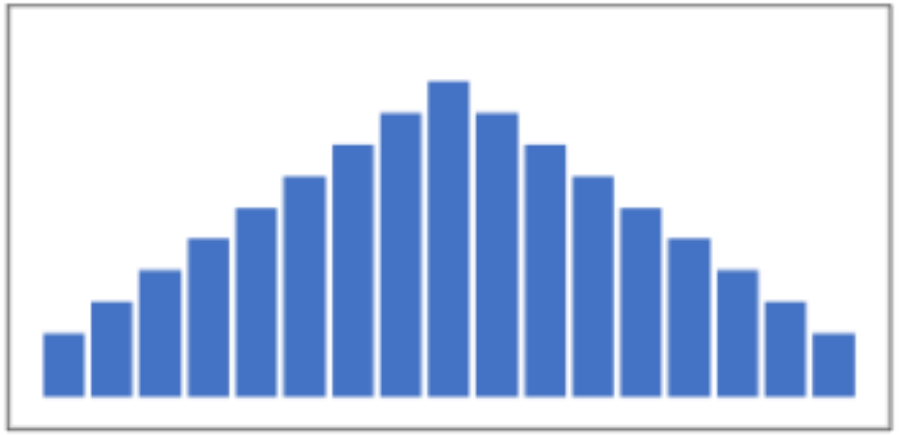
Tapered Fan vs. Even Fan

When running even fan nozzles in single nozzle mode, you will be applying the rate as displayed on the Gen4, assuming you are running a stable, correct boom height.

Tapered-fan nozzles are NOT APPROVED for single nozzle mode for See & Spray Select. See the difference in spray pattern illustrated below.



Even Fan



Tapered Fan

Current S&S Recommendation above ground (mm)

Fan angle	@50.8cm nozzle spacing	@38.1cm nozzle spacing
SF40s	838	762
TP65s	762	660
AI80s, TSL80s, ER80s, DG80s	660	660
3Ds, AIXRs, ULDs, LDMs	660	660
Max boom height	1067mm (1168mm fallback)	
min above canopy	508	
min above canopy SF40 and TP65 @ 50.8cm	610	

Nozzle Recommendation Summary

Individual Nozzle Mode works best with Even Fan Nozzles. This provides a consistent rate across the pattern.

The Fan Angle of the nozzle tip must correspond to the operating height of the boom. 65 deg and 80 degree even Fan nozzles typically work well normal boom heights. Operator should verify that the spray pattern is sufficient to cover the ground at operating boom height without gaps and excessive overlaps.

Tapered Fan Nozzles should be used in Overlapping Nozzle Mode. These nozzle have uneven distribution in their spray pattern and rely on spray patterns from neighbouring nozzles.

Contact Herbicides are best used in an Overlapping Nozzle Mode as this mode ensures full plant coverage of the product.

Blanket and spot spraying together

Who has used this feature?

When would you use this feature?

There is a few restrictions on rates.

Nozzle selection is important.

See and Spray nozzle is the master.

We can use PWM with the blanket nozzle.

Example: 100l/ha S&S + 60l/ha blanket

100l/ha S&S with 05 @18kph 2bar pressure

Blanket nozzle will need to run at 2 bar pressure because of single line, so our choice limited.

In this example a 04 would work with pulsing at 75%.

Blanket and spot spraying formula

$$\frac{\frac{A}{B} \times C}{D} = E$$

A - Desired Traditional Broadcast Rate (nozzle A)

B - Desired Target Rate (nozzle B)

C - Target Spray Nozzle Tip Size (nozzle B)

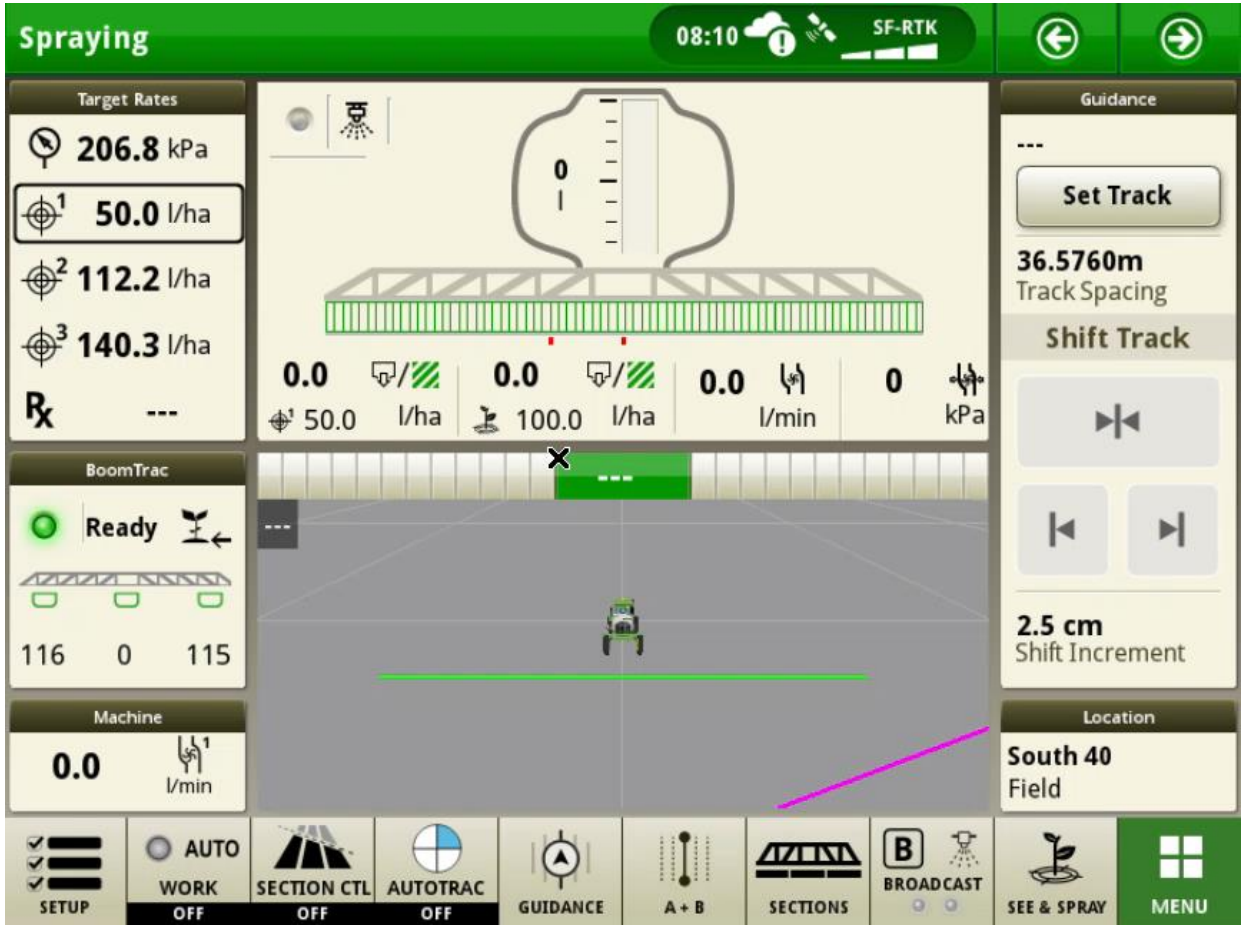
D - Desired Duty Cycle Percentage Expressed as a Decimal (eg. 65% = 0.65)

E - Traditional Broadcast Nozzle Tip Size (nozzle A)

$$\frac{\frac{60}{100} \times 5}{0.75} = 4$$

60/ha blanket
100/ha S&S with 05 nozzle
Pulsing at 75%

Screen setup for blanket/S&S



See & Spray™ Select Calibration Info

- When to calibrate
- Calibration process
- Potential calibration issues (mat placement)

See and Spray calibration

This is not a 5 minute process!

A poor calibration can and will lead to poor infield performance.

Take your time to make sure everything is correct.

During the calibration, the cameras look at the images on the mat to tell the VSMs where they are and when to get the timing of the spray correct

Make sure cameras are clean

Do not do if its windy

If you can do it in the shade of a shed or similar

1 Boom at a time.

Take care of the mat.

Do not have boom lights on.

Read the operators manual

See and Spray™ Select Calibration process

A calibration process will need to be done if;

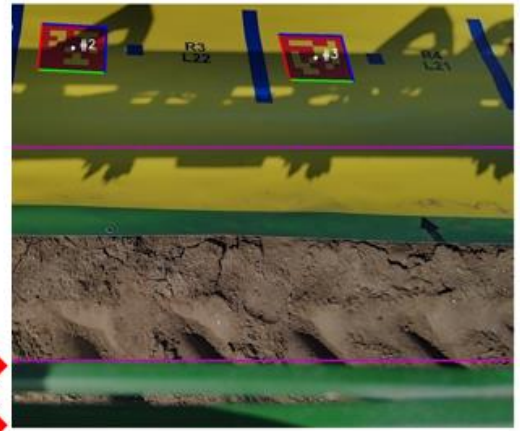
- A camera is replaced or moved on the boom (due to boom maintenance)
- Damage to a camera bracket where the camera has moved location

Calibration components (kit to come with the sprayer)

- Calibration mat
- Stakes to position mat
- Chains to locate mat
- Pegs that are too big to fit in the holes

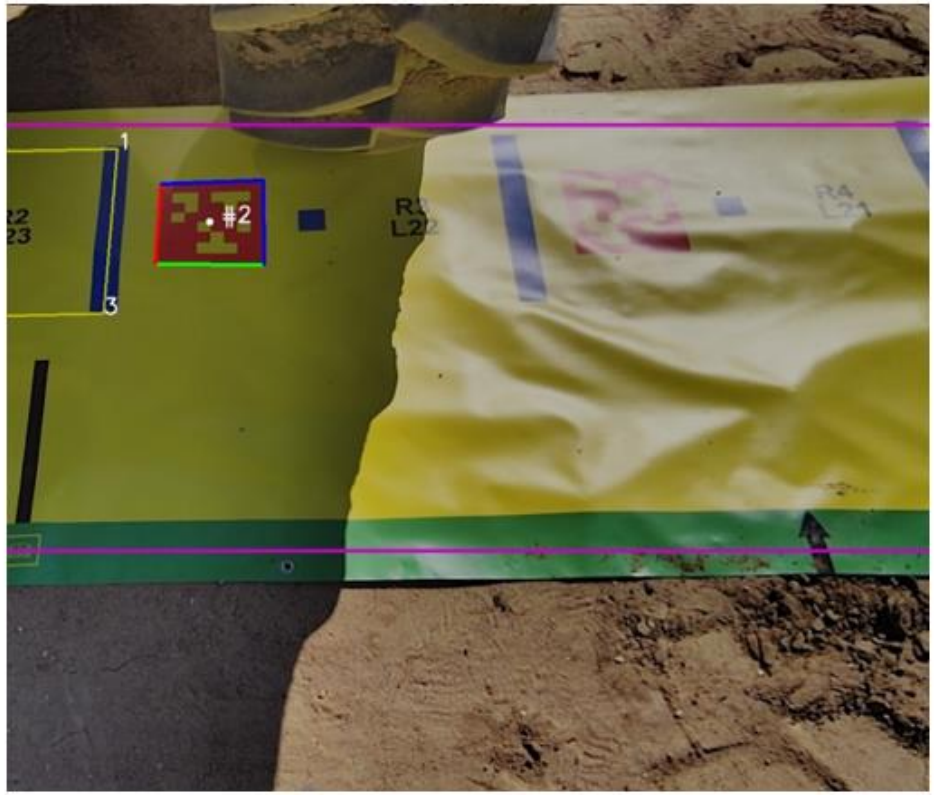
Calibration: Mat Placement

- Ensure mat is located properly and aligned with the boom.



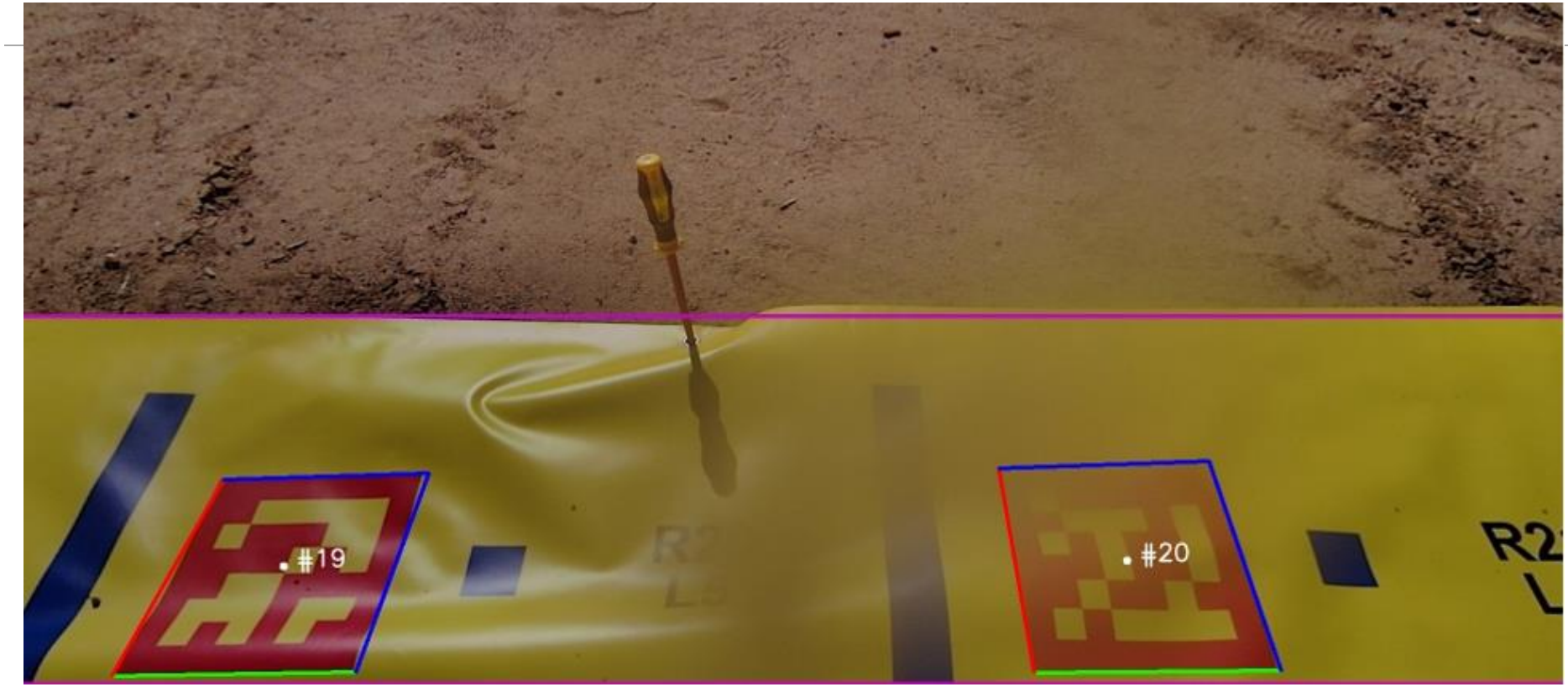
Calibration: Glare

- Avoid glare on the mat



Calibration: Camera Vision

Ensure cameras are clean and clear of dirt/dust



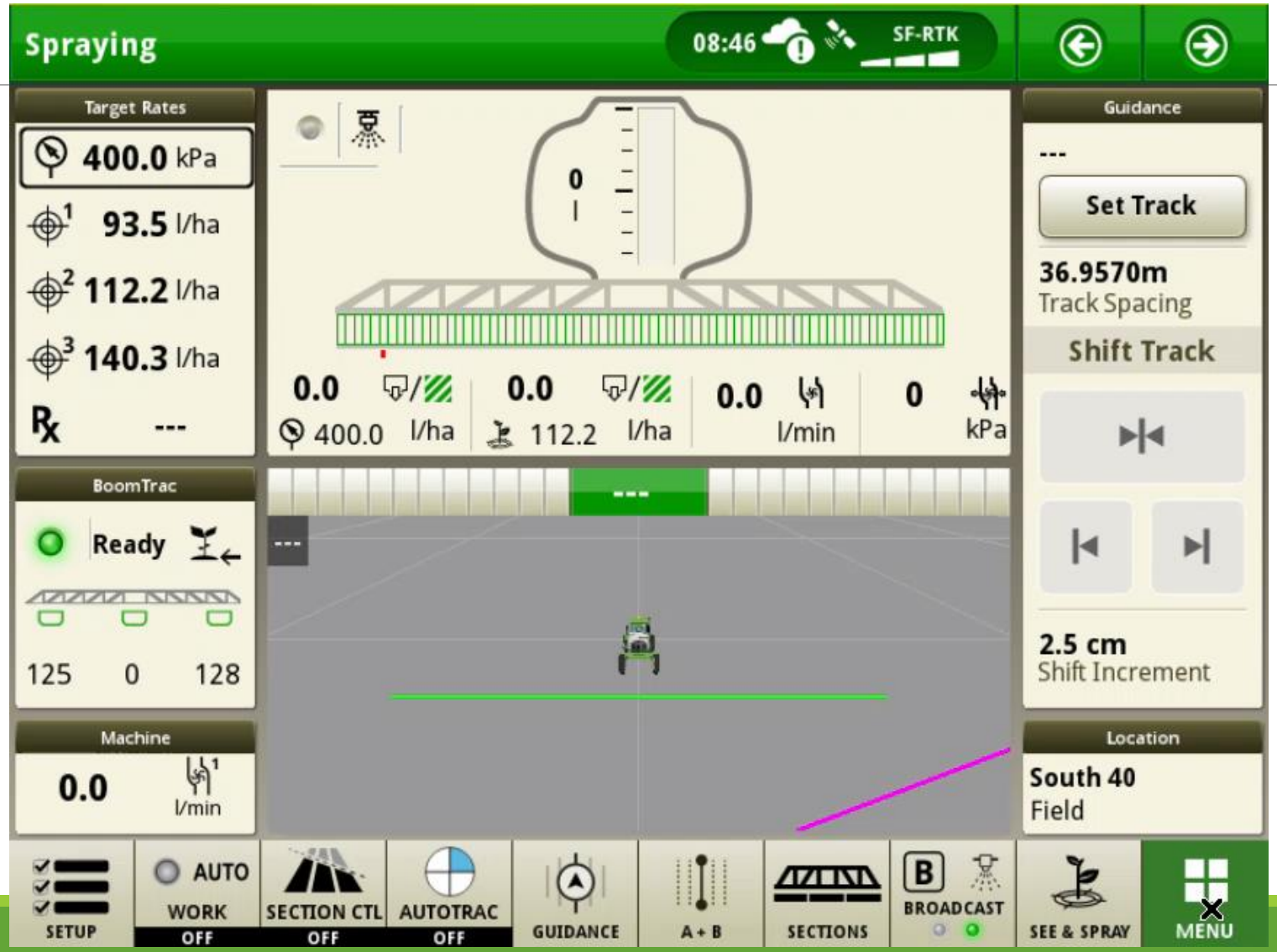
Calibraiton: Flatness of mat

- Ensure mat is as flat as possible

Calibration: Shadows on mat

- Avoid having shadows directly on the mat

Calibrations to consider



See & Spray™ Select Diagnostic Screens

- Go through Diagnostic Screens
- How do NMQ tools work
- Common DTC’s we have seen

Have you turned if off and on again?

Nuisance Diagnostic trouble codes (DTC's)

On startup it is very common to get some DTC's that really don't mean much.

If a code stays 'active' these are ones might need some action.

Some code descriptions tell us to ignore them.

Example:

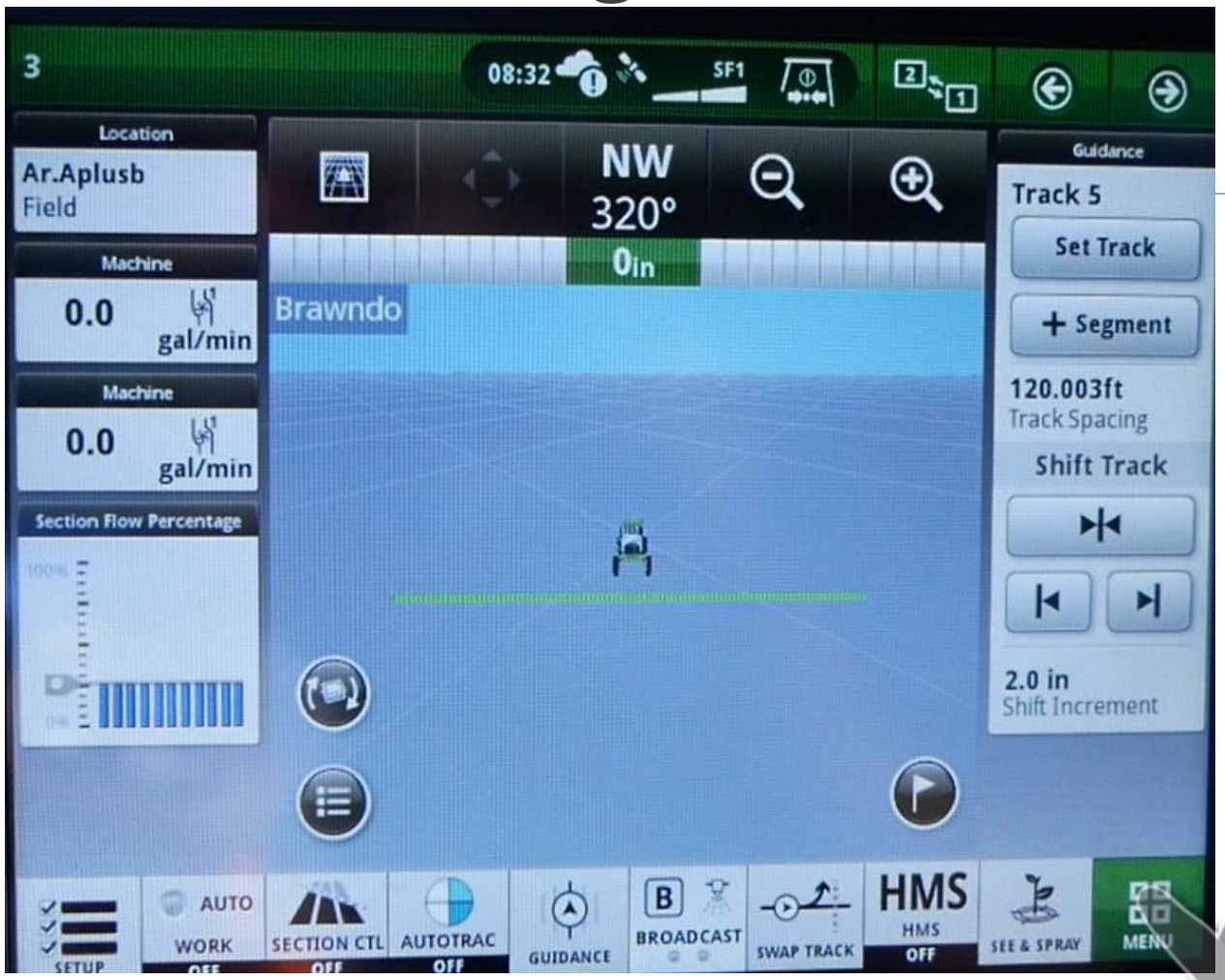
GWA 517191.02

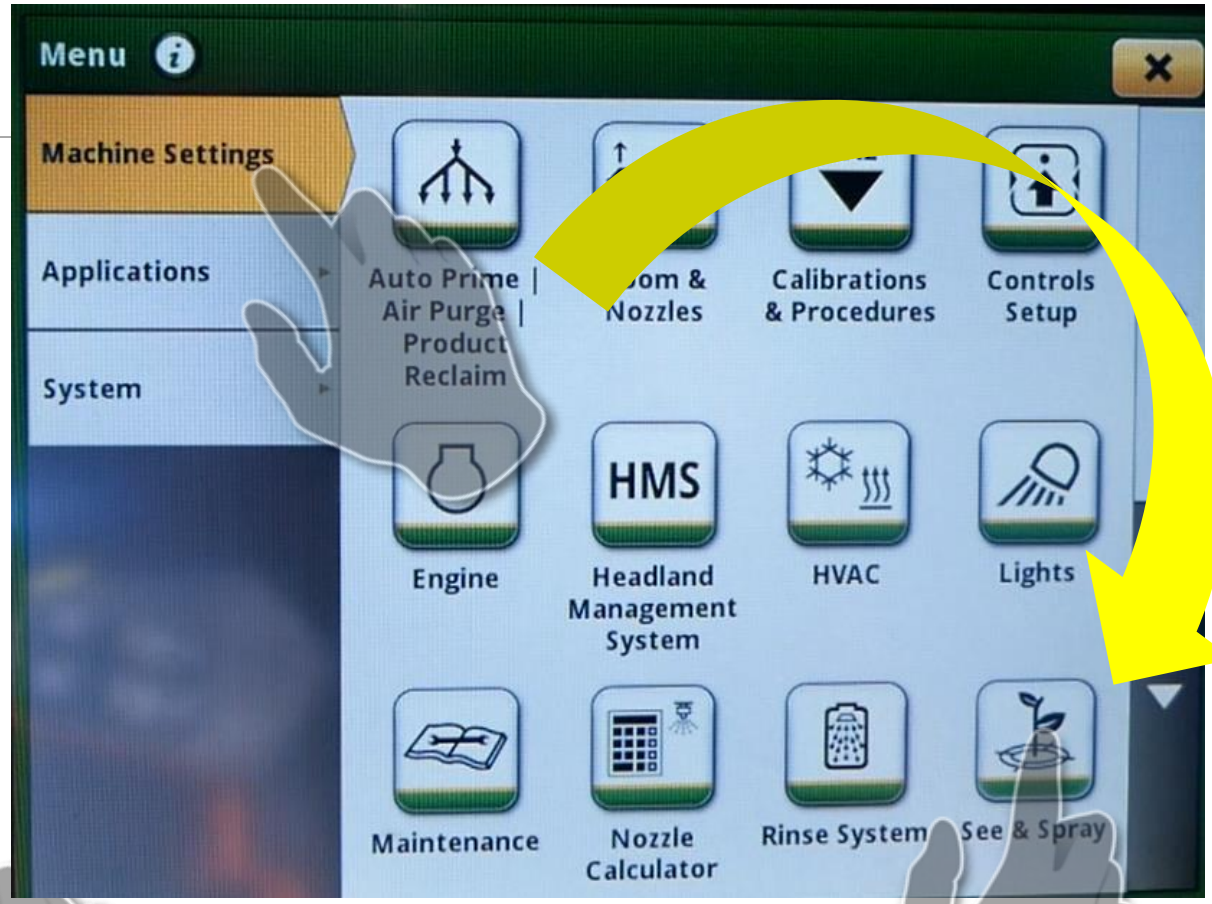
Camera signal fault. Excessive packets dropped.

Image quality is poor. This can be seen with poor camera connection or cable. If this DTC is seen at startup and then goes inactive, it can be ignored and no issue taken.

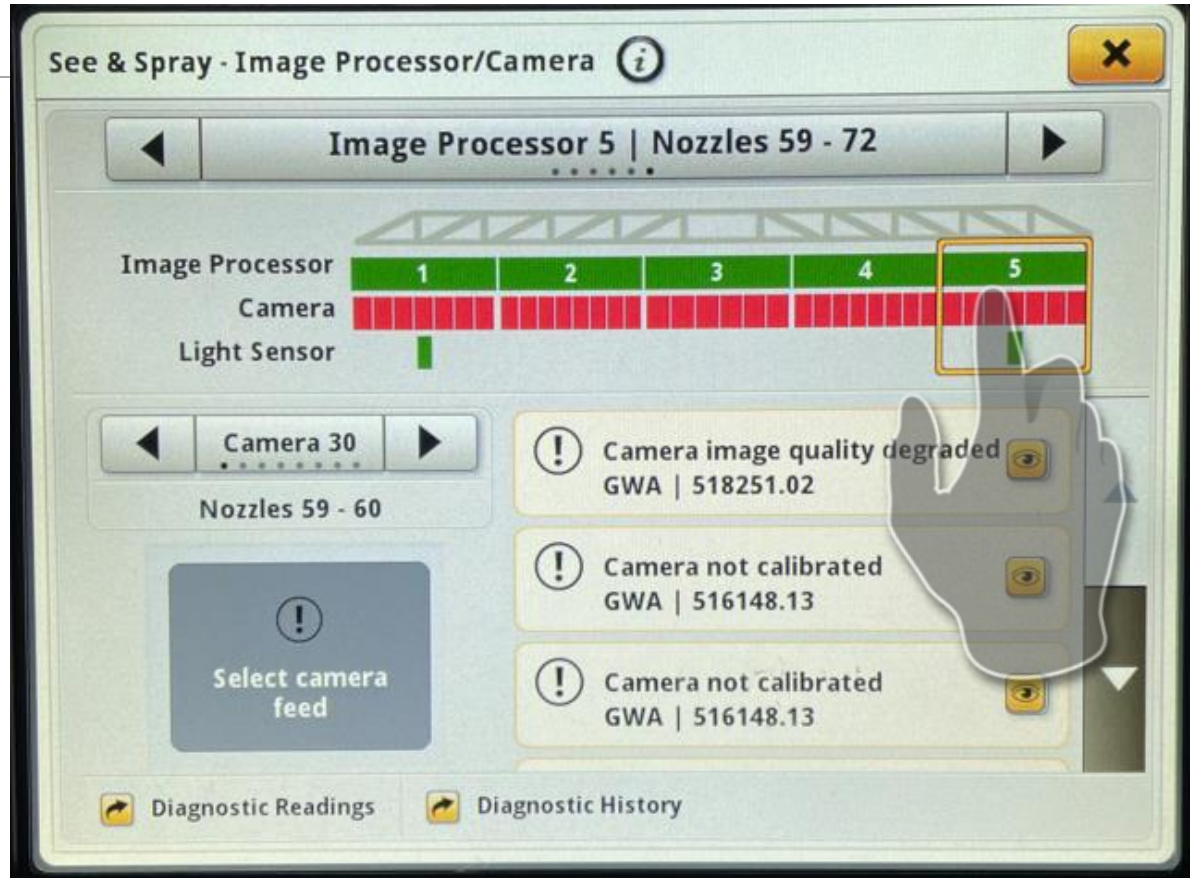
Generally, if the code becomes inactive it **should** be ok.

Accessing S&S DTC’s

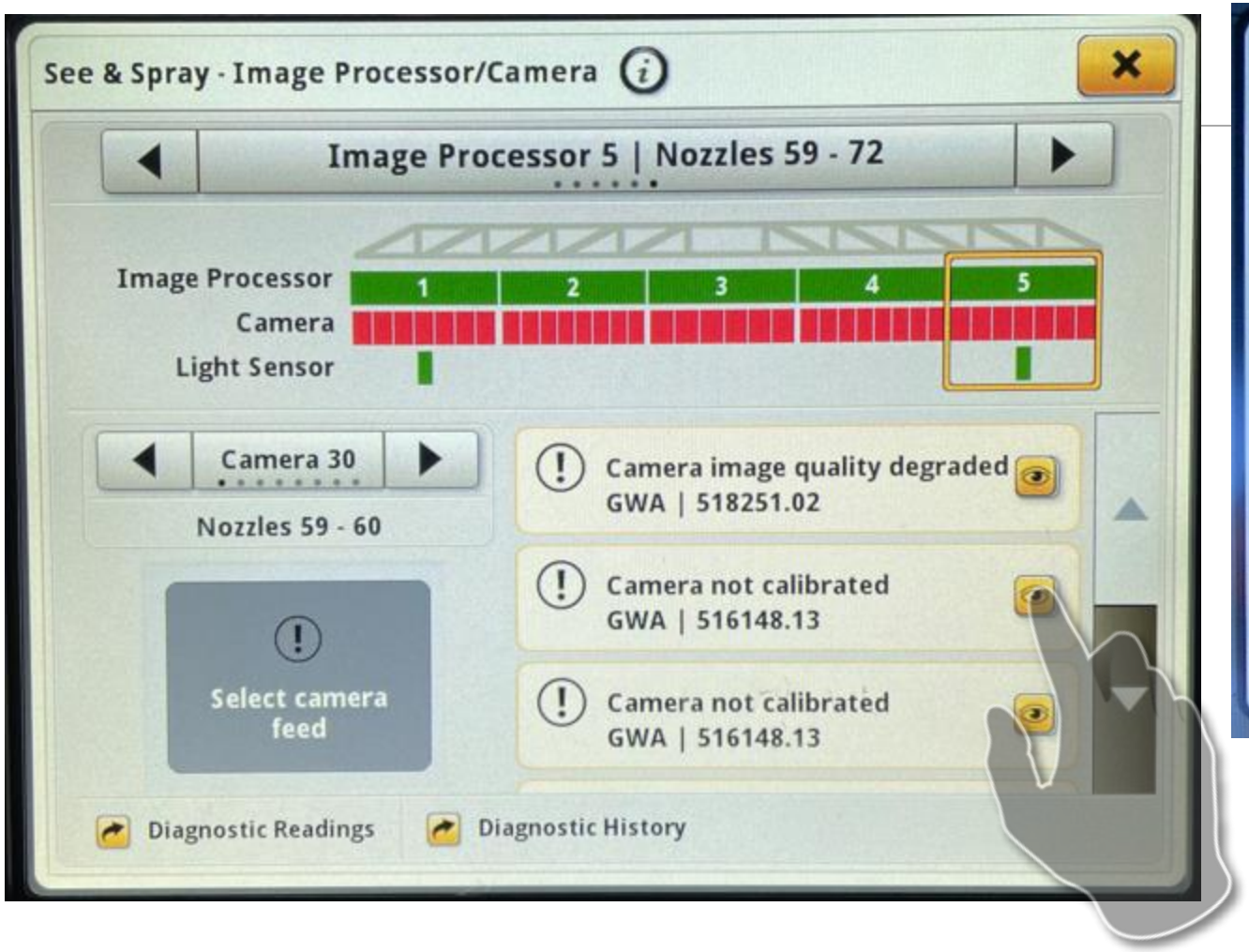


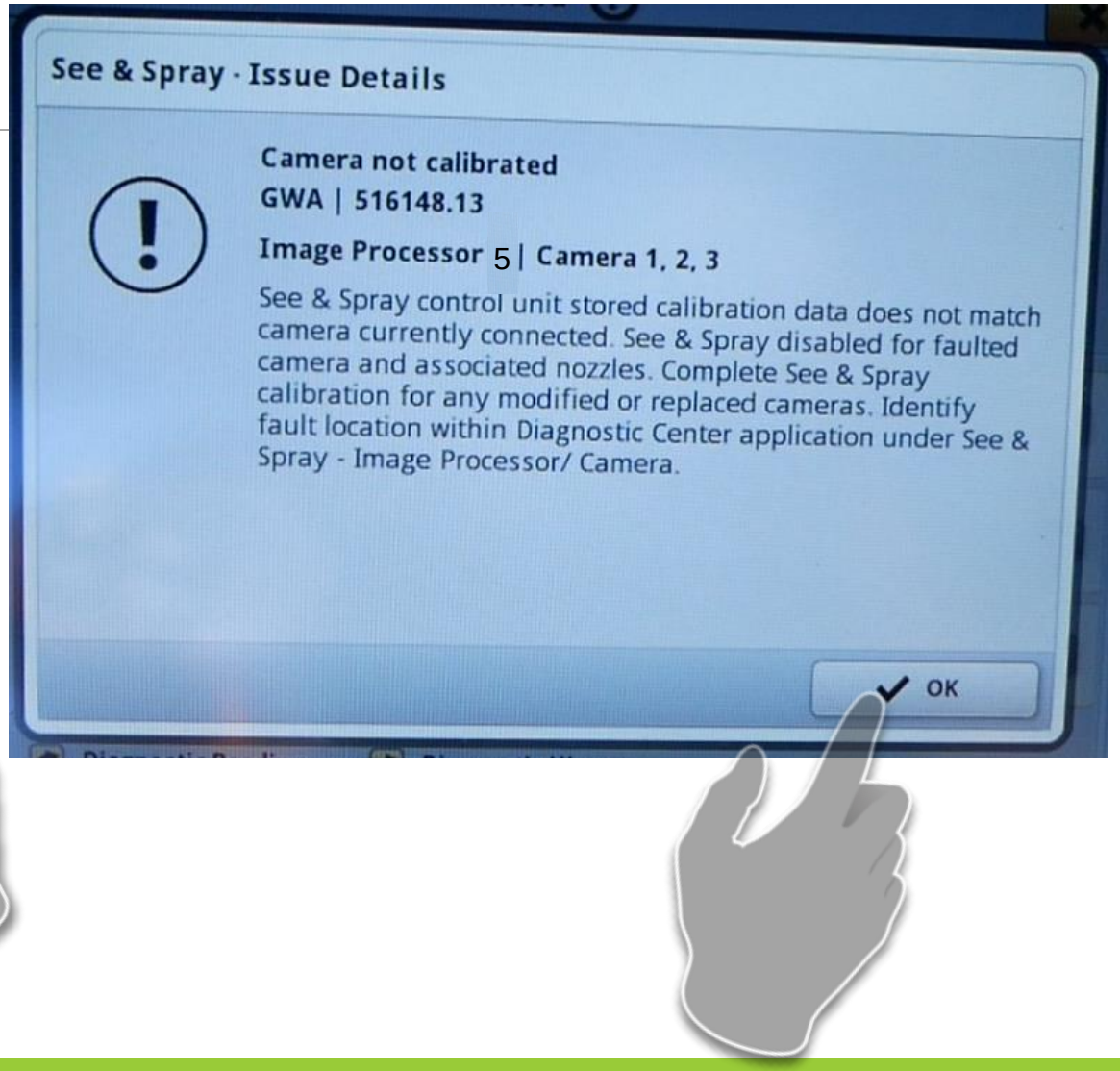


Accessing S&S DTC’s

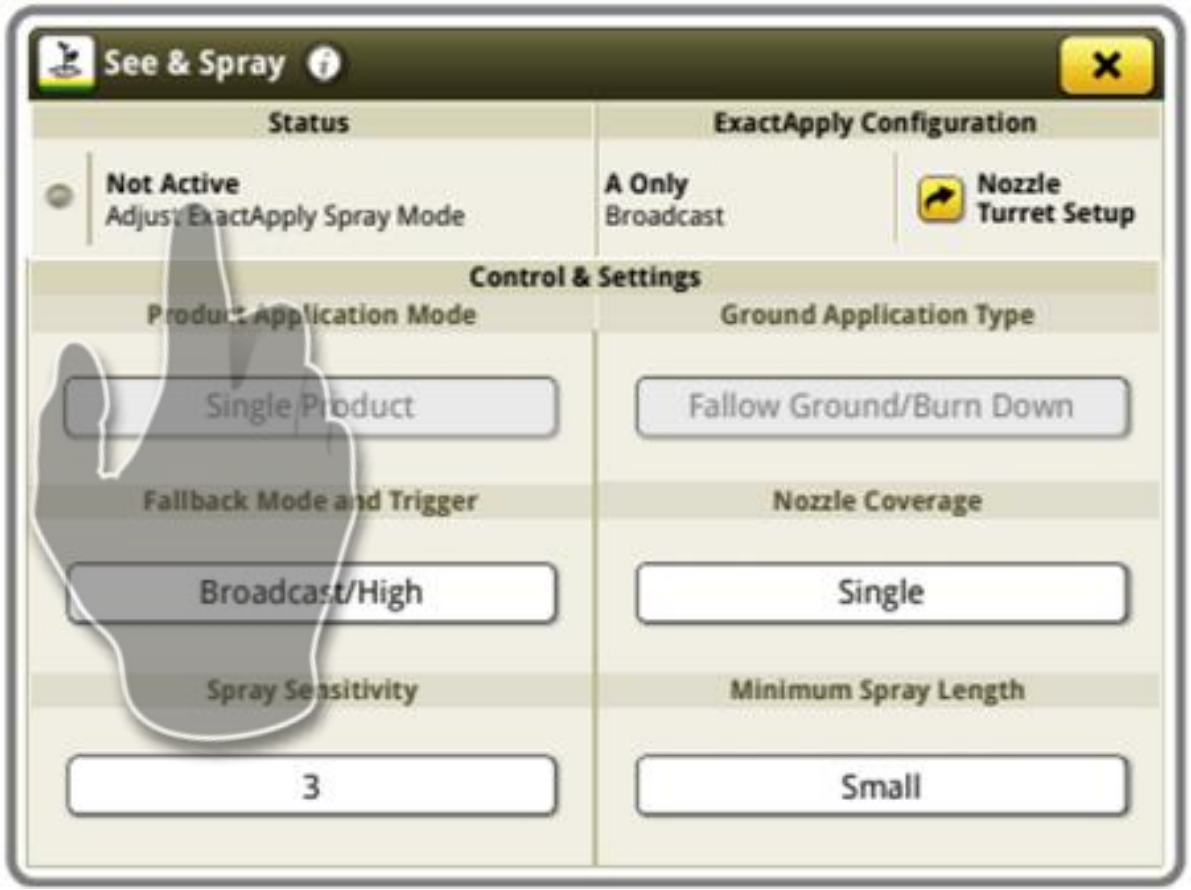


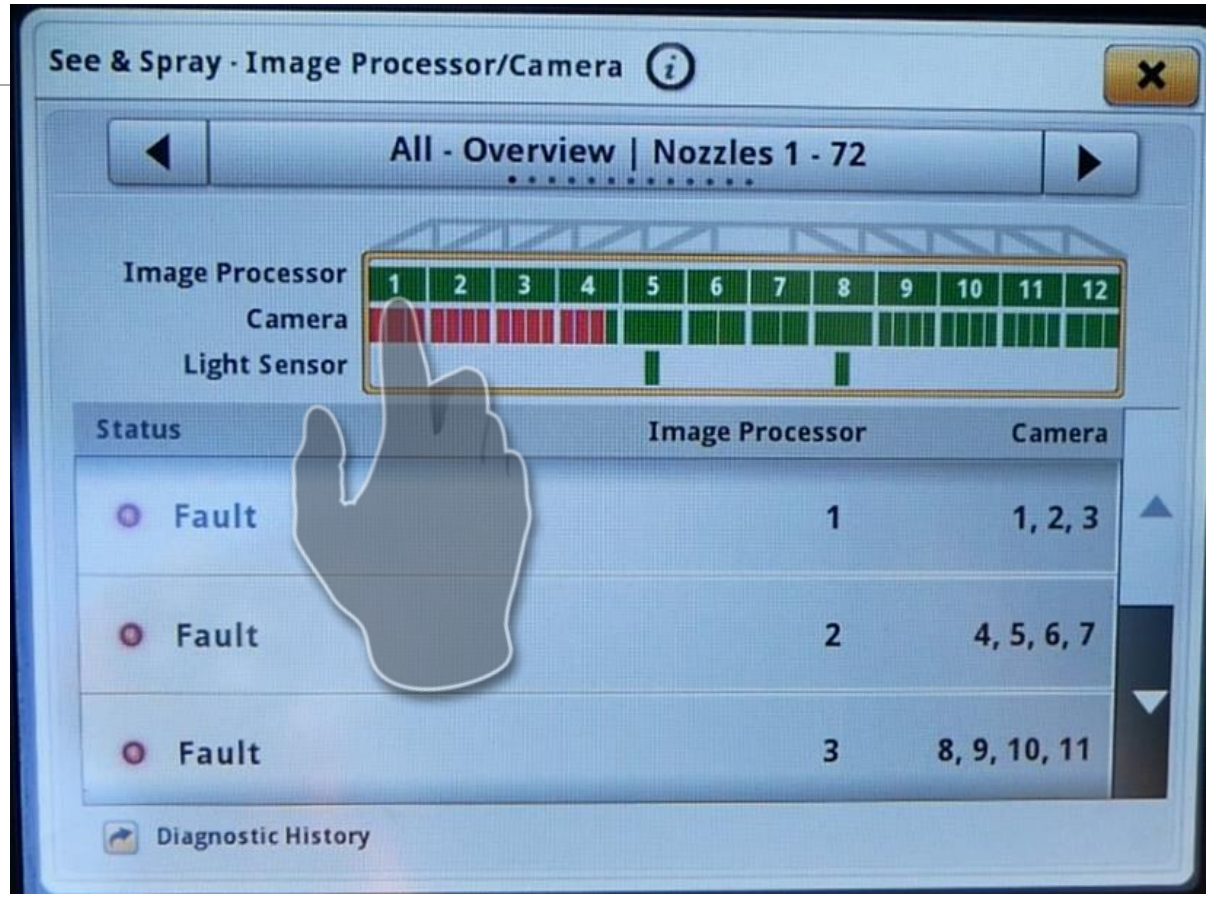
Accessing S&S DTC’s



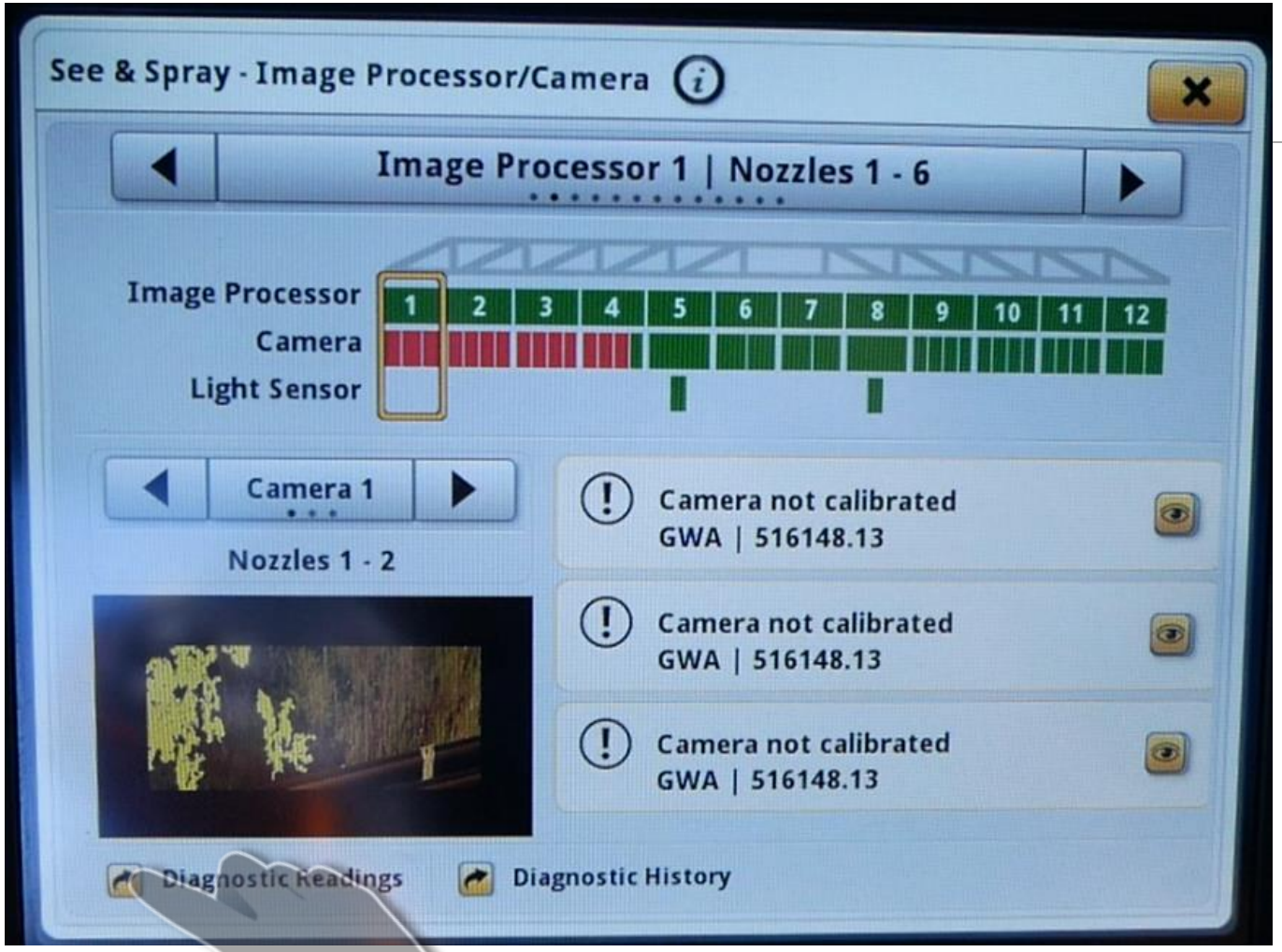


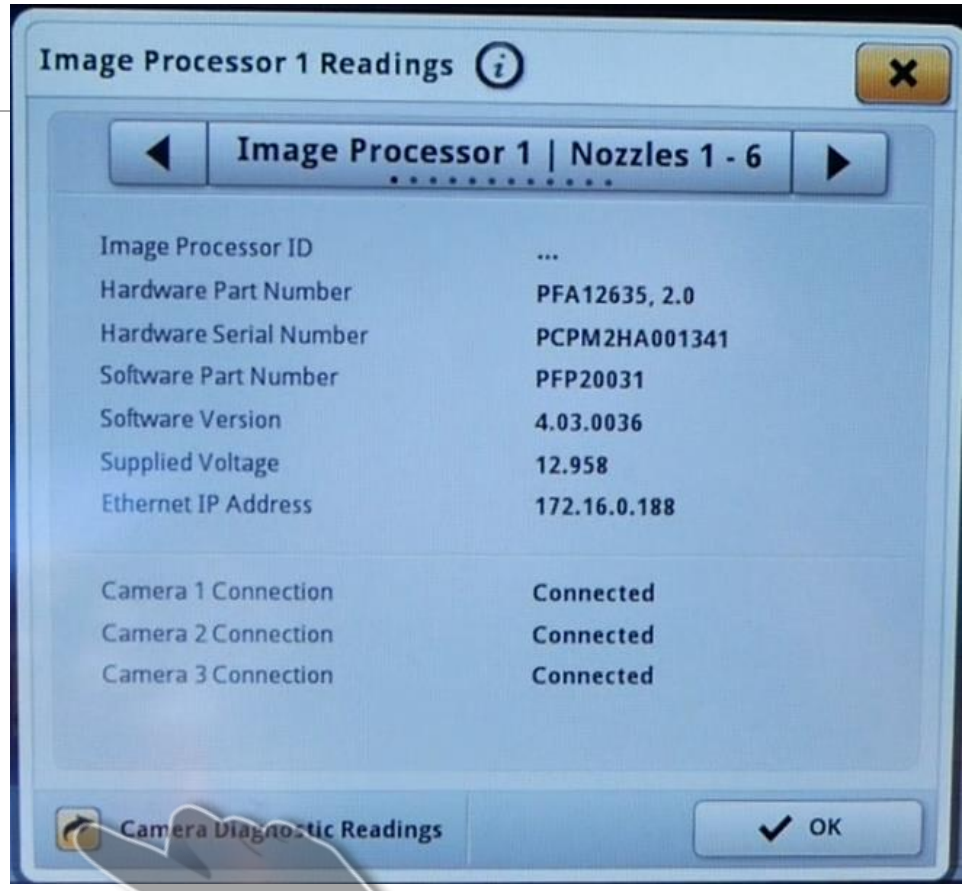
Accessing Diagnostic Readings



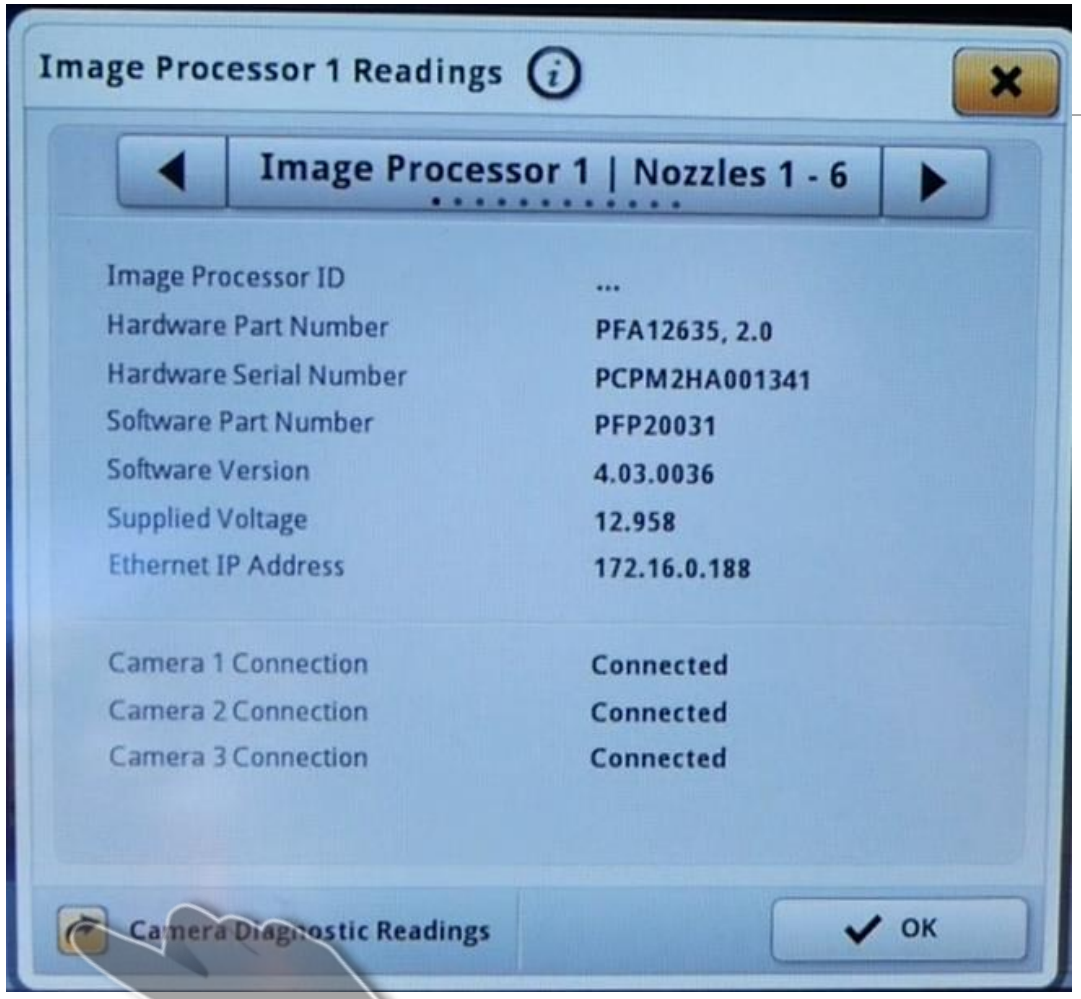


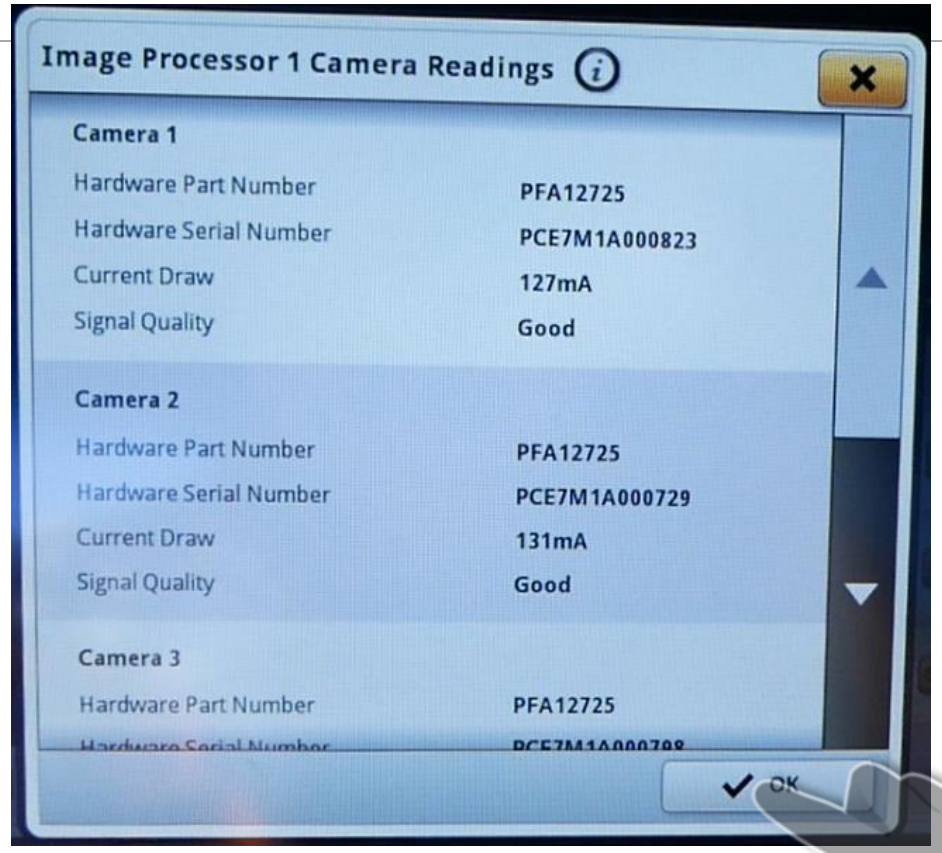
Accessing Diagnostic Readings



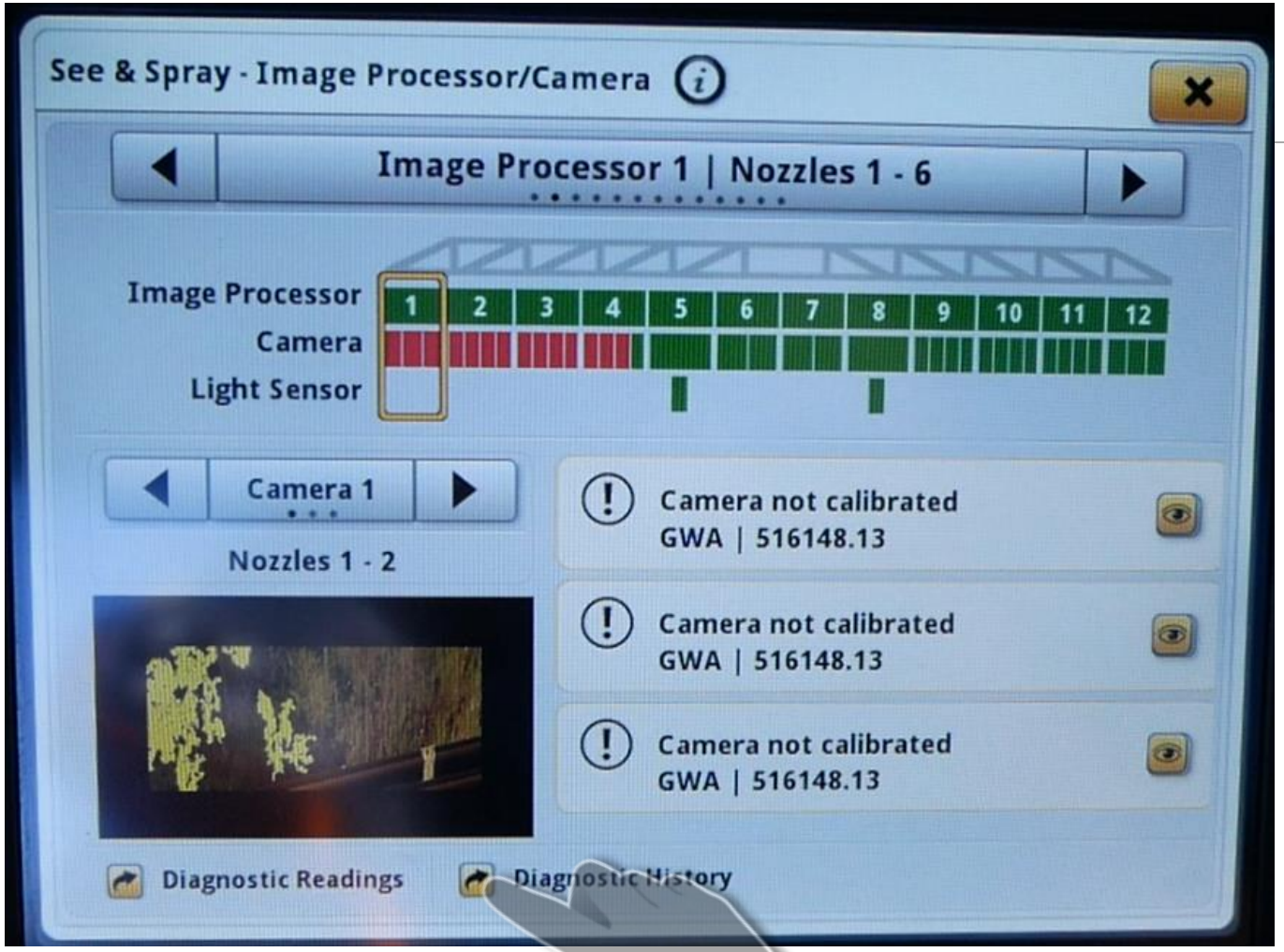


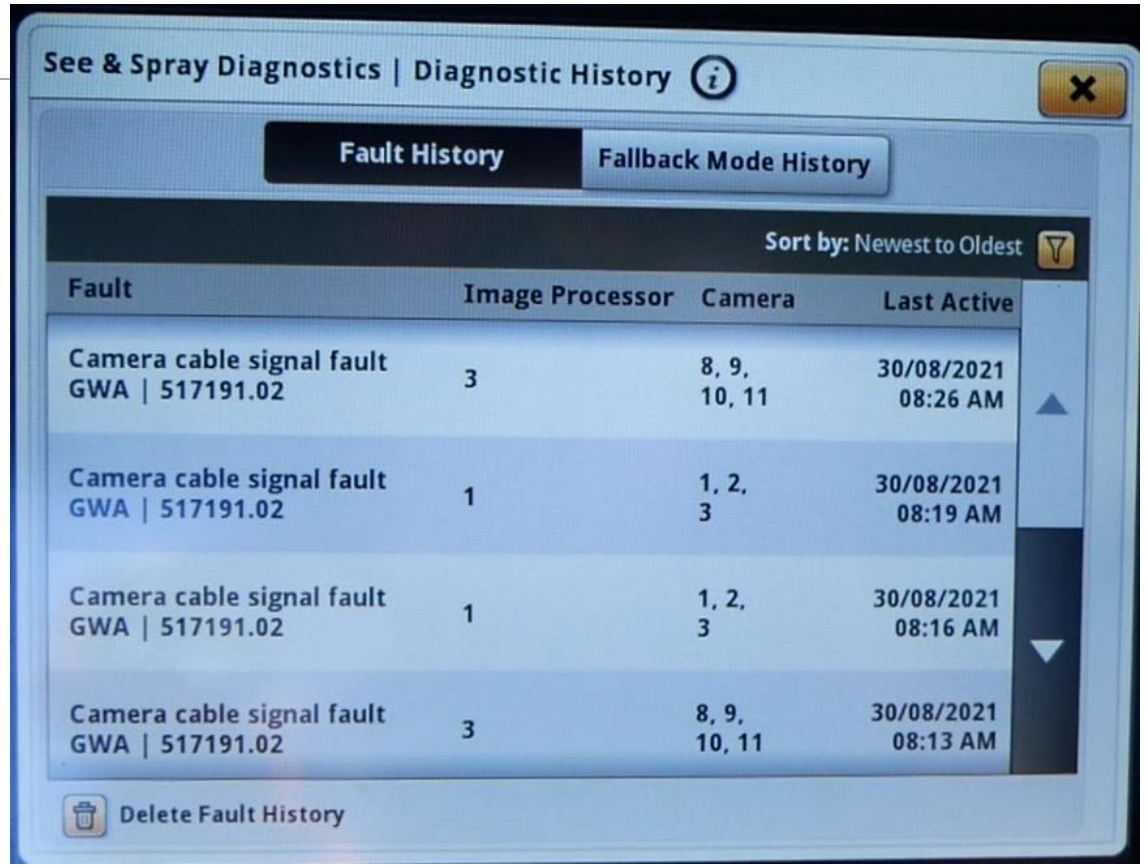
Accessing Diagnostic Readings



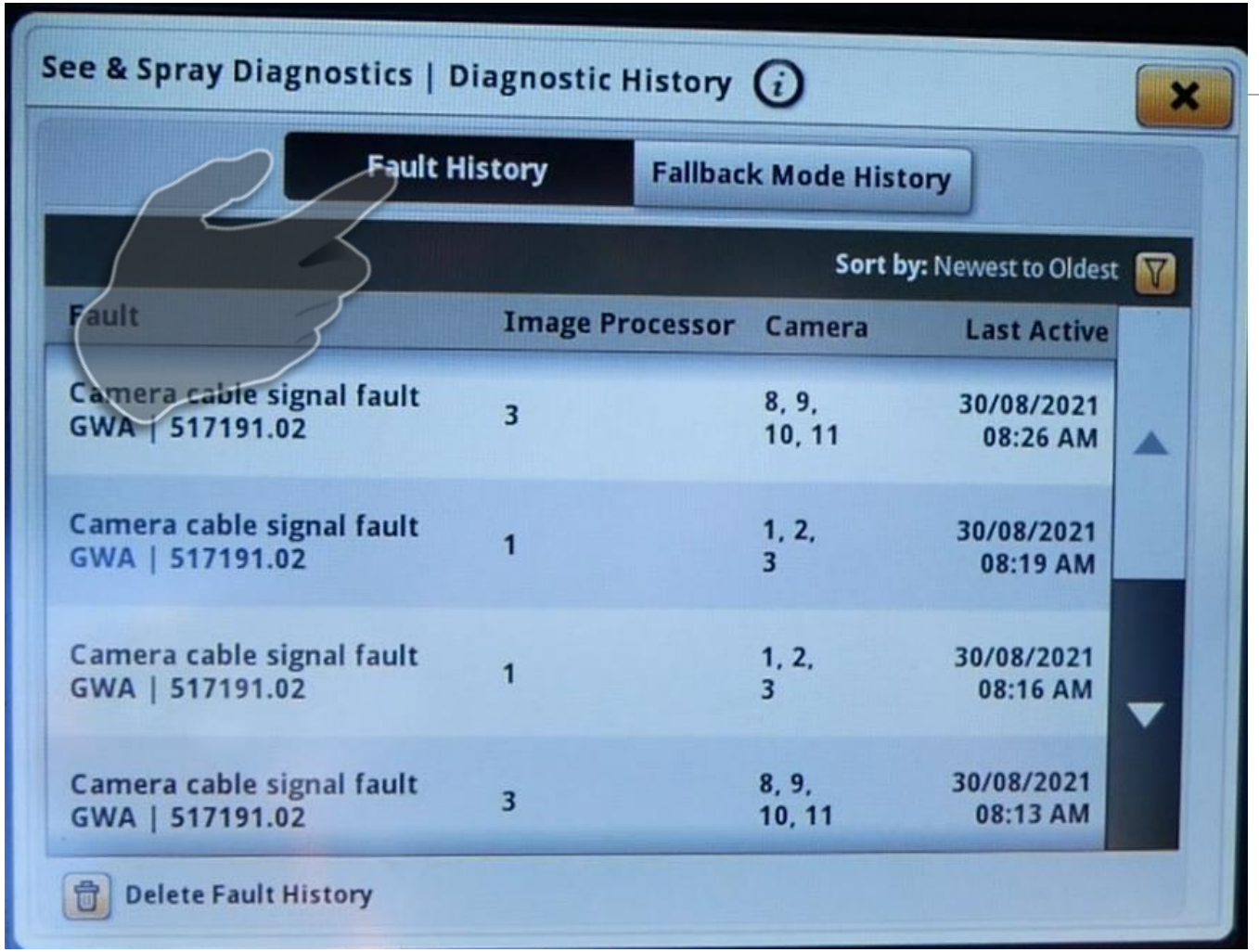


Accessing Diagnostic History



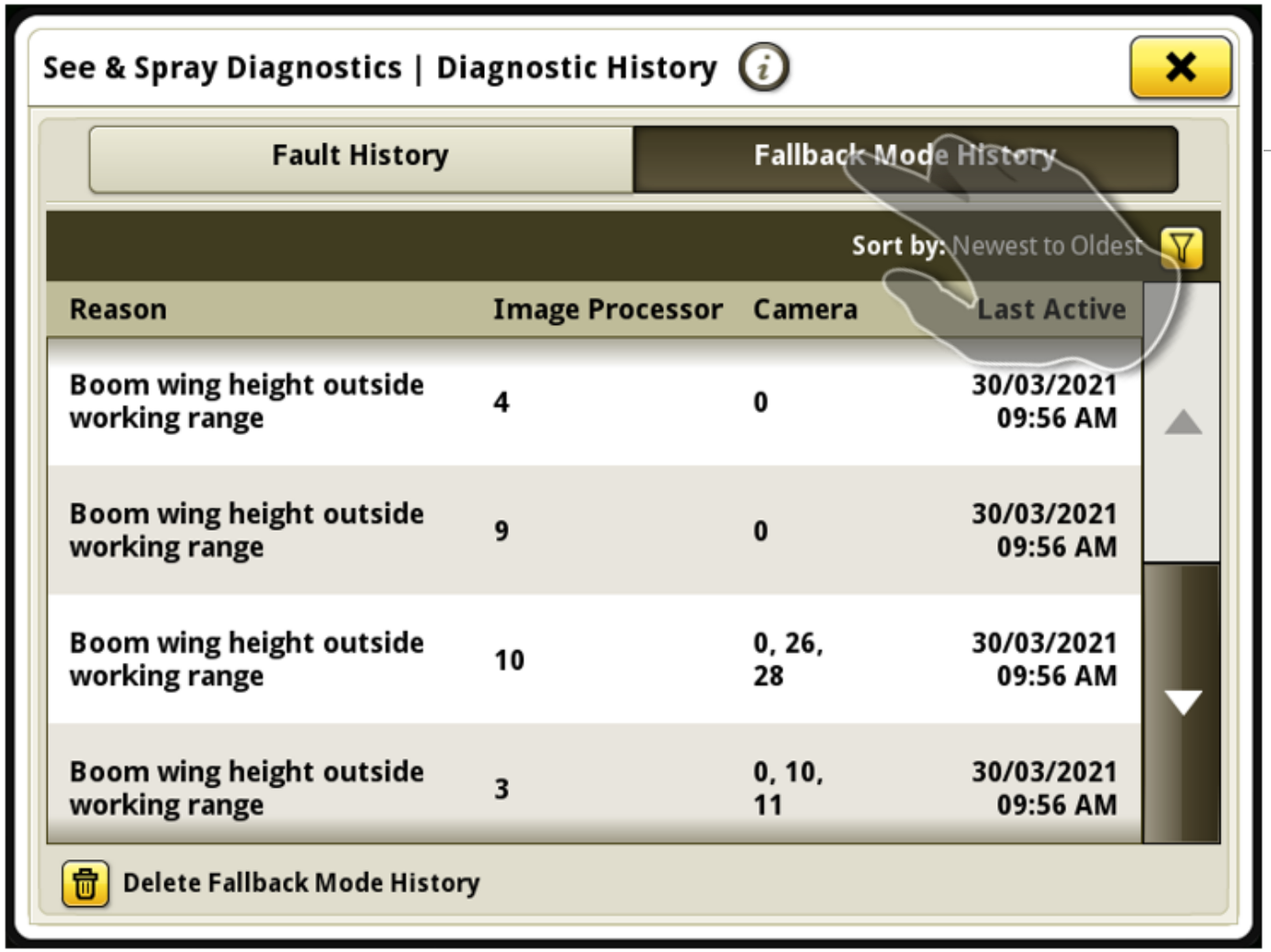


Accessing Diagnostic History (DTC Faults)



- Access DTC history
- Isolate it to a VSM (vision spray module) or camera.

Accessing Diagnostic History (Fallback)



- Understand reason for fallback
- Fallback reasons
  - Working range
  - Height
  - Ambient lighting
- Use this information to coach operators.

Handy things to carry

Dielectric grease
- $25

Glass cleaner
- $15

Microfibre cloths
- $12

Last Years experiences

Walk around