Training Manual

Brandt

X SERIES COMBINE

JOHN DEERE

OUR DEALERSHIP LOCATIONS

ALBERTA AND BRITISH COLUMBIA

Bassano
Old Highway 1
(403) 641-3813

Brooks
Highway 873 North
(403) 362-3486

Calgary
292177 Crosspointe Rd
(403) 280-2200

Claresholm
8500 Alberta Road
(403) 625-4421

Coronation
4420 Victoria Avenue
(403) 578-3744

Creston
1617 Northwest Blvd
(250) 431-9002

Drumheller
3049 Highway 10 East
(403) 823-8484

Hanna
302 Pioneer Trail
(403) 854-3334

High River
498114 - 121 St East
(403) 652-7797

Olds
4310 - 50th Avenue
(403) 556-6961

Pincher Creek
1165 Main Street
(403) 627-4451

Ponoka
3600 Highway 2A South
(403) 783-3337

Red Deer County
37043 Hwy 2 Service Rd. (Northbound)
(403) 343-2238

Stettler
Highway 12 West
(403) 742-4427

Trochu
102 - 1st Avenue North
(403) 442-3982

Vulcan
311 Service Road North
(403) 485-2231

SASKATCHEWAN

Melfort
2320 Saskatchewan Dr S
(306) 752-9344

Nipawin
2002 Highway 35 South
(306) 862-9344

Prince Albert
Highway 3
(306) 763-6686

Rosthern
Highway 312 West
(306) 232-4852

Saskatoon
1125 North Service Rd
(306) 933-3303

Watrous
Highway 2 South
(306) 946-3362

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X SERIES COMBINE SETTING TIPS AND TRICKS

- Set the combine to recommended initial settings for the grain you are going to harvest
- Use the Operator's Manual, Go Harvest App or Combine Advisor
- Harvest until the separator is completely full, up to 100 feet before you start to do your preliminary tests
- Check your four key indicators
    - Straw condition, Grain Tank sample, Tailings and Grain Loss at the rear of combine either the shoe or the rotor
- Try to maintain as long of straw as possible and still get the grain out of the head
- Start with concave at a wider range of the recommended settings, fill combine, stop, and check for kernels in the heads
- If some kernels are left, pull up the concave at increments of two on the display until the kernels are gone and you have the longest straw length possible
- Once there are a couple of kernels left in the head, leave concave at the achieved setting, and increase rotor speed to remove the final kernels
- On the X9 1000 and X9 1100 the engine will run at 1900 rpm when separator engaged and engine at High-Speed position
- These combines have an Isochronous governor that does everything it can to maintain the 1900 engine RPM
- Do drop box checks, then use the seed loss charts in Operator's Manual or Equipment + Grain Harvesters App
- Don't be fooled by pre-harvest grain loss that's already on the ground before the combine passes the test area

The goals are to have an acceptable grain tank sample, very little grain loss at the rear of the combine at acceptable ground speeds (both on the shoe and the rotor), very low tailings and the longest straw length possible out the rear of the combine.

The X9 Dual Separator has three speed ranges which can be set on the rotor transmission with a lever outside the cab door.

- 1st range: 300—520 rpm
- 2nd range: 420—800 rpm
- 3rd range: 720—1300 rpm

Rotor Speed: Minimum: 300 rpm, Maximum: 1300 rpm

Fan Speed: Minimum: 570 rpm, Maximum: 1430 rpm

Concave: Minimum: 0, Maximum: 42

Feed Accelerator: #1 = Low, N = Neutral, #2 = High setting

TIPS FOR MAKING INITIAL ADJUSTMENTS ON X SERIES COMBINES

Feeder chain in slow speed, feed accelerator at recommended speed for the crop you are combining Low or High.

WHEN CROP IS TOUGH:

Note: The initial settings for the X9 combine have been very good.

Concaves: on the tighter side of the initial adjustments.

Rotor Speed: on the high end of the specifications. Increase the speed as needed to raise the centrifugal force and separate the grain. Use rotor speed when grain is hard to thresh rather than tightening the concave. Increase the rotor speed until you start cracking grain, then back off the RPM until the grain just stops cracking.

Fan Speed: on the high end of initial adjustments, when fine tuning, use your tailings indicator to set maximum fan speed for the chaffer and sieve settings. Increase your fan speed until your tailings indicator begins to rise – this is an indication you are blowing clean grain into the return system.

Shoe Settings: at the larger openings of the adjustments.

WHEN CROP IS DRY:

Note: The initial settings for the X9 combine have been very good.

Concave: on the open side of adjustments.

Rotor Speed: at the lower end of adjustments.

Fan Speed: on high end of initial adjustments.

Shoe Settings: at the mid-range openings of the adjustments.

CONCAVE FILLER PLATES

X9 1000 AND X9 1100 MODELS

On any X9 combines, leave the concave filler plates out until you determine if you will need them or have excessive partial heads in the grain tank.

If you cannot clean up the grain tank sample:

- Install one plate in the front of the front concave, one on each front concave on Left and Right side of the combine
- If the grain tank sample is still not acceptable, install one more concave filler plate in the rear of the front concave
- Filling the front concave will help clean up the tank sample
- For those excessively hard to thresh varieties of grain you may need more concave filler plates
- With the front set of concaves completely filled on both sides, add another set of concave filler plates in the front of the middle concaves on both sides of the combine. *BXE11382* concave filler plates will fill one concave or two half width concaves

TINE SEPARATOR FILLER PLATES

X9 1000 AND X9 1100 MODELS

- In Cereals start without any tine separator plates
- In high yielding crops remove the upper plate on tine separator grates to allow more area for the grain to come out
- In Canola start with two tine separator plates per side
- *BXE11383* one set of separator grate covers

CONCAVE TYPES

CONCAVE TYPE	SOYBEANS	WHEAT, BARLEY, SMALL GRAINS	SUNFLOWER (OIL)	CANOLA
Small Wire	Not Recommended	Best	Average	Best
Large Wire	Good	Good	Best	Good
Round Bar	Best	Average	Best	Average

Best: Provides the Best Level of Performance **Good:** Provides a Good Level of Performance **Average:** Provides an Average Level of Performance

HOW TO MAKE ADJUSTMENTS ON X SERIES COMBINES

The following adjustments are not final. You will have to continue to adjust the combine accordingly throughout the day. Always be sure to only make **ONE** adjustment at a time after the initial settings are made.

- Adjust Rotor speed by 30 RPM increments
- Adjust Cleaning Fan speed in 30 RPM increments
- Adjust Concave in 1/8" increments or two numbers at a time on the display read out
- Adjust Chaffer and Clean Grain Sieve in 1/8" increments or one number at a time on the dials or readout
- Be aware if you close the Chaffer you may have to reduce the Cleaning Fan speed
- Be aware if you open the Chaffer you may have to increase the Cleaning Fan speed
- Remember: The Chaffer is for cleaning & the Clean Grain Sieve is for sizing
- On X Series combines, use the tailings indicator on the corner post if you are not sure of what your Cleaning Fan speed should be. Turn up Cleaning Fan speed until the tailings indicator on VisionTrak starts to rise suddenly, then back off fan 30 RPM at a time, until the tailings indicator drops back close to where it started, or four to five bars

USE THESE FOUR KEY INDICATORS TO SET A COMBINE:

1. **Straw Condition, as long as possible**
2. **Check Grain Tank Sample (work with your grain buyer)**
3. **Check amount of Tailings**
4. **Check Cleaning Shoe losses (chaffer and sieve area) and Tine Separator Area losses**

Be aware of pre-harvest losses when checking for losses behind the combine.

Once you have the combine set where you want, then turn on Auto Maintain.

Power shut down procedure in the Operator's Manual or on the Combine Adjustment Guide can also be used to diagnose what the combine is doing to help you make the settings needed to set your combine. It is only recommended when acceptable loss levels cannot be achieved.

Use a drop box so you know exactly what is being thrown over and from where.

All the above suggestions are irrelevant if the concave are not leveled and proportioned to the rotor. This adjustment should be made before the start of a new harvest season to ensure maximum productivity of your combine.

If the swath you are picking up is intertwined and butts of grain would feed in first, it is almost impossible to clean up the sample, ideally you want the heads to be feeding in first.

When straight cutting, if the heads and stand of straw are hanging sideways to your direction of travel you will again have a hard time cleaning up the sample. If crop is standing straight things will work fine.

Do not pull your power meter to the red zone for extended periods of time. Doing so will cause your grain tank sample to go dirty very quickly.

CROP SETTINGS

Note: Various crop settings shown are for average conditions. Varying crop and field conditions may require slightly different settings.

	CANOLA (DRY)	CANOLA (WET)	ALFALFA	BARLEY	WHEAT
FEEDER HOUSE DRIVE SPROCKET*A	18 Tooth	18 Tooth	18 Tooth	18 Tooth	18 Tooth
FEED ACCELERATOR SPEED*A*F	High	High	High	High	High
FEED ACCELERATOR WEAR STRIPS	Serrated	Serrated	Serrated	Serrated	Serrated
THRESHING SPEED (RPM)*A	550-850	650-900	720-1000	800-1150	900-1300
THRESHING CLEARANCE (MM)	15-35	10-30	0-10	8-22_*C)	4-20
CONCAVE TYPE*C	Small Wire	Small Wire	Small Wire	Small Wire	Small Wire
SEPARATOR GRATE SPACERS	In Storage Position	In Storage Position	In Storage Position	In Storage Position	In Storage Position
FAN SPEED (RPM)	570-800	570-770	570-700	700-1030	820-1100
FRONT CHAFFER CLEARANCE (MM) *(IF EQUIPPED)*	25	25	25	25	25
CHAFFER CLEARANCE (MM)*H	11-19	11-19	10-20	12-19	12-20
SIEVE CLEARANCE (MM)	3-7	3-7	1-4	6-11	5-11
TAILINGS SYSTEM CONCAVE POSITION	Corn	Grain	Grain	Grain	Grain
KNIFE BANK ENGAGEMENT	Allowed	Allowed	Allowed	Allowed	Allowed
KNIFE BANK ENGAGEMENT %	0	0	25	50	50
CHOPPER SPEED	High	High	High	High	High

FOOTNOTES

(A)* For improved straw quality in dry crops and grain quality, use lower speed.

(B)* For improved grain quality, use slow-down kit to reach 320 rpm.

(C)* For improvement in threshing, grain tank sample, and chaff load distribution in small grain, first install concave covers in the front concave. Extra covers can be added to other concaves as needed.

(D)* Tailings sump cover recommended.

(E)* Cleaning fan slow-down kit may be required.

(F)* For increased material handling, use high speed.

(G)* Wires may be removed for increased cob capture.

(H)* Flat-tooth comb chaffer recommended setting is 2—3 mm more open than the general-purpose chaffer.

	OATS	PEAS	RYE	SOYBEANS	TRITICALE
FEEDER HOUSE DRIVE SPROCKET*A	22 Tooth	18 Tooth	18 Tooth	18 Tooth	18 Tooth
FEED ACCELERATOR SPEED*A*F	High	Low	High	Low	High
FEED ACCELERATOR WEAR STRIPS	Serrated	Serrated	Serrated	Serrated	Serrated
THRESHING SPEED (RPM)*A	720-1150	400-600	850-1200	500-800	850-1200
THRESHING CLEARANCE (MM)	15-25	15-30	13-26	12-30	10-25
CONCAVE TYPE*C	Small Wire	Round Bar or Large Bar	Small Wire	Round Bar or Large Wire	Small Wire
SEPARATOR GRATE SPACERS	In Storage Position	In Storage Position	In Storage Position	Either	In Storage Position
FAN SPEED (RPM)	630-850	850-1050	750-1100	900-1150	750-1000
FRONT CHAFFER CLEARANCE (MM) *(IF EQUIPPED)*	25	25	25	25	25
CHAFFER CLEARANCE (MM)*H	12-21	16-22	15-18	13-21 (General-Purpose) 12-20 (Deep-Tooth)	15-20
SIEVE CLEARANCE (MM)	7-13	8-12	6-10	6-13 (General-Purpose) 5-12 (Deep-Tooth)	6-11
TAILINGS SYSTEM CONCAVE POSITION	Grain	Corn	Grain	Corn	Grain
KNIFE BANK ENGAGEMENT	Allowed	Allowed	Allowed	Allowed	Allowed
KNIFE BANK ENGAGEMENT %	50	25	50	50	50
CHOPPER SPEED	High	High	High	High	High

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	CORN (WET)	FLAX	GRASS SEED	LENTILS	MUSTARD	NAVY BEANS
FEEDER HOUSE DRIVE SPROCKET*A	18 Tooth	18 Tooth	22 Tooth	18 Tooth	18 Tooth	18 Tooth
FEED ACCELERATOR SPEED*A*F	Low	High	High	Low	High	Low (B)*
FEED ACCELERATOR WEAR STRIPS	Serrated	Serrated	Serrated	Serrated	Serrated	Serrated
THRESHING SPEED (RPM)*A	360-520	800-1200	450-750	420-700	720-1100	370-520
THRESHING CLEARANCE (MM)	27-42	0-10	12-25	7-20	10-20	15-30
CONCAVE TYPE*C	Round Bar	Small Wire	Small Wire	Round Bar or Large Wire	Small Wire	Round Bar
SEPARATOR GRATE SPACERS	Installed	In Storage Position	In Storage Position	In Storage Position	In Storage Position	In Storage Position
FAN SPEED (RPM)	1300-1430	700-1050	350-600 (E)*	800-1000	620-800	800-1100
FRONT CHAFFER CLEARANCE (MM) *(IF EQUIPPED)*	25	25	25	25	25	25
CHAFFER CLEARANCE (MM)*H	16-24 (Deep-Tooth) 18-26 (General-Purpose)	12-18	9-18	12-18	10-15	13-18
SIEVE CLEARANCE (MM)	12-17 (Deep-Tooth) 13-17 (General-Purpose)	6-10	5-12	3-10	2-6	7-11
TAILINGS SYSTEM CONCAVE POSITION	Corn	Grain	Grain	Corn	Grain	Corn
KNIFE BANK ENGAGEMENT	Disengaged Only	Allowed	Allowed	Allowed	Allowed	Allowed
KNIFE BANK ENGAGEMENT %	0	25	25	25	25	25
CHOPPER SPEED	Low	High	High	High	High	High

FOOTNOTES

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(B)* For improved grain quality, use slow-down kit to reach 320 rpm.

(C)* For improvement in threshing, grain tank sample, and chaff load distribution in small grain, first install concave covers in the front concave. Extra covers can be added to other concaves as needed.

(D)* Tailings sump cover recommended.

(E)* Cleaning fan slow-down kit may be required.

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(H)* Flat-tooth comb chaffer recommended setting is 2—3 mm more open than the general-purpose chaffer.

PAYABLE MOISTURE AND DENSITY

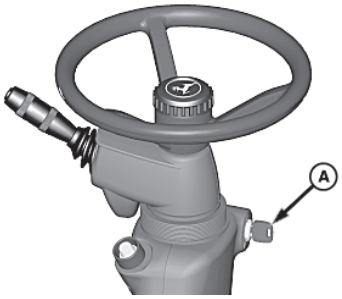
CROP TYPE	STANDARD MOISTURE (%)	CROP DENSITY (LBS/BUSHEL)	CROP DENSITY (KG/BUSHEL)
ALFALFA	12.0	60	27
BARLEY	14.0	48	22
CANOLA	10.0	52	24
CORN (DRY OR WET)	15.0	56	25
EDIBLE BEANS	14.5	60	27
FLAX	7.0	56	25
GRASS SEED	12.0	22	10
LENTILS	10.5	60	27
MILLET	11.0	50	23
MUSTARD	8.0	60	27
NAVY BEANS	14.5	62	28
OATS	14.0	32	15
PEAS	10.5	60	27
POPCORN	14.0	60	27
RICE	14.0	45	20
RYE	14.0	56	25
SAFFLOWER	6.0	45	20
SORGHUM	12.0	56	25
SOYBEANS	13.0	60	27
SUNFLOWER	14.0	29	11
WHEAT (SPRING & WINTER)	13.0	60	27

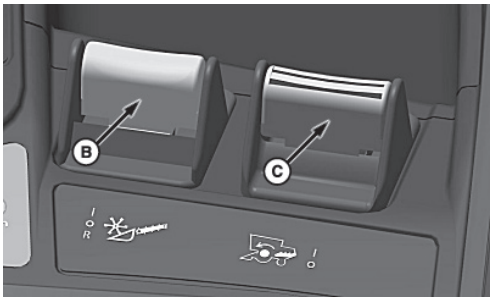
POWER SHUT DOWN PROCEDURE

A power shutdown is used to determine the machine's performance in the threshing and separating areas by taking a "snapshot" of the material in the separator. This is valuable in determining where the losses behind the machine are generated and what adjustments can be made to correct the condition. Verifying that crop condition and material intake is similar for each shutdown.

1. Locate the engine speed indicator on the corner post display and threshing speed readout on the armrest display
2. Lock the brake pedals together
3. Operate the machine at optimized throughput levels in the desired crop
4. Move the steering wheel forward for free motion (both hands are needed)
5. Press the low idle engine speed switch on the armrest
6. Lightly depress brake pedals

   Note: The machine is designed to have a slower draw down of the engine rpm and more of a run-on for separator components.
7. As engine speed drops to near low idle speed (1200 RPM), quickly disengage header (B) and separator engage (C) switches on the armrest
8. Quickly move the multi-function lever to the neutral position
9. Allow engine to cool for a minute
10. Turn key switch (A) to shut OFF the engine, set park brake and remove key
11. Inspect for excessive grain damage, kernels left on the cobs, uneven distribution of material on the return pan and cleaning shoe, and free grain loss before making any adjustments
12. Decide what adjustments are needed. Open threshing clearance and engage separator(avoids undue stress to cylinder drive area during clean out)
13. Adjust machine to desired settings and continue harvesting
14. Repeat this procedure and verify grain quality and losses behind machine
15. Once acceptable loss levels are attained, calibrate VisionTrak™ Monitor and continue to harvest





LEGEND: A - Key Switch B - Header Engage Switch C - Separator Engage Switch

CALIBRATIONS

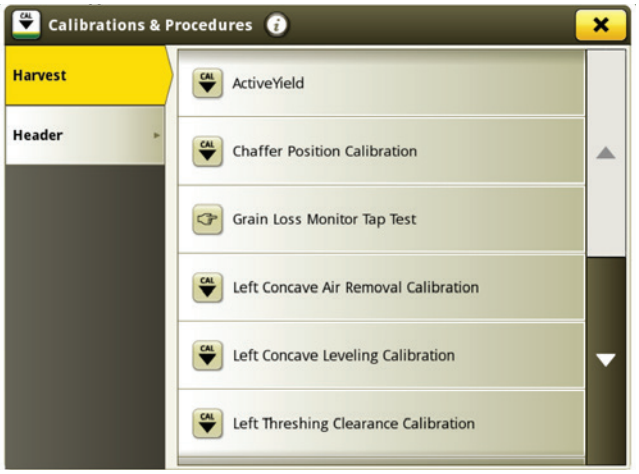
WHERE TO FIND THEM

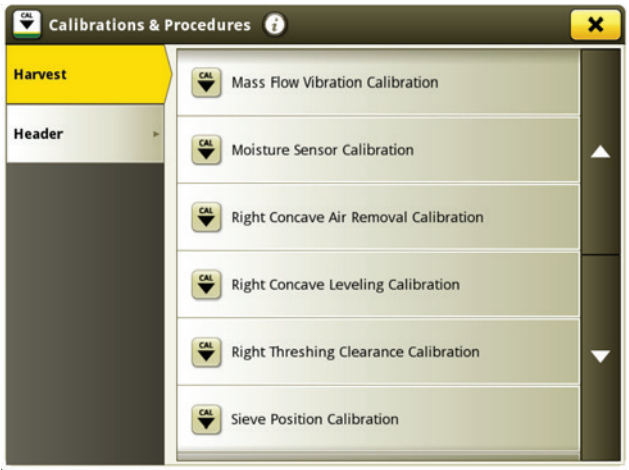
From the main Settings page of the Combine press Menu 

From the Machine Settings page, press Calibration and Procedures tab 

This takes you to the Calibrations and Procedures page where you will be able to do calibrations on the combine and the header. What you see will depend on the options on your combine and the header you have installed.

CALIBRATION OPTIONS





Harvest Tab Calibration Options:

- Mass Flow Vibration
- Moisture Sensor Temperature
- Yield
- Amber Flashers
- Chassis Tilt
- Threshing Clearance (Hydraulic)
- Concave Air Removal
- Concave Leveling
- ActiveYield
- Threshing Clearance (STS Electric)
- Unloading Auger Engage

Header Tab Calibration Options:

- Feederhouse Speed
- Header
- Deck Plate Spacing
- Feederhouse Lateral Tilt Speed
- Wings
- Reel and Cutterbar Position
- Reel Position
- Feederhouse Tilt Fore/Aft Range
- Feederhouse Lateral Tilt Range

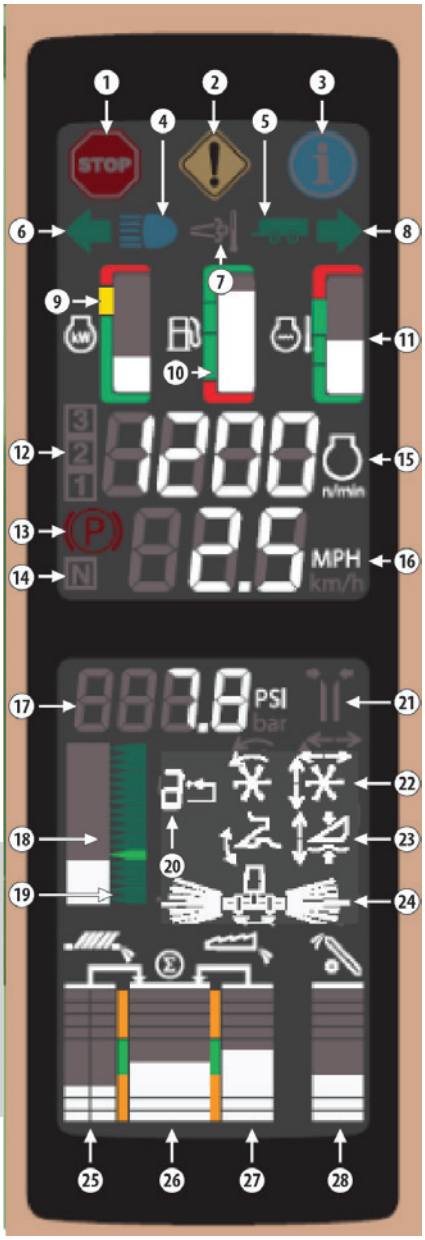
COMMANDTOUCH CAB CORNERPOST

1. **Step Engine Warning Indicator (Red):** illuminates and requires the machine to be stopped at once and the problem corrected. Diagnostic trouble code is shown on armrest display until problem is resolved
2. **Service Warning Indicator (Yellow):** illuminates and flashes when a problem exists with a machine. Requires machine to be stopped at the earliest convenience. Diagnostic trouble code is shown on armrest display
3. **Information Warning Indicator (Grey):** illuminates and flashes when diagnostic trouble code is active. Alerts operator to be aware of a condition. When a warning is acknowledged, screen message disappears, and the warning indicator turns OFF
4. **High Bean Indicator:** shows operator that high beam lights are currently selected
5. **Trailer Lights Indicator:** illuminates when the trailer harness is hooked up and turn signal is applied
6. **Left Turn Signal Indicator:** shows operator that a left turn planned
7. **Exhaust Filter Cleaning Indicator (Interim Tier 4/ Stage III B):** illuminates when exhaust filter system is actively performing exhaust filter cleaning
8. **Right Turn Signal Indicator:** shows operator that a right turn is planned
9. **Engine Power Meter Indicator:** shows operator percentage of power that engine is currently using at any given time

IMPORTANT: If the indicator moves into the red region, engine power is maximized, and machine could stall. Reduce load on machine until indicator moves back into green and yellow regions

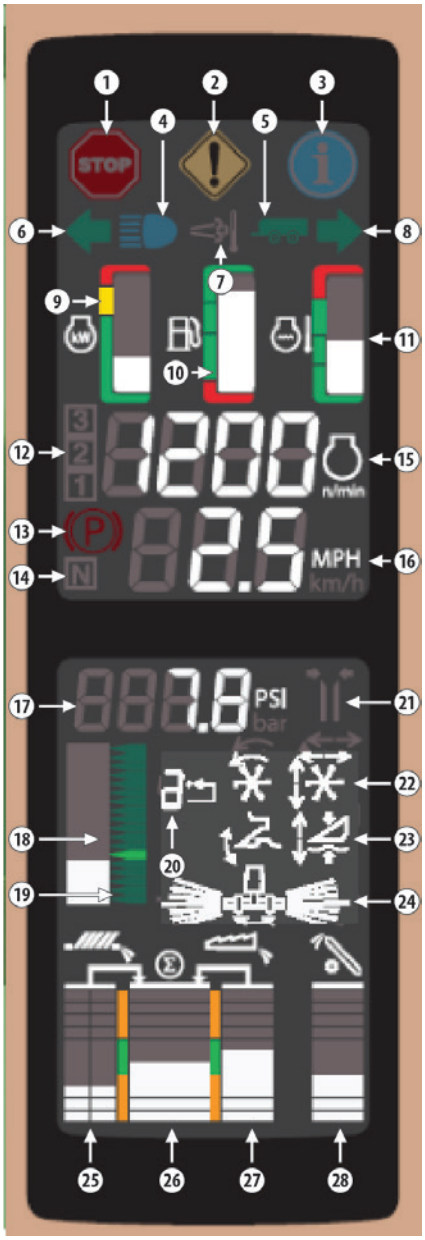
- Green Region (35 to 100%)
- Yellow Region (101 to 107%)
- Red Region (108 to 114%)

10. **Fuel Gauge Indicator:** shows how much fuel is left in the tank. When level reaches 10% (approximately one hour of operation) of remaining fuel, fuel indicator flashes, alarm sounds and low fuel message appears

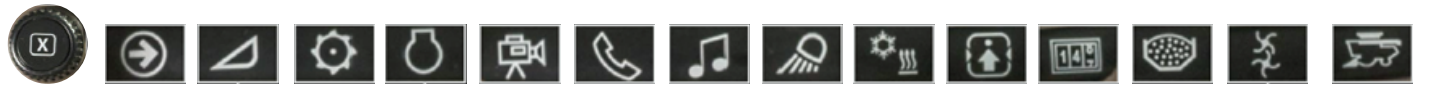


- Indicator shows zero bars when fuel tank is empty

11. **Engine Temperature Indicator:** seven to nine bars are displayed for normal operating temperature. If the alarm sounds and engine temperate message appears, stop engine and check problem immediately
12. **Transmission Gear or Range Indicator:**
    - 3 Speed Non-ProDrive Machines: shows which gear is currently selected. 1, 2, 3 indicators illuminate depending on gear selection
    - 2 Speed ProDrive Machines: shows which range is currently selected. 1 and 2 indicators illuminate depending on gear selection
13. **Park Brake Indicator:** illuminates when park break is selected
14. **Neutral Indicator:** shows that the machine is currently in neutral position
15. **Engine Speed Indicator:** shows engine RPM speed
16. **Ground Speed Indicator:** shows the machine ground speed (km/h or mph)
17. **Header Height Numeric Display:** shows current header height
18. **Header Height Position Display:** shows current header height position
19. **Header Heights Setpoint Display:** shows operator desired setpoint
20. **Header Activation Number:** shows currently selected activation button
21. **Deck Plate Position Resume:** shows system is currently active
22. **Dial-A-Speed/Reel Resume:** Dial-A-Speed (Left Icon): shows system is currently active Reel Resume (Right Icon): shows system is currently active
23. **Header Height Resume/Header Height Sensing/Active Header Float:**
    - Header Height Resume (Left Icon): shows system is currently active
    - Header Height Sensing (Right Icon): shows system is currently active
    - Header Float (Right Icon): shows system is currently active
24. **Lateral Tilt Display:** shows position of Feederhouse frame
25. **Shoe Loss Indicator:** shows grain loss from shoe
26. **Total Loss Indicator:** shows averages grain loss from shoe and separator area
27. **Separator Loss Indicator:** shows grain loss from separator area
28. **Tailings Volume Indicator:** shows volume of tailing return



SOFTKEYS



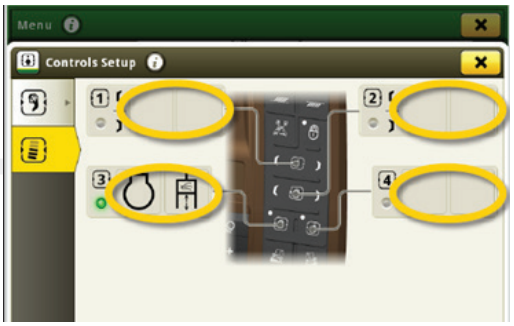
CUSTOMIZE THE MULTI-FUNCTION CONTROL LEVER

1) Press the unlock button on the CommandARM or the Control Set-up softkey

2) Configure functions based upon your preference by selecting boxes A-E to see the options and change the configuration

CUSTOMIZE THE COMMANDARM LAYOUT

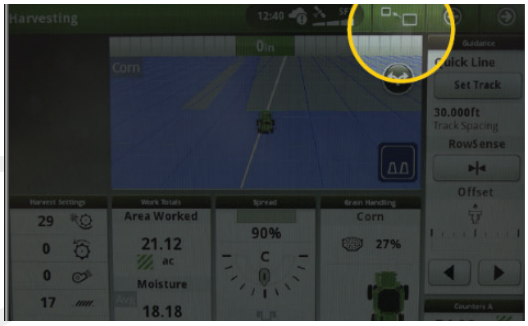
1) Press the unlock button on the CommandARM or the control set-up softkey. The Controls Set-up page will appear



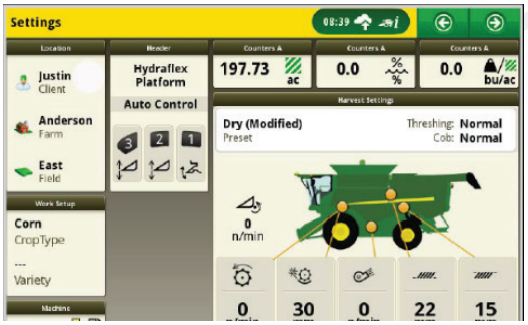
2) Configure functions based upon your preference by selecting boxes 1-4 to see the options and change the configuration

USING THE EXTENDED MONITOR

1) Toggle to the screen you wish to show on the extended monitor



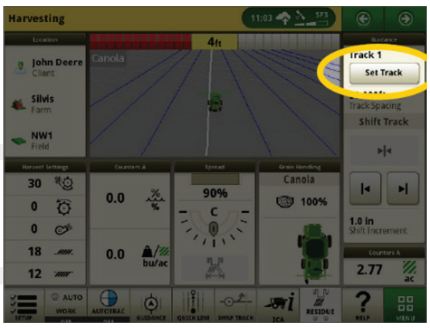
2) Hit the button to move that screen to the extended monitor



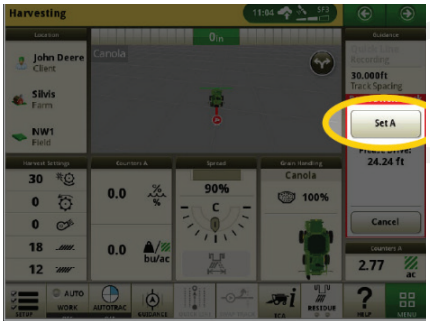
3) To edit the screen on the extended monitor, it must be brought back down to the Generation 4 display mounted on the CommandARM

SETUP OF A SIMPLE A-B GUIDANCE LINE

1) On the main page, select Quick Line



2) Push the "Set Track" button



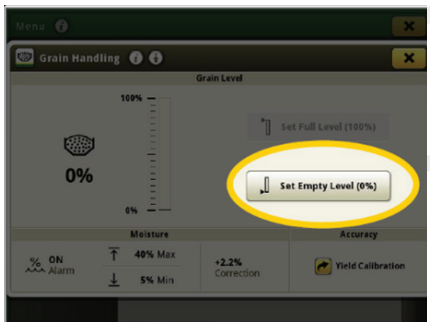
3) Set A line and start harvesting

4) Drive 50 feet, then set B line

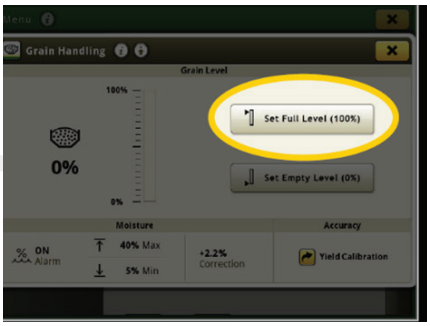
SET THE GRAIN TANK FILL LEVEL

1) Ensure the grain tank is completely empty

2) Select the Grain Handling shortcut feature

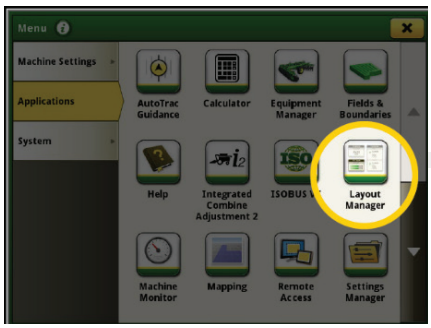


3) Push "Set Empty Level"

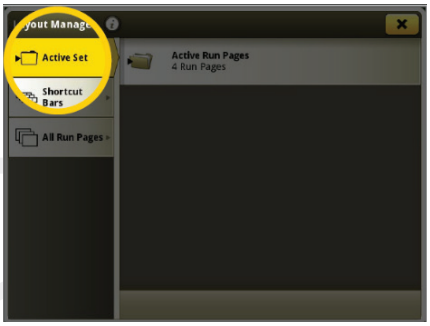


4) Once the grain tank is filled push "Set Full Level." Grain tank fill level is now complete

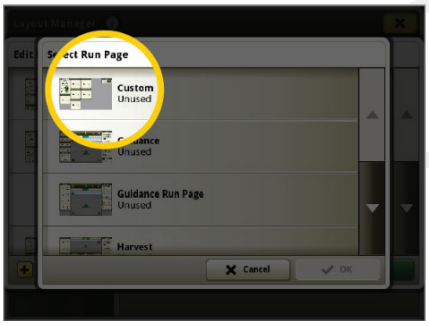
SETTING UP A CUSTOM PAGE ON 4600 DISPLAY



1) In the applications tab, go to Layout Manager

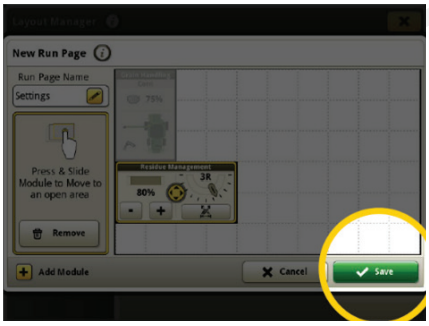


2) Select Active Set



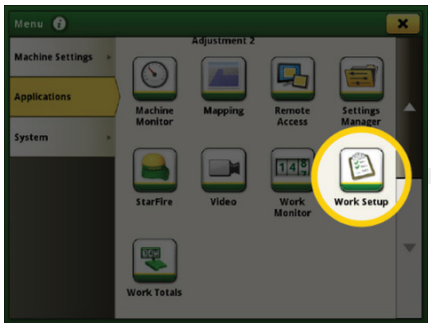
3) Select a Run Page to edit or create a new one

4) Add the module(s) you'd like to add

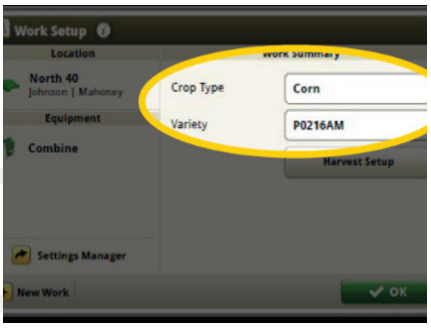


5) Don't forget to save your custom Run Page

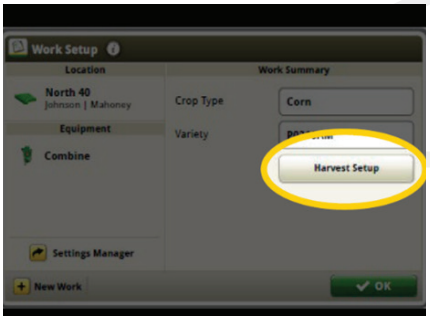
ENTERING YOUR CROP TYPE



1) When on the Applications page, scroll to the second page and select Work Setup

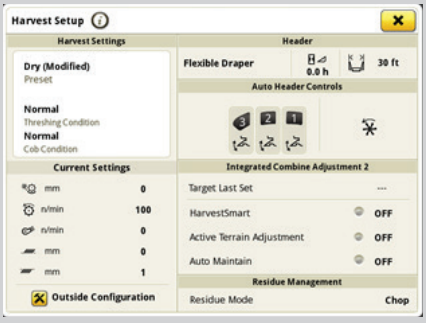


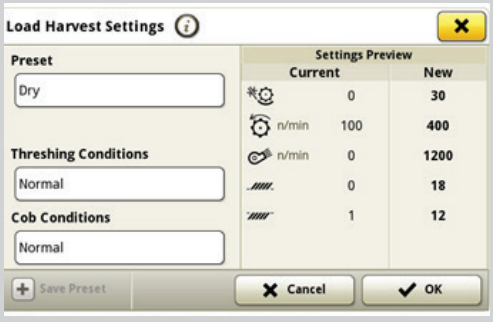
2) This is the **single place** to enter crop type by simply typing in the Crop Type and Variety

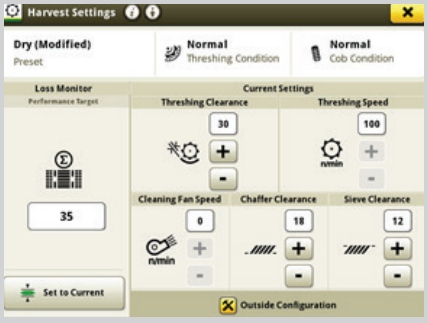


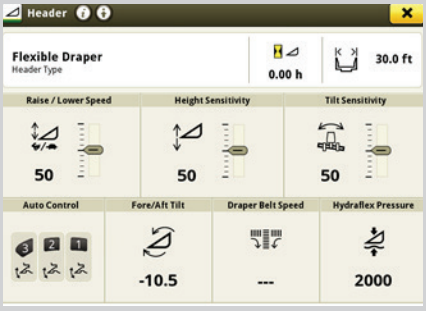
3) From here, select Harvest Setup to continue making adjustments to machine settings for crops and field conditions

Adjust Settings as Shown Below









ACTIVATION BUTTON MODE COMBINATIONS

Note: Press and hold activation buttons 1, 2, or 3 on the multi-function lever for two seconds to enter desired modes into memory.

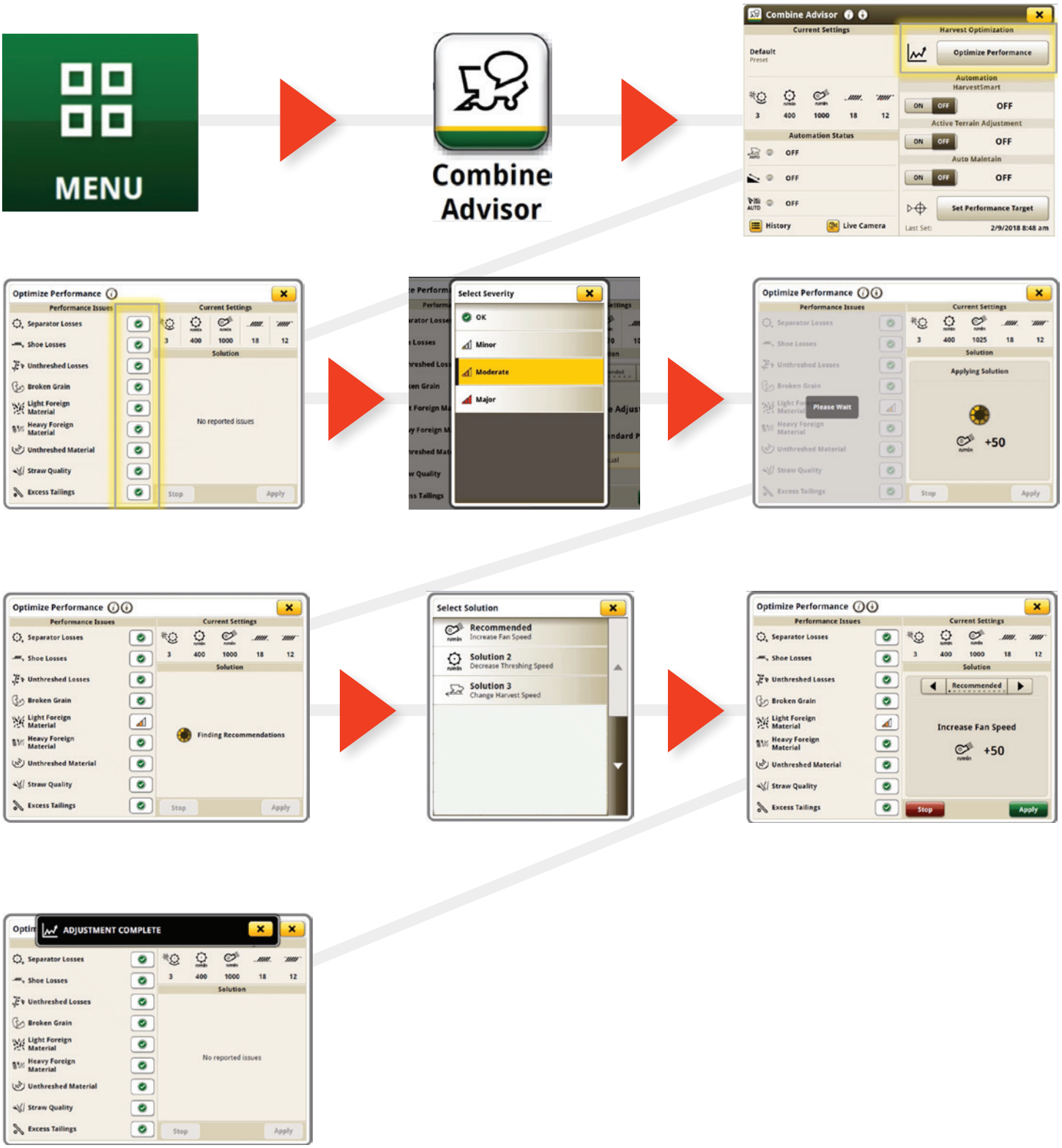
A few common modes are shown below, but many combinations exist.

CONTROL MODES ENABLED	ACTIVATION BUTTON 1	ACTIVATION BUTTON 2	ACTIVATION BUTTON 3
Height Resume		 Height Resume	
Height Resume, Height Sensing	 Height Resume	 Height Sensing	
Height Resume | HydraFlex™ Height Sensing	 Height Resume	 Height Sensing	
Height Resume | Height Sensing | HydraFlex™ Height Sensing [See your John Deere dealer to enable Height Sensing and HydraFlex™ Height Sensing, requires RDF HydraFlex™ Height Sensing. Requires RDF HydraFlex Drapers with auxiliary height sensors.]	 Height Resume	 Height Sensing	 HydraFlex™ Height Sensing
Height Resume | Height Sensing | Active Header Float	 Height Resume	 Height Sensing	 Active Header Float
Height Resume | HydraFlex™ Height Sensing | Active Header Float	 Height Resume	 HydraFlex™ Height Sensing	 Active Header Float
Height Resume | Active Header Float	 Height Resume		 Active Header Float
Height Sensing		 Height Sensing	
HydraFlex™ Height Sensing		 HydraFlex™ Height Sensing	

CONTROL MODES ENABLED	ACTIVATION BUTTON 1	ACTIVATION BUTTON 2	ACTIVATION BUTTON 3
Height Sensing | HydraFlex™ Height Sensing [See your John Deere dealer to enable Height Sensing and HydraFlex™ Height Sensing, requires RDF HydraFlex™ Drapers with auxiliary height sensors.]	 Height Sensing		 HydraFlex™ Height Sensing
Height Sensing | HydraFlex™ Height Sensing | Active Header Float [See your John Deere dealer to enable Height Sensing and HydraFlex™ Height Sensing, requires RDF HydraFlex™ Height Sensing. Requires RDF HydraFlex Drapers with auxiliary height sensors.]	 HydraFlex™ Height Sensing		 Active Header Float
Height Sensing | Active Header Float	 Height Sensing		 Active Header Float
HydraFlex™ Height Sensing | Active Header Float	 HydraFlex™ Height Sensing		 Active Header Float
Active Header Float		 Active Header Float	
Reel Position Resume	 Reel Position Resume		
Deck Plate Position Resume	 Deck Plate Position Resume		
Hydraulic Feederhouse Fore/Aft Tilt (If Equipped)	 Hydraulic Feederhouse Fore/Aft Tilt		
Auto Reel Speed	 Auto Reel Speed		
Auto Belt Speed	 Auto Belt Speed		

HARVEST SCREEN SET-UP

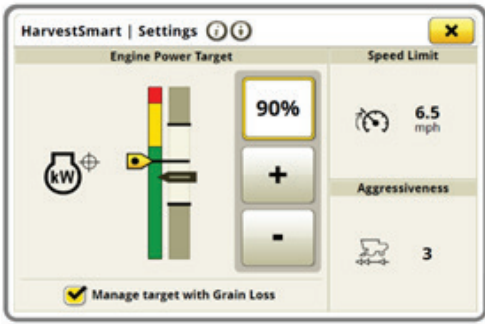
MY22 COMBINE ADVISOR



HARVESTSMART™

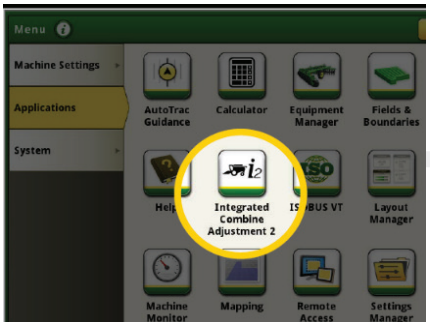
HarvestSmart improvements reduce the aggressiveness of ground speed responses that we have experienced with the previous version. Turn on HarvestSmart, Set the Engine Power Target Percentage, Ground Speed Limit, and Aggressiveness so they are appropriate for the harvesting conditions.

HarvestSmart will now engage by pressing the number 2 or 3 on the multi function control lever as you are harvesting. HarvestSmart automates ground speed to assist the operator in maintaining constant throughout, which maximizes productivity over the course of the day.

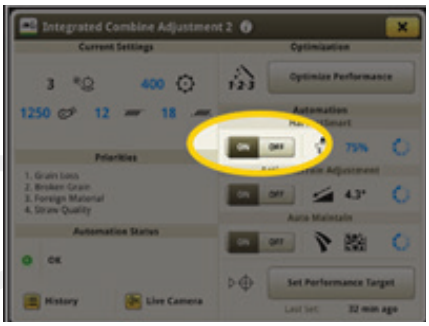


HOW TO ENABLE HARVESTSMART

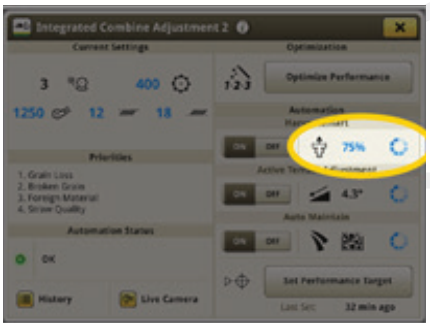
Menu> Applications> Integrated Combine Adjustment 2



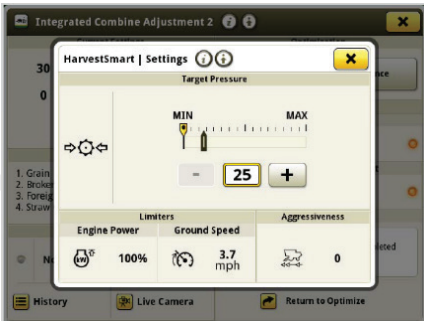
1) In the Application tab, select Integrated Combine Adjustment 2



2) Enable the HarvestSmart feature



3) To fine tune adjustments, click the box



4) Adjust settings as needed. (Target pressure/rotor pressure set at ground speed you'd like to harvest at)

AUTO MAINTAIN

SET PERFORMANCE TARGET

Turn on Auto Maintain and begin harvesting. As soon as the operator is happy with the machine's performance, touch the Set Performance Target button directly below the Auto Maintain ON/OFF switch.

Auto Maintain will remember this target and use it to make setting adjustments while harvesting this crop until the operator either sets a new performance target, shuts the system off, or switches crops.

As long as Auto Maintain is on, the system will remember the previous performance target for that crop. This saves the operator setup time each morning or when switching back and forth in crops, such as going frequently from wheat to canola to barley.

Brandt Operational Tip: Turn off HarvestSmart and Active Terrain Adjustment when setting the performance target for Auto Maintain.

ACTIVE TERRAIN ADJUSTMENT

Navigate to the Combine Advisor run page. Move the slider from OFF to ON:

Take note of the current Cleaning Fan, Chaffer, and Sieve settings. Begin harvesting up or down a slope, and Active Terrain Adjustment will make adjustments.

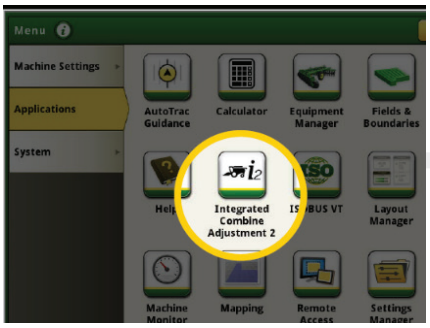
As the machine:

Starts an uphill climb, the Cleaning Fan speed decreases and the Chaffer and Sieve open more.

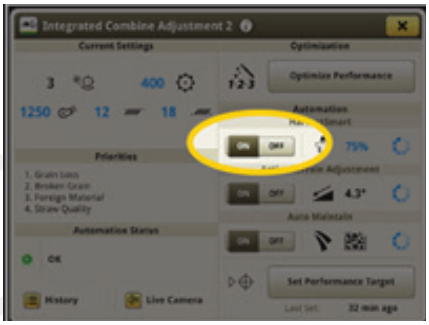
Descends down a hill, the Cleaning Fan speed increases and Chaffer and Sieve elements close more to prevent grain loss and overloading the cleaning shoe.

HOW TO ENABLE AUTO MAINTAIN

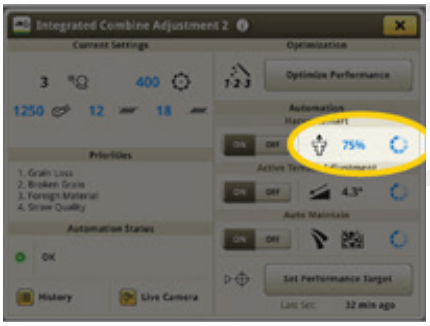
Menu> Applications> Integrated Combine Adjustment 2



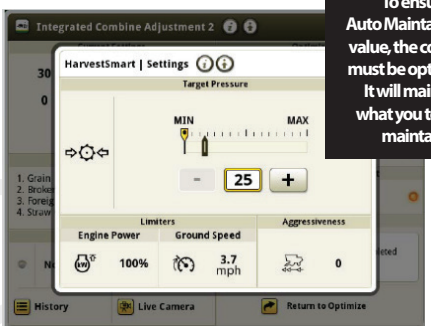
1) Have the combine fully optimized to the desired performance. This performance is what Auto Maintain will maintain



2) In the application tab, select Integrated Combine Adjustment 2

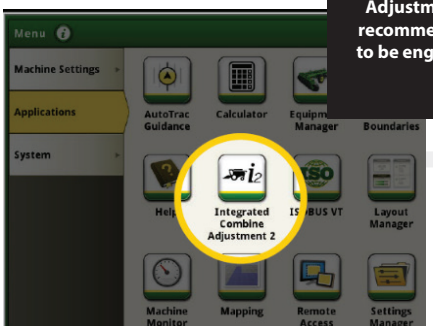


3) Enable the Auto Maintain feature



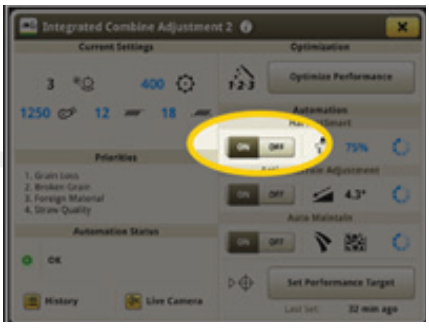
To ensure Auto Maintain adds value, the combine must be optimized. It will maintain what you tell it to maintain.

4) Hit Set Performance Target to establish the performance level that Auto Maintain will sustain. It may take up to 15 minutes to acquire the target



Active Terrain Adjustments recommended to be engaged.

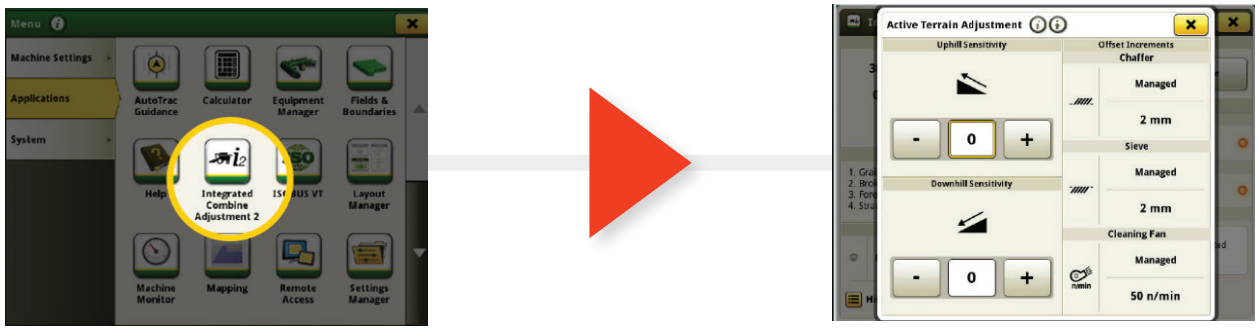
5) Confirm Auto Maintain is Active



6) Notice all the adjustments that were made for you at the end of the day on both the Performance and Adjustments tabs

ENABLE ACTIVE TERRAIN ADJUSTMENT

Menu> Applications> Integrated Combine Adjustment 2



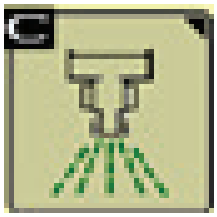
1) In the Application tab, select Integrated Combine Adjustment 2

2) Adjust sensitivity as needed

RESIDUE MANAGEMENT SETTINGS

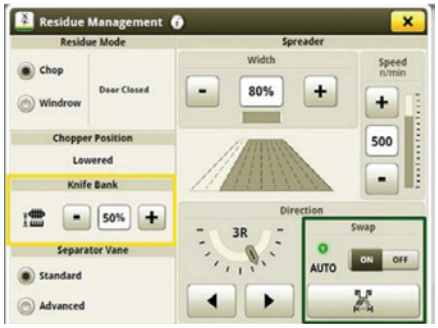
From the main run page you can touch Spread or Menu

If you touch Menu, Machine Settings comes up then touch down arrow on the right of the screen then touch the Residue Management button.



Then touch the screen on the areas you want to adjust

Screen display for Model Year 18/19 Combines



Screen display for Model Year 20/21 Combines with Knife Bank Adjust and auto-swap features

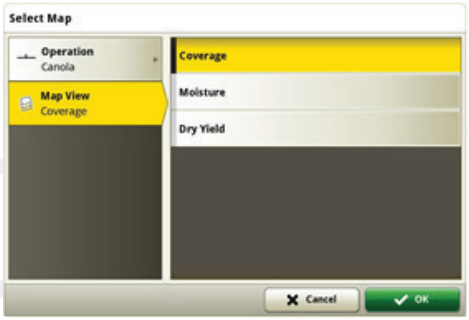
YIELD MAP DRY YIELD

Change Run Pages until you see one with a field map

1) Touch the Map

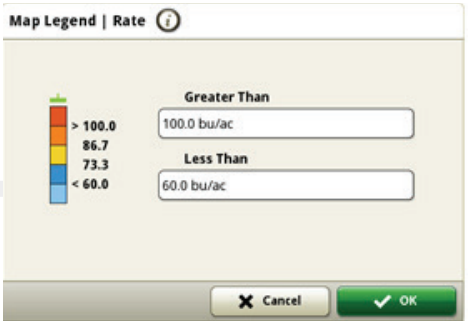
2) This screen will come up

3) Touch the Menu button bottom in the left-hand corner of the screen



4) Touch the Layer button located to the right of the Menu button

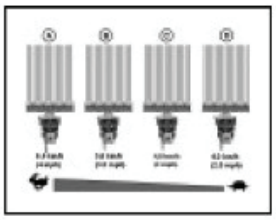
5) Select Dry Yield and click OK



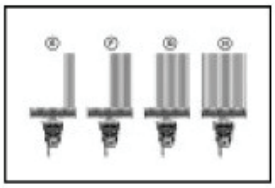
6) Click on the Map Legend to open the screen above. You can now set your greater than and less than target rates

YIELD CALIBRATIONS

Varying machine ground speed is the best way to vary the flow rate. The best way to keep the flow rate constant is to monitor the VisionTrak display and adjust the machine ground speed accordingly.



H105056-UN: Speed Variations



H105057-UN: Crop Flow Variations

LEGEND:				
	A - Load 1	C - Load 3	E - Minimum Flow	G - Medium Flow
	B - Load 2	D - Load 4	F - Medium Flow	H - Maximum Flow

SINGLE POINT YIELD CALIBRATION

Single point yield calibration is performed when two or three calibration loads are collected. This type of calibration is suggested when the harvested field has a fairly consistent yield, and the machine is operated at a constant ground speed with little flow variation.

To collect a calibration load, harvest approximately 2722 kg (6000 lb) at the maximum harvest speed.

Running one or two additional loads is not required, but it may allow the system to average the overall error.

MULTI-POINT YIELD CALIBRATION

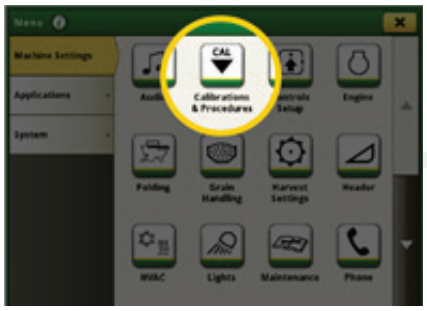
Multi-point yield calibration is used when the harvested field is expected to have varying yields or machine is operated at varying speeds with varying grain flows.

This type of calibration collects each calibration load at each expected flow condition.

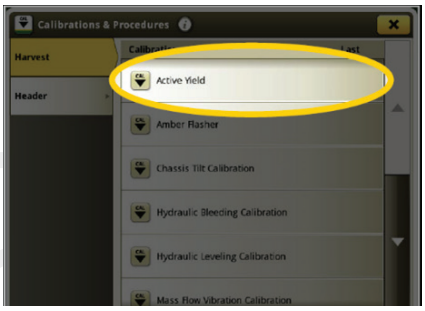
For each calibration load, harvest approximately 2722 kg (6000 lb). Run at least four calibration loads over various ground speeds (A—D) or at different cut widths to simulate four different flow rates (E—H).

ENABLE ACTIVEYIELD

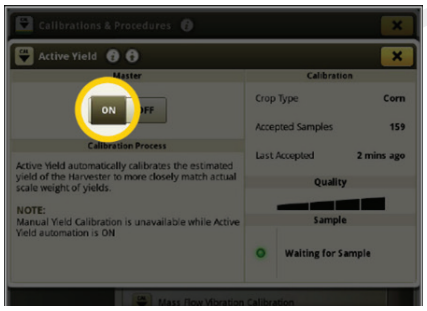
Menu> Machine Settings



1) In the Machine settings tab, go to Calibrations and Procedures



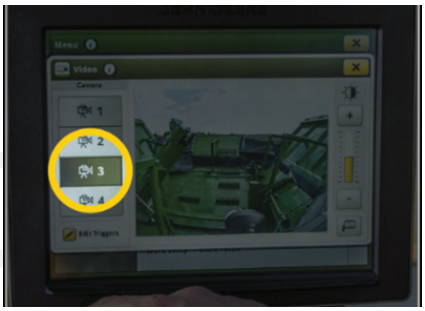
2) Select the ActiveYield Calibration



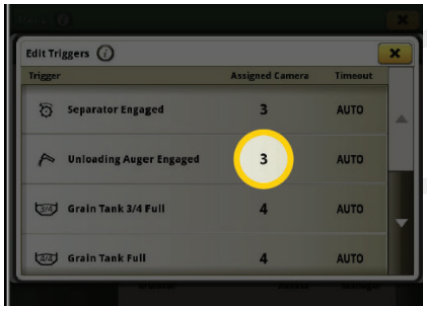
3) Turn the feature on

VIDEO CAMERA INFORMATION

1) Select the video shortcut feature



2) View the desired camera



3) Adjust video prompts by editing camera triggers

4) Choose specific camera for desired trigger

GENERAL CLEANING GUIDELINES

Your machine must be inspected periodically throughout the harvest day. Any buildup of crop material and other debris must be removed to ensure proper machine function and to reduce the risk of a thermal event. Frequency of inspections and cleanings will vary depending on a number of factors, including: operating conditions, machine settings, crop conditions, operating speeds and weather conditions. Inspections and cleanings may be required multiple times throughout the harvest day, particularly in dry, hot and windy conditions.

IMPORTANT: Regular and thorough cleaning of your machine combined with other routine maintenance procedures listed in the Operator's Manual greatly reduce the risk of a thermal event, chance of costly downtime, and improve machine performance.

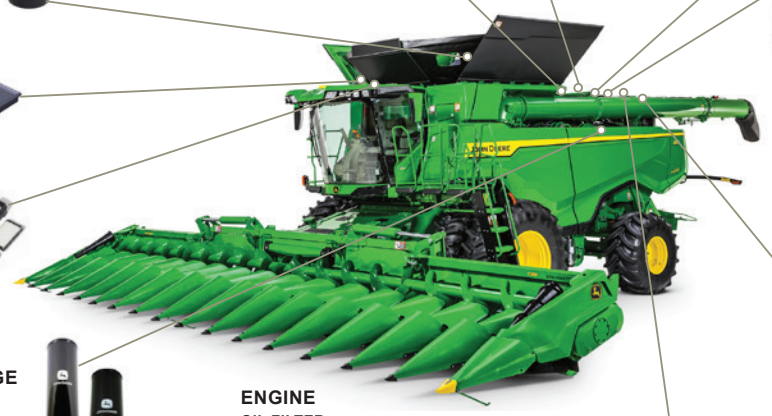
Crop material and other debris can accumulate in various areas. Direction of wind, type of crop and crop moisture content can all impact where and how much crop material and debris can accumulate. Be aware of harvest conditions and adjust your cleaning schedule to ensure proper machine function and reduce the risk of fire. Inspect and clean these areas as needed throughout the harvest day.

Harvesting certain crops can cause special issues. Some crops are very "sticky" and it is often more difficult to clean the machine when harvesting these crops. Examples of these crops include alfalfa, sunflower, canola and safflower. Take special care in cleaning the machine when harvesting these crops.

Always follow all safety procedures posted on the machine and in the Operator's Manual. Before carrying out any inspection or cleaning, always shut OFF engine, set parking brake and remove key.

FILTER OVERVIEW & CAPACITIES

Click Here to Download Full Size Filter Overview and Capacities Chart



ENGINE
PRIMARY AIR FILTER
HXE11090
SECONDARY AIR FILTER
HXE11091
Replace at every 400 hours.

ENGINE
DIESEL EXHAUST FLUID (DEF)
DZ114640
Replace every 4500 hours or every three years of operation, whichever occurs first.

ENGINE
FUEL WATER SEPARATOR FILTER
R502778
Inspect every 10 hours, inspect every 50 hours and every 400 hours or when Diagnostic Trouble Code (DTC) is generated.

ENGINE
SECONDARY FUEL FILTER
DZ104868
Replace at every 500 hours.

CAB
FRESH AIR FILTER
AXE70605
Clean or replace every 50 hours and as required.

ENGINE
PRIMARY FUEL FILTER
DZ105040
Replace at every 500 hours.

CAB
FRESH AIR FILTER
RE284091
Clean or replace every 50 hours and as required.

HYDRAULIC FILTER, CHARGE AND LUBRICATION
TRANSMISSION OIL FILTER
RE577250, RE577612
Minimum hours before first transmission filter change is 100 hours and then every 1000 hours.

ENGINE
OIL FILTER
RE572785
Minimum hours before first engine oil change is 100 hours. Extended engine oil change every 500 hours or annually, whichever come first. The extended 500 hour interval is only allowed if using Plus-50™ II oil with a John Deere filter and diesel fuel with sulfur content less than 15mg/kg (15ppm). If all conditions are not met, change oil and filter at 250 hours of operation.

MAIN HYDRAULIC RESERVOIR
HYDRAULIC FILTER
AXE73798 ,AXE73797
Replace at first 100 hours, and at every 1000 hours.

CAPACITIES

X9 Series Combine X9 1000, X9 1100

CAPACITIES (Approximate):

Fuel Tank:
X9 1000, X9 1100 ..... 1,250 L (330 gal)

Cooling System with Heater:
X9 1000, X9 1100 (Tier 3/Stage IIIA) ..... 76 L (21.2 gal)
X9 1000, X9 1100 (Final Tier 4 and Stage V) ..... 84 L (23.5 gal)

Engine Crankcase with Filter:
X9 1000, X9 1100 ..... 57 L (15.9 gal)

Feed Accelerator Gear Case:
X9 1000, X9 1100 ..... 2 L (0.5 gal)

Main Engine Gear Case:
X9 1000, X9 1100 ..... 53 L (14.8 gal)

Cleaning Fan Variable Speed Driven Bearing Cavity:
X9 1000, X9 1100 ..... 0.1 L (0.03 gal)

Spreader Gear Case:
X9 1000, X9 1100 ..... 1.2 L (0.33 gal)

Final Drives
X9 1000, X9 1100 (Wheel Machines) ..... 8 L (2.23 gal)
X9 1000, X9 1100 (Track Machines) ..... 13.5 L (3.76 gal)

Chopper Gear Case (Two-Speed):
X9 1000, X9 1100 ..... 1.9 L (0.53 gal)

Loading Auger Gearcase:
X9 1000, X9 1100 (Fixed) ..... 0.9 L (0.23 gal)
X9 1000, X9 1100 (Pivoting) ..... 0.9 L (0.23 gal)

Diesel Exhaust Fluid (DEF) Tank (Final Tier 4/Stage V):
John Deere™ Diesel Exhaust Fluid
X9 1000, X9 1100 ..... 83 L (22 gal)

Hydraulic / Hydrostatic Reservoir:
X9 1000, X9 1100 ..... 91 L (25.40 gal)

BRANDT SERVICE TIPS FOR JOHN DEERE X SERIES COMBINE

Lateral Tilt Feeder House: Check and clean out pinch points for packed material that can prevent the header from tilting completely and damaging metal on the floor corners. Also, check and clean the openings on the lower edge of the feeder house to ensure proper functionality of the latching pins. Recommended inspection interval – Every 50 hrs.

Feeder House Gear Case and Reverser Motor: Daily check and clean the feeder house gear case and reverser motor area of debris to help reduce heating.

Feeder House Gear Case Mounting Bolts: Put a wrench on the three mounting bolts and verify they are tight. Recommended inspection interval – Every 50 hrs. Cap Screw Torque Specification: 170 N*m (125 lb.-ft).

Feeder House Front Drive Belt Tension: Check the belt tension daily for the first 50 hours and then every 50 hours thereafter. Adjust until the spring side of the washer is aligned with the bottom of the step.

Multi-Coupler Shear Bolts: 3 shear bolts are supplied with the machine and are located below the multi-coupler.

Safety Lock Operation: There is a red button on the left-hand side of the feeder house that allows the feeder house to be locked at any height. On the bottom of each lift cylinder is a visual indicator indicating the feeder house lock status. **Red you could be dead, white you are alright!**

Ground Drive Components: Clean material buildup from the hydrostatic motors and transmission daily.

Driveshaft Couplers: Grease both sides every 50 hours, until the grease purges from the splines. Clean the excess grease that purged from the splines.

Air Conditioner Drain Hoses: Clean the drain hose on each side of the cab daily.

Operators' Station Air Filters: Cab fresh air filter and cab recirculating filter, clean as necessary and replace yearly.

Tire Pressure, Front and Rear: Check every 100 hours. Refer to the Operator's Manual for proper pressures.

Wheel Bolt Torques: Check torque every 50 hours until they remain at spec, then check yearly.

Vertical Unloading Auger Gear Case: Grease both lubrication fittings every 400 hours with *John Deere Corn Head Grease*.

Unloading Auger Elbow Gear Case: Grease remote lubrication fitting every 400 hours with *TY6341 High Temp Extreme Pressure Grease.*

Cleaning Fan Fixed Belt Tension: Check the belt tension daily for the first 50 hours and then every 50 hours thereafter. Adjust until the spring side of the washer is aligned with the bottom of the step.

Cleaning Fan Variable Speed Driven/Driver Sheaves: Close the sheaves (high speed) before greasing, 10 shots of *TY6341 High Temp Extreme Pressure Grease* every 100 hours. Cycle the fan speed to distribute the grease if operated at a constant speed all the time. Each sheave has 2 lubrication fittings.

Tailings and Cleaning Fan Drive Belt Tension: Check the belt tension daily for the first 50 hours and then every 50 hours thereafter. Adjust until the spring side of the washer is aligned with the bottom of the step.

Active Tailings Return Concave: Periodically cycle the crop selection handle to prevent internal build-up and seizure.

ActiveVision Tailings Camera: Clean the camera once a week or as needed. Frequency varies with the weather, operating, and crop conditions. Open the latch, and clean the camera lens with a soft, water moistened cloth.

Tailings Elevator Sensors: Clean the sensors once a week or as needed. Frequency varies with the weather, operating, and crop conditions. Remove the spring retaining clip, and clean the sensors with a soft, water moistened cloth.

Tailings Conveyor Chain: Adjust the chain tension so that the chain can just be slid side to side across the bottom sprocket but not pulled away from the sprocket.

Unloading Auger Drive Belt Tension: Check the belt tension daily for the first 50 hours and then every 50 hours thereafter. Adjust until the spring side of the washer is aligned with the bottom of the step.

Hydraulic Oil Filters: Replace the Transmission Filter, Transmission Return Filter, and the Main Engine Gear Case/Rotor Lube Filter after the first 100 hours and then every 1000 hours. Replace the Hydrostatic Cooler Return Filter, Auxiliary Return Filter, and the Hydrostatic Charge Filter every 1000 hours.

Straw Chopper Belt Tension: Check the belt tension daily for the first 50 hours and then every 50 hours thereafter. Adjust until the spring side of the washer is aligned with the bottom of the step.

Straw Chopper Gear Case: Use *John Deere Hy-Gard* and change every 400 hours. (Capacity Specification: 1.9 L (2.01)).

Rear Axle, Tie Rod Ends, Spindle Bearings, and Pivot Pins: Grease all lubrication fittings on each side with *TY6341 High Temp Extreme Pressure Grease* every 50 hours. (Grease every 10 hours if operating in mud and water).

Spreader Drive Belt Tension: Check the belt tension daily for the first 50 hours and then every 50 hours thereafter. Adjust until the spring side of the washer is aligned with the bottom of the step.

Daily Engine Compartment Level Checks: Engine oil, Engine Gear Case oil level, Hydraulic oil level, Coolant level, and DEF level.

Separator Variable Speed Driven Sheave: 20 shots of *John Deere Corn Head Grease* every 200 hours in the flat surface fitting. 20 shots of *TY6341 High Temp Extreme Pressure Grease* every 200 hours in the angled surface fitting. Do not over grease.

Separator Variable Speed Driver Sheave: 20 shots of *TY6341 High Temp Extreme Pressure Grease* every 200 hours. Close the sheaves (high speed) before greasing. Cycle separator through full speed range to distribute the grease after greasing. Do not over grease.

Hydraulic / Hydrostatic Oil: Check with the header on the ground. Recommended: *Hy-Gard Hydraulic Oil.*

Fuel Tank Breather: Clean off accumulated dirt.

Radiator and Coolers: Clean as needed. Check coolant daily. Recommended: *Cool Guard II Premixed Coolant.*

Mass Flow Sensor: Lower the hopper loading auger and access sensor. Remove any dirt buildup as necessary. Clean with a soft, water moistened cloth.

Loading Auger Fixed Gear Case and Loading Auger Pivoting Gear Case Oil Level Check: Remove the dipstick and check the oil level every 400 hours. Add *John Deere GL-5 Gear Lubricant* if required.

Fuel Pre-Cleaner Screen and Sediment Bowl: Empty to remove debris and clean the screen if it is restricted. Use fuel treatment to prevent blackening. Drain if water has accumulated.

Battery Disconnect Switch: Use the battery disconnect if the combine is going to be sitting for a while. Note: Make sure the DEF pump has creased running before disconnecting power.

Moisture Sensor: Clean sensor and sampling auger of dirt buildup as needed. Remove the sensor and clean with a soft, water moistened cloth.

ActiveVision Clean Grain Camera: Clean the camera once a week or as needed. Frequency varies with the weather, operating, and crop conditions. Open the latch, and clean the camera lens with a soft, water moistened cloth.

Clean Grain Conveyor Chain: Adjust the chain tension so that the chain can just be slid side to side across the bottom sprocket but not pulled away from the sprocket.

Clean Grain Elevator Belt Tension: Check the belt tension daily for the first 50 hours and then every 50 hours thereafter. Adjust until the spring side of the washer is aligned with the bottom of the step.

Right-Hand Jackshaft Drive Belt Tension: Check the belt tension daily for the first 50 hours and then every 50 hours thereafter. Adjust until the spring side of the washer is aligned with the bottom of the step.

Cleaning Shoe Belt Tension: Check the belt tension daily for the first 50 hours and then every 50 hours thereafter. Adjust until the spring side of the washer is aligned with the bottom of the step.

Feed Accelerator Drive Belt and Two-Speed Belt Tension: Check the belt tension daily for the first 50 hours and then every 50 hours thereafter. Adjust until the spring side of the washer is aligned with the bottom of the step.

Loading Auger Belt Tension: Check the belt tension daily for the first 50 hours and then every 50 hours thereafter. Adjust until the spring side of the washer is aligned with the bottom of the step.

Cross Auger Drive Belt Tension: Check the belt tension daily for the first 50 hours and then every 50 hours thereafter. Adjust until the spring side of the washer is aligned with the bottom of the step.

Stone Trap: Empty at the end of each day. More often in stony conditions. Make sure to close the stone trap and retain it with the quick-lock pin.

Feeder House Conveyor Chain: Check the chain tension daily. Adjust until the spring side of the washer is aligned with the bottom of the step. Replace the chain when there are no ½ links left and you are out of adjustment.

Feeder House Conveyor Drive Chain: Check drive chain tension daily. The chain should be tensioned 18 – 25 mm at the front edge of the upper chain guide. Replace the chain when there is no adjustment left.

700FD CALIBRATION FLOWCHART

This should fully calibrate the header for ON and OFF ground operations. No further effort in calibration sequences of locking out or pinning up sensor brackets should be required to run either rigid mode or hybrid mode.

700FD – S Series

↓

Ensure that all software is up-to-date

↓

Un-pin AHHC sensor arms and Remove the float arm lock-out brackets

↓

Combine screens for the header calibration

↓

See Troubleshooting or refer to the Calibrations section of the Operator's Manual

700FD ADJUSTMENTS

DRAPER GROUND ENGAGEMENT ANGLE

The HydraFlex™ Draper engagement angle is designed for optimum performance on your combine. It is recommended that the factory Feederhouse fore/aft tilt frame setting be used. If adjustments are desired, refer to your combine Operator's Manual for proper instructions.

IMPORTANT: Excessive rearward tilt may result in frame assembly being pushed into the ground, causing material accumulation in the float system components.

Excessive forward tilt may result in the cutterbar pushing the crop.

HYDRAULIC FEEDERHOUSE FORE/AFT TILT ADJUST (IF EQUIPPED)

Hydraulic Feederhouse fore/aft tilt adjust allows the operator to increase or decrease the angle of the Feederhouse tilt frame enhancing the cutting performance.

System Requirements:

- Engine is running.
- Road transport disconnect button must be disengaged.
- Multi-function lever reconfigurable buttons are functionally assigned and unlocked (B).

ON-SCREEN

1. To adjust the angle of the Feederhouse tilt frame touch plus (+) or minus (-) symbol or rotate the selection dial
   - Increase tilts Feederhouse tilt frame angle forward
   - Decrease tilts Feederhouse tilt frame angle rearward
2. Display shows operator adjustment settings

BELT SPEED ADJUST

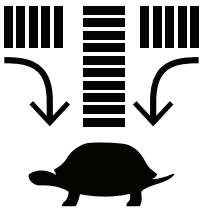
Draper belt speed adjust allows the operator to increase or decrease the belt speed

1. Press the Header application button and select the belt speed section
2. To increase or decrease the belt speed, touch the plus (+) or minus (-) symbol or rotate the selection dial
3. Display shows the operator adjustment settings

QUICK SIDE BELT SPEED REDUCTION SWITCH

When crop is harvested on one side of the platform due to irregular shaped fields, slowing the side draper belts speed enhances the feeding performance.

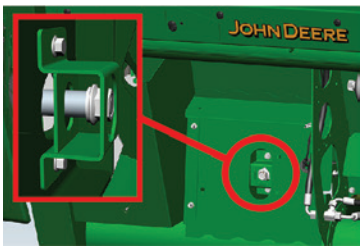
Side belt speed reduction switch allows the speed of the draper belt to automatically slow to a factory setpoint speed.



1) Press the side Belt Speed Reduction button on the multi-function lever
2) Slow Speed Mode Engaged appears on the display and the draper belt speed automatically slows to the factory setpoint speed
3) Pressing the Belt Speed Reduction switch again or attempting to make manual belt speed adjustments while in slow speed mode automatically returns belt speed to the original speed set by the operator

NOTE: If the original draper belt speed set by the operator is slower than the factory setpoint speed, the system will not engage and a diagnostic trouble code appears. See your Brandt Agriculture dealer if the factory setpoint speed needs to be adjusted.

REQUIRED DRAPER BELT TENSION SETTING



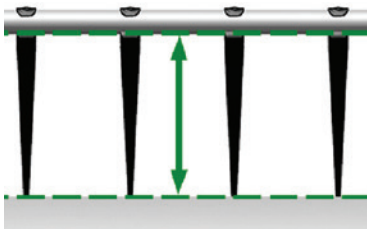
Critical: On the 730FD only, the idler belt tensioning bolt should be even with the outside shield.

Critical: Draper belt tension indicator must be in the position shown to ensure proper draper function in all conditions

REEL REPLACEMENT/REEL FINGER ADJUSTMENT

Recommended reel position is directly over the cutterbar, and only low enough so that the lower portion of the reel fingers engage the crop (not the tube).

Rule of Thumb: Out and Up!



Reel finger pitch is adjustable. Adjustment levers are at both ends of the reel. A more advanced finger pitch helps pick up downed crop. A less advanced pitch reduces the material wrapping on the reel.

ADDITIONAL RECOMMENDED SETTINGS

Header Height/HydraFlex™ Pressure Control Knob

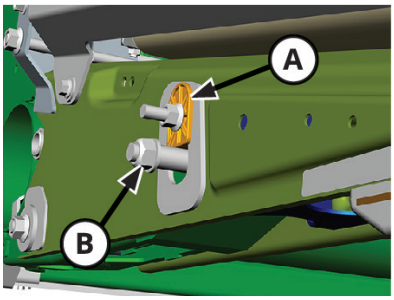
- With AHHC engaged, use the knob to adjust the header set point
- While operating in the flex mode, the knob adjusts the flex pressure set point
- Higher pressure = Less ground force
- While operating in rigid mode, the knob adjusts the height set point

HEADER APPLICATION BUTTON

- Press the Header application button, then select either the manual HydraFlex™ float pressure adjustment or the belt speed adjustment

ACTIVE HEADER HEIGHT CONTROL (AHHC) MODE OPTIONS

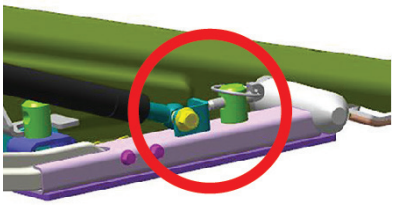
For flex draper platforms, there are three unique AHHC modes:



- On-Ground (“flex mode”) – soybeans, lentils, chickpeas
- Off-Ground (“rigid mode”), auxiliary attachment – wheat, barley, oats, canola
- On-Ground and Off-Ground AHHC are selected. AHHC resume button 2 is Off-Ground, AHHC resume button 3 is On-Ground (“hybrid mode”)

Float arm brackets may be reinstalled for operating in off-ground mode after the Feederhouse speed calibration and header calibration has been completed.

For on-ground mode, lockout brackets (A) must be removed. Ensure that only the lockout bracket cross-bolt is removed when unlocking the float arms. The second float arm stop bolt (B) is critical for function (Do Not Remove).



When using off-ground mode with the ground-engaging sensor arms unpinned, ensure that grease has been added to the sensor arm pivot shaft and that the sensor arm rotates freely.

Ensure that the storage pin is placed in the correct location.

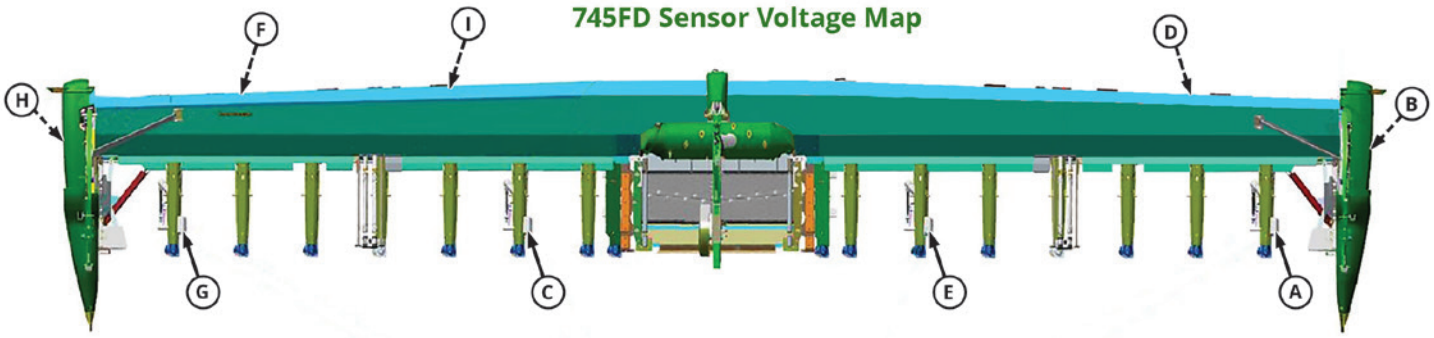
NOTE: It’s possible to use a Hybrid mode where no calibration is needed when changing between on and off-ground modes.

RECOMMENDED HEADER MODES TO ENABLE

With both on-ground and off-ground sensing buttons turned ON, it's possible to set the Header Activation button 2 on the Multi-Function Lever. For the off-ground header height sensing and Header Activation button 3 for on-ground float pressure sensing.

Header Activation buttons 2 and 3 on the Multi-Function Lever will activate the platform.

For pre-MY19 machines, refer to DTAC solution 92094 for enabling hybrid mode



IMPORTANT: Performing any header calibration may automatically enable all six header modes. It is recommended to revisit the header application Auto Header Controls screen and turn OFF the Feederhouse Float mode, which does not utilize functionality of the AHHC system on the header.

S-Series LC1 Address			
Controller	**Address**	**Display**	**Description**
LC1	21	_ _ n n n X X X	**(A)** Left-Hand Auxiliary Height Sensor Voltage (cc #9826)
LC1	21	_ _ X X X n n n	**(B)** Left-Hand Main Height Sensor Voltage (cc #9816)
LC1	22	_ _ n n n X X X	**(C)** Center Auxiliary Header Height Sensor Voltage (cc #9803)
LC1	22	_ _ X X X n n n	**(D)** Center Main Header Height Sensor 1 Voltage (cc #9817)
LC1	30	_ _nn n X X X	**(E)** Cutterbar Flex Pressure Sensor
LC1	23	_ _ n n n X X X	**(F)** Center Main Header Height Sensor 2 Voltage (cc #9804)
LC1	24	_ _ n n n X X X	**(G)** Right-Hand Auxiliary Height Sensor Voltage (cc #9828)
LC1	24	_ _ X X X n n n	**(H)** Right-Hand Main Height Sensor Voltage (cc #9818)

CALIBRATIONS

Calibrating the Feederhouse speed and then the AHHC sensors is required to initially use the system. Calibration verifies that the AHHC sensors are set within the operating range. A failed calibration often means that a sensor is not set properly. See AHHC Troubleshooting and Sensor Voltage Map for more information.

Tuning calibration is also available after a header calibration is performed. This tuning operation improves sensitivity of the Height Sensing function and is recommended to be performed whenever possible.

AHHC TROUBLESHOOTING

If a header calibration fails, there are several common causes and solutions:

SENSORS OUT OF RANGE

- Sensors may not be adjusted properly: See Sensor Voltage Settings
- Damaged wiring harness: Inspect the wiring harness leading to all the AHHC sensors
- Broken sensor or components: Inspect sensors

SENSORS SEEING LESS THAN 1.2 V OF RANGE

- Broken sensor or components: Inspect sensors
- Lock-out brackets still installed in the float arms
- Off-ground sensor arm still pinned up
- Off-ground sensor arm unable to fully rotate due to lack of lubrication: Add grease to the fitting on the float arm
- Damaged wiring harness: Inspect the wiring harness leading to all the AHHC sensors

SENSORS SEEING TOO MUCH VOLTAGE RANGE

- Float arm stop bolt was removed: Check the float arms for stop bolts

SENSOR VOLTAGE SETTINGS

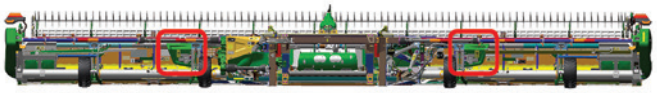
Operating range while harvesting of the AHHC sensor is 0.6 – 4.4 V. Sensor voltage readings can be viewed in LC1 Diagnostic Addresses – see the Calibrations section of the platform Operator's Manual.

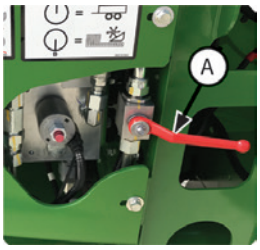
It is highly recommended to set the sensors at 0.9 – 4.1 volts to ensure that the sensor does not shift out of the operating range.

If a header calibration fails, see the 700FD Sensor Voltage Map to ensure that all sensors are set correctly.

HDxxR HINGED DRAPERS

SAFETY INFORMATION



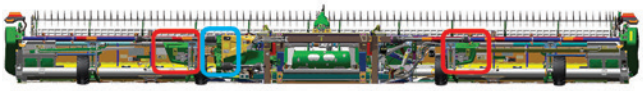


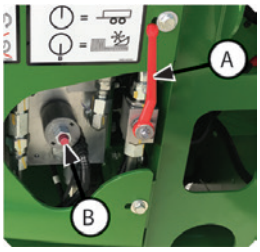
CAUTION: Do not go under the head without the left and right safety Wing Lock Ball Valves (A) locked—in the horizontal position.

There can be stored hydraulic energy in the header, even with the combine off, wings down, or header not attached to the combine.

Discharge the system for service via the Header Suspension Service Mode—Refer to the Operator's Manual.

START UP GUIDE



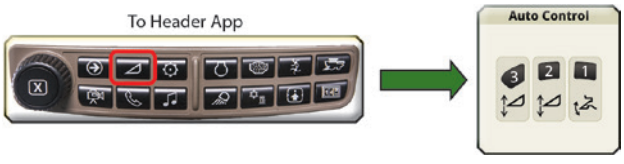


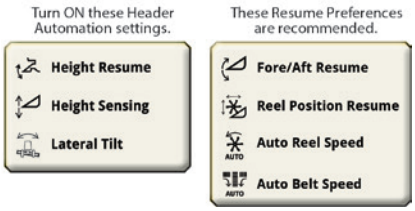
Complete Out-of-Combine Checks:

1. Left and right Safety Wing Lock Ball Valves (A) are unlocked/vertical.
2. Left and right Wing Manual Override Valves (B) are rotated clockwise.
3. Fully connected to the combine.
4. Ensure that the Center Feed gear case (C) is engaged.
   - Refer to Adjustments—Center Feed section for speed recommendations.
5. Check the top auger speed, fingers, and stripper clearance (if equipped).
   - Refer to Adjustments—Top Augers section for recommendations.

Complete In Combine Setup:

1. Complete the following calibrations (first connection to a new combine).
   - Feeder House Raise Speed
   - Feeder House Lateral Tilt Speed
2. Select the Automatic Header Controls settings.





Resume - returns to the set position, set up in the next step.

Auto Speed - adjusts relative to the ground speed

3. Set one or more Automatic Header Height Configurations.

   a. Turn on the Header Engage switch.

   b. Press header activation button 2 on the multi-function lever.

      - Ensure that these icons are on the corner post display.

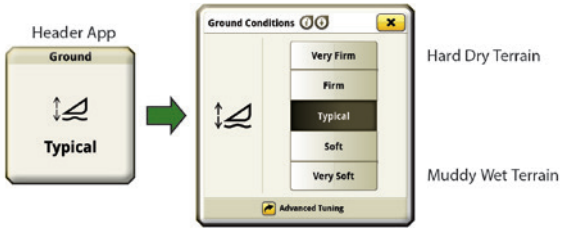
Active Configuration: Height Sensing, set point 2

   c. Set the desired cut height.

      - For off-ground—Cut Height Encoder (A) controls gauge wheel position.
      - For on-ground—gauge wheel fully retracted.

   d. Select Ground Conditions, Typical is recommended to start.

      - Primary Ground Conditions are optimized for off-ground or on-ground cutting, based on the gauge wheel position.



   e. Press header activation button 1 or raise header to save Cut Height and Ground Conditions.

   f. Press header activation button 2 on the multi-function lever.

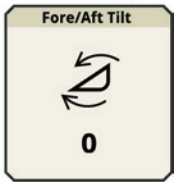
   g. If Fore/Aft Resume is on in the Header App, set Fore/Aft Tilt to 0 (if equipped).

   h. If Reel Position Resume is on, move the reel to the desired harvest position.

   i. Press and hold header activation button 2 on the multi-function lever for 5 seconds to save Fore/Aft Tilt and Reel position.

   j. Repeat steps from (b), with header activation button 3 to save a different header harvest configuration.

Header App

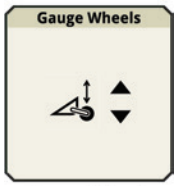


Height Sensing Mode Active

4. Head is ready to Harvest.

THINGS TO REMEMBER:

- Ground Conditions are stored to the Auto Control Buttons (button 2 or 3).
- Ground Conditions can only be changed in the Height Sensing Mode. Ground Conditions are greyed out at all other times.

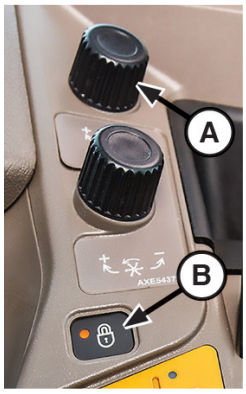


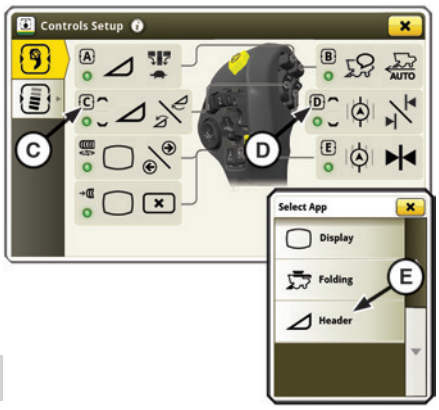
Gauge Wheel Control in Header App

CONTROLS

Off Ground

- Gauge Wheels position sets and controls cut height
- Gauge Wheels controls the direction based on the cylinder length, not the cut height
- Gauge Wheels controls:
    - Cut Height Encoder (A)
    - Gauge wheel button in the Header App
    - Multi-function lever programmable buttons
- Program multi-function lever:
    - Press the lock button (B)
    - On the display, select the programmable button (C) or (D)
    - Select the Header (E)
    - Select Gauge Wheels





On Ground

- Gauge wheels are fully retracted
- Fore/Aft tilt can be used to adjust cut height
- Cut Height Encoder moves gauges wheels, do not use while cutting on the ground

IMPORTANT: Review Trailering section before transporting the head.

BELT SPEED CONTROLS

Recommend starting the belt speed at 75.

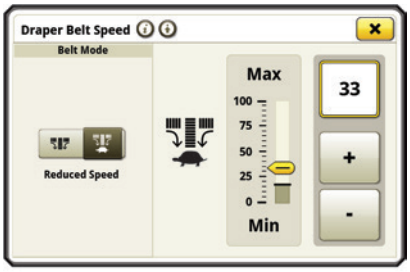
Header App

BELT SPEED REDUCTION MODE

- Slows the belt speed for cutting half a head width
- Mode is manually turned off and on

To activate the Belt Speed Reduction Mode:

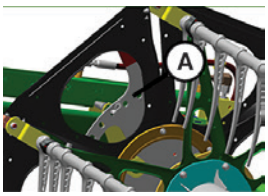
- Select the Belt Speed in the Header App
- Select the Reduced Speed Mode

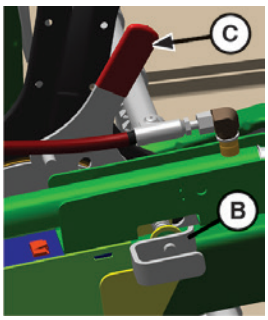


Reduced Speed Belt Mode Active

ADJUSTMENTS - REEL

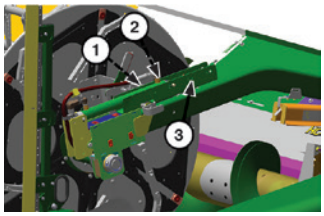
FINGER PITCH





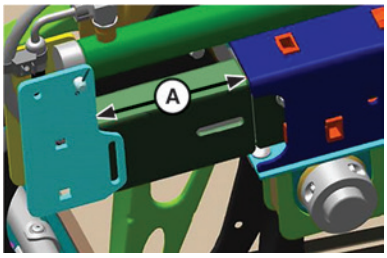
- Finger pitch adjustment—five position
    - Remove clip (A)
    - Pull and rotate retaining pin (B)
    - Move the adjustment handle (C) to the desired position
    - Replace clip
    - Repeat on the other side
- Middle position is the default
- Use more aggressive fingers for down crop, handle towards the cutterbar
- Less aggressive fingers are recommended for oilseed rape and canola, handle away from the cutterbar
    - Finger pitch adjustment changes the reel to cutterbar clearance. Check reel to cutterbar clearance

REEL - FORE/AFT



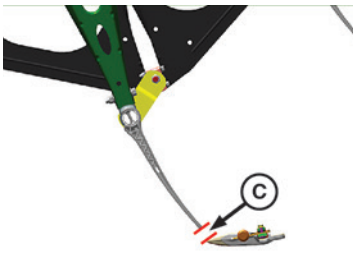
- Fore/Aft cylinder position
- Position (2) is HDR harvest position
- Positions (1) and (3) are factory shipping positions

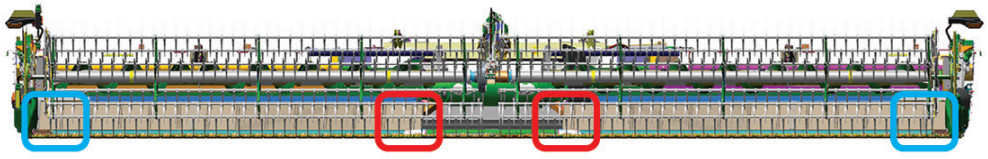
CHECK THE REEL TO CUTTERBAR CLEARANCE WHEN:



- Fingers are getting cut by the cutterbar
- Reel does not have enough crop engagement

1. Set the head on the ground and fully lower the reel
2. Move the reel fore/aft to the position shown (A). 170 mm (6-11/16 in) between stop and the saddle bracket
3. Push in and rotate the left and right Wing Manual Override Valves (B) counter-clockwise
4. Raise the head until the wings are no longer supported by the ground
    - Head should be in the full frown position
5. At the hinges (Red), the distance from the reel finger tip to the knife tip should be 15 mm (9/16 in) (C)
6. At the outer most fingers (Blue), the distance from the finger to the knife should be 70 mm (2-3/4 in)
7. Adjust if needed, refer to the Operator's Manual for instructions
8. Lower the head to the ground so that the wings are in the flat position
9. Push in and rotate the left and right Wing Manual Override Valves clockwise



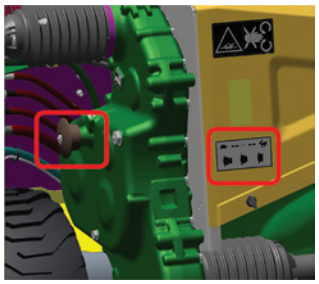


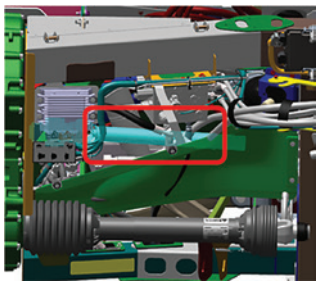
Red = 15 mm (9/16 in) Blue = 70mm (2-3/4 in)

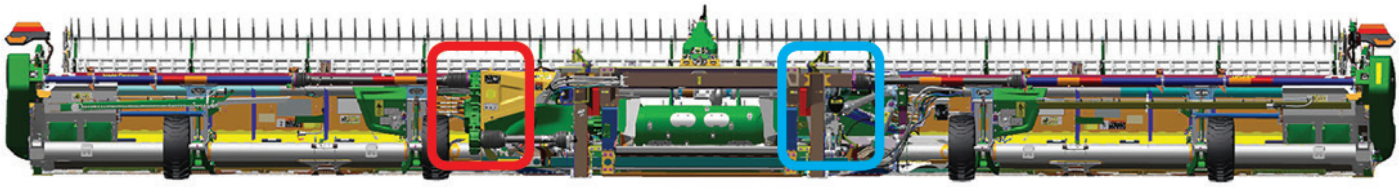
ADJUSTMENTS - CENTER FEED

CENTER FEED SPEED

- Two-speed gear case for center feed section
- High speed = button pushed in
- Recommended for small grains and high volume crops
- Low speed = button pulled out
- Recommended for soybeans and shatter prone crops
- To Shift—slightly rotate center feed drive line manually

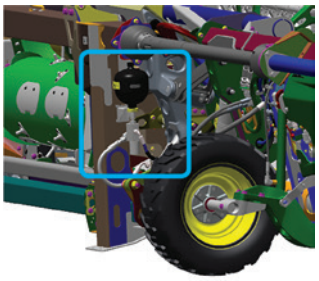


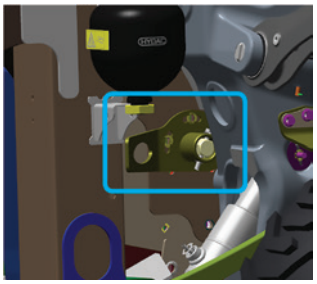




FEED DRUM FINGER PITCH

- Rotate the handle clockwise to make the fingers more aggressive
- More aggressive finger timing for low volume crops (wheat, lentils, flax)
- Rotate the handle counterclockwise to make the fingers less aggressive
- Less aggressive finger timing for bulky, high volume crops (oilseed rape, canola, mustard seed)



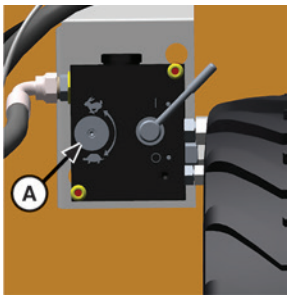


TO ADJUST

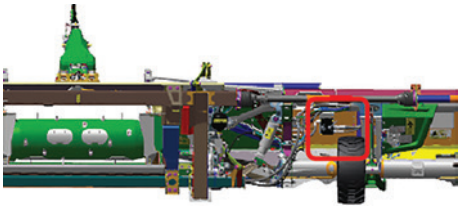
1. Loosen nuts
2. Make adjustment
3. Tighten nuts
4. Shift center feed to neutral
5. Ensure that the fingers do not contact feed floor during rotation

ADJUSTMENTS - TOP AUGER

TOP AUGER SPEED



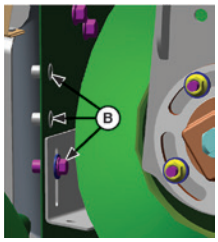
1. Watch the head from the front of the machine
2. Compare the belt splice speed to the linear speed of the auger flighting
3. Adjust the speed so that the belt splice and the auger flight match speeds or the auger flighting is slightly faster than the belt cleat speed

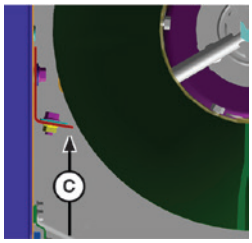


The speed control knob (A) sets the speed of the auger relative to the speed of the side belts.

TOP AUGER STRIPPER ADJUSTMENT

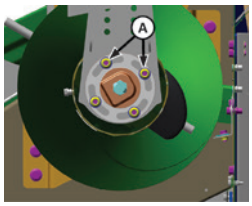
- Adjust with the slot in the stripper and the three bolt positions (B)
- Stripper to flight distance should be set to approximately 5 mm (3/16 in) (C)
    - Approximately 5 mm (3/16 in) gap is most important at the center of the machine, may vary along the auger length
    - After adjusting the stripper, check the finger timing

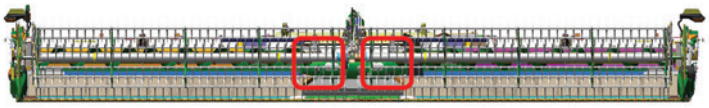




TOP AUGER FINGER TIMING

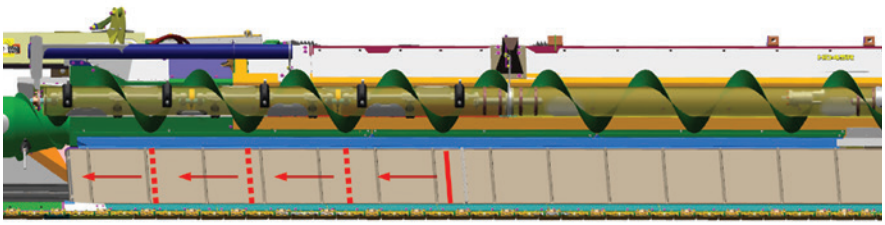
- Adjust the timing by loosening the bolts (A) and turning the casting at the center of the head
- Ensure that fingers are fully retracted prior to crossing the stripper to avoid backfeed and wrapping





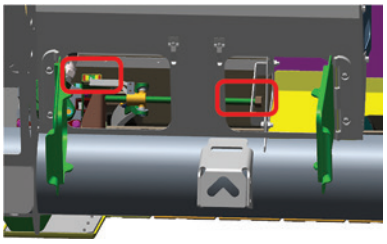
WHEN TO ADJUST TOP AUGERS

- If wrapping or not releasing material well
    - Check the stripper position and the finger timing
    - Adjust the auger position, contact your local dealer for instructions
- If augers are not compressing material underneath and/or material is bridging over the auger
    - Raise the auger position, contact your local dealer for instructions
- Augers can be turned off when harvesting cereal grains that do not contact the augers
- If stopped augers are disturbing crop flow
    - Turn the auger on
    - Check the auger relative to belt speed
    - Adjust the auger position, contact your local dealer for instructions



BELT TENSION - SIDE BELT

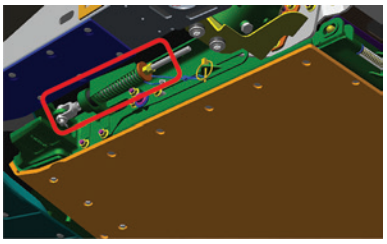
- Side Belts (A)

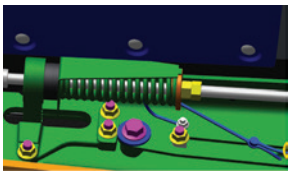


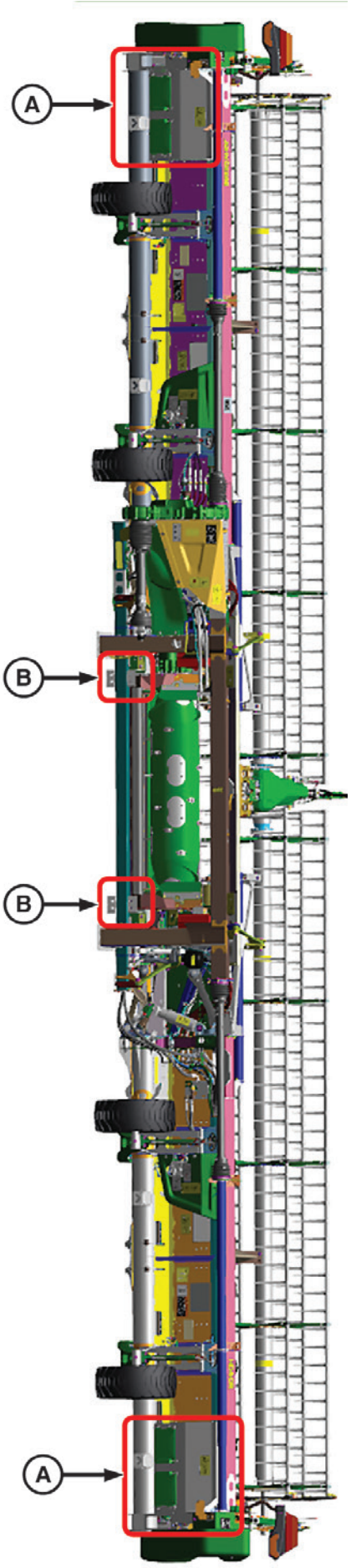
BELT TENSION - CENTER BELT

- Center Belts (B)
- Center belt tensioner underneath the head
- Tension must be adjusted on both sides of the center belt

CAUTION: Review the Safety Information section before going under the head







TROUBLESHOOTING

If ... Hinged Draper does not show in the header type box in the Header App.

- Check the head to combine connection

If ... Wing(s) lower to full frown when raised.

- Ensure that both manual wing override valves are locked, rotated clockwise—refer to Complete Out-of-Combine Checks, step 2
- Once locked, set the head down on level ground to return the wings to the flat position

If ... Wing(s) do not unlock when entering cut.

- Check that the safety wing lock ball valves are unlocked— refer to Complete Out of Combine Checks, step 1
- Ensure that the correct Header Automation settings are enabled—refer to Complete In Combine Setup, step 2
- Check active DTCs, refer to the combine Operator's Manual

If ... Header raises out of cut.

- Run a more firm Ground Condition, refer to Complete In Combine Setup, step 3d
- If the issue continues, check the attachment frame sensors for damage, contact your local dealer for assistance

If ... Ground Conditions options are grayed out.

- Ensure that the correct Header Automation settings are enabled—refer to Complete In Combine Setup, step 2
- Ensure that the Height Sensing mode is enabled, refer to Complete In Combine Setup, step 3b
- Check active DTCs, refer to the combine Operator's Manual
- Perform the following calibrations:
    - Header
    - Gauge Wheel Range
    - Wing Position
- Report the issue to the dealer

If ... Head performance is unsatisfactory at all of the Ground Condition settings.

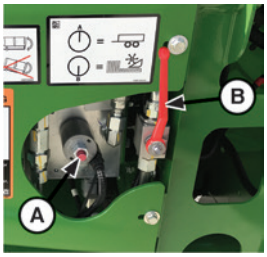
- Contact Deere support for instructions on how to use the Advanced Tuning screen
- Advanced Tuning reset button returns the system to the factory default settings

TRAILERING

SETTING ON TRAILER

1. While in the Height Sensing mode set point 2 or 3) adjust the header Ground Condition to Very Firm
   - Refer to Complete In Combine Setup step 2
2. Retract and lower the reel
3. Retract the gauge wheels
4. Disconnect from the head
5. Set the head on the trailer
6. Push in and rotate both left and right Wing Manual Override Valves (A) counterclockwise to allow wings to sit down into the wing frame cradles
7. Ensure the left and right Safety Wing Lock Ball Valves (B) are open/vertical
8. Secure the head to the trailer
   - Wing Manual Override should remain open during transport
   - Safety Wing Lock Ball Valve should remain open during transport

REMOVING FROM TRAILER



1. Push in and rotate both left and right Wing Manual Override Valves clockwise to hold the wings in position
2. Lift the head and remove from the trailer

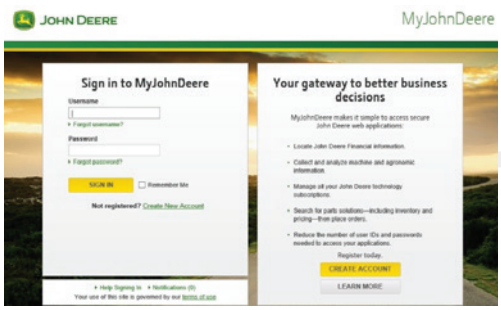
LIMP HOME MODE

- Limp Home Mode should only be used when the header or head sensors are damaged
- If Limp Home Mode becomes necessary a DTC alerts the operator
- For off-the-ground cutting

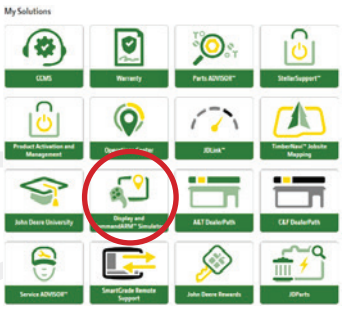
1. Fully retract the gauge wheels
2. Run in Height Resume, refer to Complete In Combine Setup step 2, but turn off Height Sensing
   - Wings remain locked to prevent damage. Performance is reduced

IMPORTANT: Do not cut on the ground in Limp Home Mode or Height Resume Mode. Damage to the head may occur

HOW TO ACCESS THE X SERIES COMBINE SIMULATOR



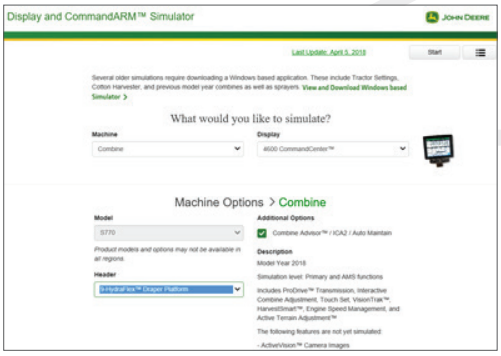
1) Sign in to your MyJohnDeere account



2) Select Display and CommandARM Simulator

3) Choose Combine from the Choose a Machine drop down menu

4) To change the display: Click the drop-down arrow and choose your display



5) Under Machine Options: Choose the Model of combine similar to yours, Choose the Header you want to work with, Choose the Residue Management system you have

6) Under the Guidance Options select AutoTrac

7) Then Click Start Simulation in the top or bottom of the page. It may take a minute to load, this is normal

8) Once it has loaded you can practice finding the various areas outlined in this handbook by simply clicking on the different areas of the screen just like you would touch it with your finger in your S700 combine

APPENDIX

BRANDT CUSTOMER PORTAL

FILTER OVERVIEW & CAPACITIES

GOHARVEST APP - IPHONE

GOHARVEST APP - ANDROID

PAYABLE MOISTURE AND DENSITY CHART

POWER SHUT DOWN PROCEDURE

X SERIES COMBINE SIMULATOR

STANDARD WEIGHT CHART

BRANDT.CA/AGRICULTURE