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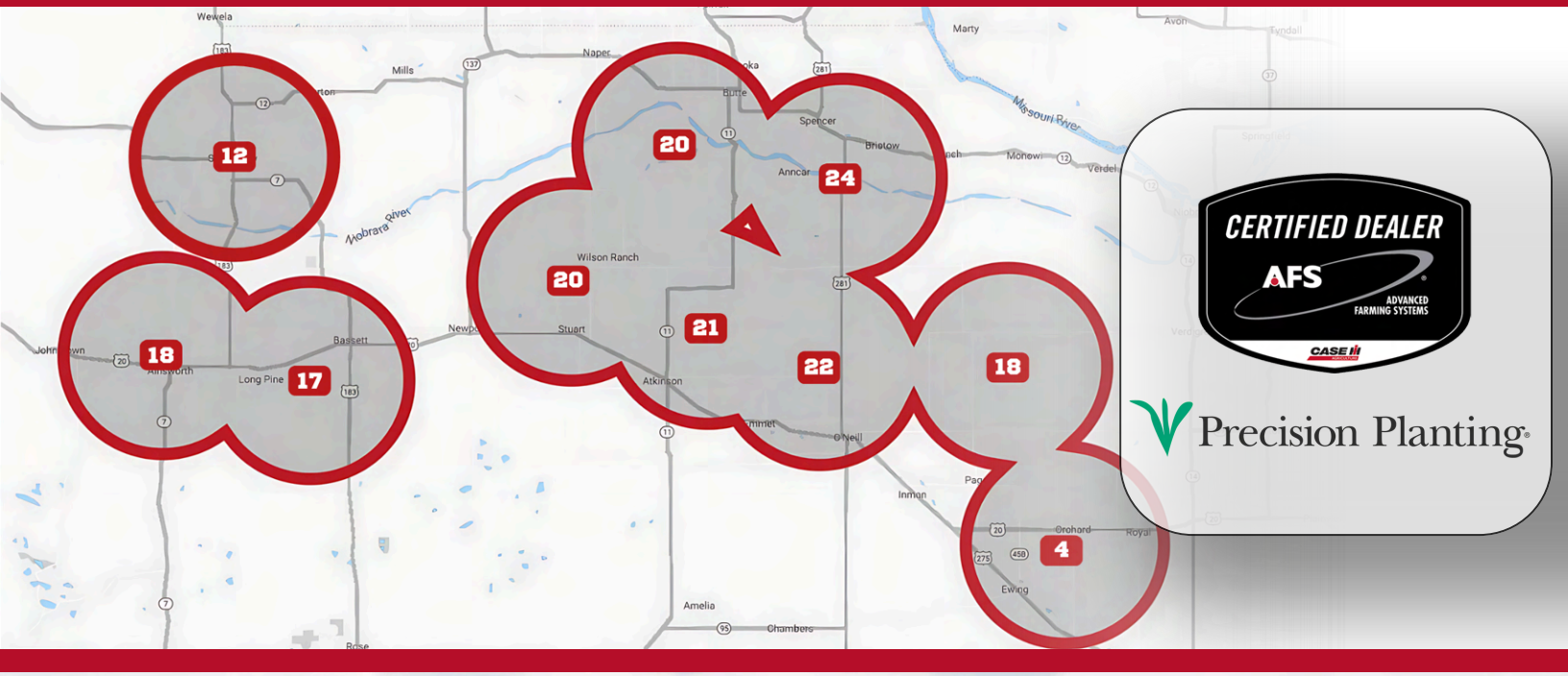

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21, 23, and 2500 Series - Auto Header and Height Calibration and Operation

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Calibration: The header sensors should be calibrated anytime the header has been switched, anytime a sensor has been adjusted/replaced, or anytime the header height is not working properly. The header sensor calibration tells the combine controller what each sensor reads when the head is flat on the ground and then when it is full off the ground. This reading then allows the combine controller to know that the header can be operated with the sensors anywhere in that range.

1. **Calibrate the header height sensors:** *(Machine on smooth/level ground, engine idle, separator OFF.)* Header latched tightly onto combine, lower header flat on the ground and then hold the down button for at least 2 seconds. Then, push and hold the raise button until the header reaches the top of travel (it should momentarily hesitate part way up if working correctly). *If the calibration fails, an S2 error will display on the instrument cluster. This usually means that a sensor on the head is bad or that there is a broken wire on the auto header height harness (most often is a broken wire).*
2. **Set cut height:** (Separator and feeder running.)
    a. Ensure that the header height mode knob is set to “HT” (knob located to right of Feeder switch).
    b. Push the header lower button on the hydro handle momentarily and the header should lower to the ground. The header height indicator in the instrument cluster should show a decimal number and a double up/down arrow. This means that you are in auto header height mode.
    c. Use the middle of the three front knobs to adjust your cut height. Turning the knob all the way to the right will be your max auto height and to the left will be your minimum height. *If the header won’t run low enough or high enough in auto, please refer to troubleshooting.*
    d. Use the right of the three knobs to adjust the header sensitivity. It is best to run it turned as far to the right as you can, without the header bouncing excessively, for the quickest auto header height response.

21, 23, and 2500 Series - Field Tracker Operation
(If combine and header are equipped)

An equipped combine has the tilting faceplate on the front and the header has three height sensors.

Note: To set and adjust the field tracker, you will be using the set off controls directly ahead of the concave/rotor/fan adjusting switches.

1. With the separator and feeder running, lower the header in auto header height mode and flip the rocker switch from M to A which should engage the self-leveling field tracker. The header should now tilt to follow the ground contour.

2. Use the left of the three knobs to center up the head so it is level with the ground. The middle knob will control the header tilt sensitivity. The right knob will control the header tilt speed of travel. Use the three knobs to fine tune your field tracker. When raising your header, the header should self-level to the combine and then return to following the ground contour when lowered. If it doesn't seem to work properly, please refer to troubleshooting.

Midrange Combine Auto - Header Height Calibration and Operation

5088, 6088, 7088, 5130, 6130, 7130 Old Cab

Calibration: The header height sensors should be calibrated anytime the header has been switched, anytime a sensor has been adjusted/replaced, or anytime the header height is not working properly. The header sensor calibration tells the combine controller what each sensor reads when the head is flat on ground and then when it is fully off of the ground. This reading then allows the combine controller to know that the header can be operated with the sensors anywhere in that range.

1. **Calibrate the header height sensors.** *(Machine on smooth/level ground, engine idle, separator OFF).* Header latched tightly onto combine, lower header flat on the ground and then hold the down button for at least two seconds. Then, push and hold the raise button until the header reaches the top of travel. *If the calibration fails for any reason it should give you as message instructing you of the reason for failure. Examples of other things that can cause a failure: a sensor catches and doesn't move full travel when the head raises/lowers, bad sensor, broken wire, or the sensor is out of range (a sensor voltage is not in correct range). Please refer to trouble shooting section to determine the type of repair needed.*
2. **Set your cutting height.** *(Machine on smooth/level ground, separator and feeder ON).* Engage separator and feeder. Manually lower header to desired cut height (make sure you are low enough that the header height sensors have touched the ground enough to move sensor slightly). Push the #2 button on armrest which should cause the light by that switch to light up. On your header height display the header height reading will change from MANUAL to AUTO if the auto-header height is engaged. *If it shows RETURN TO CUT or FLOAT, lower header slightly and retry. If it still doesn't read AUTO then please refer to troubleshooting.*
3. **Set your turn-around height.** *(Machine on smooth/level ground, separator and feeder ON).* Raise header to your desired turn-around height and push the #1 button on the armrest. This should change your header height reading on the height display from Manual to Return-to-Cut. Now, you should be able to push RESUME button on hydro handle and this will toggle your header height from your #1 height to #2 and vice-versa. For acre counter purposes, make sure that your turn-around height is set above the Max Work Height set point. (Refer to HEADER SETUP).
4. **Optional 2nd cut height.** *(Machine on smooth/level ground, separator and feeder ON).* An additional option is to set the #1 and #2 heights as two different cutting heights (ex. Running snoots on the ground for down corn on one end of field and 6" off the ground at other end of field). To do this simply position the head at each of your desired cut heights and push the #1/#2 buttons. To raise head at the end of the field, push the SHIFT button (small button on front of hydro handle) while also pushing the RESUME button which will raise the head to the height you have to set to shut off your acre counter. Pushing the RESUME button again will return your header to your previous cut height.

Common Cab Midrange Flagship - Auto Header Height Calibration and Operation

Prior to any header calibration you must check the header setup in the monitor. Go to TOOLBOX, HEAD 1, and HEAD 2 screens to change or adjust the individual header settings.

HEAD 1:

- MAXIMUM WORK HEIGHT - The height that will shut your acre counter on/off when raising/lowering your head. Adjust that number to get the trigger point set to the header that you are currently using.
- HEADER TYPE - Draper head is Draper/Varifeed, others are self explanatory.
- HEADER SUBTYPE - (Draper head only) is 2000 series fro Macdon flex drapers.
- HEADER WIDTH - Total width of head.
- TARGET WORK WIDTH - Estimated actual cut width (used for guidance lines).
- LATERAL TILT - Installed on flex heads and corn heads.
- WORK WIDTH RESET MODE - Auto needs to be selected.
- HYDRAULIC DECK PLATES - Must be set in hydraulic in order to work.
- FEEDER SPEED RANGE (*Flagship option only)* - Minimal for drapers.
    - Nominal for CIH chopping corn heads
    - Full Range ***Only for Geringhoff or non-chopping CIH corn heads***

Head 2:

- HEADER SENSORS - Enable if using sensor mounted on header, Disable if no sensors on header
- HEADER PRESSURE FLOAT - NO - Only use for pickup headers
- HEIGHT/TILT RESPONSE - Use normal to start with but can change to Fast for quicker response.
- PRESSURE FLOAT OVERRIDE - Leave where it is.
- AUTO HEADER LIFT - Automatically raises header when backing up with combine.
- HHC Raise/Lower Rate, HHC Tilt Sensitivity (fine tune for each header)
    - (Some of the setting options don't need adjusted.
- REEL DRIVE - Hydraulic-HEADER KNIFE FORE-AFT - MUST be on YES to enable tilting forward of Draper heads.
- DECK PLATES - Set to hydraulic for hydraulic operated deck plates.
- HEADER LATERAL TILT - Yes enables manual tilting side to side of the head.
- AUTO TILT - Enable auto tilting of the head side-to-side for following ground contour.
- AUTOLEVEL IN HEADLAND - Auto levels head when using headland mode to raise head on ends.

Calibration: The header height sensors should be calibrated anytime the header has been switched, anytime a sensor has been adjusted/replaced, or anytime the header height is not working properly. The header sensor calibration tells the combine controller what each sensor reads when the head is flat on ground and then when it is fully off of the ground. This reading then allows the combine controller to know that the header can be operated with the sensors anywhere in that range.

1. **Calibrate the header height sensors.** *(Machine on smooth/level ground, engine idle, separator OFF).* Header latched tightly onto combine, go to MAIN > CALIBRATION > select drop down arrow > HEADER and follow the instructions to calibrate the header height sensors. *If the calibration fails for any reason it should give you a message instructing you of the reason for the failure. Occasionally it will fail due to a time-out. If this happens just restart calibration. Examples of other things that can cause a failure: a sensor catches and doesn't move full travel when the head raises/lowers, bad sensor, broken wire, or the sensor is out of range (sensor voltage is not in correct range). Please refer to troubleshooting section to determine the type of repair needed.*
2. **Set your cutting height.** *(Machine on smooth/level ground, separator and feeder ON).* Engage separator and feeder. Manually lower header to desired cut height (make sure you are low enough that the header height sensors have touched the ground enough to move sensor slightly). Push #2 button on armrest which should cause the light by that switch to light up. On your Color Display the header reading will change from MANUAL to AUTO if the auto-header height is engaged. *If it shows RETURN TO CUT or FLOAT, lower header slightly and retry. If it still doesn't read AUTO, then please refer to troubleshooting.*
3. **Set your turn-around height.** *(Machine on smooth/level ground, separator and feeder ON).* Raise your header to your desired turn around height and push the #1 button on the armrest. This should change your header height reading on the Color Display from Manual to Return-to-Cut. Now, you should be able to push the RESUME button on hydro handle and this will toggle your header height from your #1 height to #2 and vice-versa. *For acre counter purposes make sure that your turn-around height is set above the Max Work height set point (refer to HEADER SETUP).*
4. **Optional second cut height.** *(Machine on smooth/level ground, separator and feeder ON).* An additional option is to set the #1 and #2 heights as two different cutting heights (ex. Running snoots on the ground for down corn on one end of field and 6" off ground at other end of field). To do this simply position the head at each of your desired cut heights and push the #1/#2 buttons. To raise head at the end of the field, push the SHIFT button (small button in front of hydro handle) while also pushing the RESUME button which will raise the head to the height you have set off your acre counter. Pushing the RESUME button again will return your header to your previous cut height.

21, 23, and 2500 Series Troubleshooting

Feeder doesn't hesitate while performing calibration:

- Header height control knob not set to HT position
- Combine didn't see the header height sensor

S2 code shows on instrument cluster:

- Combine tried to go through the calibration but either the height sensor on head was out of the acceptable range or there is a broken wire (also make sure the three pin connector on combine feeder is correctly hooked up, sometimes can be forced into the wrong position) cycle power.

Header won't run low/high enough while in auto mode:

- Make sure the sensors are moving full travel when going through the calibration
- Make sure there isn't a physical limit on header travel, skid plates down, or sensor arms not long enough for running header above ground.

Header doesn't run level with the ground while running in Field Tracker mode:

- Adjust the left of the three field tracker knobs to level up the header to the ground. If you run out of travel with the knob, the sensors will need to be adjusted to make up the difference.

Field Tracker not self-centering when raising head:

- Potentiometer near front LH corner of feeder house is adjusted to level the header when raised
- Whisker switch up near LH pivot of feeder house tells combine when head is raised up for turning.

Midrange Combine Troubleshooting

Feeder doesn't hesitate while performing calibration:

- Combine didn't see the header height sensor, cycle power and retry (bad sensor/wire).

Header won't run low/high enough while in auto mode:

- Make sure the sensors are moving full travel when going through the calibration
- Make sure there isn't a physical limit on header travel, skid plates down, or sensor arms not long enough for running header above ground.

Flagship Combine Troubleshooting

Feeder fails calibration: (The display will give you a reason for the failure)

- Sensor voltage out of range
- Sensor shorted to high/low source
- Use Color Displays diagnostics to check each sensor for proper operating range. Go to diagnostic, then scroll along bottom to settings, at top of screen select Group and select header from the list, then select the next box down that says Parameter and through that list you can select Left Height/Tilt, Left Center Height/Tilt, Center, Right Center Height/Tilt, or Right Height/Tilt depending on which sensor you want to watch. Now, go along the bottom of the screen and select Graph. This brings up a graph of the sensor voltage and you can visually watch the voltage reading of that sensor while you have someone move it. Make sure it has at least 2.5 volts of travel and stays between .5 and 4.5 volts at all times. If it exceeds those readings then the sensor needs adjusted.
- Voltage should transition smoothly as the sensor is moved, if the voltage jumps erratically with sensor movement then sensor has likely failed internally.

Header Troubleshooting

Corn Heads:

- Make sure the sensor wand has full travel and isn't catching on anything.
- Make sure that the 3-wire plug is fully inserted into sensor connector.
- Follow the wiring along each snoot and to the main connector at the back of the head (CIH heads are known for mice getting into the main rear tube and chewing wires).

Corn Heads with Headsight Controller:

Calibrate - Anytime a sensor has been adjusted or replaced, the calibration must be gone through on the Headsight box. Then, recalibrate the header height from combine also.

Troubleshoot - The Headsight box is an excellent tool for sensor troubleshooting. Navigate through the menu on the Headsight box to view each sensor's voltage which can tell if a sensor is disconnected or out of the acceptable range. The sensors must stay between .5 and 4.5 volts. If they are going outside of this range it will trigger a fault and the green light on the Headsight box will change to a red light. The sensor must then be adjusted by loosening the mounting screws and turning slightly.

If a sensor is reading 0.0 volts then it either came unplugged or has a broken wire somewhere in the harness.

MacDon Flex Drapers:

- Make sure the header float locks are disengaged.
- Make sure the height indicator on the center of the head is moving up and down as the head floats up/down. (Sometimes the indicator sticks and doesn't move. Must have full range of travel for the header height to work properly).

Auger Flex Heads:

- 1020 heads use a potentiometer mounted by the hydraulic connectors. It is connected by cable or rod linkage to a pivot pipe underneath the auger trough. Make sure the pivot pipe and linkage/cable are moving full travel. Common for pivot pipe to get stuck but usually just needs worked with to loosen back up. Field Tracker on a 1020 is performed by a sensor on each end divider that measures the ground contour. Check linkage and wires to each sensor.
- 2020/2030 headers use 1 or 2 sensors mounted on each end of head. They also use pivot pipes to turn the sensor and are returned with a spring for each one. Make sure the pivot pipes move freely and the springs are in good working order.

MOISTURE AND YIELD CALIBRATIONS

The following pages will walk you through step-by-step for your moisture and yield calibrations. Important steps to complete before you begin moisture and yield calibrations.

1. First select GPS as your speed sensor. **Distance calibrations are not required when using GPS speed.** To select GPS speed as the speed sensor type press Back to get to the home screen. Select Toolbox > Comb (Combine) > Speed Sensor Type > GPS.
2. If you are not using GPS speed and you are using wheel speed ensure your distance calibration has been completed. To Complete the Distance Calibration fill the grain tank approximately half way full. Measure out a 400 foot course and mark the start and end points. Line up at the starting point. Enter your tire radius in the tire radius box. from the Home Screen select > Toolbox > Drive. Once your tire radius is entered Press the Back button > Calibrations > Distance. Press start and drive to the end point. Press enter when you reach your 400ft marker, you should get a calibration complete indication box, press OK. *You may have to do multiple distance calibrations to allow for accurate yield and moisture mapping as field conditions change.*

Other considerations for yield mapping:

1. Make sure your instant moisture are fluctuating through the field. If they are not fluctuating, check the fuse on the moisture and temperature module. If after yield calibration your yield is not fluctuating, ensure the yield sensor at the top of the clean grain elevator is present and not damaged.
2. Make sure you have your header height set correctly. When you are harvesting there should be a **green arrow**  that is pointing down in the lower left hand corner. You will also get a warning on the Pro6/700 if you are harvesting and not logging data.
3. If you are mapping on RTK and you lose signal, you can switch to WAAS and continue to harvest until RTK is restored. To change from RTK to WAAS Press the Back button > Toolbox > GPS > and change DGPS type from RTK to WAAS/EGNOS. This will allow you to keep harvesting and mapping until RTK is restored.
4. If you need specific portions of field data for insurance purposes, you can create a new task for the area you wish to harvest. Creating a new task and labeling this task will make data separation easier when separating yield data for insurance purposes.
5. If you are using field boundaries through the Pro6/700, you can turn off the boundary alarm by going to the home screen > Toolbox > PF > Boundary Alarm and toggle to off. This will only turn off the alarm it will not turn off the boundary.
6. If using variety tracking ensure that variety tracking is turned off while you are performing calibrations or you will not calibrate correctly.

Advanced Calibration - Moisture

From the “Home” screen, press the “Calibration” icon to access the “Calibration” screens.

Press the “Moisture” icon on the navigation bar to display the “Moisture Calibration” screen.

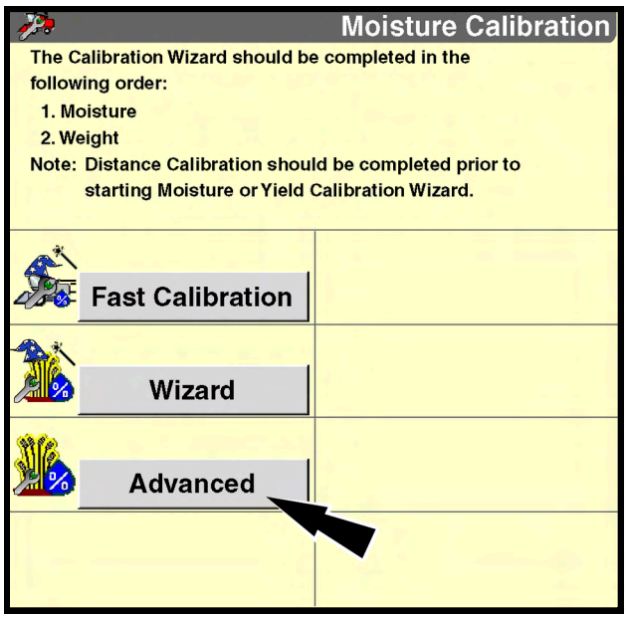
The screen contains a reminder about the proper calibration sequence.

Advanced calibration should be completed in the following order:

1. Moisture
2. Weight

NOTE: *Complete distance calibration before performing moisture calibrations or yield calibration.*

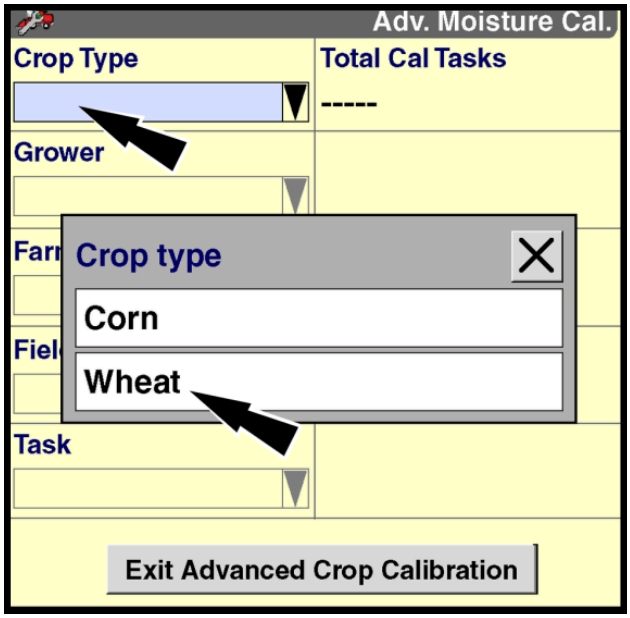
Press the “Advanced” button to start the advanced moisture calibration.



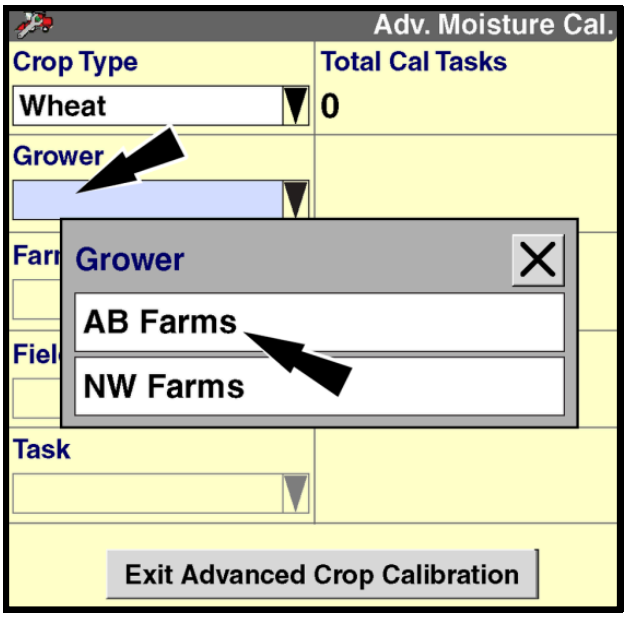
1.Press the “Crop Type” window to access the pop-up options window. Press the current crop type being harvested in the window.

NOTE: *Only crop types with harvest data recorded to them display in the window.*

NOTE: *Since a task is performed in a field, a field is located on a farm, and a farm is worked by a grower, the windows by the same names only become active when their predecessors are populated.*



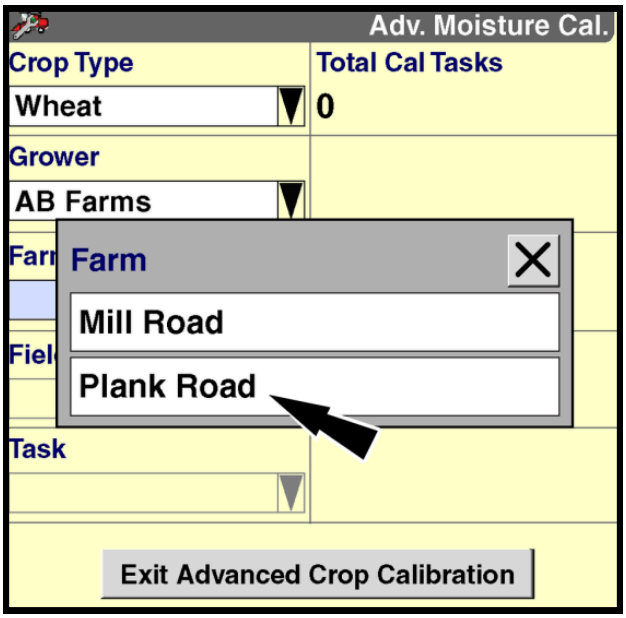
2. Press the “Grower” window to access the pop-up operations window. Press the grower that contains the farm in which the calibration task was performed.



3. Press the “Farm” window to access the pop-up options window. Press the farm that contains the field in which the calibration task was performed.

NOTE: *Entries that display in italics contain a task that already has been calibrated for this crop type.*

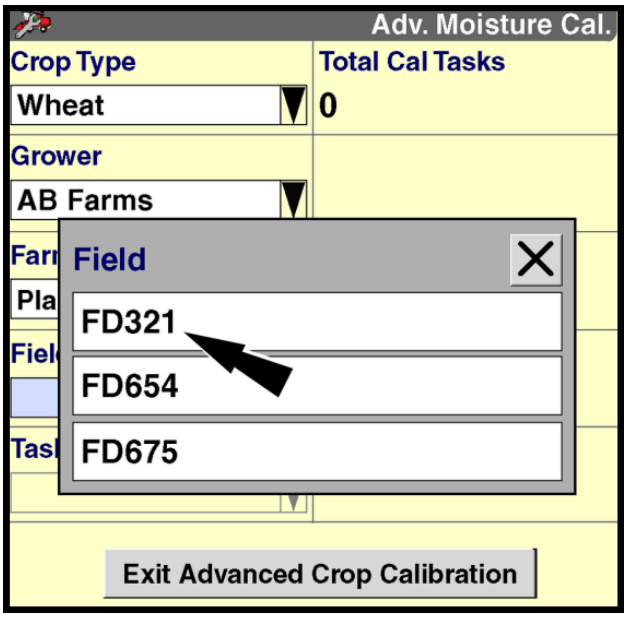
NOTE: *Only farms with harvest data recorded to them display in the window.*



4. Press the "Field" window to access the pop-up options window. Press the field in which the calibration task performed.

NOTE: *Entries that display in italics contain a task that already has been calibrated for this crop style.*

NOTE: *Only fields with harvest data recorded to them display in the window.*



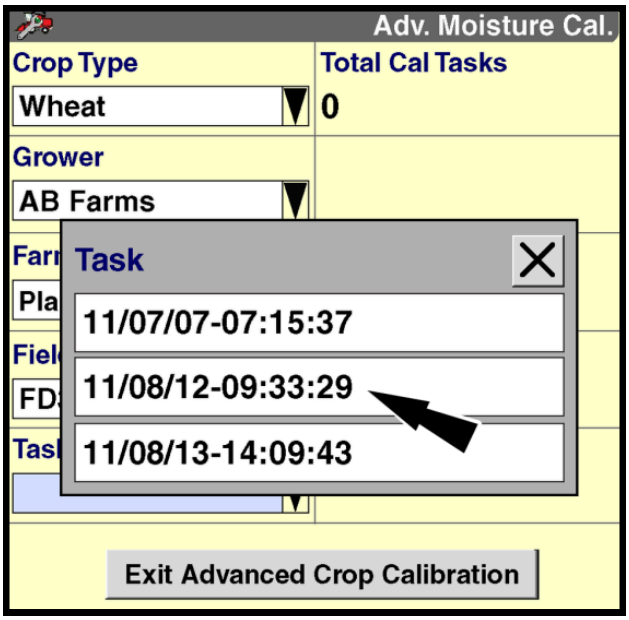
5. Press the "Task" window to access the pop-up options window. Press the task that was created for the moisture calibration.

NOTE: *The current task cannot be selected as the calibration task. Create a new task to close the current task if it contains the calibration data.*

NOTE: *Edit the name of a task to be used for calibration so it can be easily identified in the task selection window - for example, "moisture cal."*

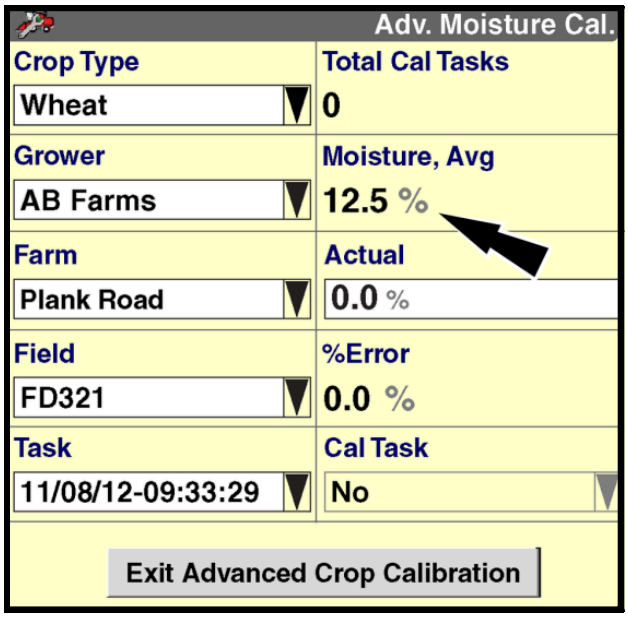
NOTE: *A task used for moisture calibration can also be used later for yield calibration.*

NOTE: *Only tasks with harvest data recorded to them display in the window. Entries that display in italics contain a task that cannot be used for calibration.*

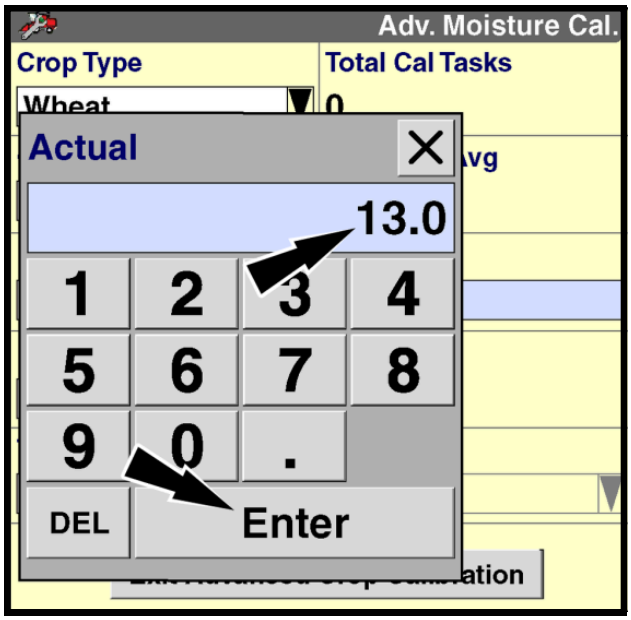


When the “Task” window is populated , the “Advanced Moisture Calibration” screen updates with additional windows.

The “Moisture Average” window displays the average sensed moisture from the combine sensor for the task.



6. Press the “Actual” window to access the numeric keypad and enter the average value from the moisture tester readings. Use the keypad to enter the percentage. Press the “Enter” button on the keypad to save the value.



When the actual measured moisture is entered, the “%Error” window updates to show the percentage of error between the moisture readings from the combine sensor and the moisture tester.

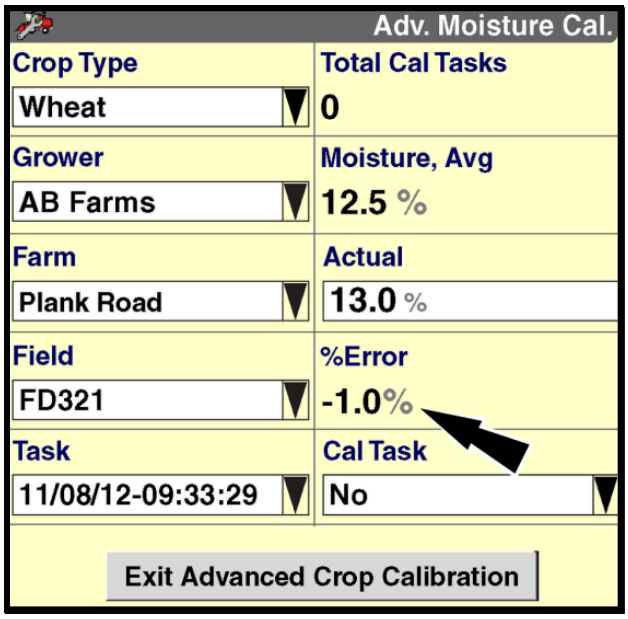
The percentage may be a positive or negative number, depending on whether the value in the “Moisture, Average” window is greater or less than the value in the “Actual” window.

Typically, the two values should be within a few percentage points off each other.

The error percentage should be low.

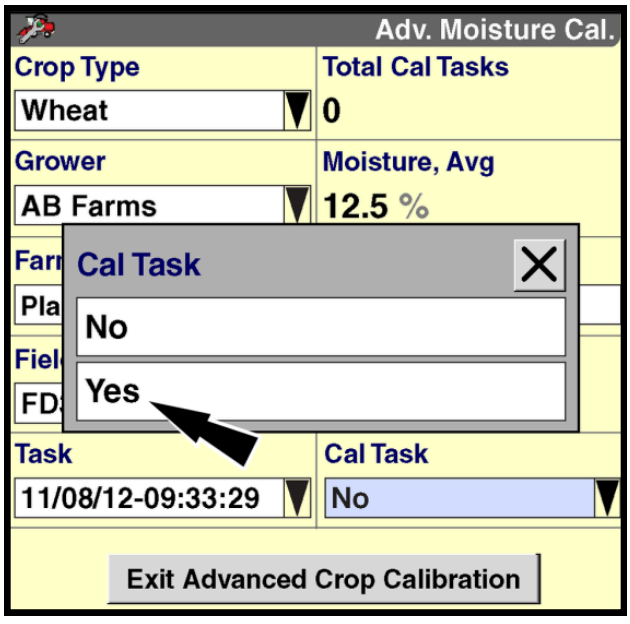
When multiple tasks are used for moisture calibration, the error percentage should be similar for all tasks.

NOTE: *The “Calibration Task” window becomes active after the actual measured moisture is entered.*



7. If the task is acceptable for moisture calibration, press the “Calibration Task” window to access the pop-up options window. Press “Yes” in the options window.

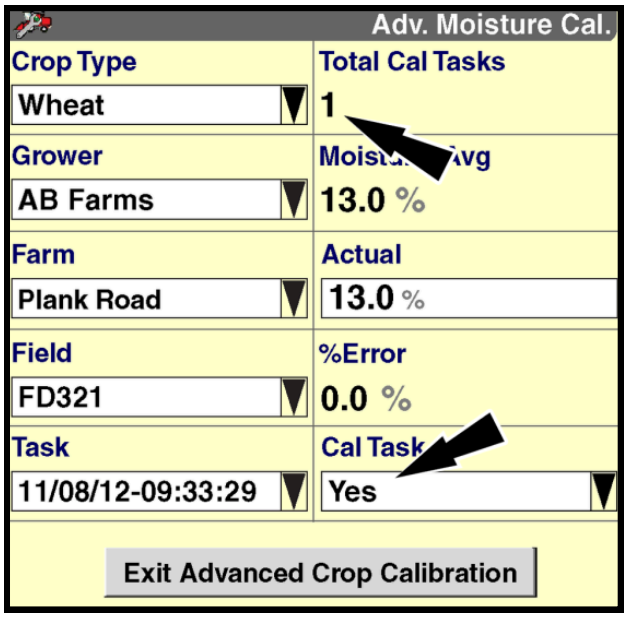
NOTE: *Once “Yes” is selected for a task, additional harvest data cannot be recorded to the task. Calibrated tasks appear in italics in pop-up options windows and cannot be selected for the active data set.*



When “Yes” is pressed, the combine moisture sensor is immediately calibrated:

- The value in “Moisture, Average” window reflects the value entered in the “Actual” window.
- The value in the “%Error” window is reset to 0 (zero).

The “Total Calibration Tasks” updates to indicate that one task has been calibrated for moisture. This window reports the total number of moisture calibration tasks for all fields on all farms for all growers for the crop type resident on the memory stick. An information message displays.

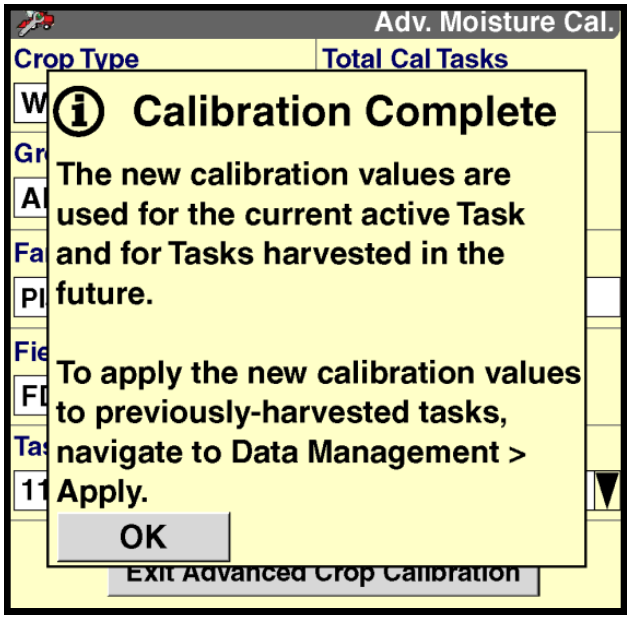


8. The message reminds the operator that the new calibration values are used for the current active task and future tasks only.

Use the “Apply Calibration” screen (Home > Data Management > Apply) to selectively apply the new moisture value to previous tasks for this crop type.

NOTE: *This procedure is documented at the end of this chapter.*

Press the “OK” button to acknowledge and dismiss the message.

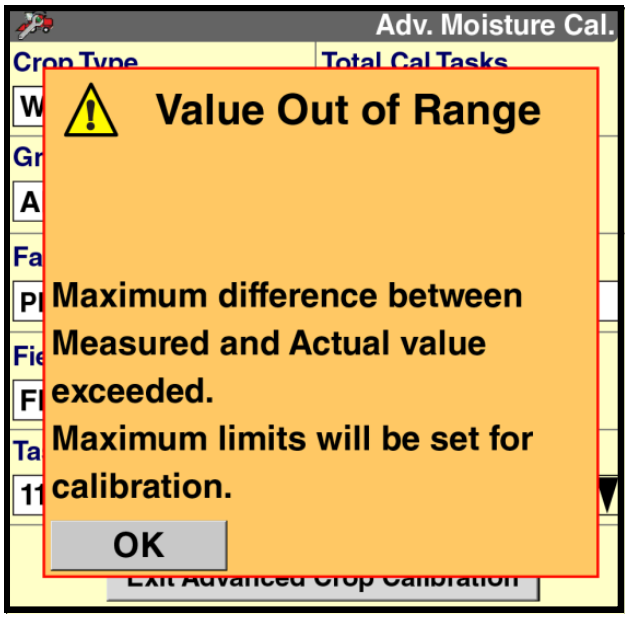


If the average error percentage or the selected tasks is too large, a pop-up message displays when you make a selection in the “Calibration Task” window: “Maximum difference between Measured and Actual value exceeded. Maximum limits will be set for calibration.”

Press the “OK” button to acknowledge message.

The display automatically uses the maximum allowable values for calibration.

See **Incorrect Moisture Readings** to determine the cause and corrective action.



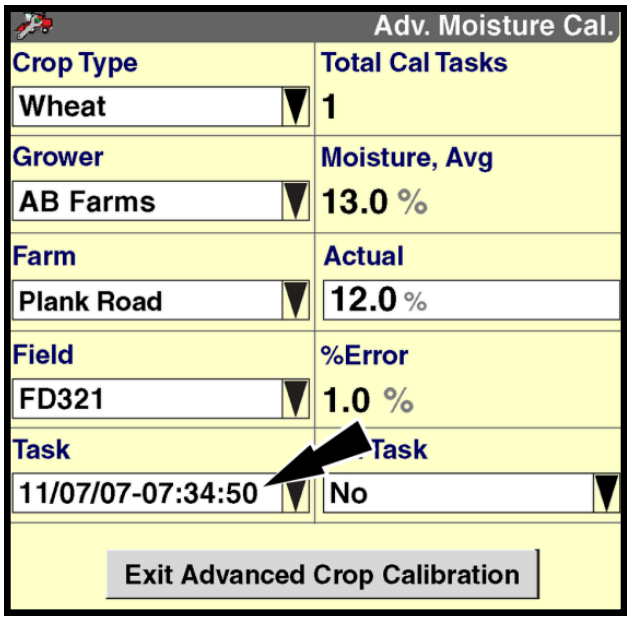
9. If you wish to process additional tasks for moisture calibration for this crop type, repeat steps 1-7 as appropriate for the additional tasks. As each additional task is accepted, the number in the total “Total Calibration Tasks” window increases by one.

After the second task has been selected and the measured value is entered in the “Actual” window, the “%Error” window reports the percentage of error for the second task only.

Once “Yes” is pressed in the “Calibration Task” window, the “%Error” window reports the average error for both calibration tasks. The “Moisture, Average” window reports the average moisture for both calibration tasks.

This same pattern repeats if a third task is calibrated: the windows report the average results for all three tasks once “Yes” is pressed in the “Calibration Task” window for the third task.

NOTE: *For the highest moisture accuracy, no more than 3 tasks with similar percentage of error values should be used in the calibration procedure.*

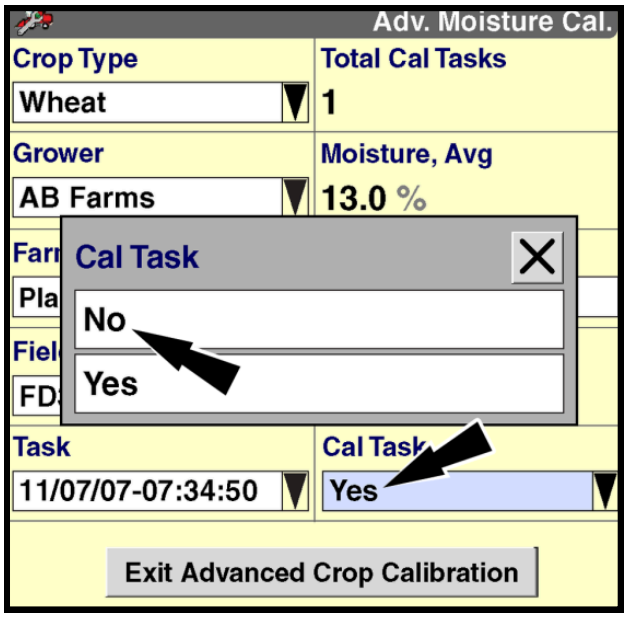


Remove a Moisture Calibration Task

If an operator decides not to use a calibration task, the task can be removed:

1. Re-select the task in the “Task” window. The selections in the ‘Crop Type”, “Grower,” “Farm,” and “Field” windows may also be changed.
2. Press the “Calibration Task” window to access the pop-up option windows.
3. Press “No” in the options window.

An information message displays.

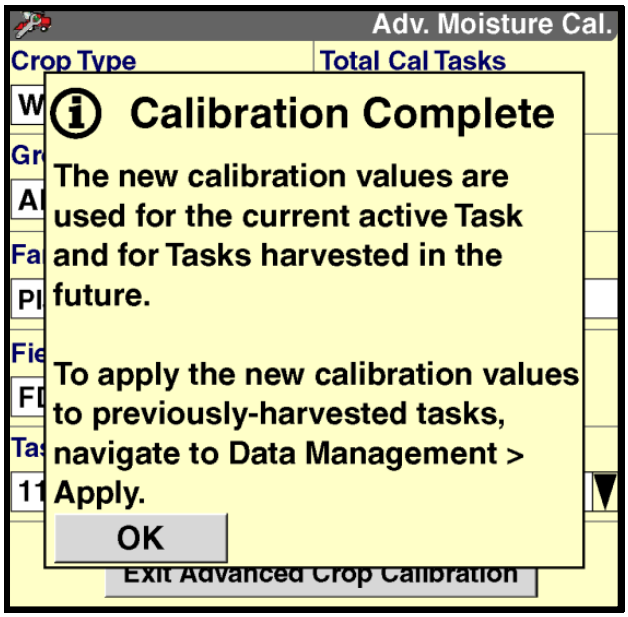


The message reminds the operator that the new calibration values are used for the current active task and future tasks only.

Use the “Apply Calibration” screen (Home > Data Management > Apply) to selectively apply the revised moisture value to previous tasks for this crop type.

NOTE: *This procedure is documented at the end of this chapter.*

Press the “OK” button to acknowledge and dismiss the message.

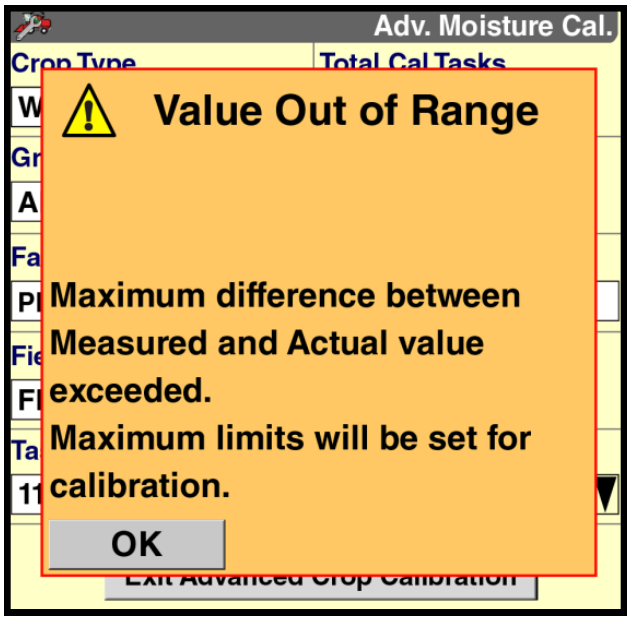


If the average error percentage for the selected tasks is too large, a pop-up message displays when you make a selection in the “Calibration Task” window: “Maximum difference between Measured and Actual value exceeded. Maximum limits will be set for calibration.”

Press the “OK” button to acknowledge the message.

The display automatically uses the maximum allowable values for calibration.

See **Incorrect Moisture Readings** to determine the cause and corrective action.



Advanced Calibration - Yield

From the “Home” screen, press the “Calibration” icon to access the “Calibration” screens.

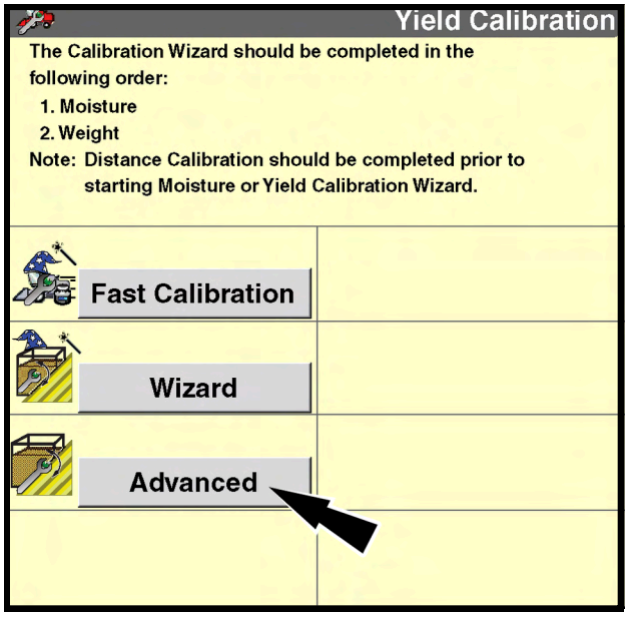
Press the “Yield” icon on the navigation bar to display the “Yield Calibration” screen.

The screen contains a reminder about the proper calibration sequence.

Advanced calibration should be completed in the following order:
1. Moisture
2. Weight

NOTE: *Complete distance calibration before performing moisture calibration or yield calibration.*

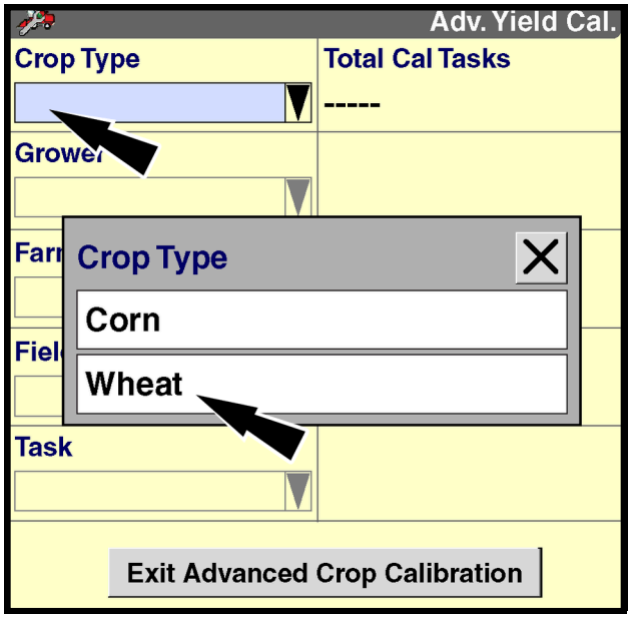
Press the “Advanced” button to start the advanced yield calibration.



1. Press the Crop Type window to access the pop-up options window. Select the current crop type being harvested from the window.

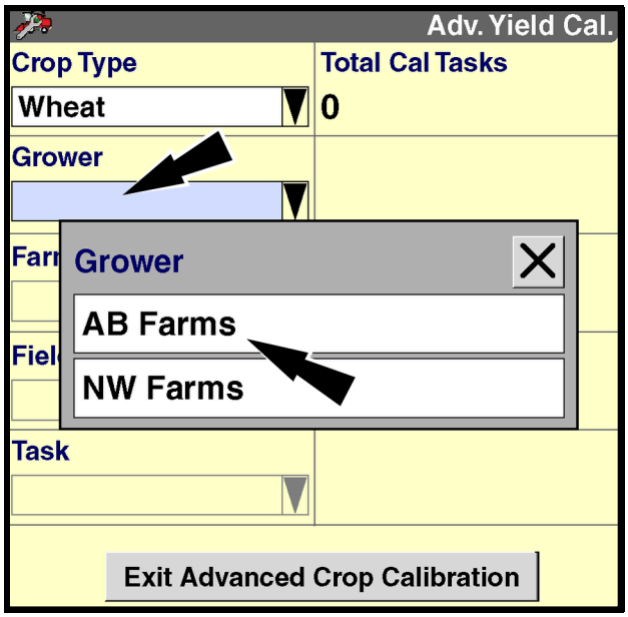
NOTE: *Only crop types with harvest data recorded to them display in the window.*

NOTE: *Since a task is performed in a field, a field is located on a farm, and a farm is worked by a grower, the windows by the same names only become active when their predecessors are populated.*



2. Press the “Grower” window to access the pop-up options window. Press the grower that contains the farm in which the calibration task was performed.

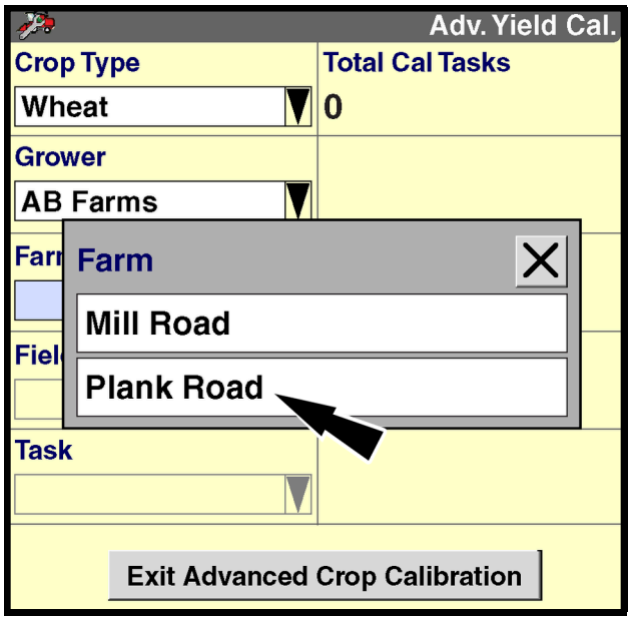
NOTE: *Only growers with harvest data recorded to them display in the window.*



3. Press the “Farm” window to access the pop-up options window. Press the farm that contains the field in which the calibration task was performed.

NOTE: *Entries that display in italics contain a task that already has been calibrated for this crop type.*

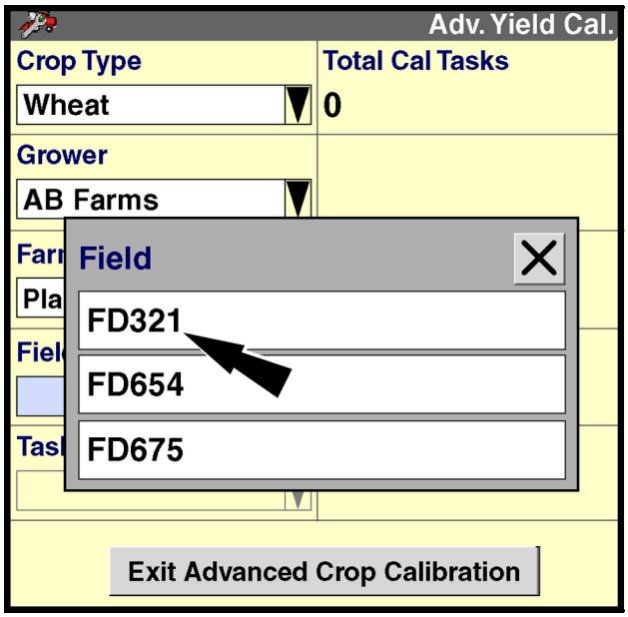
NOTE: *Only farms with harvest data recorded to them display in the window.*



4. Press the “Field” window to access the pop-up options window. Press the field in which the calibration task was performed.

NOTE: *Entries that display in italics contain a task that already has been calibrated for this crop type.*

NOTE: *Only fields with harvest data recorded to them display in the window.*



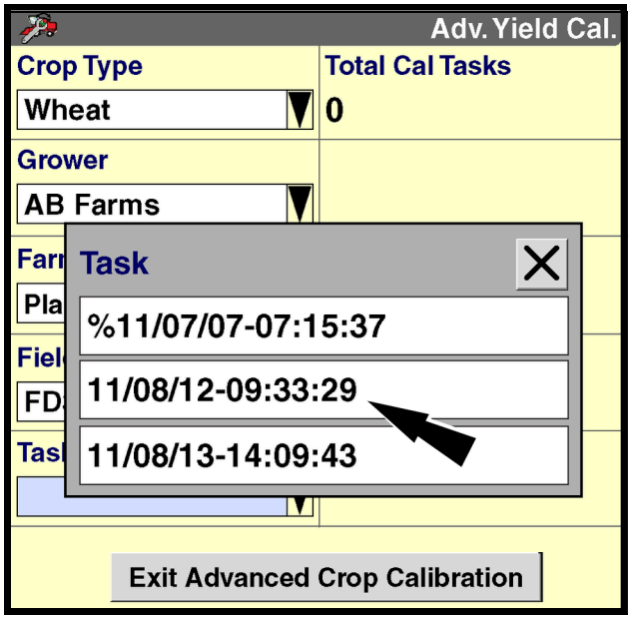
5. Press the “Task” window to access the pop-up options window. Select a task that was created for weight (yield) calibration or a task that was created for both moisture and yield calibration.

NOTE: *The current task cannot be selected as the calibration task; create a new task to close the current task if it contains the calibration data.*

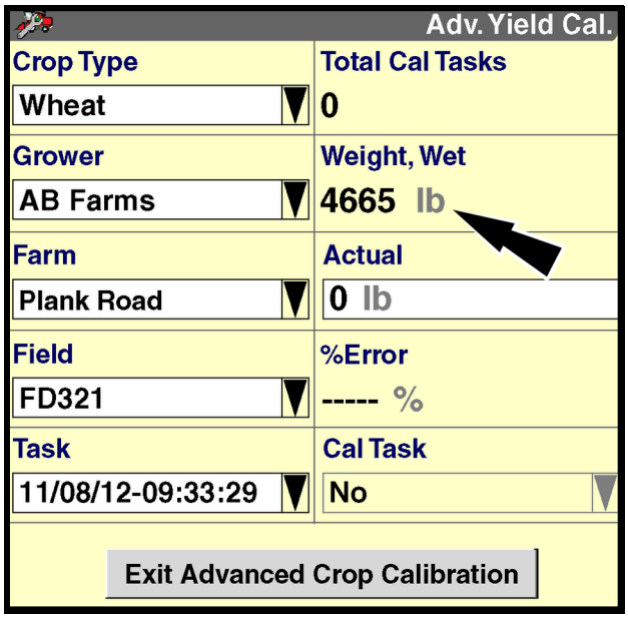
NOTE: *Edit the name of a task to be used for calibration so it can be easily identified in the task selection window – for example, weight cal1, weight cal2, etc.*

NOTE: *Tasks that display with a “%” prefix are tasks created previously for moisture calibration. A task used previously for moisture calibration can also be used for yield calibration.*

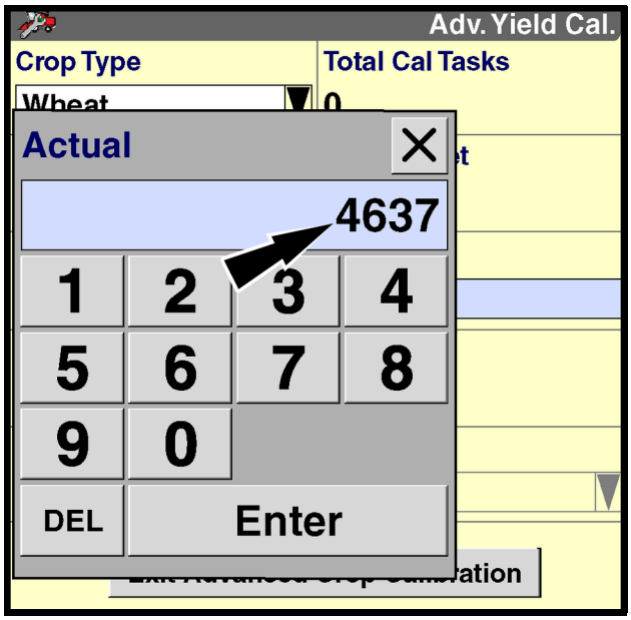
NOTE: *Only tasks with harvest data recorded to them display in the window. Entries that display in italics contain a task that cannot be used for calibration.*



When the “Task” window is populated, the “Advanced Yield Calibration” screen updates with additional windows. The “Weight, Wet” window displays the sensed weight in metric tons or pounds from the flow sensor for the task.



6. Press the “Actual” window to access the numeric keypad and enter the weight from the scale readings. Use the keypad to enter the weight in metric tons or pounds, depending on the unit of measurement selected. Press the “Enter” button on the keypad to save the value.



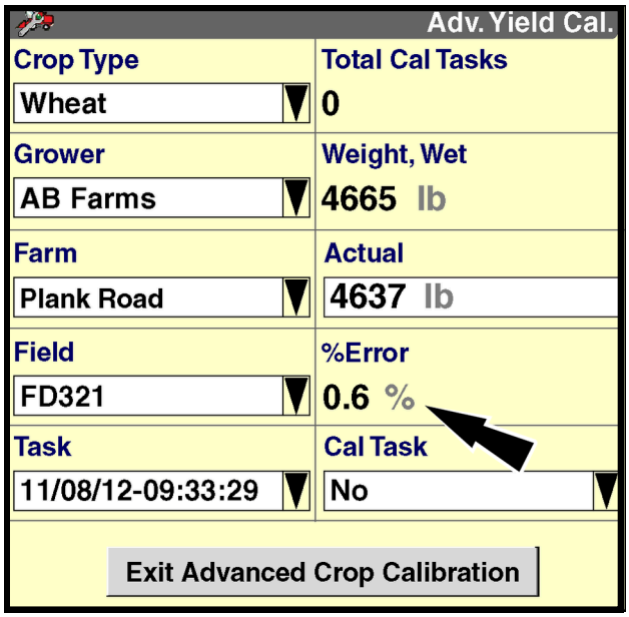
When the actual measured weight is entered, the "%Error" window updates to show the percentage of error between the weight (yield) reading from the flow sensor and the weight reading from the scale.

The percentage may be a positive or negative number, depending on whether the value in the "Weight, Wet" window is greater or less than the value in the "Actual" window.

The initial percent of error for a task should be **10%** or less.

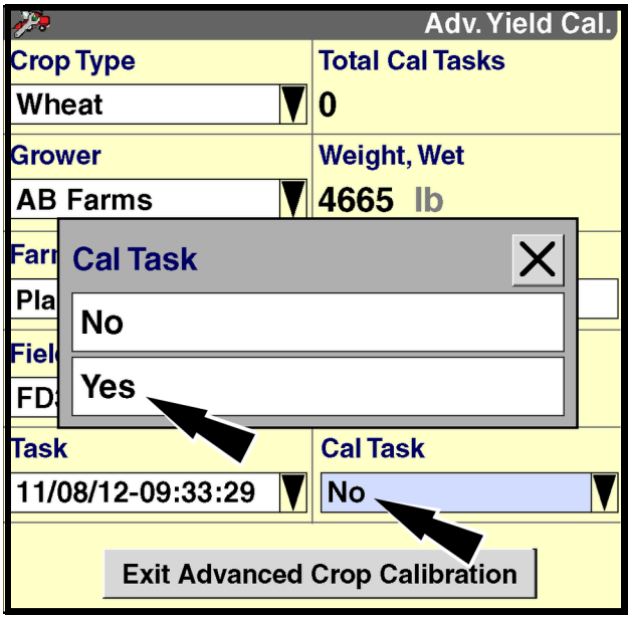
When multiple tasks are used for weight (yield) calibration, the error percentage should be similar for all tasks.

If the value in the "%Error" window is **10%** or less, proceed to the next step to accept the task for calibration.



7. If the task is acceptable for weight (yield) calibration, press the "Calibration Task" window to access the pop-up options window. Press "Yes" in the options window.

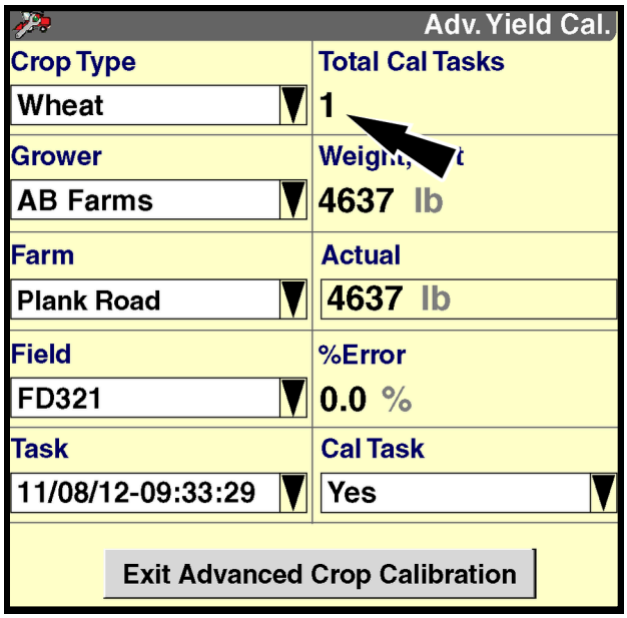
NOTE: *Once "Yes" is selected for a task, additional harvest data cannot be recorded to the task. Calibrated tasks appear in italics in options windows and cannot be selected for the active data set.*



When “Yes” is pressed , the flow sensor is immediately calibrated:

- The value in the “Weight, Wet” window reflects the value entered in the “Actual” window.
- The value in the “%Error” window is reset to 0 (zero).

The “Total Calibration Tasks” updates to indicate that one task has been calibrated for weight (yield). This window reports the total weight (yield) calibration tasks for all fields on all farms for all growers for the crop type resident on the memory stick. An information message displays.

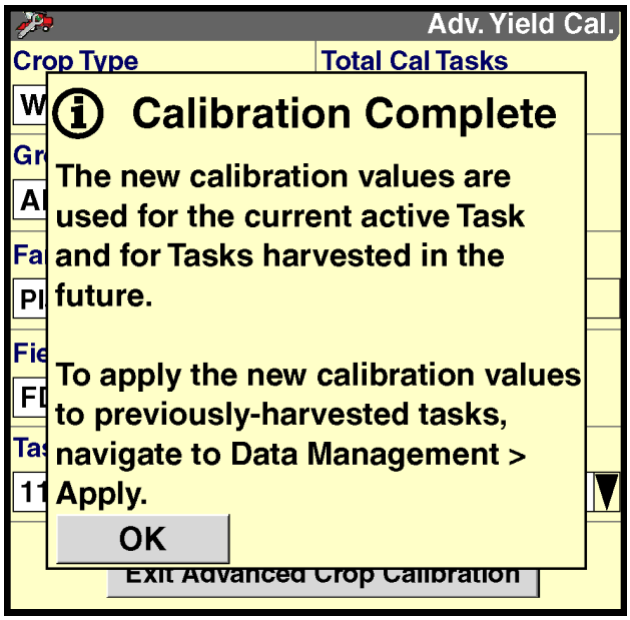


8. The message reminds the operator that the new calibration values are used for the current active task and future tasks only.

When all calibration tasks have been processed, use the “Apply Calibration” screen (Home > Data Management > Apply) to selectively apply the new weight (yield) value to previous tasks for this crop type.

NOTE: *This procedure is documented at the end of this chapter*.

Press the “OK” button to acknowledge and dismiss the message.

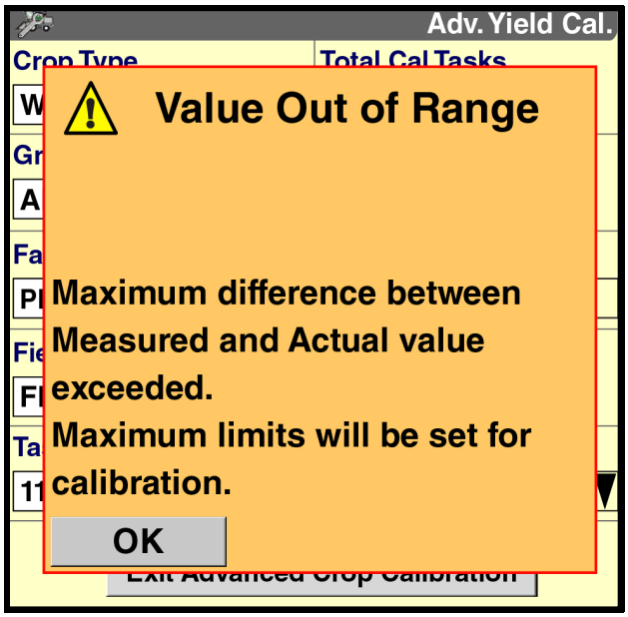


If the average error percentage for the selected tasks is too large, a pop-up message displays when you make a selection in the “Calibration Task” window: “Maximum difference between Measured and Actual value exceeded. Maximum limits will be set for calibration.”

Press the “OK” button to acknowledge the message.

The display automatically uses the maximum allowable values for calibration.

See **Incorrect Yield** to determine the cause and corrective action.

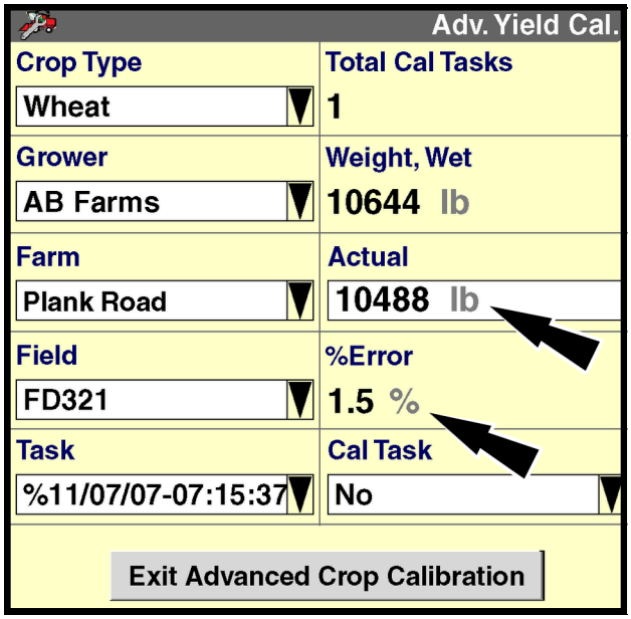


9. Repeat Steps 1-7 as appropriate for the additional tasks to be processed for weight (yield) calibration. As each additional task is accepted, the number in the “Total Calibration Tasks” window increases by one.

After the second task has been selected and the measured value is entered in the “Actual” window, the “%Error” window reports the percentage of error for the second task only.

Once “Yes” is selected in the “Calibration Task” window, the “%Error” window reports the average error for both tasks. The “Weight, Wet” window reports the average weight for both calibration tasks.

This same pattern repeats if additional tasks are calibrated: the windows report the average results for all tasks once “Yes” is selected in the “Calibration Task” window for each task.

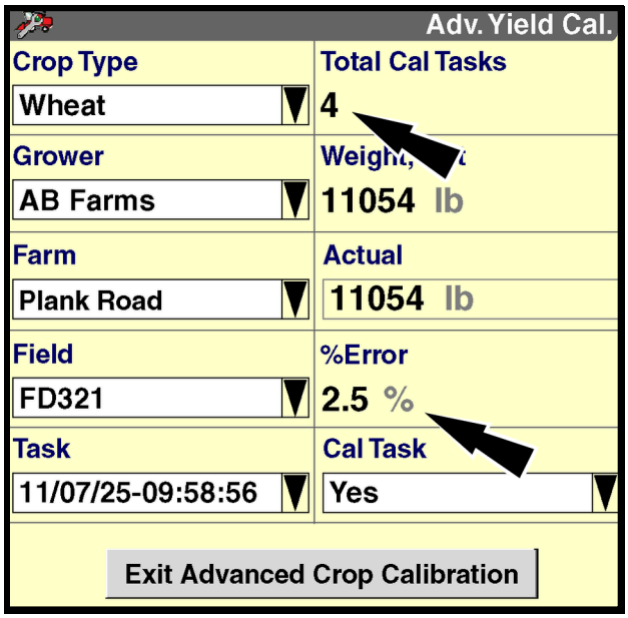


In general, if one or two tasks are used for weight (yield) calibration, the average value in the "%Error" window should be less than **10%** ; **5%** is typical.

If four or more tasks are used, the average value in the "%Error" window should be within **3%** .

If the average value in the "%Error" window does not reflect these results, see **Troubleshoot High Calibration** errors to determine the cause and corrective action.

NOTE: *No more than ten tasks with similar percentage of error values can be used in the weight (yield) calibration procedure. Four tasks are recommended.*



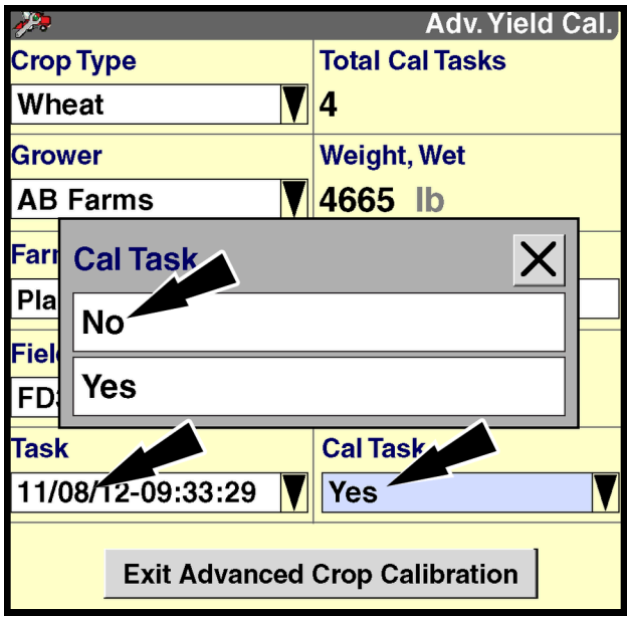
Remove a Weight (yield) Calibration Task

If an operator decides not to use a calibration task, the task may be removed:

1. Re-select the task in the "Task" window. The selections in the "Crop Type," "Grower," "Farm," and "Field" windows may also have to be changed.
2. Press the "Calibration Task" window to access the pop-up options windows.
3. Press "No" in the options window.

The task is removed from the weight (yield) calibration for the flow sensor, and calibration information is removed from the task. The value in the "Total Calibration Tasks" window is reduced by one.

An information message displays.

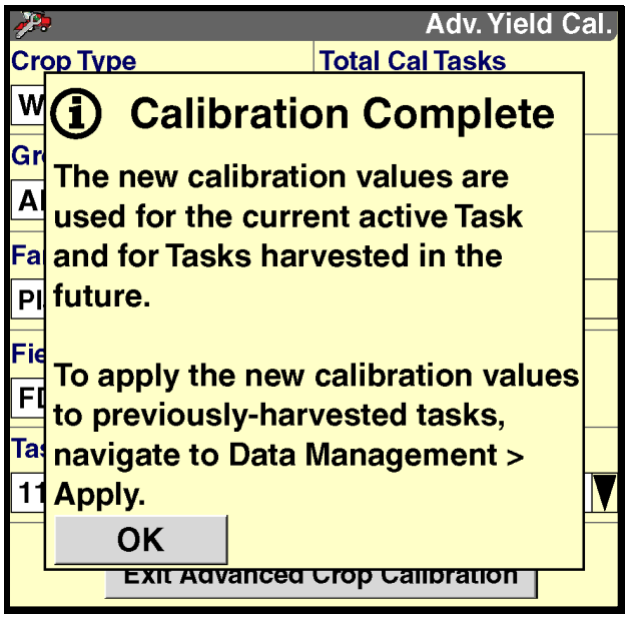


The message reminds the operator that the new calibration values are used for the current active task and future tasks only.

Use the “Apply Calibration” screen (Home > Data Management > Apply) to selectively apply the revised moisture value to previous tasks for this crop type.

NOTE: *This procedure is documented at the end of this chapter.*

Press the “OK” button to acknowledge and dismiss the message.

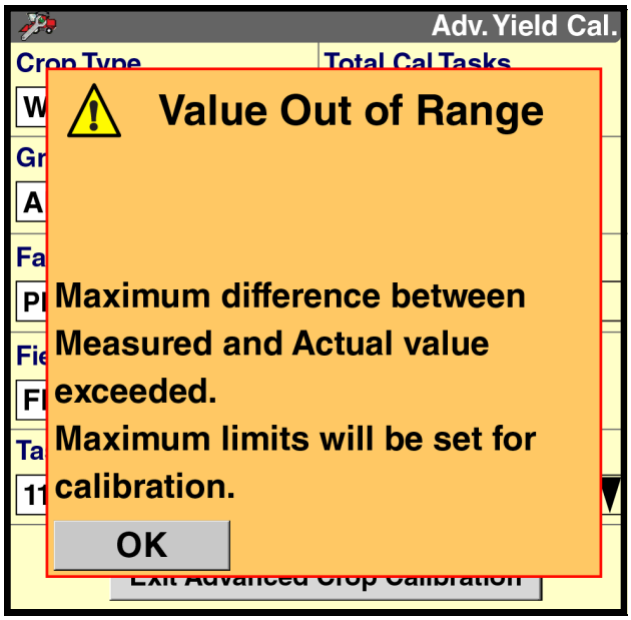


If the average error percentage for the selected tasks is too large, a pop-up message displays when you make a selection in the “Calibration Task” window: “Maximum difference between Measured and Actual value exceeded. Maximum limits will be set for calibration.”

Press the “OK” button to acknowledge the message.

The display automatically uses the maximum allowable values for calibration.

See **Incorrect Yield** to determine the cause and corrective action.



CORN/SOYBEAN SETTINGS FOR MIDRANGE COMBINES-51/61/7140, 51/61/7130, 50/6/7088, AND LEGACY COMBINES

CORN

Corn - Large wire concaves - No wires pulled.

Grates - Keystock Bar grates

Rotor Configuration - For high volume corn, suggest 8 straight bars on the rear of the rotor over the grate area.

Vanes - Front vanes in the medium position. You can run the back vanes in the medium position, but if you are concerned with rotor loss, an alternate suggestion is to put the back 5 vanes in the slow position (by slow, we mean the vanes will be almost straight up and down). By having the back 5 vanes in the slow position (along with the 8 straight bars on the back of the rotor), this will pretty much eliminate any chance of rotor loss in high yielding corn.

Rotor Speed - Baseline is 350 to 450 RPM. A lot of folks like 380 to 400 RPM. (If you slow the rotor in an effort to control rotor loss, it is suggested not to run less than 300 RPM because at its low speed, you do put a lot of torque/load on the rotor belt.

Concave Clearance - Depending on the vintage/model of the combine, this can be different. The 88 series calls for 18 to 25 MM. Other models might say 3 to 5 on the indicator. The key thing is to run the thickness of the corncob at the pinch point. Running the clearance at the thickness of a corncob will do two things:

1. Generally will allow the ears to roll through the machine rather than tumble (longer cobs out back). If you get the clearance too wide, the ears will tumble, and then you will have a lot of broken cobs to deal with in cleaning system.
2. Running the thickness of a cob will put a certain amount of “rub” pressure on the concaves which can help prevent plugging of the concaves in green leaf varieties. It will provide a wiping action in order to keep the concave holes open and available for separation.

Front Section of Chaffer Sieve - Also known as the pre-sieve. Baseline setting is 1/4 inch with the long cleaning system. Maybe, just a touch more. A good rule of thumb is to run the front section of the sieve half of what you run the main section of the chaffer. If you ever get corn in the cleaning fan, the root cause is that the front section is too far open. If you have the front section too far open, you may let too much corn through right away and actually create a pile on the front half of the shoe sieve. You will then lose air flow to the top sieve making it ineffective. You have a lot of sieve, use the rest of it.

Main Chaffer Sieve - Recommended sieve is the 1 5/8 inch corn slat sieve. A good baseline setting is 5/8 of an inch between louver openings. (About 13 mm. The 88 series uses millimeters in the cab readout). If you like, you can run the very rear section the same, or just a little wider to prevent any sieve loss. You want the top sieve to do over 90% of the cleaning.

Shoe Sieve - Recommended sieve is a 1 5/8 inch closed slate sieve. Baseline setting is 1/2 inch. (About 10 mm) Keep an open attitude! Do not close too much because you will close air to the top sieve. Note: If you have good quality dry corn and the cobs are staying whole out of the back rotor, you may be able to use wider setting on the chaffer and the shoe.

Fan Speed - Baseline is 1100 RPM. A lot of folks will use 1150 RPM or higher. If you ever think you are blowing corn out of the sieve while running in the field. Double check your front section of the chaffer sieve. Too wide of a setting on the front of the shoe sieve blocking air in the front which will in turn create super high velocities of air at the rear of the top and bottom sieve.

Chopper - Low speed (always drop stationary knives for low speed. Never chop in low speed). It is a good idea to run the chopper in low for corn. If you run high, the cobs will bounce off the back inside hood of the combine back on the sieves. The strain of the big cobs bouncing on the sieve will wear out the wires and sections can break out prematurely.

SOYBEANS

Fan Speed - Large wire Concaves - No wires pulled. Alternate note or tip: In hard thresh rubbery green pods, some folks like to put a small wire concave in #1 position with large wire concaves in #2 and #3 position. This can help clean up a hard thresh variety. (Remember, you need all large wire concaves for corn).
Grates - Keystock Bar Grates
Rotor Configuration - We usually leave it at that same as corn configuration listed above. However, if you don't have corn, you would not need the straight bars for soybeans.
Vanes - Front vanes in the medium position. The back 5 vanes can be left in the medium position, but an alternate suggestion for green vine stems is to put the back 5 vanes in the fast position (by fast, we mean the vanes will be at the flattest angle possible). By having the back 5 vanes in the fast position, you will get the green stems out faster. You will also find that it takes less power and fuel.
Rotor Speed - Baseline is 550 to 650 RPM- sometimes even 700. In damp, viney soybeans, an alternate method to finding the best rotor speed is to start out in the field with an empty grain tank. Start out at 550 rotor RPM. Keep bumping the rotor speed up 20 RPM at a time and looking back in the grain tank. Bump up the speed 20 RPM at a time until you see the soybean crack/split in the tank. Once you see them start to crack, look at the rotor speed and back it down to 70 RPM. You have just found the sweet spot to run rotor speed without cracking the beans. It will take less power and you will have better fuel economy. If soybeans dry down during the day, you will need to reevaluate rotor speed.
Concave Clearance - Depending on the vintage/model of the combine, this can be different. The 88 series calls for 15 to 25 MM. Other models might say 3 to 4 on the indicator. If you were to visually look at the clearance, it would be about 3/4 of an inch at the pinch point.
Front Section of Chaffer Sieve - Also known as the pre sieve. Baseline setting is 1/4 inch with the long cleaning system. A good rule of thumb is to run the front section of the sieve half of what you run the main section of the chaffer. If you ever get beans in the cleaning fan, the root cause is that the front section is too far open. If you have the front section too far open, you may let too many beans through right away and actually create a pile on the front half of the shoe sieve. You will then lose air flow to the top sieve making the top sieve ineffective. You have a lot of sieve, use the rest of it.
Main Chaffer Sieve - If you also combine corn, you probably will use the same 1 5/8 inch corn slat sieve. Long sieve systems call for baseline setting of 1/2 inch distance between the louver openings. (About 12 mm. The 88 series uses millimeters in the cab readout.) The nice thing about the 1 5/8 corn slate sieve is that if you want to run a little tighter, the sieve almost will act as a hole sieve due to the long fingers and bigger openings. You want the top sieve to do over 90% of the cleaning. Note: Some folks will run a 1 5/8 closed type sieve. Just be aware of what sieve you have, as this can effect what setting to use.
Shoe Sieve - If you also combine corn, you probably will use the same 1 5/8 inch closed slate sieve. Baseline setting is 3/8 of an inch. (About 9 or 10 mm. The 88 series uses millimeters in the cab readout.) Keep a open attitude! Do not close too much because you will close air to the top sieve also. Some folks will run a 1 1/8 shoe sieve which will also do a nice job cleaning the pods out.
Fan Speed - Baseline is 1050 to 1100 RPM. If you ever think you are blowing beans out of the sieve while running in the field. Double check your front section of the chaffer sieve. Too wide of a setting on the front top sieve can create a pile on the front of the shoe sieve blocking air in the front which will in turn create super high velocities of air at the rear of top and bottom sieve.
Chopper - High speed with stationary knives engaged.

INITIAL CORN SETTINGS FOR 50, 40, 30, 20, 10 SERIES AXIAL-FLOW COMBINES

Below are some suggested settings to help you get a good starting point - you can adjust accordingly to your conditions.

Concaves - Large wire modules in concave area. (Round bar modules are used by some operators - perhaps very wet corn - just make sure you are threshing kernels off the cob). Large wire modules often give a wider range of operating conditions.

Grate Area - Use large skip wire in grate area

Rotor Configuration - Standard rotor rasp bar configuration. Normal AFX Rotor with 8 spike bars on rear half. If separation is a concern, 4 straight bars can be used at the rear of the rotor - grate area.

Vanes - Mid Position. In extremely hard to separate corn conditions, the very back 4 vanes can be moved to the slow position.

Rotor Speed - Baseline is 380 RPM. Operator's manual suggests 350 to 450 RPM. Use 1st range for rotor gear box. (Rotor Speeds below 300 rpm could cause the feeder chain to jump in high yielding corn).

Concave Clearance - Baseline is 18 to 25 mm. The width of a cob should just fit between the rasp bar and the pinch point. This is the most critical adjustment for corn. The idea is to roll the ears through the rotor and not tumble them with too wide of a setting. Too wide of a setting will tumble the ears and cause excessive sieve load with broken cobs. If you have leaf material hair pinning on the concaves, going tighter will let the cobs put a little pressure on the concave to help wipe the leaf material away. Don't go too tight that you are quartering cobs.

Pre-Sieve - Louver opening should be thickness of a corn seed - 1/4 inch - 4th notch, perhaps 5th notch. (If you ever get grain in the cleaning fan, chances are you have the pre-sieve too wide). You only want 15% of the grain to go through the pre-sieve. If the corn is on the wetter side, like 25% plus, you may want to use a wider setting (such as 5th or 6th notch)

Chaffer Sieve - Baselines setting is 17 mm. Note: With good dryer corn, a number some folks are using 21 to 23mm.

Shoe Sieve - Baseline setting is 15 mm. Can go more if sample is clean. Some may go as high as 18 mm if conditions permit.

Fan Speed - Baseline is 1050 to 1150 RPM

Chopper - Low Speed (always drop stationary knives for low speed. Never chop in low speed).

Residue Spreaders - Adjust speed on residue spreader fans so cobs are thrown to the width of the head. If you have 30 series and newer flagship combine, adjust the mass distributor (Whales Tail) to a wider opening so cobs can get through.

Elevator Speed - Recommend that the Clean Grain Elevator is set to the high side on the pulleys. (Reason is: the clean grain auger has to turn fast enough to take away high yielding corn, so it does not build up in auger trough. If you leave on Low side, this could be a second reason to possible get corn in the fan.

INITIAL SOYBEAN SETTINGS FOR 50, 40, 30, 20, 10 SERIES AXIAL-FLOW COMBINES

Below are some suggested settings to help you get a good starting point - you can adjust accordingly to your conditions.

Concaves - Large wire modules for the concaves

Grate Area - Use Large Skip Wire in grate area

Rotor Configuration - Recommend standard rotor rasp bar configuration. Normal AFX Rotor with 8 spike bars on rear half.

Vanes - Mid Position

Rotor Speed - Baseline is 600 to 650 RPM (Many users like to take rotor speed up until they see the soybeans actually crack in the grain tank and then, back the rotor down 70 RPM's to find the sweet spot! We then get no crackage, but can run maximum sweet spot rotor speed). This is a nice way to use for different varieties and moisture levels. Use 2nd range on rotor gear box.

Concave Clearance - 15 to 18 mm.

Pre-Sieve - Louver opening should be thickness of soybean seed -3rd or 4th Notch. The long finger corn slat sieve still has a lot of opening when it is closed. You only want 15% of the grain to go through the pre-sieve.

Chaffer Sieve - Baseline setting is 16. If you have 1 and 5/8 long finger corn sieve, you can even use a cab indicator setting less than 16 (maybe as far down to 12).

Shoe Sieve - Baseline setting is 12. Perhaps, down to 9 with 1 and 5/8 inch shoe sieve

Fan Speed - Baseline is 1000 to 1050 RPM. The cleaning system fan is very efficient. Some folks only have to run 940 RPM on the fan.

Chopper - High Speed with stationary knives engaged.

Residue Spreaders - Adjust residue spreader fan speed to the higher side to try to give full head width spread. If you have 30 series and newer flagship combine, adjust the mass distributor (Whales Tail) opening so equal amount of residue is on the ground between the wheels, verses outside the wheels.

Elevator Speed - Can use high or low side of pulleys. If harvesting seed soybeans, recommend low side for a bit less chance of damage.

SUPPORT HELP LINES

ATKINSON

402-925-5191	402-925-4117	402-925-4100	402-925-4099	402-925-4097	402-925-4101	402-925-4098
MAIN:	AFS:	SERVICE:	TRACTOR:	PLANT/HARVEST:	PARTS:	HAY:
402-923-1622	402-920-4341	402-923-1626	402-923-7703	402-923-7706	402-923-7700	Scan codes to call

HUMPHREY

Mitchell Equipment

CASE IH
AGRICULTURE