

AGCO

Combine Manual
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HEADSIGHT INC.

HARVESTING SOLUTIONS



About Headsight

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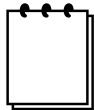
Technical Assistance

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About this Manual

How to use this manual

For new installations, follow all applicable instructions in each of the numbered sections (1, 2, etc) in the order that they are presented in this manual. The information in the lettered appendices (A, B, etc) is for service or advanced settings which you will not need for most installations, but may want to reference in the future.



This icon designates information of which you should take note.



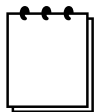
This icon designates an important instruction.

Disclaimers

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Suggestions

If you have any suggestions to improve this manual –please call 574-546-5022 or email info@headsight.com.



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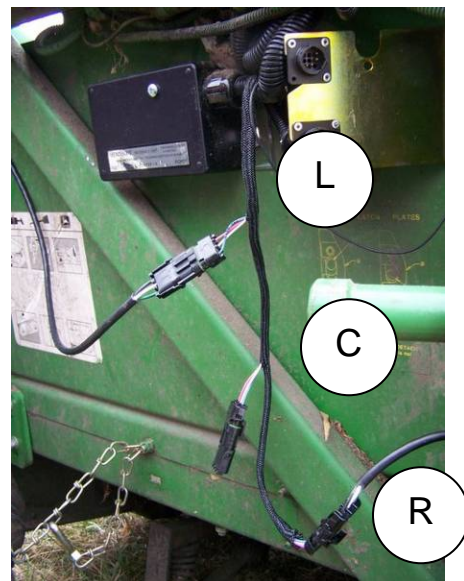
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1. Installation



Complete the installation portion of the header manual before continuing.

1. Hold box at rear of header within reach of feederhouse electrical connection on combine and mark mounting hole locations.
2. Drill mounting holes using ¼ “ drill bit.
3. Secure box to header using provided tie straps or optional ¼” bolts.
 - Mount connections downward to prevent dirt and water entry.
4. Attach connector mounting plate to header within reach of combine electrical connector.
5. Connect individual sensor wiring to the control box as described below.
 - Connect the left sensor to the input nearest the control box.
 - Connect the right sensor to the input farthest from the control box.
 - Connect remaining sensors in order from left to right using the remaining inputs. (3 sensor shown, 5 sensor similar)



6. Mate remaining connectors to combine and header.

2. Calibration

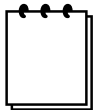


Before working under the header always:

1. Perform all combine and header manufacturer safety precautions for servicing header.
2. Insert stop to prevent movement of header.
3. Set combine parking brake.
4. Disconnect all drive shafts from the header.



2.1. Sensor Calibration for Control Box Systems



You will not need to calibrate the sensors for brand-new installations because they are precalibrated at the factory. You may recalibrate the sensors if you are unsatisfied with the operating range of the system. You should perform calibration if any of the components of the system are used or once annually.

1. Use a voltmeter to probe the signal return wire (white) from each sensor with power connected.
2. Follow sensor adjustment procedures found in the header manual to make all sensor voltages match each other. All voltages must also be within the Basic Requirements found in the Diagnostic section of the Appendix.

2.2. Combine Calibration

2.2.1. AGCO “13” MY2003-2006

1. With Insight™ calibrated, park on level ground
2. Disengage header control and header clutch



3. Press and hold CAL1 until the following LEDs flash

- 1.1. Lower header, Tilt auto mode
- 1.2. Previously selected auto height mode
- 4. Lower header to minimum height



- 5. Press CAL2 button until lower header stops flashing and raise header starts flashing
- 6. Raise header to maximum height



- 7. Press CAL2 button until raise header LED turns off
- 8. Wait for tilt left LED to flash then tilt header to maximum left position



- 9. Press CAL2 button until tilt header left LED stops flashing and tilt header right LED starts flashing
- 10. Tilt header to maximum right position



- 11. Press CAL2 button until the following LEDs flash

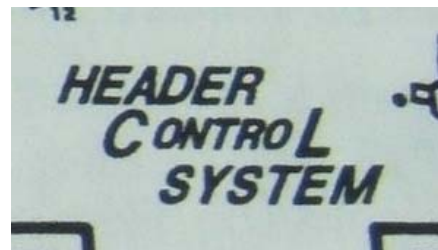
- 1.3. Raise header, Lower header, Height auto mode
- 1.4. Right header, Left header, Tilt auto mode



- 12. Center header and press CAL1 to exit calibration and save all calibration values

2.2.2. AGCO "F6" MY1998-2002

- 1. Disengage header control and header clutch
- 2. Raise header to maximum position
- 3. Press and hold hidden button under the C of Control until the LED starts flashing

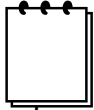


- 4. Lower header to minimum height
- 5. Press and hold hidden button under the L of Control until the LED starts flashing

6. Raise header to maximum position
7. Tilt header completely left using balance switch below tilt sensitivity knob
8. Continue pressing tilt left switch -Press and hold hidden button under the C of Control until the LED starts flashing
9. Tilt header completely right using balance switch below tilt sensitivity knob
10. Continue pressing tilt right switch -Press and hold hidden button under the L of Control until the LED starts flashing

3. Settings

3.1. Combine Settings



Properly setting the combine is essential to having responsive header control. You should become very familiar with the steps in this section.



Always perform combine calibration before attempting system tuning.



Set the automatic drop rate as high as you like without causing head “hunting”. If the head “hunts”, decrease the automatic drop rate.

3.1.1. Automatic drop rate

1. Use the adjustment bolt on lower valve of hydraulic valve stack on right-hand side of combine
- 1.5. Common range is 6-8 seconds from full up to full down in auto mode
- 1.6. Set drop rate as high as possible without causing height ‘hunting’

3.1.2. Hydraulic accumulator



It is very difficult to properly set the hydraulic accumulator on AGCO combines. Expect to spend some time in trial-and-error. Alternatively, you may replace the ¼ turn valve shown with a multiple turn valve for improved tuning capability.

1. Find the accumulator
 - It is located either near the left front wheel or on right side of combine near the hydraulic valve stack.
2. The accumulator valve should be:
 - 1.7. Open far enough to reduce ‘banging’ of the header when it is raised or lowered

- 1.8. Closed far enough to avoid sloppy response.
3. For a reference of handle position– the accumulator pictured is properly set.



3.1.3. Set raise rate



1. Adjustment bolt on raise valve of hydraulic valve stack on right-hand side of combine
- 1.9. Common range is 5-7 seconds from full down to full up
- 1.10. Set raise rate as high as possible without causing height 'hunting'

4. Operation

4.1. Enabling Height Control

1. Turn on separator and header clutches
2. Enable auto header height and auto header tilt mode

-  and  (MY2003-2006)

-  and  (MY1998-2002)

3. Press header lower button

4.2. Height Sensitivity

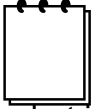
1. Use height sensitivity knob
 - Set sensitivity as high as possible without causing height 'hunting'

4.3. Tilt sensitivity

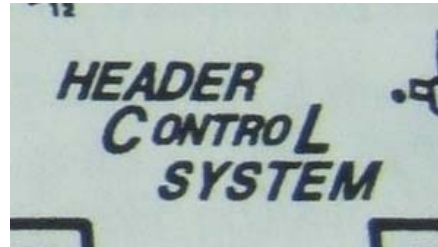
1. Use tilt sensitivity knob
 - 1.11. Set sensitivity and gain as high as possible without causing tilt 'hunting'

A Advanced Information

1 Tilt Gain Adjustment



This procedure is rarely needed, but is described here for reference. These instructions only apply to MY1998-2002 machines.



1. Set tilt gain as high as possible without causing tilt 'hunting'
2. Press and hold both hidden "C" and "L" of ControlL for 3 seconds
 - Auto header height and tilt LEDs will flash
3. Press left manual tilt switch
 - Present gain setting will flash on LEDs
 - Gain is from 1 (low) to 8 (high) gain
4. Turn tilt sensitivity knob to new setting
 - There are 8 settings from low (counter clockwise) to high (clockwise)
5. Press left manual tilt to save new tilt gain setting
 - New setting will be flashed on LEDs from 1 to 8
6. Press both "C" and "L" of ControlL to save new setting and exit tilt gain adjustment mode

B Diagnostics

1 Theory of Operation

All JD Dial-a-Matic (20/00/10 series) combines height control systems work in a similar way. A review of the following points will help the service technician to understand the complete system which will help when diagnosing specific problems.

1. Each sensor returns a variable voltage to the control box at the rear of the header depending on its height.
 - high height = high voltage (approximately 4 volts)
 - low height = low voltage (approximately 1 volt)
2. Each sensor has 3 wires
 - red = 5V power
 - black = ground
 - white = signal returned to the control box (varies between approximately 1.0 and 4.0 volts)
3. The combine views the sensors in the following way:
 - 1.12. Any one sensor can raise the head.
 - 1.13. All sensors must agree to lower the head.
4. A control box (if present) passes the lowest voltage from the center sensor(s) on to both the right and left combine inputs.

2 Basic Requirements



If any sensor does not meet the requirements below you must correct it (to meet the requirements) and then recalibrate the combine. See the header manual for sensor adjustment instructions. Each sensor must meet basic requirements for the combine to accept the calibration.

- Signal output must always be between .5 and 4.5 volts.
- Signal must change more than 2.0 volts from raised to lowered position for each sensor.



The following symbols are used in the troubleshooting guide:



Denotes a problem or symptom.

- Read through the problems and select the one that most closely represents your problem.

? A question or condition needed for the following steps that the technician must answer.

- Read through the possible options and select the one that most closely represents your problem.

★ A possible answer to the previous question or problem

- Evaluate each possible answer to determine the cause of the problem.
- Answers are given in order from most to least likely.

○ **Gives further explanation or testing instructions.**

3 Troubleshooting by Symptom



Header is too jumpy or responds too slowly

★ Combine is improperly set.

- See Settings section – adjust drop rate and accumulator.

★ Sensors need to be recalibrated.

- See Calibration section.



Header is not level with SmartTrac enabled.

? If the header tilts completely to one side:

★ Verify that the individual sensor wiring is connected to the main wiring harness at the rear of the header properly.

- This symptom will occur if the Left and Right sensor wiring are in the incorrect position.



- See Installation section for details.

- ★ Check individual sensors

? If the header is slightly out of level but functions correctly:

- ★ Verify that all sensors can move freely through the entire range.
- ★ Verify that all sensors are connected, functioning and calibrated as per the Calibration section of this manual.
- ★ Recalibrate combine. -See Calibration section.
- ★ Use tilt bump to balance header.



- Press  and/or  to level header
- Press hidden "C" and/or "L" in ControlL with auto tilt active



No automatic operation - height or tilt

- ★ Wiring is not connected properly
- ★ Header control is not enabled with cab controls.
 - See Operation section for instructions about how to enable.
- ★ Sensor(s) are out of range
 - Read sensor input values to combine
 - PIN 9 and 10 (MY 2007+)
 - LTGRN and DKGRN (MY 2003 to 2006)
 - PIN D and E (MY1998 to 2002)
 - All values should be approximately
 - 4V with header raised
 - 1V with header lowered
- ★ Control box issue
 - Verify that sensors are calibrated correctly
 - Contact Headsight

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