

TrueSight-CIH Row Guidance

Install Manual
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HEADSIGHT INC.

HARVESTING SOLUTIONS



About Headsight

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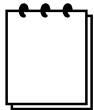
Technical Assistance

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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.



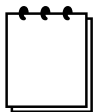
This icon designates an important instruction.

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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Table of Contents

About Headsight	i
Headsight Contact Info	i
Technical Assistance	i
About this Manual	i
How to use this manual	i
Disclaimers	i
Suggestions	i
1. Quick-Start Guide	4
1.1. Identify the components	4
1.2. Install the system	5
1.3. Use Truesight/RowSense	5
2. Installation	6
2.1. Crop sensor installation	6
2.1.1. Sensor assembly	6
2.1.2. Width adjustment	7
2.1.3. Safety reminder	7
2.1.4. Snout choice	7
2.2. Sensor mounting:	8
2.2.1. Case 2000 & 3000 series / All NH poly	8
2.2.2. Other heads	8
2.3. Interface module installation	8
3. Calibration	10
3.1. Check for Power	10
3.2. Enable Row Guidance	10
4. Operation	11
5. Settings	11
5.1. Sensitivity	11
5.2. Offset / Nudge	11
A Technical Information	12

1	Theory of Operation	12
2	Troubleshooting	13
3	Adding Row Guide to non-equipped CIH combines	13
4	Known Combine System Installation Issues	14
5	Wiring	15
B	Parts	16

1. Quick-Start Guide



Note: Follow the steps in order in this Quick-Start section when installing the system for the first time. All of the calibration and tuning steps will be available in the TrueSight menu.

1.1. Identify the components

1. Interface Module

1- TS-IHRG-IM -Module



2. Module Adapter harness

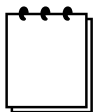
- o May vary based on header model

AR- TS-ALL-IHRG -harness (shown)



3. Crop sensor assembly

1- HT2670 -Crop sensor asm



For parts breakdown see appendix.



4. Crop whiskers

- 2- HT2695 -Arm TrueSight

5. Crop sensor mounting kit

- o May vary based on header

- 1- B2713 -Mounting kit
- 1- HT2713-Bracket
- 2- 08200124 -Bolt M10x25
- 2- 08200134 -Bolt FI 5/16" x .75"
- 2- 08200133 -Washer 5/16"
- AR- 08200107 -Screws
- AR- 08100101 -Cable clamp small
- AR- 08100102 -Cable clamp large
- AR- 08300102 -Zip ties

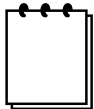


6. Trusight Crop Sensor Extension Harness

- 1- HT2808 Not shown

1.2. Install the system

Install the system following the instructions described in the Installation section of this manual.



Note: All directions and locations including left, right, front, and rear are oriented with respect to the operator when sitting in the driver's seat.

1.3. Use Truesight/RowSense

After the initial calibration – all settings and adjustments are made following the IH Row Guidance operational instructions. See the “Calibration”, “Operation”, and “Settings” sections of this manual.

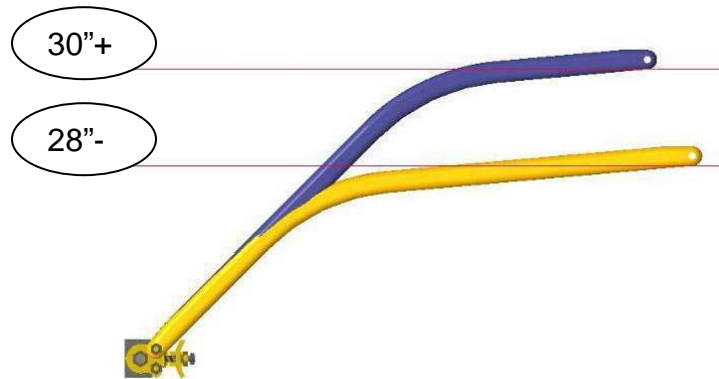
2. Installation

2.1. Crop sensor installation

2.1.1. Sensor assembly

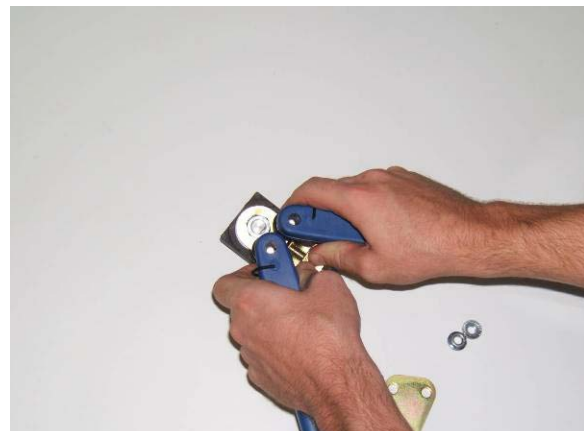
1. Choose your headers row spacing range.

- For row spacings 30" and above use the arm position shown by the blue arm.
- For row spacings less than 30" use the arm position shown by the yellow arm.



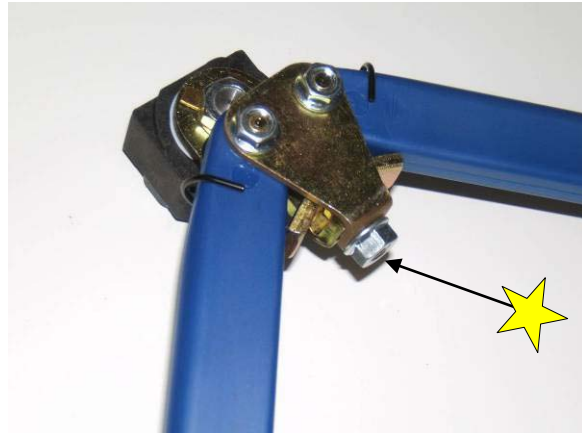
2. Install the arms on the crop sensor.

- Remove the crop sensor lower shield.
- Hold the arms and spring as shown – slide the spring hooks over both arms – then the arms over the pivot posts of the sensor.
- Replace the lower shield.



2.1.2. Width adjustment

1. Loosen the jamb nut indicated.
2. Turn arm adjustment screen using a hex (allen) wrench.
 - Adjust arm width to row spacing plus 2 inches (e.g. adjust to 32" for 30" row spacing)
3. Tighten jamb nut



2.1.3. Safety reminder



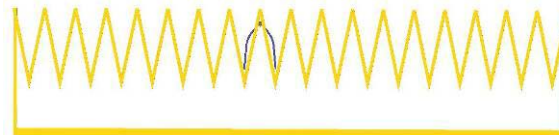
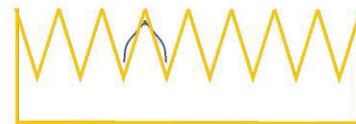
Before working under the header always:

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



2.1.4. Snout choice

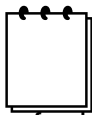
1. Choose which snout of the header to mount the crop sensor.
 - If there is no header height sensor on the center snout the crop sensor may be mounted there.
 - For most headers, mount the sensor one snout to the left of center.



2.2. Sensor mounting:

2.2.1. Case 2000 & 3000 series / All NH poly

1. Remove the cast iron snout tip from the snout.
2. Cut out the poly as shown
 - o Use a large drill bit to make rounded corners to avoid weakening snout.
3. Attach sensor to mounting bracket using provided hardware.

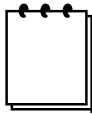


The sensor should be as far into the snout as possible without causing the arms to rub the bottom of the snout frame.

4. Insert bracket between cast iron snout tip and snout as shown. Fasten with provided hardware.
5. Route the extension harness to the back of the header near the 31p plug using the included clamps, screws and zipties. Make sure the harness is clear of all pinch points, and leave enough slack at all pivot points on the snout.



2.2.2. Other heads



Specific sensor mounting instructions for other header and snouts are included with the sensor mounting bracket kit for that header.

2.3. Interface module installation

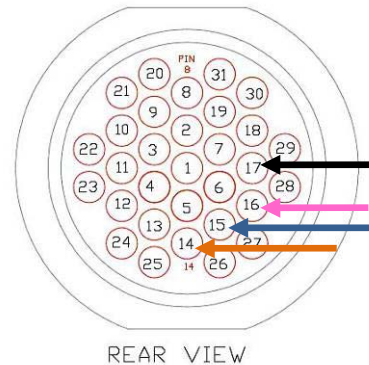


1. Mount the interface module on the rear of the header in this general area

2. The loose pins on adapter harness plug into the back of the 31p plug on the header (IH header connector shown, JD, NH, others similar).

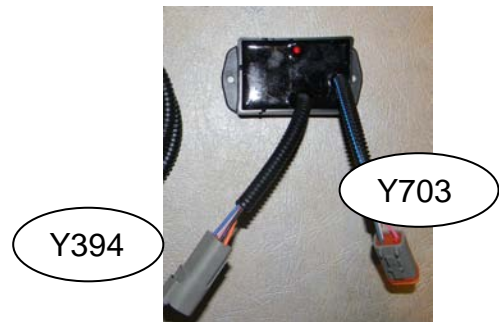


- If necessary, unbolt the connector and move it out for access
- On all heads, remove the sealing plugs from cavities 14, 15, 16 & 17.
- Insert the ORANGE wire into pos. 14
- Insert the Dk. BLUE wire into pos. 15
- Insert the PINK wire into pos. 16
- Insert the BLACK wire into pos. 17



3. Connect the Adapter harness to the module (Y793-Y794)

4. Connect TrueSight crop sensor extension harness to Y703.



5. Check to see that the combine is ready for Row Guidance. See A3, A4

3. Calibration

3.1. Check for Power

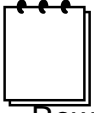
1. Make sure the red LED is on when the combine is running.



3.2. Enable Row Guidance

1. Follow the instructions in your CIH owner's manual to calibrate and enable the Row Guidance feature, just as if you had CIH sensors
2. If not already done, purchase the Row guide unlock from your CIH dealer.
3. Go to the Pro 600 monitor.
4. Choose "Toolbox, RowG".
5. Select RowGuide "ON".
6. Set the "Dist. Front Axle" to the correct measurement from the crop contact point of the wands to the center of the front axle.
7. Choose "Toolbox, NAV".
8. Choose "DGPS".
9. Go back to the main screen.
10. Choose "Diagnostics, RowG".
11. Check the "Row Sense Left" and "Row Sense Right" voltages.
 - When the crop sensor is centered, both the left and right inputs to the combine should read about 0.6V.
 - With the sensor pressed to the left, the left input should increase toward 3.5 V. The right should remain about 0.6V
 - With the sensor pressed to the right, the right input should increase toward 3.5 V. The left should remain about 0.6V

4. Operation



Operate the Truesight system exactly like you would use a CIH Row Guidance system. Details may be found in the CIH operator's manual.

5. Settings

5.1. Sensitivity

1. Go to the Pro 600 monitor.
2. Choose "Toolbox, RowG".
3. Choose "RowGuide Aggressiveness".
 - Increase the number for more responsiveness

5.2. Offset / Nudge

1. Go to the Pro 600 monitor.
2. Choose "Toolbox, RowG".
3. Choose "RowGuide Trim".
 - Adjust the value to center the machine on the row.

A Technical Information

1 Theory of Operation

A review of the following points will help the service technician to understand the complete system which will help when diagnosing specific problems.

1. The TrueSight crop sensor has 3 wires
 - red = 5V power
 - black = ground
 - white = signal returned to the combine
2. A sensor returns a variable voltage depending on its swing, with center being approx. 2.5V.
 - Left = high voltage (approximately 4.7 volts)
 - Right = low voltage (approximately 0.3 volt)
 - Signal **must** be centered at 2.5V volts.
3. The interface module modifies the sensor signal as needed then sends a left and right sensor signal to the OEM IH auto-steer system. These voltage measurements can be read using the diagnostics under "INFO,RowG" in the PRO-600. (CAL jumper OFF)
 - When the crop sensor is centered , both the left and right inputs to the combine should read about 0.6V.
 - With the sensor pressed to the left, the left input should increase toward 3.5 V. The right should remain about 0.6V
 - With the sensor pressed to the right, the right input should increase toward 3.5 V. The left should remain about 0.6V

2 Troubleshooting

1. Problem – The power LED is not on
 - Solution – the combine Row guidance system has not been correctly installed. See **A4 Known Combine System Installation Issues**.
 - Solution – the pink wire in the Y793 connector is not 5V, or the Black wire is not ground. Check for 5V between pins 1 & 3 in the adapter harness. Start the combine engine and recheck
 - Solution – the sensor harness is shorted to ground. Unplug Y703 and see if the light comes on
2. Problem - The voltages shown on PRO-600 under “INFO,RowG” are reversed L to R from what the instructions say they should be.
 - Solution – the wiring is incorrect – swap the left and right combine inputs (Orange and Dk Blue wires in 31P header connector).
3. Problem – Power LED is on, but the voltages shown on PRO-600 under “INFO,RowG” are 4.5-5.0V
 - Solution – See **A4 Known Combine System Installation Issues**. Make sure connector A is connected to B, not C.

3 Adding Row Guide to non-equipped CIH combines

This section applies to late model x010 and early model x120 combines that are factory equipped with autosteer, but were not row guidance ready.

1. Combines prior to serial # Y9G207118
 - Install CIH part #'s 84194266 & 84169561 before installing the Truesight kit.

4 Known Combine System Installation Issues

The installer must check the CNH x120 series combines to make sure they are ready to accept the row guidance signals. If a combine is not ordered guidance pre-equipped, the NAV harness is not installed, just left coiled up in the cab. The row guidance tail on the NAV harness (4pin plug [Pink Blue, (2) Yellows]) must be run down thru the floor by the NAV controller, and across under the cab to connect to the cable coming up the feeder from the header plug. To complicate matters there is another mating plug with the same color wires (designed for EURO autoguidance) already hanging under the cab in the same area. Plugging into this plug will provide power to the row sensors, but will not allow the steering inputs to get back to the combine.

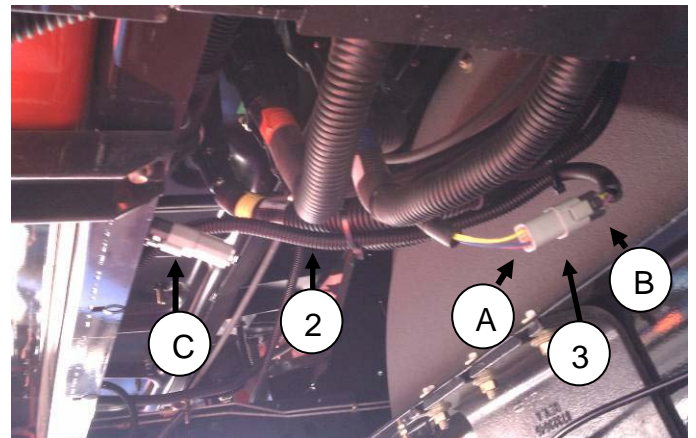
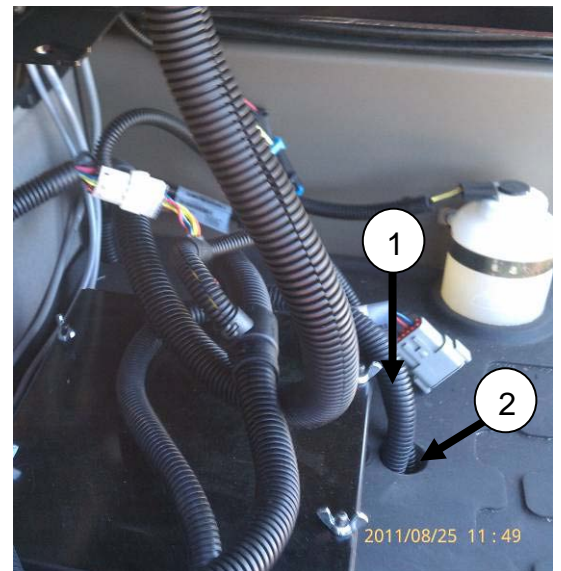
1. Make sure the NAV harness is installed. If GPS guidance works, this harness is installed.
2. Make sure the row guidance tail (4 pin Deutsch) of the NAV harness is routed out of the cab, and across under the cab to the left side.
3. Make sure the feeder harness plug A is connected to the NAV harness plug B, not to C (capped off).

Symptom: No Light on the Module

- Connect A to B as shown

Symptom: Light on module, but Pro 600 says 4.5-5V on steering inputs.

- A connected to C, reconnect to B!



B Parts



<u>Key#</u>	<u>Part#</u>	<u>Description</u>	<u>Qty</u>	<u>Notes</u>
1	TS-IHRG-IM	INTERFACE MODULE	1	
2	TS-ALL-IHRG	HARNESS—ALL OTHER	1	

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