

Truesight - Lexion Autopilot

Install Manual
09050501a



HEADSIGHT INC.
HARVESTING SOLUTIONS



About Headsight

Headsight Contact Info

Headsight, Inc
3529 Fir Road
Bremen, IN 46506
Phone: 574-546-5022
Fax: 574-546-5760
Email: info@headsight.com
Web: www.headsight.com

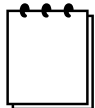
Technical Assistance

Phone: 574-220-5511

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.



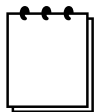
This icon designates an important instruction.

Disclaimers

Headsight, Insight, Foresight, FeatherSight and TrueSight are trademarks of Headsight, Inc. All other trademarks are property of their respective owners.

Suggestions

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

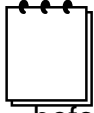


Portions of this product are protected by US Patents 6202395, 6833299, 7310931, and other US and international patents, issued and pending.

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. Installation	3
1.1. Multilink Block Identification	3
1.2. Truesight Adapter Installation	3
2. Settings	4
2.1. Sensitivity Adjustment	4
2.2. Combine Settings	4
3. Operation	4
A Technical Information	5
1 Theory of Operation	5
2 Basic Requirements	5
3 Testing OEM Lexion Multilinks	6
4 Modifying a 12V Multilink	7
5 Adding Autopilot to an early Headsight Multilink	8
6 Wiring	9
B Parts	10

1. Installation



Complete the installation portion of the header sensor manual before continuing.

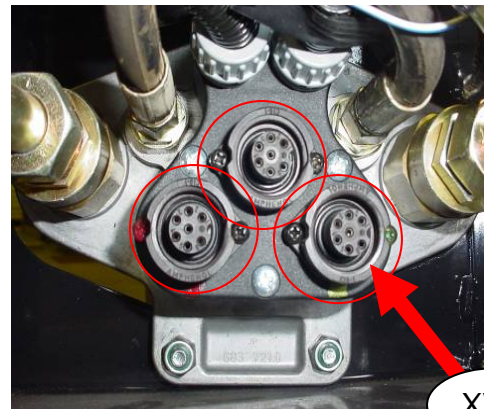


Do NOT connect Y703 until instructed.

1.1. Multilink Block Identification

1. Identify your multilink block style.

- If the multilink has 3 plugs as shown, you have an OEM Lexion multilink, and must follow the instructions in **A3** to test the power supplied to the autopilot connector XV2.
- If the multilink does not have XV2 installed, you must follow the instructions in **A5** to add the autopilot connector XV2 to the multilink.
- If the multilink has only 2 plugs, one of which is XV2, continue directly to the adapter installation



1.2. Truesight Adapter Installation

1. Identify the Autopilot plug (XV2) on the rear of the multilink connector on the header.
2. Plug the TruSight adapter into the XV2 connector.
3. Connect TruSight crop sensor to the adapter (Y703).
4. Tie up the adapter so it will not drag.



2. Settings



Properly adjustment is essential to having responsive steering.
Take time to try different settings.

2.1. Sensitivity Adjustment

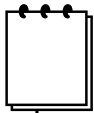
1. Use the knob on the adapter to adjust the responsiveness of the system
 - o Increase the knob to make the system more reactive.
 - o Decrease the knob to make it less reactive.



2.2. Combine Settings

1. Make sure the combine is set to LASER pilot, not finger input.

3. Operation



Operate the Trusight system exactly like you would use a Lexion Laserpilot system. Details may be found in the combine operator's manual.

1. Engage header and separator clutch
2. Choose Laserpilot
3. Engage Autosteer

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. A TruSight sensor returns a variable voltage depending on its swing, with center being approx. 2.5V. This is similar to an OEM laser system.
 - Left = high voltage (approximately 4.7 volts)
 - Right = low voltage (approximately 0.3 volt)
2. The sensor has 3 wires
 - red = 5V power
 - black = ground
 - white = signal returned to the combine
 - varies between approximately 0.3 and 4.7 volts
3. The adapter increases the signal as needed then sends them on to the combine using the same combine wiring as an OEM system would use.
 - With the knob a min, the voltage is approx. the same from the sensor to the combine.
 - With the knob at max, the voltage to the combine is approx. 2x the difference between the sensor voltage and 2.5V $((\text{Sensor V.} - 2.5) \times 2)$. This effectively doubles the sensitivity.

2 Basic Requirements



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

- Signal must always be between .3 and 4.7 volts.
- Signal must be centered at 2.5V volts.

3 Testing OEM Lexion Multilinks



Testing the multilink is not required for multilinks purchased from Headsight®. If you have an OEM multilink, complete the test below to determine if you need to modify the block.



Do NOT connect Y703 to the header sensor.

Lexion header multilink blocks use 2 different wiring schematics for autopilot. Laserpilot systems use 12V on pin 1 of the XV2 plug. Corn heads normally have +5V on pin 1 for finger sensing. To operate a +5V Headsight sensor on the OEM Lexion multilink, the following test must be made. Please note: It is not likely a corn head will be wired for 12V, but test anyway, as some aftermarket headers use platform OEM multilinks.

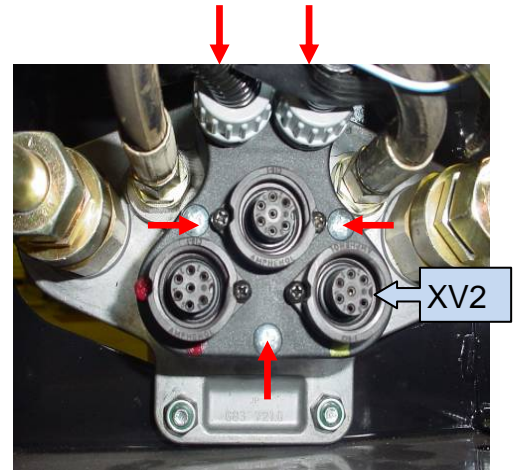
1. Connect the adapter to XV2 ONLY.
2. Connect the combine multilink and start the combine engine.
3. Using a voltmeter, measure DC Voltage from the BLUE wire (Ground) to the PINK wire (Power) on Y703. If necessary, the orange “clip” on the end of Y703 can be snapped off with a small screwdriver to have easy access to the terminals.
 - IF voltage is +5V DC—Continue to the installation portion of the manual. The steps in section 4 are not needed.
 - IF voltage is +12V, you must follow the steps in **A4** to switch to the 5V power wire in the Multilink Header Block.



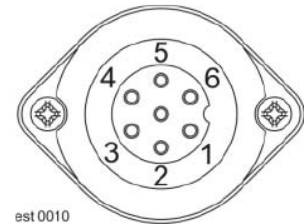
The Multilink layout drawing and wiring shown in **A6** is very helpful in locating the plugs and positions needed.

4 Modifying a 12V Multilink

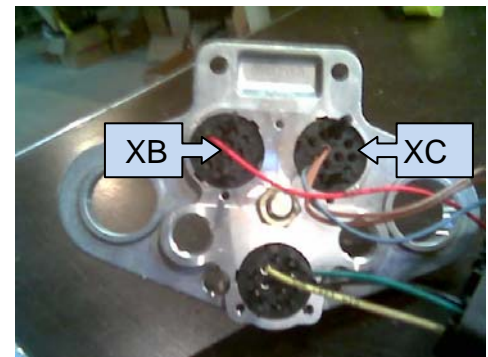
1. Clean the block thoroughly and remove the 5 screws holding the back cover onto the box. (You may need to disconnect harnesses or hoses to have adequate working room. If so, first carefully mark all components for reassembly.)
2. Carefully pull the plastic housing away from the metal of the multilink until you can reach the wiring and plugs inside.
3. Disconnect the current 12V source. Pin 1 of XV2 will be connected to Pin 9 of XB, possibly along with some other wires.



- If there are no other wires connected to this pin, move the pin from XB-9 to XC-8 as noted in step 4 below.
- Otherwise, cut the wire coming from XV2 pin 1 free from any other wires and from pin 9, XB, and crimp a new Cat Multilink pin (PN 213 603.0) onto the end of the wire from XV2 pin 1.
- The drawing in A6 may help identify plugs.

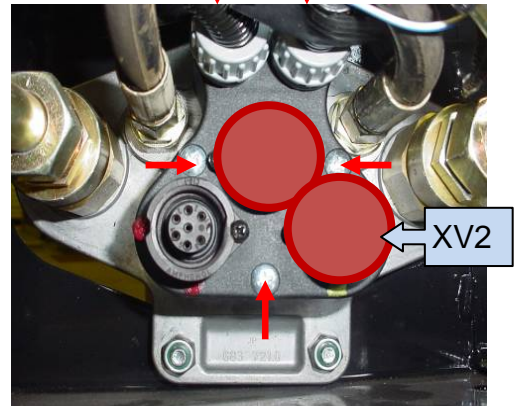
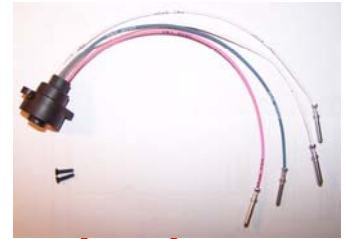


4. 5V power is picked up at pin 8 of the XC connection.
 - Press the XC connection assembly back out of the multilink metal housing.
 - Use a small screwdriver to snap the 2 halves of the assembly apart 1 notch.
 - Insert the LARGE pin into pin 8
 - Snap the holder assembly back fully together.
 - Reinsert XC into the multilink housing.
5. CAREFULLY reassemble the multilink, making sure not to pinch wires between the housings.

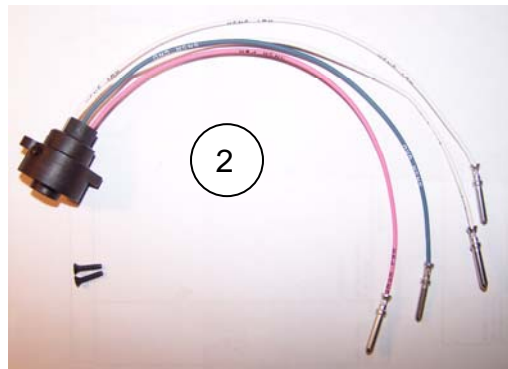
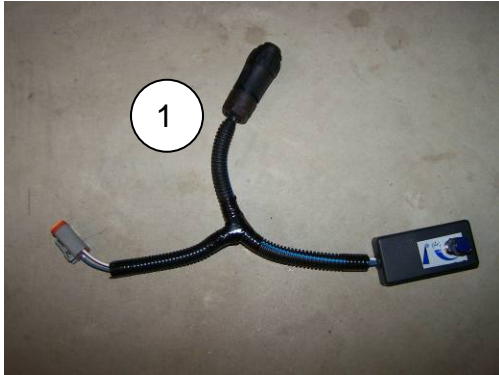


5 Adding Autopilot to an early Headsight Multilink

1. Make sure you have the Multilink Autopilot update kit, which includes a 7 pin plug with 4 wires w/ terminals, and 2 small screws. If not already ordered, please call Headsight® to order one.
2. Clean the block thoroughly and remove the 5 screws holding the back cover onto the box. (You may need to disconnect harnesses or hoses to have adequate working room. Mark all components for reassembly.)
3. Loosen the compression nut on the lights harness, then carefully pull the plastic housing away from the metal of the multilink until you can reach the wiring and plugs inside.
4. Remove the cap from the XV2 location and insert the four large pins thru the hole from the outside of the cap.
5. The wires must go to the correct locations in the XC plug.
 - Press the XC connection assembly back out of the multilink metal housing.
 - Use a small screwdriver to snap the 2 halves of the assembly apart 1 notch.
 - Insert the large pin on the PINK wire into pin 8
 - Insert the large pin on the BLUE wire into pin 9
 - Insert the large pin on the WHITE wire marked LEFT into pin 10
 - Insert the large pin on the WHITE wire marked RIGHT into pin 11
 - Snap the holder assembly back fully together.
 - Reinsert XC into the multilink housing.
6. CAREFULLY reassemble the multilink, making sure not to pinch wires between the housings.
7. Coil the wires for the Autopilot plug down into the housing and secure the new connection into place with the two screws provided.



B Parts



<u>Key#</u>	<u>Part#</u>	<u>Description</u>	<u>Qty</u>	<u>Notes</u>
1	TS-CA50-CAAP	ADAPTER	1	
2	CAML-UPDATE	WIRING UPDATE	AR	Updates early multilink blocks to autopilot

HEADSIGHT INC.

HARVESTING SOLUTIONS



3529 Fir Rd. Bremen, IN 46506
Ph: 574-546-5022 Fax: 574-546-5760
info@headsight.com www.headsight.com