

CONVERSION

INSTALLATION & OPERATION MANUAL



LEXION TO DYNAFLEX

09040406b



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About this Manual

How to use this manual

The instructions in this manual are in the order that they should be completed for new installations. Complete all applicable instructions in each section before proceeding. Note that some sections are labeled to indicate they only apply to certain machines or applications. An index is available in the front of the manual to help find technical information for previously installed systems.



This icon designates information of which you should take note.



This icon indicates a special tool needed for a given task.



This icon designates an important instruction.

Suggestions

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

Disclaimers

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Installation



Before working on combine or under 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. Turn off combine and remove key from ignition.
5. Disconnect all drive shafts from the header.



Components

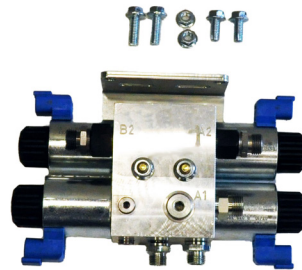
1. Multilink

- CA500MLHYD
- Required to allow connection to the combine
- Also Includes the Reel Flow fittings kit HT9003



2. Hydraulics, Dual Valve Assm. kit

- HT9002
- Required to control the hydraulic functions on the header to the combine. See valve-specific manual.



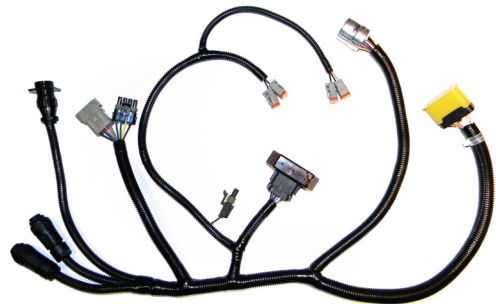
3. Insight

- INSIGHT
- Converts the AHC system on the header to the Lexion combine.



4. Header Adapter Harness

- QP0-CA12-31A
- This harness is installed on the Header, between the Insight, Lexion multilink, valve assm, and the JD header connection. For connector details, see “Wiring” in the Appendix



5. Feeder Harness

- HT9870-FH
- This harness is installed on the combine, between the cab and the Multilink. Connects to the Cab Controller and the Header Adapter. For connector details See “Wiring” in the Appendix



6. Hydrflex Cab Control

- HT9993
- Mounts in the cab to display and adjust the Hydrflex Pressure.



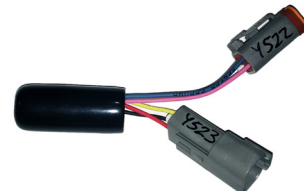
7. Reel Select Update

- 08100147 NC solenoid spool
 - Replaces NO valve on header
- HT9863-RS harness



8. Pressure shift module

- HT9219



9. Reel F/A Switch Kit

- Not shown
- See Switch Kit Installation Manual



Make sure the cable routing is done so no wiring can bind or pinch. Tie up all loose cabling. Properly installed wiring is the most critical aspect of a trouble-free installation. For harness details, see Advanced Info/Harness & Connector Guide.

Multilink and Valve Mounting

1. Mount the Headsight Multilink assembly on the header.
 - Shown with combine connected
 - Photo shows one suggested mounting position
2. See the Specific Installation Guide for the Dual Valve assembly for details on the next steps.
3. Mount the hydraulic valve assembly to the head.
4. Route the pressure and tank hoses from the valves to the multilink.
5. Disconnect the smaller hoses from the OEM Header Single point and connect them to the valve assembly.
6. Install the Reel Flow couplings into the Multilink and connect the Reel Drive hoses.



Insight Box Mounting

1. Hold Insight unit (or mounting bracket if supplied) at rear of header near the Multilink and feederhouse electrical connection on combine and mark mounting hole locations.
2. Drill mounting holes using 1/4" drill bit.
3. Secure box to header.
 - Use provided tie straps or 1/4" bolts.
 - Box must be within reach of the header electrical connector and the Multilink.



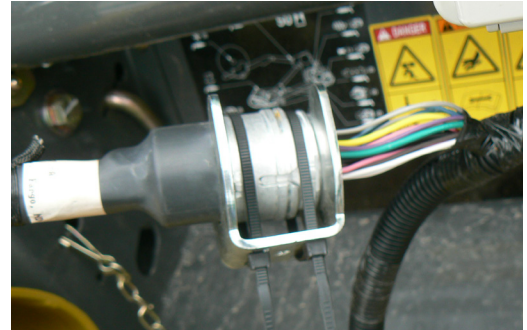
If Insight Box does not power up after completing full installation section, check that Y401 is connected to correct port on multilink, and see Advanced Info, 12V Power Test.

Header Adapter Harness

1. Connect the 24 pin connector on the adapter Header harness to the Insight box using an Allen wrench.

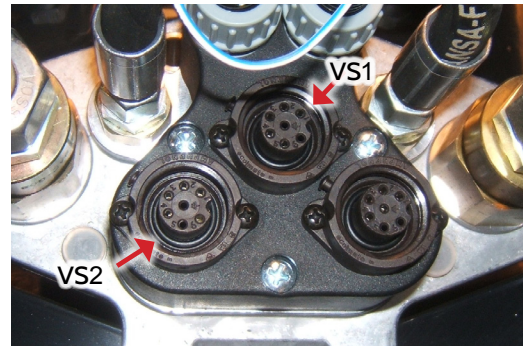
Header Connection

1. Remove the C clip holding the OEM header electrical connector in the AGCO single-point plate. Remove the connector from the plate.
2. Press the connector into Y502 on the QP0-CA12-31A adapter harness.
3. Slip the HT2259 bracket over the connection and secure with zip ties.
4. Tie Y424 so it is easy to connect during header hookup.



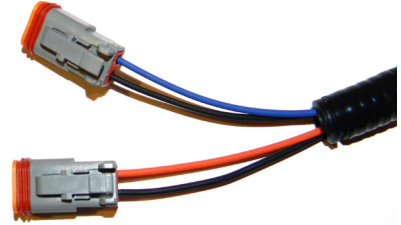
Multilink Connection

5. Connect Insight™ header harness to header side of multilink block.
 - The plug marked Y410/VS1 should connect to receptacle VS1
 - The plug marked Y401/VS2 should connect to receptacle VS2
 - Make sure Y424 (16 pin Round) is tied so that it is easily accessible when connecting/disconnecting the header
6. Connect Y111 and Y112 (Lights) together.
7. Connect Y407 and Y408 (Valve Functions) together.
8. Place Y424 near the Multilink so it can be easily accessed during header attachment.



Reel/Deck plate/Fold Valve Connection

9. There are two sets of solenoid connections, Reel Lift & Reel F/A (shown). Follow the steps below to correctly attach them.
 - Connect Y411 to the Reel Lift Solenoid
 - Connect Y412 to the Reel Lower Solenoid
 - Connect Y413 to the Reel Fore Solenoid
 - Connect Y414 to the Reel Aft Solenoid
10. If the function operates backwards, switch the appropriate set of connectors to the opposite valves (Y413<->Y414, or Y411<->Y412).



Reel Enable



This step is only applicable to Multilink assemblies provided by Headsight®.

1. To enable reel drive flow connect the mating 1p Weatherpack connectors, Y517 & Y518.



Header OEM Module

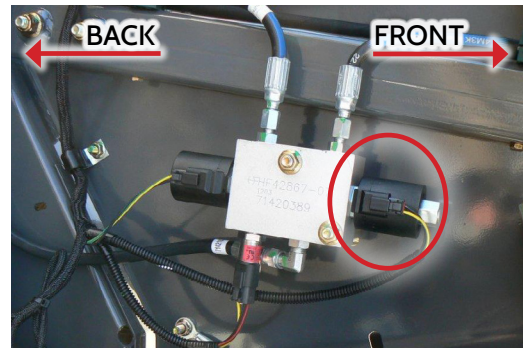
1. Make sure the OEM AHC module is connected correctly.
 - Just left of feeder, by single point storage plate
 - For Flex mode, the module must be connected to the OEM harness
 - For Rigid mode (drag rods) the harness must have the jumper installed
 - See your OEM AGCO header manual for more info.



Reel Lift Update

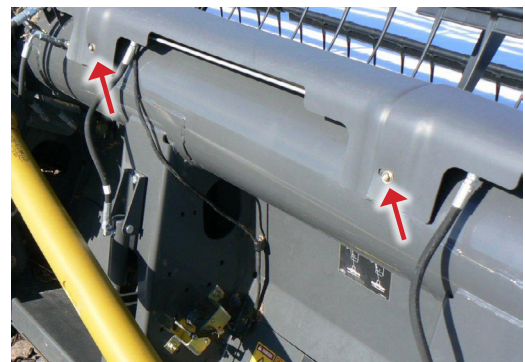
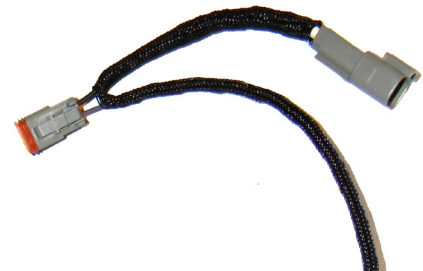
Reel Select Solenoid

1. Do the entire previous sections of installation.
2. Release all pressure from the reel & flex control circuit, if not already done.
3. Disconnect the OEM wiring connector from the Reel Selector Solenoid.
4. Remove the solenoid coil from the valve spool.
5. Carefully remove the OEM N.O. valve spool from the valve block and replace it with the included N.C. valve spool.
6. Reinstall the Reel Select solenoid on the new N.C. valve spool.
7. Do not reconnect the OEM wiring; see Reel Select Harness below.
8. Store the OEM N.O. valve spool for re-installation during trade-in.



Reel Select Harness

1. Connect Y540 to the reel select solenoid.
 2. Connect Y541 to the OEM reel select connector.
3. Route Y539 across the header with the other wiring and piping to the left side of the feeder.
 - To ease access, you may wish to remove the shields above the frame rail on the header from the left side of the feeder to the right end of the header

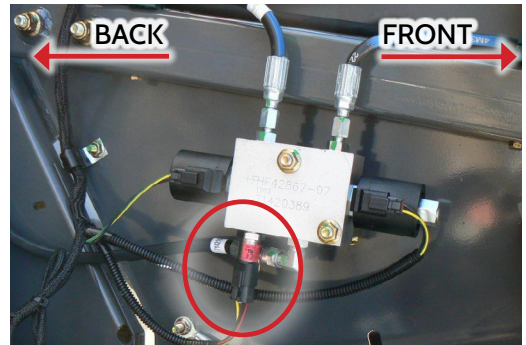


4. Connect Y539 to Y538 on the header adapter harness.
5. Coil up any excess under shields and reinstall all shields.



Pressure Shift Module

1. Disconnect the plug from the OEM pressure sensor on the diverter valve assembly.
2. Connect Y522 to the pressure sensor.
3. Connect Y523 to the OEM connector.



This module increases the pressure “signal” by about 500psi, so the Flex Controller will display higher than actual pressure. This is necessary to adjust the Dynaflex pressure sensor into the right range for the display.



Combine Installation

In-cab Controller

1. Use the included suction mount to attach the Cab Controller to the right cab window above the console. Place it in an easy to see and reach location.



Feeder Harness

1. Open the Right hand Console inside the cab (bolt under Cebis monitor.)
2. Route the 12 pin connectors Y225 and Y534 of the Feeder Harness up into the cab using the access point on the floor of the console housing.
3. Route the harness across under the cab and down the Multilink Pigtail.
 - Making sure to leave sufficient wire to connect to the header harness,
 - Use zipties to secure harness away from moving parts
4. Route the feeder harness Y225 out the back of the console and connect Y225 into the Hydrflex controller firmly (until latch clicks.)
5. Connect Y534 to the switch kit harness (coil excess wire under console.)
6. Attach the Feeder Harness Y423 to Y424 at the Header Adapter.

Reel F/A Switch Kit

1. Follow the instructions in the F/A Switch Kit Installation manual to mount and connect the switch for Reel F/A.
2. Connect the included power wire inside the console.
 - Connect the red wire to a 30A capable 12V source--battery or switched
 - Connect the black wire to a clean frame ground bolt
3. Coil the harness in the cab to connect to the Feeder Harness installed below.



Pressure Sensor Bypass Harness (4/500 Only)



Many Headsight systems require the use of a Pressure Bypass Harness. This is needed for OFF-GROUND height control only. When operating in Flex Mode, this wire does not need to be installed. If already installed, the 2 pin jumper plug must be installed in Headsight pressure sensor harness when Insight™ is disconnected, such as when a flex head is being operated.

1. Do not use the pressure bypass with the 600F or 600FD headers operating “On-Ground” in Flex mode.
2. If the Pressure Bypass is installed for another application, make sure the Y402J jumper plug is installed when operating the 600F/FD in flex mode.





The Dynaflex uses up to 6 height sensors for active height control. These sensors may not be factory calibrated. Proper operation of the header requires that these sensors be set correctly.

- Failure to properly adjust these sensors could result in severe damage to the header!
- A Sensor Tester and adapter are included to simplify this process.



The sensors must be calibrated before using the header, and once yearly thereafter. Off-ground (rigid) sensors (if equipped) should be calibrated in a similar fashion.

1. Before starting, test the Sensor tester.

- Using a scrap wire, short the Pink and White wires together in the blue tester plug
- The tester should read 4.9-5.1V
- If reading is $< 4.8V$, change the battery

2. Connect the Agco Adapter to the blue connector.

3. Flex Sensors: Lower the header all the way down on a level surface, preferably flat concrete.

4. Rigid Sensors (If equipped): Depress sensors fully against bottom of head.

5. Disconnect the OEM harness from each sensor.

6. Connect the Sensor Tester adapter to the sensor.

7. Adjust all sensor linkages for proper operation

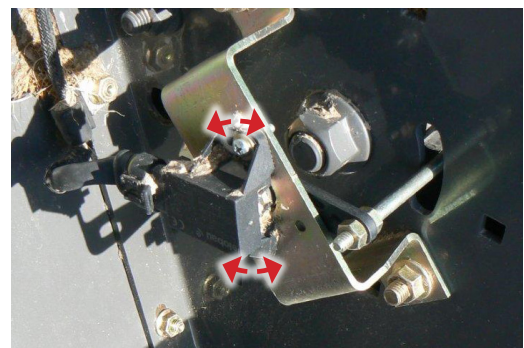
- Make sure the sensor linkages move freely
- If not, adjust brackets/ sensors until the arm does not bind
- Later models add a “down pressure” spring to the sensor bolt. This is a worthwhile upgrade.

8. Adjust all sensors so they read between 1.0 and 1.2V.

- Loosen 2 bolts and rotate sensor until desired voltage is reached
- Tighten bolts
- Make sure sensor linkage still moves freely

9. Reconnect the OEM harnesses to all the sensors.

Note: The sensor tester can be used to test any 3 wire potentiometer or 5V analog sensor with appropriate adapters: Call Headsight® for more information.



Setup Insight[®] Box



These steps must be performed the first time the Insight box is powered up and each time it is reset. They do not need to be redone each time the Insight box is calibrated. Read the Insight Overview section for basic information about how to use the Insight box.



1. Connect all wiring to Insight box and combine as described in previous section.
2. Start Combine.
3. On the Insight box.
 - Choose language
 - Choose “LEXION”
 - For all Flex conversions, Choose 6/700 even if the combine is a 4/500.
 - Choose the number of height sensors
 - For Agco Dynaflex, choose 2
 - The OEM Agco module combines the multiple sensors to only 2 inputs

Calibrate Insight



When you initialize Insight, you will be led directly to this calibration routine. If you wish to recalibrate at any time - select “>>Perform Calibration” on the Insight main menu.

Standard Calibration

1. Park the combine on a smooth, level surface - preferably a cement driveway or shop floor.
2. Follow on-screen instructions.
 - “Raise Header”
 - Raise head so header is completely clear off the ground
 - Sensor voltages should be 3.0-4.5V
 - Press  enter
 -
 - “Fully Lower Header”
 - Lower head fully down all the way on the skids
 - Sensors voltages should be 1.0-2.0V
 - Press  enter
 - Go to model-specific Combine Ground Calibration section of this manual



If an error appears on the Insight box - see the Diagnostic section of this manual.

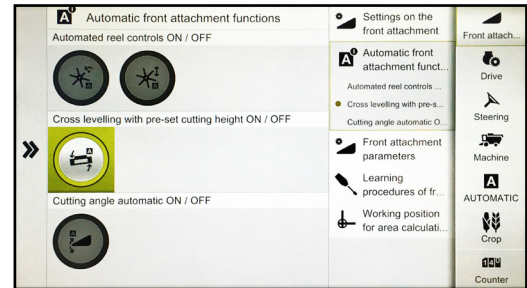
Combine Calibration: 8000 Series



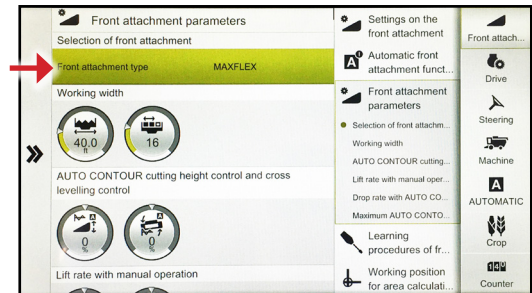
Note: Calibrations and parameter adjustments are only available in Expert/Professional mode on the 8000 series Cebis system. If you do not have these settings, check the Mode.

Setup

1. Choose “Front Attachment”
2. Choose “Automatic front attachment functions”
3. Turn ON “Cross levelling with preset cutting height”

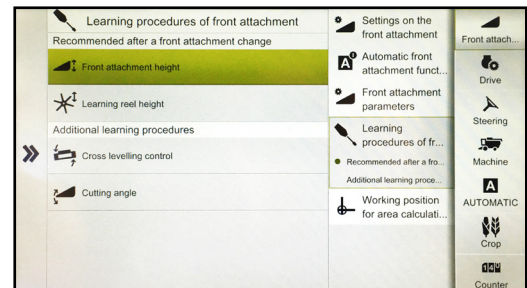


4. Choose “Front Attachment Parameters”
5. Select the Front attachment type
 - Choose the most relevant type of header from the list
6. Select other relevant setup for the header under “Settings”
 - Width, rows, etc.




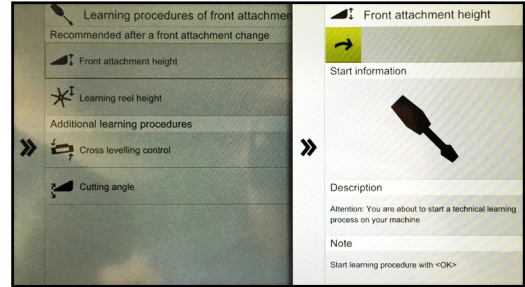
Calibration


1. Choose “Front Attachment”
2. Choose “Learning Procedures”
3. Choose “Front attachment height”
4. Prep combine
 - Engine running
 - Header raised
 - Thresher engaged
 - Feeder engaged
 - Throttle wide open



5. Perform the “Front attachment height” calibration.

- Press OK  to start calibration
- Follow the instructions on-screen
 - Press and HOLD the selected function until instruction changes



6. Tap  to close calibration screen

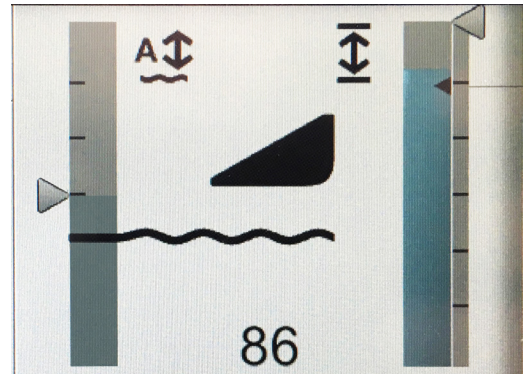
7. After calibration, the right bar graph should read 0-100 as the head is moved full stroke.

8. Reading the left graph:

- Below the heavy divider is the header lift pressure
- Above the line is the header AHC sensors.

9. After calibration, the left graph should read:

- 0 with the head all the way down.
- At the line as the header frame begins to lift off the ground
 - On spring mounted heads such as the MacDon, this can vary somewhat
- At the top of the graph as the header sensors (or cutterbar) clear the ground



10. If the numbers on the graphs are close to this, the calibration is good.





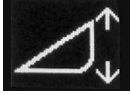

The graphs may not respond exactly as noted for all heads and types. If the AHC appears to work correctly, the system can still be considered properly set and calibrated.

Combine Calibration: 600 & 700 Series



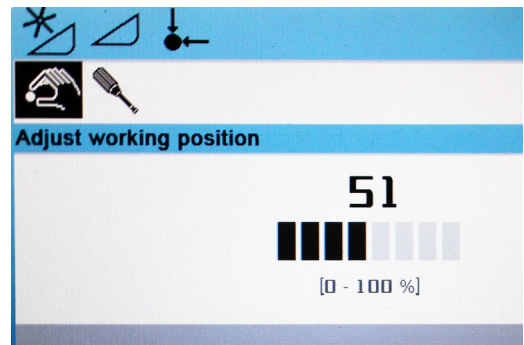
To ensure a proper calibration, make sure your combine has the latest Lexion recommended software and the feeder to header latching mechanism is tight with minimal play. See Appendix for more information.

1. Start combine.
2. Use the Scroll knob and ESC to navigate the menus as shown:
3. Get to the HHC “Learning End Stops”.

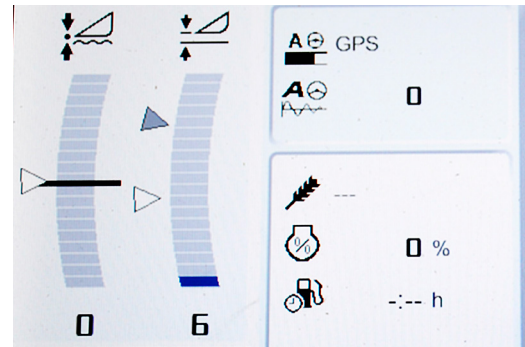
- Choose  on the main display - Press the Scroll knob to OK
- Choose  - Press OK
- Choose  - Press OK
- Choose  - Press OK



4. The screen should read “Start learning procedure with “OK””.
5. Follow the on-screen instructions.
6. You may also wish to calibrate other relevant items such as “Lateral Float End Stops” and “Deck Plate End Stops”. See your Lexion Owners’ Manual.
7. Also adjust working position to about 50%.



8. After calibration, the right bar graph should read 0-100 as the head is moved full stroke.
9. Reading the left graph:
 - 0-49 is the header lift pressure
 - 50-100 is the header AHC sensors.
10. After calibration, the left graph should read:
 - 0 with the head all the way down.
 - 50 as the header frame begins to lift off the ground
 - On spring mounted heads such as the MacDon, this can vary somewhat
 - 100 as the header sensors (or cutterbar) clear the ground
11. If the numbers on the graphs are close to this, the calibration is good.




The graphs may not respond exactly as noted for all heads and types. If the AHC appears to work correctly, the system can still be considered properly set and calibrated.

Combine Calibration: 400 & 500 Series


1. Start combine.
2. Make sure that the Headsight Bypass harness is either not installed, or is disconnected from the header harness and has the Y402J jumper in place.
3. Set "Sensitivity CAC".



- Choose  on the harvest display – Press OK
- Choose "Header" – Press OK
- Choose "Sensitivity CAC" – Press OK
- Adjust setting as suggested for a flex platform in the Lexion Owner's Manual.
- Increasing the setting should weight height over tilt

4. Engage the thresher and header clutches.
5. Raise head almost up, and speed up motor.

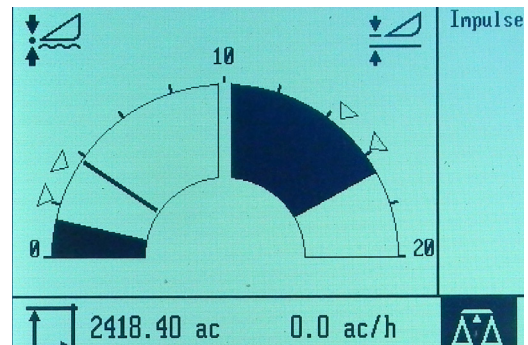


6. Choose  on the harvest display – Press OK.
7. Choose "Header" – Press OK.
8. Choose "Cutt. Height Limits" – Press OK.
9. Follow on-screen instructions.
 - Raise header / Lower header, etc
 - If head drops too fast, see Operation section of manual

10. (All) After calibration, the right bar graph (feeder position) should read "empty" to "full" as the feeder is moved full stroke.

11. After calibration, the left graph should read:
 - Nearly "empty" with the head all the way down.
 - Nearly "full" as the header sensors (or cutterbar) clear the ground

12. If the graphs operate as suggested, the header sensors are working properly and the calibration is good.




The graphs may not respond exactly as noted for all heads and types. If the AHC appears to work correctly, the system can still be considered properly set and calibrated.


Settings

Insight Settings

Tilt Sensitivity

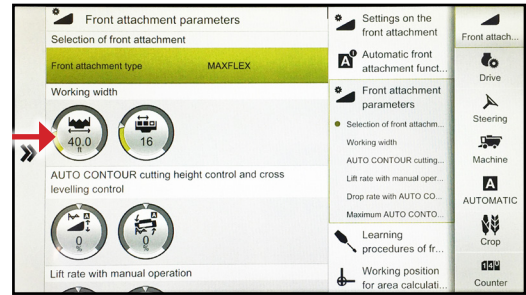
1. To change this setting go to >>Settings>>Tilt Sensitivity in the Insight™ box.
 - Default setting is 50.
2. Adjust combine Tilt Sensitivity first (when available.)
3. If the head is to jumpy from side to side:
 - Decrease sensitivity
4. If you would like the head to be more responsive:
 - Increase sensitivity
5. Press  Enter to save value

Tilt Balance

1. To change this setting go to >>Settings>>Tilt Balance in the Insight™ box.
 - Default setting is 100
2. Make certain ALL other possible causes of head running out of level are eliminated first:
 - Insight/sensors not calibrated on flat level surface
 - Combine not calibrated on same surface as Insight
 - Header float not equal across head. Cutterbar should move the same travel at both ends.
3. If the head will still not run level:
 - Increase value to tilt head to right.
 - Decrease value to tilt head to left.
 - Press  Enter to save value
4. This setting must be reset to 100 every time before doing a combine header calibration.


Combine Settings: 8000 Series

1. Choose “Front Attachment”
2. Choose “Front Attachment Parameters”
3. Select the desired adjustment
 - If you can not adjust these, see warning about Cebis Mode in Combine Calibration: 8000



4. Adjust Settings as needed during operation.
 - Drag caret or tap +/- to change setting
 - All Settings have a range of -50 to +50



- Press Enter  to save setting
- Note: the value must be “entered” before taking effect



Cutting Height Control

- Height sensitivity.
- Adjust to just below the point the head will “hunt”.
- Suggested initial setting: 0-10

Cross Leveling Control

- Tilt Sensitivity
- Adjust to just below the point the head will “rock” side to side
- Suggested initial setting: 10-20

Manual Raise Rate

- Adjust to 5-6 seconds full down to full up.
- Suggested initial setting: 40

Manual Lower Rate

- Adjust to 8-10 seconds full up to full down
- Suggested initial setting: 0

Drop Rate with AUTO CONTOUR

- Adjust slow enough to eliminate “hunting”.
- Suggested initial setting: -40



Combine Settings: 600 & 700 Series




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

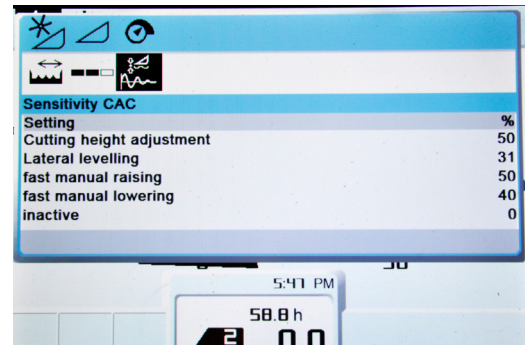
1. Perform “Learning End Stops” calibration before attempting fine tuning.
2. Start combine.
3. Use the scroll knob and ESC to navigate the menus as shown:
4. Get to the HHC “Sensitivity CAC”.

- Choose  on the main display – Press the Scroll knob to OK

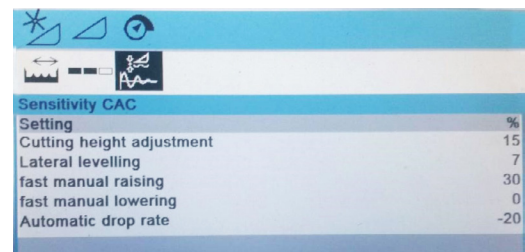
- Choose  – Press OK

- Choose  – Press OK

- Choose  – Press OK




5. All Settings have a range of -50 to +50.
6. “Cutting Height Adjustment” is actually height sensitivity. It should be adjusted just below the point the head will “hunt”.
7. Adjust the “Lateral Leveling” to increase/decrease lateral response. It should be adjusted just below the point the head will “rock” side to side.
8. Set “fast manual raising” to 5-6 seconds full down to full up.
9. Set “fast manual lowering” to 8-10 seconds full up to full down.
10. Set “Automatic Drop Rate” slow enough to eliminate “hunting”.
11. Suggested starting values are shown at right. Your values may vary.
See your Lexion Owner’s manual for more information.



Combine Settings: 400 & 500 Series



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

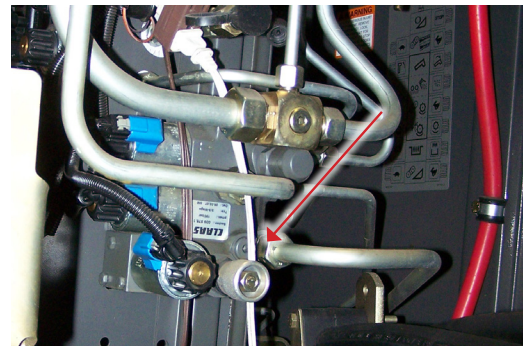
1. Perform “Cutting Height Limits” calibration before attempting fine tuning.
2. Set CAC setting.
 - For on-Ground operation of a flex head:
 - Do not install the pressure bypass
 - Adjust the CAC to an appropriate setting exactly as if you were operating a Lexion header (see Lexion Owner’s Manual)
3. Choose  on the harvest display – Press OK.
4. Choose “Header” – Press OK
5. Choose “Sensitivity CAC” – Press OK
6. For off-ground sensing only (corn or wheat sensors): change setting to:
 - 50% for Type 1: 400 & Type 2: 500S combines with lift springs (Do not adjust)
 - 61-100% for Type 3: 500A & Type 4: 500U combines with lift accumulators

Raising the Sensitivity CAC will make the system more responsive.

- Always redo “Cutting Height Limits” calibration after changing Sensitivity CAC. Insight must be in >>Setup >>Combine Cal Mode.

4/500 High Speed Drop Rate

1. Use the high speed drop rate valve adjustment knob on the main valve block (indicated by arrow.)
 - Turn OUT (counterclockwise) to slow down, IN (clockwise) to speed up.
 - If the speed is too fast, hunting will occur.
 - If the speed is too slow, the system will not be responsive enough.
2. Common range is 8-10 seconds from header full up to full down in automatic mode.



Operation



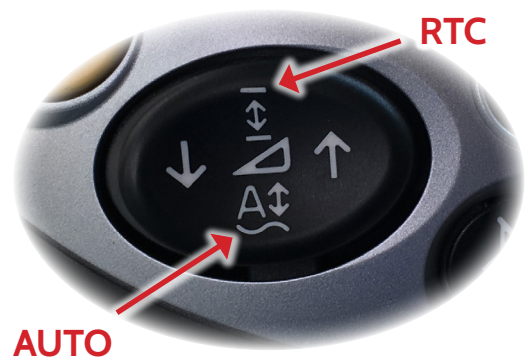
Operate the Headsight system exactly like you would use a Lexion system. Further details may be found in the combine operator's manual.

8000 Series

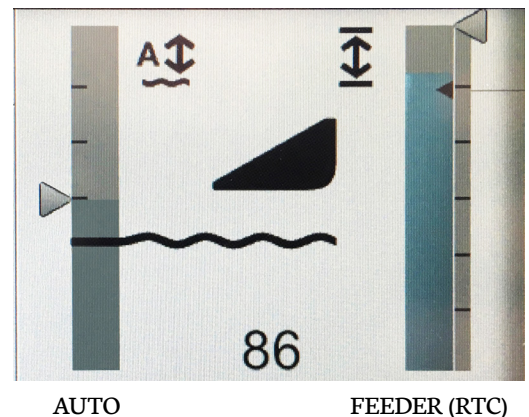
1. Engage header and separator clutch



2. Press Auto (A w/wavy line) to enter AHHC.
 - Press again to switch setting.
 - For all heads with height sensors on the head
3. The top button (arrows to lines) is "Feeder Position" (Return to Cut or RTC).
 - For heads with no height sensors,
 - To raise the head to a preset height at headlands



4. Choose desired cutting height setpoints
 - Manually lower the head to the desired cutting height
 - (Must be within the sensor travel range)
 - Press and hold **AUTO** button until the caret resets to the top of the colored bar in the left graph (Active Header Height)
 - Tap button once and redo above to set a 2nd position.
 - The "greyed" caret is selected.
 - To set a "feeder position," press and hold the **RTC** button until the caret resets to point to the top of the dark bar in the right graph (feeder position)
 - Tap button once and repeat to set a 2nd position.
 - The "greyed" caret is selected.



4/5/6/700 Series

1. Engage header and separator clutch
(700 Series shown, 400 & 500 similar.)



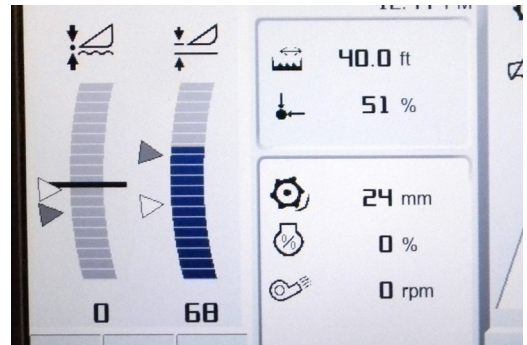
2. Press left side of header raise/lower button to enter AHHC. Press again to switch setting.

- The “Left Side” button (arrows to dot) is Active Header Height (AHHC).
 - For all heads with height sensors on the head
- The “Right Side” button (arrows to lines) is “Feeder Position” (Return to Cut or RTC).
 - Only for heads with NO height sensors,
 - Or to raise the head to a preset height if needed.



3. Choose desired cutting height setpoints (700 Series shown, 400 & 500 similar.)

- Manually lower the head to the desired cutting height
 - (Must be within the sensor travel range)
- Press and hold the AHHC (left)button until the caret resets to the top of the dark bar in the left graph (Active Header Height)
 - Tap button once and redo above to set 2nd position.
 - The “greyed” caret is selected.
- To set a higher “feeder position,” press and hold the RTC (right) button until the caret resets to point to the top of the dark bar in the right graph (feeder position)
 - Tap button once and repeat to set 2nd position.
 - The “greyed” caret is selected.



Adjusting Float Pressure



The pressure changes fairly slowly. Hold the Increase or decrease button for 5-10 seconds to see if pressure changes.

1. To increase the pressure, press and hold the Increase pressure button



2. To decrease the pressure, press and hold the Decrease pressure button

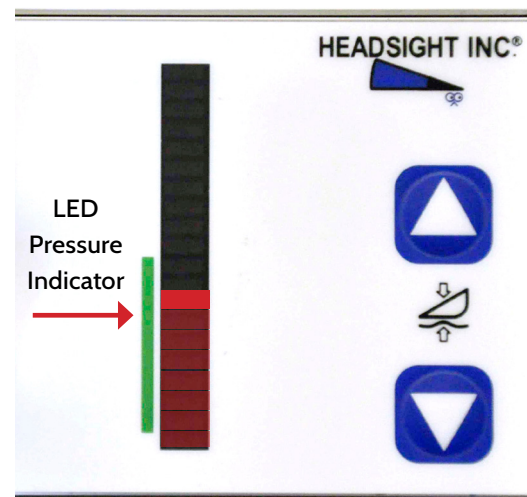


3. The LED pressure indicator shows the approximate pressure in the float system. The green sidebar shows the normal operating range of the header in flex mode.

- Running near the bottom of the green area means MORE ground pressure (less hydraulic pressure holding up the cutterbar). Use this area for dry, hard conditions.
- Running near the top of the green area means LESS ground pressure (more hydraulic pressure holding up the cutterbar). Use this area for wet, soft conditions.
- Raising the pressure all the way up should “lock up” the cutterbar for rigid mode.

4. The Hydrflex heads are designed to run low. Set the Height point to about 15-25% of the height range, and use the pressure adjustment to keep the head from dragging up.

5. The LED pressure indicator can also show the deck plate position on a corn head if the header is equipped with a Headsight conversion and deck plate sensor.



Adjusting Header F/A Pitch

1. Use the Reel F/A switch on the Hydro Handle





Adjusting Reel F/A

1. Use the new rocker switch installed by the dash





Insight® Navigation

How to Navigate



When in a menu (selection arrow appears to left side)

-  Enter: chooses the selected menu choice
-  Esc: backs up one menu level
-  Up: moves up within the menu choices displayed
-  Down: moves down within the menu choices displayed

When in a screen which allows setting of parameters

-  Enter: saves value and exits to menu
-  Esc: backs up to last menu level without saving
-  Up: increases the value
-  Down: decreases the value

Meaning of Status Light

- Solid Green:
 - System is operating
 - No errors detected
- Solid Red:
 - System is NOT operating
 - No height or tilt signals are sent to combine
 - You have changed settings which require calibration of Insight, are currently in a menu which will force a calibration if you make any changes, or are in calibration mode
-  Solid Green with Flashing red:
 - System is operating
 - An error has been detected
 - Repair problem then clear errors
-  Flashing Red:
 - System is operating
 - A sensor has been ignored
 - See note in Troubleshooting by Error - ER16
 - Repair system - Recalibrate Insight

Screen Contrast Adjustment

To change contrast:

- Press and hold Esc  +  Up or  Down to increase or decrease contrast



Resetting Insight[®] to Defaults

To reset all settings hold  +  for 5 seconds

Updating Insight[®] Software with USB Drive



Updating software may cause the Foresight option to be disabled. If you have purchased Foresight, contact Headsight before updating software.

1. You will need:
 - USB drive
 - Means of loading USB Stick (computer with USB)
2. Load USB drive with new software files.
 - Place insightf.hex in the root directory of USB drive (ex. E:\insightf.hex)
 - Do not change file names
3. If you do not have the new files you may:
 - Download updated software from www.headsight.com
 - Order pre-loaded USB drive from Headsight, Inc.
4. Remove cap from USB on front of Insight controller.
5. Insert USB drive card into USB slot on front of Insight.
6. Power Insight.
 - Turn on key switch
7. Wait for software to download.
 -  Yellow light will blink while download is in progress
 -  Green light will turn on solid when download is complete
8. Verify update is successful.
 - Go to >>About Insight>>Software Version and read software version number
9. Remove USB drive.
10. Install cap on USB on front of Insight controller.
11. Remove power from Insight.
 - Turn off key

Advanced Information

Theory of Operation

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

1. Each sensor returns a variable voltage depending on header height.
 - High header height = high voltage (approximately 4 volts)
 - Low header height = low voltage (approximately 1 volt)
2. Each sensor has 3 wires:
 - black or lt blue= ground
 - white = signal returned to combine (varies 1-4 volts)
 - green or pink = 5 volt power
3. The Insight box (if equipped) adjusts signals as needed then sends them to combine using the same combine wiring as OEM system would use.
 - All sensors are scaled to an appropriate range for combine
 - Insight will reverse the direction of swing if needed
 - Insight box reads all sensors and sends signals to combine that will cause appropriate height and or tilt response
 - If Foresight is enabled - the Insight box magnifies the voltage change below the point where the snout tips touch the ground
4. The voltages the combine sees are similar to what it would see with an OEM system.
All existing combine controls and settings may be used.

Basic Requirements



Each sensor must meet basic requirements for the combine to accept the calibration. If any sensor does not meet the requirements below, you must correct it and then recalibrate the Insight box.

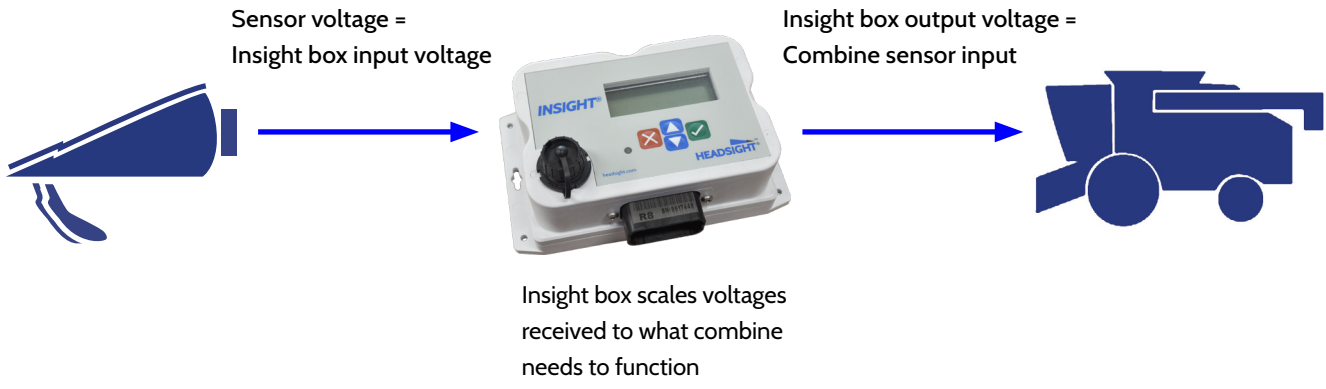
- See the header manual for sensor adjustment instructions.
- Sensor output voltage must always be between .3 and 4.7 volts.
- Sensor output voltage must change more than 1.0 volts from raised to lowered position for each sensor.

Reading Voltages

Before you Start



The Insight box can display both the input voltages it receives from each sensor and the output voltages it is sending to the combine.



On the Insight[®] Box : Sensor Voltages

1. From main menu, go to >> Diagnostics>>Display Voltages

- This shows real-time voltage coming from each sensor.

```
L LC CTR RC R  
0.0 0.0 0.0 0.0 0.0  
Sensors^ L C R  
Outputs> 0.0 0.0 0.0
```

2. For more information about sensor history and status see >>Diagnostics>>Detailed Diagnostics>>(parameter of interest)

- Sensor = signal from sensor in volts
- Max = the maximum voltage sent to Insight box from sensor since last calibrated
- Min = the minimum voltage sent to Insight box from sensor since last calibrated
- Enabled = is this sensor enabled to control height? Yes or No
- SetH = the “header raised” voltage set-point recorded during calibration
- SetL = the “header lowered” voltage set-point recorded during calibration
- Reversed = is the polarity of this sensor reversed? Yes or No

```
Left Sens =0.00V  
Max=0.00V SetH=5.00V  
Min=0.00V SetL=0.00V  
Enabled=N Reversed=N
```

On the Insight[®] Box : Output Voltages

1. From main menu, go to >> Diagnostics>>Display Voltages

- This shows real-time voltage sent to the combine
- 1.0V with head fully lowered
- 4.0V with head raised

```

L   LC   CTR  RC   R
0.0 0.0  0.0  0.0  0.0
Sensors^
Outputs> 0.0 0.0 0.0
  
```

2. Alternately: From main menu, go to >> Diagnostics>>Detailed Diagnostics>> (parameter of Interest).

- Shows actual voltage being sent to the combine.
- Available selections depend on combine model

```

Pressure/aux Sensor
->Left Height Out
Right Height Out
Sensor Status
  
```

3. Left Height Output = X.XVolts

- 1.0V with head fully lowered
- 4.0V with head raised

```

Left Height OUTPUT
      =1.00V
Range = (1.0v-4.0V)
  
```

4. Right Height Output = X.XVolts

- 1.0V with head fully lowered
- 4.0V with head raised

```

Right Height OUTPUT
      =1.00V
Range = (1.0v-4.0V)
  
```

In Combine

5. You must have a service tool plugged into the diagnostic ports to read voltages on a Lexion combine.
6. To visually determine if the sensor voltages are getting to the combine, watch the left bar graph on the display while raising and lowering the header. See the appropriate "Combine Calibration" section for details.

12V Power Test



Complete the tests below to determine if you need to do the update.
(Update should be very rare.)

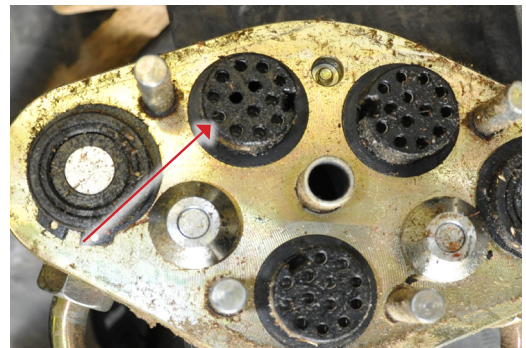
1. Turn on engine. Make sure the roading switch is in field mode.

- If the Insight or Horizon box turns on - You do not need to install the power wire. - Go to next section.
- If the Insight or Horizon box does not turn on - Make sure the Adapter harness is plugged into VS2. Then continue with step 2.



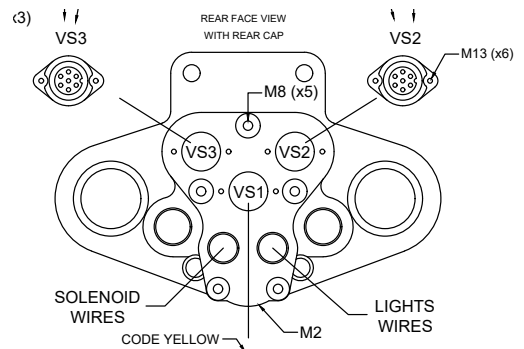
2. Disconnect the Combine Multilink and use a voltmeter to measure pin 9 of the B housing on the Combine Multilink.

- There is no 12V on pin B9
 - Find and repair 12V supply problem on combine (most likely issue!)
- There is 12V on pin B9
 - Go to Step 3.



3. Connect the combine multilink to the header, and start the engine. Measure power on VS2, pin 6.

- There is 12V on VS2, pin 6
 - STOP. Do NOT disassemble multilink. Check for Insight adapter harness fault.
- There is no 12V on VS2, pin 6
 - Repair the Internal multilink power wire



600 & 700 Series Calibration Issues

Symptom

When the CAC system is engaged, the header dives into the ground, then recovers to the preset height.

Cause

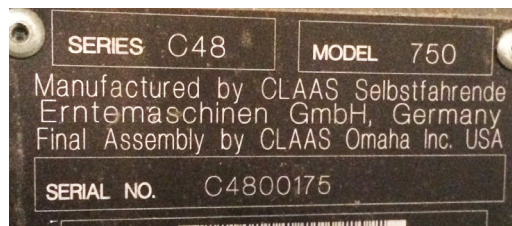
For machines with 2011-2014 OEM Lexion software, play in the connection between the header and feeder house can cause the calibration process to not work correctly. If your feeder can drop more than 1/2" after the header solid frame (not flex cutterbar skids) touches the ground, it is recommended that you use one of the two following solutions.

Stubble stompers mounted so they contact the ground during calibration can also cause this issue.

Solutions

Solution 1 – s/n C67, C68, C69

6/700 series combines with SN's starting with C67, C68, or C69 and later should have the software updated to at least VBM 3.6.3 to eliminate this issue. For earlier machines, see solution 2.



| Information about version | |
|---------------------------|----------|
| ECU | Software |
| CEBIS | 3.0.0 |
| VBM | 1.4.3 |
| OPM | 3.2.0 |
| WLP | 2.0.6 |
| ATP | 1.2.4 |

Solution 2 – Earlier Models

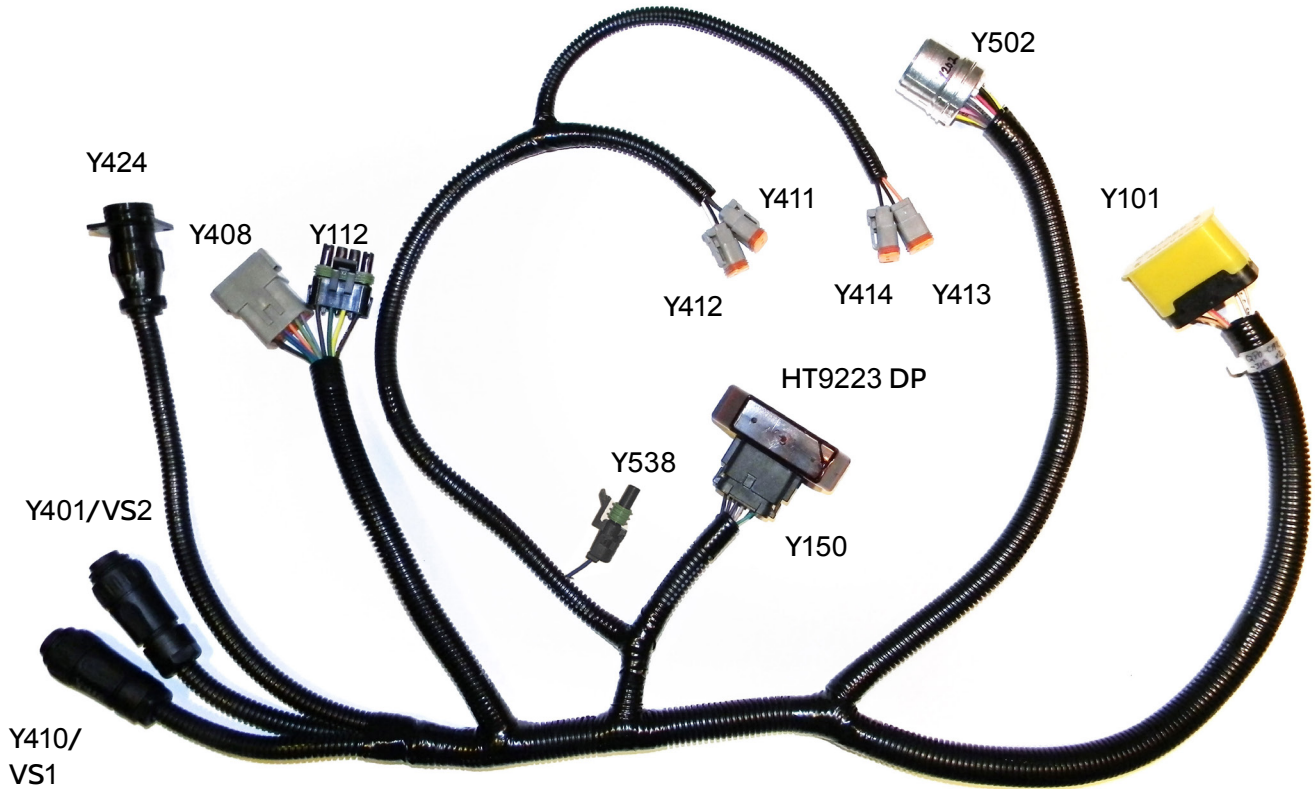
- Note: this procedure works for all 6/700 combines on all headers.
- Remove or chain up any stubble stompers so they do not carry header weight during calibration.
- Use blocks under the feeder faceplate to stop further movement downward during the calibration process.
 - The block height should be enough to stop the feeder just as the solid frame of the head contacts the ground (not flex cutterbar skids). See arrows.



Harness & Connector Guide

QP0-CA12-31A - Header adapter harness

Advanced Info



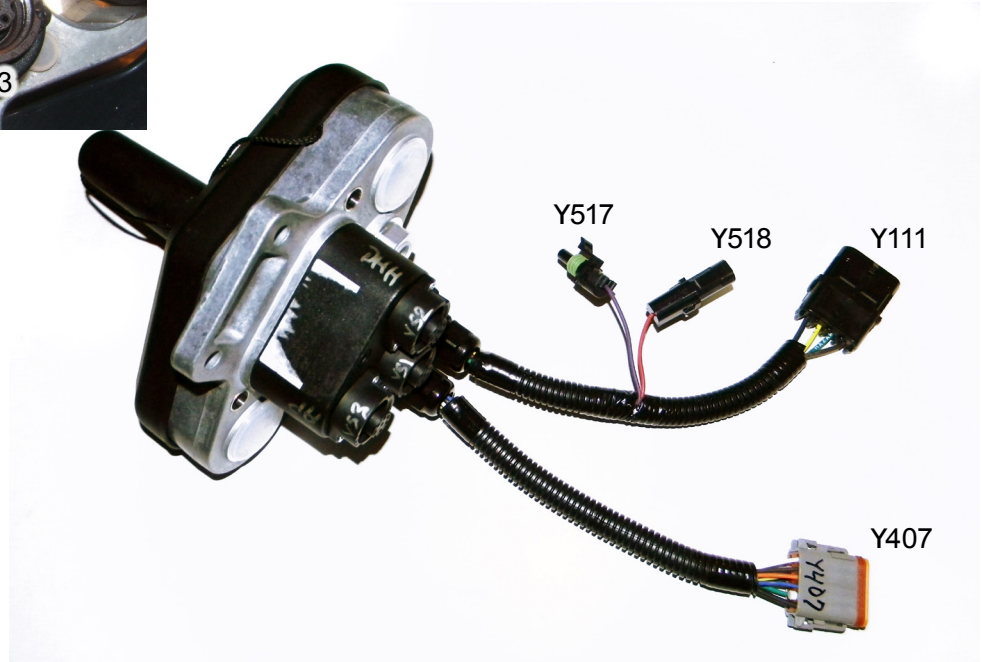
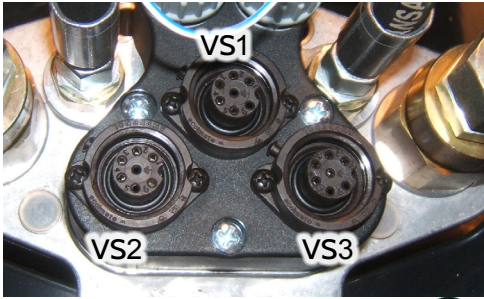
| <u>Connector</u> | <u>Description</u> | <u>Connects to</u> |
|------------------|--------------------|--|
| Y502 | 31 pin Deutsch | Header Connector – Header Single-Point |
| Y112 | 4 pin WP | Multilink: Y111 Lights |
| Y424 | 16 pin Amp CPC | Adapter Feeder Harness |
| Y101 | 24 pin DT | Insight™ Control box |
| Y150 | 12 pin DT | Diode Module (HT9223 DP) |
| Y408 | 12 pin DT | Multilink: Y407 Valve Functions |
| Y401/VS2 | 7 pin C016 (AHC) | Multilink: VS2 |
| Y410/VS1 | 7 pin CO16 (REEL) | Multilink: VS1 |
| Y411/2 | 2 pin DT set | Reel Lift Solenoids |
| Y413/4 | 2 pin DT set | Reel F/A Solenoids |
| Y538 | 1 pin WP | Reel Select harness |

HT9817-FH - Feeder harness



| <u>Connector</u> | <u>Description</u> | <u>Connects to</u> |
|------------------|--------------------|------------------------|
| Y423 | 16 pin AMP CPC | Header Adapter Harness |
| Y225 | 12 pin DT A code | Hydraflex Cab Control |
| Y534 | 2 pin WP | Reel F/A Switch |

CA500ML - Multilink



| <u>Connector</u> | <u>Description</u> | <u>Connects to</u> |
|------------------|--------------------|------------------------|
| VS1 | Reel Sensors | VS1/Y410 (If equipped) |
| VS2 | AHHC | VS2/Y401 |
| VS3 | AutoPilot | VS3/Y409 (If equipped) |
| Y111 | Lights | Y112 |
| Y517 | Reel Drive | Y518 |
| Y518 | Reel Drive | Y517 |
| Y407 | Valve Functions | Y408 |

Diagnostics



Before working on combine or under 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. Turn off combine and remove key from ignition.
5. Disconnect all drive shafts from the header.



Troubleshooting Overview

Several Troubleshooting Sections are available, depending on the type of problem or symptoms.

1. Troubleshooting -Sensors & Harnesses

- Use this section to troubleshoot a specific sensor that is not working or out of adjustment.
 - Diagnostics are general for typical sensors...may not apply exactly to OEM JD header sensors
- Typical symptom:
 - Sensor fault code displayed - example: "Err XX, Left sensor > 0.3V"

2. Troubleshooting by Symptom

- Use this section to diagnose poor operation symptoms
 - May not be accompanied by an Error message or Fault Code
- Common Combine Problems
- AHHC Diagnostics
- Lateral Tilt Diagnostics

Troubleshooting—Sensors and Harnesses



To properly test the wiring and sensors on the header, follow the steps below in order. Use a Volt Meter as needed.

The sensor connector pattern is as follows:

- Pin A is Ground (Black or Lt Blue)
- Pin B is Signal (White)
- Pin C is 5V (Green or Pink)



A very common problem during install is to reverse the wires at the connector after removing the plug to route the cables. Make sure that the wires/voltages are as shown. If A & C are reversed, the sensor output voltage will be 4.7V and not change.

The following requirements must be met before testing:

- Key on, combine engine running
- Header connected

| Symptom | Problem | Solution |
|---|--|--|
| Bad Harness Wiring Disconnect Sensor Plug (Measure voltage on harness plug at sensor) | Measure C to Frame Ground Voltage should be 5V | If not, check harness for continuity or short on 5V wire Check Combine 5V source |
| | Measure C to A Voltage should be 5V | If not check harness for continuity on ground wire Check combine sensor ground source |
| | Jump C to B in harness plug Voltage should be 5V (For Insight systems, see “Diagnostics/ Display Sensor Voltages”. For all others, use Combine Diagnostics*) | If not check signal wire for broken harness or bad connection |
| | All of the above are correct | Harness & combine connections pass test. |
| If you have a Headsight Sensor tester, use it to test the sensor. For all other: | Verify sensor is connected to extension harness Sensor voltage should be 0.5- 4.5V (For Insight systems, see “Diagnostics/ Display Sensor Voltages”. For all others, use Combine Specific Diagnostics) | If sensor cannot be adjusted to achieve a voltage within the range, replace sensor. |

Troubleshooting by Symptom

Nearly every problem with the header control system may be resolved by one of the following simple steps:

- Make sure each sensor meets basic requirements discussed in Advanced Info section
- Properly calibrate Insight box
- Properly calibrate combine AHHC (“Header Cal”)
- Enable appropriate AHHC functions on combine
- Properly set combine electronics and/or hydraulics

Sections

- Insight Status Light Diagnostics
- AHHC Diagnostics
- Lateral Tilt Diagnostics
- Reel/Hydrflex Diagnostics

| Symptom | Problem | Solution |
|--|--|--|
| Insight Status Light Diagnostics (Status not green) | | |
| No light | Combine does not supply 12V to pin 4 of the Insight connector | Follow solution for problem: “No 12V power available on pin 4 of Insight plug” |
| | No Ground to Pin 6 of the Insight connector. | Check Grounds |
| | Insight defective | Replace Insight |
| Solid red | Wiring is not connected properly or calibration has not been completed | See Installation and Calibration sections of manual |
| Flashing Red or Green/Red | Insight box has detected an error | Correct problem, clear error codes, and recalibrate Insight box |

| Symptom | Problem | Solution |
|--|--|---|
| AHHC Diagnostics | | |
| No automatic operation height or tilt (If the Insight box does not have a green status light, go to "Insight Status Light Diagnostics") | Wiring is not connected properly, or calibration not completed | Check wiring from sensor to combine, complete Combine AHHC calibration |
| | Insight not set correctly | Check Combine selection |
| | Header control is not enabled with cab controls | See Operation section of this manual |
| | Sensors are out of range (Direct Wire Systems only) | Correct sensor voltages to between 0.5V < xx < 4.0V, low on ground. |
| | Power supply from combine less than 10V to Insight. | Roading switch on, set to field mode. See Installation, 12V Power Test |
| | Insight box/wiring failure | >>Diagnostics>>Detailed Diagnostics>>Left/Right Height Output 0.8-1.2V head fully lowered 3.8-4.2V sensors off ground |
| | Multilink wiring failure | Check AHHC sensor voltages in CEBIS (Lexion Service tool only) |
| | Combine Problem | Contact your Lexion Dealer |
| Header is too jumpy | Combine is improperly set | See - Setting section of this manual 4/500 Decrease Fast Drop 6/700 Reduce Auto Drop Rate Decrease sensitivity |
| | Insight or combine needs to be re-calibrated | See Calibration section of this manual |
| | Pressure Bypass installed when not needed. | See Installation. |
| Header responds to slowly | Insight or combine needs to be re-calibrated | See Calibration section of this manual |
| | Combine is improperly set | See - Setting section of this manual 4/500 Increase Fast Drop 6/700 Increase Auto Drop rate Increase sensitivity |

| Symptom | Problem | Solution |
|---|---|--|
| AHHC Diagnostics | | |
| Combine Header Cal Fails (Cutting Height Limits) or (Learning End stops) | Header not properly connected | Verify that Insight harness is attached to VS2, and Insight box has power. |
| | Insight Has Errors | Repair error, clear error codes Cycle key Recalibrate Insight |
| | OEM module not connected or defective | Test/connect OEM AHC module |
| | Insight Outputs are not correct | Recalibrate Insight on flat surface. |
| | >>Diagnostics>>Detailed Diagnostics>>Left/Right Height Output | Reset Insight: See Insight Overview for details |
| | 0.8-1.2V head fully lowered 3.8-4.2V sensors off ground | Insight defective |
| | Combine computer needs to be reset (4/500 Series only) | Disconnect header Multilink with key on, motor running. Turn off key/motor. Reconnect Header Turn on key, start engine. |
| Lift Pressure Sensor Error in combine (4/500 Series only) | Pressure Bypass Jumper not installed | Install jumper for flex headers |
| Cannot operate head low enough | Calibration not properly completed | Perform Insight and Combine calibration on flat level surface |
| | Special software needed | Contact Headsight regarding optional products Foresight and/or Feathersight |
| Cannot operate head high enough | Calibration not properly completed | Perform Insight and Combine calibration on flat level surface |
| Header works upward, then dives to ground . (400 & 500 Series only) | Slow Lower non-functional | Test combine manual slow lower mode. Turn OFF Thresher & Header Use RTC and AHC buttons to test slow raise/lower modes. Head should raise and lower slowly. If not, repair OEM header lift valve asm. |
| Header dives to ground and recovers entering crop | Lower Rate set too High | See Combine Specific Settings |
| | 6/700 Series: Too much play in feeder to header coupling | See Advanced Info>>600 & 700 Series Calibration Issues |
| Head Jumps and Jerks whole combine | Drop rate too fast | See Combine Settings section of this manual) |
| | Unopened accumulator | Open accumulator valve 1-2 turn |
| | Discharged accumulator | Test accumulator as described in combine owner's manual, replace or recharge as necessary |

| Symptom | Problem | Solution |
|---|--|---|
| Lateral Tilt Diagnostics | | |
| Height works but not Tilt | Increase Tilt Sensitivity. | >>Setup>>Tilt Sensitivity Increase Tilt sensitivity |
| | Rare combine problem | Call Headsight to increase Max Combine Tilt. |
| Head rocks back and forth | Tilt Sensitivity too high | Adjust sensitivity in combine >>Setup>>Tilt Sensitivity Decrease Tilt sensitivity Press Check |
| | Insight/Combine not calibrated properly (do Cal on flat surface) | See Calibration Section |
| Header tips wrong way (Once head is moved off level, it continues all the way in either direction) | Left and Right sensor reversed | Adapter harness miswired, contact Headsight |
| Head tips all the way one direction | Improperly adjusted sensors | Adjust the sensors to both be about 1-1.2V when sitting flat on the ground |
| | Poor connection | Check harness and connectors for cut/torn wire or loose terminals Make sure terminals are properly latched, not "pushed back", in connector body |
| | Sensor or harness fault | See Diagnostics: Sensor & Harness |
| | Insight box failure | >>Diagnostics>>Detailed Diagnostics>>Left & Right Height Outputs 1.0V head fully lowered 4.0V sensors off ground |
| | Multilink wiring failure | Check AHHC sensor voltages in CEBIS (Lexion Service tool only) |
| | Combine problem | Test combine on a different header |

| Symptom | Problem | Solution |
|-----------------------------------|---|--|
| Lateral Tilt Diagnostics | | |
| Header runs slightly out of level | Insight or combine not calibrated correctly | Recalibrate Insight and combine on flat surface |
| | Sensor physically misadjusted | Make sure both end sensors mount the same and are adjusted the same |
| | Header not adjusted correctly | <p>Make sure the frame to cutterbar float adjustment is the same across the width of the head</p> <p>Repair header float mechanism as needed</p> |
| | All the above fails to correct problem: | <p>>>Settings>>Tilt Balance</p> <p>Adjust balance to level Head</p> <p>(Must be reset to 100 before calibrating combine)</p> |

| Symptom | Problem | Solution |
|---|--|---|
| Reel/Dynaflex Diagnostics | | |
| Reel does not raise or lower | Wiring not connected properly | Verify that Y423-Y424 is connected at header to feeder Verify Y407 & Y408 are connected Verify Y411 & Y412 are connected to the correct solenoids |
| | Diode Module not installed | Make sure that HT9223 module is installed on Y150 |
| | Diverter valve on head not firing Diverter valve on head not replaced with NC valve, or HT9863-RS harness not installed Check for 12V at Reel Diverter valve | Verify that Y538 has 12V when either Reel raise or lower is pressed. Check for 12V at Reel Diverter valve when either Reel raise or lower is pressed. NC solenoid must be installed.. Test header harness |
| | Hydraulic problem on head | Check hoses for correct connection pattern Contact Agco service |
| | | |
| Dynaflex Control module does not light up | Harness not connected, or header not connected | Connect Y423 to Y424 at header , Connect Multilink See Installation |
| | Plug not seated | Make sure Y225 is fully seated in Dynaflex control module |
| | No 12V to Y225 | Check Y225 pin 6 (Red wire) |
| | NO Ground to Y225 | Check Y225 pin 5 (black wire) |
| | Defective Control | Call Headsight |
| Flex Pressure does not Increase (Can increase pressure by holding Reel Raise & Dynaflex Increase simultaneously) | Master valve not connected/firing | Verify Y408 pin 2 is 12V when either Pressure Increase or Decrease is pressed. Make sure the HT9223 module is installed on Y150 |

| Symptom | Problem | Solution |
|--|--------------------------------------|--|
| Reel/Dynaflex Diagnostics | | |
| Flex pressure does not Increase or decrease. (Cutterbar does not physically move if button held for > 1 minute) | Wiring not connected properly | Verify that Y423-Y424 is connected at header to feeder Verify Y407 & Y408 are connected Verify Y411 & Y412 are connected to the correct solenoids |
| | Diode Module not installed | Make sure the HT9223 module is installed on Y150 |
| | Plug not seated | Make sure Y225 fully seated in Dynaflex control |
| | Diverter valve on head not firing | Check for 12V at Dynaflex Diverter valve. Verify that Pin 27 of Y502 has 12V when either Dynaflex increase or decrease is pressed. Test header harness |
| | Hydraulic problem on head | Check hoses for correct connection pattern Contact AGCO service |
| | Defective control | Call Headsight. |
| Flex pressure bar graph does not Increase or decrease. (Cutterbar does physically move if button held for > 1 minute. | Defective pressure shift module | Temporarily remove module and reconnect OEM harness to sensor. If display works, replace module |
| | Defective Pressure sensor | Test/Replace sensor on header–See Agco Service |
| | Wiring on header bad | Test/Replace wiring on header–See Agco Service |
| | Defective wiring in Headsight System | Trace/repair wire from Y502, pin 30 to Y225, pin 1. See attached Schematics. |
| | Defective display | Call Headsight |

Troubleshooting by Insight® Error Codes

| Error Code | Problem | Solution |
|--|---|---|
| ER11 Left sensor signal less than 0.3V | Left sensor temporarily disconnected. | Repair wiring or bad connector Calibrate Insight Box Calibrate Combine |
| | Wiring open | Check sensor harness for pinched/ broken wiring |
| | Sensor failure | See sensor test instructions |
| ER12 Left sensor signal greater than 4.7V | Wiring problem | Ground wire to sensor is open Signal short to power Calibrate Insight Box Calibrate Combine |
| | Sensor failure | See sensor test instructions |
| ER13 Left sensor swing less than 0.6V | Left sensor mechanical range is restricted | Verify sensor is not obstructed in swing Verify sensor can collapse fully with header lowered Adjust down stop to allow greater range |
| | Sensor failure | See sensor test instructions |
| ER16 Left sensor expected but not detected | Left sensor not properly connected | Verify harness is connected to sensor 1 Verify harness is connected properly to control box harness Verify that signal wire (Pin B white wire of sensor cable) is connected to PIN7 of connector Y101 (Insight box) |
| | Not enough swing during cal | Make sure sensor meets requirements in - Advanced Information - Basic Requirements section of this manual |
| | Incorrect number of sensors selected in setup | Go to >>Initial Setup>>Number Sensors and choose the correct number of sensors |
| | Sensor failure | See sensor troubleshooting instructions |
| ER17 Left sensor detected but not expected | Control box /wiring failure | Contact Headsight |
| | Incorrect number of sensors selected in setup | Go to >>Setup>>System Select and choose the correct number of sensors |
| | Harness wiring error | Verify that no wires contact PIN7 of connector Y101 |
| | Control box /wiring failure | Contact Headsight |

| Error Code | Problem | Solution |
|---|--|---|
| ER21 Left Center sensor signal less than 0.3V | Left Center sensor temporarily disconnected. Wiring open Sensor failure | Repair wiring or bad connector Calibrate Insight Box Calibrate Combine Check sensor harness for pinched/ broken wiring See sensor test instructions |
| ER22 Left Center sensor signal greater than 4.7V | Wiring problem Sensor failure | Ground wire to sensor is open Signal short to power Calibrate Insight Box Calibrate Combine See sensor test instructions |
| ER23 Left Center sensor swing less than 0.6V | Left Center sensor mechanical range is restricted Sensor failure | Verify sensor is not obstructed in swing Verify sensor can collapse fully with header lowered Adjust down stop to allow greater range See sensor test instructions |
| ER26 Left Center sensor expected but not detected | Left Center sensor not properly connected Not enough swing during cal Incorrect number of sensors selected in setup Sensor failure Control box /wiring failure | Verify harness is connected to left center sensor Verify harness is connected properly to control box harness Verify that signal wire (Pin B white wire of sensor cable) is connected to PIN13 of connector Y101 (Insight box) Make sure sensor meets requirements in - Advanced Information - Basic Requirements section of this manual Go to >>Initial Setup>>Number Sensors and choose the correct number of sensors See sensor troubleshooting instructions Contact Headsight |
| ER27 Left Center sensor detected but not expected | Incorrect number of sensors selected in setup Harness wiring error Control box /wiring failure | Go to >>Setup>>System Select and choose the correct number of sensors Verify that no wires contact PIN13 of connector Y101 Contact Headsight |

| Error Code | Problem | Solution |
|--|---|--|
| ER31 Center sensor signal less than 0.3V | Center sensor temporarily disconnected. | Repair wiring or bad connector Calibrate Insight Box Calibrate Combine |
| | Wiring open | Check sensor harness for pinched/ broken wiring |
| | Sensor failure | See sensor test instructions |
| ER32 Center sensor signal greater than 4.7V | Wiring problem | Ground wire to sensor is open Signal short to power Calibrate Insight Box Calibrate Combine |
| | Sensor failure | See sensor test instructions |
| ER33 Center sensor swing less than 0.6V | Center sensor mechanical range is restricted | Verify sensor is not obstructed in swing Verify sensor can collapse fully with header lowered Adjust down stop to allow greater range |
| | Sensor failure | See sensor test instructions |
| ER36 Center sensor expected but not detected | Center sensor not properly connected | Verify harness is connected to center sensor Verify harness is connected properly to control box harness Verify that signal wire (Pin B white wire of sensor cable) is connected to PIN8 of connector Y101 (Insight box) |
| | Not enough swing during cal | Make sure sensor meets requirements in - Advanced Information - Basic Requirements section of this manual |
| | Incorrect number of sensors selected in setup | Go to >>Initial Setup>>Number Sensors and choose the correct number of sensors |
| | Sensor failure | See sensor troubleshooting instructions |
| ER37 Center sensor detected but not expected | Control box /wiring failure | Contact Headsight |
| | Incorrect number of sensors selected in setup | Go to >>Setup>>System Select and choose the correct number of sensors |
| | Harness wiring error | Verify that no wires contact PIN8 of connector Y101 |
| | Control box /wiring failure | Contact Headsight |

| Error Code | Problem | Solution |
|--|---|--|
| ER41 Right Center sensor signal less than 0.3V | Right Center sensor temporarily disconnected. Wiring open Sensor failure | Repair wiring or bad connector Calibrate Insight Box Calibrate Combine Check sensor harness for pinched/broken wiring See sensor test instructions |
| ER42 Right Center sensor signal greater than 4.7V | Wiring problem Sensor failure | Ground wire to sensor is open Signal short to power Calibrate Insight Box Calibrate Combine See sensor test instructions |
| ER43 Right Center sensor swing less than 0.6V | Right Center sensor mechanical range is restricted Sensor failure | Verify sensor is not obstructed in swing Verify sensor can collapse fully with header lowered Adjust down stop to allow greater range See sensor test instructions |
| ER46 Right Center sensor expected but not detected | Right Center sensor not properly connected Not enough swing during cal Incorrect number of sensors selected in setup Sensor failure Control box /wiring failure | Verify harness is connected to right center sensor Verify harness is connected properly to control box harness Verify that signal wire (Pin B white wire of sensor cable) is connected to PIN14 of connector Y101 (Insight box) Make sure sensor meets requirements in - Advanced Information - Basic Requirements section of this manual Go to >>Initial Setup>>Number Sensors and choose the correct number of sensors See sensor troubleshooting instructions Contact Headsight |
| ER47 Right Center sensor detected but not expected | Incorrect number of sensors selected in setup Harness wiring error Control box /wiring failure | Go to >>Setup>>System Select and choose the correct number of sensors Verify that no wires contact PIN14 of connector Y101 Contact Headsight |

| Error Code | Problem | Solution |
|--|---|---|
| ER51 Right sensor signal less than 0.3V | Left sensor temporarily disconnected. | Repair wiring or bad connector Calibrate Insight Box Calibrate Combine |
| | Wiring open | Check sensor harness for pinched/ broken wiring |
| | Sensor failure | See sensor test instructions |
| ER52 Right sensor signal greater than 4.7V | Wiring problem | Ground wire to sensor is open Signal short to power Calibrate Insight Box Calibrate Combine |
| | Sensor failure | See sensor test instructions |
| ER53 Right sensor swing less than 0.6V | Right sensor mechanical range is restricted | Verify sensor is not obstructed in swing Verify sensor can collapse fully with header lowered Adjust down stop to allow greater range |
| | Sensor failure | See sensor test instructions |
| ER56 Right sensor expected but not detected | Right sensor not properly connected | Verify harness is connected to right sensor Verify harness is connected properly to control box harness Verify that signal wire (Pin B white wire of sensor cable) is connected to PIN9 of connector Y101 (Insight box) |
| | Not enough swing during cal | Make sure sensor meets requirements in - Advanced Information - Basic Requirements section of this manual |
| | Incorrect number of sensors selected in setup | Go to >>Initial Setup>>Number Sensors and choose the correct number of sensors |
| | Sensor failure | See sensor troubleshooting instructions |
| ER57 Right sensor detected but not expected | Control box /wiring failure | Contact Headsight |
| | Incorrect number of sensors selected in setup | Go to >>Setup>>System Select and choose the correct number of sensors |
| | Harness wiring error | Verify that no wires contact PIN9 of connector Y101 |
| ER61 Sensor 6 (aux sensor) signal less than 0.3V | Control box /wiring failure | Contact Headsight |
| | Wiring open | Check sensor harness for pinched/ broken wiring |
| | Sensor failure | See sensor test instructions |

| Error Code | Problem | Solution |
|--|----------------------------------|--|
| ER62 Sensor 6 (aux sensor) signal greater than 4.7V | Wiring problem Sensor failure | Ground wire to sensor is open See sensor test instructions |
| ER92 Tilt Sensitivity greater than 4.0V | Wiring problem | Turn the Tilt sensitivity knob in the cab to Maximum CW. Read under >>Diagnostics>>Detailed Diag.>>Tilt Sens In, on the Insight box Reading between 4.0 and 4.5. Call Headsight for instructions Reading > 4.5V, Combine problem- Check wiring on combine |

Schematics

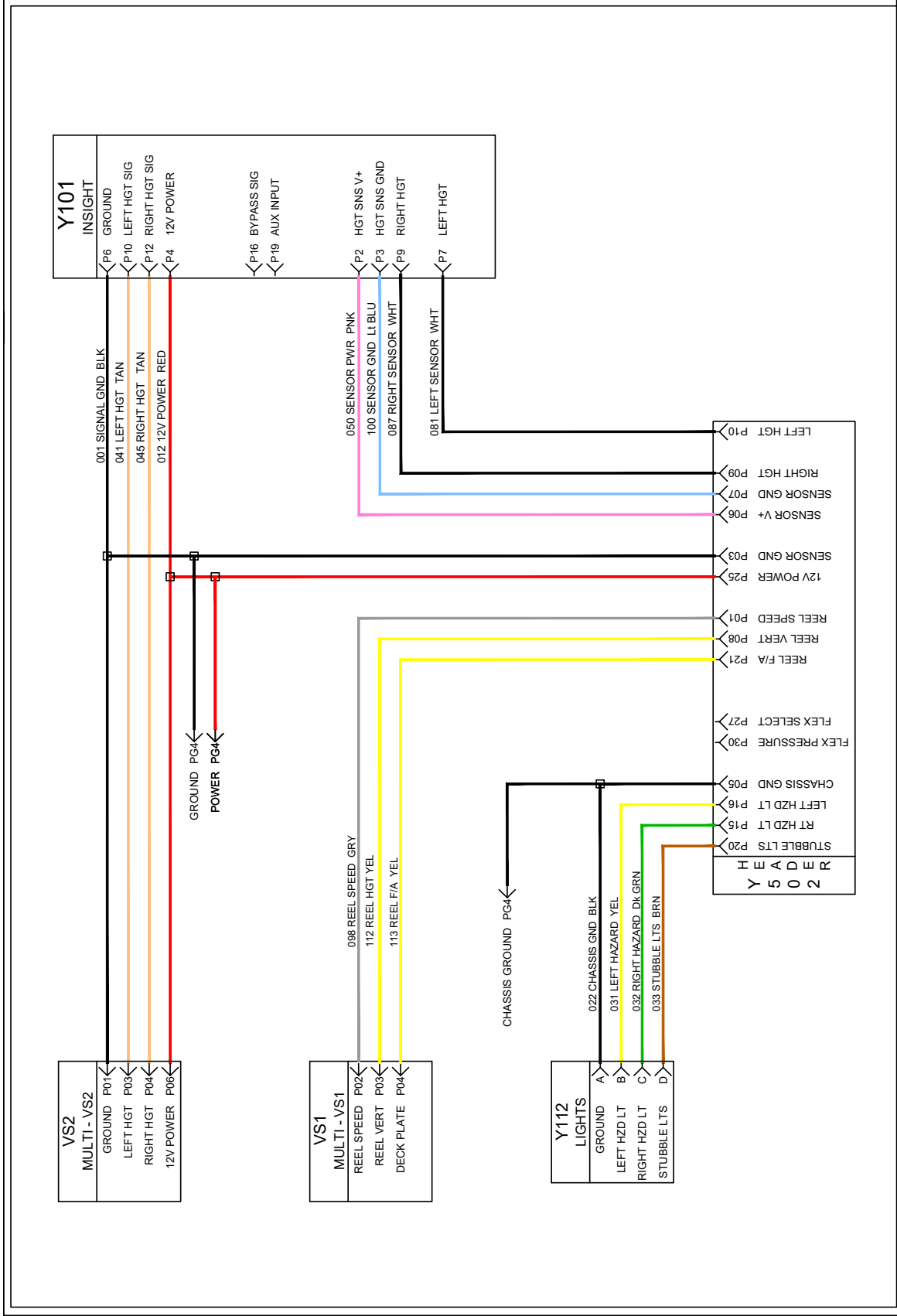


The Insight Harness schematic is the main harnesses used for all applications in this manual, each uses one of the following valve harnesses depending on your steering device.



The following schematics are provided for troubleshooting and installation purposes only. Unauthorized uses, such as using them to replicate harnesses for resale, are strictly prohibited under copyright law.

Header Adapter harness - Pg 1



NOTES:

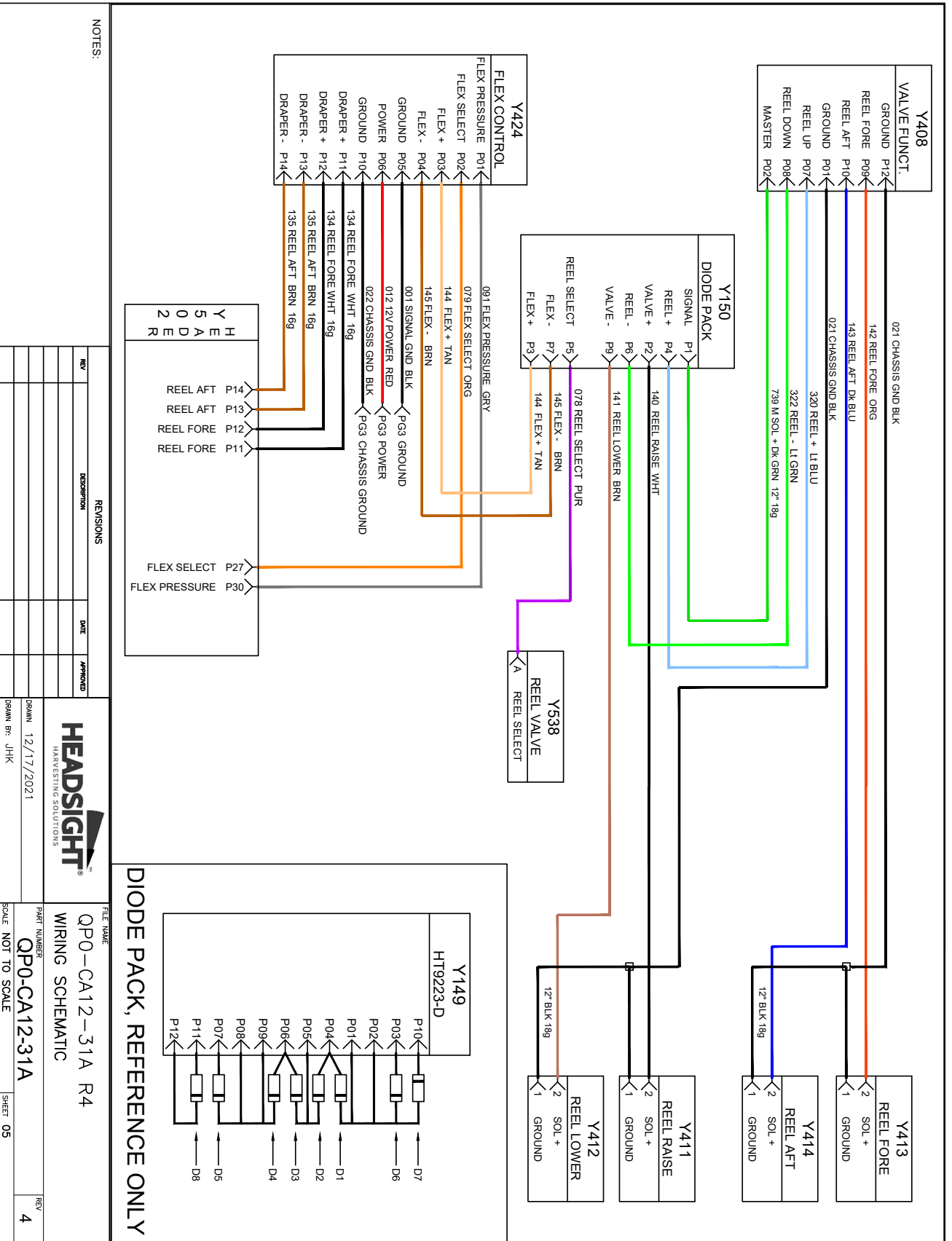
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REVISIONS

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FILE NAME: QP0-CA12-31A R4
 WIRING SCHEMATIC
 PART NUMBER: QP0-CA12-31A
 DRAWN: 12/17/2021
 DRAWN BY: JHK
 SCALE: NOT TO SCALE
 SHEET 04

Header Adapter Harness - Pg 2



NOTES:

| REV | DESCRIPTION | DATE | APPROVED |
|-----|-------------|------|----------|
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DIODE PACK, REFERENCE ONLY



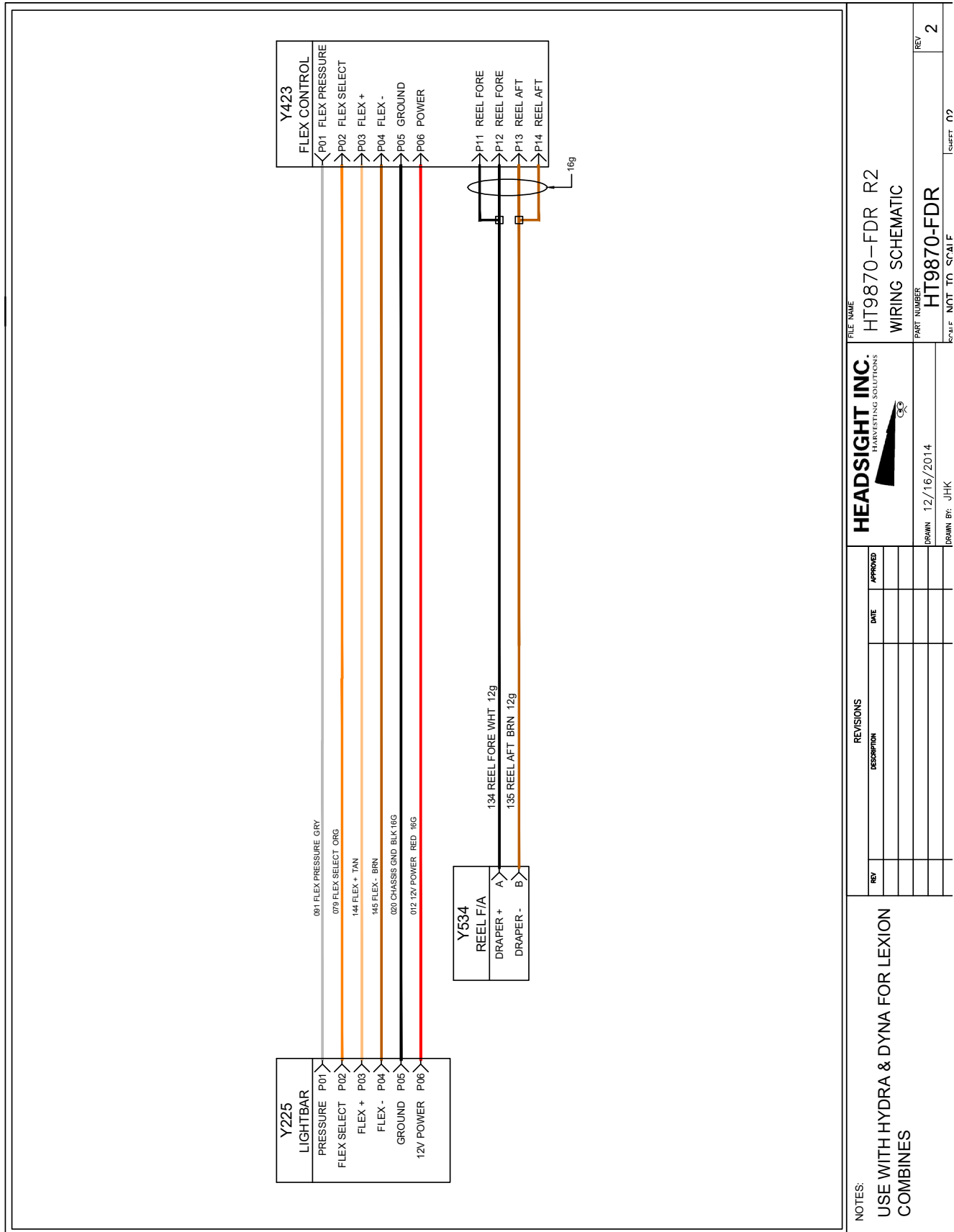
FILE NAME
QP0-CA12-31A R4
WIRING SCHEMATIC

DRAWN 12/17/2021
DESIGN BY: JHK

PART NUMBER
QP0-CA12-31A
SCALE NOT TO SCALE

SHEET 05
REV 4

Feeder harness



NOTES:
USE WITH HYDRA & DYNA FOR LEXION COMBINES

| REV | DESCRIPTION | DATE | APPROVED |
|-----|-------------|------|----------|
| | | | |
| | | | |
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FILE NAME: HT9870-FDR R2
WIRING SCHEMATIC

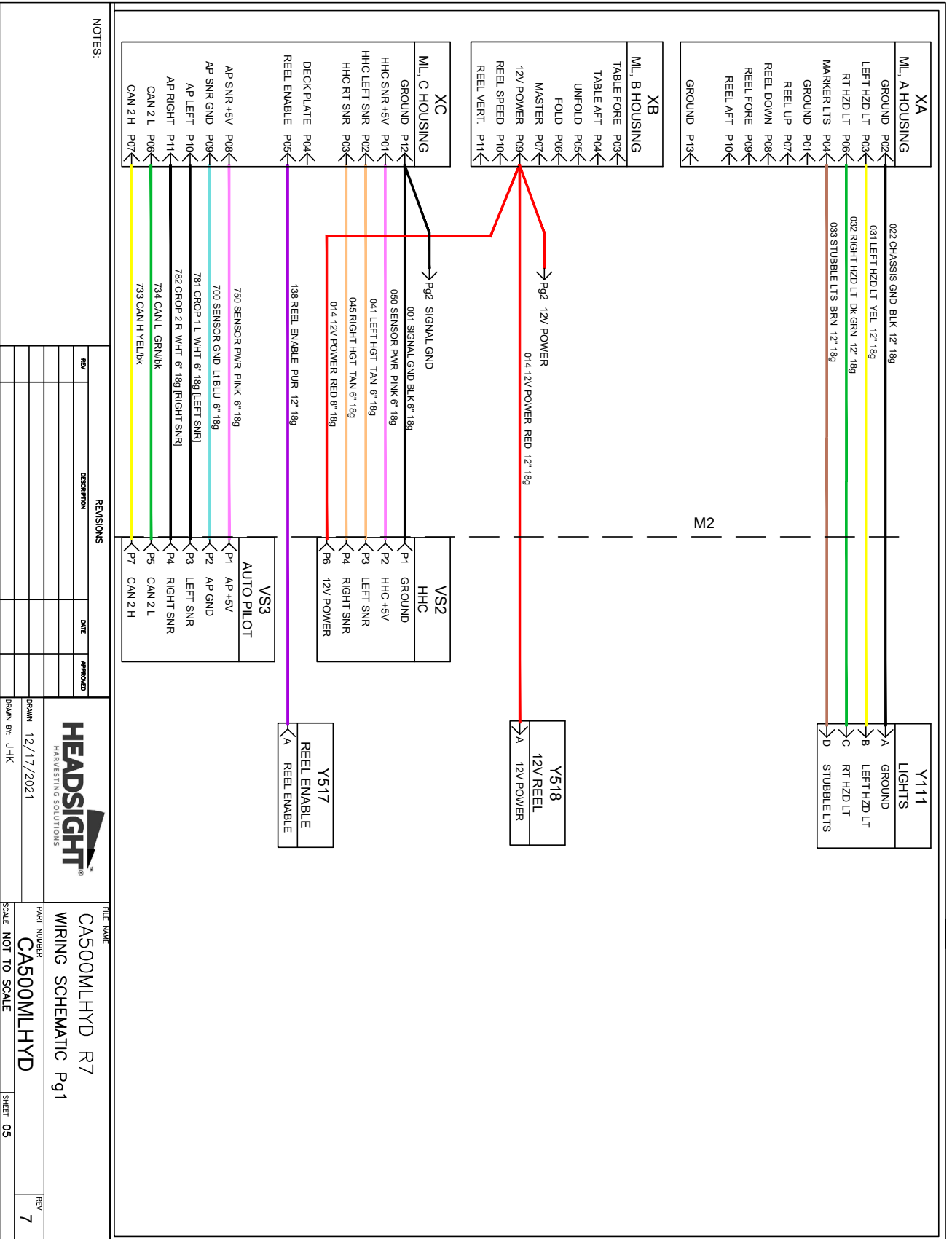
HEADSIGHT INC. HARVESTING SOLUTIONS

DRAWN: 12/16/2014
DRAWN BY: JHK

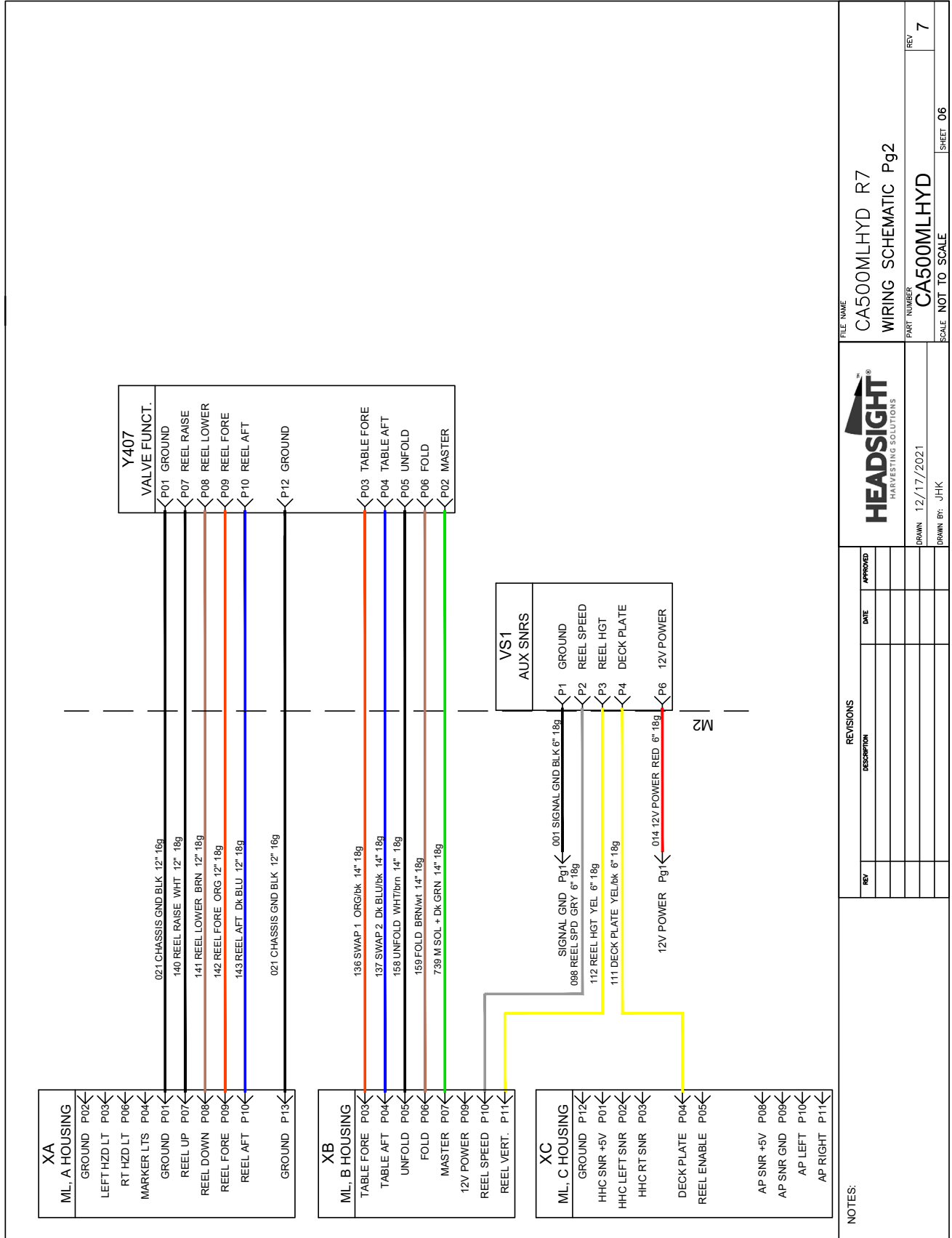
PART NUMBER: HT9870-FDR
REV: 2

SCALE: NOT TO SCALE

Header Multilink - Internal Schematic Pg 1



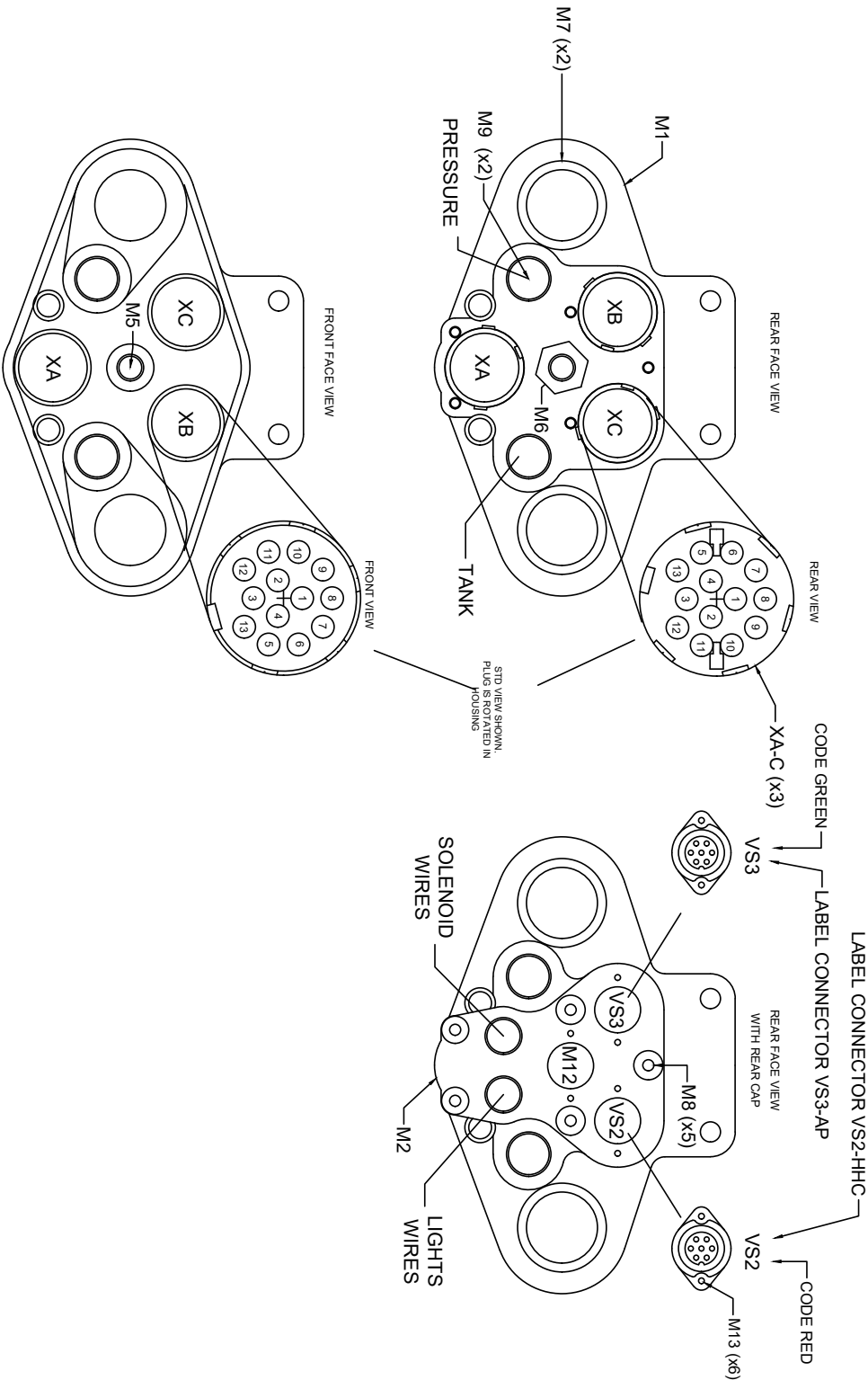
Header Multilink - Internal Schematic Pg 2



| REVISIONS | | DATE | APPROVED |
|-----------|-------------|------|----------|
| REV | DESCRIPTION | | |
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|----------------------|---------------|
| FILE NAME | CA500MLHYD R7 |
| WIRING SCHEMATIC Pg2 | |
| PART NUMBER | CA500MLHYD |
| SCALE | NOT TO SCALE |
| DRAWN BY | JHK |
| DATE | 12/17/2021 |
| REV | 7 |
| SHEET | 06 |

Header Multilink - Mechanical



NOTES:

REVISIONS

| REV | DESCRIPTION | DATE | APPROVED |
|-----|---------------------------|----------|----------|
| 7 | HEATSHRINK ON CABLES, CAN | 12/17/21 | JHK |



FILE NAME: CA500ML R7
MECHANICAL LAYOUT

REV: 7

DRAWN: 12/17/2021
DRAWN BY: JHK

PART NUMBER: CA500MLHYD

SHEET: 01

Parts



| <u>ITEM</u> | <u>QTY.</u> | <u>PART NUMBER</u> | <u>DESCRIPTION</u> |
|-------------|-------------|--------------------|--------------------------------|
| 1 | 1 | QP0-CA12-31A | Header Adapter Harness |
| 2 | 1 | HT9870-FDR | Feeder Harness |
| 3 | 1 | INSIGHT | AHC Interface |
| 4 | 1 | HT9993 | Hydraflex Cab Control |
| 5 | 1 | CA500MLHYD | Multilink Assm. |
| 6 | 1 | HT9219 | Pressure Shift Module |
| 7 | 1 | HT9300 | Power Adapter (not shown) |
| 8 | 1 | 08100147 | Valve Insert, N.C. |
| 9 | 1 | HT9863-RS | Reel Select harness |
| 10 | 1 | HT2259 | Clip, Header plugs (not shown) |

Statement of Limited Warranty

For Headsight® Products

Precision Planting DBA Headsight Harvesting Solutions (Headsight) warrants its new products to be free from defects in material and workmanship for a period of twelve (12) consecutive months following the date of purchase by the retail purchaser.

Headsight warrants its new corn sensors assemblies for a period of thirty-six (36) months.

Headsight warrants genuine Headsight replacement parts and components to be free from defects in material and workmanship for a period of six (6) consecutive months following the date of purchase or the remainder of the original equipment warranty period, whichever is longer.

Headsight's obligation under these warranties shall be limited to repairing or replacing, free of charge to the original purchaser, any part that, in Headsight's judgment, shows evidence of such defect.

Limitations to Warranty

This warranty does not cover:

- Warranty claims directly resulting from improper installation of the product.
- Any product damaged by accident, abuse, misuse, or negligence after shipment from Headsight.
- Any unauthorized product alteration or modification.
- Any unauthorized repairs made with parts other than genuine Headsight parts.
- Any repairs performed by anyone other than Headsight or an authorized Headsight dealer unless specifically authorized by Headsight.

Warranty Procedure

- Troubleshooting should be done between farmer/dealer and Headsight through our technical assistance @ **574.220.5511**.
- Labor reimbursement will occur only pre-arranged through Headsight technical assistance and be scheduled to a flat rate basis or reasonable time allowance in Headsight's judgment.
- There is no mileage reimbursement.
- Diagnostic time will not be reimbursed except in pre-arranged circumstances.
- Warranty claims should be on typical dealer service work order with a number and name to be attached for any future correspondence.
- All warranty work must be performed, and claims submitted, within thirty (30) days of the occurrence of the claim and within the warranty period.
- All parts removed during warranty repair must be returned to Headsight with Headsight's Return Form within thirty (30) days of the occurrence of the claim and within the warranty period.
- Headsight reserves the right to either inspect the product at the original retail purchaser's location or require it to be returned to Headsight for inspection.

Limitation of Liability

Headsight makes no express warranties other than those, which are specifically described herein. Any description of the goods sold hereunder, including any reference to buyer's specifications and any descriptions in circulars and other written material published by Headsight is for the sole purpose of identifying such goods and shall not create an express warranty that the goods shall conform to such description.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED. There are no implied warranties of merchantability or fitness of a particular purpose. This warranty states Headsight's entire and exclusive liability and buyer's exclusive remedy or any claim for damages in connection with the sale of furnishing of Headsight products, their design, suitability for use, installation or operation, or for any claimed defects herein. **HEADSIGHT WILL IN NO EVENT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES WHATSOEVER, NOR FOR ANY SUM IN EXCESS OF THE PRICE RECEIVED FOR THE GOODS FOR WHICH LIABILITY IS CLAIMED.**

No representative of Headsight nor any dealer associated with Headsight has the authority to change the items of this warranty in any manner whatsoever, and no assistance to purchaser by Headsight in the repair or operation of any Headsight product shall constitute a waiver of the conditions of this warranty, nor shall such assistance extend or revive it.

Headsight reserves the right to make improvements in design or changes in specifications at any time, without incurring any obligation to owners of units previously sold. Warranty: **1/2022**



P 574.546.5022 • **F** 574.546.5760

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