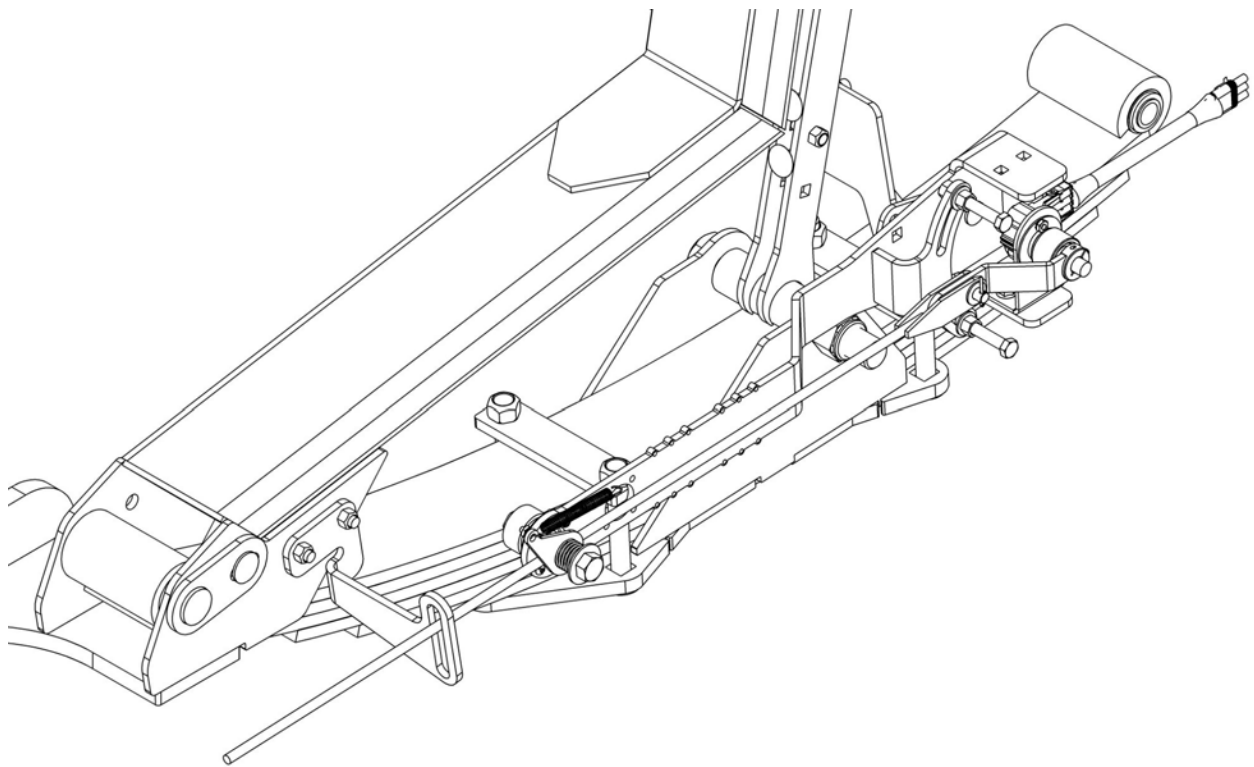




***Grain Belt Plus  
Header Height Control Instructions***





## Header Height Control

### ***Introduction***

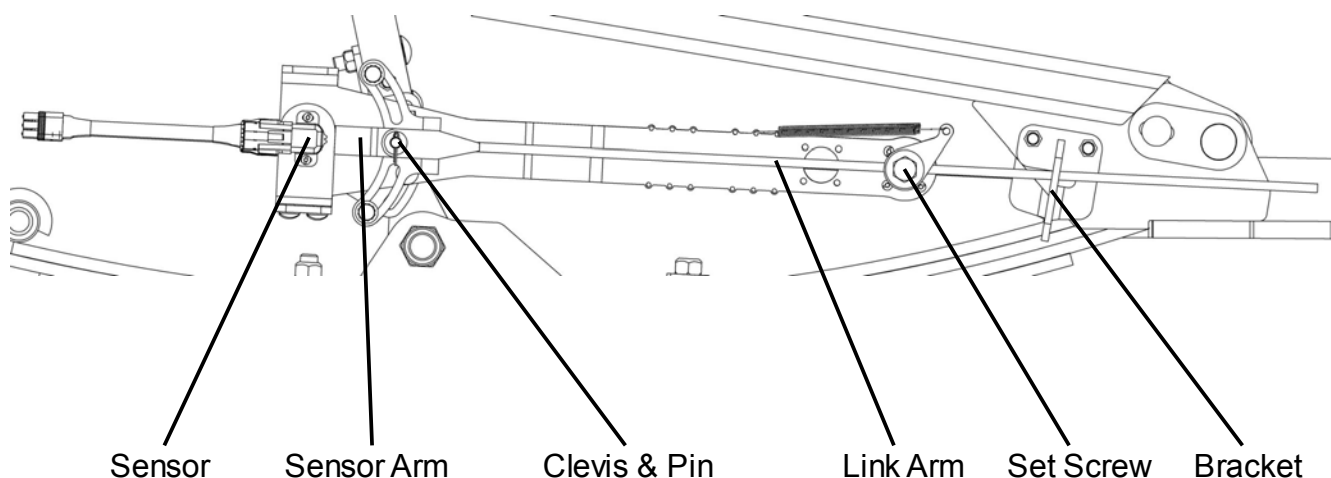
The Header Height Control system is greatly affected by the other settings on the header. For this reason, it is critical to the correct operation of the Header Height Control that it be adjusted after the header is prepared for the crop conditions that exist in your location. To achieve this, it must be set up in the shop simulating these operating parameters, or in the field under actual operating conditions. The header must be lowered into the cutting position, with the proper amount of weight on the gauge wheels and with the cutting angle set.

Since the header tilt changes the header's center of gravity and cutting angle, adjustments to the header tilt will affect the deflection of the suspension springs, which in turn will affect the calibration of the height sensor. Make sure that the cutting angle is properly set.

Refer to the Operator's Manual. Ensure the header is level, the cutter bar is at a good height for most crops, and that the flotation arms, and lift link bolts are set correctly. When you are satisfied that the header is physically set up, study these instructions, then install and calibrate the Header Height Control.

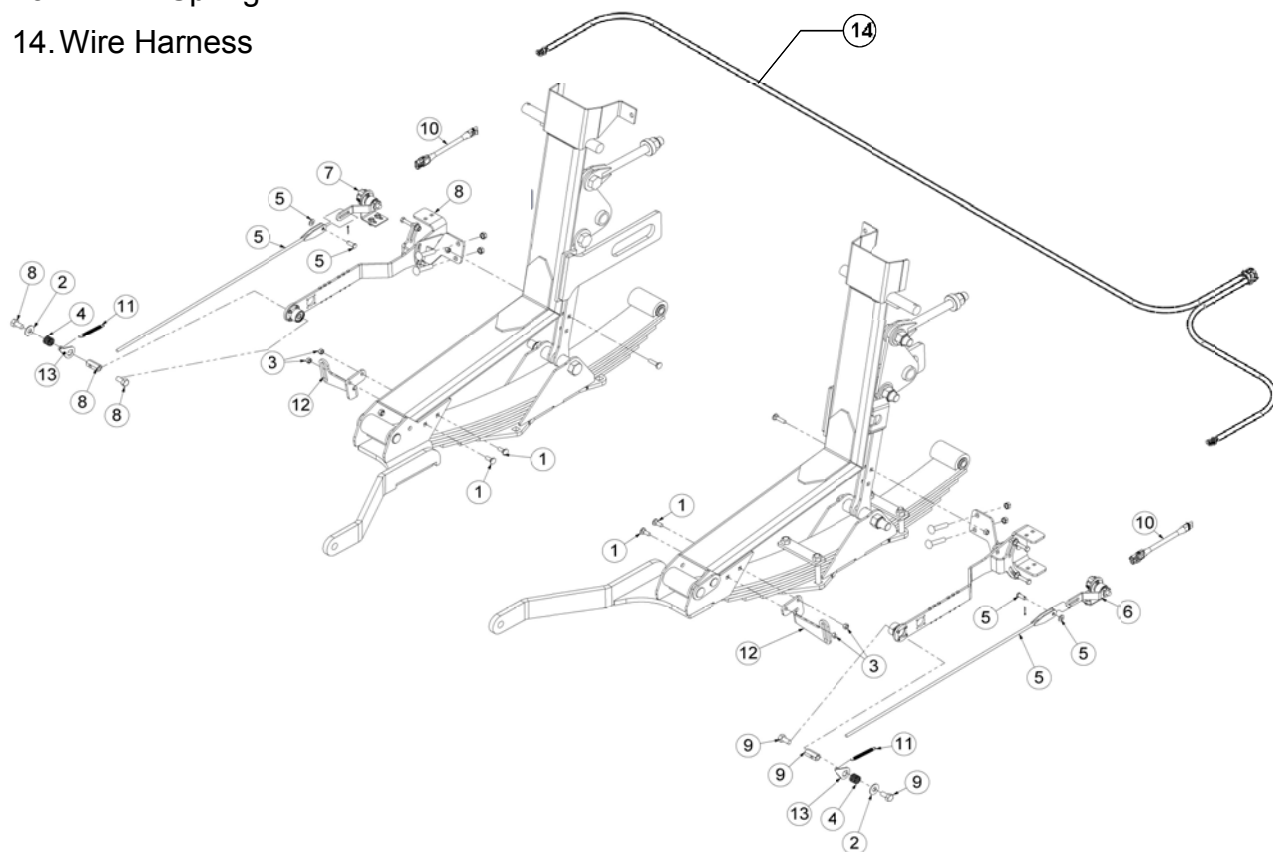
### ***Terminology***

The following diagram illustrates the important components and the terms used for them in this installation guide.



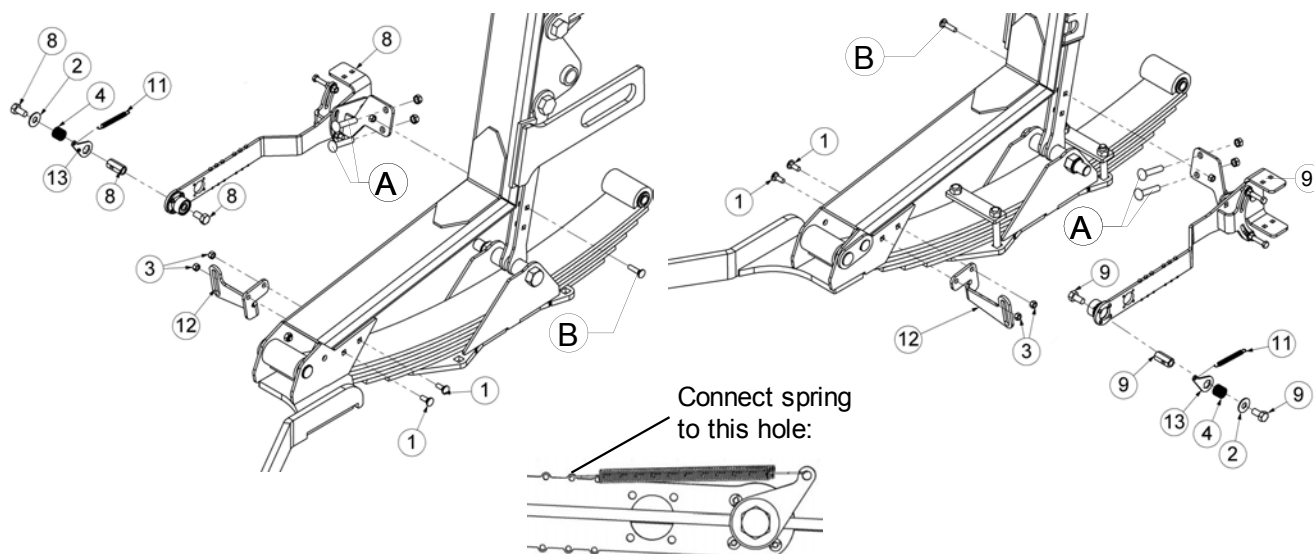
**Parts List**

1. 4x Bolt 3/8 x 1 1/4 UNC
2. 2x Washer Flat 1/2
3. 4x Nut 3/8 UNC C/Lock
4. 2x Spring 0.062x1x1-15/16
5. 2x Sensor Link Arm Assembly
6. Sensor Assembly LH
7. Sensor Assembly RH
8. Sensor Mount RH
9. Sensor Mount LH
10. 2x Wire Harness Adapter (Not required for all models)
11. 2x Spring Ext 0.041x0.385x4 SS
12. 2x Bracket – Sensor Rod Slot
13. 2x Arm Spring
14. Wire Harness



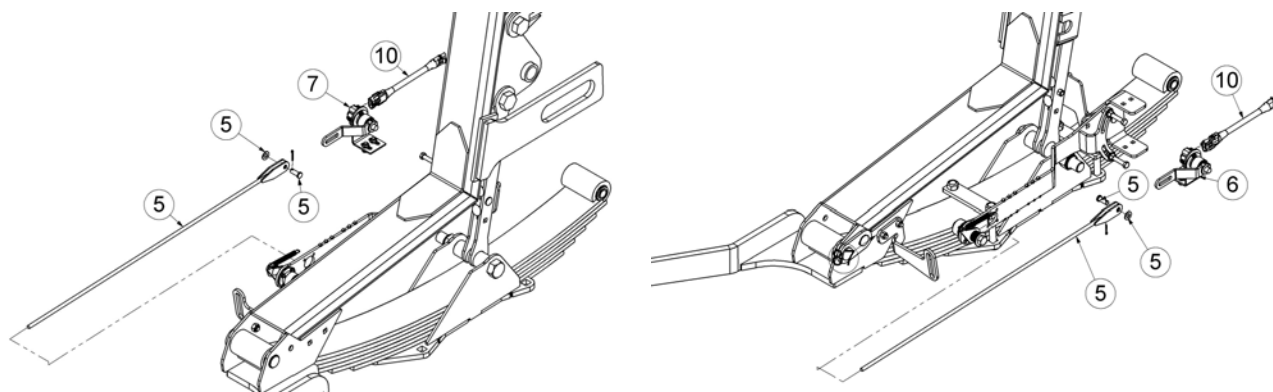
## Installation

1. Attach the Mounting Brackets and pivot points to the frame on the left and right sides.

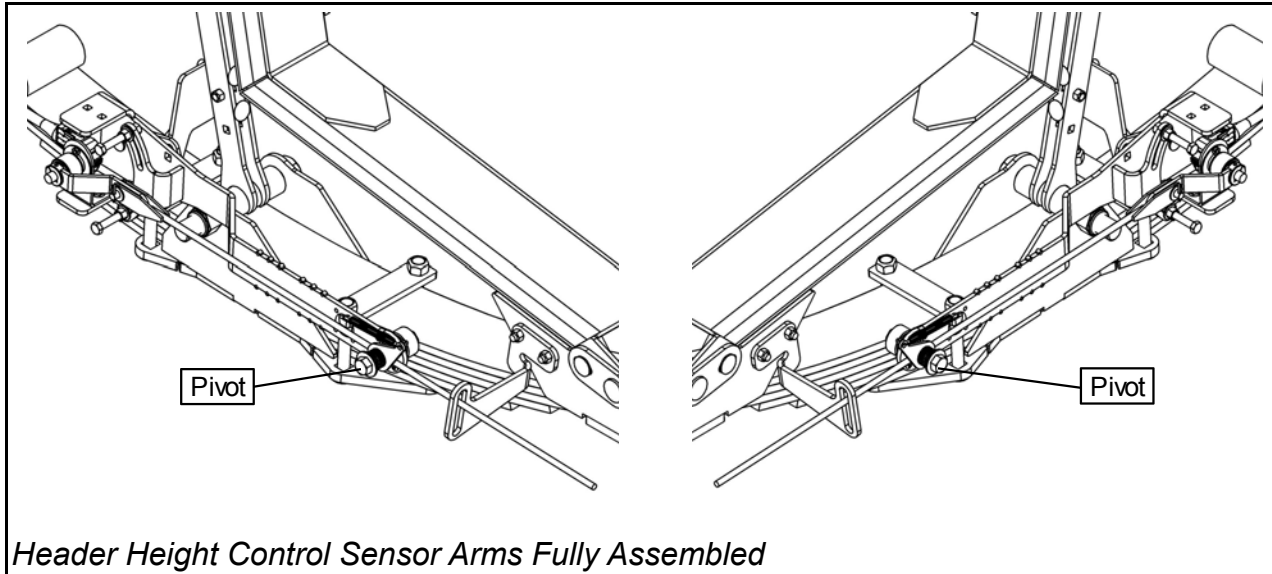


When connecting the sensor mount (8,9), Ensure that the two bolts (A) go on either side of bolt (B).

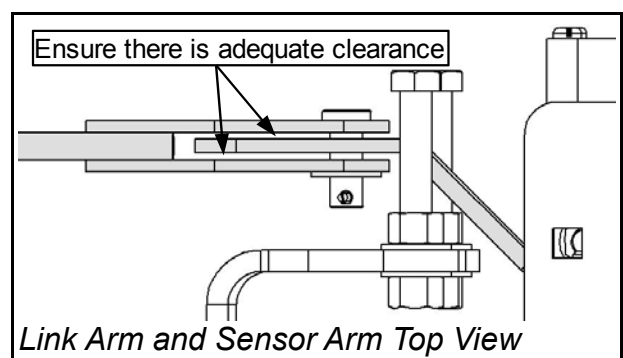
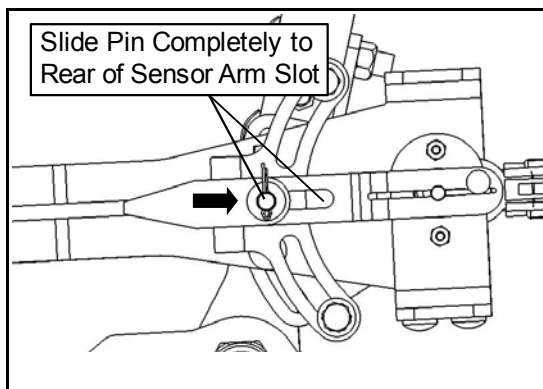
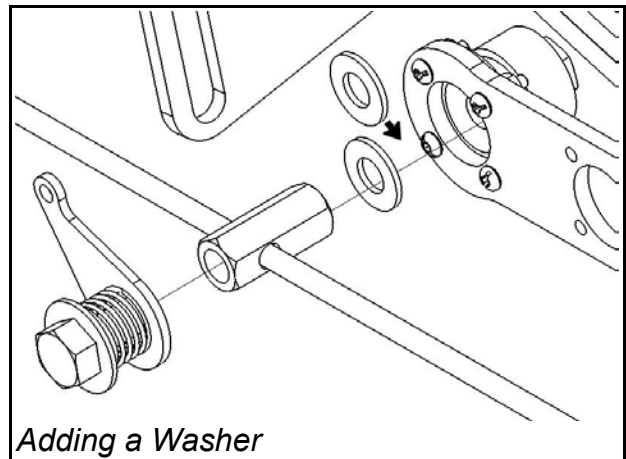
2. Connect and assemble the Link arm, sensor assembly and the pivot point.



3. Ensure everything is assembled as shown in the illustration below.



4. Check the pivot to ensure it does not bind and has adequate room for movement. If it is restricted, unscrew the pivot point and install additional ½" SAE Washers in between the coupler nut and bearing to increase the clearance.
5. Ensure the Clevis and Pin rotate freely and do not bind (*See Lower Right*). If there is not enough clearance, pry the clevis slightly apart with a screwdriver. Make sure the pin is located in the rear of the sensor arm slot (*See Below*).

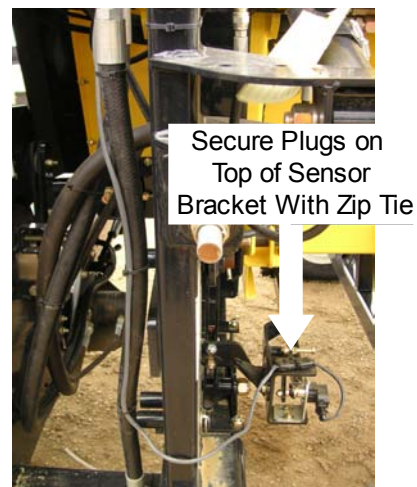


6. Find the two available plugs located close to both the left and right sensors. Run the plugs down to the sensor securing with more zip ties. Connect the wire to the sensor on the right side and secure on top of sensor bracket with zip tie (*See Right*).



*Left Side Sensor*

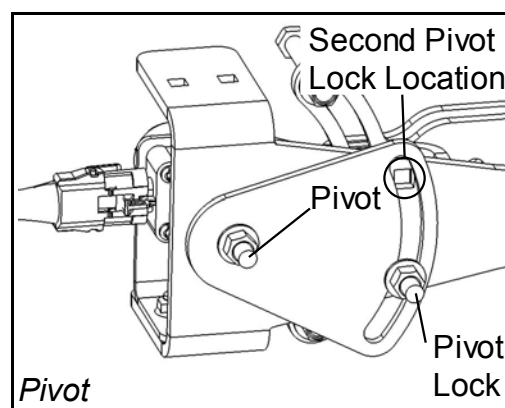
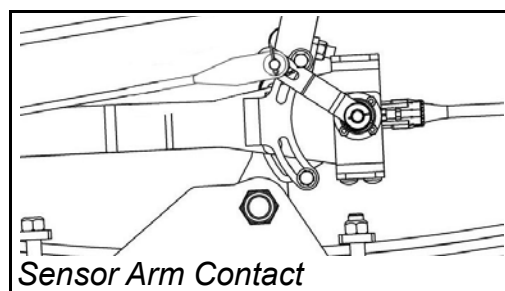
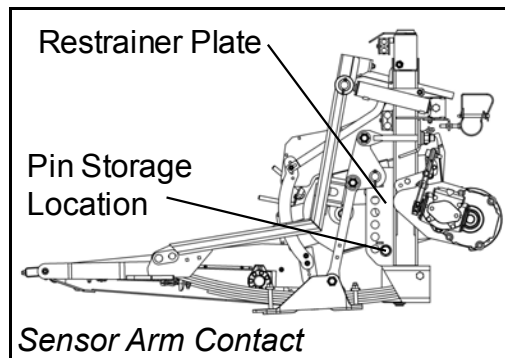
7. Plug in the remaining wire into the left side sensor. Securing with a zip tie. (*See Left*)



*Right Side Sensor*

## **Initial Setting**

1. Ensure the header is properly installed on the combine, leveled and fully connected to all hydraulic and electrical systems.
2. Park the unit on a flat, hard surface and fully raise the header off the ground so there is no weight on the gauge wheels.
3. Ensure that the pin in the restrainer plate is in the storage position so it does not interfere with tilting the table.
4. Set the header tilt to the anticipated operating angle, using the hydraulic tilt.
5. Set the feeder house lift cylinder safety locks in place.
6. Turn off the combine and wait for all moving parts to stop before exiting the cab.
7. Check the pressure of the sensor arm against the top stop. The arm should contact the stop very lightly.
8. If the arm does not contact the top stop or it is too tight against the stop, loosen the pivot and pivot lock bolts and tilt the unit until the desired contact pressure is achieved.
9. Proceed to "Calibration" on the following page. If the calibration is successful, the unit is ready to operate. If the combine computer cannot calibrate the header, one or more voltages is outside the parameters. Continue with "Detailed Setting".

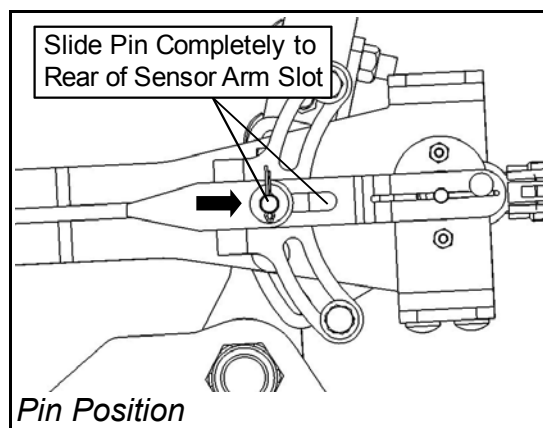


On some headers, there may be two pivot locks. In which case they would both need to be loosened before adjusting the pivot.



## Detailed Setting

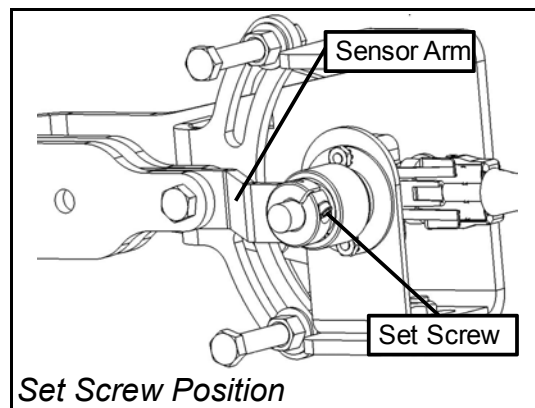
1. To obtain the maximum range of voltage variation from the sensors, make sure that the clevis on the link arm is extended all the way towards the back of the header. If not, loosen the set screw located at the center of the link arm, and slide the clevis portion of the link arm as far as possible to the rear, while maintaining the line of sight previously set. Secure the set screw at the center of the link arm. (See Right)



Some sensors are internally limited in their travel, and forcing them will break the sensor. These units can be identified by turning the sensor shaft and noting a slight spring-loading in one direction of travel.

If you cannot easily align the unit, check your assembly against the sensor diagrams provided in the operator's manual, and correct as needed.

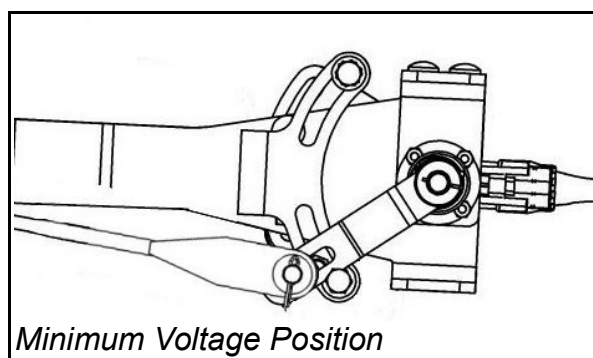
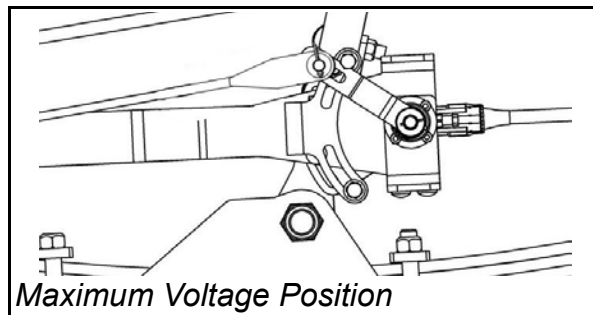
2. If the sensor arm reaches the top or bottom stop but it does not reach its max/min voltage, loosen the hex-head set screw and adjust the sensor arm. If the sensor reaches the top stop but does not reach maximum voltage, lower the sensor arm. If the sensor reaches the bottom stop but does not reach minimum voltage, raise the sensor arm. Re-tighten the set screw.



3. If the sensor arm reaches the end of it's travel before contacting either the top or the bottom stops, loosen the stop bolt and move it into light contact with the arm, then re-tighten.

## Calibration

1. It may be easier, depending on the height control system in the combine, to have an assistant in the cab operate the controls, monitor, and record the readings.
2. Check the multi-coupler plug connection to ensure it is fully seated.
3. Review in detail the combine instructions for the electronic controls, as they relate to diagnosis and calibration.
4. If the readings are within the specified range, (See *Table 1: Voltage Readings listed by Application*), the unit is calibrated. If not, follow the steps on the previous page under “Detailed Settings”



	<b>High Reading Not above:</b>	<b>Low Reading Not Below:</b>	<b>Maximum Difference:</b>	<b>Minimum Difference:</b>
<b>2008 New Holland CR 9040/9060</b>	4.5 Volts	0.5 Volts	4.5 Volts	1.5 Volts
<b>New Holland CR/CX</b>	7.5 Volts	2.5 Volts	5.0 Volts	2.5 Volts
<b>AFX 7010/8010</b>	4.5 Volts	0.5 Volts	4.0 Volts	2.5 Volts
<b>John Deere 50/60</b>	4.5 Volts	0.5 Volts	4.0 Volts	2.5 Volts
<b>CAT Lexion 400/500</b>	4.5 Volts	0.5 Volts	4.0 Volts	2.5 Volts
<b>Challenger 660/670</b>	4.5 Volts	0.5 Volts	4.0 Volts	2.5 Volts
<b>MF-9690/9790</b>	4.5 Volts	0.5 Volts	4.0 Volts	2.5 Volts
<b>Gleaner R 65/R75</b>	4.5 Volts	0.5 Volts	4.0 Volts	2.5 Volts
<b>AGCO w/ Multi Coupler</b>	3.8 Volts	1.5 Volts	2.3 Volts	1.5 Volts

*Table 1: Voltage Readings Listed by Application*



Some combines do not have a header height sensor voltage reading on the display in the cab. In this situation, a combine diagnostic computer will be required. Please consult your dealer for additional voltage information.

## **Fault Diagnosis**

Some of the most frequently encountered problems may include:

- If the upper position voltage reading is above the maximum, (or you receive an upper limit error code), the lower position voltage is too low, (or you receive a low limit error code) loosen the pivot lock and pivot bolts and move the plate in increments, re-testing each time, until both high and low readings are within the allowable values. Tighten the sensor pivot plate bolts in this position.
- If the difference between “High” and “Low” voltages is too small, a restriction in movement of the suspension, or a problem with the clevis pin location is indicated. Look for any restriction, such as flotation arms not set or restrainer plate pinned in place. Ensure the clevis is set fully to the back of the sensor bracket, with the line of sight as close to straight as possible.
- If the link arm is vibrating excessively up and down, a nut, two washers and bolt can be added to the sensor rod slot bracket to reduce the vibration (shown below). Alternatively you can move the spring back one space and hook it in the next hole.
- For some conditions/combines, it may be necessary to install the set screw in the rear hole of the sensor arm in order to decrease the sensitivity of the sensor.

