

SmartDepth Installation Instructions for Harvest International Row Units

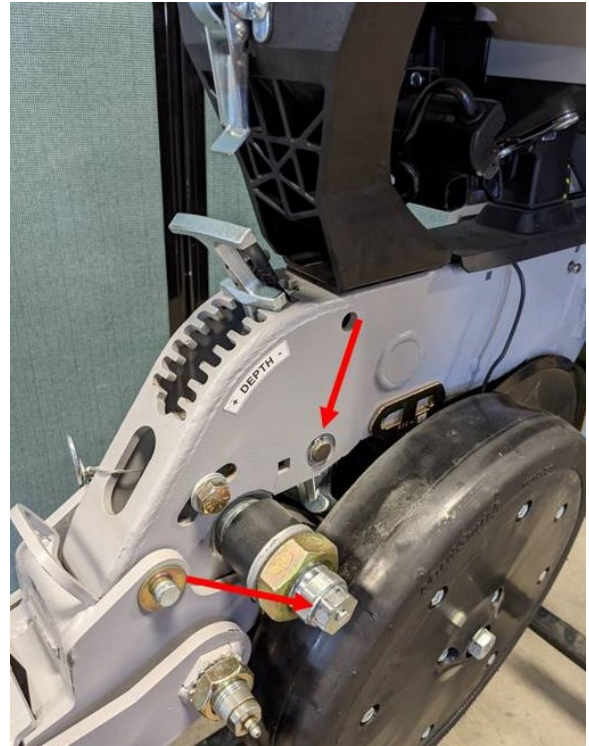
Parts List

Part Number	Description	Quantity
734100	Control Module, Gearbox	1
Hardware		
734181	Harvest International Hardware Kit	1
734190	CAN Expansion Hub Bracket (optional)	1

Step 1:

Begin by removing the depth control arm from the row unit.

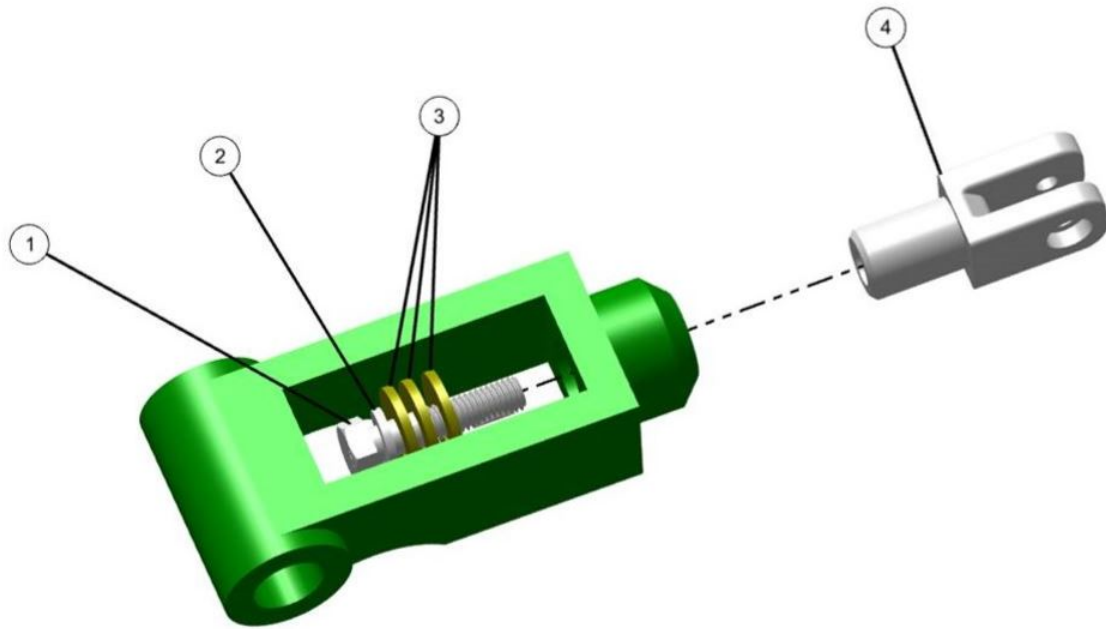
- a: Remove one of the gauge wheels to make it easier to get the depth control arm out.



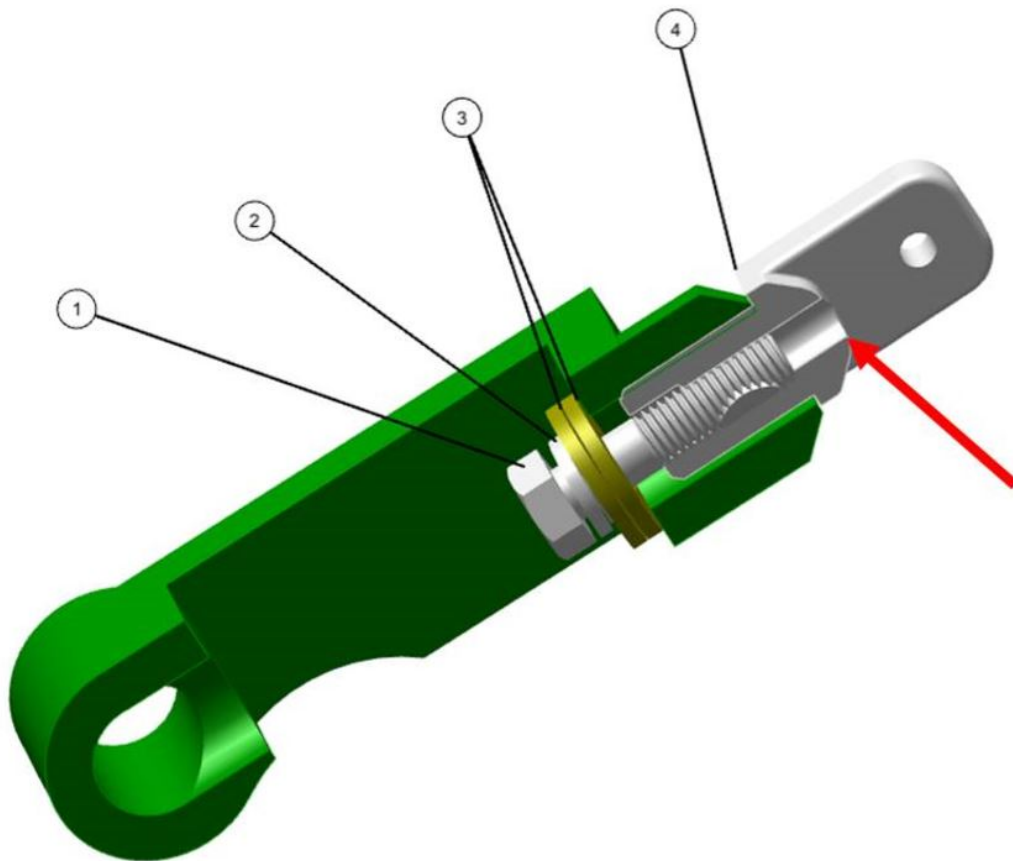
- b: Remove the snap ring and pin from the depth adjustment mechanism. If a load cell is installed, remove the load cell.
- c: The depth control arm and handle will now come out the bottom of the shank.
- d: Next, remove the “T” handle and spring from the depth control arm by removing the snap ring.



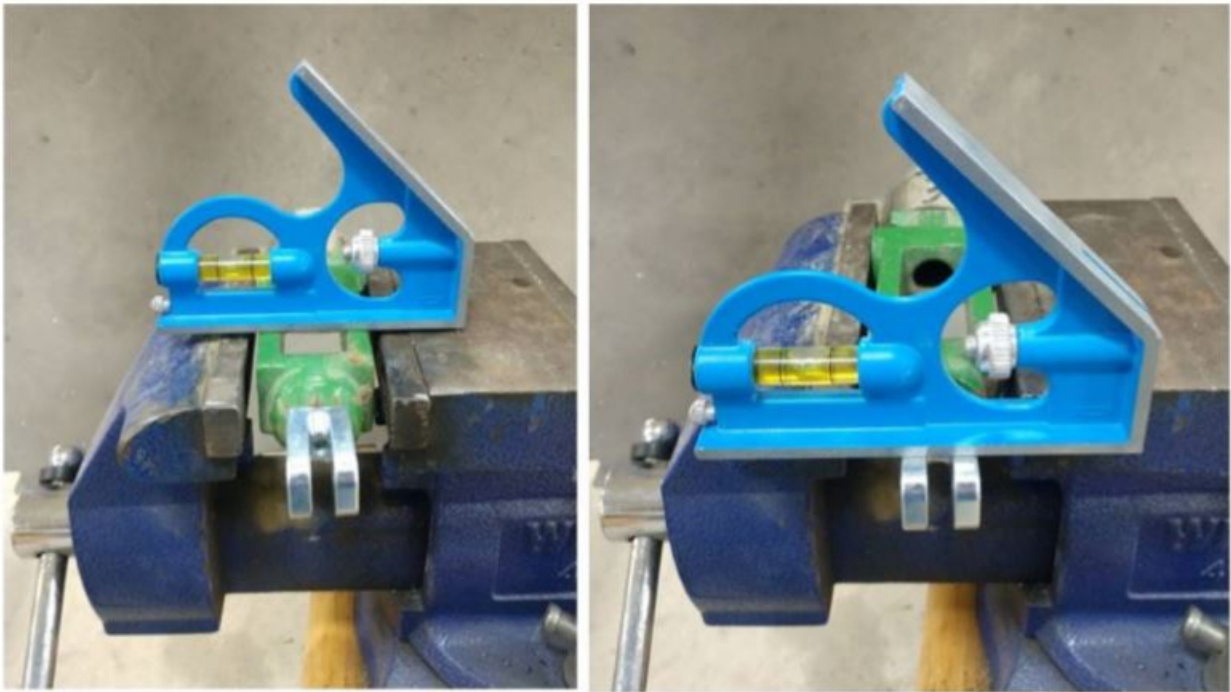
- e: Install the connecting rod (4) to the depth control arm using the M8 Bolt (1), 5/16 Split Washer (2), and 5/16” Flat Washers (3) found in the hardware bag. Refer to the next step to determine how many 5/16” flat washers (3) are required.



- f. The number of 5/16" flat washers varies based on depth arm variability. Use enough washers so M8 bolt (1) does not protrude past the threaded portion of connecting rod (4) (red arrow). If the bolt sticks out past the red arrow then add more washers. Use a minimum of one flat washer.



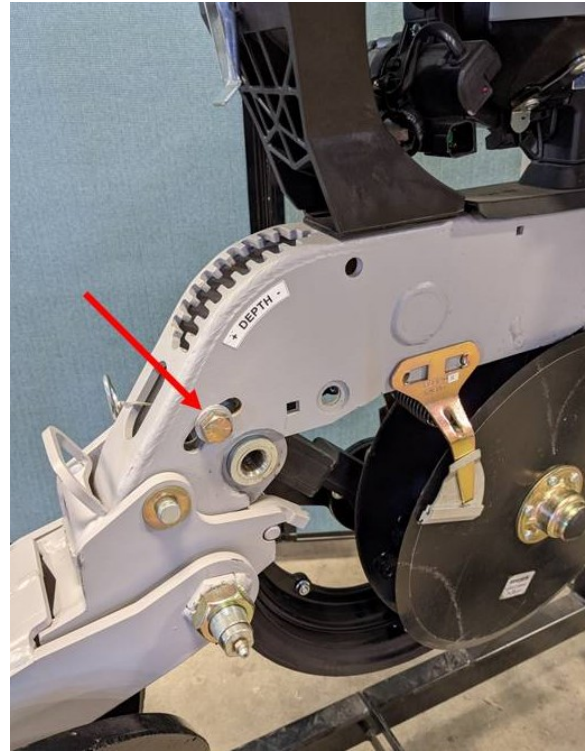
- g: Put the depth arm in a vise and attach the connecting rod (4). Use a 13 mm wrench to tighten M8 bolt (1).
- h: Before the bolt is tight make sure the two faces are parallel to each other. In this example you can use a small level to guarantee they are on the same plane.



Step 2:

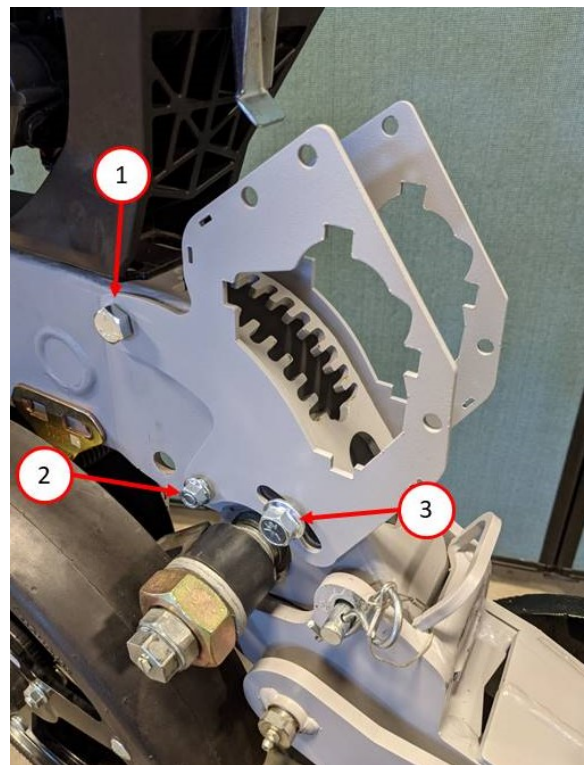
Install the gear box support brackets to the row unit.

- a: Remove the two toe bolts from either side of the shank.



- b: Next, bolt the support brackets to the shank. Use the 1/2" x 3.5" bolt and 1/2" nut in position (1), 3/8" carriage bolt and nut in position (2), and 1/2" x 1.75" serrated bolts in position (3) to secure the support brackets to either side of the shank. The carriage head at position (3) should be on the inside of the shank. DO NOT tighten the bolts yet.

Note: The hardware bag includes longer bolts for position (1) and (2) when installing the support brackets with insecticide brackets.



- c: Install the depth arm back into the shank ensuring the arm is oriented correctly and use the load pin to hold it in place. Do not reinstall the snap ring on the load cell at this time.

Note: The load cell harness can not be routed through the T handle portion of the shank or the harness will get damaged during calibration. Route the harness along the left side or right side of the shank under the seed boot. There are a couple holes in the shank which can be used to secure the harness with zip ties.



Step 3:

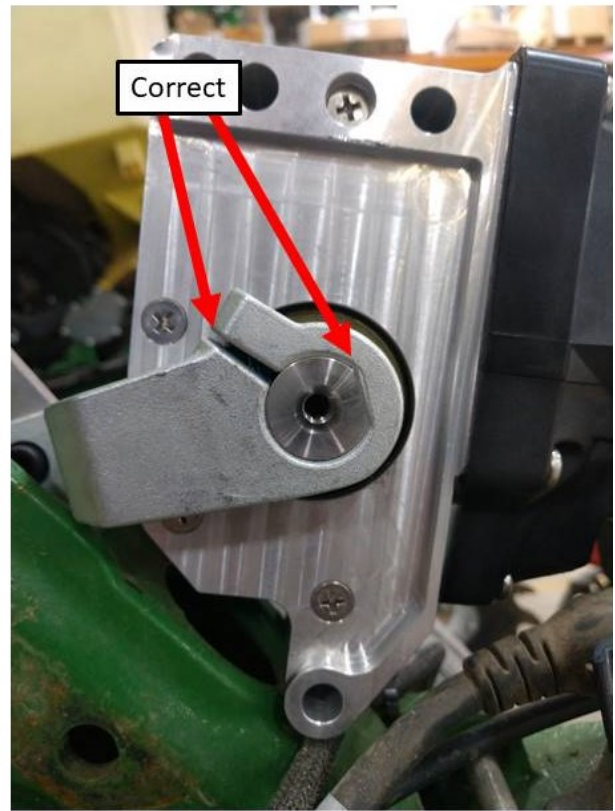
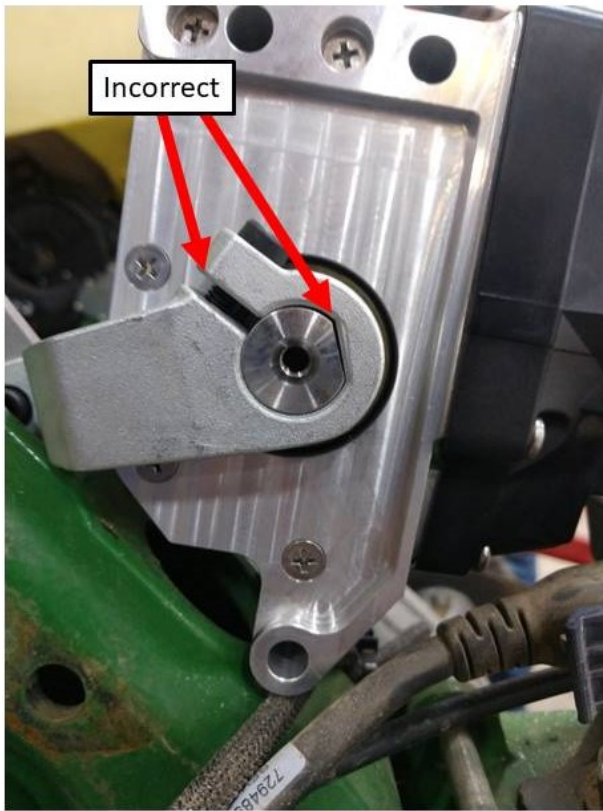
Assemble the arms and wishbone link to the SmartDepth gear box assembly.

- a: Start by installing the drive arm with link bushing, the wishbone link and finally the right side drive arm. The drive arms can be install on either side of the actuator but its recommended to instal them with the clamping bolt towards the rear as shown. Use a 5 mm allen wrench to tighten all three joints.

Note: Tighten the bottom allen head bolt at the wishbone link before tightening the top bolts on the gear box output shaft using the LOW PROFILE bolt at this location. The low profile allen head bolt is used here to prevent interference with the teeth on the shank.



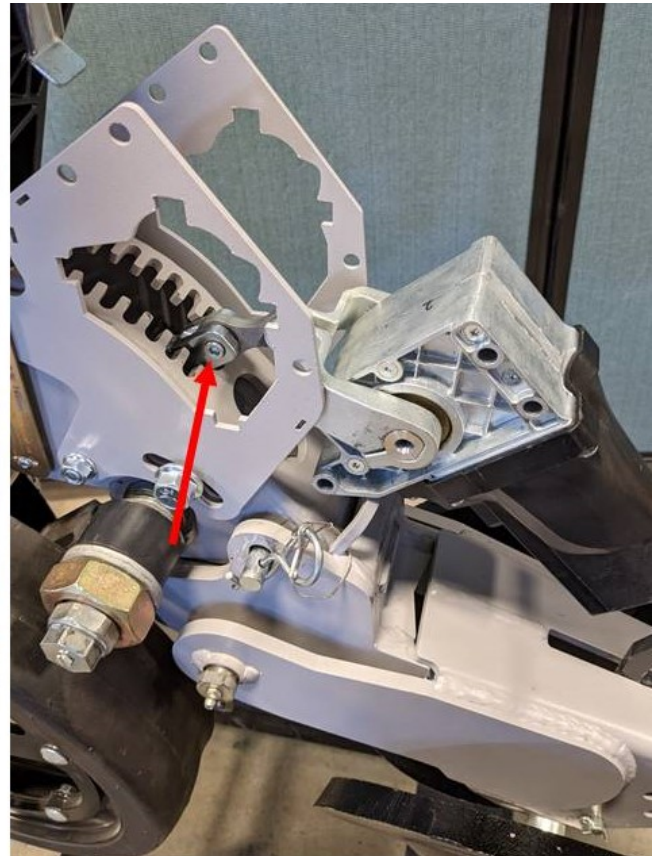
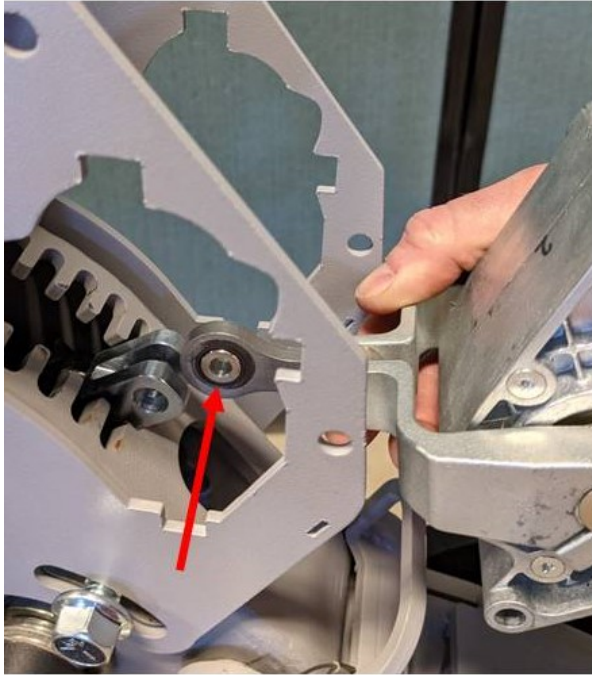
- b: Ensure the drive arms are clamped tight enough as shown and the arm is flush with the gear box output shaft. If the arm is not flush you can gently tap on it with a hammer before its completely tight.



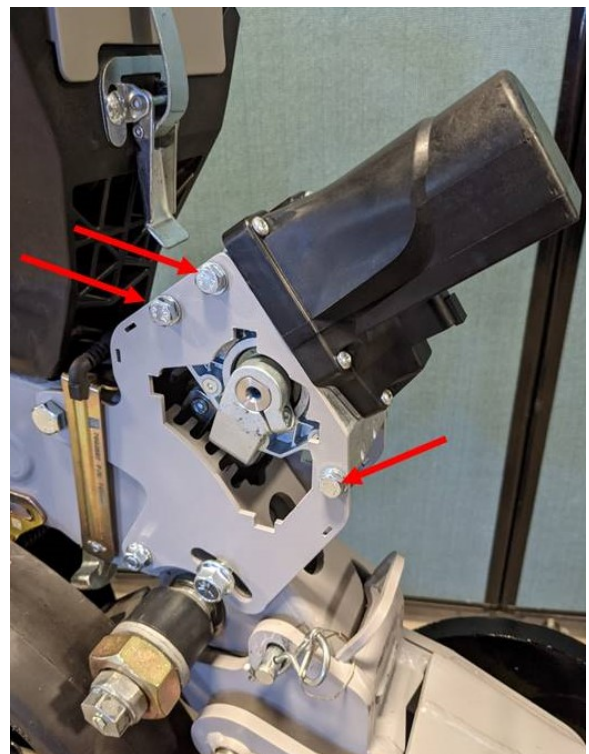
Step 4:

Install the SmartDepth control actuator to the row unit.

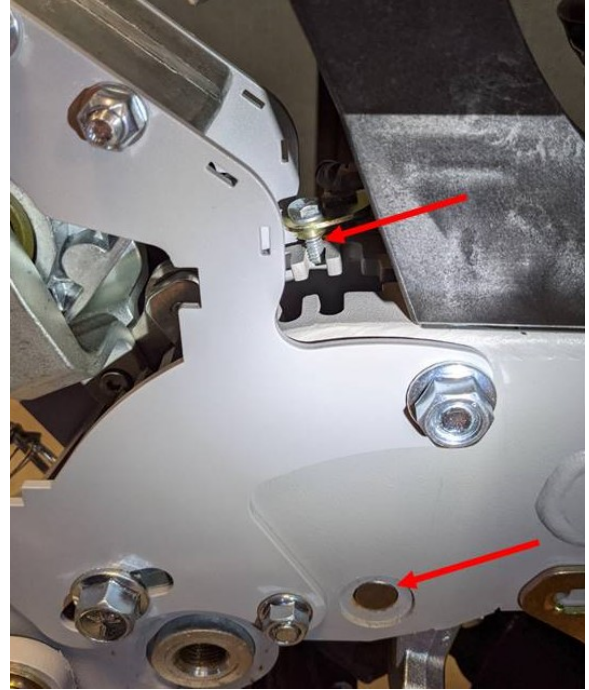
- a: Insert the link bushing into the wishbone and then use a M6 allen head bolt to secure the wishbone to the depth arm.



- b: Position the gear box and actuator between the two support brackets and use the M8 bolt, M8 flat washers and M8 lock nuts to secure the actuator to the support brackets.



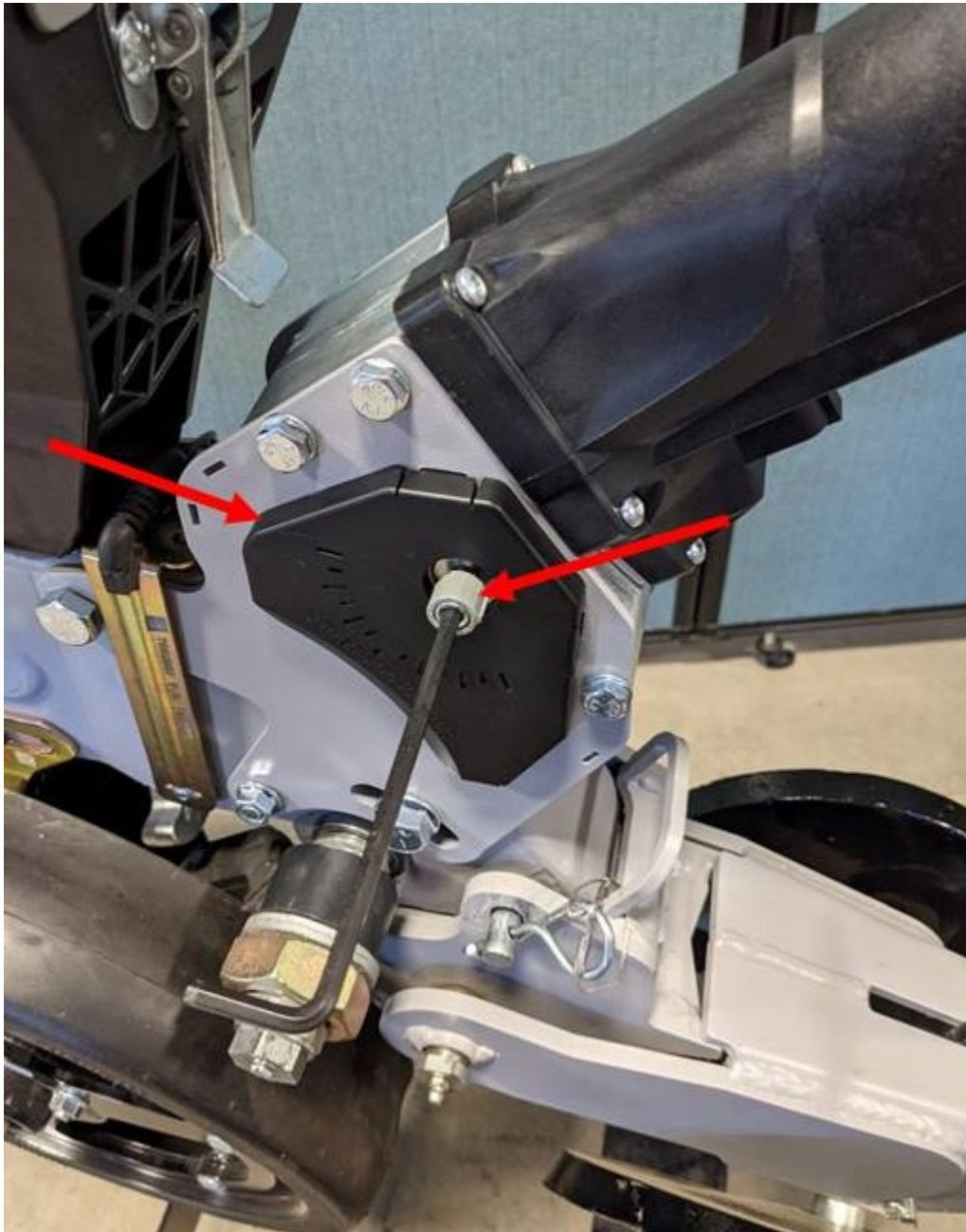
- c: Next, tighten all support bracket and gearbox hardware which was previously left loose.
- d: Secure the load cell back into place. Start by using a socket with extension and tighten the retaining screw on the top of the load pin. The load pin will flex just enough to allow the screw to do down into the tooth of the shank. Once that is complete reinstall the snap ring on the load cell.



Step 5:

Install the left and right hand guards.

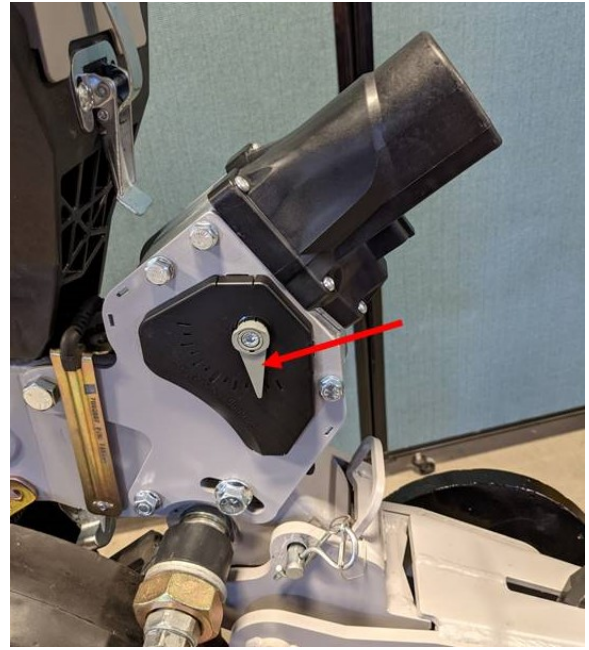
Guard Installation



- a: Begin by snapping guard into the support bracket. Notice there is a right hand and left hand guard which are not reversible.
- b: Next, install bushing insert so that the insert is facing inward against the drive shaft. Use the M6 allen head bolt from the hardware kit to hold the bushing insert but DO NOT tighten the bolt.

- c: Install depth indicator by aligning the two flat spots and sliding the depth indicator over the bushing until it snaps into place.

Note: SmartDepth has dangerous pinch points that can cause serious injury. Install the safety sticker as a reminder to the danger of pinch points.



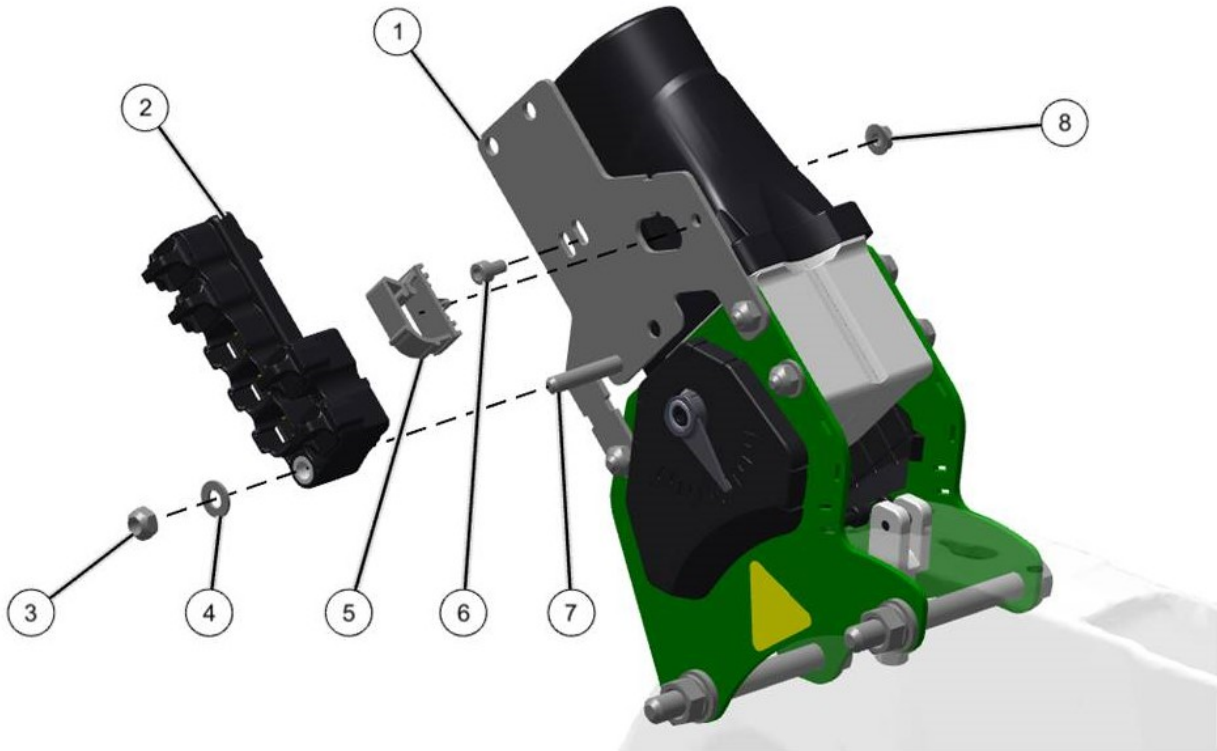
- d: Wait until the install is complete to set the depth indicator final location. Once the installation is complete, the 2020 is setup, and the depth calibration is completed, command the depth to 2" as an example (any depth can be chosen). With all of the SmartDepth modules at their commanded depth align the depth indicator with the center notch on the guard and tighten the M6 allen head bolt. Notice that you can depress the flag into the center notch to help hold it in place as you tighten the bolt.

Step 6:

Finally, route the CAN jumper from the actuator up the shank to the CAN expansion hub. Zip tie the harness so it does not interfere with any moving parts. Use the zip tie holes on the bracket and do not over tighten.

Step 7:

Install the SmartDepth CAN expansion Hub bracket (optional).



The CAN expansion hub bracket is designed to be flexible in its mounting location and orientation. It allows for the CAN hub to be installed on either the right or left hand side of the SmartDepth assembly and provides zip tie points as well as clips to help secure the harnessing in place.

- a: Use M8 bolt (7), M8 nut (3), and flat washer (4) to bolt the CAN expansion hub to bracket (1). The CAN hub can be mounted with the bolt on the bottom (as shown) or on top depending on preference.
- b: Use M6 bolt (6) and M6 flange nut (8) in one of the center slotted holes. The purpose on Bolt (6) is to help keep the CAN expansion hub located in the correct spot and prevent it from rotating.
- c: Next, mount bracket (1) to the top two bolts of the SmartDepth support bracket as shown.
- d: Finally, snap clip (5) in the bracket which can be used to help secure harnesses as desired.