Ride Height Sensor Relocation

FORD SUPERDUTY 2023+

INSTALLATIONGUIDE

NEW PRODUCT

Please visit www.aev-conversions.com to view the most current installation guide for this product.

This is a new product and we want to make sure that you receive the latest and most accurate information based on customer feedback, product revisions, and/or model year updates. We value customer feedback, so we encourage you to contact our Technical Support department if you have any suggestions on how to make the installation of this product easier or if you have any questions regarding the installation of this product. AEV's Technical Support can be reached by email at tech@aev-conversions.com or by giving us a call at (248)-926-0256.

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Last Updated: 09/23/26

PLEASE READ BEFORE YOU START

To guarantee a quality installation, we recommend reading these instructions thoroughly before beginning any work. These instructions assume a certain amount of mechanical ability and are not written nor intended for someone not familiar with auto repair.

INCLUDED PARTS	QTY
Ride Height Sensor Brackets	1
Hardware	1

REQUIRED TOOLS
Common Hand Tools
Snap Ring Pliers
Impact Wrench

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1. Remove the stock front ride height sensors and brackets from the vehicle. Keep the RH and LH sided sensors separate to ensure you reinstall the correct sided sensor later in the installation. Set aside the hardware you remove for later use.

2. Starting on the driver side of the vehicle, locate the body harness and ride height sensor harness sitting above the frame body mount bracket. NOTE: If the AEV Ford Superduty Highmark Fender Flares are already installed on your vehicle, steps (a – c) regarding the body harness do not apply. The body harness would have already been re-routed to the new location. Proceed removing the fir tree clips attaching the ride height sensor harness above the body mount as stated below in step (d).

    a. Remove the zip ties attaching the body harness to the body mount. **NOTE: Be careful when cutting zip ties around the body harness cable, this is a high voltage cable.**
    b. Remove the factory plastic body mount routing bracket that the body harness was attached to. This can be discarded as a new AEV routing bracket will be installed for the body harness.

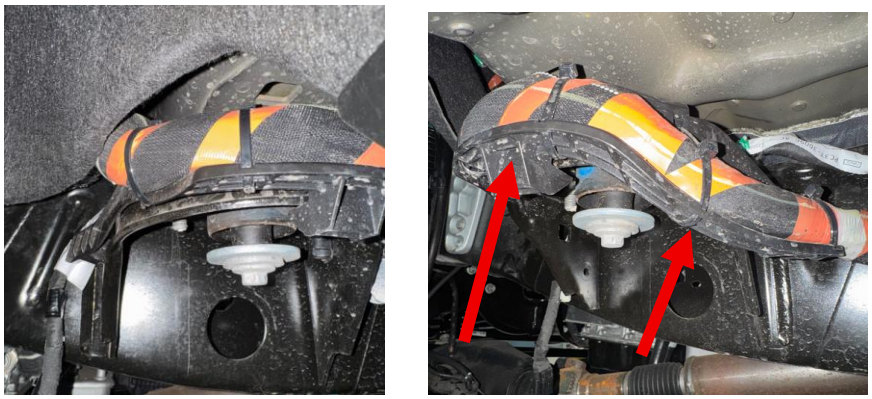


Figure 1

    c. Pry out the fir tree clips that attach the body harnesses to the frame above the body mount. The body harness needs to be free of the frame to relocate this to the new body harness bracket.

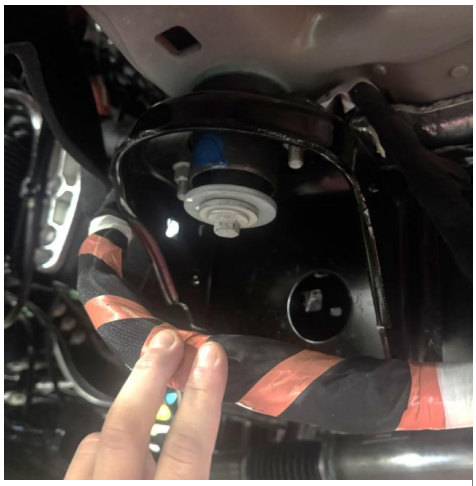


Figure 2

d. Locate the ride height sensor harness that also sits above the frame body mount bracket. Free the ride height sensor harness from the frame so that it can be pulled rearward enough to be out of the way during the install. This will be rerouted after the new sensor is mounted.

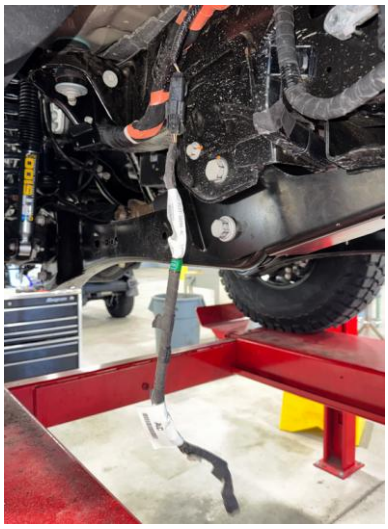


Figure 3

3. Take the factory driver side ride height sensor and remove plastic guard on the bracket, this can be discarded. Remove the sensor from the factory bracket and save the two M5 bolts and nuts for later use. Carefully remove the sensor arm from the ball stud on the factory ride height sensor.





Figure 4

4. Use snap ring pliers (or a similar tool) to remove the ball stud arm from the factory ride height sensor. Carefully spread open the tabs as shown and pull on the ball stud arm at the same time to remove it. The arm should slide out with little force once the tabs are spread open enough, do not force this and break the tabs.

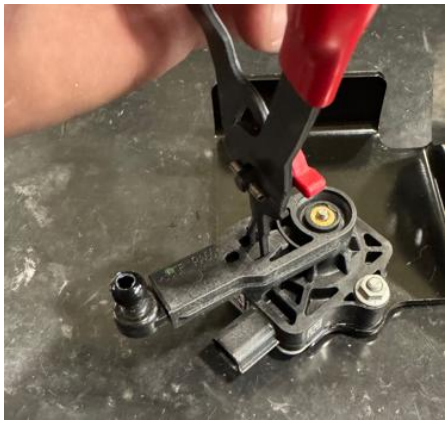




Figure 5

5. Try and keep the sensor arm in the original position and avoid spinning this around the pivot point too much during the install process.

6. Locate the factory ride height sensor lower bracket that was attached to the radius arm and remove the metal ball stud and nut, this will be reused in the next step. Save the M8 bolt that attached the bracket to the radius arm as well, this will be used later in the install.

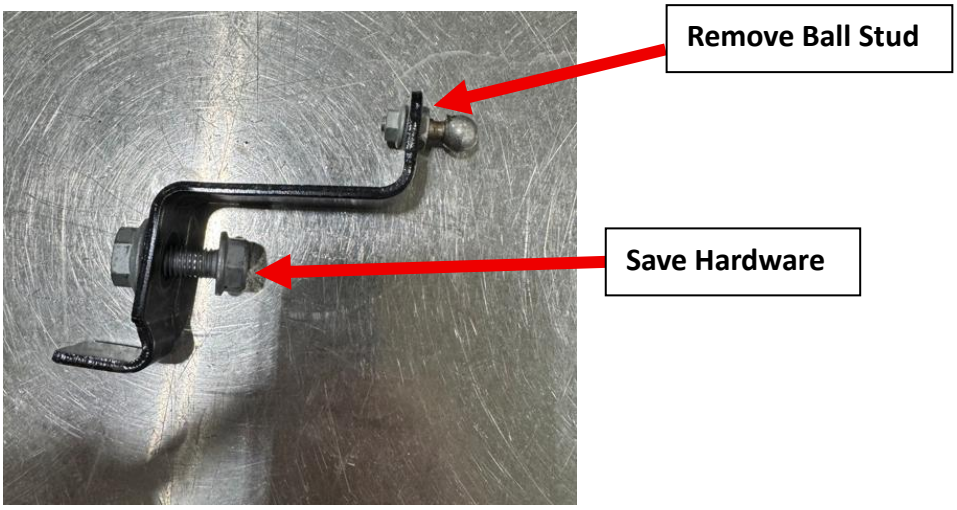


Figure 6

7. Take the ball stud previously removed from the factory bracket in the previous step and snap this into one end of the ride height sensor arm (pliers can be used to assist). Take the AEV pivot arm bracket (these are common RH and LH) and install the metal ball stud and arm in the orientation shown below. Secure and tighten with factory ball stud nut.

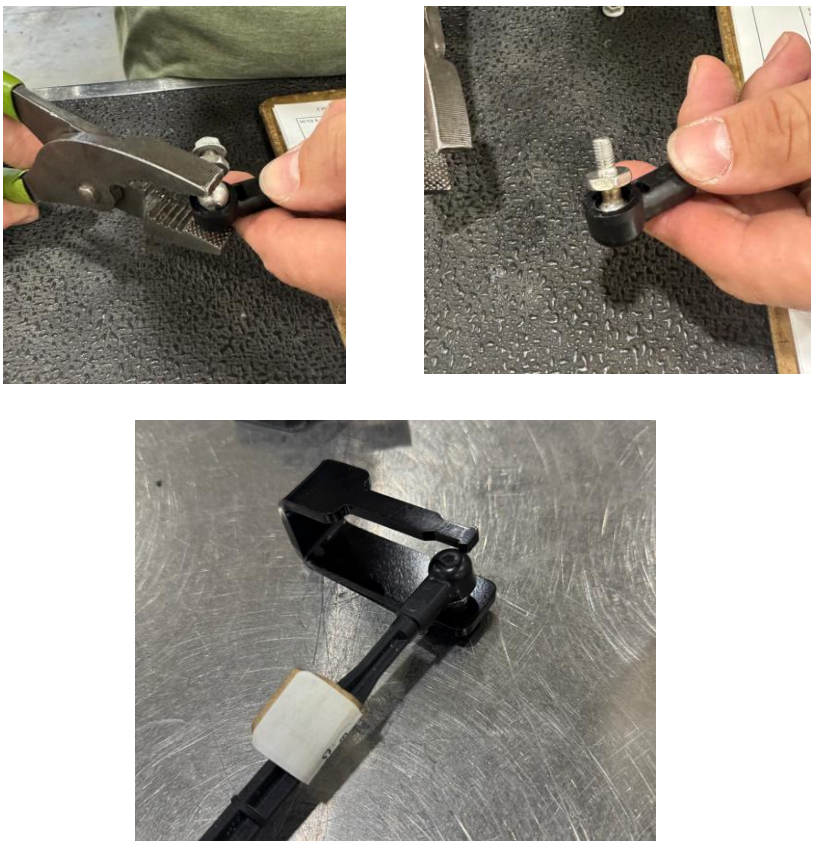


Figure 7

8. Install the AEV pivot arm bracket into the ride height sensor as shown. The bracket will slide into the sensor pivot arm and push until you hear the plastic snap engage.



Figure 8

9. Now locate the AEV ride height sensor frame bracket (reference the figure below for the correct RH and LH sided bracket) and using the M5 bolts and nuts removed from the factory frame bracket, install the sensor onto the AEV bracket in the orientation shown below. The bolts will be installed through the backside of the new bracket and be secured with nuts on the top side of the sensor.



Figure 9

10. Locate the AEV body harness bracket shown in the figure below. NOTE: If your vehicle already has the AEV Ford SuperDuty HighMark Fender Flares installed, you will already have this bracket installed on the vehicle, proceed to step (f).

    a. Locate the AEV body harness bracket and align this inside the driver side body mount that the body harness sits above. Using the provided M8 bolts and nuts, loose install the forward two bolts to secure the AEV bracket to the frame body mount.



Figure 10

    b. Reroute the body harness to sit in the pocket of the new AEV bracket.

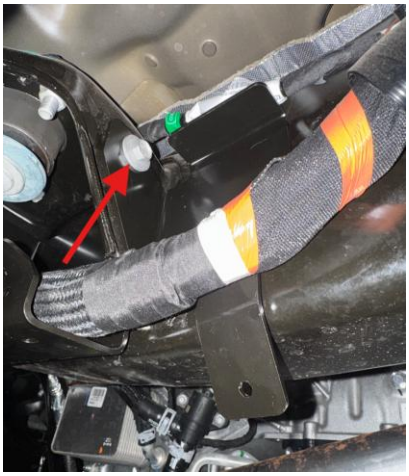


Figure 11

c. Install the new AEV ride sensor bracket to the rearward side of the frame body mount, aligning the mounting hole in the sensor bracket to the body mount hole. Loose install with provided M8 bolt and nut.
d. Once all (3) M8 bolts are in place, tighten the M8 nuts to secure the new ride height sensor bracket and body harness bracket to the frame body mount. Torque to 16 ft-lb.
e. Install two provided cable ties to secure the body harness to the AEV bracket.



Figure 12

f. If you already had the AEV body harness bracket installed on your vehicle, remove the rearward single M8 bolt and nut shown in step (c). Place the new AEV sensor bracket into position on the backside of the frame body mount and reinstall the M8 bolt and nut. Discard the extra body harness bracket that was provided in the ride height sensor kit.

11. Locate the unused hole in the radius arm that sits below the new ride height sensor bracket installed. Take the M8 rivnut tool provided in the kit and remove the rivnut that comes threaded onto the tool. Replace that rivnut with the larger rivnut that is provided in the hardware pack. Using an impact gun and a 9/16 wrench, install the rivnut into the radius arm as shown.

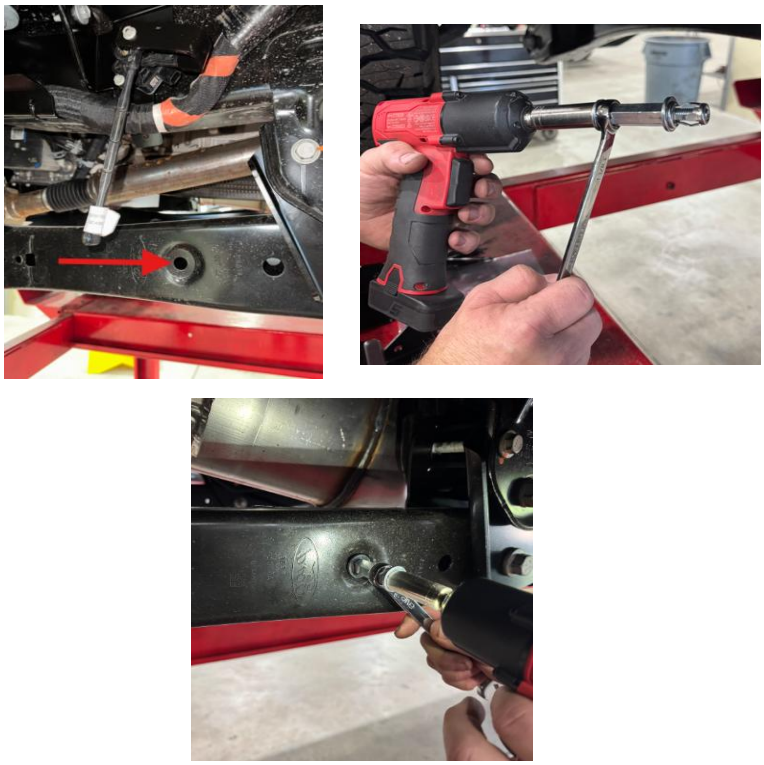


Figure 13

12. Take the driver side radius arm relocation bracket as shown below and install this onto the vehicle using the M8 bolt that we previously removed from the factory radius arm ride height sensor bracket. Torque M8 bolt to 16 ft-lb. Note that these two brackets in the kit are unique to each side of the vehicle.

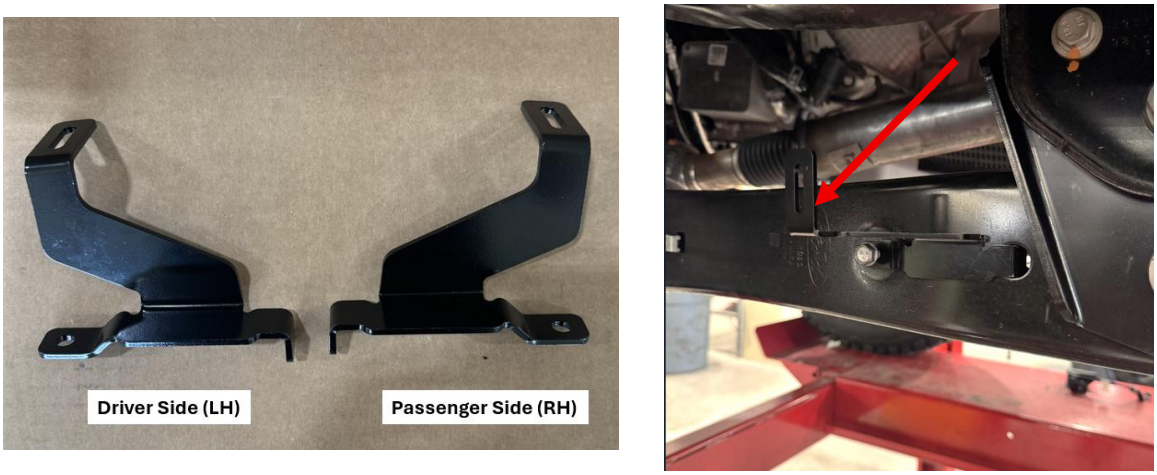


Figure 14

13. Install the provided metal ball stud into this new radius arm relocation bracket with the ball stud facing inboard. Secure loose with provided nut. Reattach the ride height sensor arm onto the new ball stud, pliers can be used to assist in snapping the arm back onto the ball stud. Leave the ball stud nut loose installed until the passenger side is complete.

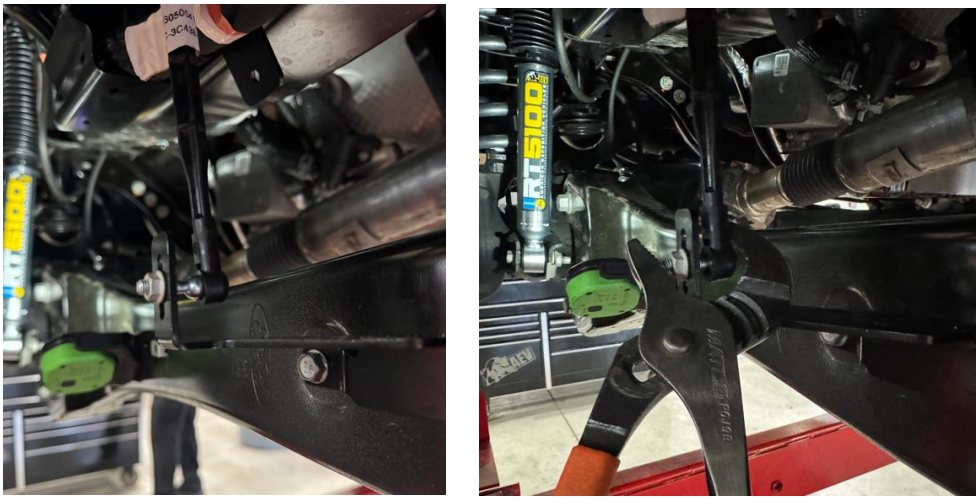


Figure 15

14. With the new ride height sensors and brackets in place, take the body harness and using the fir tree zip tie provided in the kit, secure the body harness to the driver side frame bracket using this zip tie in the location shown below. Tighten this to keep the body harness out of the way of the new ride height sensor pivot arm and bracket.

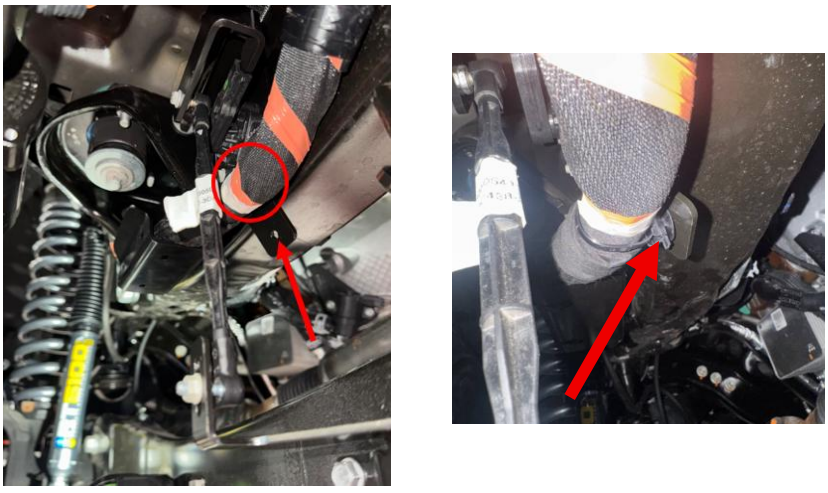


Figure 16

15. Now take the factory ride height sensor harness that was loose from the frame cable ties and plug the harness back into the sensor. Route the sensor harness along the body harness cable and use the provided zip ties to attach the two together. You can utilize the factory fir tree zip ties on the harness itself to keep the harness up against the frame as it moves rearward.



Figure 17

16. Once the harness on the driver's side is secured, move to the passenger side of the vehicle. Like the driver side, remove the cable ties attaching the ride height sensor harness to the frame of the vehicle above the frame body mount to free the harness so it can be pulled rearward and kept out of the way.

17. Remove the bolt that attaches the ground wire to the rearward side of the body mount. Save bolt for later use. Remove the fir tree clip attaching the ride height sensor harness to the frame as shown below as well.

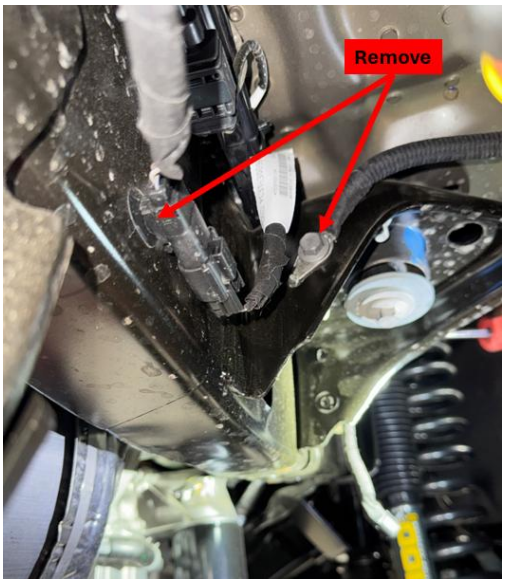


Figure 18

18. Locate the passenger side AEV sensor frame bracket and proceed installing the factory sensor to the new bracket using the same steps as done on the driver side. The only difference being using the passenger AEV sensor frame bracket. Note the orientation of the sensor on the new bracket below.



Figure 19

19. Place the AEV sensor bracket up to the rearward side of the frame body mount where you previously removed the bolt attaching the ground wire to the body mount. The new bracket will align to this hole, take the M8 bolt that was previously removed and attach the bracket AND ground wire back onto the body mount frame. Torque M8 bolt to 16 ft-lb. NOTE: the AEV bracket has an extra hole that is used for the ground wire locating tab, the ground wire will sit on the outside of the bracket between the bracket and the bolt that is installed.

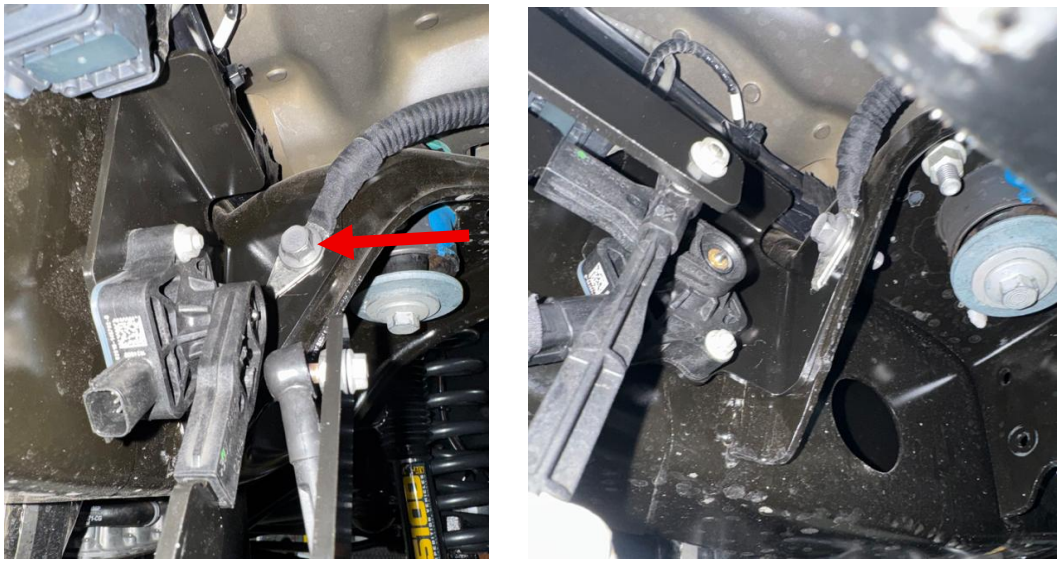


Figure 20

20. Once the frame bracket is secured, install the AEV relocation bracket on the radius arm as done on the driver side. Use the provided rivnut and previously removed M8 bolt to install the relocation bracket on the radius arm. Loose install the provided ball stud facing inward and attach the sensor arm to the ball stud.




Figure 21

21. Take the ride height sensor harness that was previously hanging loose and plug this back into the sensor. Disconnect the ride height sensor jumper connector as shown and reroute this underneath the sleeved harness already attached to the frame.

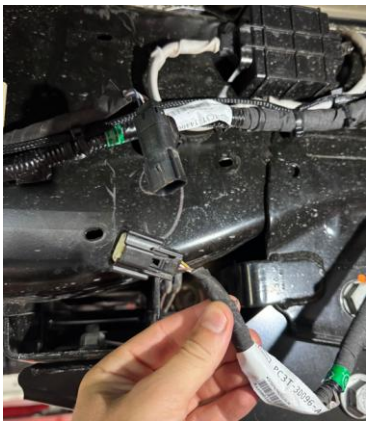



Figure 22

22. Reconnect the harness and utilize the fir tree clip on the connector to attach this to the existing hole on the upper portion frame.



Figure 23

23. Secure the rest of the ride height sensor harness (from this jumper connection to the actual sensor itself) to the frame/harnesses using cable ties provided. Ensure all harnesses on the frame are secure and out of the swing path of the ride height sensor arm.



Figure 24

24. At this point, the sensors and new AEV brackets are securely attached to both sides of the vehicle, and the harness should be secured back to the frame. The last step will be adjusting the lower ball stud position in the vertical slot of the new AEV radius arm relocation bracket.

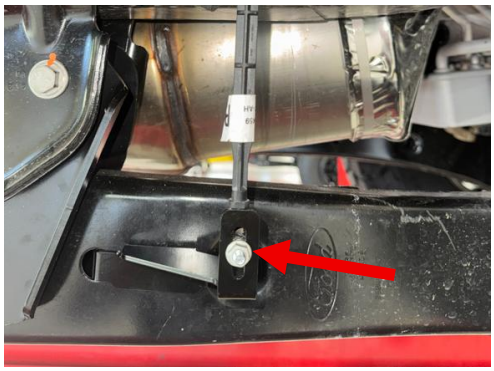


Figure 25

25. Turn your vehicle on and navigate to the onboard scale feature. The position and angle of the pivot arm on the ride height sensors will dictate what the onboard scale feature reads.

    a. Move the lower ball stud position to the top of the vertical slot on each side of the vehicle and check what the onboard scale reads. The goal is to have the onboard scale read zero with no weight in the vehicle, but as you enter the vehicle, it should capture your weight on the scale.
    b. Adjust the lower ball stud position downward in small increments on each side until the scale in the vehicle levels out to zero.
    c. Once the scale shows zero with no weight in the truck, tighten the lower ball studs in place and test the scales by getting in the vehicle and seeing if it shows your body weight on the scale. If you do not see the green bar scale increase when you enter the vehicle, you may need to raise the lower ball studs slightly to reach the correct threshold.



Figure 26

    d. It is also best to try and keep the angle of each pivot arm coming off the sensor as equal as possible on both sides of the vehicle relative to the frame. This may cause the lower ball stud to sit in different positions in the vertical slot on either side of the vehicle, but keeping the angles consistent on both sides will ensure proper scale readings from the sensor.





Figure 27

26. The front ride height sensor relocation is now complete.
27. The rear ride height sensors will be installed in the factory location. No changes are needed for the rear sensors.



Figure 28