



**3" DUALSPORT REAR  
SUSPENSION  
RAM TRUCK 2500 AIR RIDE**



## **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.

<b>INCLUDED PARTS</b>	<b>QTY</b>
Rear Axle Kit	1
Power Hop Bracket Kit (optional)	(1)

**NOTE: Installation on vehicles with a Two-Piece Drive Shaft requires the purchase of AEV PN: NRM43400AA. See Appendix for instructions.**



# 2500 REAR SUSPENSION

## A. REAR SUSPENSION PREPARATION

**NOTE: Two-Piece drive shafts require PN: NRM43400AA. See Appendix for Instructions before beginning.**

1. Disconnect Battery
2. Support the vehicle by the frame until the rear wheels are off the ground.
3. Remove the wheels and tires.
4. Remove sensor arms and links
  - a. Unplug the wire harness from the ride height sensor.
  - b. Remove the torx head screw holding the sensor arm in bracket.
  - c. Remove the link from the axle by popping it off of the ball stud.
  - d. Remove the link from the sensor arm.
  - e. Remove socket ends from links. An easy way to remove the socket ends is to secure the link in a vice, place a metal trim tool under the socket end, and pry upwards (fig. 1).
  - f. Reinstall the socket ends onto the new link rods (fig. 2).

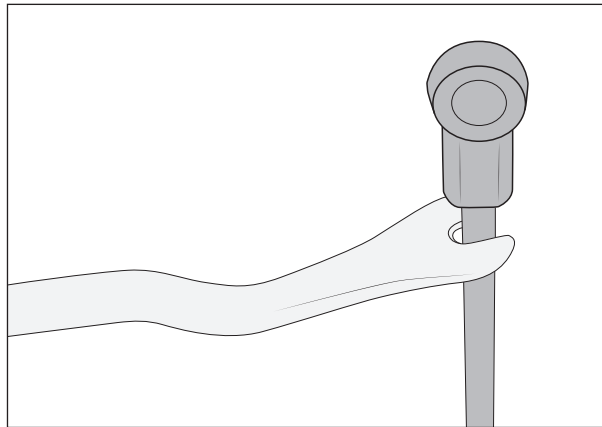


Figure 1

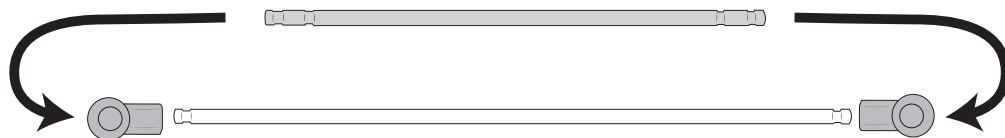


Figure 2



5. Remove the rear sway bar links.
6. Remove the axle vent tube and clip from track bar bracket (fig. 3).
7. Remove the power hop bracket and save the hardware – if equipped (fig. 4).
8. Remove the track bar at the axle end only.
9. Locate the solenoid block on the frame below the passenger floor and loosen the fittings marked RR and LR on to deflate the air springs (fig. 5).
10. Support the axle and remove the shocks.
11. Remove the bump stops from the frame.
12. Remove the left side sway bar bolts from the axle (fig. 6).
13. Remove the left side brake line bolt at the axle (fig. 7).

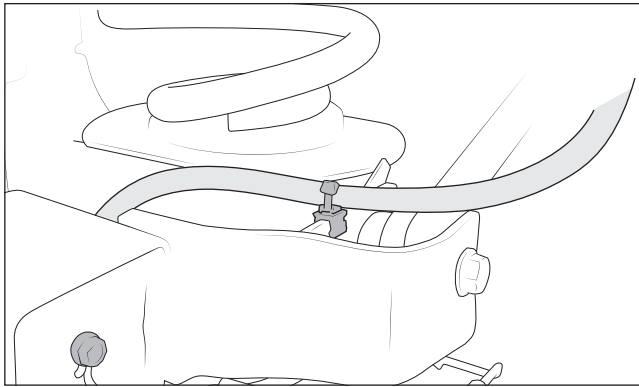


Figure 3

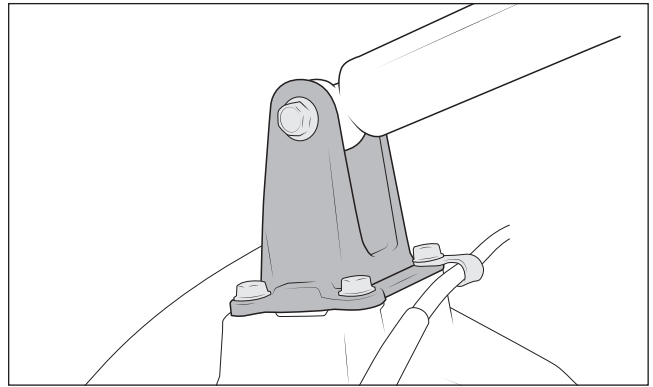


Figure 4

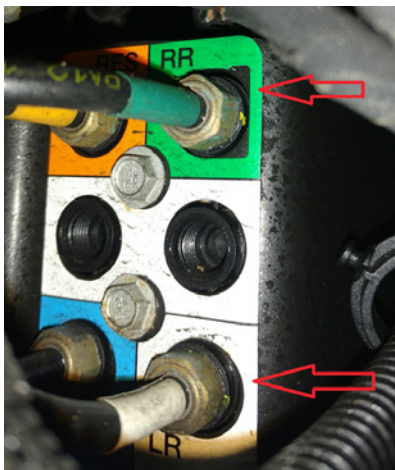


Figure 5

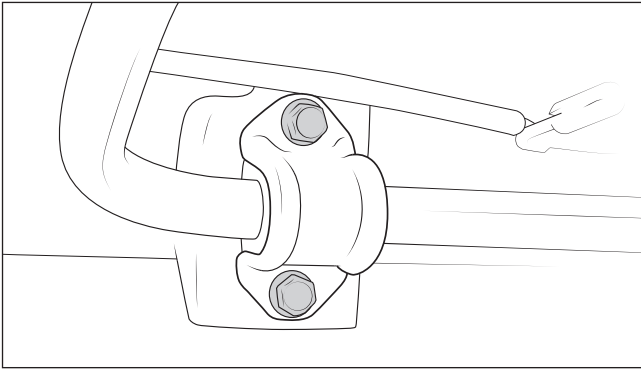


Figure 6

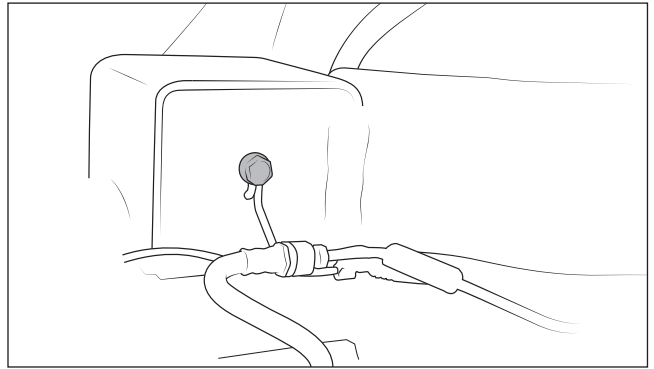


Figure 7

## B. REAR SUSPENSION INSTALLATION

1. Install the track bar relocation bracket.
  - a. Drill the existing hole in the control arm bracket to 1/2" and treat for corrosion (fig. 8).

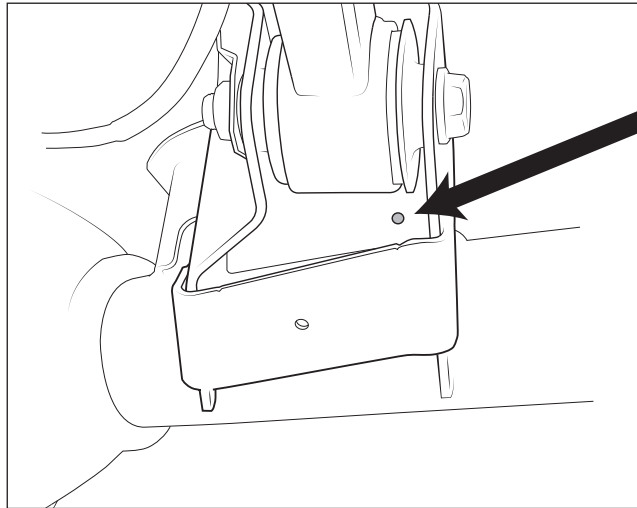


Figure 8



- b. Position the rear track bar relocation bracket on the axle and secure using the supplied hardware (fig. 9). NOTE: You will still have one hole to drill before all hardware can be installed.

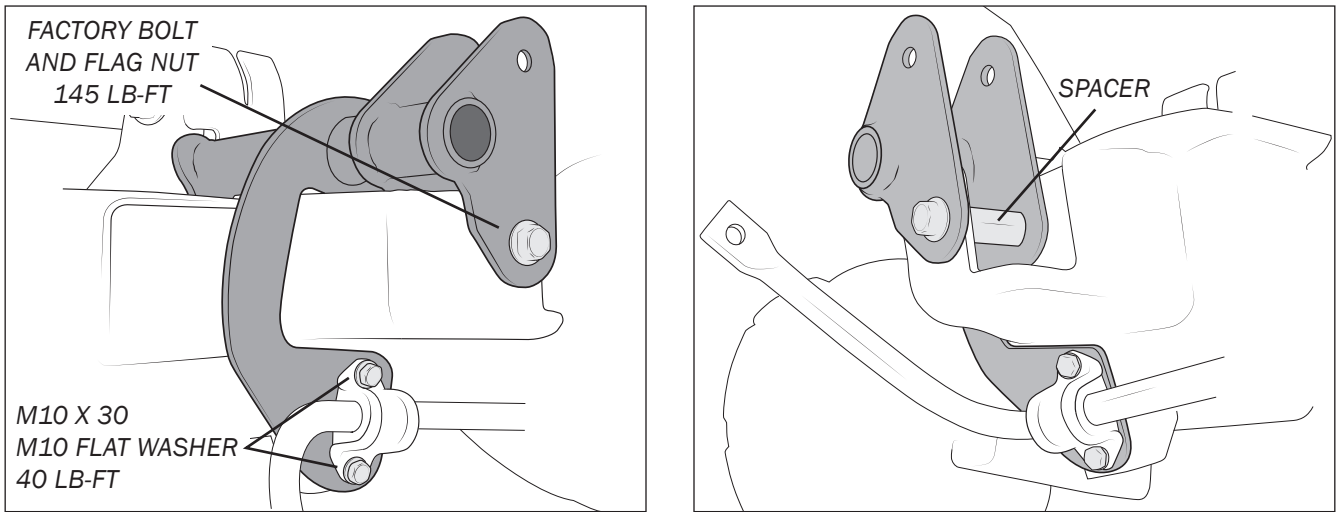


Figure 9

- c. Drill the remaining hole in the control arm bracket and treat for corrosion, then install the remaining bolt (fig. 10).
- d. Tighten all the track bar bracket bolts and torque to spec (fig 9-11).
- e. Re-install the brake line bolt at the axle.
- f. Install the track bar into the track bar relocation bracket passing the bolt through from front of the vehicle to the rear (leave loose at this time).
2. Install the sway bar spacer plate behind the right side of the sway bar with supplied hardware and torque to **40 lb-ft** (fig. 11).

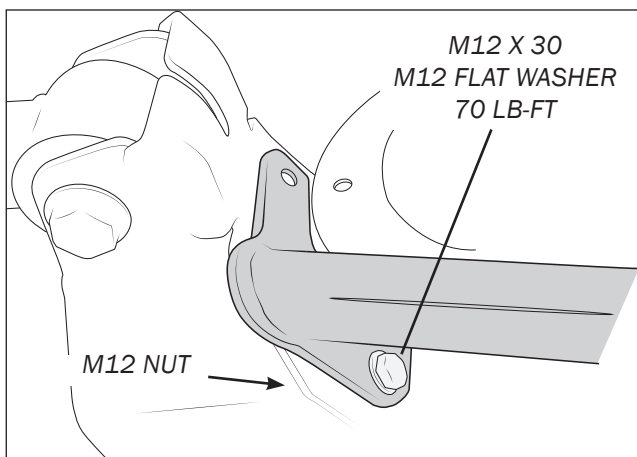


Figure 10

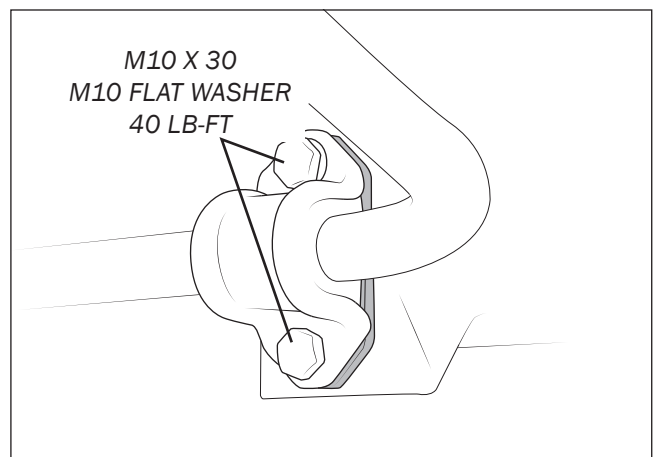


Figure 11



3. Install AEV Power Hop bracket with factory hardware (if equipped). Attach the parking brake cable to the power hop bracket with supplied hardware and torque (fig. 12).
4. Install the bump stop spacers and factory bump stops with supplied hardware and torque to **40 lb-ft** (fig. 13).

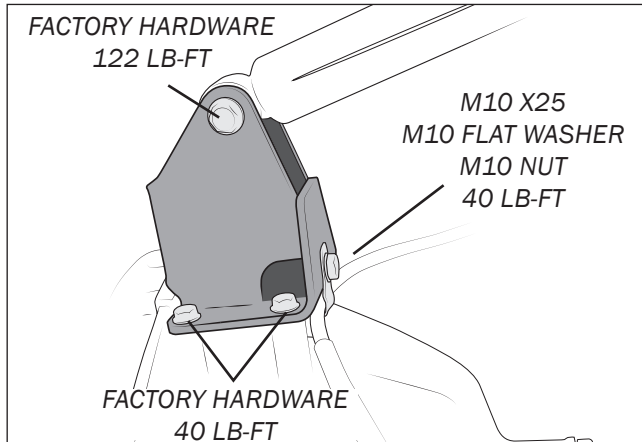


Figure 12

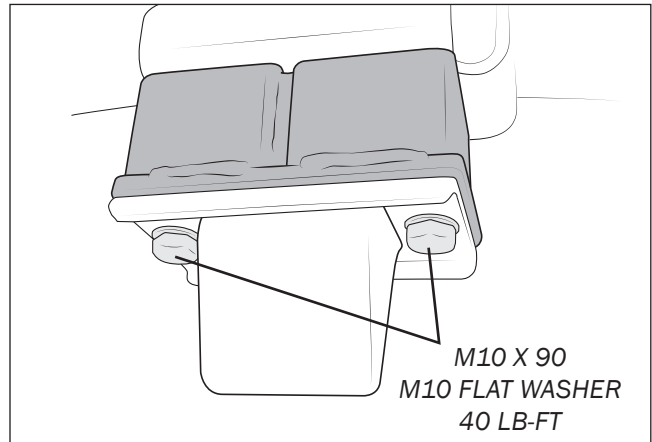


Figure 13

5. Install AEV coil spring spacers with supplied hardware and nut plate (fig. 14).

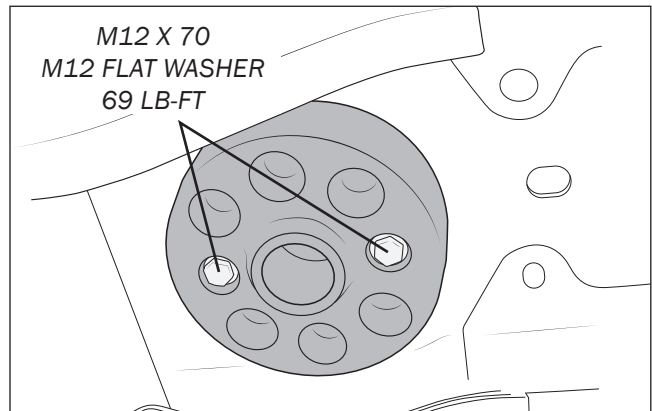
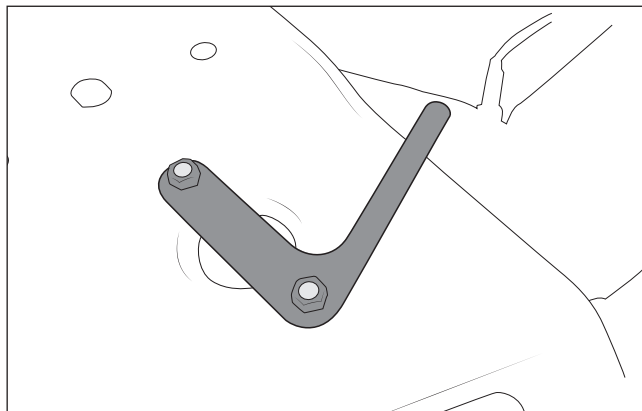


Figure 14 – Left: Tabbed nut-plate, Right: AEV Coil Spacer

6. Assemble the shock bushings as shown (fig. 15) then install AEV shocks. Torque the lower bolt to **136 lb-ft**

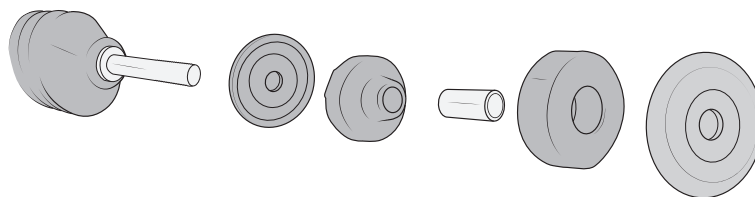


Figure 15



7. Install AEV sway bar links with the factory nut at the axle end and the supplied hardware at the frame Torque as specified (fig. 16).

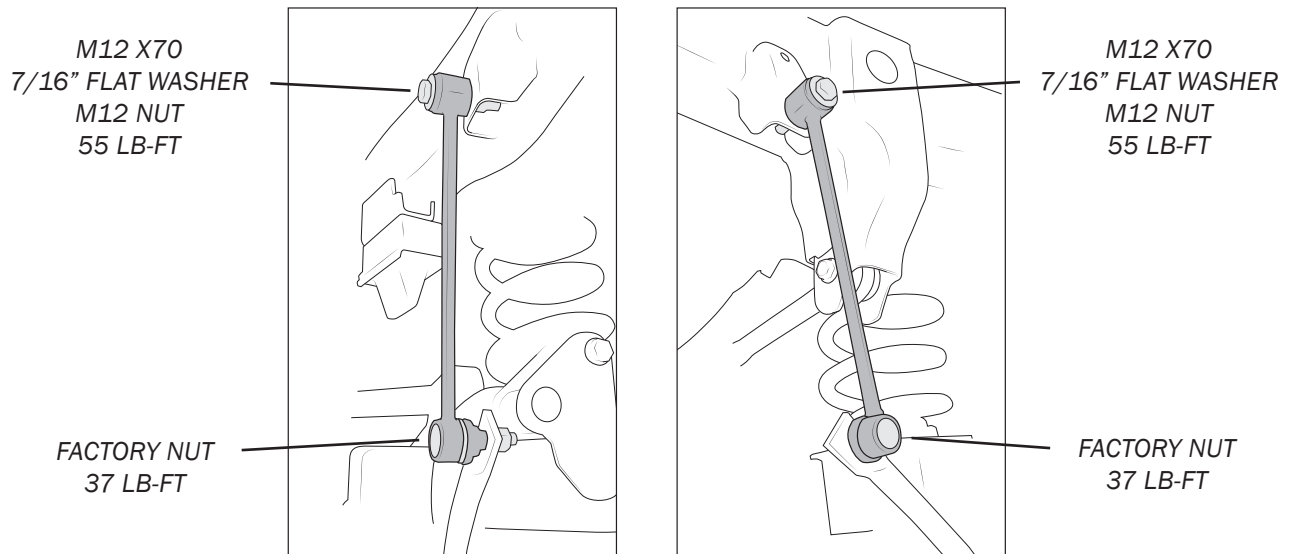


Figure 16

8. Install arm extensions (fig. 17)
  - a. Place arm extension over the ball stud on the factory sensor arm and align with rib.
  - b. Flange should go on the top side of the factory arm.
  - c. Clamp arm and drill holes using a 1/4 in. drill bit.
  - d. Fasten the extension to the factory arm using 6 mm bolts, washers, and nuts. Use a medium strength thread locker.
  - e. Install ball stud on the extension arm with an M6 nut.

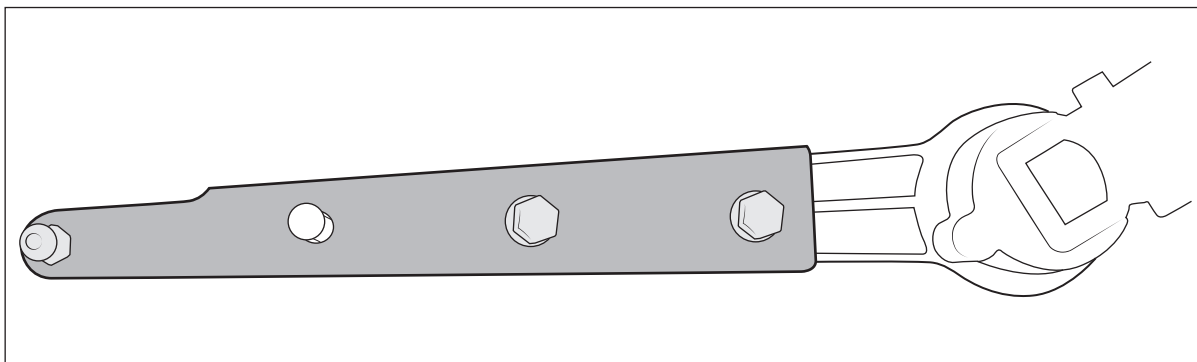
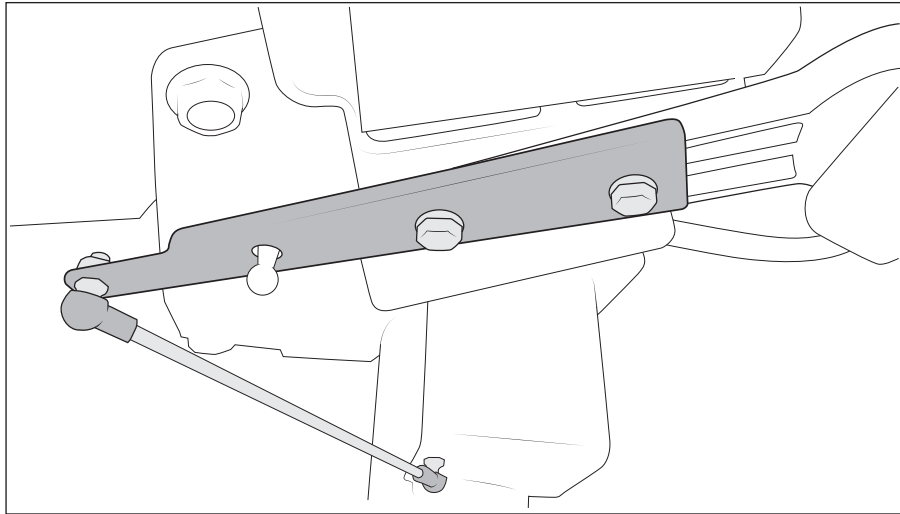


Figure 17



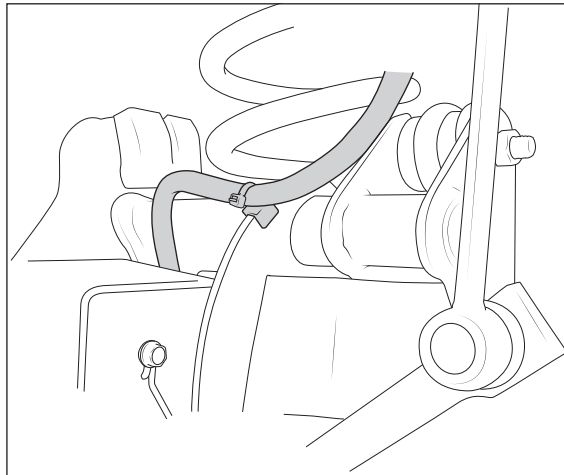


9. Reinstall sensor arms (fig. 18).
  - a. Snap link rod onto ball stud.
  - b. Position sensor back onto the bracket and reinstall torx screw.
  - c. Gently pull the link rod down until you can snap the other socket end onto the ball stud at the axle.
  - d. Plug in wire harness.



*Figure 18*

10. Reattach the axle vent to new track bar tower (fig. 19).



*Figure 19*



11. Install the wheels and tires.
12. Place the vehicle on the ground and make sure the air springs are properly seated in the spacers.
13. Reconnect the battery and turn the key to the ACC position to inflate the air springs.
14. Torque at ride height

Once the vehicle is on the ground at ride height, you will need to torque the following:

- Front radius arm bolts at frame end.
- Front track bar bolts
- Loosen then torque rear control arm bolts at frame and axle end to **229 lb-ft**
- Rear track bar bolts (loosen and retighten at frame end). Torque both sides to **145 lb-ft**

After everything is tight, drive the vehicle back and forth on flat ground to check steering wheel position. Adjust the drag link to straighten the steering wheel as needed.



## APPENDIX FOR TRUCKS WITH A 2-PIECE DRIVE SHAFT INSTALLING AEV PN: NRM43400AA

### PARKING BRAKE CABLE EXTENSION

1. Disconnect parking brake cable (fig. 1).
  - a. Note the tension on the forward and rear parking brake cables loosen the brake adjustment nut to just short of the end of the threads.
  - b. Disconnect forward section of the rear brake cable.
  - c. Disconnect rear section of the rear brake cable.
  - d. Disconnect rear brake line pass through fitting.

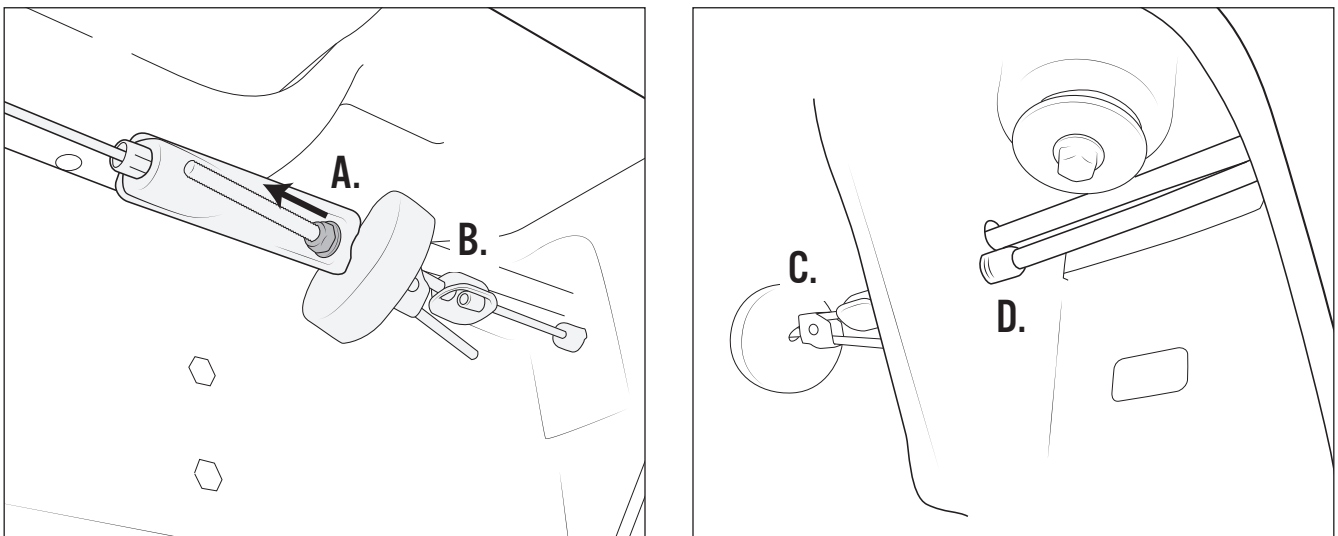


Figure 1

2. Install AEV parking brake cable spacer (fig. 2).
  - a. Install the AEV rear brake cable spacer onto the pass-through fitting on the forward part of the rear brake cable.
  - b. Insert the brake cable and spacer back into its original location and secure with AEV provided jam nut using anti-seize, torque to **14–16 lb-ft**
  - c. Reconnect the rear section of the rear brake cable to its OE position.
  - d. Reconnect the forward section of the rear brake cable to its OE position.
  - e. Adjust nut in a tightening direction and set to previously not tension.
  - f. Check the operation of the parking brake and adjust as needed to ensure proper tension.

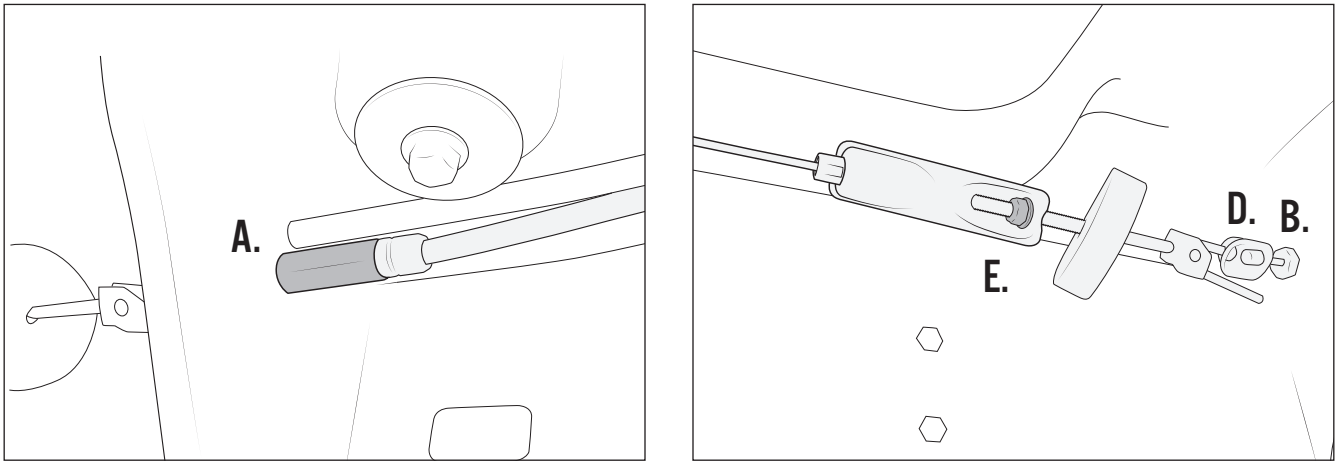


Figure 5

## CARRIER BEARING SPACERS

Carrier Bearing spacers are required to maintain proper drive shaft angles and help to eliminate drive shaft vibrations.

1. Support the carrier bearing and drive shafts in place.
2. Remove the two (2) carrier bearing bolts and discard (fig. 6).
3. Consult the spacer allocation chart (fig. 7) to determine the number of spacers required for your application.
4. Lower the carrier bearing assembly and slide in the required spacer(s).
5. Insert the supplied hardware and torque to 56 lb-ft.

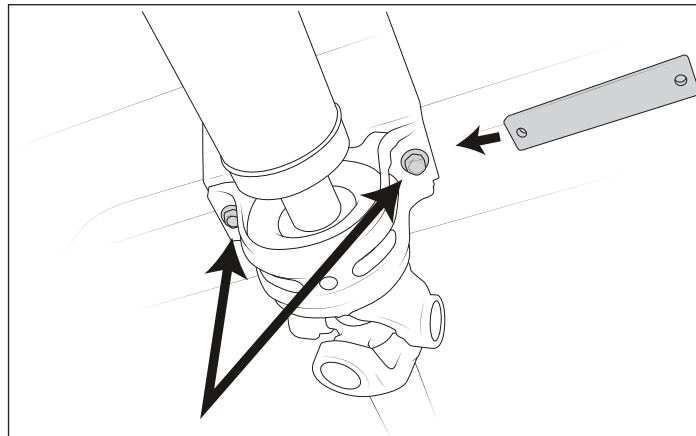


Figure 6

Model	Cab	Bed	Powertrain	Transmission	Spacer(s)
2500	Crew	Long	Diesel	6 Speed Auto	4
3500	Mega	Short	Diesel	6 Speed Auto	1
3500	Crew	Long	Diesel	Aisin	2
3500	Crew	Long	Gas	6 Speed Auto	2
3500	Crew	Long	Diesel	Manual	2

Figure 7