



May 2014

Dealer Service Instructions for:

Safety Recall N26 / NHTSA 13V-239 Front Axle Housing

Models

2012 (DP) RAM Truck Cab Chassis (4500/5500 Series)

NOTE: This recall applies only to the above vehicles equipped with four wheel drive (sales code 5I4) built from February 02, 2012 through December 22, 2012 (MDH 020207 through 122210).

IMPORTANT: Some of the involved vehicles may be in dealer used vehicle inventory. Dealers should complete this recall service on these vehicles before retail delivery. Dealers should also perform this recall on vehicles in for service. Involved vehicles can be determined by using the VIP inquiry process.

Subject

The front axle tube welds on about 5,600 of the above vehicles may not have been welded correctly during the manufacturing process. Improperly welded front axle tubes could allow the differential housing to rotate under high torque operating conditions while in four wheel drive. Should the front axle tube welds break, the differential could rotate and cause the front propeller shaft universal joint to break. This can result in a loss of motive power or damage to surrounding components if the propeller shaft continues to spin after separation. This could cause a crash without warning.

Repair

For vehicles equipped with an automatic transmission, the front axle must be inspected. Front axles that have broken welds will have a new front axle assembly installed. Front axles that are not damaged will have reinforcement brackets installed.

For vehicles equipped with a manual transmission, the front axle must be replaced.

Alternate Transportation

Dealers should attempt to minimize customer inconvenience by placing the owner in a loaner vehicle if inspection determines that the front axle requires replacement and the vehicle must be held overnight.

Parts Information

<u>Part Number</u>	<u>Description</u>
CBA1N261AA	Axle Assembly (4.10 ratio)
CBA1N262AA	Axle Assembly (4.44 ratio)
CBA1N263AA	Axle Assembly (4.88 ratio)
CBA1N264AA	Axle Installation Package

NOTE: Each Axle Installation Package (CBA1N264AA) contains all the required nuts and bolts to replace the axle assembly. One package is required for each axle replacement.

<u>Part Number</u>	<u>Description</u>
CBA1N265AA	Axle Reinforcement Bracket Package

NOTE: The axle reinforcement bracket package is only to be used on vehicles equipped with an automatic transmission.

Each package contains the following components:

<u>Quantity</u>	<u>Description</u>
1	Left Reinforcement Bracket, Upper
1	Left Reinforcement Bracket, Lower
1	Shim, Wedge Bracket Upper
1	Shim, Wedge Bracket Lower Forward
1	Shim, Wedge Bracket Lower Forward
1	Right Reinforcement Bracket, Upper
1	Right Reinforcement Bracket, Lower
1	Fastener Kit

NOTE: Should the vehicle require axle service in the future or if bolts are missing or lost, order bolt package 68237399AA. This kit contains all bolts required to service the axle reinforcement brackets.

Special Tools

The following special tools are required to perform this repair:

- 100000404939 Digital Angle Tool (Craftsman® 948292)
- 100000404940 Hex Head Socket (KD Tools® WTC27910)
- C3894 Tie Rod Tool

NOTE: One special tool kit containing a digital angle tool and hex head socket was shipped to each Dodge/RAM heavy duty truck dealer free of charge in April 2014.

Additional special tool kits can be purchased, at dealer expense, by calling Wright Tool Company at 1-800-783-9826 during regular business hours (Eastern Standard Time).



Special Tool Kit Contents

Service Procedure

- **Vehicles equipped with a manual transmission:** no front axle inspection is required. Proceed to **Section C. Replace Front Axle Assembly.**
- **Vehicles equipped with an automatic transmission:** front axle inspection is required. Proceed to **Section A. Inspect Front Axle for Differential Carrier Rotation.**

A. Inspect Front Axle for Differential Carrier Rotation

NOTE: This inspection procedure is only for vehicles equipped with an automatic transmission.

1. Lift the vehicle on an appropriate hoist.
2. **For vehicles on a “drive-on” type hoist,** raise the vehicle by the frame slightly to gain the clearance required to insert the digital angle tool (Figure 1).
3. **Thoroughly clean** the left and right side front axle jounce bumper pads (Figure 2).



Figure 1 – Raise the Truck Slightly by the Frame

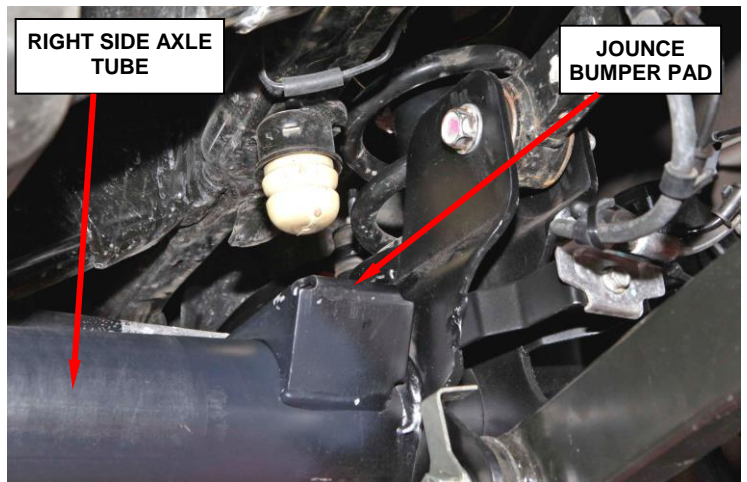


Figure 2 – Clean Jounce Bumpers (right side shown)

Service Procedure (Continued)

4. Press the “Power” button on the digital angle tool.

NOTE: The digital angle tool is self-calibrating each time it is turned on. There is no calibration required before using the tool.

WARNING: The digital angle tool has a built-in laser that will not be used in this service procedure. Do not shine the laser in anyone’s eyes. Eye damage may occur.

CAUTION: The digital angle tool must have the magnetic base against the jounce bumper pad and the red laser ON/OFF button must be facing rearward when making measurements on both sides of the vehicle.

5. Place the digital angle tool onto the right jounce bumper pad with the magnetic side down and the red laser ON/OFF button facing rearward (Figure 3).
6. Press and hold the “ZERO” button for approximately three seconds (Figure 3).

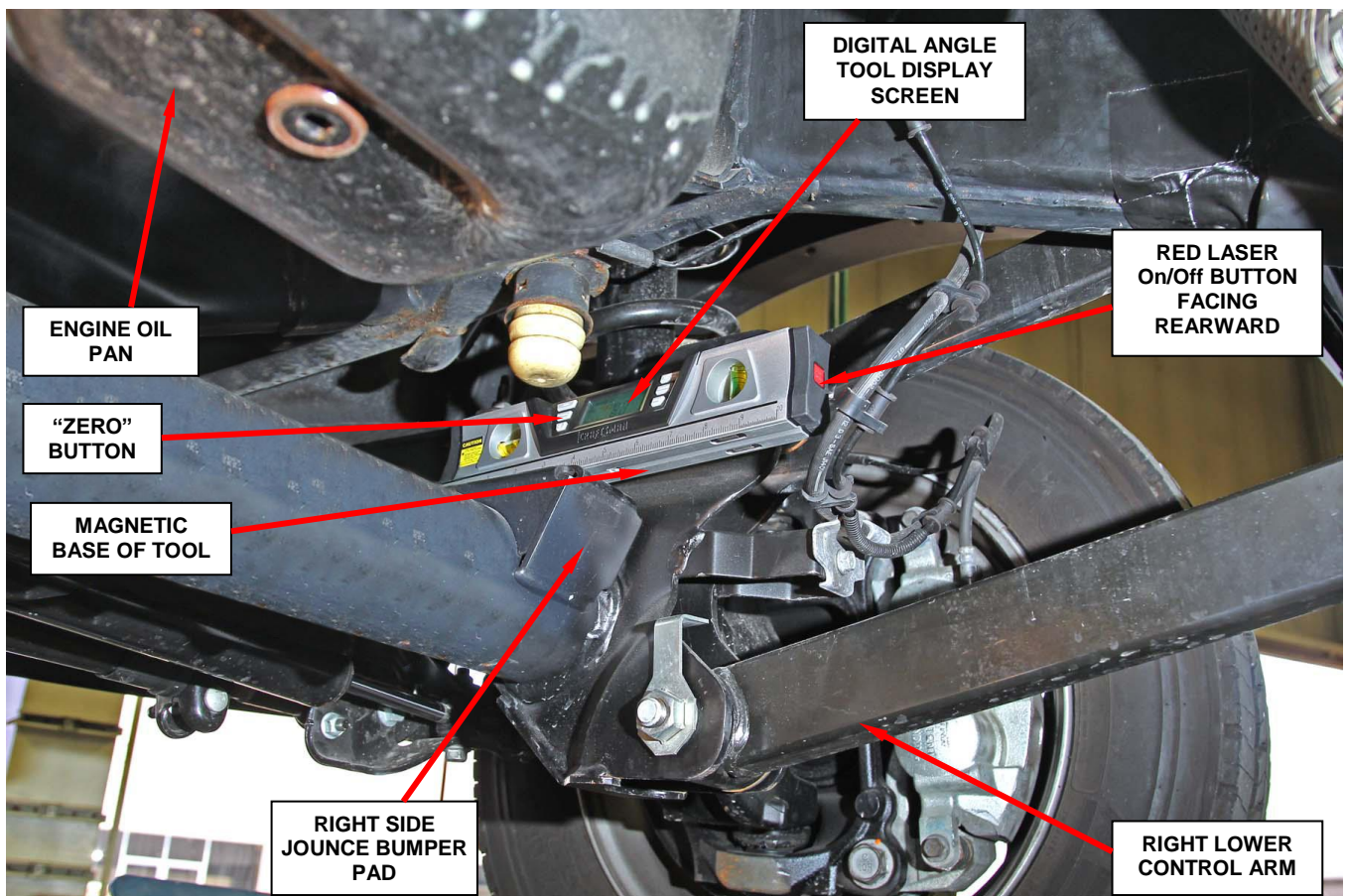


Figure 3 – Digital Angle Tool on Right Jounce Bumper Pad

Service Procedure (Continued)

7. Remove the digital angle tool from the right jounce bumper pad.
8. Place the digital angle tool onto the left jounce bumper pad with the magnetic side down and the digital angle tool red “Laser ON/OFF” button facing rearward (Figure 4).

CAUTION: Failure to have the red “Laser ON/OFF” button facing rearward when making measurements will result in an incorrect measurement.

9. With the tool on the left jounce bumper pad, press the “**HOLD**” button once.

NOTE: Pressing the “**HOLD**” button is a “blind operation.” The “**HOLD**” button is the bottom button at the rear of the tool.

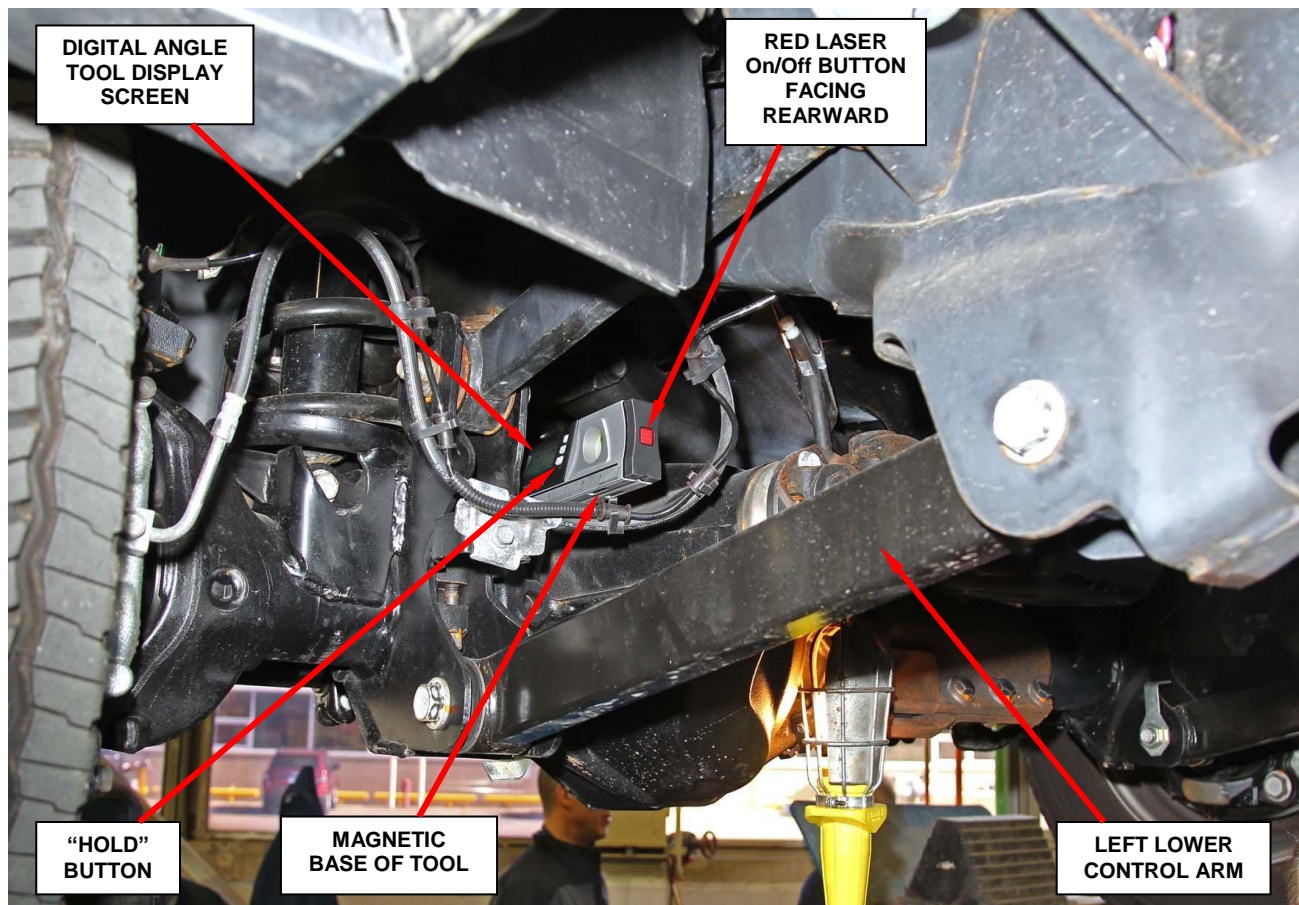


Figure 4 - Digital Angle Tool on Left Jounce Pad

Service Procedure (Continued)

10. Remove the tool from the left jounce bumper pad.
11. Press the “**Memory/Recall**” button once and note the reading on the display screen of the tool (Figure 5). The number displayed on the tool screen is the angle difference between the right and left jounce pads:
 - If the angle difference between the two jounce pads is 3.0° or less, continue with **Section B. Install Front Axle Reinforcement Brackets**.
 - If the angle difference between the two jounce pads is 3.1° or more, continue with **Section C. Replace Front Axle Assembly**.

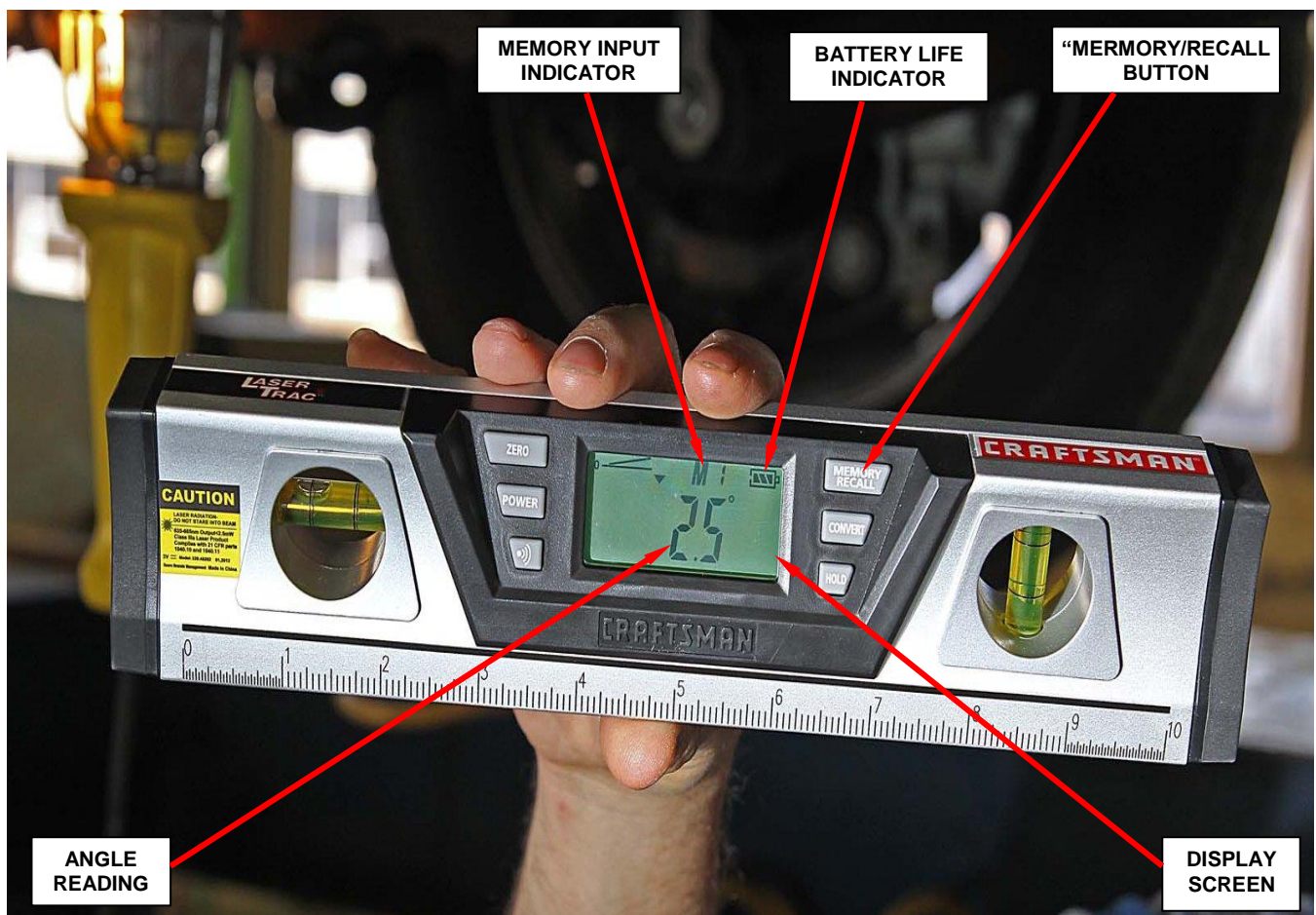


Figure 5 – Press “Memory/Recall” Button to Obtain Angle Difference between the Two Jounce Bumper Pads

Service Procedure (Continued)

B. Install Front Axle Reinforcement Brackets

NOTE: This procedure is only for vehicles equipped with an automatic transmission.

1. Remove the axle vent hose from the axle fitting (Figure 6).

2. Rotate the axle fitting so that the vent opening is parallel to the axle (vent fitting opening towards the driver’s side) (Figure 6).

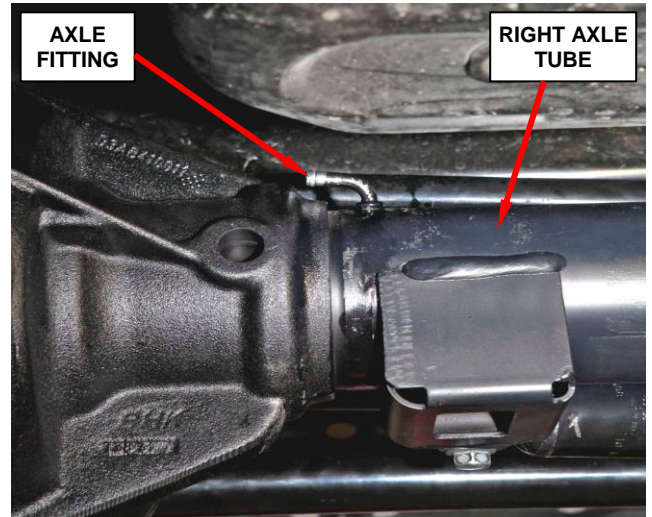


Figure 6 – Rotate Axle Vent Tube Fitting

3. Remove and save the steering stabilizer retaining bolt at the axle bracket side of the stabilizer (Figure 7).

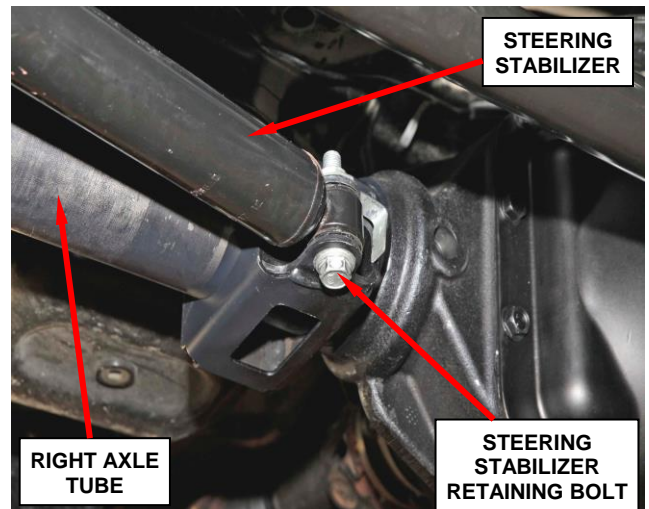


Figure 7 – Steering Stabilizer Retaining Bolt

Service Procedure (Continued)

4. Use the following procedure to install the right side axle bracket:
 - a. Using an abrasive pad or 100 grit sandpaper, remove any rust and/or debris from the axle tube (Figure 8).
 - b. If still present, remove and discard the part number sticker on the right axle tube.
 - c. Place the upper half of the bracket onto the right axle tube (Figure 9). Then install the axle vent hose onto the axle fitting to temporarily hold the bracket in place.

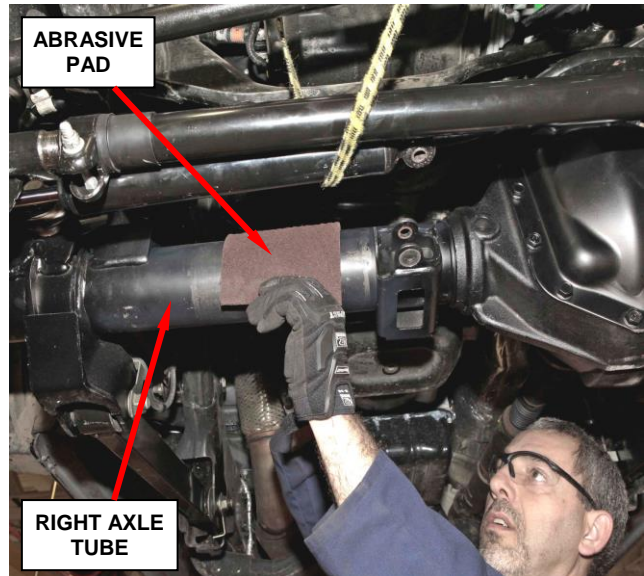


Figure 8 – Clean Axle Tube

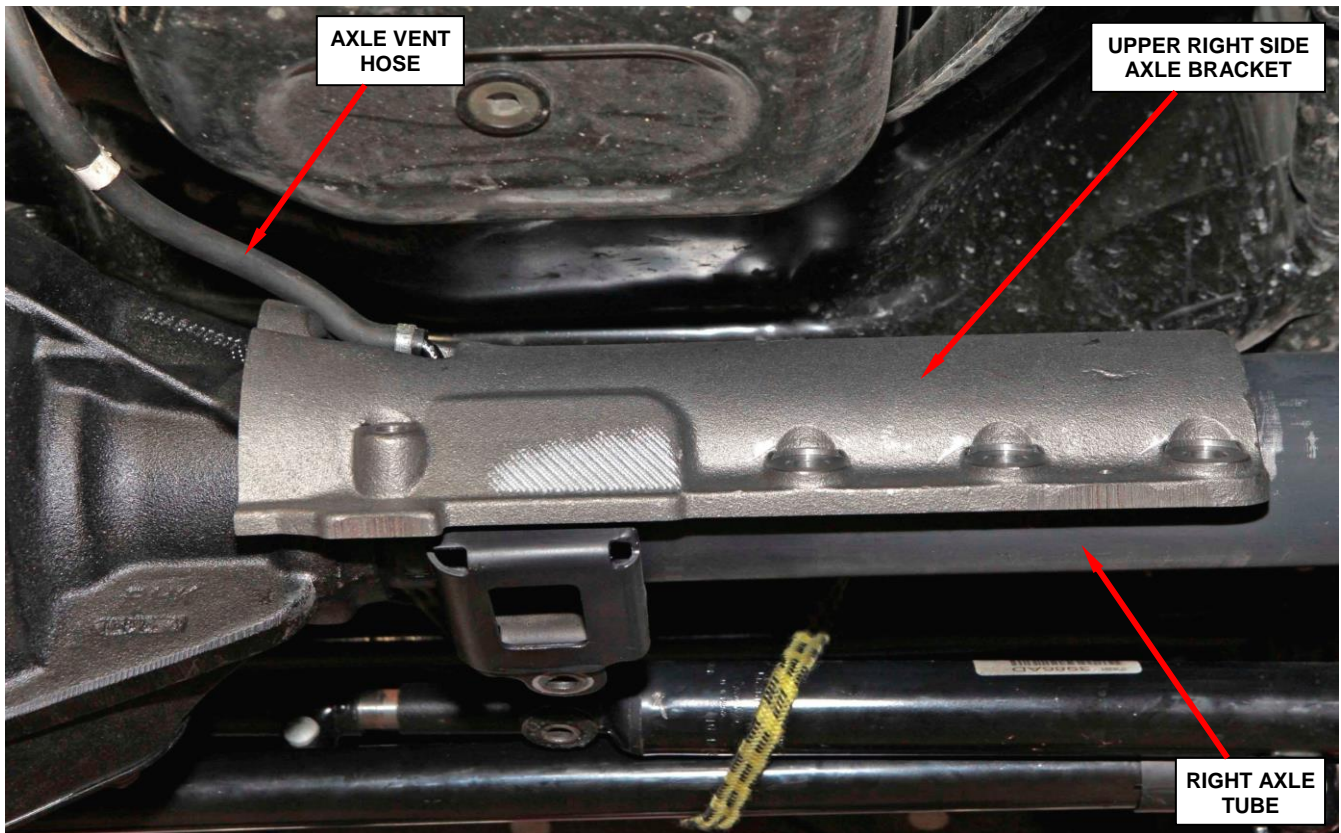


Figure 9 – Install Upper Right Side Axle Bracket

Service Procedure (Continued)



Figure 10 - Install Lower Right Side Axle Bracket

d. Install the lower half of the bracket onto the axle tube (Figure 10). Then install the steering stabilizer and retaining bolt to hold the lower bracket in place.

e. Install (hand tight) the eight bracket fasteners with washers (Figure 11).

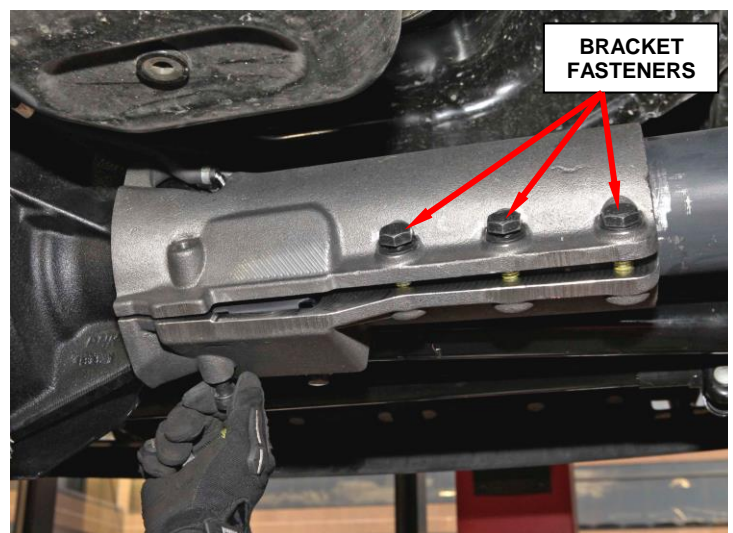


Figure 11 – Install All Bracket Fasteners

Service Procedure (Continued)

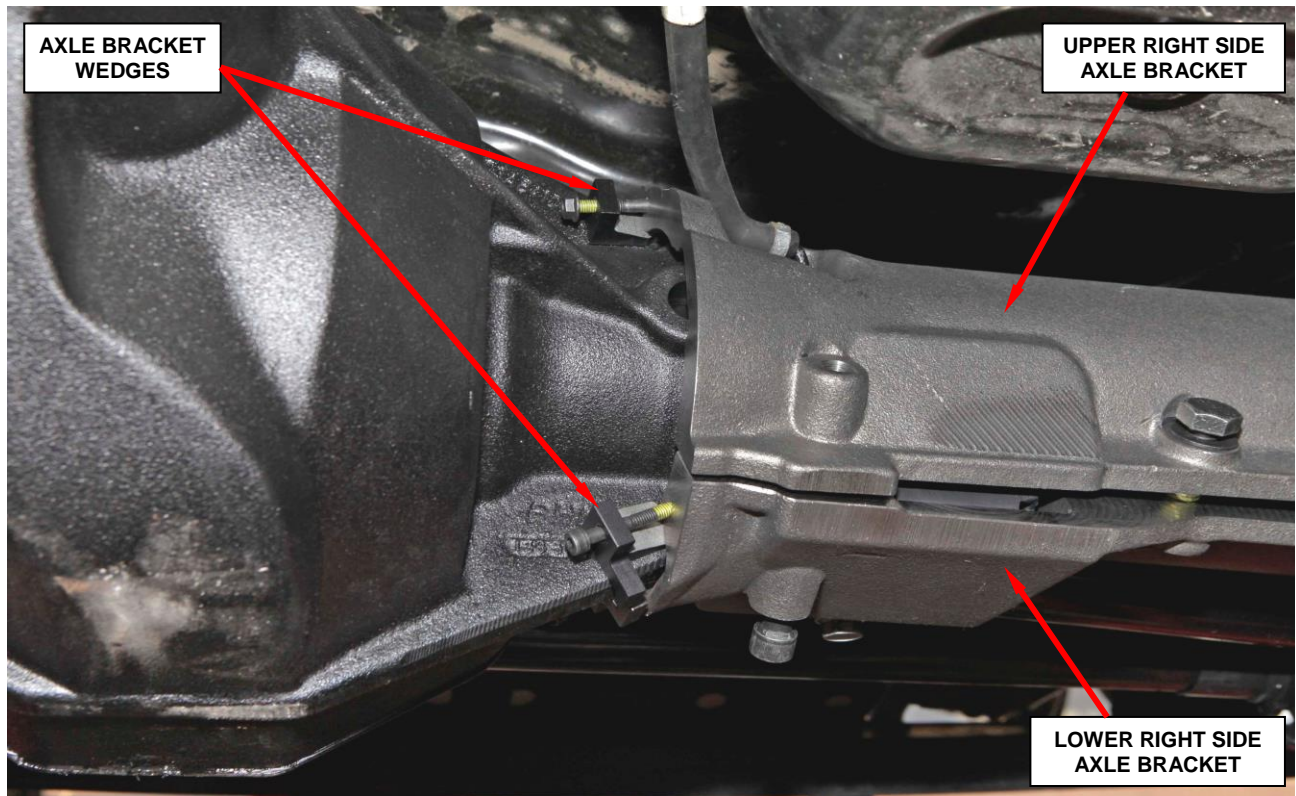


Figure 12 – Install Axle Bracket Wedges

f. Install the three axle bracket wedges. Hand tight only (Figure 12).

Service Procedure (Continued)

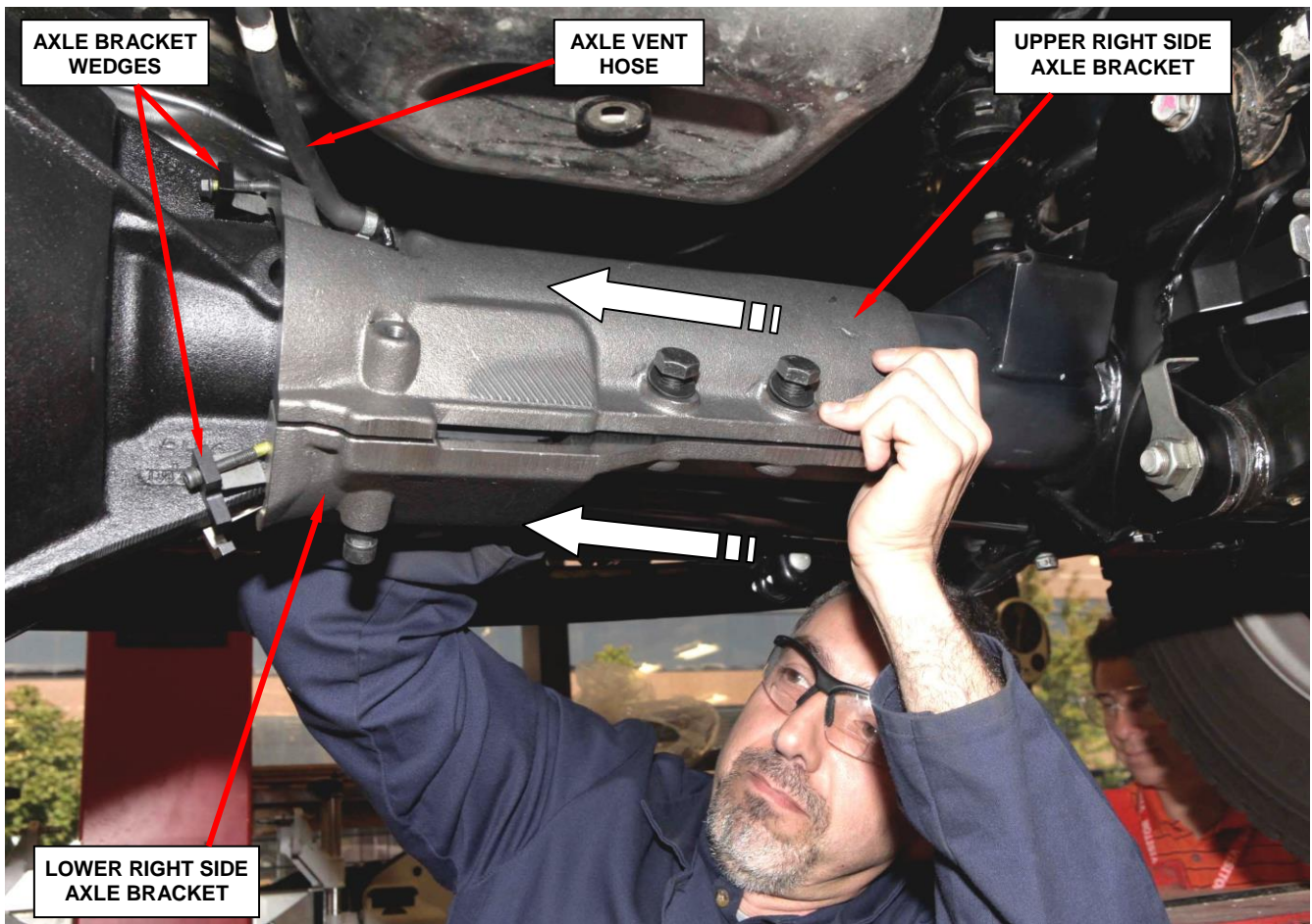


Figure 13 – Slide Reinforcement Bracket towards Differential Housing

- g. Slide the reinforcement bracket to the left until the reinforcement bracket contacts the steering stabilizer axle bracket (Figure 13 and 14).

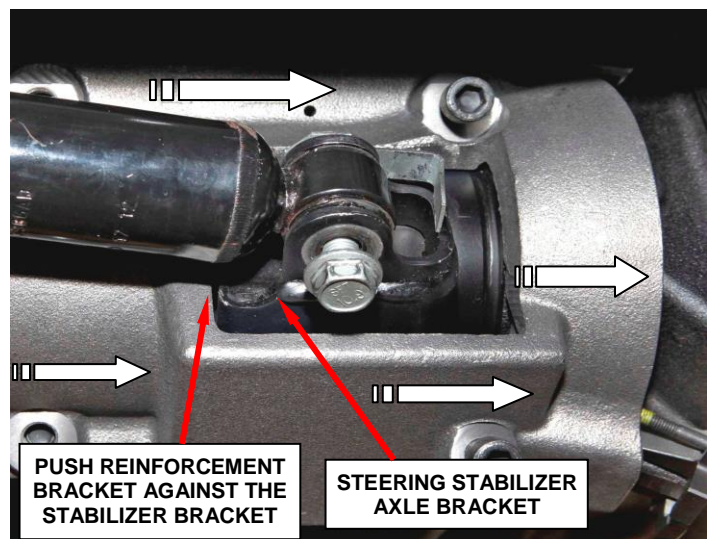


Figure 14 – Reinforcement Bracket against Steering Stabilizer Axle Bracket

Service Procedure (Continued)

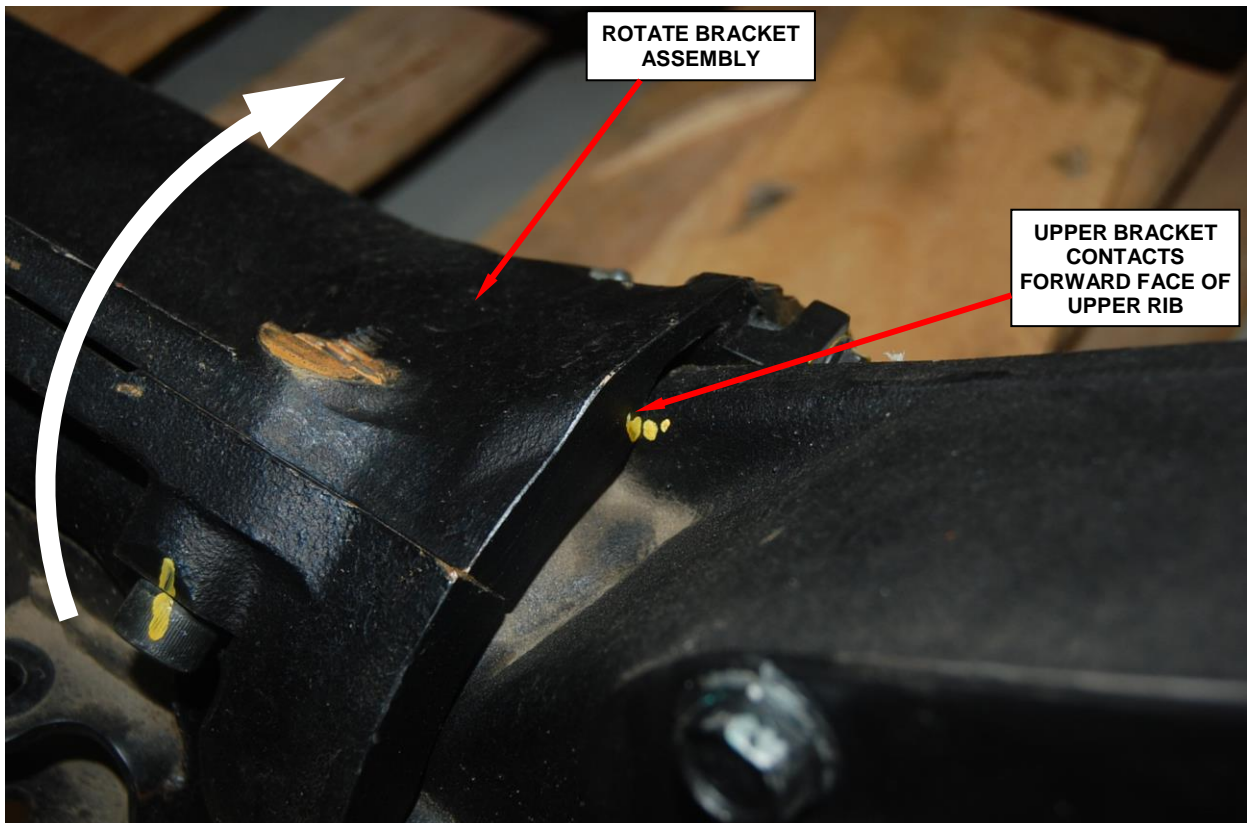


Figure 15 – Rotate Right Bracket Assembly

- h. Rotate the right bracket assembly until the upper forward face of the bracket is in contact with the differential housing rib (Figure 15). Snug up the upper wedge fastener hand tight.

- i. Snug the eight reinforcement bracket fasteners.

- j. Snug the remaining wedge fasteners.

Service Procedure (Continued)

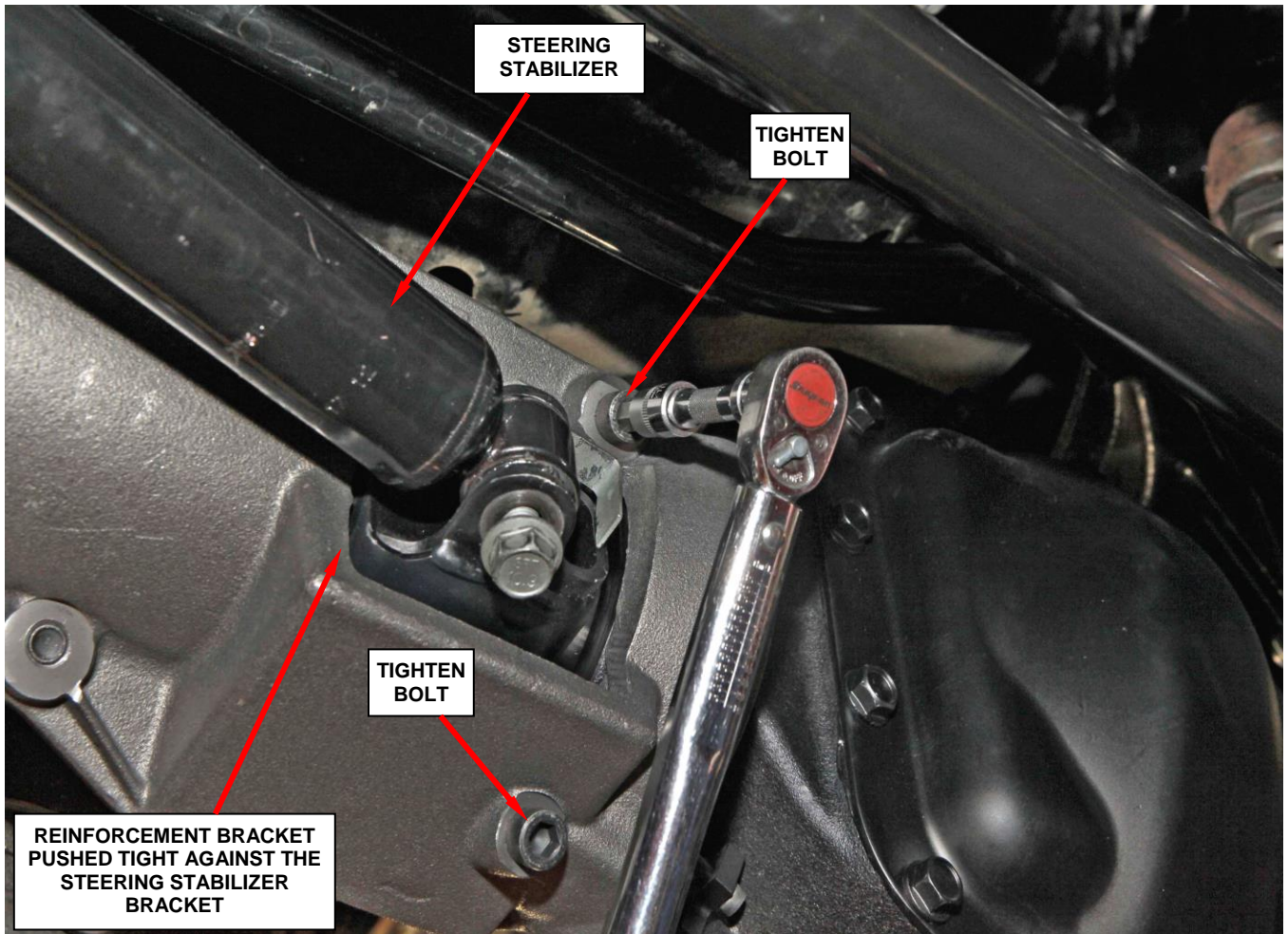
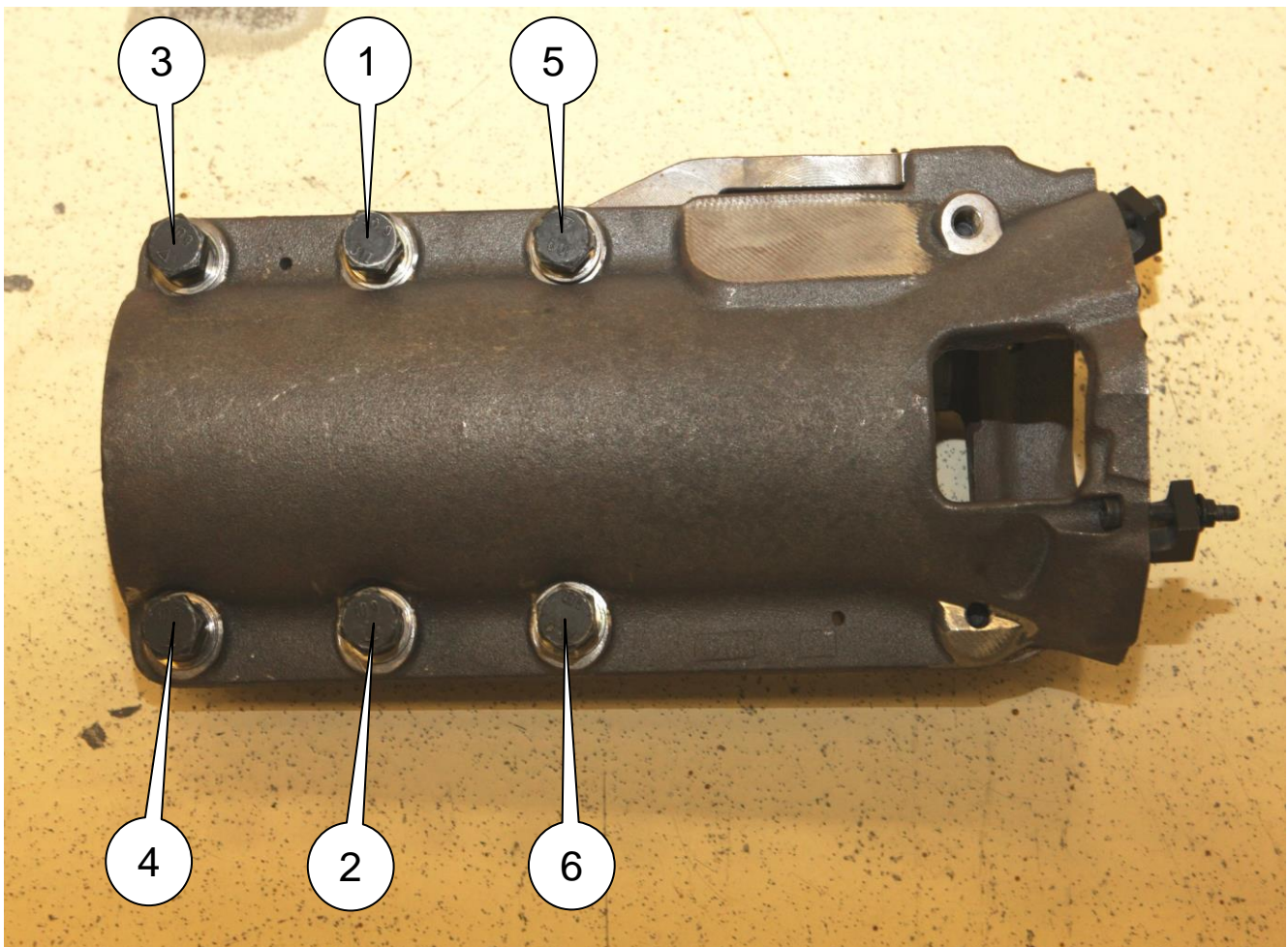


Figure 16 – Tighten the Two 10mm Bolts

- k. Using the supplied socket, tighten the two 10 mm bolts to 75 ft. lbs. (101 N·m) (Figure 16).

Service Procedure (Continued)

1. Tighten all six reinforcement bracket fasteners in the order shown in Figure 17 in steps to:
 - First to 60 ft. lbs. (81 N·m)
 - Then to 90 ft. lbs. (122 N·m)
 - Then to 120 ft. lbs. (162 N·m)
 - Then to 150 ft. lbs. (203 N·m)
 - Finally tighten to 150 ft. lbs. (203 N·m) a second time to assure proper torque.

**Figure 17 – Bolt Tightening Sequence**

Service Procedure (Continued)

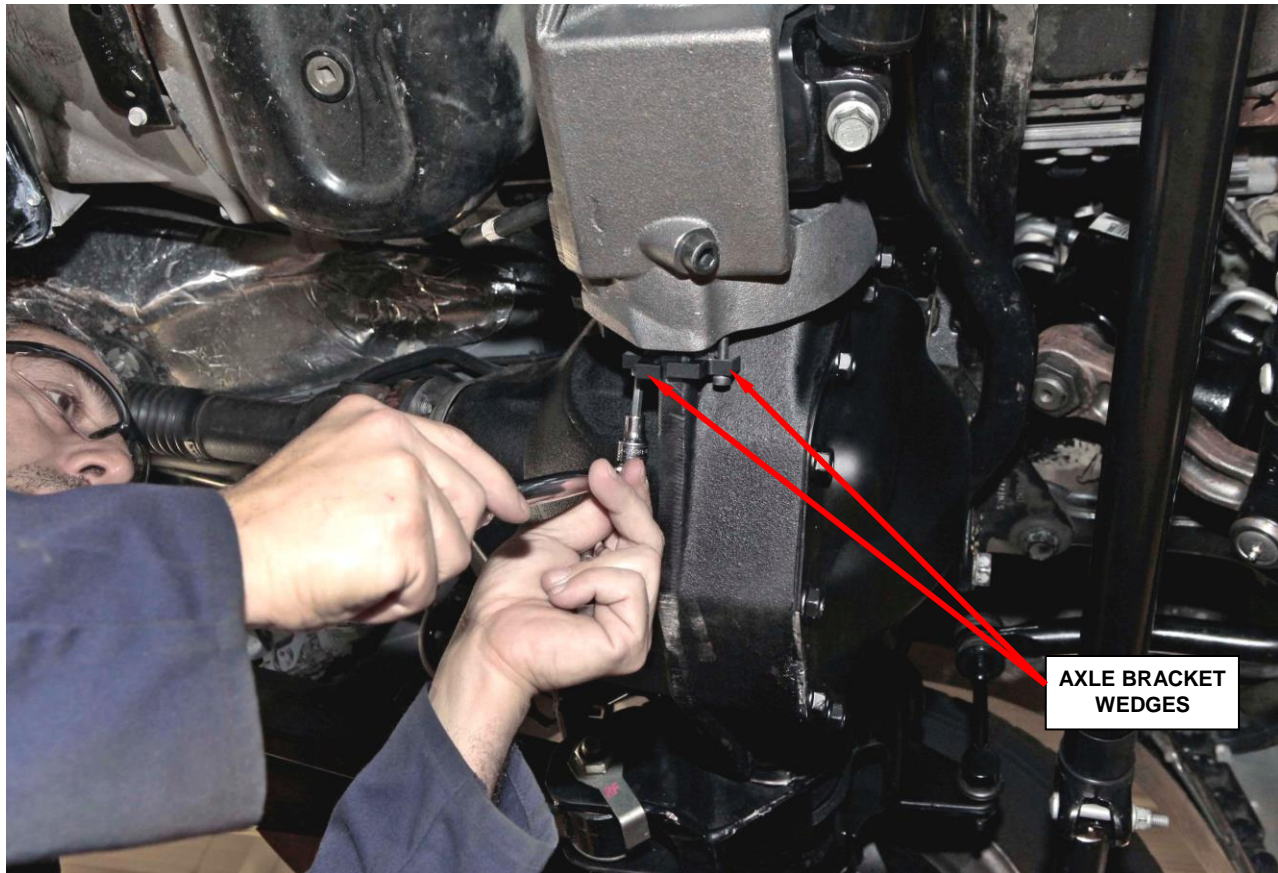


Figure 18 – Tighten Wedge Fasteners

m. Tighten the three axle bracket wedge fasteners to 88 in. lbs. (10 N·m) (Figure 18).

n. Tighten the steering stabilizer retaining bolt at the axle bracket to 86 ft. lbs. (117 N·m) (Figure 19).

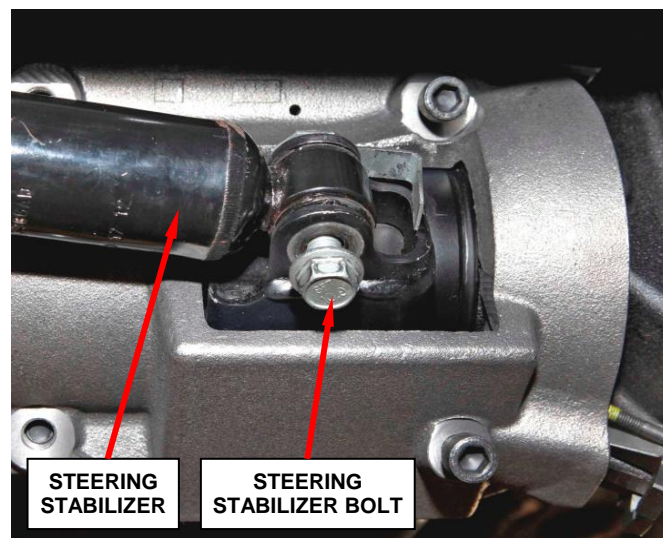


Figure 19 – Steering Stabilizer Retaining Bolt

Service Procedure (Continued)

5. Use the following procedure to install the left side axle bracket:
 - a. Using an abrasive pad or 100 grit sandpaper, remove any rust and/or debris from the left axle tube.
 - b. Place the front section of the left reinforcement bracket into position, then install the top rear section of the left reinforcement bracket and install the two retaining bolts, hand tighten only (Figure 20).

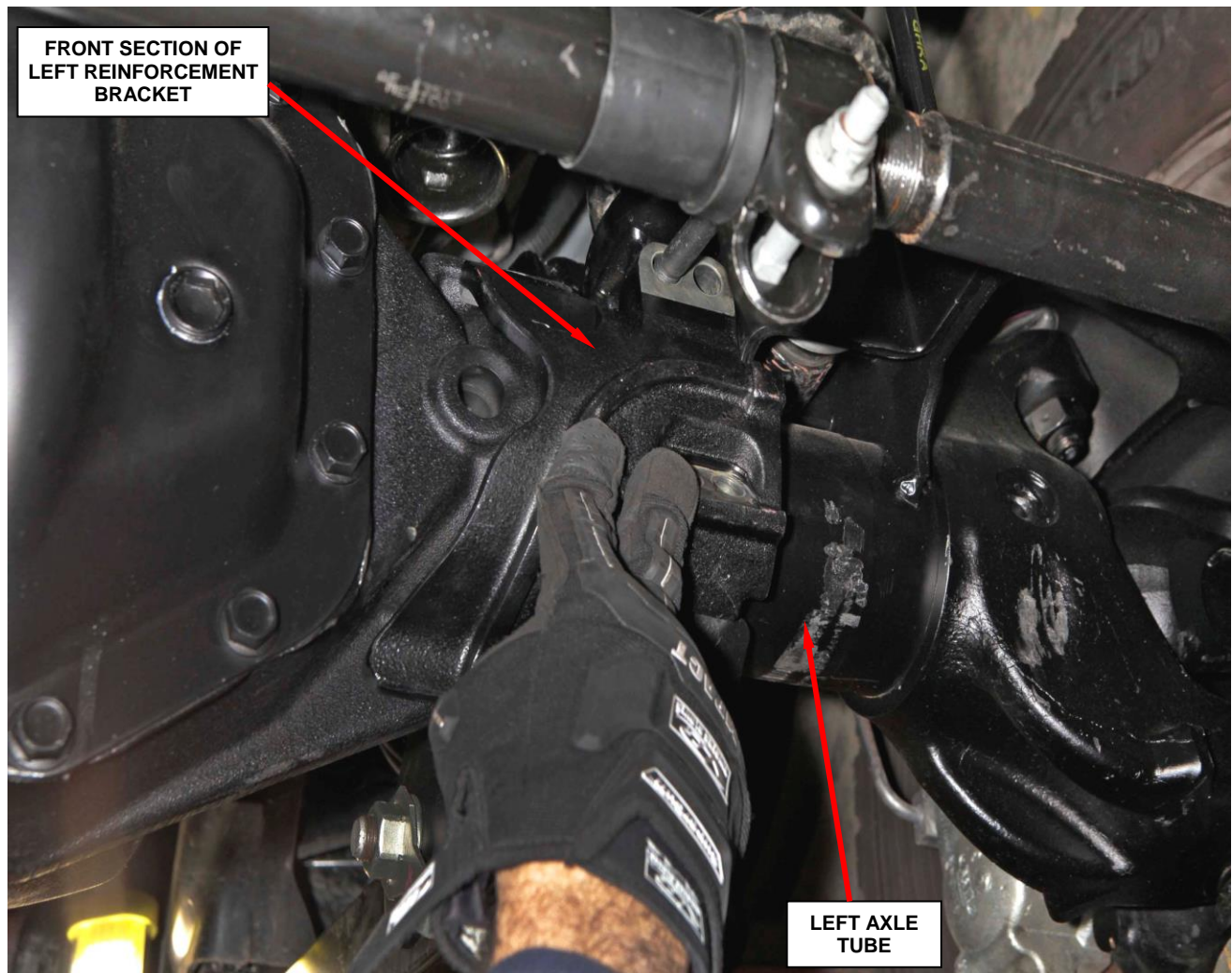


Figure 20 – Install Left Side Top and Front Reinforcement Brackets

Service Procedure (Continued)

- c. Place the bottom section of the left reinforcement bracket into position and install the bottom retaining bolts, hand tighten only (Figure 21).

NOTE: The guide pin on the bottom section must go in the hole on the top rear section of the bracket (Figure 21).

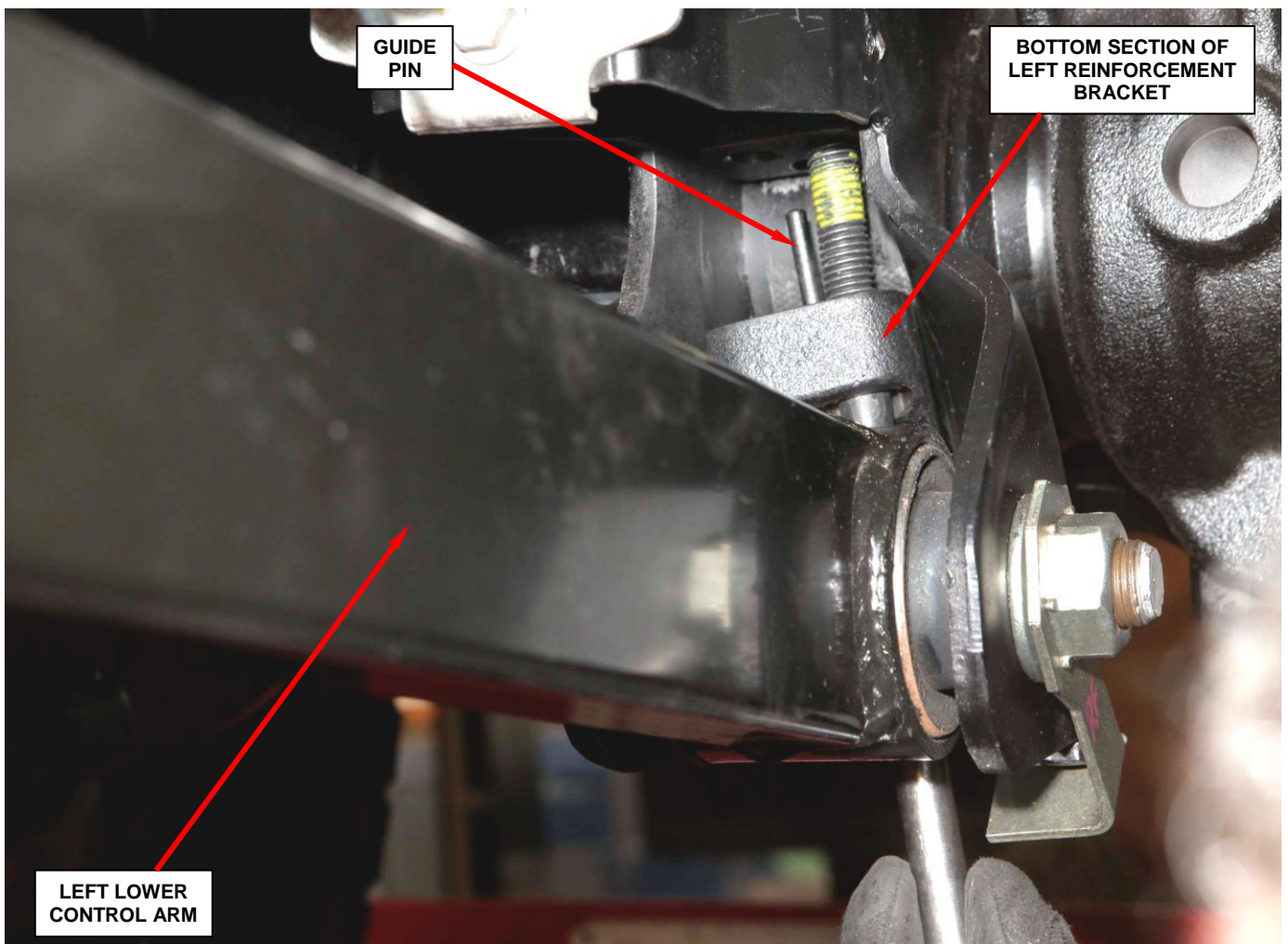


Figure 21 – Install Left Side Bottom Reinforcement Bracket Retaining Bolts

Service Procedure (Continued)

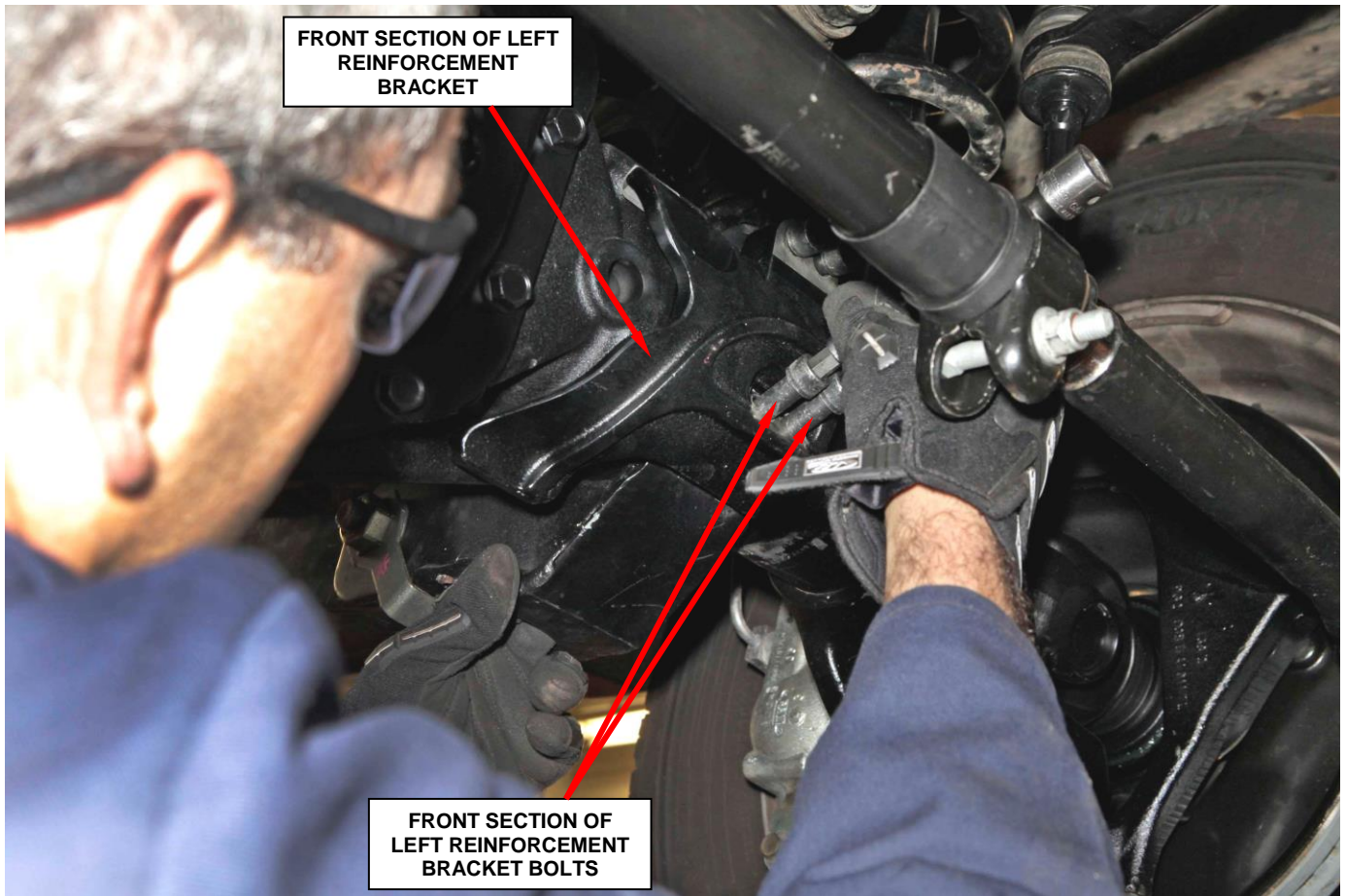


Figure 22 – Install Front Reinforcement Bracket Lower Retaining Bolts (hand tight)

- d. Install the front reinforcement bracket lower retaining bolts, hand tight only (Figure 22).

Service Procedure (Continued)

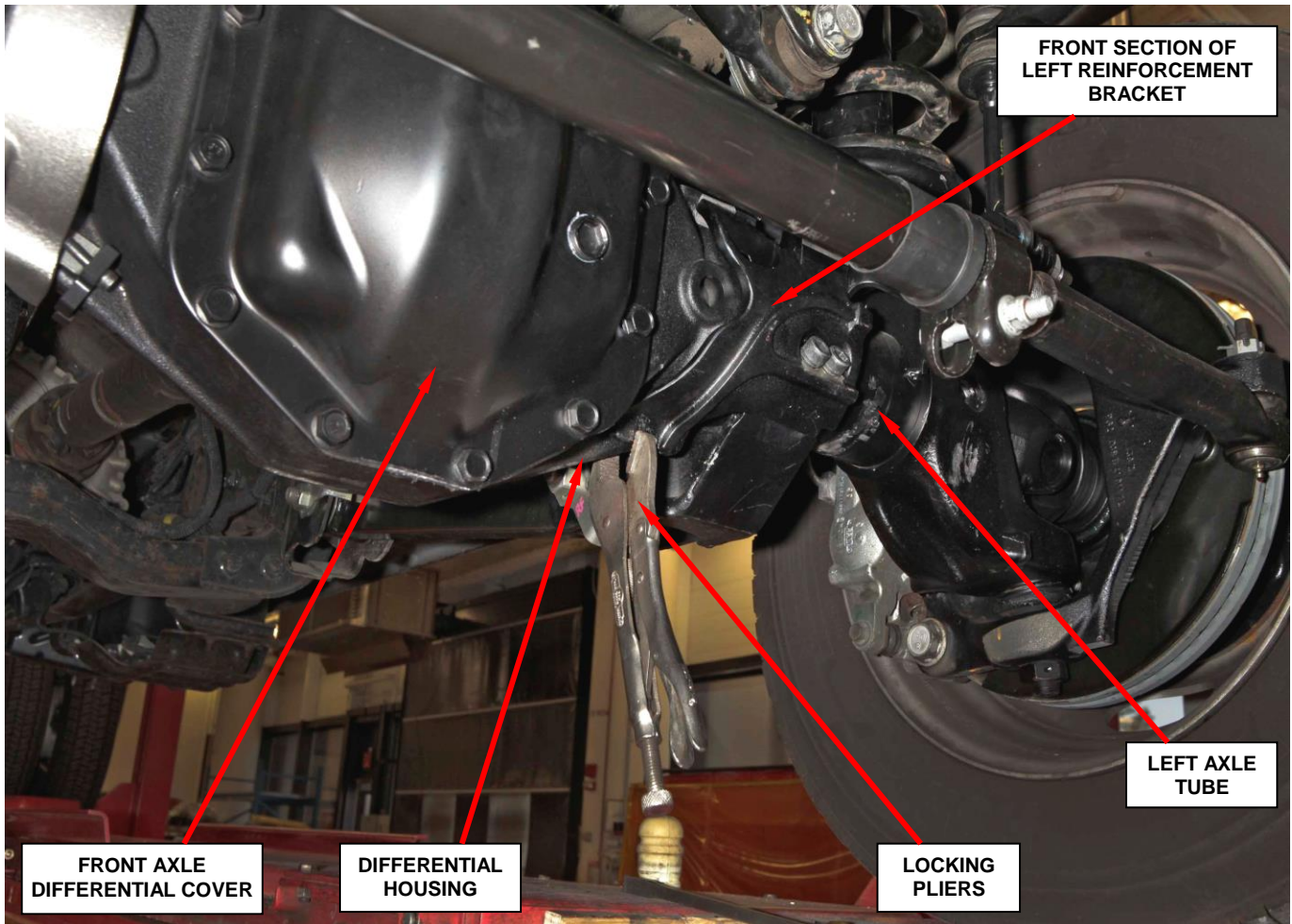


Figure 23 – Clamp Front Reinforcement Bracket to Differential Housing

- e. Install locking pliers or a “C” clamp on the edge of the front reinforcement bracket and differential housing (Figure 23).

Service Procedure (Continued)

f. Tighten the left axle reinforcement bracket retaining bolts in the sequence shown in Figure 24 to:

- First to 55 ft. lbs. (75 N·m)
- Then to 65 ft. lbs. (88 N·m)
- Then to 75 ft. lbs. (101 N·m)
- Then tighten to 75 ft. lbs. (101 N·m) a second time to assure proper torque.

g. Remove the locking plier from the axle bracket.

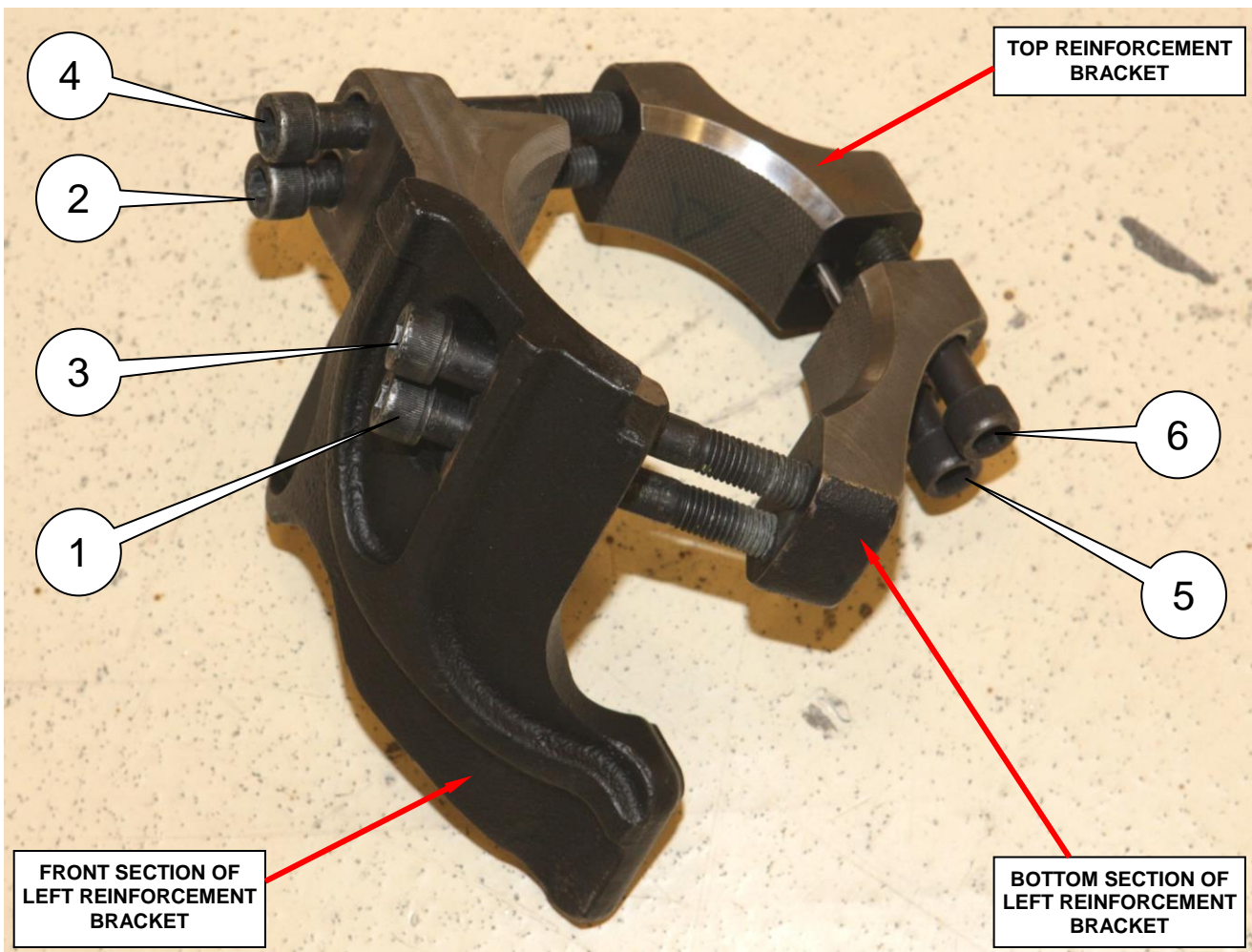


Figure 24 – Left Axle Reinforcement Bracket Retaining Bolt Tightening Sequence

Service Procedure (Continued)

6. Remove the track bar-to-frame bolt and reinstall it in the opposite direction (Figure 25). Tighten the track bar-to-frame bolt to 273 ft. lbs. (370 N·m).

CAUTION: Failure to reverse the track bar-to-frame bolt will create a condition that could allow the track bar-to-frame bolt to contact the reinforcement bracket under certain driving conditions.

7. If removed, install the left side white jounce bumper.
8. Lower the vehicle from the hoist and return the vehicle to the customer.

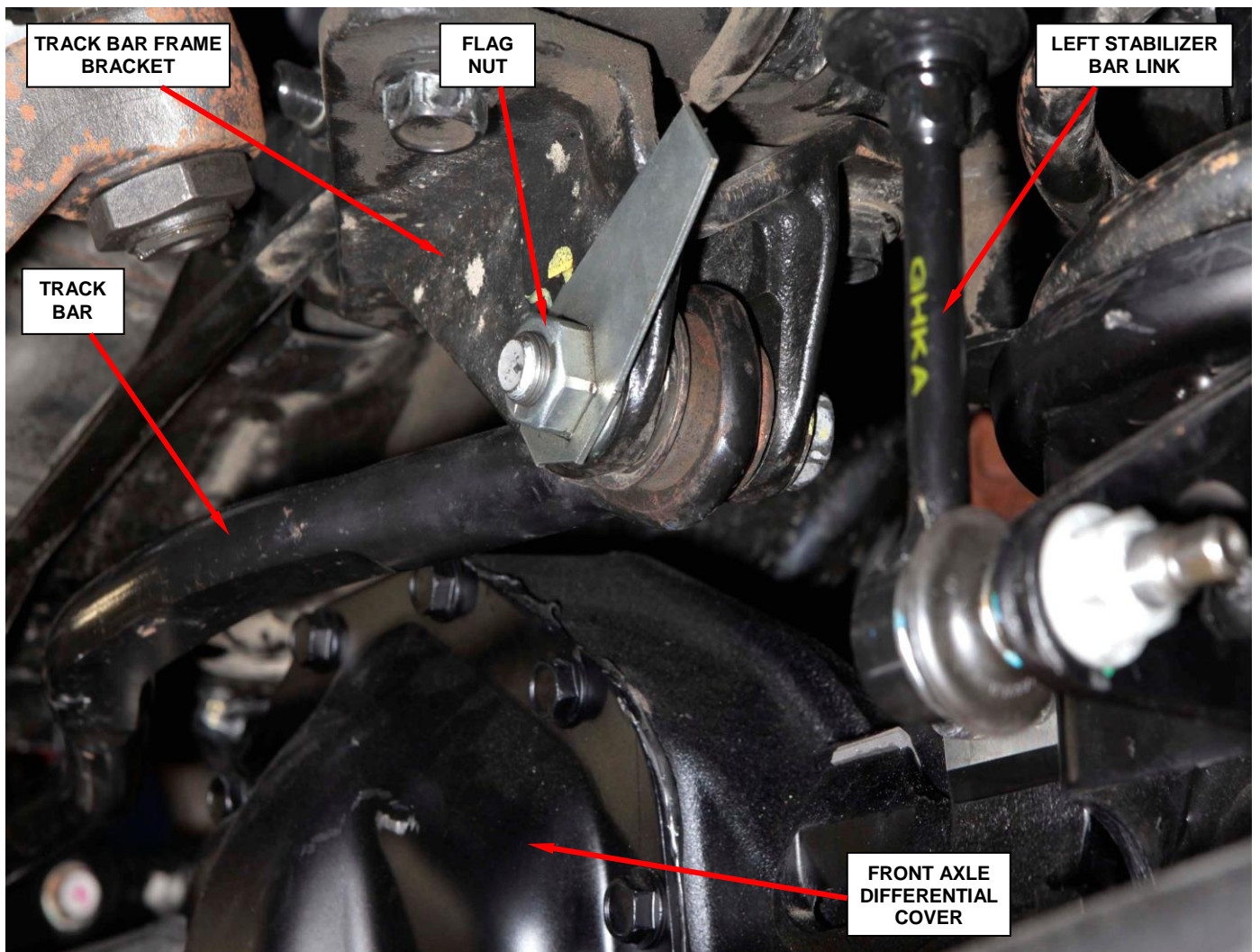


Figure 25 – Reverse the Installation Direction of the Bolt and Nut

Service Procedure (Continued)

C. Replace Front Axle Assembly

NOTE: The following procedure is required for all manual transmission equipped vehicles and automatic equipped vehicles with a rotated housing per the inspection in Section “A.”

1. Lift the vehicle on an appropriate hoist.
2. Remove and save the front wheels/tires.
3. Disconnect the axle housing vent hose.
4. Disconnect the front propeller shaft at the axle.
5. Disconnect the left and right front wheel speed sensors at the electrical connector located behind the wheel opening splash shield.
6. Disconnect the right and left front wheel speed sensor wiring from the brake caliper flex hose.
7. Remove and save the right and left side brake caliper flex hose bracket from the axle bracket (Figure 26).
8. Remove and save the right and left brake calipers and adapters as an assembly. Do not disconnect the brake hose from the brake caliper (Figure 27).

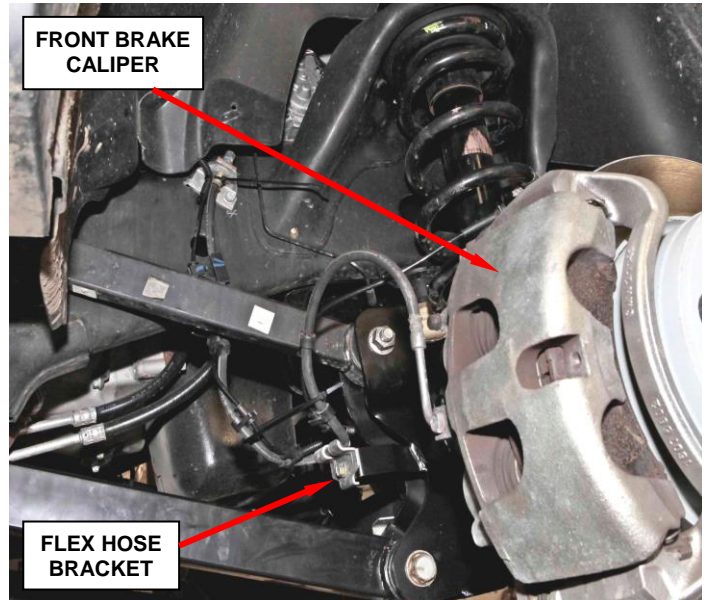


Figure 26 – Brake Caliper Flex Hose Bracket

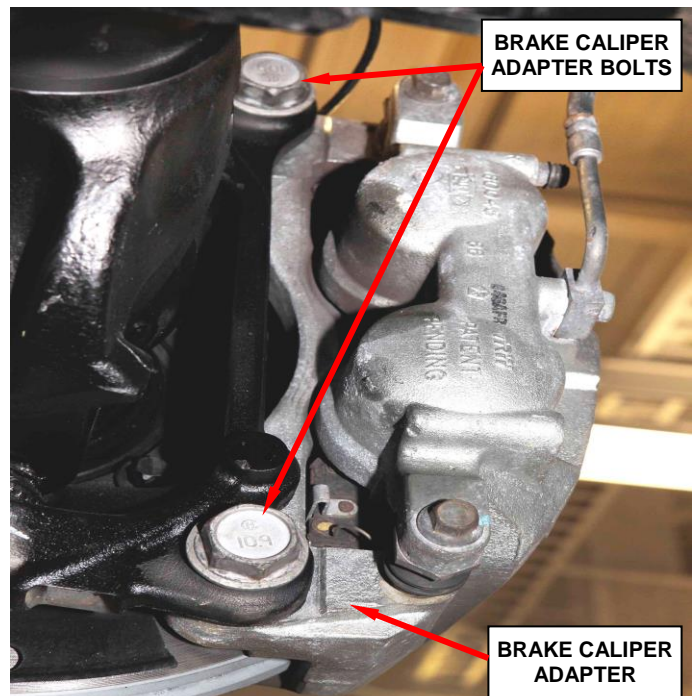


Figure 27 – Brake Caliper Adapter Bolts

Service Procedure (Continued)

9. Loosen the right and left side stabilizer bar link nuts (Figure 28).
10. Disconnect the right and left side front stabilizer bar at the axle bracket (Figure 28).
11. Disconnect the steering damper at the axle bracket.
12. Using Special Tool C3894A, disconnect the left and right tie rod end from the steering knuckle.
13. Disconnect the track bar from the axle bracket.
14. Remove and save the left and right side upper and lower control arm bolts at the axle brackets (Figure 29).

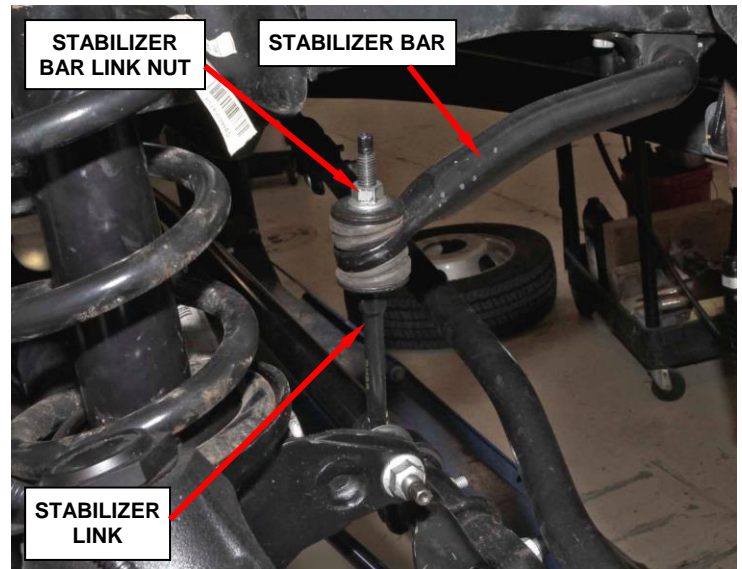
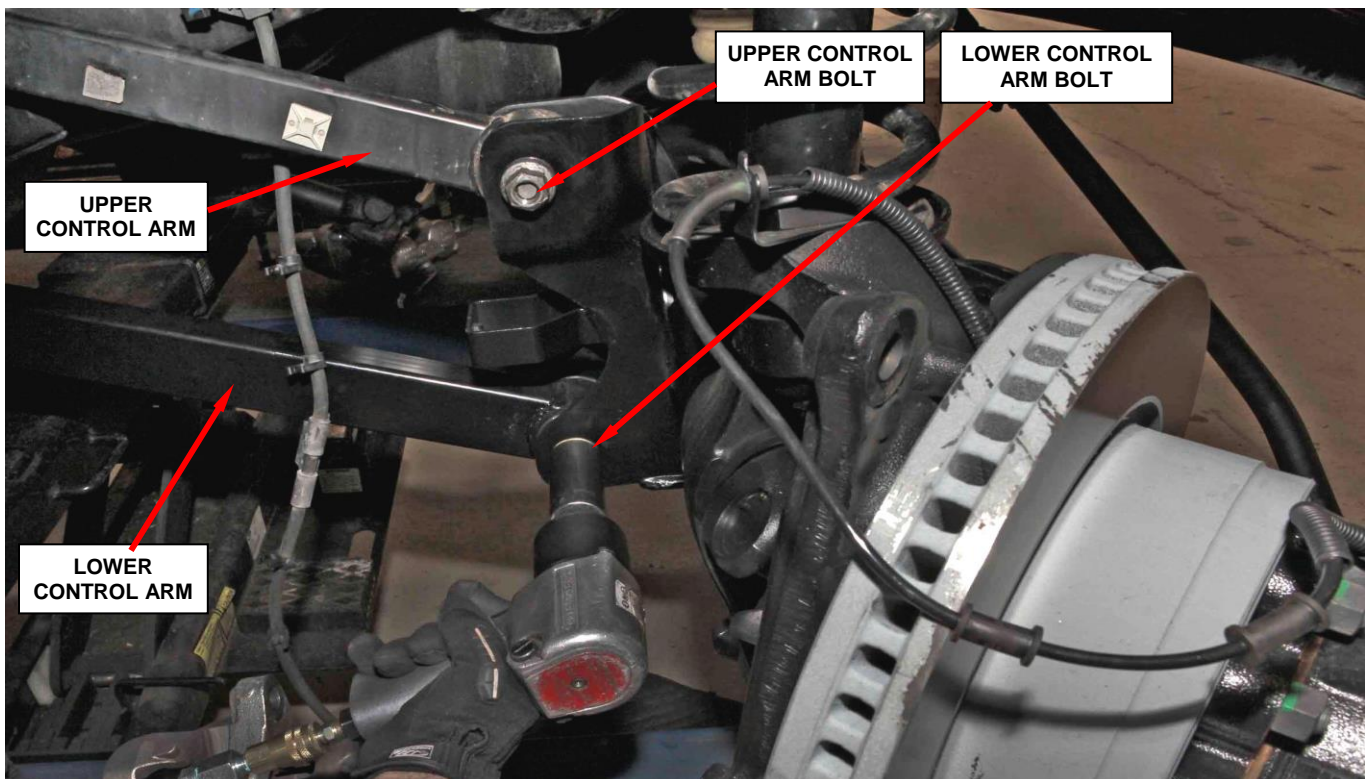


Figure 28 – Stabilizer Bar Links



**Figure 29 – Upper and Lower Control Arm Bolts
(right side shown)**

Service Procedure (Continued)

15. Support the axle weight with appropriate axle jack.
16. Remove and save the lower shock absorber bolts (Figure 30).
17. With the help of an assistant, lower the axle assembly from the truck.
18. Using an appropriate lifting device, remove the original axle from the jack.
19. Using an appropriate lifting device, place the new axle assembly onto the jack.
20. Raise the front axle and front coil springs into position.
21. Install the upper and lower control arm bolts on both sides. Do not tighten the bolts at this time.
22. Place the left and right lower shock absorber mounts into position and install the shock absorber mounting bolts. Tighten the shock absorber mounting bolt to 100 ft. lbs. (136 N·m).
23. Install the track bar-to-axle bracket bolt. Do not tighten at this time (Figure 31).
24. Connect the axle housing vent hose to the axle housing fitting.

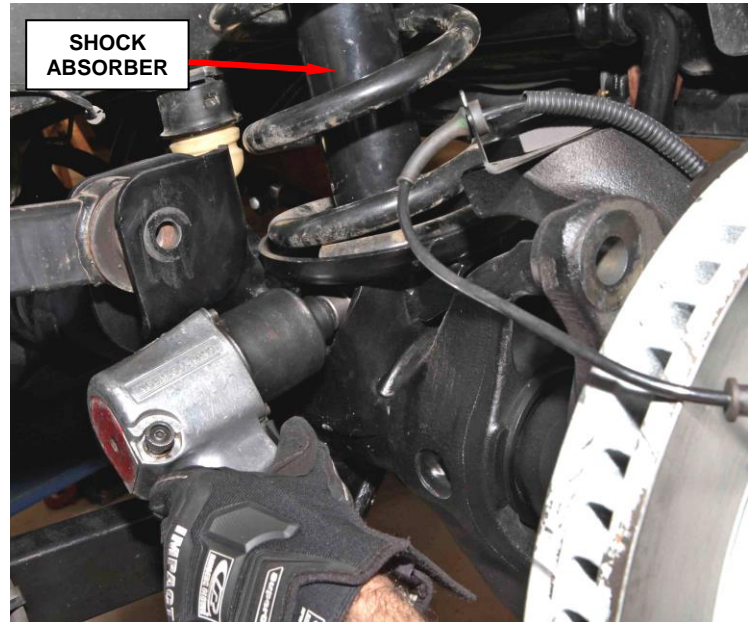


Figure 30 – Lower Shock Absorber Bolt

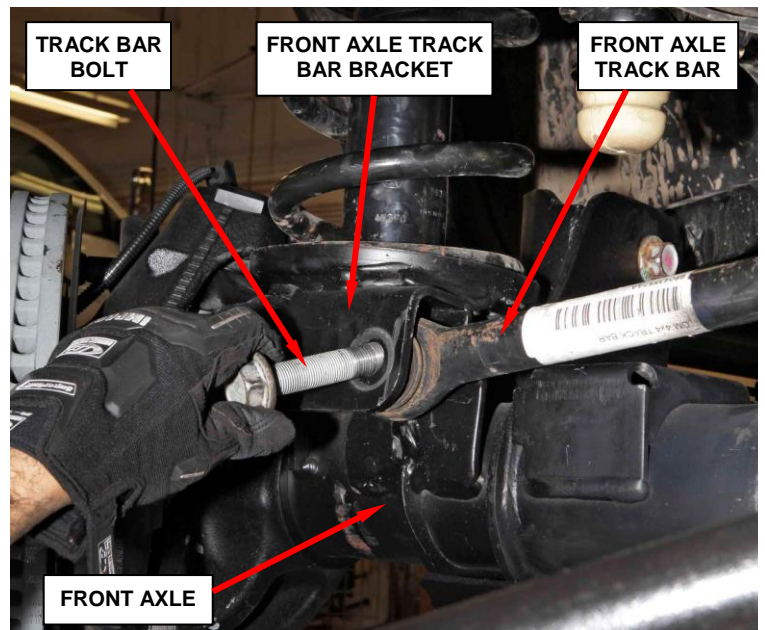


Figure 31 – Track Bar-to-Axle Bracket Bolt

Service Procedure (Continued)

25. Using new bolts, connect the front propeller shaft to the axle flange. Tighten the bolts to 21 ft. lbs. (28 N·m).
26. Connect the right and left tie rod ends to the steering knuckle arms. Tighten the tie rod castle nut to 121 ft. lbs. (164 N·m).
27. Connect the steering damper to the axle bracket. Tighten the steering damper bolt to 86 ft. lbs. (117 N·m).
28. Connect the stabilizer bar links to the axle brackets. Tighten the stabilizer bar links at the axle bracket to 50 ft. lbs. (68 N·m).
29. Tighten the stabilizer bar link nuts to 44 ft. lbs. (60 N·m).
30. Install the left and right brake caliper and adapter assemblies. Tighten the brake caliper adapter bolts to 460 ft. lbs. (624 N·m).
31. Install the right and left brake caliper flex hose brackets to the axle brackets. Tighten the bolt to 23 ft. lbs. (31 N·m).
32. Route the left and right front wheel speed sensor wiring along the brake caliper flex hose.
33. Connect the left and right wheel speed sensor wire connector to the body harness located behind the wheel opening splash shield.
34. Check front axle lubricant level and add as required.
35. Install the front wheels/tires. Tighten the lug nuts to 145 ft. lbs. (196 N·m).
36. Lower the vehicle from the hoist.
37. With full weight on the suspension, jounce the vehicle several times to “settle” the front suspension.

Service Procedure (Continued)

38. With full vehicle weight on the suspension, tighten the following bolts:
- Upper control arm bolts 184 ft. lbs. (250 N·m).
 - Lower control arm bolts 306 ft. lbs. (415 N·m).
 - Track bar-to-axle bracket bolt 273 ft. lbs. (370 N·m).
39. Perform a complete front end alignment. Follow the alignment rack’s instructions to install alignment equipment. Use the applicable wheel alignment specification below.

4500/5500 SERIES - WHEEL BASE 144, 168, 173

FRONT ALIGNMENT	PREFERRED SETTING	ACCEPTABLE RANGE
CAMBER - LEFT	0.10°	-0.40° to +0.60°
CAMBER - RIGHT	0.10°	-0.40° to +0.60°
CROSS-CAMBER	0.00°	-0.50° to +0.50°
CASTER - LEFT	+5.50°	+5.00° to +6.00°
CASTER - RIGHT	+6.00°	+5.50° to +6.50°
CROSS-CASTER	-0.50°	-0.80° to +0.20°
TOE - TOTAL*	+0.20°	+0.10° to +0.30°
Positive toe (+) is toe-in and negative toe (-) is Toe-out.		
* TOTAL TOE is the sum of both the left and right wheel toe settings. TOTAL TOE should be equally split between each wheel on the same axle to ensure the steering wheel is centered after setting toe.		

REAR ALIGNMENT	PREFERRED SETTING	ACCEPTABLE RANGE
CAMBER	-0.10°	-0.45° to +0.25°
CROSS-CAMBER	0.00°	-0.30° to +0.30°
TOE - TOTAL*	+0.10°	-0.20° to +0.40°
THRUST ANGLE	0.00°	-0.40° to +0.40°
Positive toe (+) is toe-in and negative toe (-) is Toe-out.		
* TOTAL TOE is the sum of both the left and right wheel toe settings. TOTAL TOE should be equally split between each wheel on the same axle to ensure the steering wheel is centered after setting toe.		

Service Procedure (Continued)

4500/5500 SERIES - WHEEL BASE 192, 197

FRONT ALIGNMENT	PREFERRED SETTING	ACCEPTABLE RANGE
CAMBER - LEFT	0.10°	-0.40° to +0.60°
CAMBER - RIGHT	0.10°	-0.40° to +0.60°
CROSS-CAMBER	0.00°	-0.50° to +0.50°
CASTER - LEFT	+6.30°	+5.80° to +6.80°
CASTER - RIGHT	+6.80°	+6.30° to +7.30°
CROSS-CASTER	-0.50°	-0.80° to +0.20°
TOE - TOTAL*	+0.20°	+0.10° to +0.30°
Positive toe (+) is toe-in and negative toe (-) is Toe-out.		
* TOTAL TOE is the sum of both the left and right wheel toe settings. TOTAL TOE should be equally split between each wheel on the same axle to ensure the steering wheel is centered after setting toe.		

REAR ALIGNMENT	PREFERRED SETTING	ACCEPTABLE RANGE
CAMBER	-0.10°	-0.45° to +0.25°
CROSS-CAMBER	0.00°	-0.30° to +0.30°
TOE - TOTAL*	+0.10°	-0.20° to +0.40°
THRUST ANGLE	0.00°	-0.40° to +0.40°
Positive toe (+) is toe-in and negative toe (-) is Toe-out.		
* TOTAL TOE is the sum of both the left and right wheel toe settings. TOTAL TOE should be equally split between each wheel on the same axle to ensure the steering wheel is centered after setting toe.		

Service Procedure (Continued)

4500/5500 SERIES - WHEEL BASE 204

FRONT ALIGNMENT	PREFERRED SETTING	ACCEPTABLE RANGE
CAMBER - LEFT	0.10°	-0.40° to +0.60°
CAMBER - RIGHT	0.10°	-0.40° to +0.60°
CROSS-CAMBER	0.00°	-0.50° to +0.50°
CASTER - LEFT	+6.50°	+6.00° to +7.00°
CASTER - RIGHT	+7.00°	+6.50° to +7.50°
CROSS-CASTER	-0.50°	-0.80° to +0.20°
TOE - TOTAL*	+0.20°	+0.10° to +0.30°
Positive toe (+) is toe-in and negative toe (-) is Toe-out.		
* TOTAL TOE is the sum of both the left and right wheel toe settings. TOTAL TOE should be equally split between each wheel on the same axle to ensure the steering wheel is centered after setting toe.		

REAR ALIGNMENT	PREFERRED SETTING	ACCEPTABLE RANGE
CAMBER	-0.10°	-0.45° to +0.25°
CROSS-CAMBER	0.00°	-0.30° to +0.30°
TOE - TOTAL*	+0.10°	-0.20° to +0.40°
THRUST ANGLE	0.00°	-0.40° to +0.40°
Positive toe (+) is toe-in and negative toe (-) is Toe-out.		
* TOTAL TOE is the sum of both the left and right wheel toe settings. TOTAL TOE should be equally split between each wheel on the same axle to ensure the steering wheel is centered after setting toe.		

40. Remove the alignment equipment from the vehicle.

41. Road test the vehicle to verify proper front end alignment, that the steering wheel is straight, and the front axle functions properly.

42. Return the vehicle to the customer.

Completion Reporting and Reimbursement

Claims for vehicles that have been serviced must be submitted on the DealerCONNECT Claim Entry Screen located on the Service tab. Claims submitted will be used by Chrysler to record recall service completions and provide dealer payments.

Use one of the following labor operation numbers and time allowances:

	Labor Operation Number	Time Allowance
Measure front axle jounce pad angles and install front axle reinforcement brackets (equipped with an automatic transmission)	02-N2-61-82	1.4 hours
Measure front axle jounce pad angles, replace front axle assembly, and perform front end alignment (equipped with an automatic transmission)	02-N2-61-83	4.4 hours
Replace front axle assembly and perform front end alignment (equipped with a manual transmission)	02-N2-61-84	4.1 hours

Add the cost of the recall parts package plus applicable dealer allowance to your claim.

NOTE: See the Warranty Administration Manual, Recall Claim Processing Section, for complete recall claim processing instructions.

Dealer Notification

To view this notification on DealerCONNECT, select “Global Recall System” on the Service tab, then click on the description of this notification.

Owner Notification and Service Scheduling

All involved vehicle owners known to Chrysler are being notified of the service requirement by first class mail. They are requested to schedule appointments for this service with their dealers. A generic copy of the owner letter is attached.

Enclosed with each owner letter is an Owner Notification postcard to allow owners to update our records if applicable.

Vehicle Lists, Global Recall System, VIP and Dealer Follow Up

All involved vehicles have been entered into the DealerCONNECT Global Recall System (GRS) and Vehicle Information Plus (VIP) for dealer inquiry as needed.

GRS provides involved dealers with an updated VIN list of their incomplete vehicles. The owner's name, address and phone number are listed if known. Completed vehicles are removed from GRS within several days of repair claim submission.

To use this system, click on the “**Service**” tab and then click on “**Global Recall System.**” Your dealer's VIN list for each recall displayed can be sorted by: those vehicles that were unsold at recall launch, those with a phone number, city, zip code, or VIN sequence.

Dealers must perform this repair on all unsold vehicles before retail delivery. Dealers should also use the VIN list to follow up with all owners to schedule appointments for this repair.

Recall VIN lists may contain confidential, restricted owner name and address information that was obtained from the Department of Motor Vehicles of various states. Use of this information is permitted for this recall only and is strictly prohibited from all other use.

Additional Information

If you have any questions or need assistance in completing this action, please contact your Service and Parts District Manager.

Customer Services / Field Operations
Chrysler Group LLC