RIVIAN

RCA-38-23-001-2: Inadequate Halfshaft Spline Interference

Rivian is initiating a customer satisfaction campaign for some model year 2022 R1S and R1T vehicles that may have been built with inadequate press fit force between the halfshaft splines and the wheel hubs. In some instances, this condition may result in a loss of torque of the halfshaft bolt and subsequent noise and/or separation of the bolt and wheel center cap. Without this bolt there may be additional movement of the components and/or noise but there will be no resulting changes in the performance of the vehicle. Rivian will replace the halfshaft bolts and torque them to a higher specification to improve the press fit force and bolt retention. In addition, washers will be installed on the halfshafts to reduce potential noise. Rivian is launching this campaign for customer satisfaction and to ensure the quality of Rivian vehicles.

Note: This document supersedes RCA-38-23-001-1. Revision 2 reduces the labor required to access the halfshafts.

Document Type	Customer Satisfaction Campaign Bulletin
Date	July 19, 2023
Affected Region(s)	USA
Affected Model(s)	R1T, R1S
Model Year(s)	2022
Approximate Build Dates Refer to **Open Containments** in ServiceOS to determine if this document applies to a specific vehicle.	August 2021 - May 2022
Vehicle System	38 - Front Drive Unit
Minimum Service Location	Mobile

Required Parts

Part Number	Quantity	Engineering Name	Service Name/Notes
PT00753512-B	2	TING WASHER; FRONT HALFSHAFT	
PT00753511-C	2	TING WASHER; REAR HALFSHAFT	
SC00006346-A	4	BOLT - M10X1.5X50 HX FL WSHR LOCK SPCL CL10.9 R105G	Bolt, Halfshaft
SC00004333-A	4	BOLT - M14X1.5X50 HX FL PIL CL10.9	Bolt, Front Brake Caliper
One of the following:			
	As needed	Molykote M-77	
	As needed	Molykote 1000	

Attention: The parts listed in this table are only for unique steps that are called out in this bulletin. Some sections of this bulletin might refer to Service Manual procedures which require additional parts. Always review the bulletin and all potentially related Service Manual procedures before ordering parts and beginning work.

Potentially Required Parts

Part Number	Quantity	Engineering Name	Service Name/Notes
SC00006949-A	2	NUT - M14X1.5 HX FL ADH CL10 R107G	Nut, Front Upper Control Arm

Attention: The parts listed in this table are only for unique steps that are called out in this bulletin. Some sections of this bulletin might refer to Service Manual procedures which require additional parts. Always review the bulletin and all potentially related Service Manual procedures before ordering parts and beginning work.

Required Special Tools:

Tool Number	Tool Name
TSN01096-300-A	Ting Washer Installation Tool
NCT05389333	Kit, ride height torque tool (front and rear)
NCT05079228	Axle press

Attention: The special tools listed in this table are only for unique steps that are called out in this bulletin. Some sections of this bulletin might refer to Service Manual procedures which require additional special tools. Always review the bulletin and all potentially related Service Manual procedures before beginning work.

Front Halfshafts

Warning: Using RiDE to depressurize the air suspension system may leave up to 3 bar (44 PSI) in various components or in independently sealed areas of the system. Loosen all air hose fittings slowly, even if other fittings have already been loosened or removed.

CAUTION: If the air suspension system is depressurized, do not allow the vehicle to rest on its own weight until the air springs have been re-filled.

1. **Important:** This procedure requires RiDE. Review the RiDE instructions specific to this procedure before starting work.

2. Raise and Support Vehicle (refer to service manual procedure 981020017).
3. Using RiDE: Depressurize the air suspension.

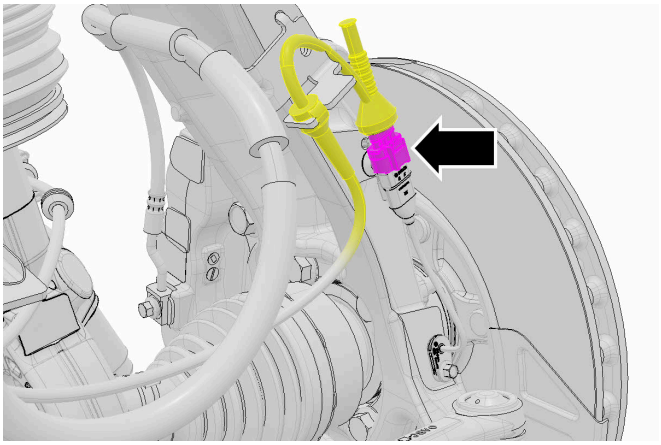
   CAUTION: Do not lower the vehicle until the air springs have been re-filled.

4. Using RiDE: Depressurize the hydraulic suspension.

   CAUTION: Do not lower the vehicle until the hydraulic suspension has been re-pressurized.

5. Remove: Wheel and Tire Assembly, Front, LH (refer to service manual procedure 221010011).

6.



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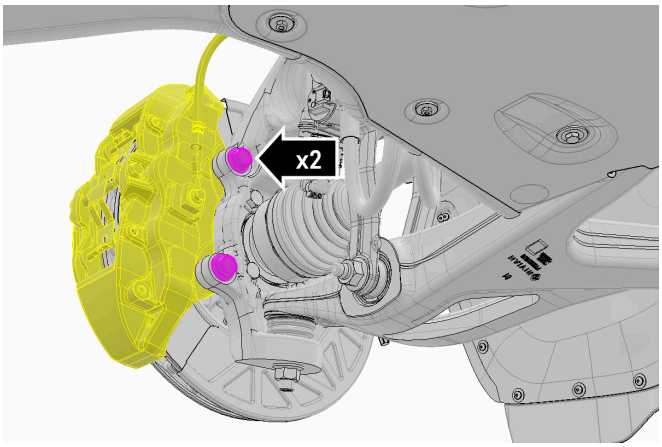
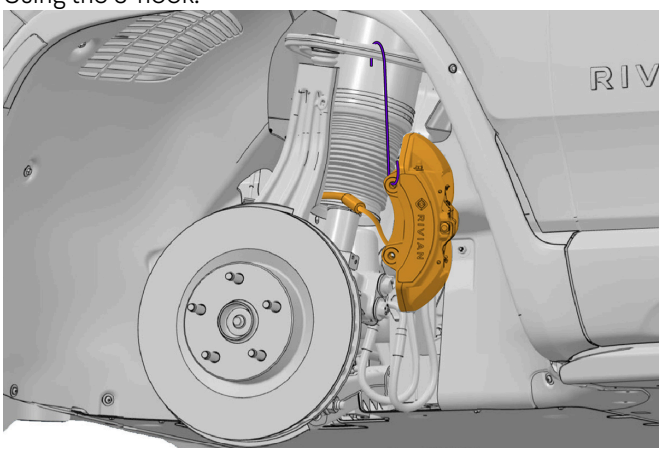


CAUTION: Non-reusable component(s).

8. Using the S-hook:



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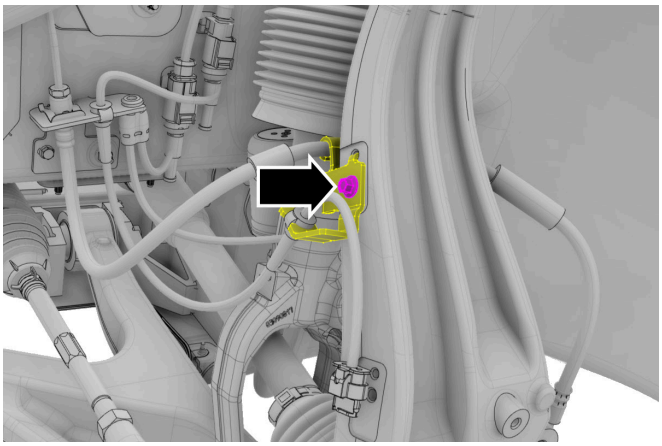

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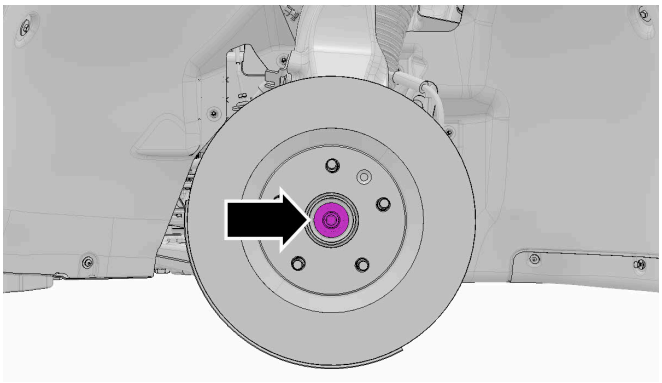
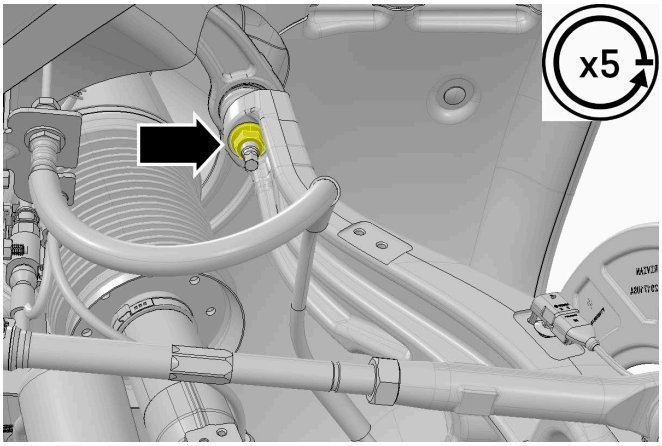


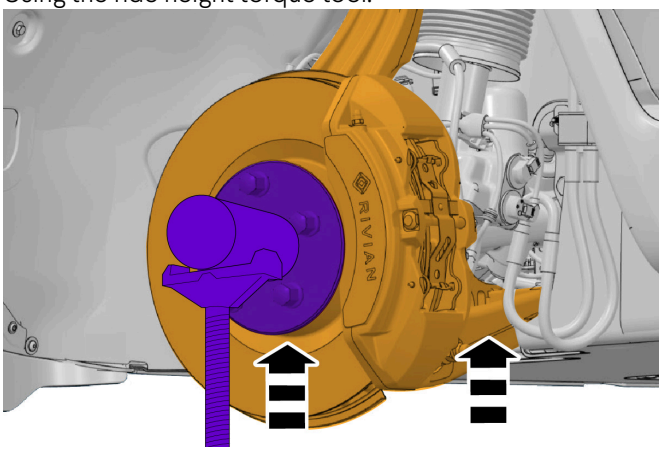
CAUTION: Non-reusable component(s).

11.

a.



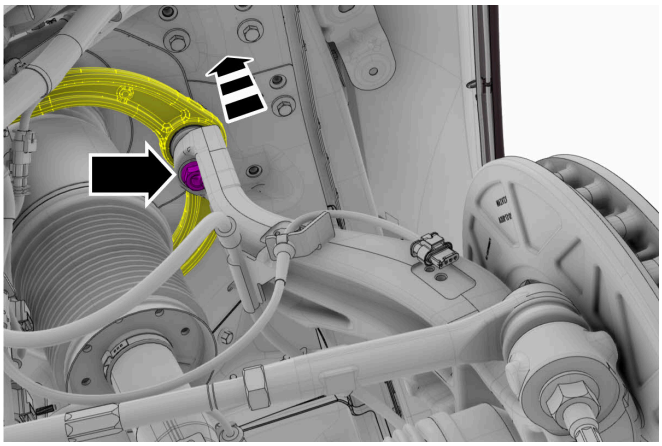
b. Using the ride height torque tool:



Note: Refer to the special tool instructions for important information.

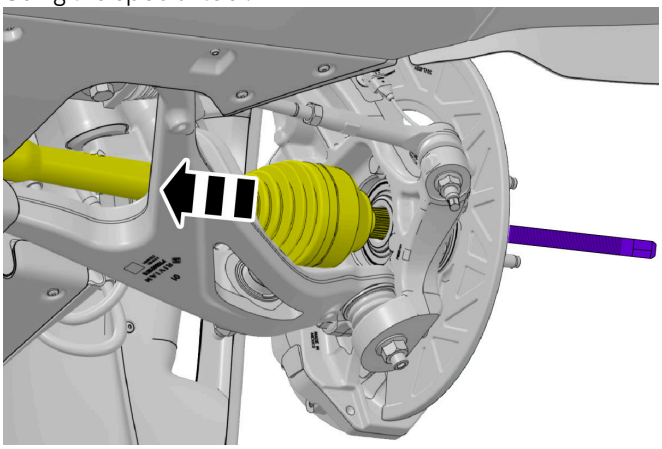
c. Using the ball joint separator: Separate the components.

d.



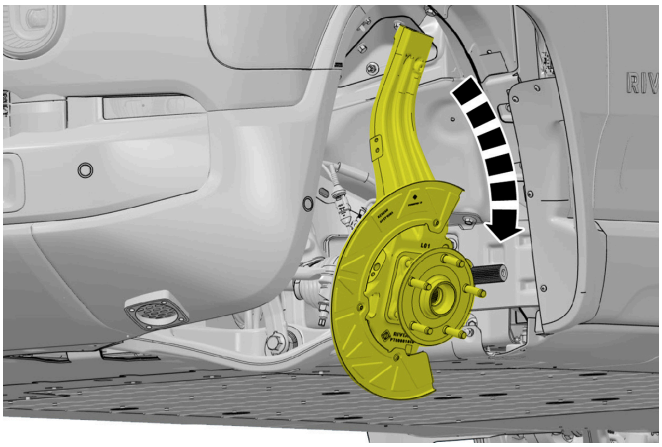
CAUTION: Potentially non-reusable component(s).

12. Using the special tool:

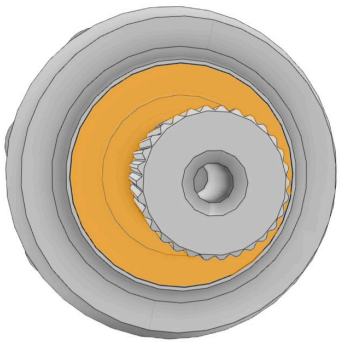


Refer to the special tool instructions for important information.

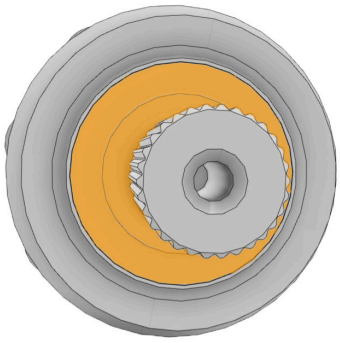
13.



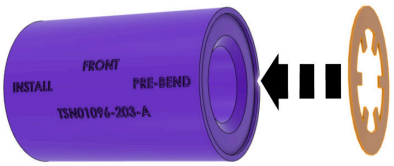
14. Using a nylon mesh scuff pad: Clean the highlighted area(s).



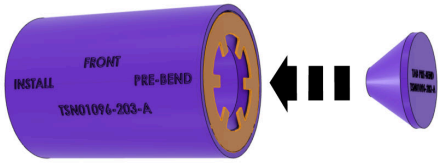
15. Apply grease to the highlighted area(s).



16. Position the washer in the "PRE-BEND" side of the front washer sleeve.

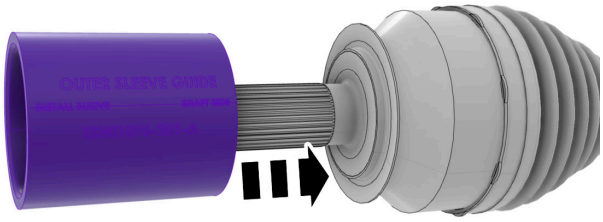


17. Push the pre-bend tool into the sleeve to bend the washer tabs. Continue pressing until the tabs do not bend any further.



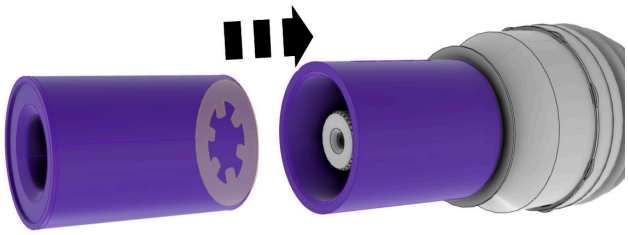
Tip: If necessary: Use a vise or C-clamp to apply pressure to the pre-bend tool.

18. Position the outer sleeve onto the halfshaft. Make sure that the side of the sleeve labeled "SHAFT SIDE" points toward the vehicle.

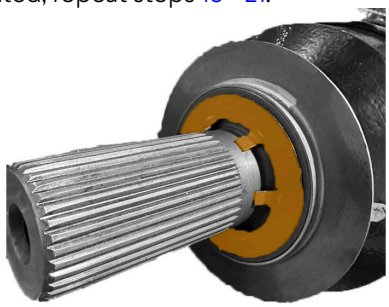


19. Position the washer in the "INSTALL" side of the front washer sleeve. Make sure that the bent tabs point toward the inside of the tool.

20. Install the front washer sleeve into the outer sleeve. Make sure that the side of the tool labeled "INSTALL" points toward the vehicle.



21. Push on the front washer sleeve to fully seat the washer onto the halfshaft. If necessary: Use a mallet.
22. Remove the special tools. Make sure that the washer is fully seated onto the halfshaft. If the washer is not fully seated, repeat steps 18 - 21.

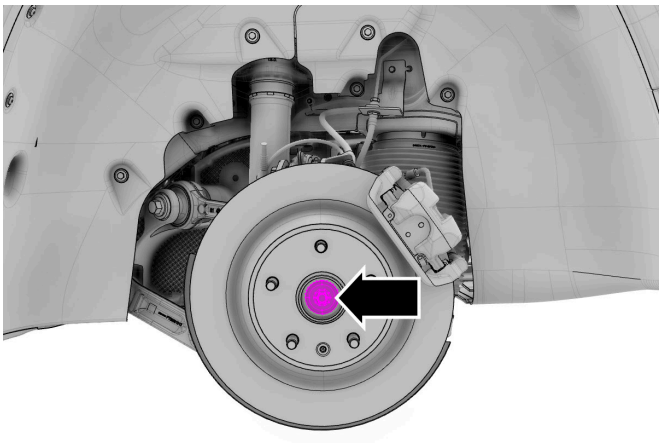


23. Repeat the steps in this section on the opposite side of the vehicle.
24. Continue to the Rear Halfshafts section.

Torque specifications in this section

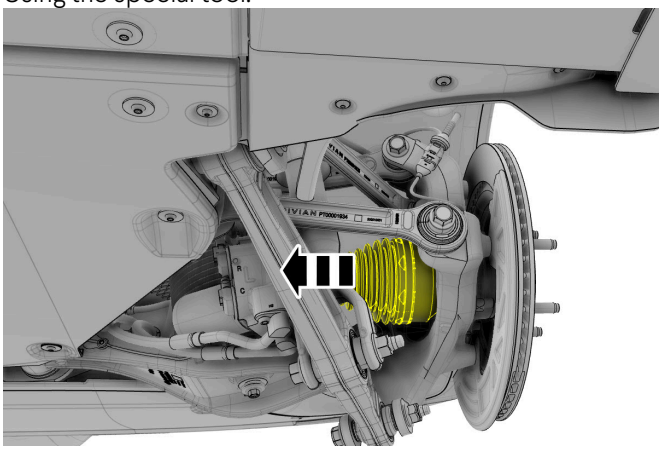
Step Number	Torque (Nm)
7	217
9	18
10	128
11.d	120

Rear Halfshafts

1. LH rear: Remove: Wheel and Tire Assembly, Front, LH (refer to service manual procedure 221010011).
2. 

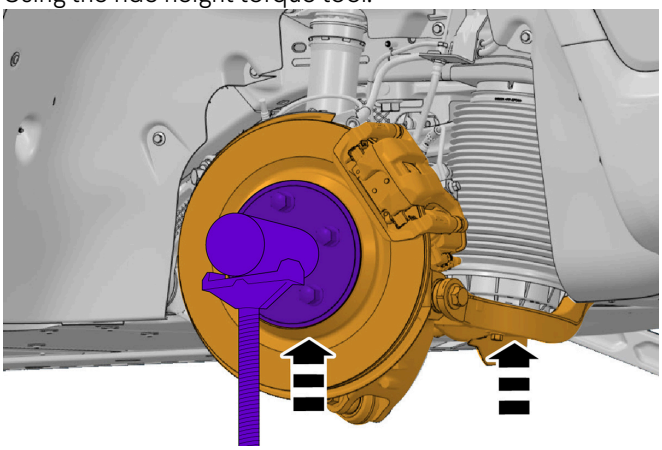
CAUTION: Non-reusable component(s).

3. Using the special tool:



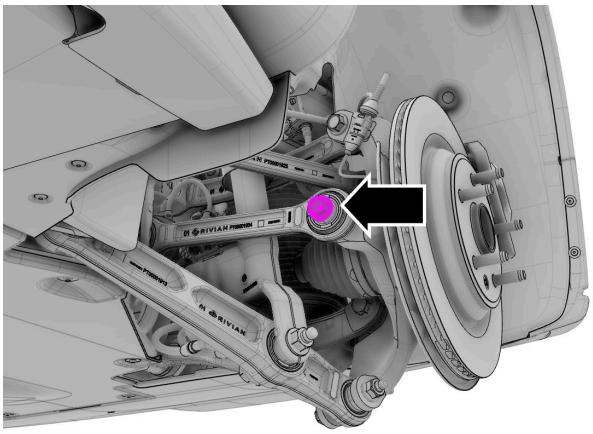
Note: Refer to the special tool instructions for important information.

4. Using the ride height torque tool:



Note: Refer to the special tool instructions for important information.

5.



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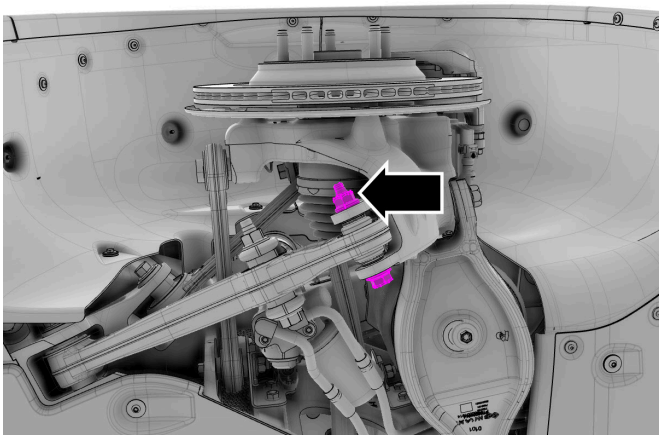
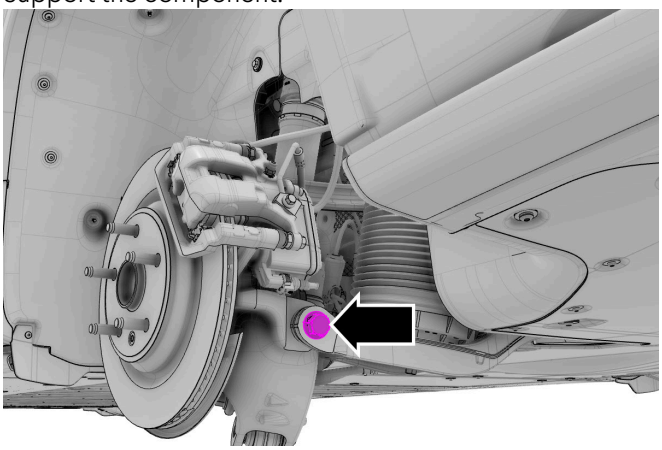


7. Support the component.



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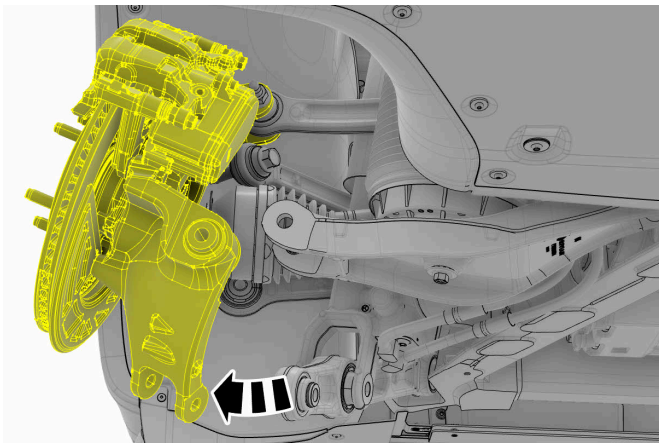

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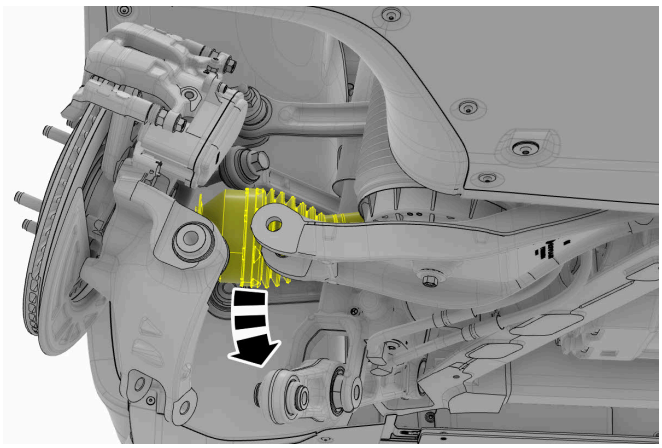

10. Using the rear washer sleeve: Repeat steps 14-22 of the previous section on the rear halfshaft.

11. Repeat the steps in this section on the opposite side of the vehicle.
12. Reinstall all components that were removed for access and replace all non-reusable components. Refer to the service manual procedures referenced in this document for additional component reusability information and torque specifications.
    - **CAUTION:** Do not pull the air spring down or inflate the air spring in order to attach any components.
    - Use the special tool to position the suspension at ride height before tightening any rubber bushings. Refer to the special tool instructions.
    - **Note:** When installing the halfshaft bolt:
      a. Use a new bolt.
      b. Torque the bolt to 80 Nm.
      c. Loosen the bolt 1 turn.
      d. Torque the bolt to 128 Nm.

Torque specifications in this section

Step Number	Torque (Nm)
2	128
5	175
6	175
7	270

Labor Codes

Labor Code	Description
RCA382300100	RCA-38-23-001 not applicable
RCA382300101	Obsolete labor code
RCA382300102	Install washers on 4 halfshafts
Contact ServiceDocumentFeedback@rivian.com regarding labor codes and document content.	