TECHNICAL INSTRUCTIONS

FOR

SAFETY RECALL 22TA05

REAR AXLE SHAFTS MAY SEPARATE FROM VEHICLE DURING DRIVING (INSPECTION + REPAIR)

CERTAIN 2022 MODEL YEAR TUNDRA AND TUNDRA HV

Update

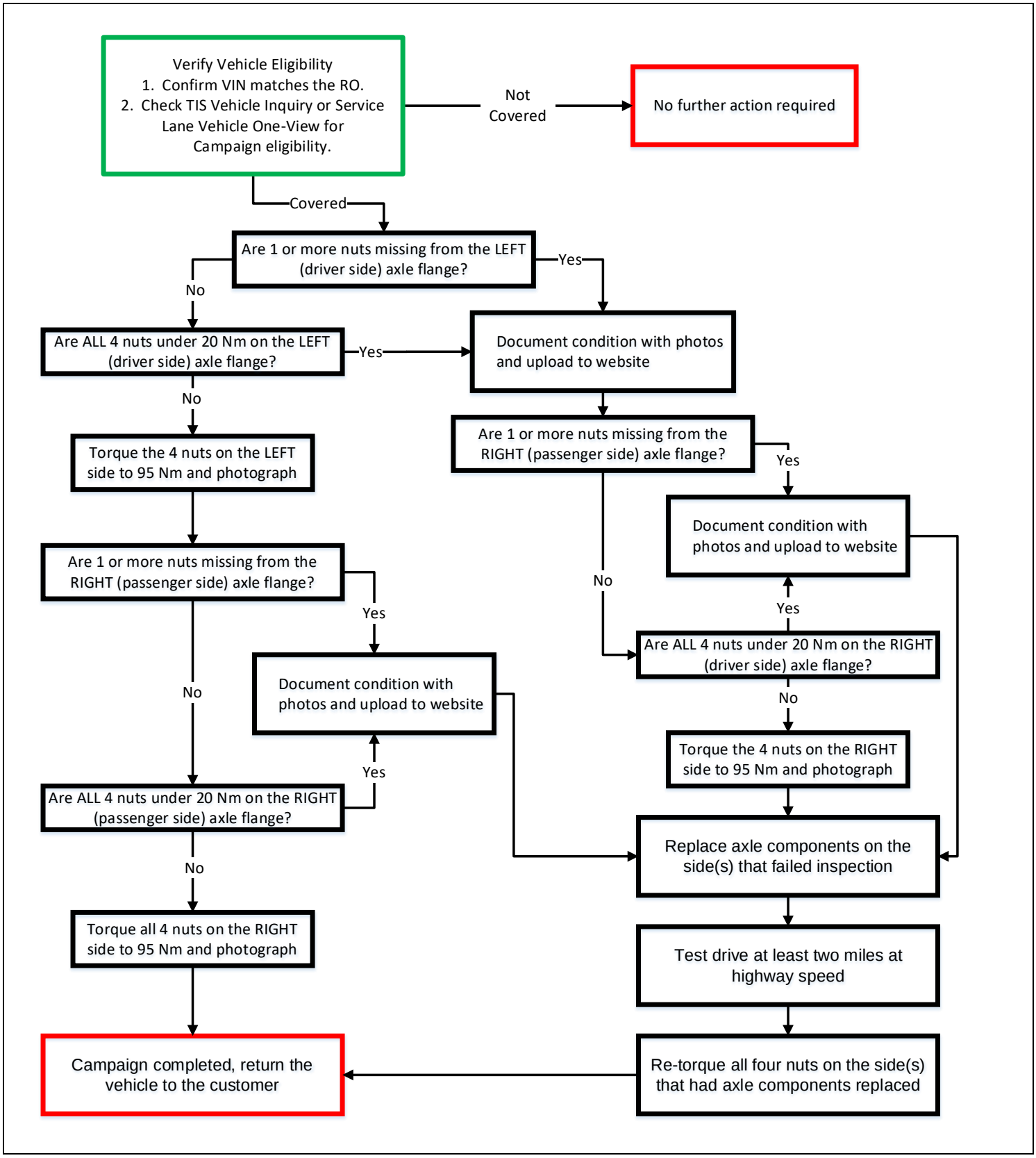
- 10-13-22 – Added repair process for vehicles that fail inspection
- 7-21-22 – Video overview added to clarify inspection process
- 6-28-22 – TI updated to include inspection website URL

The repair quality of covered vehicles is extremely important to Toyota. All dealership technicians performing this recall are required to successfully complete the most current version of the E-Learning course "Safety Recall and Service Campaign Essentials". To ensure that all vehicles have the repair performed correctly; technicians performing this repair are required to currently have completed all of the following courses:

- T351 Toyota Drivetrain Service and Repair

It is the dealership's responsibility to select technicians that have completed the above courses to perform this repair. Carefully review your resources, the technician skill level, and ability before assigning technicians to this repair. It is important to consider technician days off and vacation schedules to ensure there are properly trained technicians available to perform this repair at all times.

I. OPERATION FLOW CHART



II. IDENTIFICATION OF AFFECTED VEHICLES

1. CHECK VEHICLE FOR CAMPAIGN ELIGIBILITY
   a. Compare the VIN on the vehicle to the VIN on the Repair Order to ensure they match.
   b. Check TIS Vehicle Inquiry or Service Lane Vehicle One-View to confirm the VIN is involved in this Campaign, and that it has not already been completed.

Note: TMNA warranty will not reimburse dealers for repairs completed on vehicles that are not affected or were previously completed, even by another dealer.

III. PREPARATION

A. PARTS

NOTE: PARTS ONLY REQUIRED IF VEHICLE FAILS INSPECTION. DO NOT ORDER PARTS BEFORE INSPECTION IS COMPLETE.

Category	Part Number	Part Description	Quantity
Only order/replace parts on the side(s) that failed inspection. A photo of missing or under torqued nuts will be required.			
LEFT (Driver) Side	90468-A0007	Clip (For Brake Tube)*	1
	47804-60011	Cover Sub-Assy, Disc Brake Dust, Rear LH	1
	42460-0C020	Hub & Bearing Assy, Rear Axle, LH	1
	90208-A0001	Washer (For Rear Axle Shaft)*	1
	42423-34040	Retainer, Rear Axle Bearing Inner*	1
	90520-46014	Ring, Snap (For Rear Axle Shaft)*	1
	90310-A0004	Seal, Oil (For Rear Axle Shaft)*	1
	90301-A0015	Ring, O (For Rear Axle Bearing)*	1
	90114-A0004	Bolt, Serration*	4
	90178-A0057	Nut, Flange*	4
	94622-41200	Washer, Plate*	4
RIGHT (Passenger) Side	90468-A0007	Clip (For Brake Tube)*	1
	47803-60011	Cover Sub-Assy, Disc Brake Dust, Rear RH	1
	42450-0C030	Hub & Bearing Assy, Rear Axle, RH	1
	90208-A0001	Washer (For Rear Axle Shaft)*	1
	42423-34040	Retainer, Rear Axle Bearing Inner*	1
	90520-46014	Ring, Snap (For Rear Axle Shaft)*	1
	90310-A0004	Seal, Oil (For Rear Axle Shaft)*	1
	90301-A0015	Ring, O (For Rear Axle Bearing)*	1
	90114-A0004	Bolt, Serration*	4
	90178-A0057	Nut, Flange*	4
	94622-41200	Washer, Plate*	4
MISCELLANEOUS (Required for one or both sides)	00475-1BF03	Brake Fluid (DOT 3 or 4)	2
	08885-02506	Toyota Genuine Differential gear oil LT SAE 75W-85 APL GL-5 or equivalent	2
	12157-10010	Gasket (For Rear Axle Housing Filler Plug)	1

*Same part number used for both sides

B. TOOLS & EQUIPMENT

• Standard Hand Tools	• Torque Wrench	• Smart Phone or Camera	• Fine tip paint marker
• Hydraulic Press	• Cut-Off Wheel		

SST – These Special Service Tools will be required for this repair:

Part Number	Tool Name	Drawer #	Quantity
09308-00010*	Oil Seal Puller*	3	1
09521-25011* or 09521-25012	Rear Axle Shaft Puller*	7	1
09521-60020**	Rear Axle Tool**	N/A	1
09631-12090*	Seal Ring Tool*	3	1
09726-40010 (or equivalent)	Lower Control Shaft Bearing Replacer	N/A	1
09951-01100*	Replacer 110*	11	1
09951-00770*	Replacer 77*	11	1
09951-07150*	Handle Assembly 150 - 6.25 Inch*	12	1

*Essential Tool

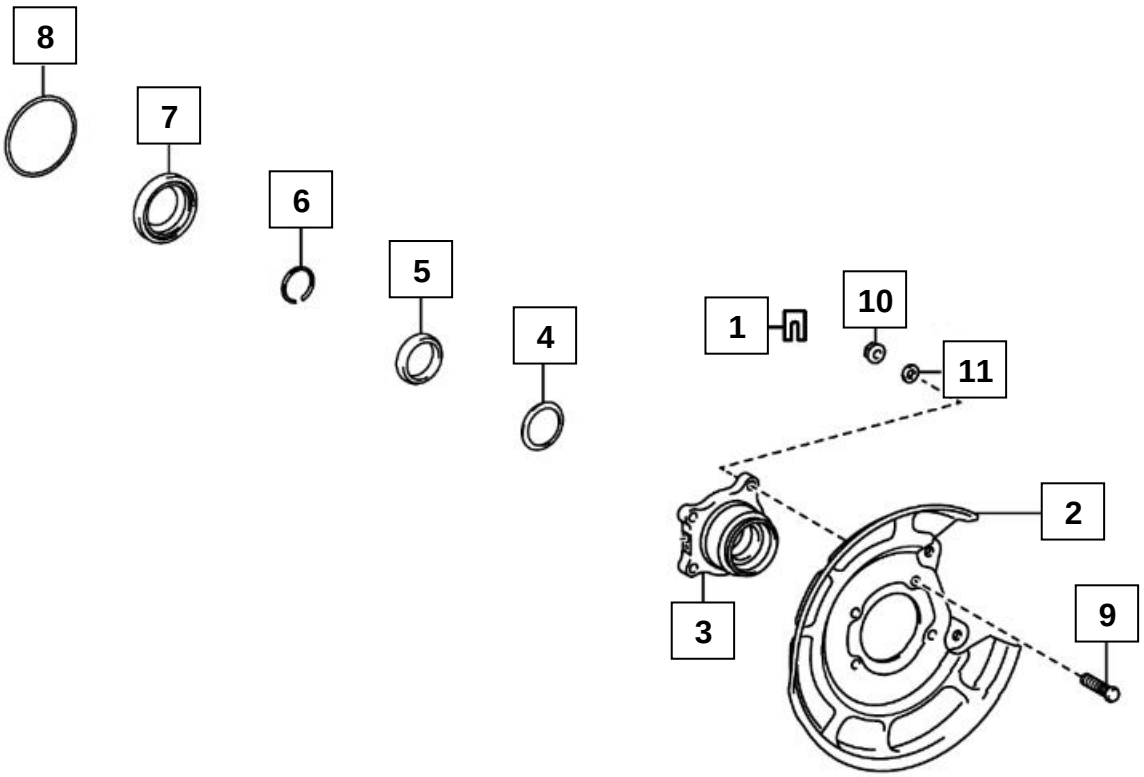
**Available through Loaner Tool Program. Do NOT order loaner tools until all parts are received.

IV. WORK PROCEDURE TABLE OF CONTENTS

*ONLY required for vehicles that fail inspection

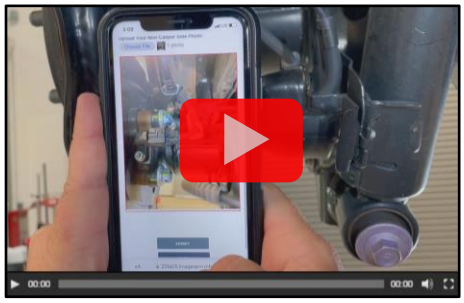
V. COMPONENTS

The image below is for the left (driver) side. Reference this image for the right (passenger) side as well.



	PART NAME
1	CLIP (FOR BRAKE TUBE)
2	COVER SUB-ASSY, DISC BRAKE DUST, REAR
3	HUB & BEARING ASSY, REAR AXLE
4	WASHER (FOR REAR AXLE SHAFT)
5	RETAINER, REAR AXLE BEARING INNER
6	RING, SNAP (FOR REAR AXLE SHAFT)
7	SEAL, OIL (FOR REAR AXLE SHAFT)
8	RING, O (FOR REAR AXLE BEARING)
9	BOLT, SERRATION
10	NUT, FLANGE
11	WASHER, PLATE

VI. LEFT REAR AXLE HOUSING FLANGE NUT INSPECTION



1. WATCH INSPECTION VIDEO OVERVIEW

a. Click the link to the left to watch a video overview of the inspection and photo upload process.

Remedy Inspection Website

https://22ta05.imagespm.info/

2. LOG INTO REMEDY INSPECTION WEBSITE

a. Navigate to the URL shown the left on a computer, or for a more seamless photo upload process, scan the QR code with your smartphone.

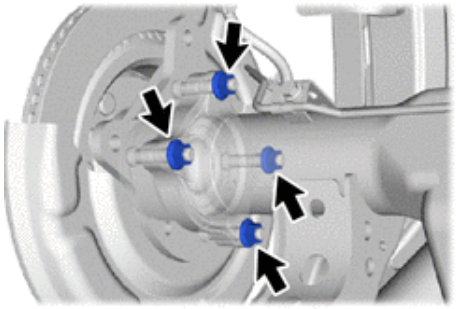
b. Log in to the website.

Username: 5-digit Dealer Code
Default Password: xxxxx

NOTE: Each dealer only has a single account, please ensure that the reset password is communicated to all technicians and dealer associates that will be utilizing this website.

c. Enter all requested information along with VIN.

d. Follow along on the website as you go through the procedure and upload images as requested.



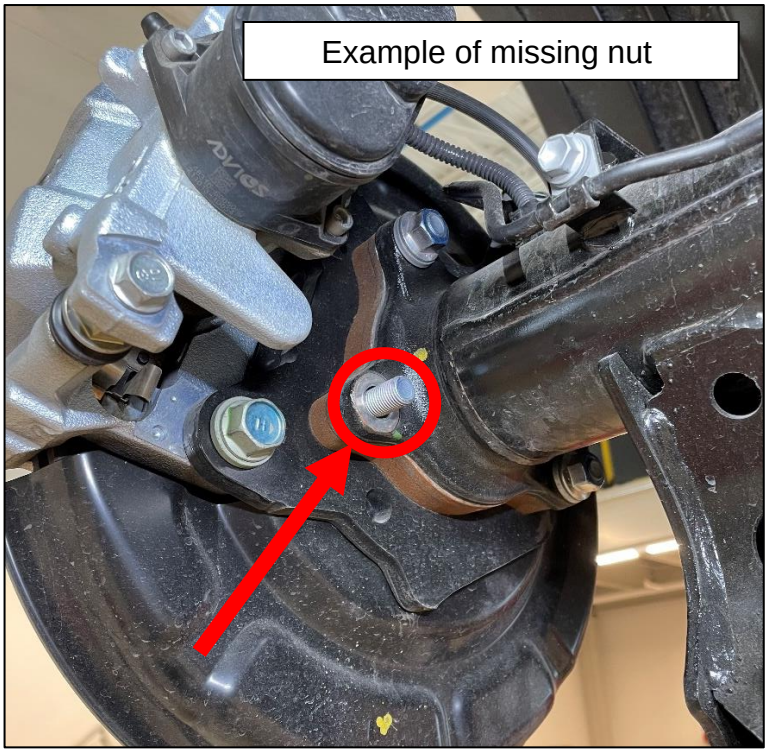
3. CHECK FOR MISSING AXLE SHAFT FLANGE NUTS

a. Release the parking brake.

b. Lift the vehicle.

c. Remove the left (driver) rear tire.

d. Check to see if all 4 nuts are present on the axle housing flange. If one or more nuts are missing, this side has failed inspection.



Is there **at least one** nut missing on the LEFT (Driver) Side?

Yes

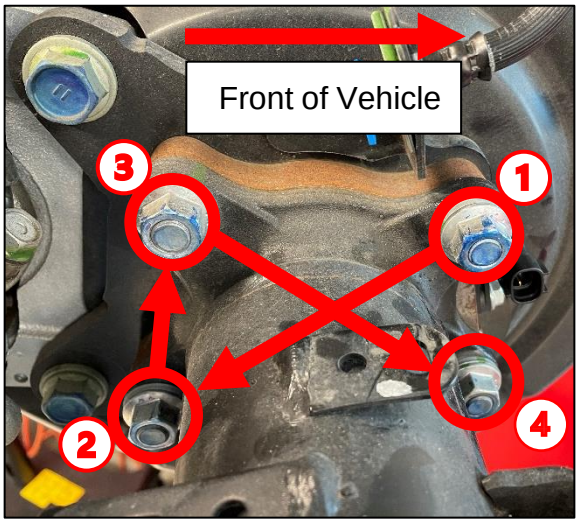
Upload photo to website as prompted then proceed to section VII. RIGHT REAR AXLE HOUSING FLANGE NUT INSPECTION

No

Proceed to step 4

4. MATCHMARK NUTS ON LEFT SIDE
   a. Using a fine tip paint marker, matchmark all 4 nuts, washers, and the axle housing flange.
   b. Mark "D" for "Driver" close to the axle shaft flange so it will be visible while taking photos of the nuts/studs.

5. TEMPORARILY REMOVE BRAKE LINE HARDWARE TO ALLOW ACCESS TO UPPER LEFT NUT
   a. Remove the outermost bolt that secures the hard brake line to the axle housing.



NOTE: Some parts removed for visibility

6. TORQUE STEP 1: CHECK TO SEE IF ALL FOUR (4) NUTS ON LEFT SIDE MOVE AT 20 Nm
   a. Set torque wrench to 20 Nm (204 kgf cm, 177 in. lbf)
   b. Tighten each nut to 20 Nm (204 kgf cm, 177 in. lbf) following the tightening sequence shown in the image to the left.

Critical

- Only move the brake line enough to create clearance for a torque wrench. Excessive movement could result in permanent damage to the brake line or loosing of the joint.
- Be careful not to scratch or cause other damage to the brake line.
- Do NOT use extensions with the torque wrench.

   c. Check the matchmarks to see if the nuts moved. If **ALL FOUR (4)** moved, this side has failed inspection.

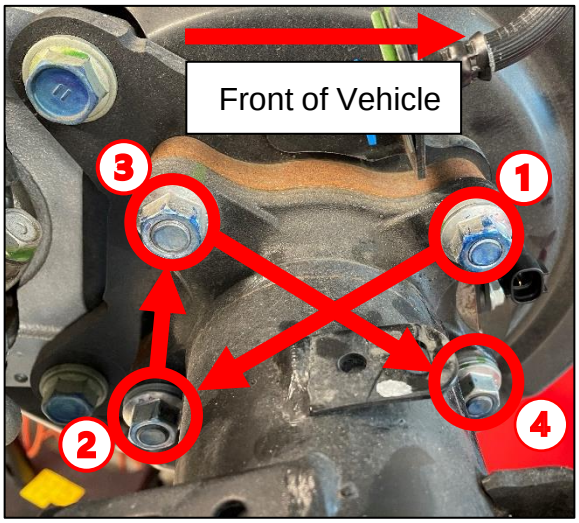
Did **ALL FOUR** nuts move on the LEFT (Driver) Side when torqued to 20 Nm?

Yes

Upload photos to website as prompted then proceed to section VII. RIGHT REAR AXLE HOUSING FLANGE NUT INSPECTION

No

Proceed to step 7



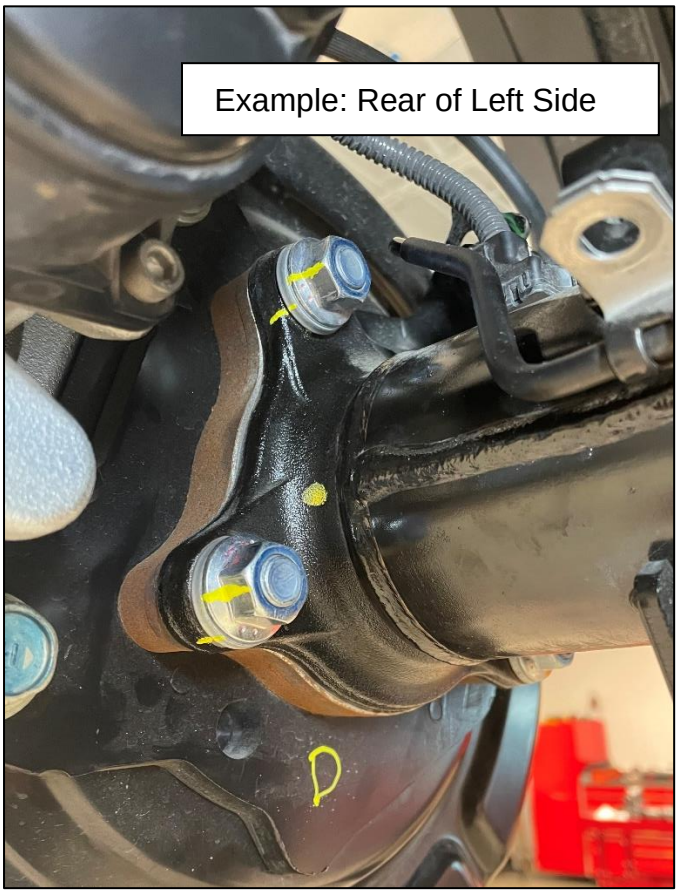
NOTE: Some parts removed for visibility

7. TORQUE STEP 2: INCREASE TORQUE TO 95 Nm
   a. Set torque wrench to 95 Nm (969 kgf cm, 70 ft. lbf)
   b. Tighten each nut to 95 Nm (969 kgf cm, 70 ft. lbf) following the tightening sequence shown to the left.

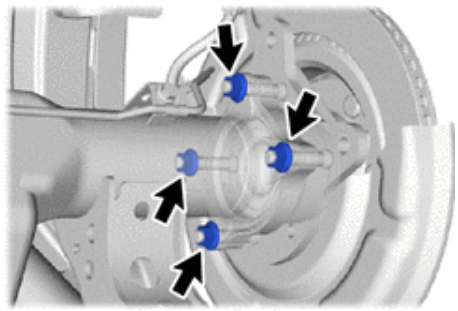
Critical

- Only move the brake line enough to create clearance for a torque wrench. Excessive movement could result in permanent damage to the brake line or loosing of the joint.
- Be careful not to scratch or cause other damage to the brake line.
- Torque nuts to 95 Nm (969 kgf cm, 70 ft. lbf). DO NOT use torque specification listed in Repair Manual.
- When torquing the nut apply torque in a smooth slow rotation. DO NOT quickly apply torque.
- Do NOT use extensions with the torque wrench.

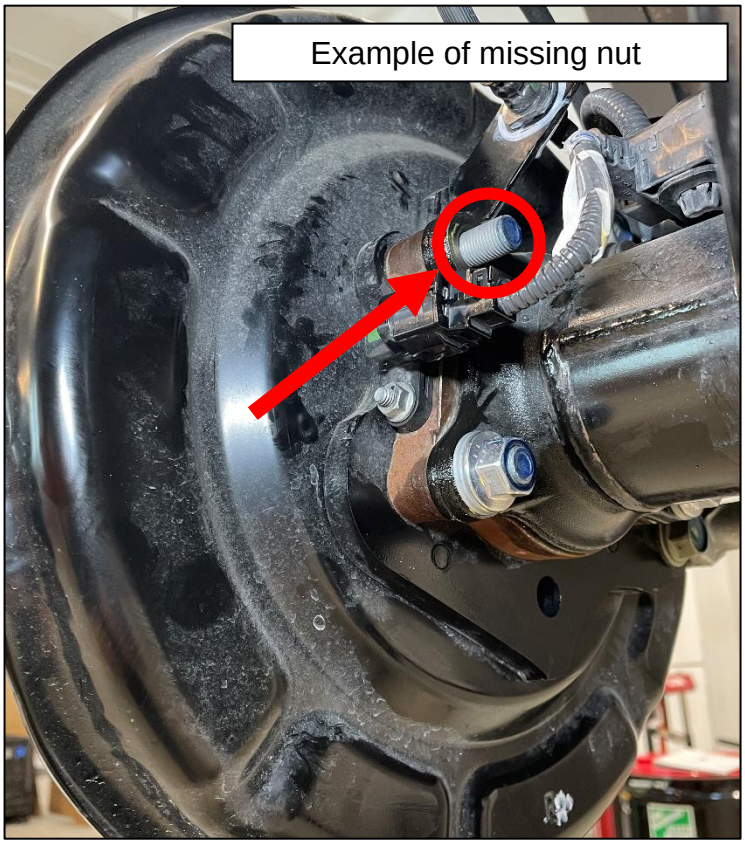
c. Photograph the matchmark positions post-torque and upload 2 photos to website (front and rear of axle; 2 nuts per photo).

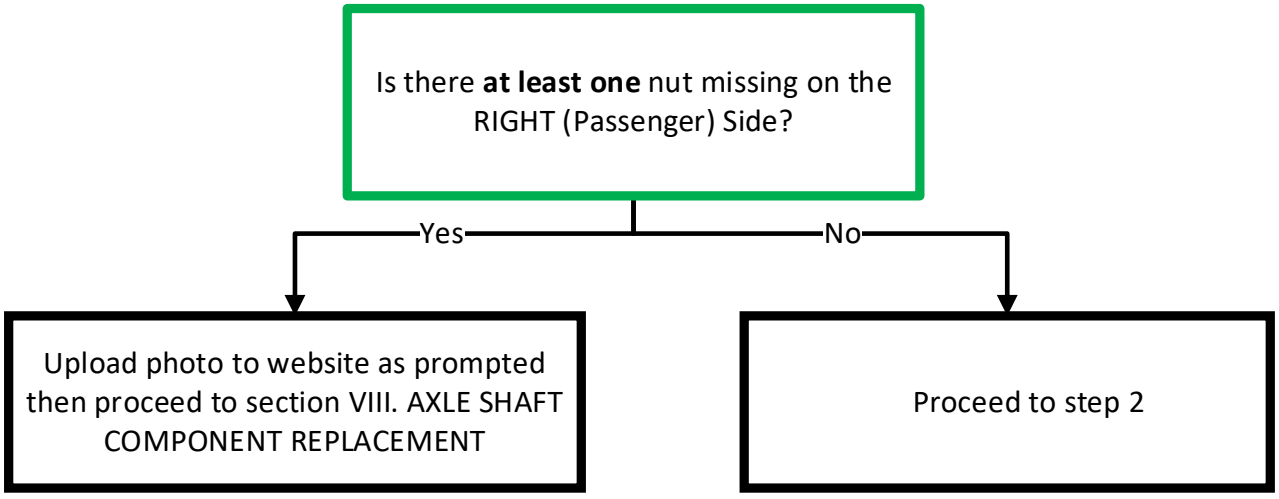


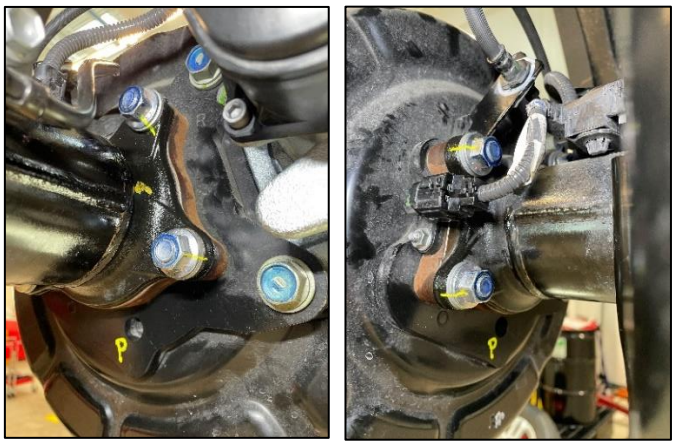
VII. RIGHT REAR AXLE HOUSING FLANGE NUT INSPECTION



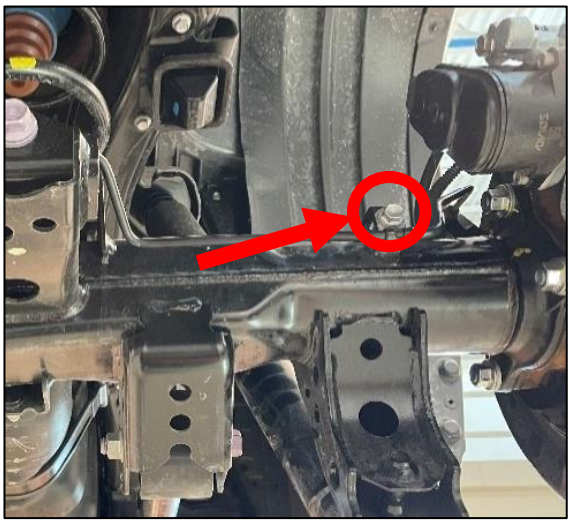
1. CHECK FOR MISSING AXLE SHAFT FLANGE NUTS
   a. Remove the right (passenger) rear tire.
   b. Check to see if all 4 nuts are present on the axle housing flange. If one or more nuts are missing, this side has failed inspection.



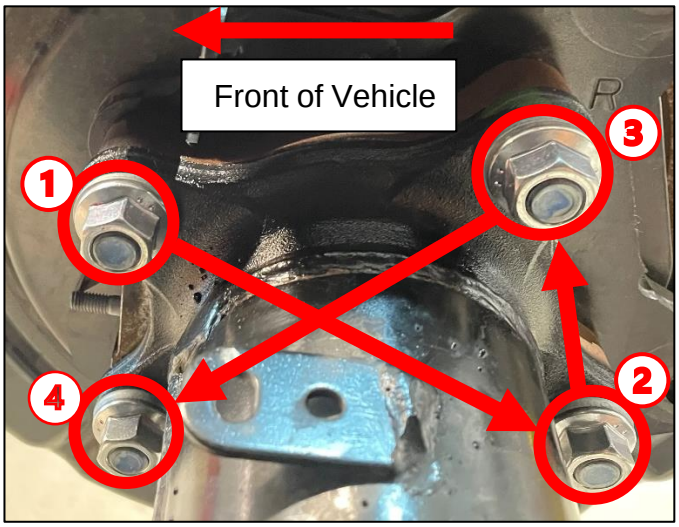




2. MATCHMARK NUTS ON RIGHT SIDE
   a. Using a fine tip paint marker, matchmark all 4 nuts, washers, and the axle housing flange.
   b. Mark "P" for "Passenger" close to the axle shaft flange so it will be visible while taking photos of the nuts/studs.



3. TEMPORARILY REMOVE BRAKE LINE HARDWARE TO ALLOW ACCESS TO UPPER RIGHT NUT
   a. Remove the outermost bolt that secures the hard brake line to the axle housing.



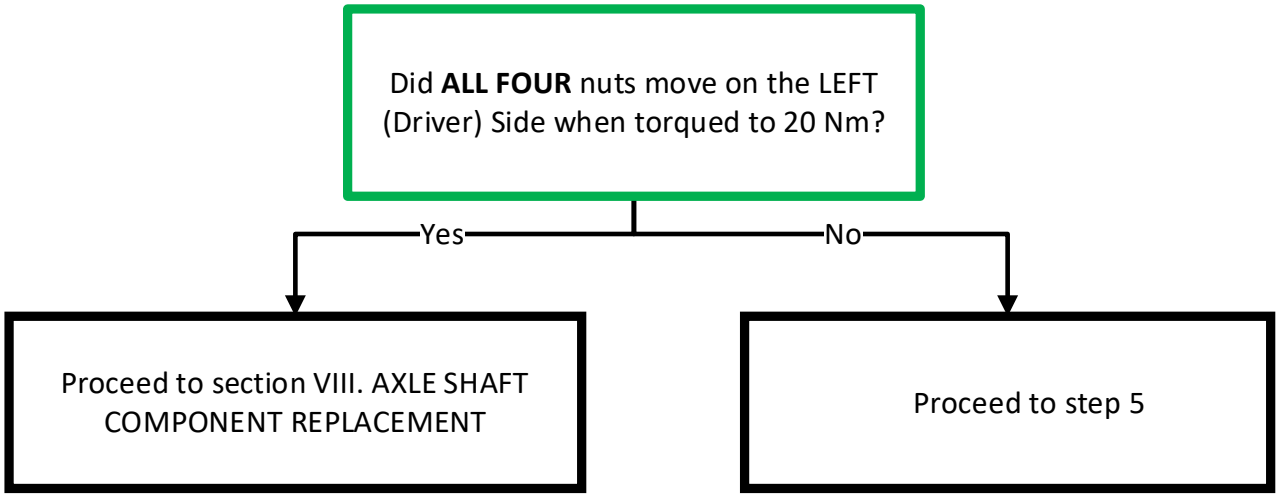
NOTE: Some parts removed for visibility

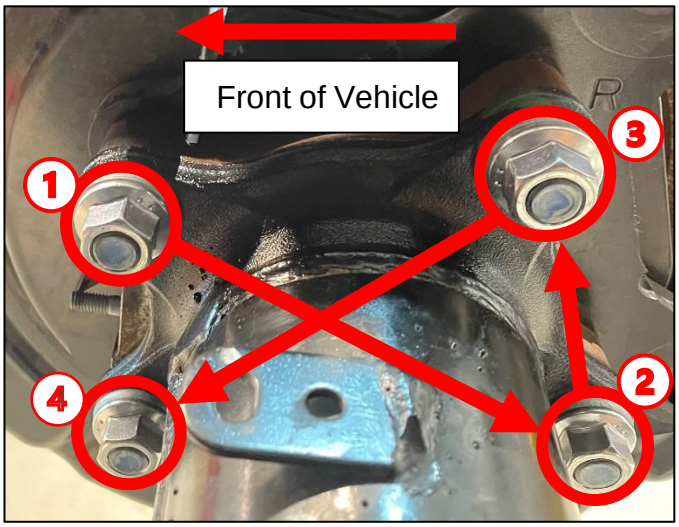
4. TORQUE STEP 1: CHECK TO SEE IF ALL FOUR (4) NUTS ON RIGHT SIDE MOVE AT 20 Nm
   a. Set torque wrench to 20 Nm (204 kgf cm, 177 in. lbf).
   b. Tighten each nut to 20 Nm (204 kgf cm, 177 in. lbf) following the tightening sequence shown in the image to the left.

Critical

- Only move the brake line enough to create clearance for a torque wrench. Excessive movement could result in permanent damage to the brake line.
- Be careful not to scratch or cause other damage to the brake line.
- Do NOT use extensions with the torque wrench.

   c. Check the matchmarks to see if the nuts moved. If **ALL FOUR (4)** moved, this side has failed inspection.





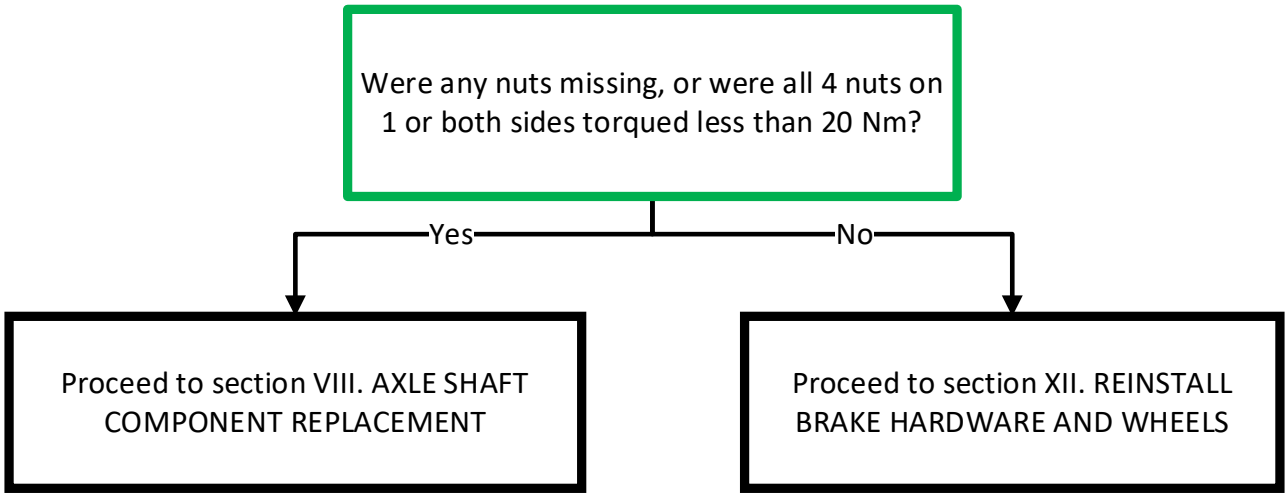
NOTE: Some parts removed for visibility

5. TORQUE STEP 2: INCREASE TORQUE TO 95 Nm
   a. Set the torque wrench to 95 Nm (969 kgf cm, 70 ft. lbf)
   b. Tighten each nut to 95 Nm (969 kgf cm, 70 ft. lbf) following the tightening sequence shown to the left.

Critical

- Only move the brake line enough to create clearance for a torque wrench. Excessive movement could result in permanent damage to the brake line.
- Be careful not to scratch or cause other damage to the brake line.
- Torque nuts to 95 Nm (969 kgf cm, 70 ft. lbf). DO NOT use torque specification listed in Repair Manual.
- When torquing the nut apply torque in a smooth slow rotation. DO NOT quickly apply torque.
- Do NOT use extensions with the torque wrench.

c. Photograph the matchmark positions post-torque and upload 2 photos to website (front and rear of axle; 2 nuts per photo).



VIII. AXLE SHAFT COMPONENT REPLACEMENT

1. REPLACE COMPONENTS LISTED BELOW

Replace all parts on the side(s) that failed inspection ONLY.

Failed Side	Part Number	Part Description	Quantity
LEFT (Driver) Side	90468-A0007	Clip (For Brake Tube)*	1
	47804-60011	Cover Sub-Assy, Disc Brake Dust, Rear LH	1
	42460-0C020	Hub & Bearing Assy, Rear Axle, LH	1
	90208-A0001	Washer (For Rear Axle Shaft)*	1
	42423-34040	Retainer, Rear Axle Bearing Inner*	1
	90520-46014	Ring, Snap (For Rear Axle Shaft)*	1
	90310-A0004	Seal, Oil (For Rear Axle Shaft)*	1
	90301-A0015	Ring, O (For Rear Axle Bearing)*	1
	90114-A0004	Bolt, Serration*	4
	90178-A0057	Nut, Flange*	4
	94622-41200	Washer, Plate*	4
RIGHT (Passenger) Side	90468-A0007	Clip (For Brake Tube)*	1
	47803-60011	Cover Sub-Assy, Disc Brake Dust, Rear RH	1
	42450-0C030	Hub & Bearing Assy, Rear Axle, RH	1
	90208-A0001	Washer (For Rear Axle Shaft)*	1
	42423-34040	Retainer, Rear Axle Bearing Inner*	1
	90520-46014	Ring, Snap (For Rear Axle Shaft)*	1
	90310-A0004	Seal, Oil (For Rear Axle Shaft)*	1
	90301-A0015	Ring, O (For Rear Axle Bearing)*	1
	90114-A0004	Bolt, Serration*	4
	90178-A0057	Nut, Flange*	4
	94622-41200	Washer, Plate*	4

*Same part number used for both sides

a. Axle Shaft Removal:

AXLE AND DIFFERENTIAL: REAR AXLE SHAFT: REMOVAL; 2022 MY Tundra Tundra HV [11/2021 - 05/2022] (RM100000001Z2DK)

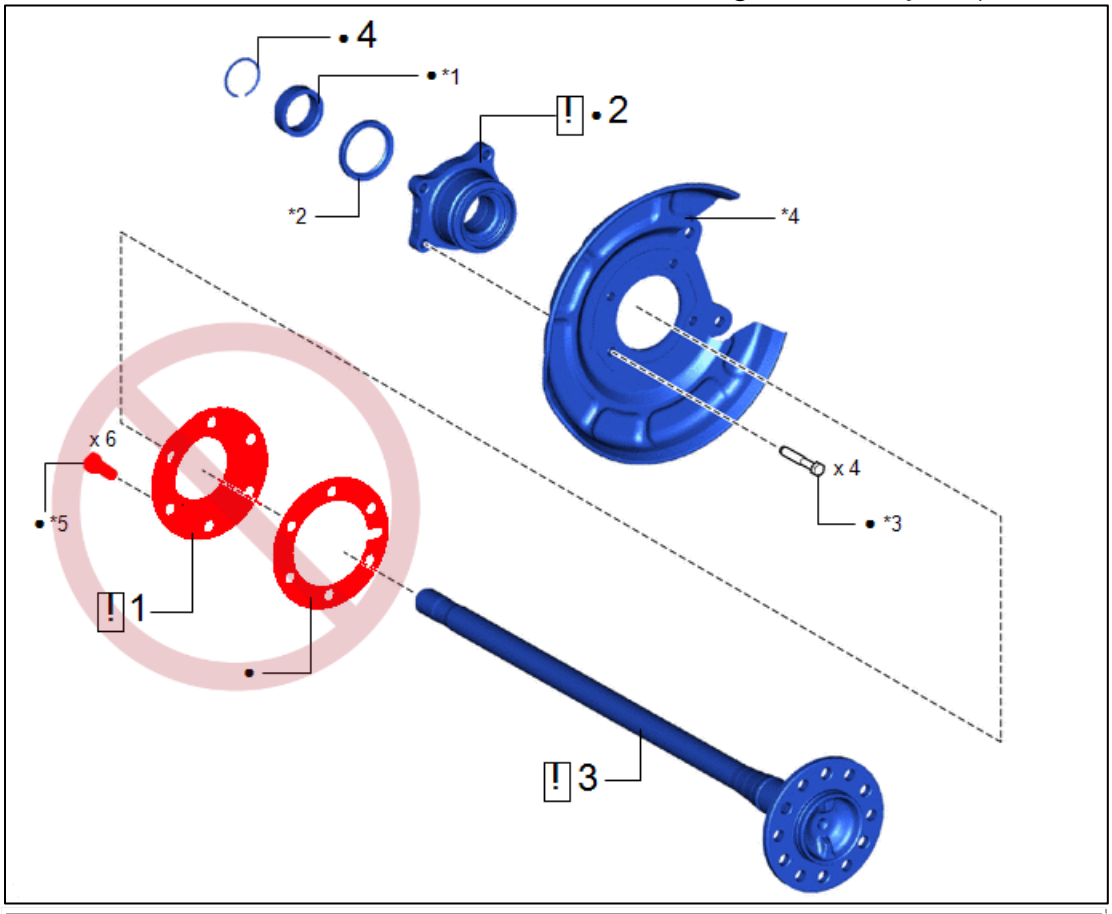
AXLE AND DIFFERENTIAL: REAR AXLE SHAFT: REMOVAL; 2022 MY Tundra Tundra HV [05/2022 -] (RM1000000022DH0)

NOTE: Differential oil will leak once you begin to separate the axle shaft from the axle housing. Be prepared with a drain pan and rags.

b. Axle Shaft Disassembly:

AXLE AND DIFFERENTIAL: REAR AXLE SHAFT: DISASSEMBLY; 2022 MY Tundra Tundra HV [11/2021 -] (RM100000001Z2DL)

NOTE: DO NOT remove Brake Drum Oil Deflector during disassembly (step 4 in RM).



	PART NAME
1	BRAKE DRUM OIL DEFLECTOR (DO NOT REMOVE)
2	REAR AXLE HUB AND BEARING ASSEMBLY
3	REAR AXLE SHAFT
4	REAR AXLE SHAFT SNAP RING

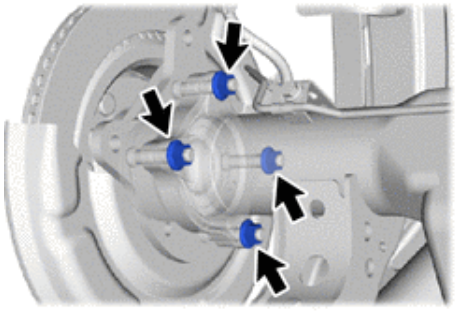
*1	REAR AXLE BEARING INNER RETAINER	*2	REAR AXLE SHAFT WASHER
*3	PARKING BRAKE PLATE TO REAR AXLE HOUSING BOLT	*4	PARKING BRAKE PLATE SUB-ASSEMBLY
*5	REAR AXLE HUB BOLT (DO NOT REMOVE)	-	-
•	Non-reusable part	-	-

c. Axle Shaft Reassembly:
AXLE AND DIFFERENTIAL: REAR AXLE SHAFT: REMOVAL; 2022 MY Tundra Tundra HV [11/2021 - 05/2022] (RM100000001Z2DK)

d. Axle Shaft Installation:
AXLE AND DIFFERENTIAL: REAR AXLE SHAFT: REMOVAL; 2022 MY Tundra Tundra HV [11/2021 - 05/2022] (RM100000001Z2DK)
AXLE AND DIFFERENTIAL: REAR AXLE SHAFT: REMOVAL; 2022 MY Tundra Tundra HV [05/2022 -] (RM1000000022DH1)

Critical

- GTS (Techstream) is required to bleed the brakes on hybrid models. Be sure to follow the correct Repair Manual procedure for brake bleeding. Example: BRAKE SYSTEM (OTHER): BRAKE FLUID (for HEV Model): BLEEDING; 2022 MY Tundra Tundra HV [05/2022 -] (RM1000000022AI4)
- Rear axle nuts should be torqued to 95 Nm (969 kgf cm, 70 ft. lbf). Do NOT use Repair Manual torque specification for these nuts.



IX. ADD DIFFERENTIAL OIL

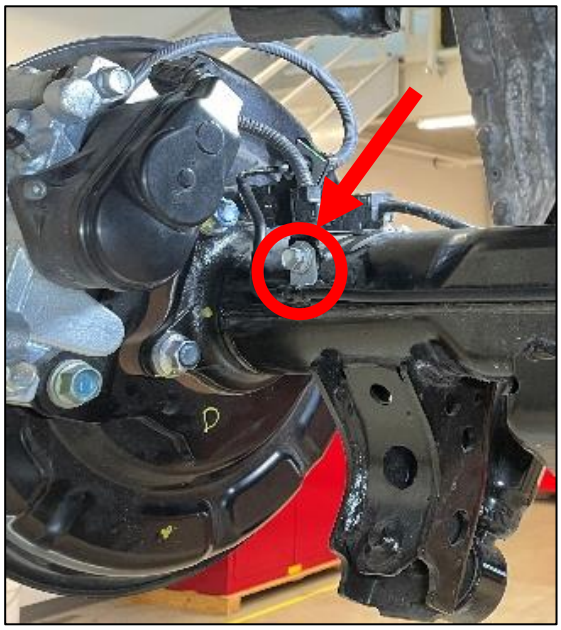
1. Add differential oil (step 2 in RM).
MAINTENANCE: DIFFERENTIAL OIL: REPLACEMENT; 2022 MY Tundra Tundra HV [11/2021 - 05/2022] (RM100000002048H)
MAINTENANCE: DIFFERENTIAL OIL: REPLACEMENT; 2022 MY Tundra Tundra HV [05/2022 -] (RM1000000022LTS)

X. REINSTALL BRAKE HARDWARE AND WHEELS

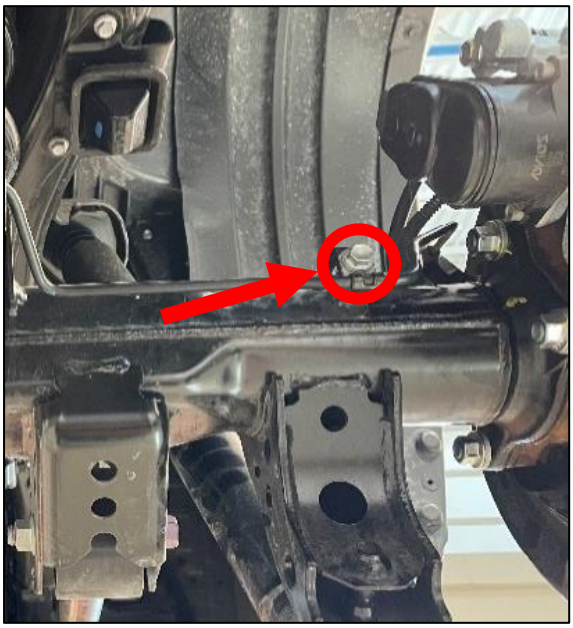
1. REINSTALL BRAKE HARDWARE

a. Reinstall the bolts that secure the hard brake line to the axle housing.

Torque Specification: 19.5 Nm (199 kgf cm, 173 in. lbf)



Left (Driver) Side

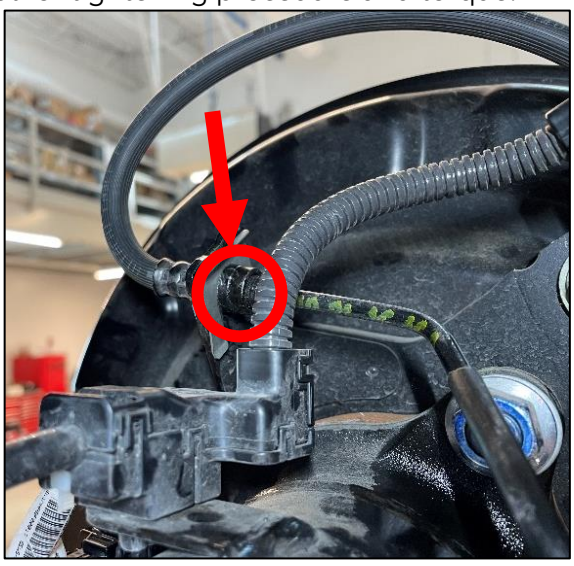


Right (Passenger) Side

2. CHECK FOR BRAKE FLUID LEAKS

a. Inspect both brake line joints for leaks where the hard brake tube connects to the flexible hose. If leaks are found, refer to Repair Manual for tightening procedure and torque.

Left (Driver) Side



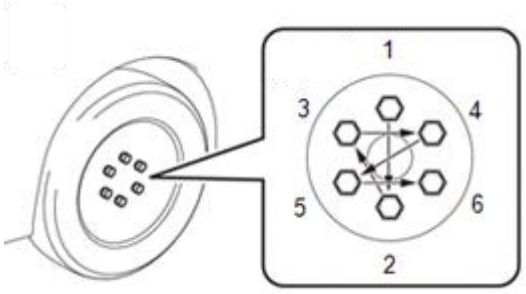
Right (Passenger) Side

3. REINSTALL REAR WHEELS
    a. Reinstall Rear Wheels and torque according to the sequence and specification below.

Torque Specification:

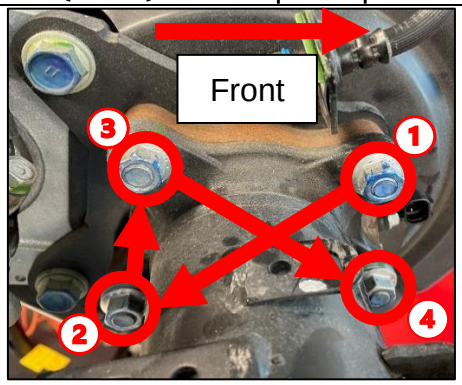
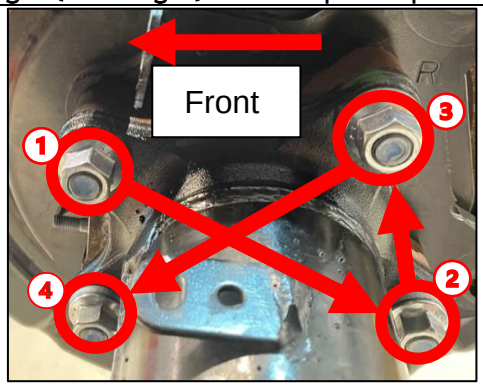
- Steel Wheel: 209 Nm (2131 kgf·cm, 154 ft.·lbf)
- Aluminum Wheel: 131 Nm (1336 kgf·cm, 97 ft.·lbf)

Torque Pattern:



XI. TEST DRIVE AND RE-TORQUE

1. **TEST DRIVE VEHICLE ON THE HIGHWAY FOR AT LEAST TWO MILES**
    a. Test drive conditions should include acceleration, deceleration, braking, and bumps.
2. **RE-TORQUE NUTS ON THE SIDE(S) THAT HAD AXLE COMPONENTS REPLACED.**
    a. Lift the Vehicle
    b. Remove the rear wheel(s) on the side(s) that had axle components replaced.
    c. Remove the bolts that secure the hard brake line to the axle housing on the side(s) that had axle components replaced.
    d. Remove the clip where the hard brake line connects to the flexible brake hose on the side(s) that had axle components replaced.
    e. Torque the four nuts to 95 Nm in the sequence below on the side(s) that had axle components replaced.

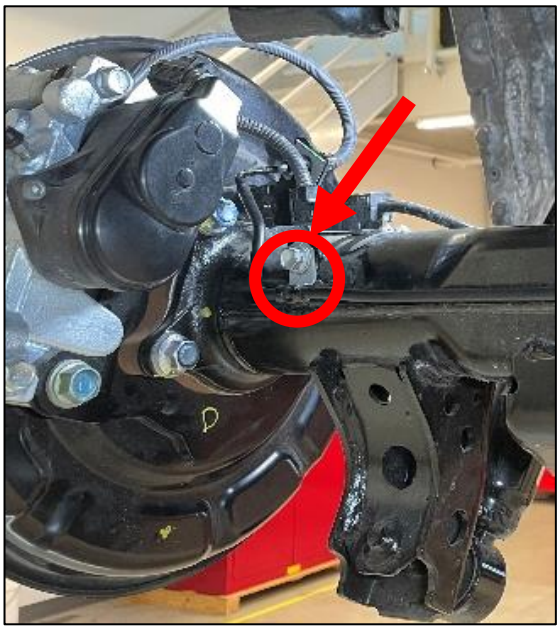
Left (Driver) Side Torque Sequence	Right (Passenger) Side Torque Sequence
	
NOTE: Some parts removed for visibility	NOTE: Some parts removed for visibility

XII. REINSTALL BRAKE HARDWARE AND WHEELS

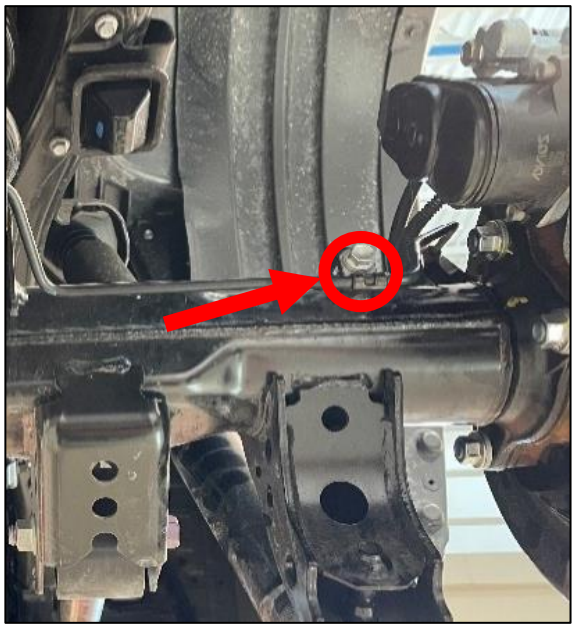
4. REINSTALL BRAKE HARDWARE

a. Reinstall the bolts that secure the hard brake line to the axle housing.

Torque Specification: 19.5 Nm (199 kgf cm, 173 in. lbf)



Left (Driver) Side

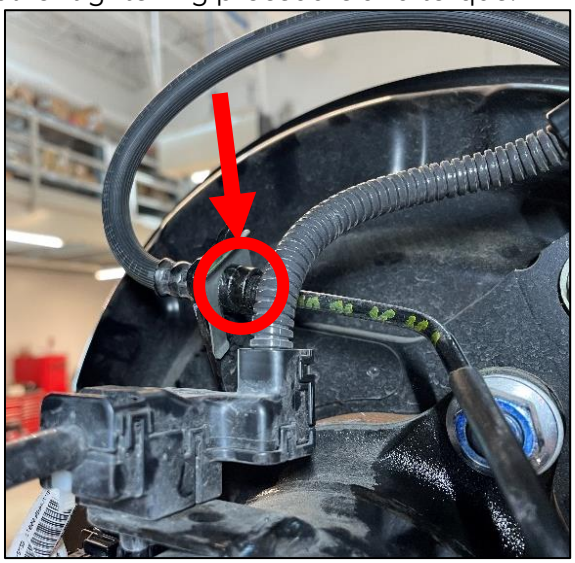


Right (Passenger) Side

5. CHECK FOR BRAKE FLUID LEAKS

a. Inspect both brake line joints for leaks where the hard brake tube connects to the flexible hose. If leaks are found, refer to Repair Manual for tightening procedure and torque.

Left (Driver) Side



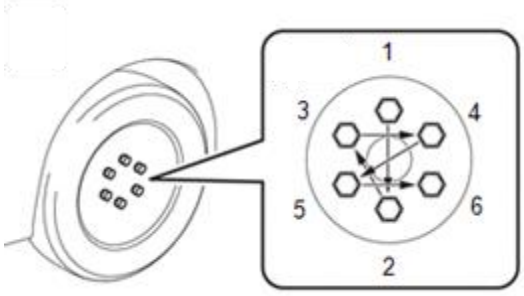
Right (Passenger) Side

6. **REINSTALL REAR WHEELS**
    a. Reinstall Rear Wheels and torque according to the sequence and specification below.

Torque Specification:

- Steel Wheel: 209 Nm (2131 kgf·cm, 154 ft.·lbf)
- Aluminum Wheel: 131 Nm (1336 kgf·cm, 97 ft.·lbf)

Torque Pattern:



◄ VERIFY REPAIR QUALITY ►

- Confirm all axle flange nuts were installed and torqued properly.
- Confirm brake line bolts were installed and torqued properly.
- Confirm wheels were installed and torqued properly.
- Confirm that there are no fluids leaking from the rear axle area.
- Confirm that the brake lines have not been deformed, scratched, or damaged in any way.

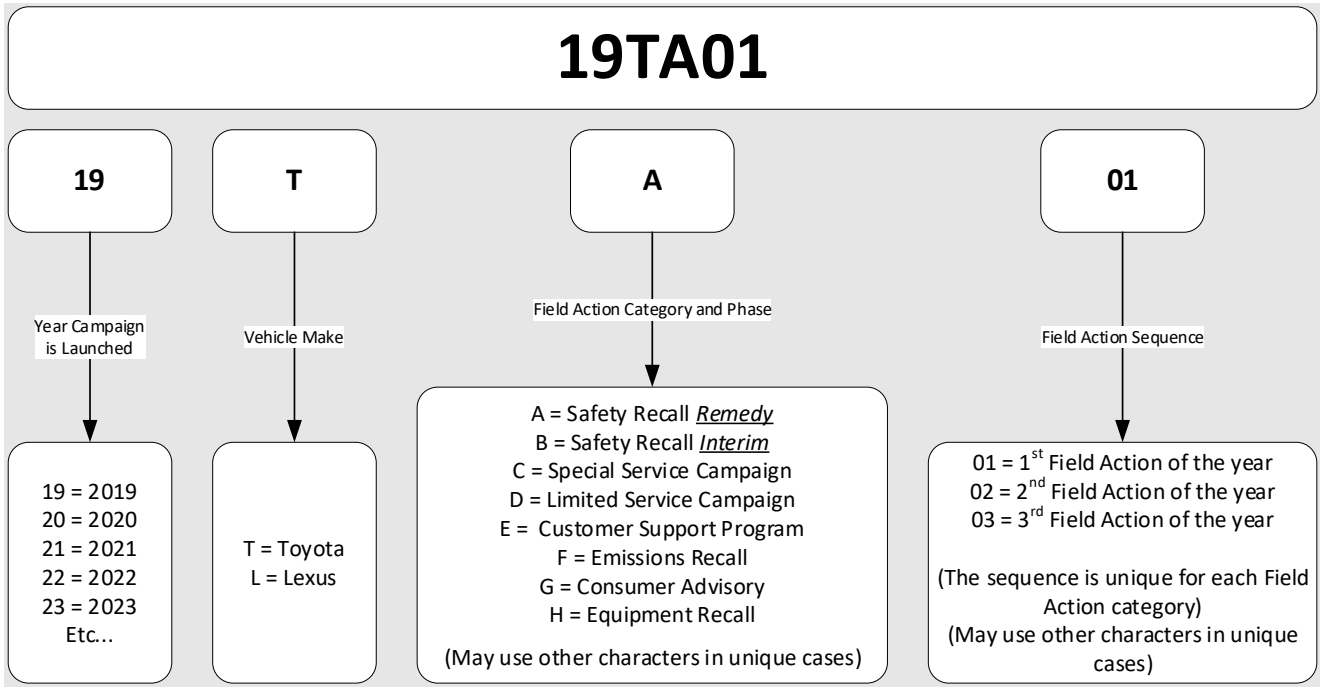
If you have any questions regarding this instruction, please contact your regional representative.

APPENDIX

A. PARTS DISPOSAL

In accordance with Federal law, please make sure all recalled parts (original parts) removed from the vehicle are disposed of in a manner in which they will not be reused, *unless requested for parts recovery return*.

B. CAMPAIGN DESIGNATION DECORDER



Examples:

19TA01 = Launched in 2019, Toyota, Safety Recall Remedy Phase, 1st Safety Recall Launched in 2019

20TC02 = Launched in 2020, Special Service Campaign, 2nd Special Service Campaign Launched in 2020

21TE05 = Launched in 2021, Customer Support Program, 5th Customer Support Program Launched in 2021