

Abnormal Noise From Rear Differential During Connect/Disconnect Operation

Service Category Drivetrain

Section Axle/Differential

Market USA

Toyota Supports
 ASE Certification 

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2019 - 2020	RAV4	WMI(s): 2T3, JTM VDS(s): J1RFV, N1RFV

Introduction

Some 2019 – 2020 model year RAV4 Adventure and Limited grade AWD vehicles may exhibit an abnormal noise from the rear differential assembly when accelerating from a stop and/or on deceleration after driving the vehicle for 15 – 20 minutes or more. This condition occurs with Normal drive mode selected during disconnect/connect timing of the AWD system. Follow the Repair Procedure in this bulletin to address this condition.

NOTE

This Service Bulletin ONLY applies to 2019 – 2020 model year RAV4 Adventure and Limited grade vehicles with torque vectoring AWD system.

Warranty Information

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
TC1906	R & R Differential Carrier Assembly for Torque Vectoring Differential	5.0	41110-42050	91	19

APPLICABLE WARRANTY

- This repair is covered under the Toyota Powertrain Warranty. This warranty is in effect for 60 months or 60,000 miles, whichever occurs first, from the vehicle's in-service date.
- Warranty application is limited to occurrence of the specified condition described in this bulletin.

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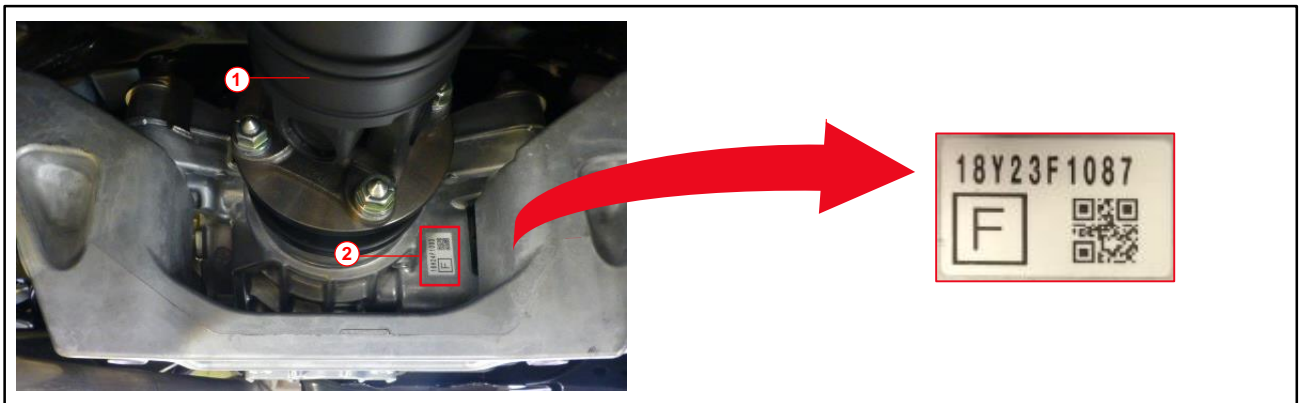
Production Change Information

This bulletin applies to vehicles with a differential produced **BEFORE** the effective serial number shown below.

MODEL	PLANT	DRIVETRAIN	PRODUCTION CHANGE EFFECTIVE SERIAL NUMBER
RAV4	TMMC - C	AWD	20E15F1013
	TMMC - W		
	Takaoka		
	Shokki #1		
	Shokki #2		

1. Locate the differential serial number, as shown in the figure below.

Figure 1. Real Differential Front View



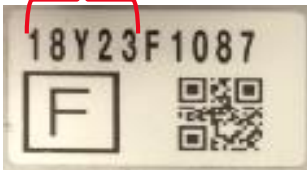
1	Propeller Shaft
2	Rear Differential Serial Number

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Production Change Information (continued)

2. Use the figure below as a guide to determine the production date from the serial number.

Figure 2. Rear Differential Serial Number Breakdown

Example: 18Y23F1087 → Produced November 23, 2018		Production Month	
Year (YY) / Month (M) / Day (DD)		<ul style="list-style-type: none"> • A: Jan • B: Feb • C: Mar • D: Apr • E: May • F: Jun 	<ul style="list-style-type: none"> • G: Jul • H: Aug • I: Sep • X: Oct • Y: Nov • Z: Dec
			

Parts Information

PART NUMBER		PART NAME	QTY
PREVIOUS	NEW		
41110-42050	41110-42053	Carrier Assy, Differential	1
41110-42051			
41110-42052			
90119-12453		Bolt, W/Washer*	2
90119-12455			2
90119-14186			1
90105-14210		Bolt, Flange*	3
90179-A0005		Nut*	2
08885-02606		LX GL-5 75W-85 Gear Oil (LX85 LSD Type)	1
12159-10010		Gasket, Drain Plug*	1

*Nonreusable parts.

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Required Tools & Equipment

REQUIRED EQUIPMENT	SUPPLIER	PART NUMBER	QTY
Techstream ADVi*	ADE	TSADVUNIT	1
Techstream 2.0		TS2UNIT	
Techstream Lite		TSLITEPDLR01	
Techstream Lite (Green Cable)		TSLP2DLR01	
ChassisEAR™ (or Equivalent)		JSP06608	1

*Essential SST.

NOTE

- Only ONE of the Techstream units listed above is required.
- Software version 15.00.028 or later is required.
- A mechanic's stethoscope or similar tool may be used in place of ChassisEAR™.
- ChassisEAR™ and Additional Techstream units may be ordered by calling Approved Dealer Equipment (ADE) at 1-800-368-6787.

Repair Procedure

1. Confirm the vehicle exhibits one of the following abnormal noises from the rear differential assembly when accelerating from a stop during AWD system disconnect timing or upon deceleration during AWD system connect timing:
 - [Buzz/Groan](#)
 - [Single, Double, or Triple Clunk](#)
 - [Ratchet/Grinding](#)
 - [Bang/Thump](#)

NOTE

- Use ChassisEAR™ to confirm the noise is coming from the rear differential assembly.
- Monitor the 4WD ECU Data List "Front and rear axle coupling position sensor status" to confirm the noise is occurring at AWD system disconnect and/or connect timing.

HINT

- On 2019 model year RAV4 vehicles, while driving above 20 mph, the system can be manually switched back and forth from disconnect to connect by switching drive mode from Normal to Sport.
- On 2020 model year RAV4 vehicles, while driving above 50 mph, the system can be manually switched back and forth from disconnect to connect by switching drive mode from Normal to Sport.

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Repair Procedure (continued)

- A. Does the vehicle exhibit an abnormal noise during one or more of the conditions described above?
 - **YES** — Continue to sub step B.
 - **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

- B. Does the abnormal noise come from the rear differential assembly?
 - **YES** — Continue to step 2.
 - **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

2. Confirm the rear differential assembly production date is BEFORE May 15th, 2020. Does the differential serial number show a production date BEFORE the effective serial number in the Production Change Information section? See the Production Change Information section for details.
 - **YES** — Continue to step 3.
 - **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

3. Replace the rear differential carrier assembly.
Refer to TIS, applicable model and model year Repair Manual:
 - 2019 RAV4:
Drivetrain – Axle/Differential – “[Axle and Differential: Rear Differential Carrier Assembly \(for Torque Vectoring Differential\): Removal](#)”
 - 2020 RAV4:
Drivetrain – Axle/Differential – “[Axle and Differential: Rear Differential Carrier Assembly \(for Torque Vectoring Differential\): Removal](#)”

NOTE

Reuse the side couplers/harness and brackets from OE unit removed.

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Repair Procedure (continued)

4. For information regarding how to disassemble and reassemble the rear differential carrier assembly (torque vectoring differential) refer to TIS, applicable model and model year Repair Manual:
 - 2019 – 2020 RAV4:
Drivetrain – Axle/Differential – “[Axle and Differential: Rear Differential Carrier Assembly \(for Torque Vectoring Differential\): Disassembly](#)” ONLY steps 1 – 4 and 12 – 13
 - 2019 – 2020 RAV4:
Drivetrain – Axle/Differential – “[Axle and Differential: Rear Differential Carrier Assembly \(for Torque Vectoring Differential\): Reassembly](#)” ONLY steps 17 – 18 and 25 – 28
 - 2019 – 2020 RAV4:
Drivetrain – Axle/Differential – “[Axle and Differential: Rear Differential Carrier Assembly \(for Torque Vectoring Differential\): Installation](#)”

5. Using Techstream, check and clear ANY DTCs.

6. Test-drive the vehicle and confirm the condition no longer exists.