

# Rear Air Suspension Feels Rough Over Bumps

**Service Category** Suspension

**Section** Suspension Control System **Market** USA and Mexico

Toyota Supports  
 ASE Certification 

## Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2023	Sequoia HV	VDS(s): AAAAA, AAABA
2022 - 2023	Tundra, Tundra HV	VDS(s): JA5AA, JA5AB, JA5BC, JA5DA, JA5DB, JA5EC, JC5AB, JC5BC, JC5DB, JC5EC, LA5AA, LA5AB, LA5BC, LA5CD, LA5DA, LA5DB, LA5EC, LA5GD, MA5AB, MA5BC, MA5DB, MA5EC, MC5AB, MC5BC, MC5DB, MC5EC, NA5AB, NA5BC, NA5DB, NA5EC, NC5AB, NC5BC, NC5DB, NC5EC, VC5DB

### REVISION NOTICE

February 02, 2023 Rev1:

- **Applicability has been updated to include 2023 model year Sequoia Hybrid, Tundra, and Tundra Hybrid vehicles.**

**Any previous printed versions of this bulletin should be discarded.**

## Introduction

Some 2023 model year Sequoia Hybrid and 2022 – 2023 model year Tundra and Tundra Hybrid vehicles equipped with air suspension may exhibit a rough-ride feel when driving over uneven road conditions such as bumps or dips. Follow the Repair Procedure in this bulletin to address this condition.

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### Warranty Information

#### For USA Market

OP CODE	DESCRIPTION	TIME	OFFP	T1	T2
SU1922	Adjust the Height Control Sensor for Both Sides and Adjust the Headlights	1.0	89407-0C010	34	99

#### **APPLICABLE WARRANTY (USA)**

- This repair is covered under the Toyota Basic Warranty. This warranty is in effect for 36 months or 36,000 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.

#### For Mexico Market

OP CODE	DESCRIPTION	TIME	OFFP	T1	T2
SU1922	Adjust the Height Control Sensor for Both Sides and Adjust the Headlights	1.0	89407-0C010	34	99

#### **APPLICABLE WARRANTY (MEXICO)**

- This repair is covered under the Toyota Basic Warranty. This warranty is in effect for 36 months or 60,000 kilometers, 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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### Required Tools & Equipment

REQUIRED TOOLS & MATERIAL	QUANTITY
Metric Ruler	1

REQUIRED EQUIPMENT	SUPPLIER	PART NUMBER	QTY
Techstream ADVI*	ADE	TSADVUNIT	1
Techstream 2.0		TS2UNIT	
Techstream Lite		TSLITEPDLR01	
Techstream Lite (Green Cable)		TSLP2DLR01	

\*Essential SST.

#### NOTE

- Only ONE of the Techstream units listed above is required.
- Software version 17.30.011 or later is required.
- Additional Techstream units may be ordered by calling Approved Dealer Equipment (ADE) at 1-800-368-6787 (USA) or 01-55-50103041 (Mexico).

### Repair Procedure

1. Confirm the condition exists.

Does the vehicle exhibit a rough-ride feel when driving over uneven road conditions such as bumps or dips?

- **YES** — Continue to step 2.
- **NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

2. Drive the vehicle onto an alignment rack and cycle the vehicle height twice.

Refer to TIS, applicable model and model year Repair Manual:

#### NOTE

ONLY perform step 1.

- 2023 Sequoia Hybrid:  
Suspension – Suspension Control System – [“Suspension Control: Suspension Control System: Adjustment”](#)
- 2022 – 2023 Tundra and Tundra Hybrid:  
Suspension – Suspension Control System – [“Suspension Control: Suspension Control System: Adjustment”](#)

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## Repair Procedure (continued)

- Using Techstream, perform a Health Check on the vehicle. From the Health Check results, select Air suspension as shown.

Figure 1. Health Check

Tire Pressure / Threshold Value [psi(gauge)]

Sensor 1: 40.90 / 27.68    Sensor 2: 39.41 / 27.68  
 Sensor 3: 39.90 / 27.68    Sensor 4: 39.41 / 27.68  
 Sensor 5: N/A / N/A

Health Check Results

- Health Check does not display live data.  
 - Changes in vehicle condition will not update automatically.  
 - To update Health Check, click the Refresh button on the bottom of the Health Check screen.

Campaign Status: **OPEN**  
 PERMANENT: **NO**

ECU Security Key: -

System	Monitor Status	DTC Related Information						RoB	Calibration	Update	Configure
		DTC	Curr Conf	Pend	Hist	Test Failed	SB				
Radar Cruise1	-							-	-	No	
Adaptive Variable Suspension System	-							8924F3402 1	No	No	
Steering Angle Sensor	-							8924G0A01 100	No	No	
Trailer Brake Controller	-							8954F0C07 300	No	No	
<b>Air suspension</b>	-							8929F3403 1	No	No	
D-Door Motor	-							-	-	No	
P-Door Motor	-							-	-	No	
RR-Door Motor	-							-	-	No	

- Ensure the Techstream display settings are set to metric. Note the initial values displayed by Air Suspension Live for the RR Height Control Sensor and the RL Height Control Sensor.

Figure 2. Techstream Air Suspension Live

Parameter	Value	Unit	Parameter	Value	Unit
G Sensor (Back&Forth)	-0.0718	m/s2	Motor Relay	OFF	
Gravity Sensor (Side to Side)	0.00	m/s2	Compatible Constant Information	1	
<b>RR Height Control Sensor</b>	<b>0.0</b>	<b>mm</b>	Identical Constant Information	1	
<b>RL Height Control Sensor</b>	<b>15.7</b>	<b>mm</b>	Design Constant Information	1	
Stop Light Switch	OFF		Vehicle Information (Conv/HV)	Conv	
Manual Mode Switch	OFF		Stop and Start Learning Status	ON	
Door Switch	ON		Status of IGP Information (IGP_PT2)	ON	
Height Control Switch (Up)	OFF		Status of IGP Information (IGP_PT1)	ON	
Height Control Switch (Down)	OFF		Status of IGP Relay Coil	ON	
Height Position	Normal		Status of IG Switch OFF While Driving	Other	
Height Control	OFF		Number of Trouble Codes	0	
IG Power Source Voltage	12.1	V			
Engine Speed	0	rpm			
FR Wheel Speed	0	MPH			
FL Wheel Speed	0	MPH			
RR Wheel Speed	0	MPH			
RL Wheel Speed	0	MPH			
Height Mode	NORMAL				
Manual Mode	OFF				
Rear Gate Solenoid	OFF				
Rear Leveling Solenoid	OFF				
Exhaust Solenoid	OFF				

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### Repair Procedure (continued)

- Under the vehicle, measure the distance between each rear bump stop and the top of the rear axle housing, as shown below.

**Figure 3.**



<b>1</b>	<b>Bump Stop</b>
<b>2</b>	<b>Rear Axle Housing</b>

**Figure 4. Bump Stop to Rear Axle Housing Gap**



Is the gap less than 35 mm?

- YES** — Continue to step 6.
- NO** — This bulletin does NOT apply. Continue diagnosis using the applicable Repair Manual.

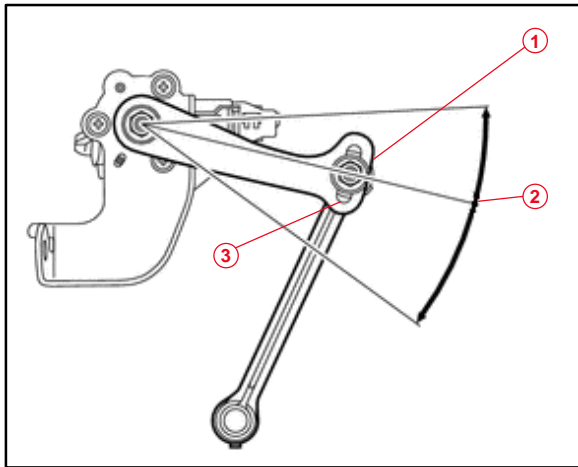
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### Repair Procedure (continued)

6. Adjust the height control sensor for each side.
  - A. Loosen the height control sensor nut.
  - B. Move the height control sensor link plate along the slotted hole of the bracket until it is positioned at the bottom of the slotted hole (see Figure 5).
  - C. Tighten and retorque the nut.
 

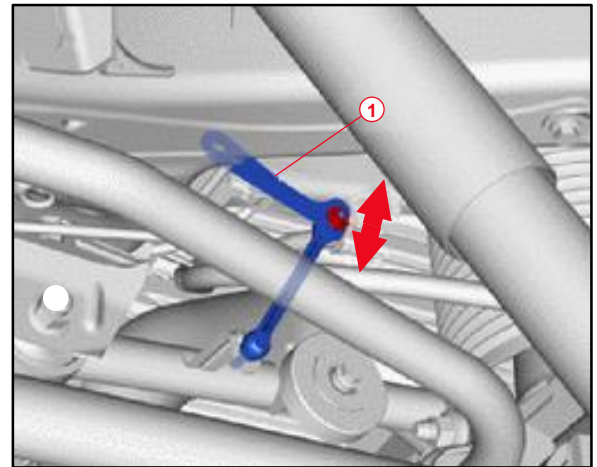
**Torque: 5.6 N\*m (57 kgf\*cm, 50 in\*lbf)**
  - D. Repeat on the opposite side.

**Figure 5. Nominal Factory Setting Versus New Target Setting**



<b>1</b>	<b>Nut (Loosen)</b>
<b>2</b>	<b>Factory Setting for Nut Position</b>
<b>3</b>	<b>New Target Setting for Nut Position</b>

**Figure 6.**



<b>1</b>	<b>Height Control Sensor Link Plate</b>
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7. Cycle the suspension twice by repeating step 2 once.



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### Repair Procedure (continued)

8. Measure the bump stop to axle housing.  
Is the gap measurement between 35 – 45 mm and equal side to side?
  - **YES** — Continue to step 9.
  - **NO** — Continue to adjust the height control sensors until an axle housing to bump stop gap of 35 – 45 mm is achieved. Then continue to step 9.

**NOTICE**  
Do NOT exceed 45 mm.

**Figure 7. Bump Stop to Rear Axle Housing Gap**



9. Using Techstream Air Suspension Live, confirm that the RR Height Control Sensor and the RL Height Control Sensor measurements are within 10 mm of each other.

**Figure 8.**

Parameter	Value	Unit	Parameter	Value	Unit
G Sensor (Back&Forth)	-0.1795	m/s2	Motor Relay	OFF	
Gravity Sensor (Side to Side)	-0.07	m/s2	Compatible Constant Information	1	
RR Height Control Sensor	1.6	mm	Identical Constant Information	1	
RL Height Control Sensor	3.9	mm	Design Constant Information	1	
Stop Light Switch	OFF		Vehicle Information (Conv/HV)	Conv	
Manual Mode Switch	OFF		Stop and Start Learning Status	ON	

Is the difference 10 mm or less?

- **YES** — Continue to step 10.
  - **NO** — Continue to adjust the height control sensors until the side-to-side difference is 10 mm or less AND a rear axle housing to bump stop gap of 35 – 45 mm is achieved, then continue to step 10.
10. Adjust the headlight aim.  
Refer to TIS, applicable model and model year Repair Manual:
    - 2023 Sequoia Hybrid:  
*Vehicle Exterior – Lighting (ext) – [“Lighting \(Ext\): Headlight Assembly: Adjustment”](#)*
    - 2022 – 2023 Tundra and Tundra Hybrid:  
*Vehicle Exterior – Lighting (ext) – [“Lighting \(Ext\): Headlight Assembly: Adjustment”](#)*
  11. Test-drive the vehicle to confirm the rough-ride condition is no longer present.