

Driveline Vibration

Service Category Drivetrain

Section Drive Shaft/Propeller Shaft

Market USA



Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2005 – 2014	Tacoma	Engine(s): 1GR Transmission(s): 5AT, 6MT VDS(s): JU4GN, JU62N, KU4HN, KU72N, LU42N, LU4EN, MU4FN, MU52N, TU4GN, TU62N, UU42N, UU4EN

REVISION NOTICE

July 28, 2014 Rev1:

- Applicability has been updated to include 6-speed manual transmission equipped vehicles.
- The Parts Information and Repair Procedure sections have been updated.

Any previous printed versions of this bulletin should be discarded.

Introduction

Some 2005 – 2014 model year Tacoma vehicles equipped with 1GR-FE engine (PreRunner and 4WD) and automatic or 6-speed manual transmission may exhibit a vibration felt in the seat, floorboard, and steering wheel between 15 – 25 mph caused by a second order drivetrain vibration under acceleration. The following Repair Procedure may improve this condition.

Required Tools & Equipment

REQUIRED TOOLS	SUPPLIER	PART NUMBER
Mini-Mag Protractor (or equivalent)	Snap-on®	FFL74422450

Driveline Vibration

Warranty Information

OP CODE	DESCRIPTION	TIME	OFF	T1	T2
EG8032	R & R Engine Mount	1.0	12371-0P020 12371-0P030 12371-0P040 12371-0P041	9B	57
SU1301	Measure Joint Angle and R & R Leaf Springs	1.7	48210-04550 48210-04551 48210-04650 48210-04660 48210-35A20 48210-35A40 48210-35A80 48210-35A90 48220-04190 48220-04191 48220-04290 48220-04300 48220-35020 48220-35040 48220-35060 48220-35070	9B	57
ST1202	Install Steering Wheel Damper	0.6	45713-35050 45713-60030	9B	57

APPLICABLE WARRANTY

- **EG8032 (R & R Engine Mount):** 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.
- **SU1301 (R & R Leaf Springs) and ST1202 (Install Steering Wheel Damper):** 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.**

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Parts Information

NOTE

BEFORE ordering parts, please refer to Repair Procedure and Part Number Selection Tables on pages 17 – 19 to order the correct parts for each vehicle.

MODEL YEAR	PART NUMBER		PART NAME	QTY
	PREVIOUS	NEW		
2005 – 2014	12371-0P030	12371-31240	RR Engine Mount Insulator (PreRunner V6 AT)	1
2005 – 2010	12371-0P020		RR Engine Mount Insulator (PreRunner V6 MT)	1
2005 – 2014	12371-0P040 12371-0P041	12371-31250	RR Engine Mount Insulator (4WD V6)	1
	48210-04550 48210-04551 48210-04650 48210-04660 48210-35A20 48210-35A40 48210-35A80 48210-35A90	48210-04580 48210-04590 48210-04650 48210-04660 48210-04670 48210-04680	RR RH Spring Assy	1
	48220-04190 48220-04191 48220-04290 48220-04300 48220-35020 48220-35040 48220-35060 48220-35070	48220-04220 48220-04230 48220-04290 48220-04300 48220-04310 48220-04320	RR LH Spring Assy	1
2005 – 2011	45713-60030		Steering Wheel Damper	1
2012 – 2014	45713-35050			1
2005 – 2014	90080-15079		Screw, w/ Washer (for Steering Wheel Damper)	2
2005 – 2014	90117-A0001	90117-A0005	U-Bolt	4
	90178-A0050		Flange Nut	8
	94622-51400		Plain Washer	8
	48341-04070	48341-04090	RR Spring Bumper (5AT)	2
	48341-04080	48341-04100	RR Spring Bumper (6MT)	2

NOTE

- If the vehicle was built October 2013 or earlier, replace the RR Spring Bumper, U-bolts, Flange Nuts, and washers with new parts listed in the table above.
- If the vehicle was built November 2013 or later, no additional parts need to be replaced.

Driveline Vibration

Repair Procedure

1. Some level of driveline vibration is normal in all vehicles. However, if vehicle exhibits vibration under the following conditions, proceed to step 2:

- 10% throttle input or slow run up.
- 30% or greater throttle input.

HINT

On 4WD trucks the following method can be used to confirm if this bulletin applies to the vehicle:

- Remove the rear driveshaft.
- Shift into 4WD HI.
- Test drive the vehicle.
- If the vibration is gone, then this bulletin applies. If the vibration is still present, this bulletin does NOT apply.

NOTE

If the vehicle has an aftermarket suspension/body lift or leveling kit installed, this bulletin does NOT apply.

2. Verify in National Service History if the vehicle has had Service Bulletin No. T-SB-0249-12 performed.

Has the vehicle had T-SB-0249-12 performed?

- **YES** —
2005 – 2011 MY: Go to step 4.
2012 – 2014 MY: Go to step 5.
- **NO** — Go to step 3.

Driveline Vibration

Repair Procedure (Continued)

3. Replace the Rear Engine Insulator (Rear Transmission Mount).

Refer to the Technical Information System (TIS), applicable model and model year Repair Manual:

- 2005 Tacoma:
 - *Drivetrain – Automatic Transmission/Transaxle – “Automatic Transmission Assy (A750E): Replacement”*
 - *Drivetrain – Manual Transmission/Transaxle – “Manual Transmission Unit Assy (RA60 / RA60f): Replacement”*
- 2006 – 2014 Tacoma:
 - *Drivetrain – Automatic Transmission/Transaxle – “A750E / A750F Automatic Transmission: Automatic Transmission Assembly: Removal / Installation”*
 - 2006 Tacoma (A750E): [Removal](#) / [Installation](#)
 - 2007 Tacoma (A750E): [Removal](#) / [Installation](#)
 - 2008 Tacoma (A750E): [Removal](#) / [Installation](#)
 - 2009 Tacoma (A750E): [Removal](#) / [Installation](#)
 - 2010 Tacoma (A750E): [Removal](#) / [Installation](#)
 - 2011 Tacoma (A750E): [Removal](#) / [Installation](#)
 - 2011 Tacoma (A750F): [Removal](#) / [Installation](#)
 - 2012 Tacoma (A750E): [Removal](#) / [Installation](#)
 - 2012 Tacoma (A750F): [Removal](#) / [Installation](#)
 - 2013 Tacoma (A750E): [Removal](#) / [Installation](#)
 - 2013 Tacoma (A750F): [Removal](#) / [Installation](#)
 - 2014 Tacoma (A750E): [Removal](#) / [Installation](#)
 - 2014 Tacoma (A750F): [Removal](#) / [Installation](#)

Driveline Vibration

Repair Procedure (Continued)

Drivetrain – Manual Transmission/Transaxle – “RA60/ RA60F Manual Transmission: Manual Transmission Assembly: Removal / Installation”

- 2006 Tacoma (RA60): [Removal](#) / [Installation](#)
- 2006 Tacoma (RA60F): [Removal](#) / [Installation](#)
- 2007 Tacoma (RA60): [Removal](#) / [Installation](#)
- 2007 Tacoma (RA60F): [Removal](#) / [Installation](#)
- 2008 Tacoma (RA60): [Removal](#) / [Installation](#)
- 2008 Tacoma (RA60F): [Removal](#) / [Installation](#)
- 2009 Tacoma (RA60): [Removal](#) / [Installation](#)
- 2009 Tacoma (RA60F): [Removal](#) / [Installation](#)
- 2010 Tacoma (RA60): [Removal](#) / [Installation](#)
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- 2012 Tacoma (RA60): [Removal](#) / [Installation](#)
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- 2013 Tacoma (RA60): [Removal](#) / [Installation](#)
- 2013 Tacoma (RA60F): [Removal](#) / [Installation](#)
- 2014 Tacoma (RA60): [Removal](#) / [Installation](#)
- 2014 Tacoma (RA60F): [Removal](#) / [Installation](#)

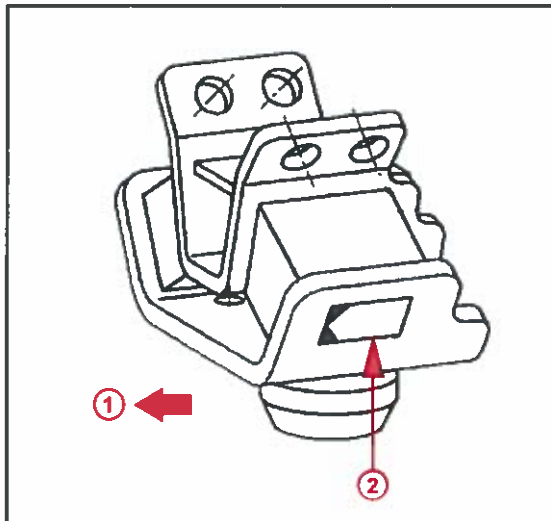
Driveline Vibration

Repair Procedure (Continued)

HINT

Refer to Figures 1 and 2 to confirm the proper part identification by examining the label on the part, and for the proper positioning of the new engine mount in ATM equipped trucks.

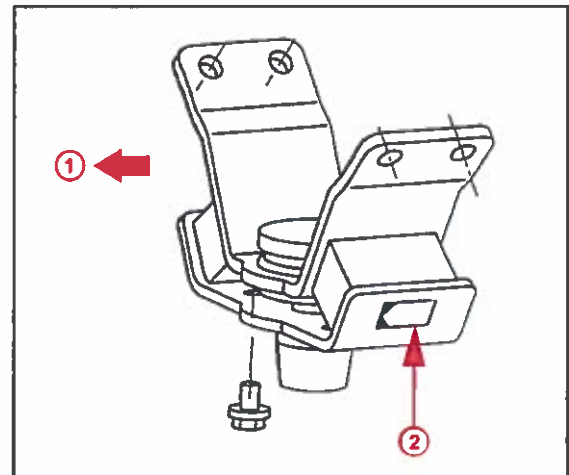
Figure 1. PreRunner Rear Engine Insulator



1	Front of Vehicle
2	Label

ENGINE	I.D. ON LABEL	LABEL COLOR
1GR	VA	Green

Figure 2. 4WD Rear Engine Insulator



1	Front of Vehicle
2	Label

ENGINE	I.D. ON LABEL	LABEL COLOR
1GR	VA	Green

Driveline Vibration

Repair Procedure (Continued)

4. Install the Steering Wheel Damper.
 - A. Remove the steering wheel pad.

NOTICE

Wait at **LEAST 90 seconds** after the ignition switch is turned to the LOCK position and the negative (-) terminal cable is disconnected from the battery before performing this procedure.

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

- 2005 Tacoma:
Vehicle Interior – Supplemental Restraint Systems – "Horn Button Assy: [Replacement](#)"
- 2006 – 2014 Tacoma:
Vehicle Interior – Supplemental Restraint Systems – "Supplemental Restraint System: Steering Pad: Removal"
 - 2006 Tacoma: [Removal](#)
 - 2007 Tacoma: [Removal](#)
 - 2008 Tacoma: [Removal](#)
 - 2009 Tacoma: [Removal](#)
 - 2010 Tacoma: [Removal](#)
 - 2011 Tacoma: Removal [\(06/2010 – 12/2010\)](#) / [\(12/2010 – \)](#)
 - 2012 Tacoma: [Removal](#)
 - 2013 Tacoma: [Removal](#)
 - 2014 Tacoma: [Removal](#)

Driveline Vibration

Repair Procedure (Continued)

- B. Remove the steering wheel switch wire harness retainer bracket (only for vehicles with steering wheel mounted switches).

Is the steering wheel switch wire harness retainer bracket present? (See Figure 4.)

- **YES** — Proceed with removal of the bracket.
- **NO** — Proceed to step C.

Figure 3. 2005 – 2011 MY Steering Wheel



Figure 4. 2012 – 2014 MY Steering Wheel



1	Steering Wheel Switch Wire Harness Retainer Bracket
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Driveline Vibration

Repair Procedure (Continued)

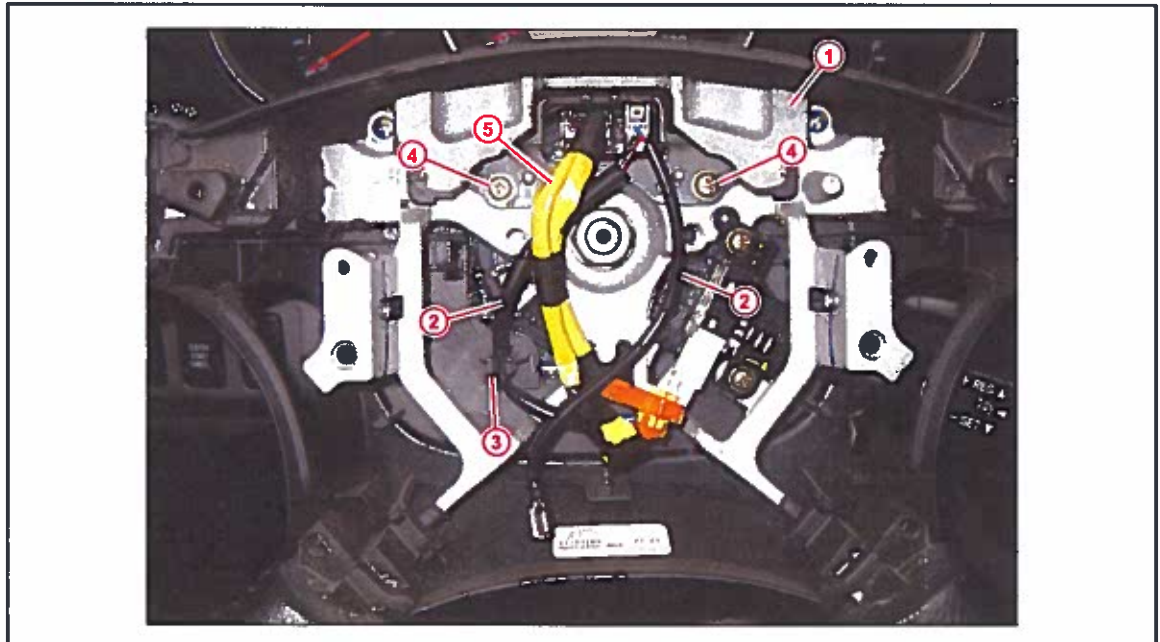
- C. Install the Steering Wheel Damper with 2 new screws in the location shown in Figures 5 and 6.

CAUTION

Use care when handling the driver side airbag wire harness during steering wheel damper installation.

Torque: 2.35 N*m (24 kgf*cm, 20.8 in*lbf)

Figure 5. 2005 – 2011 MY Steering Wheel



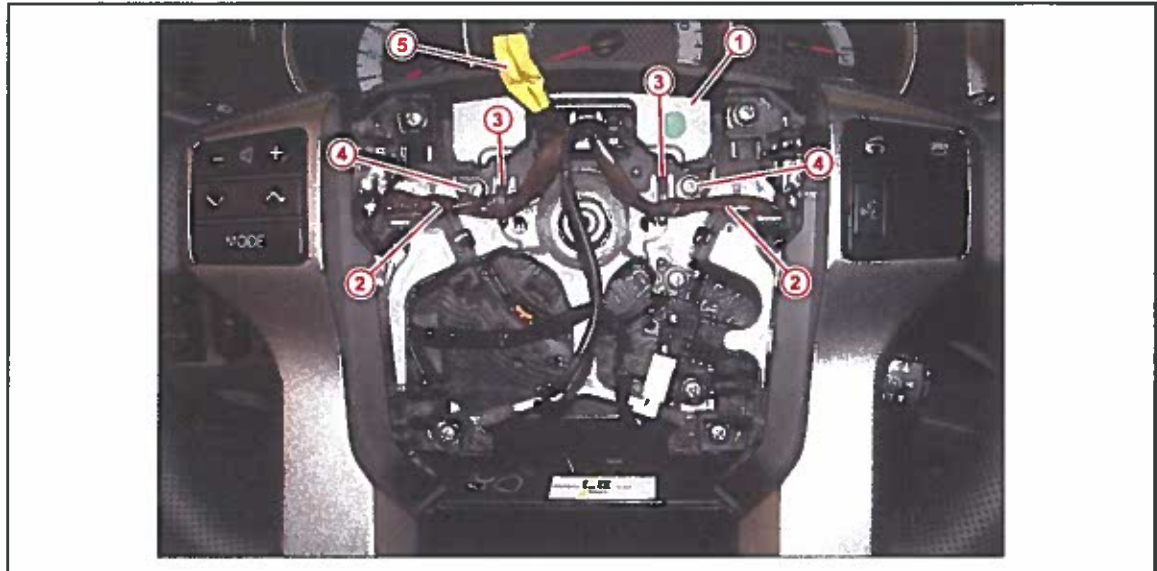
1	Damper
2	Cruise Control Wire Harness
3	Wire Retainer Hooks

4	Screw
5	Driver Side Airbag Wire Harness

Driveline Vibration

Repair Procedure (Continued)

Figure 6. 2012 – 2014 MY Steering Wheel



1	Damper
2	Steering Wheel Switch Wire Harness
3	Wire Retainer Hooks

4	Screw
5	Driver Side Airbag Wire Harness

NOTE

Secure the steering wheel switch wires to the steering wheel damper bracket hooks as seen in Figures 5 and 6.

Driveline Vibration

Repair Procedure (Continued)

D. Install the steering wheel pad.

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

- 2005 Tacoma:
Vehicle Interior – Supplemental Restraint Systems – “Horn Button Assy: [Replacement](#)”
- 2006 – 2014 Tacoma:
Vehicle Interior – Supplemental Restraint Systems – “Supplemental Restraint System: Steering Pad: Installation”
 - 2006 Tacoma: [Installation](#)
 - 2007 Tacoma: [Installation](#)
 - 2008 Tacoma: [Installation](#)
 - 2009 Tacoma: [Installation](#)
 - 2010 Tacoma: [Installation](#)
 - 2011 Tacoma: Installation ([06/2010 – 12/2010](#)) / ([12/2010 –](#))
 - 2012 Tacoma: [Installation](#)
 - 2013 Tacoma: [Installation](#)
 - 2014 Tacoma: [Installation](#)

5. Raise the vehicle using a drive-on hoist or wheel alignment rack.

NOTE

Suspension of vehicle **MUST** be at ride height.

Driveline Vibration

Repair Procedure (Continued)

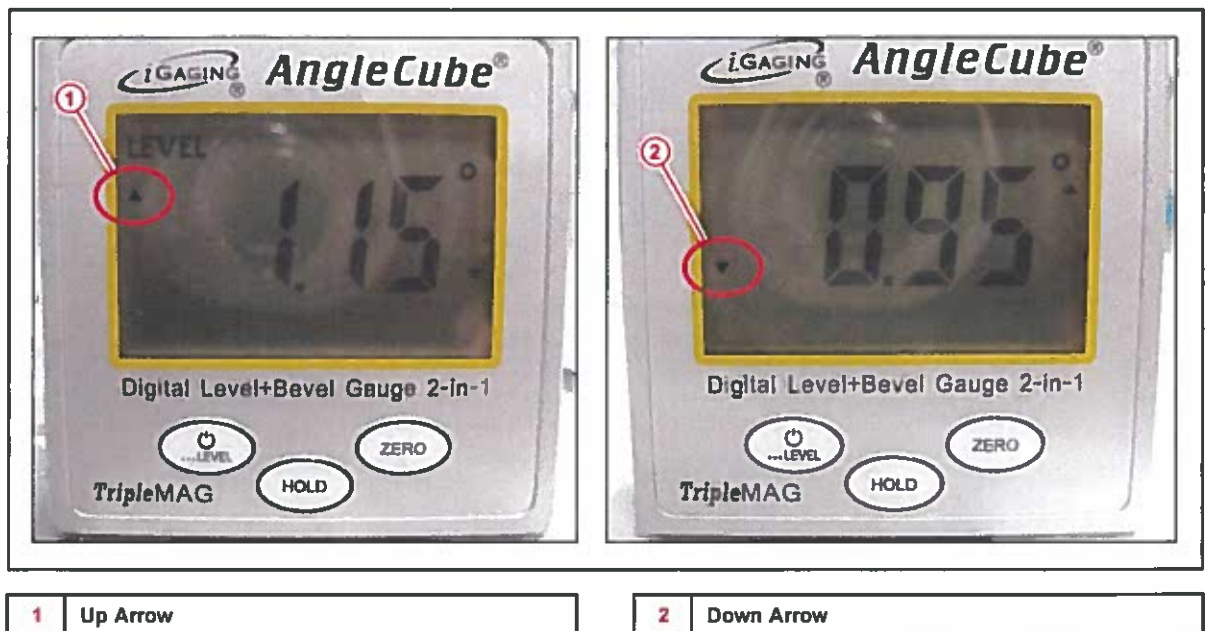
6. Measure Propeller Shaft to Pinion Joint Angle (J/A).

NOTE

All measurements must be taken from the passenger side of vehicle facing the driver side. Refer to Figure 7 below to ensure that the angles measured have the correct positive (+) or negative (-) values assigned.

- Arrow pointing up indicates a positive angle. In the example on the left, the angle measured is a positive 1.15 (+1.15).
- Arrow pointing down indicates a negative angle. In the example on the right, the angle measured is a negative 0.95 (-0.95).

Figure 7.



Driveline Vibration

Repair Procedure (Continued)

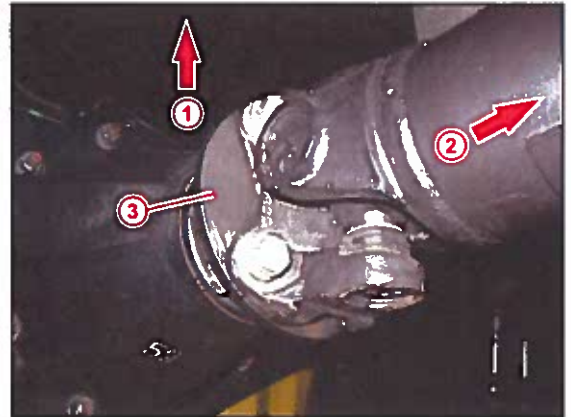
A. Measure the Propeller Shaft Angle (P/A).

- (1) Rotate pinion flange to the correct position as shown in Figure 8.

NOTE

Be sure to wipe off the area before taking pinion flange measurement.

Figure 8.



1	Up
2	Front
3	Pinion Flange

- (2) Use the protractor and measure the angle of the rear section of the 2-piece propeller shaft. Ensure protractor is placed along the centerline of the propeller shaft as shown in Figure 9.

Figure 9. CORRECT Placement of Protractor



Figure 10. INCORRECT Placement of Protractor

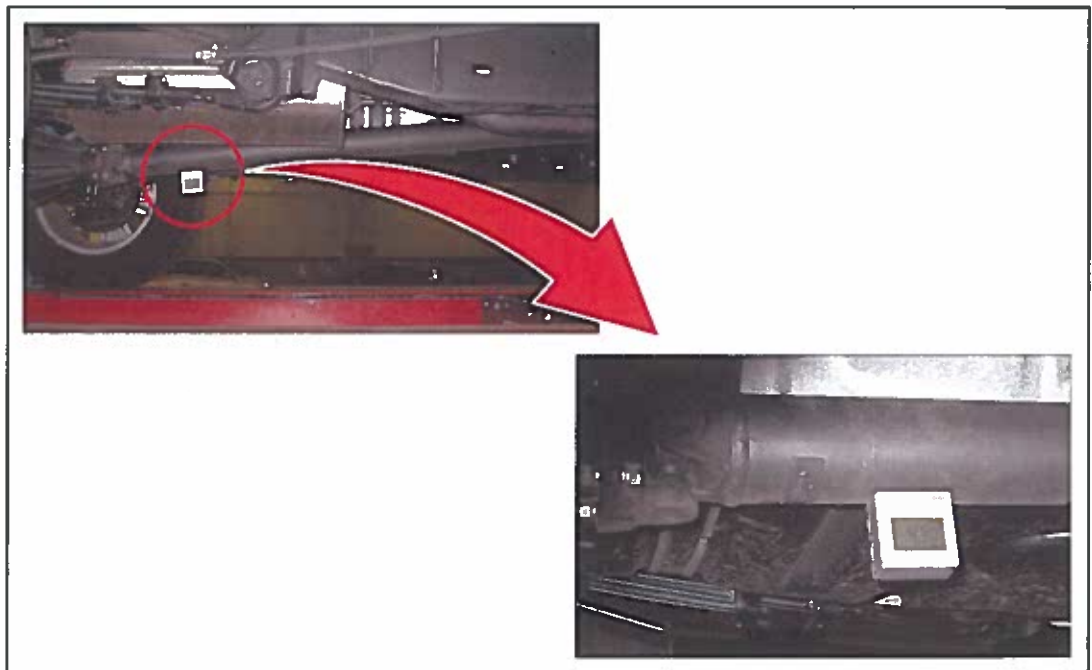


Driveline Vibration

Repair Procedure (Continued)

- (3) Record the Propeller Shaft Angle (P/A).

Figure 11.



B. Measure the Pinion Flange Angle (F/A).

- (1) Place protractor against flange surface.

Ensure protractor is firmly against the flange to obtain an accurate Pinion Flange Angle as shown in Figure 12.

Figure 12. CORRECT Placement of Protractor



Figure 13. INCORRECT Placement of Protractor



Driveline Vibration

Repair Procedure (Continued)

- (2) Record the Pinion Flange Angle (F/A).

Figure 14.



- C. Obtain the Propeller Shaft to Pinion Joint Angle (J/A).

Joint Angle Worksheet

PINION FLANGE ANGLE	—	PROPELLER SHAFT ANGLE	=	JOINT ANGLE
F/A	—	P/A	=	J/A
	—		=	

NOTE

Joint Angle (J/A) can be a negative value.

7. Using the Pinion Joint Angle (J/A) value obtained in step 6, select the appropriate leaf spring part numbers from one of the tables below.
 - A. Verify if the vehicle is equipped with Standard or Firm Ride suspension. Look up the factory option codes (accessories) in vehicle history on TIS.

Does the vehicle have option codes CW, OF, OC, PT, or PY?

 - **YES** — Vehicle has Firm Ride Suspension. Refer to Table 2 or 4.
 - **NO** — Vehicle has Standard Suspension. Refer to Table 1 or 3.
 - B. Verify if the vehicle has had T-SB-0249-12 previously performed through National Service History on TIS.

Has the vehicle had T-SB-0249-12 previously performed?

 - **YES** — Refer to Table 1 or 2.
 - **NO** — Refer to Table 3 or 4.

Driveline Vibration

Repair Procedure (Continued)

NOTE
Be sure to reference the correct table.

Table 1. Part Number Selection for Vehicles WITH T-SB-0249-12 Performed: Standard Suspension

STANDARD SUSPENSION							
MODEL TYPE	VDS	JOINT ANGLE GREATER THAN 0.9°	JOINT ANGLE BETWEEN -0.3° & 0.8°	JOINT ANGLE LESS THAN -0.4°	JOINT ANGLE GREATER THAN 0.4°	JOINT ANGLE BETWEEN -0.8° & 0.3°	JOINT ANGLE LESS THAN -0.9°
4X2 Double Cab PreRunner	JU4GN	48220-04290 LH 48210-04650 RH	48220-04220 LH 48210-04580 RH	48220-04230 LH 48210-04590 RH			
	JU62N						
4X2 Double Cab PreRunner S-Long	KU4HN				48220-04290 LH 48210-04650 RH	48220-04220 LH 48210-04580 RH	48220-04230 LH 48210-04590 RH
	KU72N						
4X4 Double Cab	LU42N	48220-04290 LH 48210-04650 RH	48220-04220 LH 48210-04580 RH	48220-04230 LH 48210-04590 RH			
	LU4EN						
	MU4FN						
4X4 Double Cab S-Long	MU52N				48220-04290 LH 48210-04650 RH	48220-04220 LH 48210-04580 RH	48220-04230 LH 48210-04590 RH
4X2 Access Cab PreRunner	TU4GN	48220-04290 LH 48210-04650 RH	48220-04220 LH 48210-04580 RH	48220-04230 LH 48210-04590 RH			
	TU62N						
4X4 Access Cab	UU42N	48220-04290 LH 48210-04650 RH	48220-04220 LH 48210-04580 RH	48220-04230 LH 48210-04590 RH			
	UU4EN						
CASTER WEDGE		No Wedge	2° Caster Wedge	3° Caster Wedge	No Wedge	2° Caster Wedge	3° Caster Wedge

Driveline Vibration

Repair Procedure (Continued)

Table 2. Part Number Selection for Vehicles WITH T-SB-0249-12 Performed: Firm Ride Suspension

FIRM RIDE SUSPENSION							
MODEL TYPE	VDS	JOINT ANGLE GREATER THAN 0.9°	JOINT ANGLE BETWEEN -0.3° & 0.8°	JOINT ANGLE LESS THAN -0.4°	JOINT ANGLE GREATER THAN 0.4°	JOINT ANGLE BETWEEN -0.8° & 0.3°	JOINT ANGLE LESS THAN -0.9°
4X2 Double Cab PreRunner	JU4GN	48220-04300 LH 48210-04660 RH	48220-04310 LH 48210-04670 RH	48220-04320 LH 48210-04680 RH			
	JU62N						
4X2 Double Cab PreRunner S-Long	KU4HN				48220-04300 LH 48210-04660 RH	48220-04310 LH 48210-04670 RH	48220-04320 LH 48210-04680 RH
	KU72N						
4X4 Double Cab	LU42N						
	LU4EN	48220-04300 LH 48210-04660 RH	48220-04310 LH 48210-04670 RH	48220-04320 LH 48210-04680 RH			
	MU4FN						
4X4 Double Cab S-Long	MU52N				48220-04300 LH 48210-04660 RH	48220-04310 LH 48210-04670 RH	48220-04320 LH 48210-04680 RH
4X2 Access Cab PreRunner	TU4GN	48220-04300 LH 48210-04660 RH	48220-04310 LH 48210-04670 RH	48220-04320 LH 48210-04680 RH			
	TU62N						
4X4 Access Cab	UU42N	48220-04300 LH 48210-04660 RH	48220-04310 LH 48210-04670 RH	48220-04320 LH 48210-04680 RH			
	UU4EN						
CASTER WEDGE		No Wedge	2° Caster Wedge	3° Caster Wedge	No Wedge	2° Caster Wedge	3° Caster Wedge

Driveline Vibration

Repair Procedure (Continued)

Table 3. Part Number Selection for Vehicles WITHOUT T-SB-0249-12 Performed: Standard Suspension

STANDARD SUSPENSION							
MODEL TYPE	VDS	JOINT ANGLE GREATER THAN 1.6°	JOINT ANGLE GREATER THAN 1.2°	JOINT ANGLE BETWEEN 0.3° & 1.5°	JOINT ANGLE LESS THAN 0.2°	JOINT ANGLE BETWEEN -0.1° & 1.1°	JOINT ANGLE LESS THAN -0.2°
4X2 Double Cab PreRunner	JU4GN	48220-04290 LH		48220-04220 LH	48220-04230 LH		
	JU62N	48210-04650 RH		48210-04580 RH	48210-04590 RH		
4X2 Double Cab PreRunner S-Long	KU4HN		48220-04290 LH			48220-04220 LH	48220-04230 LH
	KU72N		48210-04650 RH			48210-04580 RH	48210-04590 RH
4X4 Double Cab	LU42N						
	LU4EN	48220-04290 LH		48220-04220 LH	48220-04230 LH		
	MU4FN	48210-04650 RH		48210-04580 RH	48210-04590 RH		
4X4 Double Cab S-Long	MU52N		48220-04290 LH			48220-04220 LH	48220-04230 LH
			48210-04650 RH			48210-04580 RH	48210-04590 RH
4X2 Access Cab PreRunner	TU4GN	48220-04290 LH		48220-04220 LH	48220-04230 LH		
	TU62N	48210-04650 RH		48210-04580 RH	48210-04590 RH		
4X4 Access Cab	UU42N	48220-04290 LH		48220-04220 LH	48220-04230 LH		
	UU4EN	48210-04650 RH		48210-04580 RH	48210-04590 RH		
CASTER WEDGE		No Wedge	No Wedge	2° Caster Wedge	3° Caster Wedge	2° Caster Wedge	3° Caster Wedge

Table 4. Part Number Selection for Vehicles WITHOUT T-SB-0249-12 Performed: Firm Ride Suspension

FIRM RIDE SUSPENSION							
MODEL TYPE	VDS	JOINT ANGLE GREATER THAN 1.6°	JOINT ANGLE GREATER THAN 1.2°	JOINT ANGLE BETWEEN 0.3° & 1.5°	JOINT ANGLE LESS THAN 0.2°	JOINT ANGLE BETWEEN -0.1° & 1.1°	JOINT ANGLE LESS THAN -0.2°
4X2 Double Cab PreRunner	JU4GN	48220-04300 LH		48220-04310 LH	48220-04320 LH		
	JU62N	48210-04660 RH		48210-04670 RH	48210-04680 RH		
4X2 Double Cab PreRunner S-Long	KU4HN		48220-04300 LH			48220-04310 LH	48220-04320 LH
	KU72N		48210-04660 RH			48210-04670 RH	48210-04680 RH
4X4 Double Cab	LU42N						
	LU4EN	48220-04300 LH		48220-04310 LH	48220-04320 LH		
	MU4FN	48210-04660 RH		48210-04670 RH	48210-04680 RH		
4X4 Double Cab S-Long	MU52N		48220-04300 LH			48220-04310 LH	48220-04320 LH
			48210-04660 RH			48210-04670 RH	48210-04680 RH
4X2 Access Cab PreRunner	TU4GN	48220-04300 LH		48220-04310 LH	48220-04320 LH		
	TU62N	48210-04660 RH		48210-04670 RH	48210-04680 RH		
4X4 Access Cab	UU42N	48220-04300 LH		48220-04310 LH	48220-04320 LH		
	UU4EN	48210-04660 RH		48210-04670 RH	48210-04680 RH		
CASTER WEDGE		No Wedge	No Wedge	2° Caster Wedge	3° Caster Wedge	2° Caster Wedge	3° Caster Wedge

Driveline Vibration

Repair Procedure (Continued)

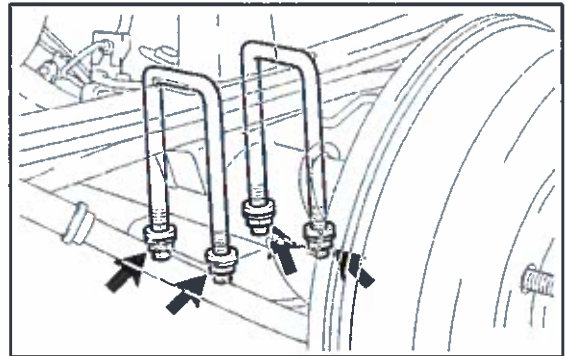
8. Replace the leaf springs with the applicable part numbers from one of the tables above.

NOTE

When tightening U-bolt nuts, be sure to set to the following torque:

Torque: 60 N*m (610 kgf*cm, 44 ft*lbf)

Figure 15.



NOTE

- If the vehicle was built October 2013 or earlier, replace the RR Spring Bumper, U-bolts, Flange Nuts, and washers with parts listed in the Parts Information table.
- If the vehicle was built November 2013 or later, no additional parts need to be replaced.

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

- 2005 Tacoma:
Suspension – Rear Suspension – “Rear LH Spring Assy: [Overhaul](#)”
- 2006 – 2014 Tacoma:
Suspension – Rear Suspension – “Suspension: Rear Leaf Spring: Removal / Installation”
 - 2006 Tacoma: [Removal / Installation](#)
 - 2007 Tacoma: [Removal / Installation](#)
 - 2008 Tacoma: [Removal / Installation](#)
 - 2009 Tacoma: [Removal / Installation](#)
 - 2010 Tacoma: [Removal / Installation](#)
 - 2011 Tacoma: [Removal / Installation](#)
 - 2012 Tacoma: [Removal / Installation](#)
 - 2013 Tacoma: [Removal / Installation](#)
 - 2014 Tacoma: [Removal / Installation](#)

Driveline Vibration

Repair Procedure (Continued)

NOTE

Fasteners for shocks and leaf spring bushings should be tightened. Then torque for these joints should be set while vehicle is on the ground.

9. Test drive vehicle and confirm the vibration has been improved. Ensure that there is no vibration under deceleration.

Is vibration still felt between 15 – 25 mph?

- **YES** — If vibration is still present, confirm that repair was performed correctly following the Repair Procedure in this bulletin.
- **NO** — Repair is complete.

