



**Technical Service
BULLETIN**

July 20, 2007

Title:

REAR SPRING HARSH RIDE

Models:

'05 – '07 Tacoma 4x4 & PreRunner
(Except Standard Cab)

SUSPENSION
SU006-07
REVISED

TSB REVISION NOTICE:

- December 19, 2007: Wheel alignment specifications have been updated.
- September 12, 2007: Applicable Vehicles has been updated.
- August 28, 2007: 2007 model year has been added to Applicable Vehicles, and the TIS references have been updated to include 2007 model year.

Previous versions of this TSB should be discarded.

Introduction

Some customers may experience a harsh ride from the rear suspension while carrying heavy cargo in the bed and driving over bumps or uneven road surfaces. Updated rear spring assemblies and front and rear shocks are available to improve this condition.

NOTE:

Customers should be advised that vehicle ride characteristics in an unloaded condition may exhibit an increase in rear suspension firmness.

Applicable Vehicles

- 2005 – 2007 model year Tacoma 4x4 and PreRunner vehicles (except standard cab).

Warranty Information

NOTE:

Warranty Information has been separated into two sections: Non-TRD Option Package Truck and TRD Option Package Truck. Please verify that the correct Warranty Information is used.

- Non-TRD Option Package Truck

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
SU7003	Rear Spring Assembly (Both Sides)	1.4	48210-04550	34	14
Combo A	Front Shock Absorber (Both Sides)	1.5			
Combo B	Rear Shock Absorber (Both Sides)	0.6			
Combo C	Alignment	1.2			
Combo D	Front Toe-in	0.1			
Combo E	Front Camber	0.2			
Combo F	Front Caster	0.2			

Applicable Warranty*:

This repair is covered under the Toyota Comprehensive 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 correction of a problem based upon a customer's specific complaint.



Warranty Information
(Continued)

• **TRD Option Package Truck**

OP CODE	DESCRIPTION	TIME	OFP	T1	T2
SU7003	Rear Spring Assembly (Both Sides)	1.4	48210-04550	34	14
Combo C	Alignment	1.2			
Combo D	Front Toe-in	0.1			
Combo E	Front Camber	0.2			
Combo F	Front Caster	0.2			

Applicable Warranty*:

This repair is covered under the Toyota Comprehensive 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 correction of a problem based upon a customer's specific complaint.

Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
48210-04550	48210-04570	Spring Assembly Rear, RH Leaf Spring	1
48220-04190	48220-04210	Spring Assembly Rear, LH Leaf Spring	1
90117-A0001	90117-A0005	Leaf Spring U-bolt	4
48510-09L80*	48510-A9630	Shock Absorber, Front	2
48530-09B50*	48530-A9340	Shock Absorber, Rear	2

* Non-TRD Option Package Truck ONLY.

**Repair
Procedure****Non-TRD Option Package Truck:**

Remove and replace the rear spring assemblies and all shock absorbers.

Refer to the Technical Information System (TIS):

- **2005** model year Tacoma Repair Manual:
 - *Suspension – Rear Suspension –*
 - *“Rear LH Assy: Overhaul (2005 Tacoma)”*
 - *“Shock Absorber Assy Rear LH: Replacement”*
 - *Suspension – Front Suspension – “Front Shock Absorber with Coil Spring (4WD and Pre Runner): Overhaul (2005 Tacoma)”*
- **2006** or **2007** model year Tacoma Repair Manual:
 - *Suspension – Rear Suspension –*
 - *“Suspension: Rear Leaf Spring: Reassembly”*
 - *“Suspension: Rear Leaf Spring: Installation”*
 - *“Suspension: Rear Shock Absorber: Removal”*
 - *“Suspension: Rear Shock Absorber: Installation”*
 - *Suspension – Front Suspension –*
 - *“Suspension: Front Shock Absorber with Coil Spring (for 4WD And Pre-Runner): Removal”*
 - *“Suspension: Front Shock Absorber with Coil Spring (for 4WD And Pre-Runner): Disassembly”*
 - *“Suspension: Front Shock Absorber with Coil Spring (for 4WD And Pre-Runner): Reassembly”*
 - *“Suspension: Front Shock Absorber with Coil Spring (for 4WD And Pre-Runner): Installation”*

TRD Option Package Truck:

Remove and replace the rear spring assemblies. Do **NOT** replace the front and rear shocks.

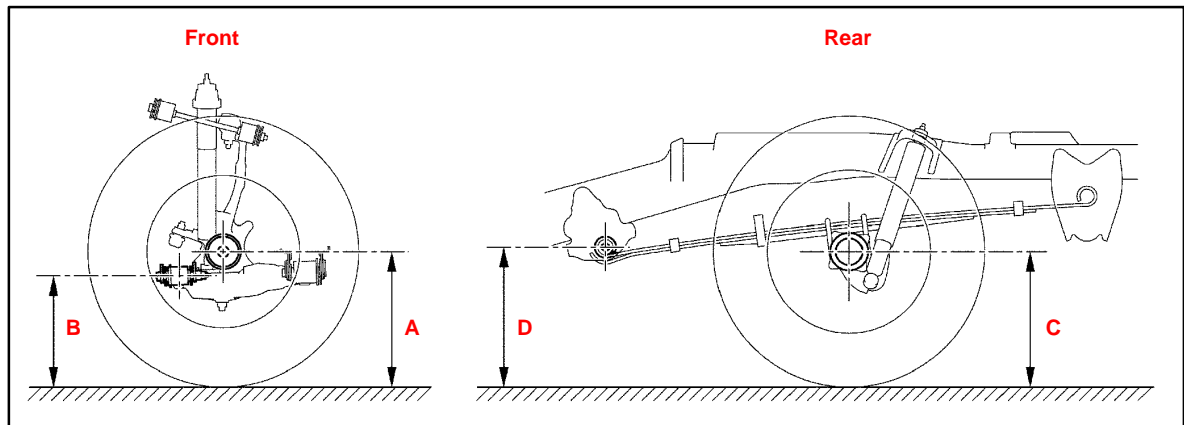
Refer to the Technical Information System (TIS):

- **2005** model year Tacoma Repair Manual, *Suspension – Rear Suspension – “Rear LH Assy: Overhaul (2005 Tacoma)”*
- **2006** or **2007** model year Tacoma Repair Manual, *Suspension – Rear Suspension –*
 - *“Suspension: Rear Leaf Spring: Reassembly”*
 - *“Suspension: Rear Leaf Spring: Installation”*

Alignment Inspection Procedure

An alignment inspection and adjustment is required after the installation of the new rear leaf springs. The NEW alignment specifications are provided below.

1. Measure vehicle height:



• **Tacoma PreRunner (4-cylinder 2TR engine)**

VDS	TRANSMISSION	TIRE SIZE	A-B	C-D
TX62N	Manual	P245/75/R16	63 mm (2.48 in.)	-59 mm (-2.32 in.)

• **Tacoma PreRunner (V6 1GR engine)**

VDS	TRANSMISSION	TIRE SIZE	A-B	C-D
TU62N	Automatic	P245/75/R16	63 mm (2.48 in.)	-56 mm (-2.20 in.)
	Manual	P245/75/R16	67 mm (2.63 in.)	-56 mm (-2.20 in.)
TU62N w/TRD	Automatic	P265/70/R16	72 mm (2.83 in.)	-55 mm (-2.20 in.)
		P265/65/R17	63 mm (2.48 in.)	-56 mm (-2.20 in.)
	Manual	P265/70/R16	71 mm (2.79 in.)	-56 mm (-2.20 in.)
		P265/70/R17	67 mm (2.63 in.)	-57 mm (-2.20 in.)
JU62N	Automatic	P245/75/R16	66 mm (2.50 in.)	-51 mm (-2.00 in.)
JU62N w/TRD		P265/70/R16	64 mm (2.50 in.)	-52 mm (-2.00 in.)
		P265/65/R17	66 mm (2.50 in.)	-51 mm (-2.00 in.)
		KU72N	P245/75/R16	66 mm (2.50 in.)
KU72N w/TRD		P265/70/R17	66 mm (2.50 in.)	-50 mm (-2.00 in.)

**Alignment
Inspection
Procedure**
(Continued)

• **Tacoma 4x4 (4-cylinder 2TR engine)**

VDS	TRANSMISSION	TIRE SIZE	A-B	C-D
UX42N	Manual	P245/75/R16	66 mm (2.50 in.)	-56 mm (-2.20 in.)

• **Tacoma 4x4 (V6 1GR engine)**

VDS	TRANSMISSION	TIRE SIZE	A-B	C-D
UU42N	Automatic	P245/75/R16	65 mm (2.55 in.)	-52 mm (-2.00 in.)
	Manual	P245/75/R16	70 mm (2.75 in.)	-53 mm (-2.08 in.)
UU42N w/TRD	Automatic	P265/70/R16	73 mm (2.87 in.)	-51 mm (-2.00 in.)
		P265/65/R17	65 mm (2.55 in.)	-52 mm (-2.00 in.)
	Manual	P265/70/R16	72 mm (2.83 in.)	-53 mm (-2.08 in.)
		P265/70/R17	70 mm (2.75 in.)	-53 mm (-2.08 in.)
LU42N	Manual	P245/75/R16	65 mm (2.55 in.)	-49 mm (-1.90 in.)
LU42N w/TRD		P265/70/R16	69 mm (2.71 in.)	-49 mm (-1.90 in.)
		P265/65/R17	65 mm (2.55 in.)	-49 mm (-1.90 in.)
MU52N	Automatic	P245/75/R16	68 mm (2.67 in.)	-47 mm (-1.85 in.)
MU52N w/TRD		P265/65/R17	68 mm (2.67 in.)	-47 mm (-1.85 in.)

Bounce the vehicle up and down at the corners to stabilize the suspension before inspecting the vehicle height.

Measuring points:

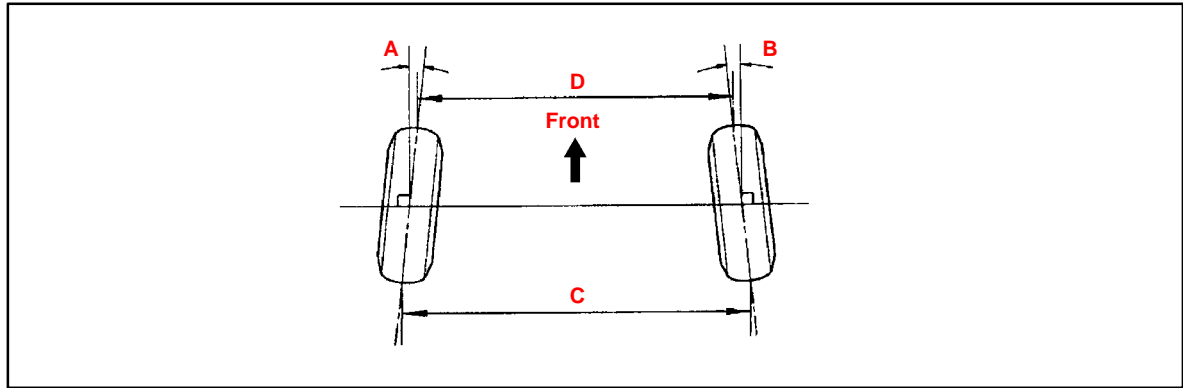
- **A** is the ground clearance of front wheel center.
- **B** is the ground clearance of adjustment cam bolt center (front side).
- **C** is the ground clearance of rear wheel center.
- **D** is the ground clearance of rear leaf spring front side bushing center.

NOTE:

Before inspecting the wheel alignment, check the vehicle height.

**Alignment
Inspection
Procedure**
(Continued)

2. Adjust toe-In.



• **Tacoma PreRunner (4-cylinder 2TR engine)**

VDS	TRANSMISSION	TIRE SIZE	A-B	C-D
TX62N	Manual	P245/75/R16	0° 7'18" +/- 0° 6' (0.121° +/- 0.108°)	1.64 +/- 2 mm (0.065 +/- 0.08 in.)

• **Tacoma PreRunner (V6 1GR engine)**

VDS	TRANSMISSION	TIRE SIZE	A-B	C-D
TU62N	Automatic	P245/75/R16	0° 6'36" +/- 0° 6' (0.110° +/- 0.108°)	1.48 +/- 2 mm (0.058 +/- 0.08 in.)
	Manual	P245/75/R16	0° 4'36" +/- 0° 6' (0.077° +/- 0.108°)	1.04 +/- 2 mm (0.041 +/- 0.08 in.)
TU62N w/TRD	Automatic	P265/70/R16	0° 1'18" +/- 0° 6' (0.022° +/- 0.108°)	0.30 +/- 2 mm (0.012 +/- 0.08 in.)
		P265/65/R17	0° 7' +/- 0° 6' (0.111° +/- 0.108°)	1.50 +/- 2 mm (0.059 +/- 0.08 in.)
	Manual	P265/70/R16	0° 2' +/- 0° 6' (0.033° +/- 0.108°)	0.45 +/- 2 mm (0.018 +/- 0.08 in.)
		P265/70/R17	0° 4'42" +/- 0° 6' (0.078° +/- 0.108°)	1.05 +/- 2 mm (0.041 +/- 0.08 in.)
JU62N	Automatic	P245/75/R16	0° 4'36" +/- 0° 6' (0.077° +/- 0.108°)	1.04 +/- 2 mm (0.041 +/- 0.08 in.)
JU62N w/TRD		P265/70/R16	0° 5'54" +/- 0° 6' (0.099° +/- 0.108°)	1.34 +/- 2 mm (0.053 +/- 0.08 in.)
		P265/65/R17	0° 4'42" +/- 0° 6' (0.078° +/- 0.108°)	1.05 +/- 2 mm (0.041 +/- 0.08 in.)
KU72N		P245/75/R16	0° 4'36" +/- 0° 6' (0.077° +/- 0.108°)	1.04 +/- 2 mm (0.041 +/- 0.08 in.)
KU72N w/TRD		P265/65/R17	0° 4'42" +/- 0° 6' (0.078° +/- 0.108°)	1.05 +/- 2 mm (0.041 +/- 0.08 in.)

**Alignment
Inspection
Procedure**
(Continued)

• **Tacoma 4x4 (4-cylinder 2TR engine)**

VDS	TRANSMISSION	TIRE SIZE	A-B	C-D
UX42N	Manual	P245/75/R16	0° 5'12" +/- 0° 6' (0.087° +/- 0.108°)	1.18 +/- 2 mm (0.046 +/- 0.08 in.)

• **Tacoma 4x4 (V6 1GR engine)**

VDS	TRANSMISSION	TIRE SIZE	A-B	C-D
UU42N	Automatic	P245/75/R16	0° 5'12" +/- 0° 6' (0.087° +/- 0.108°)	1.18 +/- 2 mm (0.046 +/- 0.08 in.)
	Manual	P245/75/R16	0° 2'36" +/- 0° 6' (0.044° +/- 0.108°)	0.59 +/- 2 mm (0.023 +/- 0.08 in.)
UU42N w/TRD	Automatic	P265/70/R16	0° 0'36" +/- 0° 6' (0.011° +/- 0.108°)	0.15 +/- 2 mm (0.006 +/- 0.08 in.)
		P265/65/R17	0° 5'18" +/- 0° 6' (0.089° +/- 0.108°)	1.20 +/- 2 mm (0.047 +/- 0.08 in.)
	Manual	P265/70/R16	0° 1'18" +/- 0° 6' (0.022° +/- 0.108°)	0.30 +/- 2 mm (0.012 +/- 0.08 in.)
		P265/65/R17	0° 2'36" +/- 0° 6' (0.044° +/- 0.108°)	0.60 +/- 2 mm (0.024 +/- 0.08 in.)
LU42N	Manual	P245/75/R16	0° 5'12" +/- 0° 6' (0.087° +/- 0.108°)	1.18 +/- 2 mm (0.046 +/- 0.08 in.)
LU42N w/TRD		P265/70/R16	0° 2'36" +/- 0° 6' (0.044° +/- 0.108°)	0.60 +/- 2 mm (0.024 +/- 0.08 in.)
		P265/65/R17	0° 5'18" +/- 0° 6' (0.089° +/- 0.108°)	1.20 +/- 2 mm (0.047 +/- 0.08 in.)
MU52N	Automatic	P245/75/R16	0° 3'18" +/- 0° 6' (0.055° +/- 0.108°)	0.74 +/- 2 mm (0.029 +/- 0.08 in.)
MU52N w/TRD		P265/65/R17	0° 3'18" +/- 0° 6' (0.055° +/- 0.108°)	0.75 +/- 2 mm (0.030 +/- 0.08 in.)

If toe-in is NOT within the specified range, adjust it at the rack ends.

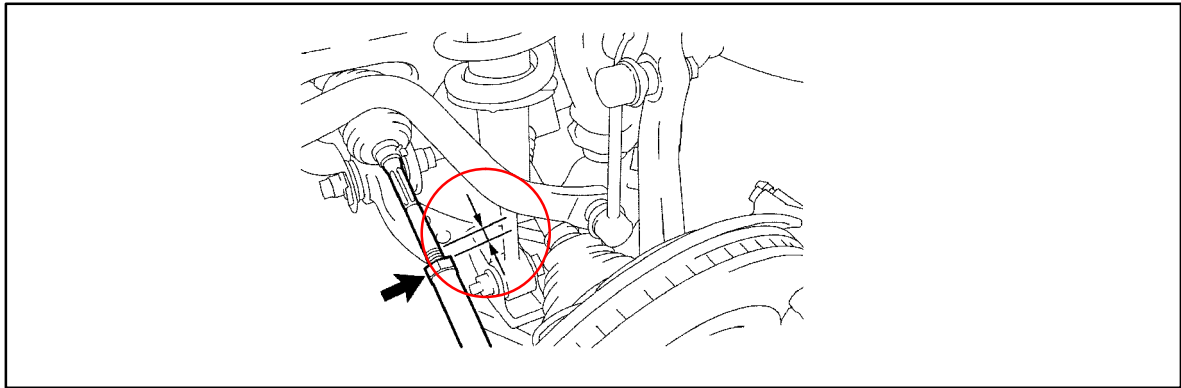
3. Adjust toe-in.
 - A. Remove the rack boot set clips.
 - B. Loosen the tie rod end lock nuts.
 - C. Turn the right and left rack ends uniformly to adjust toe-in.

HINT:

Try to adjust toe-in to the middle of the specified range.

**Alignment
Inspection
Procedure**
(Continued)

D. Make sure that the lengths of the right and left rack ends are the same.



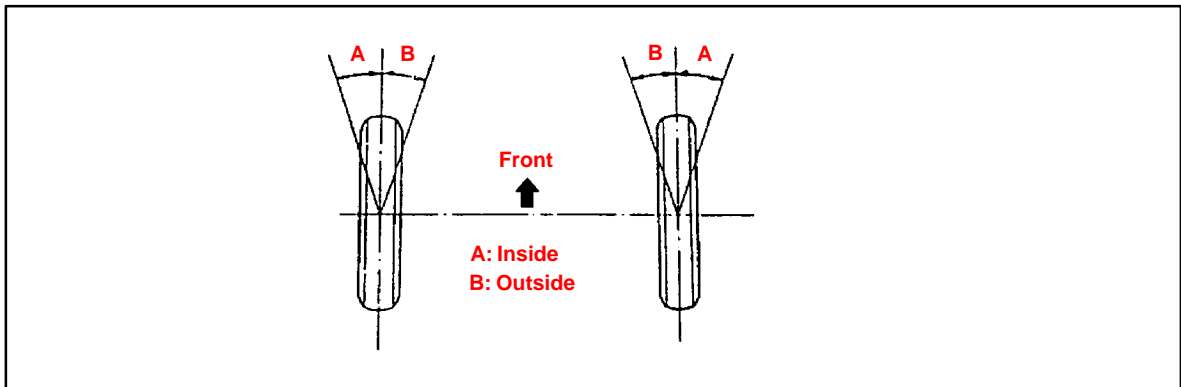
E. Torque the tie rod end lock nuts.

Torque: 55.5 N•m (566 kgf•cm, 41 ft•lbf)

F. Place the boots on the seats and install the clips.

HINT:
Make sure that the boots are NOT twisted.

4. Inspect the wheel turning angle.



Turn the steering wheel fully, and measure the turning angle.

Wheel Turning Angle:

INSIDE WHEEL	OUTSIDE WHEEL (REFERENCE)
40°18' (38°18' to 41°18')	35°54' (33°54' to 36°54')
40.30° (38.30° to 41.30°)	35.90° (33.90° to 36.90°)

If the right and left turning angles of the inside and outside wheels are not within the specified ranges, check the right and left rack end lengths.

**Alignment
Inspection
Procedure**
(Continued)

5. Inspect the camber, caster, and steering axis inclination.

• **Tacoma PreRunner (4-cylinder 2TR engine)**

VDS	TRANSMISSION	TIRE SIZE	CAMBER	CASTER	STEERING AXIS INCLINATION
TX62N	Manual	P245/75/R16	0°35' +/- 45' (0.59° +/- 0.75°)	1°32' +/- 45' (1.54° +/- 0.75°)	12°00' +/- 45' (12.0° +/- 0.75°)

• **Tacoma PreRunner (V6 1GR engine)**

VDS	TRANSMISSION	TIRE SIZE	CAMBER	CASTER	STEERING AXIS INCLINATION
TU62N	Automatic	P245/75/R16	0°35' +/- 45' (0.58° +/- 0.75°)	1°36' +/- 45' (1.61° +/- 0.75°)	11°53' +/- 45' (11.88° +/- 0.75°)
	Manual	P265/70/R16	0°31' +/- 45' (0.52° +/- 0.75°)	1°38' +/- 45' (1.64° +/- 0.75°)	11°56' +/- 45' (11.93° +/- 0.75°)
TU62N w/TRD	Automatic	P265/65/R17	0°26' +/- 45' (0.43° +/- 0.75°)	1°45' +/- 45' (1.75° +/- 0.75°)	12°1' +/- 45' (12.02° +/- 0.75°)
		P265/70/R16	0°26' +/- 45' (0.43° +/- 0.75°)	1°45' +/- 45' (1.75° +/- 0.75°)	12°1' +/- 45' (12.02° +/- 0.75°)
	Manual	P265/70/R16	0°27' +/- 45' (0.45° +/- 0.75°)	1°43' +/- 45' (1.72° +/- 0.75°)	12° +/- 45' (12.00° +/- 0.75°)
		P265/65/R17	0°31' +/- 45' (0.52° +/- 0.75°)	1°39' +/- 45' (1.65° +/- 0.75°)	11°56' +/- 45' (11.93° +/- 0.75°)
JU62N	Automatic	P245/75/R16	0°31' +/- 45' (0.52° +/- 0.75°)	1°47' +/- 45' (1.78° +/- 0.75°)	11°56' +/- 45' (11.93° +/- 0.75°)
JU62N w/TRD		P265/70/R16	0°33' +/- 45' (0.56° +/- 0.75°)	1°46' +/- 45' (1.76° +/- 0.75°)	11°54' +/- 45' (11.90° +/- 0.75°)
		P265/65/R17	0°31' +/- 45' (0.52° +/- 0.75°)	1°46' +/- 45' (1.76° +/- 0.75°)	11°56' +/- 45' (11.93° +/- 0.75°)
KU72N		P245/75/R16	0°31' +/- 45' (0.52° +/- 0.75°)	1°53' +/- 45' (1.89° +/- 0.75°)	11°56' +/- 45' (11.93° +/- 0.75°)
KU72N w/TRD		P265/65/R17	0°31' +/- 45' (0.52° +/- 0.75°)	1°54' +/- 45' (1.90° +/- 0.75°)	11°56' +/- 45' (11.93° +/- 0.75°)

Alignment Inspection Procedure
(Continued)

• **Tacoma 4x4 (4-cylinder 2TR engine)**

VDS	TRANSMISSION	TIRE SIZE	CAMBER	CASTER	STEERING AXIS INCLINATION
UX42N	Manual	P245/75/R16	0°32' +/- 45' (0.54° +/- 0.75°)	1°36' +/- 45' (1.60° +/- 0.75°)	11°55' +/- 45' (11.91° +/- 0.75°)

• **Tacoma 4x4 (V6 1GR engine)**

VDS	TRANSMISSION	TIRE SIZE	CAMBER	CASTER	STEERING AXIS INCLINATION
UU42N	Automatic	P245/75/R16	0°32' +/- 45' (0.54° +/- 0.75°)	1°40' +/- 45' (1.67° +/- 0.75°)	11°55' +/- 45' (11.91° +/- 0.75°)
	Manual	P265/70/R16	0°32' +/- 45' (0.54° +/- 0.75°)	1°46' +/- 45' (1.77° +/- 0.75°)	11°59' +/- 45' (11.99° +/- 0.75°)
UU42N w/TRD	Automatic	P265/65/R17	0°25' +/- 45' (0.42° +/- 0.75°)	1°49' +/- 45' (1.82° +/- 0.75°)	12°1' +/- 45' (12.02° +/- 0.75°)
		P265/70/R16	0°25' +/- 45' (0.42° +/- 0.75°)	1°49' +/- 45' (1.82° +/- 0.75°)	12°2' +/- 45' (12.03° +/- 0.75°)
	Manual	P265/70/R16	0°26' +/- 45' (0.43° +/- 0.75°)	1°46' +/- 45' (1.77° +/- 0.75°)	12°1' +/- 45' (12.02° +/- 0.75°)
		P265/65/R17	0°28' +/- 45' (0.47° +/- 0.75°)	1°42' +/- 45' (1.70° +/- 0.75°)	11°59' +/- 45' (11.99° +/- 0.75°)
LU42N	Manual	P245/75/R16	0°32' +/- 45' (0.54° +/- 0.75°)	1°46' +/- 45' (1.76° +/- 0.75°)	11°55' +/- 45' (11.91° +/- 0.75°)
LU42N w/TRD		P265/70/R16	0°28' +/- 45' (0.47° +/- 0.75°)	1°52' +/- 45' (1.86° +/- 0.75°)	11°39' +/- 45' (11.65° +/- 0.75°)
		P265/65/R17	0°32' +/- 45' (0.54° +/- 0.75°)	1°46' +/- 45' (1.76° +/- 0.75°)	11°55' +/- 45' (11.91° +/- 0.75°)
MU52N	Automatic	P245/75/R16	0°29' +/- 45' (0.49° +/- 0.75°)	1°55' +/- 45' (1.92° +/- 0.75°)	11°58' +/- 45' (11.97° +/- 0.75°)
MU52N w/TRD		P265/65/R17	0°29' +/- 45' (0.49° +/- 0.75°)	1°58' +/- 45' (1.97° +/- 0.75°)	11°58' +/- 45' (11.97° +/- 0.75°)

NOTE:

- Perform the inspection while the vehicle is empty.
- The tolerance for the difference between the left and right wheels is 30' (0.50°) or less for both the camber and the caster.

6. Adjust the camber and caster.

NOTE:

Inspect and re-adjust as necessary after the camber has been adjusted.

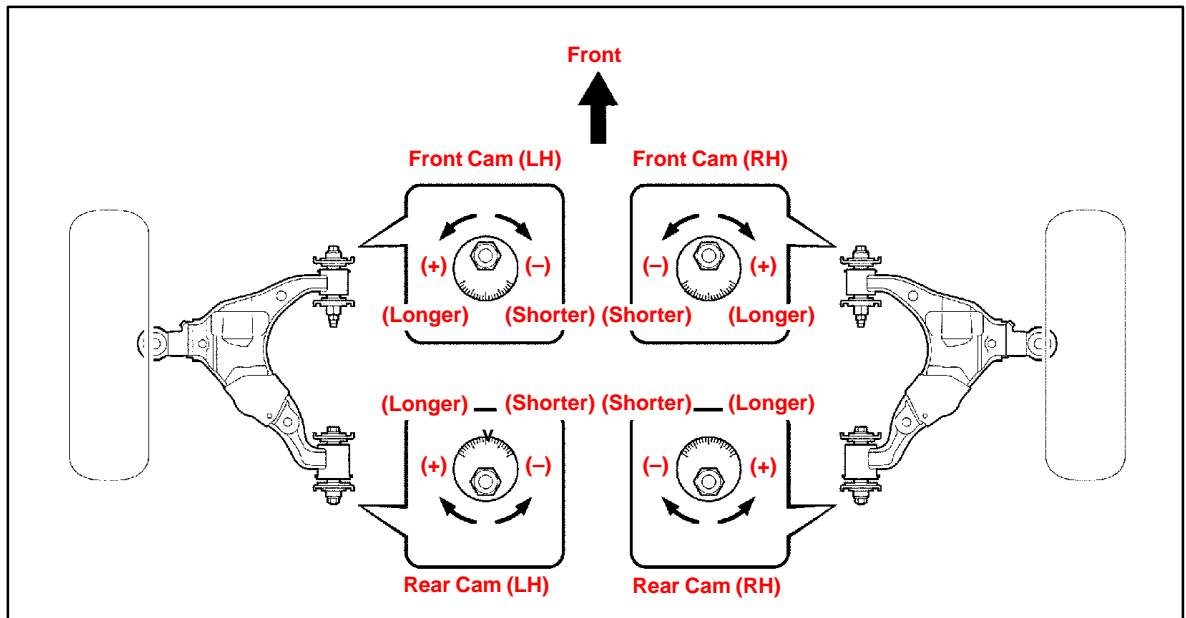
A. Loosen the nut and bolt.

**Alignment
Inspection
Procedure**
(Continued)

- B. Turn camber adjust cam No. 2 and the toe adjust cam and adjust the camber and the caster.

HINT:

Try to adjust the camber and caster to the central values.



- C. How to read the adjustment chart (using examples):

- a. Measure the present alignment.

Camber: 0°17' (0.28°)

Caster: 1°28' (1.47°)

- b. Calculate the difference between the standard value (A) and the measured value (B) on the adjustment chart.

Standard value:

Camber: 0°37' (0.61°)

Caster: 1°38' (1.64°)

Formula: B – A = C

Camber: 0°17' – (0.37°) = –0°20'

Caster: 1°28' – (1.38°) = –0°10'

- c. As shown in the chart, read the distance from the marked point to 0 point, and adjust the front and/or rear adjusting cams accordingly.

Toe adjust cam: – (Shorter) 2.8

Camber adjust cam: – (Shorter) 1.5

Example:

--- Caster

— Camber

○ = Calculated Value

● = 0 Point

