TOYOTA SERVICE BULLETIN

Group: 07 No.: 02 Date: Mar, 15

RAV 4

Corrections to Repair Manual RM01N3E

Please ensure these pages are distributed to all relevant staff for their information; and a copy made available for future reference, with the above repair manual.

Section	Title	Paragraph
SUSPENSION	REAR WHEEL ALIGNMENT	ADJUSTMENT (2005/11-2007/08)
		ADJUSTMENT (2007/08-)

The revised pages listed above are attached.
(The corrected parts are indicated by arrows.)

This Bulletin does not cause the Flat Rate Manual to be changed.

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REAR WHEEL ALIGNMENT

ADJUSTMENT

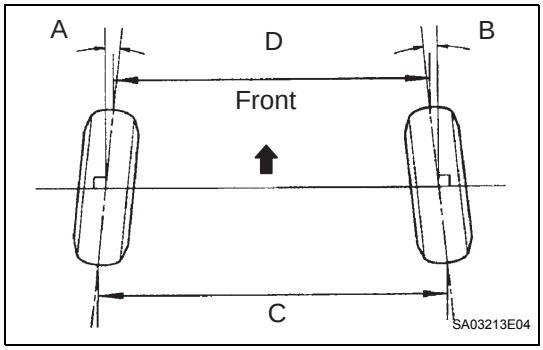
(2005/11-2007/08)

1. INSPECT TIRE

(a) Inspect the tire (see page ○○-○○).

2. MEASURE VEHICLE HEIGHT

(a) Measure the vehicle height (see page ○○-○○).



3. INSPECT TOE-IN

Standard toe-in

Item	Specified Condition
Toe-in (total)	A + B: 0°11' +-10' (0.18° +-0.17°) C - D: 2.3 +-1 mm (0.09 +-0.04 in.)

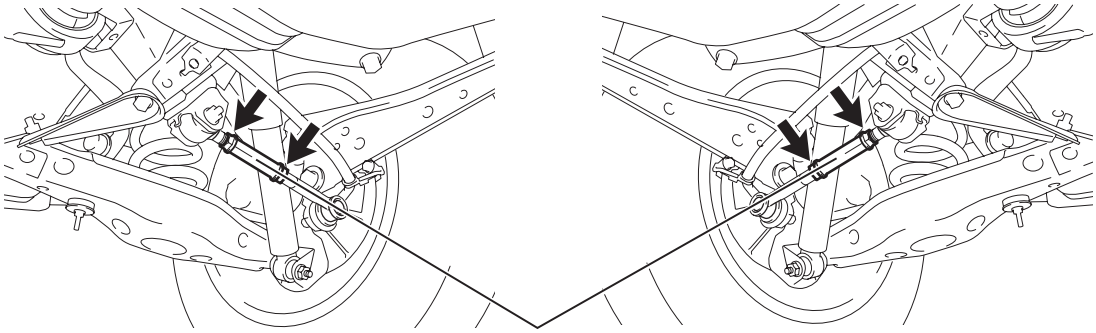
If the toe-in is not within the specified range, inspect the suspension parts and replace them if necessary.

4. ADJUST TOE-IN

(a) Inspect the rear No. 1 suspension arm by inspecting the nuts and adjusting tube for looseness visually and by hand.

for LH:

for RH:



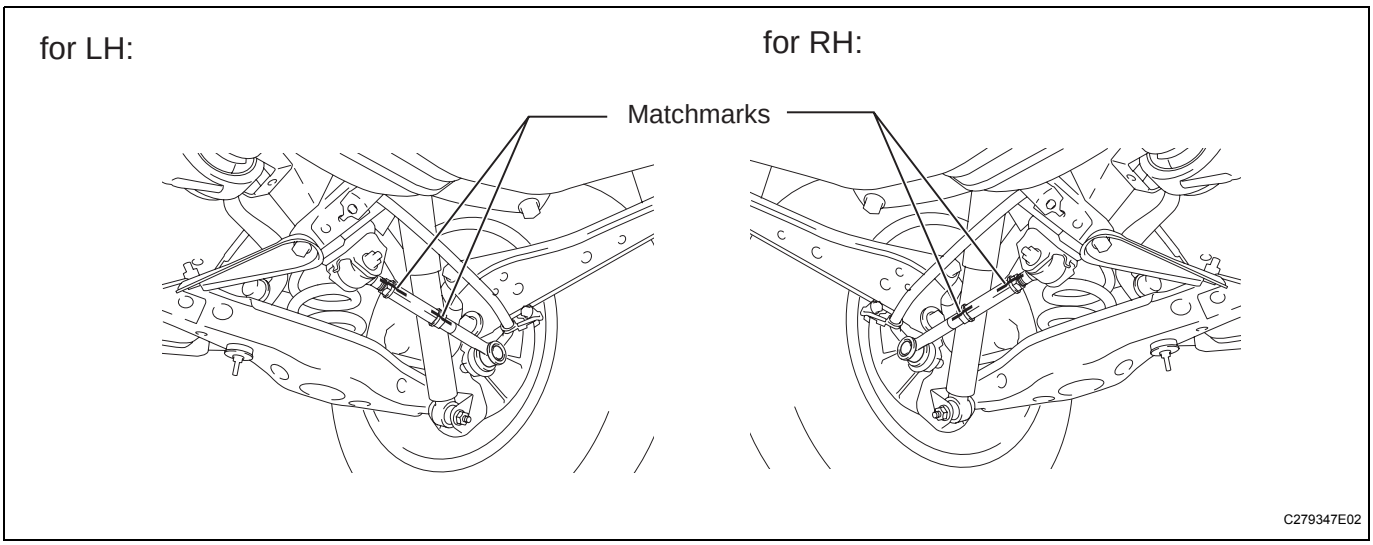


[Corrected]

SP

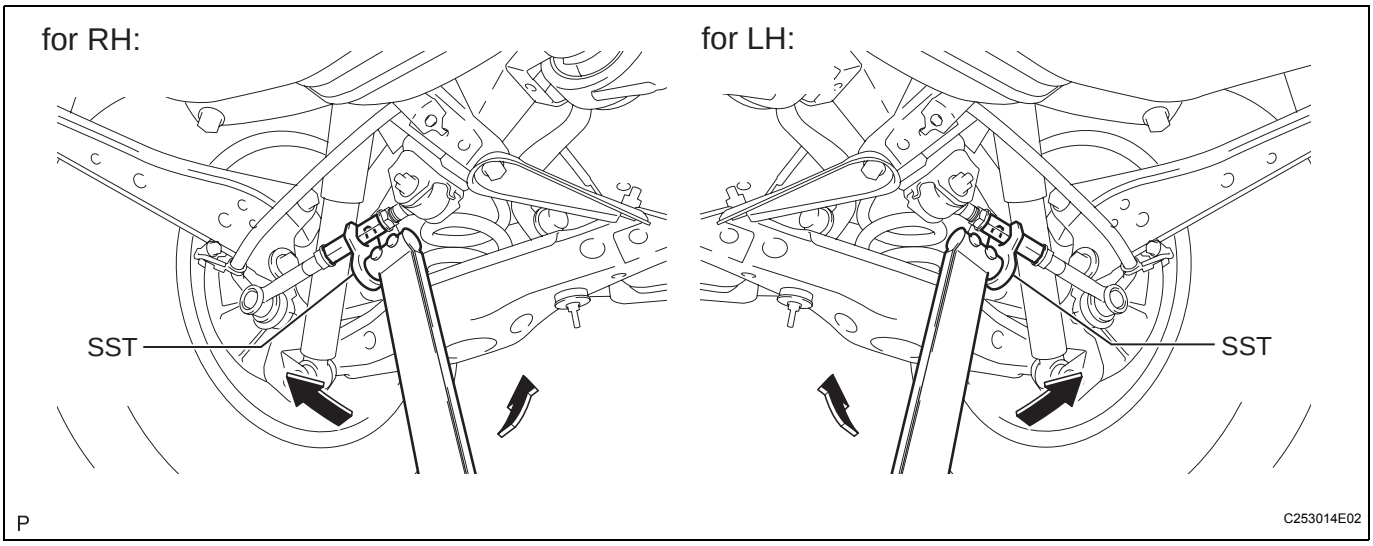
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(b) Put matchmarks onto the rear No. 1 suspension arm assembly as shown in the illustration below.



(c) Check adjusting tube for looseness.

(1) Using the SST, try turning the adjusting tube in both clockwise and counterclockwise directions with the specified torque to check that the matchmarks will not be misaligned.



SST 09612-24014 (09617-24011)

Torque: without SST

20 N*m (204 kgf*cm, 15 ft.*lbf)

with SST

17 N*m (173 kgf*cm, 13 ft.*lbf)

NOTICE:

- **Do not apply more force than specified when checking for adjusting tube or lock nut looseness.**
- **Use the formula to calculate special torque values for situations where SST is combined with a torque wrench (See page OO-OO).**

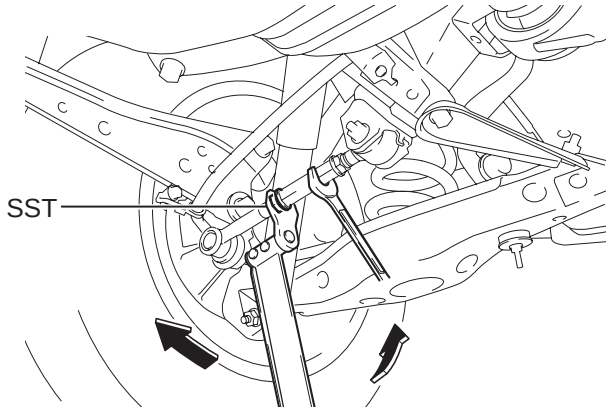
[All Corrected]

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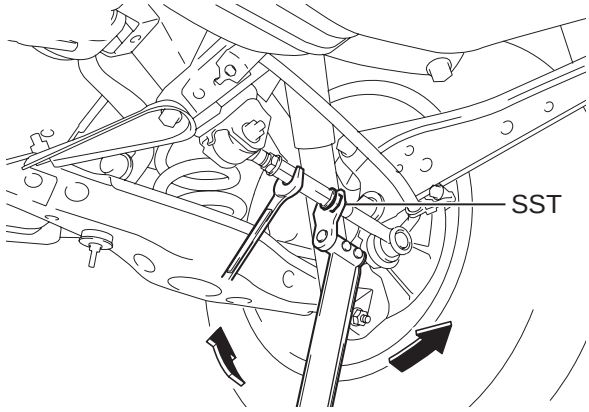
HINT:
Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).

(d) Check the lock nut at the ball joint side for looseness.
   (1) Hold the adjusting tube and using the SST, turn the lock nut at the ball joint side in both clockwise and counterclockwise directions with the specified torque to check that the matchmarks will not be misaligned.

for RH:



for LH:



P

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SST 09612-24014 (09617-24011)
Torque: without SST
20 N*m (204 kgf*cm, 15 ft.*lbf)
with SST
17 N*m (173 kgf*cm, 13 ft.*lbf)

NOTICE:

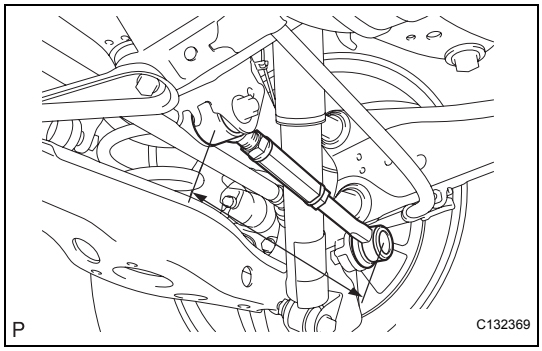
- **The wrench applied to the adjusting tube should not be turned during this step. Hold the wrench applied to the adjusting tube while applying force to the SST or torque wrench.**
- **Use the formula to calculate special torque values for situations where SST is combined with a torque wrench (See page ○○-○○).**

HINT:
Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).
If the lock nut is found loose, replace the tie rod assembly and adjust the rear wheel alignment.

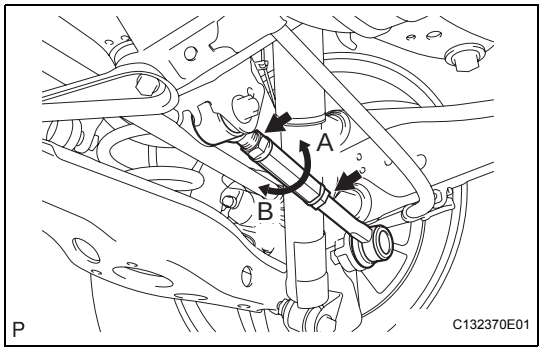
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(e) Measure the length of the left and right rear No. 1 suspension arms.
Standard difference:
1.0 mm (0.0394 in.) or less



(f) Loosen the 2 lock nuts of the adjusting tube.
NOTICE:
If either nut is abnormally tight when loosening it (90 N*m (918 kgf*cm, 66 ft.*lbf) or more), or if either nut does not rotate smoothly by hand after loosening it, replace the rear No. 1 suspension arm.
HINT:
Loosen the 2 lock nuts of the adjusting tube on the other side using the same procedure.

(g) If the difference between the length of the left and right rear No. 1 suspension arms is not within the specification, adjust the value to within the specification using the method below.
(1) If the toe-in value deviates towards the inside, turn the adjusting tube of the shorter No. 1 suspension arm assembly in the direction which increases arm length until the difference between the left and right suspension arms is within the specification.
(2) If the toe-in value deviates towards the outside, turn the adjusting tube of the longer No. 1 suspension arm assembly in the direction which decreases arm length until the difference between the left and right suspension arms is within the specification.
(3) Measure the toe-in again.

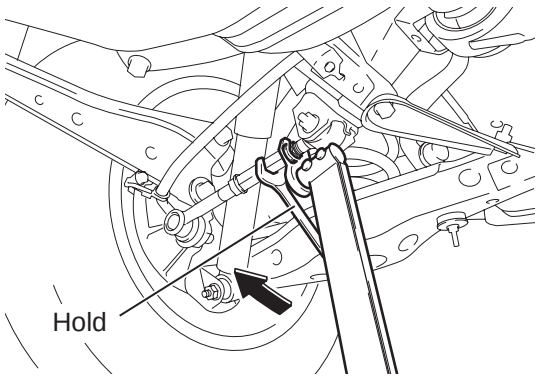
(h) Turn the left and right adjusting tubes in the same direction by the same amount to adjust the toe-in.
Adjustment Value:
2.3 +/-1.0 mm (0.0905 +/-0.0394 in.)
HINT:
- When the adjusting tube of the rear No. 1 suspension arm assembly LH is turned one revolution in the direction of A in the illustration, the toe-in changes to the inside by approximately 3.7 mm (0.146 in.)
- When the adjusting tube of the rear No. 1 suspension arm assembly LH is turned one revolution in the direction of B in the illustration, the toe-in changes to the outside by approximately 3.7 mm (0.146 in.).

SP

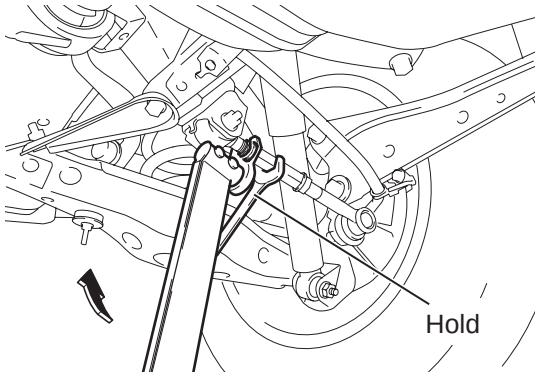
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(i) Tighten the inboard (bushing side) lock nut.
(1) Hold the adjusting tube in place and using SST, tighten the lock nut on the rubber bushing side.

for RH:



for LH:



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SST 09612-24014 (09617-24011)
Torque: without SST
56 N*m (571 kgf*cm, 41 ft.*lbf)
with SST
49 N*m (500 kgf*cm, 36 ft.*lbf)

NOTICE:

- **The wrench applied to the adjusting tube should not be turned during this step. Hold the wrench applied to the adjusting tube while applying force to the SST or torque wrench.**
- **Use the formula to calculate special torque values for situations where SST is combined with a torque wrench (See page ○○-○○).**

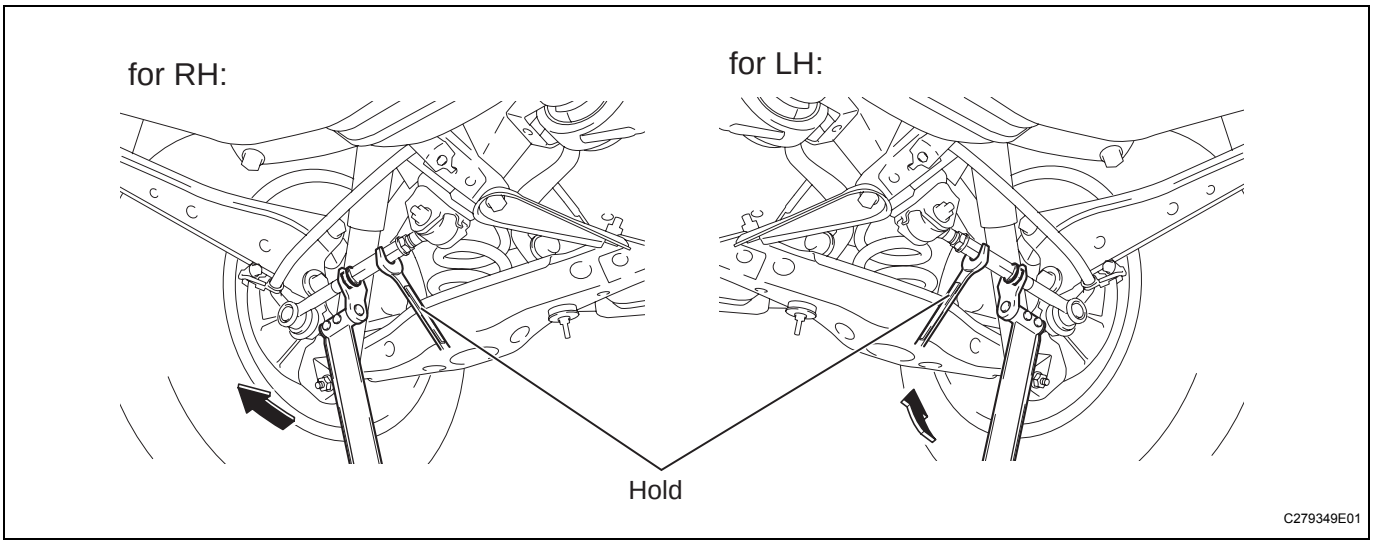
HINT:
Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).

SP

[All Corrected]

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(j) Tighten the outboard (ball joint side) lock nut.
(1) Hold the adjusting tube in place and, using SST, tighten the lock nut on the ball joint side.



SST 09612-24014 (09617-24011)
Torque: without SST
56 N*m (571 kgf*cm, 41 ft.*lbf)
with SST
49 N*m (500 kgf*cm, 36 ft.*lbf)

NOTICE:

- **The wrench applied to the adjusting tube should not be turned during this step. Hold the wrench applied to the adjusting tube while applying force to the SST or torque wrench.**
- **Use the formula to calculate special torque values for situations where SST is combined with a torque wrench (See page OO-OO).**

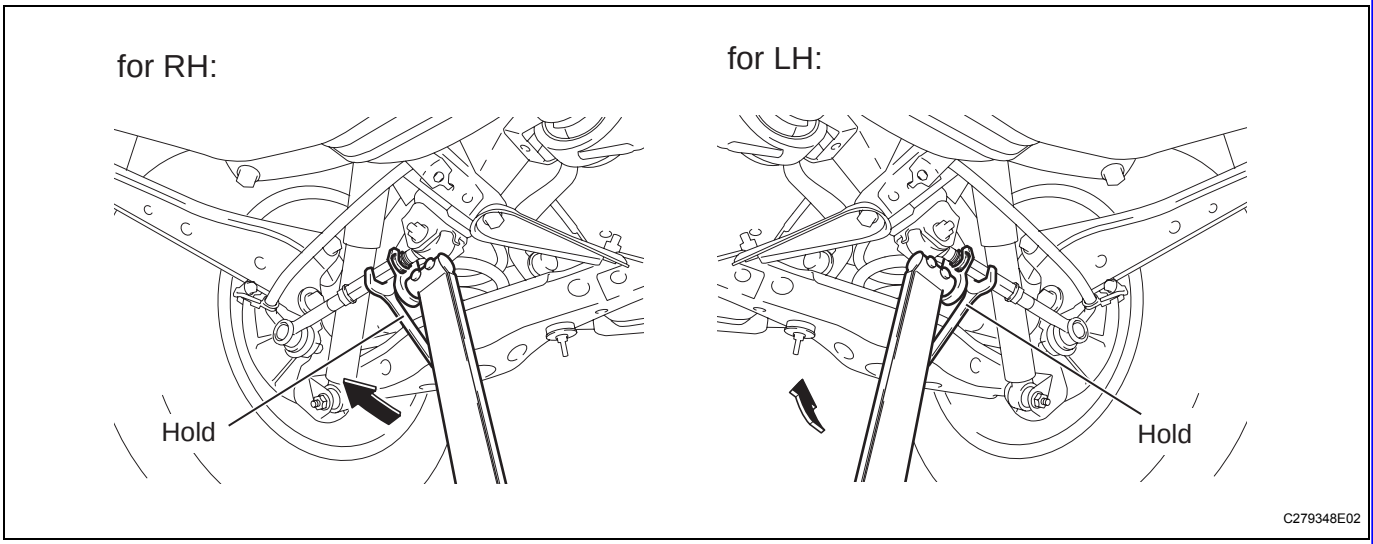
HINT:
Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).

SP

[All Corrected]

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(k) Tighten the inboard (bushing side) lock nut again.
(1) Hold the adjusting tube in place and using SST, tighten the lock nut on the rubber bushing side.



SST 09612-24014 (09617-24011)
Torque: without SST
56 N*m (571 kgf*cm, 41 ft.*lbf)
with SST
49 N*m (500 kgf*cm, 36 ft.*lbf)
NOTICE:
- **Failure to follow this procedure will result in the lock nut not being tightened to the proper torque and/or becoming loose.**
- **Use the formula to calculate special torque values for situations where SST is combined with a torque wrench (See page ○○-○○).**

HINT:
Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).

SP

[Corrected]

5. INSPECT CAMBER
(a) Install the camber-caster-kingpin gauge or set the vehicle on the wheel alignment tester.
(b) Inspect the camber.

Standard camber

Item		Specified Condition
Camber **Right-left error**	***Tire Size: 215/70R16**	**0°58' +-45' (0.97° +-0.75°)** **45' (0.75°) or less**
	Tire Size: 225/65R17 **Tire Size: 235/55R18**	**-1°07' +-45' (-1.12° +-0.75°)** **45' (0.75°) or less**
	Australia	**-0°52' +-45' (0.87° +-0.75°)** **45' (0.75°) or less**

*: Europe only

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HINT:
Camber is not adjustable. If the measurement is not within the specified range, inspect the suspension parts for damage and/or wear, and replace them if necessary.

ADJUSTMENT

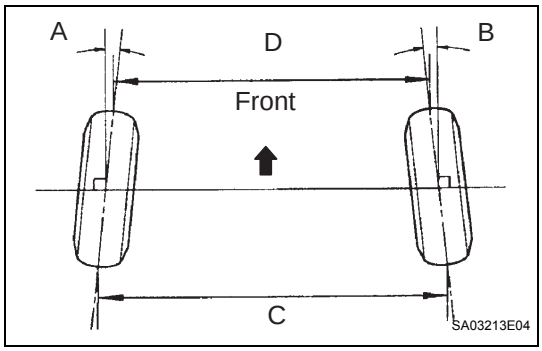
(2007/08-)

1. INSPECT TIRE

(a) Inspect the tire (see page ○○-○○).

2. MEASURE VEHICLE HEIGHT

(a) Measure the vehicle height (see page ○○-○○).



3. INSPECT TOE-IN

Standard toe-in

Item	Specified Condition
Toe-in (total)	A + B: 0°11' +-10' (0.18° +-0.17°) C - D: 2.3 +-1 mm (0.09 +-0.04 in.)

If the toe-in is not within the specified range, inspect the suspension parts and replace them if necessary.

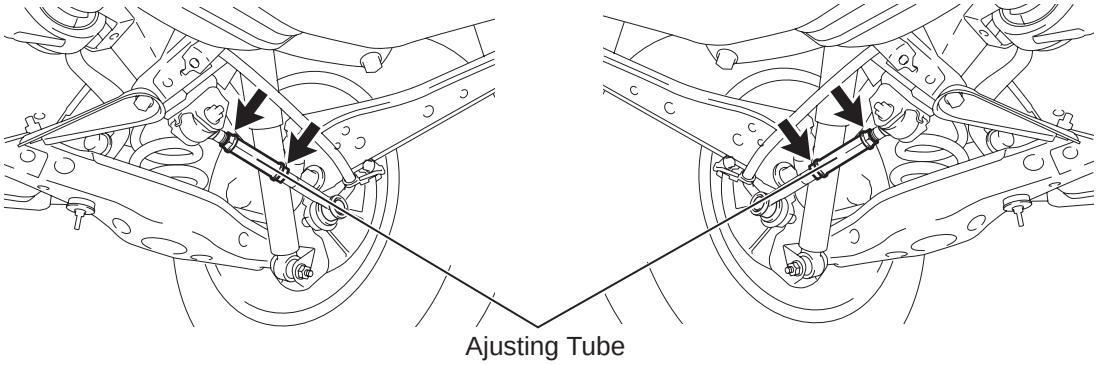
4. ADJUST TOE-IN

(a) Inspect the rear No. 1 suspension arm by inspecting the nuts and adjusting tube for looseness visually and by hand.

SP

for LH:

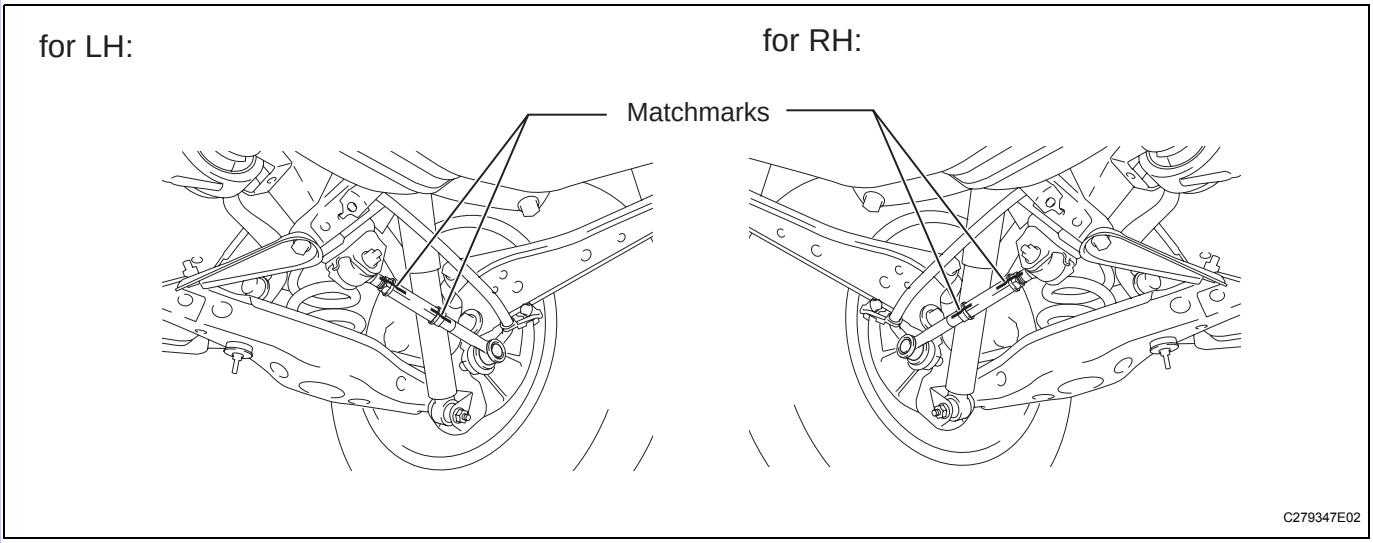
for RH:



[Corrected]

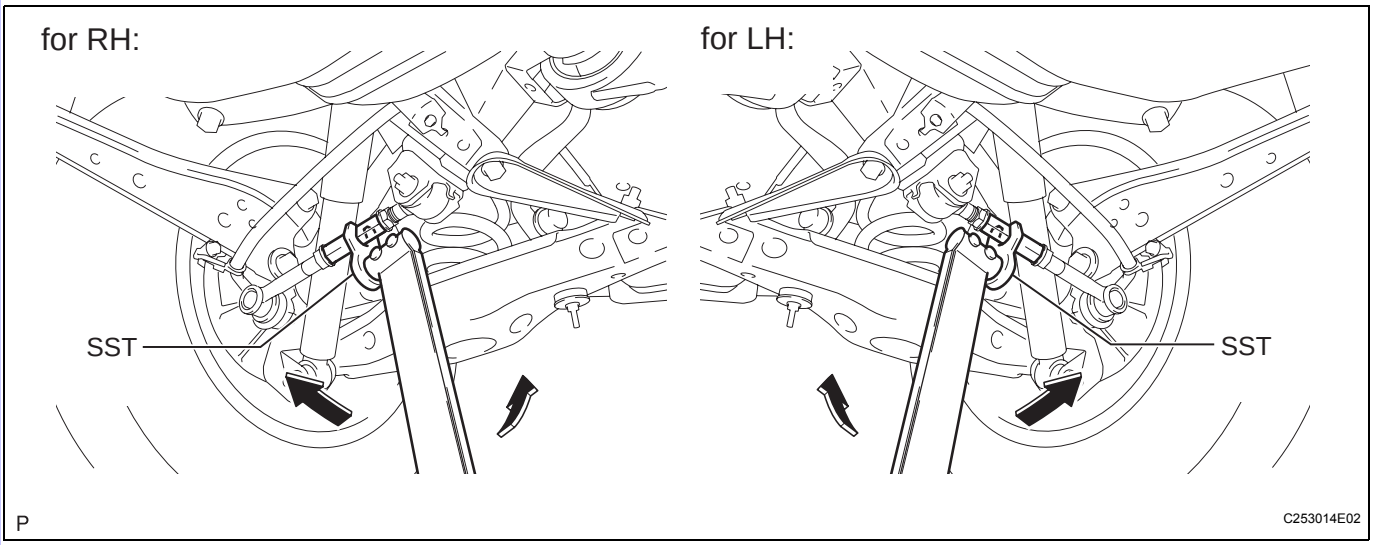
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(b) Put matchmarks onto the rear No. 1 suspension arm assembly as shown in the illustration below.



(c) Check adjusting tube for looseness.

(1) Using the SST, try turning the adjusting tube in both clockwise and counterclockwise directions with the specified torque to check that the matchmarks will not be misaligned.



SST 09612-24014 (09617-24011)

Torque: without SST

20 N*m (204 kgf*cm, 15 ft.*lbf)

with SST

17 N*m (173 kgf*cm, 13 ft.*lbf)

NOTICE:

- **Do not apply more force than specified when checking for adjusting tube or lock nut looseness.**
- **Use the formula to calculate special torque values for situations where SST is combined with a torque wrench (See page ○○-○○).**

SP

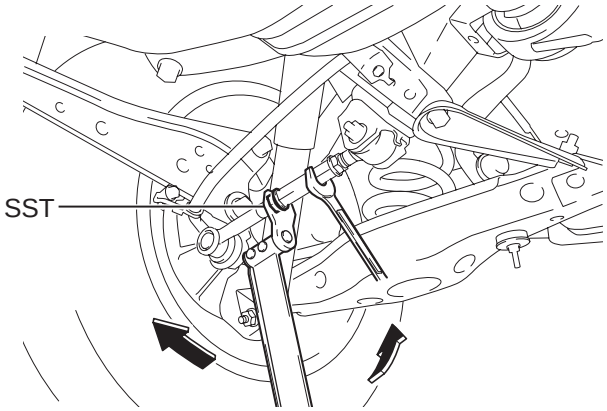
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HINT:
Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).

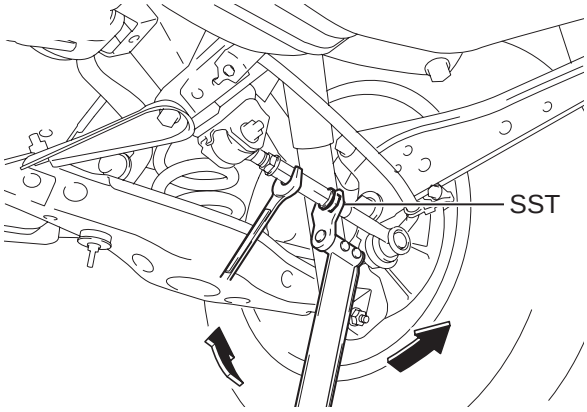
(d) Check the lock nut at the ball joint side for looseness.

(1) Hold the adjusting tube and using the SST, turn the lock nut at the ball joint side in both clockwise and counterclockwise directions with the specified torque to check that the matchmarks will not be misaligned.

for RH:



for LH:



P

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SP

SST 09612-24014 (09617-24011)
Torque: without SST
20 N*m (204 kgf*cm, 15 ft.*lbf)
with SST
17 N*m (173 kgf*cm, 13 ft.*lbf)

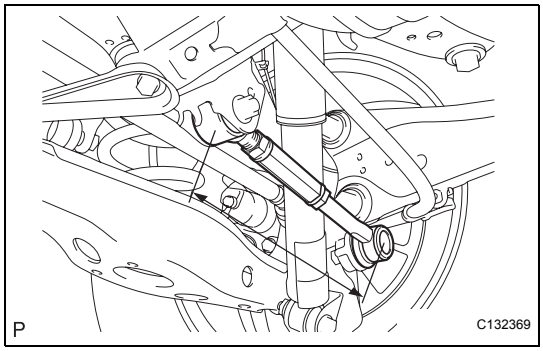
NOTICE:

- **The wrench applied to the adjusting tube should not be turned during this step. Hold the wrench applied to the adjusting tube while applying force to the SST or torque wrench.**
- **Use the formula to calculate special torque values for situations where SST is combined with a torque wrench (See page ○○-○○).**

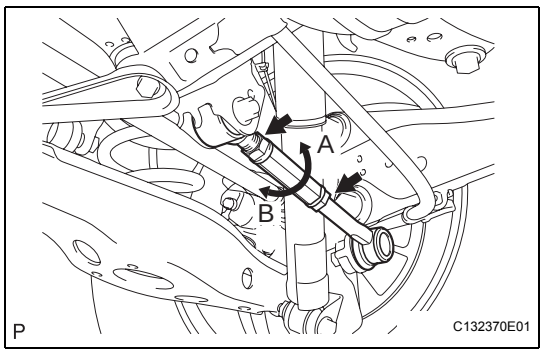
HINT:
Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).
If the lock nut is found loose, replace the tie rod assembly and adjust the rear wheel alignment.

[All Corrected]

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(e) Measure the length of the left and right rear No. 1 suspension arms.
Standard difference:
1.0 mm (0.0394 in.) or less



(f) Loosen the 2 lock nuts of the adjusting tube.
NOTICE:
If either nut is abnormally tight when loosening it (90 N*m (918 kgf*cm, 66 ft.*lbf) or more), or if either nut does not rotate smoothly by hand after loosening it, replace the rear No. 1 suspension arm.
HINT:
Loosen the 2 lock nuts of the adjusting tube on the other side using the same procedure.

(g) If the difference between the length of the left and right rear No. 1 suspension arms is not within the specification, adjust the value to within the specification using the method below.
(1) If the toe-in value deviates towards the inside, turn the adjusting tube of the shorter No. 1 suspension arm assembly in the direction which increases arm length until the difference between the left and right suspension arms is within the specification.
(2) If the toe-in value deviates towards the outside, turn the adjusting tube of the longer No. 1 suspension arm assembly in the direction which decreases arm length until the difference between the left and right suspension arms is within the specification.
(3) Measure the toe-in again.

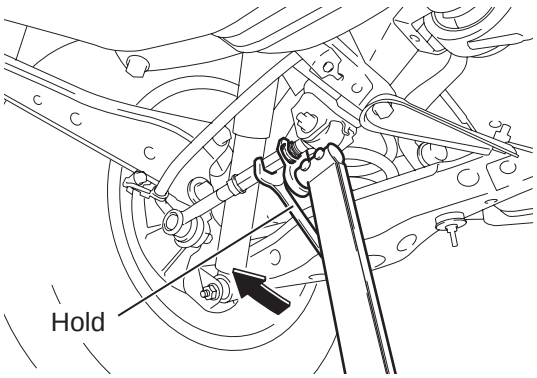
(h) Turn the left and right adjusting tubes in the same direction by the same amount to adjust the toe-in.
Adjustment Value:
2.3 +/-1.0 mm (0.0905 +/-0.0394 in.)
HINT:
- When the adjusting tube of the rear No. 1 suspension arm assembly LH is turned one revolution in the direction of A in the illustration, the toe-in changes to the inside by approximately 3.7 mm (0.146 in.)
- When the adjusting tube of the rear No. 1 suspension arm assembly LH is turned one revolution in the direction of B in the illustration, the toe-in changes to the outside by approximately 3.7 mm (0.146 in.).

SP

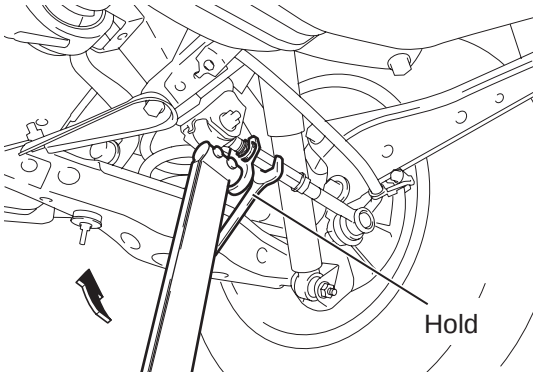
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(i) Tighten the inboard (bushing side) lock nut.
(1) Hold the adjusting tube in place and using SST, tighten the lock nut on the rubber bushing side.

for RH:



for LH:



C279348E02

SST 09612-24014 (09617-24011)
Torque: without SST
56 N*m (571 kgf*cm, 41 ft.*lbf)
with SST
49 N*m (500 kgf*cm, 36 ft.*lbf)

NOTICE:

- **The wrench applied to the adjusting tube should not be turned during this step. Hold the wrench applied to the adjusting tube while applying force to the SST or torque wrench.**
- **Use the formula to calculate special torque values for situations where SST is combined with a torque wrench (See page OO-OO).**

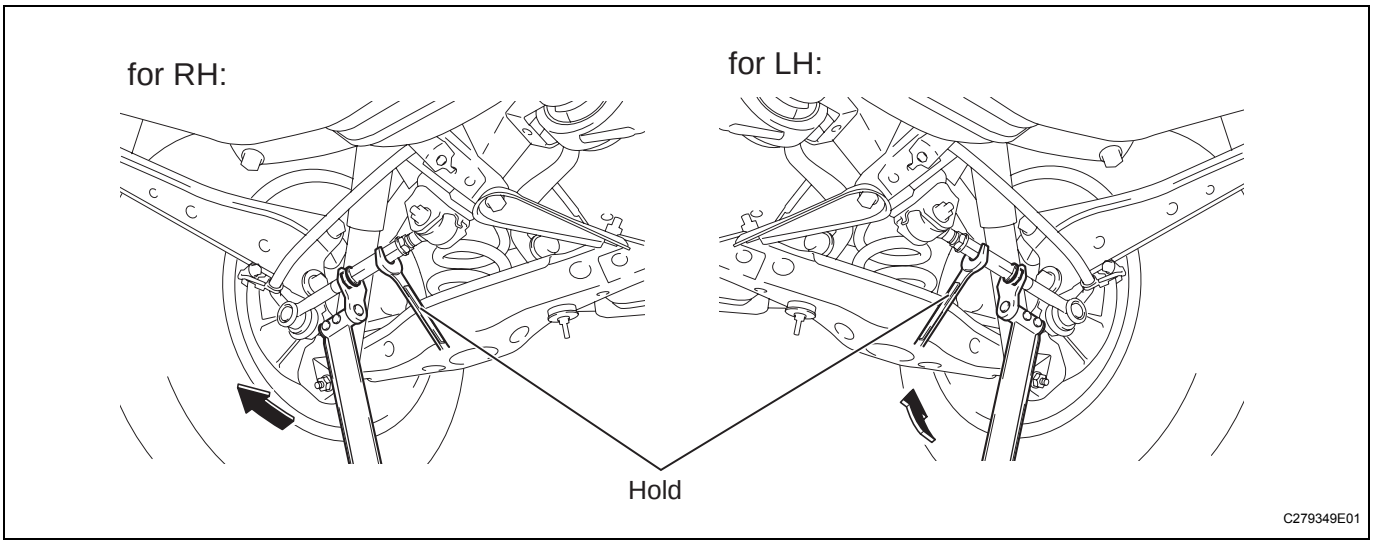
HINT:
Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).

SP

[All Corrected]

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(j) Tighten the outboard (ball joint side) lock nut.
(1) Hold the adjusting tube in place and, using SST, tighten the lock nut on the ball joint side.



SST 09612-24014 (09617-24011)
Torque: without SST
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NOTICE:

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HINT:
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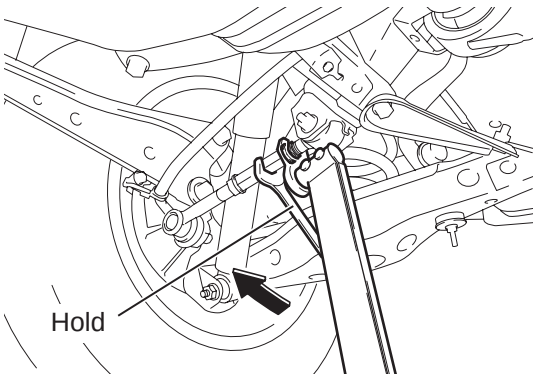
SP

[All Corrected]

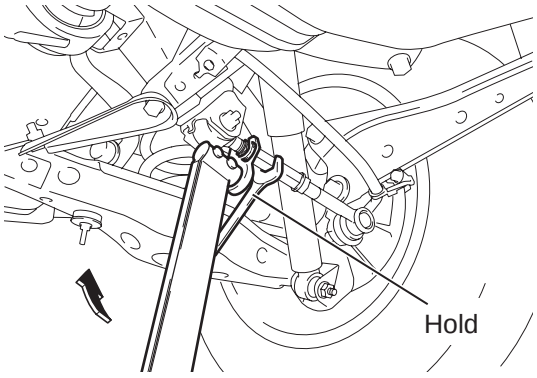
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(k) Tighten the inboard (bushing side) lock nut again.
(1) Hold the adjusting tube in place and using SST, tighten the lock nut on the rubber bushing side.

for RH:



for LH:



C279348E02

SST 09612-24014 (09617-24011)
Torque: without SST
56 N*m (571 kgf*cm, 41 ft.*lbf)
with SST
49 N*m (500 kgf*cm, 36 ft.*lbf)

NOTICE:

- **Failure to follow this procedure will result in the lock nut not being tightened to the proper torque and/or becoming loose.**
- **Use the formula to calculate special torque values for situations where SST is combined with a torque wrench (See page OO-OO).**

HINT:
Use a torque wrench with a fulcrum length of 300 mm (11.8 in.).

SP

[Corrected]

5. INSPECT CAMBER

(a) Install the camber-caster-kingpin gauge or set the vehicle on the wheel alignment tester.
(b) Inspect the camber.

Standard camber

Item		Specified Condition
Camber **Right-left error**	***Tire Size: 215/70R16**	**-0°58' +-45' (-0.97° +-0.75°)** **45' (0.75°) or less**
	Tire Size: 225/65R17 **Tire Size: 235/55R18**	**-1°07' +-45' (-1.12° +-0.75°)** **45' (0.75°) or less**
	Australia	**-0°52' +-45' (0.87° +-0.75°)** **45' (0.75°) or less**

*: Europe only

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