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<b>Model Year Start:</b> 2016	<b>Model:</b> Prius	<b>Prod Date Range:</b> [11/2015 - 12/2018]
<b>Title:</b> ALIGNMENT / HANDLING DIAGNOSIS: FRONT WHEEL ALIGNMENT: ADJUSTMENT; 2016 - 2018 MY Prius [11/2015 - 12/2018]		

## ADJUSTMENT

### CAUTION / NOTICE / HINT

The necessary procedures (adjustment, calibration, initialization, or registration) that must be performed after completing the front wheel alignment procedure are shown below.

#### Necessary Procedures After Procedure Performed

REPLACED PART OR PERFORMED PROCEDURE	NECESSARY PROCEDURE	EFFECT/INOPERATIVE FUNCTION WHEN NECESSARY PROCEDURE NOT PERFORMED	LINK
Front wheel alignment adjustment	<ol style="list-style-type: none"> <li>1. Clear zero point calibration data.</li> <li>2. Perform yaw rate and acceleration sensor zero point calibration.</li> </ol>	<ul style="list-style-type: none"> <li>• DTCs are stored</li> <li>• ABS warning light illuminates</li> <li>• Brake warning light/yellow (minor malfunction) illuminates</li> <li>• Slip indicator light illuminates</li> <li>• VSC disabled or malfunctions</li> </ul>	<a href="#">INFO</a>

## PROCEDURE

### 1. INSPECT TIRES

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### 2. MEASURE VEHICLE HEIGHT

#### NOTICE:

- Before inspecting the wheel alignment, adjust the vehicle height to the specified value.
- Be sure to perform measurement on a level surface.
- If it is necessary to go under the vehicle for measurement, confirm that the parking brake is applied and the vehicle is secured with chocks.
- Inspect while the vehicle is unloaded.
- The standard value shown here is a value that is used for performing a wheel alignment and does not indicate the height of an actual vehicle.

(a) Bounce the vehicle up and down at the corners to stabilize the suspension.

(b) Measure the vehicle height.

#### Measurement Points:

A: Ground clearance of front wheel center

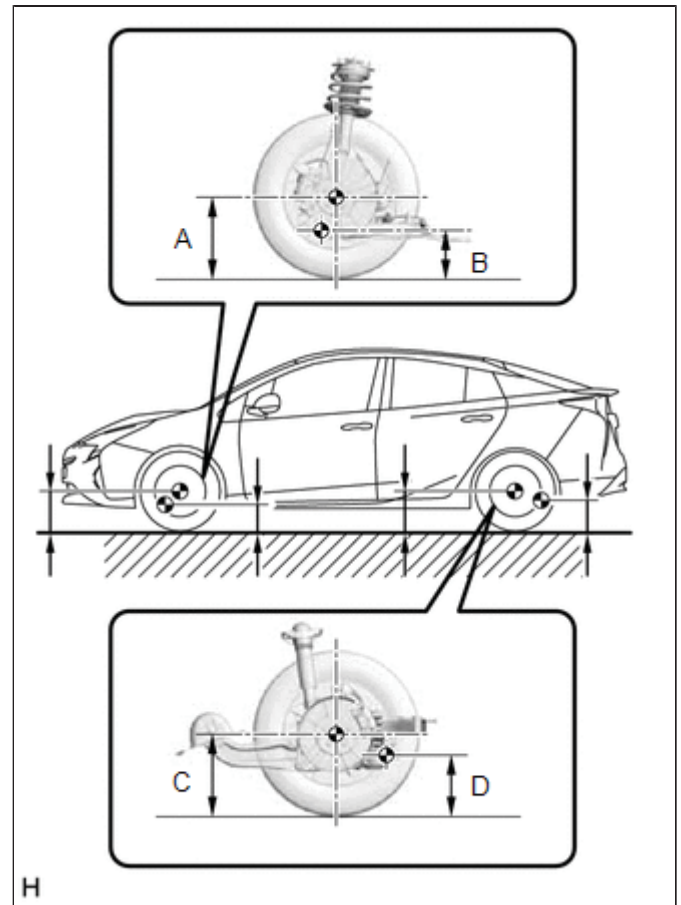
B: Ground clearance of front lower No. 1 suspension arm sub-assembly x front suspension crossmember sub-assembly set bolt center

C: Ground clearance of rear wheel center

D: Ground clearance of rear No. 2 suspension arm assembly x rear suspension member sub-assembly set bolt center

Vehicle Height (Unloaded Vehicle):

FRONT A - B	REAR C - D
114 mm (4.49 in.)	41 mm (1.61 in.)
95 mm (3.74 in.)*A	24 mm (0.945 in.)*A
*A: for Rough Road Area Specification Vehicles	

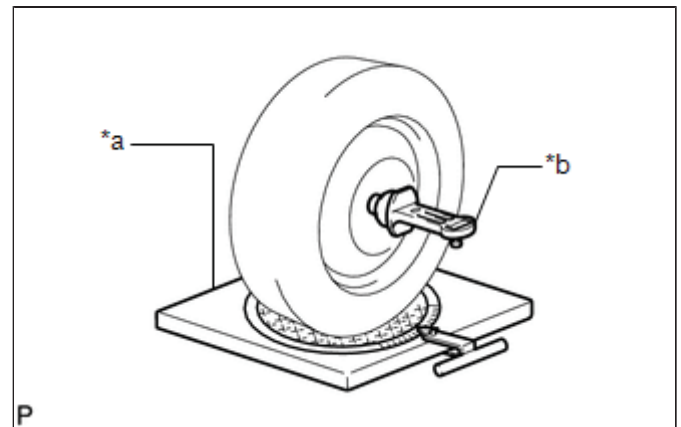


### 3. INSPECT CAMBER, CASTER AND STEERING AXIS INCLINATION

**NOTICE:**

Inspect while the vehicle is unloaded.

- (a) Install a camber-caster-kingpin gauge and place the front wheels on the center of a turning radius gauge.



*a	Turning Radius Gauge
*b	Camber-caster-kingpin Gauge

- (b) Inspect the camber, caster and steering axis inclination.

Camber (Unloaded Vehicle):

CAMBER INCLINATION	RIGHT-LEFT DIFFERENCE
-0°09' +/- 0°45' (-0.15° +/- 0.75°) 0°06' +/- 0°45' (0.10° +/- 0.75°)*A	0°45' (0.75°) or less
*A: for Rough Road Area Specification Vehicles	

Caster (Unloaded Vehicle):

TIRE SIZE	CASTER INCLINATION	RIGHT-LEFT DIFFERENCE
195/65R15	6°51' +/- 0°45' (6.85° +/- 0.75°) 6°37' +/- 0°45' (6.62° +/- 0.75°)*A	0°45' (0.75°) or less
215/45R17	6°53' +/- 0°45' (6.88° +/- 0.75°)	
*A: for Rough Road Area Specification Vehicles		

Steering Axis Inclination (Unloaded Vehicle):

STEERING AXIS INCLINATION REFERENCE
13°18' (13.30°) 12°50' (12.83°)*A
*A: for Rough Road Area Specification Vehicles

#### 4. ADJUST CAMBER

##### NOTICE:

Inspect toe-in after the camber has been adjusted.

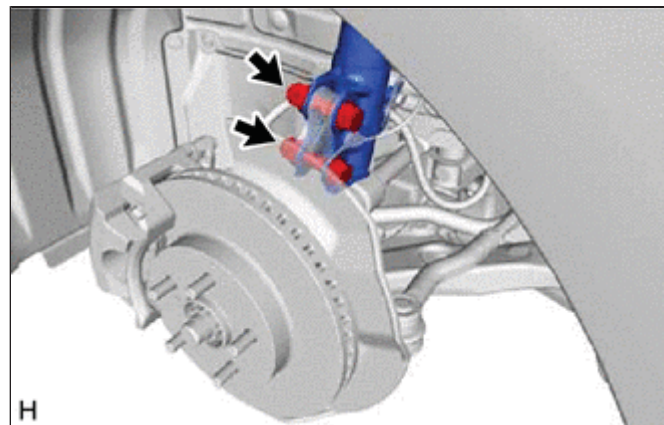
- (a) Remove the front wheel.

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- (b) Remove the 2 nuts on the lower side of the front shock absorber assembly.

##### NOTICE:

Keep the bolts inserted.

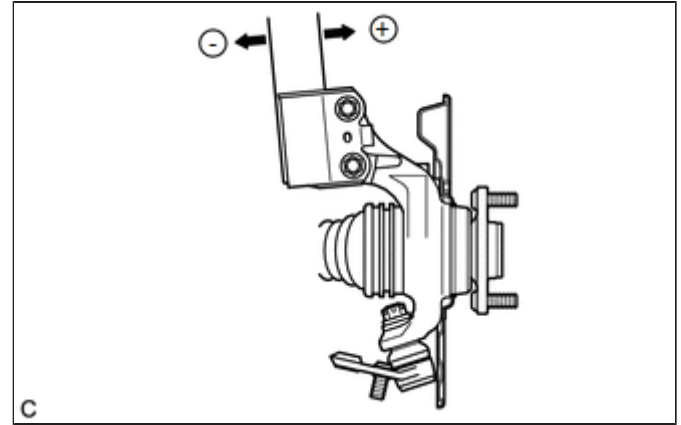


- (c) Remove the top and bottom bolts one at a time and confirm that the steering knuckle can move freely in the front shock absorber assembly.

##### HINT:

- Reinstall each bolt after removing it and confirming steering knuckle movement.
- If the steering knuckle does not move freely in the front shock absorber assembly, clean the contact surfaces of the front shock absorber assembly and the steering knuckle.

(d) Temporarily install the 2 nuts. (Step A)



(e) Fully push or pull the front axle hub in the direction of the required adjustment. (Step B)

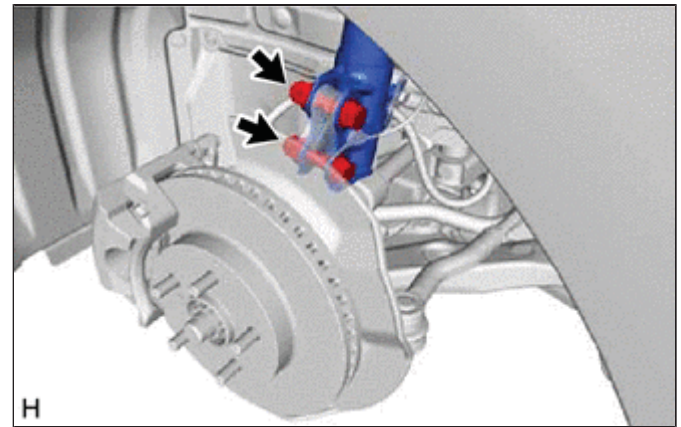
(f) Tighten the 2 nuts.

**Torque:**

**240 N·m { 2447 kgf·cm, 177 ft·lbf }**

**NOTICE:**

Keep the bolts from rotating when tightening the nuts.



(g) Install the front wheel.

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(h) Bounce the vehicle up and down at the corners to stabilize the suspension.

(i) Check the camber.

Camber (Unloaded Vehicle):

CAMBER INCLINATION	RIGHT-LEFT DIFFERENCE
-0°09' +/- 0°45' (-0.15° +/- 0.75°) 0°06' +/- 0°45' (0.10° +/- 0.75°)*A	0°45' (0.75°) or less
*A: for Rough Road Area Specification Vehicles	

(1) If the measured value is not within the specification, calculate the required adjustment amount using the formula below.

Camber adjustment amount = center of the specified range - measured value

Check the combination of the installed bolts. Select

appropriate bolts from the tables below to adjust the camber to the specified values.

**HINT:**

Try to adjust the camber to the center of the specified values.

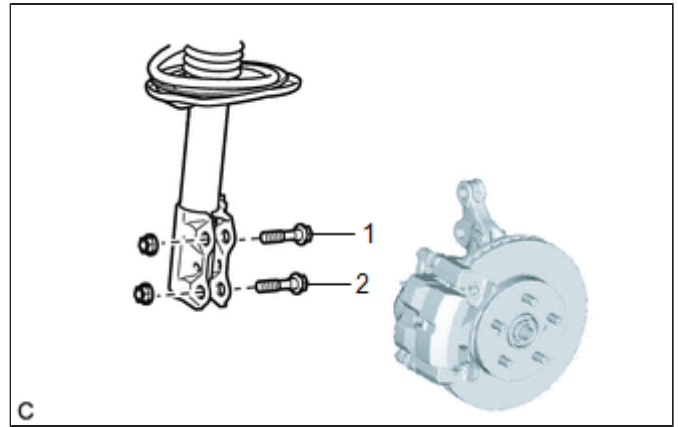
TO MOVE THE AXLE HUB TOWARD (+) IN STEP B	TO MOVE THE AXLE HUB TOWARD (-) IN STEP B
Refer to table (1) (To move the axle hub toward the positive side)	Refer to table (2) (To move the axle hub toward the negative side)

The vehicle body and suspension may be damaged if the camber cannot be correctly adjusted according to the table above.

**NOTICE:**

Replace the nut with a new one when replacing the bolt.

(2) Table (1) (To move the axle hub toward the positive side)



\*A

	1							
	2							
-1°30' to -1°15' (-1.50° to -1.25°)								G
-1°15' to -1°00' (-1.25° to -1°)							G	A
-1°00' to -0°45' (-1° to -0.75°)						G	A	B
-0°45' to -0°30' (-0.75° to -0.5°)				G	A	B	C	D
-0°30' to -0°15' (-0.5° to -0.25°)			G	A	B	C	D	E
-0°15' to 0° (-0.25° to 0°)		G	A	B	C	D	E	F
0° to 0°15' (0° to 0.25°)	A	B	C	D	E	F		
0°15' to 0°30' (0.25° to 0.5°)	B	C	D	E	F			
0°30' to 0°45' (0.5° to 0.75°)	C	D	E	F				
0°45' to 1°00' (0.75° to 1°)	D	E	F					
1°00' to 1°15' (1° to 1.25°)	E	F						
1°15' to 1°30' (1.25° to 1.5°)	F							

\*B

	A	B	C	D	E	F	G
1							
2							

*A	Table (1) (To move the axle hub toward the positive side)	*B	Selected Bolt Combination
*a	Installed Bolt	*b	Adjusting Value
*c	Standard Bolt	*d	90105-17009
*e	90105-17010	*f	90105-17011

(3) Table (2) (To move the axle hub toward the negative side)

\*A

	1							
	2							
-1°30' to -1°15' (-1.50° to -1.25°)	F							
-1°15' to -1°00' (-1.25° to -1°)	E	F						
-1°00' to -0°45' (-1° to -0.75°)	D	E	F					
-0°45' to -0°30' (-0.75° to -0.5°)	C	D	E	F				
-0°30' to -0°15' (-0.5° to -0.25°)	B	C	D	E	F			
-0°15' to 0° (-0.25° to 0°)	A	B	C	D	E	F		
0° to 0°15' (0° to 0.25°)		G	A	B	C	D	E	
0°15' to 0°30' (0.25° to 0.5°)			G	A	B	C	D	
0°30' to 0°45' (0.5° to 0.75°)				G	A	B	C	
0°45' to 1°00' (0.75° to 1°)					G	A	B	
1°00' to 1°15' (1° to 1.25°)						G	A	
1°15' to 1°30' (1.25° to 1.5°)							G	

\*B

	A	B	C	D	E	F	G
1							
2							

*A	Table (2) (To move the axle hub toward the negative side)	*B	Selected Bolt Combination
*a	Installed Bolt	*b	Adjusting Value
*c	Standard Bolt	*d	90105-17009
*e	90105-17010	*f	90105-17011

(j) If the camber was out of adjustment in the previous step, perform the adjust camber steps mentioned above. In step A, replace the existing bolts with the selected bolts.

**HINT:**

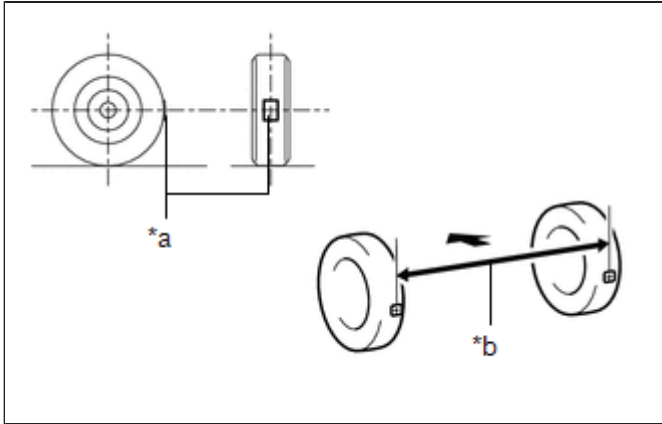
Replace one bolt at a time when replacing both bolts.


**5. INSPECT TOE-IN**

**NOTICE:**

Inspect while the vehicle is unloaded.

- (a) Bounce the vehicle up and down at the corners to stabilize the suspension.
- (b) Release the parking brake and move the shift lever to N.
- (c) Push the vehicle straight ahead approximately 5 m (16.4 ft.). (Step C)
- (d) Put tread center marks on the rearmost points of the front wheels and measure the distance between the marks (dimension B).

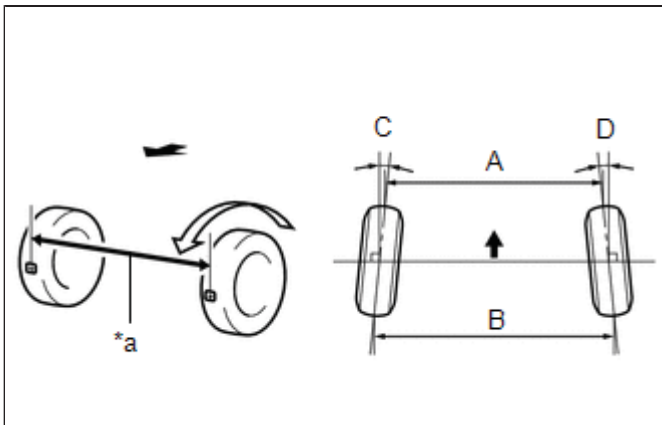



*a	Tread Center Mark
*b	Dimension B
	Front of the Vehicle

- (e) Slowly push the vehicle straight ahead to cause the front wheels to rotate 180°. Use the front tire valve as a reference point.

**HINT:**  
Do not allow the wheels to rotate more than 180°. If the wheels rotate more than 180°, perform the procedure from step C again.

- (f) Measure the distance between the tread center marks on the front of the wheels (dimension A).



*a	Dimension A
	Front of the Vehicle

Toe-in (Unloaded Vehicle):



SPECIFIED CONDITION

C + D: 0°07' +/- 0°11' (0.12° +/- 0.18°)  
C + D: 0°04' +/- 0°11' (0.06° +/- 0.18°)\*A

B - A: 1.3 +/- 2.0 mm (0.0512 +/- 0.0787 in.)  
B - A: 0.7 +/- 2.0 mm (0.0276 +/- 0.0787 in.)\*A

\*A: for Rough Road Area Specification Vehicles

**HINT:**

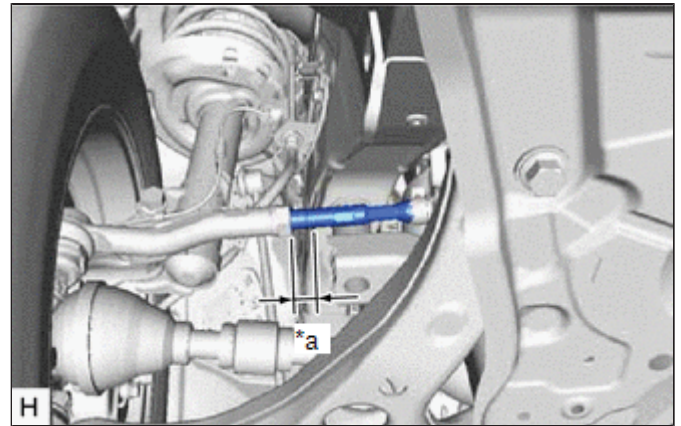
Measure "B - A" only when "C + D" cannot be measured.

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

**6. ADJUST TOE-IN**

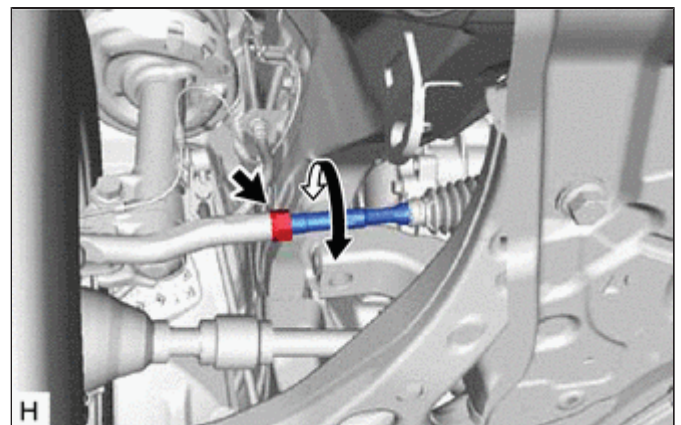
- (a) Make sure that the thread length of the right and left steering rack ends are approximately the same.

Standard Difference:  
1.5 mm (0.0591 in.) or less



*a	Thread Length
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- (b) Remove the steering rack boot clips.



- (c) Loosen the tie rod end sub-assembly lock nuts.

- (d) Adjust the steering rack ends if the difference in thread length between the right and left steering rack ends is not within the specified range.

(1) If the toe-in measurement is greater than the specified range (too much toe-out), extend the shorter rack end so that the difference in length is within the specified range.

(2) If the toe-in measurement is less than the specified range (too much toe-in), shorten the longer rack end so that the difference in length is within the specified range.

(3) Measure the toe-in.

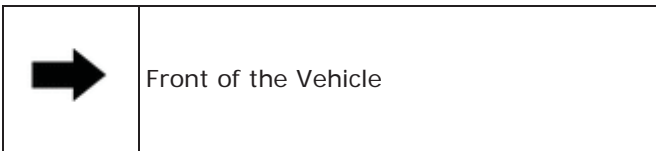
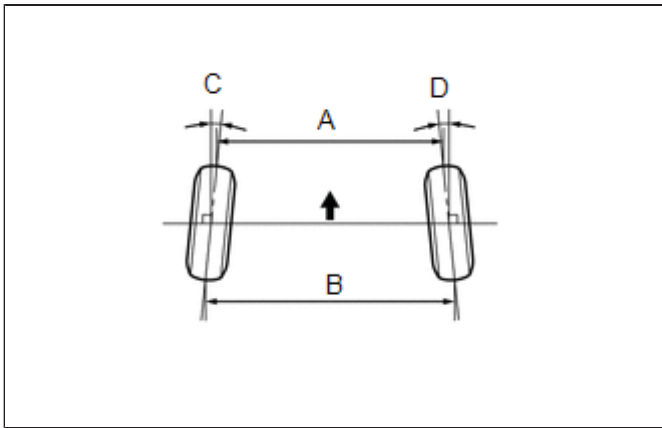
(e) Turn the right and left steering rack ends by an equal amount to adjust the toe-in.

Toe-in (Unloaded Vehicle):

SPECIFIED CONDITION
C + D: $0^{\circ}07' \pm 0^{\circ}11'$ ( $0.12^{\circ} \pm 0.18^{\circ}$ ) C + D: $0^{\circ}04' \pm 0^{\circ}11'$ ( $0.06^{\circ} \pm 0.18^{\circ}$ )*A
B - A: $1.3 \pm 2.0$ mm ( $0.0512 \pm 0.0787$ in.) B - A: $0.7 \pm 2.0$ mm ( $0.0276 \pm 0.0787$ in.)*A
*A: for Rough Road Area Specification Vehicles

**HINT:**

Perform adjustments so that the value is as close as possible to the median of the specified range.



(f) Make sure that the thread length of the right and left steering rack ends are the same.

(g) Tighten the tie rod end sub-assembly lock nuts.

**Torque:**

**74 N·m { 755 kgf·cm, 55 ft·lbf }**

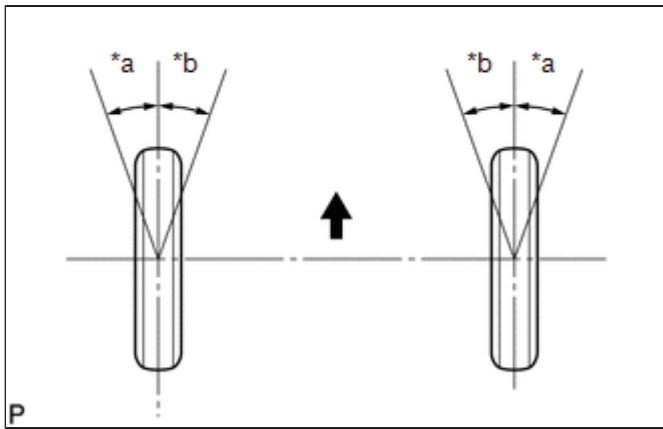
(h) Place the steering rack boots on the seats and install the steering rack boot clips.


**HINT:**

Make sure that the steering rack boots are not twisted.

**7. INSPECT WHEEL ANGLE**

(a) Put tread center marks on the rearmost points of a turning radius gauge.



*a	Inside
*b	Outside
	Front of the Vehicle

(b) Turn the steering wheel fully to the left and right and measure the turning angle.

**NOTICE:**

Inspect while the vehicle is unloaded.

Wheel Turning Angle (Unloaded Vehicle):

TIRE SIZE	INSIDE WHEEL	OUTSIDE WHEEL
195/65R15	41°44' +/- 2°00' (41.73° +/- 2.00°)	34°44' (34.73°)
	42°31' +/- 2°00' (42.52° +/- 2.00°)*A	35°05' (35.08°)*A
215/45R17	37°43' +/- 2°00' (37.72° +/- 2.00°)	32°22' (32.37°)

\*A: for Rough Road Area Specification Vehicles

If the right and left inside wheel angles differ from the specified value, check and adjust the right and left steering rack end lengths.

**8. ALIGN FRONT WHEELS FACING STRAIGHT AHEAD**

**9. PERFORM YAW RATE AND ACCELERATION SENSOR CALIBRATION**

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<b>Model Year Start:</b> 2016	<b>Model:</b> Prius	<b>Prod Date Range:</b> [11/2015 - 12/2018]
<b>Title:</b> ALIGNMENT / HANDLING DIAGNOSIS: REAR WHEEL ALIGNMENT: ADJUSTMENT; 2016 - 2018 MY Prius [11/2015 - 12/2018]		

## ADJUSTMENT

## CAUTION / NOTICE / HINT

The necessary procedures (adjustment, calibration, initialization, or registration) that must be performed after completing the rear wheel alignment procedure are shown below.

### Necessary Procedures After Procedure Performed

REPLACED PART OR PERFORMED PROCEDURE	NECESSARY PROCEDURE	EFFECT/INOPERATIVE FUNCTION WHEN NECESSARY PROCEDURE NOT PERFORMED	LINK
Rear wheel alignment adjustment	<ol style="list-style-type: none"> <li>1. Clear zero point calibration data.</li> <li>2. Perform yaw rate and acceleration sensor zero point calibration.</li> </ol>	<ul style="list-style-type: none"> <li>• DTCs are stored</li> <li>• ABS warning light illuminates</li> <li>• Brake warning light/yellow (minor malfunction) illuminates</li> <li>• Slip indicator light illuminates</li> <li>• VSC disabled or malfunctions</li> </ul>	<a href="#">INFO</a>

## PROCEDURE

### 1. INSPECT TIRES

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### 2. MEASURE VEHICLE HEIGHT

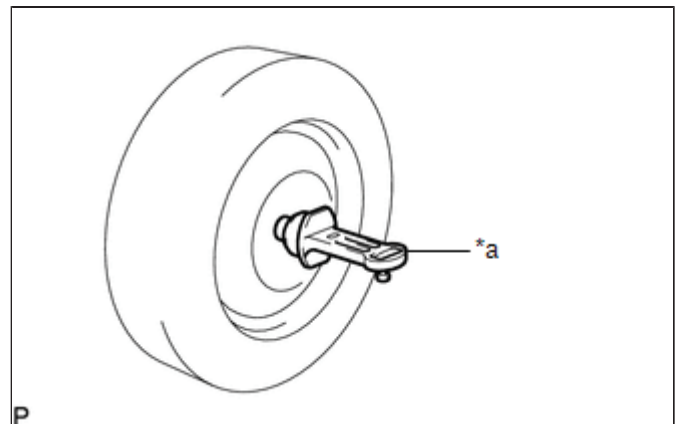
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### 3. INSPECT CAMBER

#### NOTICE:

Inspect while the vehicle is unloaded.

(a) Install a camber-caster-kingpin gauge.



(b) Inspect the camber.

Camber (Unloaded Vehicle):

CAMBER INCLINATION	RIGHT-LEFT DIFFERENCE
-0°58' +/- 0°45' (-0.97° +/- 0.75°) -0°41' +/- 0°45' (-0.68° +/- 0.75°)*A	0°45' (0.75°) or less
*A: for Rough Road Area Specification Vehicles	

**HINT:**

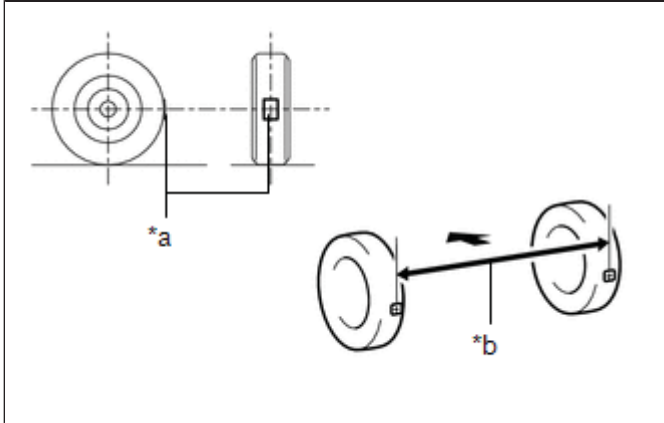
Camber is not adjustable. If the measurement is not within the specified range, inspect the suspension parts for damage and/or wear, and replace them if necessary.


**4. INSPECT TOE-IN**

**NOTICE:**

Inspect while the vehicle is unloaded.

- (a) Bounce the vehicle up and down at the corners to stabilize the suspension.
- (b) Release the parking brake and move the shift lever to N.
- (c) Push the vehicle straight ahead approximately 5 m (16.4 ft.). (Step A)
- (d) Put tread center marks on the rearmost points of the rear wheels and measure the distance between the marks (dimension B).



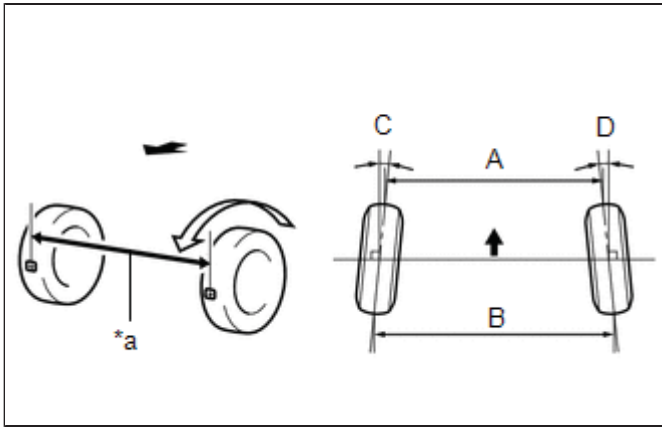
*a	Tread Center Mark
*b	Dimension B
	Front of the Vehicle


(e) Slowly push the vehicle straight ahead to cause the rear wheels to rotate 180°. Use the rear tire valve as a reference point.

**HINT:**

Do not allow the wheels to rotate more than 180°. If the wheels rotate more than 180°, perform the procedure from step A again.

(f) Measure the distance between the tread center marks on the front of the rear wheels (dimension A).



*a	Dimension A
	Front of the Vehicle

Toe-in (Unloaded Vehicle):

SPECIFIED CONDITION
C + D: 0°10' +/- 0°11' (0.16° +/- 0.18°) C + D: 0°03' +/- 0°11' (0.05° +/- 0.18°)*A
B - A: 1.8 +/- 2.0 mm (0.0709 +/- 0.0787 in.) B - A: 0.5 +/- 2.0 mm (0.0197 +/- 0.0787 in.)*A
*A: for Rough Road Area Specification Vehicles

**HINT:**

Measure "B - A" only when "C + D" cannot be measured.

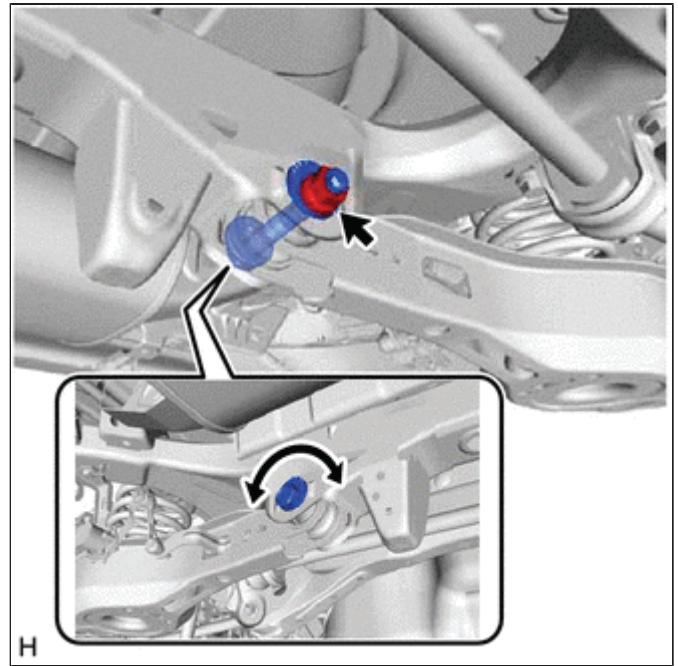
If the toe-in is not within the specified range, adjust it at the rear suspension toe adjust cam sub-assembly.

**5. ADJUST TOE-IN**

- (a) Loosen the nut of the rear No. 2 suspension arm assembly (on the rear suspension member sub-assembly side).

**NOTICE:**

Hold the rear suspension toe adjust cam sub-assembly while rotating the nut.

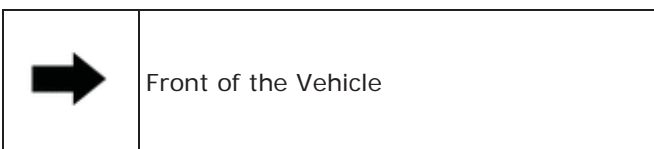
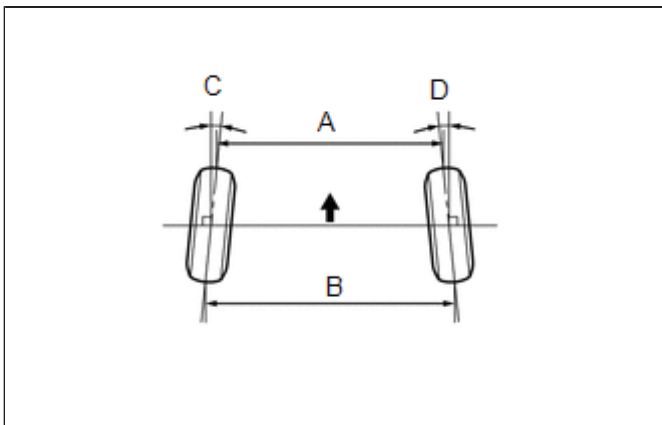


(b) Rotate the rear suspension toe adjust cam sub-assembly to adjust the toe-in.

Toe-in (Unloaded Vehicle):

SPECIFIED CONDITION
$C + D: 0^{\circ}10' \pm 0^{\circ}11' (0.16^{\circ} \pm 0.18^{\circ})$ $C + D: 0^{\circ}03' \pm 0^{\circ}11' (0.05^{\circ} \pm 0.18^{\circ})^*A$
$B - A: 1.8 \pm 2.0 \text{ mm } (0.0709 \pm 0.0787 \text{ in.})$ $B - A: 0.5 \pm 2.0 \text{ mm } (0.0197 \pm 0.0787 \text{ in.})^*A$
*A: for Rough Road Area Specification Vehicles

- HINT:**
- Rotating the rear suspension toe adjust cam sub-assembly by one notch changes the toe by approximately 2.9 mm (0.114 in.).
  - Perform adjustments so that the value is as close as possible to the median of the specified range.



(c) Tighten the nut of the rear No. 2 suspension arm assembly (on the rear suspension member sub-assembly side).

**Torque:**

**100 N·m { 1020 kgf·cm, 74 ft·lbf }**

**NOTICE:**

Hold the rear suspension toe adjust cam sub-assembly while rotating the nut.

**6. ALIGN FRONT WHEELS FACING STRAIGHT AHEAD**

**7. PERFORM YAW RATE AND ACCELERATION SENSOR CALIBRATION**

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