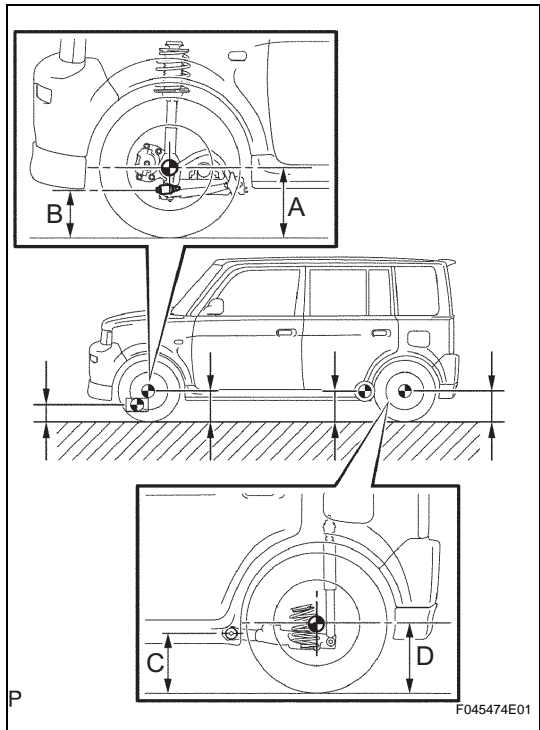


# FRONT WHEEL ALIGNMENT

## ADJUSTMENT

1. INSPECT TIRE
- (a) Inspect the tire (see page TW-3).
2. INSPECT VEHICLE HEIGHT
- Standard vehicle height



Item	Specified Condition
Front A - B	82 mm (3.22 in.)
Rear D - C	12 mm (0.47 in.)

Measure points:

- A:
- Ground clearance of front wheel center
- B:
- Ground clearance of lower suspension arm front bolt center
- C:
- Ground clearance of axle beam set bolt center
- D:
- Ground clearance of rear wheel center

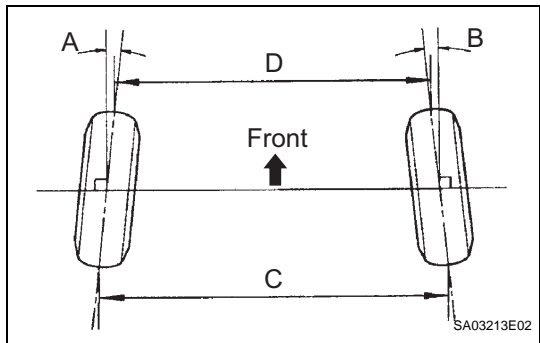
NOTICE:

Before inspecting the wheel alignment, adjust the vehicle height to the specified value.

HINT:

Bounce the vehicle at the corners to stabilize the suspension and inspect the vehicle height.

3. INSPECT TOE-IN
- Standard toe-in



Item	Specified Condition
Toe-in (total)	A + B: 0°+-11' (0° +-0.19°) C - D: 0 +-2 mm (0 +-0.08 in.)

HINT:

- Measure "C - D" only when "A + B" cannot be measured.
- If the toe-in is not within the specified range, adjust it at the rack ends.

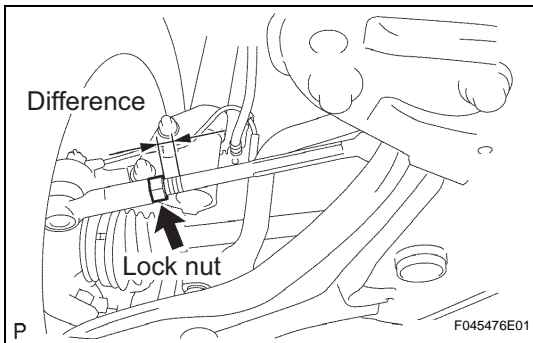
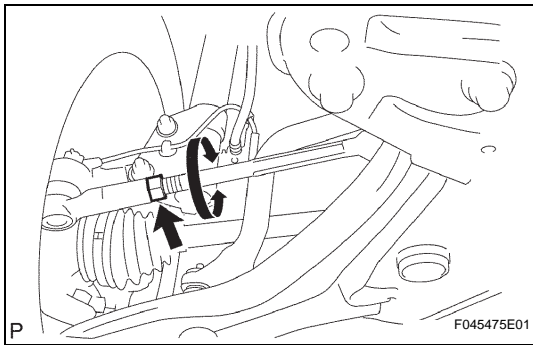
4. ADJUST TOE-IN

- (a) Measure the thread lengths of the right and left rack ends.

Rack end length difference:

1.5 mm (0.059 in.) or less

- (b) Remove the rack boot set clips.



- (c) Loosen the tie rod end lock nuts.
- (d) Adjust the rack ends if the difference in thread length between the right and left rack ends is not within the specified range.
  - (1) Extend the shorter rack end if the measured toe-in deviates toward the outer side.
  - (2) Shorten the longer rack end if the measured toe-in deviates toward the inner side.

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

HINT:

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

- (f) Make sure that the lengths of the right and left rack ends are the same.

**Standard rack end length difference:**

**0  $\pm$  1 mm (0.0039 in.)**

- (g) Torque the tie rod end lock nuts.

**Torque: 74 N\*m (749 kgf\*cm, 54 ft.\*lbf)**

**NOTICE:**

**Temporarily tighten the lock nut while holding the hexagonal part of the steering rack end so that the lock nut and the steering rack end do not turn together. Hold the flat section of the tie rod end and tighten the lock nut.**

- (h) Place the boots on the seats and install the clips.

HINT:

Make sure that the boots are not twisted.

- (i) Perform VSC system calibration (see page [BC-11](#)).

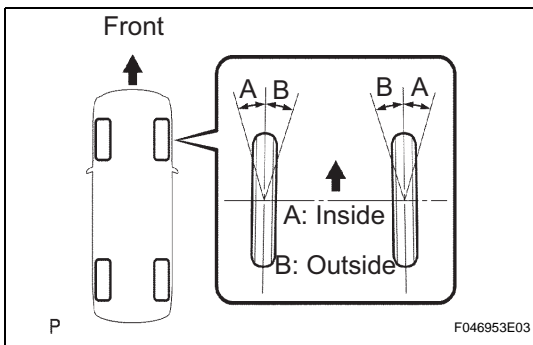
## 5. INSPECT WHEEL ANGLE

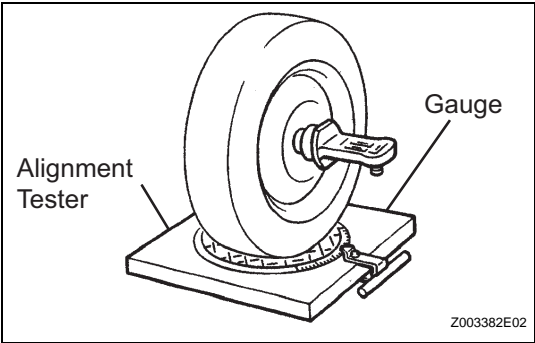
- (a) Turn the steering wheel fully and measure the turning angle.

**Standard wheel turning angle**

Item	Specified Condition
Inside wheel	33°42' $\pm$ 2° (33.70° $\pm$ 2°)
Outside wheel (reference)	30°04' (30.07°)

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





**6. INSPECT CAMBER, CASTER AND STEERING AXIS INCLINATION**

- (a) Put the front wheel on the center of the alignment tester.
- (b) Remove the wheel cap.
- (c) Install the camber-caster-steering axis inclination gauge at the center of the axle hub or drive shaft.
- (d) Adjust the camber, caster and steering axis inclination.

**Standard camber, caster and steering axis inclination**

Item	Specified Condition
Camber Right-left error	-0°34' +45' (-0.57° +0.75°) 30' (0.5°) or less
Caster Right-left error	1°45' +45' (1.75° +0.75°) 30' (0.5°) or less
Steering axis inclination Right-left error	10°01' +45' (10.02° +0.75°) 30' (0.5°) or less

**NOTICE:**

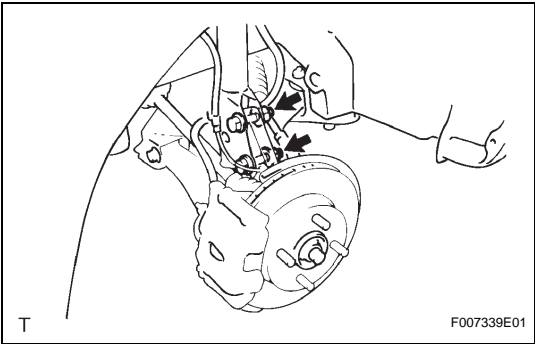
- Inspect while the vehicle is empty (without the spare tire or tools on board).
  - The maximum tolerance of right and left difference for the camber and caster is 30' or less.
- (e) Remove the camber-caster-steering axis inclination gauge and attachment.
- (f) Install the wheel cap.
- If the caster and steering axis inclination are not within the specified values after the camber has been correctly adjusted, recheck the suspension parts for any damage and/or worn-out parts.

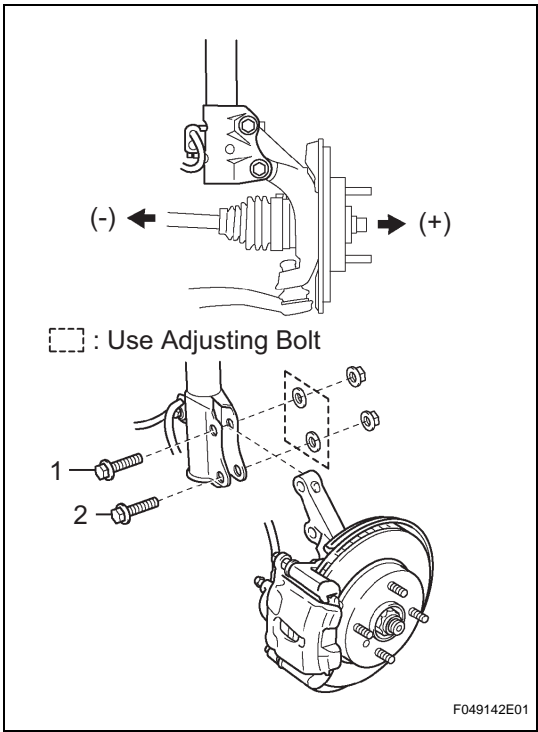
**7. ADJUST CAMBER**

**NOTICE:**

**Inspect toe-in after the camber has been adjusted.**

- (a) Remove the front wheel.
- (b) Remove the 2 nuts on the lower side of the shock absorber.
- (c) Clean the installation surface of the shock absorber and 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: 132 N\*m (1,350 kgf\*cm, 97 ft.\*lbf)**

**NOTICE:**

**Keep the bolts from rotating and torque the nuts.**

- (g) Install the front wheel.

**Torque: 103 N\*m (1,050 kgf\*cm, 76 ft.\*lbf)**

- (h) Check the camber.

If the measured value is not within the specified range, calculate the required adjustment amount using the formula below.

**Camber adjustment amount:**











**Center of the specified range - Measured value**











Check installed bolts combination. Select appropriate bolts from the table below to adjust the camber to within the specified range.

**Standard selection table**

Item	Selection Table
Move the axle toward (+) in step (B)	Refer to table (1) (Move the axle toward positive side)
Move the axle toward (-) in step (B)	Refer to table (2) (Move the axle toward negative side)

Table (1) Move the axle toward positive side

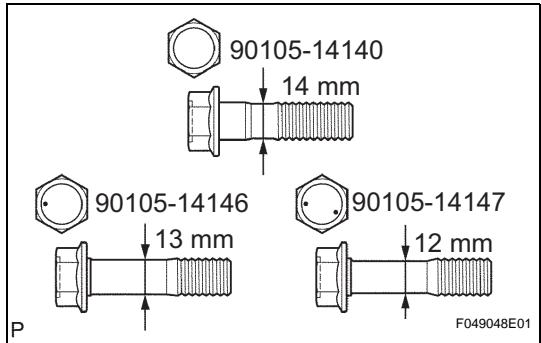
Installed Bolt  Adjusting Value	1					
	2					
−1°00' to −0°45'						E
−0°45' to −0°30'					E	A
−0°30' to −0°15'				E	A	B
−0°15' to 0°			E	A	B	C
0° to 0°15'	A	B	C	D		
0°15' to 0°30'	B	C	D			
0°30' to 0°45'	C	D				
0°45' to 1°00'	D					

	A	B	C	D	E
1	 90105-14140	 90105-14140	 90105-14146	 90105-14147	 90105-14140
2	 90105-14146	 90105-14147	 90105-14147	 90105-14147	 90105-14140

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**NOTICE:**











- The body and suspension may be damaged if the camber is not correctly adjusted according to the table above.
- Replace the nut with a new one when replacing the bolt.











- (i) Repeat the steps mentioned above. In step (A), replace 1 or 2 selected bolts.

**HINT:**

Replace one bolt at a time when replacing 2 bolts.

Table (2) Move the axle toward negative side

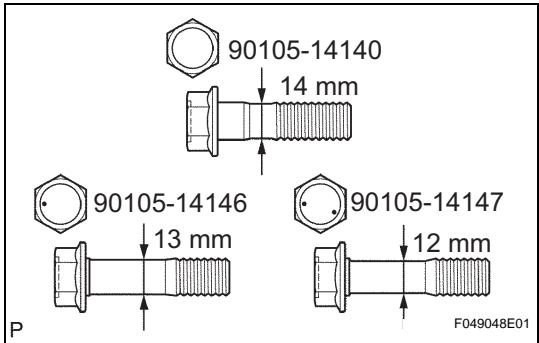
<div> <div>Installed Bolt</div> <div>Adjusting Value</div> </div>	1					
	2					
−1°00' to −0°45'	D					
−0°45' to −0°30'	C	D				
−0°30' to −0°15'	B	C	D			
−0°15' to 0°	A	B	C	D		
0° to 0°15'		E	A	B	C	
0°15' to 0°30'			E	A	B	
0°30' to 0°45'				E	A	
0°45' to 1°00'					E	

	A	B	C	D	E
1					
2					

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**NOTICE:**

- The body and suspension may be damaged if the camber is not correctly adjusted according to the table above.
- Replace the nut with a new one when replacing the bolt.

(j) Repeat the steps mentioned above. In step (A), replace 1 or 2 selected bolts.

**HINT:**

Replace one bolt at a time when replacing 2 bolts.