

FRONT WHEEL ALIGNMENT

ADJUSTMENT

1. CHECK VEHICLE CONDITION

- (a) Check that the vehicle is empty. (With the fuel tank full, remove spare tires and tools.)

2. CHECK TIRE

- (a) Check tire size, tire air pressure and tire wear.

3. CHECK SIDE SLIP

- (a) Check for side slip with a side slip tester.

Standard:

$0 \pm 5 \text{ mm (per 1 m)}$

NOTICE:

- Put the vehicle in neutral, and, approach the tester straight ahead at a speed no higher than that of walking pace (4 km/h, 2.5 mph).
- Do not depress the brake while the vehicle is on the tester.
- Do not operate the steering wheel while the vehicle is on the tester.

- (b) If the side slip values are outside the specified value, check the wheel alignment.

4. CHECK TOE-IN

- (a) Bounce the vehicle to stabilize.

- (b) Physically push the vehicle and advance it 5 m (16.5 ft.).

NOTICE:

After moving the vehicle backward, always move it forward the same distance it was moved backward.

- (c) Align the needle height of the toe-in gauge with the height of the center of the front wheel axis and insert into the back side of the tire.
- (d) Make a tread center mark at the rear end of both (right and left) front tires and measure the distance between the marks (measurement B).
- (e) Slowly push the vehicle forward and rotate the tire 180° to the tire pressure bulb on the front wheels.

NOTICE:

Do not rotate the tire more than 180°. In case of over-rotation, repeat the procedure from the point where the toe-in gauge is set.

- (f) Measure the distance between the tread center marks at the front end of the tires (measurement A).
- (g) Find the toe-in.

Standard:

$0 \pm 2 \text{ mm}$

HINT:

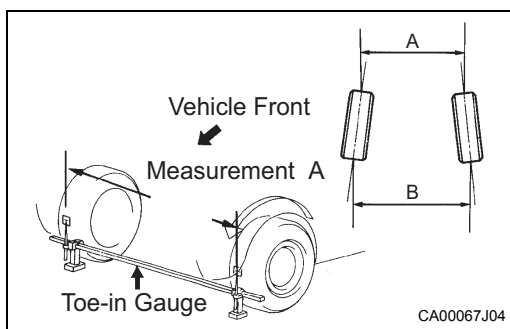
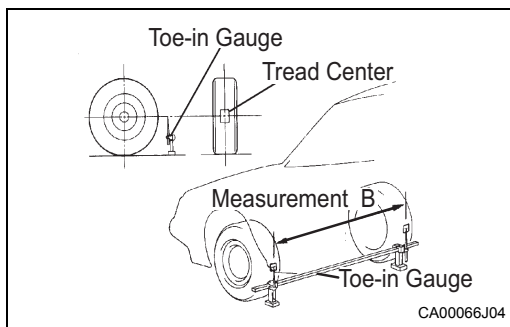
Toe-in = measurement B - measurement A

5. ADJUST TOE-IN

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

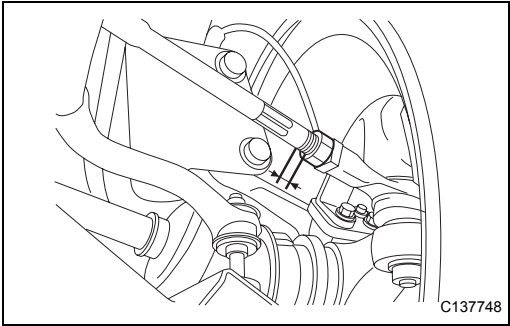
Standard:

Difference in thread lengths of 1.5 mm (0.059 in) or less



SP



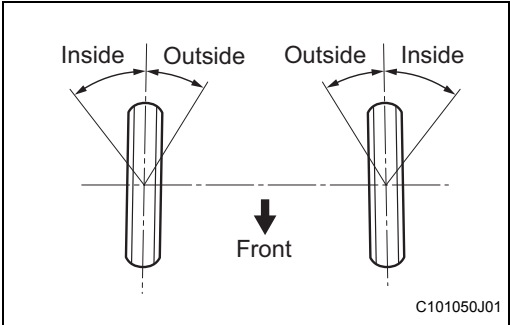


- (b) Loosen the tie rod end nuts.
- (c) Turn the right and left rack ends in the opposite directions by an equal amount to adjust the toe-in so that it is within the specified range.

Standard:

0 ± 2 mm

- (d) Tighten the nut of the tie rod end nut.
Torque: 47.1 N*m (480 kgf*cm)



6. CHECK WHEEL ANGLE

- (a) Set the turning radius gauge.
- (b) Check the wheel angle.

Standard:

	Mounted suspension	Inside Wheel	Outside Wheel (Reference)
215/65R16	STD	40°32 ' ±2°	34°05 ' ±2°
	Two Wheel Drive low down suspension	40°23 ' ±2°	33°46 ' ±2°
	Four Wheel Drive low down suspension	39°18 ' ±2°	33°02 ' ±2°
235/60R16	Standard suspension	39°06 ' ±2°	33°06 ' ±2°

NOTICE:

- Empty the vehicle (spare tires, tools, etc.)
- Remove the stop light fuse so that the stop light will not blink while checking.
- With the vehicle empty, apply pressure to the brake pedal that the front wheels do not rotate. Then check that the brake pedal is working.

7. ADJUST WHEEL ANGLE

- (a) Loosen the nut of the tie rod end nut.
- (b) Adjust the lengths of the right and left rack ends so that they are the same.

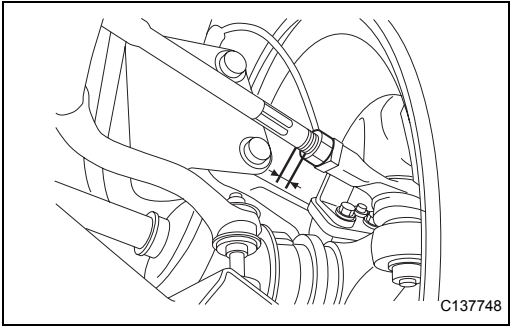
NOTICE:

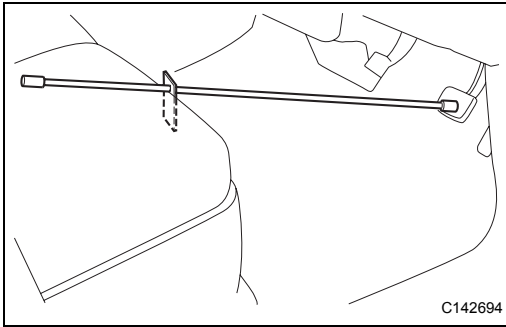
When adjusting, do not twist the boot.

- (c) Tighten the nut of the tie rod end nut.
Torque: 47.1 N*m (480 kgf*cm)

8. CHECK CAMBER, CASTER AND KING PIN ANGLE

- (a) Set the turning radius gauge.
- (b) Set the calibration of the turning radius gauge to 0° and lock.

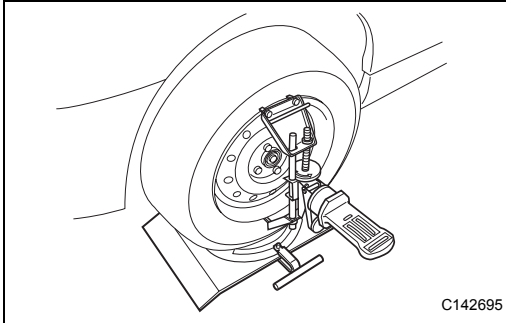




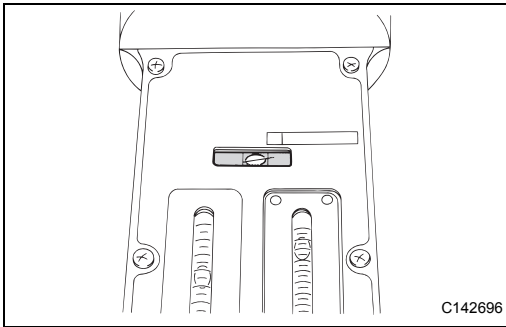
- (c) Get in the vehicle so that the center of the tire tread is aligned in the center of the turning radius gauge.

NOTICE:

- With the vehicle empty, apply pressure to the brake pedal so that the front wheels do not rotate. Then check that the brake pedal is working.
- When using a portable type turning radius gauge, make sure that the rear wheels have the same height and evenness.
- Remove the stop light switch fuse so that the stop light will not blink while checking.



- (d) Install the computer in the disk wheel. Then install the camber caster king pin gauge.
- (e) Set the calibration of the turning radius gauge to 0°. Then remove the lock on the turning radius gauge.
- (f) Install the center rod terminal of the camber caster king pin gauge so that it adjusts to the predefined position of the computer.
- (g) Check the camber.
- (h) Confirm straight symptoms.

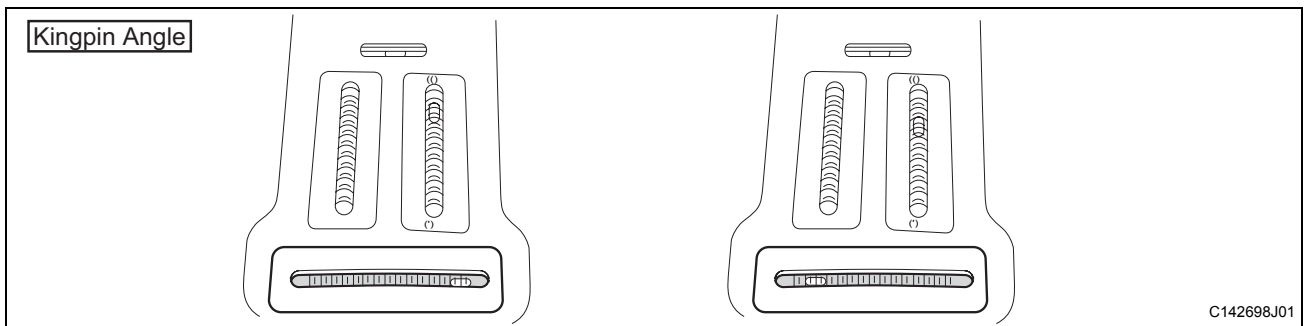
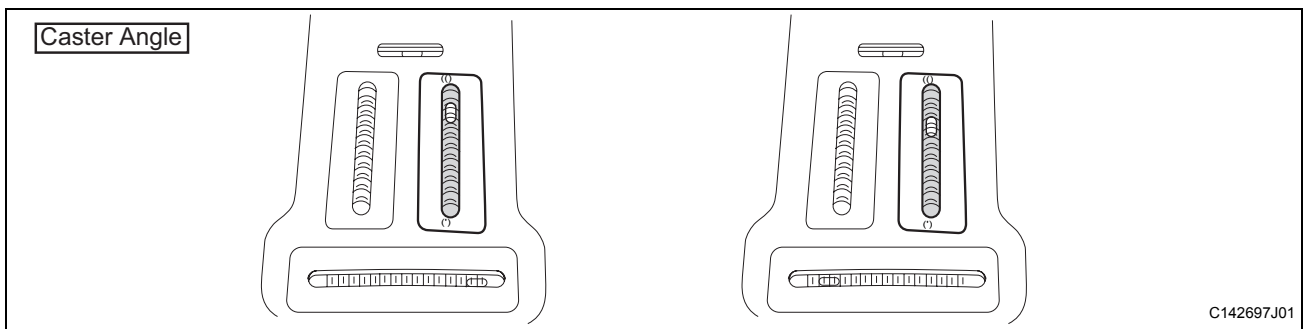


- (i) Set the gauge in a horizontal position so that the horizontal bubble of the gauge is in the center.
- (j) Read the calibration of the center position of the bubble in the gauge being used for camber measurements.

Standard

	Mounted suspension	Standard
Camber	Standard suspension	0°30'±45'
	Low down suspension	0°12'±45'

- (k) Check the caster angle and king pin angle (right wheel).



- (l) Turn the steering wheel to the right until calibration of the turning radius gauge reaches 20°.
- (m) Turn the adjustment screws for the caster angle and king pin angle of the gauge so that each bubble is aligned with "0".
- (n) Turn the steering wheel to the left until calibration of the turning radius gauge reaches 20°.
- (o) Read the calibration of the center position of the bubble in the gauge being used to measure the caster angle and the king pin angle.

Standard

	Mounted suspension	Standard
Caster angle	Standard suspension	4°53'±1°
	Low down suspension	4°53'±1°
King pin angle	Standard suspension	12°25'±1°
	Low down suspension	12°52'±1°

- (p) Check the caster angle and king pin angle (left wheel).
HINT:
Since the camber, caster and king pin angle have been adjusted to the standard values in advance, no adjustments are needed.
- (q) Remove the gauge and computer.

