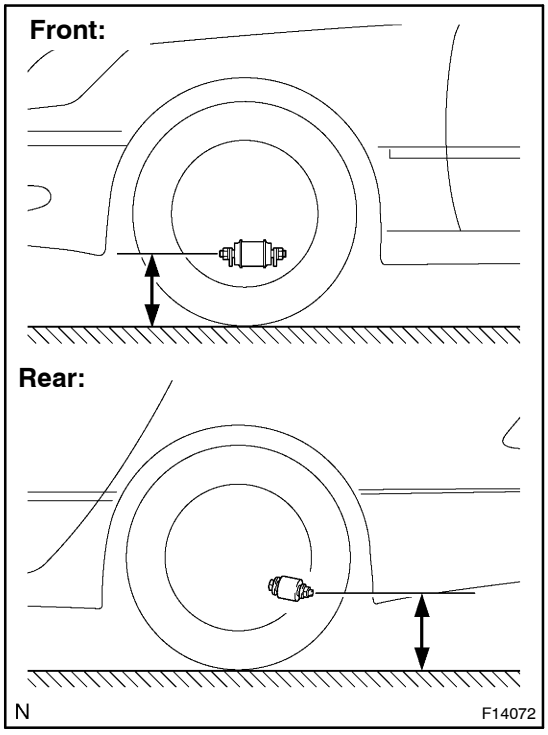


FRONT WHEEL ALIGNMENT

SA221–01

INSPECTION

1. w/o Electronic modulated air suspension:
MEASURE VEHICLE HEIGHT

When the radius of a wheel is 318 mm (12.52 in.) vehicle height will be the value described in the chart below.

Vehicle height:

Tire size	Front*1 mm (in.)	Rear*2 mm (in.)
225/55R17	214 (8.43)	233 (9.17)

*1: Front measuring point
Measure from the ground to the center of the lower suspension arm mounting bolt.
*2: Rear measuring point
Measure from the ground to the center of the lower suspension arm No.2 mounting bolt.

NOTICE:
Before inspecting the wheel alignment, adjust the vehicle height to specification.

If the vehicle height is not within the standard, try to adjust it by pushing down on or lifting the body.

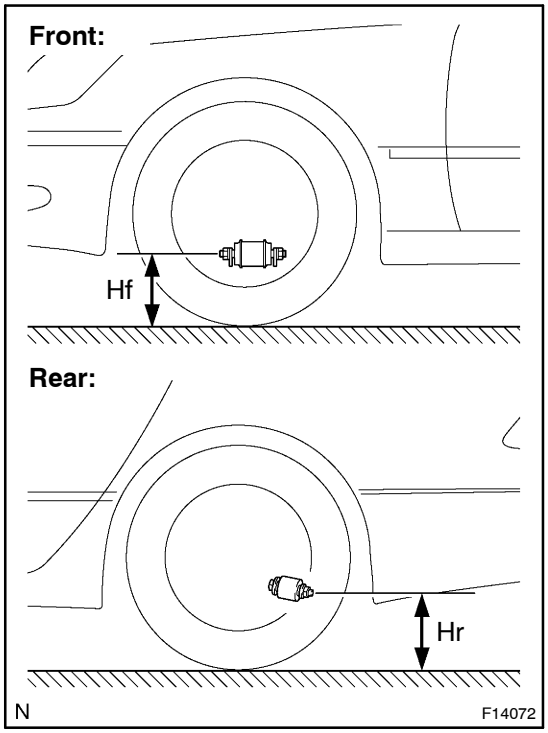
2. w/ Electronic modulated air suspension:
MEASURE VEHICLE HEIGHT

(a) Bounce the vehicle up and down several times to stabilize the suspension.
(b) Move the vehicle forward and backward by pushing it to settle the wheels.
(c) Place the shift lever in the N range.
(d) Release the parking brake.

NOTICE:
Block the wheels to keep the vehicle from rolling.

(e) Start the engine.
(f) Set the height control switch in the HIGH position, then after waiting 1 minute with the vehicle height in the raised condition, set the switch in the NORM position to lower the vehicle's height.
Wait 50 seconds with it in this condition. Repeat this operation one more.

HINT:
Be sure to perform this operation 2 times so that each suspension part settles down.



(g) When the radius of a tire is 318 mm (12.52 in.) vehicle height will be the value described in the chart below.

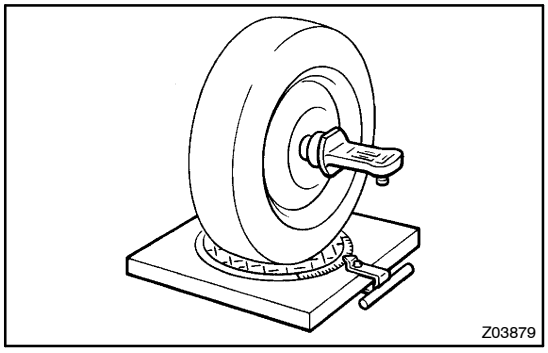
Vehicle height:

Tire size	Front*1 mm (in.)	Rear*2 mm (in.)
225/55R17	206 ± 10 (8.11 ± 0.39)	212 ± 10 (8.35 ± 0.39)

Left–right error: 10 mm (0.39 in.) or less
Hf – Hr = 27.5 ± 15 mm (1.08 ± 0.59 in.)
Hf = Measured value of the front vehicle height
Hr = Measured value of the rear vehicle height

*1: Front measuring point
Measure from the ground to the center of the lower suspension arm mounting bolt.
*2: Rear measuring point
Measure from the ground to the center of the lower suspension arm No. 2 mounting bolt.

NOTICE:
Before inspecting the wheel alignment, adjust the vehicle height to specification.
If the vehicle height is not standard, adjust it by turning the height control sensor link (See page SA–123).



3. INSTALL CAMBER–CASTER–KINGPIN GAUGE ONTO WHEEL ALIGNMENT TESTER

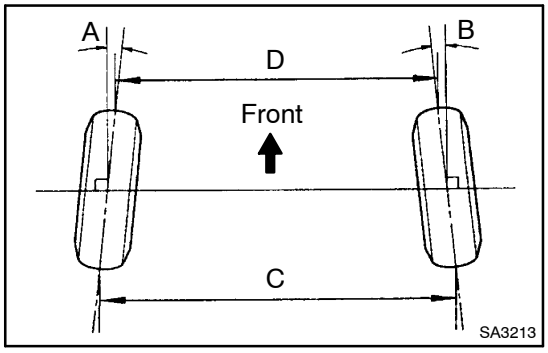
Follow the specific instructions of the equipment manufacturer.

4. INSPECT CAMBER, CASTER AND STEERING AXIS INCLINATION

Camber, caster and steering axis inclination:

	w/o Electronic modulated air suspension	w/ Electronic modulated air suspension
Camber Left– right error	–0°05' ± 45' (–0.08° ± 0.75°) 30' (0.5°) or less	–0°15' ± 45' (–0.25° ± 0.75°) 30' (0.5°) or less
Caster Left– right error	6°45' ± 45' (6.75° ± 0.75°) 30' (0.5°) or less	7°15' ± 45' (7.25° ± 0.75°) 30' (0.5°) or less
Steering axis inclination Left– right error	9°00' ± 45' (9° ± 0.75°) 30' (0.5°) or less	9°15' ± 45' (9.25° ± 0.75°) 30' (0.5°) or less

If the steering axis inclination is not as specified, after camber and caster have correctly adjusted, recheck the steering knuckle and front wheel for bearing or looseness.

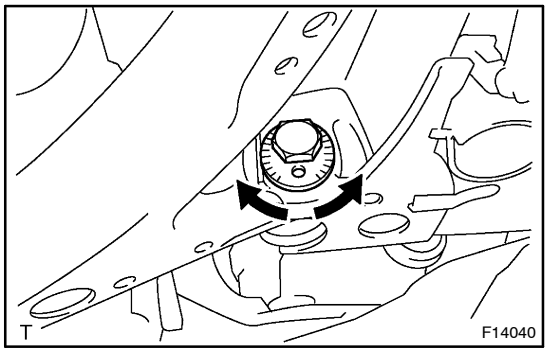


5. INSPECT TOE–IN

Toe–in:

Toe–in (Total)	A + B: 0°06' ± 12' (0.1° ± 0.2°) C – D: 1 ± 2 mm (0.04 ± 0.08 in.)

If the toe–in is not within the specification, adjust it at the tie rod end.



6. ADJUST CAMBER

HINT:

- After adjusting the camber, inspect the caster and toe–in.
- Try to adjust the camber to the center value.

(a) Loosen the camber adjusting cam nut.

(b) Turn the camber adjusting cam and adjust camber.

HINT:

Camber changes about 6'18" (0.11°) with each graduation of the cam.

(c) Torque the camber adjusting cam.

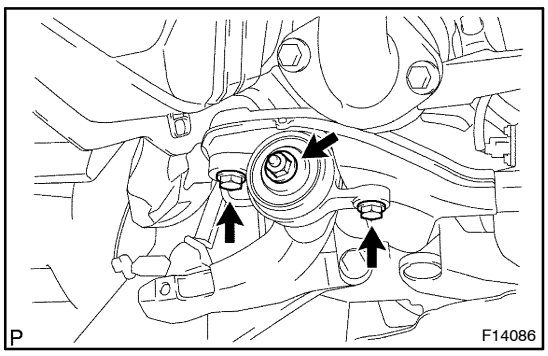
Torque: 172 N·m (1,755 kgf·cm, 127 ft·lbf)

7. ADJUST CASTER

HINT:

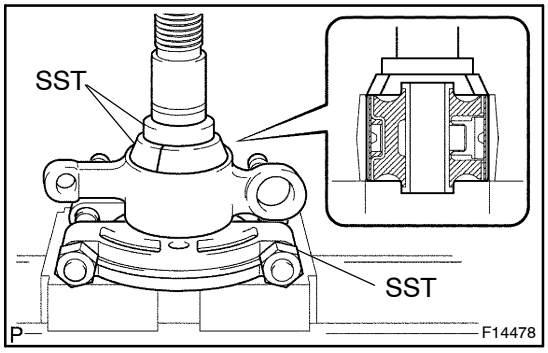
The caster can be adjusted by replacing the No. 2 bushing bracket.

(a) Jack up the vehicle and make the wheels in full rebound condition.



(b) Remove the nut and washer from the rear of the lower No. 2 bushing.

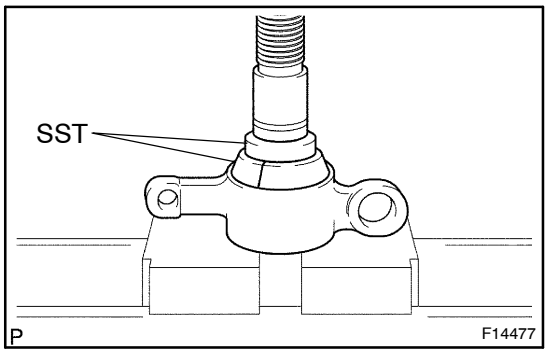
(c) Remove the bolts from the right and left sides of the lower No. 2 bushing bracket and take out the bracket from the lower arm.



(d) Using SST and a press, remove the lower No. 2 bushing from the bracket. According to the table below, replace the bracket and press–fit the removed bushing.
SST 09613–26010, 09950–00020, 09950–60010 (09951–00650)

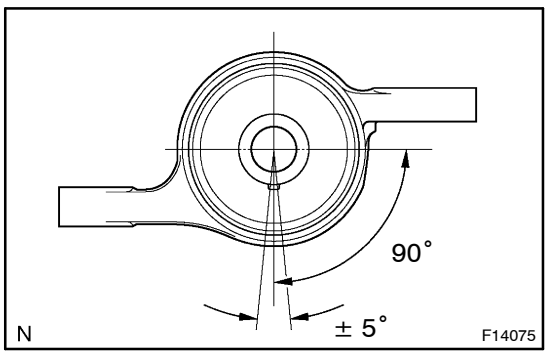
Part No.	Adjustment Amount
48652–50040	+30’
48652–50050	–30’

HINT:
- Push the part shown in the illustration to remove.
- For SST 09613–26010, use 2 thicker half–rings as a pair.



(e) Using SST and a press, reinstall a bushing as shown in the illustration.
SST 09613–26010, 09950–60010 (09951–00650)

HINT:
- For SST 09613–26010, use 2 thicker half–rings as a pair.



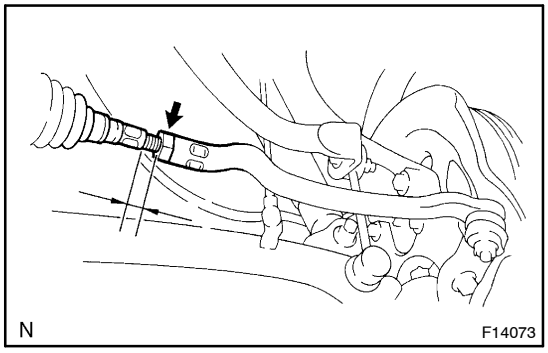
- Set a projection of the bushing to the position shown in the illustration.

(f) Install the lower bracket into the lower arm shaft. Temporarily install the washer and nut removed in (b) until it goes by hand.

NOTICE:
Do not install them completely in this stage.

(g) install the 2 bolts that removed in (c).
Torque:
Vehicle inside: 60 N·m (612 kgf·cm, 44 ft·lbf)
Vehicle outside: 137 N·m (1,395 kgf·cm, 101 ft·lbf)

(h) Put down the vehicle and, with its wheels completely grounded, tighten the nut that is temporarily installed in (e).
Torque: 137 N·m (1,395 kgf·cm, 101 ft·lbf)



8. ADJUST TOE–IN

HINT:

Toe–in adjustment should be performed after caster adjustment.

(a) Remove the boot clips.

(b) Loosen the tie rod end lock nut.

(c) Turn the left and right rack ends an equal amount to adjust the toe–in.

HINT:

- Try to adjust the toe–in the center value.
- Make sure that the length of the left and right rack ends length is same.

  Rack end length difference: 1.0 mm (0.039 in.) or less

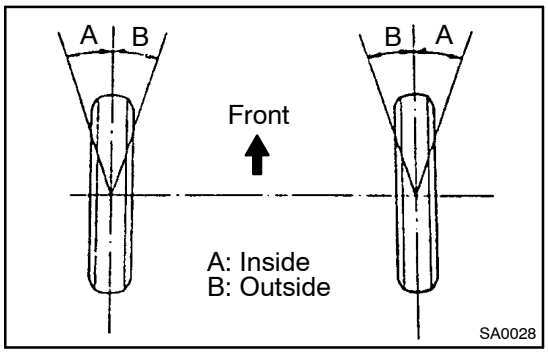
(d) Torque the tie rod end lock nuts.

  Torque: 56 N·m (570 kgf·cm, 41 ft·lbf)

(e) Place the boot on the seat and clamp it.

HINT:

Make sure that the boots are not twisted.



9. INSPECT WHEEL ANGLE

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

Wheel turning angle:

Inside wheel	43˚30’ (43.5˚)
Outside wheel: Reference	37˚20’ (37.33˚)

If the wheel angles differ from the standard of the specification, inspect the toe–in.