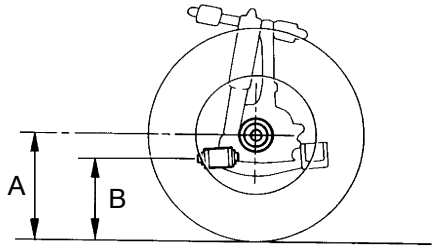
FRONT WHEEL ALIGNMENT (1GR–FE)

260BH–02

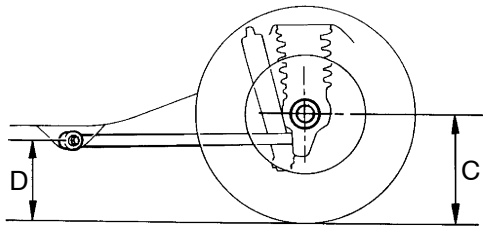
ADJUSTMENT

1. INSPECT TIRE

FRONT:



REAR:



D28453

2. MEASURE VEHICLE HEIGHT

Vehicle height:

5 Door Except air suspension:

	Front A – B	Rear C – D
GRJ120L – GKMGK		
for 5 passenger:	76.1 mm (3.00 in.)	53.7 mm (2.11 in.)
for 8 passenger:	75.6 mm (2.98 in.)	58.0 mm (2.28 in.)
GRJ120L – GKPGK		
for 5 passenger:	77.6 mm (3.06 in.)	54.0 mm (2.13 in.)
for 8 passenger:	77.1 mm (3.04 in.)	58.4 mm (2.30 in.)
GRJ120L – GKMGKV		
for 5 passenger:	79.0 mm (3.11 in.)	54.4 mm (2.14 in.)
for 8 passenger:	78.6 mm (3.09 in.)	58.7 mm (2.31 in.)
for 9 passenger:	78.8 mm (3.10 in.)	56.5 mm (2.22 in.)
GRJ120L – GKPGKV		
for 5 passenger:	77.8 mm (3.06 in.)	54.1 mm (2.13 in.)
for 8 passenger:	77.3 mm (3.04 in.)	58.5 mm (2.30 in.)
for 9 passenger:	77.5 mm (3.05 in.)	56.3 mm (2.22 in.)
GRJ120R – GKMEKQ		
for 5 passenger:	79.0 mm (3.11 in.)	53.2 mm (2.09 in.)
for 8 passenger:	78.5 mm (3.09 in.)	57.6mm (2.27 in.)
GRJ120R – GKPEKQ		
for 5 passenger:	80.5 mm (3.17 in.)	53.6 mm (2.11 in.)
for 8 passenger:	80.0 mm (3.15 in.)	57.9 mm (2.28 in.)
GRJ120R – GKPGKQ		
for 5 passenger:	83.3 mm (3.28 in.)	55.4 mm (2.18 in.)
for 8 passenger:	82.8 mm (3.26 in.)	59.7 mm (2.35 in.)
GRJ120R – GKPEKW		
for 5 passenger:	79.0 mm (3.11 in.)	53.2 mm (2.09 in.)
for 8 passenger:	78.9 mm (3.11 in.)	52.9 mm (2.08 in.)
GRJ120L – GKPEKW		
for 5 passenger:	79.0 mm (3.11 in.)	53.2 mm (2.09 in.)
for 8 passenger:	78.9 mm (3.10 in.)	52.9 mm (2.08 in.)
GRJ120L – GKMEKW		
for 5 passenger:	77.5 mm (3.05 in.)	52.8 mm (2.09 in.)
for 8 passenger:	77.4 mm (3.05 in.)	52.6 mm (2.08 in.)

5 Door Air suspension:

	Front A – B	Rear C – D
GRJ120L – GKMGK		
for 5 passenger:	75.0 mm (2.95 in.)	65.1 mm (2.56 in.)
for 8 passenger:	75.0 mm (2.95 in.)	65.0 mm (2.56 in.)
GRJ120L – GKPGK		
for 5 passenger:	76.5 mm (3.01 in.)	65.6 mm (2.58 in.)
for 8 passenger:	76.5 mm (3.01 in.)	65.3 mm (2.57 in.)
GRJ120L – GKMGKV		
for 5 passenger:	78.0 mm (3.07 in.)	65.9 mm (2.59 in.)
for 8 passenger:	77.9 mm (3.07 in.)	65.7 mm (2.59 in.)
for 9 passenger:	78.0 mm (3.07 in.)	65.8 mm (2.59 in.)
GRJ120L – GKPGKV		
for 5 passenger:	76.8 mm (3.02 in.)	65.7 mm (2.59 in.)
for 8 passenger:	76.7 mm (3.02 in.)	65.4 mm (2.57 in.)
for 9 passenger:	76.7 mm (3.02 in.)	65.6 mm (2.58 in.)
GRJ120R – GKMEKQ		
for 5 passenger:	77.8 mm (3.06 in.)	65.8 mm (2.59 in.)
for 8 passenger:	77.8 mm (3.06 in.)	65.6 mm (2.58 in.)
GRJ120R – GKPEKQ		
for 5 passenger:	79.3 mm (3.12 in.)	66.1 mm (2.60 in.)
for 8 passenger:	79.2 mm (3.12 in.)	65.9 mm (2.59 in.)
GRJ120R – GKPGKQ		
for 5 passenger:	82.3 mm (3.24 in.)	66.8 mm (2.63 in.)
for 8 passenger:	82.2 mm (3.24 in.)	66.7 mm (2.63 in.)
GRJ120R – GKPEKW		
for 5 passenger:	77.8 mm (3.06 in.)	65.8 mm (2.59 in.)
for 8 passenger:	77.8 mm (3.06 in.)	65.6 mm (2.58 in.)
GRJ120L – GKPEKW		
for 5 passenger:	77.8 mm (3.06 in.)	65.8 mm (2.59 in.)
for 8 passenger:	77.8 mm (3.06 in.)	65.6 mm (2.58 in.)
GRJ120L – GKMEKW		
for 5 passenger:	76.3 mm (3.00 in.)	65.4 mm (2.57 in.)
for 8 passenger:	76.3 mm (3.00 in.)	65.2 mm (2.57 in.)

3 Door:

	Front A – B	Rear C – D
GRJ125L – GJPGK	80.9 mm (3.19 in.)	58.1 mm (2.29 in.)
GRJ125L – GJPGKV	84.1 mm (3.31 in.)	59.0 mm (2.32 in.)
GRJ125L – GJMEKW	77.9 mm (3.07 in.)	56.1 mm (2.21 in.)
GRJ125L – GJPEKW	79.5 mm (3.13 in.)	56.6 mm (2.23 in.)

Measuring points:

A: Ground clearance of front wheel center

B: Ground clearance of lower suspension arm No.2 set bolt center

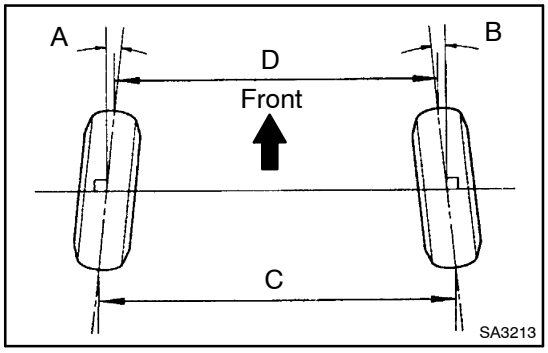
C: Ground clearance of rear wheel center

D: Ground clearance of strut rod set bolt center

NOTICE:

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

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



3. INSPECT TOE–IN

Toe–in:

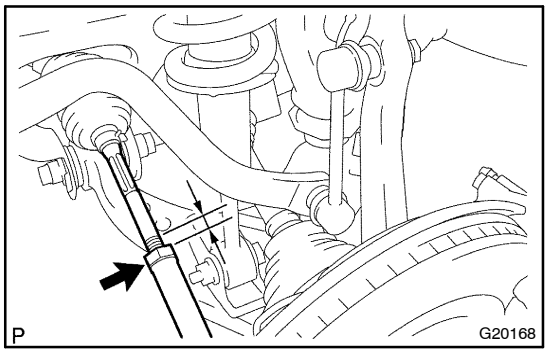
Toe–in (total)	5 Door:	A + B: 0°10' ± 0°10' (0.16° ± 0.16°) C – D: 2 ± 2 mm (0.08 ± 0.08 in.)
	3 Door:	A + B: 0°05' ± 0°10' (0.08° ± 0.16°) C – D: 1 ± 2 mm (0.04 ± 0.08 in.)

If the toe–in is not within the specified value, adjust it at the rack ends.

4. ADJUST TOE–IN

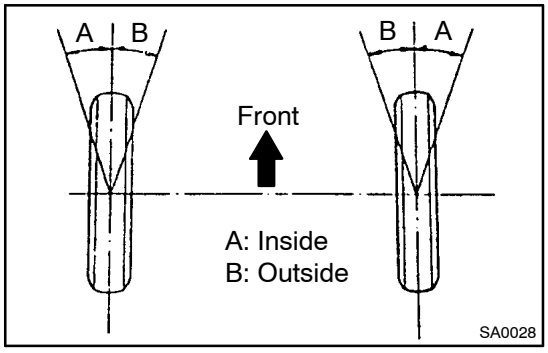
(a) Remove the rack boot set clips.
(b) Loosen the tie rod end lock nuts.
(c) Turn the right and left rack ends by an equal amount to adjust the toe–in.

HINT:
Try to adjust the toe–in to the center of the specified value.



(d) Make sure that the lengths of the right and left rack ends are the same.
(e) Torque the tie rod end lock nuts.
Torque: 88 N·m (897 kgf·cm, 65 ft·lbf)
(f) Place the boots on the seats and install the clips.

HINT:
Make sure that the boots are not twisted.



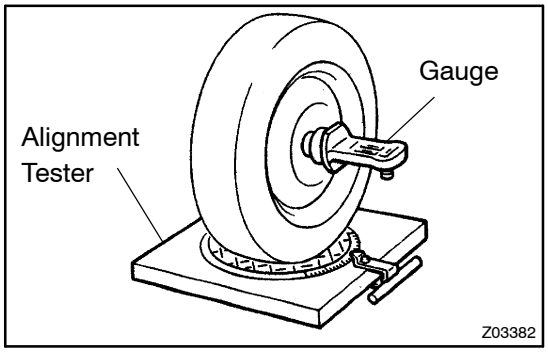
5. INSPECT WHEEL ANGLE

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

Wheel angle:

Inside wheel	Outside wheel (Reference)
36°20' (34°20' – 37°20') 36.33° (34.33° – 37.33°)	33°14' 33.23°

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



6. INSPECT CAMBER, CASTER AND STEERING AXIS INCLINATION

(a) Install the camber–caster–kingpin gauge or position vehicle on a wheel alignment tester.
(b) Inspect the camber, the caster and the steering axis inclination.

Camber, caster and steering axis inclination:
5 Door Except air suspension:

Camber	0°19' ± 45' (0.32° ± 0.75°)
Right–left error	45' (0.75°) or less
Caster	2°40' ± 45' (2.67° ± 0.75°)
Right–left error	45' (0.75°) or less
Steering axis inclination	12°11' ± 45' (12.18° ± 0.75°)
Right–left error	45' (0.75°) or less

5 Door Air suspension:

Camber Right–left error	0°19' ± 45' (0.32° ± 0.75°) 45' (0.75°) or less
Caster Right–left error	2°56' ± 45' (2.93° ± 0.75°) 45' (0.75°) or less
Steering axis inclination Right–left error	12°11' ± 45' (12.18° ± 0.75°) 45' (0.75°) or less

3 Door:

Camber Right–left error	0°16' ± 45' (0.27° ± 0.75°) 45' (0.75°) or less
Caster Right–left error	2°41' ± 45' (2.68° ± 0.75°) 45' (0.75°) or less
Steering axis inclination Right–left error	12°14' ± 45' (12.23° ± 0.75°) 45' (0.75°) or less

If the steering axis inclination is not as specified after adjusting the camber and the caster have been correctly adjusted, re-check the steering knuckle and the front wheel for distortion or looseness.

7. ADJUST CAMBER AND CASTER

NOTICE:

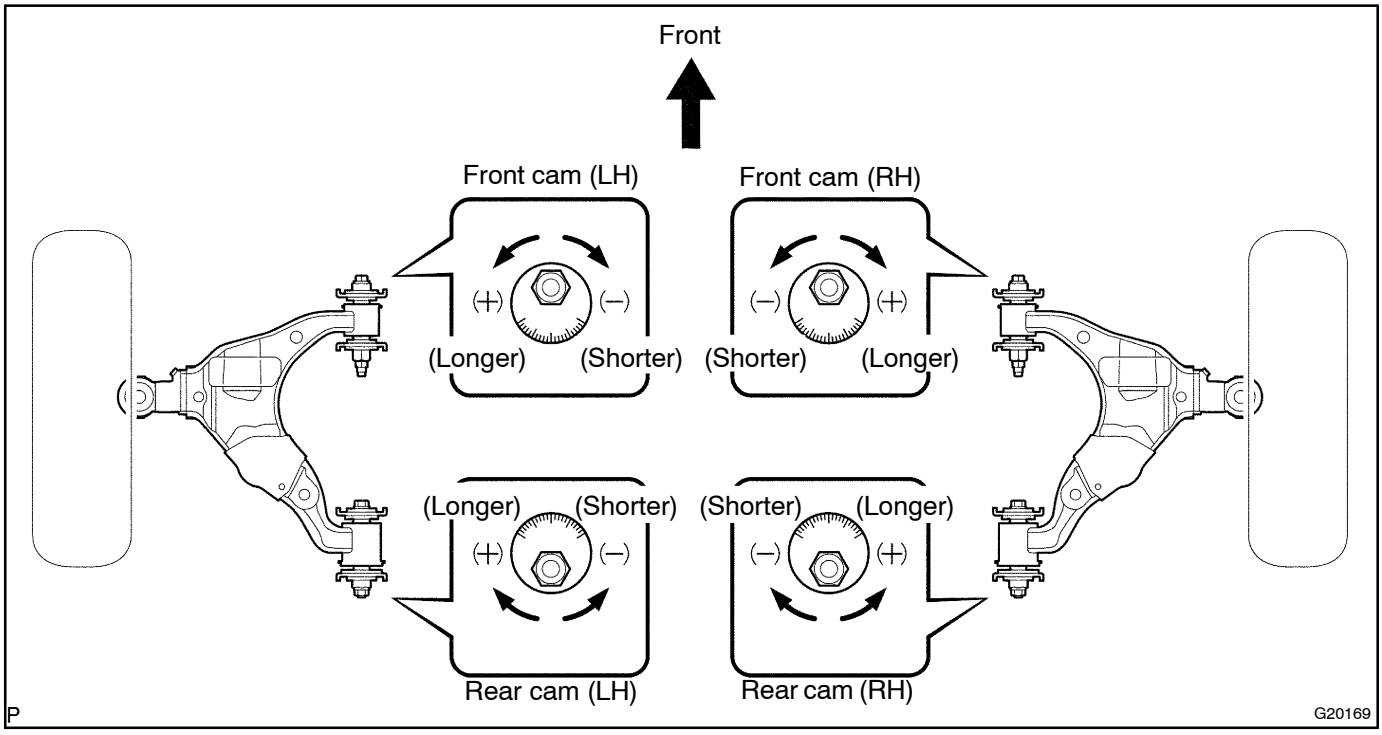
After adjusting the camber, inspect the toe–in.

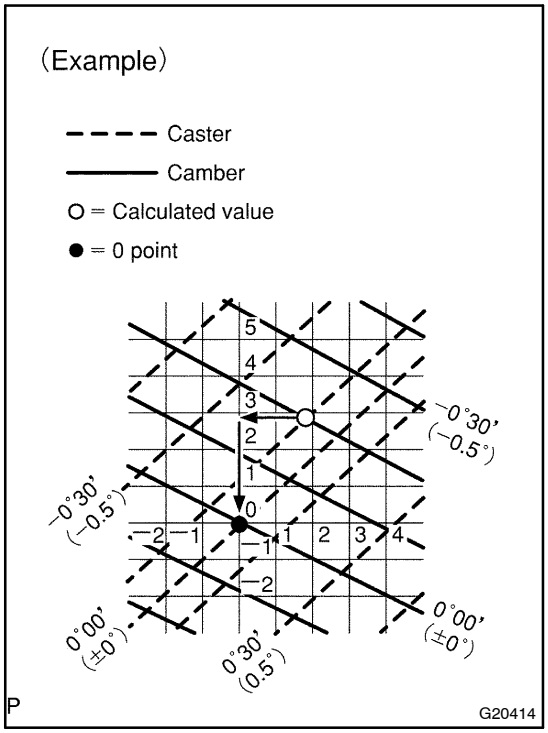
(a) Loosen the nut and the bolt.

(b) Turn the camber adjust cam No.2 and the toe adjust plate No.2 in the circumference direction, and adjust the camber and the caster.

HINT:

Try to adjust the camber and caster to the center value.





(c) How to read adjustment chart (using examples).

(1) Measure the alignment.

Camber: 0°15' (0.25°)

Caster: 2°45' (2.75°)

(2) Make the difference between the standard value (A) and the measured value (B) on the adjustment chart.

Standard value:

Camber: 0°35' (0.58°)

Caster: 2°55' (2.92°)

Formula: B – A = C

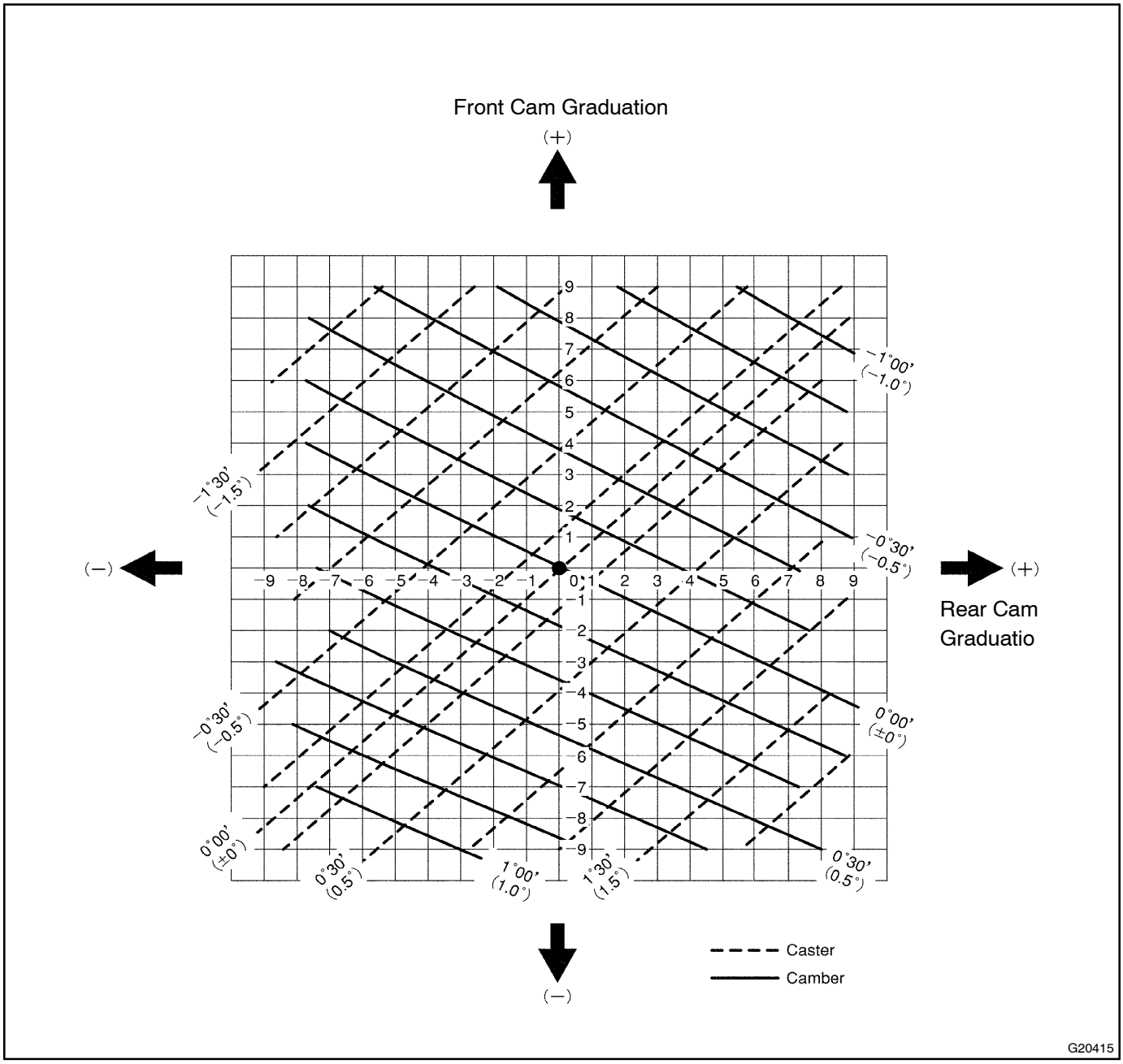
Camber: 0°15' – (0°35') = – 0°20'

Caster: 2°45' – (2°55') = – 0°10'

(3) As shown in the chart, read the distance from the marked point to 0 point, and adjust the front and/or rear adjusting cams accordingly.

Toe adjust cam: – (Shorter) 2.8

Camber adjust cam: – (Shorter) 1.8


Front Cam Graduation
(+)
(−)
(−)
(+)
Rear Cam
Graduatio
−1°30'
(−1.5°)
−1°00'
(−1.0°)
−0°30'
(−0.5°)
0°00'
(±0°)
0°30'
(0.5°)
1°00'
(1.0°)
1°30'
(1.5°)
Caster
Camber
G20415