Component Procedures: Alignment

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Component Procedures: Alignment

Parts and Labor (itype_189)

Labor

Operation	Qualifier Path	Skill	Std Hrs	Wty Hrs
Adjust	Front Suspension > Suspension Service > Toe-I?	B	0.6	0.0
Align	Suspension > Suspension Service > Wheels, Ali?	B	1.9	0.0
Align	Suspension > Suspension Service > Wheels, Ali?	B	1.4	0.0
Align	Suspension > Suspension Service > Wheels, Ali?	B	1.2	0.0

Alignment - Repair Procedures (Article 44292)

- Front wheel alignment

When using a commercially available computerized wheel alignment equipment to inspect the front wheel alignment, always position the vehicle on a level surface with the front wheels facing straight ahead. Prior to inspection, make sure that the front suspension and steering system are in normal operating condition and that the tires are inflated to the specified pressure.

- When using a commercially available computerized wheel alignment equipment to inspect the front wheel alignment, always position the vehicle on a level surface with the front wheels facing straight ahead.
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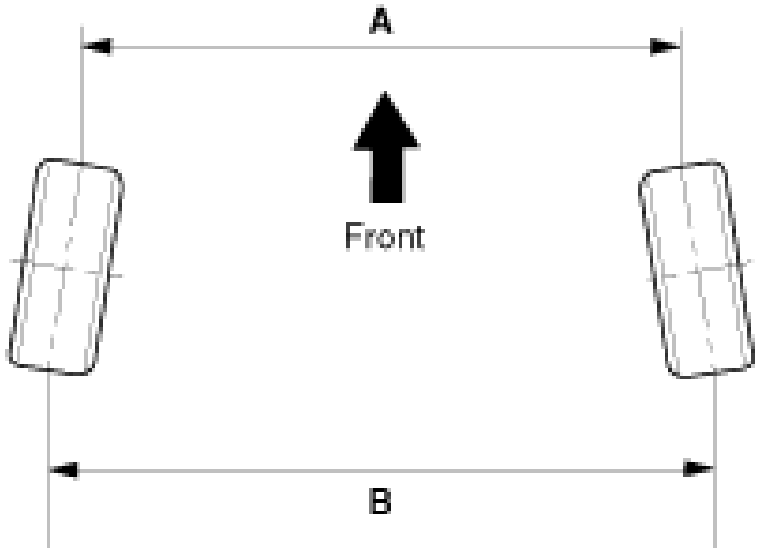
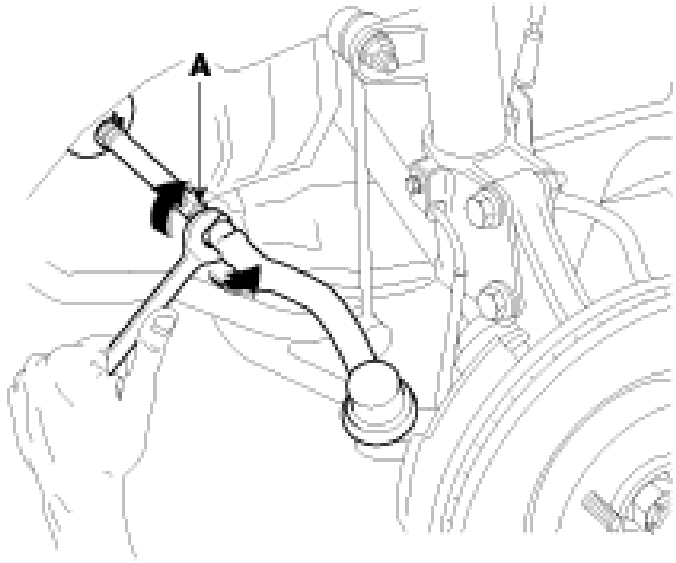
Toe



Toe adjustment

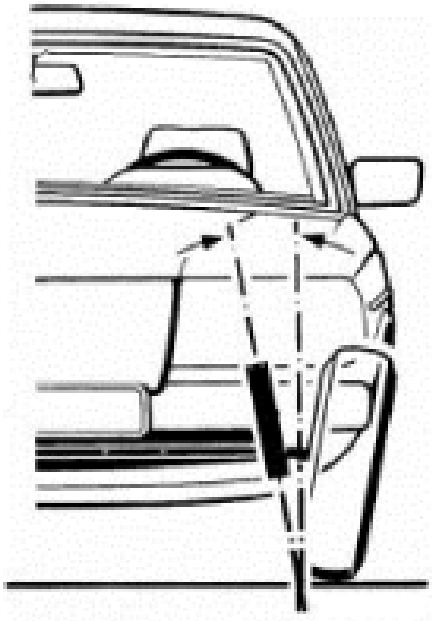
- Loosen the tie rod end lock nut.
- Remove the bellows clip to prevent the bellows from being twisted.
- Adjust the toe by screwing or unscrewing the tie rod . Toe adjustment should be made by turning the right and left tie rods by the same amount. Toe-in Total : 0.1■ ± 0.2■ Individual : 0.05■ ± 0.1■



- When completing the toe adjustment, install the bellows clip and tighten the tie rod end lock nut to specified torque. Tightening torque : 49.0 - 53.9 N.m (5.0 - 5.5 kgf.m, 36.2 - 39.8 lb-ft)

Camber and Caster

King-pin angle



The worn loose or damaged parts of the front suspension assembly must be replaced prior to measuring front wheel alignment. Caster are pre-set to the specified value at the factory and don't need to be adjusted. If the caster are not within specifications, replace bent or damaged parts. The difference of left and right wheels about the the caster must be within the range of 0° ± 0.5°.

- The worn loose or damaged parts of the front suspension assembly must be replaced prior to measuring front wheel alignment.
- Caster are pre-set to the specified value at the factory and don't need to be adjusted.
- If the caster are not within specifications, replace bent or damaged parts.
- The difference of left and right wheels about the the caster must be within the range of 0° ± 0.5°.

- Rear Wheel Alignment

When using a commercially available computerized wheel alignment equipment to inspect the rear wheel alignment, always position the vehicle on a level surface. Prior to inspection, make sure that the rear suspension system is in normal operating condition and that the tires are inflated to the specified pressure.

- When using a commercially available computerized wheel alignment equipment to inspect the rear wheel

alignment, always position the vehicle on a level surface.
- Prior to inspection, make sure that the rear suspension system is in normal operating condition and that the tires are inflated to the specified pressure.
Camber

Steering System - Specifications (Article 44237)

- Specifications
Item Specification
Type Electric Power Steering System
Steering gear Type Rack ■ Pinion
Rack stroke 154±1 mm (6.07±0.04 in)
Steering angle (Max.) Inner 39.4°+0.5° / -1.5°
Outer 32.6°
Tightening Torques
Item Tightening torque (kgf.m)
N.m kgf.m lb-ft
Hub nut s 107.9 ~ 127.5 11.0 ~ 13.0 79.6 ~ 94.0
Steering wheel lock nut 44.1 ~ 49.0 4.5 ~ 5.0 32.5 ~ 36.2
Steering column mounting Bolt 53.9 ~ 58.8 5.5 ~ 6.0 39.8 ~ 43.4
Nuts 25.0 ~ 29.4 2.5 ~ 3.0 14.5 ~ 21.7
Steering column to Universal joint 49.0 ~ 58.8 5.0 ~ 6.0 39.8 ~ 43.4
Bolt connecting universal joint to pinion 32.4 ~ 38.3 3.3 ~ 3.8 23.9 ~ 27.5
Tie rod end castle nut 24.5 ~ 34.3 2.5 ~ 3.5 18.1 ~ 25.3
Lower arm to front axle 58.8 ~ 70.6 6.0 ~ 7.2 43.4 ~ 52.1
Steering gear box to sub frame 88.3 ~ 107.9 9.0 ~ 11.0 65.1 ~ 79.6
Stabilizer link nut 98.1 ~ 117.7 10.0 ~ 12.0 72.3 ~ 86.8
Sub frame mounting bolts ■ nuts 156.9 ~ 176.5 16.0 ~ 18.0 115.7 ~ 130.2

Suspension System - Specifications (Article 44264)

- Specifications
Front Suspension
Item Specification
Suspension type Mac Pherson Strut
Shock absorber Type Advanced Valve(RS Valve)
Rear Suspension
Suspension type Torsion Beam Axle
Wheel & Tire
Wheel Aluminum 6.0J * 15
6.5J * 16
7.0J * 17
7.5J * 18
Steel 6.0J * 15
Tire 195/65 R15
205/55 R16
225/45 R17
225/40 R18
Spare tire TMK (tire mobility kit)
T125/80 D15
T125/80 D16
Tire pressure kPa (psi) 195/65 R15 230 (33)
205/55 R16 230 (33)
215/45 R17 230 (33)
225/40 R18 230 (33)
T125/80 D15 420 (60)
T125/80 D16 420 (60)
Wheel Alignment
Front Toe-in Total 0.1° ± 0.2°
Individual 0.05° ± 0.1°
Camber angle -0.55 ± 0.5°

Caster angle 4.5° ± 0.5°
King-pin angle 14.0° ± 0.5°
Ride Height 367 ± 10 mm (14.4488 ± 0.3937)
Rear Toe-in Total 0.34° ± 0.3°
Individual 0.17° ± 0.15°
Camber angle -1.2° ± 0.5°
Ride Height 364 ± 10 mm (14.3307 ± 0.3937)
Tightening Torques
Item Tightening torque (kgf.m)
N.m kgf.m lb-ft
Hub nut s 107.9 - 127.5 11.0 - 13.0 79.6 - 94.0
Lower arm to sub frame (Front) 117.7 - 137.3 12.0 - 14.0 86.8 - 101.3
Lower arm to sub frame (Rear) 156.9 - 176.5 16.0 - 18.0 115.7 - 130.2
Lower arm to knuckle 58.8 - 70.6 6.0 - 7.2 43.4 - 52.1
Tie rod end castle nut 24.5 - 34.3 2.5 - 3.5 18.1 - 25.3
Steering gear box to sub frame 88.3 - 107.9 9.0 - 11.0 65.1 - 79.6
Stabilizer bar to stabilizer link 98.1 - 117.7 10.0 - 12.0 72.3 - 86.8
Stabilizer bar to sub frame 44.1 - 53.9 4.5 - 5.5 32.5 - 39.8
Stabilizer bar to front strut assembly 98.1 - 117.7 10.0 - 12.0 72.3 - 86.8
Front strut assembly to front axle 156.9 - 176.5 16.0 - 18.0 115.7 - 130.2
Strut assembly lock nut 98.1 10 72.3
Sub frame mounting bolt & nut 156.9 - 176.5 16.0 - 18.0 115.7 - 130.2
Sub frame stay bolt 44.1 - 53.9 4.5 - 5.5 32.5 - 39.8
Bolt connecting universal joint to pinion 32.4 - 38.3 3.3 - 3.8 23.9 - 27.5
Roll rod bracket to roll rod support bracket fixing bolt & nut 107.9 - 127.5 11.0 - 13.0 79.6 - 94.0
Hub nuts 107.9 - 127.5 11.0 - 13.0 79.6 - 94.0
Shock absorber to body 49.0 - 63.7 5.0 - 6.5 36.2 - 47.0
Shock absorber to torsion beam axle 98.1 - 117.7 10.0 - 12.0 72.3 - 86.8
Torsion beam axle to frame 156.9 - 176.5 16.0 - 18.0 115.7 - 130.2
Bitmap Torsion beam axle to brake caliper 63.7 - 73.5 6.5 - 7.5 47.0 - 54.2

All New Technical Service Bulletins (itype_432)

Tsbs
- WHEEL ALIGNMENT REQUIREMENTS AND BEST PRACTICES (25-SS-001H, 2025/01/14)

All Technical Service Bulletins (itype_100)

Tsbs
- WHEEL ALIGNMENT REQUIREMENTS AND BEST PRACTICES (25-SS-001H, 2025/01/14)

OEM Policies and Procedures (itype_120)

Tsbs
- WHEEL ALIGNMENT REQUIREMENTS AND BEST PRACTICES (25-SS-001H, 2025/01/14)