Suspension System

GENERAL

SPECIFICATIONS E5F865DF

Items		Specifications		
		BETA M/T	BETA, DELTA A/T DSL M/T	DSL A/T
Front suspen-sion	**Model**	Macpherson strut type		
	Shock absorber Type Stroke mm(in.) Identification color	 Gas type 160.7(6.33) Red		
	Coil spring-2WD Inside dia. mm(in.) Outside dia. mm Load rate Kgf/mm Free height mm(in.) Identification color	 Ø137.6(5.42) Ø165~168(6.50~6.61) 3.1±0.15 325.8(12.83) YELLOW	 Ø137.6(5.42) Ø165~168(6.50~6.61) 3.1±0.15 332.3(13.08) GREEN	 Ø137.5(5.41) Ø165~168(6.50~6.61) 3.1±0.15 338.7(13.34) ORANGE
	Coil spring-4WD Inside dia. mm(in.) Outside dia. mm(in.) Load rate Kgf/mm Free height mm(in.) Identification color	 Ø137.5(5.41) Ø165~168(6.50~6.61) 3.2±0.16 328.1(12.92) YELLOW-YELLOW	 Ø137.4(5.41) Ø165.1~168.1(6.50~6.62) 3.2±0.16 334.3(13.16) GREEN-GREEN	 Ø137.4(5.41) Ø165.2~168.2(6.50~6.62) 3.2±0.16 340.6(13.41) ORANGE-ORANGE
Rear suspen-sion	**Model**	Dual link		
	Shock absorber Type Stroke mm(in.) Identification color	 Gas type 191.0(7.52) WHITE		
	Coil spring	2WD	4WD	
	Min. dia. mm(in.) Max. dia. mm(in.) Load rate Kgf/mm Measurement range of rate mm(in.) Free height mm(in.) Identification color	Ø100 (3.94) Ø170 (6.69) 2.8±0.14 154.3~300.8 (6.08~11.84) 346.5(13.64) YELLOW	Ø100 (3.94) Ø170 (6.69) 2.9±0.15 156.6~301.5(6.17~11.87) 349.8(13.77) WHITE	

Items		Specifications			
Wheel & Tire	**Wheel alignment**	**Front**		**Rear**	
	Dimension	P215/65R16	P235/60R16	P215/65R16	P235/60R16
	Toe-in mm(in.)	±2(0.079)	±2(0.079)	4.6+3,-1	4.6+3,-1
	Camber	0°±30′	0°±30′	0°55′±30′	0°55′±30′
	Caster angle(to ground)	3°32′±30′	3°32′±30′	-	-
	Caster angle(to body)	3°52′	3°52′	-	-
	King pin angle	12°46′±30′	12°46′±30′	-	-
	King pin offset mm(in.)	-9.73(0.383)	-10.41(0.410)	-	-
	Side slip mm(in.)	±3(0.118)	±3(0.118)	-	-
	Wheel Size Run out mm(in.)	AL wheel 6.5JX16 Radial : 0.3(0.01), Lateral : 0.3(0.01)			
	Tire Size Inflation pressure kg/cm^2 (psi)	 P215/65R16, P235/60R16 2.1±0.07(30+1.0)			

TIGHTENING TORQUE

Items	Nm	Kgf·cm	lbf·ft
Front suspension			
Wheel nut	90~110	900~1100	66.4~81.2
Strut upper mounting nut	45~60	450~600	33.2~44.3
Strut lower mounting nut	140~160	1400~1600	103.3~118.0
Strut mounting self-locking nut	60~70	600~700	44.3~51.6
Speed sensor cable mounting bolt	7~11	70~110	5.2~8.1
Lower arm mounting nut	80~90	800~900	59.0~66.4
Lower arm bush(A) mounting bolt	100~120	1000~1200	73.8~88.5
Lower arm bush(G) mounting bolt	140~160	1400~1600	103.3~118.0
Stabilizer bracket mounting bolt	50~65	500~650	36.9~48.0
Stabilizer link mounting nut	100~120	1000~1200	73.8~88.5
Tie rod end ball joint mounting nut	45~60	450~600	33.2~44.3
Tie rod toe adjustment nut	50~60	500~600	36.9~44.3
Rear suspension			
Wheel nut	90~100	900~1100	66.4~81.2
Strut upper mounting nut	30~40	300~400	22.1~29.5
Strut lower mounting nut	140~160	1400~1600	103.3~118.0
Strut mounting self-locking nut	40~55	400~550	29.5~40.6
Speed sensor cable mounting bolt	7~11	70~110	5.2~8.1
Stabilizer bracket mounting bolt	50~65	500~650	36.9~48.0
Stabilizer link mounting nut	100~120	1000~1200	73.8~88.5
Tie rod toe adjustment nut	50~60	500~600	36.9~44.3
Suspension arm mounting bolt[2WD]	160~180	1600~1800	118.0~132.8
Suspension arm mounting bolt[4WD]	140~160	1400~1600	103.3~118.0
Cross member mounting bolt	100~120	1000~1200	73.8~88.5
Trailing arm bracket mounting bolt	100~120	1000~1200	73.8~88.5
Trailing arm to carrier mounting bolt	100~120	1000~1200	73.8~88.5
Differential mounting bolt	90~120	900~1200	59.0~88.5

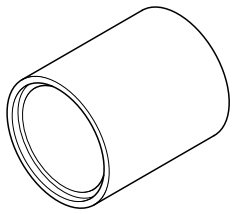
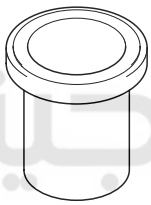
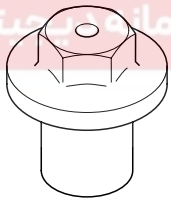
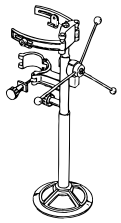
CAUTION

Replace the self-locking nuts with new ones after removal.

LUBRICANTS ECA8D26E

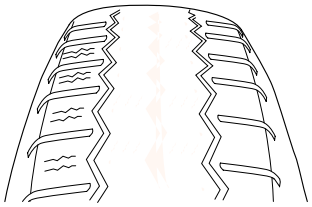
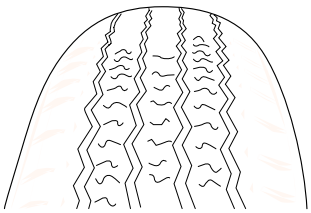
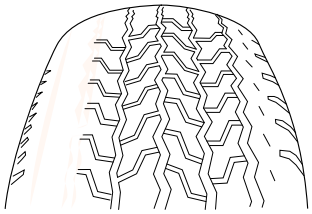
Item	Quantity
In insulator of strut	As required

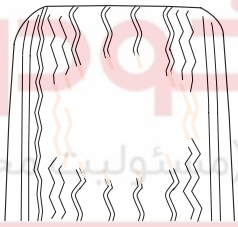
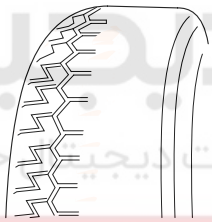
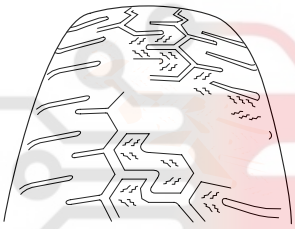
SPECIAL TOOLS EBE96F7A

Tool(Number and Name)	Illusstration	Use
09216-21100 Mount bushing remover and installer	 B1621100	Removal & installation of lower arm bushing(G)
09214-32000 Mount bushing remover and installer	 E1432000	Removal & installation of lower arm bushing(G)
09529-21000 Trailing arm bushing remover installer	 E2921000	Removal & installation of trailing arm bushing
09546-26000 Strut spring compressor	 E4626000	Compression of the coil spring

TROUBLESHOOTING EBF3578C

Trouble sysmptom	Probable cause	See page
Hard steering	Improper front wheel alignment Excessive turning resistance of lower arm ball joint Flat tire No power assist	SS-45 - - -
Poor return of steering wheel to center	Improper front wheel alignment	SS-45
Poor ride quality	Improper front wheel alignment Damaged shock absorber Varied or dameged stabilizer Varied or dameged coil spring Worn lower arm bushing	SS-45 SS-7, 23 SS-20, 41 SS-11 SS-18
Abnormal tire wear	Improper front wheel alignment Worn of shock absorber	SS-45 SS-7 ,23
Wandering	Improper front wheel alignment Poor turning resistance of lower arm ball joint Loose or worn lower arm bushing	SS-45 - SS-18
Vehicle pulls to one side	Improper front wheel alignment Excessive turning resistance of lower arm ball joint Varied or dameged coil spring Bent lower arm Improper tire inflation pressure	SS-45 - SS-11, 27 SS-16 -
Steering wheel shimmy	Improper front wheel alignment Excessive turning resistance of lower arm ball joint Varied or dameged stabilizer Worn lower arm bushing Worn of shock absorber Varied or dameged coil spring Improper front wheel alignment	SS-45 - SS-20 SS-18 SS-7 SS-11 -
Bottoming	Broken or worn spring Malfunction of shock absorber	SS-11, 27 SS-7, 23

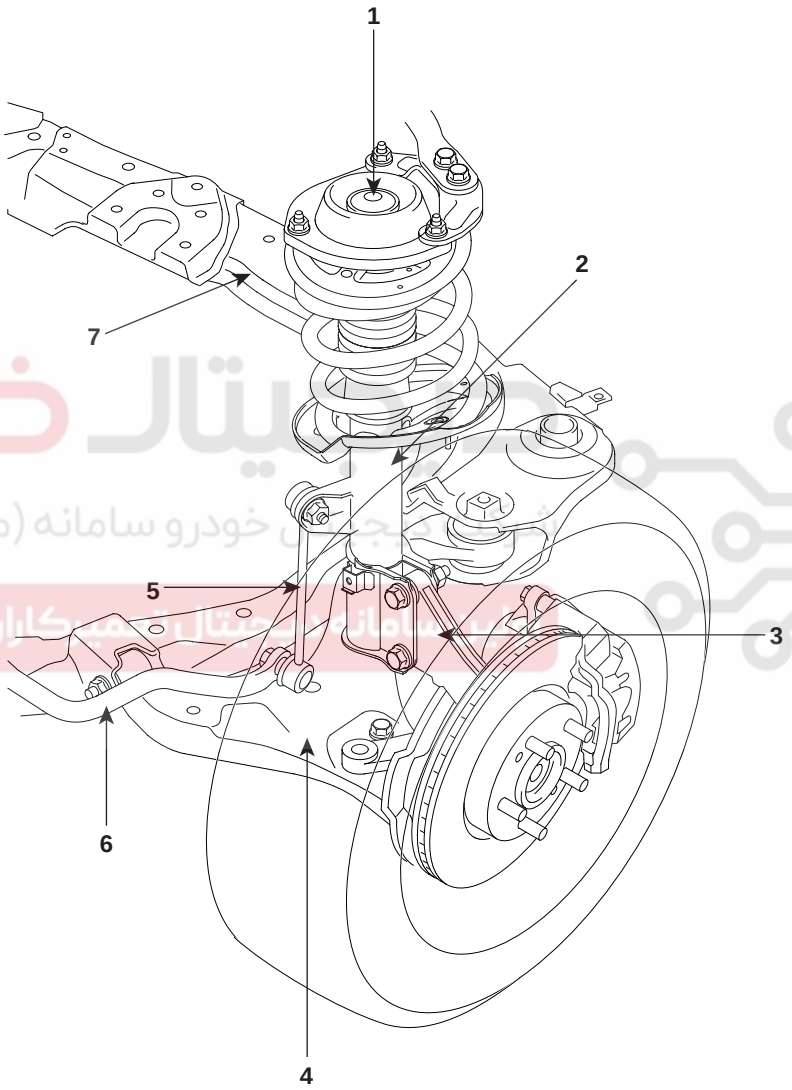
WHEEL AND TIRE DIAGNOSIS		
Radid wear at the center	Rapid wear at both shoulders	Wear at one shoulder
 KXDT001A	 KXDT002A	 KXDT003A
• Center-tread down to fabric due to excessive over inflated tires • Lack of rotation • Excessive toe on drive wheels • Heavy acceleration on drive	• Underinflated tires • Worn suspension components • Excessive cornering speeds • Lack of rotation	• Toe adjustment out of specification • Camber out of specification • Damaged strut • Damaged lower arm

WHEEL AND TIRE DIAGNOSIS		
Partial wear	Feather edges wheels	Wear pattern
 KXDT004A	 KXDT005A	 KXDT006A
• Cansed by irrequlor burrs on brak drums.	• Toe adjustment out of specification • Damaged or worn tie rods • Damaged knuckle	• Excessive toe on non-drive wheels • Lack of rotation

FRONT SUSPENSION SYSTEM

FRONT STRUT ASSEMBLY

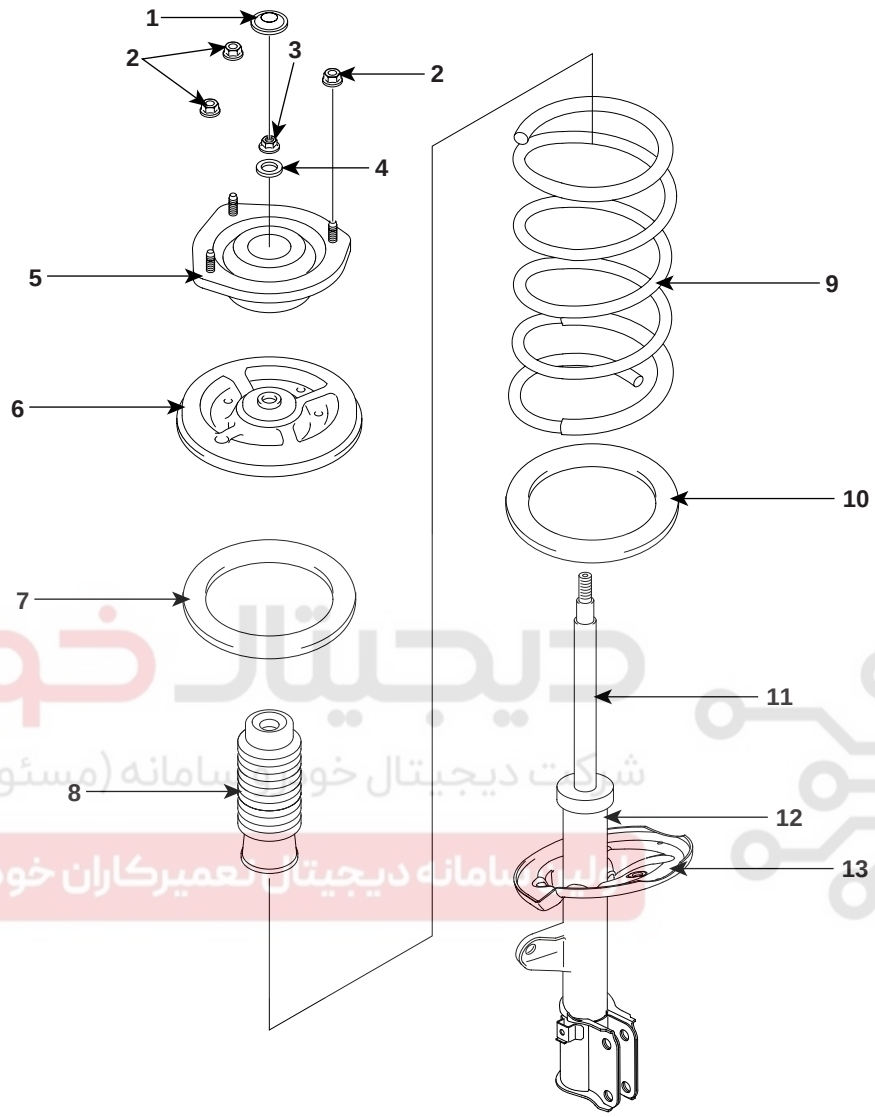
COMPONENT LOCATION EF49AC8B



1. Strut insulator dust cover
2. Front strut
3. Knuckle
4. Lower arm
5. Stabilizer bar link
6. Stabilizer bar
7. Sub-frame

EHQE101A

COMPONENTS E62C9BF8



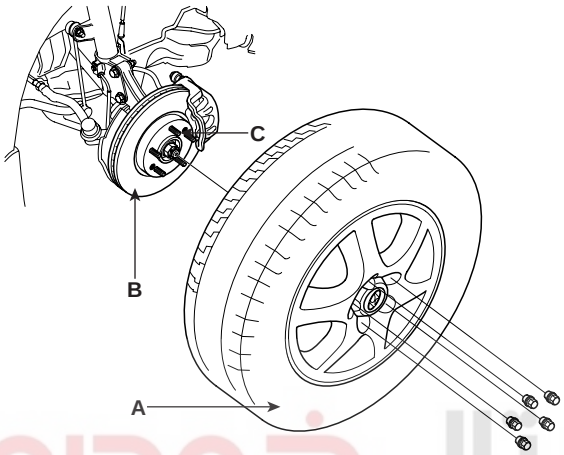
1. Insulator dust cover
2. Upper mounting nuts
3. Self-locking nut
4. Spacer
5. Insulator
6. Spring upper seat
7. Spring upper pad
8. Spring clust cover & rubber bumper
9. Coil spring
10. Spring lower pad
11. Piston rod
12. Strut assembly
13. Spring lower seat

EHQE101B

REMOVAL E2DBEF28

1. Loosen the wheel nuts slightly.
   Raise the front of the vehicle, and make sure it is securely supported.

2. Remove the front wheel and tire(A) from front hub(B).

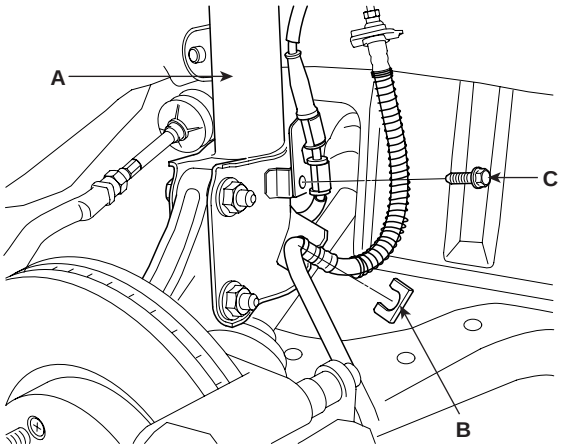


KIQE100A

CAUTION

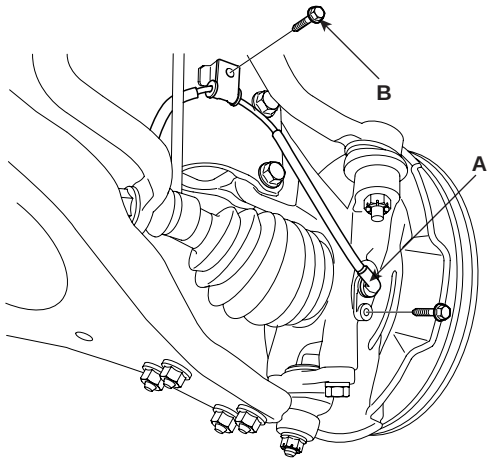
Bej careful not to damage the hub bolts(C) then remove the front wheel and tire(A).

3. Remove the brake hose bracket(B) and speed sensor cable mounting bolt(C) from the strut assembly(A).



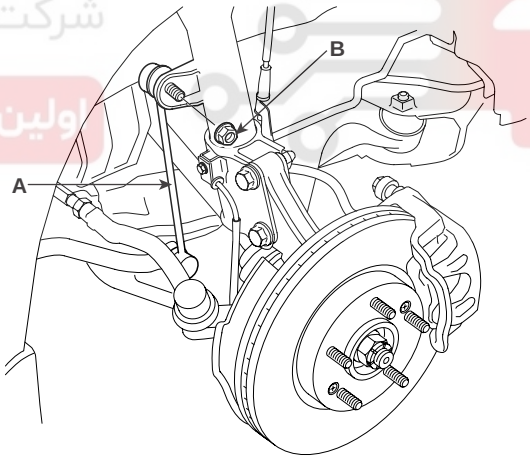
KHQE100A

4. Remove the speed sensor cable mounting bolt(B) and speed sensor(A).



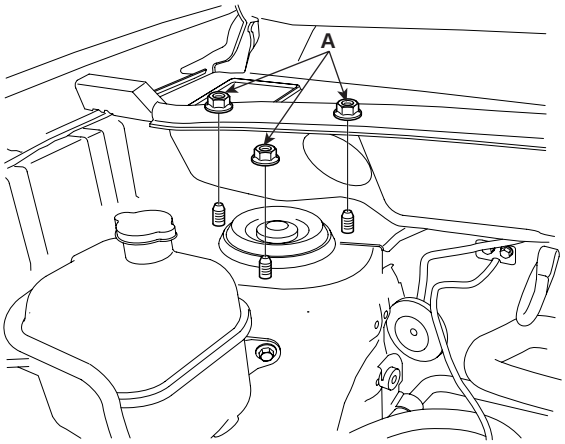
KHQE100B

5. Remove the nut(B) from the stabilizer bar link(A).



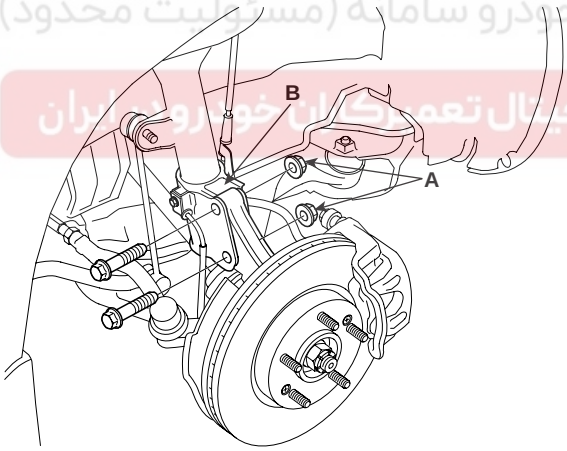
KHQE100E

6. Remove the strut upper mounting nuts(A).



KHQE100C

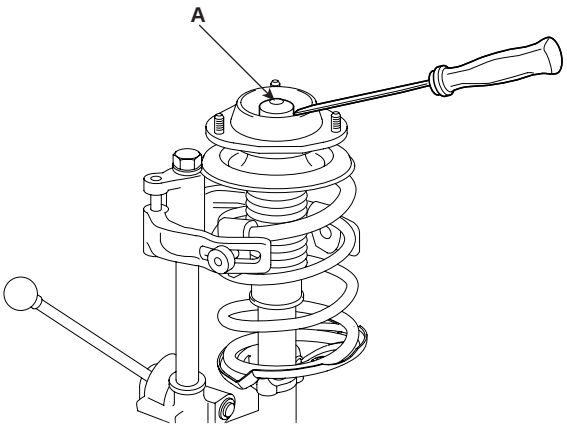
7. Remove the strut lower mounting bolts(A) and then remove the strut assembly(B).



KHQE100D

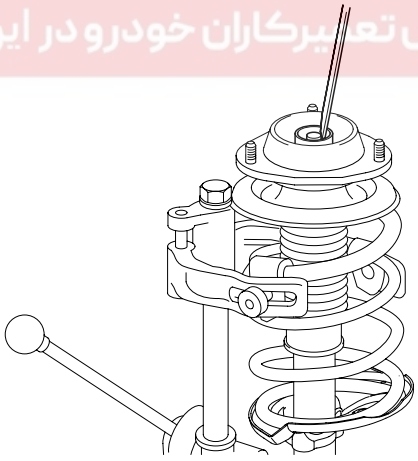
DISASSEMBLY EA5EB9F7

1. Remove the dust cover(A) with a flat-tipped (-) screw driver.



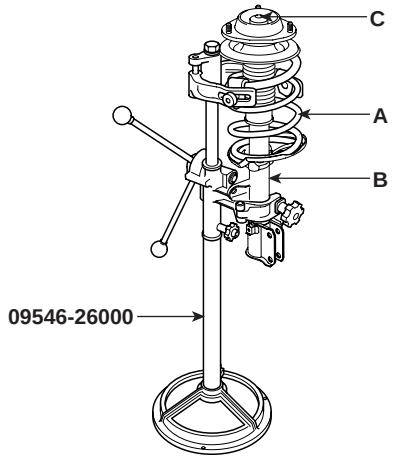
KHQE110A

2. Open the dust cover and wipe off grease in the insulator.



KHQE110B

3. Using the special tool (09546-26000), compress the coil spring(A) until there is only a little tension of the spring on the strut.



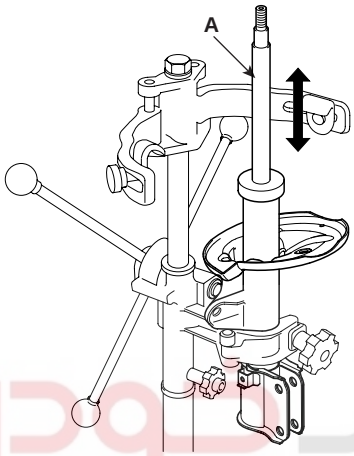
KHQE110C

4. Remove the self-locking nut(C) from the strut assembly(B).

5. Remove the insulator, spring seat, coil spring and dust cover from the strut assembly.

INSPECTION EDDEEE02

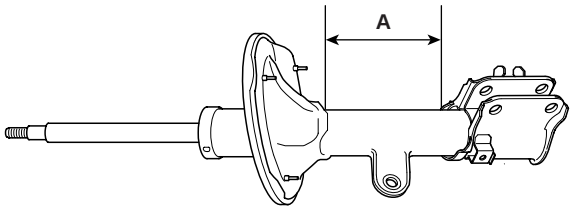
1. Check the strut insulator bearing for wear or damage.
2. Check rubber parts for damage or deterioration.
3. Compress and extend the piston rod(A) and check that there is no abnormal resistance or unusual sound during operation.



KHQE120A

DISPOSAL E401DB1D

1. Fully extend the piston rod.
2. Drill a hole on the A section to remove gas from the cylinder.



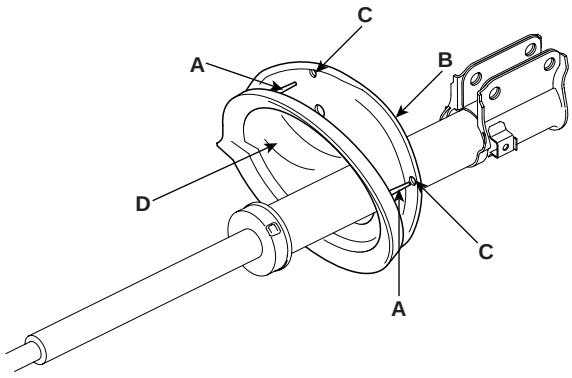
KHQE121A

CAUTION

The gas coming out is harmless, but be careful of chips that may fly when drilling.

REASSEMBLY E1D4D40B

1. Install the spring lower pad(D) so that the protrusions(A) fit in the holes(C) in the spring lower seat(B).



KHQE130A

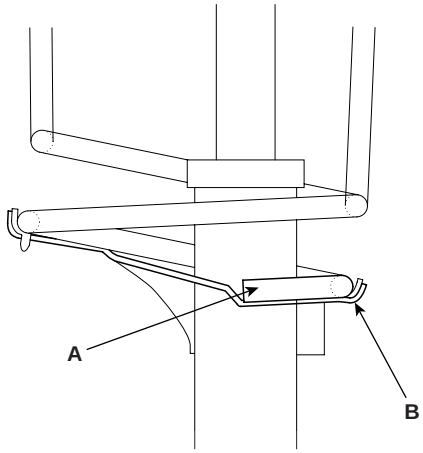
2. Compress coil spring using special tool (09546-26000).
   Install compressed coil spring into shock absorber.

   NOTE

   a. Indicated two identification color marks on the coil spring; one follows model option (see page SS-2) the other follows load classification according to the below.
   Pay attention to distiuguish between the two marks and then install them.
   b. Install the coil spring wth the idemtification mark directed toward the knuckle.

3. After fully extending the piston rod, install the spring upper seat and insulator assembly.

4. After seating the upper and lower ends of the coil spring(A) in the upper and lower spring seat grooves(B) correctly, tighten new self-locking nut temporarily.



EHKD010A

5. Remove the special tool(09546-26000).

6. Tighten the self-locking nut to the specified torque.

Tightening torque
60~70 Nm(600~700 kgf·cm, 44.3~51.6 lbf·ft)

7. Apply grease to the strut upper bearing and install the insulator cap.

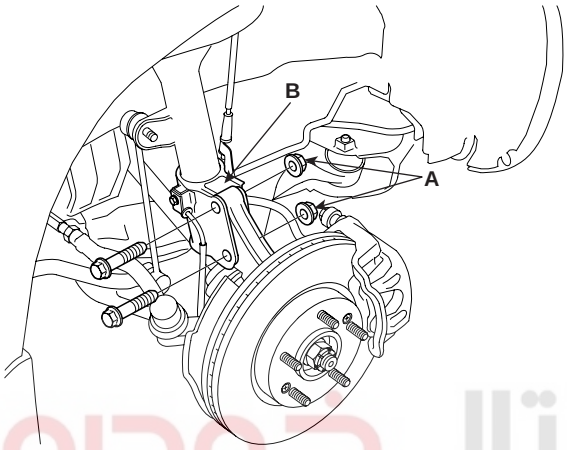
   CAUTION

   When applying the grease, be careful so that it isn't smeared on the insulator rubber.

INSTALLATION E9B1AAEF

1. Install the strut assembly(B) and then install the strut lower mounting bolts(A).

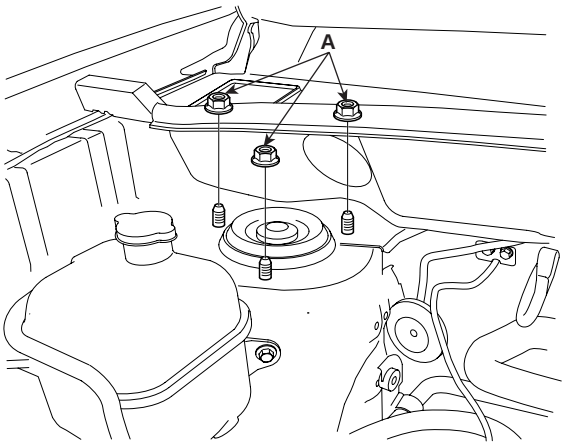
Tightening torque
140~160 Nm (1400~1600 Kgf·cm, 103.3~118.0 Ibf·ft)



KHQE100D

2. Install the strut upper mounting nuts(A).

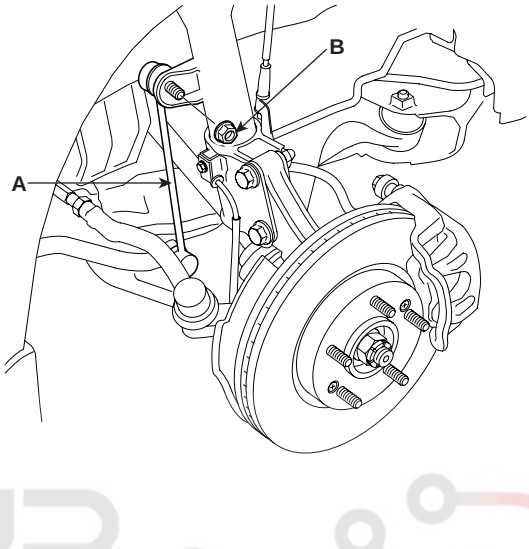
Tightening torque
45~60 Nm (450~600 Kgf·cm, 33.2~44.3 Ibf·ft)



KHQE100C

3. Install the nut(B) on the stabilizer bar link(A).

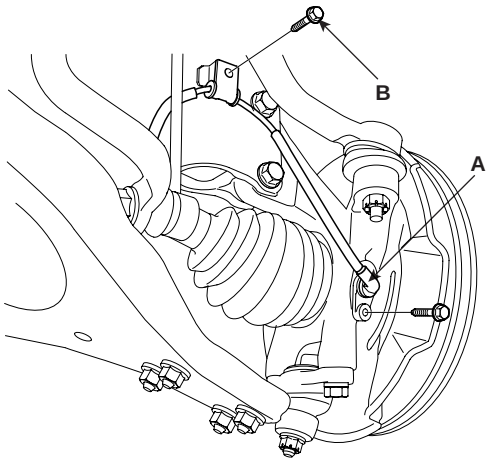
Tightening torque
100~120 Nm (1000~1200 Kgf·cm, 73.8~88.5 Ibf·ft)



KHQE100E

4. Install the speed sensor cable mounting bolt(B) and speed sensor(A).

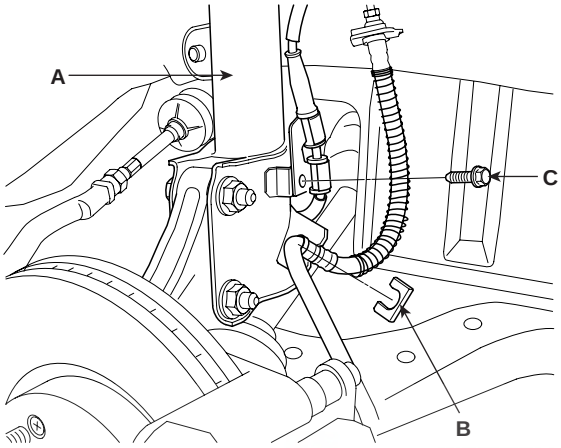
Tightening torque
7~11 Nm (70~110 Kgf·cm, 5.2~8.1 Ibf·ft)



KHQE100B

5. Install the brake hose bracket(B) and speed sensor cable mounting bolt(C) on the strut assembly(A).

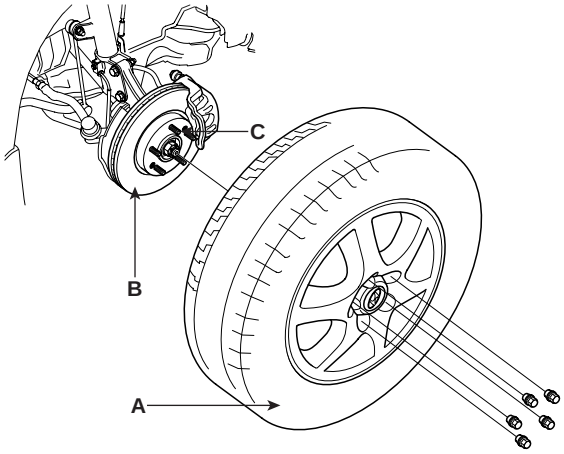
Tightening torque
7~11 Nm (70~110 Kgf·cm, 5.2~8.1 lbf·ft)



KHQE100A

6. Install the front wheel and tire(A) on the front hub(B).

Tightening torque
90~110 Nm (900~1100 Kgf·cm, 66.4~81.2 lbf·ft)



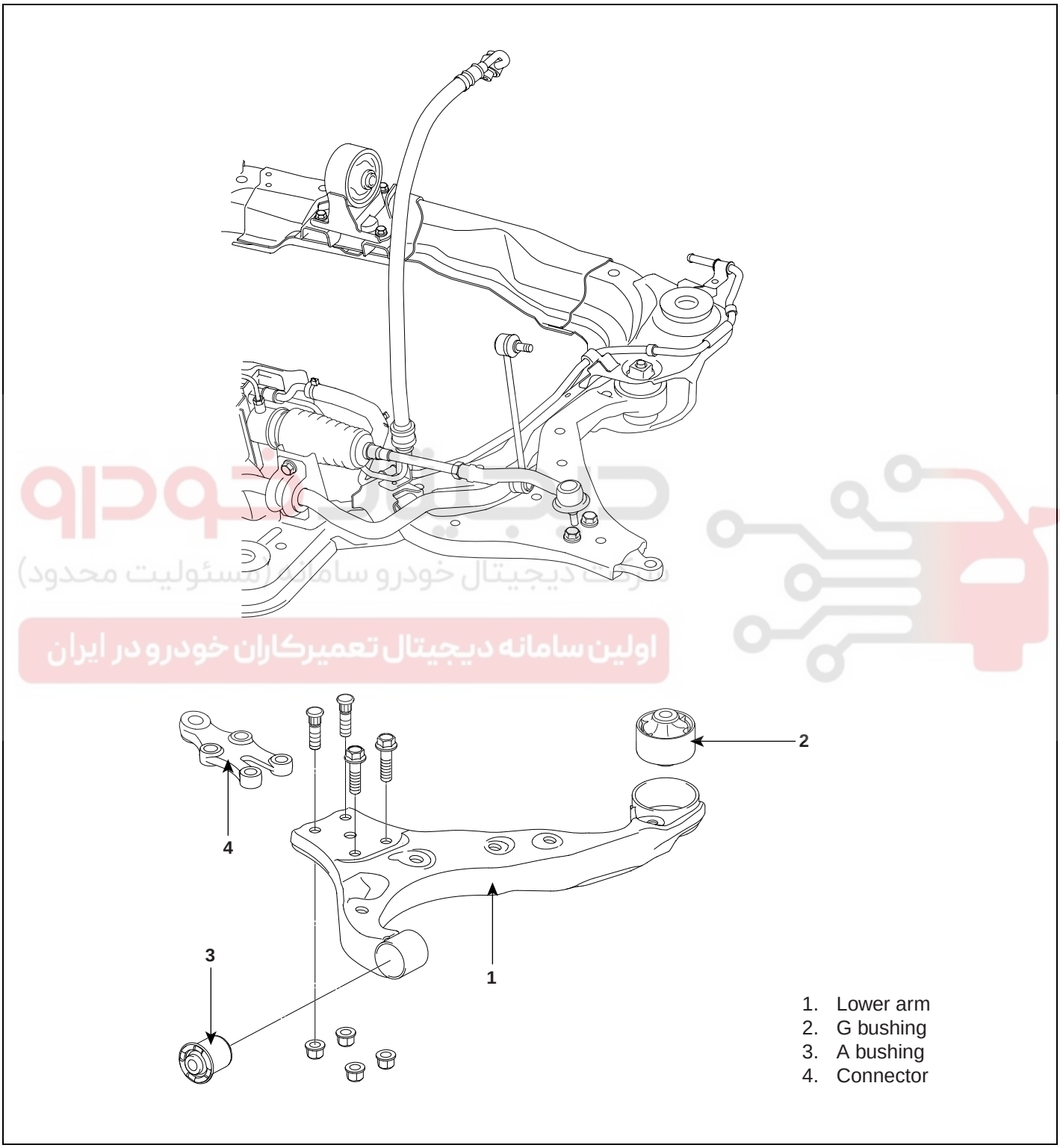
KIQE100A

CAUTION

Be careful not to damage the hub bolts(C) then install the front wheel and tire(A).

FRONT LOWER ARM

COMPONENTS E1F19F76

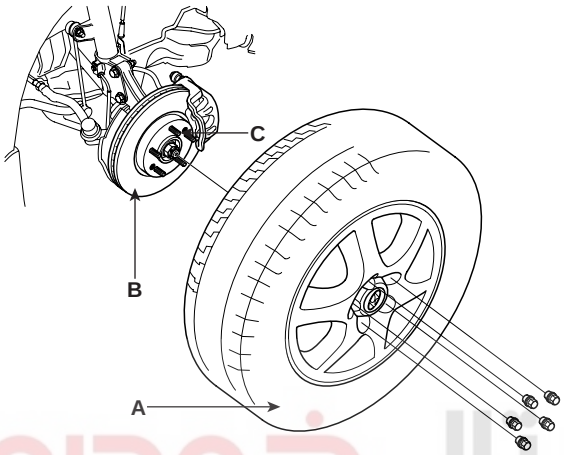


EHQE201A

REMOVAL E96D8DEB

1. Loosen the wheel nuts slightly.
   Raise the front of the vehicle, and make sure it is securely supported.

2. Remove the front wheel and tire(A) from front hub(B).

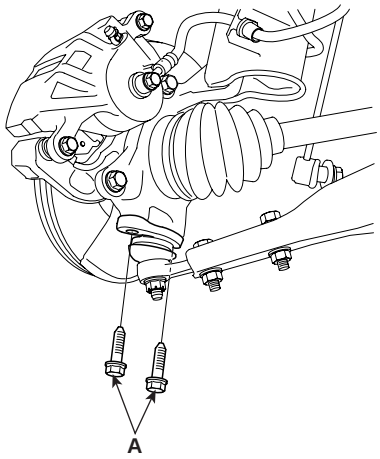


KIQE100A

CAUTION

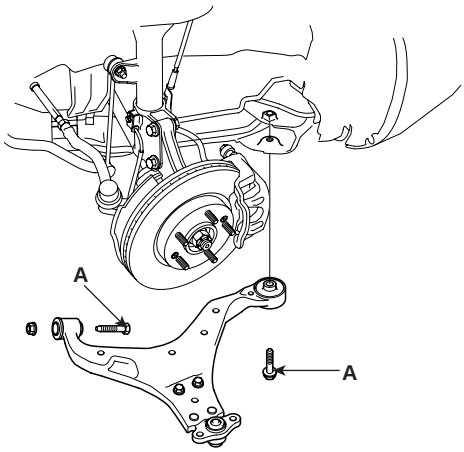
Be careful not to damage the hub bolts(C) then remove the front wheel and tire(A).

3. Remove the lower arm ball joint mounting bolts(A).



KHQE200A

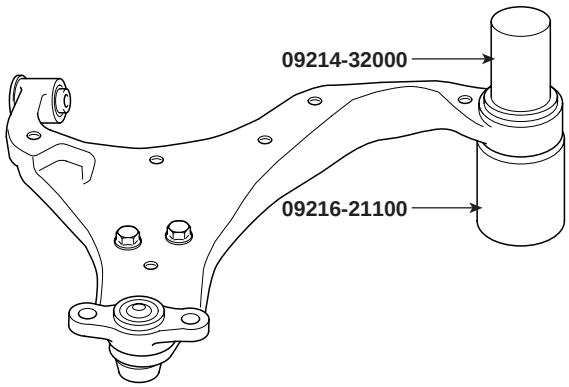
4. Remove the lower arm mounting bolts(A).



KHQE200B

REPLACEMENT EB9F14FA

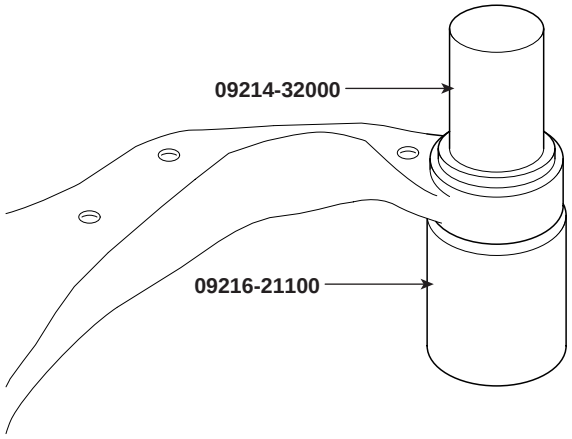
1. Using the special tools(09214-32000 & 09216-211000), remove the bushing from the lower arm.



KHQE210A

2. Apply soap solution to the following parts.
   - Outer surface of the bushing.
   - Inner surface of the lower bushing mounting part.

3. Using the special tools(09214-32000 & 09216-21100), install the busing on the lower arm.

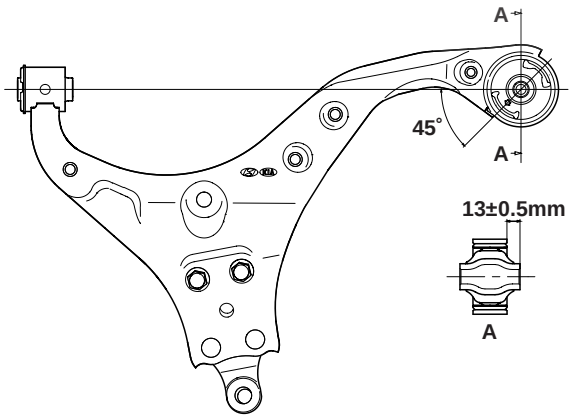


KHQE210B

CAUTION

Insert bush as to arrow direct toward this dir shown.

Separation force is over 800Kg

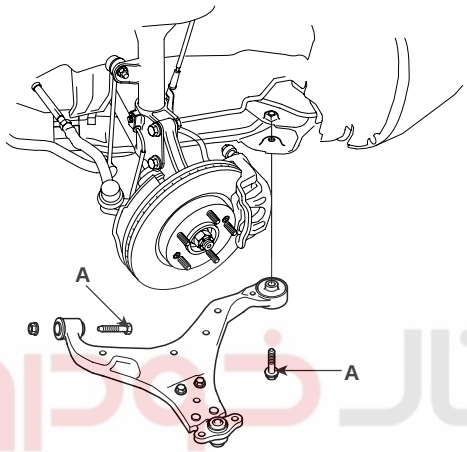


KHQE210C

INSTALLATION EEAF7A96

1. Install the lower arm mounting bolts(A).

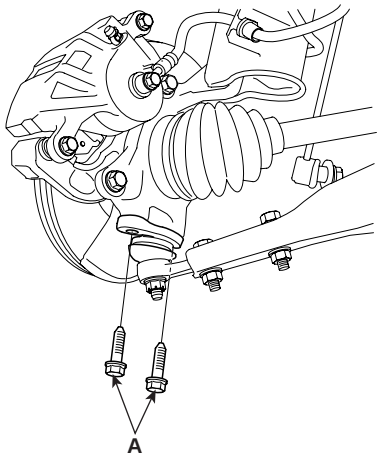
Tightening torque
A bushing :
100~120 Nm (1000~1200 Kgf·cm, 73.8~88.5 lbf·ft)
G bushing :
140~160 Nm (1400~1600 Kgf·cm, 103.3~118.0 lbf·ft)



KHQE200B

2. Install the lower arm ball joint mounting bolts(A).

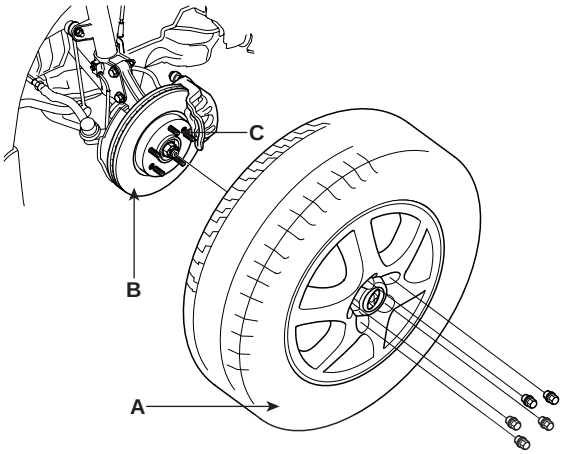
Tightening torque
100~120 Nm (1000~1200 Kgf·cm, 73.8~88.5 lbf·ft)



KHQE200A

3. Install the front wheel and tire(A) on the front hub(B).

Tightening torque
90~110 Nm (900~1100 Kgf·cm, 66.4~81.2 lbf·ft)



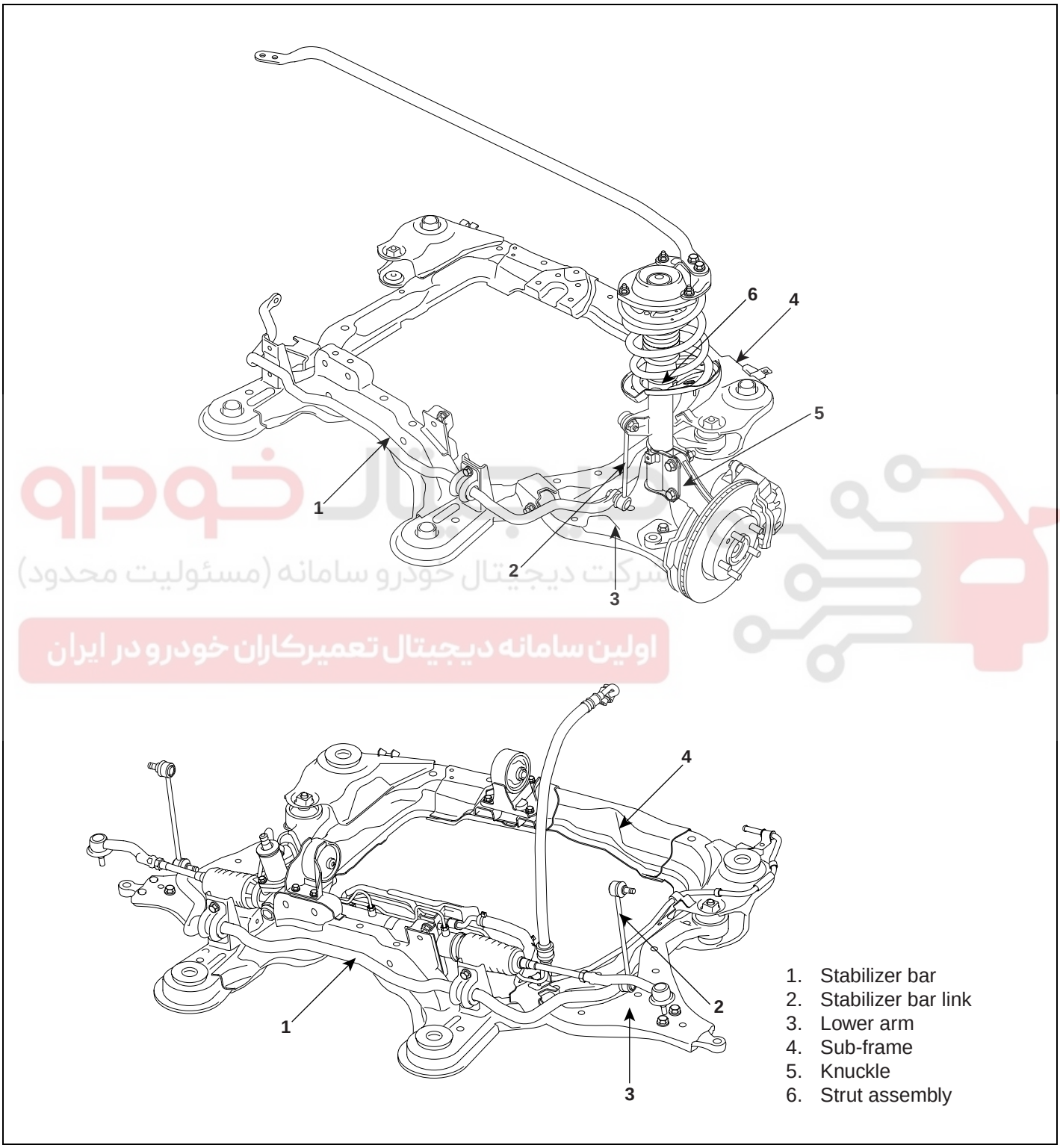
KIQE100A

CAUTION

Be careful not to damage the hub bolts(C) then install the front wheel and tire(A).

FRONT STABILIZER BAR

COMPONENTS EC063896

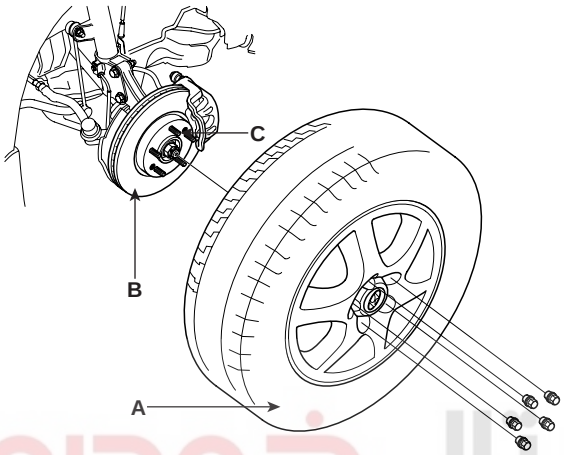


1. Stabilizer bar
2. Stabilizer bar link
3. Lower arm
4. Sub-frame
5. Knuckle
6. Strut assembly

EHQE301A

REMOVAL E7C35609

1. Loosen the wheel nuts slightly.
   Raise the front of the vehicle, and make sure it is securely supported.
2. Remove the front wheel and tire(A) from front hub(B).

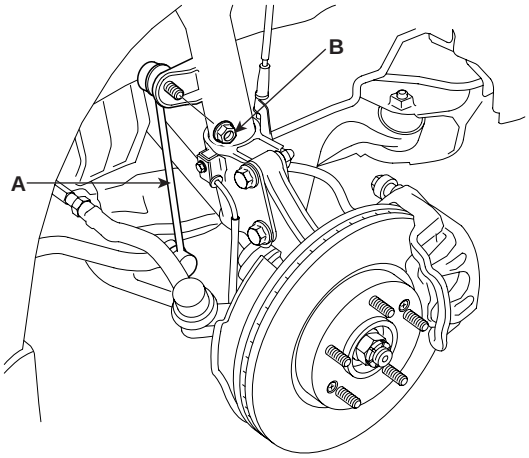


KIQE100A

CAUTION

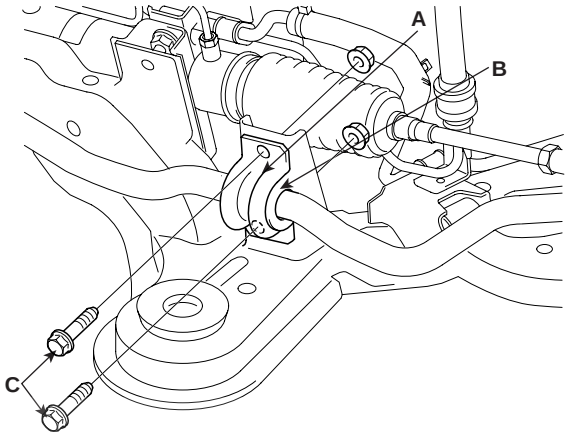
Be careful not to damage the hub bolts(C) then remove the front wheel and tire(A).

3. Remove the stabilizer bar link(A).
   a. Remove the nut(B) and stabilizer bar link(A).



KHQE100E

   b. Remove the stabilizer bar link on the opposite side in the same way.
4. Remove the rear mounting bolts of subframe.
5. Remove the stabilizer bracket(A) and bushing(B).
   a. After loosen the bolts(C), then remove the bracket(A) and bushing(B).



KHQE300A

   b. Remove the stabilizer bracket and bushing on the opposite side in the same way.
6. Remove the stabilizer bar.

CAUTION

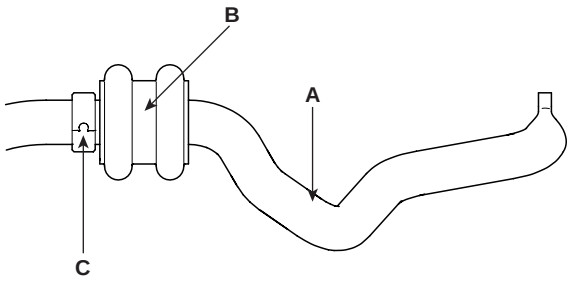
Be careful not to damage the pressure tube.

INSPECTION ED8731A3

1. Check the stabilizer bar for deterioration and damage.
2. Check all bolts for damage and deformation.
3. Check the stabilizer link dust cover for cracks or damage.

INSTALLATION EAE6F408

1. Install the bushing(B) on the stabilizer bar(A).



KHQE340A

NOTE

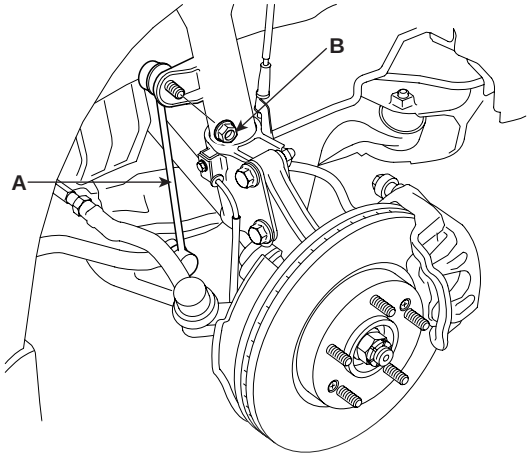
Bring clamp(C) of stabilizer bar(A) into contact with bushing(B).

2. Install the bracket on the bushing(B).
3. After tightening the bolts of the bushing bracket temporarily, install the bushing bracket on the opposite side.

Tightening torque
50~65 Nm (500~650 Kgf·cm, 36.9~48.0 Ibf·ft)

4. Install the rear mounting bolts of sub-frame.
5. Install the nut(B) on the stabilizer bar link(A).

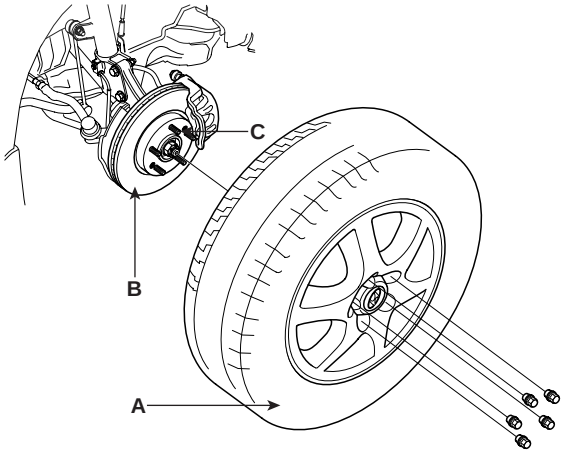
Tightening torque
100~120 Nm (1000~1200 Kgf·cm, 73.8~88.5 Ibf·ft)



KHQE100E

6. Install the front wheel and tire(A) on the front hub(B).

Tightening torque
90~110 Nm (900~1100 Kgf·cm, 66.4~81.2 Ibf·ft



KIQE100A

CAUTION

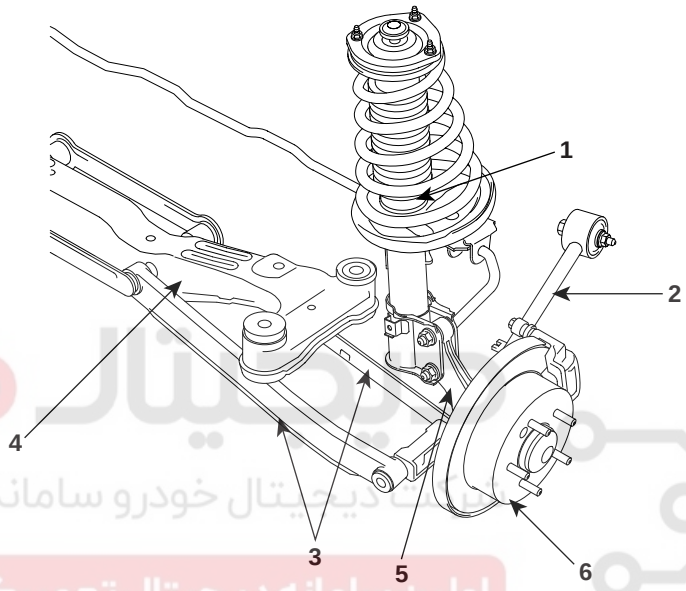
Be careful not to damage the hub bolts(C) then install the front wheel and tire(A).

REAR SUSPENSION SYSTEM

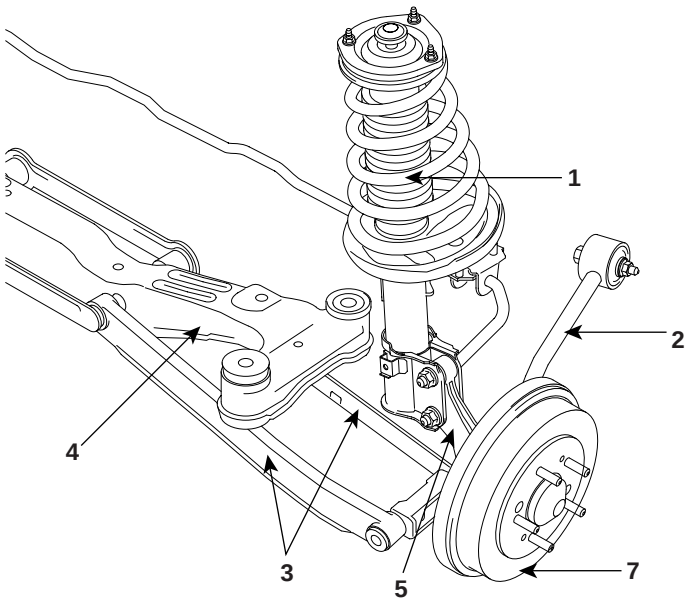
REAR STRUT ASSEMBLY

COMPONENT LOCATION E28CAFBC

[2WD-DISC TYPE]



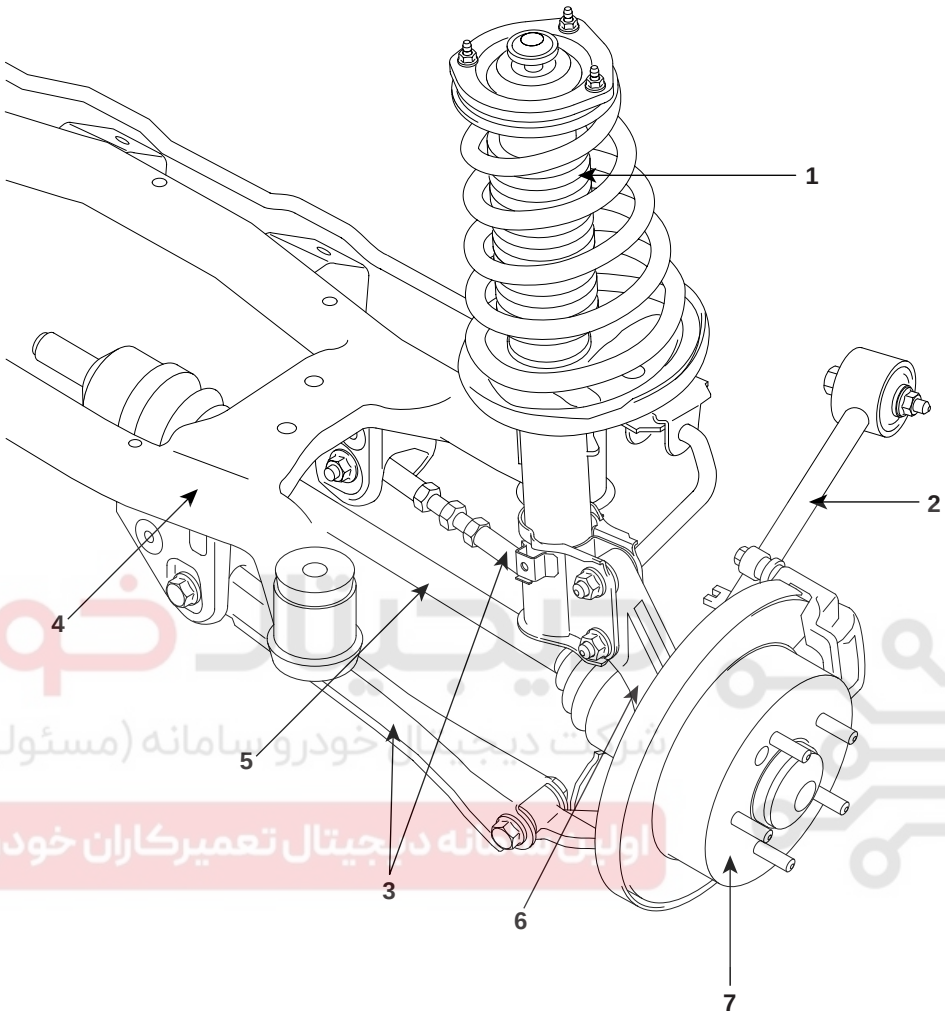
[2WD-DRUM TYPE]



1. Strut assembly
2. Trailing arm
3. Suspension arm
4. Cross member
5. Carrier
6. Disc brake assembly
7. Drum brake assembly

EHQE401A

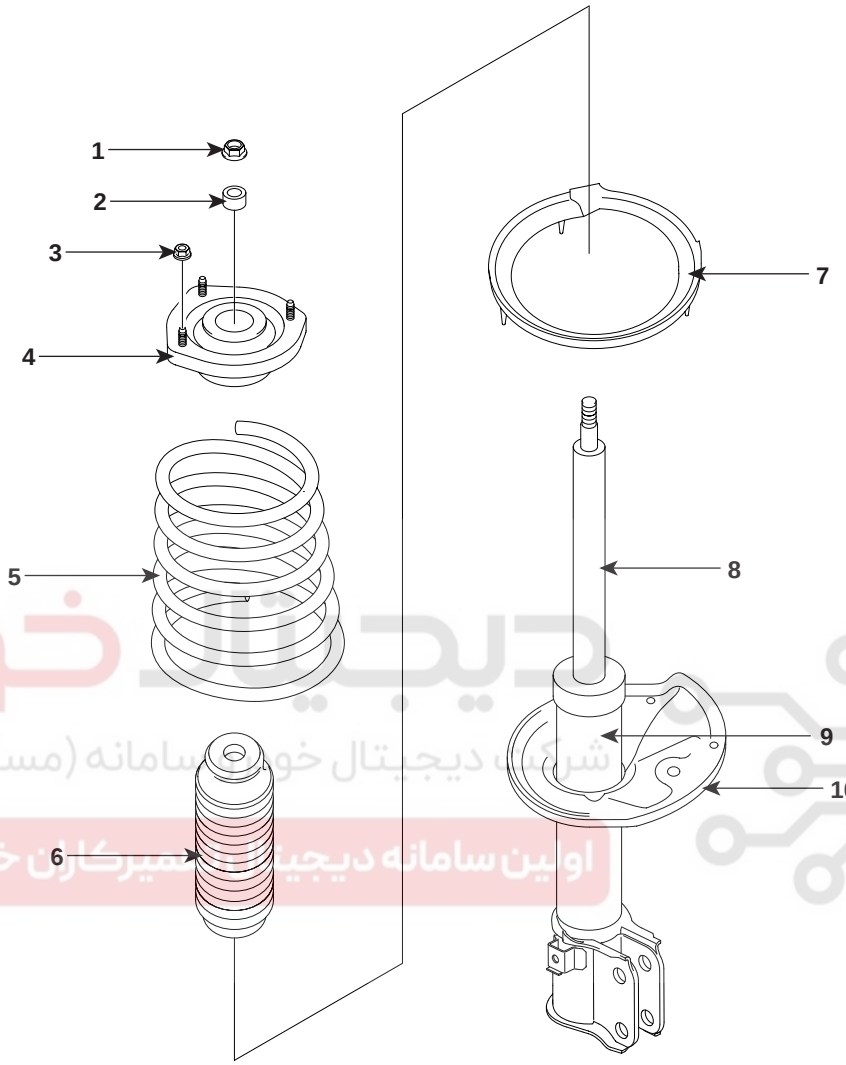
[4WD]



1. Strut assembly
2. Trailing arm
3. Suspension arm
4. Cross member
5. Drive shaft
6. Carrier
7. Disc brake assembly

EHQE401B

COMPONENTS EF589D20

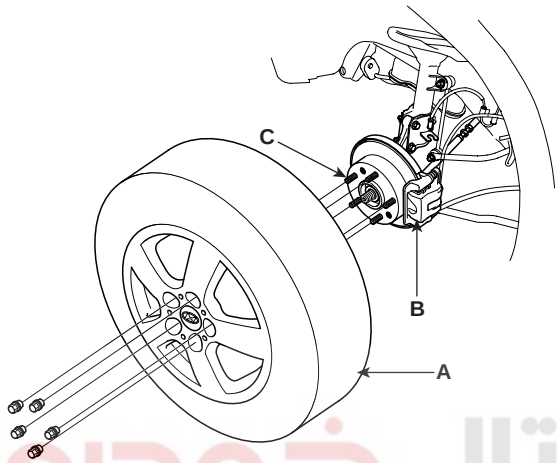


1. Self-locking nut
2. Spacer
3. Upper mounting nut
4. Insulator
5. Coil spring
6. Strut dust cover & rubber bumper
7. Spring lower pad
8. Piston rod
9. Strut assembly
10. Spring lower seat

EHQE402A

REMOVAL E382BC39

1. Loosen the wheel nuts slightly.
   Raise the rear of the vehicle, and make sure it is securely supported.
2. Remove the rear wheel and tire(A) from rear hub(B).

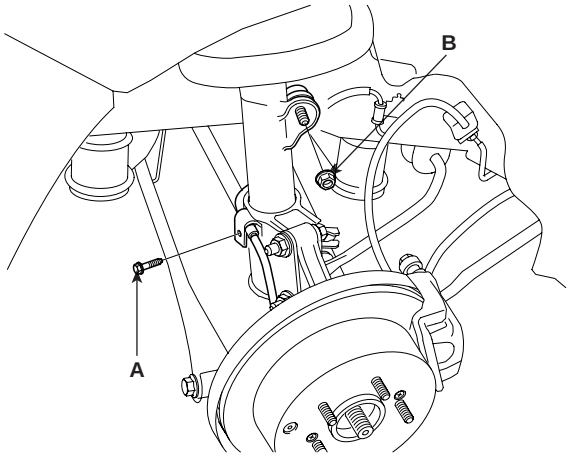


KIQE300A

CAUTION

Be careful not to damage the hub bolts(C) then remove the rear wheel and tire(A).

3. Remove the speed sensor cable monting bolt(A).

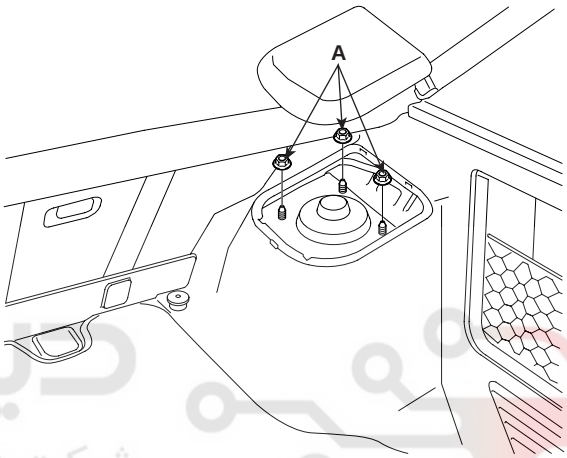


KHQE400A

NOTE

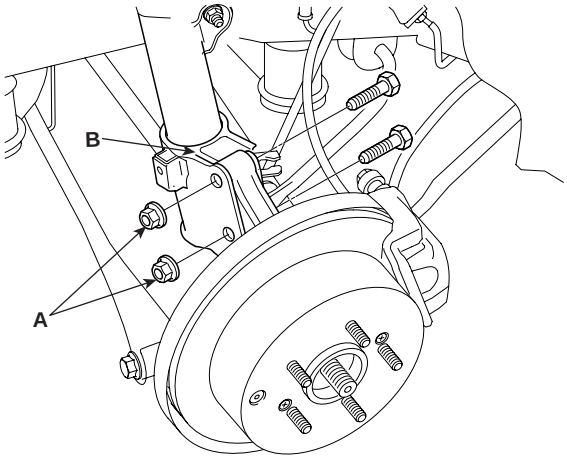
Drum brake type :
Remove the speed sensor cable mounting bolts(2EA) and the brake hose bracket.
Disc brake type :
Remove the speed sensor cable mounting bolt(1EA)

4. Remove the stabilizer bar link nut(B).
5. Remove the strut upper mounting nut(A).



KHQE400B

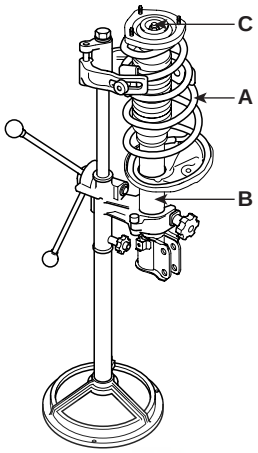
6. Remove the strut lower mounting bolts(A) and then remove the strut assembly(B).



KHQE400C

DISASSEMBLY ECFFC844

1. Using the special tool(09545-26000), compress the coil spring(A) until there is only a little tension on the strut(B).

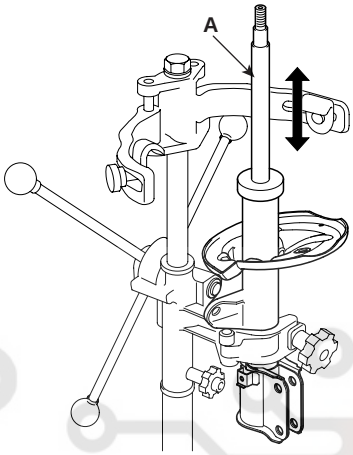


KHQE410A

2. Remove the self-locking nut(C) from the strut(B).
3. Remove the pipe, insulator, spring seat, coil spring and dust cover from the strut(B).

INSPECTION EE3EDDDE

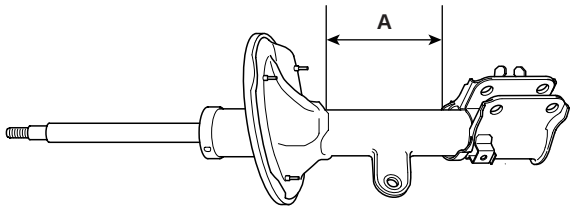
1. Check the insulator for wear or damage.
2. Check rubber parts for damage or deterioration.
3. Compress and extend the piston rod(A) and check that there is no abnormal resistance or unusual sound during operating.



KHQE120A

DISPOSAL E6E0CB61

1. Fully extend the piston rod.
2. Drill a hole on the A section to remove gas from the cylinder.



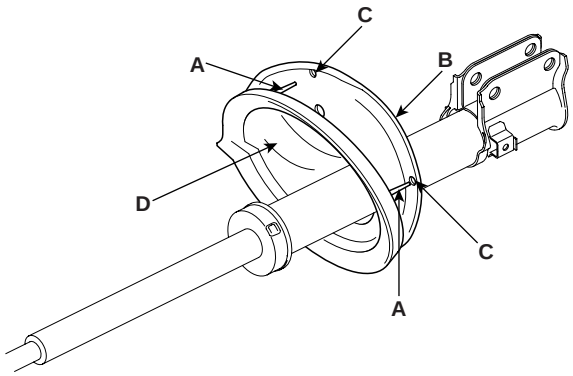
KHQE121A

CAUTION

The gas coming out is harmless, but be careful of chips that may fly when drilling.

REASSEMBLY EB6AF4DE

1. Install the spring lower pad(D) so that the protrusions(A) fit in the holes(C) in the spring lower seat(B).



KHQE130A

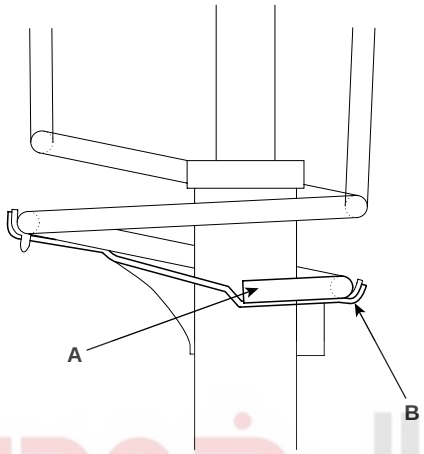
2. Compress coil spring using special tool(09546-26000).
   Install compressed coil spring into shock absorber.

NOTE

a. Indicated two idenitification color marks on the coil spring; one follows model option (see page SS-2) the other follows load classification according to the below.
Pay attention to distinguish between the two marks and then install them.
b. Install the coil spring with the identification mark directed toward the knuckle.

3. After fully extending the piston rod, install the spring upper seat and insulator assembly.

4. After seating the upper and lower ends of the coil spring(A) in the upper and lower spring seat grooves(B) correctly, tighten new self-locking nut temporarily.



EHKD010A

5. Remove the special tool(09546-26000).

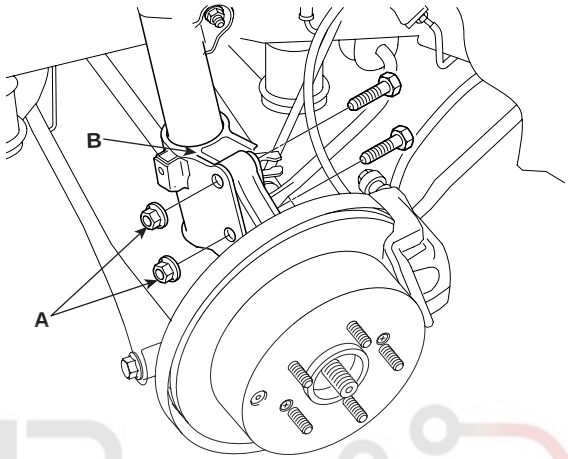
6. Tighten the self-locking nut to the specified torque.

Tightening torque
40~55 Nm (400~550 Kgf·cm, 29.5~40.6 Ibf·ft)

INSTALLATION E8FB7A4C

1. Install the strut assembly(B) and then install the strut lower mounting bolts(A).

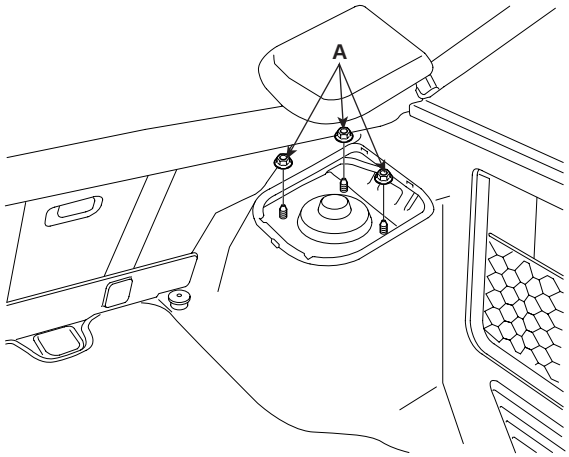
Tightening torque
140~160 Nm (1400~1600 Kgf·cm, 103.3~118.0 Ibf·ft)



KHQE400C

2. Install the strut upper mounting nuts(A).

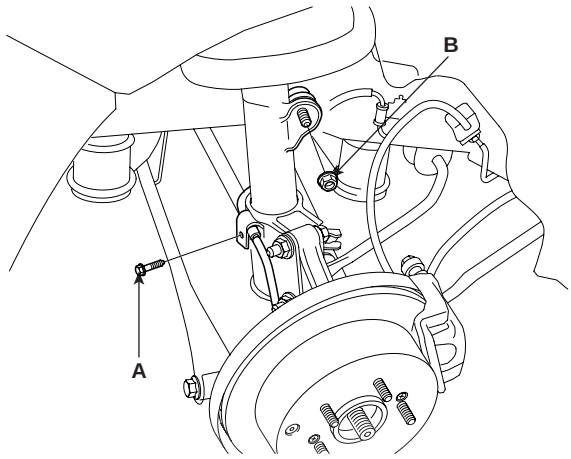
Tightening torque
30~40 Nm (300~400 Kgf·cm, 22.1~29.5 Ibf·ft)



KHQE400B

3. Install stabilizer bar link nut(B).

Tightening torque
100~120 Nm (1000~1200 Kgf·cm, 73.8~88.5 Ibf·ft)



KHQE400A

4. Install the speed sensor cable mounting bolt(A).

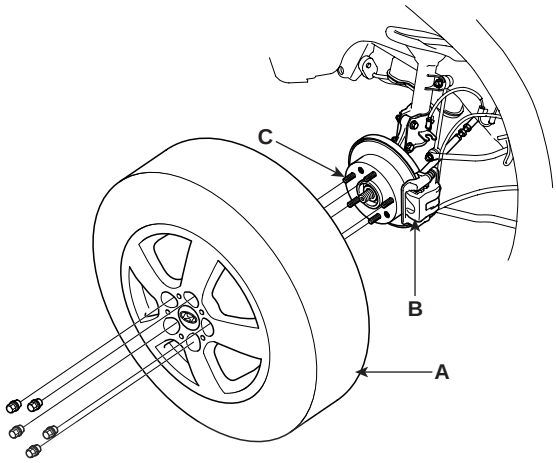
Tightening torque
7~11 Nm (70~110 Kgf·cm, 5.2~8.1 Ibf·ft)

NOTE

Drum brake type :
Install the speed sensor cable mounting bolts(2EA) and the brake hose bracket.
Disc brake tyep :
Install the speed sensor cable mounting bolt(1EA)

5. Install the rear wheel and tire(A) on the rear hub(B).

Tightening torque
90~110 Nm (900~1100 Kgf·cm, 66.4~81.2 Ibf·ft)



KIQE300A

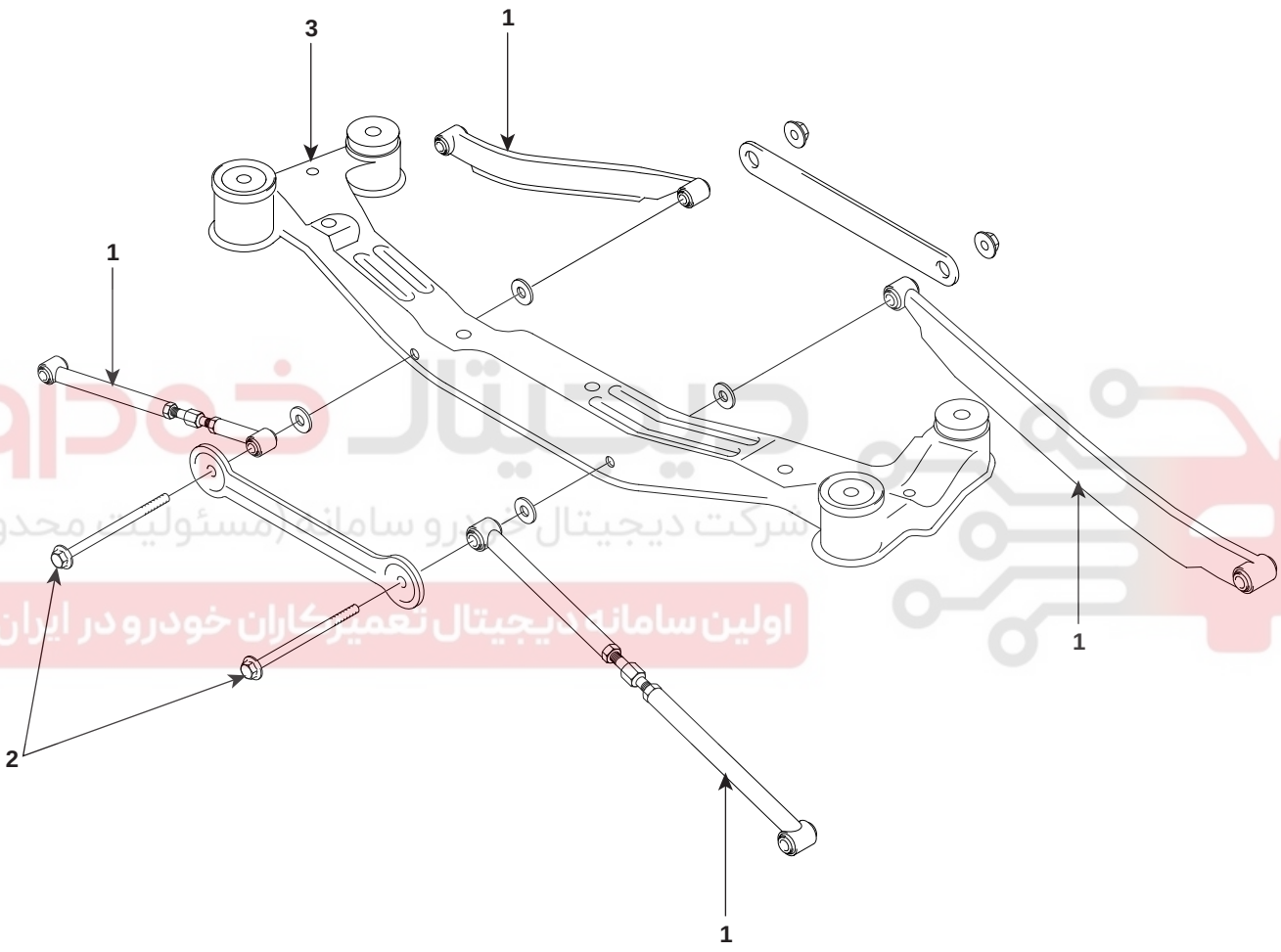
CAUTION

Be careful not to damage the hub bolts(C) then install the rear wheel and tire(A).

REAR SUSPENSION ARM

COMPONENTS EB78B9E2

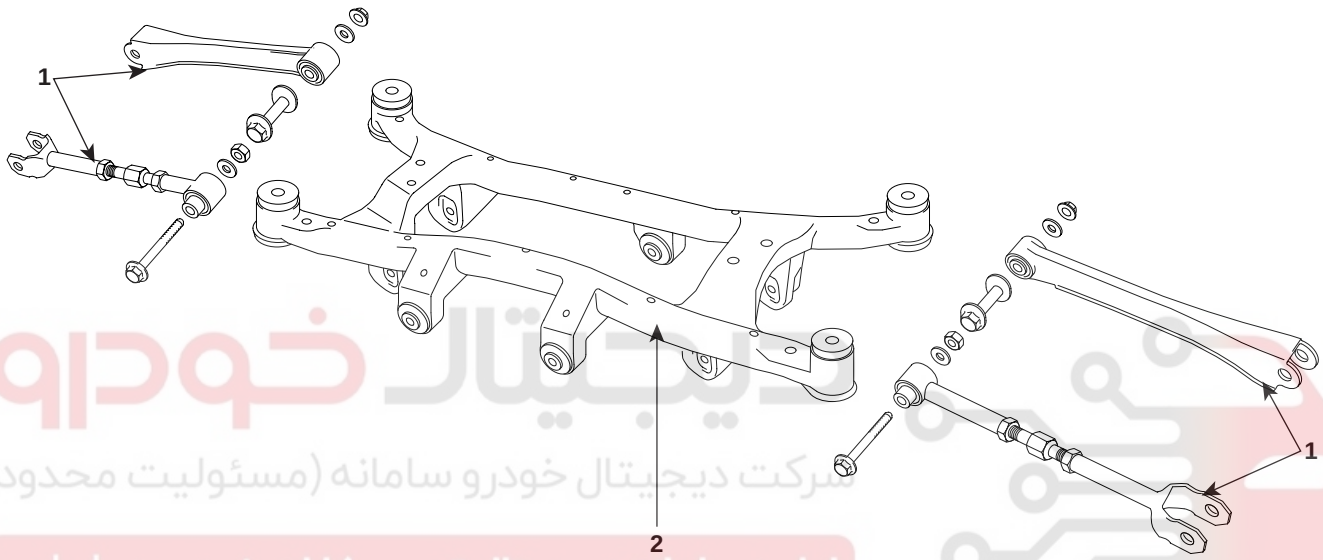
[2WD]



1. Suspension arm
2. Suspension arm bracket mounting bolt
3. Cross member

EHQE601A

[4WD]



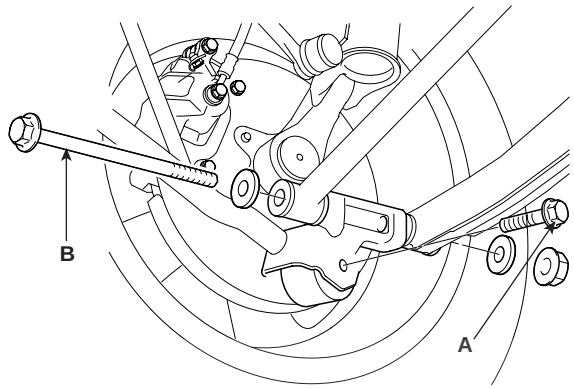
1. Suspension arm
2. Cross member

EHQE601B

REPLACEMENT E0DB0678

[2WD]

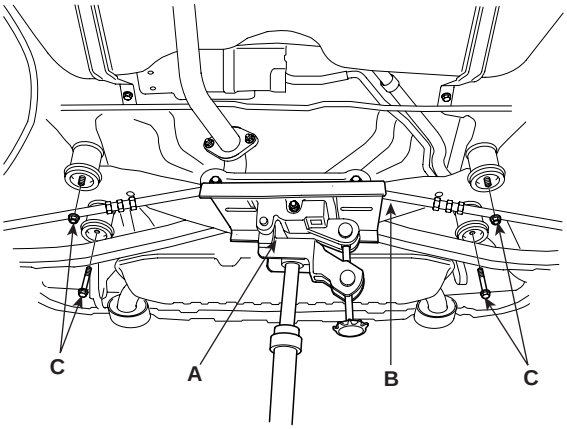
1. Remove the trailing arm mounting bolt(A) and suspension arm mounting bolt(B).



KHQE600A

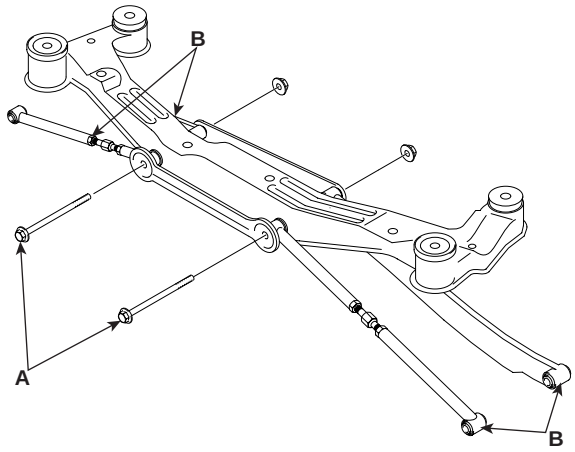
2. Remove the opposite side trailing arm mounting bolt and suspension arm mounting bolt.

3. After supporting the rear cross member assembly(B) with the jack(A), remove the cross member mounting bolts and nuts(C).



KHQE600B

4. Remove the suspension arm bracket mounting bolts(A).

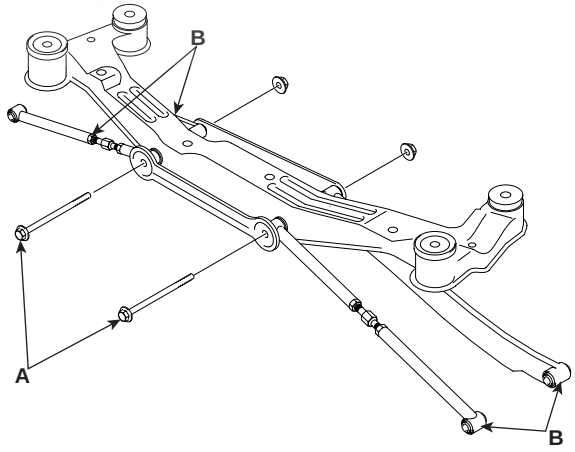


KHQE600C

5. Remove the suspension arm(B).

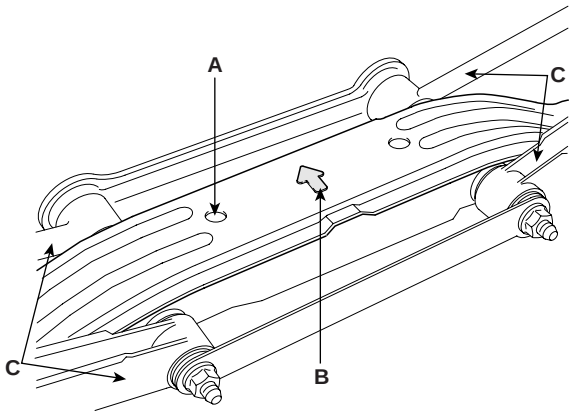
6. Install the suspension arm bracket mounting bolts(A).

Tightening torque
160~180 Nm (1600~1800 Kgf·cm, 118.0~132.8 lbf·ft)



KHQE600C

7. Make sure that the arrow mark(B) on the rear cross member(A) should place the front face of the vehicle.



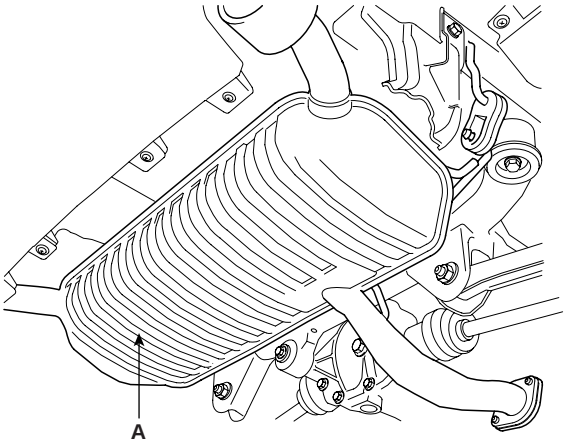
KHQE640A

8. Rear suspension arm(C)-to-rear carrier bolts should be temporarily tightened, and then fully tightened with the vehicle on the ground in unloaded condition.

Tightening torque
160~180 Nm (1600~1800 Kgf·cm, 118.0~132.8 Ibf·ft)

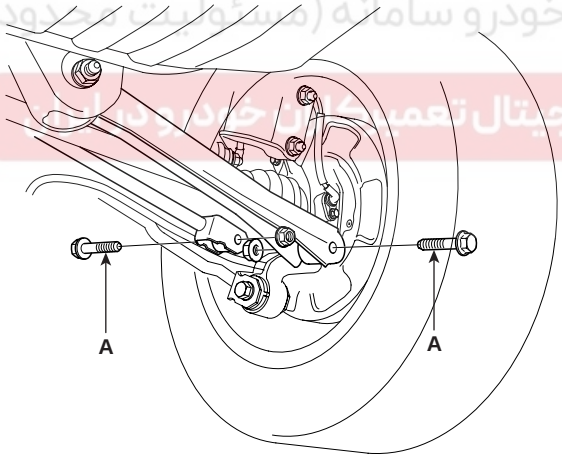
[4WD]

1. Remove the muffler(A).



KHQE605A

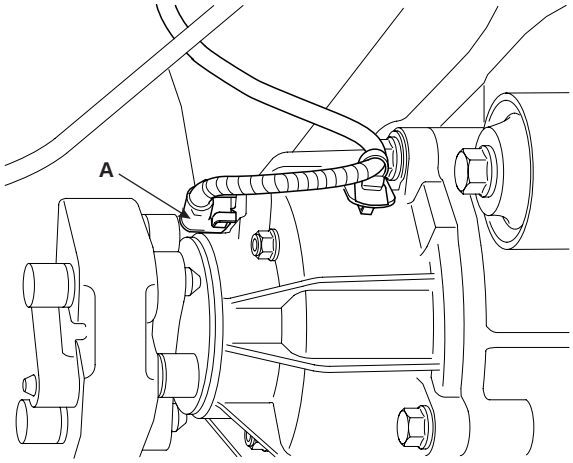
2. Remove the suspension arm mounting bolts(A).



KHQE605B

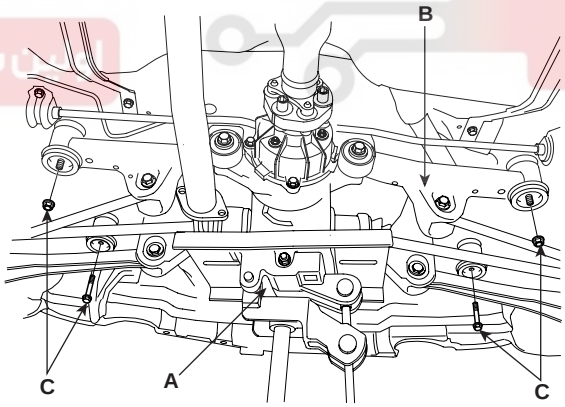
3. Remove the opposite side suspension mounting bolts.

4. Remove the coupling control connector(A).



KHQE605F

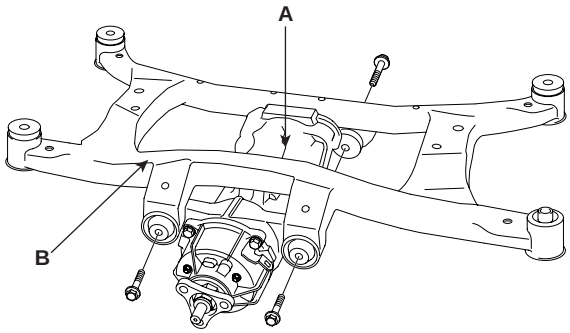
5. After supporting the rear cross member assembly(B) with a jack(A), remove the cross member mounting bolts and nuts(C).



KHQE605C

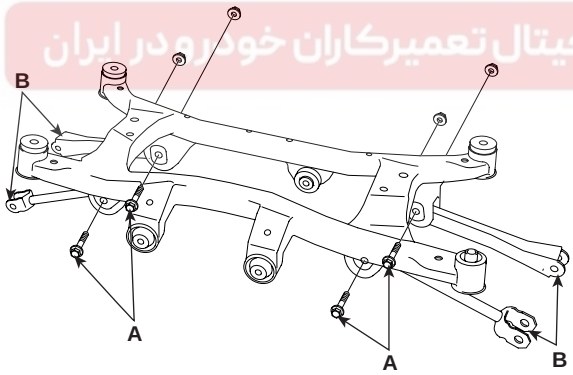
6. Remove the propeller shaft. (see page DS-propeller shaft)

7. Remove the rear differential(A) from the cross member(B).



KHQE605D

8. Remove the suspension arm bracket mounting bolts(A).

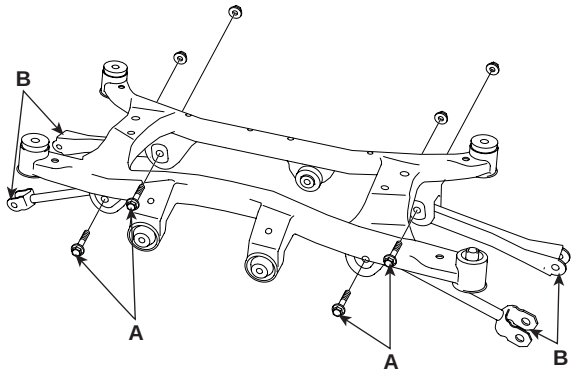


KHQE605E

9. Remove the suspension arm(B).

10. Install the suspension arm bracket mounting bolts(A).

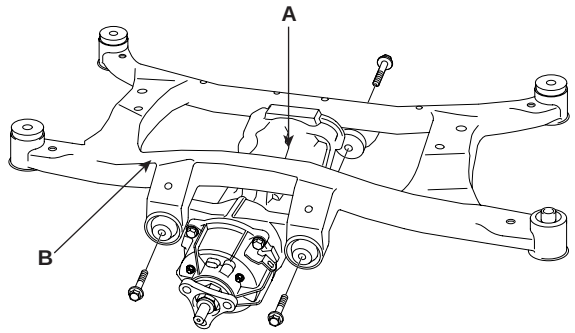
Tightening torque
140~160 Nm (1400~1600 Kgf·cm, 103.3~118.0 lbf·ft)



KHQE605E

11. Install the rear differential(A) on the cross member(B).

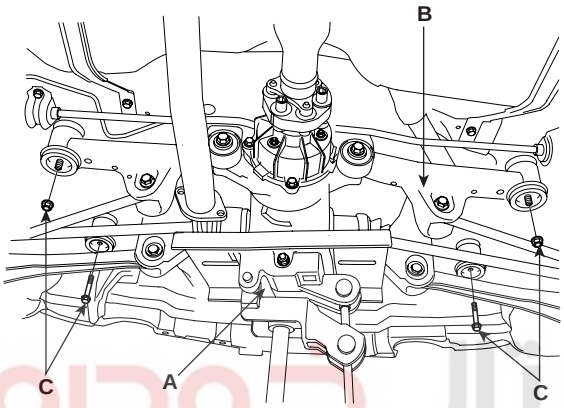
Tightening torque
90~120 Nm (900~1200 Kgf·cm, 59.0~88.5 lbf·ft)



KHQE605D

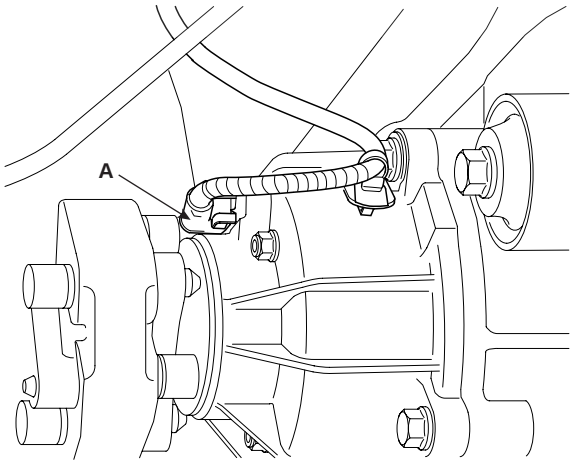
12. Install the propeller shaft. (see page DS-propeller shaft)
13. After supporting the rear cross member assembly(B) with the jack(A), install the cross member mounting bolts and nuts(C).

Tightening torque
100~120 Nm (1000~1200 Kgf·cm, 73.8~88.5 Ibf·ft)



KHQE605C

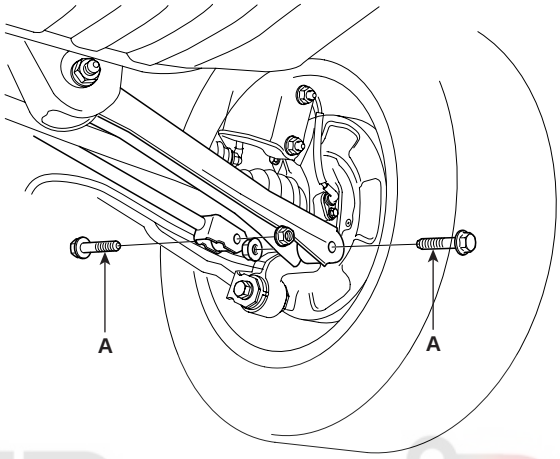
14. Install the coupling control connector(A).



KHQE605F

15. Rear suspension arm-to-rear carrier bolts(A) should be temporarily tightened, and then fully tightened with the vehicle on the ground in unloaded condition.

Tightening torque
140~160 Nm (1400~1600 Kgf·cm, 103.3~118.0 Ibf·ft)

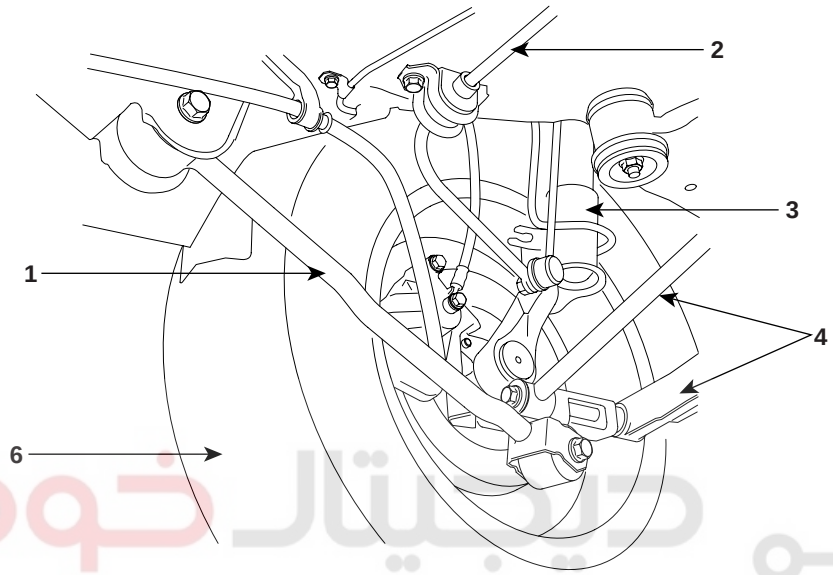


KHQE605B

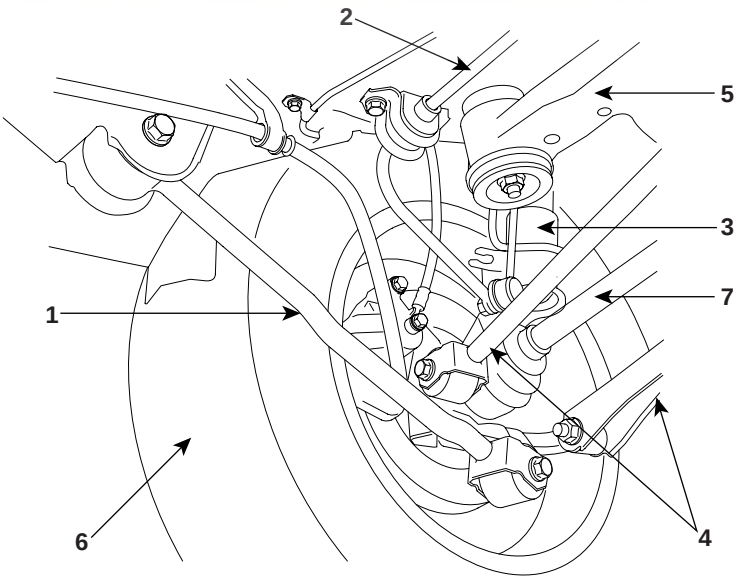
TRAILING ARM

COMPONENTS ECEDCC87

[2WD]



[4WD]

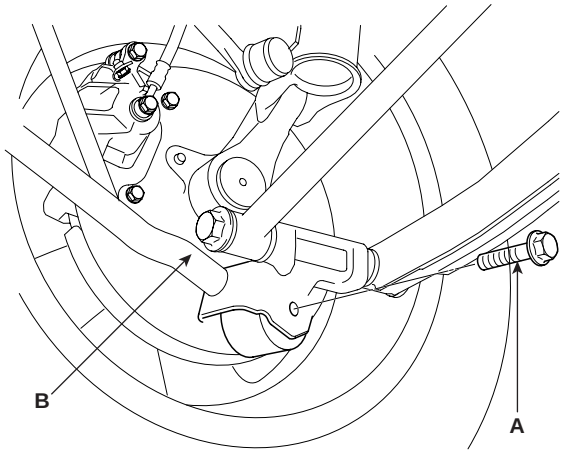


1. Trailing arm
2. Stabilizer bar
3. Strut assembly
4. Suspension arm
5. Cross member
6. Tire
7. Drive shaft

EHQE501A

REMOVAL EF96FAF2

1. Remove the trailing arm mounting bolts(A).



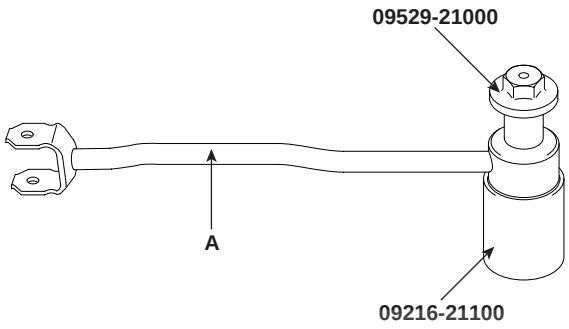
KHQE500A

2. Remove the bracket mounting bolt, nut of the vehicle side.
3. Remove the trailing arm(B).

REPLACEMENT EA5D8FFF

TRAILING ARM BUSHING

1. Install the special tools(09529-21000 & 09216-21100) on the trailing arm(A).



KHQE510A

2. Remove the bushing from the trailing arm(A).
3. Using the special tools(09529-21000 & 09216-21100), press-fit the rear trailing arm bushing.

Separation force is over 300Kg

NOTE

Insert bush as to arrow direct toward trailing arm length.

INSTALLATION EE30EDA5

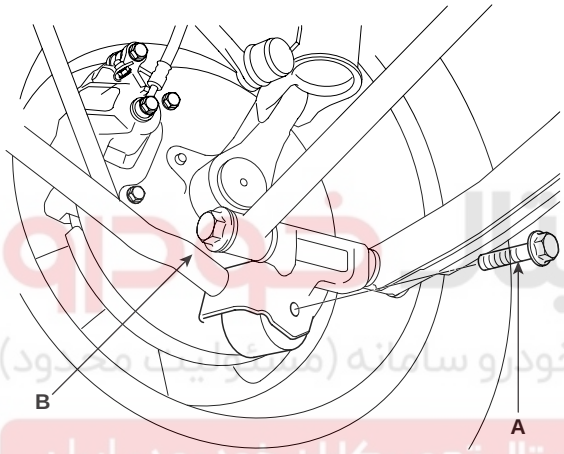
Install the trailing arm(B).

a. Install the trailing arm mounting bolt(A).

Tightening torque
100~120 Nm (1000~1200 Kgf·cm, 73.8~88.5 Ibf·ft)

b. Install the trailing arm bracket mounting bolt, nut.

Tightening torque
100~120 Nm (1000~1200 Kgf·cm, 73.8~88.5 Ibf·ft)



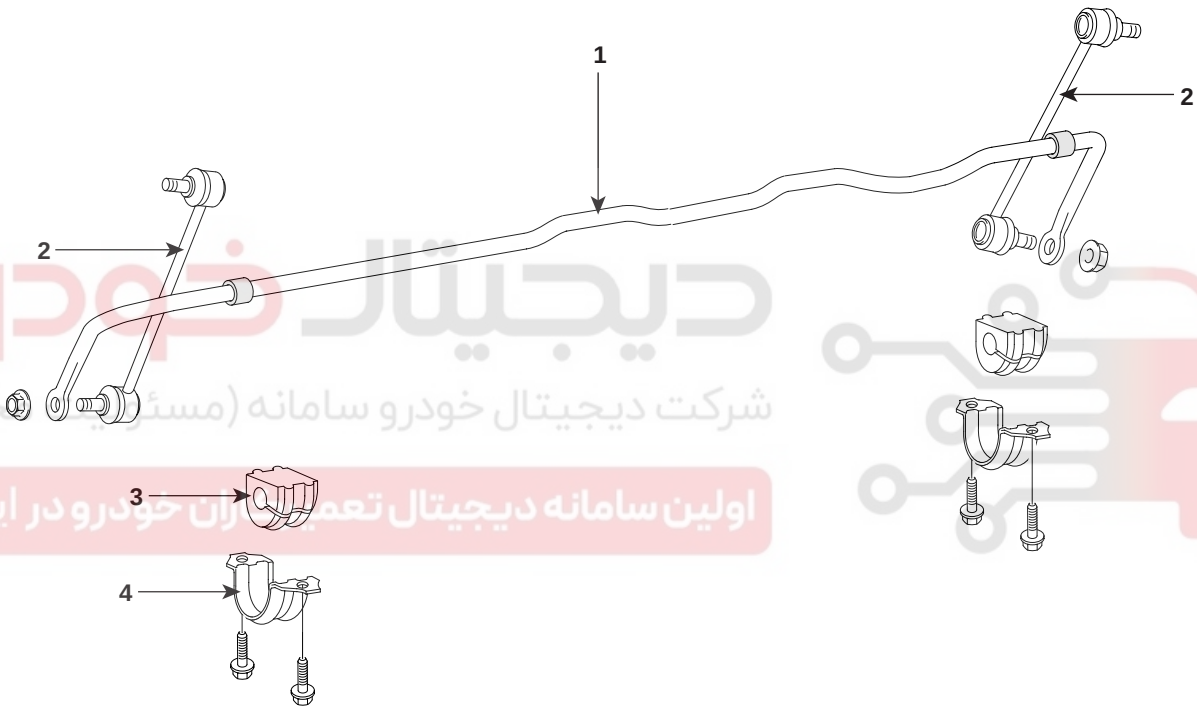
KHQE500A

NOTE

The trailing arm mounting bolts, then fully tightened with the vehicle on the ground in unloaded condition.

REAR STABILIZER BAR

COMPONENTS E2530CA4

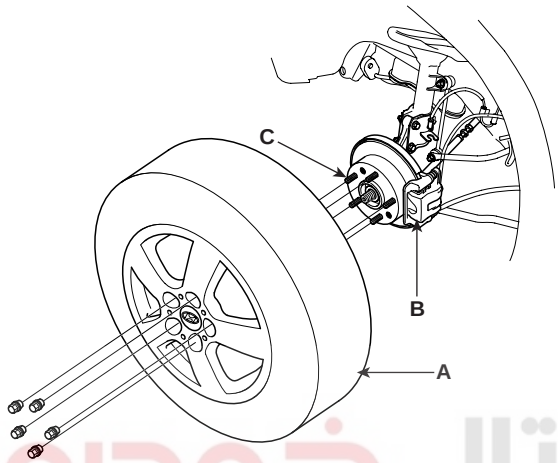


1. Stabilizer bar
2. Stabilizer bar link
3. Bushing
4. Bracket

EHQE701A

REMOVAL E7ECDA1F

1. Loosen the wheel nuts slightly.
   Raise the rear of the vehicle, and make sure it is securely supported.
2. Remove the rear wheel and tire(A) from rear hub(B).

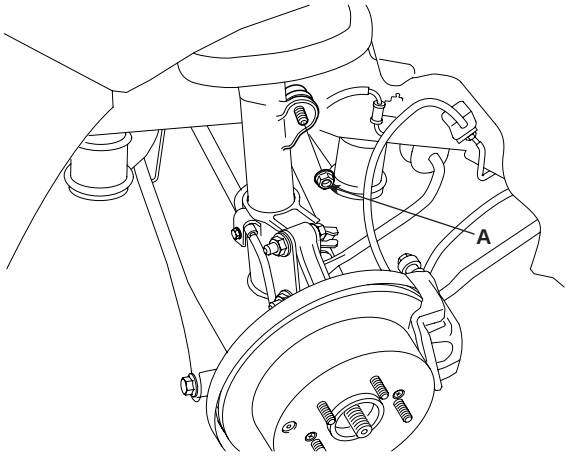


KIQE300A

CAUTION

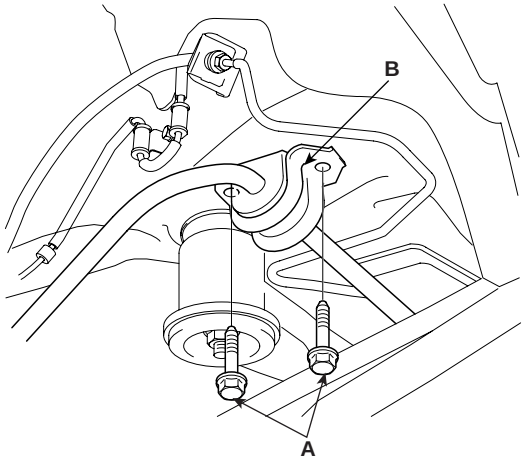
Be careful not to damage the hub bolts(C) then remove the rear wheel and tire(A).

3. Remove the stabilizer bar link mounting nut(A).



KHQE700A

4. Remove the stabilizer bar mounting bolts(A) and then remove the stabilizer bracket(B).



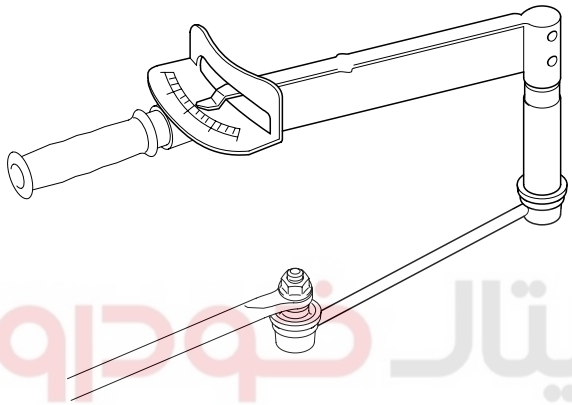
KHQE700B

5. Employ the same manner described above step 3 and 4 to the other side.
6. Remove the stabilizer bar.

INSPECTION ED1E4EBB

1. If there is a crack and damage in the dust cover, replace the stabilizer bar link.
2. Mount the self-locking nut on the ball joint, and then measure the ball joint rotating torque.

Tightening torque
0.7~2 Nm (7~20 Kgf·cm, Ibf·ft)

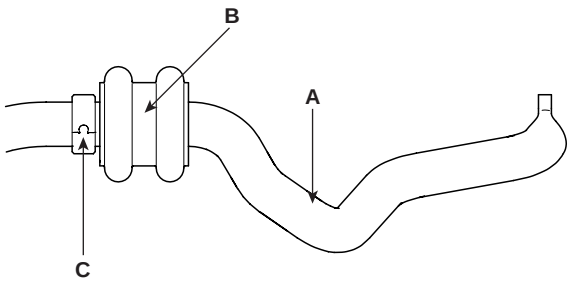


KHQE720A

3. If the rotating torque is above the upper limit of the standard value, replace the stabilizer link.
4. If the rotating torque is below the lower limit of the standard value, the ball joint may be reused unless it has drag and excessive play.

INSTALLATION E3DA2820

1. Install the bushing(B) on the stabilizer bar(A).

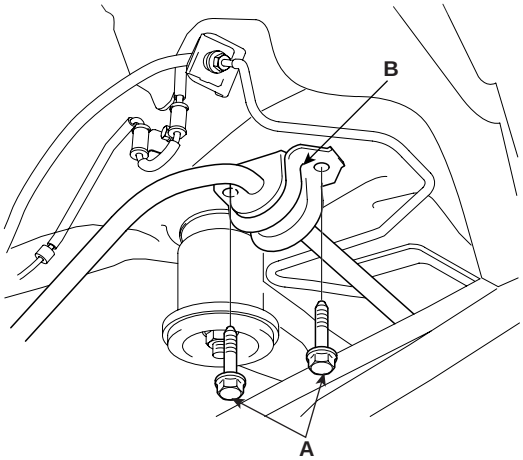


KHQE340A

NOTE

Bring clamp(C) of stabilizer bar(A) into contact with bushing(B).

2. Install the stabilizer bracket(B) and then install the stabilizer bar mounting bolts(A).



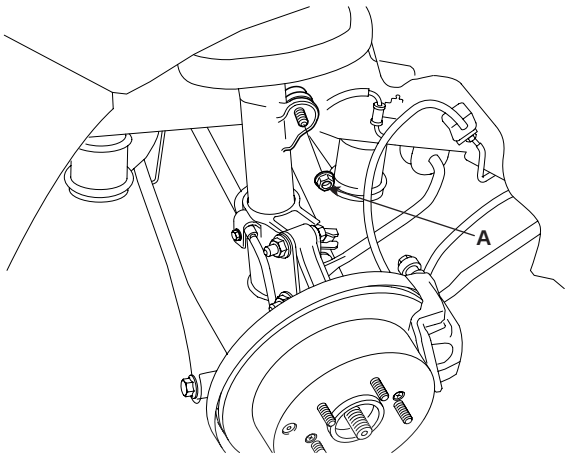
KHQE700B

3. One side bracket should be temporarily tightened, and then install the bushing on the opposite side.

Tightening torque
50~65 Nm (500~650 Kgf·cm, 36.9~48.0 Ibf·ft)

4. Install the stabilizer bar link mounting nut(A).

Tightening torque
100~120 Nm (1000~1200 Kgf·cm, 73.8~88.5 Ibf·ft)

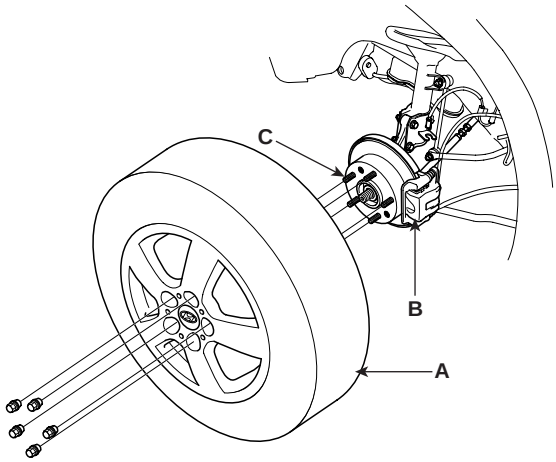


KHQE700A

5. Employ the same manner described above step 3 and 4 to the other side.

6. Install the rear wheel and tire(A) on the rear hub(B).

Tightening torque
90~110 Nm (900~1100 Kgf·cm, 66.4~81.2 Ibf·ft)



KIQE300A

CAUTION

Be careful not to damage the hub bolts(C) then install the rear wheel and tire(A).

TIRES／WHEELS

FRONT WHEEL ALIGNMENT

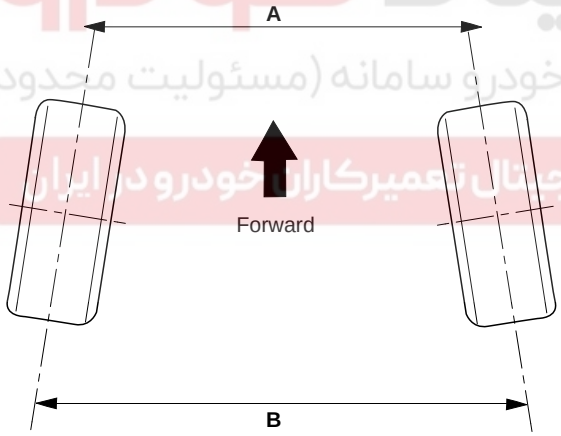
DESCRIPTION ECE9CCCD

WHEEL ALIGNMENT

When using a commercially-available computerized four wheel alignment equipment (caster, camber, toe) to inspect the front wheel alignment, always position the car 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 wheels and tires facestraight ahead and the tires are inflated to the specified pressure.

TOE

Toe is a measurement of how much the front of the wheels are turned in or out from the straight-ahead position.



EHHA850A

ITEM	Description
A-B＜0	Positive (+) toe (toe in)
A-B＞0	Negative (-) toe (toe out)

When the wheels aree turned in toward the front of the vehicle, toe is positive (+) (toe in). When the wheels are turned out toward the front of the vehicle, toe is negative (-) (toe out). Toe is measured in degrees, from side to side, and totaled.

Toe-in(B-A or angle a+b) is adjusted by turning the tie rod turnbuckles. Toe-in on the left front wheel can be reduced by turning the tie rod toward the rear of the car. Toe- in change is adjusted by turning the tie rods for the right and left wheelss simultaneously at the same amount as follows.

Standard value
Toe-in (B-A) mm (in.) : 0±2 mm (0±0.08 in.)

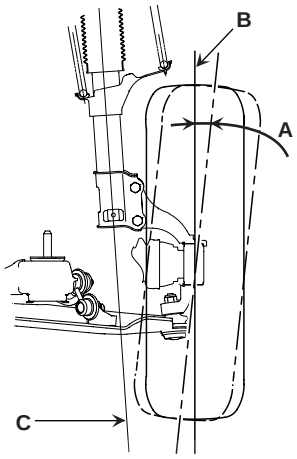
NOTE

- *Toe-in adjustment should be made by turning the right and left tie rods at the same amount.*
- *When adjusting toe-in, loosen the outer bellows clip to prevent twisting the bellows.*
- *After the adjustment, tighten the tie rod end lock nuts firmly and reinstall the bellows clip.*
- *Adjust each toe-in to be the range of ±1mm.*

Tie rod end lock nuts(A) tightening torque
50~60 Nm (500~600 Kgf·cm, 36.9~44.3 lbf·ft)

CAMBER

Camber is the inward or outward tilting of the wheels at the top.



KHQE800B

ITEM	Description
A	Positive camber angle
B	True vertical
C	Strut centerline

When the wheel tilts out at the top, then the camber is positive (+).
When the wheel tilts in at the top, then the camber is negative (-).
The stering knuckle which is installed with the strut assembly is pre-set to the specified camber at the factory and doesn't need to be adjusted.

Camber : 0°±30´

CASTER

Caster is the tilting of the strut axis either forward or backward from vertical. A backward tilt is positive (+) and a forward tilt is negative (-).

Caster is pre-set at the factory and doesn't need to be adjusted. If the caster is not within the standard value, replace the bent or damaged parts.

Caster : 3°32´ ± 30´

NOTE

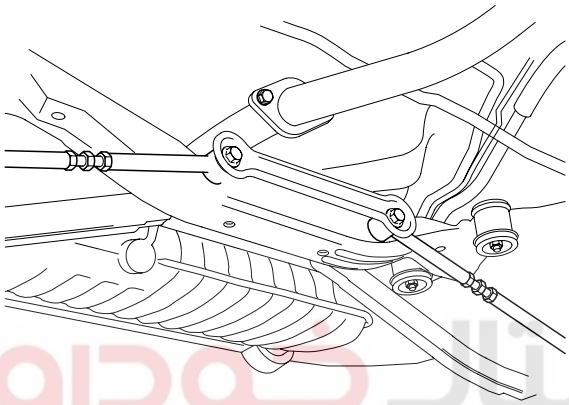
- *The worn loose or damaged parts of the front suspension assembly must be replaced prior to measuring front wheel alignment.*
- *Camber and caster are pre-set to the specified value at the factory and don't need to be adjusted.*
- *If the camber and caster are not within specifications, replace bent or damaged parts.*
- *The difference of left and right wheels about the camber and the caster must be within the range of 0° ± 30´.*

REAR WHEEL ALIGNMENT

DESCRIPTION EF8FF1CA

TOE-IN

Standard value
4.6(+3, -1) mm[0.18(+0.12, -0.04)in]



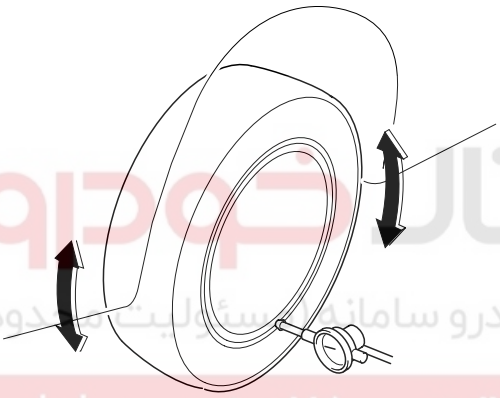
KHQE910A

WHEEL RUNOUT

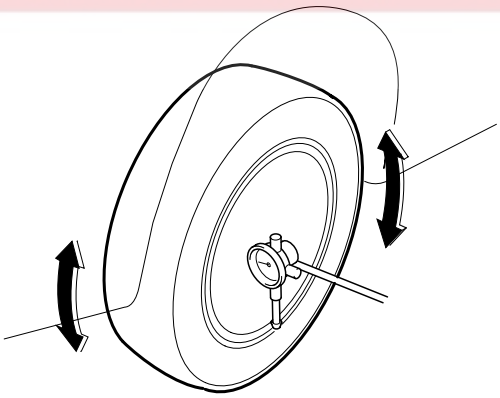
DESCRIPTION EB4999C7

1. Jack up the vehicle and support it with jack stands.
2. Measure the wheel runout with a dial indicator as illustrated.
3. Replace the wheel if the wheel runout exceeds the limit.

Limit	Radial	Axial
Runout mm(in.)	0.3(0.012)	0.3(0.012)



[Radial direction]



[Axial direction]

ELCSD97A

WHEEL NUT TIGHTENING

DESCRIPTION E8BCE653

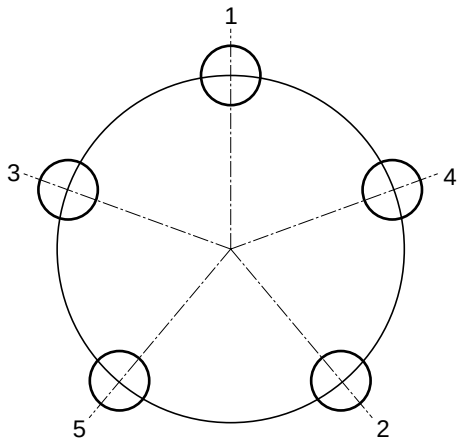
1. Tightening torque.

Tightening torque
90~110 Nm (900~1100 Kgf·cm, 66.4~81.2 lbf·ft)

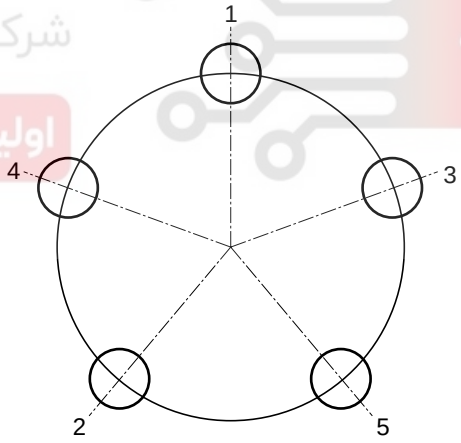
CAUTION

When using an impact gun, final tightening torque should be checked using a torque wrench.

2. Tightening order.
Check the torque again after tightening the wheel nuts diagonally.



KHQE810A



KHQE810B

TIRE WEAR

DESCRIPTION EBDE1C52

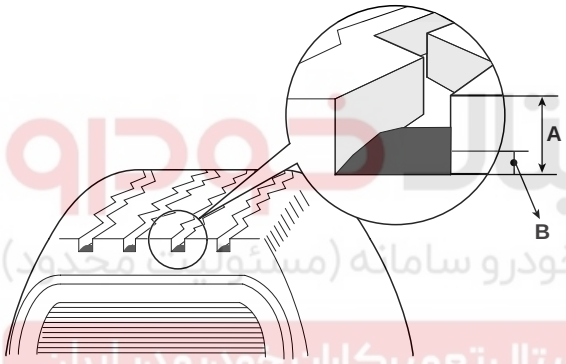
1. Measure the tread depth of the tires.

Tread depth of tire [Limit] : 1.6 mm (0.06 in.)

2. If the remaining tread(A) depth is less than the limit, replace the tire.

NOTE

When the tread depth of the tires is less than 1.6 mm (0.06 in.), the wear indicators(B) will appear.

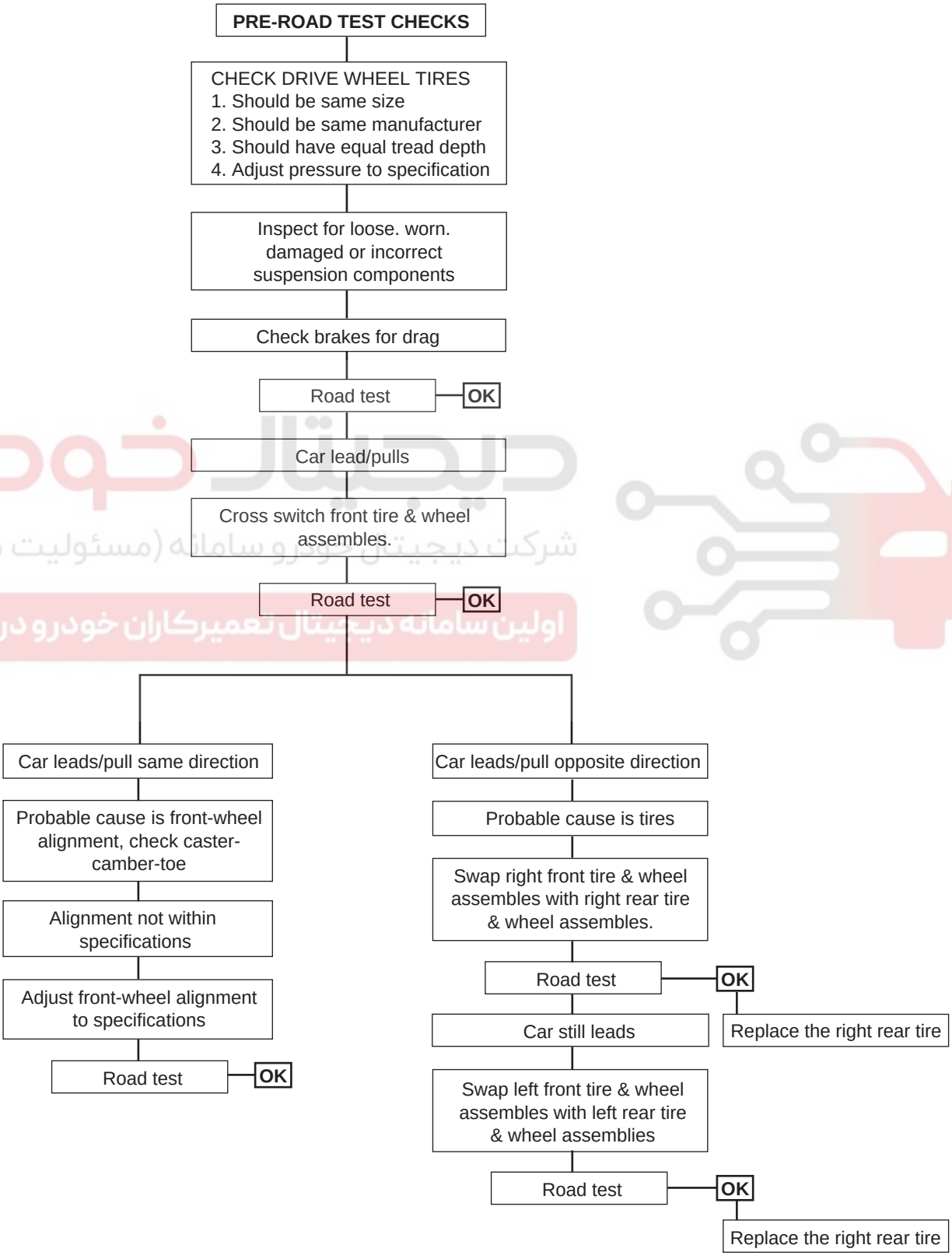


KHRSS79A

TIRE ROTATION

DISCRIPTION EED76AD7

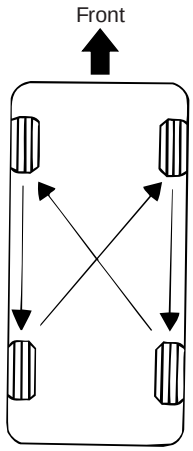
LEAD/PULL CORRECTION CHART



EHKE323A

ROTATION

Rotate the tires in the pattern illustrated.



EHDD854A