# Suspension System

# GENERAL

## SPECIFICATIONS E3F4F022

| Front suspension system | Macpherson strut type | |
|---|---|---|
| Shock absorber | | |
| Type | Gas type | |
| Stroke mm (in) | 160.4 (6.32) | |
| Damping force at 0.3 m/s | **Normal** | **Sports** |
| Expansion N(kg) | 940 ± 140 (94 ± 14) | 2080 ± 290 (208 ± 29) |
| Compression N(kg) | 260 ± 60 (26 ± 6) | 430 ± 90 (43 ± 9) |
| ID color | Red | Blue |

Coil spring free height and identification color

| Model | Classification | Free height mm (in.) | ID color |
|---|---|---|---|
| 2.0L GL M/T (-A/CON)<br>2.0L GLS M/T (-A/CON) | Sports | 323.3 (12.73) | Blue-Blue |
| 2.0L GLS 6M/T (-A/CON) | Normal | 340.9 (13.42) | Yellow-Yellow |
| 2.0L GL A/T (-A/CON)<br>2.0L GL M/T (+A/CON)<br>2.0L GLS M/T (+A/CON) | Sports | 329.2 (12.96) | Green-Green |
| 2.0L GLS 6M/T (+A/CON)<br>2.0L GLS A/T (-A/CON) | Normal | 347.6 (13.69) | Pink-Pink |
| 2.0L GL A/T (+A/CON)<br>2.0L GLS A/T (+A/CON)<br>2.7L GL 6M/T (+A/CON) | Sports | 335.1 (13.19) | Violet-Violet |
| 2.7L GL A/T (+A/CON)<br>2.7L GLS 6M/T (+A/CON)<br>2.7L GLS A/T (+A/CON) | Normal | 354.3 (13.95) | Red-Red |

* GL, GLS : Trim level
* M/T : 5 speed manual transaxle
* A/T : Automatic transaxle
* ID : Identification
* A/CON : With air conditioning
* N-A/CON : Without air conditioning
* 6M/T : 6 Speed Manual transaxle

EHOF010A

| Rear suspension system | Dual link | |
|---|---|---|
| Shock absorber | | |
| Type | Gas type | |
| Stroke mm (in) | 183.8 (7.24) | |
| Damping force at 0.3 m/s | **Normal** | **Sports** |
| Expansion N(kg) | 590 ± 100 (59 ± 10) | 1020 ± 150 (102 ± 15) |
| Compression N(kg) | 190 ± 50 (19 ± 5) | 380 ± 80 (38 ± 8) |
| ID color | Red | Blue |

Coil spring free height and identification color

| Model | Classification | Free height mm (in.) | I.D color |
|---|---|---|---|
| 2.0L GL A/T (-S/R)<br>2.7L GLS 6M/T (-S/R) | Sports | 311.0 (12.24) | White-White |
| | Normal | 320.5 (12.62) | Red-Red |
| 2.0L GL M/T (ALL)<br>2.0L GL A/T (+S/R)<br>2.0L GL M/T (+S/R)<br>2.0L GLS (ALL)<br>2.7L GL 6M/T (+S/R)<br>2.7L GL A/T (ALL)<br>2.7L GLS (ALL) | Sports | 315.6 (12.43) | Blue-Blue |
| | Normal | 325.6 (12.82) | Yellow-Yellow |

* GL, GLS : Trim level
* M/T : 5 speed manual transaxle
* A/T : Automatic transaxle
* ID : Identification
* 6M/T : 6 Speed Manual transaxle
* +S/R : With Sun roof
* -S/R : Without Sun roof

EHOF010B

## SERVICE STANDARD

| | | | |
|---|---|---|---|
| Standard value | | | |
| Toe-in mm (in.) | | Front | -2 ~ +2 (-0.08 ~ ±0.08) (Max. difference between LH and RH : 1.5 mm) |
| | | Rear | $4^{+3}_{-1}$ ($0.16^{+0.12}_{-0.04}$) (Max. difference between LH and RH : 2 mm) |
| Camber | | Front | -0°13´ ± 30´ (Max. difference between LH and RH : 0°30´) |
| | | Rear | -1°11´ ± 30´ (Max. difference between LH and RH : 30´) |
| Caster | | Front | 3°23° ± 30´ (Max. difference between LH and RH : 0°30´) |
| King pin angle | | Front | 12°42´ ± 30´ |
| King pin offset | mm (in.) | Front | -3.44 (-0.135) |
| Side slip | mm (in.) | Front | ±3 (when forwarding 1m) |
| | | Rear | 2-9 |
| Tire size | | | 205/55 R16, 215/45 R17, T125/70 R16 (Temporary tire) |
| Wheel size | | | 6.5J x 16, 7.0J x 17 (Aluminum wheel) |
| Tire inflation pressure kgf/cm† (PSI) | | | $2.1^{+0.07}_{0}$ ($30^{+1}_{0}$), 215/45 R17 tire only : $2.2^{+0.07}_{0}$ ($32^{+1}_{0}$), Temporary tire : 4.2(60) |

EHOF010C

***CAUTION***

***When rotating the "215/45 R17" Tires, ensure to follow the "ROTATION" direction marked on the sidewall of tires (see page SS-30).***

## TIGHTENING TORQUE

| Items | Nm | kgf·cm | lbf·ft |
|---|---|---|---|
| Wheel nut | 90~110 | 900~1100 | 67~82 |
| **Driveshaft nut**<br>2.0L<br>2.7L | <br>200~260<br>200~280 | <br>2000~2600<br>2000~2800 | <br>148~192<br>148~207 |
| Front strut upper installation nut | 45~60 | 450~600 | 33~44 |
| Front strut assembly to knuckle | 140~160 | 1400~1600 | 104~118 |
| Front strut mounting self-locking nut | 50~70 | 500~700 | 37~51 |
| Lower arm ball joint to knuckle | 60~72 | 600~720 | 43~52 |
| Lower arm bushing (A) mounting bolt | 130~150 | 1300~1500 | 96~111 |
| Lower arm bushing (G) mounting bolt | 130~150 | 1300~1500 | 96~111 |
| Stabilizer bar bracket mounting bolt | 30~45 | 300~450 | 22~33 |
| Tie rod end ball joint to knuckle | 24~34 | 240~340 | 18~25 |
| Tie rod end lock nut | 50~55 | 500~550 | 37~41 |
| Stabilizer link nut | 35~45 | 350~450 | 26~33 |
| Rear strut upper mounting nut | 30~40 | 300~400 | 22~30 |
| Rear strut lower mounting nut | 110~130 | 1100~1300 | 81~96 |
| Rear strut mounting self locking nut | 40~60 | 400~600 | 30~44 |
| Rear stabilizer link to stabilizer bar | 35~45 | 350~450 | 26~33 |
| Rear stabilizer bar bracket bolt | 17~26 | 170~260 | 13~19 |

| Items | Nm | kgf·cm | lbf·ft |
|---|---|---|---|
| Rear suspension arm tie rod nut | 50~60 | 500~600 | 37~43 |
| Rear suspension arm (A,B) mounting bolt | 160~180 | 1600~1800 | 118~133 |
| Rear cross member mounting bolt | 100~120 | 1000~1200 | 74~88 |
| Trailing arm to bracket nut | 40~50 | 400~500 | 30~37 |
| Trailing arm bracket to body frame | 40~50 | 400~500 | 30~37 |
| Trailing arm mounting | 100~120 | 1000~1200 | 74~88 |

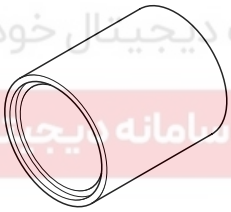
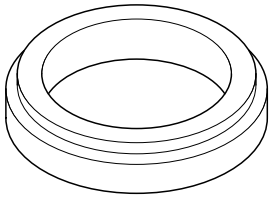
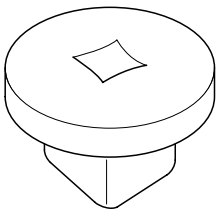
***CAUTION***

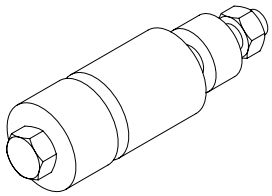
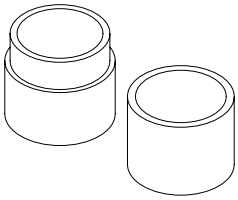
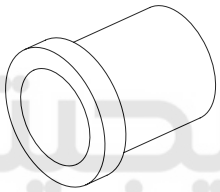
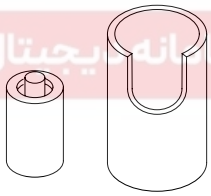
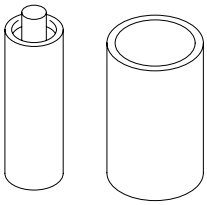
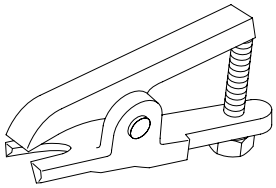
***Replace the self-locking nuts with new ones after removal.***

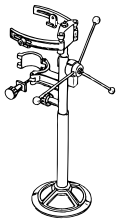
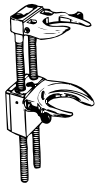
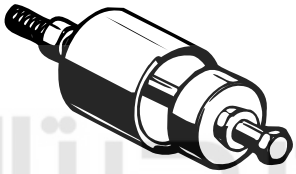
## LUBRICANTS E44ED2EE

| Item | Recommended lubricant | Quantity |
|---|---|---|
| In ball joint of lower arm | Variant R-2 grease or poly lub gly 801K | As required |

## SPECIAL TOOLS EA3CE969

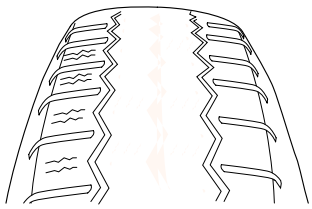
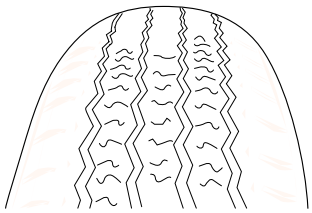
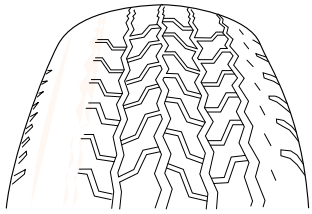
| Tool (Number and Name) | Use | Illustration |
|---|---|---|
| 09216-21100<br>Mount bushing remover and installer |  <br>B1621100 | Removal & installation of lower arm bushing (G)<br>(Use with 09216-21200, 09545-02000) |
| 09216-21200<br>Mount bushing remover and installer base |  <br>B1621200 | Removal & installation of the lower arm bushing (G)<br>(Use with 09216-21100, 09545-02000) |
| 09532-11600<br>Preload socket |  <br>E3211600 | Measurement of the lower arm ball joint & stabilizer link starting torque |

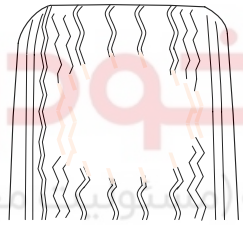
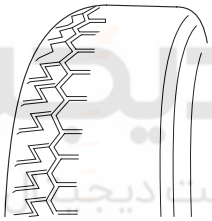
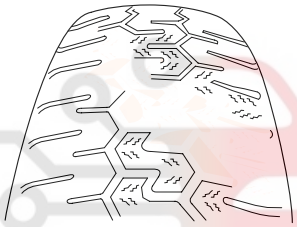
| Tool (Number and Name) | Use | Illustration |
|---|---|---|
| 09545-02000<br>Lower arm bushing remover and installer |  <br>E4502000 | Removal & installation of the lower arm bushing (G)<br>(Use with 09216-21100, 09216-21200) |
| 09545-11000<br>Ball joint remover and installer |  <br>E4511000 | Installation of the lower arm ball joint |
| 09545-21100<br>Ball joint dust cover installer |  <br>E4521100 | Installation of the lower arm ball joint dust cover |
| 09551-25000<br>Trailing arm bushing remover and installer |  <br>E5125000 | Removal & installation of the trailing arm bushing |
| 09552-25000<br>Rear suspension arm bushing remover and installer |  <br>EHDA140H | Removal & installation of the rear suspension arm bushing<br>(Use with 09545-28100) |
| 09568-34000<br>Ball joint puller |  <br>E6834000 | Separation of the lower arm ball joint |

| Tool (Number and Name) | Use | Illustration |
|---|---|---|
| 09546-26000<br>Strut spring compressor<br>or<br>J38402<br>Strut spring compressor |  <br>E4626000<br>  <br>EHDA140K | Compression of front coil spring<br>Compression of the front and rear coil spring<br>(Use with A-42 or A-20) |
| 09624-34000<br>Trailing arm bushing remover and installer |  <br>F2434000 | Removal and installation of the lower arm bush (G) |

## TROUBLESHOOTING EE139B4C

| Symptom | Possible cause | Remedy |
|---|---|---|
| Hard steering | Improper front wheel alignment<br>Excessive turning resistance of lower arm ball joint<br>Low tire pressure<br>No power assist | Correct<br>Replace<br><br>Adjust<br>Repair and replace |
| Poor return of steering wheel to center | Improper front wheel alignment | Correct |
| Poor or rough ride | Improper front wheel alignment<br>Malfunctioning shock absorber<br>Broken or worn stabilizer<br>Broken or worn coil spring<br>Worn lower arm bushing | Correct<br>Repair or replace<br>Replace<br>Replace<br>Replace the lower arm assembly |
| Abnormal tire wear | Improper front wheel alignment<br>Improper tire pressure<br>Malfunctioning shock absorber | Correct<br>Adjust<br>Replace |
| Wandering | Improper front wheel alignment<br>Poor turning resistance of lower arm ball joint<br>Loose or worn lower arm bushing | Correct<br>Repair<br><br>Retighten or replace |
| Vehicle pulls to one side | Improper front wheel alignment<br>Excessive turning resistance of lower arm ball joint<br>Broken or worn coil spring<br>Bent lower arm | Correct<br>Replace<br><br>Replace<br>Repair |
| Steering wheel shimmy | Improper front wheel alignment<br>Poor turning resistance of lower arm ball joint<br>Broken or worn stabilizer<br>Worn lower arm bushing<br>Malfunctioning shock absorber<br>Broken or worn coil spring | Correct<br>Replace<br><br>Replace<br>Replace<br>Replace<br>Replace |
| Bottoming | Broken or worn coil spring<br>Malfunctioning shock absorber | Replace<br>Replace |

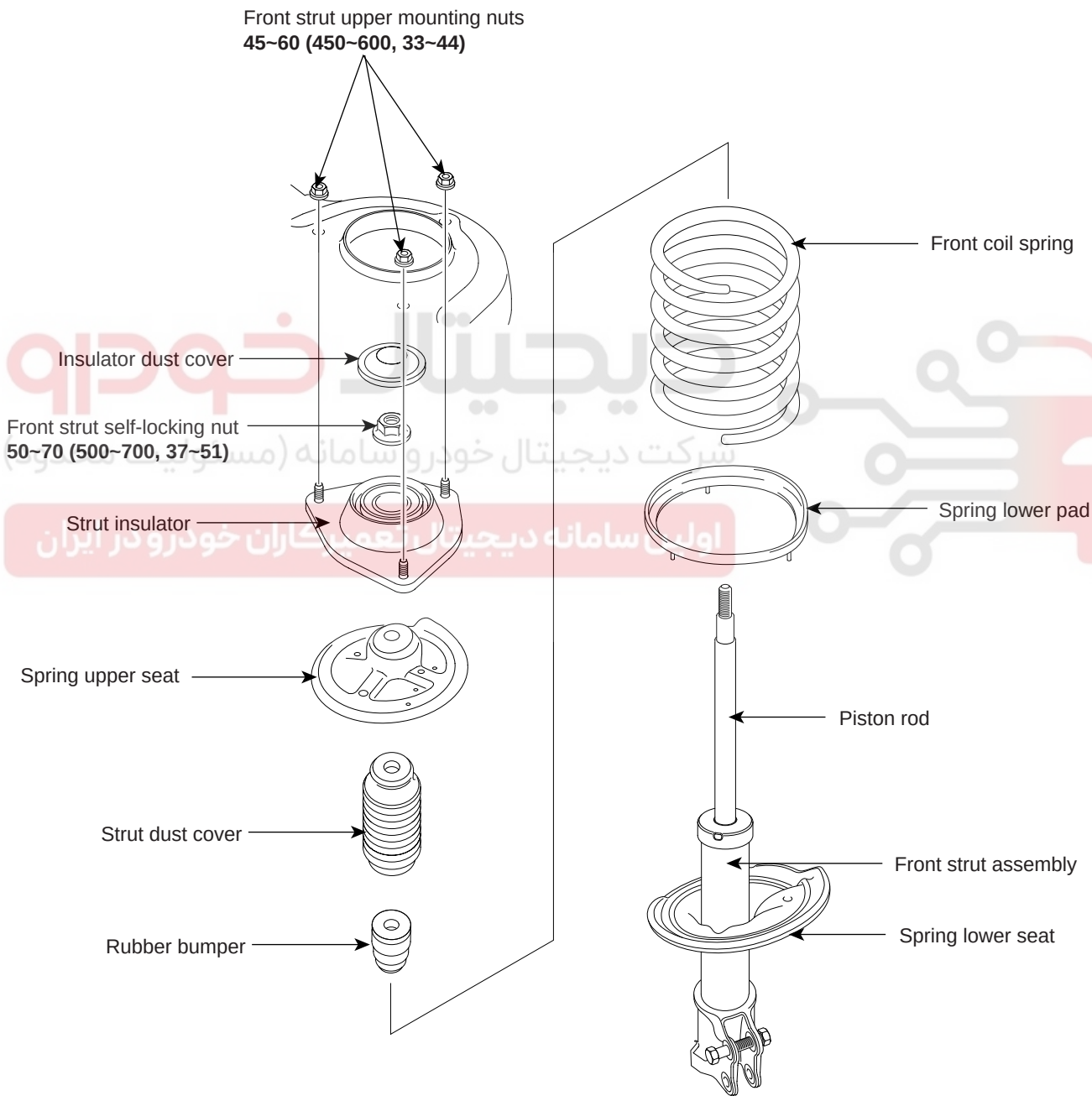
| WHEEL AND TIRE DIAGNOSIS | | |
|---|---|---|
| Rapid wear at the center | Rapid wear at both shoulders | Wear at one shoulder |
|  KXDT001A |  KXDT002A |  KXDT003A |
| • Center- tread down to fabric due to excessive over inflated tires<br>• Lack of rotation<br>• Excessive toe on drive wheels<br>• Heavy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

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

# FRONT SUSPENSION SYSTEM

## FRONT STRUT ASSEMBLY

### COMPONENTS E6E9D3C7




**TORQUE : Nm (kgf·cm, lbf·ft)**

EHOF110A

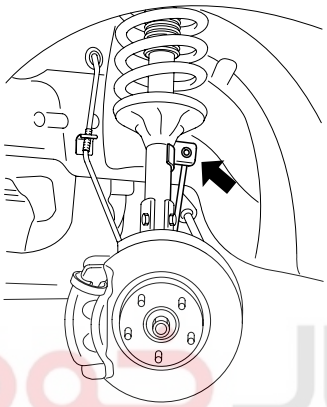
## REMOVAL E17CCED1

1. Remove the front wheel.
2. Detach the brake hose bracket from the strut assembly.

***NOTE***

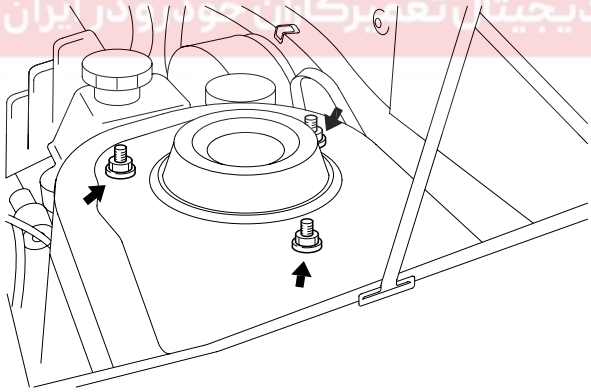
*Do not apply excessive force to the components.*

3. Remove the stabilizer link.



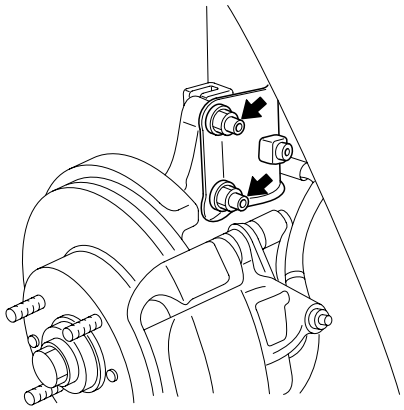
EHOF110B

4. Remove the strut upper mounting bolts(3).



EHOF110C

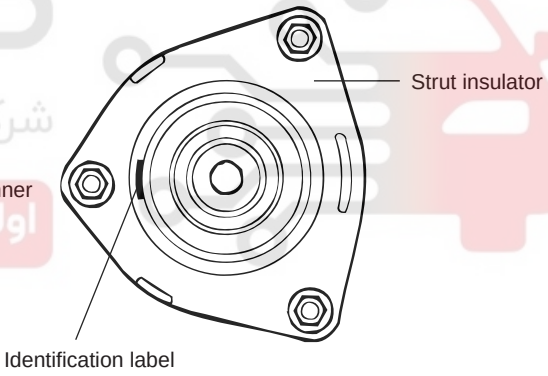
5. Remove the strut assembly.



EHOF110D

## INSTALLATION E593AD02

1. When installing the front strut, be sure to clear the conneting surface.
2. Install the strut assembly so the identification label on the strut insulator faces toward the inside of vehicle.




EFCSS03A

3. Tighten the components below to the specified torque as follows.

| Items | Torque Nm (kgf·cm, lbf·ft) |
|---|---|
| Front strut upper mounting nut | 45~60 (450~600, 33~44) |
| Front strut to knuckle | 140~160 (1400~1600, 104~118) |
| Stabilizer link nut | 35~45 (350~450, 26~33) |

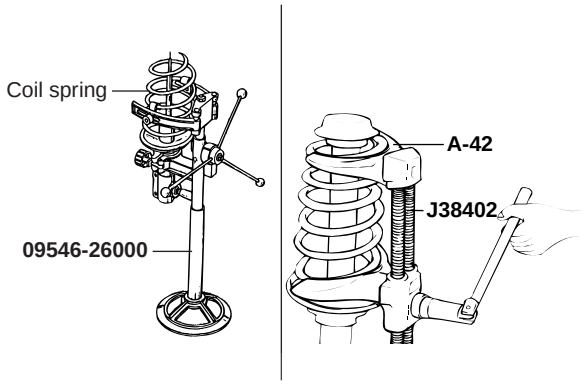
4. Install the brake hose and front wheel speed sensor wire on the front strut assembly.

## DISASSEMBLY E4E7801C

1. Using the special tools (09546-26000 or J38402), compress the coil spring until there is only a little tension on the strut.

***NOTE***

*Do not use an impact gun.*

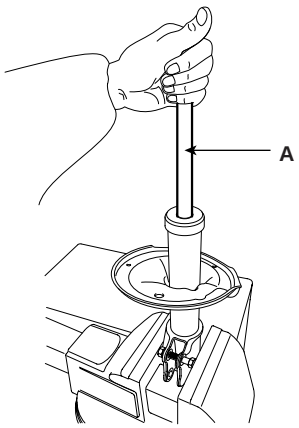



EHOC100A

2. Remove the nut at the top end of shock absorber.
3. Remove the insulator, spring seat, coil spring, dust cover from the strut assembly.

## INSPECTION EC2D49D3

1. Check the strut insulator bearing for wear or damage.
2. Check rubber parts for damage or deterioration.
3. Check the coil spring for sagging and weakness.
4. Check the shock absorber for abnormal resistance or unusual sound.



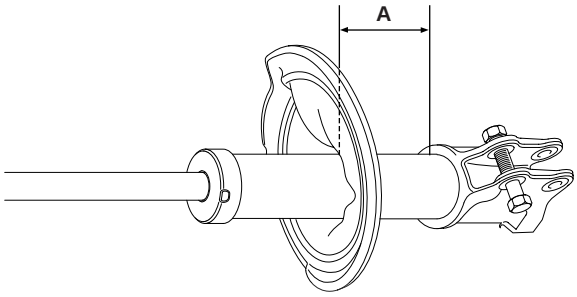

EHOF112A

### DISPOSAL

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

***CAUTION***

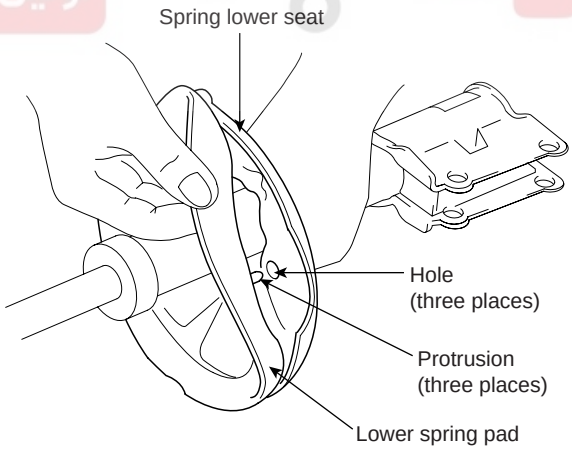
***The gas coming out is harmless, but be careful of chips that may fly when drilling.***
***Be sure to wear face shield and safety goggles.***




EHOF112B

## REASSEMBLY ED8819B1

1. Install lower spring pad so that the protrusions fit in the holes of the spring lower seat.




EHOF113A

2. Install the dust cover on the shock absorber.
3. Using the special tools (09546-26000 or J38402), compress the coil spring.
After the spring is fully compressed, install it on the shock absorber.

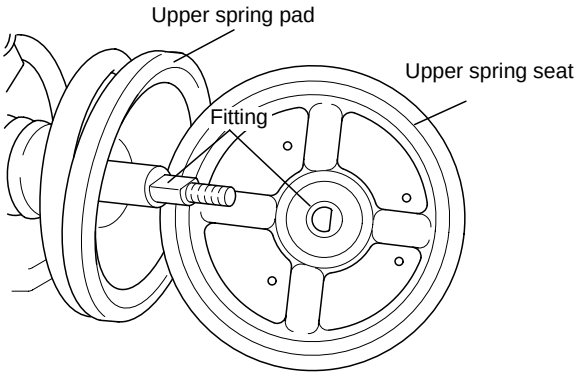
***NOTE***

*Install the coil spring with the identification mark directed toward the knuckle.*

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

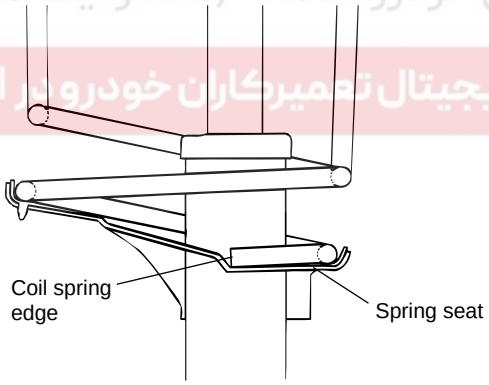
   **NOTE**

   *Align the D-shaped hole in the spring seat upper assembly with the protrusion on the piston rod.*




EHOF113B

5. After seating the upper and lower ends of the coil spring in the upper and lower spring seat grooves correctly, tighten the newself-locking nut temporarily.




EHOF113D

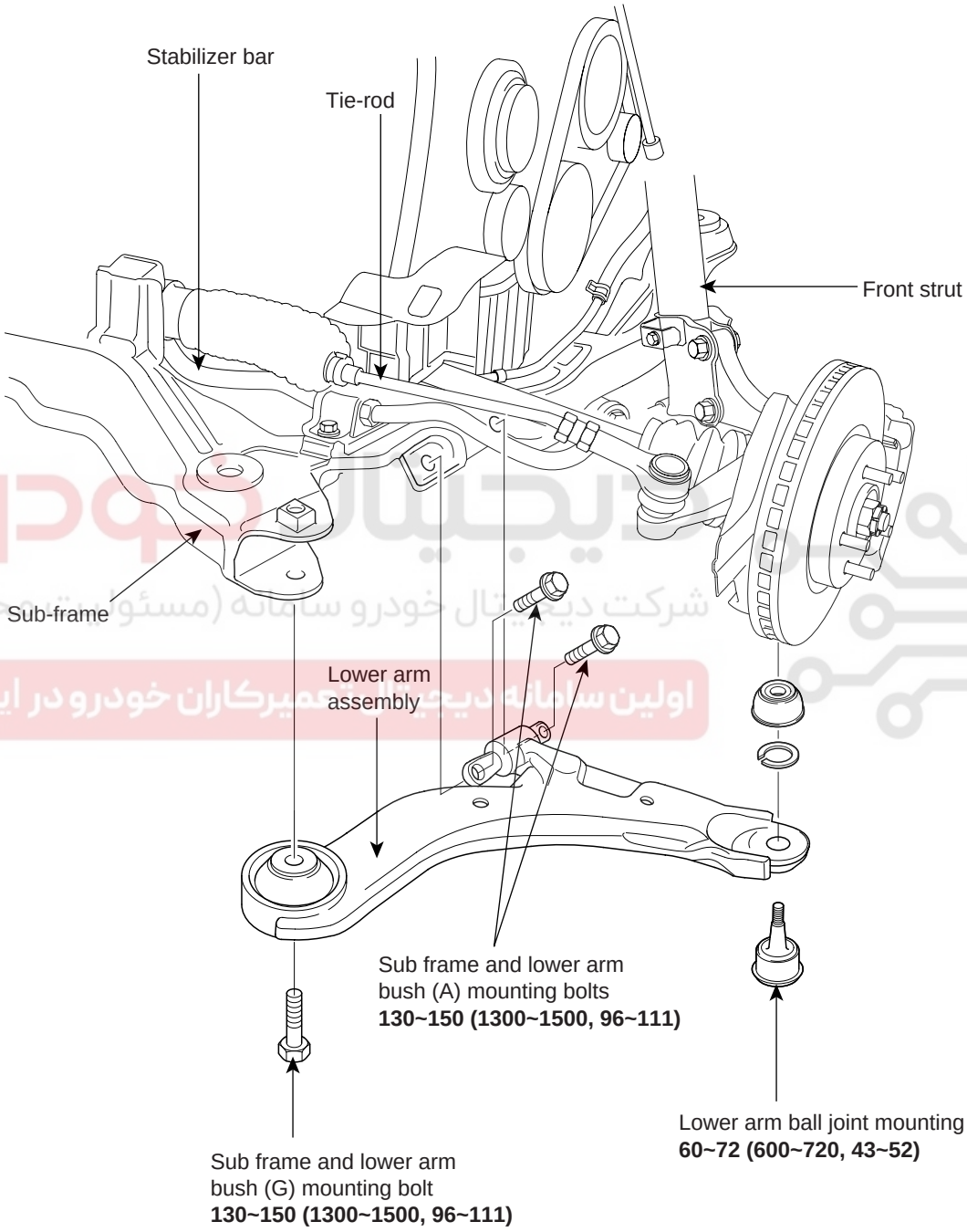
6. Remove the special tool (09546-26000 or J38402).

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

| **Tightening torque** |
| --- |
| 50~70 Nm (500~700 kgf·cm, 37~51 lbf·ft) |

# FRONT LOWER ARM

## COMPONENTS E1E137EC

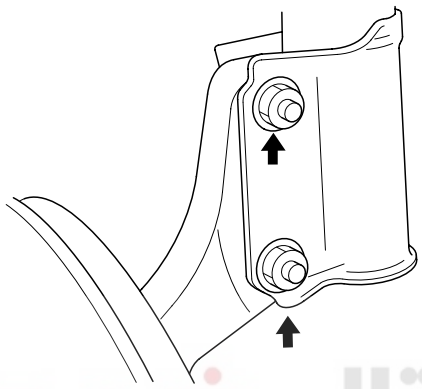



**TORQUE : Nm (kgf·cm, lbf·ft)**

EHOF120A

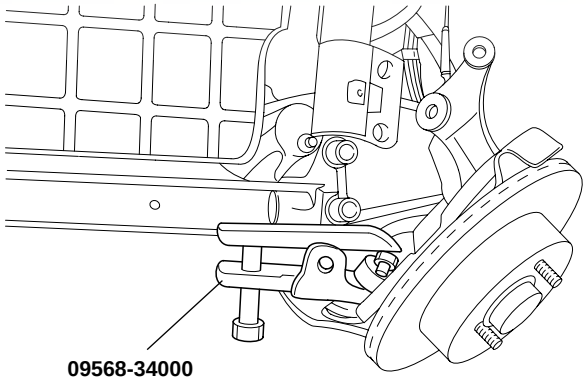
## REMOVAL EAEE468E

1. Remove the front wheel.
2. Remove the driveshaft split pin, nut and washer.
3. Loosen the lower arm ball joint nut, but do not remove it.
4. Remove the strut lower mounting bolts(2).



EHOF120B

5. Push the axle hub toward the outside to disconnect the driveshaft from the axle hub.
6. Using the special tool (09568 - 34000), disconnect the lower arm ball joint from the lower arm.




EIOF150D

7. Temporarily install the strut lower mounting bolt.
8. Remove the lower arm bushing (A) and bushing (G) mounting bolts(2).
9. Remove the lower arm assembly.

## INSTALLATION EC16F4AB

Installation is in the reverse order of removal.

***NOTE***

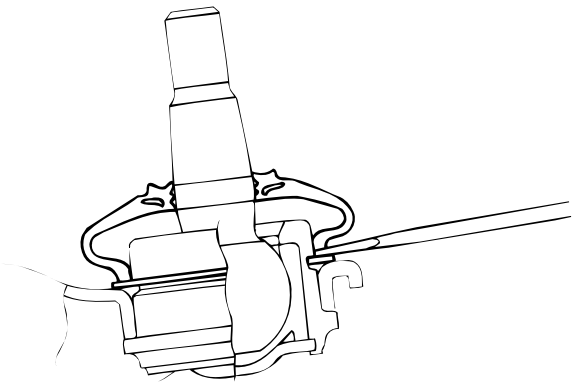
*Tighten the components below to the specified torque as follows.*

| Items | Torque Nm (kgf·cm, lbf·ft) |
|---|---|
| Wheel nut | 90~110 (900~1100, 67~82) |
| Driveshaft nut | 2.0 L : 200~260 (2000~2600, 148~192)<br>2.7 L : 200~280 (2000~2600, 148~192) |
| Strut lower mounting | 140~160 (1400~1600, 104~118) |
| Lower arm ball joint nut | 60~72 (600~720, 43~52) |
| Lower arm bushing(A) | 130~150 (1300~1500, 96~111) |
| Lower arm bushing(G) | 130~150 (1300~1500, 96~111) |
| Stabilizer link nut | 35~45 (350~450, 26~33) |

## REPLACEMENT EA31E3DF

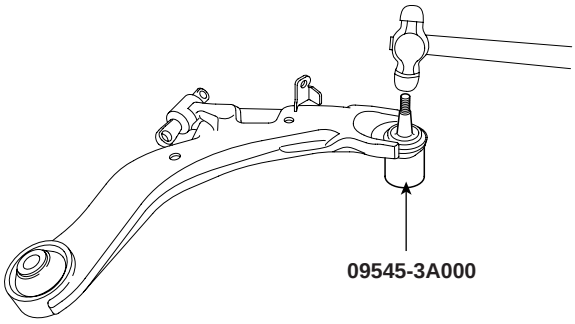
### BALL JOINT AND DUST COVER

1. Using a flat-tipped screwdriver, remove the dust cover from the lower arm ball joint.



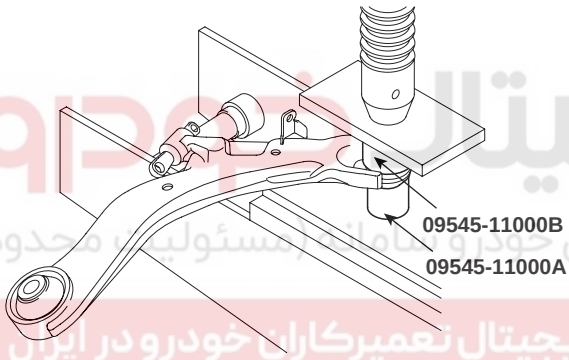
EHDA253D

2. Remove the snap ring.
3. Using a plastic hammer, tap the ball joint out of the lower arm.




EHOF124A

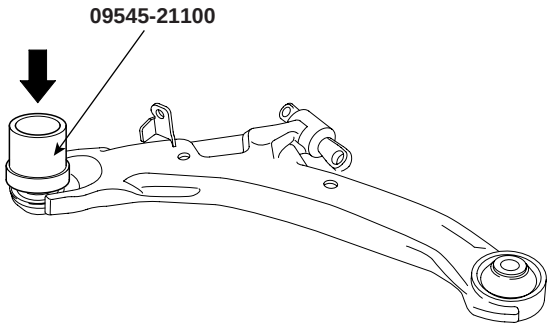
4. Using special tool (09545 - 11000), press-fit the ball joint into the lower arm assembly.




EHOF124B

5. Install the snap ring.

6. Using the special tool (09545 - 21100), install the dust cover.

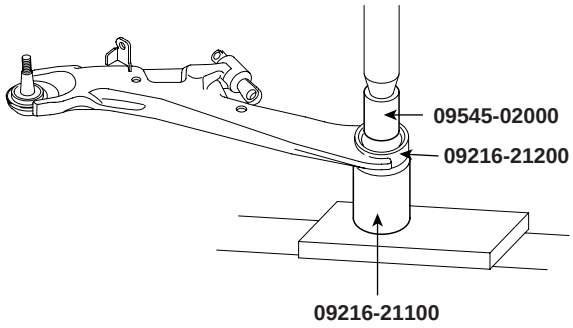



EHOF124C

**LOWER ARM BUSHING (G)**

1. Install the special tools (09545-02000, 09216-21100 and 09216-21200) on the lower arm.

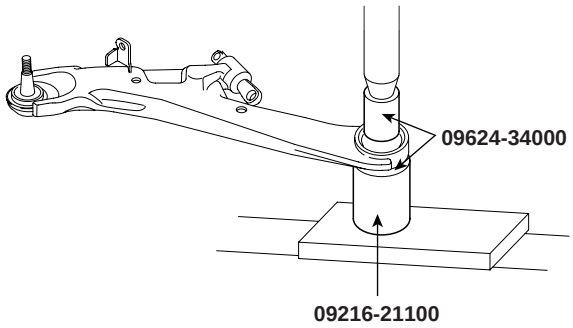
2. Press out the bushing.




EHOF124D

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

4. Install the new bushing on the lower arm by using special tools (09216-21100, 09624-34000).

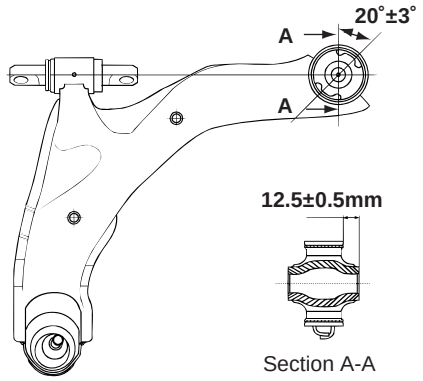



EHOF124E

***NOTE***

*Press-in the lower arm bushing (G) in the same direction as shown in illustration.*

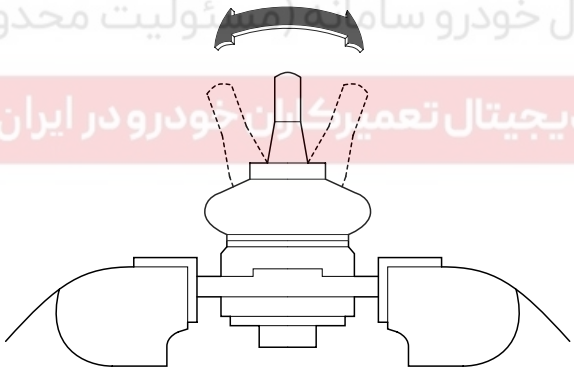
| **Pull out force for the bushing** |
| --- |
| 80 N [800 kg(f), 11.9 lb(f)] or more |



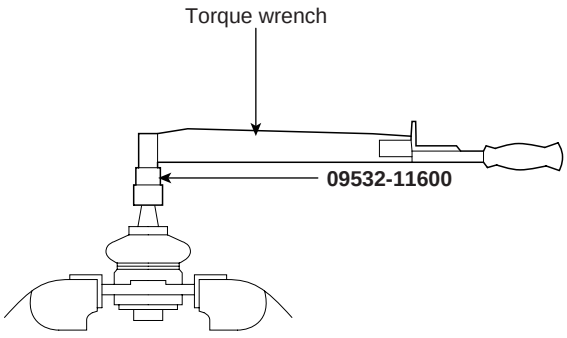

EHOE170A

## INSPECTION ECBE222C

1. Check the bushing for wear and deterioration.
2. Check the lower arm for bending or breakage.
3. Check the ball joint dust cover for cracks and damage.
4. Check all bolts for damage and deformation.
5. Check the lower arm ball joint for rotating torque.



EHOF122A




EHOF122B

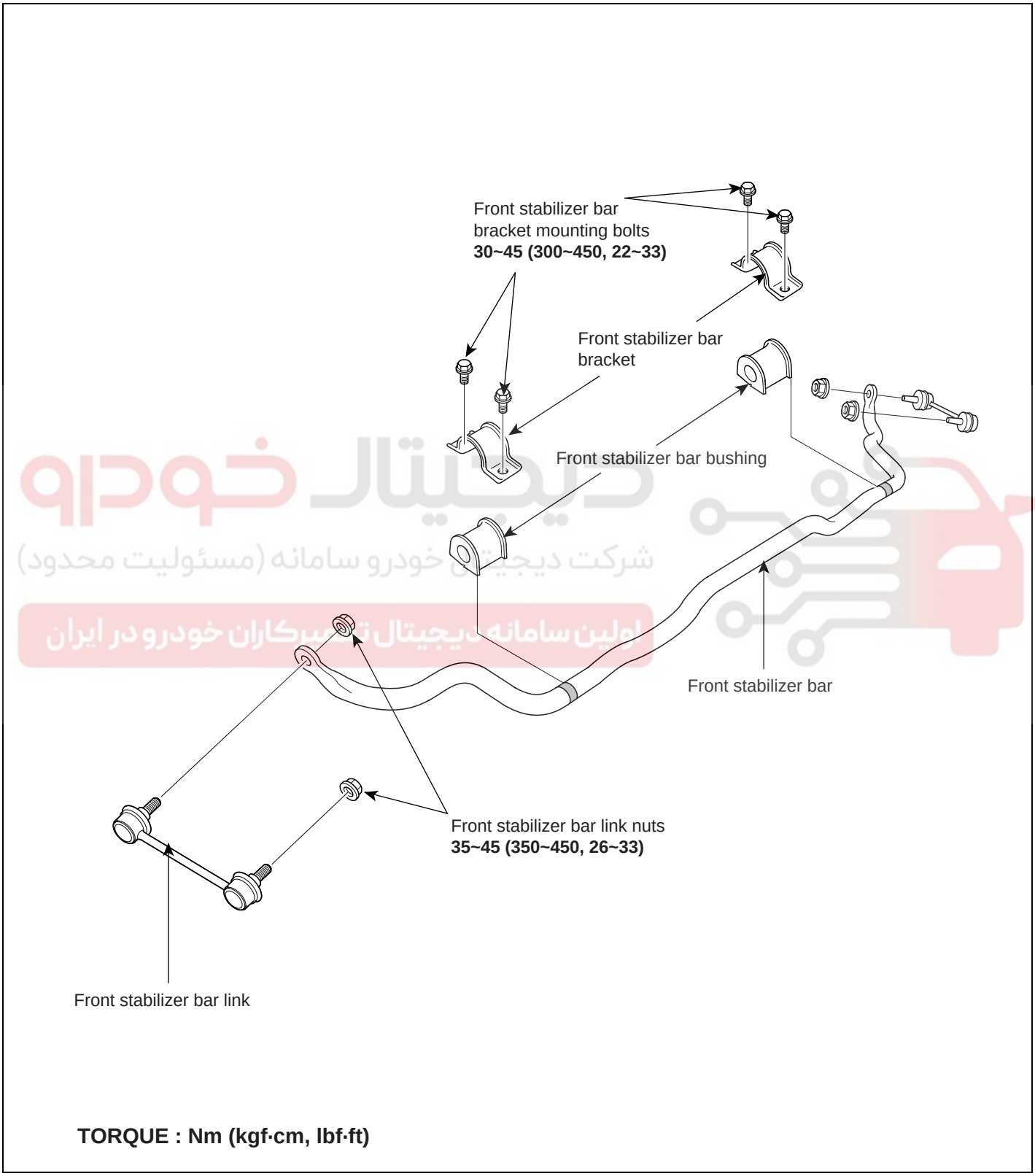
- If there is a crack in the dust cover, replace the ball joint assembly.
- Shake the ball joint stud several times.
- Measure the balll joint rotating torque.

**Standard value**
2.0~3.5 Nm (20~35 kgf·cm, 1.48~2.58 lbf·ft)

- If the rotating torque is above the upper limit of the standard value, replace the ball joint assembly.
- Even 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.

# FRONT STABILIZER BAR

## COMPONENTS E30A6749

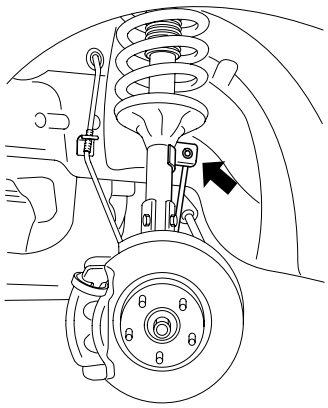



**TORQUE : Nm (kgf·cm, lbf·ft)**

EHOF130A

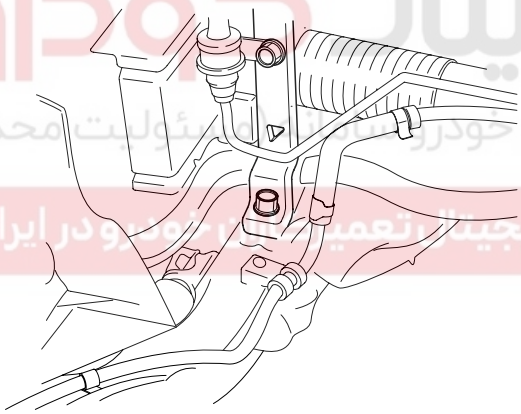
## REMOVAL EB0AED88

1. Remove the front wheel.
2. Remove the stabilizer link assembly.



EHOF110B

3. Remove the stabilizer bracket and bushing.

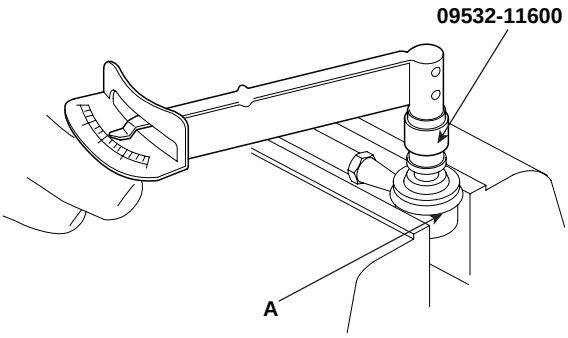


EHOF130C

4. Remove the stabilizer bar.

## INSPECTION EAFB99FA

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.
4. Check the stabilizer link ball joint for rotating torque.




EHOF132A

- If there is a crack in the dust cover, replace it and add grease.
- Shake the stabilizer link ball joint stud several times.
- Mount the self-locking nut on the ball joint, and then measure the ball joint rotating torque.

| Standard value |
| --- |
| 0.7~2 Nm (7~20 kgf·cm, 0.52~1.48 lbf·ft) |

- If the rotating torque is higher than the upper limit of the standard value, replace the stabilizer link.
- 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 E035E417

1. Install the bushing on the stabilizer bar.

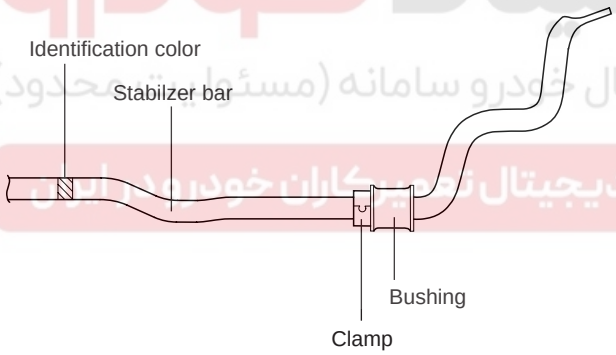
***NOTE***

*a. When installing the stabilizer bar, follow the identification color (ID color) as below.*

| Model | ID color | Outer diameter |
|---|---|---|
| 2.0L Sports (HARD) | - | 21.8mm (0.86 in.) |
| 2.0L Normal (SOFT) | White | 18.8mm (0.74 in.) |
| 2.7L Sports (HARD) | Yellow | 21.8mm (0.86 in.) |
| 2.7 Normal (SOFT) | Red | 18.8mm (0.74 in.) |

*ID : Identification*

*b. Position the bushing on the outside of the stabilizer bar clamp so as to install it.*




EGKSS13A

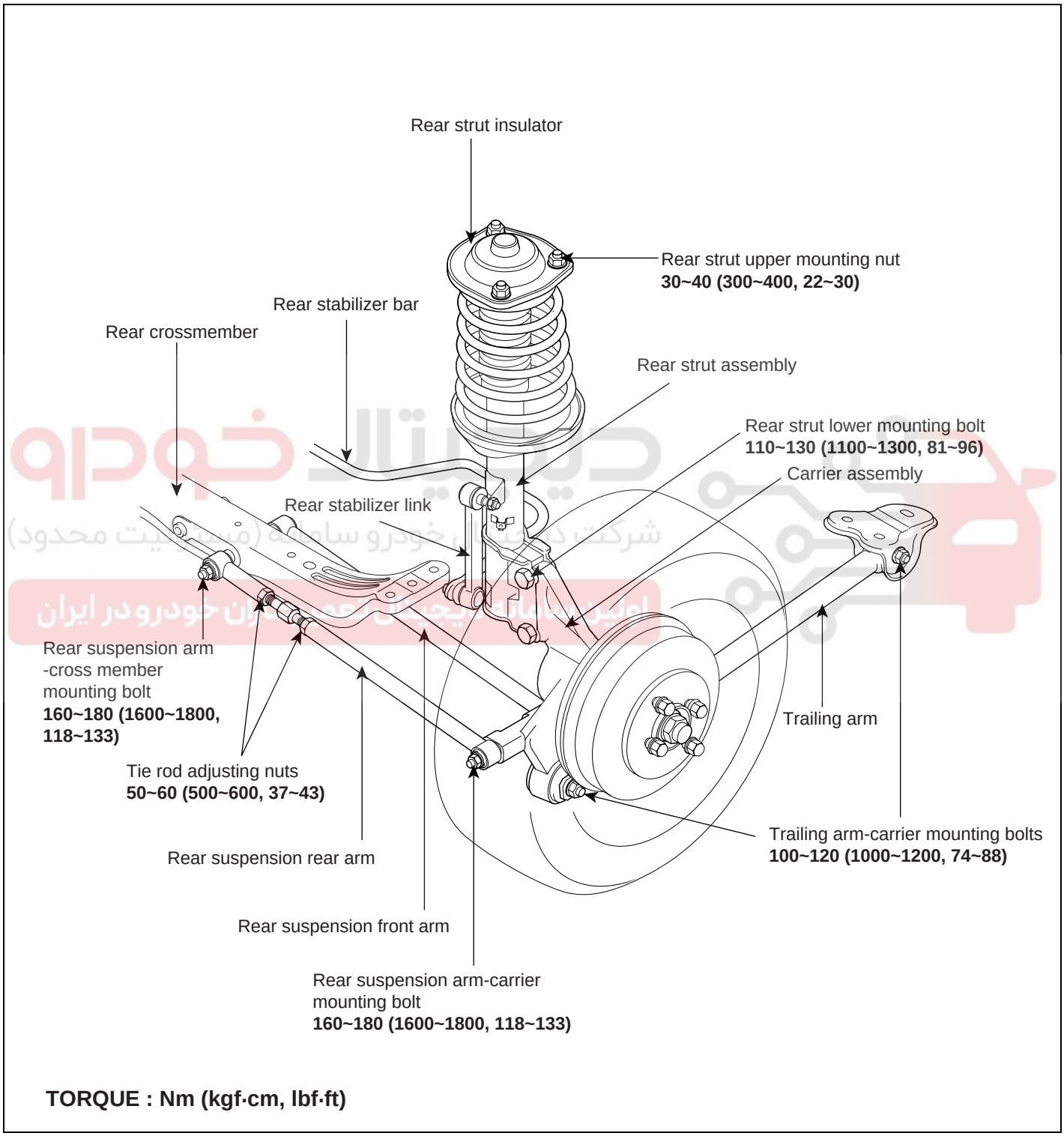
*c. Let the selection of the bushings be able to be decided by customers.*

2. Install the bracket on the bushing.

3. After tightening the bolts of the bushing bracket temporarily, install the bushing bracket on the opposite side.

# REAR SUSPENSION SYSTEM

## COMPONANTS EBFA8A01

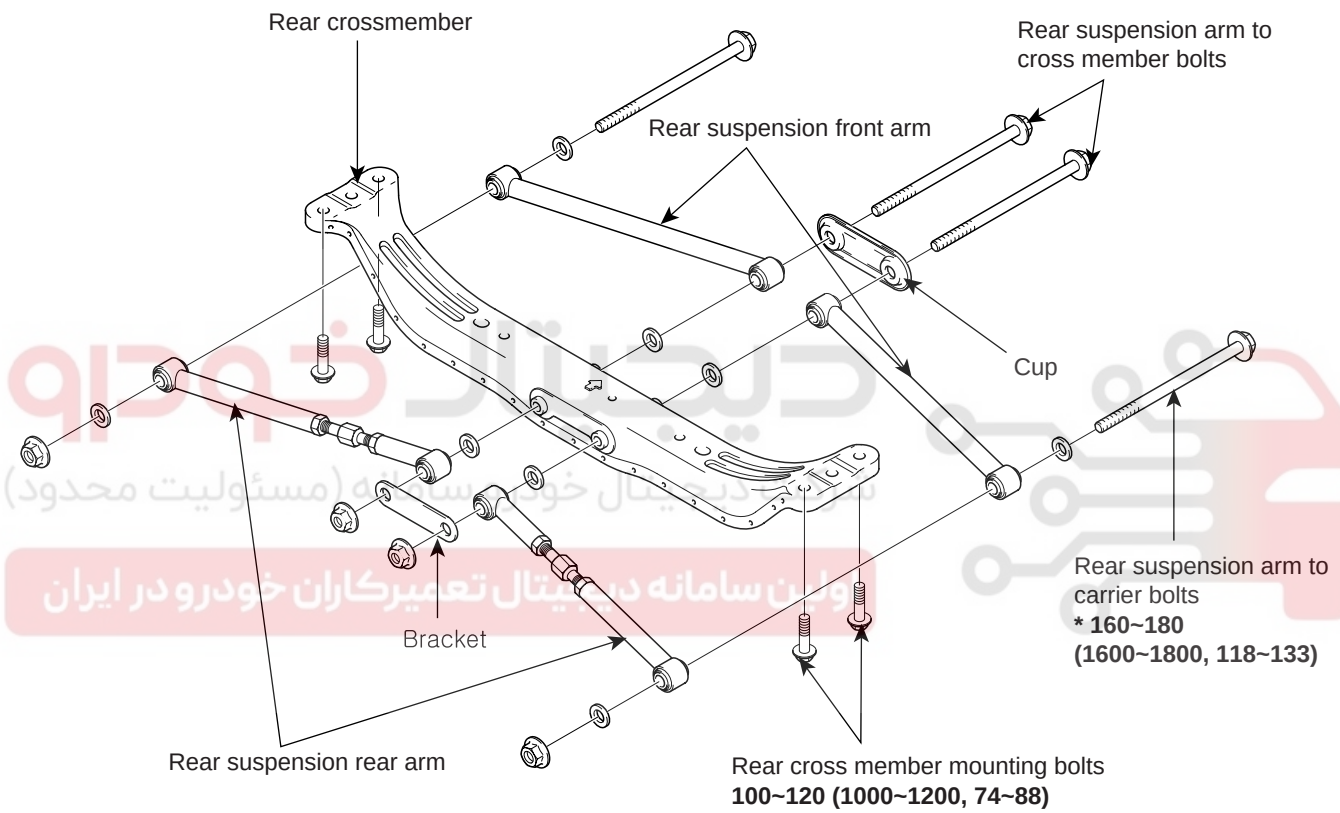



**TORQUE : Nm (kgf·cm, lbf·ft)**

EHOF210A

# REAR SUSPENSION ARM

## COMPONENTS EBAE46E6



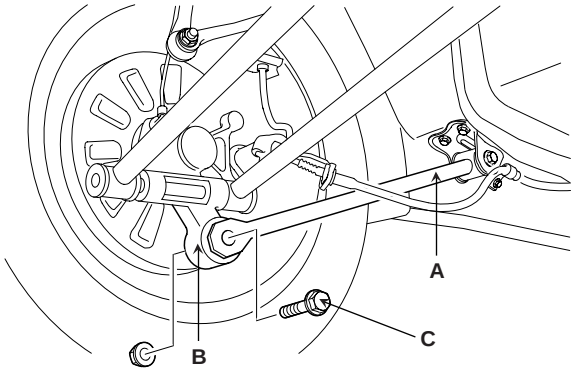

**CAUTION**
**The parts marked '*' should be temporarily tightened, and then fully tightened with the vehicle on the ground in unloaded condition.**

**TORQUE : Nm (kgf·cm, lbf·ft)**

EHOF210B

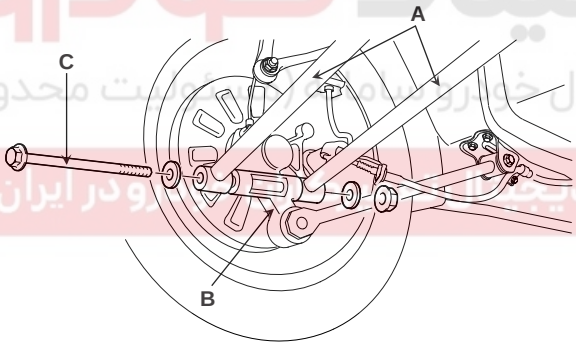
## REMOVAL EE9CD5CD

1. Remove the bolt (C) fixing the trailing arm (A) to the rear carrier (B).




EHOF210C

2. Remove the bolt (C) fixing the rear suspension arm (A) to the rear carrier (B).



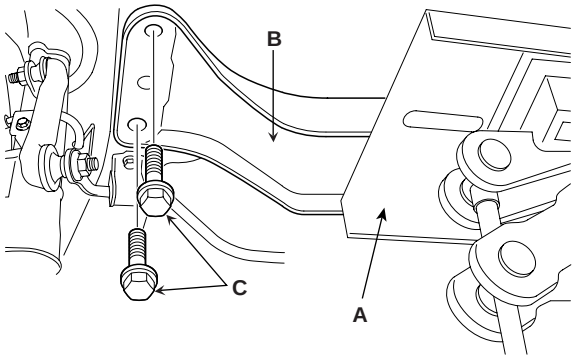

EHOF210D

3. Employ the same manner described above step 1 and step 2 to the other side.

4. After supporting the rear cross member assembly (B) with a jack (A), remove the two cross member fixing bolts (C). Employ the same manner described above to the other side.

***CAUTION***

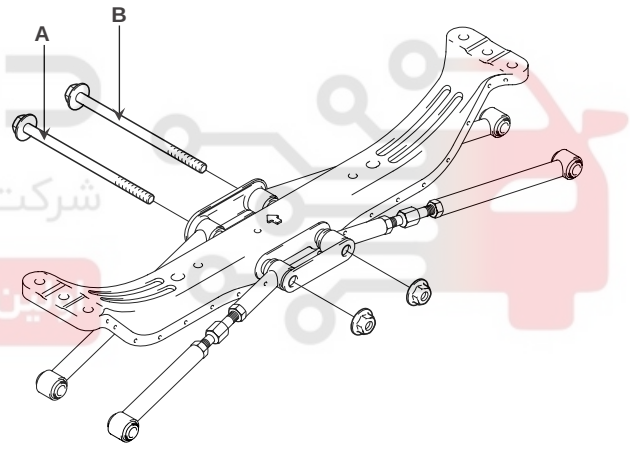
***The rear cross member assembly (B) is unstable on the jack(A); be careful not to allow it to fall.***




EHOF210E

5. Lowing the jack, remove the rear cross member and rear suspension arms as an assembly.

6. Remove the two rear suspension arm-to-cross member bolts (A, B).



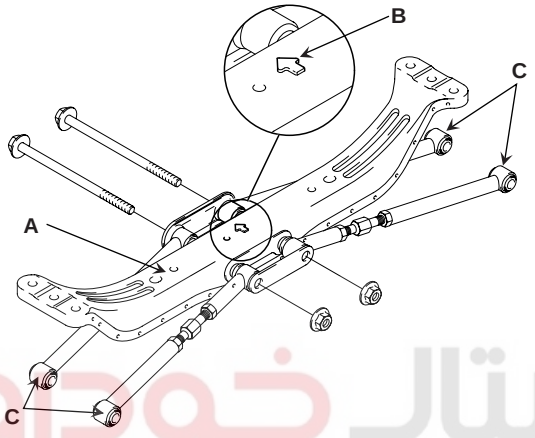

EHOF210F

7. Remove the rear suspension arms.

## INSTALLATION ED24684F

1. Installation is in the reverse order of removal.

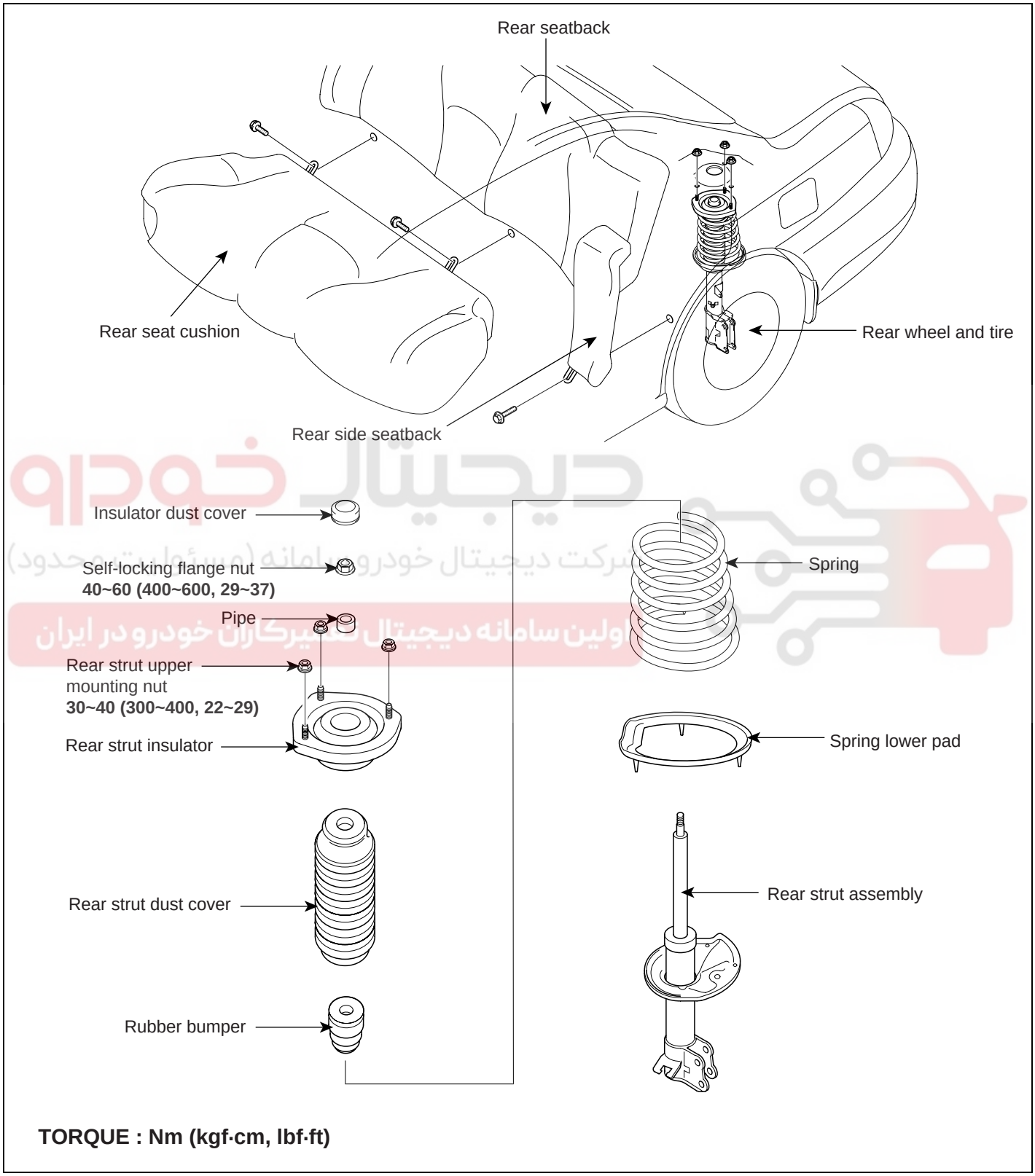
2. Reassemble the rear suspension arms (C) and the rear cross member (A) as shown below. Make sure that the arrow mark (B) on the rear cross member (A) should place the front face of the vehicle.
   Rear suspension arm (C) -to-rear carrier bolts should be temporarily tightened, and then fully tightened with the vehicle on the ground in unloaded condition.




EHOF214A

# REAR STRUT ASSEMBLY

## COMPONENTS E155657B

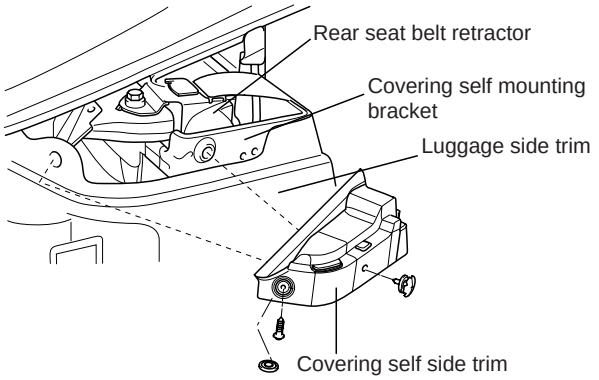



**TORQUE : Nm (kgf·cm, lbf·ft)**

EHOF220A

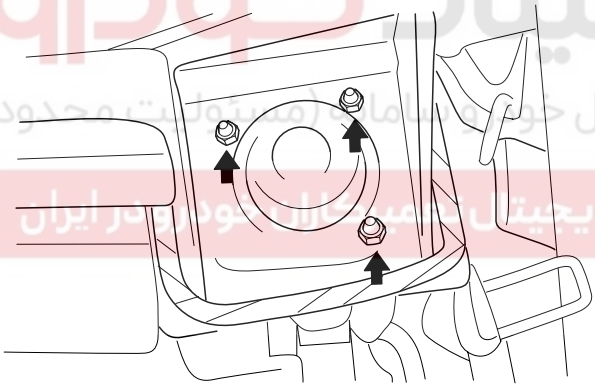
## REMOVAL E49456EC

1. Remove the covering self side trim, rear seat belt retractor, luggage side trim and covering self mounting bracket.



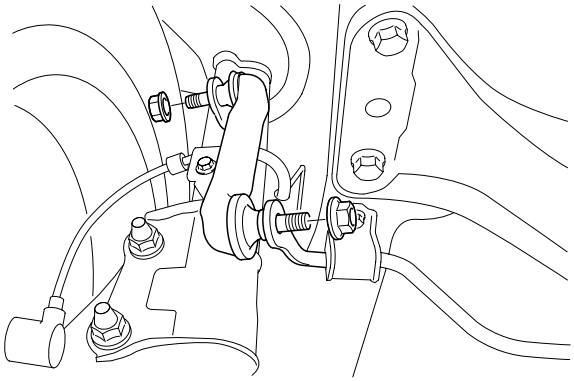

EHOF220B

2. Remove the rear strut upper mounting nuts (3).



EHOF220C

3. Remove the wheel and tire.
4. Disconnect the brake hose and wheel speed sensor wiring from the rear strut.
5. Remove the stabilizer bar link.



EHOF240B

6. Remove the strut and carrier mounting bolts(2).

***CAUTION***

***Be careful not to drop the rear strut.***

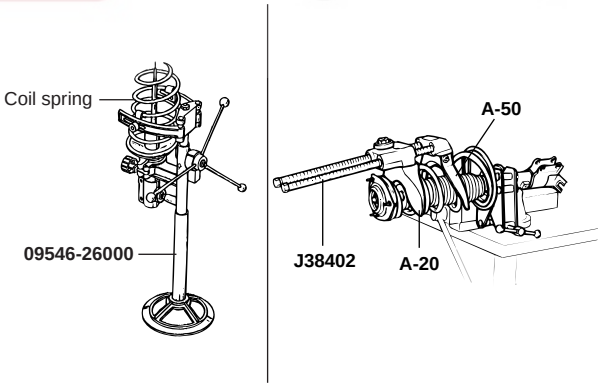
7. Remove the rear strut assembly.

## DISASSEMBLY E9DB6DF8

1. Using the special tools (09546-26000 or J38402), compress the coil spring until there is only a little tension on the strut.

***NOTE***

*Do not use an impact gun.*

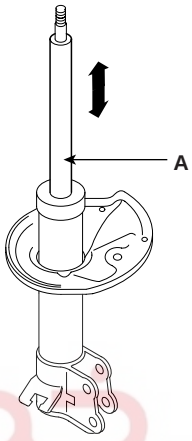



EHOC030A

2. Remove the self-locking nut at the top end of the shock absorber.
3. Remove the insulator, coil spring and dust cover from strut assembly.

## INSPECTION E461F02A

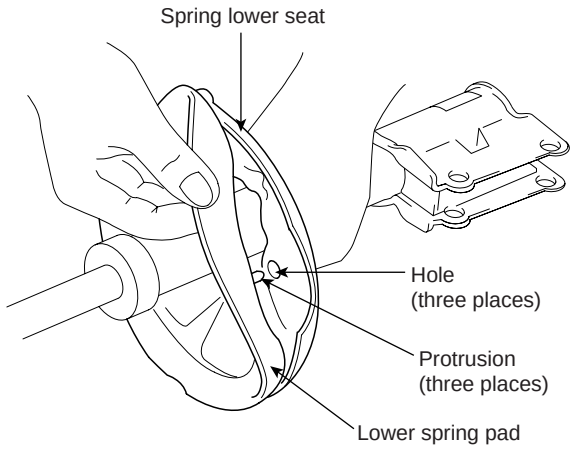
1. Check the strut insulator for wear or damage.
2. Check rubber parts for damage or deterioration.
3. Check the coil spring and strut assembly for sagging and deformation.
4. Check the shock absorber for abnormal resistance or unusual sound.




EHOF222A

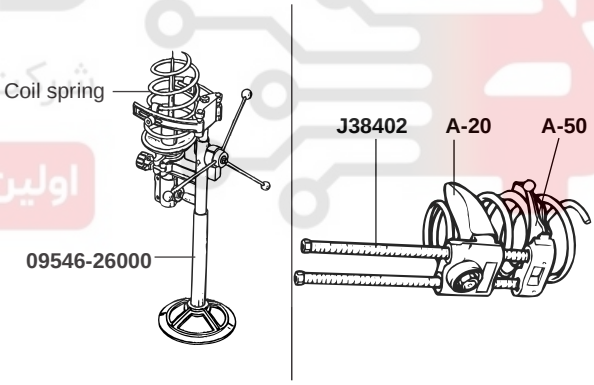
## REASSEMBLY EABD00B6

1. Install the lower spring pad so that the protrusions fit in the holes in the spring lower seat.




EHOF113A

2. Install the dust cover on the shock absorber.
3. Using the special tools (09546-26000 or J38402), compress the coil spring.

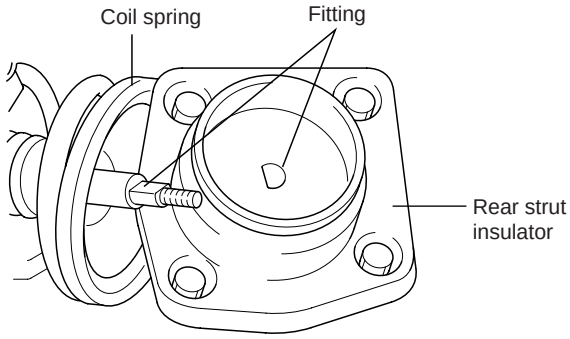



EHOC032A

4. After extending the piston rod fully, install the insulator assembly and pipe.

***NOTE***

*Align the D-shaped hole in the spring seat upper assembly with the protrusion of the piston rod.*

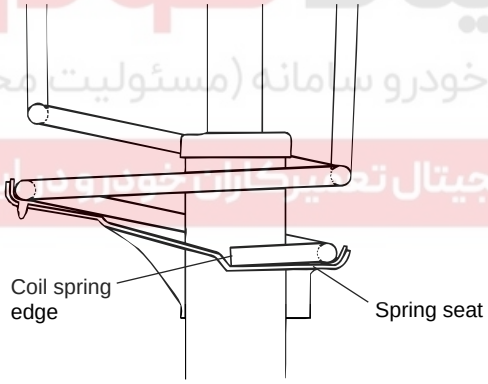



EHOF113C

5. After seating the lower ends of the coil spring in the lower spring seat grooves correctly, tighten the new self-locking nut temporarily.

***CAUTION***

***Replace the self-locking nut with new ones after removal.***




EHOF113D

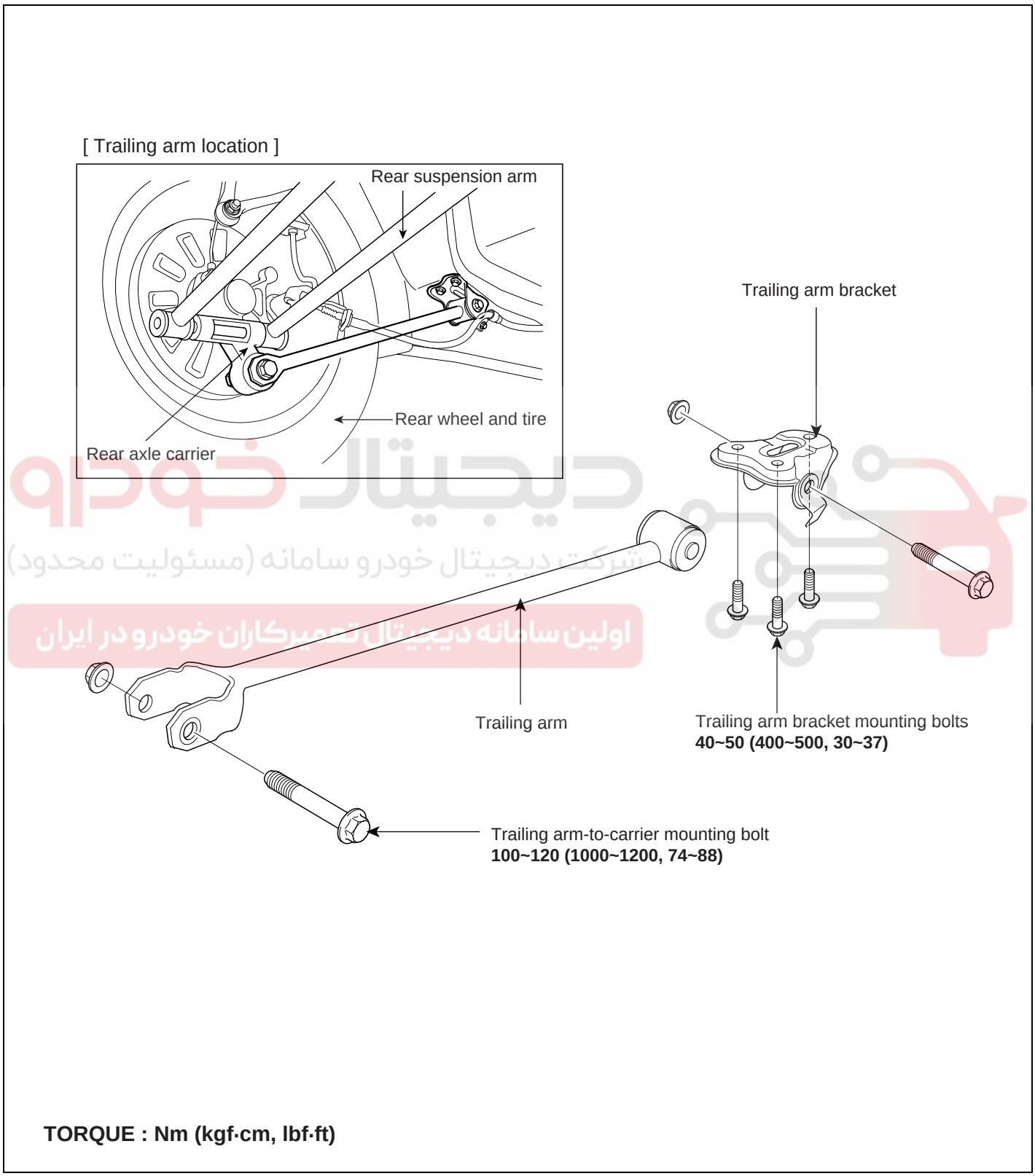
6. Remove the special tools (09546-26000 or J38402).

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

| **Tightening torque** |
| --- |
| 40~60 Nm (400~600 kgf·cm, 29~37 lbf·ft) |

# TRAILING ARM

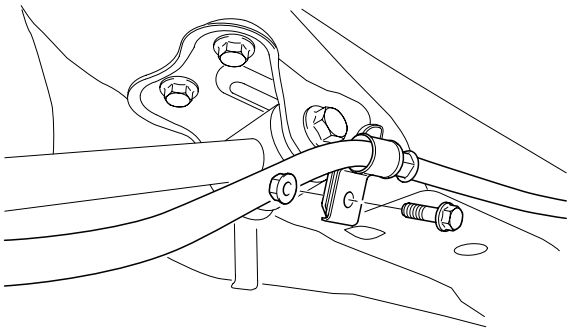
## COMPONANTS EAC6BF7B




EHOF230A

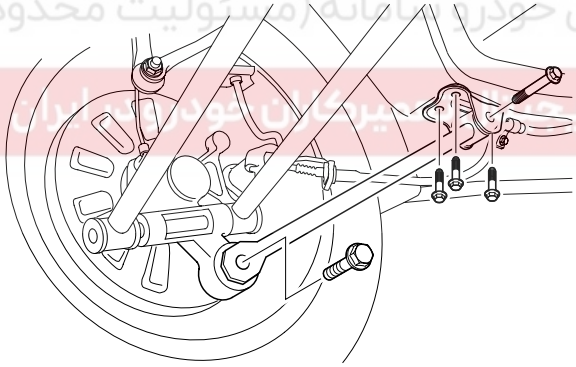
## REMOVAL E565F240

1. Detach the parking brake cable from the rear trailing arm bracket.



EHOF230B

2. After loosening the rear trailing arm mounting bolts, remove the trailing arm.
3. Remove the rear suspension arm mounting bolt from the rear axle carrier.



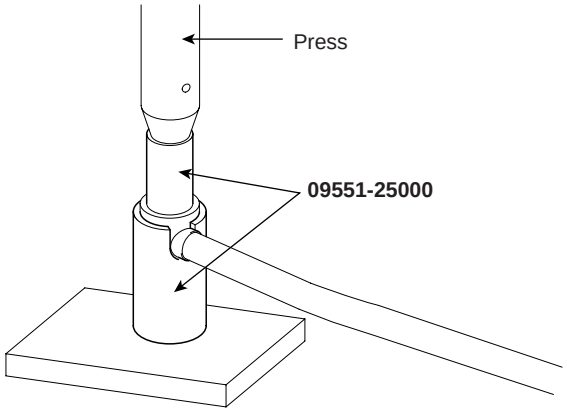
EHOF230C

4. After supporting the center of the rear crossmember assembly with a jack, remove the rear crossmember mounting bolts to the body.
5. Remove the rear crossmember and suspension arm.

## REPLACEMENT E59DD55F

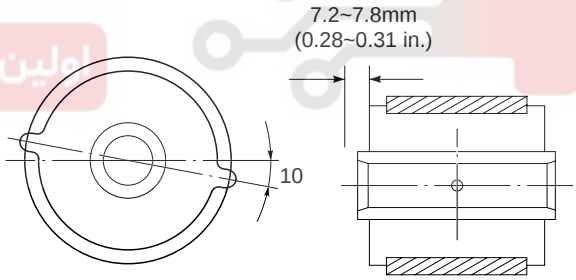
### TRAILING ARM BUSHING

1. Install the special tool (09551 - 25000) on the trailing arm.




EHOF234A

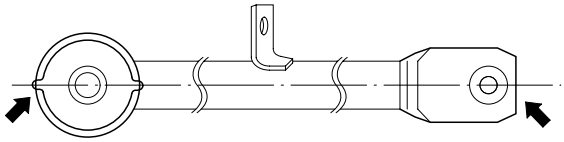
2. Remove the trailing arm bushing.
3. Using the special tool (09551 - 25000), press-fit the rear trailing arm bushing.




EHOF234B

***NOTE***

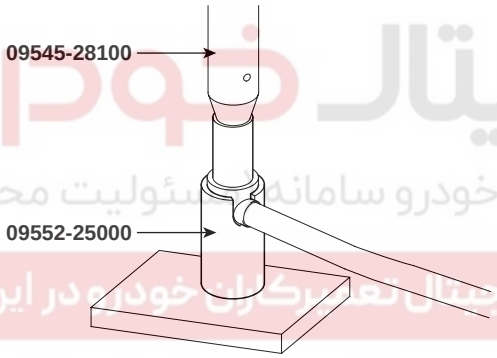
*Press-fit the bushing in the same way as shown in the illustration.*



EHOF234C

**REAR SUSPENSION ARM BUSHING**

1. Install the special tools (09545-28100, 09552-25000) on the rear suspension arm.

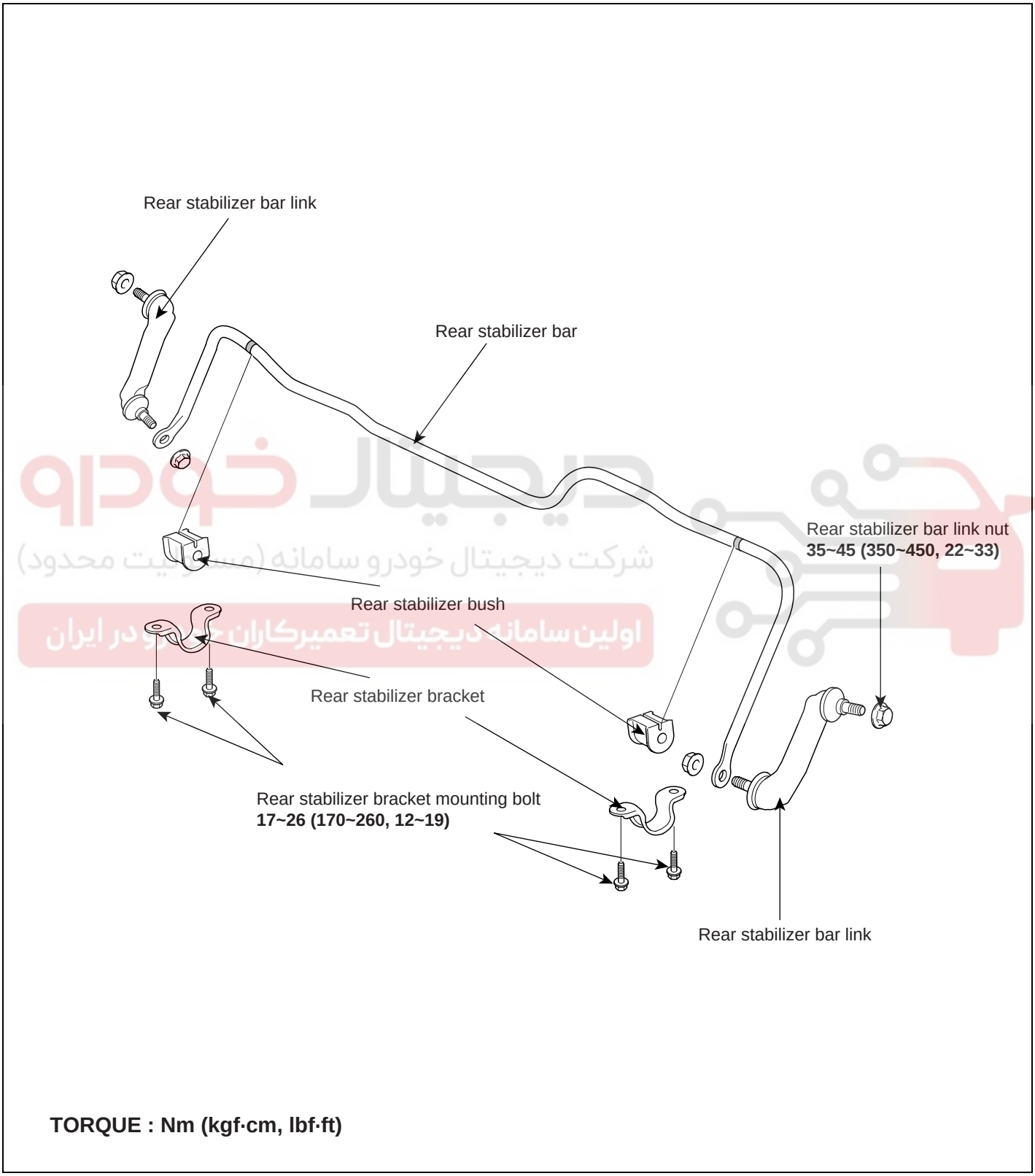



EHOF234D

2. Remove the rear suspension bushing.
3. Apply soap solution to the new bushing and the rear suspension arm.
4. Using the special tool (09552-25000), press-fit the the bushing.

# REAR STABILIZER BAR

## COMPONANTS EFEDA5CD

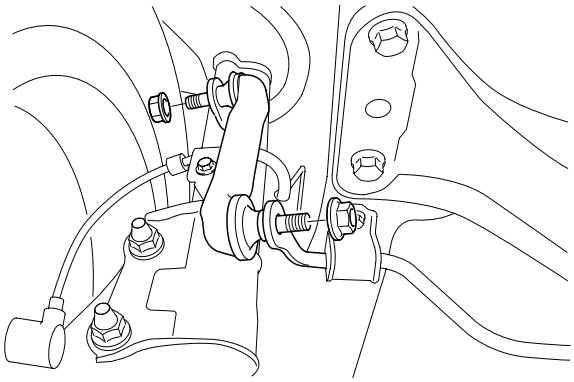



**TORQUE : Nm (kgf·cm, lbf·ft)**

EHOF240A

## REMOVAL E165A7F2

1. Remove the stabilizer bar link from the rear strut assembly.
2. Remove the rear stabilizer bar mounting brackets.

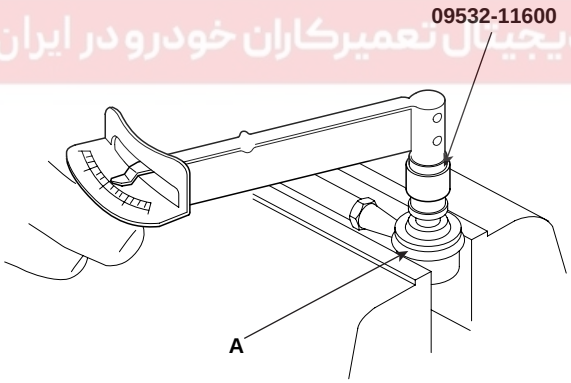


EHOF240B

3. Remove the stabilizer bar.

## INSPECTION EB9BDA05

Check the stabilizer link ball joint rotating torque.




EHOF242A

1. If there is a crack in the dust cover, replace it and add grease.
2. Shake the stabilizer link ball joint stud several times.
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 EEC5053C

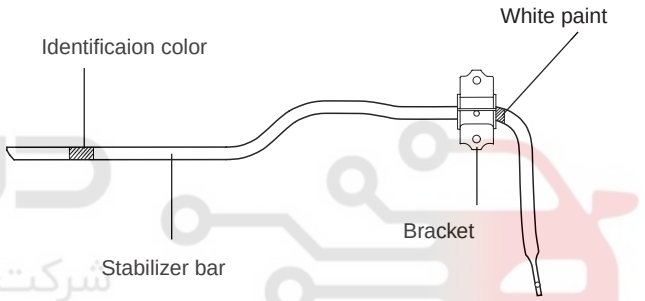
1. Install the bushing on the stabilizer bar.

***NOTE***

*a. When installing the stabilizer bar, follow the identification color (ID color) as below.*

| Model | ID color | Outer diameter |
|---|---|---|
| GL/GLS | Yellow | 16.8mm (0.66 in.) |
| Sports/Top | Green | 17.8mm (0.70 in.) |

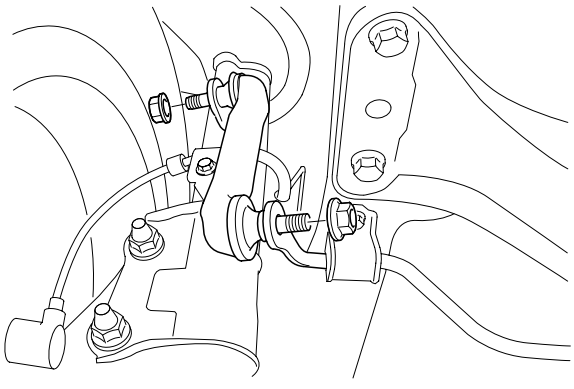
*b. After matching the bushing in the inside of the white painted part on the stabilizer bar, install the them.*




EHOE012A

2. Install the bracket on the bushing.
3. Tighten the components below to the specified torque as follows.

Rear stabilizer bar mounting bracket :
17~26 Nm (170~260 kgf·cm, 13~19 lbf·ft)
Rear stabilizer bar link mounting :
35~45 Nm (350~450 kgf·cm, 26~33 lbf·ft)



EHOF240B

# TIRES／WHEELS

## DESCRIPTION E35351AF

There are two matching ways about the wheel & tire and front suspension on this vehicle. It follows,

- Standard equipment with 2.0L/2.7L engines :
  Normal (Soft) suspension and 16″ wheel & tire
- Optional equipment with 2.0L/2.7L engines :
  Sports (Hard) suspension and 17″ wheel & tire

***NOTE***

- *The front suspension identification mark can be seen when the front wheel & tire is removed.*
- *The following degeneration in vehicle performance may occur when installing the 17" tires to the 2.0L vehicle models equipped with the normal front suspension.*
  *The handling may be inferior to the vehicles with 16" tires. However installing 17" tires to the vehicles with hard suspensions does not affect the driving performance.*
  *The 17" tire is for summer season.*
  *Therefore, its performance in snow is inferior to the 16" tire for all seasons.*
  *The 17" tire is directional*
  *An unexpected noise and vibration may occur if tires are not installed correctly according to the rotational direction.*
  *The snow chain with the thickness lower than 10mm is recommended to use on vehicles with 17" tires.*

# TIRE

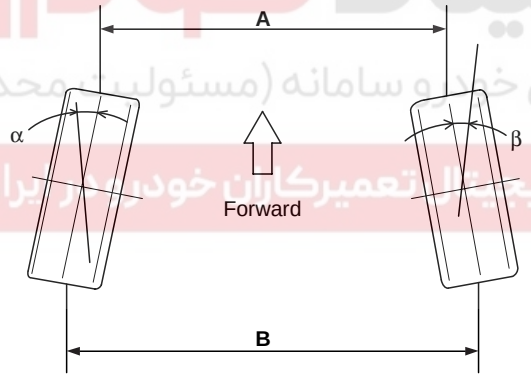
## FRONT WHEEL ALIGNMENT EAE3F84C

When using a wheel alignment tester 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 conditions and that the wheels and tires face straight ahead and the tires are inflated to the specifiedpressure.

### TOE-IN

Toe-in (B-A or angle α +β ) 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 wheels simultaneously at the same amountas follows.

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

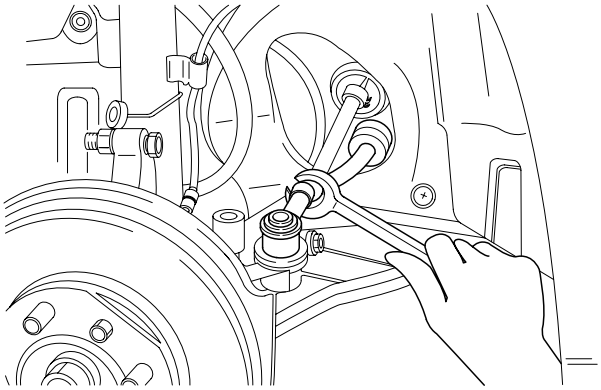



EHOF400A

***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.*

**Tightening torque**
Tie rod end lock nuts :
50~55 Nm (500~550 kgf·cm, 37~41 lbf·ft)



EHOF400B

### CAMBER

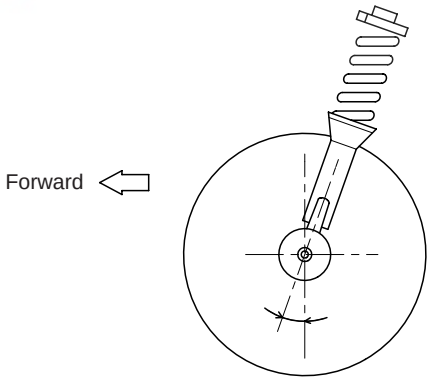
The steering knuckle which is installed with the strut assembly is pre-set to the specified camber at the factory and doesn't need to be adjusted.

Camber : 0°13´ ± 30´

### CASTER

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 damagedparts.

Caster : 3°23´ ± 30´




EHOF400C

## REAR WHEEL ALIGNMENT

### TOE-IN

Standard value : $4^{+3}_{-1}$ mm ($0.16^{+0.12}_{-0.04}$ in.)

EHKB023A

**NOTE**

- *Adjust the toe-in by turning the tie rod end of the rear suspension arm..*

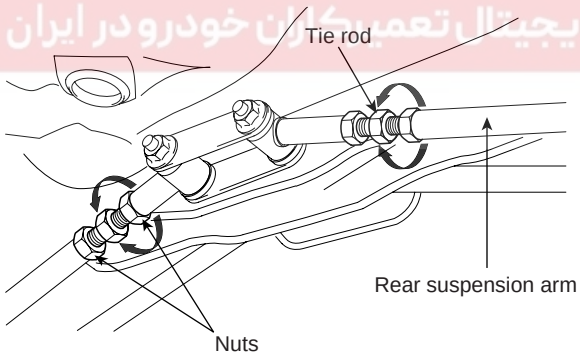
Left tie rod : Clockwise direction ⇒ toe-in
Right tie rod : Clockwise direction ⇒ toe-out
A variation of toe by a rotation of the tie rod
: About 6mm (0.6°)

- *The cam bolt should be adjusted to a maximum of 90° left or right from the center position.*

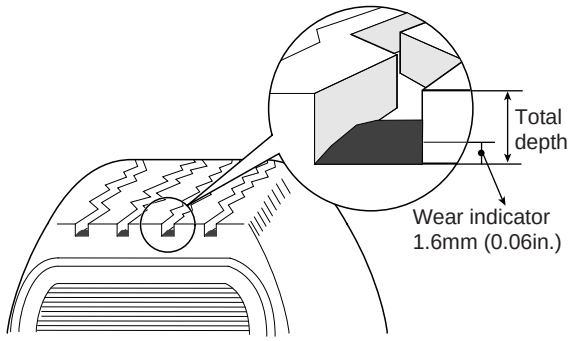
**CAUTION**

***After adjusting the tie rod, tighten both nuts to the specified torque.***

**Specified torque**
50~60 Nm (500~600 kgf·cm, 37~43 lbf·ft)




EHOF401A




EHOF402A

### TIRE WEAR

1. Measure the tread depth of the tires.

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

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

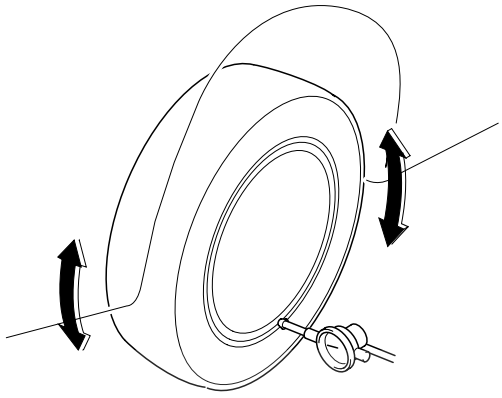
**NOTE**

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

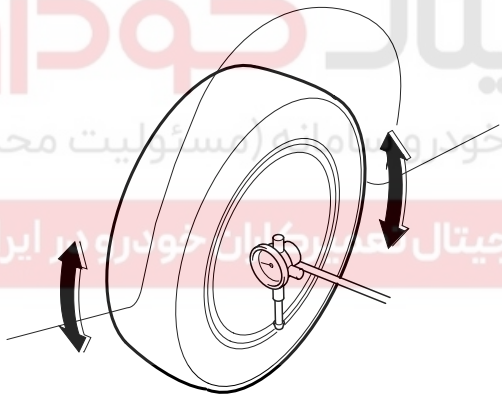
# WHEEL

## WHEEL RUNOUT E495B6F5

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



[ Axial direction ]



[ Radial direction ]

EHOF403A

3. Replace the wheel if the wheel runout exceeds the limit.

**Wheel runout [Limit]**
Steel wheeel
Radial 0.6mm (0.028 in.) : (Average of LH & RH)
Axial 1.0mm (0.039 in.)
Aluminum wheel
Radial 0.3mm (0.012 in.)
Axial 0.3mm (0.012 in.)

LH : Left Hand side, RH : Right Hand side

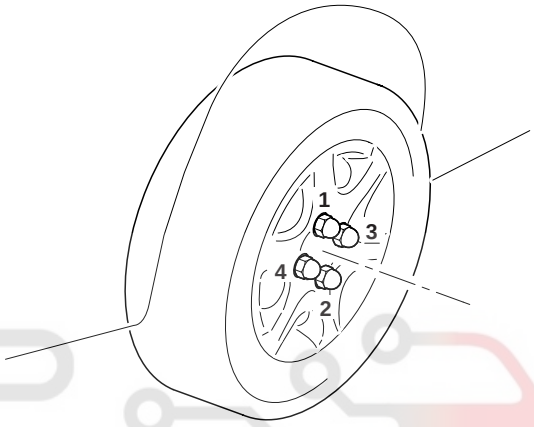
## TIGHTENING WHEEL NUT

1. Tightening torque
   Steel and aluminum alloy wheel

**Specified torque**
90~110 Nm (900~1,100 kgf·cm, 65~80 lbf·ft)

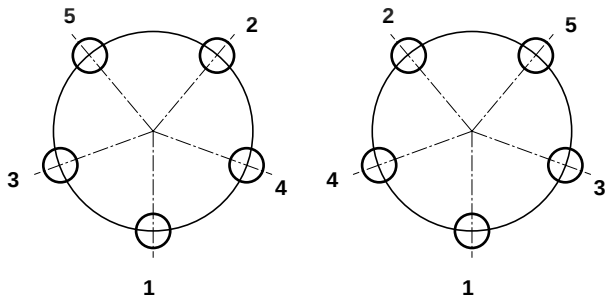
***CAUTION***

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




EHOF404A

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




KFW6020A

## WHEEL ROTATION

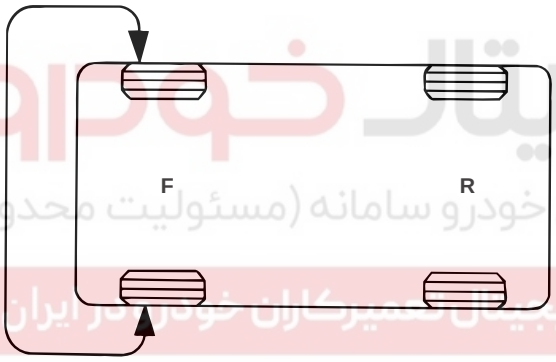
Rotate the tires in the pattern illustrated.

***CAUTION***

***When rotating the 215/45 R17 tires, ensure to follow the "ROTATION"direction marked on the sidewall of tires.***
***When rotating the tires of the left and right, seperate the wheel from the tire and then re-assemble them.***

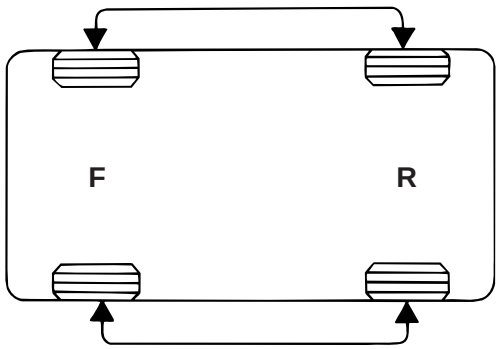
## CHECKING FOR PULL AND WANDER

1. If the steering pulls to one side, rotate the tires according to the following wheel rotation procedure.
   a. Rotate the front right and front left tires, and perform a road test in order to confirm vehicle stability.



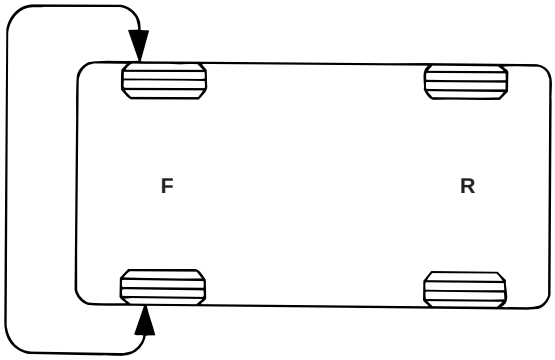

EHDA854B

   b. If the steering pulls to the opposite side, rotate the front and rear tires, and perform a road test again.



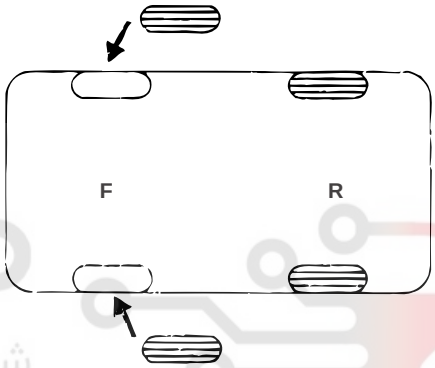

EHDA854C

   c. If the steering continues to pull to one side, rotate the front right and left tires again, and perform a road test.




EHDA854B

   d. If the steering continues to pull to the opposite side, replace the front wheels with new ones.




EHDA854D

2. On some vehicles which dirft or pull to the right only, the following procedure may be applied for fixing.
   a. Adjust tire pressure as recommended below (4 tire) prior to conducting road test.

| |
|---|
| Tire inflation pressure : 2.1 kgf/cm² (30 psi)<br>215/45 R 17 tire only : 2.2 kgf/cm² (32 psi) |

   b. To eliminate the pulling, rotate the front tires and test drive the vehicle to see if the pulling returns.
   c. If a vehicle still exhibits the pulling to the right, replace the right front strut insulator with the redesigned new part (Part No. 54610-2C000A) which increases the caster angle. (see page SS-11)

***NOTE***

- *This procedure applies to the vehicle pulls to the right only.*
- *Confirm the direction of the vehicle pulling by road testing prior to performing the repair procedure.*
- *If 'Michelin' tires are installed, do not rotate the tires because they are directional. Replace the right front strut insulator only.*