

Driveshaft and Axle

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GENERAL

SPECIFICATIONS EF1D5F2B

Items		Specification		
		Inner side	Outer side	
Front driveshaft	Joint type	2.0 GSL AT	T.J	B.J
		2.0 GSL MT, 2.0 DSL AT	T.J	B.J
		2.0 DSL MT	D.O.J	B.J
		2.7 GSL AT	S.F.J	B.J
	Max. permissible angle	2.0 GSL AT	23°	45.8°
		2.0 GSL MT, 2.0 DSL AT	23°	46°
		2.0 DSL MT	22°	46.5°
		2.7 GSL AT	23°	46°
Rear driveshaft	Joint type	D.O.J	B.J	
	Max. permissible angle	22°	45°	
Differential	Oil type	Hypoid gear oil		
	Oil capacity L	About 0.75 ~ 0.80		
	Reduction gear type	Hypoid gear		
	Reduction gear ratio	3.091		
	Final drive gear backlash mm(in.)	0.10 ~ 0.15 (0.0039 ~ 0.0059)		
	Differential gear backlash mm(in.)	0 ~ 0.076 (0 ~ 0.003)		

B.J : Birfield Joint

D.O.J : Double Offset Joint

T.J : Tripot Joint

TIGHTENING TORQUE E0439CF9

	Items	Nm	Kgf.cm	lbf.ft
Front hub	Wheel nut	90 ~ 110	900 ~ 1100	66.4 ~ 81.2
	Driveshaft castle nut	200 ~ 280	2000 ~ 2800	147.5 ~ 206.6
	Break caliper mounting bolt	50 ~ 60	500 ~ 600	36.9 ~ 44.3
	Lower arm mounting bolt	100 ~ 120	1000 ~ 1200	73.8 ~ 88.5
	Strut lower mounting bolt	140 ~ 160	1400 ~ 1600	103.3 ~ 118.0
	Tie rod end ball joint mounting nut	45 ~ 60	450 ~ 600	33.2 ~ 44.3
Rear	Wheel nut	90 ~ 110	900 ~ 1100	66.4 ~ 81.2
	Break caliper mounting bolt	50 ~ 60	500 ~ 600	36.9 ~ 44.3
	Break disc(drum) mounting screw	5 ~ 6	50 ~ 60	3.7 ~ 4.4
	Dust cover mounting bolt	50 ~ 60	500 ~ 600	36.9 ~ 44.3
	Strut lower mounting nut	140 ~ 160	1400 ~ 1600	103.3 ~ 118.0
	Trailing arm mounting bolt	100 ~ 120	1000 ~ 1200	73.8 ~ 88.5
	Hub bearing flange nut[2WD]	200 ~ 260	2000 ~ 2600	147.5 ~ 191.8
	Driveshaft castle nut[4WD]	200 ~ 280	2000 ~ 2800	147.5 ~ 206.6
	Suspension arm mounting nut[2WD]	160 ~ 180	1600 ~ 1800	118.0 ~ 132.8
	Suspension arm mounting nut[4WD]	140 ~ 160	1400 ~ 1600	103.3 ~ 118.0
Propeller shaft	Front propeller shaft mounting bolt	50 ~ 60	500 ~ 600	36.9 ~ 44.3
	Propeller shaft center bearing bracket mounting bolt	40 ~ 50	400 ~ 500	29.5 ~ 36.9
	Rear propeller shaft mounting bolt	100 ~ 120	1000 ~ 1200	73.8 ~ 88.5
Differential	Rear differential mounting bolt	90 ~ 120	900 ~ 1200	66.4 ~ 88.5
	Differential cover mounting bolt	40 ~ 50	400 ~ 500	29.5 ~ 36.9

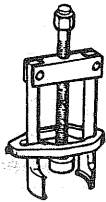
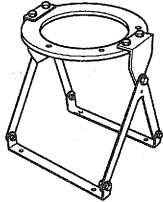
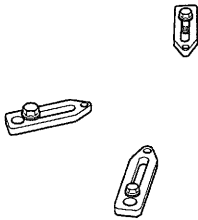
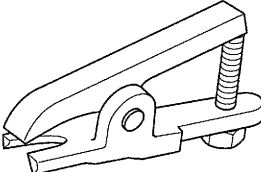
 **CAUTION**

Replace self-locking nuts with new ones after removal.

LUBRICANTS EC261DBD

Items	Recommended	Quantity
BJ92 - TJ92 type driveshaft (For 2.0 GSL AT)		
BJ boot grease	Centoplex 278M/136K CASMOLY BJ ROLLUBE BJ Sunlight SW-2	115 ± 6g Inside joint : 55 ± 3g Inside boot : 60 ± 3g
TJ boot grease	KLK TJ 41-182 CASMOLY TJ ROLLUBE TJ Oneluber MK	120 ± 6g Inside joint : 75 ± 3g Inside boot : 45 ± 3g
BJ95 - TJ95 type driveshaft (For 2.0 GSL MT, 2.0 DSL AT)		
BJ boot grease	Centoplex 278M/136K CASMOLY BJ ROLLUBE BJ Sunlight SW-2	120 ± 6g Inside joint : 60 ± 3g Inside boot : 45 ± 3g
TJ boot grease	KLK TJ 41-182 CASMOLY TJ ROLLUBE TJ Oneluber MK	145 ± 6g Inside joint : 100 ± 3g Inside boot : 45 ± 3g
BJ100 - DOJ100 type driveshaft (For 2.0 DSL MT)		
BJ boot grease	278M/136K CASMOLY BJ ROLLUBE BJ Sunlight SW-2	135 ± 6g Inside joint : 70 ± 3g Inside boot : 65 ± 3g
DOJ boot grease	Ambly TA10/2A CASMOLY DOJ DURALUBE DOJ Variant SD-R2	105 ± 6g Inside joint : 65 ± 3g Inside boot : 40 ± 3g
BJ95 - SFJ95 type driveshaft (For 2.7 GSL AT)		
BJ boot grease	278M/136K CASMOLY BJ ROLLUBE BJ Sunlight SW-2	120 ± 6g Inside joint : 60 ± 3g Inside boot : 60 ± 3g
SFJ boot grease		175 ± 6g Inside joint : 120 ± 3g Inside boot : 55 ± 3g
BJ87 - DOJ87 type driveshaft (For rear)		
BJ boot grease	Centoplex 278M/136K CASMOLY BJ ROLLUBE BJ Sunlight SW-2	95 ± 6g Inside joint : 45 ± 3g Inside boot : 50 ± 3g
DOJ boot grease	Amblygon TA10/2A CASMOLY DOJ DURALUBE DOJ Variant SD-R2	95 ± 6g Inside joint : 60 ± 3g Inside boot : 35 ± 3g

SPECIAL TOOLS EE2EEB0D

Tool(Number and Name)	Illustration	Use
09495-33000 Puller	 <p style="text-align: right;">D9533000</p>	Removal of wheel bearing inner race from a hub.
09517-43101 Working base	 <p style="text-align: right;">E1743101</p>	Support for the differential carrier
09517-43500 Adapter	 <p style="text-align: right;">E1743500</p>	
09568-34000 Ball joint puller	 <p style="text-align: right;">E6834000</p>	Separation of a lower arm and a tie rod end ball joint.

TROUBLESHOOTING

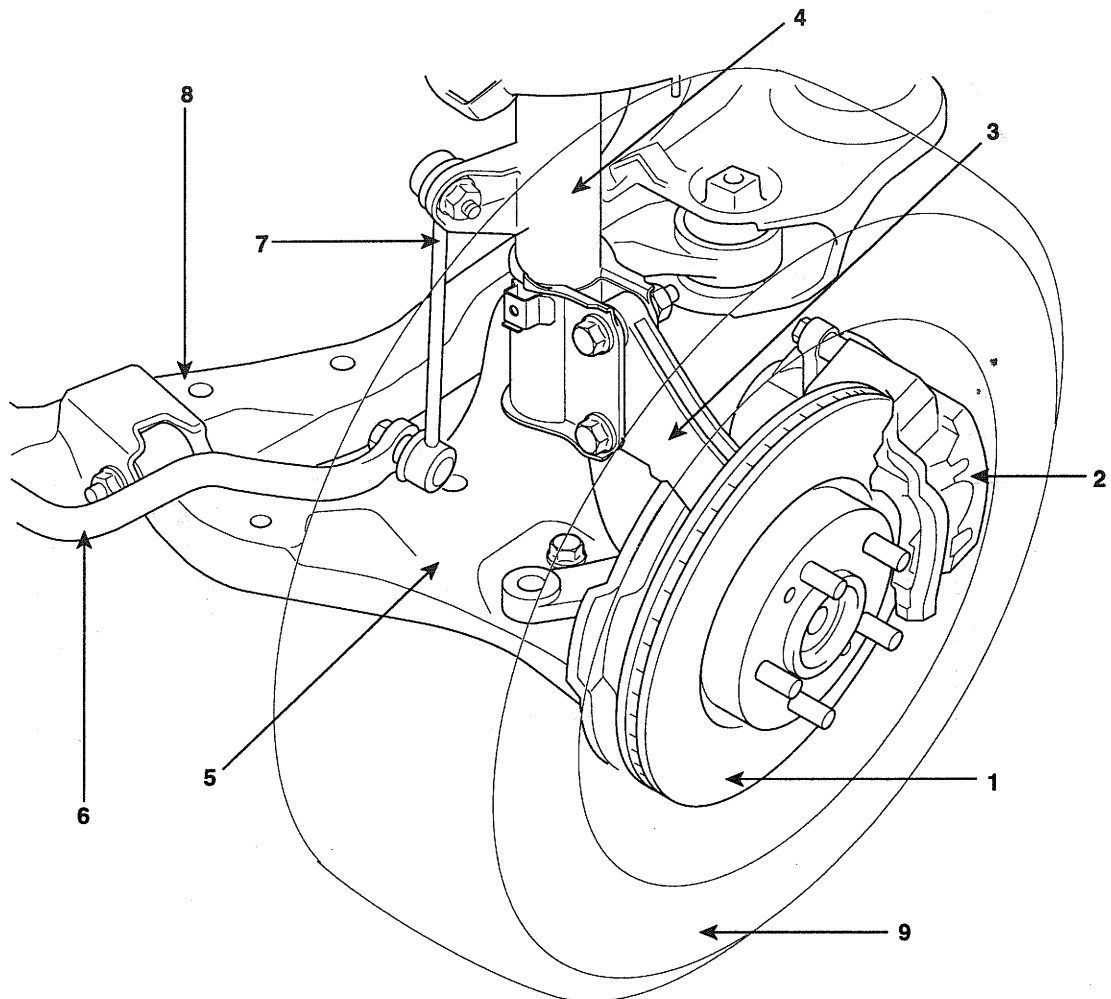
E883FEFB

Trouble Symptom	Probable cause	See page
Vehicle pulls to one side	Scoring of driveshaft ball joint Wear, rattle or scoring of wheel bearing Defective front suspension and steering	DS-17,58 DS-11 -
Vibration	Wear, damage or bending of driveshaft Driveshaft rattle and hub serration Wear, rattle or scratching of wheel bearing	DS-17,58 DS-11,17,41,52,58 DS-11
Shimmy	Defective wheel balance Defective front suspension and steering	- -
Excessive noise	Wear, damage or bending of driveshaft Rattle of driveshaft and worn hub splines Wear, rattle or scoring of wheel bearing Loose hub nut Defective front suspension and steering	DS-17,58 DS-11,17,41,52,58 DS-11 DS-11,41,52 -

FRONT AXLE

FRONT HUB / KNUCKLE

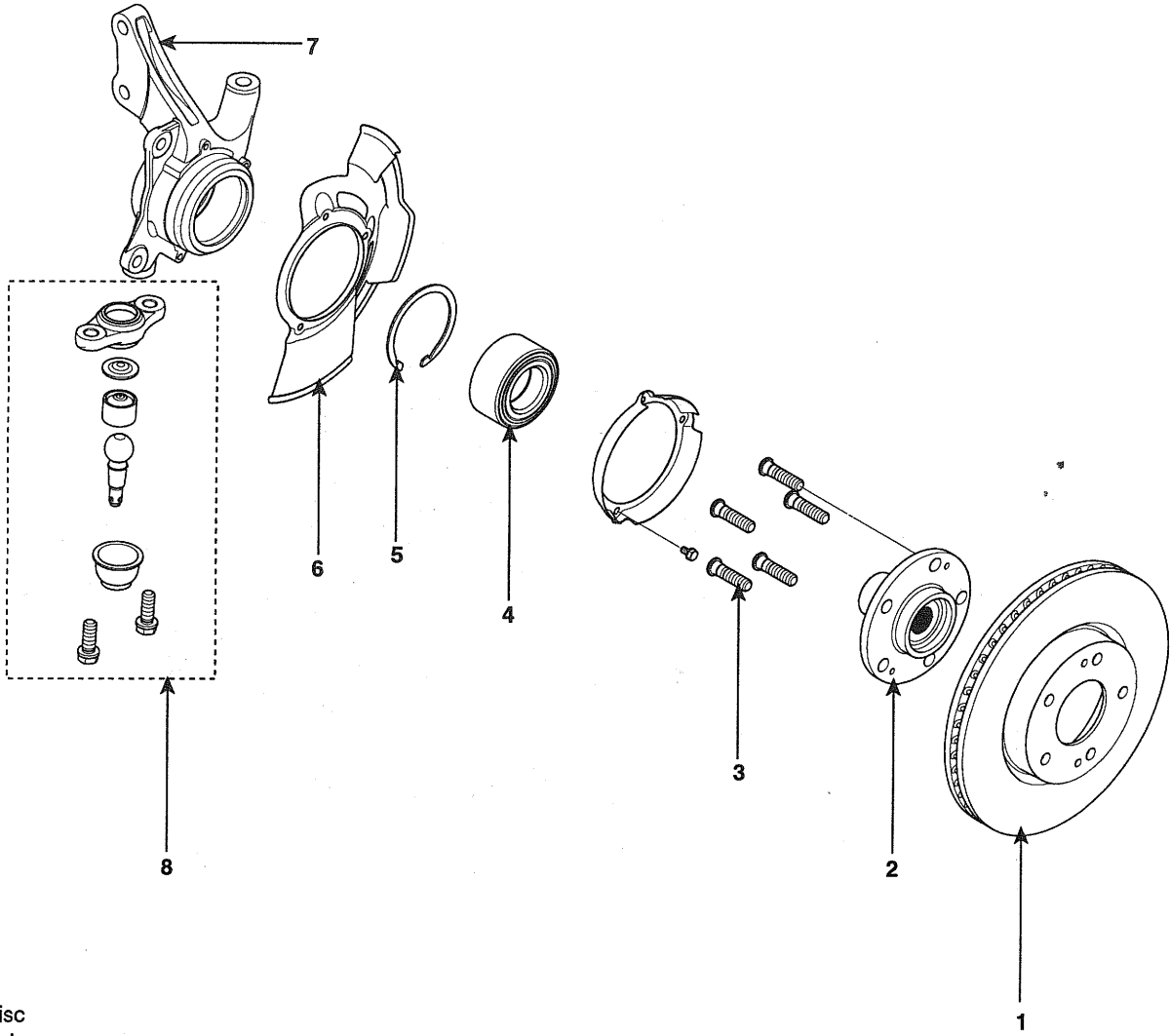
COMPONENT LOCATION EF95D302



1. Disc
2. Caliper
3. Knuckle
4. Strut assembly
5. Lower arm
6. Stabilizer bar
7. Stabilizer bar link
8. Sub-frame
9. Tire

COMPONENTS

E6EF40AF

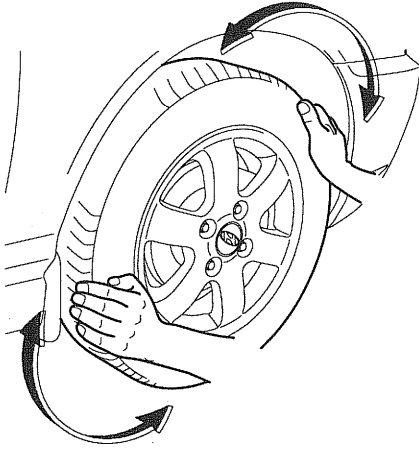


ON-VEHICLE INSPECTION

E1AAFB32

WHEEL BEARING PLAY INSPECTION

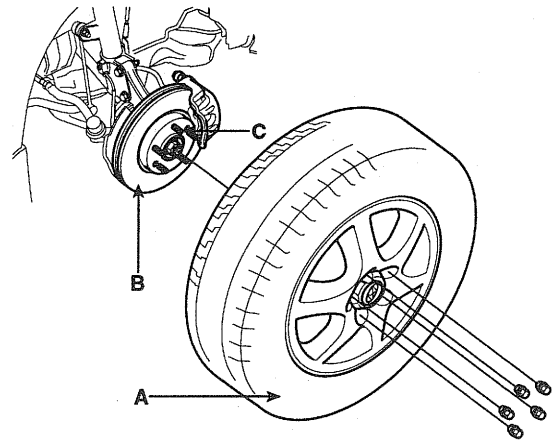
1. Inspection the play of the bearing while the vehicle is jacked up.



KISE205A

2. If there is any play, loosen the wheel nuts slightly. Raise the front of the vehicle, and make sure it is securely supported.

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

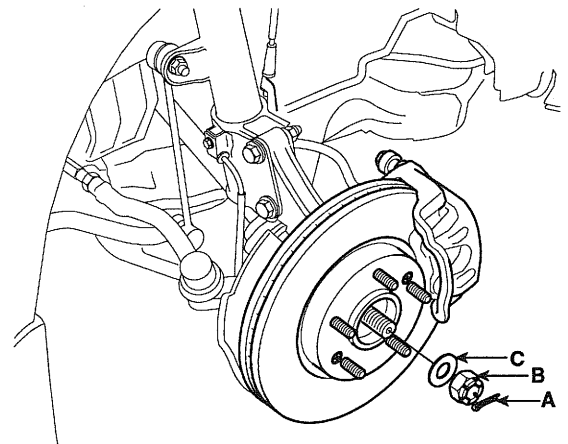


KIQE100A

! CAUTION

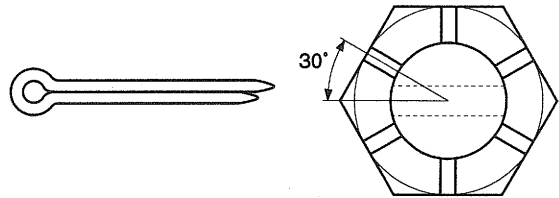
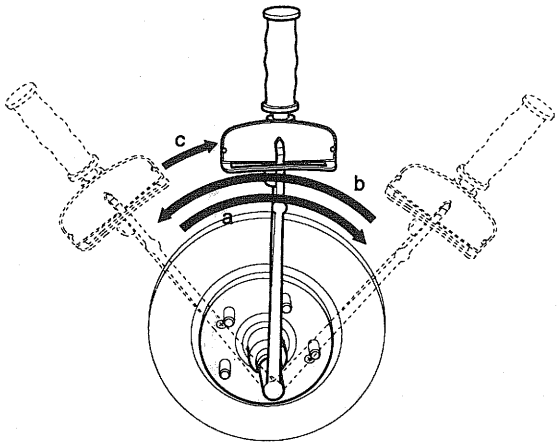
Be careful not to damage the hub bolts(C) then remove the front wheel and tire(A).

4. Remove the split pin(A), then remove castle nut(B) and washer(C) from the front hub under applying the break.



KIQE105B

5. Tighten the hub bearing nut by the following procedures.
 - a. Hub bearing nut must be fastened with torque 28kgf.m and front hub must be rotated above 3 times enough for secure placement of hub bearing.
 - b. Unfasten hub bearing nut until its tightening torque is 0kgf.m.
 - c. Hub bearing nut must be fastened again with torque 20kgf.m
- d. Assemble split pin.
- e. If the direction of split pin is not in line with the hole of knuckle unfasten hub bearing nut within 30° and assemble split pin.

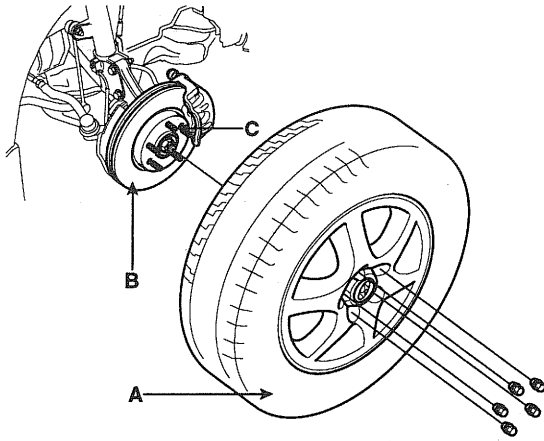


KISE205D

KISE205C

REMOVAL E09BE8BE

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).

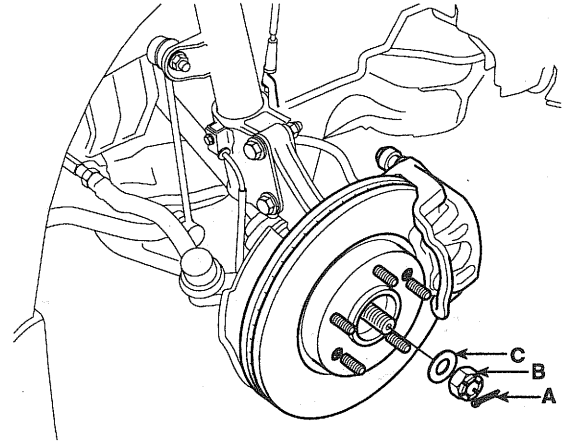


KIQE100A

! CAUTION

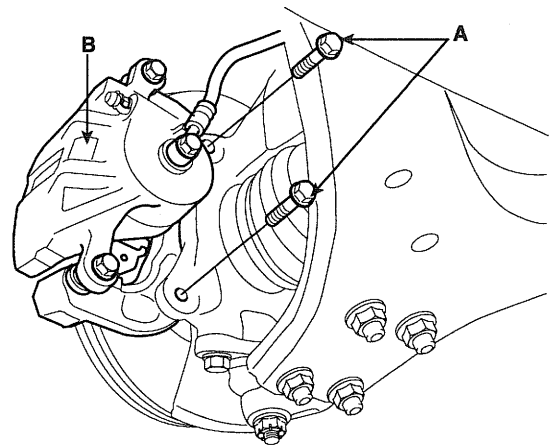
Be careful not to damage the hub bolts(C) then remove the front wheel and tire(A).

3. Remove the split pin(A), then remove castle nut(B) and washer(C) from the front hub under applying the break.



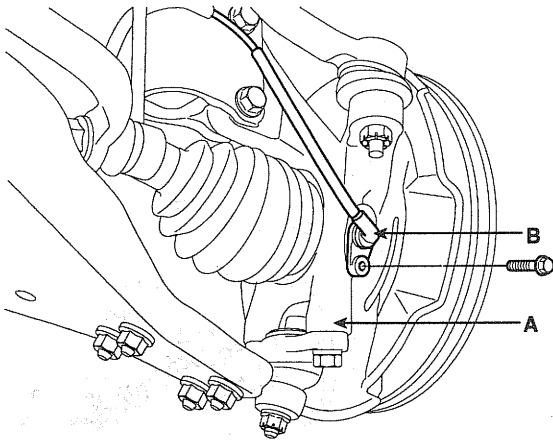
KIQE105B

4. Remove the caliper mounting bolts(A), and hang the caliper assembly(B) to one side. To prevent damage to the caliper assembly or brake hose, use a short piece of wire to hang the caliper from the undercarriage.



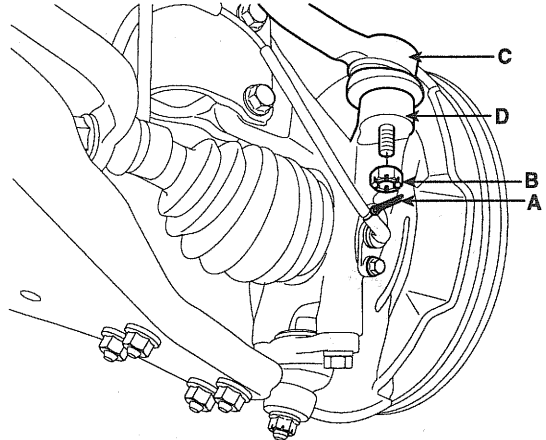
KIQE100B

5. Remove the wheel speed sensor(B) from the knuckle(A).



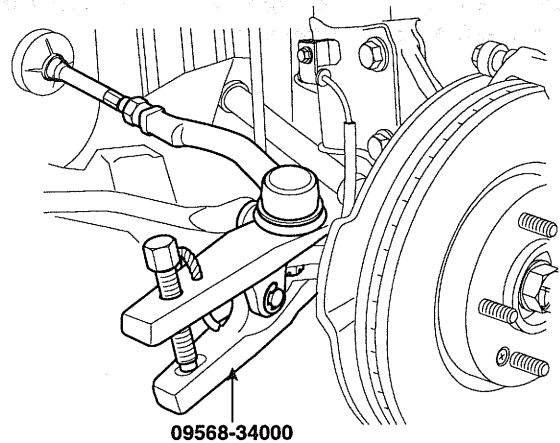
KIQE100C

6. Disconnect the tie rod end ball joint(C) from the knuckle(D) using the special tool(09568-34000).



KIQE100D

- a. Remove the split pin(A).
- b. Remove the castle nut(B).
- c. Disconnect the ball joint(C) from knuckle(D) using the special tool(09568-34000).



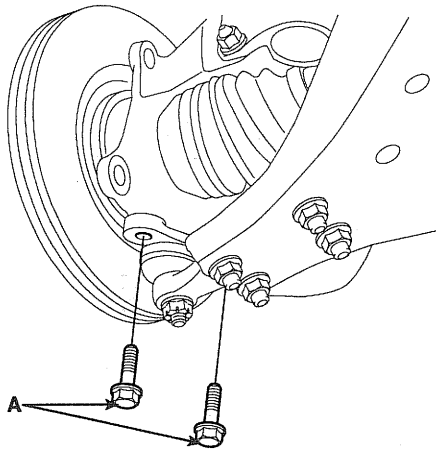
09568-34000

KIQE100E

⚠ CAUTION

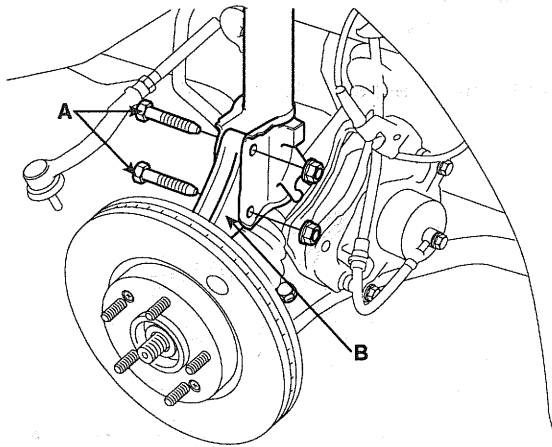
Apply a few drops of oil to the special tool. (Boot contact part)

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



KIQE100F

8. Remove the strut lower arm mounting bolts(A).



KIQE100G

9. Remove the hub and the knuckle assembly(B).

⚠ CAUTION

Be careful not to damage the boot and rotor teeth.

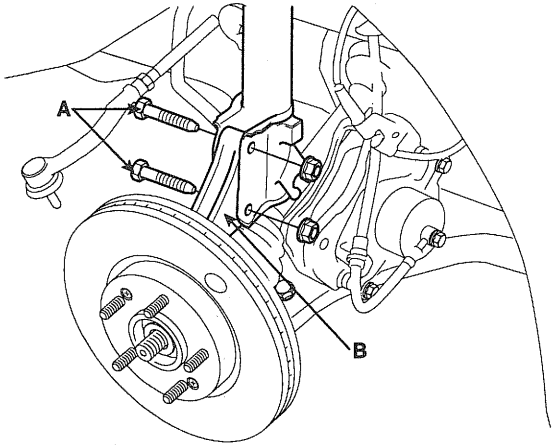
INSPECTION EC57A035

1. Check the hub for cracks and the splines for wear.
2. Check the brake disc for scoring and damage.
3. Check the knuckle for cracks.
4. Check the bearing for cracks or damage.

INSTALLATION

E5A3B522

1. Install the hub and the knuckle assembly(B).



KIQE100G

2. Install the strut lower mounting bolts(A).

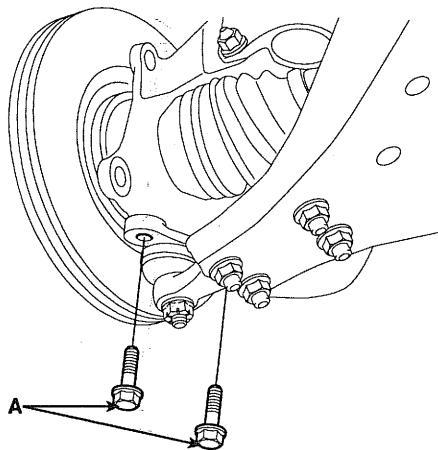
Tightening torque

140 ~ 160Nm (1400 ~ 1600Kgf.cm, 103.3 ~ 118lb.ft)

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

Tightening torque

100 ~ 120Nm (1000 ~ 1200Kgf.cm, 73.8 ~ 88.5lb.ft)

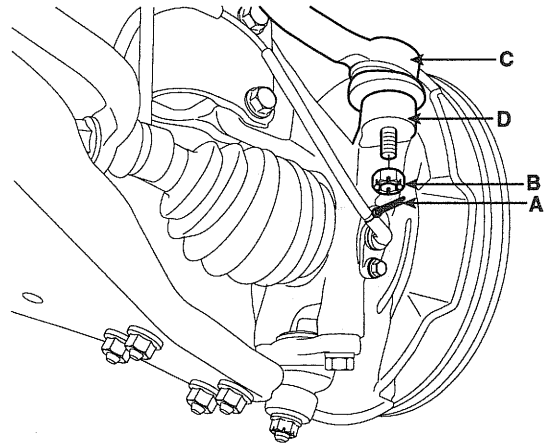


KIQE100F

4. Install the tie rod end ball joint(C) from the knuckle.

Tightening torque

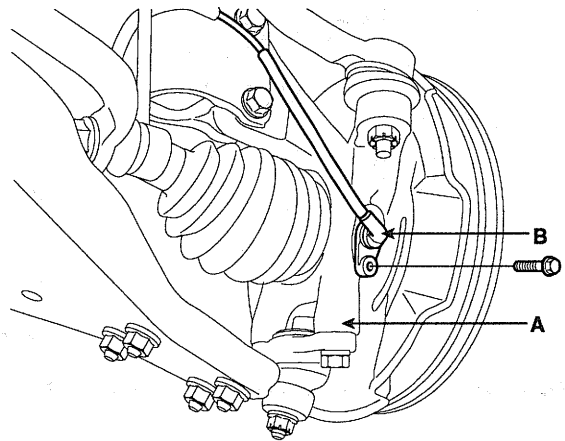
45 ~ 60Nm (450 ~ 600Kgf.cm, 33.2 ~ 44.3lb.ft)



KIQE100D

- a. Install the castle nut(B).
- b. Install the split pin(A).

5. Install the wheel speed sensor(A).

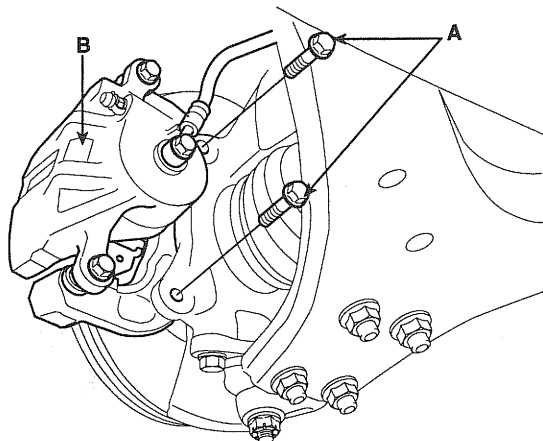


KIQE100C

6. Install the brake caliper(B), and then tighten the mounting bolts(A).

Tightening torque

50 ~ 60Nm (500 ~ 600Kgf.cm, 36.9 ~ 44.3lbf.ft)

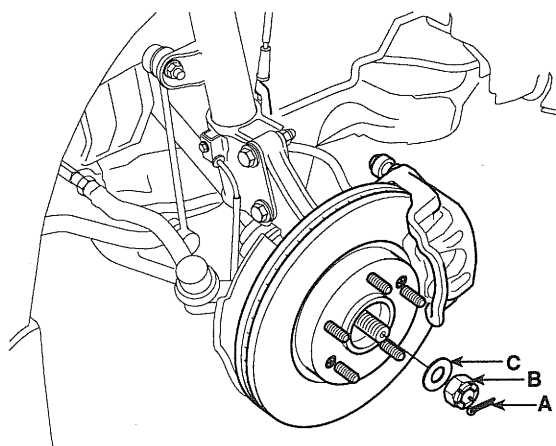


KIQE100B

7. Install the washer(C), castle nut(B) and split pin(A) from the front hub.

Tightening torque

200 ~ 280Nm (2000 ~ 2800Kgf.cm, 147.5 ~ 206.6lbf.ft)

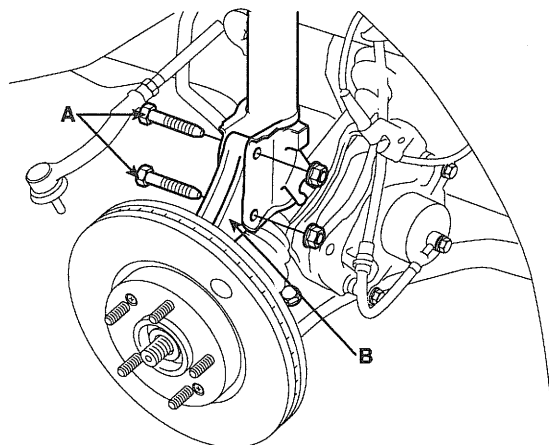


KIQE105B

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

Tightening torque

90 ~ 110Nm (900 ~ 1100Kgf.cm, 66.4 ~ 81.2lbf.ft)



KIQE100G

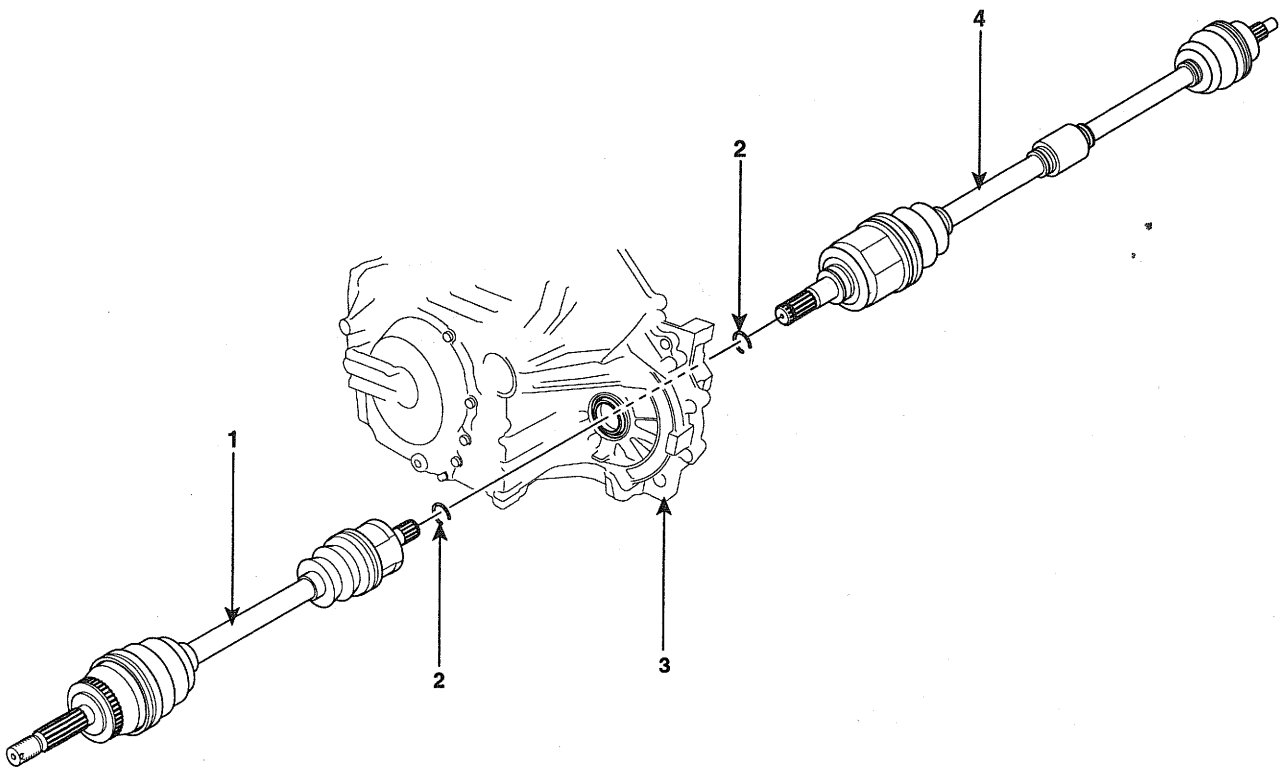
CAUTION

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

DRIVESHAFT

FRONT DRIVESHAFT ASSEMBLY

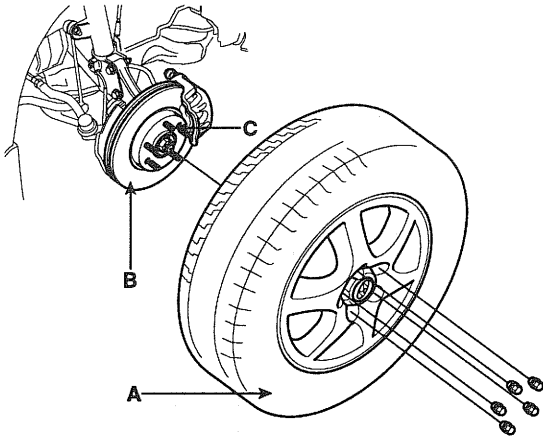
COMPONENT LOCATION E02373C7



- 1. Driveshaft (LH)
- 2. Circlip
- 3. Transaxle
- 4. Driveshaft (RH)

REMOVAL E3E09AC0

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).

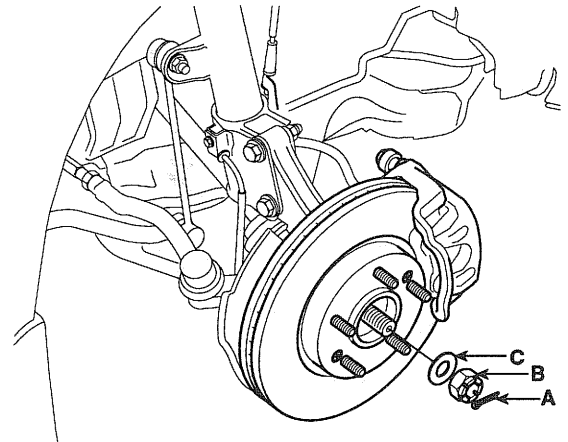


KIQE100A

⚠ CAUTION

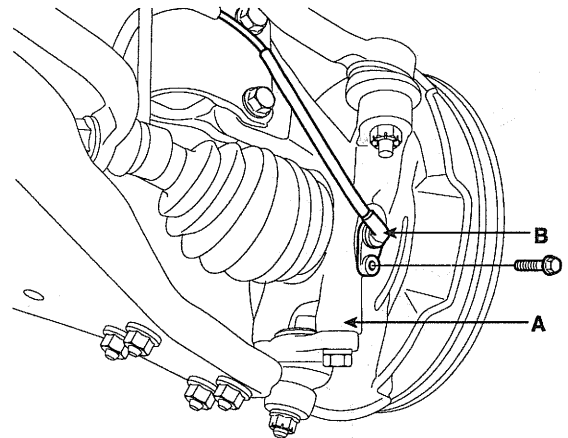
Be careful not to damage the hub bolts(C) then remove the front wheel and tire(A).

3. Remove the split pin(A), then remove castle nut(B) and washer(C) from the front hub under applying the break.



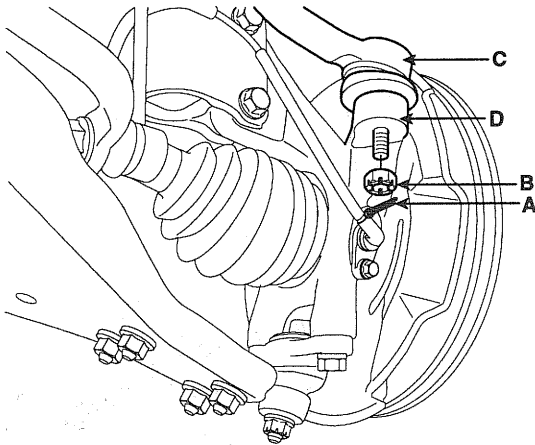
KIQE105B

4. Remove the wheel speed sensor(B) from the knuckle(A).



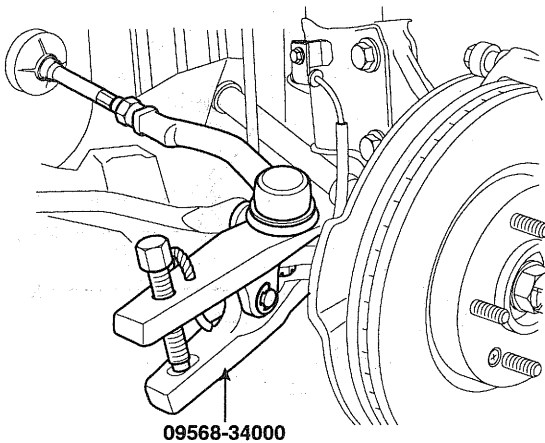
KIQE100C

5. Disconnect the tie rod end ball joint(C) from the knuckle(D) using the special tool(09568-34000).



KIQE100D

- Remove the split pin(A).
- Remove the castle nut(B).
- Disconnect the ball joint(C) from knuckle(D) using the special tool(09568-34000).

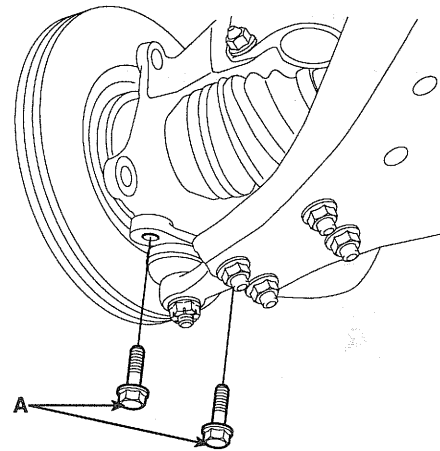


KIQE100E

⚠ CAUTION

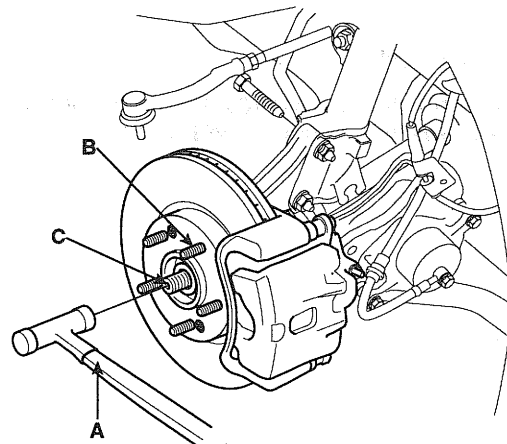
Apply a few drops of oil to the special tool.(Boot contact part)

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



KIQE100F

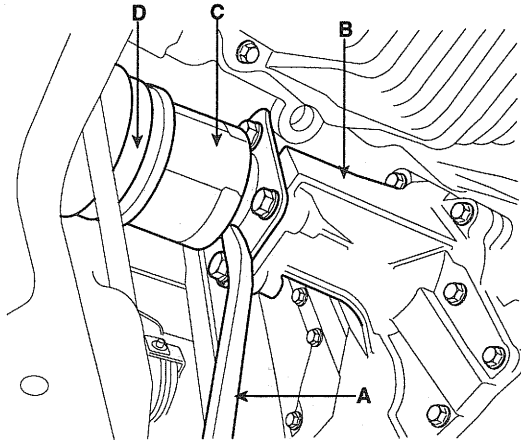
7. Using a plastic hammer(A), disconnect the drive shaft(C) from the axle hub(C).



KIQE200B

8. Push the axle hub(B) outward and separate the drive shaft(C) from the axle hub(B).

9. Insert a pry bar(A) between the transaxle case(B) and joint case(C), and separate the driveshaft(D) from the transaxle case.



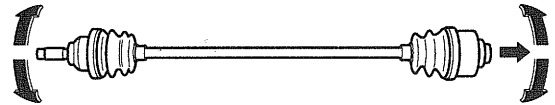
KIQE200C

CAUTION

- Use a pry bar(A) being careful not to damage the transaxle and joint.
- Do not insert the pry bar(A) too deep, as this may cause damage to the oil seal.(max. depth : 7mm(0.28in.)
- Do not pull the driveshaft by excessive force it may cause components inside the BJ or TJ(or DOJ) joint kit to dislodge resulting in a torn boot or a damaged bearing.
- Plug the hole of the transaxle case with the oil seal cap to prevent contamination.
- Support the driveshaft properly.
- Replace the retainer ring whenever the driveshaft is removed from the transaxle case.

INSPECTION E6C15557

1. Check the driveshaft boots for damage and deterioration.
2. Check the ball joint for wear and damage.
3. Check the splines for wear and damage.
4. Check the dynamic damper for cracks, wear and position



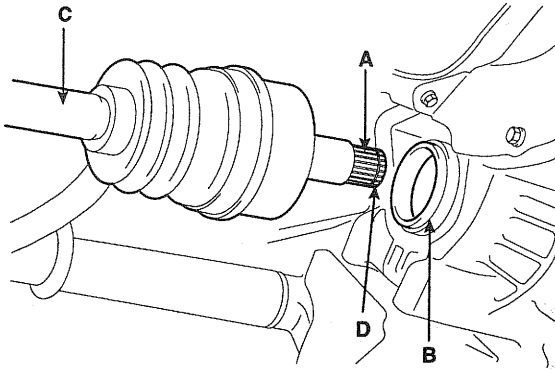
EIKD019A

5. Check the driveshaft for cracks and wears.

INSTALLATION E1BA08CB

1. Apply gear oil on the driveshaft oil seal case contacting surface(B) and transaxle case splines(A).

[2WD]

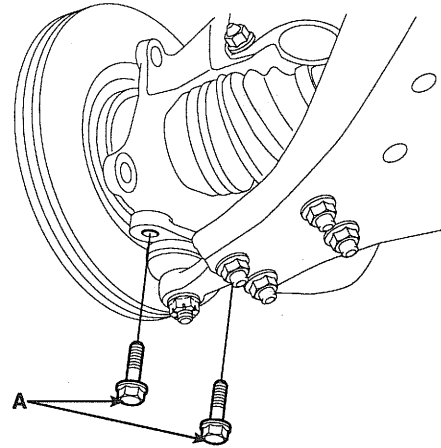


EIKD005A

4. Install the BJ. Into the knuckle.
5. Install the lower arm mounting bolts(A).

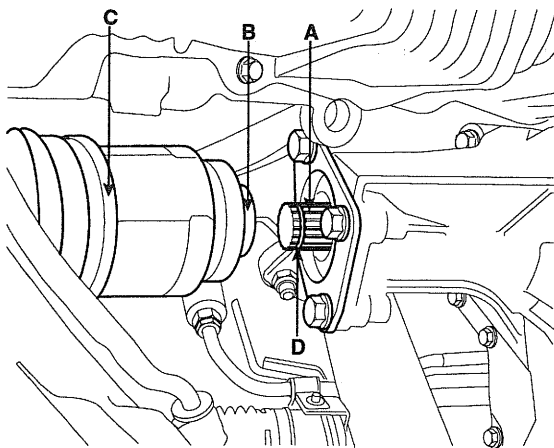
Tightening torque

100 ~ 120Nm (1000 ~ 1200Kgf.cm, 73.8 ~ 88.5lbf.ft)



KIQE100F

[4WD]

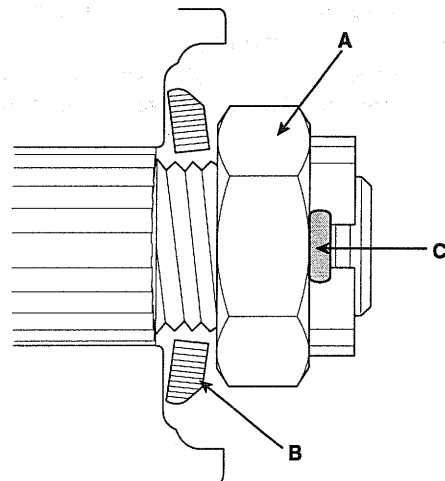


KIQE240A

6. After installing the washer(B) with convex surface outward, install the castle nut(A) and the split pin(C).

Tightening torque

200 ~ 280Nm (2000 ~ 2800Kgf.cm, 147.5 ~ 206.6lbf.ft)



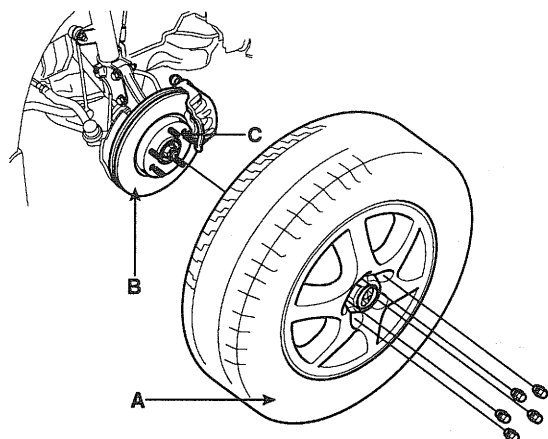
2. Before installing the driveshaft(C), set the opening side of the circlip(D) facing downward.
3. After installation, check that the driveshaft cannot be removed by hand.

EIKD010A

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

Tightening torque

90 ~ 110Nm (900 ~ 1100Kgf.cm, 66.4 ~ 81.2bf.ft)



KIQE100A

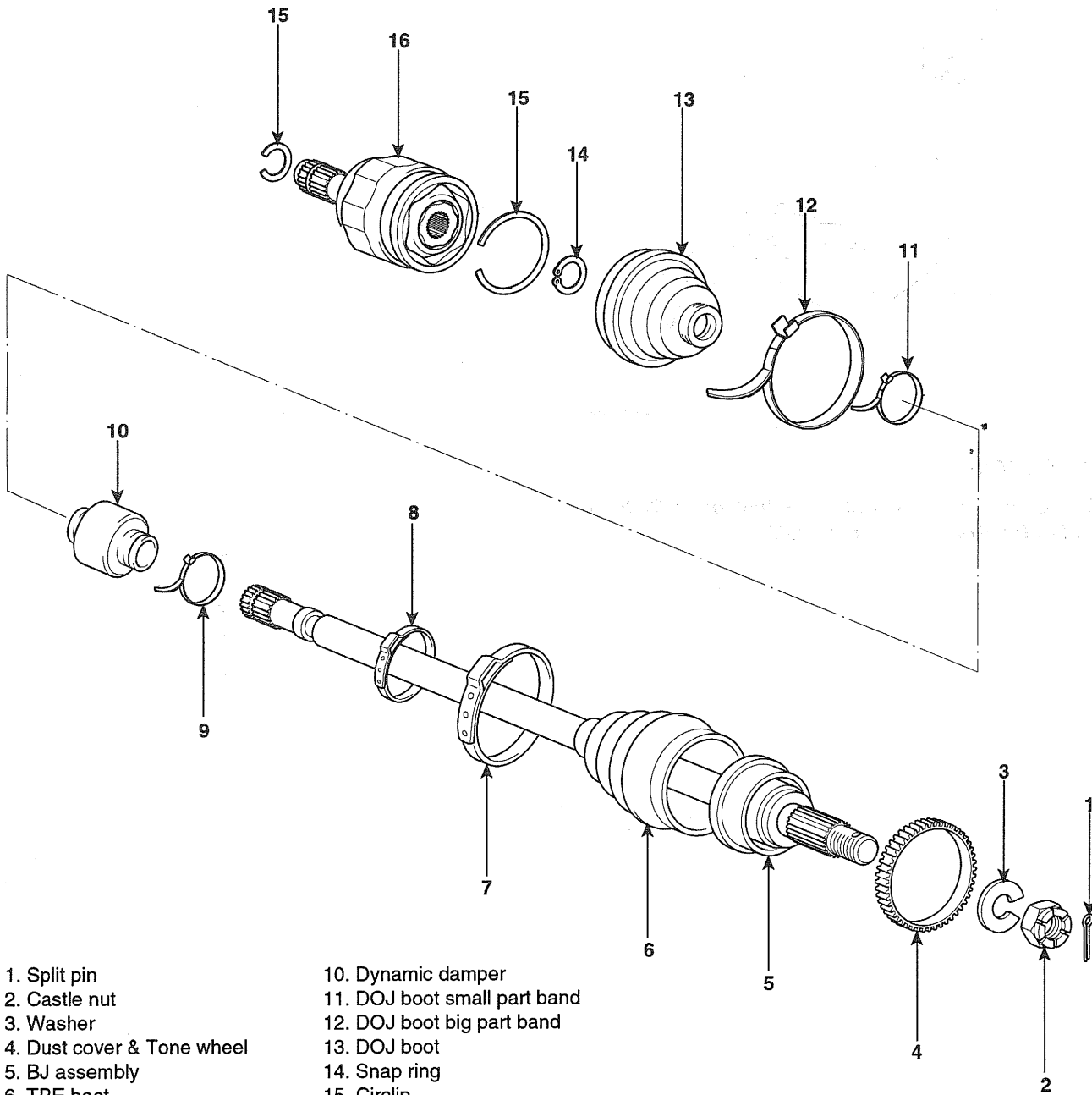
! CAUTION

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

FRONT DRIVESHAFT (DOJ-BJ TYPE)

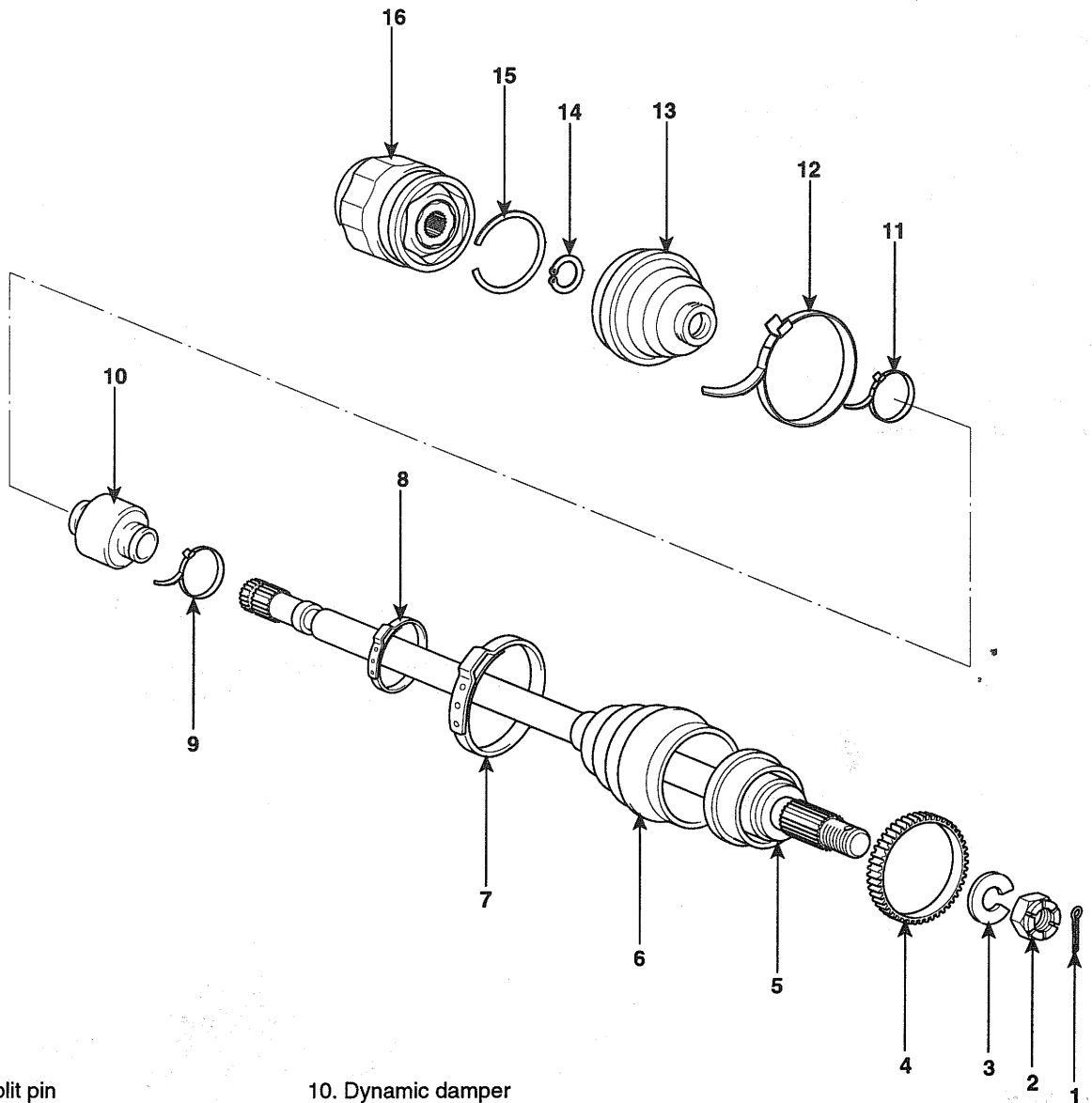
COMPONENTS E8ABC35C

[2WD]



- | | |
|----------------------------|------------------------------|
| 1. Split pin | 10. Dynamic damper |
| 2. Castle nut | 11. DOJ boot small part band |
| 3. Washer | 12. DOJ boot big part band |
| 4. Dust cover & Tone wheel | 13. DOJ boot |
| 5. BJ assembly | 14. Snap ring |
| 6. TPE boot | 15. Circlip |
| 7. BJ boot big part band | 16. DOJ assembly |
| 8. BJ boot small part band | |
| 9. Dynamic damper band | |

[4WD]

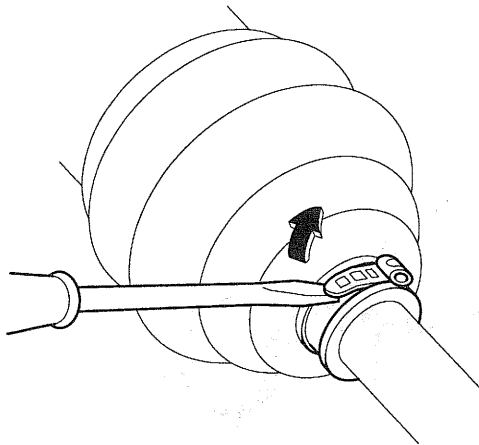


- | | |
|----------------------------|------------------------------|
| 1. Split pin | 10. Dynamic damper |
| 2. Castle nut | 11. DOJ boot small part band |
| 3. Washer | 12. DOJ boot big part band |
| 4. Dust cover & Tone wheel | 13. DOJ boot |
| 5. BJ assembly | 14. Snap ring |
| 6. TPE boot | 15. Circlip |
| 7. BJ boot big part band | 16. DOJ assembly |
| 8. BJ boot small part band | |
| 9. Dynamic damper band | |

DISASSEMBLY ED7530D0**DRIVESHAFT (RH)****CAUTION**

- Do not disassemble the BJ assembly.
- Special grease must be applied to the drive-shaft joint. Do not substitute with another type of grease.
- The boot band should be replaced with a new one.

1. Remove the DOJ. boot bands and pull the DOJ. boot from the DOJ. outer race.
 - a. Using a plier or flat-tipped (-) screwdriver, remove the LH boot band and LH DOJ. boot band from the driveshaft.
 - b. Remove RH boot band and RH DOJ. boot band.

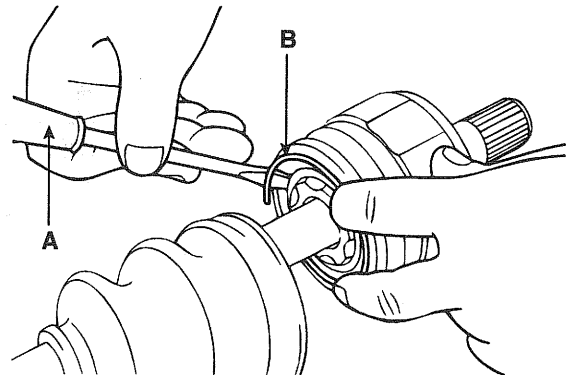


KIQE160A

CAUTION

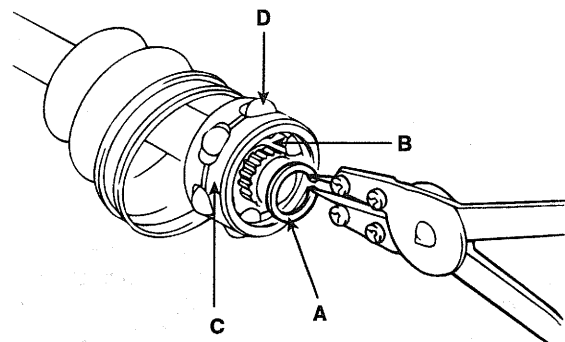
Be careful not to damage the boot.

2. Remove the circlip(B) with a flat-tipped (-) screwdriver (A).



KIKD251B

3. Pull out the driveshaft from the DOJ. outer race.
4. Remove the snap ring(A) and take out the inner race(B), cage(C) and balls(D) as an assembly.



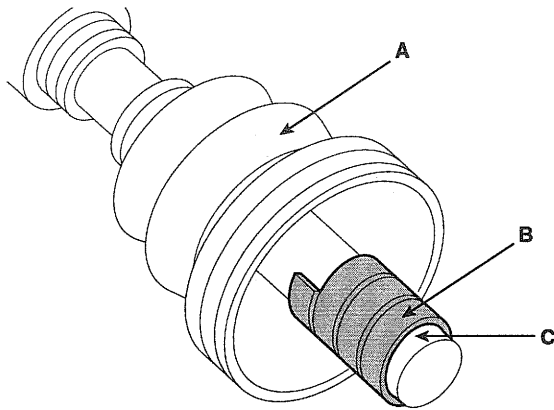
KIKD251C

5. Clean the inner race, cage and balls without disassembling.

Remove the B.J. boot bands and pull out the DOJ. boot and B.J. boot.

CAUTION

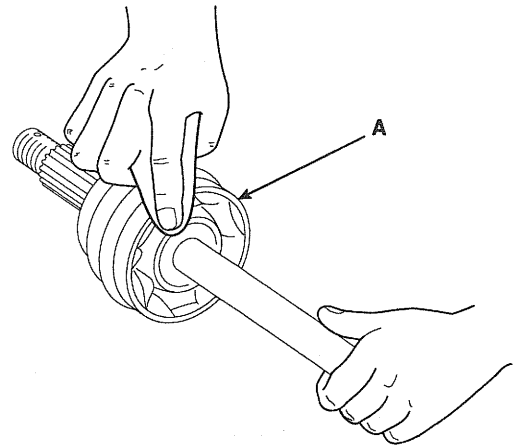
If the boot(A) is to be reused, wrap tape(B) around the driveshaft splines(C) to protect the boot(A).



KXDDE14A

INSPECTION E909EF79

1. Check the DOJ. outer race, inner race, cage and balls for rust or damage.
2. Check splines for wear.
3. Check for water, foreign matter, or rust in the B.J. boot.



EIKD025A

CAUTION

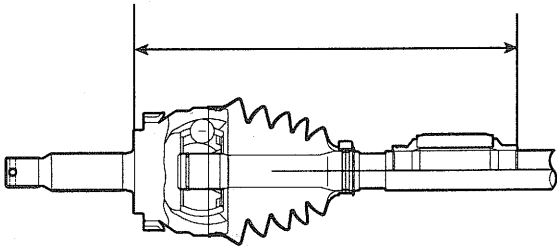
When the B.J. assembly(A) is to be reused, do not wipe away the grease. Check that there are no foreign substances in the grease. If necessary, clean the B.J. assembly(A) and replace grease.

REASSEMBLY E4BF15E4

1. Wrap tape around the driveshaft splines (DOJ. side) to prevent damage to the boots.
2. Apply grease to the driveshaft and install the boots. (See page DS - 4)
3. To install the dynamic damper, keep the BJ. and drive-shaft in a straight line and secure the dynamic damper with the dynamic damper band.

Standard value mm(in.) : 515^{+2}_0 ($20.3^{+0.079}_0$)

EIQE900A

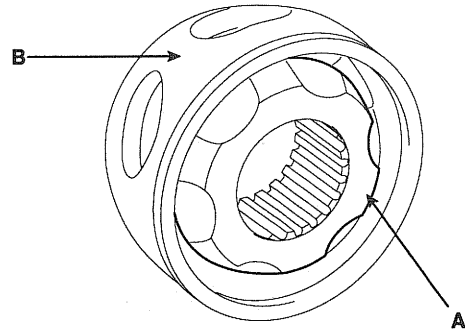


KIQE110A

4. Apply the specified grease to the inner race(A) and cage(B). Install the cage(B) so that it is offset on the race as shown.

 **CAUTION**

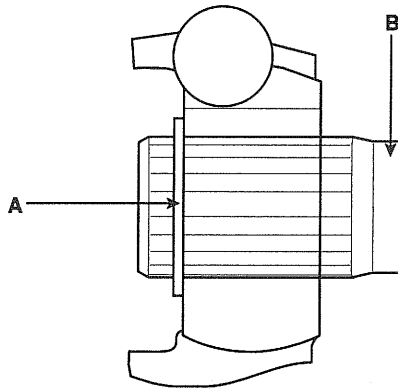
Use the grease included in the repair kit.



EIKD023A

5. Apply the specified grease to the cage and fit the balls into the cage.

6. Position the chamfered side(A) as shown in the illustration. Install the inner race on the driveshaft(B), and then the snap ring.



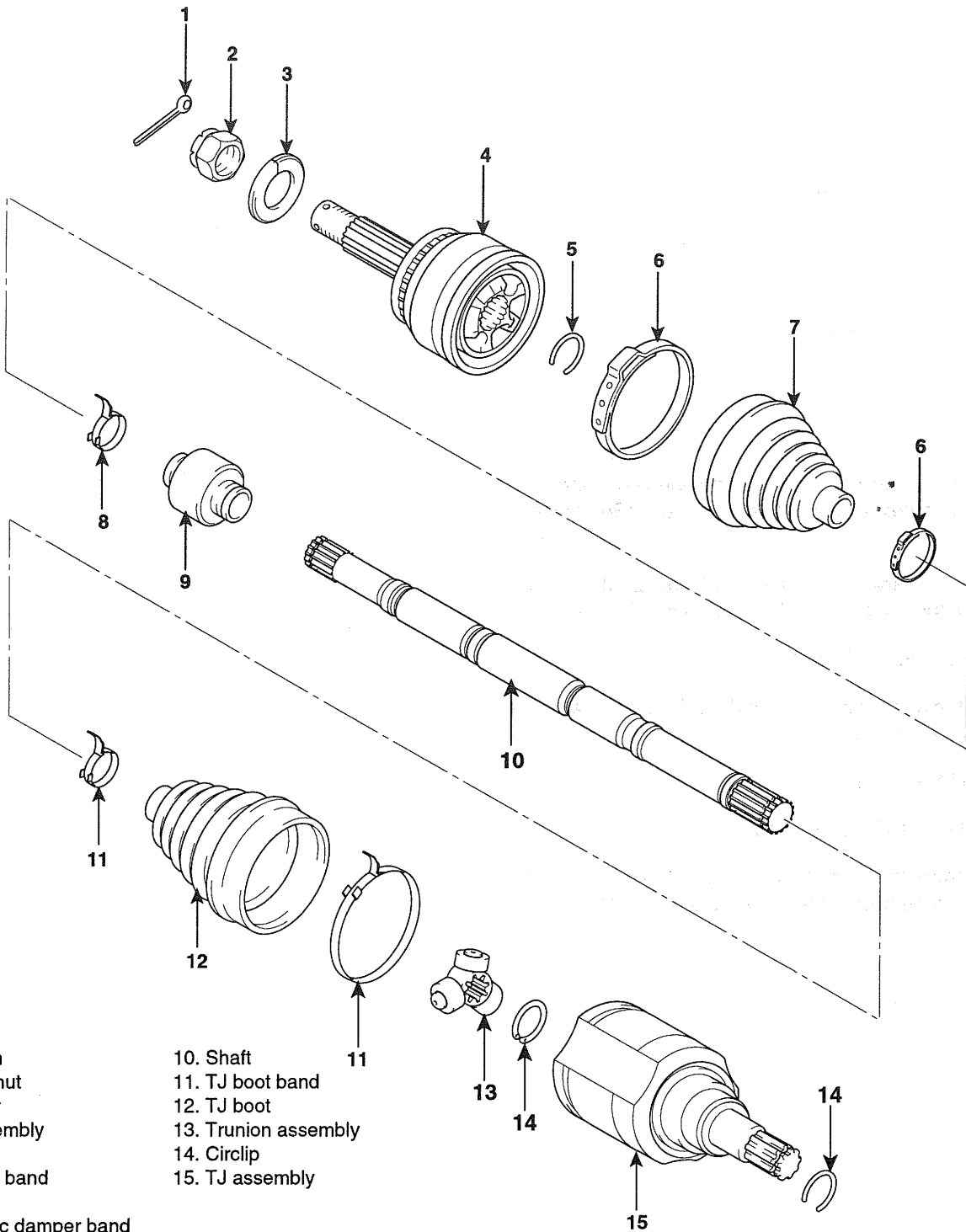
EIKD020A

7. Apply the specified grease to the outer race and install the B.J. outer race onto the driveshaft. (See page DS - 4)
8. Apply the specified grease into the DOJ. boot and install the boot with a clip. (See page DS - 4)
9. Tighten the DOJ. boot bands.
10. Add the specified grease to the B.J. as much as wiped away at inspection.
11. Install the boots.
12. Tighten the B.J. boot bands.
13. To control the air in the DOJ. boot, keep the specified distance between the boot bands when they are tightened.

FRONT DRIVESHAFT (TJ-BJ TYPE)

COMPONENTS EAAE8BFC

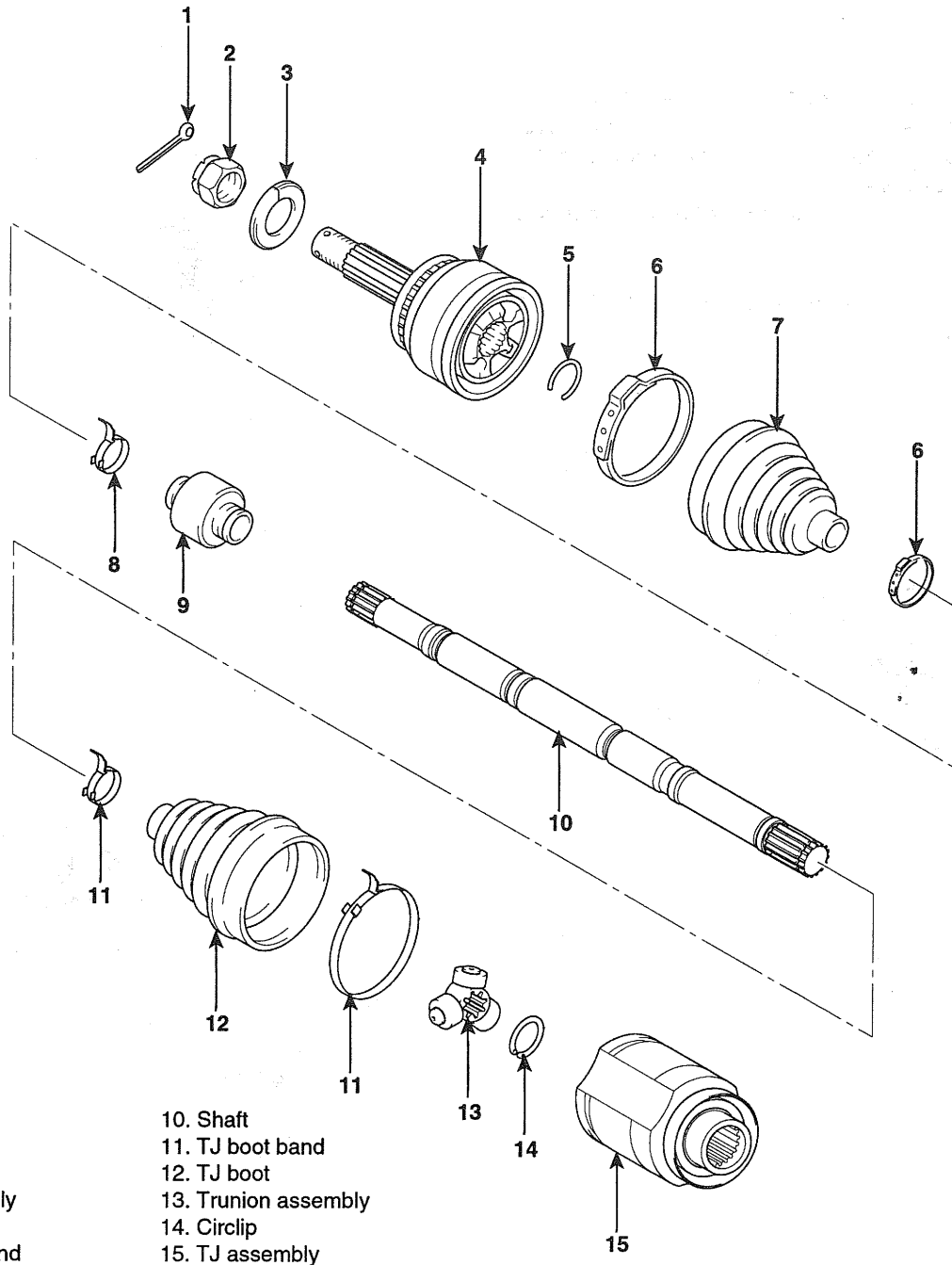
[2WD]



- 1. Split pin
- 2. Castle nut
- 3. Washer
- 4. BJ assembly
- 5. Clip A
- 6. BJ boot band
- 7. BJ boot
- 8. Dynamic damper band
- 9. Dynamic damper

- 10. Shaft
- 11. TJ boot band
- 12. TJ boot
- 13. Trunion assembly
- 14. Circlip
- 15. TJ assembly

[4WD]



- 1. Split pin
- 2. Castle nut
- 3. Washer
- 4. BJ assembly
- 5. Clip A
- 6. BJ boot band
- 7. BJ boot
- 8. Dynamic damper band
- 9. Dynamic damper

- 10. Shaft
- 11. TJ boot band
- 12. TJ boot
- 13. Trunion assembly
- 14. Circlip
- 15. TJ assembly

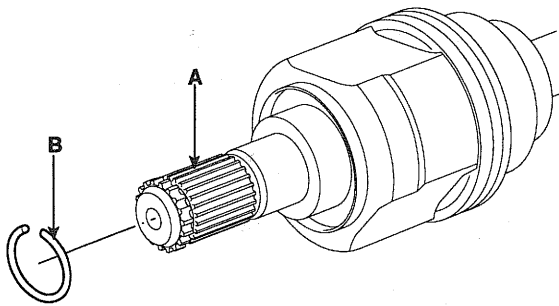
DISASSEMBLY ECDC0A8E

DRIVESHAFT (RH)

 CAUTION

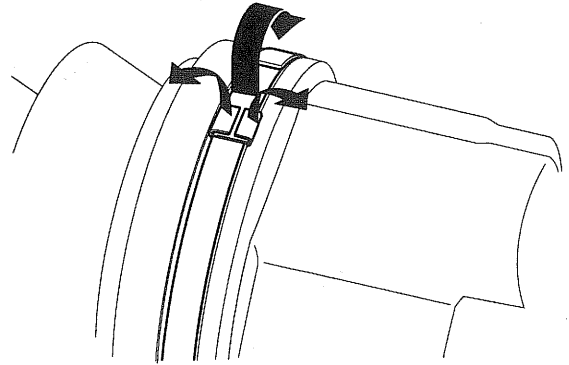
- Do not disassemble the BJ. assembly.
- Special grease must be applied to the drive-shaft joint. Do not substitute with another type of grease.
- The boot band should be replaced with a new one.

1. Remove the circlip(B) from driveshaft splines(A) of the transaxle side TJ. case.

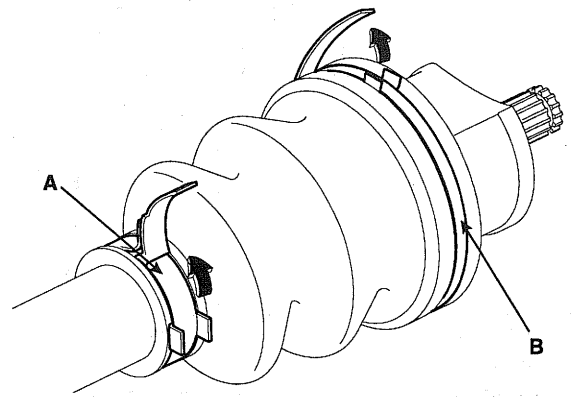


KXDDE07A

2. Remove the both boot clamps from the transaxle side TJ. case.
 - a. Using a plier or flat-tipped (-) screwdriver, remove the both clamps(TJ. boot band(B), boot band(A)) of the transaxle side.

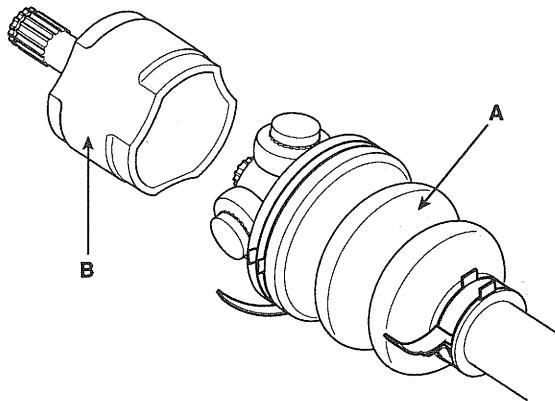


KXDDE08A

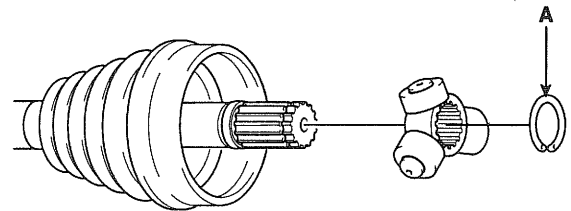


KXDDE09A

3. Pull out the boot from the transaxle side joint(TJ).
4. While dividing joint(TJ) boot(A) of the transaxle side, wipe the grease in TJ. case(B) and collect them respectively.
5. Using a plier or flat-tipped (-)screwdriver, remove the circlip(A).



KXDDE10A

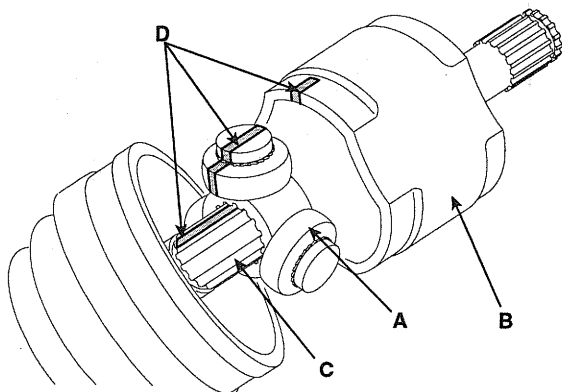


KXDDE12A

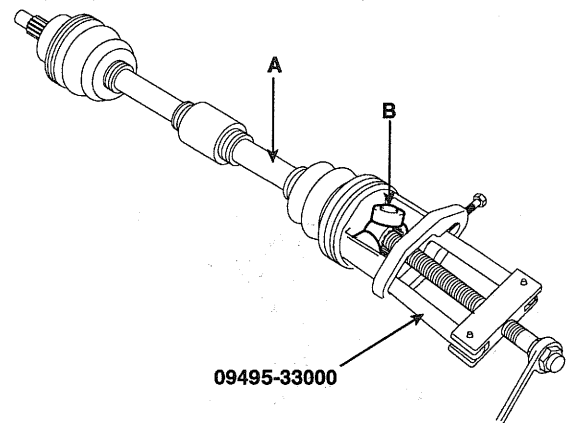
6. Remove the trunion assembly(B) from the drive-shaft(A) using the special tool(09495-33000).

CAUTION

- Be careful not to damage the boot.
- According to below the illustrated, put marks(D) on roller of trunion assembly(A), TJ. case(B) and spline part(C), for providing assembly.



KXDDE11A

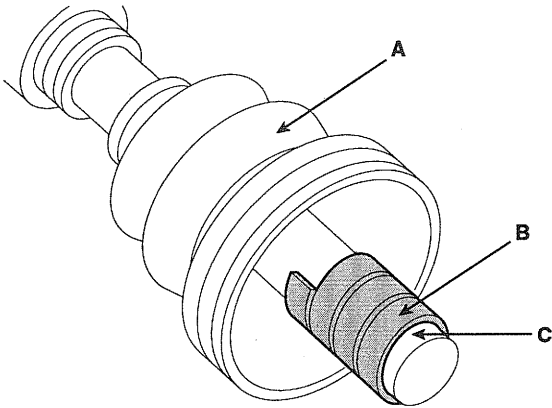


KXDDE13A

7. Clean the trunion assembly.
8. Remove the boot(A) of the transaxle side joint(TJ).

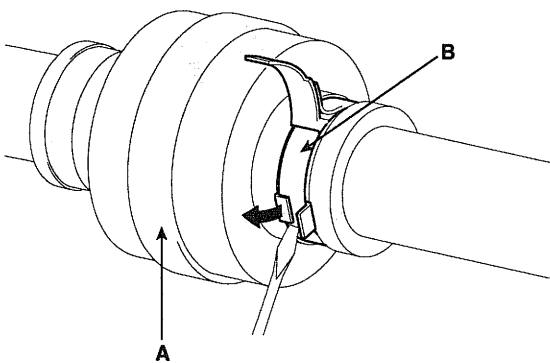
! CAUTION

For reusing the boot(A), wrap tape(B) around the driveshaft splines(C) to protect the boot(A).



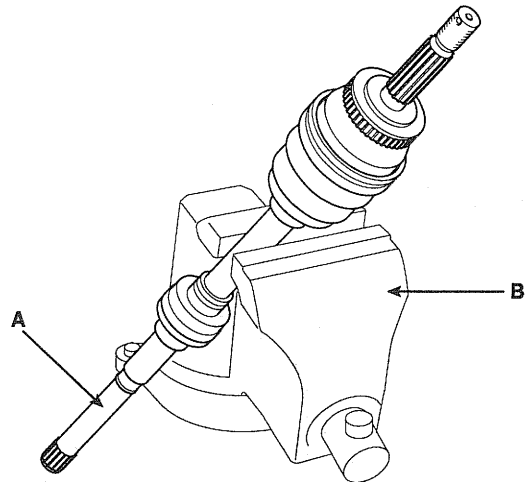
KXDDE14A

9. Using a plier or flat-tipped (-) screwdriver, remove the both side of clamp(B) of the dynamic damper(A).



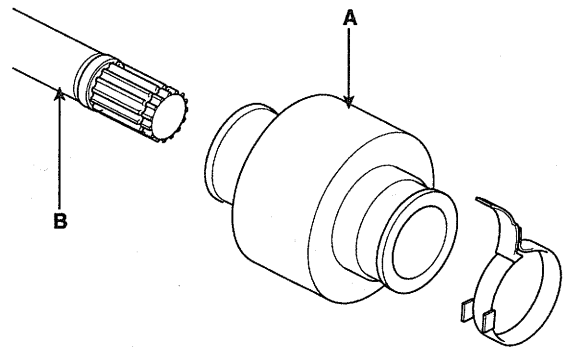
KIQE150A

10. Fix the driveshaft(A) with a vice(B) as illustrated.



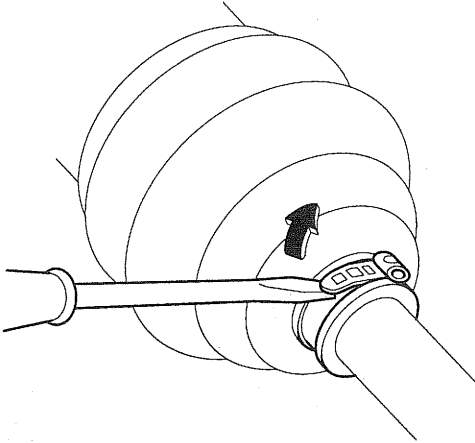
KXDDE16A

11. Apply soap powder on the shaft to prevent being damaged between the shaft spline and the dynamic damper when the dynamic damper is removed.
12. Saperate the dynamic damper(A) from the shaft(B) carefully.



KIQE150B

13. Using a plier or flat-tipped (-) screwdriver, remove the clamp on the side of wheel.

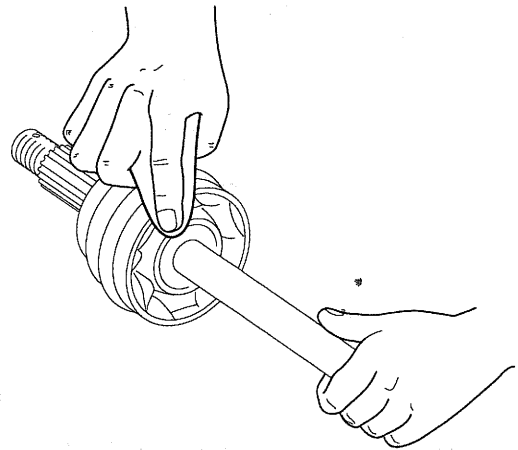


KIQE160A

14. Pull out the joint(BJ) on the side of wheel into the transaxle direction.
Be carefull not to damage the boot.

INSPECTION EEFECF9E

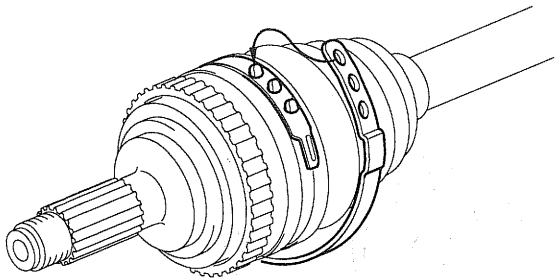
1. Check the driveshaft spline for wear or damage.
2. Check that there is no water or foreign material in the BJ.
3. Check the trunion assembly for roller rotation, wear or corrosion.
4. Check the groove inside the TJ. case for wear or corrosion.
5. Check the dynamic damper for damage or cracks.



EIKD025B

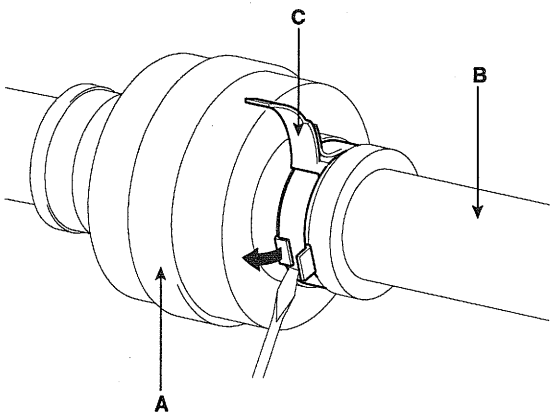
REASSEMBLY EB97FD9B

1. Wrap tape around the driveshaft splines (TJ. side) to prevent damage to the boots.
2. Apply grease to the driveshaft and install the boots. (See page DS - 4)
3. Install the clamps to both boots.



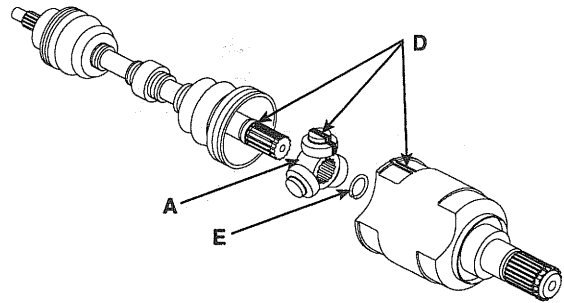
KIQE105A

4. To reassemble the dynamic damper(A), keeping the shaft(B) in the straight, tighten the dynamic damper(A) with dynamic band(C), as the illustration.

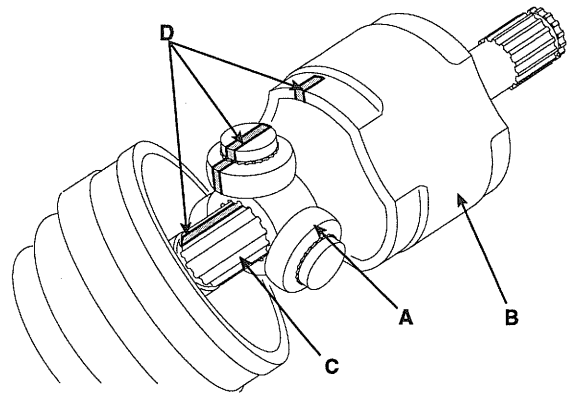


KIQE151A

5. Install the TJ. boot bands and TJ. boot.
6. Install the trunion assembly(A) and the circlip(E) to the spline(C) on the drivershaft. At this time align the marks(D) each other.



KXDDE20A



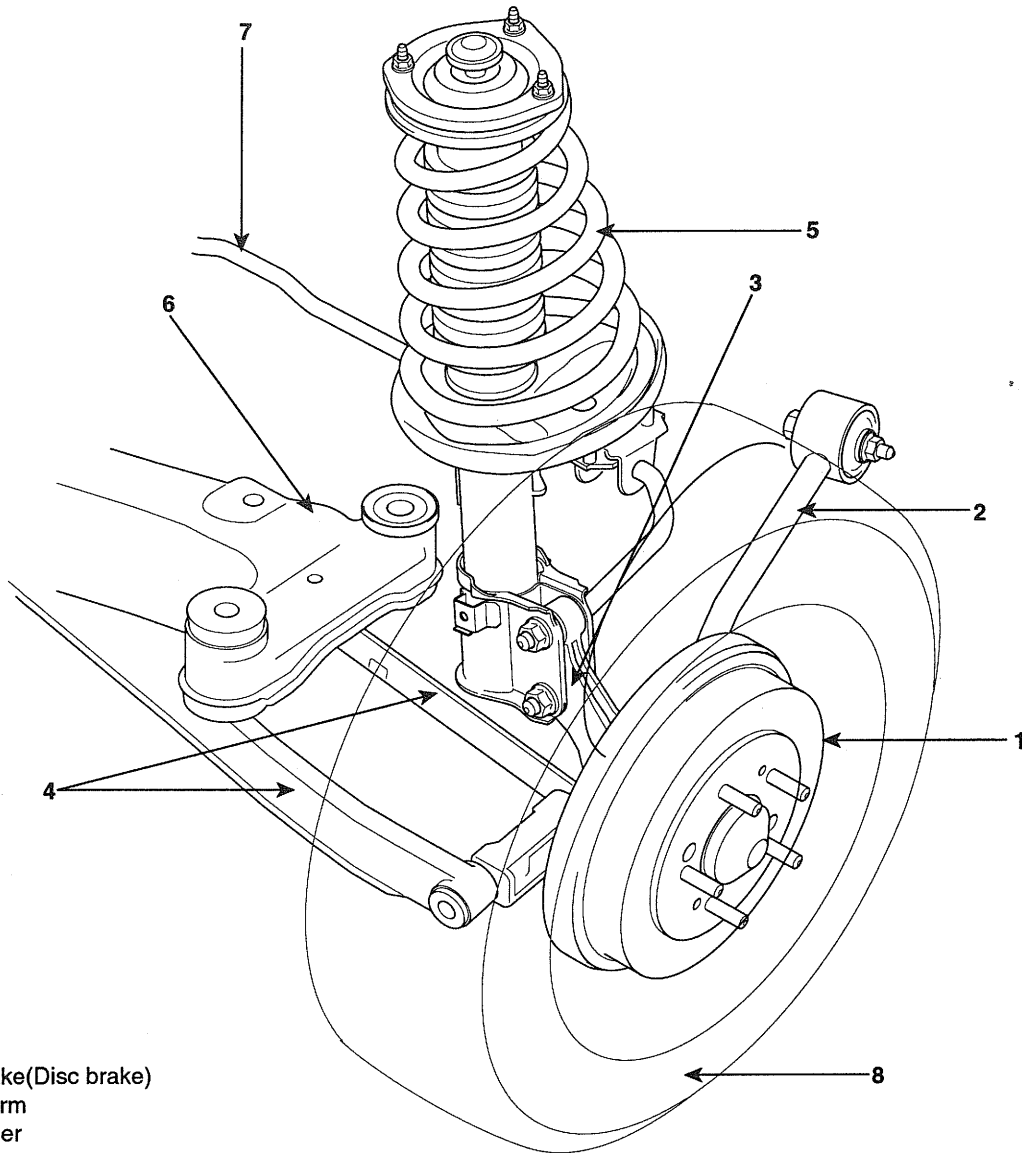
KXDDE11A

7. Add the specified grease to the T.J. as much as wiped away at inspection.
8. Install the boots.
9. Tighten the T.J. boot bands.
10. To control the air in the T.J. boot, keep the specified distance between the boot bands when they are tightened.

REAR AXLE

REAR HUB / CARRIER

COMPONENT LOCATION E8704F44

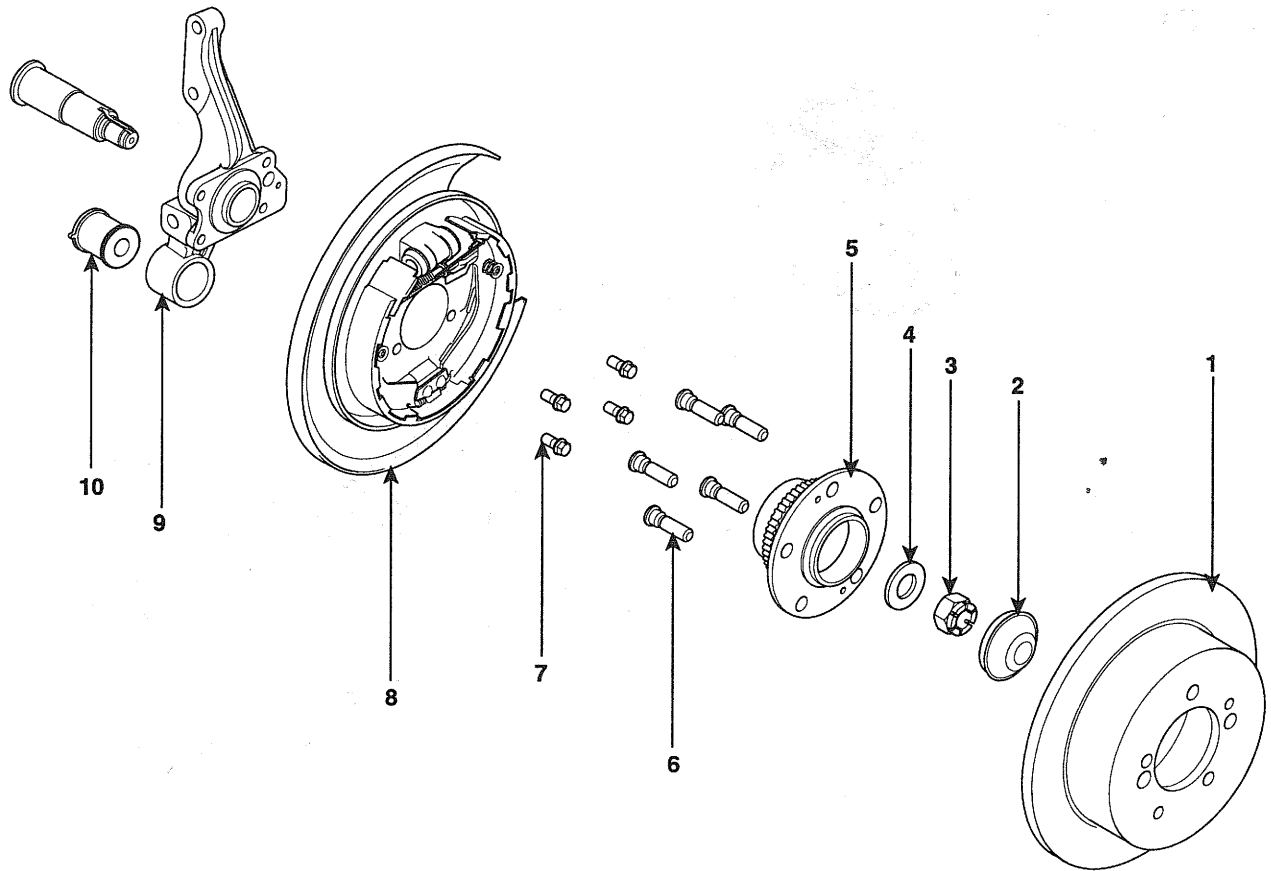


1. Drum brake(Disc brake)
2. Trailing arm
3. Axle carrier
4. Suspension arm
5. Strut assembly
6. Cross member
7. Stabilizer bar
8. Tire

COMPONENTS E3FAF6D9

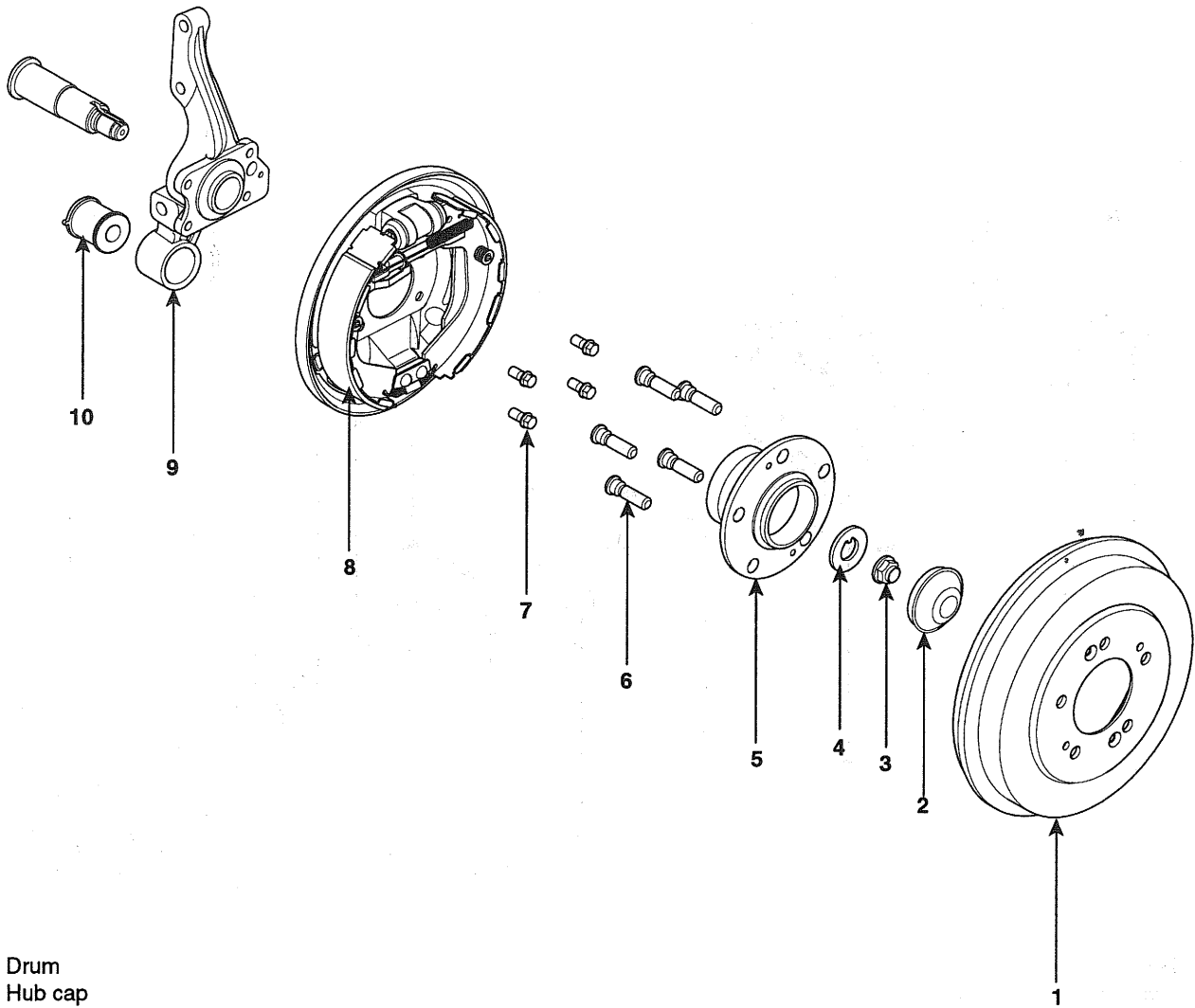
DISC BRAKE

[TYPE DISK BRAKE]



- 1. Disc
- 2. Hub cap
- 3. Castle nut
- 4. Washer
- 5. Hub
- 6. Hub bolt
- 7. Dust cover mounting bolt
- 8. Rear parking brake assembly
- 9. Axle carrier
- 10. Bushing

[TYPE DRUM BRAKE]

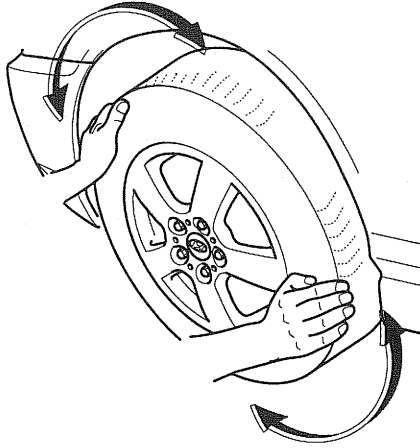


- 1. Drum
- 2. Hub cap
- 3. Castle nut
- 4. Washer
- 5. Hub
- 6. Hub bolt
- 7. Dust cover mounting bolt
- 8. Drum brake assembly
- 9. Axle carrier
- 10. Bushing

ON-VEHICLE INSPECTION EAFDF875

WHEEL BEARING PLAY INSPECTION

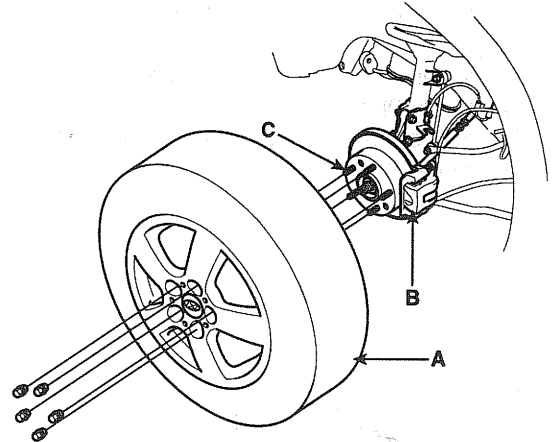
1. Inspection the play of the bearing while the vehicle is jacked up.



KIQE315A

2. If there is any play, loosen the wheel nuts slightly. Raise the rear of the vehicle, and make sure it is securely supported.

3. Remove the rear wheel and tire(A) from rear hub(B).

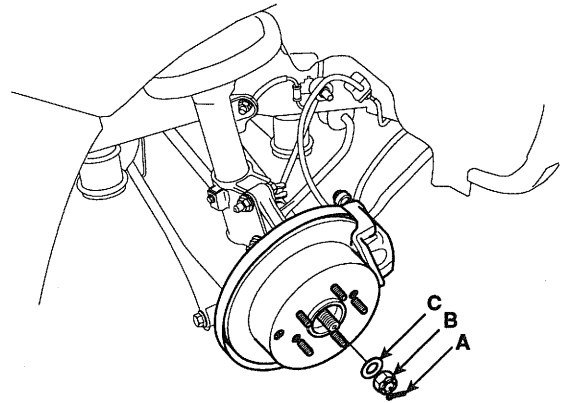


KIQE300A

CAUTION

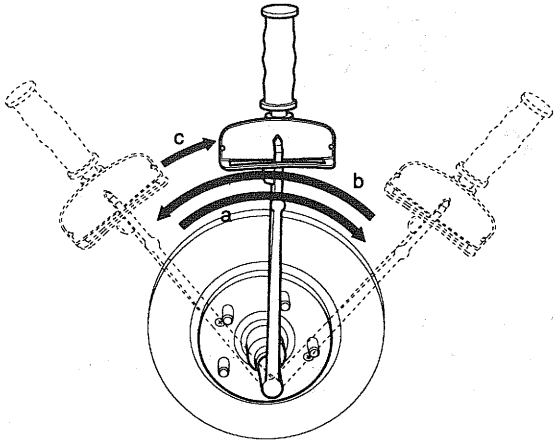
Be careful not to damage the hub bolts(C) then remove the rear wheel and tire(A).

4. Remove the split pin(A), then remove castle nut(B) and washer(C) from the rear hub under applying the break.



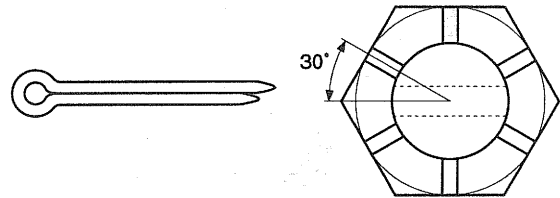
KIQE350C

5. Tighten the hub bearing nut by the following procedures.
 - a. Hub bearing nut must be fastened with torque 28kgf.m and rear hub must be rotated above 3 times enough for secure placement of hub bearing.
 - b. Unfasten hub bearing nut until its tightening torque is 0Kgf.m
 - c. Hub bearing nut must be fastened again with torque 20Kgf.m



KISE205C

- d. Assemble split pin.
- e. If the direction of split pin is not in line with the hole of knuckle unfasten hub bearing nut within 30° and assemble split pin

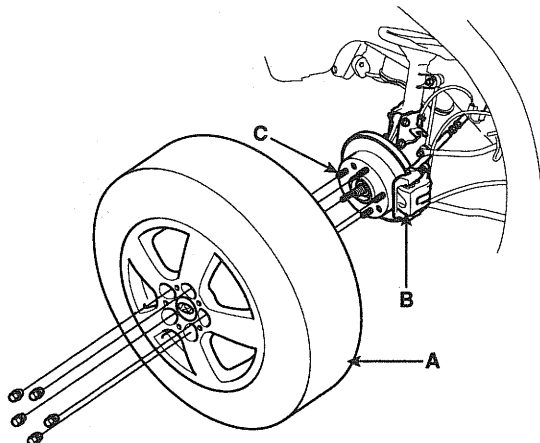


KISE205D

REMOVAL EF886CDA

[TYPE DISC BRAKE]

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).

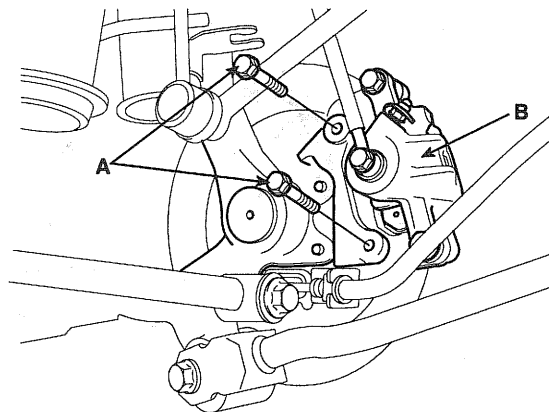


KIQE300A

CAUTION

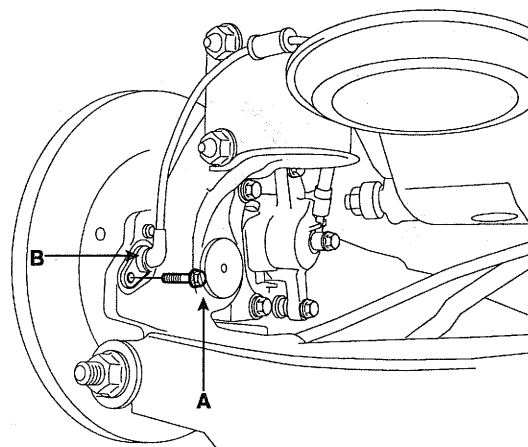
Be careful not to damage the hub bolts(C) then remove the rear wheel and tire(A).

3. Remove the caliper mounting bolts(A), and hang the caliper assembly(B) to one side. To prevent damage to the caliper assembly or brake hose, use a short piece of wire to hang the caliper from the undercarriage.



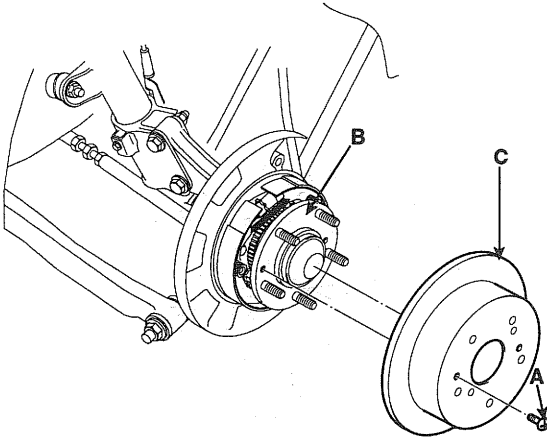
KIQE300B

4. Remove the wheel speed sensor(B) from the axle carrier(A).



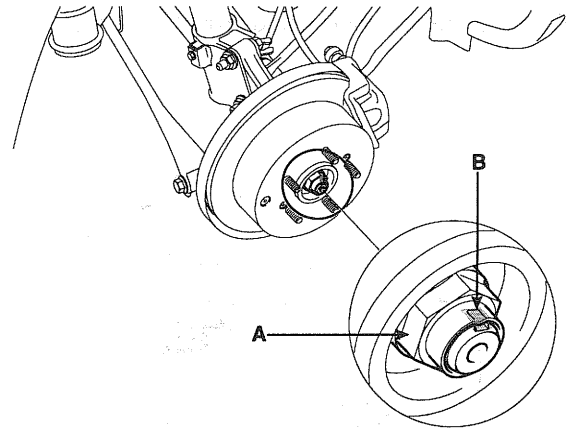
KIQE300C

5. Loosen the brake disc mounting screw(A), and then remove the brake disc(C) from the hub(B).



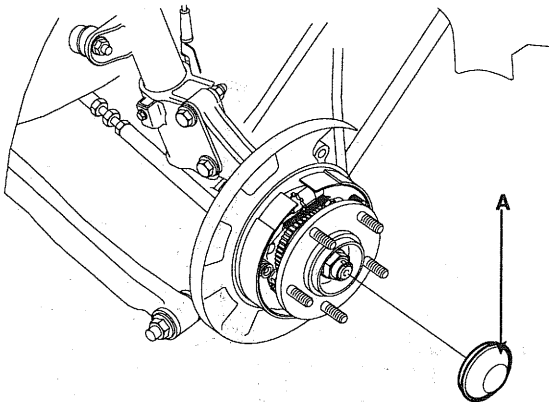
KIQE300E

7. Remove the hub bearing flange nut(A).
 a. Using a flat-tipped (-)screwdriver, spread out the groove(B) on the flange nut(A)
 b. Loosen the hub bearing flange nut(A).



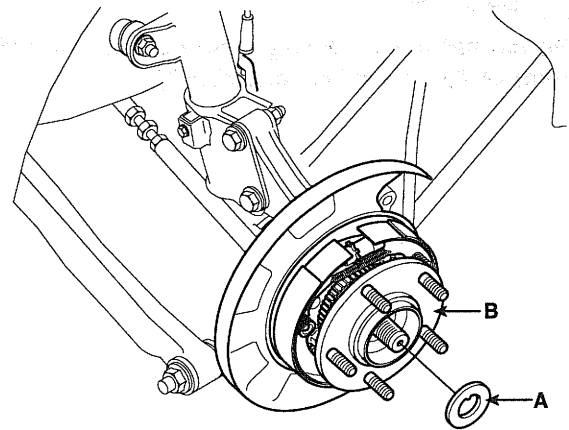
KIQE300G

6. Using a (-)screwdriver, remove the hub cap(A).



KIQE300F

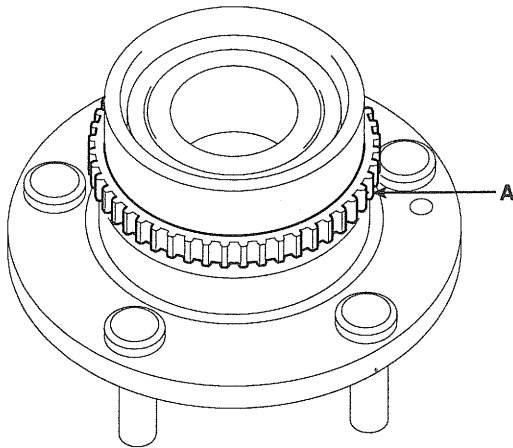
8. Remove the rear hub washer(A) and rear hub assembly(B).



KIQE300H

CAUTION

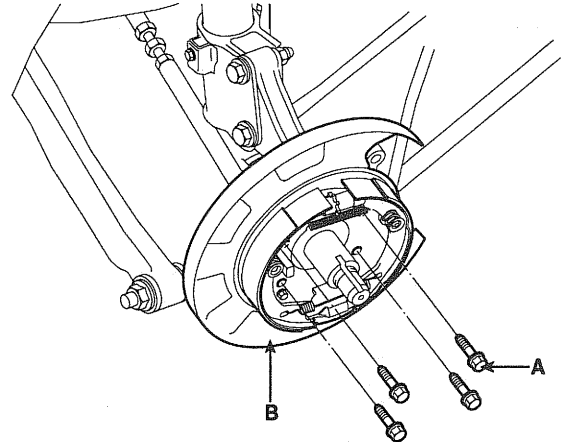
- *Be careful not to disassemble the rear hub assembly.*
- *For vehicles equipped with ABS.*



KIQE300I

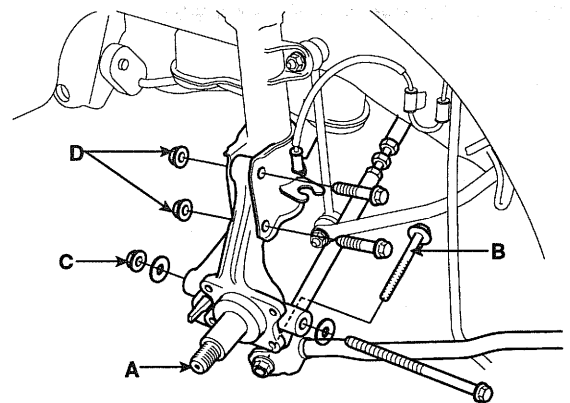
- *Care must be taken not to scratch or damage the teeth of the rotor.*
- *The rotor must never be dropped.*
- *If the teeth of the rotor are chipped, it results in deformation of the rotor. It will make it impossible to detect the wheel rotation speed accurately and to operate the system normally.*

9. Loosen the rear dust cover mounting bolts(A) and then remove the rear parking brake assembly(B).



KIQE300J

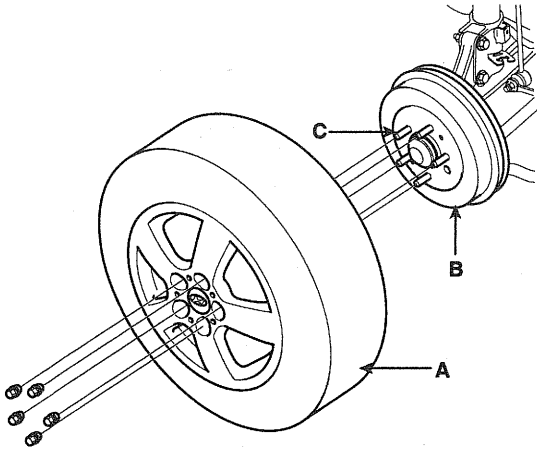
10. Remove the rear axle carrier(A).
 - a. Remove the trailing arm mounting bolt(B).
 - b. Remove the suspension arm mounting nut(C).
 - c. Remove the strut mounting nuts(D).



KIQE300K

[TYPE DRUM BRAKE]

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).

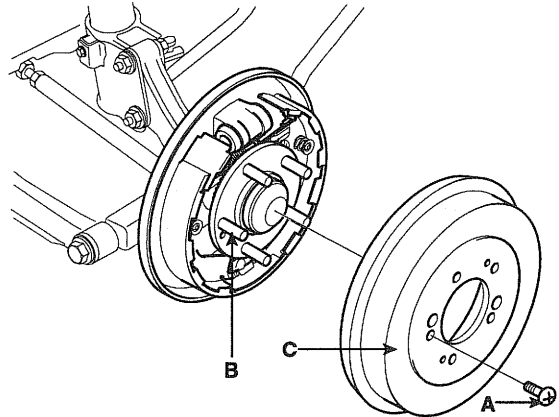


KIQE305A

⚠ CAUTION

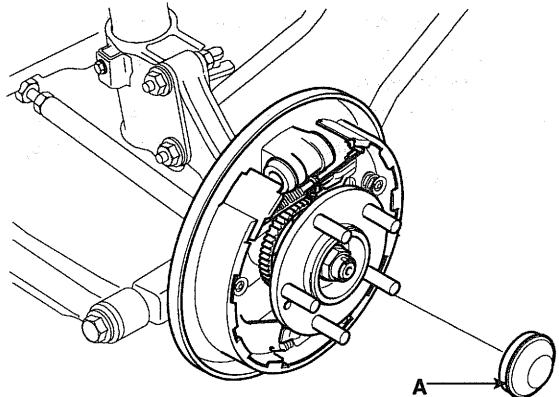
Be careful not to damage the hub bolts(C) then remove the rear wheel and tire(A).

3. Loosen the brake drum mounting screw(A), and then remove the brake drum(C) from the hub(B).



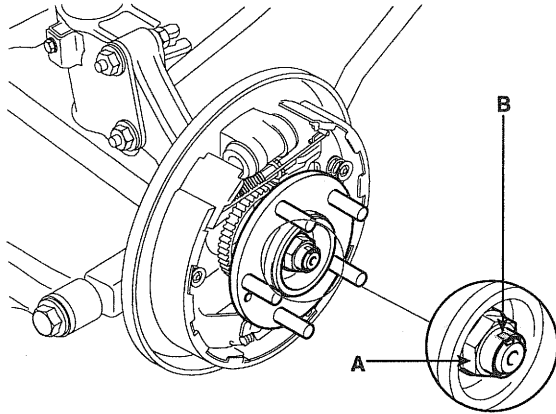
KIQE305B

4. Using a (-)screwdriver, remove the hub cap(A).



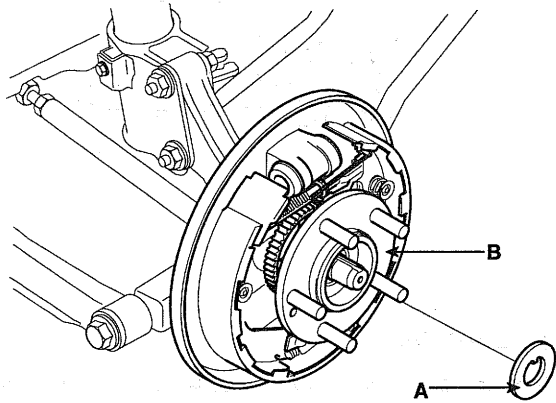
KIQE305C

5. Remove the hub bearing flange nut(A).
 - a. Using a flat-tipped (-) screwdriver, spread out the groove(B) on the flange nut(A).
 - b. Loosen the hub bearing flange nut(A).



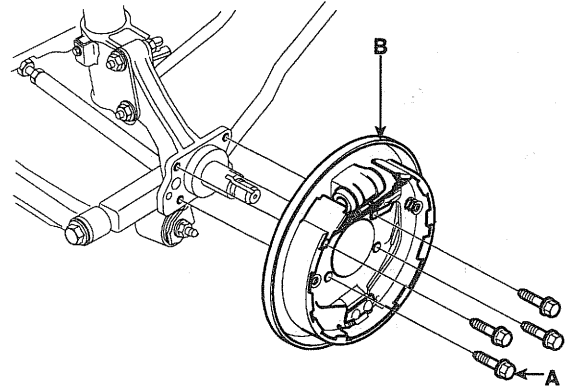
KIQE305D

6. Remove the rear hub washer(A) and rear hub assembly(B).



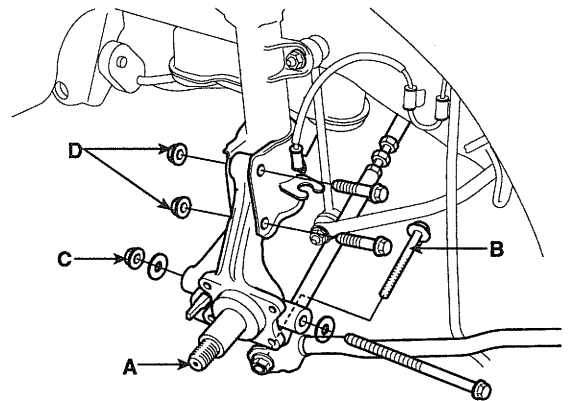
KIQE305E

7. Loosen the rear dust cover mounting bolts(A) and then remove the drum brake assembly(B).



KIQE305F

8. Remove the rear axle carrier(A).
 - a. Remove the trailing arm mounting bolt(B).
 - b. Remove the suspension arm mounting nut(C).
 - c. Remove the strut mounting nuts(D).



KIQE300K

INSPECTION ED0EC57A**[TYPE DISC BRAKE]**

1. Check the hub bearing for wear or damage.
2. Check the rotor for chipped teeth.
3. Check the carrier for cracks.

[TYPE DRUM BRAKE]

1. Check the hub bearing for wear or damage.
2. Check the brake shoe for wear or cracks.
3. Check the brake drum for wear or cracks.
4. Check the carrier for cracks.

INSTALLATION E6DBDA66**[TYPE DISC BRAKE]**

1. Install the rear axle carrier(A).
 - a. Install the strut mounting nuts(D).

Tightening torque

140 ~ 160Nm (1400 ~ 1600Kgf.cm, 103.3 ~ 118.0lbf.ft)

- b. Install the suspension arm mounting nut(C).

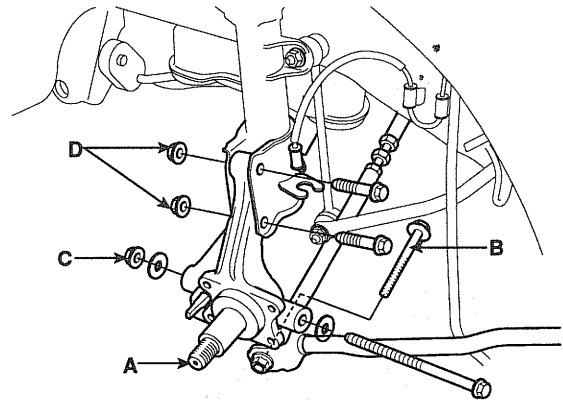
Tightening torque

160 ~ 180Nm (1600 ~ 1800Kgf.cm, 118.0 ~ 132.8lbf.ft)

- c. Install the trailing arm mounting bolt(B).

Tightening torque

100 ~ 120Nm (1000 ~ 1200, 73.8 ~ 88.5lbf.ft)



K1QE300K

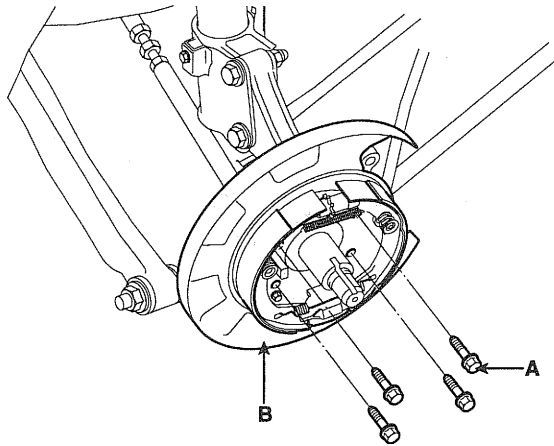
⚠ CAUTION

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

2. Install the rear dust cover(B) and then tighten the mounting bolts(A).

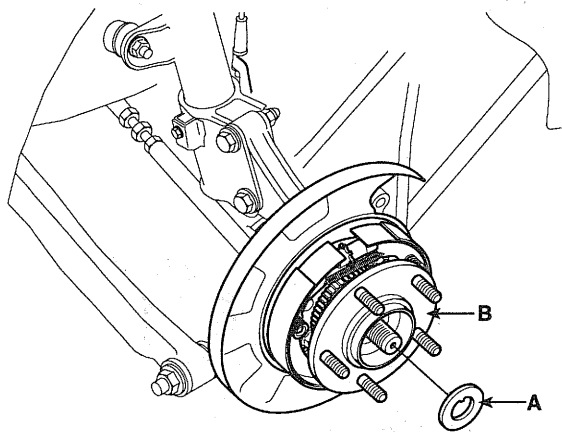
Tightening torque

50 ~ 60Nm (500 ~ 600Kgf.cm, 36.9 ~ 44.3lbf.ft)



KIQE300J

3. Install the hub assembly(B) and hub washer(A).

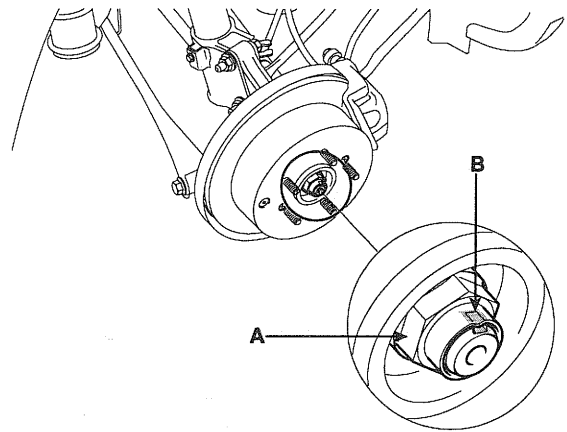


KIQE300H

4. After tightening the hub bearing flange nut(A), caulk the concave portion(B) of the spindle by crimping the nut.

Tightening torque

200 ~ 260Nm (2000 ~ 2600Kgf.cm, 147.5 ~ 191.8lbf.ft)

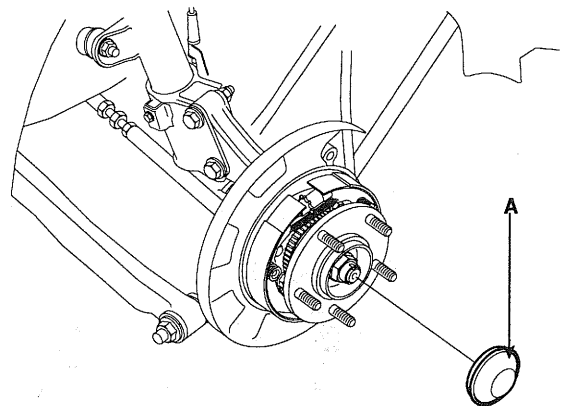


KIQE300G

! CAUTION

Replace the flange nut with new ones after removal.

5. Install the hub cap(A).



KIQE300F

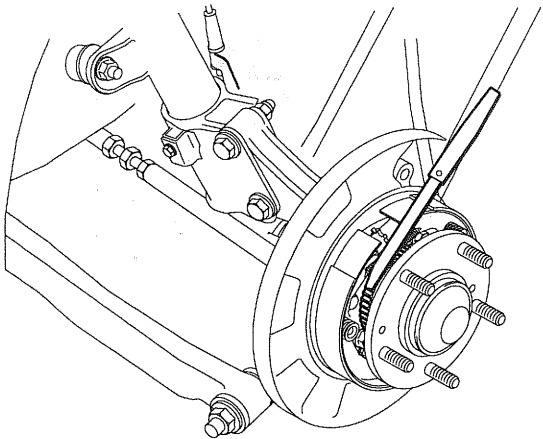
! CAUTION

Replace the hub cap with new ones after removal.

6. Installation of the rear speed sensor(A).(For vehicles equipped with ABS):
 Insert a feeler gauge(C) into the space between the pole piece of the speed sensor(A) and the rotor teeth(B) surface, and then tighten the speed sensors(A) at the position where the clearance at all places is within the standard value.

Standard value

Clearance : 0.5 ~ 1.5mm (0.02 ~ 0.06in.)

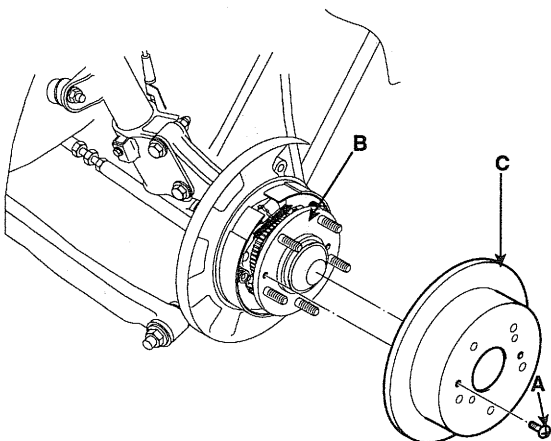


KIQE340A

7. Install the brake disc(C) from the hub(B), then tighten the brake disc mounting screw(A).

Tightening torque

5 ~ 6Nm (50 ~ 60, 3.7 ~ 4.4lbf.ft)

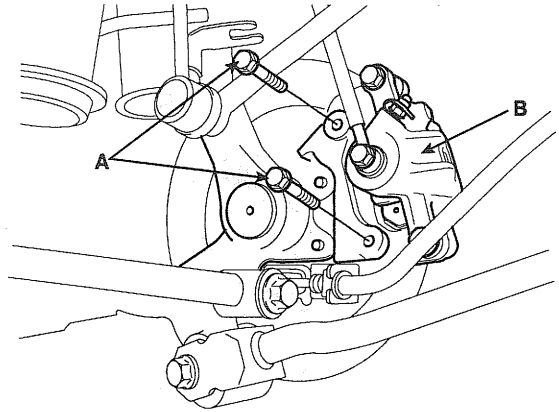


KIQE300E

8. Install the brake caliper(B), then tighten the mounting bolt(A).

Tightening torque

50 ~ 60Nm (500 ~ 600Kgf.cm, 36.9 ~ 44.3lbf.ft)

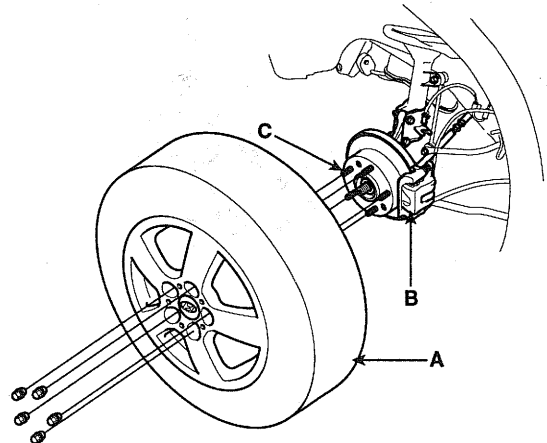


KIQE300B

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

Tightening torque

90 ~ 110Nm (900 ~ 1100kgf.cm, 66.4 ~ 81.2lbf.ft)



KIQE300A

CAUTION

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

[TYPE DRUM BRAKE]

1. Install the rear axle carrier(A).
 - a. Install the strut mounting nuts(D).

Tightening torque

140 ~ 160Nm (1400 ~ 1600Kgf.cm, 103.3 ~ 118.0lbf.ft)

- b. Install the suspension arm mounting nut(C).

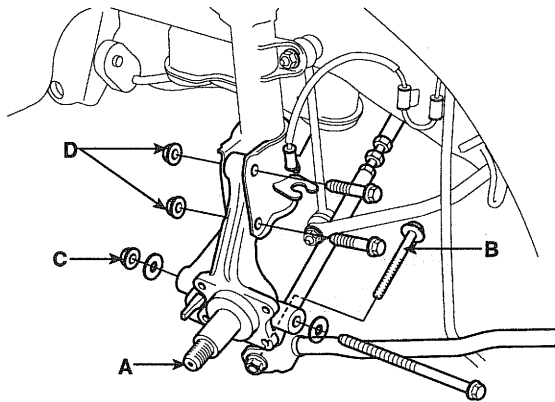
Tightening torque

160 ~ 180Nm (1600 ~ 1800Kgf.cm, 118.0 ~ 132.8lbf.ft)

- c. Install the trailing arm mounting bolt(B).

Tightening torque

100 ~ 120Nm (1000 ~ 1200Kgf.cm, 73.8 ~ 88.5lbf.ft)



KIQE300K

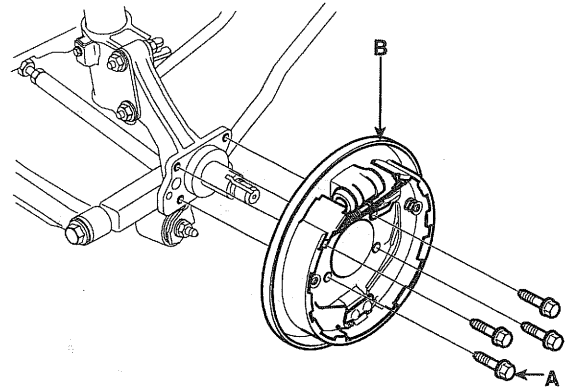
CAUTION

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

2. Install the rear dust cover(B), then tighten the mounting bolt(A).

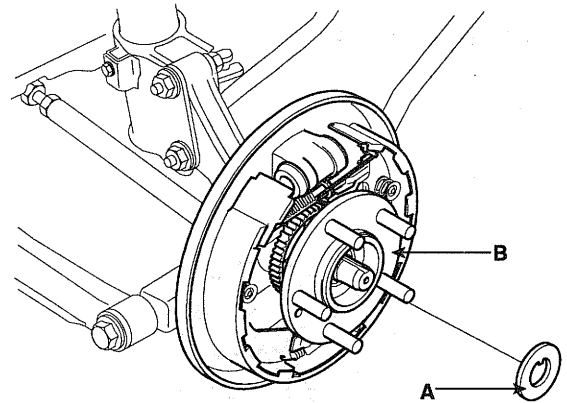
Tightening torque

50 ~ 60Nm (500 ~ 600Kgf.cm, 36.9 ~ 44.3lbf.ft)



KIQE305F

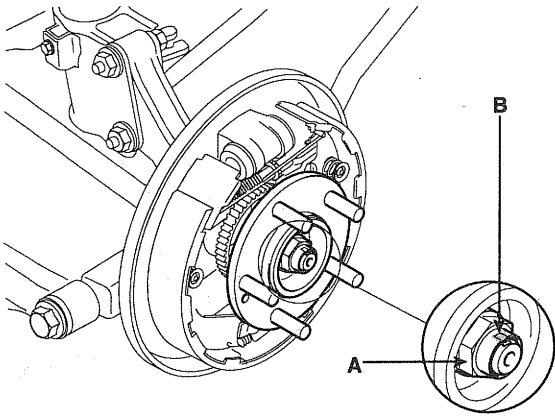
3. Install the rear hub assembly(B) and hub washer(A).



KIQE305E

- After tightening the hub bearing flange nut(A), caulk the concave portion(B) of the spindle by crimping the nut.

Tightening torque
200 ~ 260Nm (2000 ~ 26000Kgf.cm, 147.5 ~ 191.8lbf.ft)

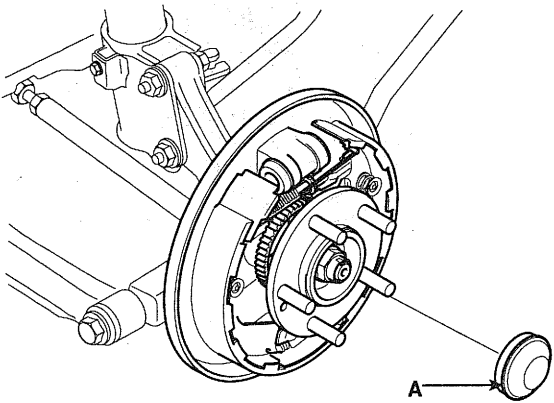


KIQE305D

! CAUTION

Replace the flange nut with new ones after removal.

- Install the hub cap(A).



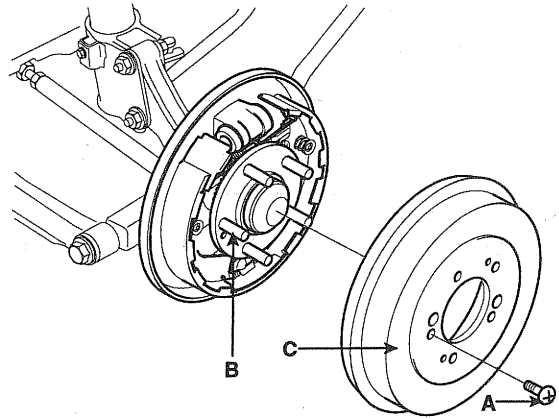
KIQE305C

! CAUTION

Replace the hub cap with new ones after removal.

- Install the brake drum(C) from the hub(B), then tighten the brake drum mounting screw(A).

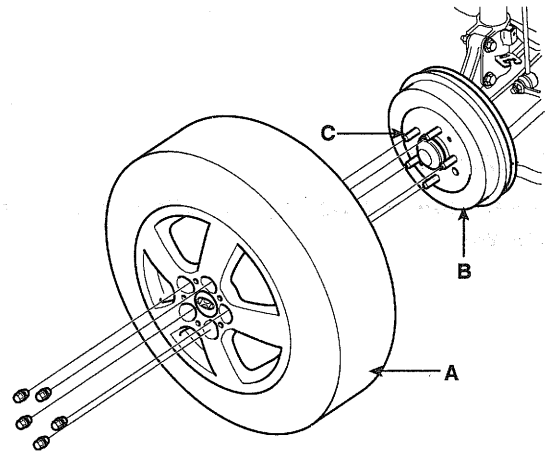
Tightening torque
5 ~ 6Nm (50 ~ 60Kgf.cm, 3.7 ~ 4.4lbf.ft)



KIQE305B

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

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



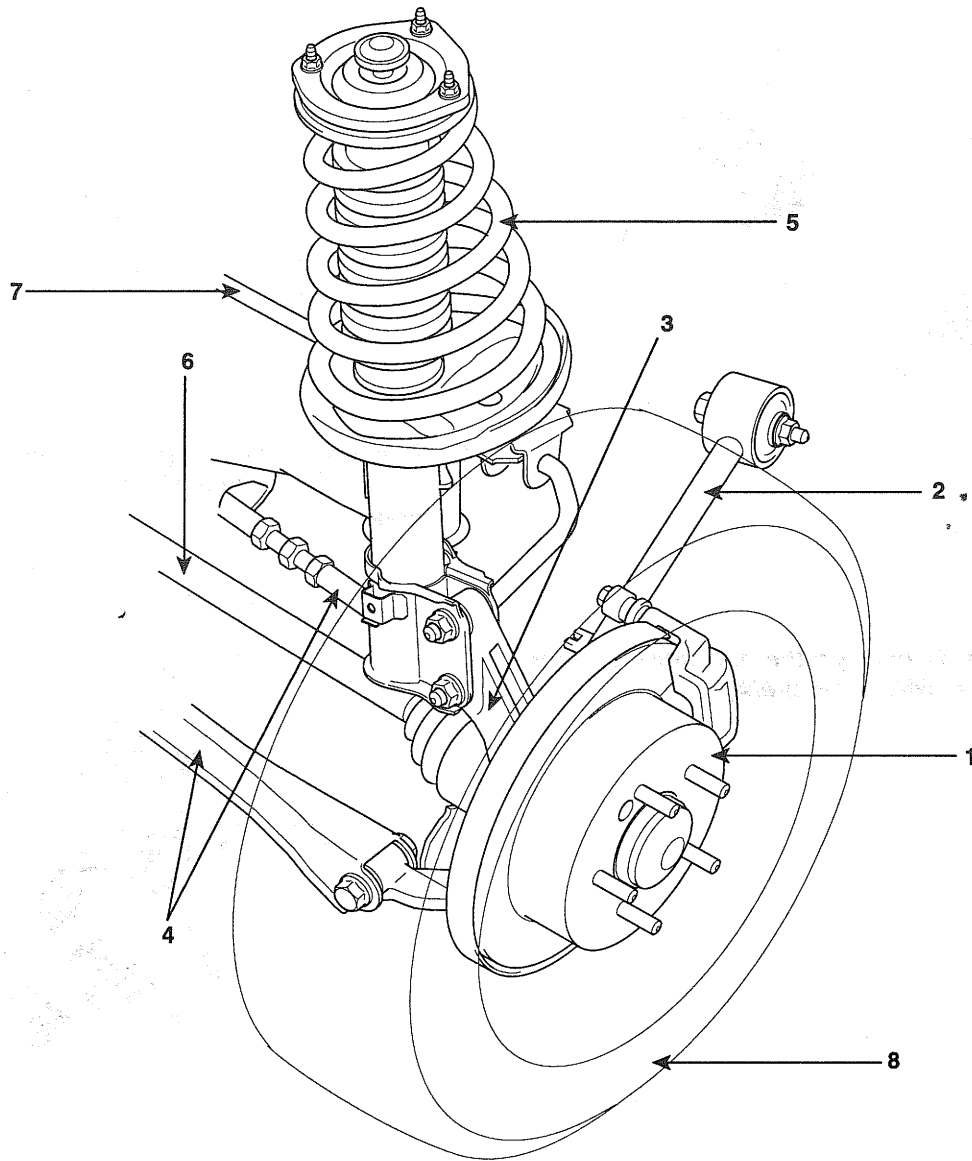
KIQE305A

! CAUTION

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

REAR HUB / AXLE

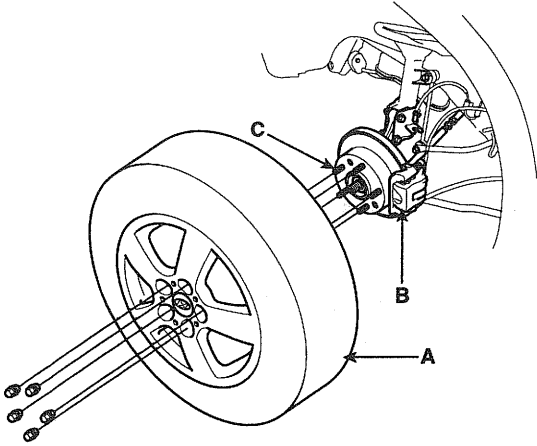
COMPONENT LOCATION EE6D3387



- 1. Disc brake
- 2. Trailing arm
- 3. Axle carrier
- 4. Suspension arm
- 5. Strut assembly
- 6. Drive shaft
- 7. Stabilizer bar
- 8. Tire

REMOVAL E540B0FC

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).

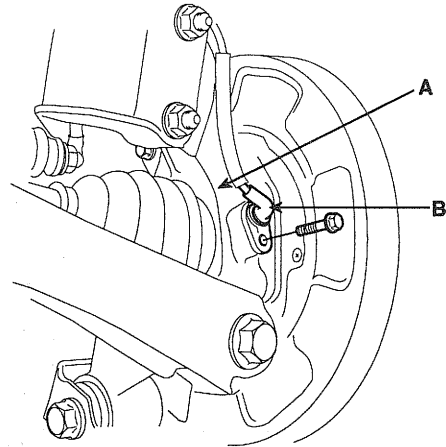


KIQE300A

⚠ CAUTION

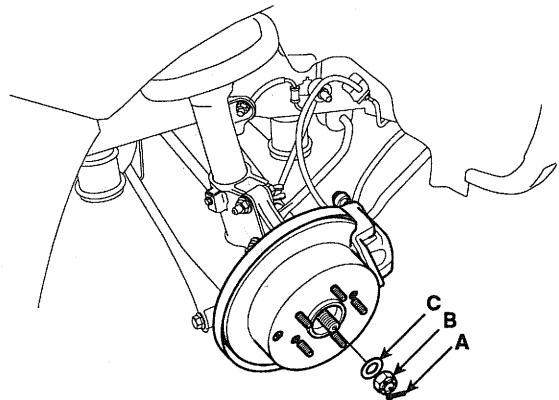
Be careful not to damage the hub bolts(C) then remove the rear wheel and tire(A).

3. Remove the wheel speed sensor(B) from the axle carrier(A).



KIQE350B

4. Remove the split pin(A), then remove castle nut(B) and washer(C) from the rear hub under applying the break.

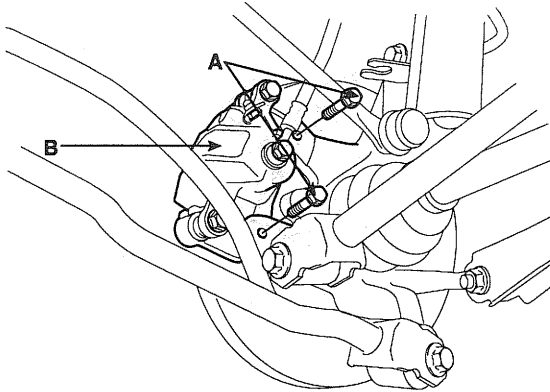


KIQE350C

5. Remove the caliper mounting bolts(A), and hang the caliper assembly(B) to one side. To prevent damage to the caliper assembly or brake hose, use a short piece of wire to hang the caliper from the undercarriage.

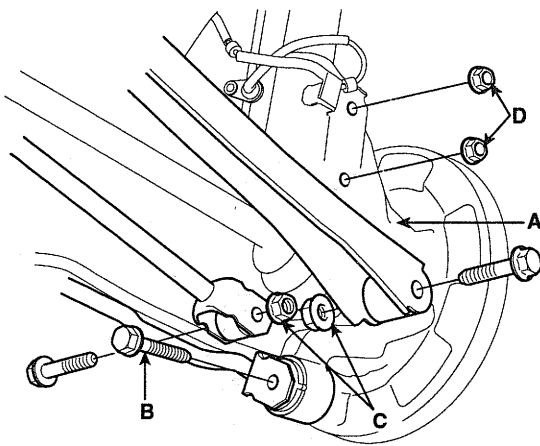
INSPECTION ECE405A7

1. Check the hub bearing for wear or damage.
2. Check the carrier for cracks.



KIQE350D

6. Remove the rear axle assembly(A).
 - a. Remove the trailing arm mounting bolt(B).
 - b. Remove the suspension arm mounting nuts(C).
 - c. Remove the strut mounting nuts(D).



KIQE350E

INSTALLATION EF7458FB

1. Install the rear axle assembly(A).
 - a. Install the strut mounting nuts(D).

Tightening torque

140 ~ 160Nm (1400 ~ 1600Kgf.cm, 103.3 ~ 118lbf.ft)

- b. Install the suspension arm mounting nuts(C).

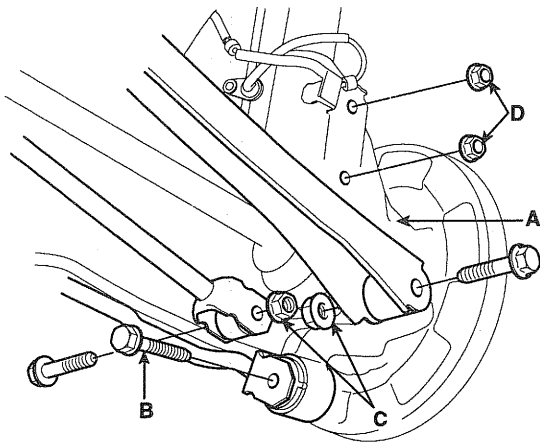
Tightening torque

140 ~ 160Nm (1400 ~ 1600Kgf.cm, 103.3 ~ 118lbf.ft)

- c. Install the trailing arm mounting bolt(B).

Tightening torque

100 ~ 120Nm (1000 ~ 1200Kgf.cm, 73.8 ~ 88.5lbf.ft)

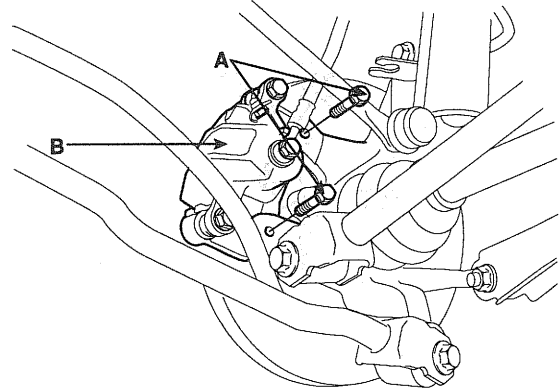


KIQE350E

2. Install the brake caliper(B), then tighten the mounting bolt(A).

Tightening torque

50 ~ 60Nm (500 ~ 600Kgf.cm, 36.9 ~ 44.3lbf.ft)

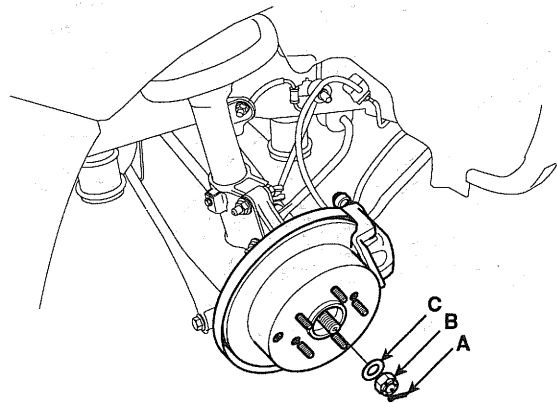


KIQE350D

3. Install the washer(C), castle nut(B) and split pin(A) from the rear hub.

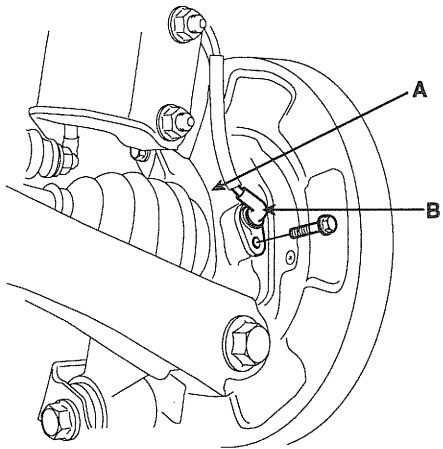
Tightening torque

200 ~ 280Nm (2000 ~ 2800Kgf.cm, 147.5 ~ 206.6lbf.ft)



KIQE350C

4. Install the wheel speed sensor(B) from the axle carrier(A).

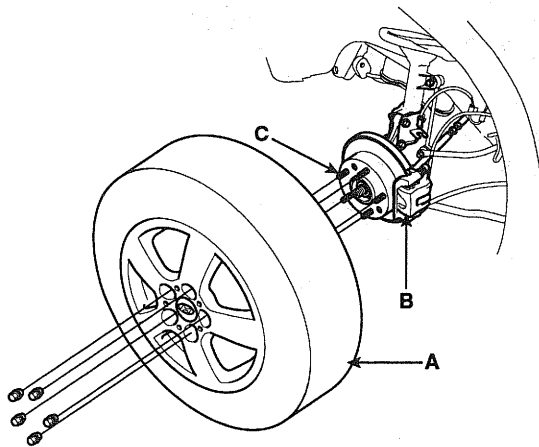


KIQE350B

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

Tightening torque

90 ~ 110Nm (900 ~ 1100Kgf.cm, 66.4 ~ 81.2lbf.ft)



KIQE300A

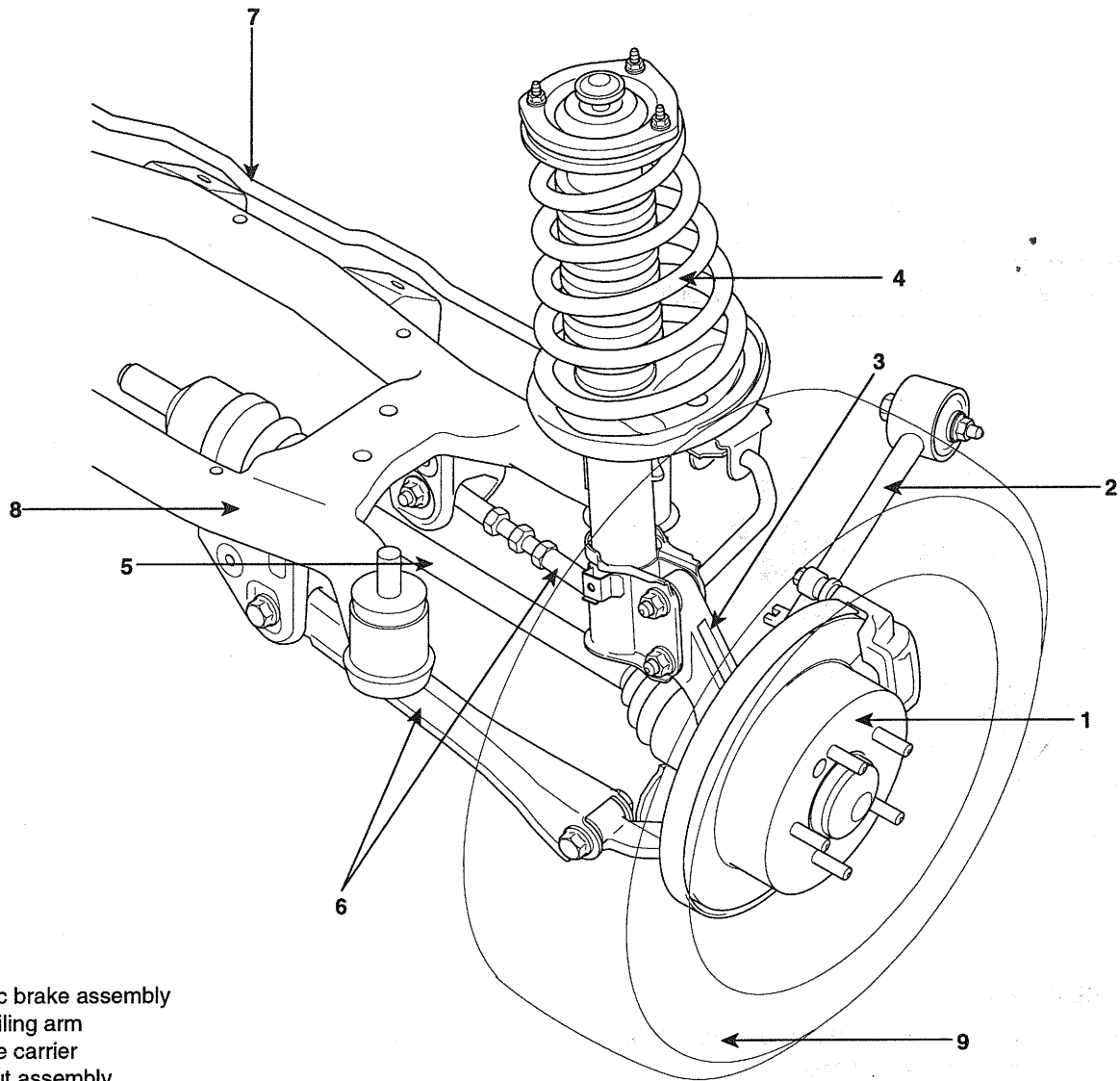
! CAUTION

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

REAR DRIVRSHAFT ASSEMBLY

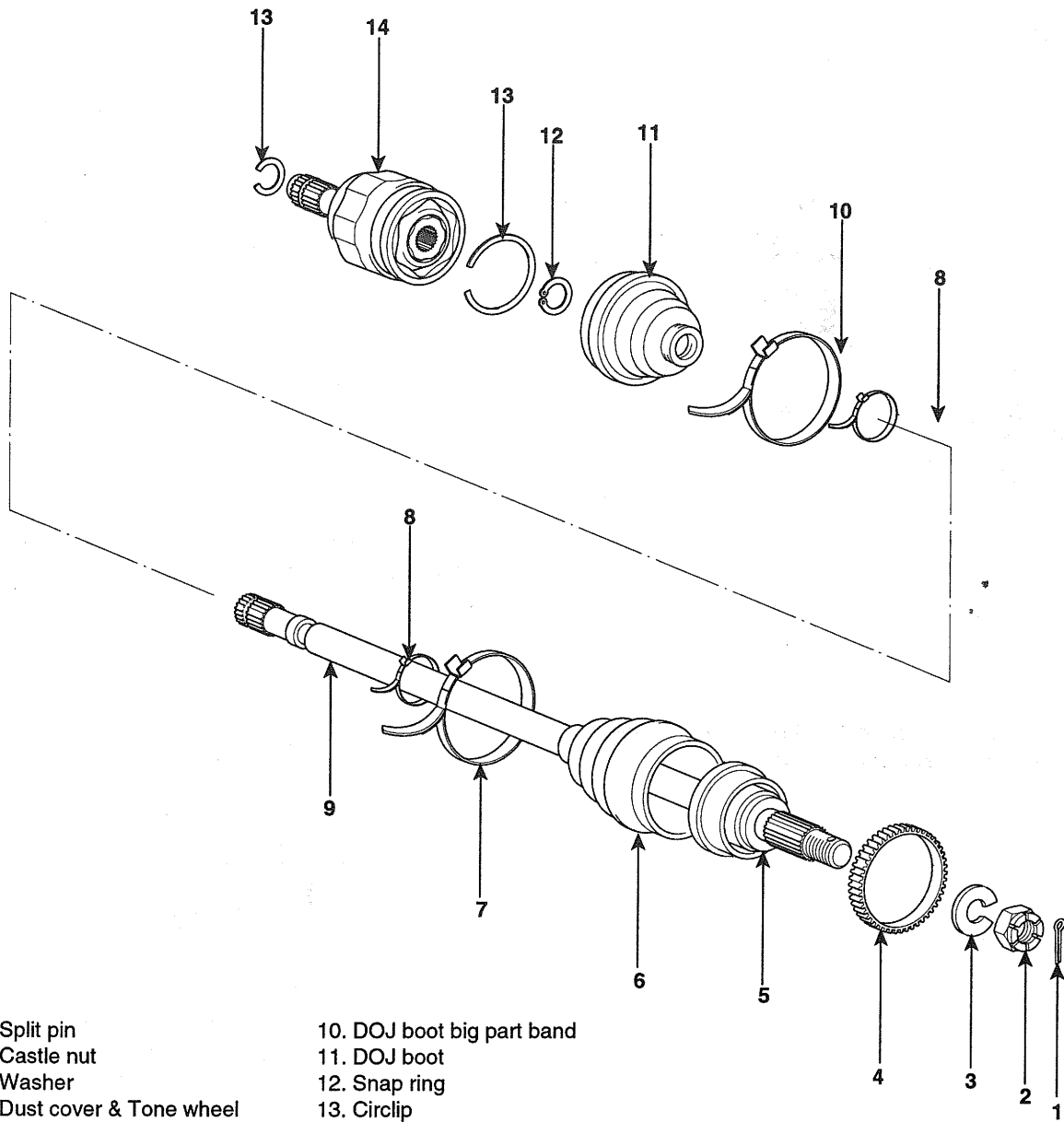
REAR DRIVESHAFT (DOJ-BJ TYPE)

COMPONENT LOCATION E0EB7BA8



1. Disc brake assembly
2. Trailing arm
3. Axle carrier
4. Strut assembly
5. Driveshaft
6. Suspension
7. Stabilizer bar
8. Cross member
9. Tire

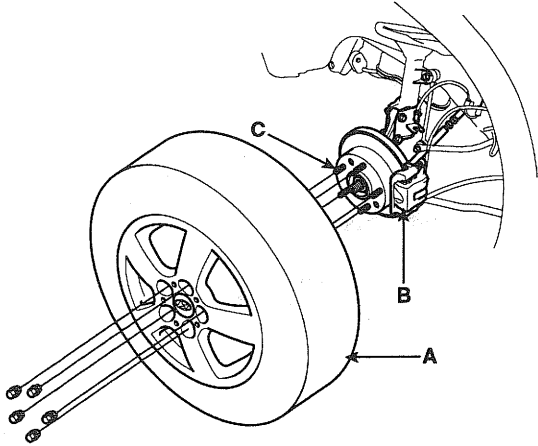
COMPONENTS EB2F9111



- | | |
|----------------------------|----------------------------|
| 1. Split pin | 10. DOJ boot big part band |
| 2. Castle nut | 11. DOJ boot |
| 3. Washer | 12. Snap ring |
| 4. Dust cover & Tone wheel | 13. Circlip |
| 5. BJ assembly | 14. DOJ assembly |
| 6. BJ boot | |
| 7. BJ boot big part band | |
| 8. Boot small part band | |
| 9. Shaft | |

REMOVAL E1E99E23

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).

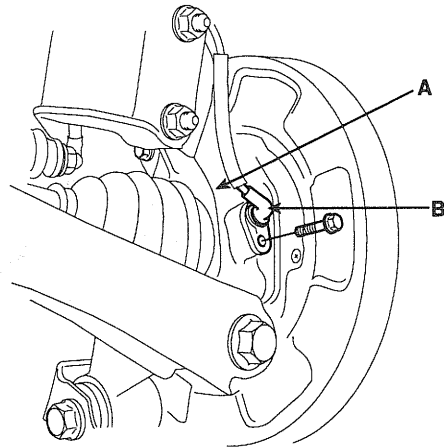


KIQE300A

CAUTION

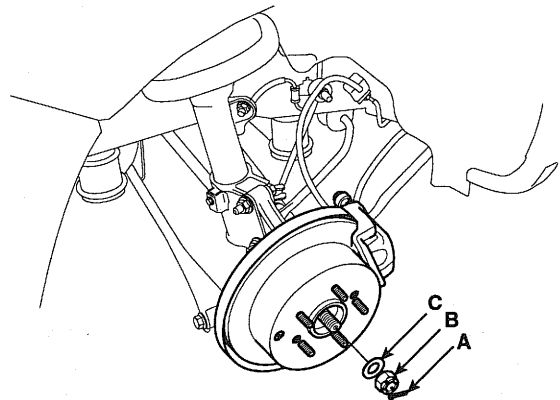
Be careful not to damage the hub bolts(C) then remove the rear wheel and tire(A).

3. Remove the wheel speed sensor(B) from the axle carrier(A).



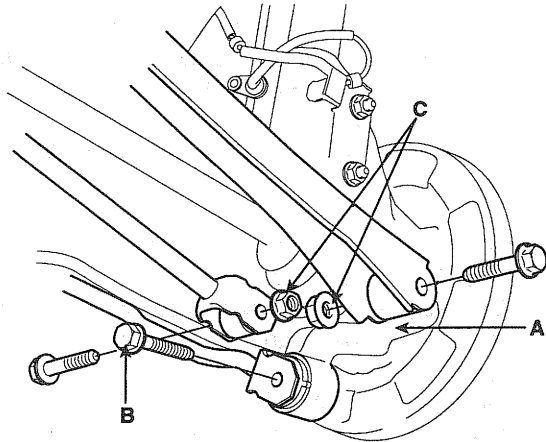
KIQE350B

4. Remove the split pin(A), then remove castle nut(B) and washer(C) from the rear hub under applying the break.



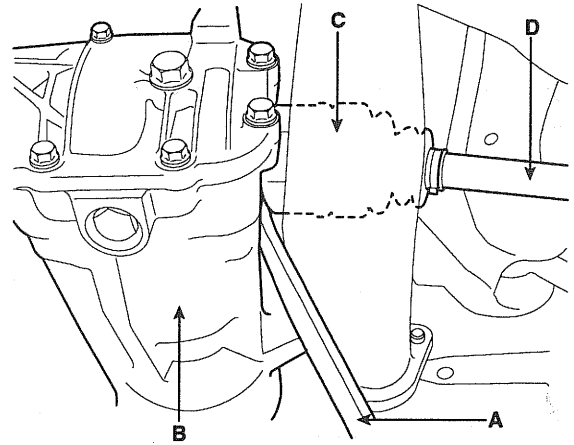
KIQE350C

5. Remove the trailing arm mounting bolt(B) from the knuckle(A).



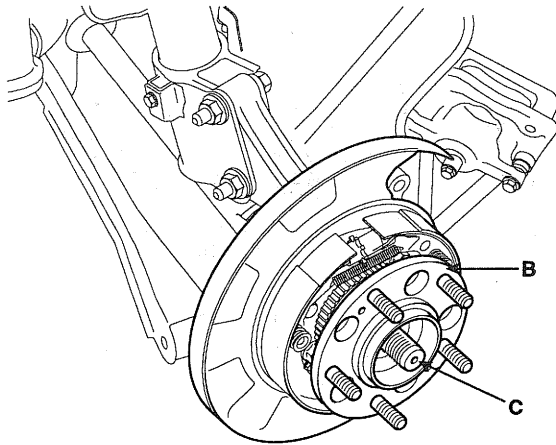
KIQE400A

8. Insert a pry bar(A) between the differential case(B) and joint case(C), and separate the driveshaft(D) from the differential case.



KIQE400C

6. Remove the suspension arm mounting nuts(C).
7. Push the axle hub(B) outward and separate the drive-shaft(C) from the axle hub(B).



KIQE400B

CAUTION

- Use a pry bar(A) being careful not to damage the transaxle and joint.
- Do not insert the pry bar(A) too deep, as this may cause damage to the oil seal.(max. depth : 7mm(0.28in.).)
- So not pull the driveshaft by excessive force it may cause components inside the BJ or DOJ joint kit to dislodge resulting in a torn boot or a damaged bearing.
- Plug the hole of the transaxle case with the oil seal cap to prevent contamination.
- Support the driveshaft properly.
- Replace the retainer ring whenever the drive-shaft is removed from the transaxle case.

INSPECTION E850CCBD

1. Check the driveshaft boots for damage and deterioration.
2. Check the ball joint for wear and damage.
3. Check the splines for wear and damage.
4. Check the dynamic damper for cracks, wear and position.

**DISASSEMBLY** EDCC3AC1**DRIVESHAFT (RH)**

 **CAUTION**

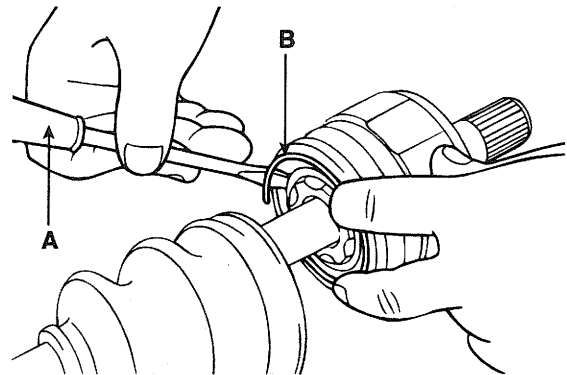
- *Do not disassemble the BJ assembly.*
- *Special grease must be applied to the drive-shaft joint. Do not substitute with another type of grease.*
- *The boot band should be replaced with a new one.*

1. Remove the DOJ. boot bands and pull the DOJ. boot from the DOJ. outer race.
 - a. Using a plier or flat-tipped (-) screwdriver, remove the LH boot band and LH DOJ. boot band from the driveshaft
 - b. Remove RH boot band and RH DOJ. boot band in the same way of LH removal procedure.

 **CAUTION**

Be careful not to damage the boot.

2. Remove the circlip(B) with a flat-tipped (-)screwdriver(A).



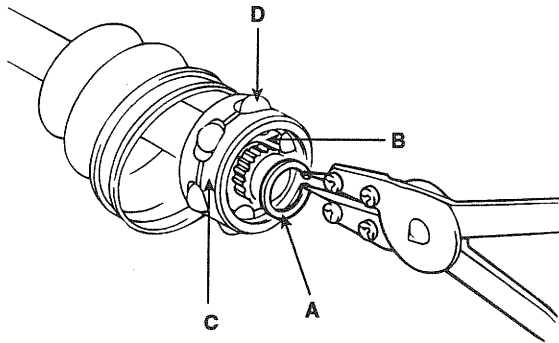
5. Check the driveshaft for cracks and wears.

EIKD019A

KIKD251B

3. Pull out the driveshaft from the DOJ. outer race.

- Remove the snap ring(A) and take out the inner race(B), cage(C) and balls(D) as an assembly.

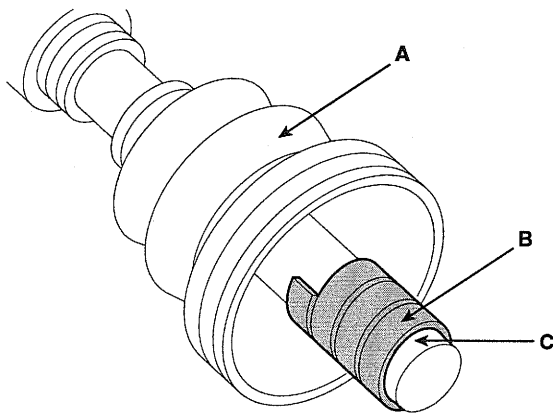


KIKD251C

- Clean the inner race, cage and balls without disassembling.
- Remove the BJ. boot bands and pull out the DOJ. boot and BJ. boot.

CAUTION

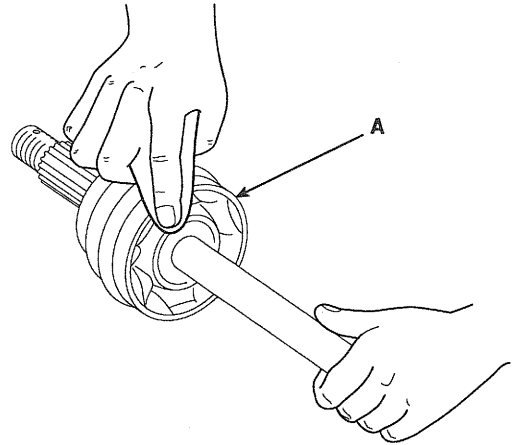
If the boot(A) is to be reused, wrap tape(B) around the driveshaft splines(C) to protect the boot(A).



KXDDE14A

INSPECTION EFDE68C0

- Check the DOJ. outer race, inner race, cage and balls for rust or damage.
- Check splines for wear.
- Check for water, foreign matter, or rust in the BJ. boot.



EIKD025A

CAUTION

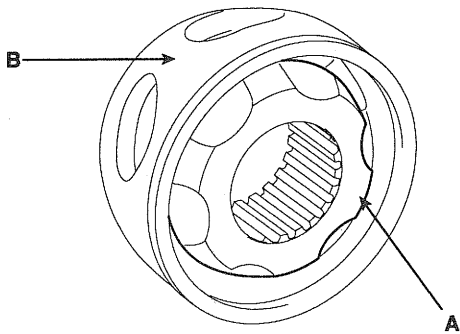
When the BJ. assembly(A) is to be reused, do not wipe away the grease. Check that there are no foreign substances in the grease. If necessary, clean the BJ. assembly(A) and replace grease.

REASSEMBLY EC7E155D

1. Wrap tape around the driveshaft splines (DOJ. side) to prevent damage to the boots.
2. Apply grease to the driveshaft and install the boots.
3. Apply the specified grease to the inner race(A) and cage(B). Install the cage(B) so that it is offset on the race as shown.

! CAUTION

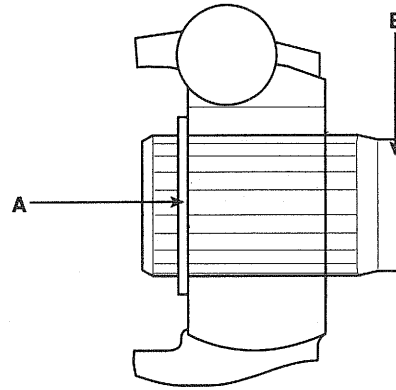
Use the grease included in the repair kit.



EIKD023A

4. Apply the specified grease to the cage and fit the balls into the cage.

5. Position the chamfered side(A) as shown in the illustration. Install the inner race on the driveshaft(B), and then the snap ring.

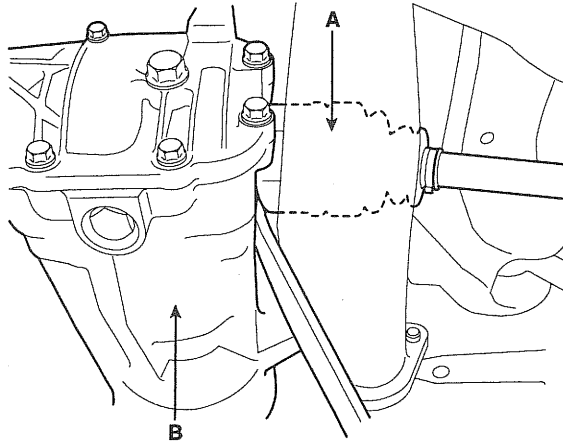


EIKD020A

6. Apply the specified grease to the outer race and install the B.J. outer race onto the driveshaft. (See page DS - 4)
7. Apply the specified grease into the DOJ. boot and install the boot with a clip. (See page DS - 4)
8. Tighten the DOJ. boot bands.
9. Add the specified grease to the B.J. as much as wiped away at inspection.
10. Install the boots.
11. Tighten the B.J. boot bands.
12. To control the air in the DOJ. boot, keep the specified distance between the boot bands when they are tightened.

INSTALLATION E690CDB8

1. Apply gear oil on the driveshaft differential case(B) contacting surface(B) and driveshaft(A) splines.



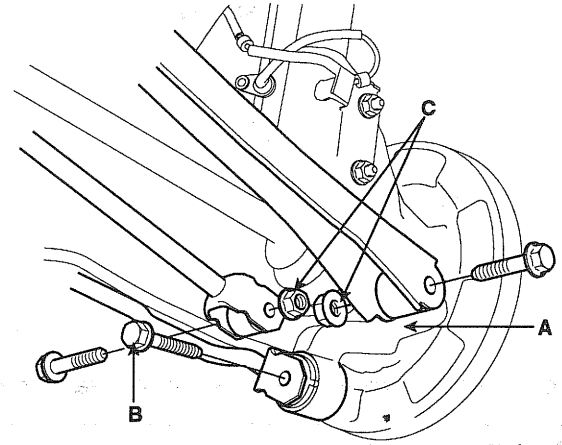
KIQE400D

2. Before installing the driveshaft(A), set the opening side of the circlip facing downward.
3. After installation, check that the driveshaft(A) cannot be removed by hand.
4. Install the BJ. Into the knuckle.

5. Install the suspension arm mounting nuts(C) and trailing arm mounting bolt(B) from the knuckle(B).

Tightening torque

Suspension arm mounting nuts(C)
 140 ~ 160Nm (1400 ~ 1600Kgf.cm, 103.8 ~ 118lb.ft)
 Trailing arm mounting bolt(B)
 100 ~ 120Nm (1000 ~ 1200Kgf.cm, 73.8 ~ 88.5lb.ft)

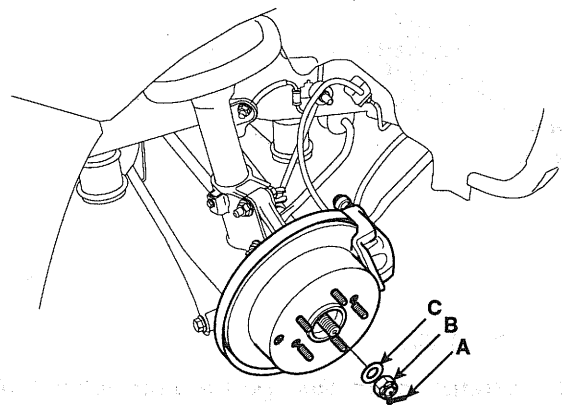


KIQE400A

6. Install the washer(C), castle nut(B) and split pin(A) from the rear hub.

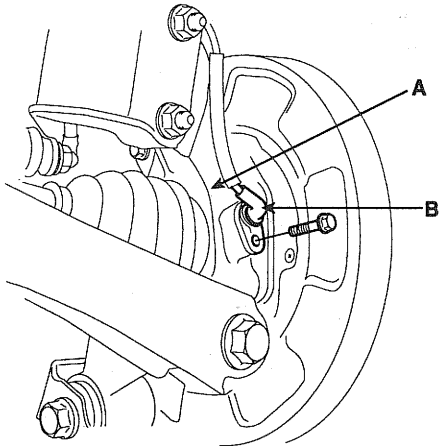
Tightening torque

200 ~ 280Nm (2000 ~ 2800Kgf.cm, 147.5 ~ 206.6lb.ft)



KIQE350C

7. Install the wheel speed sensor(B) from the knuckle(A).

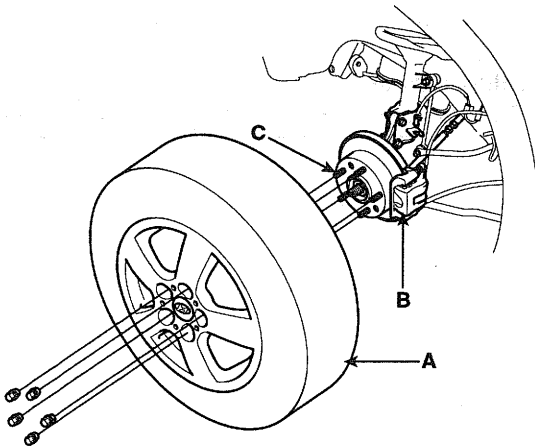


KIQE350B

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

Tightening torque

90 ~ 110Nm (900 ~ 1100Kgf.cm, 66.4 ~ 81.2lbf.ft)



KIQE300A

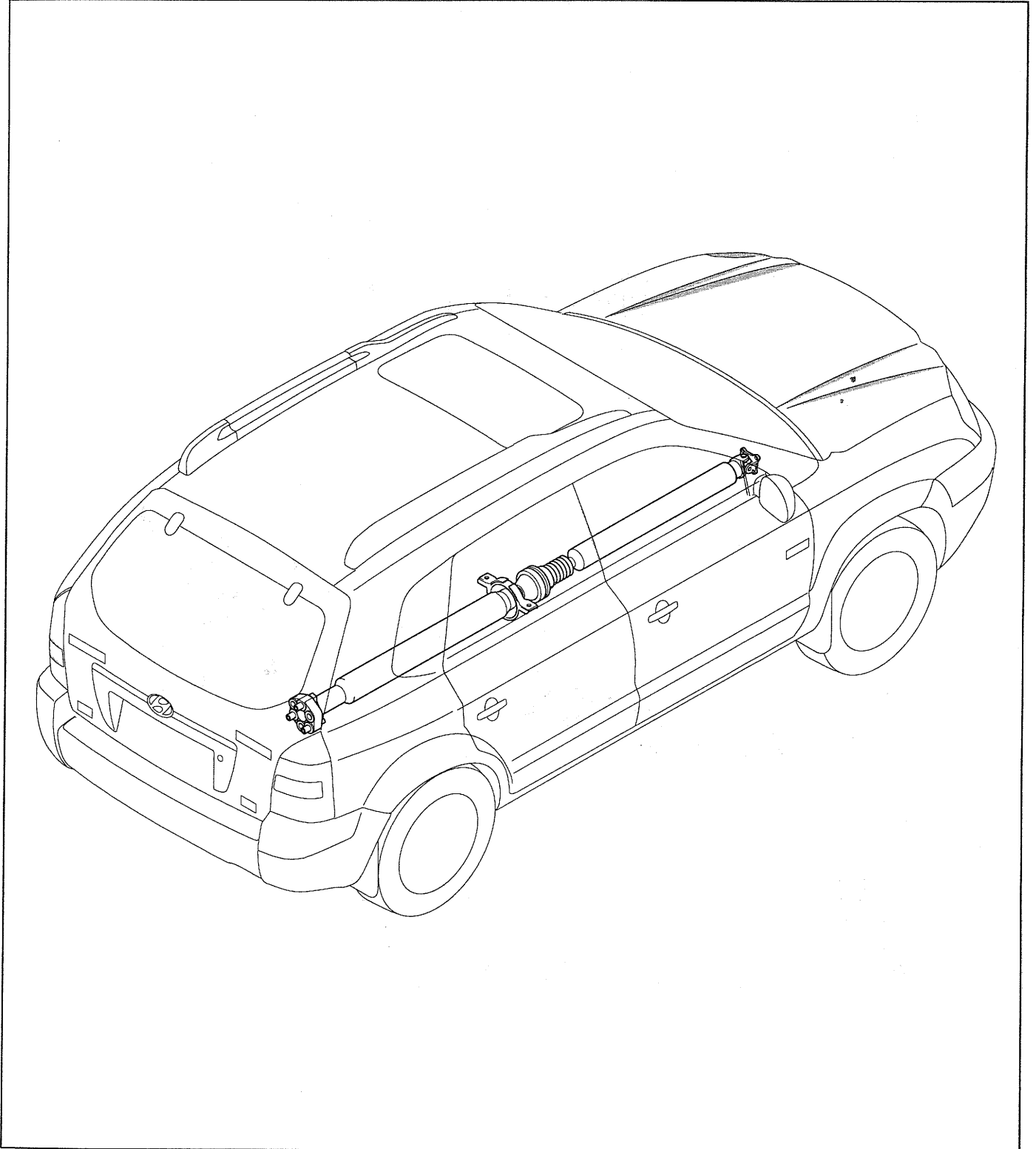
⚠ CAUTION

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

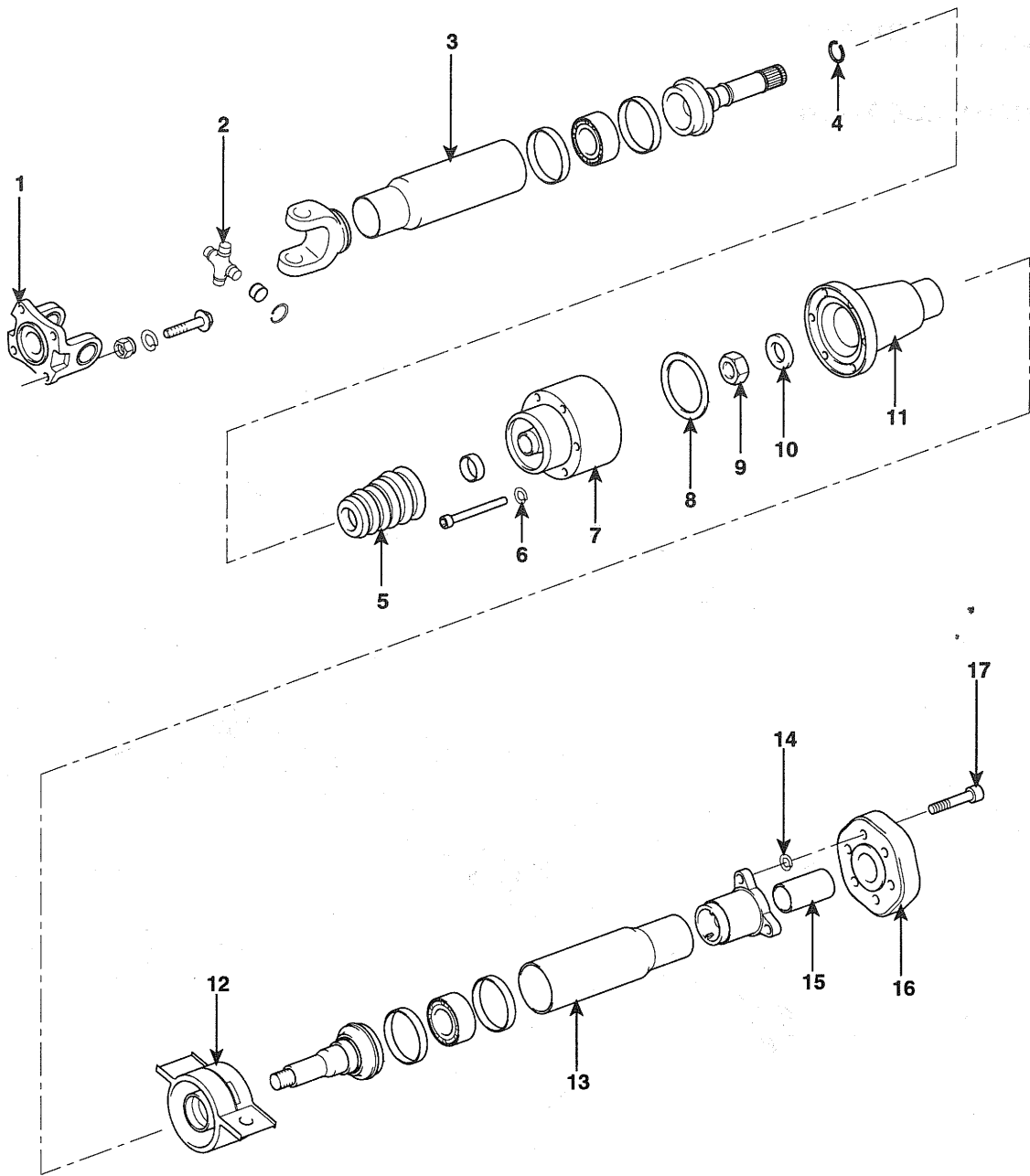
PROPELLER SHAFT ASSEMBLY

PROPELLER SHAFT

COMPONENT LOCATION EAE58355



COMPONENTS E31291DF

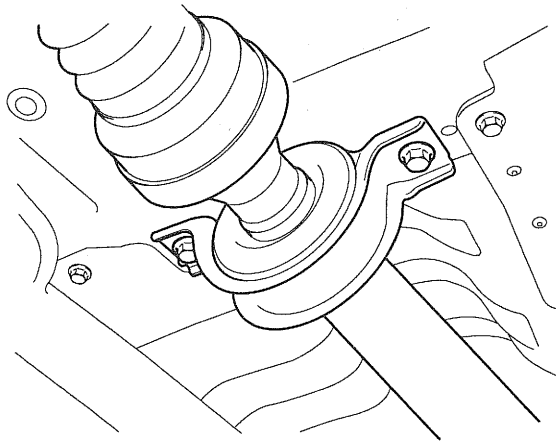


- | | | | |
|-----------------------------|-------------------|----------------------|---------------------|
| 1. Flange yoke | 6. Spring washer | 11. Companion flange | 16. Rubber coupling |
| 2. Universal joint assembly | 7. VL joint | 12. Center bearing | 17. Bolt |
| 3. Front tube | 8. Sealing | 13. Rear tube | |
| 4. Snap ring(VL) | 9. Nut | 14. Plain washer | |
| 5. LJ boot | 10. Spring washer | 15. Center device | |

INSPECTION EE45B86E

VJ JOINT AND BOOTS

1. Shift the transmission to Neutral.
2. Raise the vehicle off the ground, and support it with safety stands in the proper locations.
3. Check the center support bearing for excessive play or rattle and rubber for rent. If the center support has excessive play or rattle and rubber has rent, replace the propeller shaft assembly.



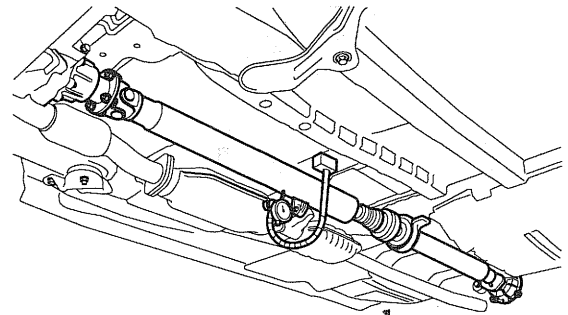
KIQE505A

4. Check the VJ joint boots for damage and deterioration. If the boots are damaged or deteriorated, replace the propeller shaft assembly.
5. Check the VJ joints for excessive play or rattle. If the universal joints have excessive play or rattle, replace the propeller shaft assembly.

PROPELLER SHAFT RUNOUT

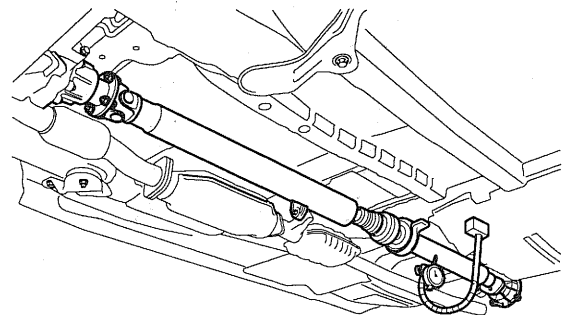
1. Install a dial indicator with its needle on the center of front propeller shaft or rear propeller shaft.
2. Turn the other propeller shaft slowly and check the runout. Repeat this procedure for the other propeller shaft.

Front Propeller Shaft Runout : 0.3mm (0.012in.)



KIQE505B

Rear Propeller Shaft Runout : 0.3mm (0.012in.)

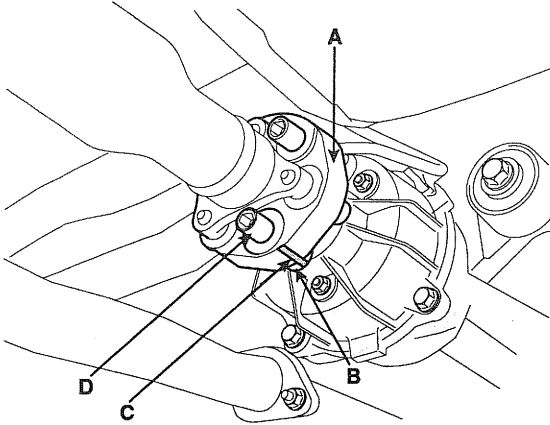


KIQE505C

3. If the runout on either propeller shaft exceeds the service limit, replace the propeller shaft assembly.

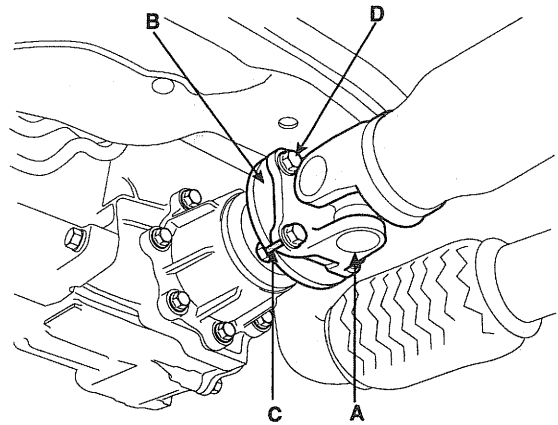
REMOVAL EBD6F6EB

1. After making a match mark(C) on the rubber coupling(A) and rear differential companion(B), remove the propeller shaft mounting bolts(D).



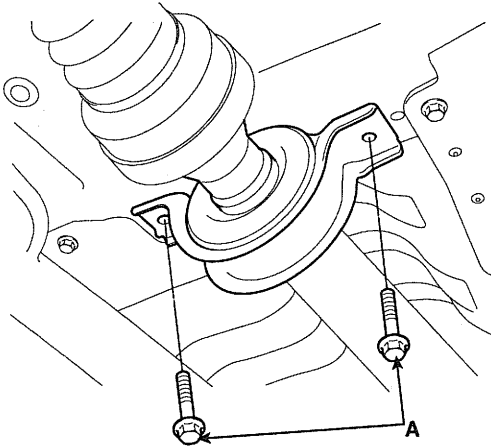
KIQE510A

3. After making a match mark(C) on the flange yoke(A) and transaxle companion(B), remove the propeller shaft mounting bolts(D).



KIQE510C

2. Remove the center bearing bracket mounting bolts(A).



KIQE510B

INSTALLATION E9CCDCE3

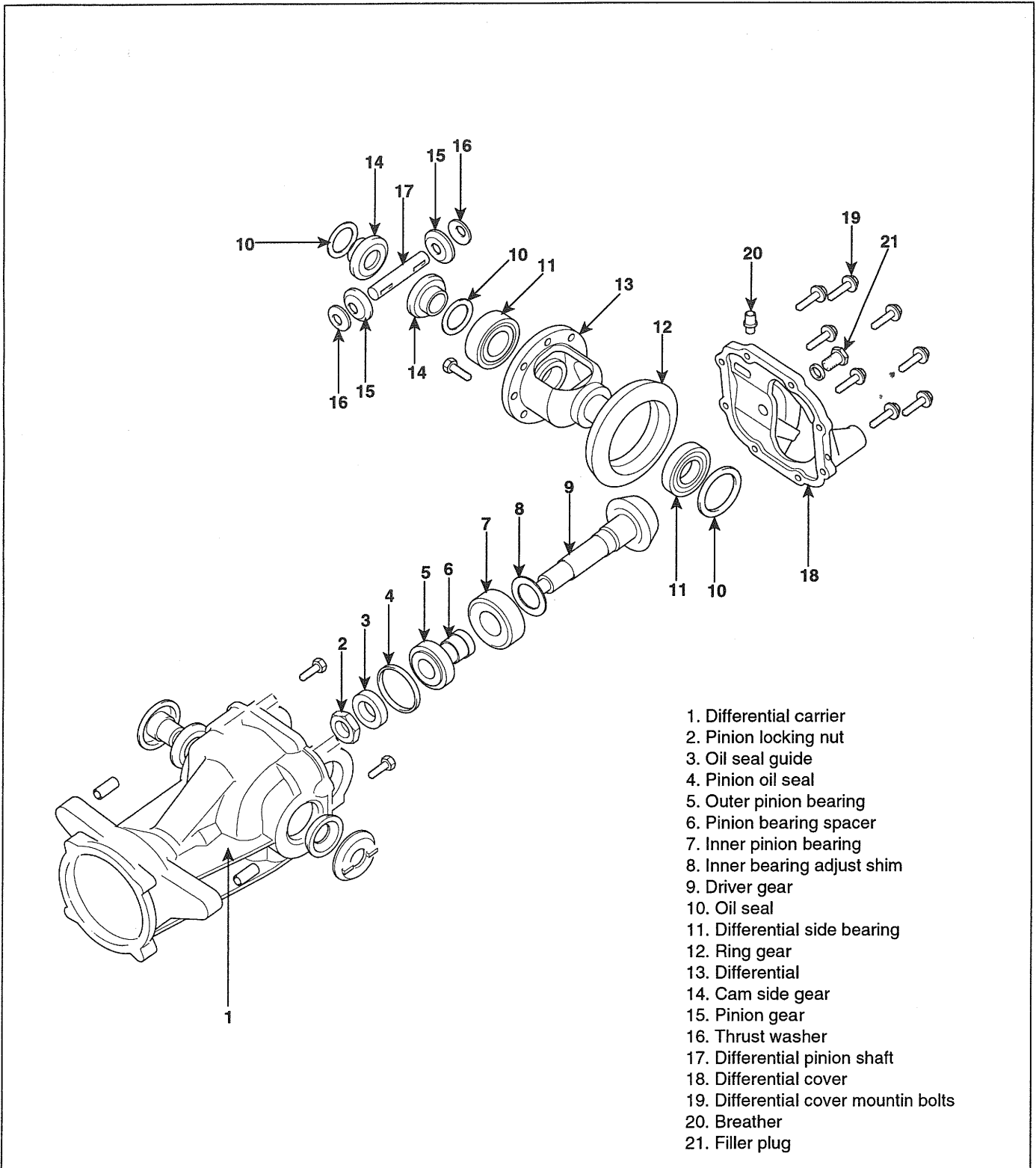
Installation is the reverse of the removal procedures
 Install according to match mark of transaxle companion (or
 rear differential companion) and propeller shaft.

Items	Nm	Kgf.cm	lbf.ft
Front propeller shaft mounting bolt	50 ~ 60	500 ~ 600	36.9 ~ 44.3
Center bearing bracket mounting bolt	40 ~ 50	400 ~ 500	29.5 ~ 36.9
Rear propeller shaft mounting bolt	100 ~ 120	1000 ~ 1200	73.8 ~ 88.5

DIFFERENTIAL CARRIER ASSEMBLY

REAR DIFFERENTIAL CARRIER

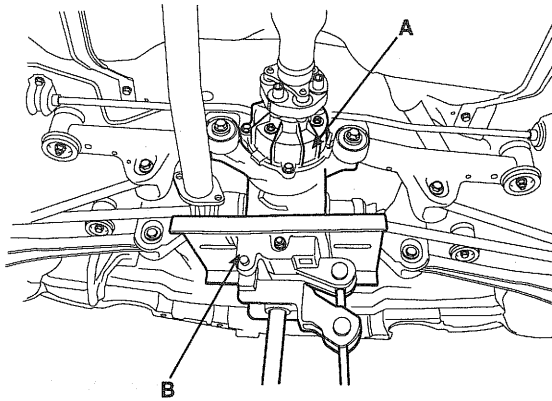
COMPONENTS EDB74A99



- 1. Differential carrier
- 2. Pinion locking nut
- 3. Oil seal guide
- 4. Pinion oil seal
- 5. Outer pinion bearing
- 6. Pinion bearing spacer
- 7. Inner pinion bearing
- 8. Inner bearing adjust shim
- 9. Driver gear
- 10. Oil seal
- 11. Differential side bearing
- 12. Ring gear
- 13. Differential
- 14. Cam side gear
- 15. Pinion gear
- 16. Thrust washer
- 17. Differential pinion shaft
- 18. Differential cover
- 19. Differential cover mountin bolts
- 20. Breather
- 21. Filler plug

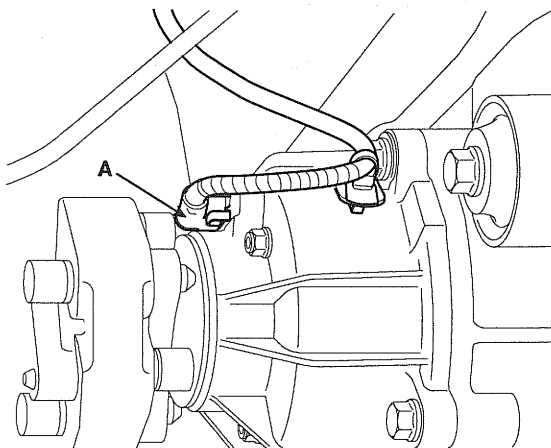
REMOVAL EOD1EE98

1. Drain the differential gear oil.
2. Remove the rear drive shaft. (See page DS - 58)
3. Remove the propeller shaft. (See page DS - 68)
4. Support the differential assembly(B) with the jack(A).



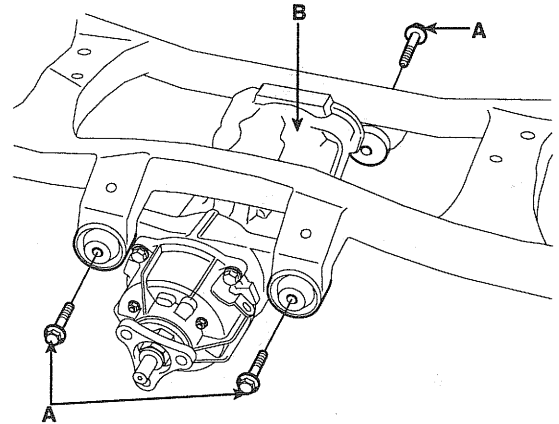
KIQE600A

5. Disconnect the coupling control connector(A).



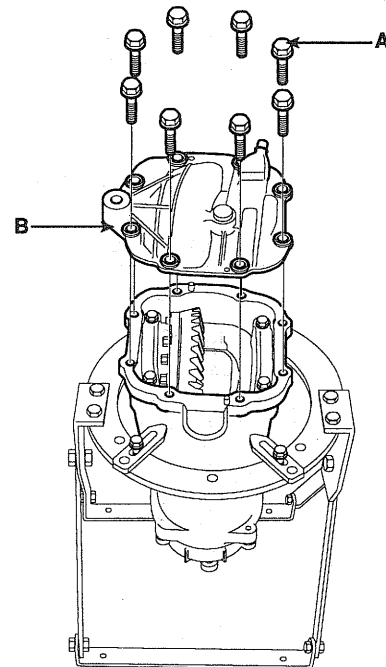
KIQE600B

6. After loosen the differential mounting bolts(A), and remove the differential(B).



KIQE600C

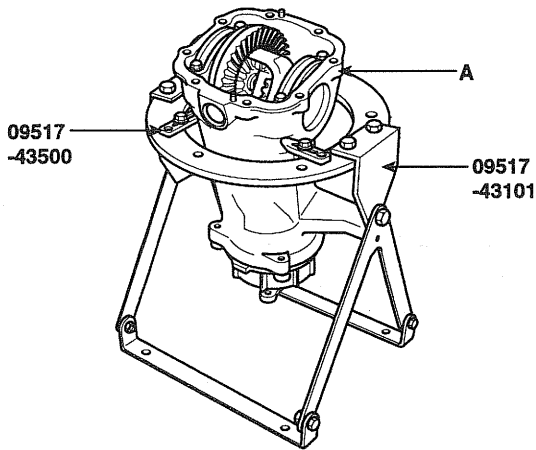
7. After loosen the cover bolts(A), and remove the differential cover(B).



KIQE600D

INSPECTION E9BCC1B0

Install the differential carrier assembly(A) with the special tools(09517-43101 & 09517-43500). Then carry out the following inspection.



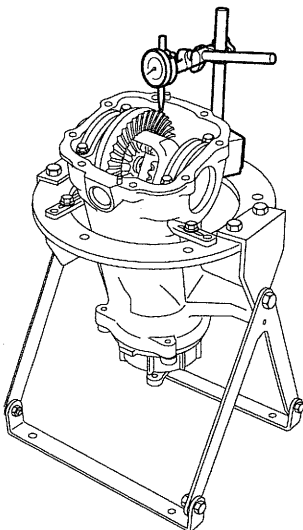
KIQE610A

1. Check the final drive gear backlash by the following procedure.
 - a. Place the drive pinion and move the drive gear to check backlash is within the standard range.

NOTE

Measure at 4 points on the gear periphery.

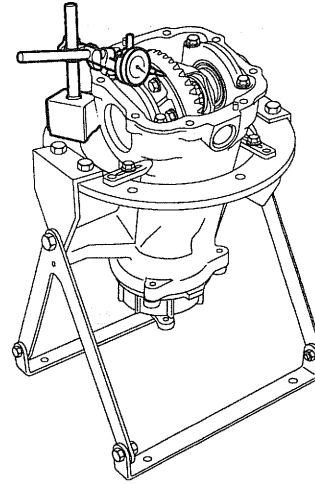
Standard value : 0.10 ~ 0.15mm (0.0039 ~ 0.0059in.)



KIQE610B

2. Check the drive gear back-face lash by the following procedure.
 - a. Place a dial gauge on the back-face of the drive gear and measure the runout.

Limit mm(in.) : : 0.05 (0.002)



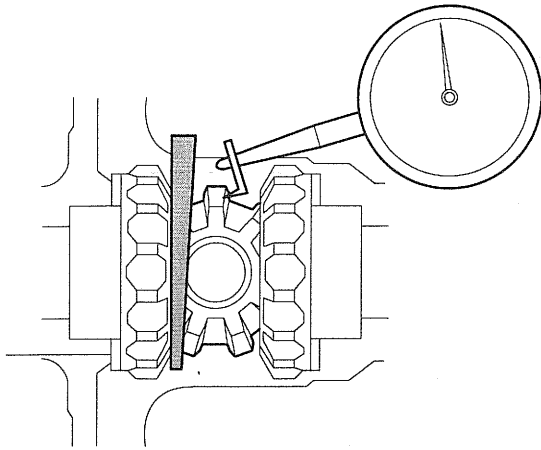
KIQE610C

- b. If the runout is beyond the limit, check that there are no foreign substances between the drive gear and differential case and, that the bolts fixing the drive gear are not loose.
3. Check the differential carrier backlash by the following procedure.
 - a. Fix the side gear with a wedge so it cannot move and measure the differential gear backlash with a dial indicator on the pinion gear.

Standard value : 0 ~ 0.076mm (0 ~ 0.003in.)

NOTE

Take the measurements at two places on the pinion gear.



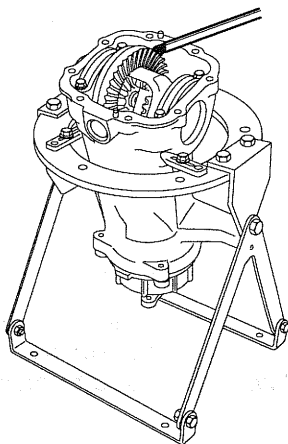
KISE610E

- b. If the backlash exceeds the limit, adjust using side bearing spacers.

NOTE

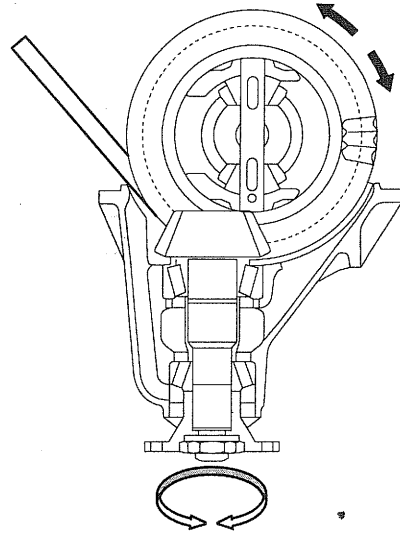
If adjustment is impossible, replace the side gear and pinion gear as a set.

4. Check the tooth contact of the final drive gear by the following procedure.
- Apply the same amount of machine blue slightly to both surfaces of the drive gear teeth.



KIQE610D

- Insert a brass rod between the differential carrier and the differential case, and then rotate the companion flange by hand (once in the normal direction, and then once in the reverse direction) while applying a load to the drive gear so that some torque (approximately 25~30Nm) is applied to the drive pinion.

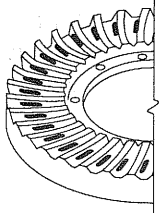
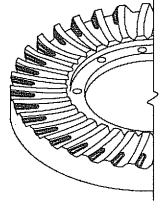
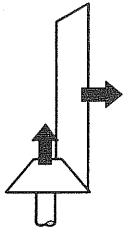
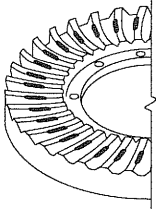
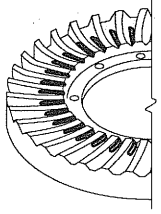
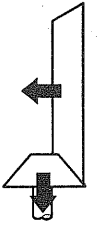
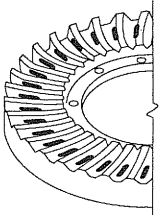


KISE610G

CAUTION

If the drive gear is rotated too much, the tooth contact pattern will become unclear and difficult to check.

c. Check the tooth contact pattern.

Tooth contact	Contact state	Solution	
Standard contact	 <p style="text-align: right;">KISE610H</p>		
Heal contact	 <p style="text-align: right;">KISE650A</p>	<p>Increase the thickness of the pinion height adjusting shim, and position the drive pinion closer to the center of the drive gear.</p> <p>Also, for backlash adjustment, reposition the drive gear further from the drive pinion.</p>	 <p style="text-align: right;">KISE630A</p>
Face contact	 <p style="text-align: right;">KISE650B</p>		
Toe contact	 <p style="text-align: right;">KISE650C</p>	<p>Decrease the thickness of the pinion height adjusting shim, and position the drive pinion further from the center of the drive gear.</p> <p>Also, for backlash adjustment, reposition the drive gear closer to the drive pinion.</p>	 <p style="text-align: right;">KISE630B</p>
Flank contact	 <p style="text-align: right;">KISE650D</p>		

NOTE

- Tooth contact pattern is a method for judging the result of the adjustment of drive pinion height and final drive gear backlash. The adjustment of drive pinion height and final drive gear backlash should be repeated until the tooth contact patterns are similar to the standard tooth contact pattern.

- When you cannot obtain a correct pattern, the drive gear and drive pinion have exceeded their limits. Both gears should be replaced as a set.

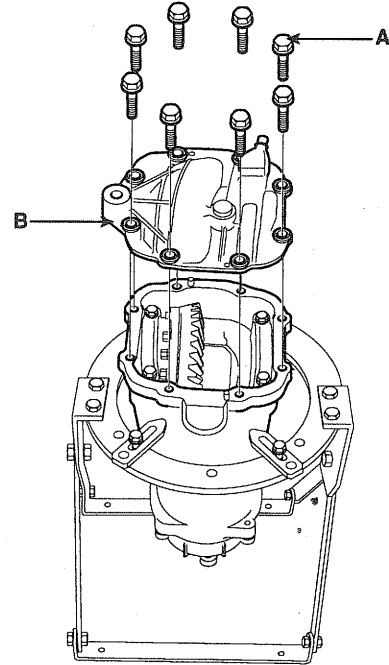
5. Check the oil leaks and the lip part for chew or wear.
6. Check the bearings for wear or discoloration..
7. Check the gear carrier for cracks.
8. Check the drive pinion and drive gear for wear or cracks.
9. Check the side gears, pinion gears and pinion shaft for wear or damage.
10. Check the side gear spline for wear or damage.

INSTALLATION ECBDECAF

1. After apply liquid gasket, install the differential cover(B), and install the mounting bolts(A).

Tightening torque

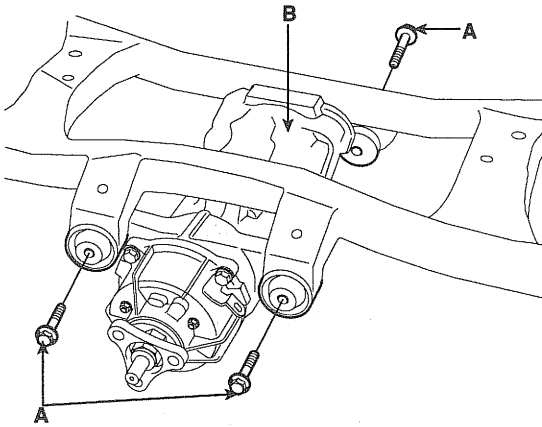
40 ~ 50Nm (400 ~ 500Kgf.cm, 29.5 ~ 36.9lbf.ft)



2. After install the differential(B), and install the mounting bolts(A).

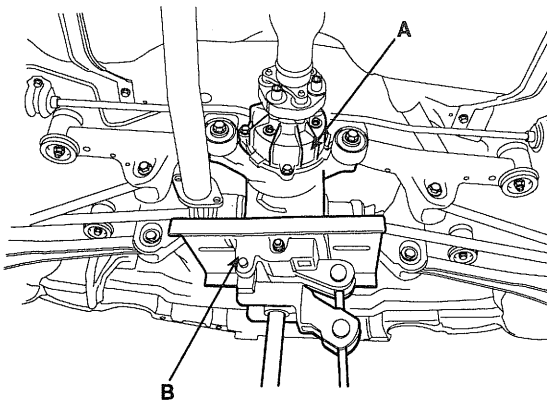
Tightening torque

90 ~ 120Nm (900 ~ 1200Kgf.cm, 66.4 ~ 88.5lbf.ft)



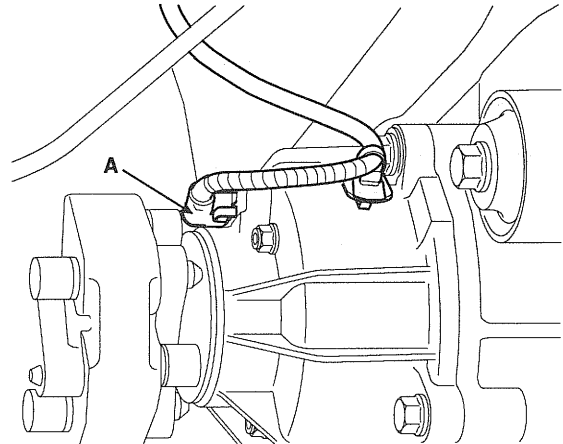
KIQE600C

3. Using the transaxle jack(B), install the differential assembly(A).



KIQE600A

4. Connect the coupling control connector(A).



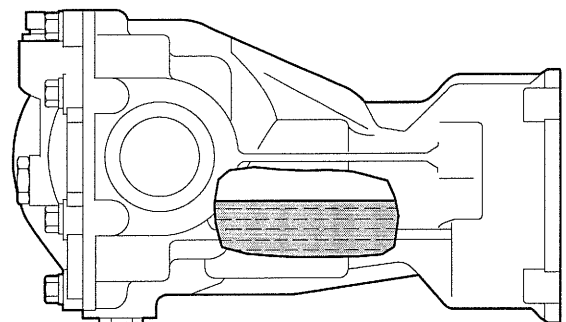
KIQE600B

5. Install the propeller shaft. (See page DS - 69)
 6. Install the rear drive shaft. (See page DS - 63)
 7. Fill the gear oil.

Specified lubricant

Hypoid gear oil (GL-5, 80W / SAE 90)

Oil quantity : Fill the reservoir to the plug hold
 (About 0.75 ~ 0.80L)



KIQE640A