Driveshaft and Axle

GENERAL

FRONT AXLE

FRONT HUB / KNUCKLE

DRIVESHAFT

FRONT DRIVESHAFT ASSEMBLY FRONT DRIVESHAFT (DOJ-BJ TYPE) FRONT DRIVESHAFT (TJ-BJ TYPE) REAR HUB / CARRIER REAR HUB / AXLE

REAR DRIVRSHAFT ASSEMBLY

REAR DRIVESHAFT (DOJ-BJ TYPE)

PROPELLER SHAFT ASSEMBLY

PROPELLER SHAFT

DIFFERENTIAL CARRIER ASSEMBLY

REAR DIFFERENTIAL CARRIER

REAR AXLE

شرکت دیجیتال خودرو سامانه (مسئولیت محدود)

اولین سامانه دیجیتال تعمیرکاران خودرو در ایران

DRIVESHAFT AND AXLE

GENERAL

DS -2

SPECIFICATIONS EF1D5F2B

Items		Specification		
		Inner side	Outer side	
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°	
driveshaft Joint type		D.O.J	B.J	
Max. permissible angle		22°	45°	
Oil type		Hypoid gear oil		
Oil capacity L		About 0.75 ~ 0	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 (0.0	0.10 ~ 0.15 (0.0039 ~ 0.0059)	
Differential gear backlash m	mm(in.) 0 ~ 0.076 (0 ~ 0.00		0.003)	
	Joint type Max. permissible angle Joint type Max. permissible angle Oil type Oil capacity L Reduction gear type Reduction gear ratio Final drive gear backlash m	Joint type 2.0 GSL AT 2.0 GSL MT, 2.0 DSL AT 2.0 DSL MT 2.7 GSL AT Max. permissible angle 2.0 GSL AT 2.0 GSL AT 2.0 GSL MT, 2.0 DSL AT 2.0 DSL MT 2.0 DSL MT 2.7 GSL AT Joint type Max. permissible angle Oil type Oil capacity L Reduction gear type Reduction gear ratio	Joint type	

B.J: Birfield Joint

D.O.J: Double Offset Joint

T.J: Tripot Joint

GENERAL DS-3

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
ىت محدود)	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
رو در ایران	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.

DRIVESHAFT AND AXLE

LUBRICANTS EC261DBD

DS -4

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 drive	eshaft (For 2.0 GSL MT, 2.0 DSL AT)	
BJ boot grease	Centoplex 278M/136K CASMOLY BJ ROLLUBE BJ Sunlight SW-2	120 \pm 6g Inside joint : 60 \pm 3g Inside boot : 45 \pm 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 dr	iveshaft (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 di	riveshaft (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

GENERAL DS -5

SPECIAL TOOLS EE2EEBOD

Tool(Number and Name)	Illustration	Use
09495-33000 Puller		Removal of wheel bearing inner race from a hub.
	D9533000	
09517-43101 Working base	E1743101	Support for the differential carrier
09517-43500		
Adapter (مسئولیت محدود)	E1743500	
09568-34000	ولین سامانه دیجیتال تعم	Separation of a lower arm and a tie
Ball joint puller	E6834000	rod end ball joint.

DS -6

DRIVESHAFT AND AXLE

TROUBLESHOOTING

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 -
Vibartion	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



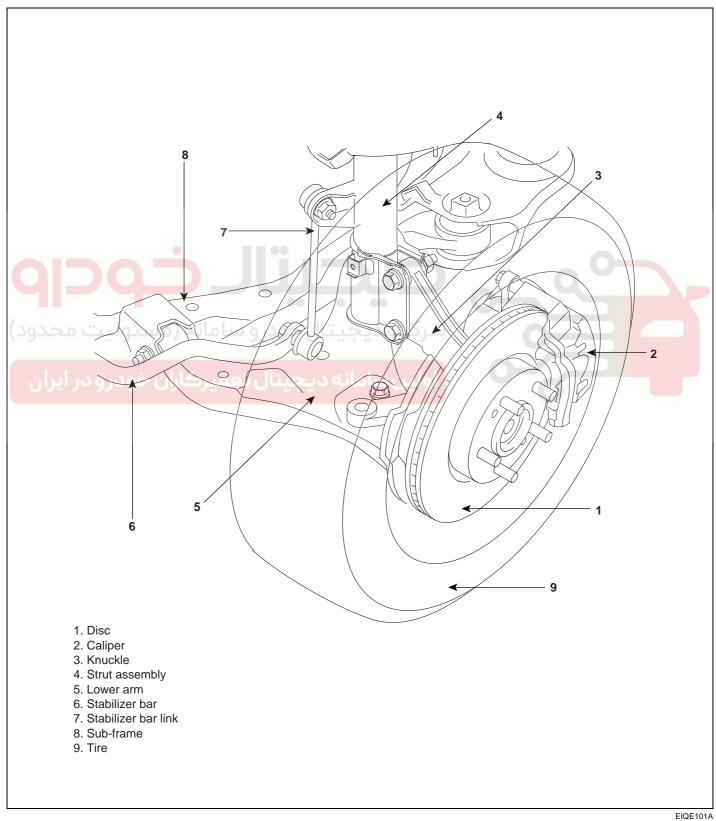


FRONT AXLE DS -7

FRONT AXLE

FRONT HUB / KNUCKLE

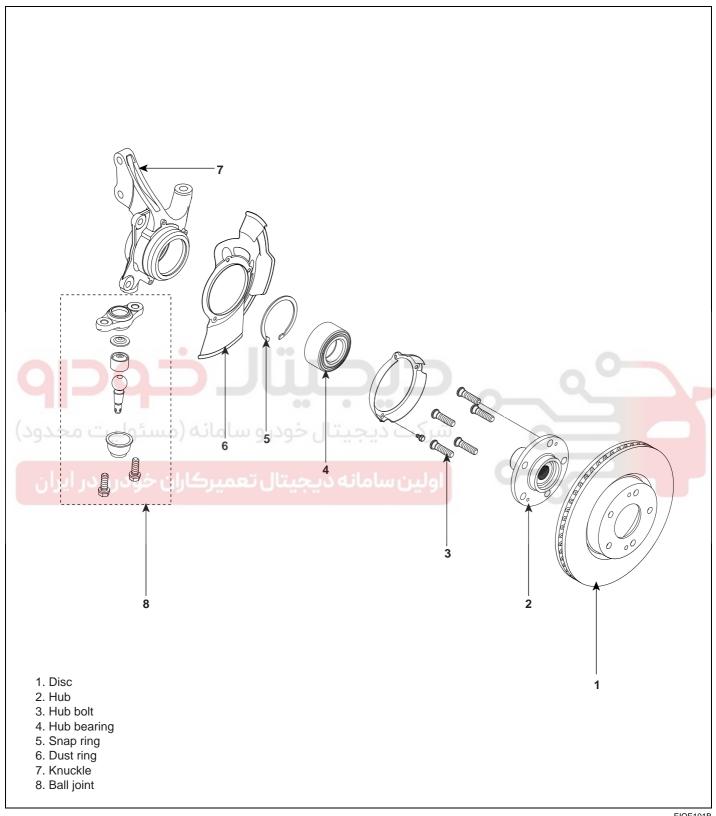
COMPONENT LOCATION EF95D302



DRIVESHAFT AND AXLE

COMPONENTS E6EF40AF

DS-8



EIQE101B

FRONT AXLE DS -9

KISE205A

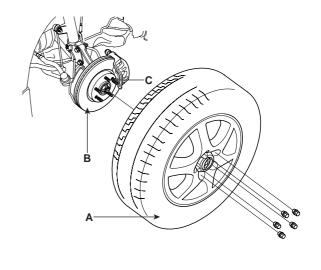
ON-VEHICLE INSPECTION E1AAFB32

WHEEL BEARING PLAY INSPECTION

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



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).

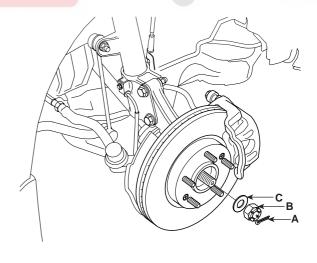


KIQE100A

A CAUTION

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

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



KIQE105B

DS -10

DRIVESHAFT AND AXLE

- 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.
 - 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 sprit pin.

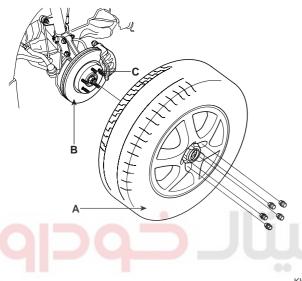


FRONT AXLE DS -11

REMOVAL E09BE8BE

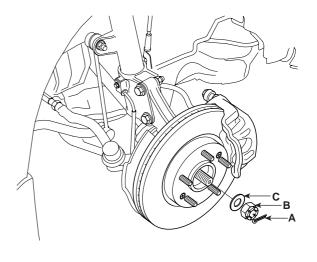
Loosen the wheel nuts slightly.
 Raise the front of the vehicle, and make sure it is securely supported.

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



KIQE100A

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

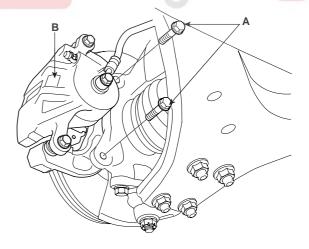


KIQE105B

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.



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

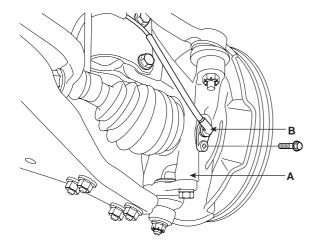


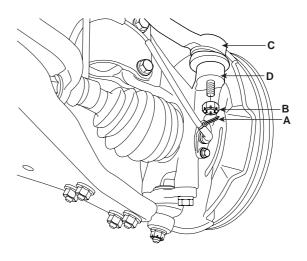
KIQE100B

DS-12

DRIVESHAFT AND AXLE

- Remove the wheel speed sensor(B) from the knuckle(A).
- Disconnect the tie rod end ball joint(C) from the knuckle(D) using the special tool(09568-34000).



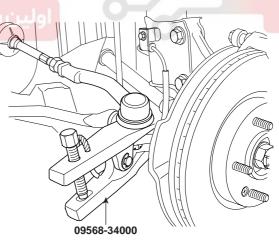


KIQE100C

KIQE100D



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



KIQE100E

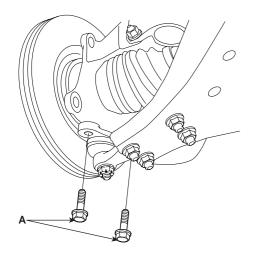


(CAUTION

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

FRONT AXLE DS -13

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

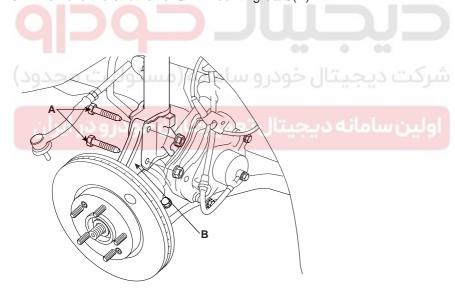


INSPECTION EC57A035

- Check the hub for cracks and the splines for wear.
- Check the brake disc for scoring and damage.
- Check the knuckle for cracks.
- Check the bearing for cracks or damage.

KIQE100F

Remove the strut lower arm mounting bolts(A).





Remove the hub and the knuckle assembly(B).



(CAUTION

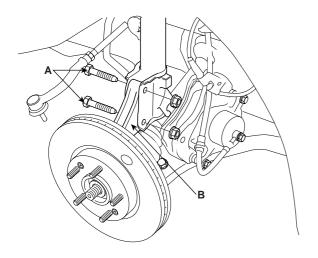
Be careful not to damage the boot and rotor teeth.

DS -14

DRIVESHAFT AND AXLE

INSTALLATION

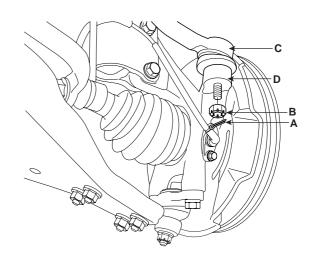
Install the hub and the knuckle assembly(B).



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

Tightening torque

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



KIQE100G

Install the strut lower mounting bolts(A).

Tightening torque

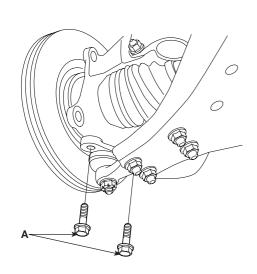
140 ~ 160Nm (1400 ~ 1600Kgf.cm, 103.3 ~ 118lbf.ft)

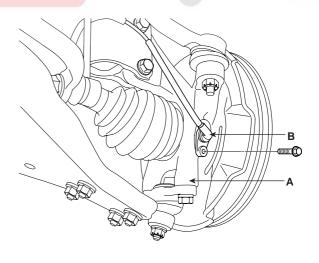
Install the lower arm ball joint mounting bolts(A).

- Install the castle nut(B).
- Install the split pin(A).
- 5. Install the wheel speed sensor(A).

Tightening torque

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





KIQE100C

KIQE100D

KIQE100F

FRONT AXLE DS -15

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

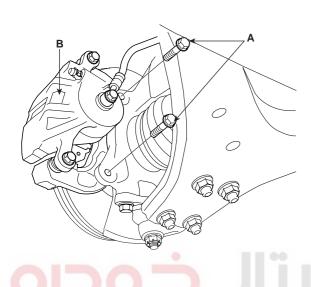
Tightening torque

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

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

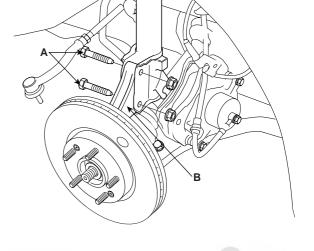
Tightening torque

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



KIQE100B

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



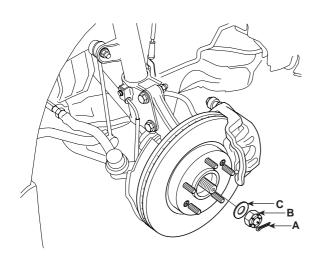
KIQE100G

(1) CAUTION

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

Tightening torque

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



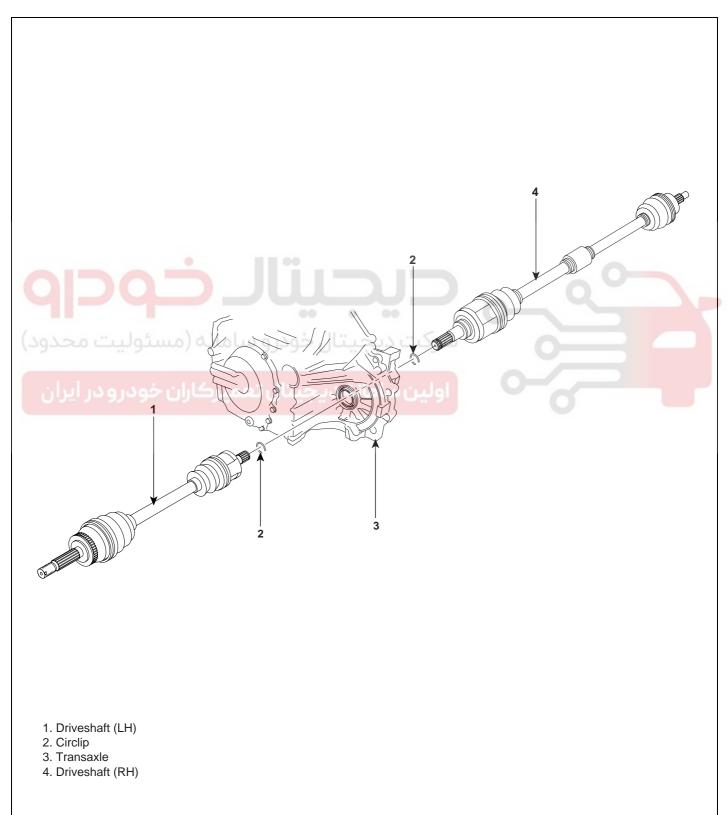
KIQE105B

DS-16

DRIVESHAFT

FRONT DRIVESHAFT ASSEMBLY

COMPONENT LOCATION E02373C7

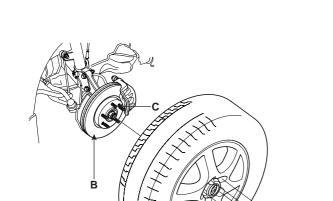


EIQE201A

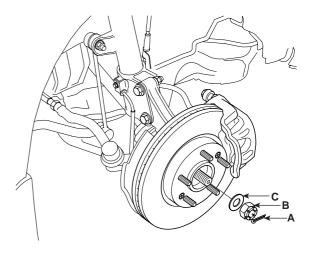
REMOVAL E3E09AC0

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).



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



KIQE105B

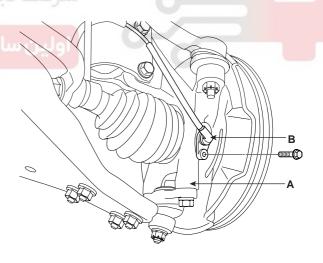
Remove the wheel speed sensor(B) from the knuckle(A).

KIQE100A



CAUTION

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

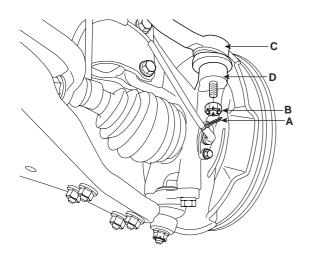


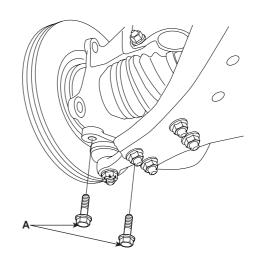
KIQE100C

DS -18

DRIVESHAFT AND AXLE

- Disconnect the tie rod end ball joint(C) from the
 - knuckle(D) using the special tool(09568-34000).
- 6. Remove the lower arm ball joint mounting bolts(A).



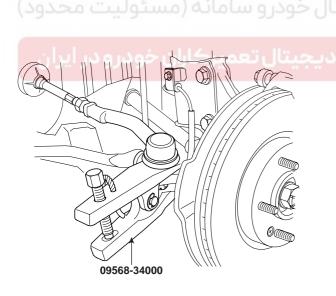


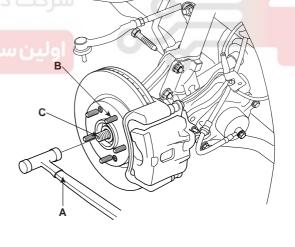
KIQE100F

KIQE100D

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

Using a plastic hammer(A), disconnect the driveshaft(C) from the axle hub(C).





KIQE200B

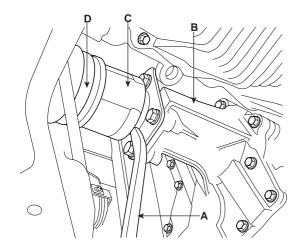
KIQE100E

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



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

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



INSPECTION E6C15557

- 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.
- Check the dynamic damper for cracks, wear and position



KIQE200C



- 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.

5. Check the driveshaft for cracks and wears.

EIKD019A

DS-20

DRIVESHAFT AND AXLE

INSTALLATION

E1BA08CB

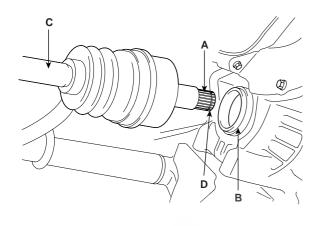
1. Apply gear oil on the driveshaft oil seal case contacting surface(B) and transaxle case splines(A).

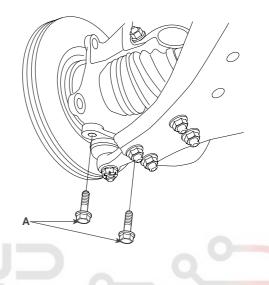
[2WD]

- 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)



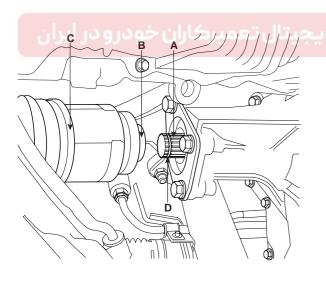


[4WD]

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

Tightening torque

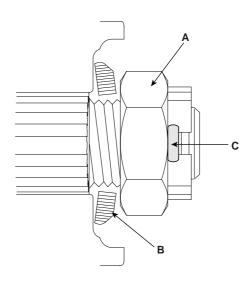
200 ~ 280Nm (2000 ~ 2800Kgf.cm, 147.5 ~ 206.6lbf.ft)



KIQE240A

EIKD005A

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



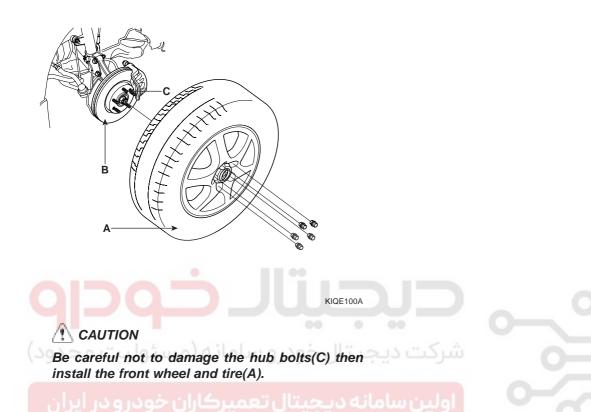
EIKD010A

KIQE100F

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

Tightening torque

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



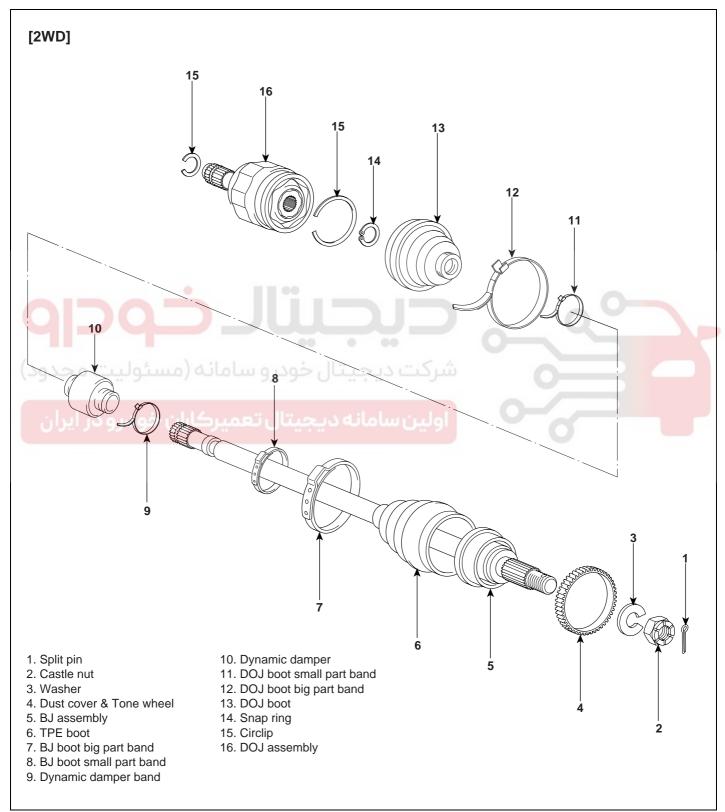
DRIVESHAFT AND AXLE

FRONT DRIVESHAFT (DOJ-BJ TYPE)

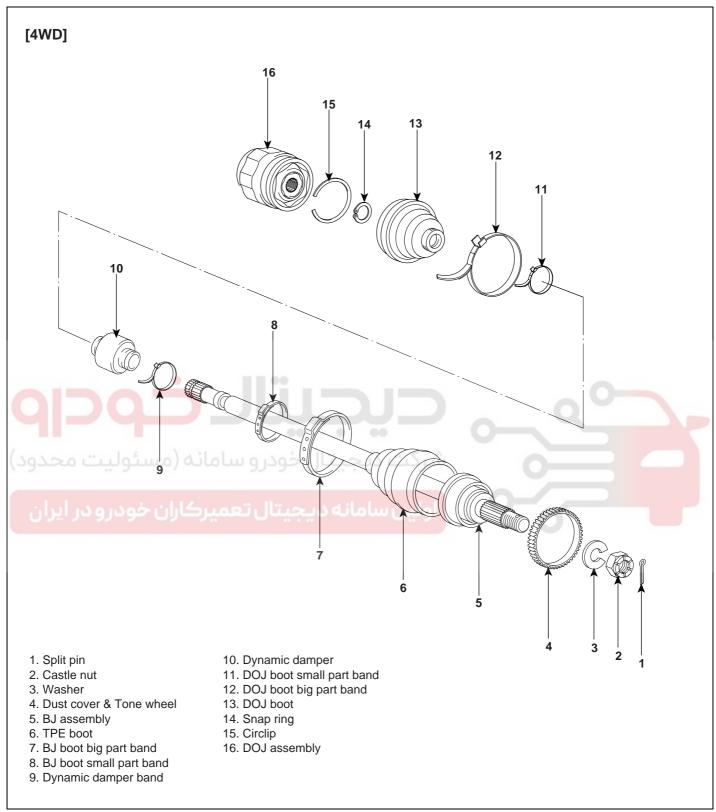
COMPONENTS

DS -22

E8ABC35C



EIQE102A



EIQE102B

DS-24

DRIVESHAFT AND AXLE

DISASSEMBLY

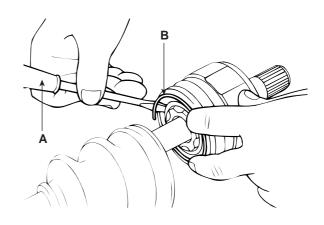
ED7530D0

DRIVESHAFT (RH)

∴ CAUTION

- · Do not disassemble the BJ assembly.
- · Special grease must be applied to the driveshaft joint. Do not substitute with another type of grease.
- The boot band should be replaced with a new one.
- Remove the DOJ. boot bands and pull the DOJ. boot from the DOJ. outer race.
 - 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.

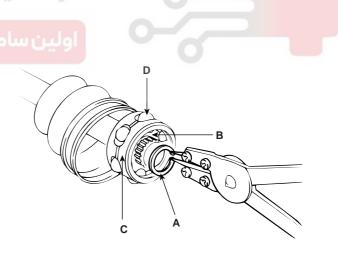
Remove the circlip(B) with a flat-tipped (-) screwdriver (A).



KIKD251B



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



KIQE160A



/!\ CAUTION

Be careful not to damage the boot.

KIKD251C

Clean the inner race, cage and balls without disas-

Remove the BJ. boot bands and pull out the DOJ. boot and BJ. boot.

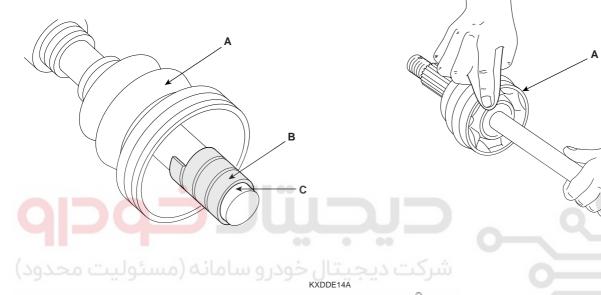


(!\ CAUTION

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

INSPECTION

- Check the DOJ. outer race, inner race, cage and balls for rust or damage.
- 2. 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.

DS-26

DRIVESHAFT AND AXLE

REASSEMBLY E4BF15E

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

Standard value mm(in.) : 515^{+2}_{0} (20.3 $^{+0.079}_{-0}$)

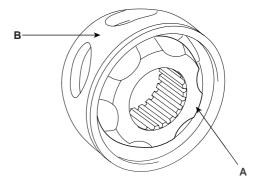
EIQE900A

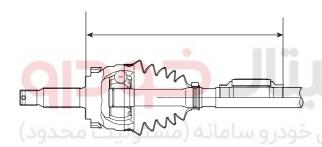
4. Apply the specified grease to the inner race(A) and cage(B). Install the cage(B) so that it is offset on the race as shown.



CAUTION

Use the grease included in the repair kit.





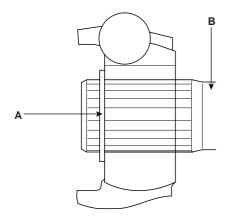
EIKD023A

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

ولین سامانه دیجیتال تعمیرکاران خودرو در ایران

KIQE110A

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

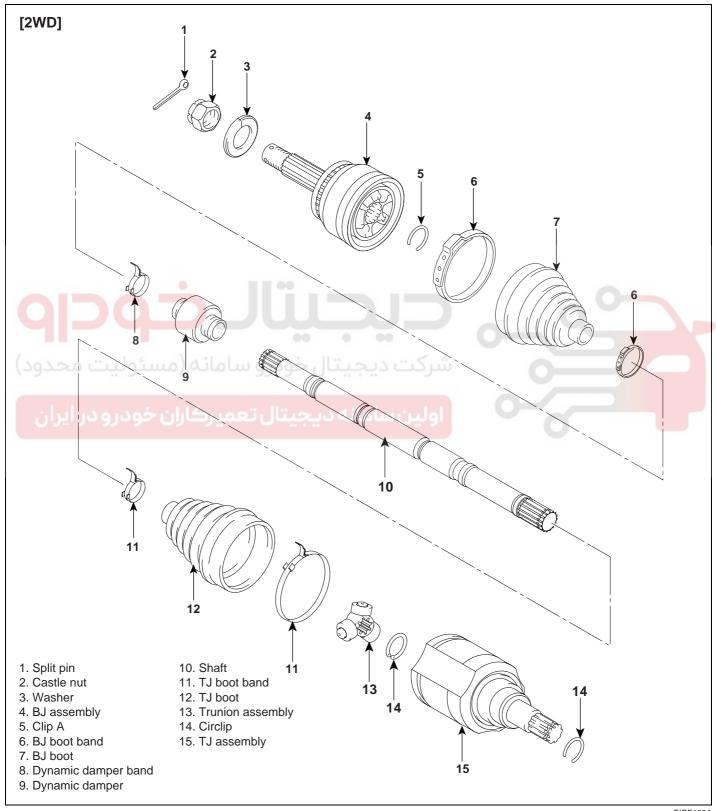
- Apply the specified grease to the outer race and install the BJ. outer race onto the driveshaft. (See page DS 4)
- Apply the specified grease into the DOJ. boot and install the boot with a clip. (See page DS - 4)
- 9. Tighten the DOJ. boot bands.
- 10. Add the specified grease to the BJ. as much as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



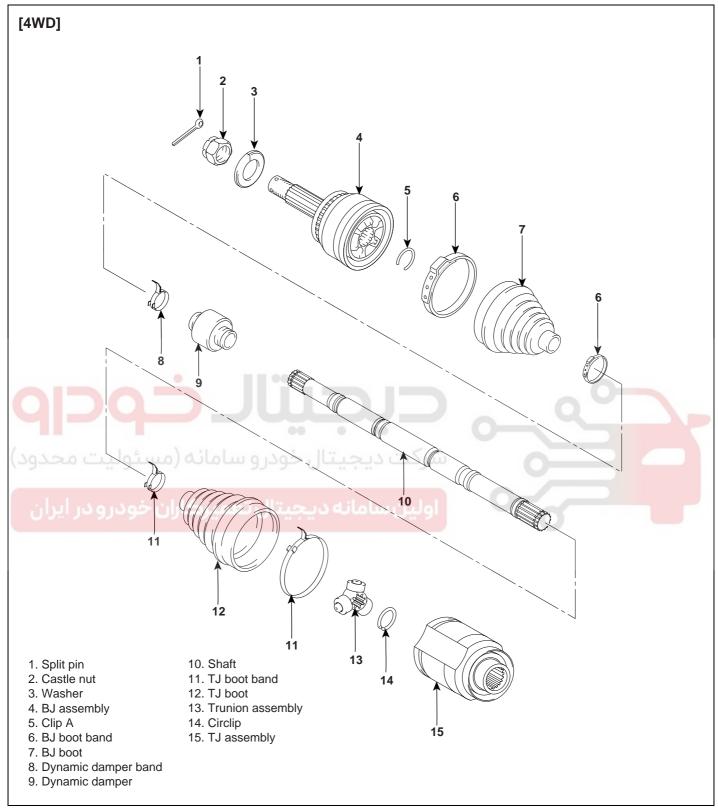
DS -28

FRONT DRIVESHAFT (TJ-BJ TYPE)

COMPONENTS EAAE8BFC



EIQE103A



EIQE103B

DRIVESHAFT AND AXLE

DS-30

ECDC0A8E

DRIVESHAFT (RH)

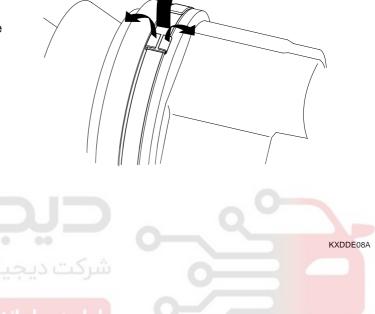
DISASSEMBLY



∴ CAUTION

- · Do not disassemble the BJ. assembly.
- · Special grease must be applied to the driveshaft joint. Do not substitute with another type of grease.
- · The boot band should be replaced with a new one.
- Remove the circlip(B) from driveshaft splines(A) of the transaxle side TJ. case.

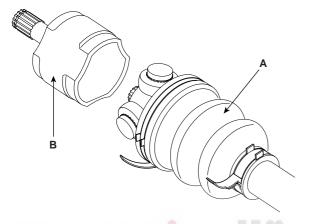
- Remove the both boot clamps from the transaxle side
 - Using a plier or flat-tipped (-) screwdriver, remove the both clamps(TJ. boot band(B), boot band(A)) of the transaxle side.

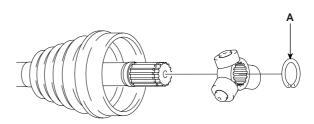


KXDDE07A

KXDDE09A

- 3. Pull out the boot from the transaxle side joint(TJ).
- 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).



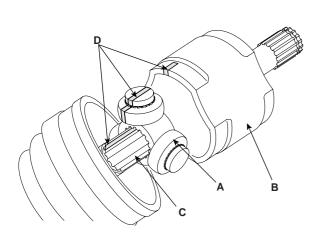


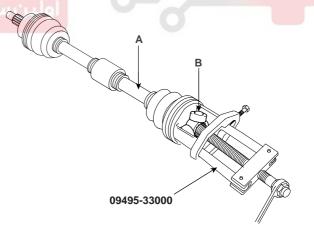
KXDDE10A

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

A 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.





KXDDE13A

KXDDF12A

KXDDE11A

DRIVESHAFT AND AXLE

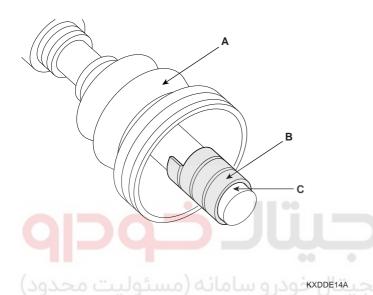
DS -32

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

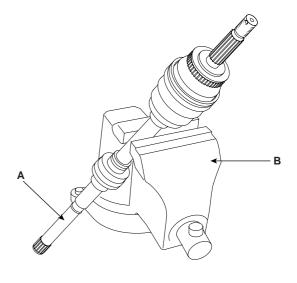
/

CAUTION

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



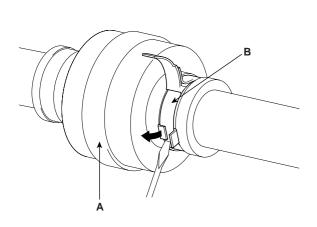
10. Fix the driveshaft(A) with a vice(B) as illustrated.

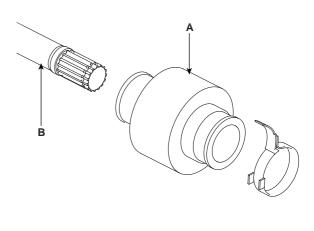


KXDDE16A

- 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.

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

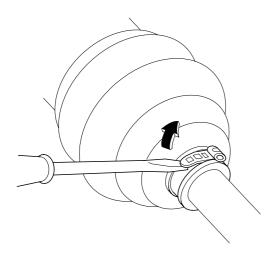




KIQE150B

KIQE150A

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.

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INSPECTION EEFECF9E

- 1. Check the driveshaft spline for wear or damage.
- 2. Check that there is no water or foreign material in the BJ.
- 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

DS -34

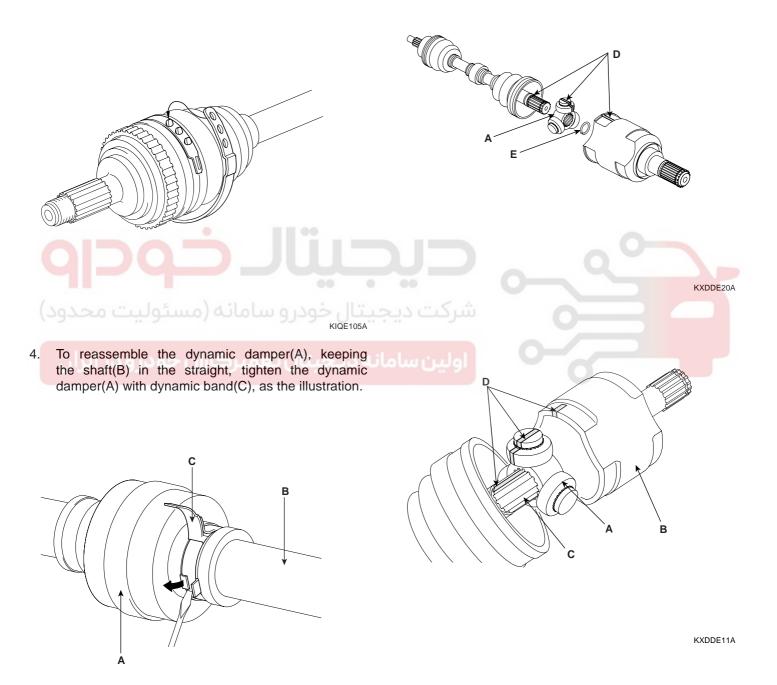
DRIVESHAFT AND AXLE

REASSEMBLY

FB97FD9B

- 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.

- 5. Install the TJ. boot bands and TJ. boot.
- 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.



KIQE151A

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



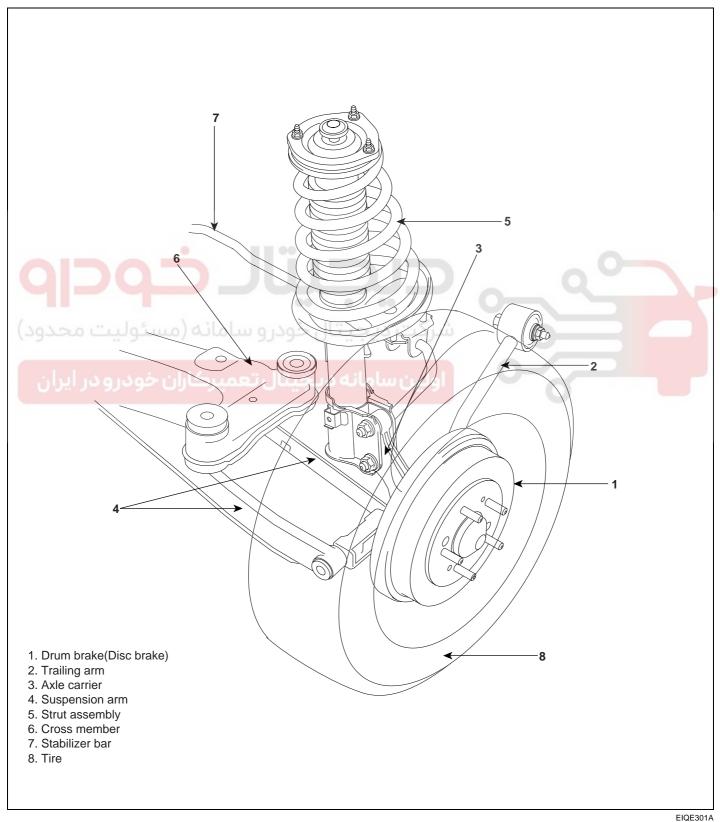


DS -36

REAR AXLE

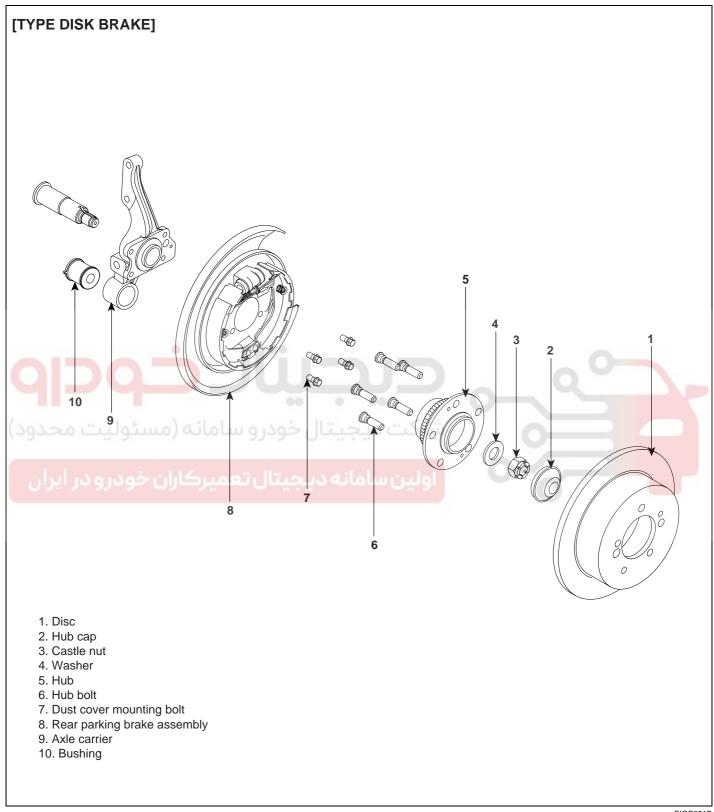
REAR HUB / CARRIER

COMPONENT LOCATION E8704F44



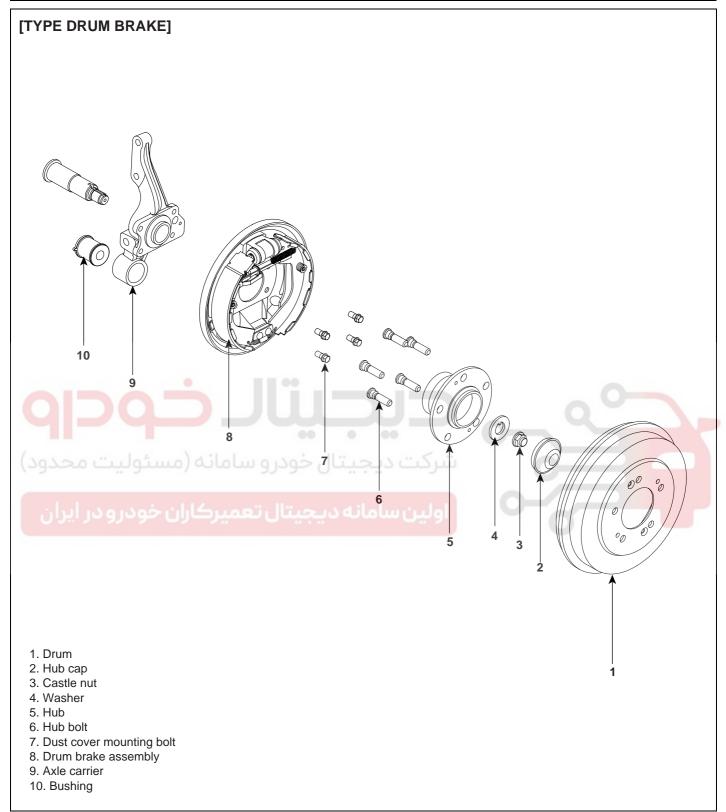
REAR AXLE DS -37

COMPONENTS E3FAF6D9



EIQE351B

DRIVESHAFT AND AXLE



EIQE301B

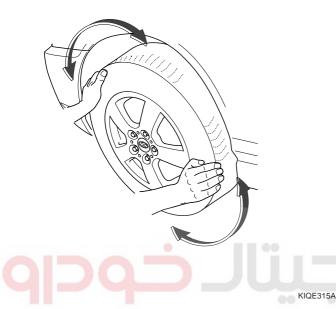
REAR AXLE DS -39

ON-VEHICLE INSPECTION

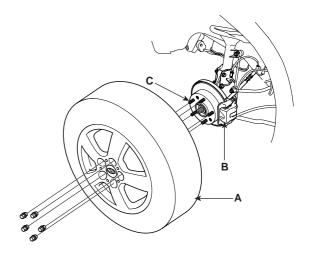
AFDF87

WHEEL BEARING PLAY INSPECTION

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



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).

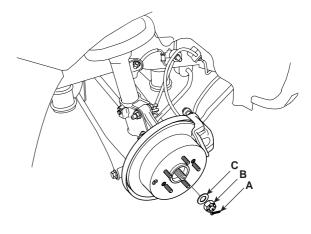


KIQE300A

A CAUTION

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

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



KIQE350C

DS -40 DRIVESHAFT AND AXLE

- 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

- 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



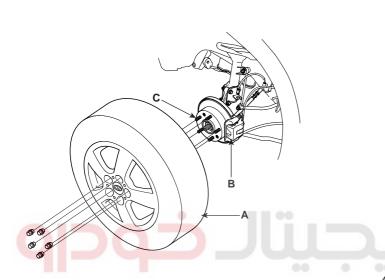
REAR AXLE DS -41

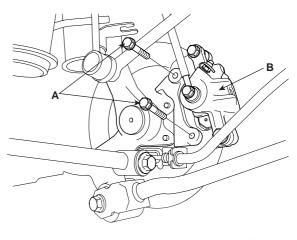
REMOVAL EF886CDA

[TYPE DISC BRAKE]

- 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).

 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.





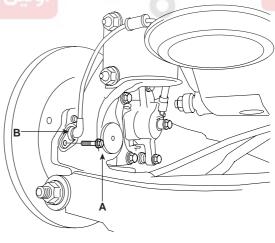
KIQE300B

خودرو سامانه (مسئولیت محدود)

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

ولین سامانه دیجیتال تعمیرکاران خو CAUTION 🛕

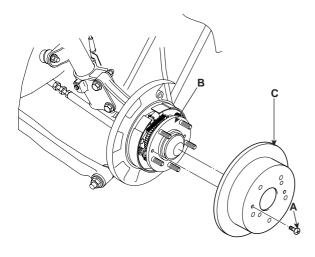
Be careful not to damage the hub bolts(C) then remove the rear wheel and tire(A).

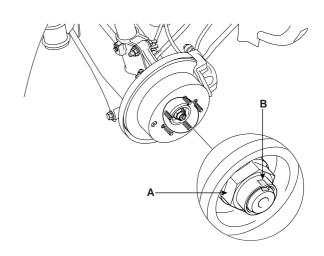


KIQE300C

DRIVESHAFT AND AXLE

- 5. Loosen the brake disc mounting screw(A), and then remove the brake disc(C) from the hub(B).
- 7. Remove the hub bearing flange nut(A).
 - Using a flat-tipped (-)screwdriver, spread out the groove(B) on the flange nut(A)
 - b. Loosen the hub bearing flange nut(A).



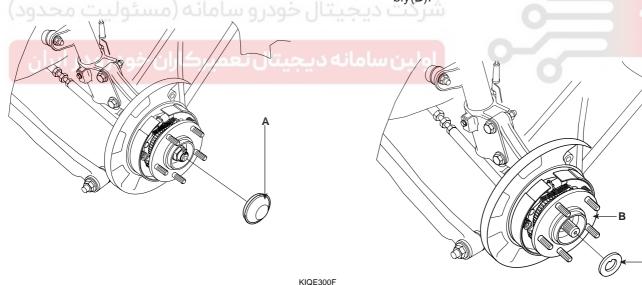


KIQE300E

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

KIQE300G

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



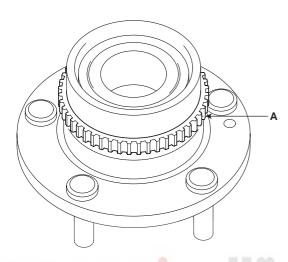
KIQE300H

REAR AXLE DS -43

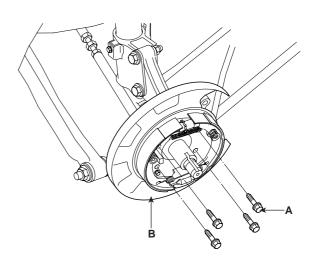
A CAUTION

· Be careful not disassembly the rear hub as-

· For vehicles equipped with ABS.



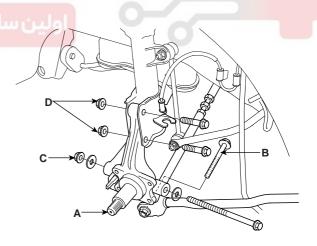
Loosen the rear dust cover mounting bolts(A) and then remove the rear parking brake assembly(B).



KIQE300J

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

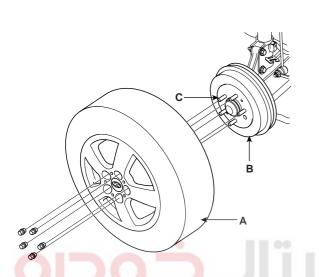


KIQE300K

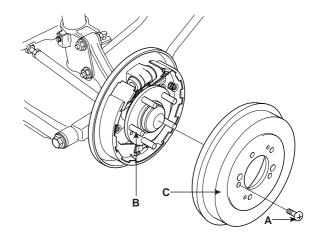
DRIVESHAFT AND AXLE

[TYPE DRUM BRAKE]

- 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).



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



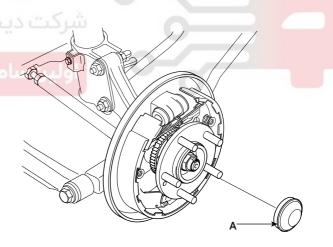
KIQE305B

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

KIQE305A



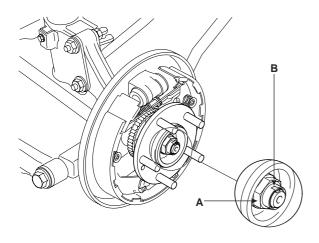
Be careful not to damage the hub bolts(C) then remove the rear wheel and tire(A).

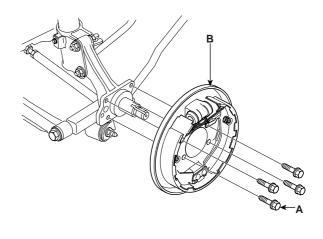


KIQE305C

REAR AXLE DS -45

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



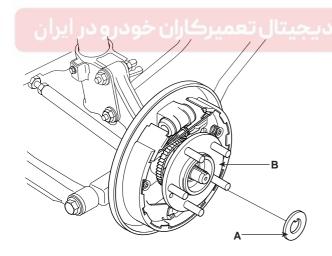


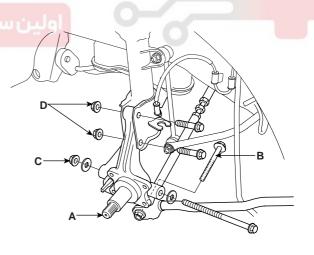
KIQE305F

KIQE305D

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

- 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).





KIQE305E KIQE300K

DRIVESHAFT AND AXLE

INSPECTION

[TYPE DISC BRAKE]

- Check the hub bearing for wear or damage.
- Check the rotor for chipped teeth.
- Check the carrier for cracks.

[TYPE DRUM BRAKE]

- Check the hub bearing for wear or damage.
- Check the brake shoe for wear or cracks.
- 3. Check the brake drum for wear or cracks.
- Check the carrier for cracks.

INSTALLATION

E6DBDA66

[TYPE DISC BRAKE]

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

Tightening torque

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

Install the suspension arm mounting nut(C).

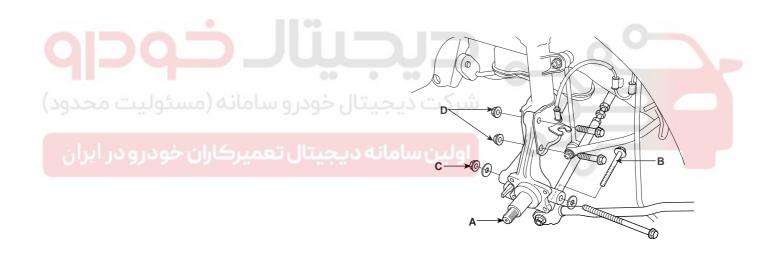
Tightening torque

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

Install the trailing arm mounting bolt(B).

Tightening torque

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



KIQE300K



A CAUTION

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

REAR AXLE DS -47

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

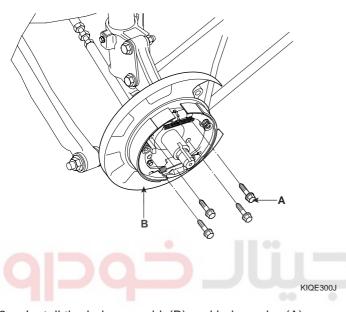
Tightening torque

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

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)



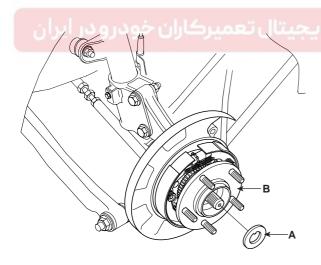
KIQE300G

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

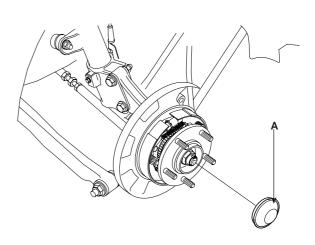
/!\ CAUTION

Replace the flange nut with new ones after removal.

Install the hub cap(A).



KIQE300H



KIQE300F



/ CAUTION

Replace the hub cap with new ones after removal.

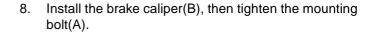
DS -48 DRIVESHAFT AND AXLE

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.

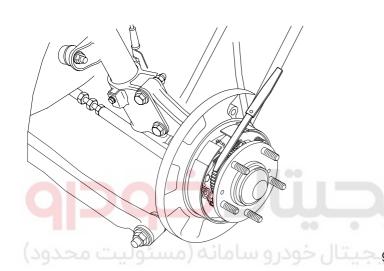
Standard value

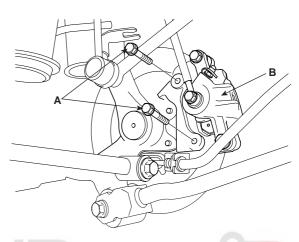
Clearance: 0.5 ~ 1.5mm (0.02 ~ 0.06in.)



Tightening torque

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





KIQE300B

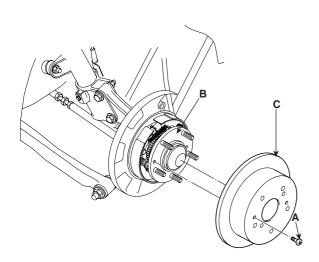
9. Install the rear wheel and tire(A) on the rear hub(B).

KIQE340A

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

Tightening torque

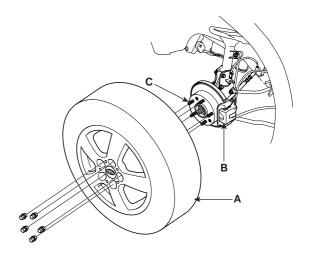
 $5 \sim 6Nm (50 \sim 60, 3.7 \sim 4.4lbf.ft)$



KIQE300E

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 AXLE DS-49

[TYPE DRUM BRAKE]

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

Tightening torque

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

Install the suspension arm mounting nut(C).

Tightening torque

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

Install the trailing arm mounting bolt(B).

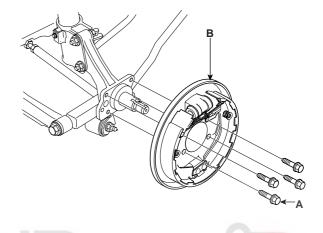
Tightening torque

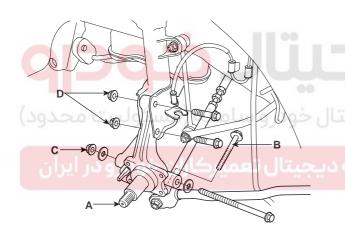
100 ~ 120Nm (1000 ~ 1200Kgf.cm, 73.8 ~ 88.5lbf.ft)

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

Tightening torque

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





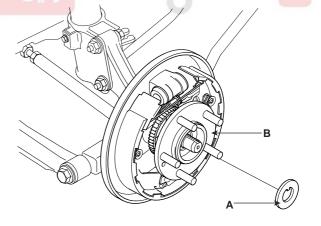
Install the rear hub assembly(B) and hub washer(A).





(CAUTION

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



KIQE305E

KIQE305F

DRIVESHAFT AND AXLE

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

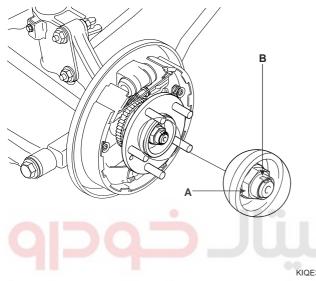
Tightening torque

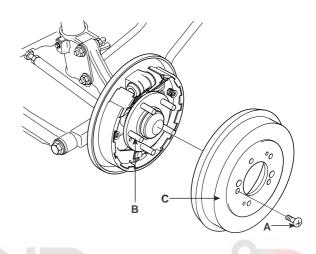
200 ~ 260Nm (2000 ~ 26000Kgf.cm, 147.5 ~ 191.8lbf.ft)

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)





KIQE305D

KIQE305B



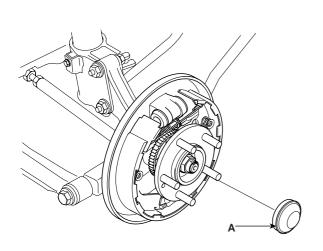
Replace the flange nut with new ones after removal.

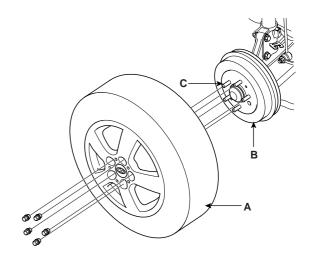
7. Install the rear wheel and tire(A) on the rear hub(B).

Tightening torque

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

Install the hub cap(A).





KIQE305A



/ CAUTION

Replace the hub cap with new ones after removal.



KIQE305C

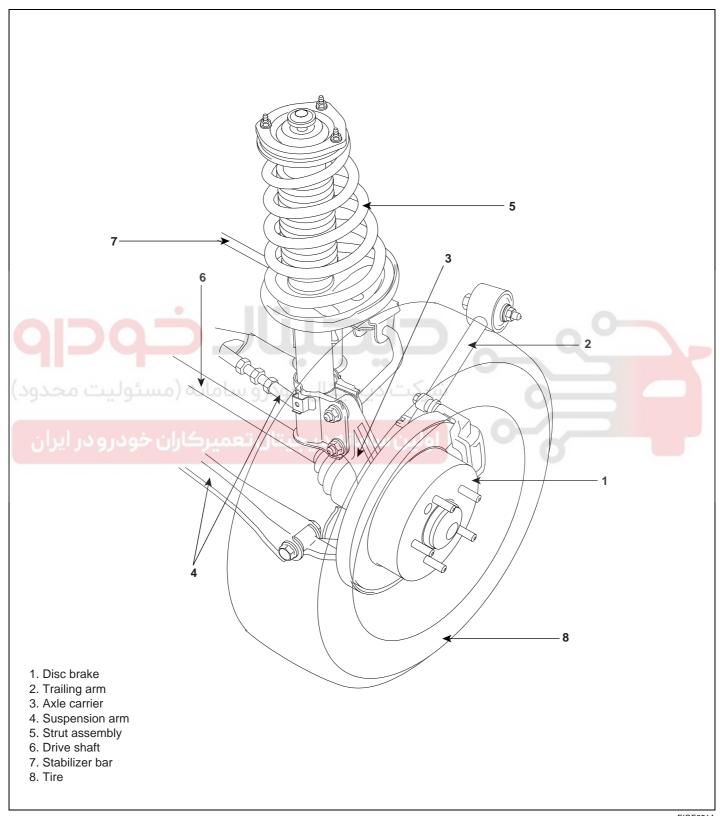
CAUTION

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

REAR AXLE DS -51

REAR HUB / AXLE

COMPONENT LOCATION EE6D3387

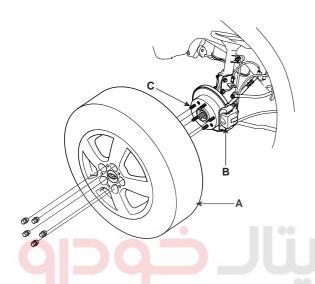


EIQE351A

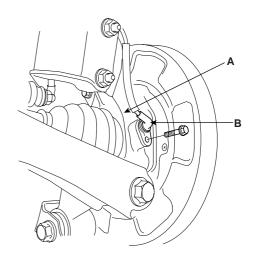
DRIVESHAFT AND AXLE

REMOVAL E540B0F0

- 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).



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



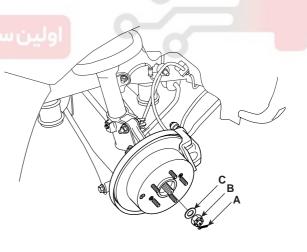
KIQE350B

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

KIQE300A



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



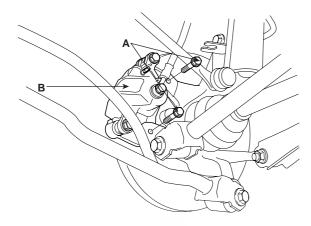
KIQE350C

REAR AXLE DS -53

 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

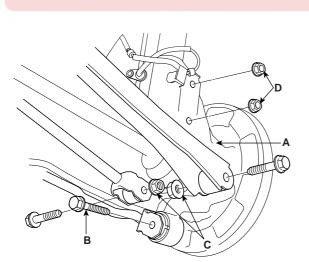
- 1. Check the hub bearing for wear or damage.
- 2. Check the carrier for cracks.





- 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).









DS -54

DRIVESHAFT AND AXLE

INSTALLATION EF74

- 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).

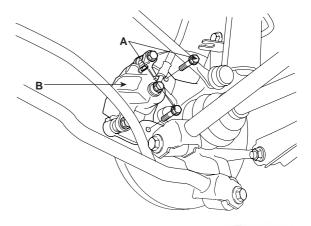
Tightening torque

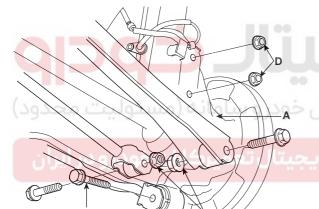
100 ~ 120Nm (1000 ~ 1200Kgf.cm, 73.8 ~ 88.5lbf.ft)

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

Tightening torque

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





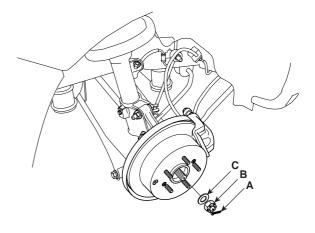
KIQE350D

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)

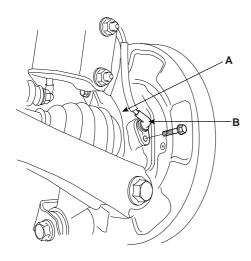




KIQE350C

REAR AXLE DS -55

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

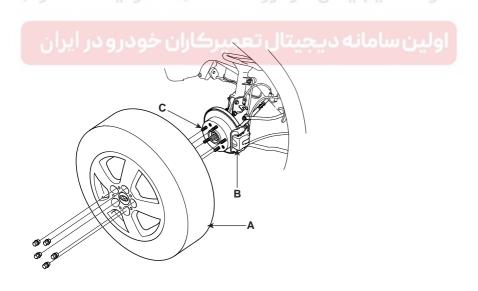


KIQE350B

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).

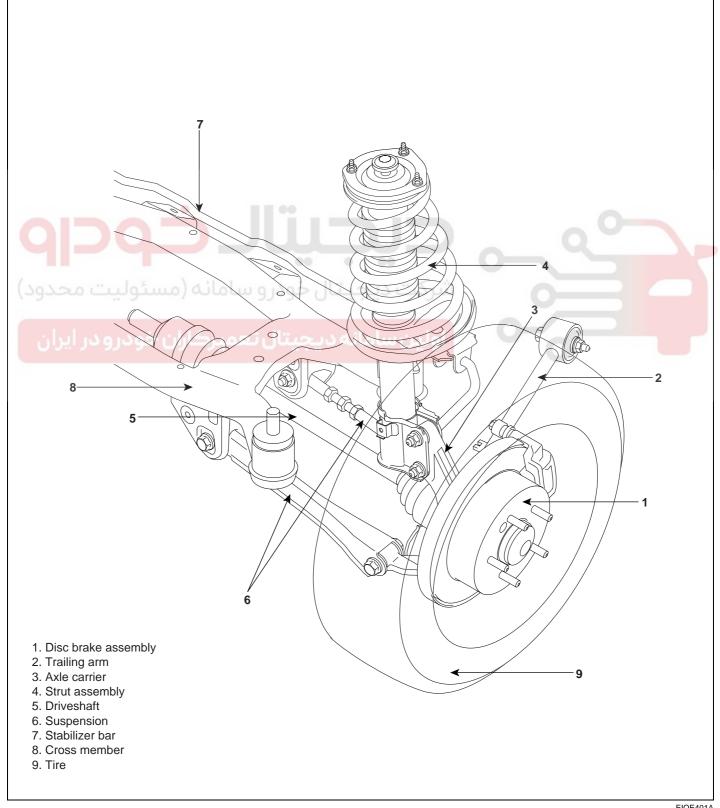
DRIVESHAFT AND AXLE

DS -56

REAR DRIVRSHAFT ASSEMBLY

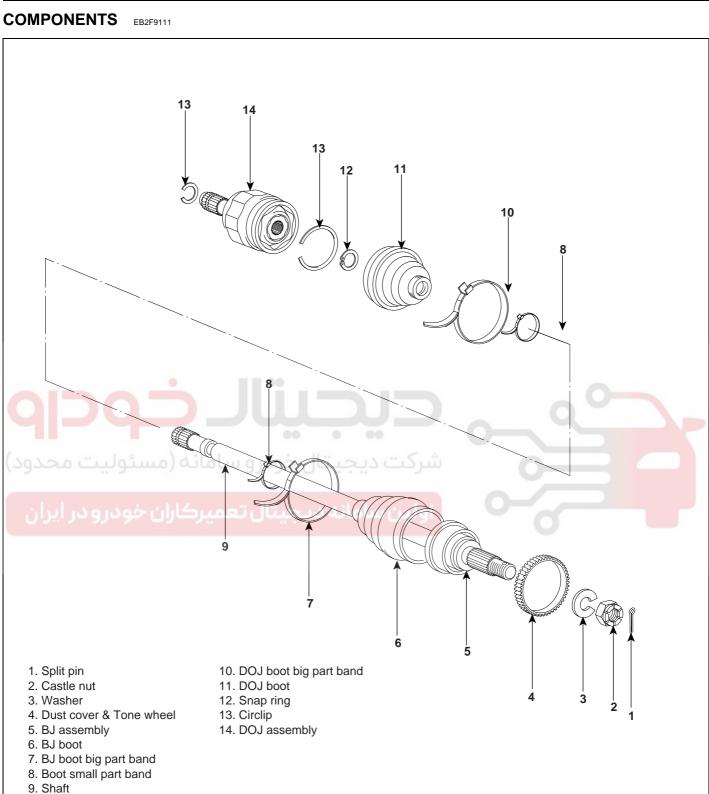
REAR DRIVESHAFT (DOJ-BJ TYPE)

COMPONENT LOCATION EOEB7BA8



REAR DRIVRSHAFT ASSEMBLY

DS -57



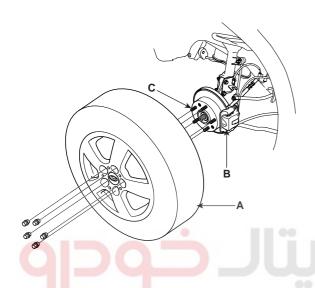
EIQE401B

DS -58

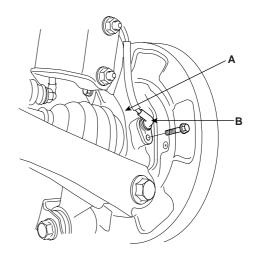
DRIVESHAFT AND AXLE

REMOVAL E1E99E23

- 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).



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



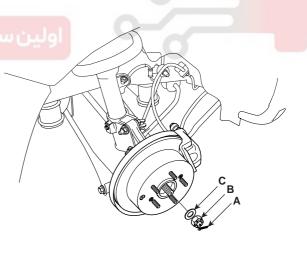
KIQE350B

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

KIQE300A



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



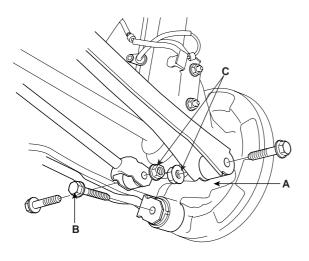
KIQE350C

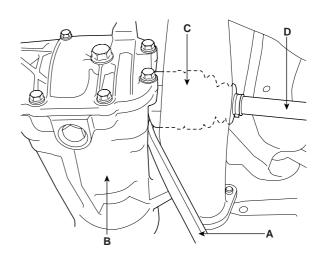
REAR DRIVRSHAFT ASSEMBLY

DS -59

KIQE400C

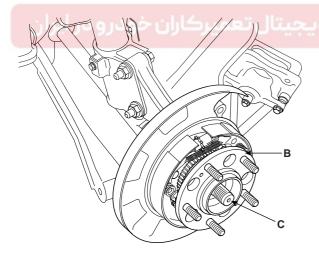
- 5. Remove the trailing arm mounting bolt(B) from the knuckle(A).
- 8. Insert a pry bar(A) between the differential case(B) and joint case(C), and separate the driveshaft(D) from the differential case.





KIQE400A

- 6. Remove the suspension arm mounting nuts(C).
- 7. Push the axle hub(B) outward and separate the driveshaft(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 driveshaft is removed from the transaxle case.

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DRIVESHAFT AND AXLE

DS-60

INSPECTION E850CCBD

- 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.
- 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 driveshaft joint. Do not substitute with another type of grease.
- The boot band should be replaced with a new one.
- Remove the DOJ. boot bands and pull the DOJ. boot from the DOJ. outer race.
 - Using a plier or flat-tipped (-) screwdriver, remove the LH boot band and LH DOJ. boot band from the driveshaft
 - Remove RH boot band and RH DOJ. boot band in the same way of LH removal procedure.



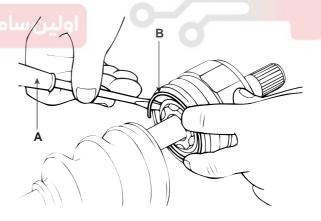
CAUTION

Be careful not to damage the boot.

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

EIKD019A

Check the driveshaft for cracks and wears.



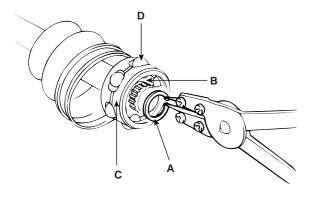
KIKD251B

Pull out the driveshaft from the DOJ. outer race.

REAR DRIVRSHAFT ASSEMBLY

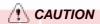
DS -61

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

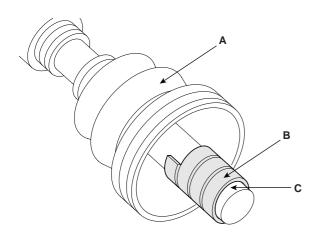


KIKD251C

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



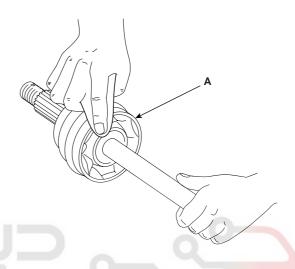
If the boot(A) is to be reused, wrap tape(B) around the driveshaft splines(C) to protect the boot(A).



KXDDE14A

INSPECTION EFDE68C0

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



EIKD025A

(AUTION

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.

DRIVESHAFT AND AXLE

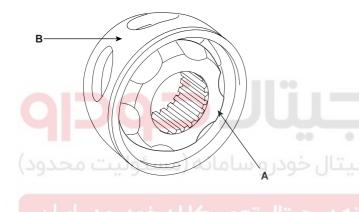
REASSEMBLY

- Wrap tape around the driveshaft splines (DOJ. side) to prevent damage to the boots.
- Apply grease to the driveshaft and install the boots.
- 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.



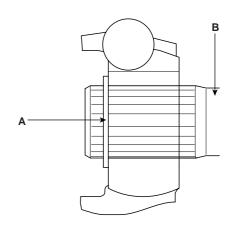
CAUTION

Use the grease included in the repair kit.



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

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



EIKD020A

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

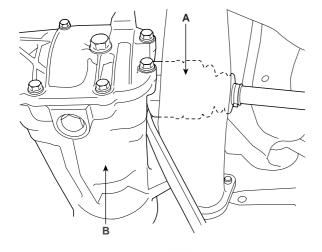
REAR DRIVRSHAFT ASSEMBLY

DS -63

INSTALLATION

TION E690CDB8

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



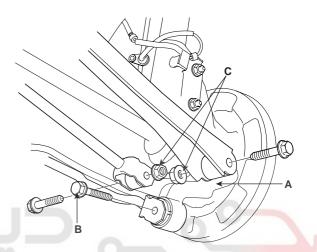
KIQE400D

- 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 ~ 118lbf.ft) Trailing arm mounting bolt(B) 100 ~ 120Nm (1000 ~ 1200Kgf.cm, 73.8 ~ 88.5lbf.ft)

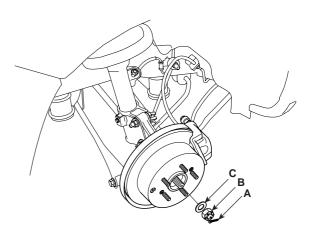


KIQE400A

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)

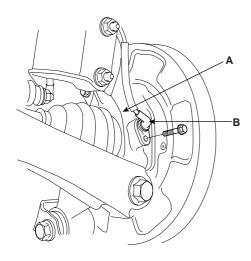


KIQE350C

DS -64

DRIVESHAFT AND AXLE

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

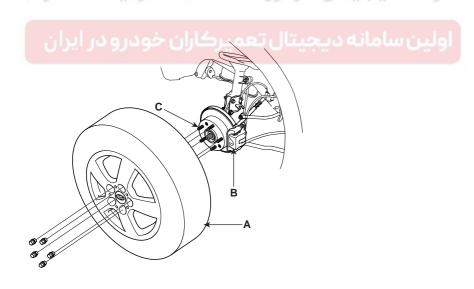


KIQE350B

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



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

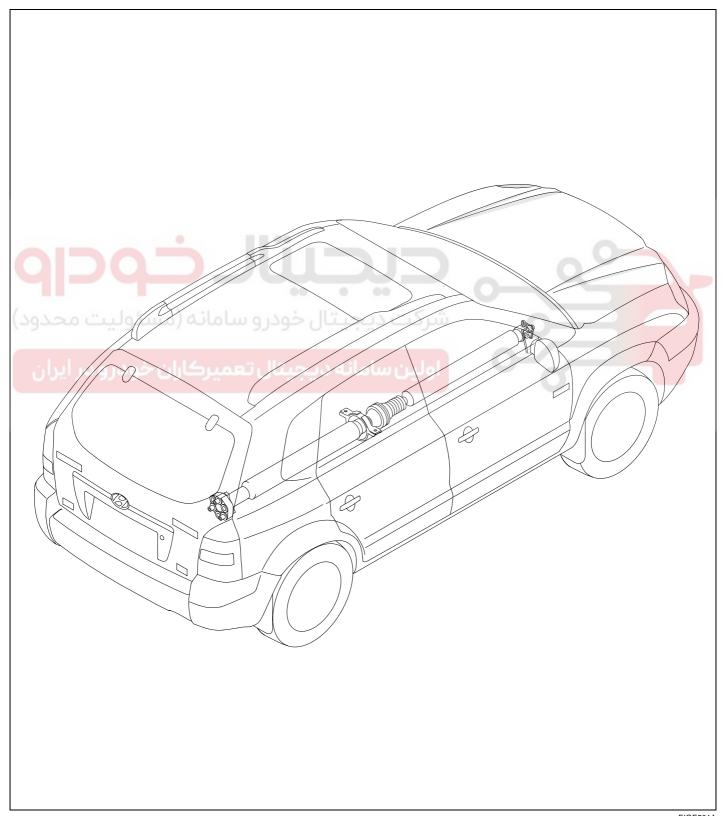
PROPELLER SHAFT ASSEMBLY

DS -65

PROPELLER SHAFT ASSEMBLY

PROPELLER SHAFT

COMPONENT LOCATION EAE58355



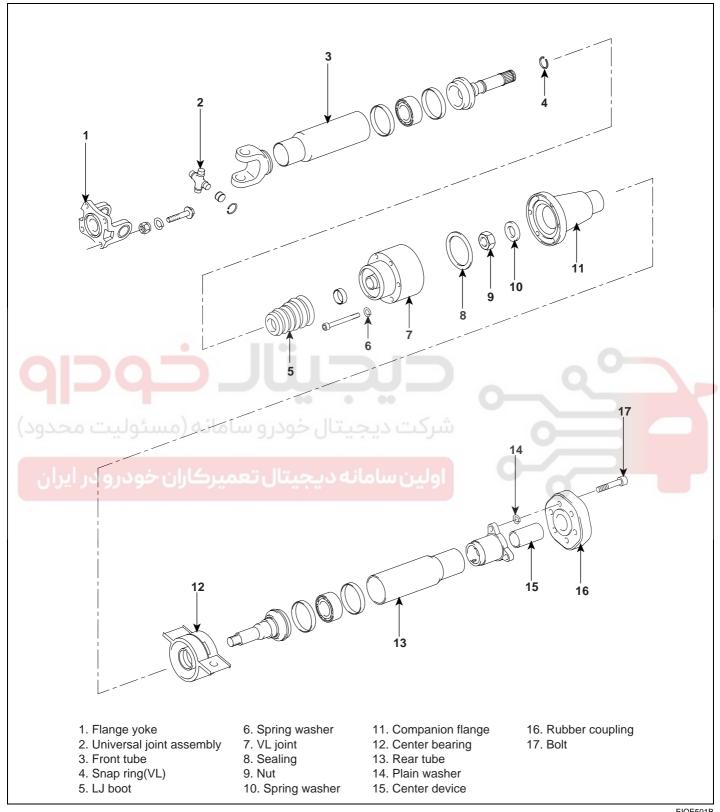
EIQE501A

DRIVESHAFT AND AXLE

COMPONENTS

DS -66

E31291DF



EIQE501B

PROPELLER SHAFT ASSEMBLY

DS-67

INSPECTION EE45B86E

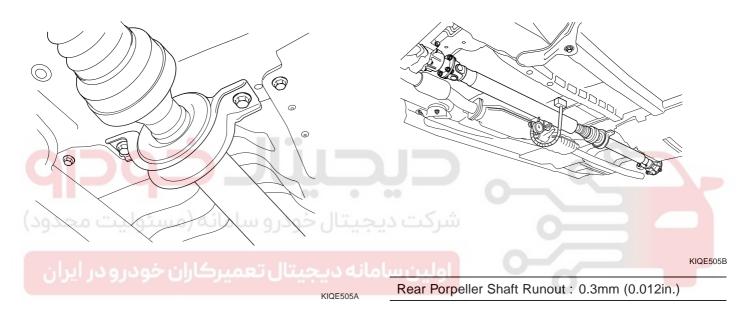
VJ JOINT AND BOOTS

- 1. Shift the transmission to Neutral.
- 2. Raise the vehicle off the ground, and support it witj safety stands in the proper locations.
- Check the center support bearing for excessives 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.

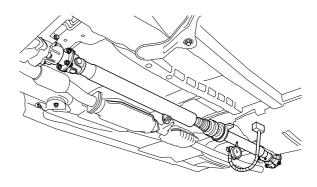
PROPELLER SHAFT RUNOUT

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

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



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



KIQE505C

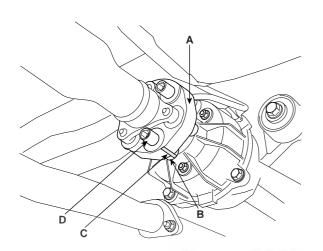
3. If the runout on either propeller shaft exceeds the service limit, replace the propeller shaft assembly.

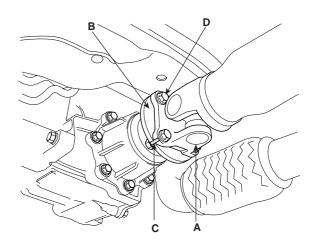
DRIVESHAFT AND AXLE

REMOVAL EBD6F6EB

DS -68

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





KIQE510A

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



KIQE510B

PROPELLER SHAFT ASSEMBLY

DS -69

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



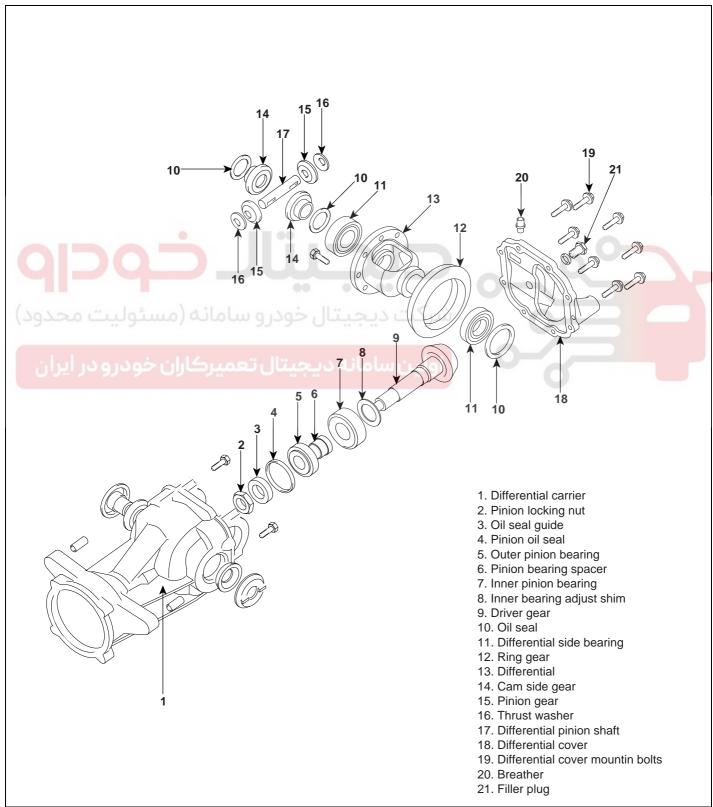


DS -70

DIFFERENTIAL CARRIER ASSEMBLY

REAR DIFFERENTIAL CARRIER

COMPONENTS EDB74A99



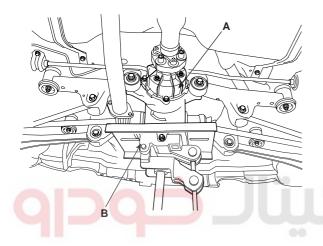
EIQE601A

DIFFERENTIAL CARRIER ASSEMBLY

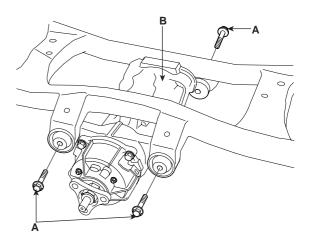
DS -71

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).



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

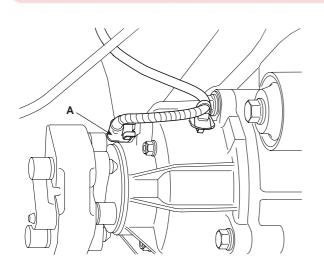


KIQE600C

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

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5. Disconnect the coupling control connector(A).



KIQE600B KIQE600D

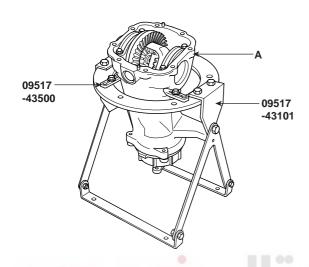
DRIVESHAFT AND AXLE

INSPECTION

9BCC1B

Install the differential carrier assembly(A) with the special tools(09517-43101 & 09517-43500).

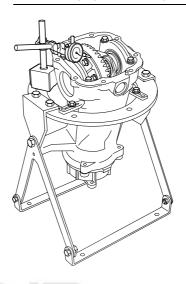
Then carry out the following inspection.



- Check the drive gear back-face lash by the following procedure.

 Place a dial gauge on the back face of the drive.
 - Place a dial gauge on the back-face of the drive gear and measure the runout.

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



KIQE610C

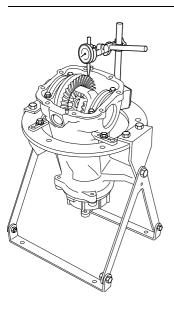
- KIQE610A
- Check the final drive gear backlash by the following procedure.
 - a. Place the drive pinion and move the drive gear to check backlash is within the standard range.
 - **NOTE**

Measure at 4 points on the gear periphery.

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

- 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.
- 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.)



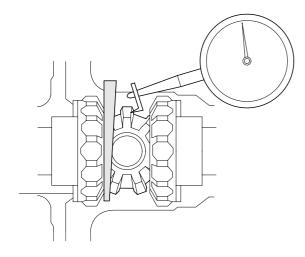
KIQE610B

DIFFERENTIAL CARRIER ASSEMBLY

DS -73



Take the measurements at two places on the pinion gear.



KISE610E

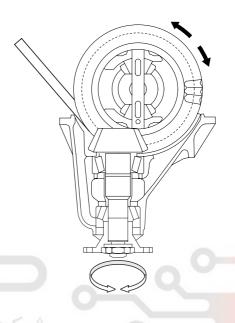
 b. If the backlash exceeds the limit, adjust using side bearing spacers.



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.

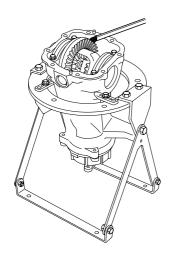
b. Insert a brass rod between the differential carrier and the differential case, and then rotate the companion flange by hand (once in the normal direction, and then once in the reverse direction) while applying a load to the drive gear so that some torque (approximately 25~30Nm) is applied to the drive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



KISE610G



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



KIQE610D

DS -74

DRIVESHAFT AND AXLE

c. Check the tooth contact pattern.

Tooth contact	Contact state	Solution		
Standard contact	KISE610H			
Heal contact	KISE650A	Increase the thickness of the pinion height adjusting shim, and position the drive pinion closer to the center of the drive gear. Also, for backlash adjustment, reposition the drive gear further from		
Face contact (a) Contact (b) Contact (a) Contact (b) Contact (c) Contact (d) Contact (d) Contact (e)	22 2 0	the drive pinion.	KISE630A	
ان خودرودر ایران Toe contact	KISE650B	Decrease the thickness of the pinion height adjusting shim, and position the drive pinion further from the center of the drive gear. Also, for backlash adjustment, reposition the drive gear closer to		
Flank contact	KISE650D	the drive pinion.	KISE630B	

∭ 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.

DIFFERENTIAL CARRIER ASSEMBLY

DS -75

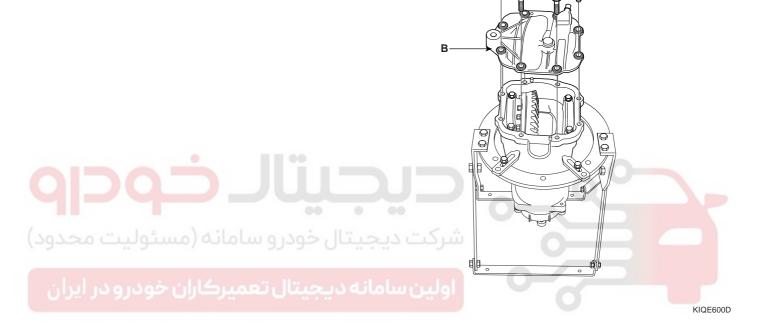
- 5. Check the oil leaks and the lip part for chew or wear.
- 6. Check the bearings for wear or discoloration..
- 7. Check the gear carrier for cracks.
- 8. Check the drive pinion and drive gear for wear or cracks.
- Check the side gears, pinion gears and pinion shaft for wear or damage.
- 10. Check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

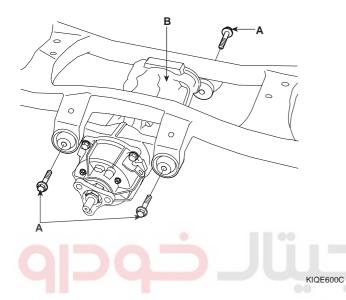


DS -76 DRIVESHAFT AND AXLE

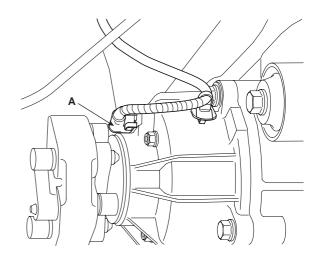
2. After install the differential(B), and install the mounting bolts(A).

Tightening torque

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



Using the transaxle jack(B), install the differential assembly(A). 4. Connect the coupling control connector(A).



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

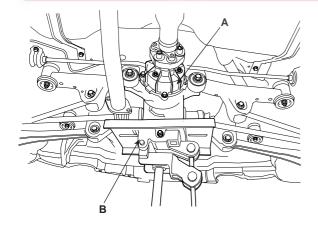
Specified lubricant

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

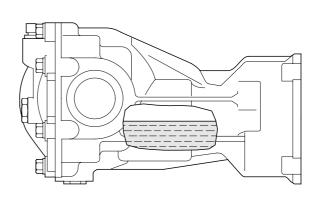
Oil quantity: Fill the reservoir to the plug hold

(About $0.75 \sim 0.80L$)





KIQE600A



KIQE640A