

GENESIS COUPE(BK) > 2010 > G 3.8 DOHC > Driveshaft and axle

Driveshaft and axle > General Information > Specifications

Specification

Items		Inner side		Outer side	
Rear drive shaft	Joint type	TSJ		BJ	
	Max. permissible angle	28.5°		15°	
	Backlash	M/T : 0.4° below A/T : 0.6° below			
Differential	Oil type	Hypoid gear oil (API GL-5, SAE 75W/90)			
	Oil capacity (L)	About 1.4			
	Reduction gear type	Hypoid gear			
	Reduction gear ratio	Theta 2.0 AT	Theta 2.0 MT	Lambda 3.8 AT	Lambda 3.8 MT
		3.909		3.727	3.538
	Final drive gear backlash mm(in.)	0.10~0.15			

Tightening Torque

Items		Nm	Kgf.m	lb-ft
Front	Wheel nut	88.3~107.9	9~11	65.1~79.6
	Strut assembly lower mounting bolt	137.2~160	14~16	101.1~115.7
	Break caliper mounting bolt	49~58.8	5~6	36.1~43.3
	Wheel speed sensor mounting bolt	6.9~10.8	0.7~1.1	5.1~8.0
	Break disc mounting screw	4.9~5.9	0.5~0.6	3.6~4.3
	Hub assembly mounting bolt	78.5~98.1	8~10	57.9~72.3
	Lower arm ball joint mounting bolt	98.1~117.7	10~12	72.3~86.8
	Tie rod end ball joint mounting nut	78.4~88.2	8~9	57.8~65.0
Rear	Wheel nut	88.3~107.9	9~11	65.0~75.6
	Driveshaft castle nut	196.1~255.0	20~26	144.7~188.1
	Shock absorber upper mounting bolt	44.1~58.8	4.5~6	32.5~43.3
	Break caliper mounting bolt	49.1~58.8	5~6	36.1~43.4
	Wheel speed sensor mounting bolt	6.9~10.8	0.7~1.1	5.1~8.0
	Break disc mounting screw	4.9~5.9	0.5~0.6	3.6~4.3
	Hub assembly mounting bolt	78.5~88.3	8~9	57.9~65.1
	Upper arm ball joint mounting nut	98.1~117.7	10~12	72.3~86.8
	Lower arm mounting bolt	137.3~156.9	14~16	101.3~115.7
	Assist arm ball joint mounting nut	98.1~117.7	10~12	72.3~86.8
	Trailing arm mounting bolt	98.1~117.7	10~12	72.3~86.8

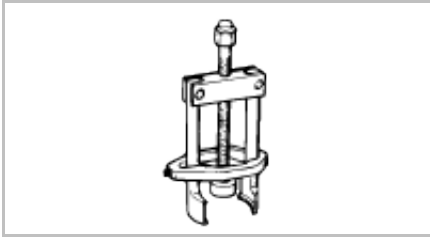

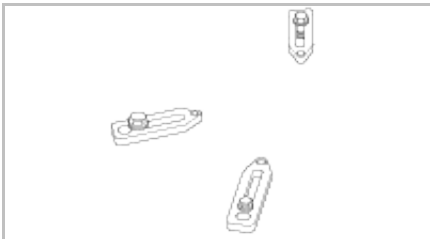

CAUTION

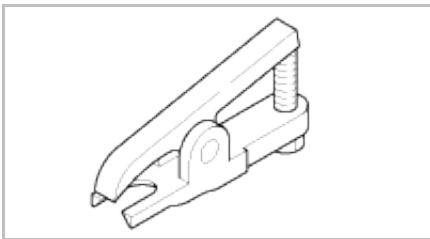
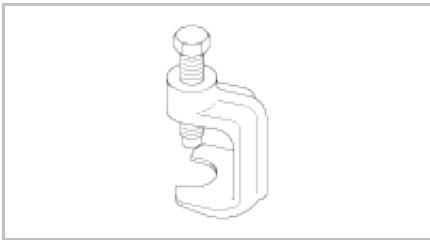
Replace self-locking nuts with new ones after removal.

Lubricants

Items		Lubricants	Quantity
Rear driveshaft	BJ	RBA	115 ± 5g
	TSJ	RBA	130 ± 5g

Driveshaft and axle > General Information > Special Service Tools**Special Service Tools**

Tool(Number and Name)	Illustration	Use
09495-33000Puller		Removal of spider assembly from a drive shaft.
09517-43101Working base		Support for the differential carrier
09517-43500Adapter		Support for the differential carrier(Use with 09517-43101)
09495-3K000Band installer		Installation of ear type boot band

09568-34000Ball joint remover		Removal of the rear upper arm ball joint
09568-4A000Ball joint remover		Removal of the front lower arm and tie rod end ball joint

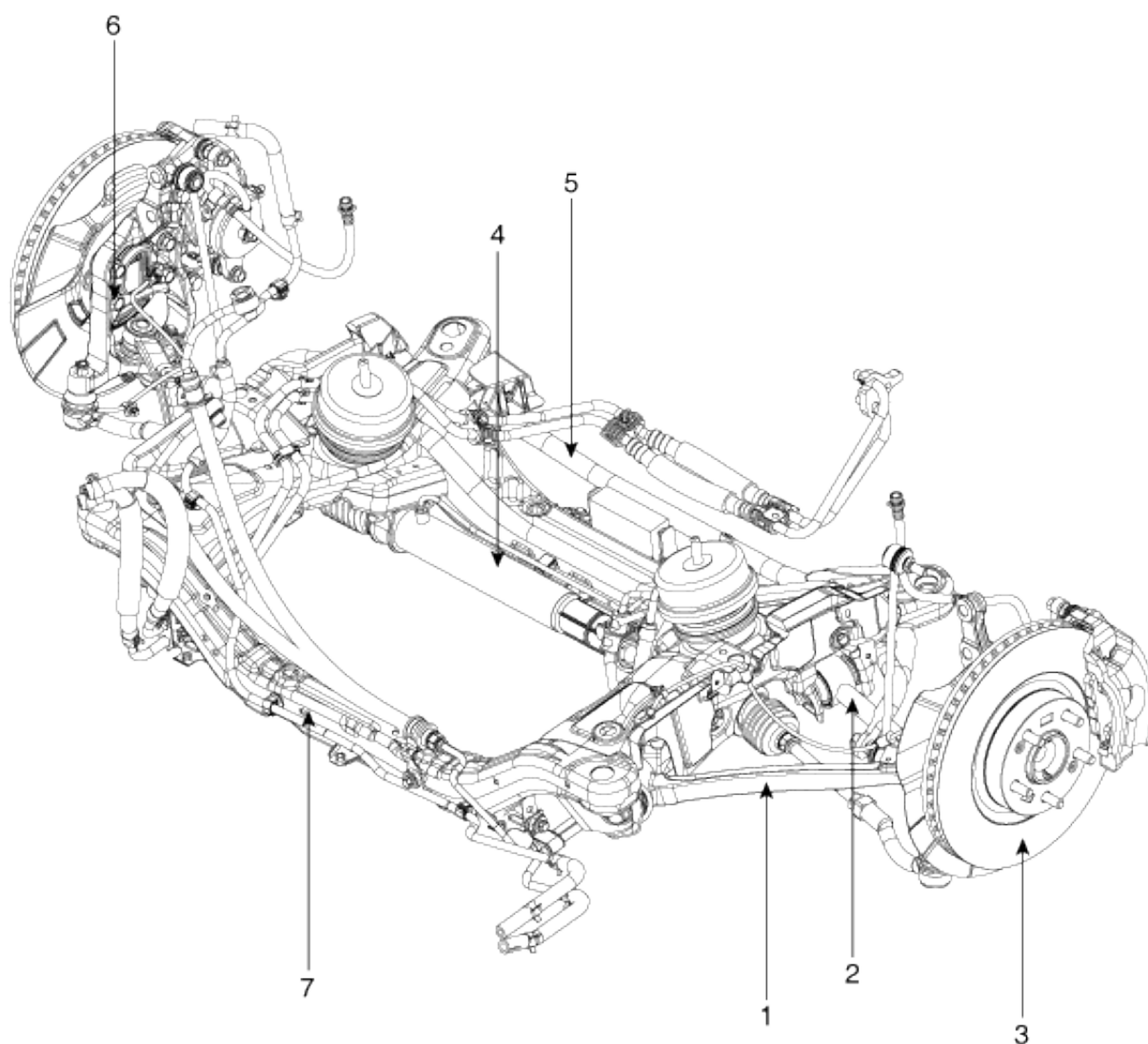
Driveshaft and axle > General Information > Troubleshooting

Troubleshooting

Trouble Symptom	Probable cause	Remedy
Vehicle pulls to one side	Scoring of driveshaft ball joint	Replace
	Wear, rattle or scoring of wheel bearing	Replace
	Defective front suspension and steering	Adjustment or Replace
Vibration	Wear, damage or bending of driveshaft	Replace
	Driveshaft rattle and hub serration	Replace
	Wear, rattle or scratching of wheel bearing	Replace
Shimmy	Defective wheel balance	Adjustment or Replace
	Defective front suspension and steering	Adjustment or Replace
Excessive noise	Wear, damage or bending of driveshaft	Replace
	Rattle of driveshaft and worn hub splines	Replace
	Wear, rattle or scoring of wheel bearing	Replace
	Loose hub nut	Adjustment or Replace
	Defective front suspension and steering	Adjustment or Replace

Driveshaft and axle > Front Axle Assembly > Front Hub / Knuckle / Tone Wheel > Components and Components Location

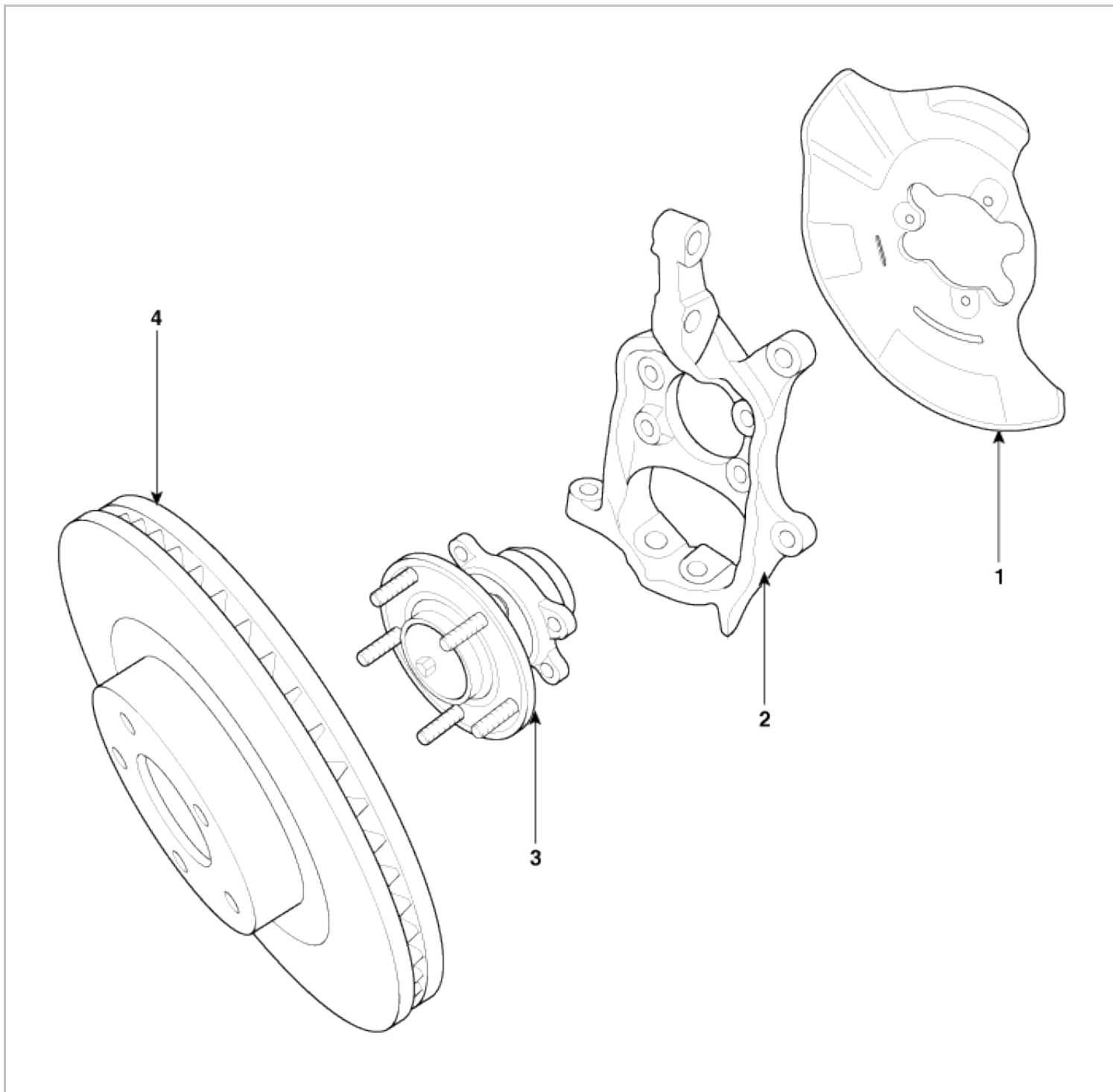
Component Locations



- 1. Tension arm
- 2. Lateral arm
- 3. Front disc
- 4. Steering gear box

- 5. Stabilizer bar
- 6. Front axle
- 7. Sub frame

Component



1. Dust cover
2. Knuckle

3. Hub assembly
4. Brake disc

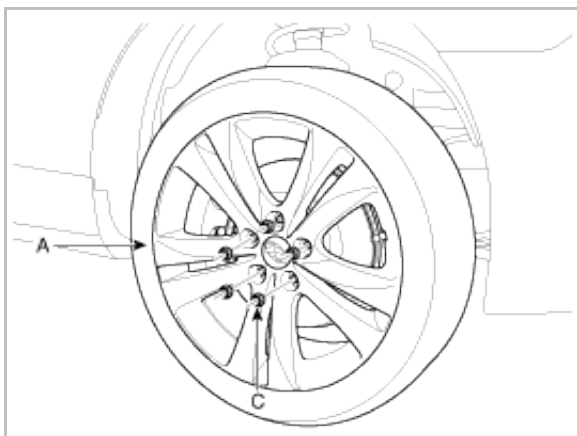
Driveshaft and axle > Front Axle Assembly > Front Hub / Knuckle / Tone Wheel > Repair procedures

Replacement

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

Tightening torque Nm (kgf.m, lb-ft) :

137.2~156.9 (9.0~11.0, 101.2~332.7)



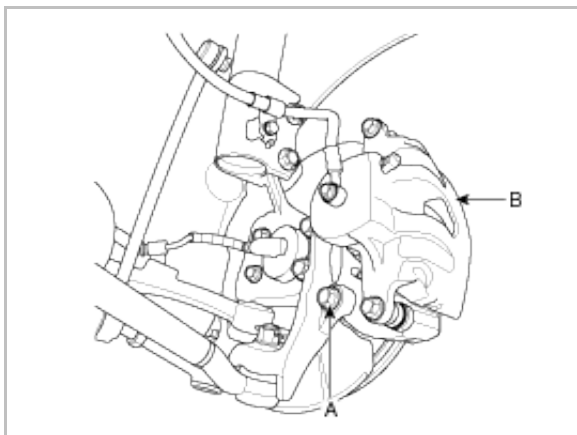
CAUTION

Be careful not to damage the hub bolts when removing the front wheel and tire.

3. Remove the brake caliper mounting bolts (A), and then place the brake caliper assembly (B) with wire.
-

Tightening torque Nm (kgf.m, lb-ft) :

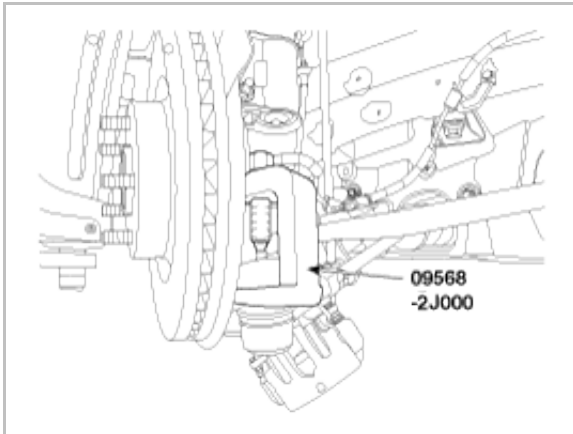
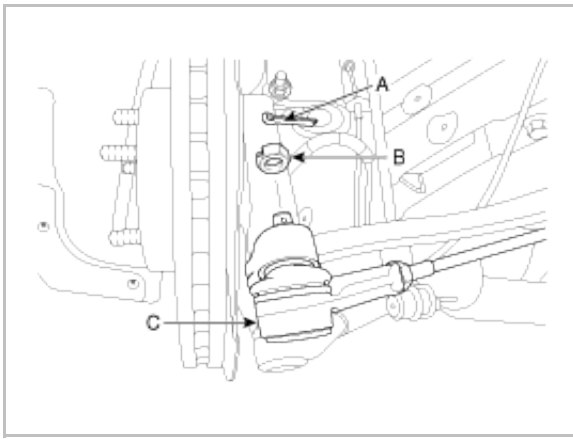
49~58.8 (5.0~6.0, 36.1~43.3)



4. Remove the tie rod end ball joint from the knuckle.
- (1) Remove the split pin.
 - (2) Remove the castle nut.
 - (3) Disconnect the ball joint(A) from knuckle(B) using the special tool (09568-4A000).
-

Tightening torque Nm (kgf.m, lb-ft) :

78.4~88.2 (8.0~9.0, 57.8~65.0)



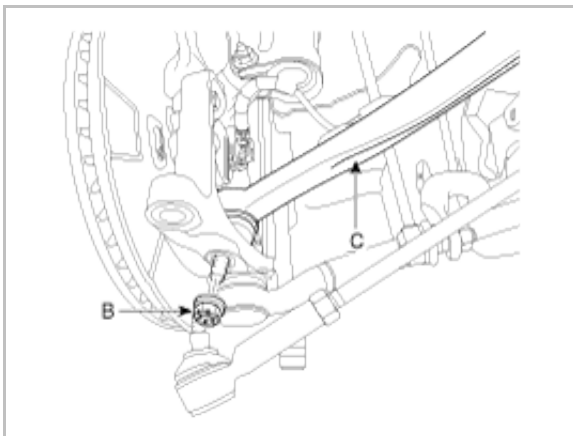
CAUTION

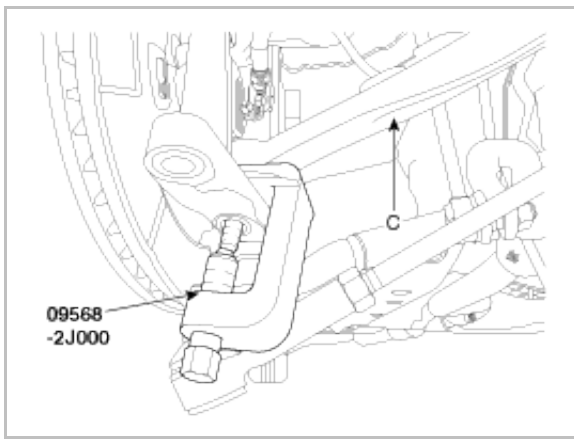
Apply a few drops of oil to the special tool. (Boot contact part)

5. Loosen the tension arm mount bolt(A), and then remove the tension arm(B).
 - (1) Remove the split pin.
 - (2) Remove the castle nut.
 - (3) Disconnect the ball joint(A) from tension arm(B) using the special tool (09568-4A000).

Tightening torque Nm (kgf.m, lb-ft) :

78.4~88.2 (8.0~9.0, 57.8~65.0)



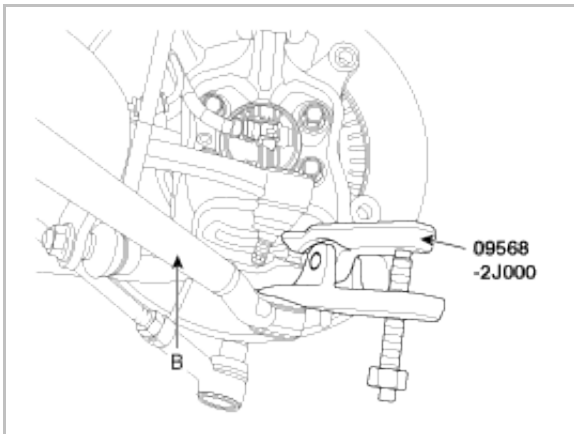
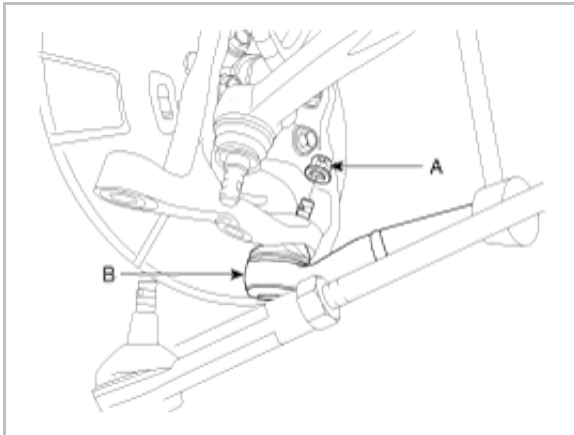


CAUTION

Be careful not to damage the boot and rotor teeth.

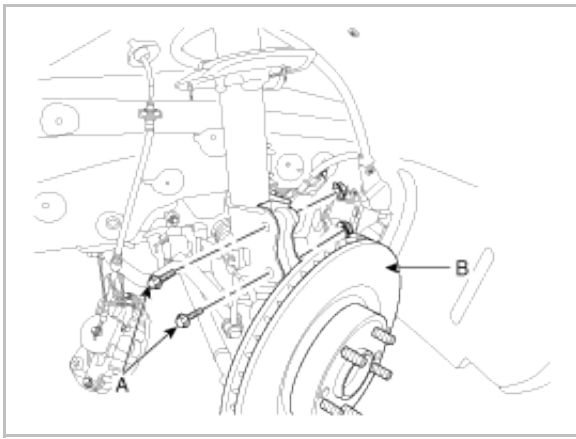
6. Loosen the lateral mount nut(A) and then disconnect the lateral arm(B).

Tightening torque Nm (kgf.m, lb-ft) :
78.4~88.2 (8.0~9.0, 57.8~65.0)

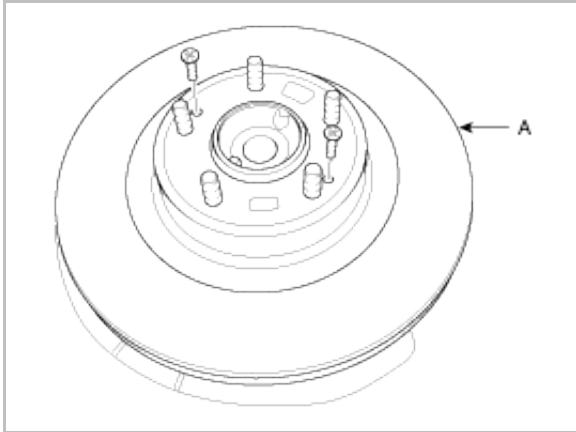


7. Remove the strut mounting bolt and then remove the knuckle assembly(A).

Tightening torque Nm (kgf.m, lb-ft) :
137.2~156.9 (14.0~16.0, 101.2~332.7)

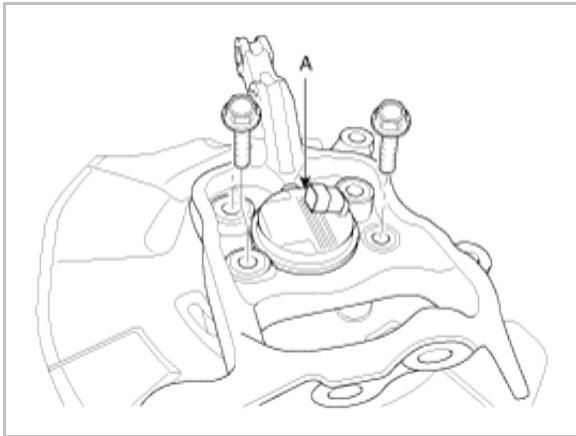


8. Remove the brake disc(A) from knuckle.

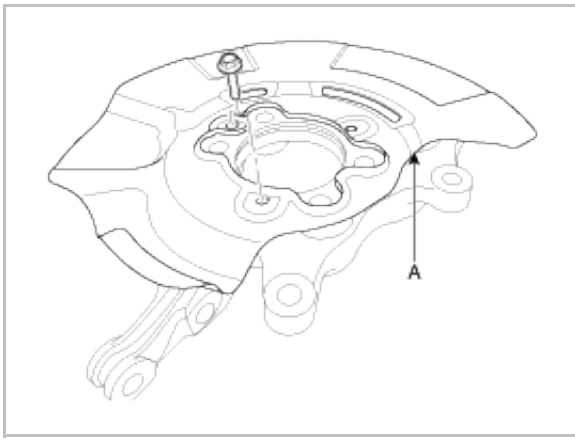


9. Remove the hub assembly(A) from knuckle assembly.

Tightening torque Nm (kgf.m, lb-ft) :
 80~100 (8.0~10.0, 57.8~72.3)



10. Loosen the dust cover mount bolts and then remove the dust cover(B).



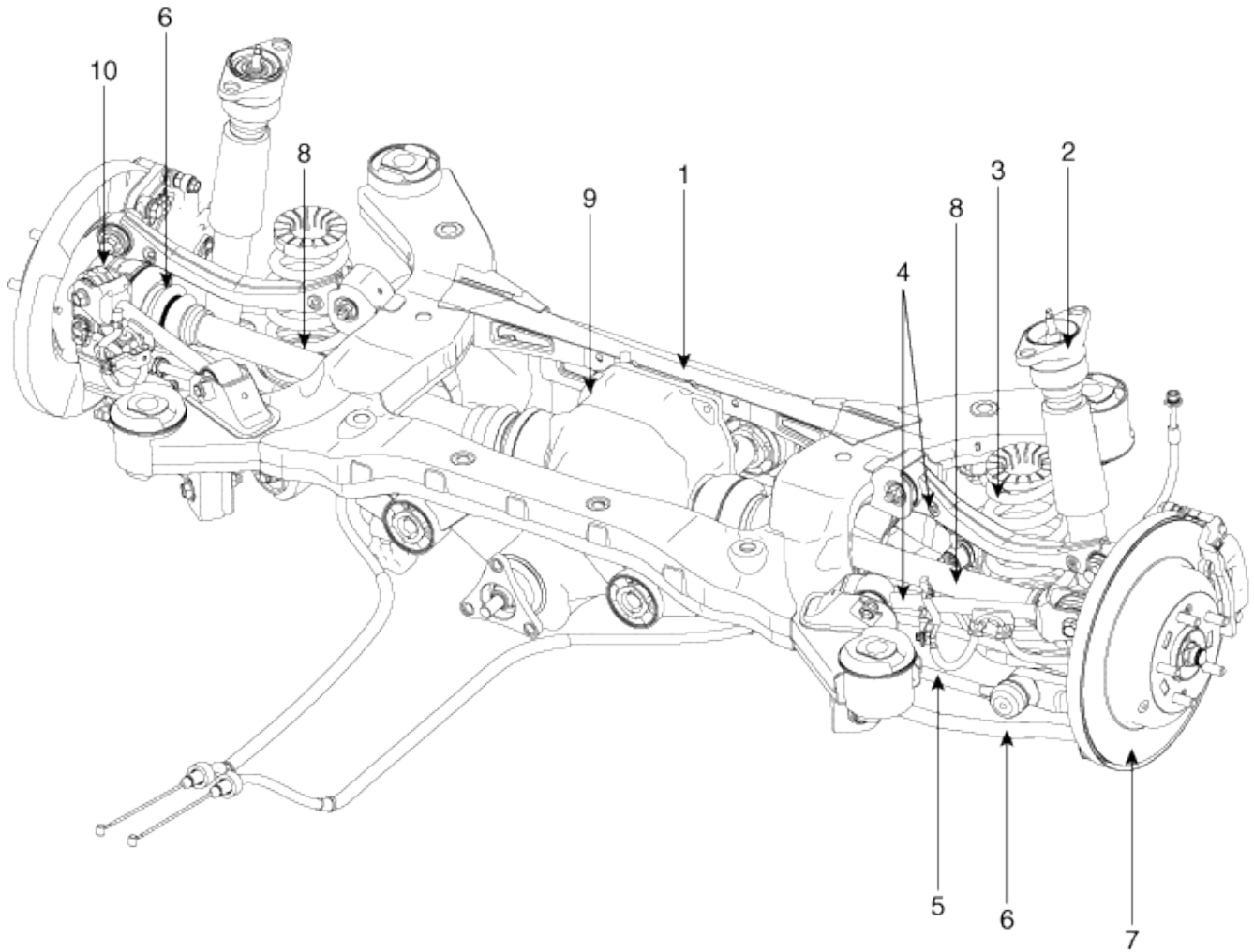
11. Installation is the reverse order of removal.

Inspection

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.

Driveshaft and axle > Rear Axle Assembly > Rear Hub - Carrier > Components and Components Location

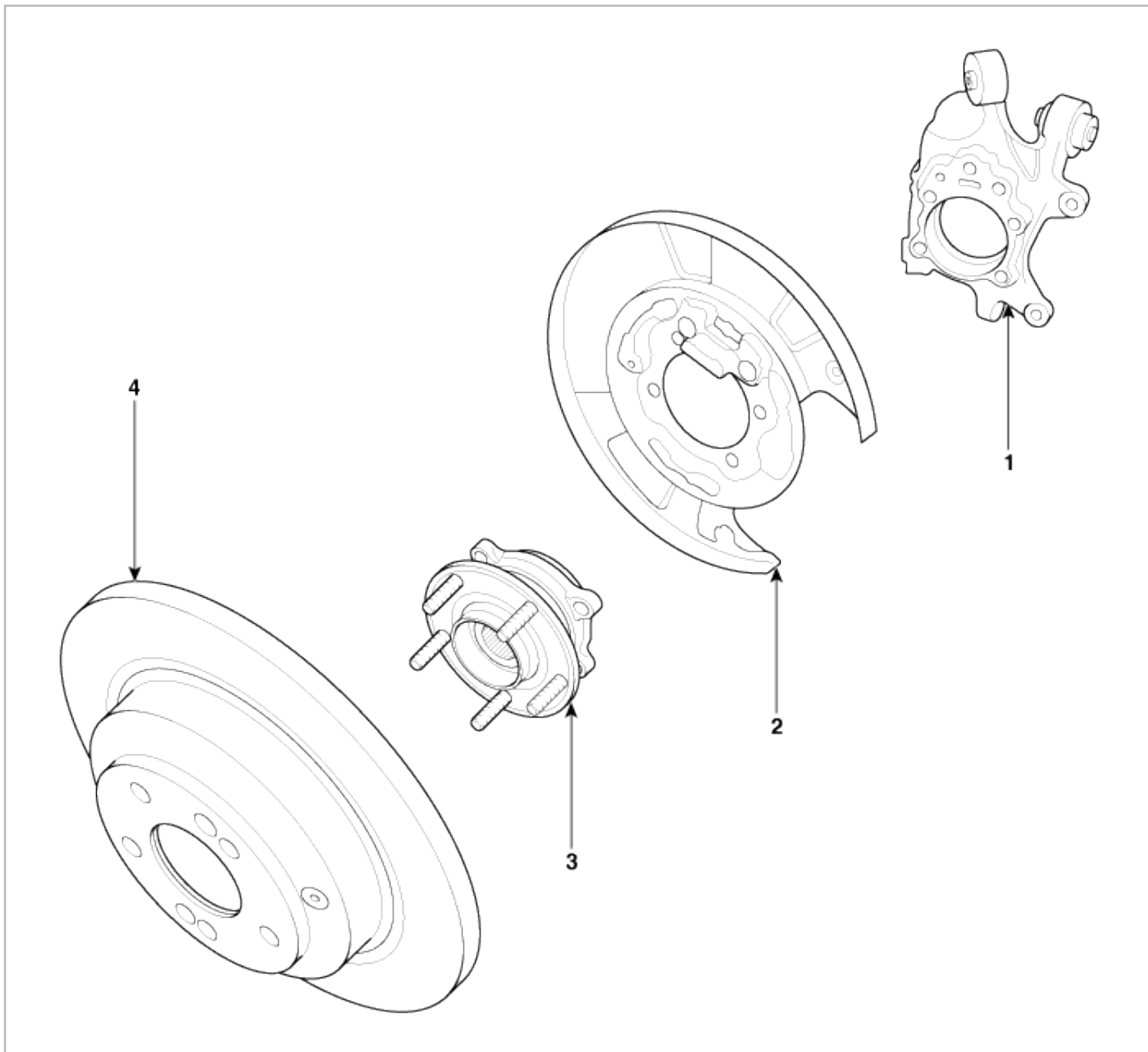
Component Locations



- 1. Sub frame
- 2. Rear shock absorber
- 3. Coil spring
- 4. Rear upper arm
- 5. Assist arm

- 6. Trailing arm
- 7. Rear disc
- 8. Rear drive shaft
- 9. Differential assembly
- 10. Rear axle

Components



1. Rear carrier assembly
2. Rear dust cover

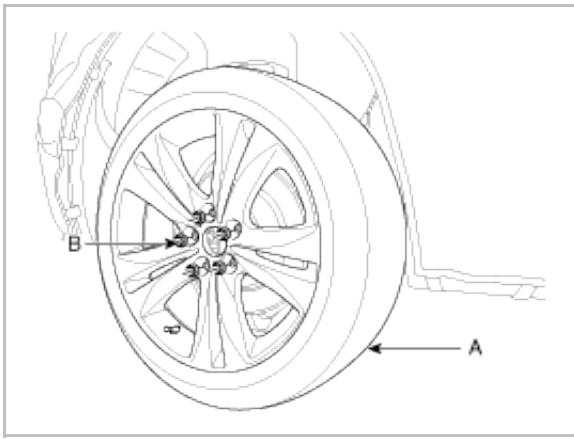
3. Rear hub assembly
4. Rear brake disc

Driveshaft and axle > Rear Axle Assembly > Rear Hub - Carrier > Repair procedures

Replacement

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

Tightening torque Nm (kgf.m, lb-ft) :
88.3~107.9 (9.0~11.0, 65.1~79.6)



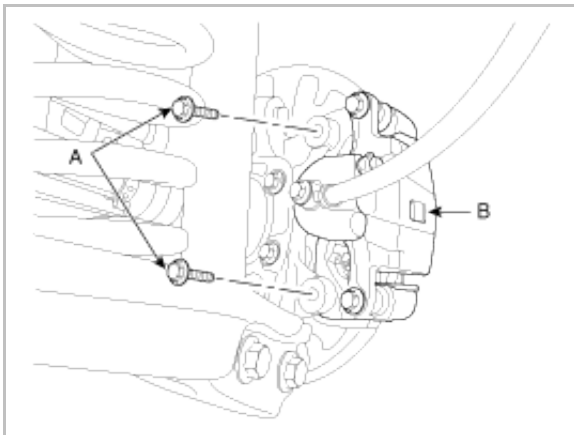
CAUTION

Be careful not to damage to the hub bolts when removing the rear wheel and tire.

3. Remove the brake caliper mounting bolts (A), and then place the brake caliper assembly (B) with wire as shown in the illustration.

Tightening torque Nm (kgf.m, lb-ft) :

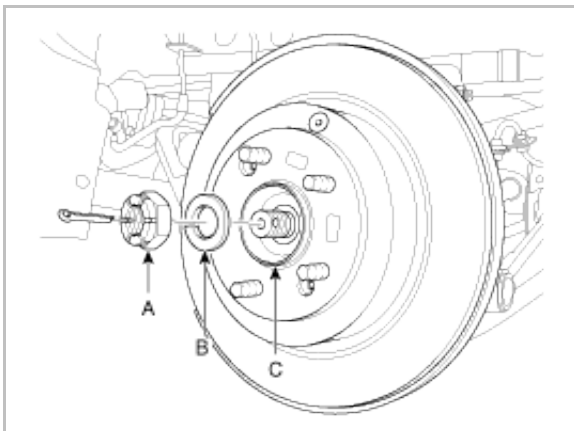
49~58.8 (5.0~6.0, 36.1~43.3)



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

Tightening torque Nm (kgf.m, lb-ft) :

196.1~255.0 (20.0~26.0, 144.7~188.1)

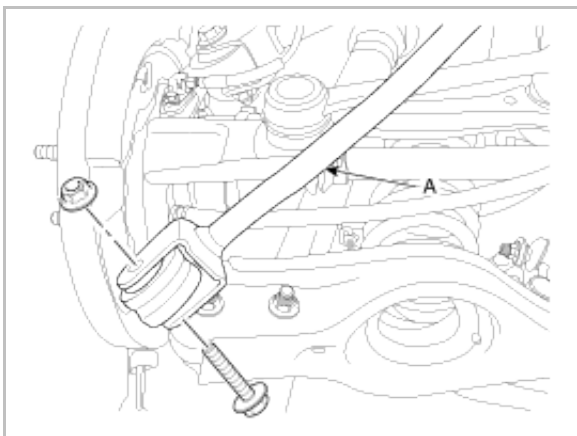


5. Remove the rear brake lining. (Refer to BR group-Rear Brake)

6. Loosen the trailing arm mount bolt & nut and then remove the trailing arm(A).
-

Tightening torque Nm (kgf.m, lb-ft) :

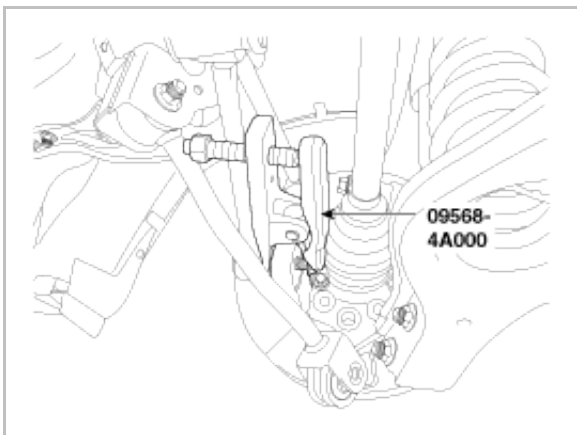
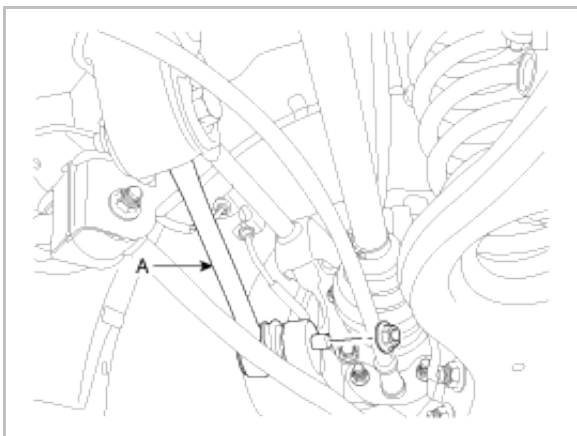
98.1~117.7 (10.0~12.0, 72.3~86.8)



7. Loosen the assist arm mount nut and then disconnect the assist arm(A).
-

Tightening torque Nm (kgf.m, lb-ft) :

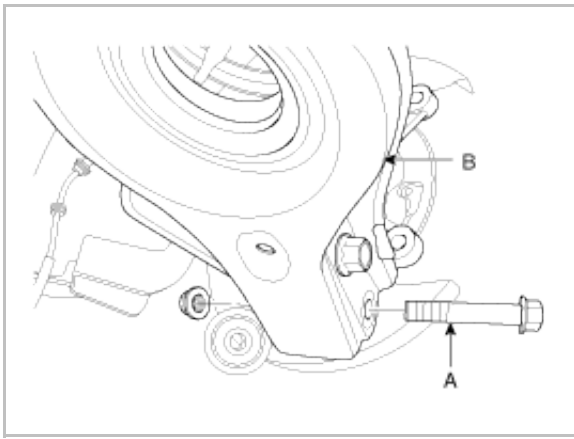
98.1~117.7 (10.0~12.0, 72.3~86.8)



8. Remove lower arm mount bolt(A) and then remove the lower arm(B).
-

Tightening torque Nm (kgf.m, lb-ft) :

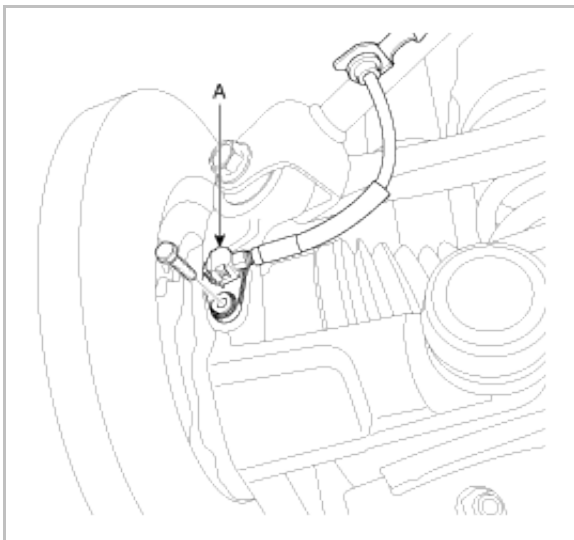
140~160 (14.0~16.0, 101.2~115.7)



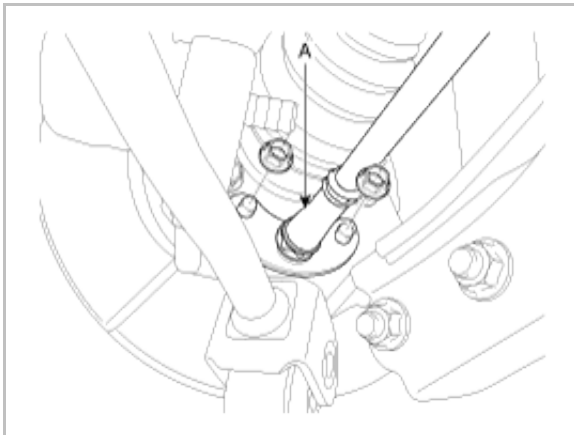
9. Remove the wheel speed sensor(A).

Tightening torque Nm (kgf.m, lb-ft) :

6.9~10.8 (0.7~1.1, 5.1~8.0)



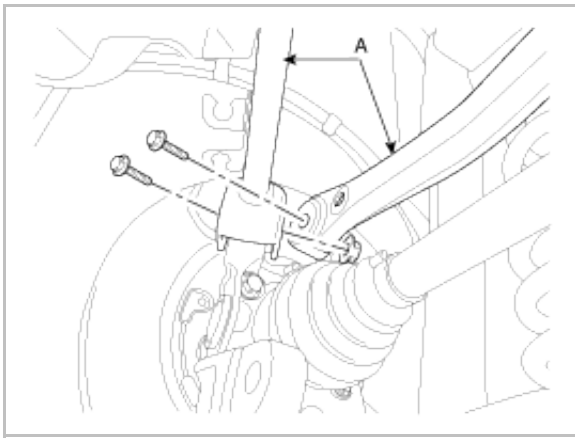
10. Loosen the brake cable mount nuts and then remove the brake cable(A).



11. Loosen the upper arm(A) link mount bolt & nut and then remove the carrier assembly(B).

Tightening torque Nm (kgf.m, lb-ft) :

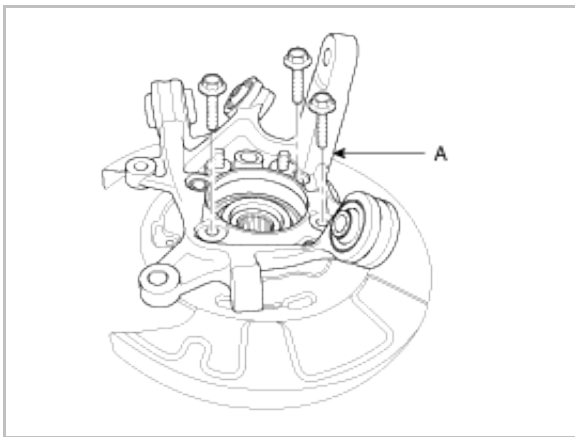
98.1~117.7 (10.0~12.0, 72.3~86.8)



12. Remove the hub assembly mount bolts from the rear axle carrier(A).

Tightening torque Nm (kgf.m, lb-ft) :

78.5~98.1 (8.0~10.0, 57.9~72.3)



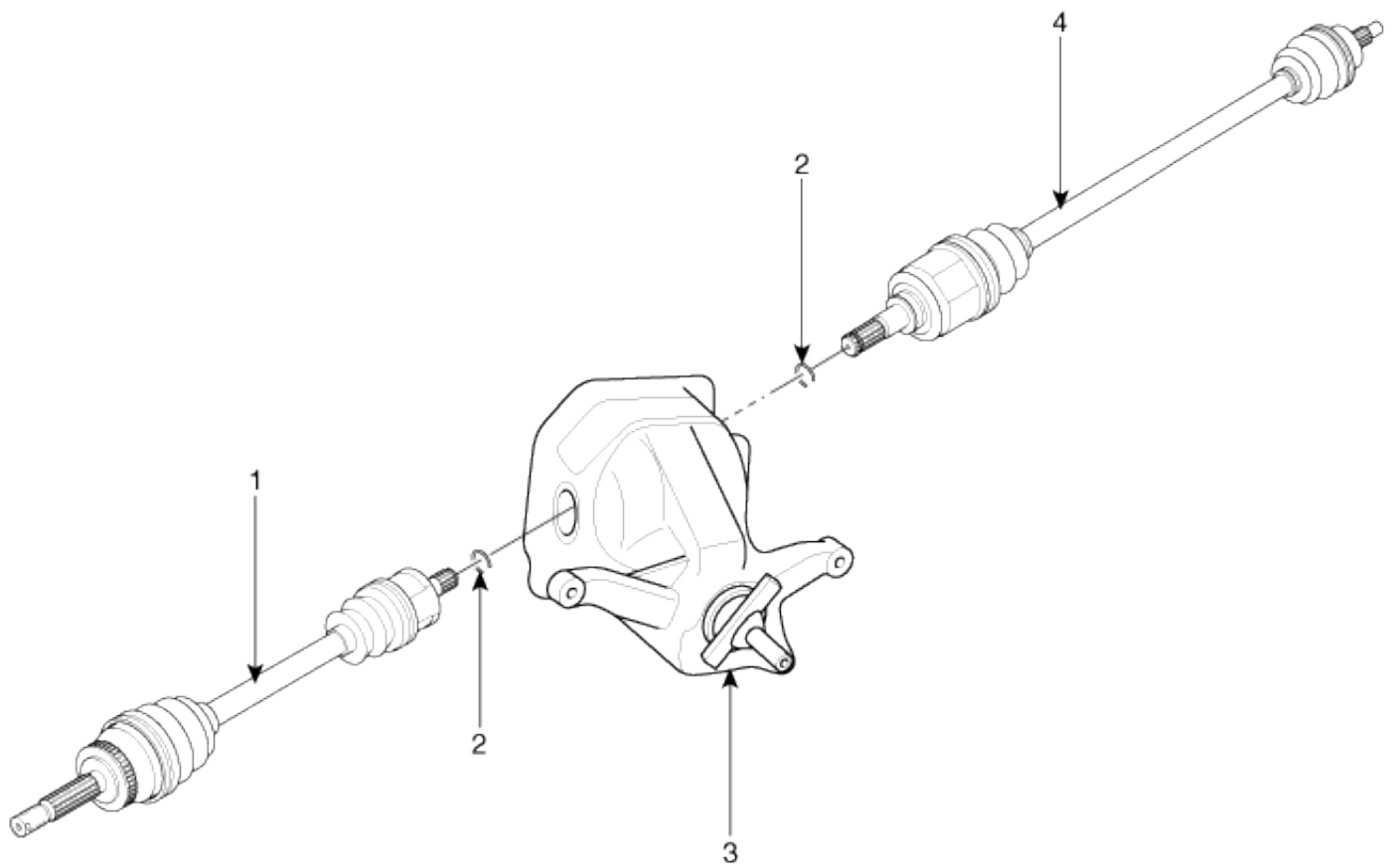
13. Installation is the reverse order of removal.

Inspection

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.

Driveshaft and axle > Rear Driveshaft Assembly > Rear Driveshaft > Components and Components Location

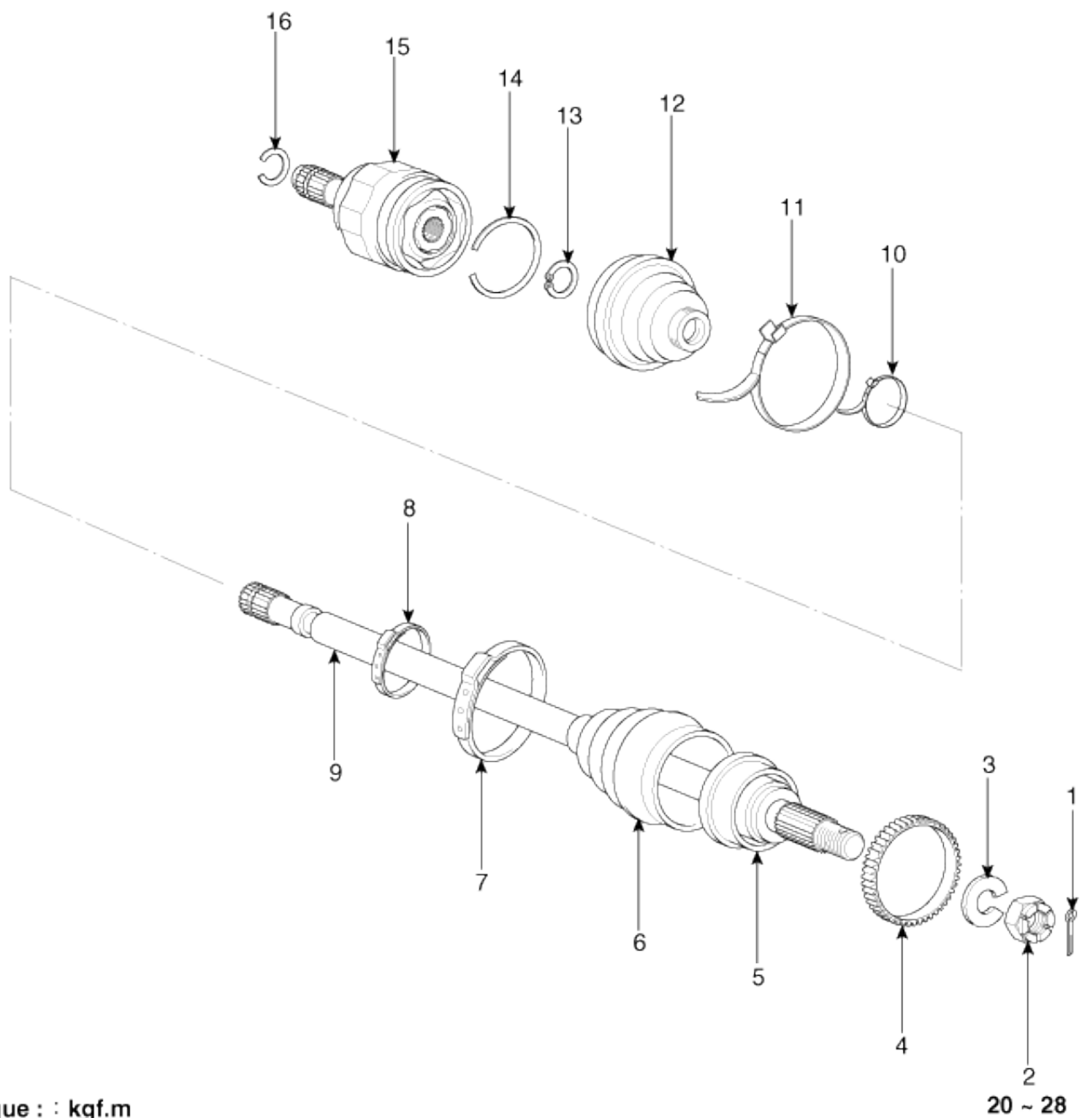
Component Location



1. Drive shaft(L)
2. Circlip

3. Defferential carrier
4. Circlip

Components



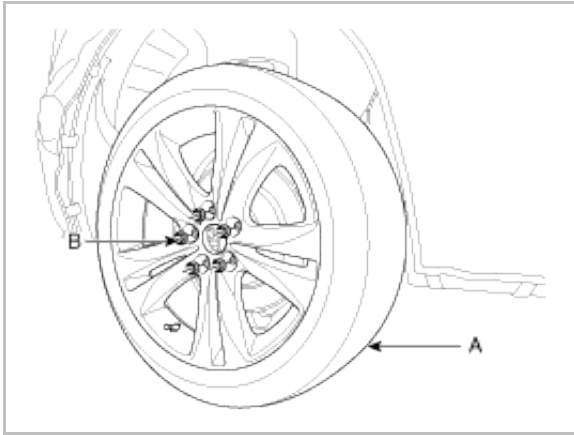
1. Split pin
2. Castle nut
3. Washer
4. Dust cover & tone wheel
5. BJ assembly
6. BJ boot
7. BJ boot big part band
8. Boot small part band

9. Shaft
10. TSJ boot small part band
11. TSJ boot big part band
12. TSJ boot
13. Snap ring
14. Circlip
15. TSJ assembly
16. Circlip

Replacement

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

Tightening torque Nm (kgf.m, lb-ft) :
88.3~107.9 (9.0~11.0, 65.1~79.6)

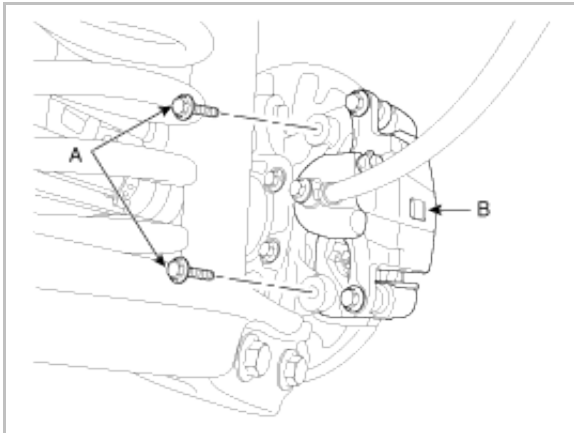


CAUTION

Be careful not to damage to the hub bolts when removing the rear wheel and tire.

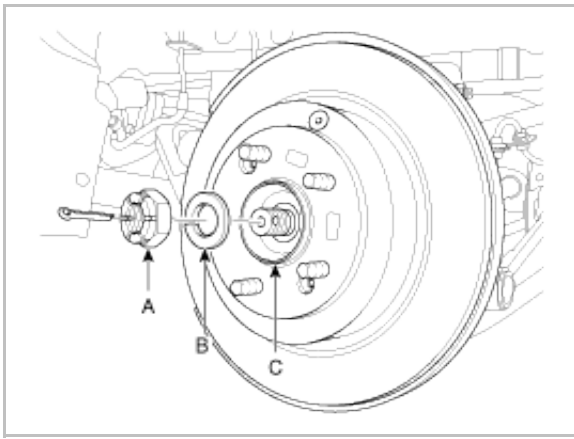
3. Remove the brake caliper mounting bolts (A), and then place the brake caliper assembly (B) with wire as shown in the illustration.

Tightening torque Nm (kgf.m, lb-ft) :
49.0~58.8 (5.0~6.0, 36.1~43.3)



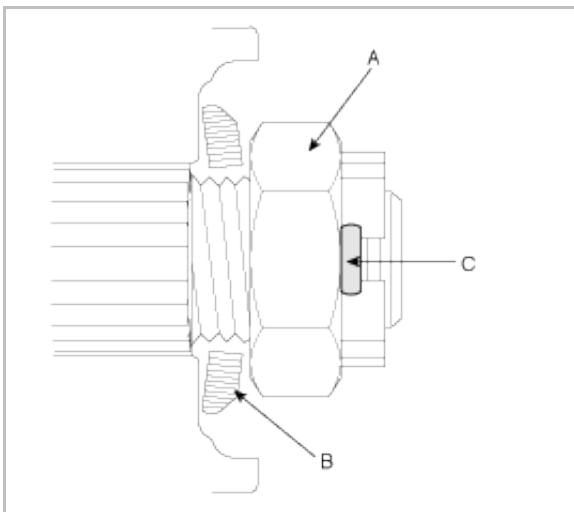
4. Remove the split pin(A), then remove castle nut(B) and washer(C) from the front hub under applying the break.

Tightening torque Nm (kgf.m, lb-ft) :
200~280 (20.0~28.0, 144.6~202.5)



CAUTION

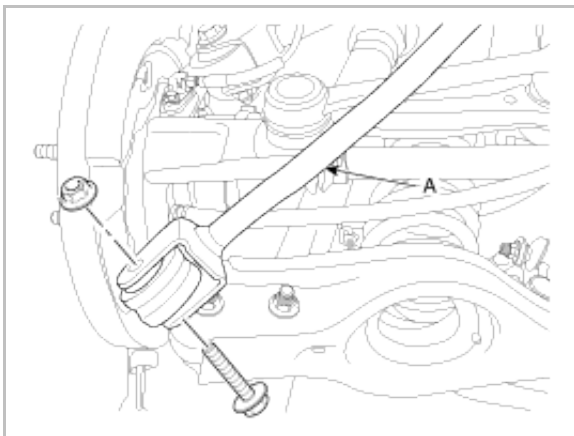
The washer (B) should be assembled with convex surface outward when installing the castle nut (A) and split pin (C).



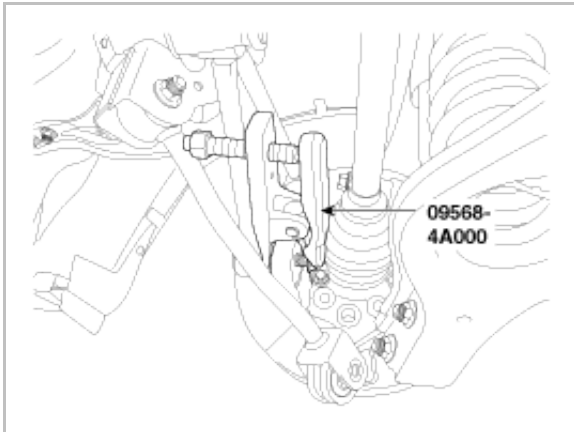
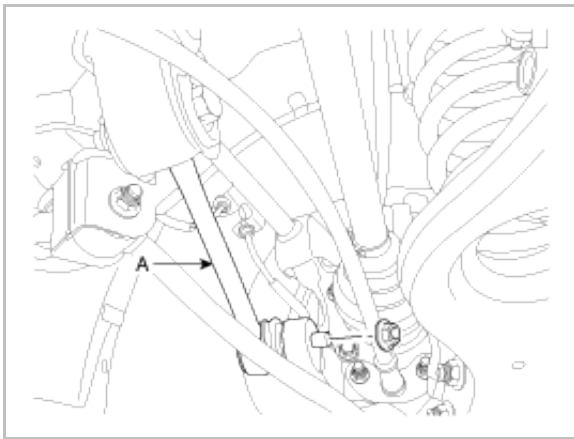
5. Remove the rear break lining (Refer to BR group-Front brake).
6. Loosen the trailing arm mount bolt & nut and then remove the trailing arm (A).

Tightening torque Nm (kgf.m, lb-ft) :

98.1~117.7 (10.0~12.0, 72.3~86.8)

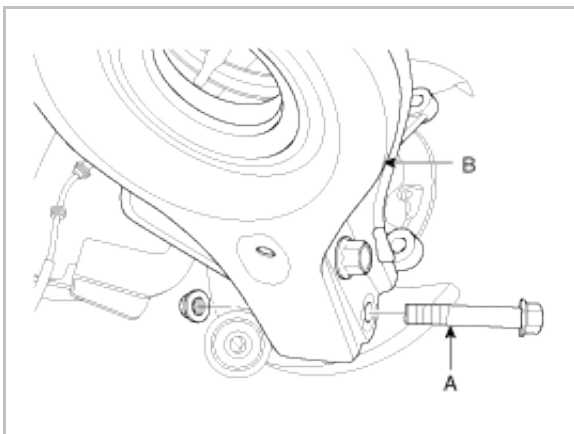


7. Loosen the assist arm mount nut and then disconnect the assist arm(A).



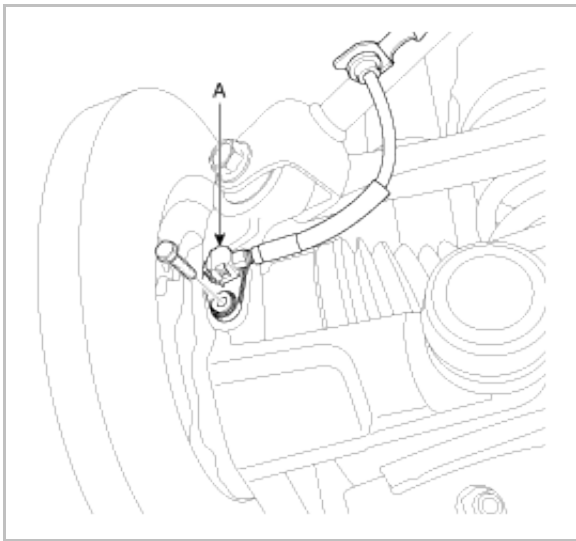
8. Remove lower arm mount bolt(A) and then remove the lower arm(B).

Tightening torque Nm (kgf.m, lb-ft) :
 140~160 (14.0~16.0, 101.2~115.7)

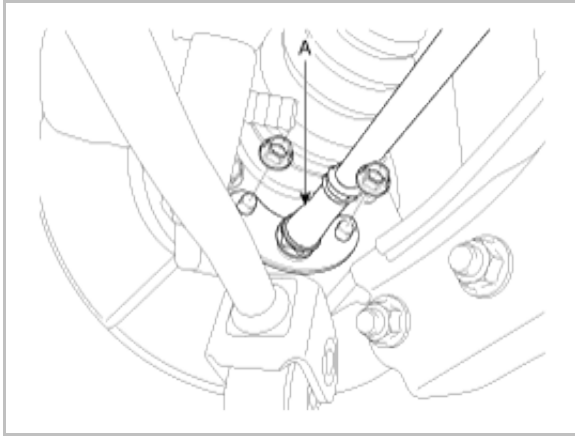


9. Remove the wheel speed sensor(A).

Tightening torque Nm (kgf.m, lb-ft) :
 6.9~10.8 (0.7~1.1, 5.1~8.0)

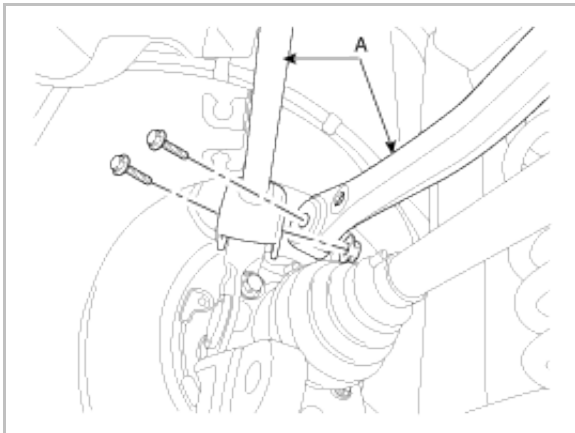


10. Loosen the brake cable mount nuts and then remove the brake cable(A).

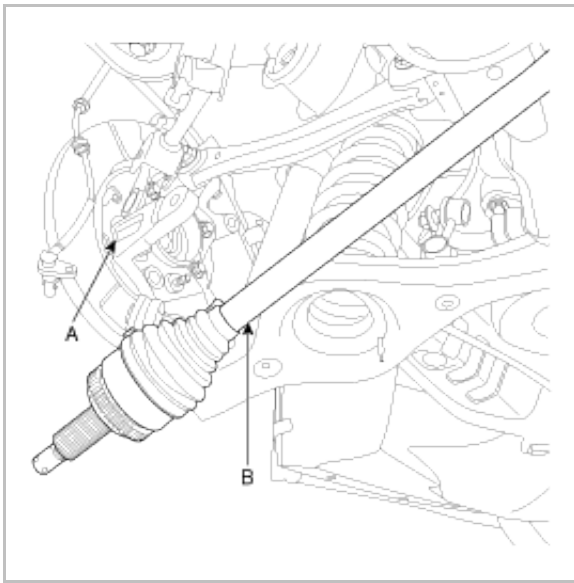


11. Loosen the upper arm(A) link mount bolt & nut and then remove the carrier assembly(B).

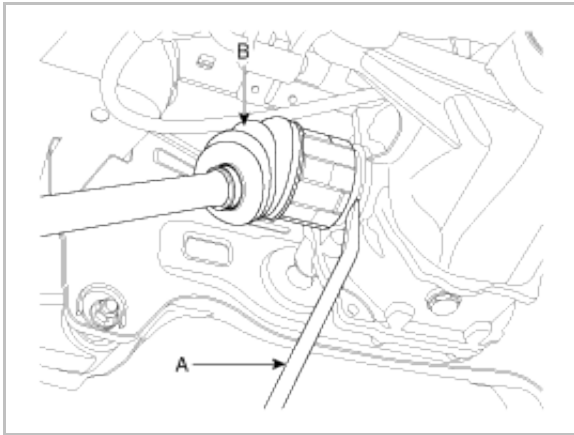
Tightening torque Nm (kgf.m, lb-ft) :
 98.1~117.7 (10.0~12.0, 72.3~86.8)



12. Push the rear axle carrier (A) outward and separate the driveshaft (B) from the axle hub.



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



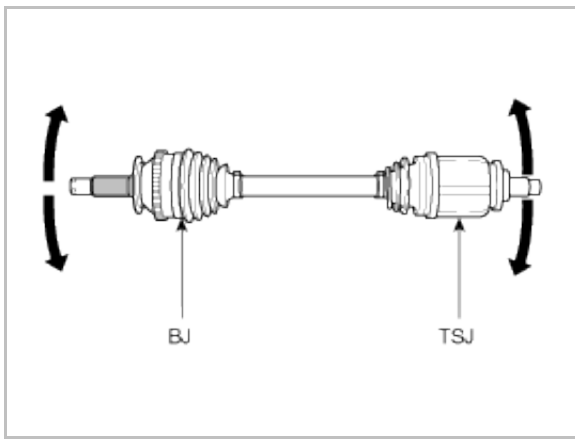
CAUTION

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

14. Installation is the reverse order of removal.

Inspection

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.



5. Check the driveshaft for cracks and wears.

Disassembly

CAUTION

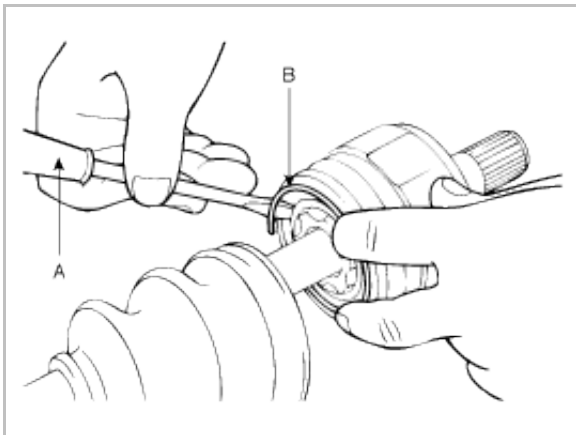
- Do not disassemble the BJ assembly.
- Special grease must be applied to the driveshaft joint. Do not substitute with another type of grease.
- The boot band should be replaced with a new one.

1. Remove the TSJ boot bands and pull the TSJ boot from the TSJ outer race.
 - (1) Using a plier or flat-tipped (-) screwdriver, remove the TSJ boot bands of differential side from the driveshaft.
 - (2) Remove BJ boot bands of wheel side in the same way of TSJ boot bands removal procedure.

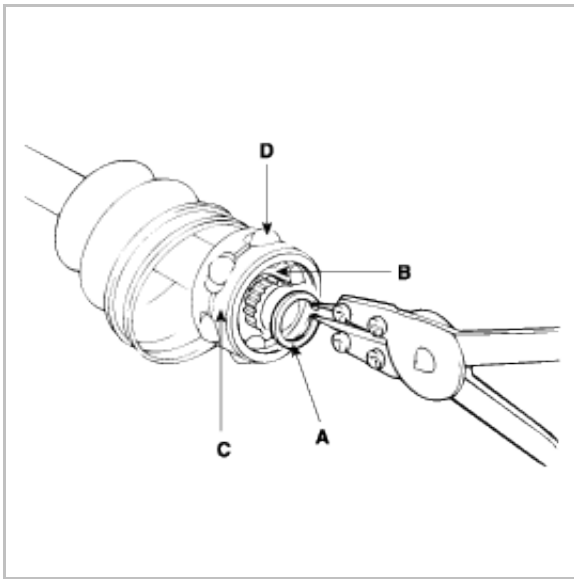
CAUTION

Be careful not to damage the boot.

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



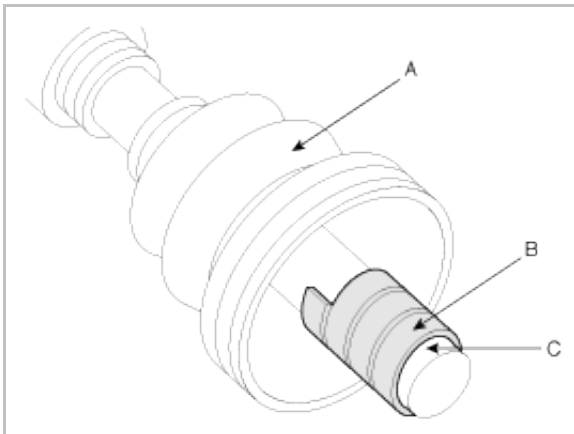
3. Pull out the driveshaft from the TSJ outer race.
4. Remove the snap ring (A) and take out the inner race (B), cage (C) and balls (D) as an assembly.



5. Clean the inner race, cage and balls without disassembling.
6. Remove the BJ boot bands and pull out the TSJ 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).

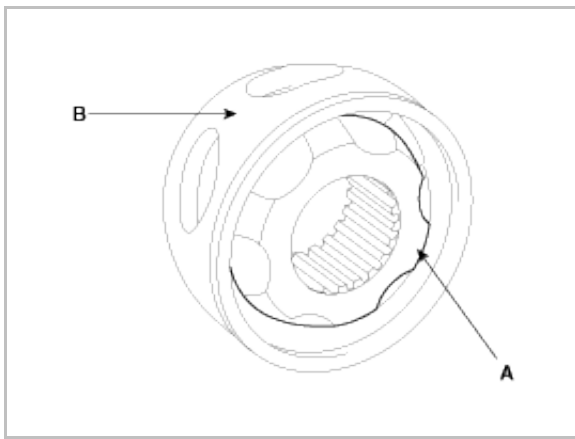


Reassembly

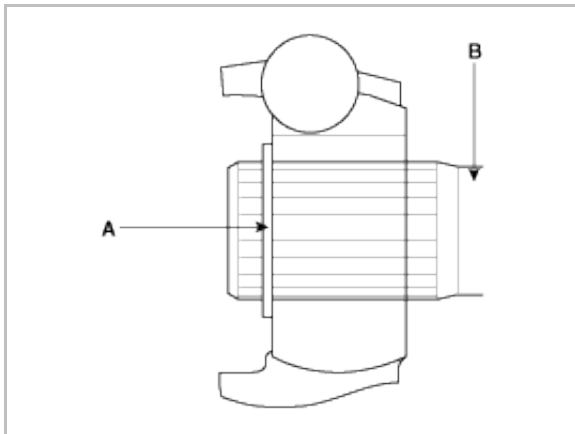
1. Wrap tape around the driveshaft splines (TSJ. side) to prevent damage to the boots.
2. Apply grease to the driveshaft and install the boots.
3. Apply the specified grease to the inner race(A) and cage(B). Install the cage(B) so that it is offset on the race as shown.

CAUTION

Use the grease included in the repair kit.



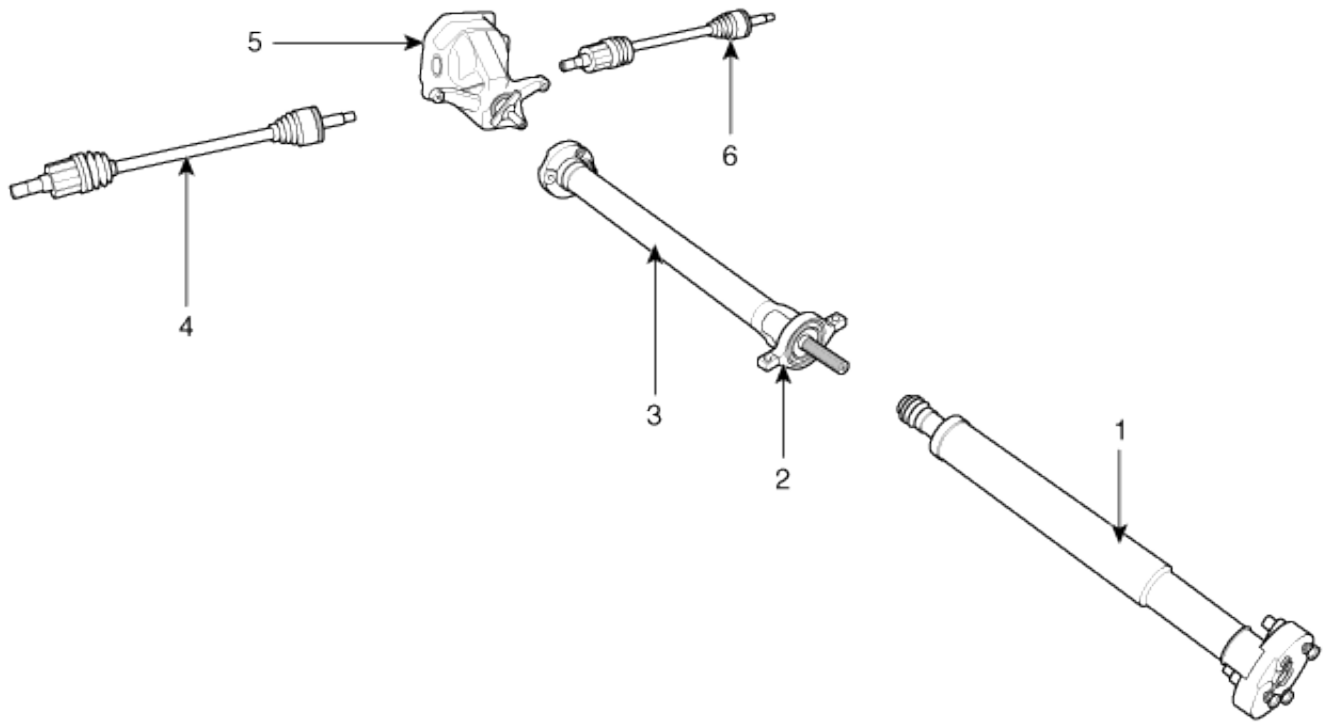
4. Apply the specified grease to the cage and fit the balls into the cage.
5. Position the chamfered side(A) as shown in the illustration. Install the inner race on the driveshaft(B), and then the snap ring.



6. Apply the specified grease to the outer race and install the BJ outer race onto the driveshaft.
7. Apply the specified grease into the TJ boot and install the boot with a clip.
8. Tighten the TJ boot bands.
9. Add the specified grease to the BJ as much as wiped away at inspection.
10. Install the boots.
11. Tighten the BJ boot bands.

Driveshaft and axle > Propeller Shaft Assembly > Propeller Shaft > Components and Components Location

Components



- 1. Front propeller shaft
- 2. Center bearing bracket
- 3. Rear propeller shaft

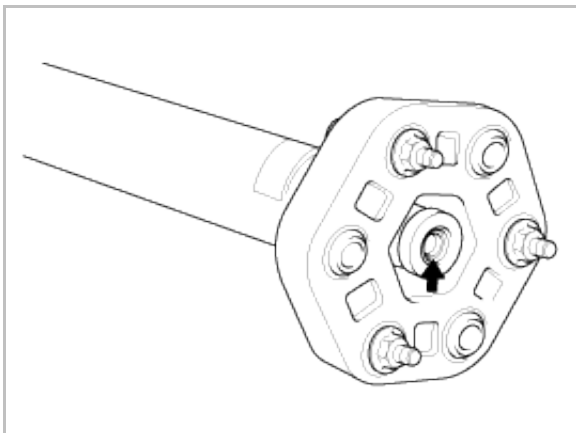
- 4. Drive shaft (R)
- 5. Differential carrier
- 6. Drive shaft (L)

Driveshaft and axle > Propeller Shaft Assembly > Propeller Shaft > Repair procedures

Inspection

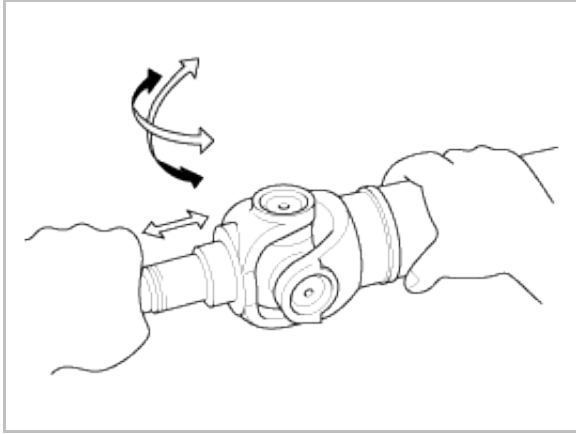
Inspect Flexible Coupling

1. Check the front and rear flexible couplings for cracks or damage.
2. Inspect the flexible coupling centering bushing. If the bushing is damaged, replace the propeller shaft assembly.



Universal Joint Inspect

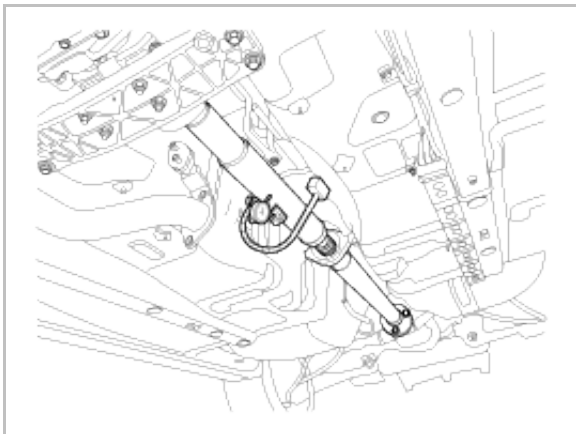
1. Check that the spider bearing rotates smoothly.
2. Check that there is no play in the spider bearing if necessary, replace the propel shaft.



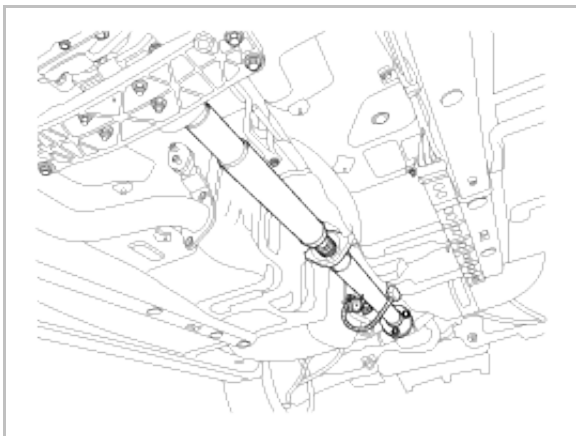
Propeller Shaft Runout

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.)



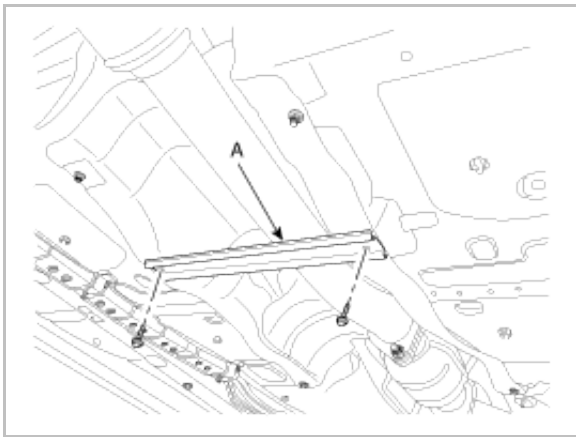
Rear Propeller Shaft Runout : 0.3mm (0.012in.)



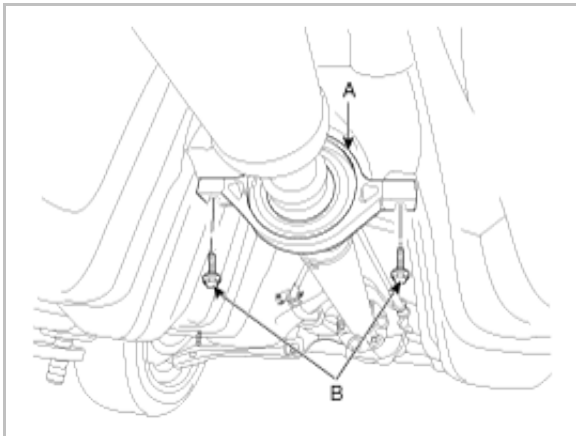
3. If the runout on either propeller shaft exceeds the service limit, replace the propeller shaft assembly.
-

Replacement

1. loosen the mount bolt and then remove the bracket(A).



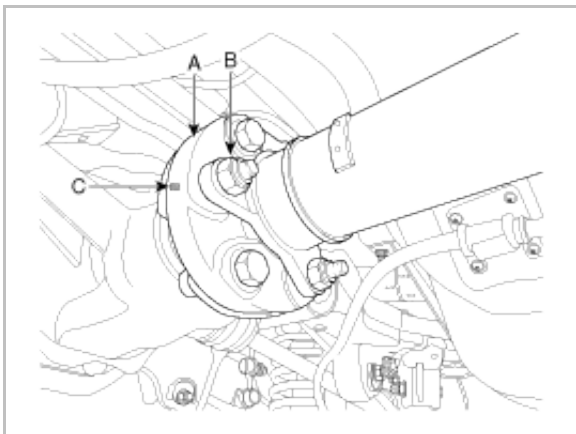
2. Remove the rear muffler(Refer to FL group-Muffler)
3. Loosen the mount bolts and then heating bracket.
4. Remove the center bearing bracket(A) mounting bolts(B).



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

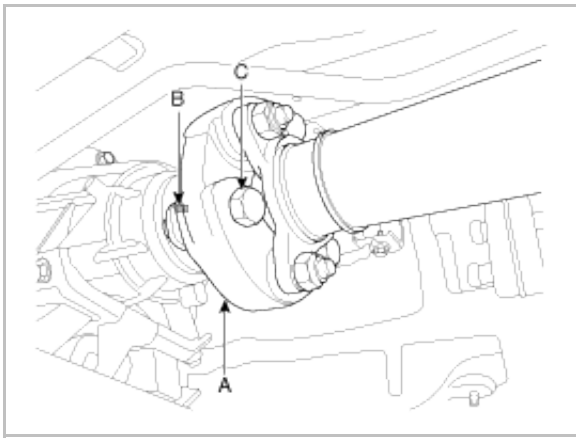
Tightening torque Nm (kgf.m, lb-ft) :

90~110 (9.0~11.0, 65.0~79.5)



Tightening torque Nm (kgf.m, lb-ft) :

90~110 (9.0~11.0, 65.0~79.5)

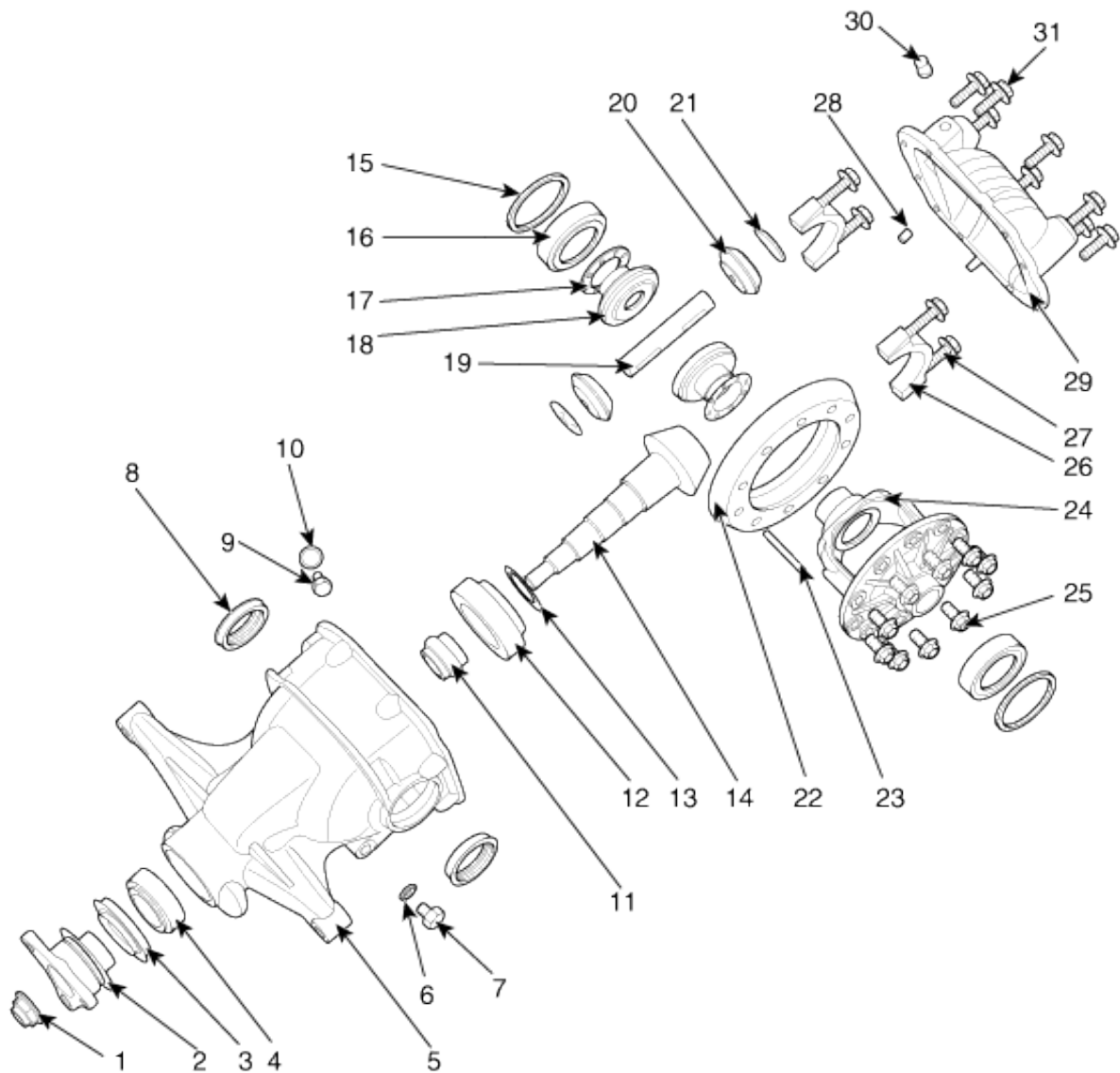


CAUTION

- A. Use the hexagonal wrench to prevent damage of bolt head when removing bolts.
 - B. When retightening the propeller shaft mounting bolts after removing them, each bolt and washer must be placed in its original position and bolt insertion direction must be the same as before, so make marks not to allow the bolts and washers to be mixed up before removing the propeller shaft.
 - C. If the position and direction of the propeller shaft mounting bolts and washers are reversed, it may cause vibration and noise at high vehicle speeds due to imbalance in the propeller shaft.
 - D. If abnormal vibration and noise occur at high vehicle speeds after replacing propeller shaft with new one, balance the propeller shaft with a balancing machine.
6. Installation is the reverse order of removal.

Driveshaft and axle > Differential Carrier Assembly > Rear Differential Carrier > Components and Components Location

Component (Open Type)

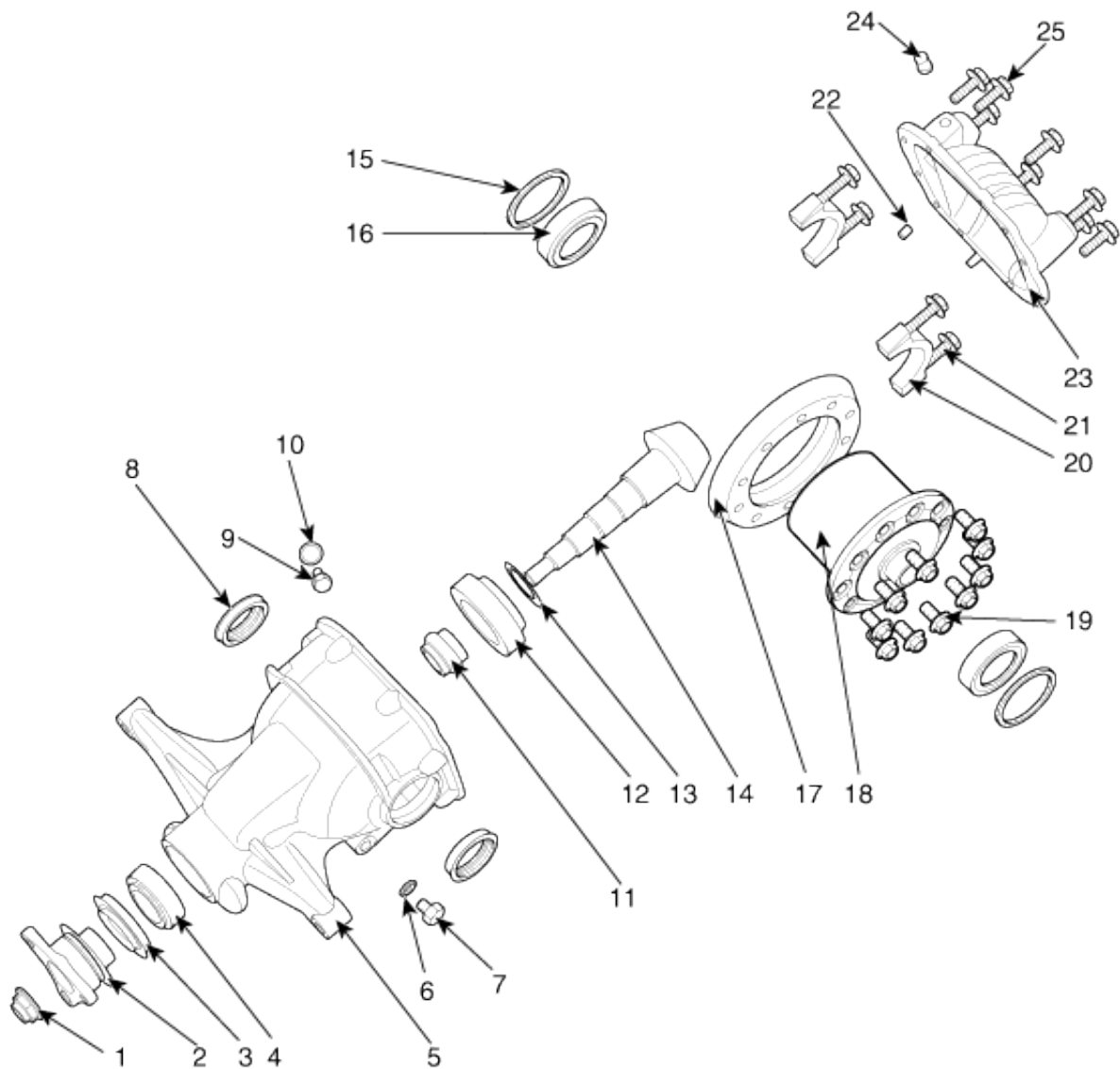


1. Drive pinion nut
2. Companion flange
3. Front oil seal
4. Pinion front bearing
5. Differential carrier
6. Gasket
7. Filler plug
8. Side oil seal
9. Drain plug
10. Gasket
11. Pinion bearing adjusting spacer
(Collapsible spacer)

12. Pinion rear bearing
13. Pinion height adjusting shim
14. Drive pinion gear
15. Side bearing adjusting washer
16. Side bearing
17. Side gear thrust washer
18. Side gear
19. Pinion mate shaft
20. Pinion mate gear
21. Pinion mate thrust washer
22. Drive gear(Ring gear)
23. Lock pin

24. Differential case
25. Ring gear bolt
26. Bearing cap
27. Bearing cap bolt
28. Dowel pin
29. Rear cover
30. Air breather
31. Cover bolt

Component (LSD Type)



1. Drive pinion nut
2. Companion flange
3. front oil seal
4. Pinion front bearing
5. Differential carrier
6. Gasket
7. Filler plug
8. Side oil seal
9. Drain plug

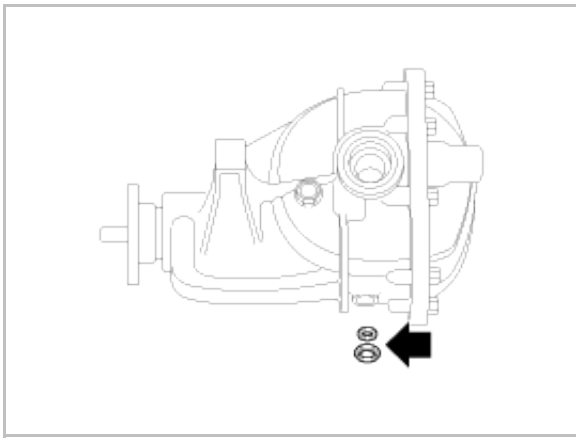
10. Gasket
11. Pinion bearing adjusting spacer
(Collapsible spacer)
12. Pinion rear bearing
13. Pinion height adjusting shim
14. Drive pinion gear
15. Side bearing adjusting washer
16. Side bearing
17. Drive gear(Ring gear)
18. Limited slip differential assy(LSD)

19. Ring gear bolt
20. Bearing cap
21. Bearing cap bolt
22. Dowel pin
23. Rear cover
24. Air breather
25. Cover bolt

Driveshaft and axle > Differential Carrier Assembly > Rear Differential Carrier > Repair procedures

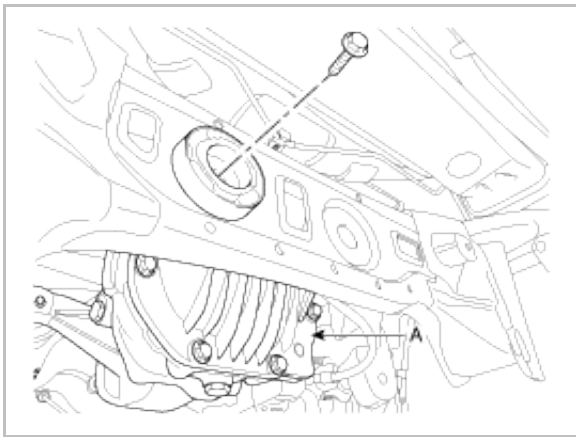
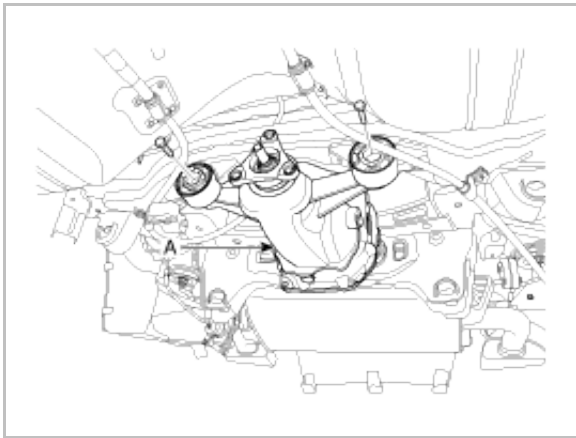
Replacement

1. Drain the differential gear oil.



2. Remove the rear driveshaft(Refer to DS group-Rear driveshaft)
3. Remove the propellshaft assembly(Refer to DS group-Propellshaft)
4. Loosen the differential carrier assembly mount bolts and than remove the differential assembly(A)

Tightening torque Nm (kgf.m, lb-ft) :
 80~100 (8.0~10.0, 57.8~72.3)

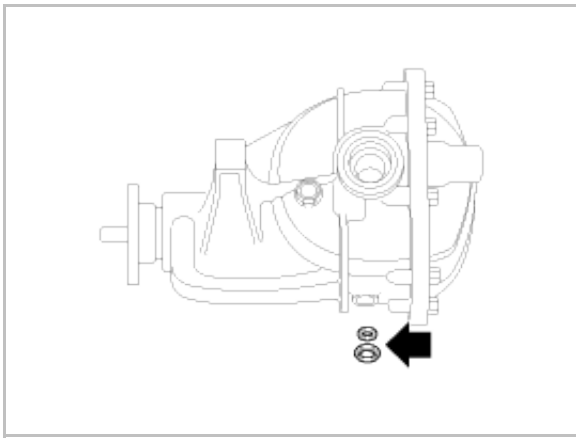


5. Installation is the reverse order of removal.

Disassembly

Rear differential carrier

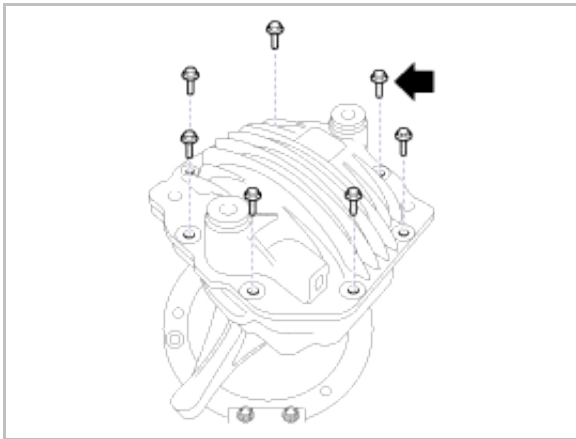
1. Before disassembling Rear differential carrier, drain off oil from Rear differential carrier.



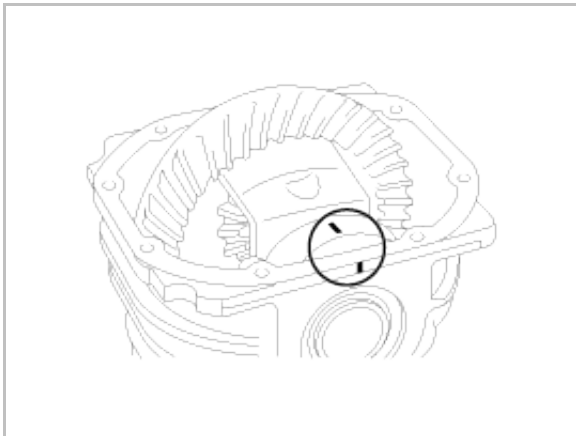
NOTE

For the first time of oil change, there is a possibility that oil color looks black due to a phosphating wear.

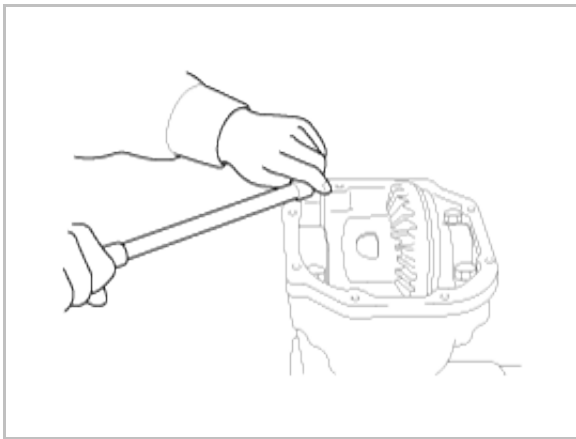
2. Remove the cover bolts.



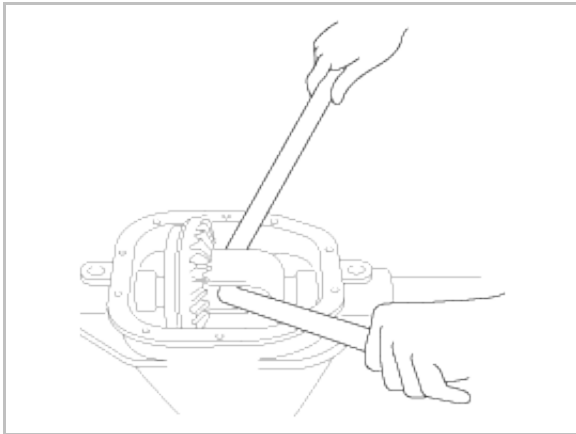
3. Before disassembling differential case assembly, paint match marks on one side of the bearing cap.



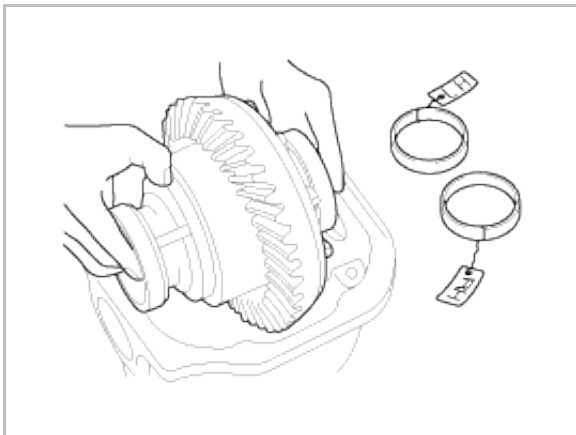
4. Loosen bearing cap bolts and remove bearing caps.



5. Lift differential case assembly out with tool.



6. Keep the side bearing outer races together with inner races.



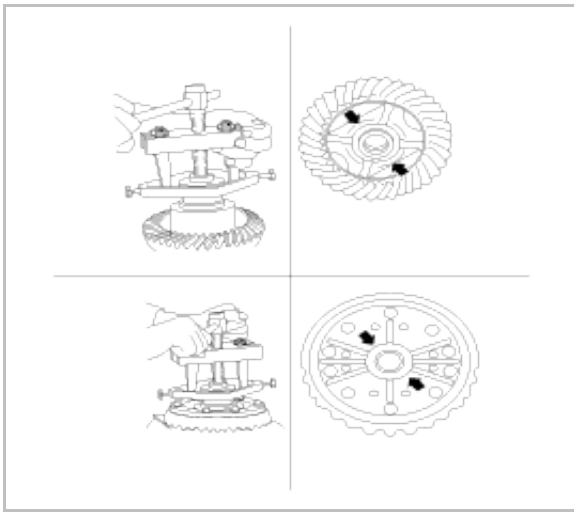
NOTE

Do not mix them up.

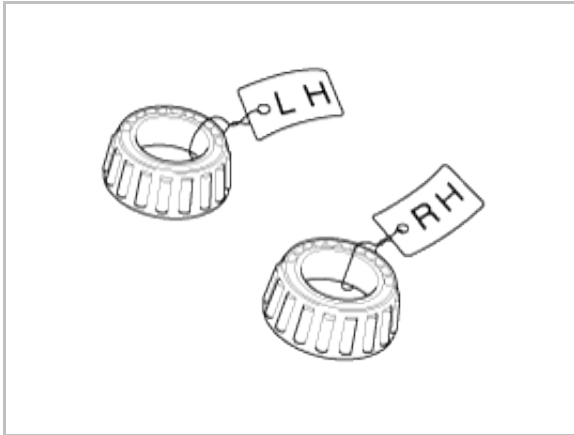
Also, keep side bearing adjusting washers together with bearings.

Diff assembly Disassembly

1. Remove side bearing inner races. To prevent damage to bearing, engage puller jaws in groove.



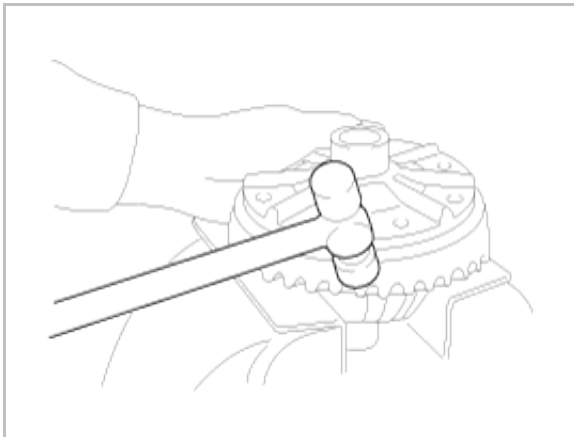
2. Be careful not to confuse left- and right-hand parts.



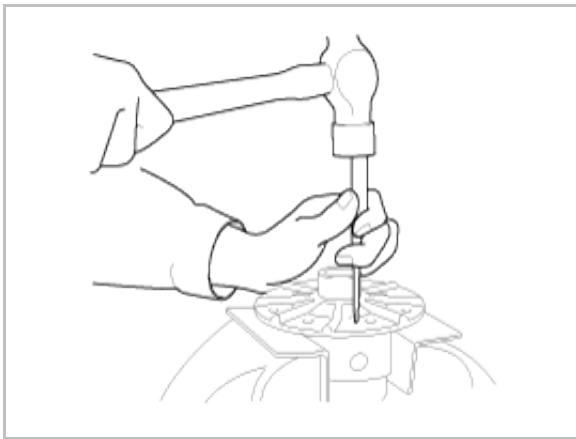
3. Loosen ring gear bolts.

Tap drive gear off the differential case with a soft hammer.

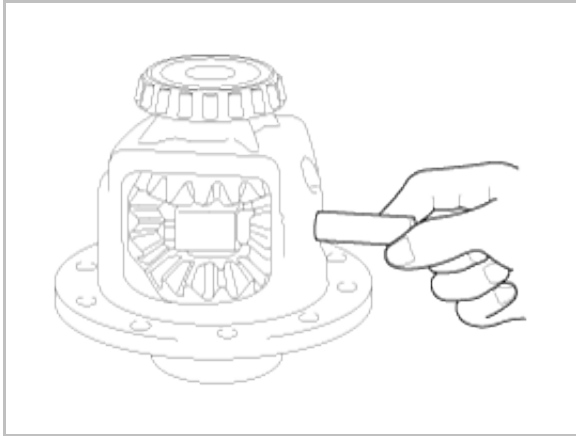
Tap evenly all around to keep drive gear from binding.



4. Drive out pinion mate shaft lock pin with punch from drive gear side.



5. Remove the pinion mate shaft.

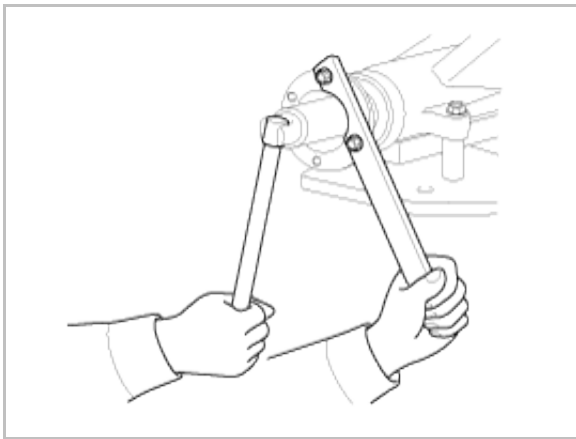


6. Remove side gears, pinion mate gears, side gear thrust washers, pinion mate thrust washers from differential case.

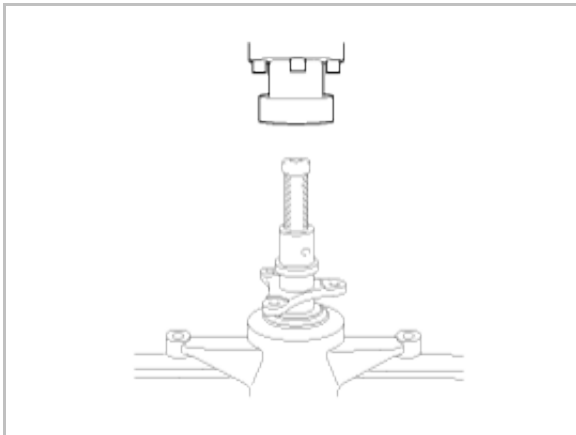


Pinion assembly disassembly

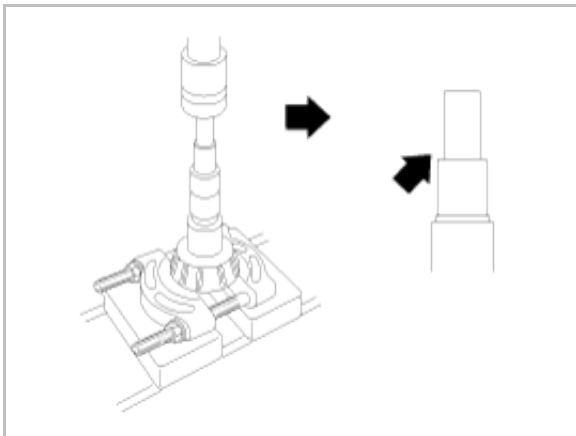
1. Loosen the pinion locking nut.



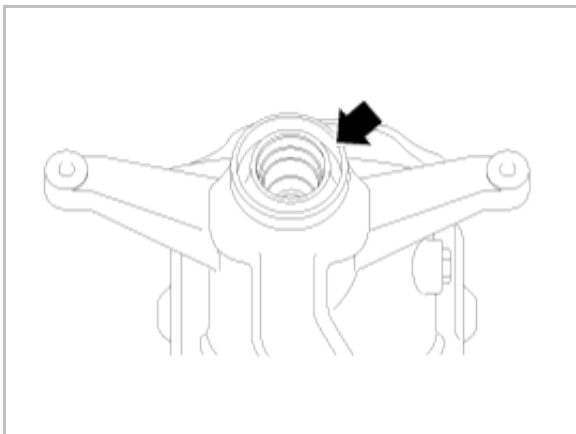
2. Using the press, take out drive pin (together with pinion rear bearing inner race, pinion bearing adjusting spacer) Remove companion flange.



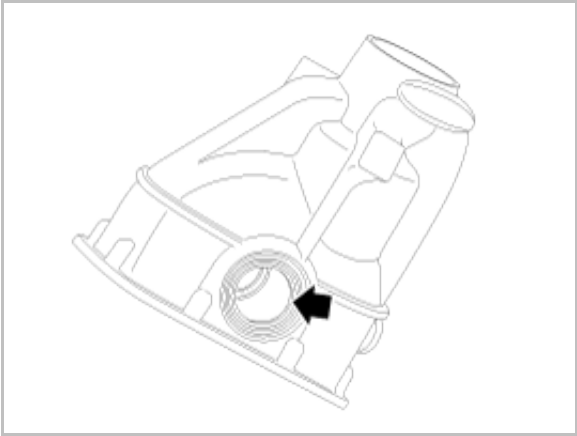
3. Using the press, remove pinion rear bearing inner race and pinion height adjusting shim .



4. Using the screwdriver, remove front oil seal.

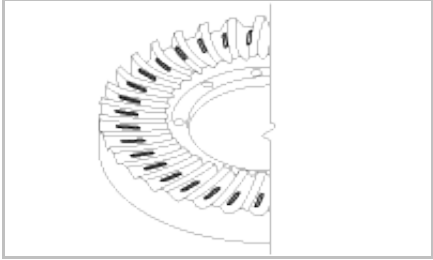
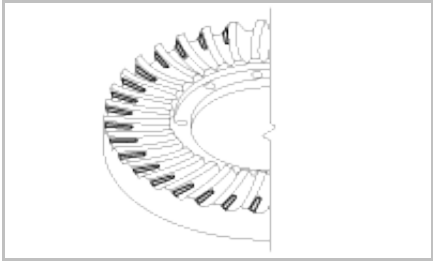
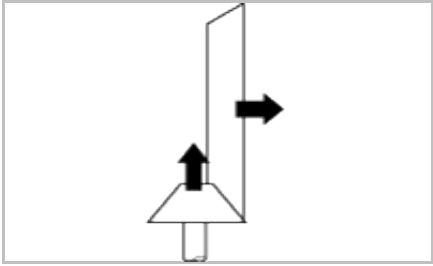
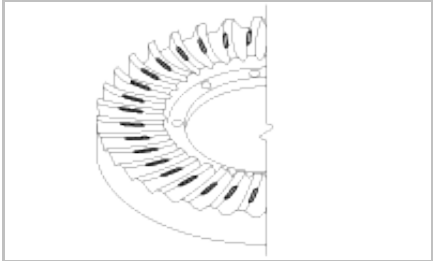
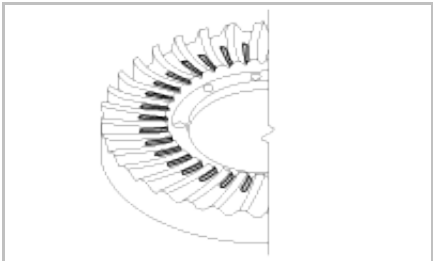
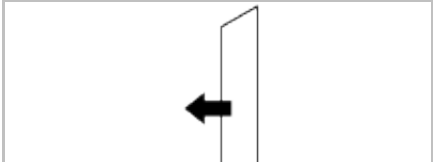


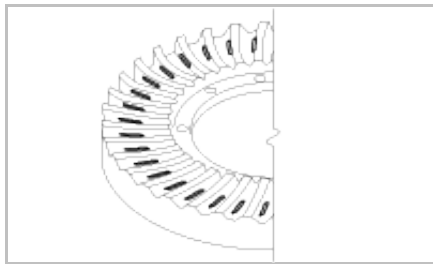
5. Using the screwdriver, Remove side oil seals.



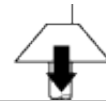
Inspection

1. Check the tooth contact pattern.

Tooth contact	Contact state	Solution	
Standard contact			
1. Heal contact		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 the drive pinion.	
2. Face contact			
3. Toe contact		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	
4. Flank contact			



the drive pinion.



NOTE

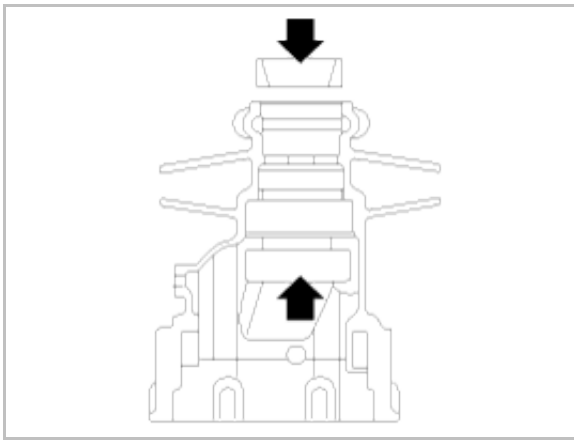
1. Tooth contact pattern is a method for judging the result of the adjustment of drive pinion height and final drive gear backlash. The adjustment of drive pinion height and final drive gear backlash should be repeated until the tooth contact patterns are similar to the standard tooth contact pattern.
2. 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.

Content		Measures
Hypoid gear set(14+22) (Drive pinion & Drive gear)		If the gear teeth do not mesh or line-up correctly, determine the cause and adjust, repair, or replace as necessary. If the gear are worn, cracked, damaged, pitted or chipped (by friction) noticeably, replace with a new gear set.
Bearing (4, 12, 16)		If found any chipped (by friction), pitted, worn, rusted, scratched mark, or unusual noise from the Bearing, replace with a new bearing ASSY (as a new set)
Oil seal (3, 8)		Oil seals must be replaced with a new one whenever disassembled.
Differential carrier (5)		Replace with a new one if found any wear or cracks on the contact sides of the Differential carrier.
Companion flange (2)		Replace with a new one if found any chipped marks or other damage on the contact sides of the Lips of the front oil seal.
Open type diff assy	side gear(18) & pinion mate gear(20)	Replace with a new one if found that it is chipped (by friction), damaged, or unusual worn.
	side gear thrust washer(17) & pinion mate thrust washer(21)	Replace with a new one if found that it is chipped (by friction), damaged, or unusual worn.
Lsd type diff assy	Limited slip differential assy (18)	Replace with a new one if found any wear or cracks on the contact sides of the Limited slip differential assy.

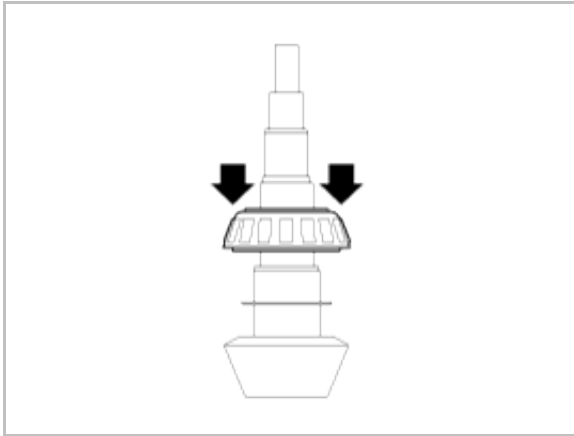
Reassembly

Pinion assembly

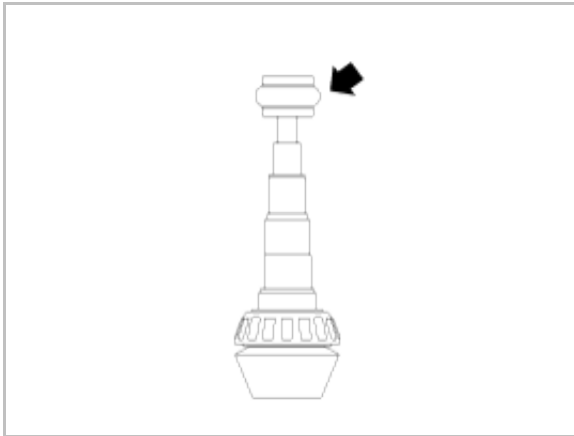
1. Press-fit pinion front and rear bearing outer races with tools.



2. Install selected pinion height adjusting shim in drive pinion gear.
Using press and tool, press-fit pinion rear bearing inner race into it.



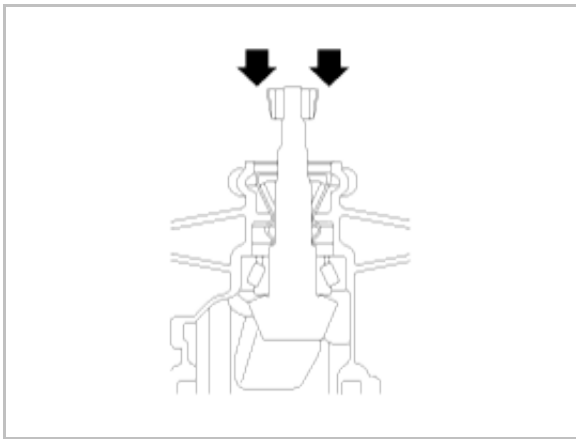
3. Install the pinion bearing adjusting spacer to the drive pinion.



CAUTION

Pinion bearing adjusting spacer is not reusable.
Never reuse pinion bearing adjusting spacer.

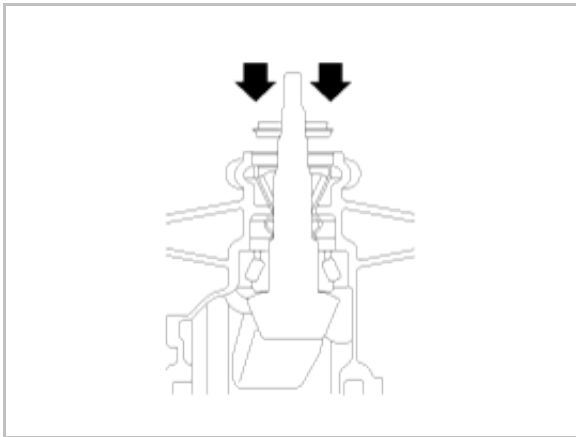
4. Using press and tool, press-fit pinion front bearing inner race.



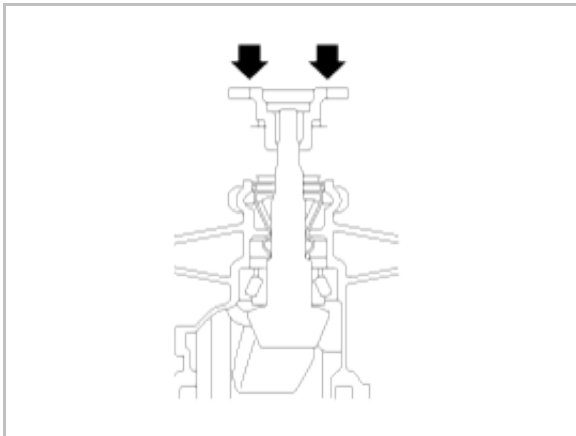
NOTE

The pressure do not exceed 5ton.

5. Using press and tool, press-fit front oil seal.



6. Using press and tool, press-fit companion flange.

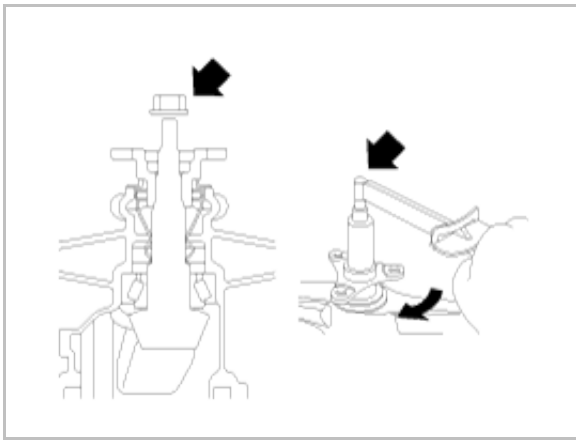


NOTE

The pressure do not exceed 5ton.

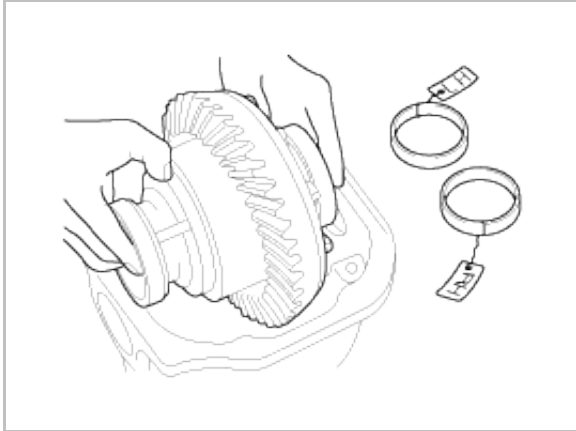
7. Install the pinion locking nut to make that the bearing freeroad is standard.

Tightening torque Nm (kgf.m, lb-ft) :
 112.7~161.8 (11.5~16.5, 83.1~119.3)

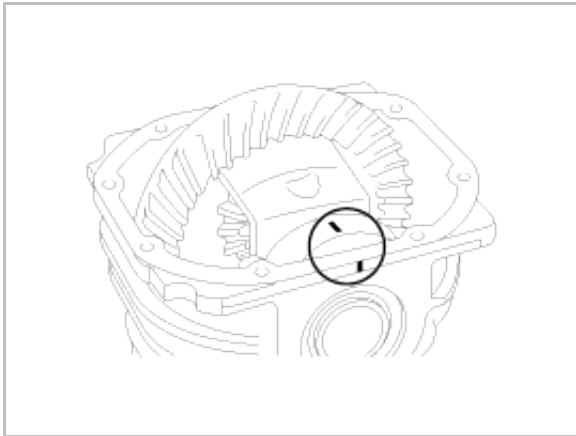


Differential case

1. Fix the diff assembly with both hands and install it to the differential carrier.

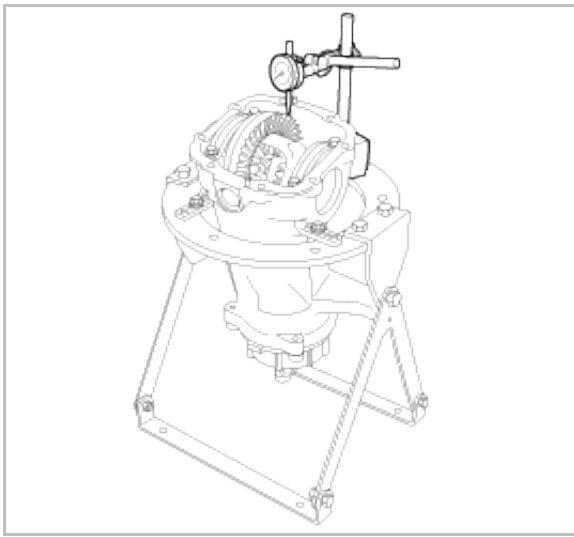


2. Insert the left/right diff shim between the diff side bearing and carrier. And then install the bearing cap with marks.



3. Measure drive gear-to-drive pinion backlash with a dial indicator at several point.

Standard :0.10~0.15mm

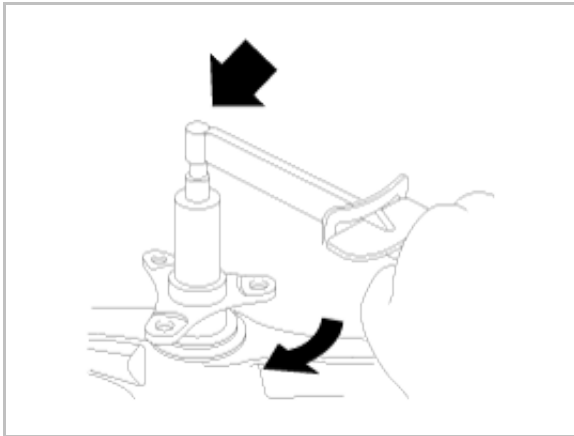


NOTE

Thickness of the diff shim need to adjusted if backlash is small. Lessen the thickness of the left side diff shim. By contraries enlarge the thickness of the right side diff shim that much.

4. Check total preload with tool.

Standard : Pinion freeroad : 1.9~4.9(0.2~0.5, 1.4~3.6)

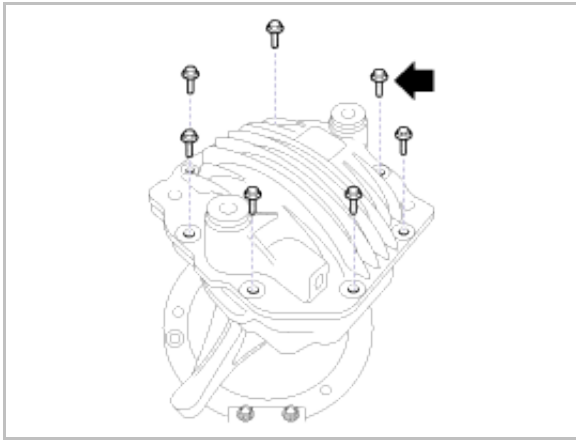


5. Applies liquid sealant to differential carrier as shown in figure

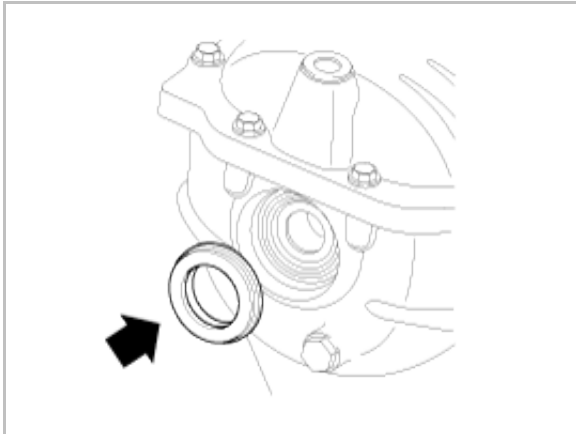


6. Install the differential cover.

Tightening torque Nm (kgf.m, lb-ft) :
 39.2~49.0 (4.0~5.0, 28.9~39.1)



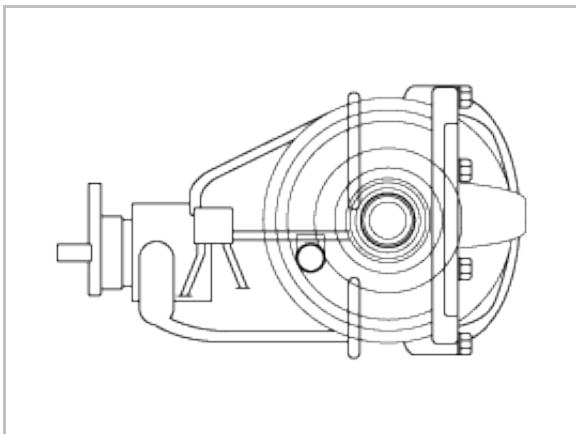
7. Using press and tool, press-fit side oil seals.



8. Install the drain plug and pinar plug.

Pillar plug : 39.2~58.8(4.0~5.0, 28.9~43.3)

Drain plug : 49.0~68.6(5.0~7.0, 36.1~50.6)



9. Tighten air breather.

Tightening torque Nm (kgf.m, lb-ft) :

9.8~19.6 (1.0~2.0, 7.2~14.4)

