

SPECIFICATION

DRIVESHAFT

Engine	T/M	Joint type		Max. permissible angle	
		Outer	Inner	Outer	Inner
Diesel 1.6 / 2.0	M/T	AC3300i	AAR3300i	45°	21°
Gasoline 2.0	M/T	AC2300i	AAR2300i	45°	21°
	A/T			45°	21°
Gasoline 1.4 / 1.6	M/T	AC2000i	AAR2000i	45°	21°
	A/T			45°	21°
Front wheel bearing					
Bearing type		Double row angular contact ball bearing			
Starting torque		1.8 Nm (18 kgf.cm, 1.31 lb-ft) or below			
Rear hub & bearing assembly					
Bearing type		Double row angular contact ball bearing			
Starting torque		1.0 Nm (10 kgf.cm, 0.7 lb-ft) or below			

ACi : Angular Contact Improved Joint

AARi : Angular Adjusted Roller Improved joint

Inner : On transaxle side

Outer : On tire side

TIGHTENING TORQUE

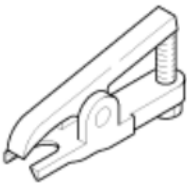
Items	Nm	Kgf-m	lb-ft
Wheel nut	88.3~107.9	9.0~11.0	65.1~79.6
Driveshaft nut (Castle nut)	240.3 ~ 269.7	24.5 ~ 27.5	177.2 ~ 198.9
Lower arm ball joint assembly to knuckle bolts	98.1~117.7	10.0~12.0	72.3~86.8
Wheel speed sensor bolt	6.9~9.8	0.7~1.1	5.1~7.2
Front caliper assembly to knuckle bolts	78.5~98.1	8.0~10.0	57.9~72.3
Tie rod end castle nut	23.5~33.3	2.4~3.4	17.4~24.6
Front strut assembly to knuckle bolts	137.3~156.9	14.0~16.0	101.3~115.7
Rear lower arm to carrier assembly bolts	137.3~156.9	14.0~16.0	101.3~115.7
Rear lower arm to cross member bolts	137.3~156.9	14.0~16.0	101.3~115.7
Rear upper arm to carrier assembly bolts	98.1~117.7	10.0~12.0	72.3~86.8
Rear caliper assembly to carrier assembly bolts	49.0~58.8	5.0~6.0	36.2~43.4
Rear shock absorber assembly to carrier assembly bolts	137.3~156.9	14.0~16.0	101.3~115.7
Assist arm to carrier assembly bolts	44.1~53.9	4.5~5.5	32.5~39.8
Trailing arm to carrier assembly bolts	34.3~53.9	3.5~5.5	25.3~39.8
Carrier assembly to rear hub assembly bolts	58.8~68.6	6.0~7.0	43.4~50.6

⚠ CAUTION

English ▼

Replace self-locking nuts with new ones after removal.

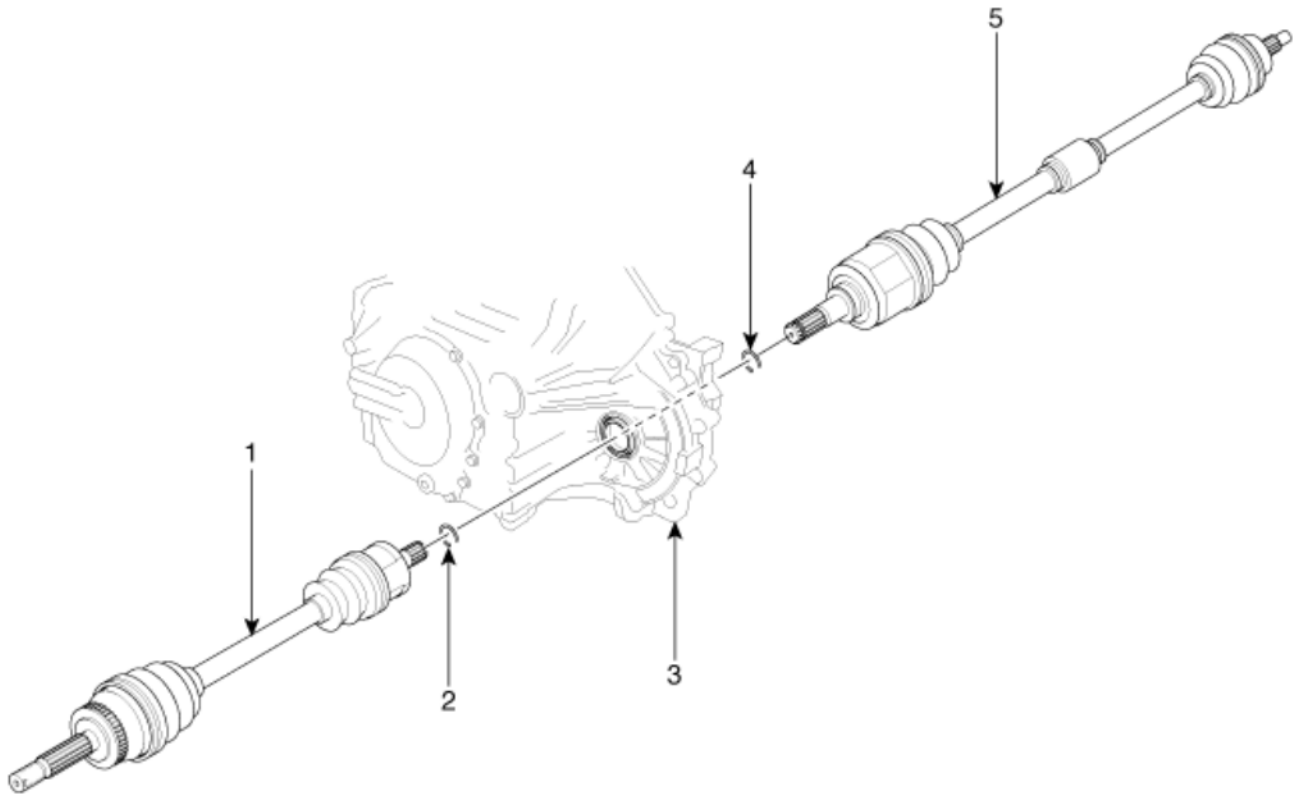
SPECIAL TOOLS

Tool(Number and Name)	Illustration	Use
09568-34000 Ball joint puller		Remover of ball joint
09495-3K000 Band installer		Installation of ear type boot band

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

COMPONENT

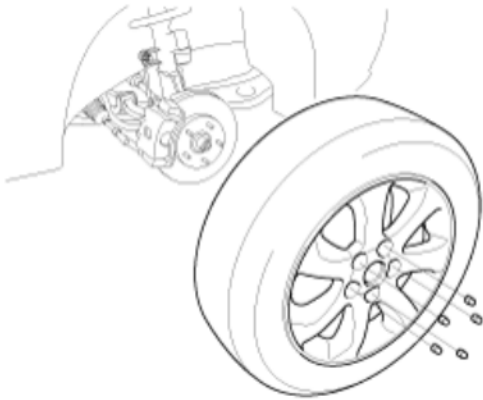


- 1. Driveshaft (LH)
- 2. Circlip
- 3. Transaxle

- 4. Circlip
- 5. Driveshaft (RH)

REMOVAL

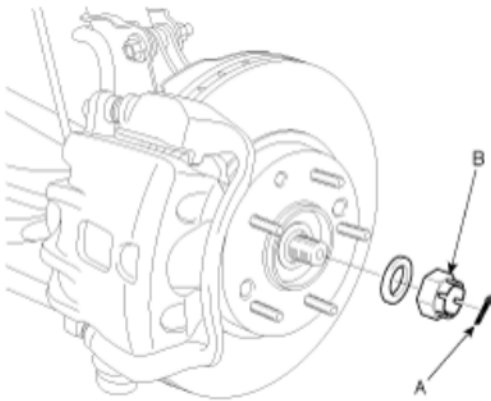
1. Loosen the wheel nuts slightly.
Raise the vehicle, and make sure it is securely supported.
2. Remove the front wheel and tire from front hub.



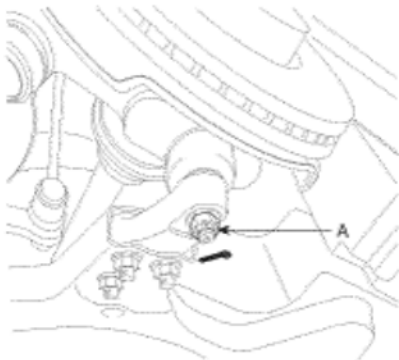
⚠ CAUTION

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

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



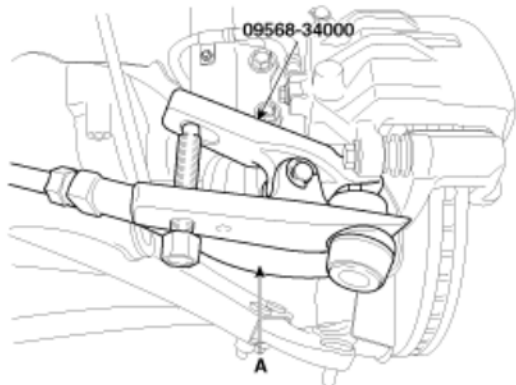
4. Remove the ball joint assembly mounting nut (A) from the knuckle.



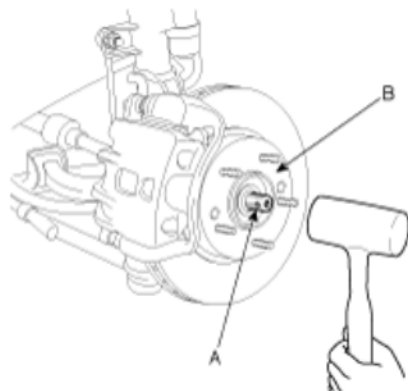
5. Remove the split pin and castle nut and then disconnect the tie rod end (A) from the front knuckle by using a SST (09568-

34000).

English ▼

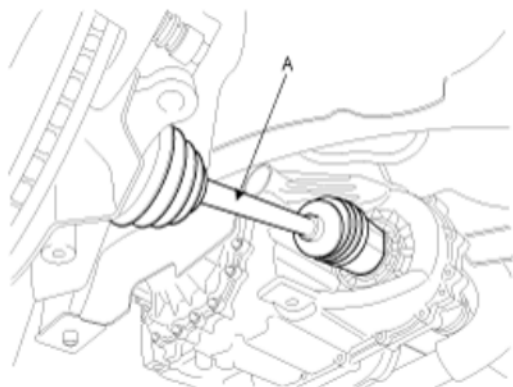


6. Using a plastic hammer, disconnect driveshaft (A) from the axle hub (B).

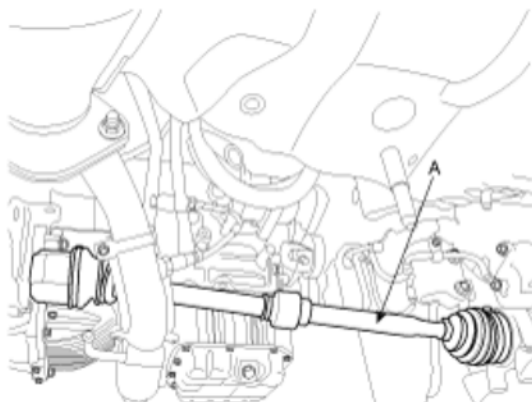


7. Insert a pry bar between the transaxle case and joint case, and separate the driveshaft (A) from the transaxle case.

[LH]



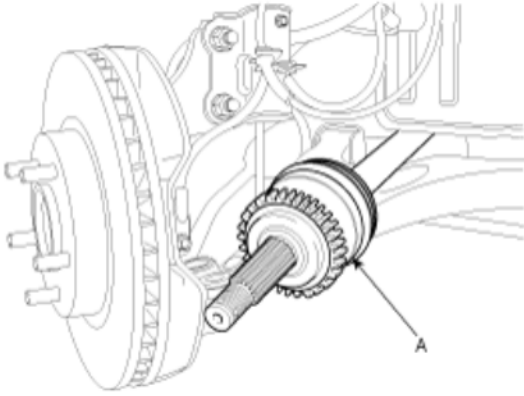
[RH]



CAUTION

- Use a pry bar being careful not to damage the transaxle and joint.
- Do not insert the pry bar 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.

8. Pull out the driveshaft (A) from the transaxle case.



CAUTION

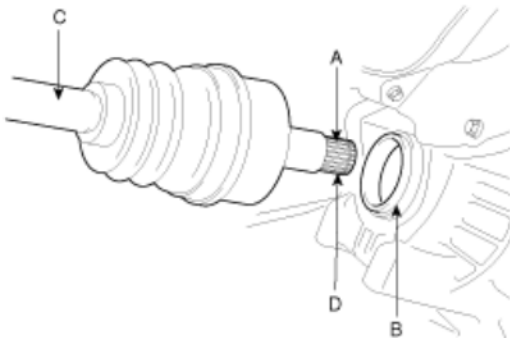
- Plug the hole of the transaxle case with the oil seal cap to prevent contamination.
- Support the driveshaft properly.
- Replace the retainer ring whenever the driveshaft is removed from the transaxle case.
- If the driveshaft is damaged, replace the driveshaft assembly.

INSTALLATION

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

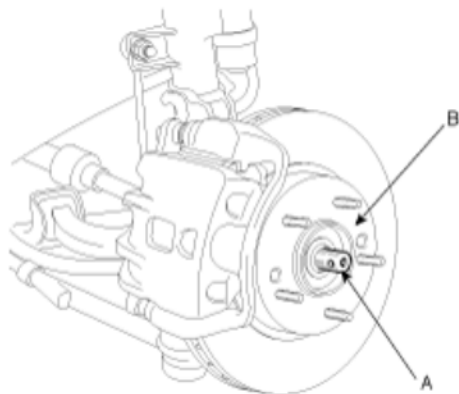
CAUTION

- Replace circlip with new one.
- Be careful not to install a different kind, when replacing the circlip.



2. Before installing the driveshaft (C), set the opening side of the circlip (D) facing downward.

3. After installation, check that the driveshaft (C) cannot be removed by hand.
4. Install the driveshaft (A) to the axle hub (B).



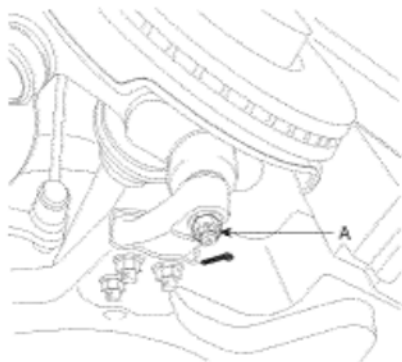
CAUTION

- Be careful not to damage and dent the both boots.
- Keep clean without contamination on contacting point between the hub-bearing and B.J.

5. Install the ball joint assembly mounting nut (A) to the knuckle.

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

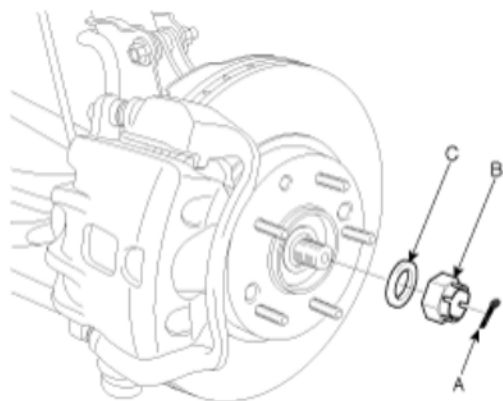
98.1~117.7 (10~12, 72.3~86.8)



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

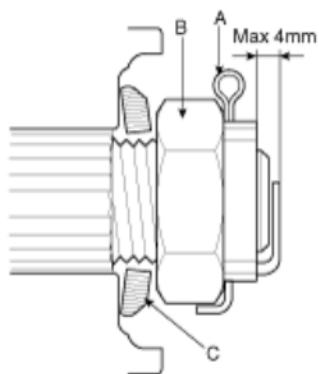
Tightening torque Nm (kgf.m, lb-ft) :

196.1~274.6 (20~28, 144.7~202.5)



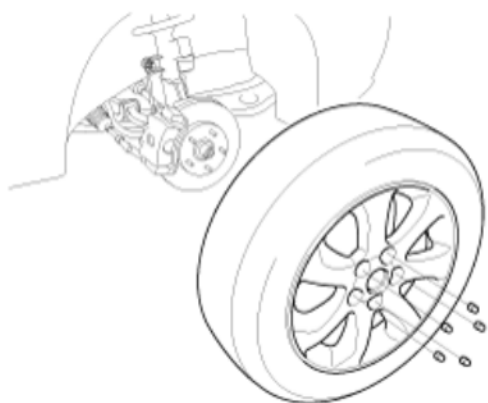
CAUTION

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



7. Install the wheel and the tire to the front hub.

Tightening torque Nm (kgf.m, lb-ft) :
88.3~107.9 (9~11, 65.1~79.6)

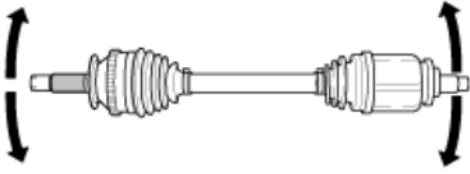


CAUTION

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

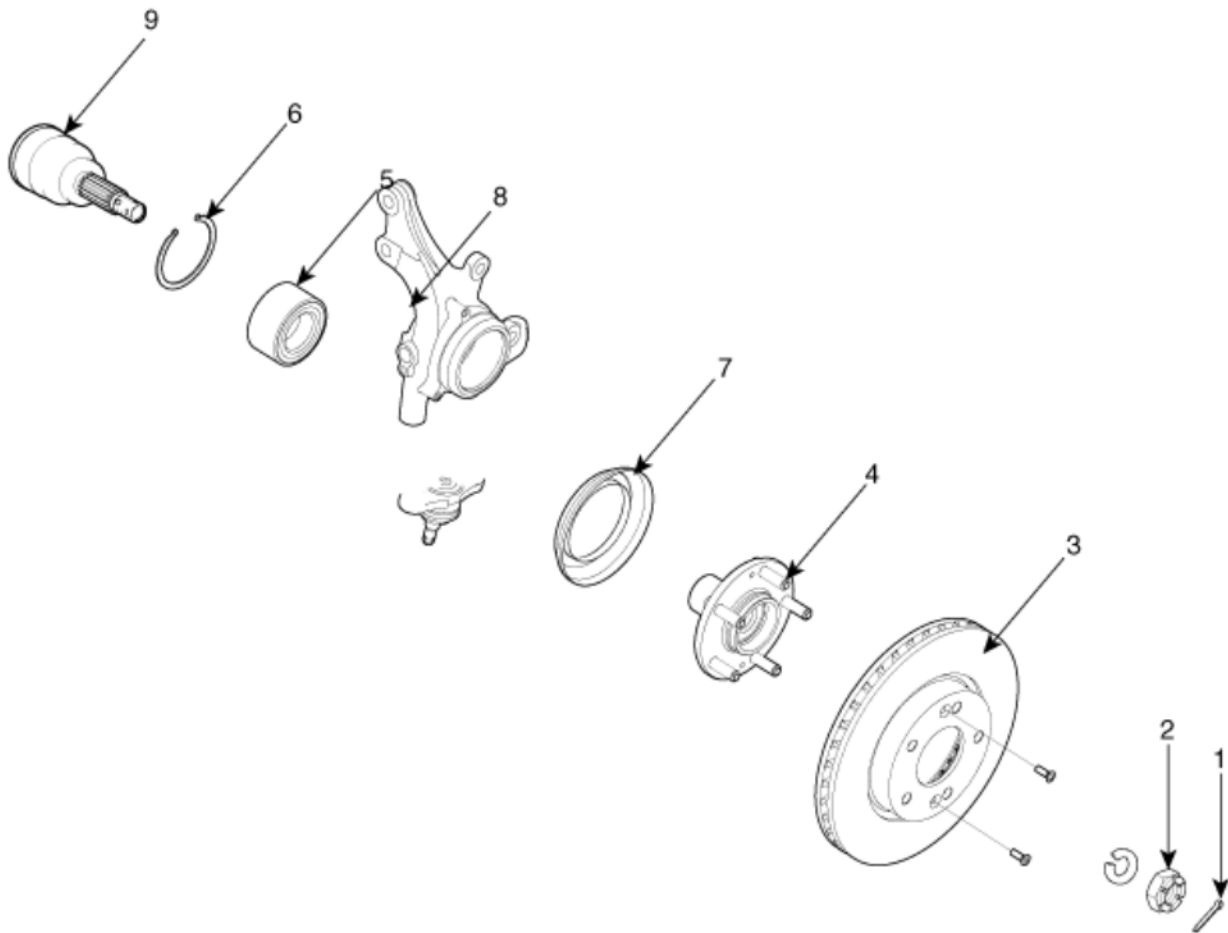
INSPECTION

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



6. Check the driveshaft for cracks and wears.
7. If the driveshaft is damaged, replace the driveshaft assembly.

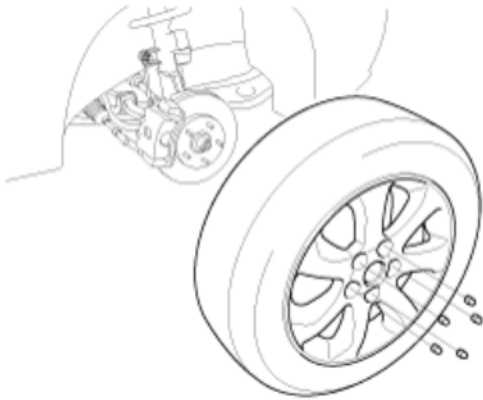
COMPONENTS



- | | |
|---|--|
| 1. Split pin
2. Driveshaft nut (castle nut)
3. Brake disc
4. Hub
5. Wheel bearing | 6. Snap ring
7. Dust cover
8. Knuckle
9. Driveshaft |
|---|--|

REMOVAL

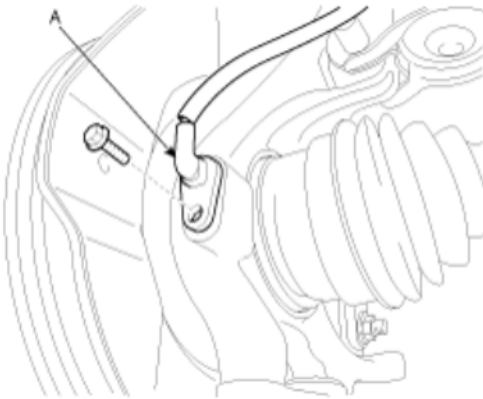
1. Loosen the wheel nuts slightly.
Raise the vehicle, and make sure it is securely supported.
2. Remove the front wheel and tire from front hub.



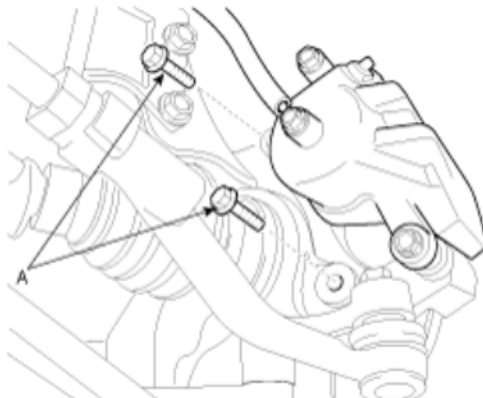
CAUTION

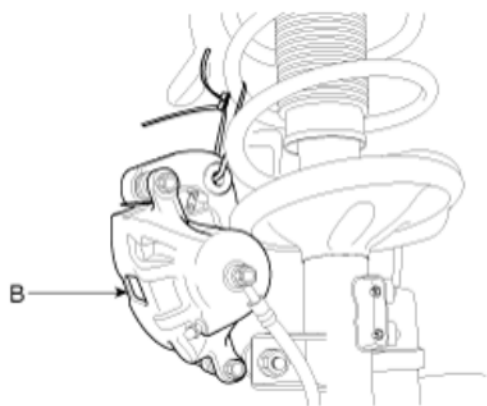
Be careful not to damage to the hub bolts when removing the front wheel and tire.

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

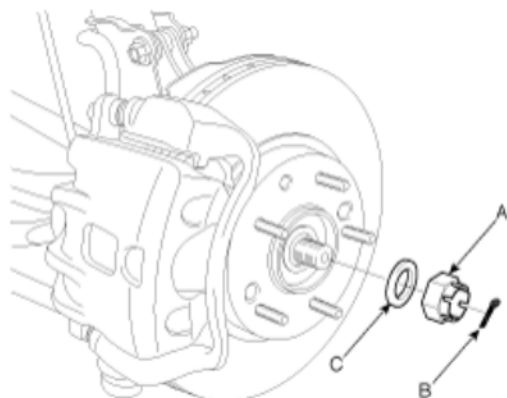


4. Remove the brake caliper mounting bolts (A), and then place the brake caliper assembly (B) with wire.

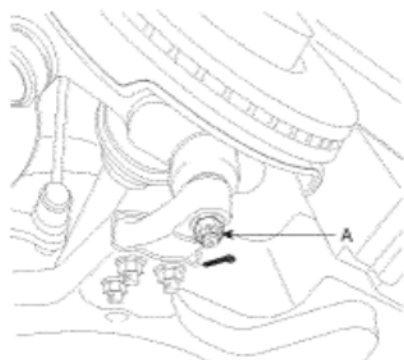




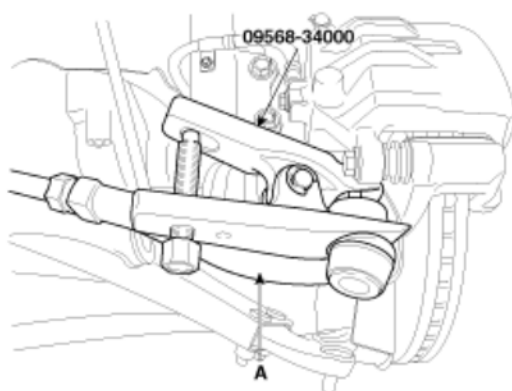
5. Remove the split pin (B), then remove castle nut (A) and washer (C) from the front hub under applying the break.



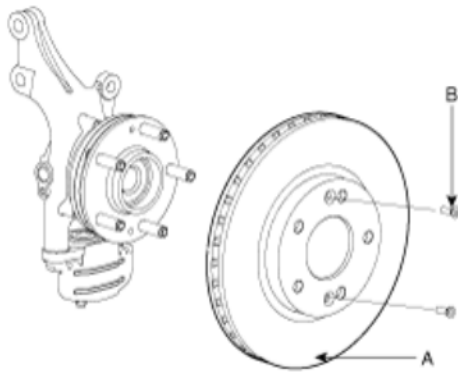
6. Remove the ball joint assembly mounting nut (A) from the knuckle.



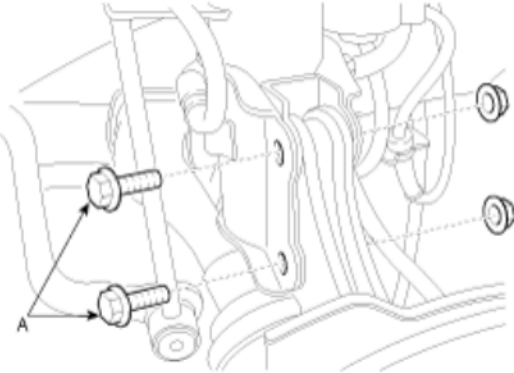
7. Remove the split pin and castle nut and then disconnect the tie rod end (A) from the front knuckle by using a SST (09568-34000).



8. Remove the brake disc (A) from the front hub assembly after remove the screws (B).



9. Remove the strut assembly mounting bolts (A) and nuts.



10. Remove the hub and knuckle assembly.

⚠ CAUTION

Be careful not to damage the boot and rotor teeth.

REPLACEMENT

Ball joint Rework instruction

1. Remove ball joint (A) with torque wrench.



2. Install ball joint (A) as tightening torque.

Tightening torque: 137.3 ~ 156.9 N.m (14.0 ~ 16.0 kgf.m, 101.3 ~ 115.7 lb-ft)



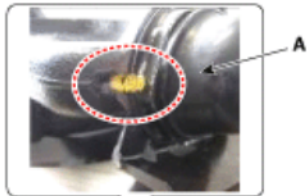
CAUTION

- Install as caring the direction of color above.

3. Make a calking with chisel.

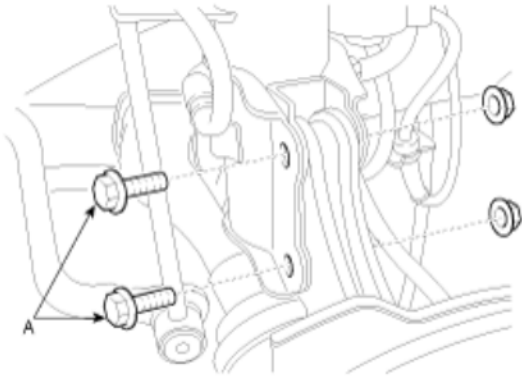


4. Mark the position of ball joint (A) after replacement.

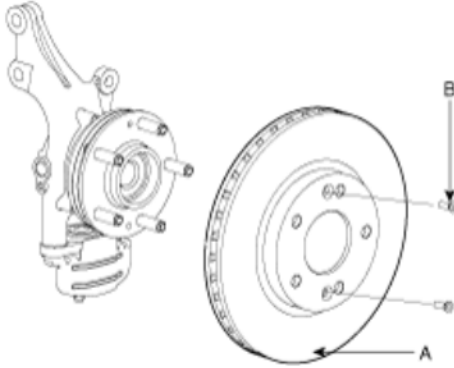


INSTALLATION

1. Install the hub and knuckle assembly to the drive shaft.
2. Install the knuckle to the strut assembly and tighten mounting bolts (A) and nuts.
Tightening torque Nm (kgf.m, lb-ft) :
Bolts(A): 137.3~156.9 (14.0~16.0, 101.3~115.7)

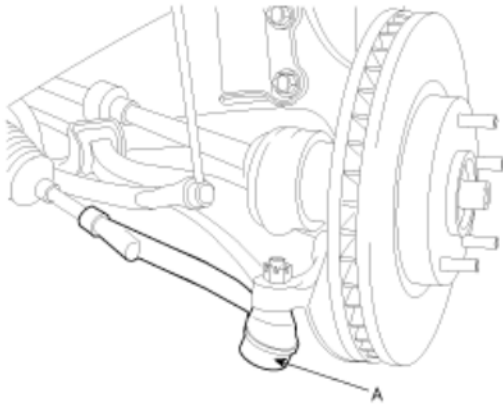


3. Install the brake disc (A) to the front hub assembly, and tighten the screws (B).

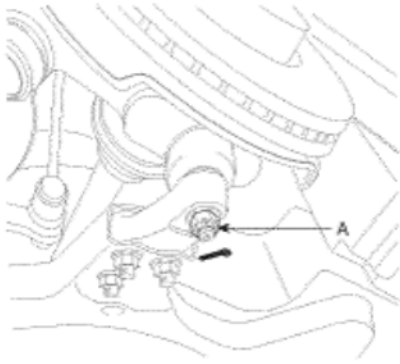


4. Install the tie rod end ball joint (A) to the knuckle.
5. Install the nut and split pin.

Tightening torque Nm (kgf.m, lb-ft) :
 23.5~33.3 (2.4~3.4, 17.4~24.6)



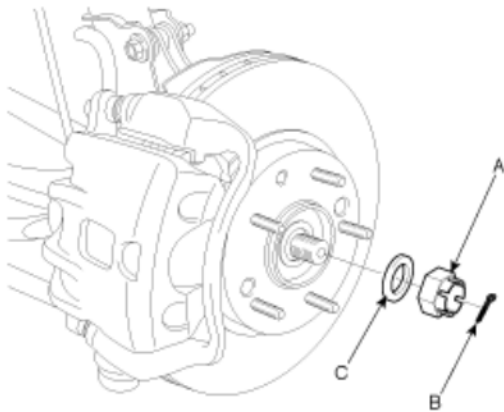
6. Install the ball joint assembly mounting nut (A) to the knuckle.
- Tightening torque Nm (kgf.m, lb-ft) :
 Bolt(A) : 98.1~117.7 (10~12, 72.3~86.8)



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

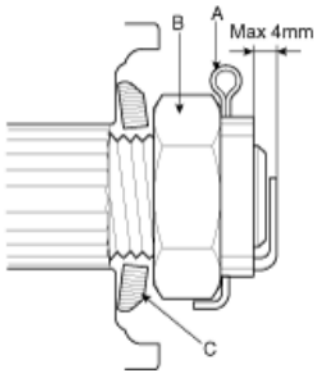
Tightening torque Nm (kgf.m, lb-ft) :

274.4 ~ 294.3 N.m, (28.0 ~ 30.0 kgf.m, 202.4 ~ 217.0 lb-ft)



CAUTION

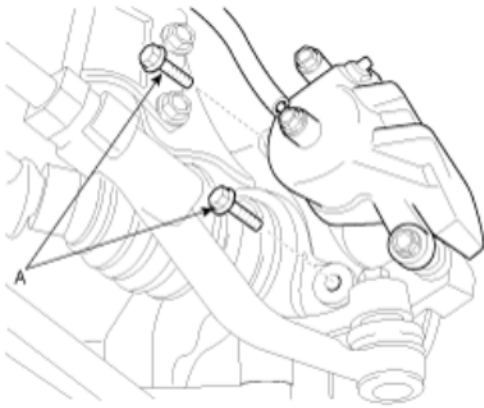
The washer (C) should be assembled with convex surface outward when installing the castle (B) nut and split pin (A).



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

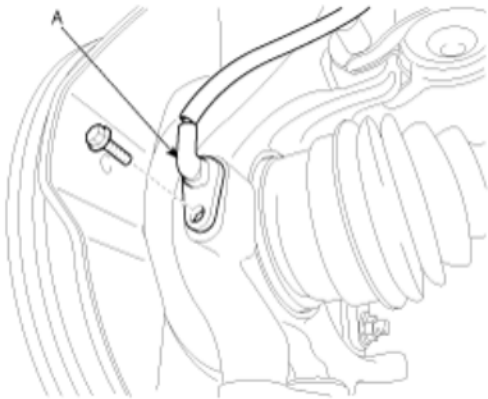
Tightening torque Nm (kgf.m, lb-ft) :

78.5~98.1 (8~10, 57.9~72.3)



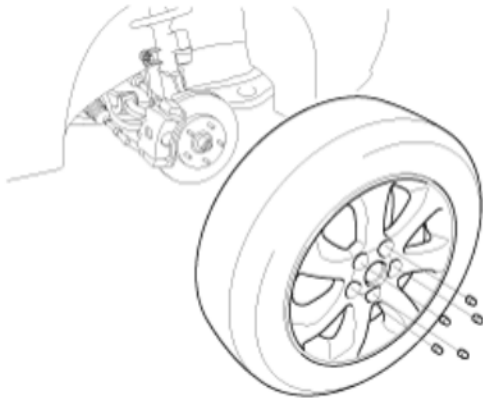
9. Install the wheel speed sensor (A) to the knuckle.

Tightening torque Nm (kgf.m, lb-ft) :
6.9~9.8 (0.7~1.1, 5.1~7.2)



10. Install the wheel and the tire to the front hub.

Tightening torque Nm (kgf.m, lb-ft) :
88.3~107.9 (9~11, 65.1~79.6)



CAUTION

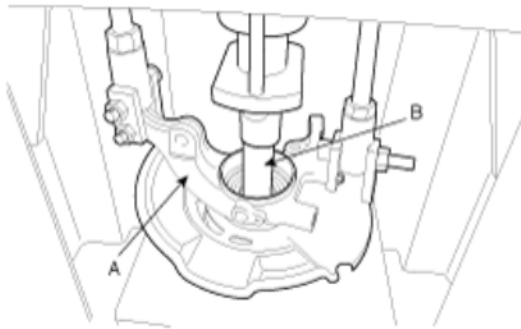
Be careful not to damage the hub bolts when installing the front wheel and tire.

DISASSEMBLY

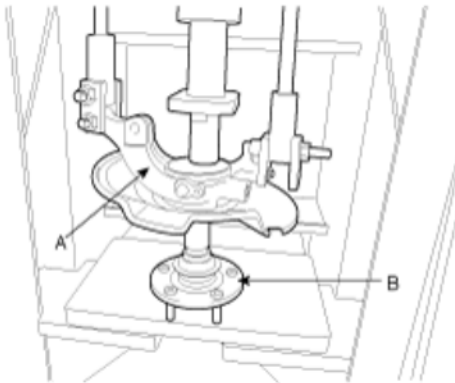
1. Remove the snap ring (A).



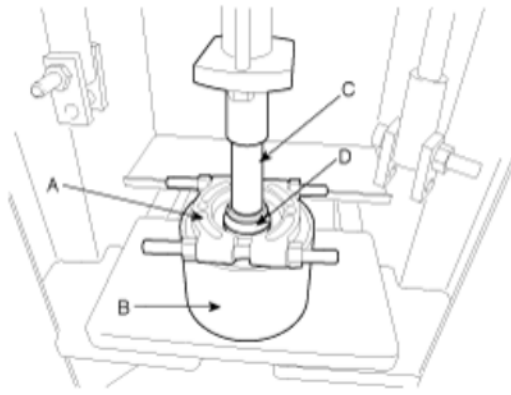
2. Remove the hub assembly from the knuckle assembly.
 - (1) Install the front knuckle assembly (A) on press.
 - (2) Lay a suitable adapter (B) upon the hub assembly shaft.



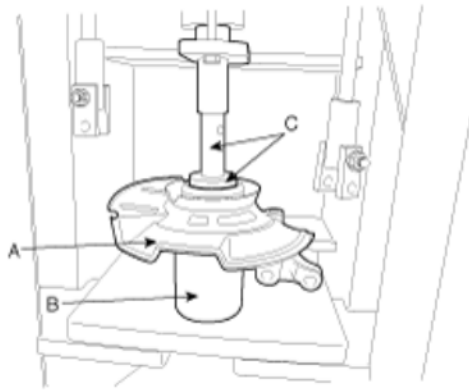
- (3) Remove the hub assembly (B) from the knuckle assembly (A) by using press.



3. Remove the hub bearing inner race from the hub assembly.
 - (1) Install a suitable tool (A) for removing the hub bearing inner race on the hub assembly.
 - (2) Lay the hub assembly and tool (A) upon a suitable adapter (B).
 - (3) Lay a suitable adapter (C) upon the hub assembly shaft.
 - (4) Remove the hub bearing inner race (D) from the hub assembly by using press.



4. Remove the hub bearing outer race from the knuckle assembly.
 - (1) Lay the hub assembly (A) upon a suitable adapter (B).
 - (2) Lay a suitable adapter (C) upon the hub bearing outer race.
 - (3) Remove the hub bearing outer race from the knuckle assembly by using press.



5. Replace hub bearing with a new one.

INSPECTION

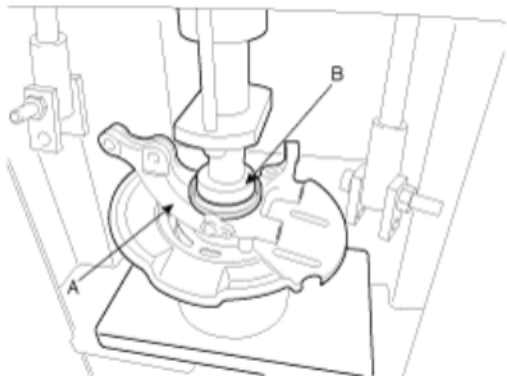
1. Check the hub for cracks and the splines for wear.
2. Check the brake disc for scoring and damage.
3. Check the knuckle for cracks.
4. Check the bearing for cracks or damage.

REASSEMBLY

1. Install the hub bearing to the knuckle assembly.
 - (1) Lay the knuckle assembly (A) on press.
 - (2) Lay a new hub bearing upon the knuckle assembly (A).
 - (3) Lay a suitable adapter (B) upon the hub bearing.
 - (4) Install the hub bearing to the knuckle assembly by using press.

⚠ CAUTION

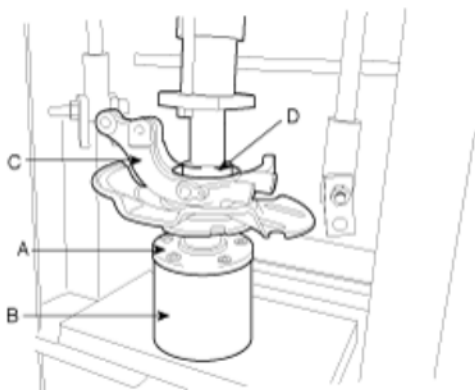
- Do not press against the inner race of the hub bearing because that can cause damage to the bearing assembly.
- Always use a new wheel bearing assembly.



2. Install the hub assembly to the knuckle assembly.
 - (1) Lay the hub assembly (A) upon a suitable adapter (B).
 - (2) Lay the knuckle assembly (C) upon the hub assembly (A).
 - (3) Lay a suitable adapter (D) upon the hub bearing.
 - (4) Install the hub assembly (A) to the knuckle assembly (C) by using press.

⚠ CAUTION

- Do not press against the inner race of the hub bearing because that can cause damage to the bearing assembly.

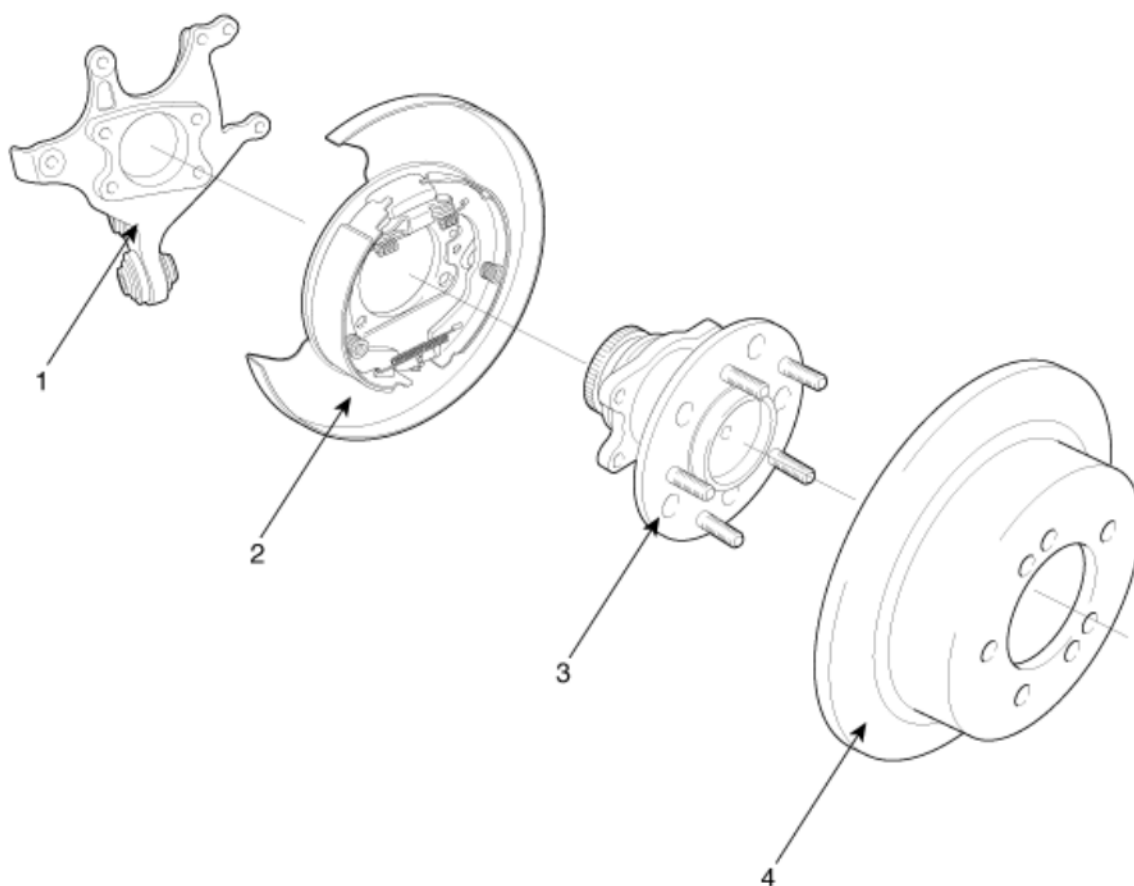


3. Install the snap ring (A).



COMPONENT

DISC BRAKE TYPE



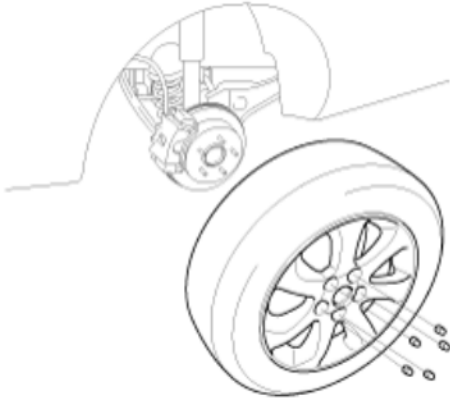
- 1. Carrier assembly
- 2. Rear brake assembly

- 3. Hub & bearing assembly
- 4. Rear brake disc

REMOVAL

DISC BRAKE TYPE

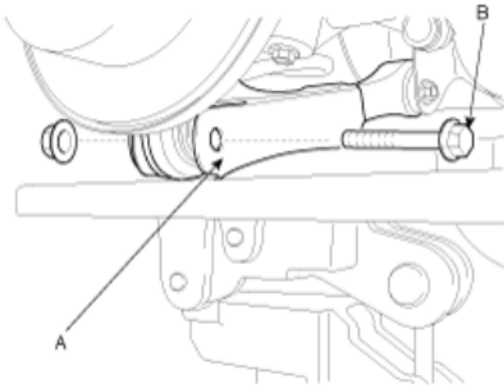
1. Release the parking brake.
2. Loosen the wheel nuts slightly.
Raise the vehicle, and make sure it is securely supported.
3. Remove the rear wheel and tire from rear hub.



CAUTION

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

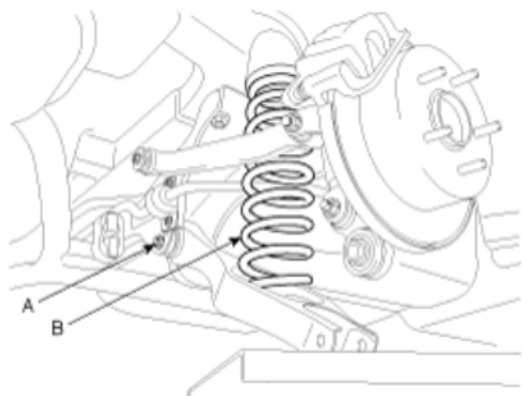
4. Remove the mounting bolt (B) of the rear lower arm (A) and the rear carrier, while supporting the lower arm (A) with a jack as shown in the illustration.



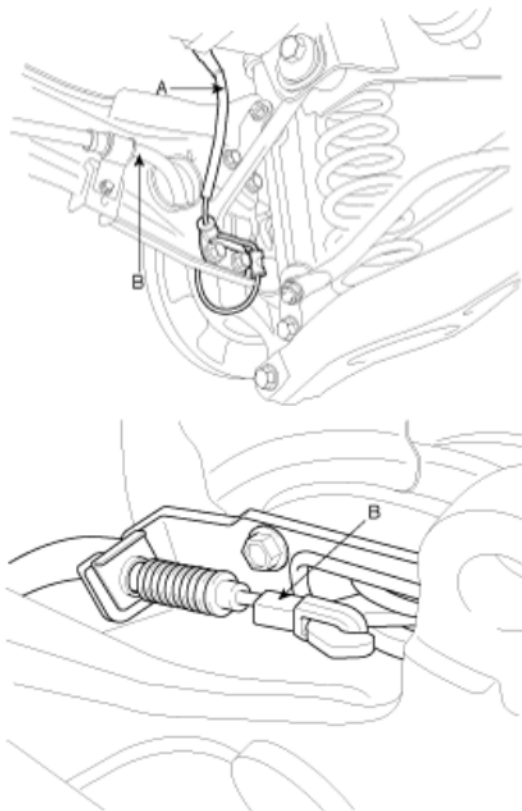
CAUTION

Be careful not to damage the deadener coating

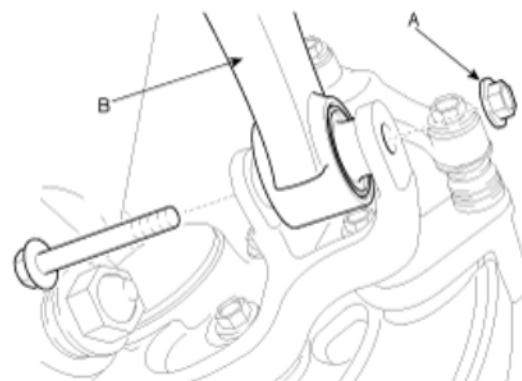
5. Loosen the mounting nut (A) of the cross member and the rear lower arm, then remove the coil spring (B) by taking down the jack.



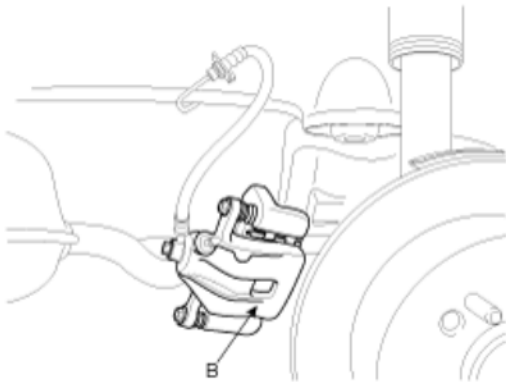
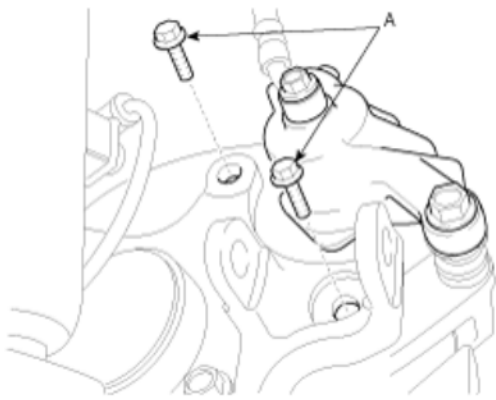
6. Remove the wheel speed sensor (A) and parking brake cable (B).



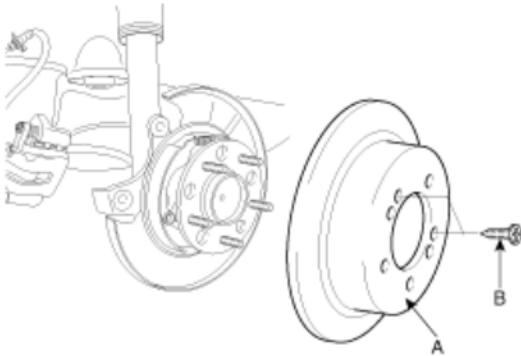
7. Disconnect the upper arm (B) from the carrier assembly after loosening the nut (A).



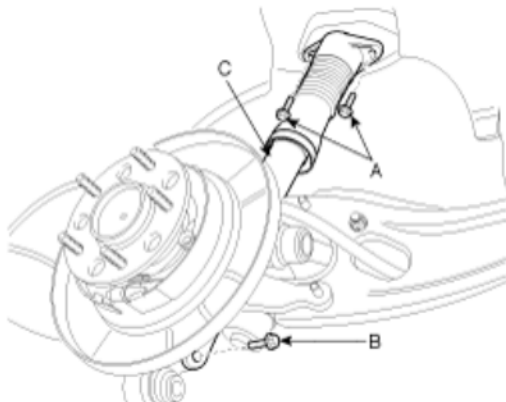
8. Remove the brake caliper mounting bolts (A), and then place the brake caliper assembly (B) with wire as shown in the illustration.



9. Remove the rear brake disc assembly (A) after loosen the screw (B).

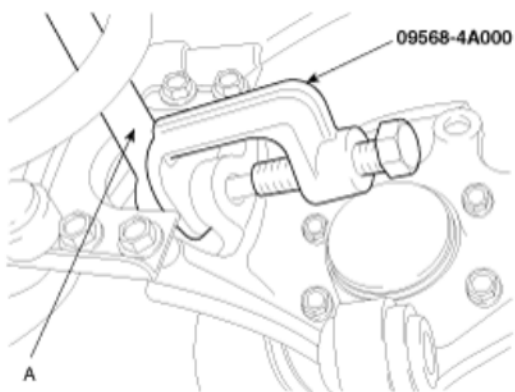


10. Remove the rear shock absorber assembly (C) after loosen the bolt (A, B).

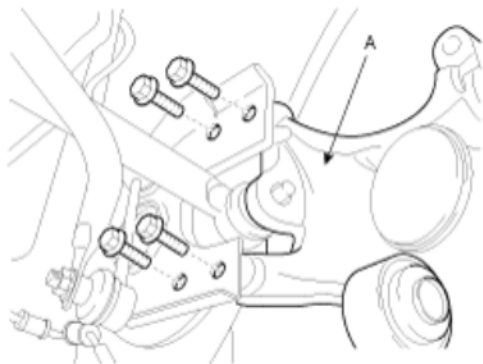


11. Remove the split pin and castle nut from the assist arm.

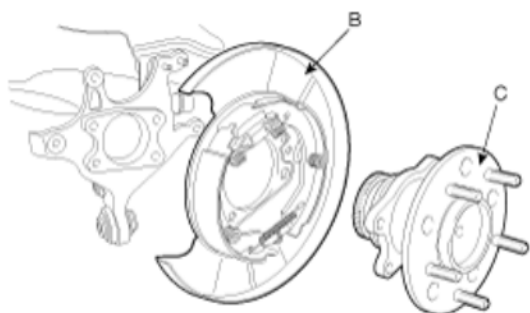
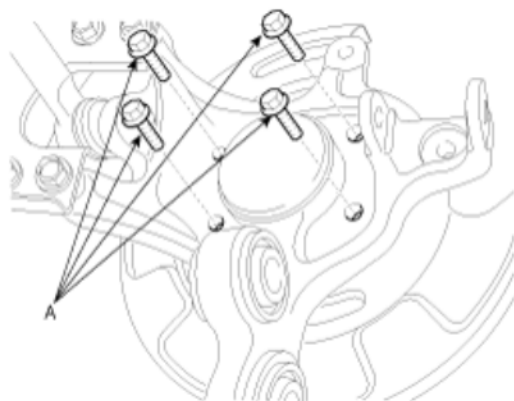
12. Using the SST (09568-4A000), disconnect the assist arm (A) from the carrier assembly.



13. Remove the carrier assembly (A) from the trailing arm after remove the mounting bolts.



14. Remove the rear hub assembly (C) and rear brake assembly (B) after remove mounting bolts (A).



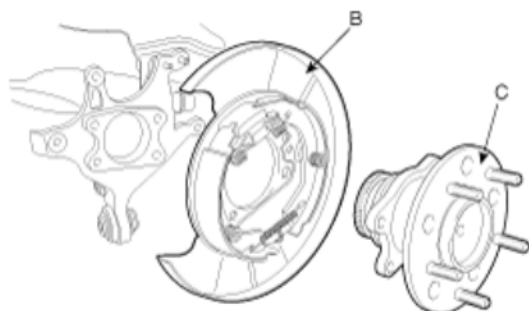
INSTALLATION

DISC BRAKE TYPE

1. Install the rear hub assembly (C) and rear brake assembly (B) to the rear carrier, then tighten mounting bolts (A).

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

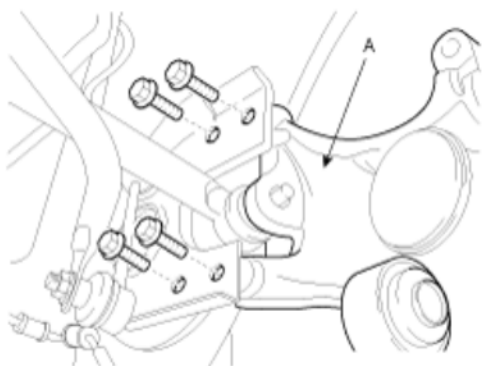
58.8~68.6 (6.0~7.0, 43.4~50.6)



2. Install the carrier assembly (A) to the trailing arm, then tighten the mounting bolts.

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

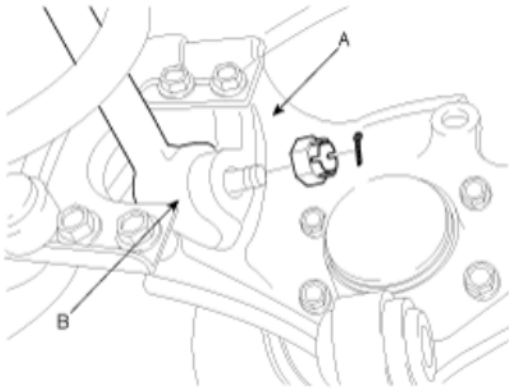
34.3~53.9 (3.5~5.5, 25.3~39.8)



3. Install the assist arm(B) to the carrier assembly (A) , then install the castle nut and split pin.

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

44.1~53.9 (4.5~5.5, 32.5~39.8)

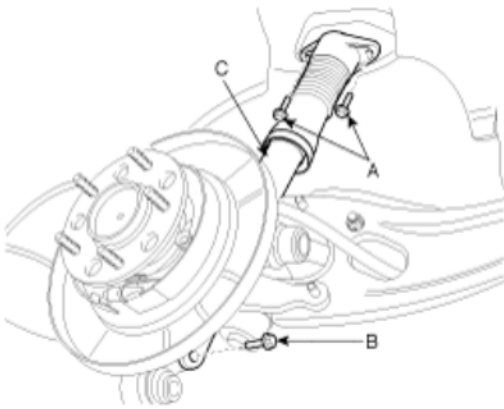


4. Install the rear strut assembly (C), then tighten the bolt (A, B).

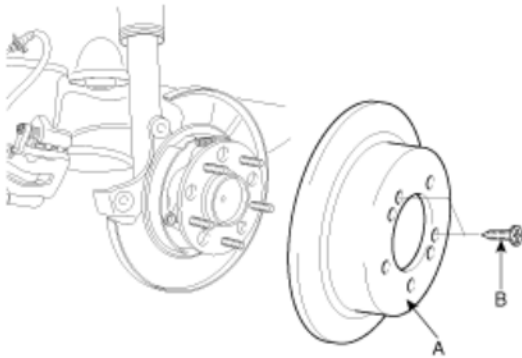
Tightening torque Nm (kgf.m, lb-ft) :

Bolt(A) : 49.0~63.7 (5.0~6.5, 36.2~47.0)

Bolt(B) : 137.3~156.9 (14.0~16.0, 101.3~115.7)



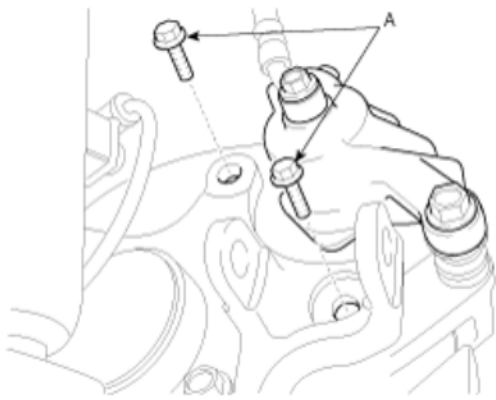
5. Install the rear brake disc assembly (A) and tighten screw (B).



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

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

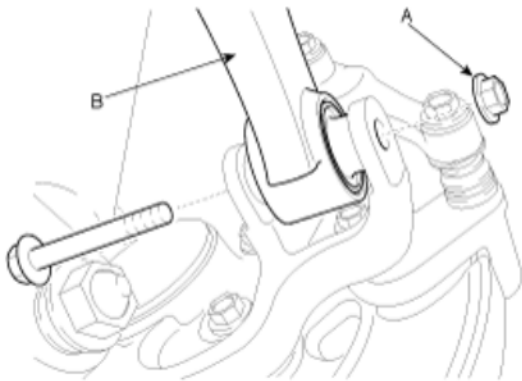
49.0~58.8 (5.0~6.0, 36.2~43.4)



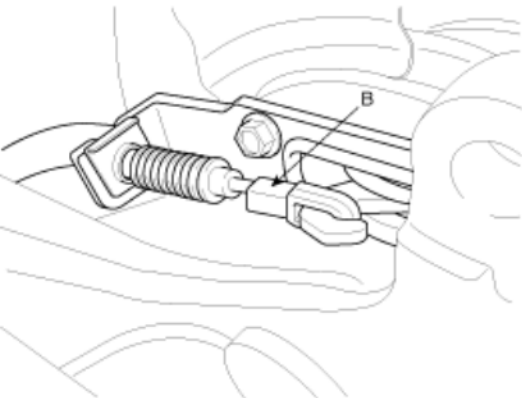
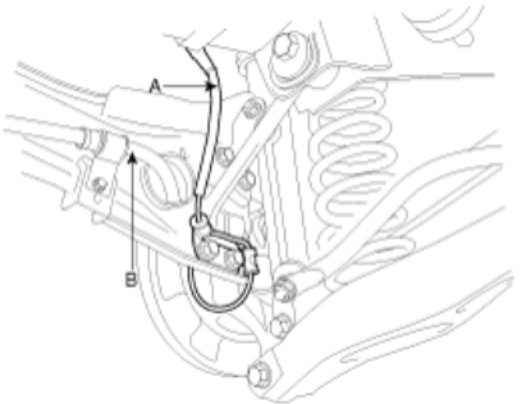
7. Install the upper arm (B) from the carrier assembly , then tighten the nut (A).

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

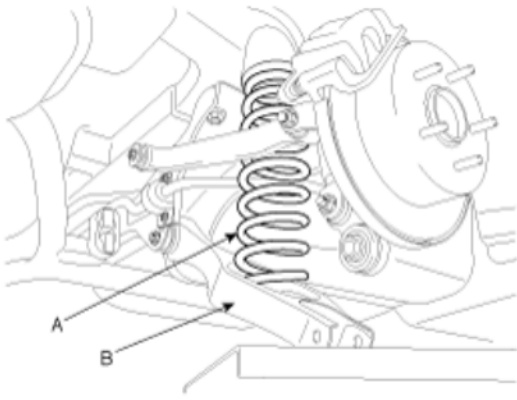
Nut(A) : 98.1~117.7 (10~12, 72.3~86.8)



8. Install the wheel speed sensor (A) and parking brake cable (B).



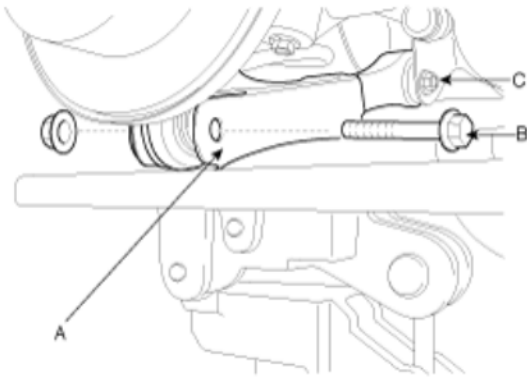
9. Install the coil spring (A) on the rear lower arm (B), then slowly jack-up the rear lower arm (B) by using jack.



10. Install the mounting bolt (B) of the rear lower arm (A) and the rear carrier with a specified torque, while supporting the lower arm (A) with a jack as shown in the illustration. Tighten the mounting bolt (C) of the cross member and the rear lower arm with a specified torque.

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

Bolt (B, C) : 137.3~156.9 (14.0~16.0, 101.3~115.7)

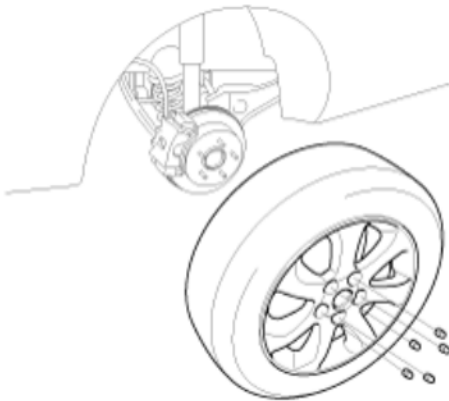


⚠ CAUTION

11. Install the wheel and the tire to the rear hub.

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

88.3~107.9 (9~11, 65.1~79.6)



⚠ CAUTION

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

INSPECTION

1. Check the hub for cracks and the splines for wear.
2. Check the bearing for cracks or damage.
3. Check the brake disc for scoring and damage.
4. Check the rear axle carrier for cracks.
5. Check the rear tone wheel for chipped the teeth.