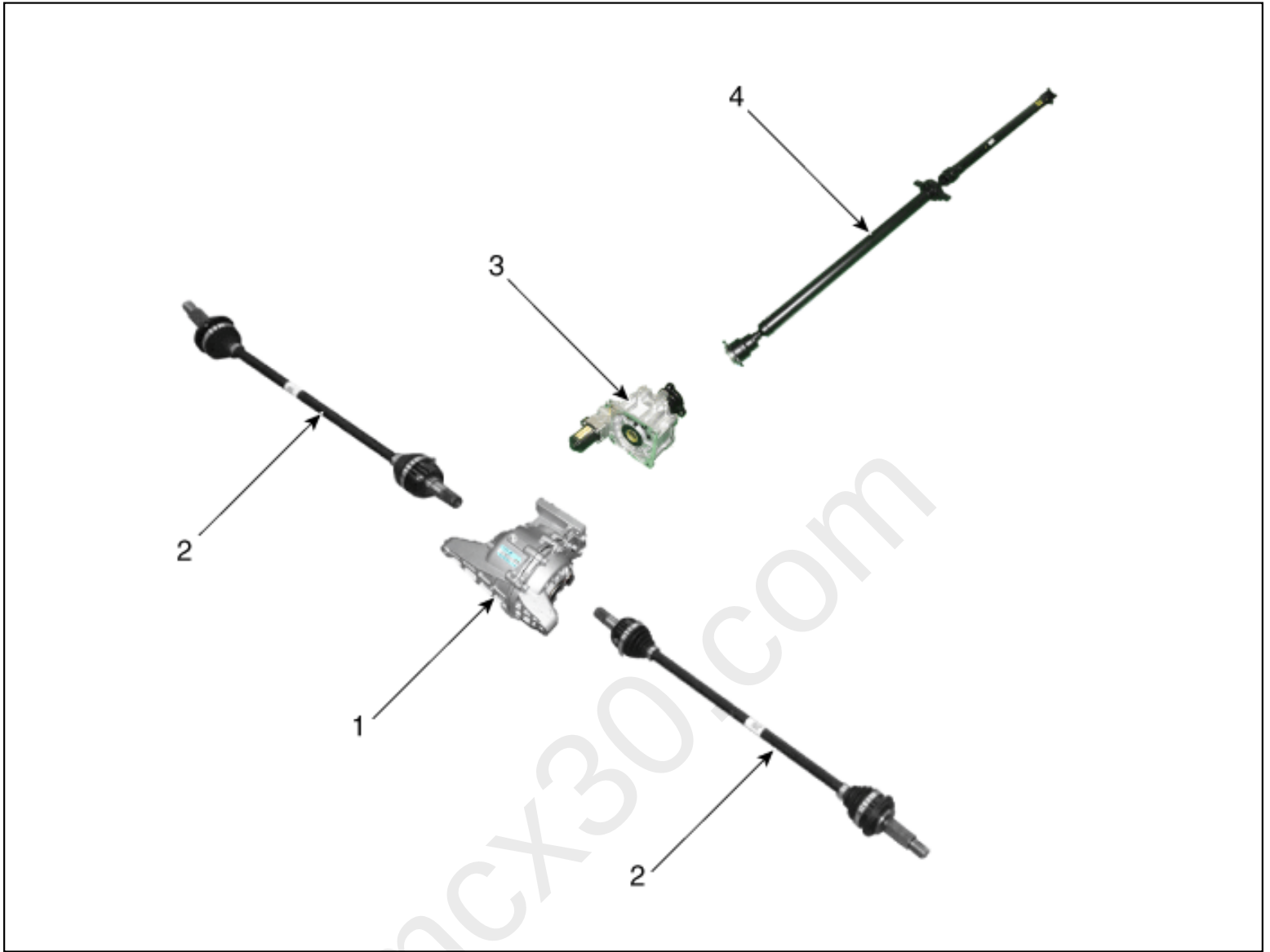


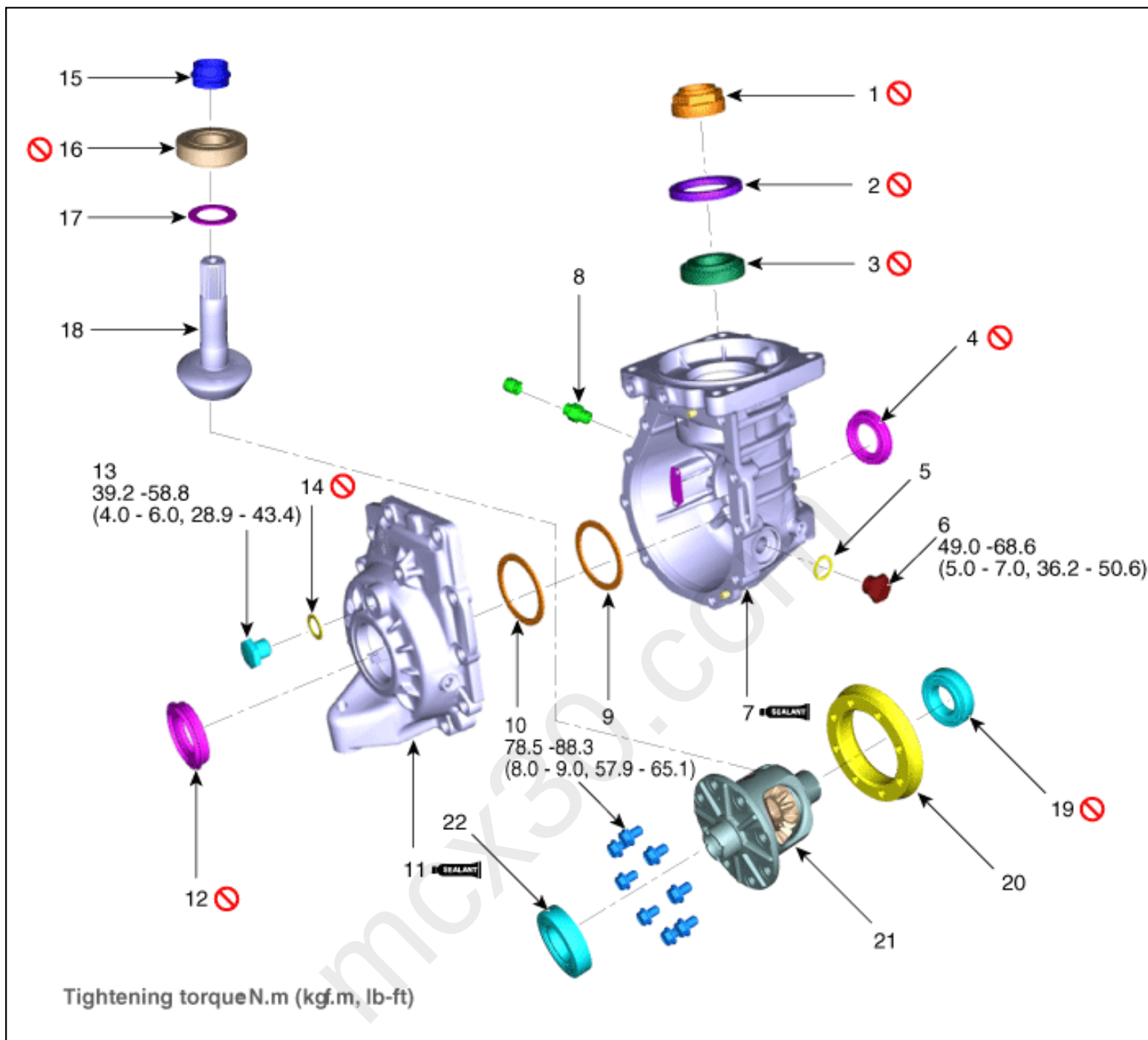
Components
Location



- 1. Rear differential carrier assembly
- 2. Rear driveshaft assembly

- 3. Coupling Assembly
- 4. Propeller shaft assembly

Components



- | | |
|--|--|
| 1. Pinion lock nut | 12. Oil seal (cover side) |
| 2. Oil seal (pinion side) | 13. Filler plug |
| 3. Pinion outer bearing | 14. Filler gasket |
| 4. Oil seal (case side) | 15. Pinion bearing spacer |
| 5. Packing | 16. Pinion inner bearing |
| 6. Drain plug | 17. Pinion inner bearing adjust shim |
| 7. Differential carrier case | 18. Pinion drive gear |
| 8. Air breather | 19. Differential gear bearing (case side) |
| 9. Differential bearing shim (case side) | 20. Ring gear |
| 10. Differential bearing shim (cover side) | 21. Gear carrier |
| 11. Differential carrier case side cover | 22. Differential gear bearing (cover side) |

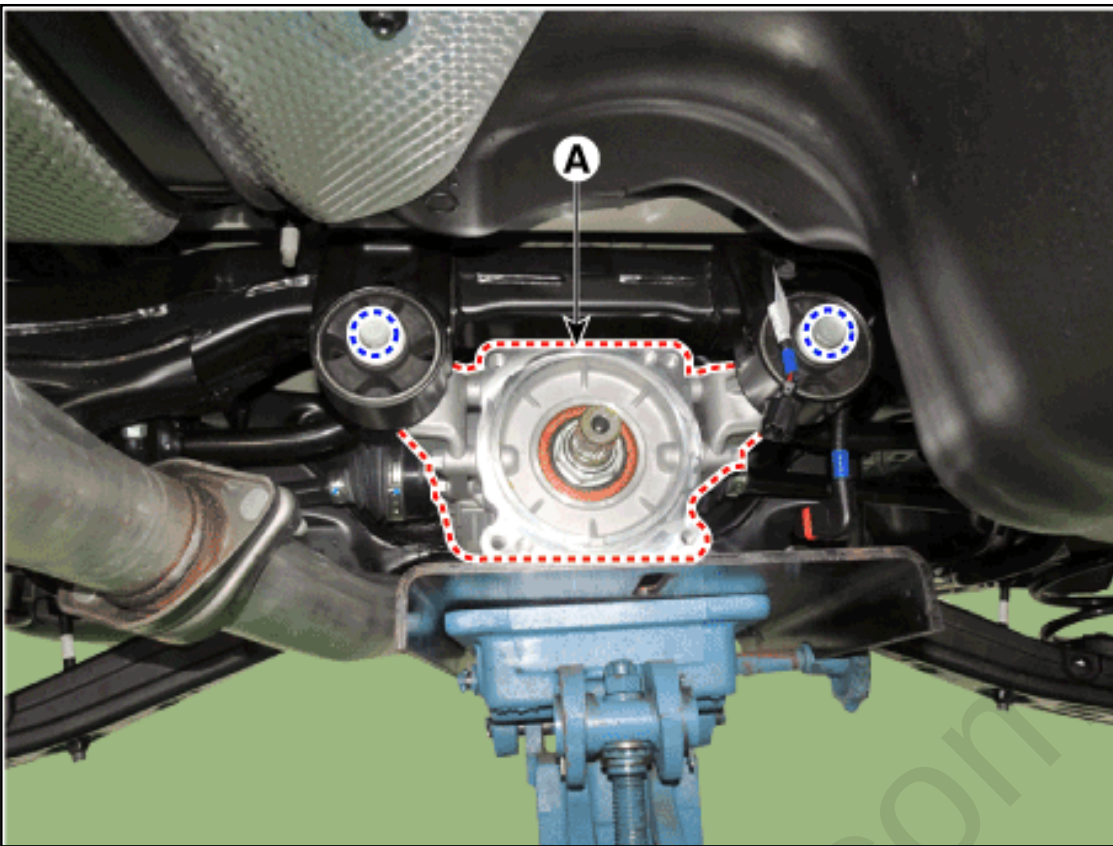
Removal

1. Disconnect the (-) battery terminal.
2. Remove the rear driveshaft.
(Refer to Rear Driveshaft Assembly - "Rear Driveshaft")
3. Remove the propeller shaft.
(Refer to Propeller Shaft Assembly - "Propeller Shaft")
4. Remove the coupling assembly.
(Refer to All Wheel Drive (AWD) System - "Direct Electro Hydraulic Actuator Coupling")
5. Install a jack on the lower part of the differential.
6. Remove the differential carrier assembly (A) after loosening the mounting bolts.

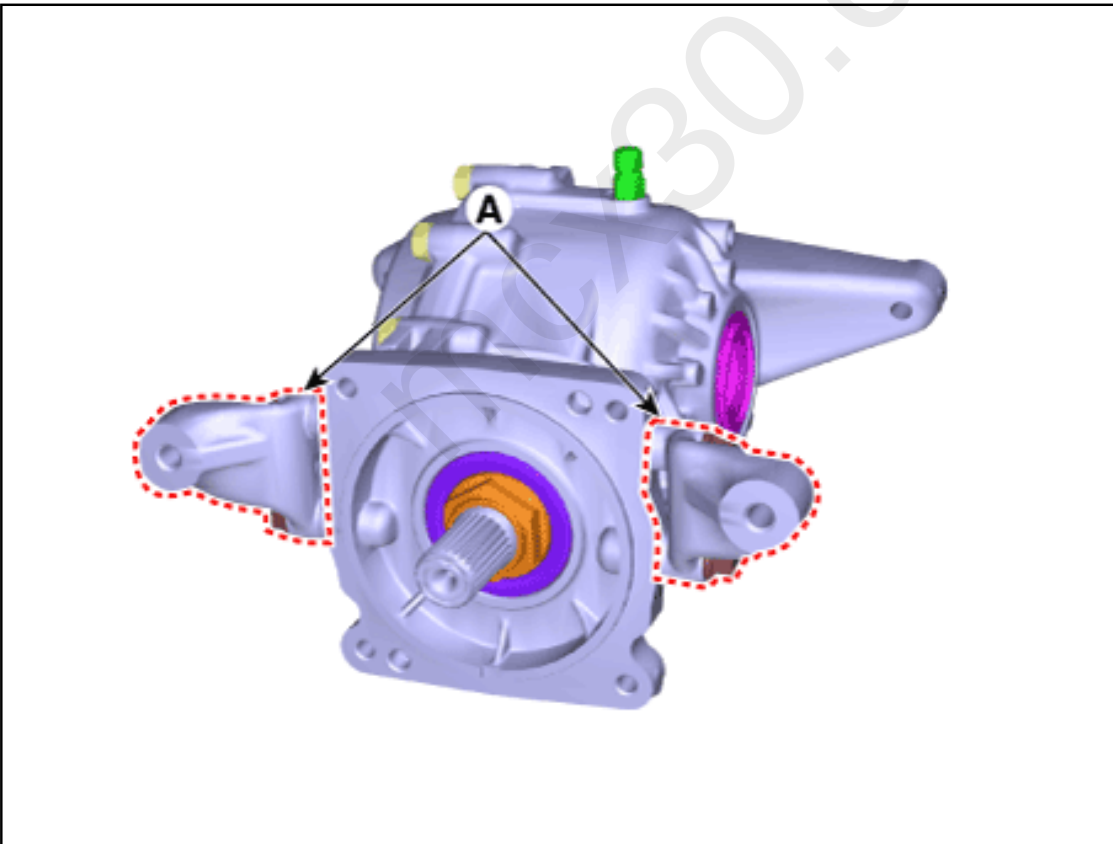
Tightening torque :

68.6 - 88.2 N·m (7.0 - 9.0 kgf·m, 50.6 - 65.0 lb·ft)





7. Remove the differential carrier bracket (A) after loosening the mounting bolts.

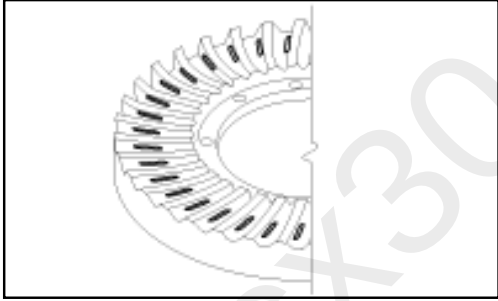
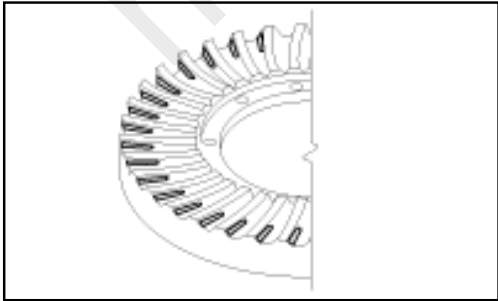
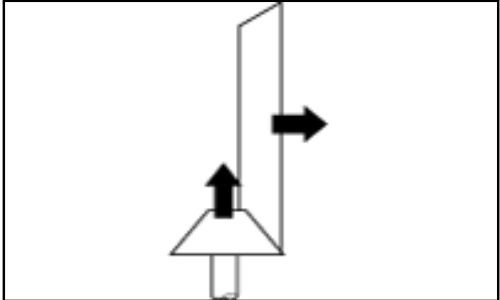


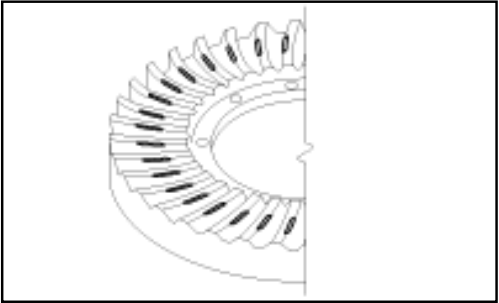
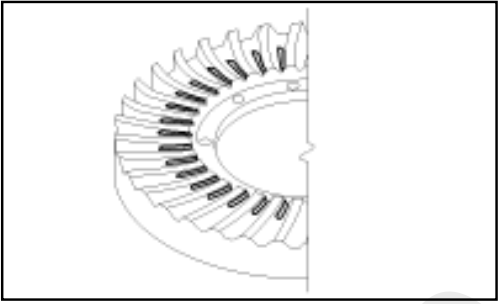
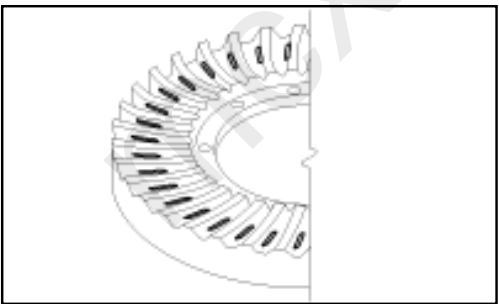
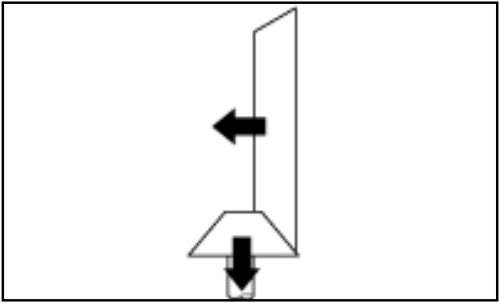
Inspection

1. After clearing, check for damage parts or abrasion. Follow the below method, if any are noticed.

Item	Identify
Gear set (drive pinion gear & drive gear)	The gear set must be replaced with a new one if the gear tooth is damaged (crack/pits/dents).
Bearing	The bearing must be replaced with a new one if the bearing roller or race is damaged (crack/pits/dents).
Oil seal	The oil seal must be replaced with a new one if disassembled.
Differential carrier	The carrier must be replaced with a new one if the inside of the carrier bearing is damaged (crack/pits/dents) or a crack is found inside/outside.
Companion flange	The pinion oil seal must be replaced with a new one if the contact surface is damaged (crack/pits/dents).

2. Check the tooth contact pattern.

Tooth contact	Contact state	Solution	
Standard contact			
1. Heel 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,	

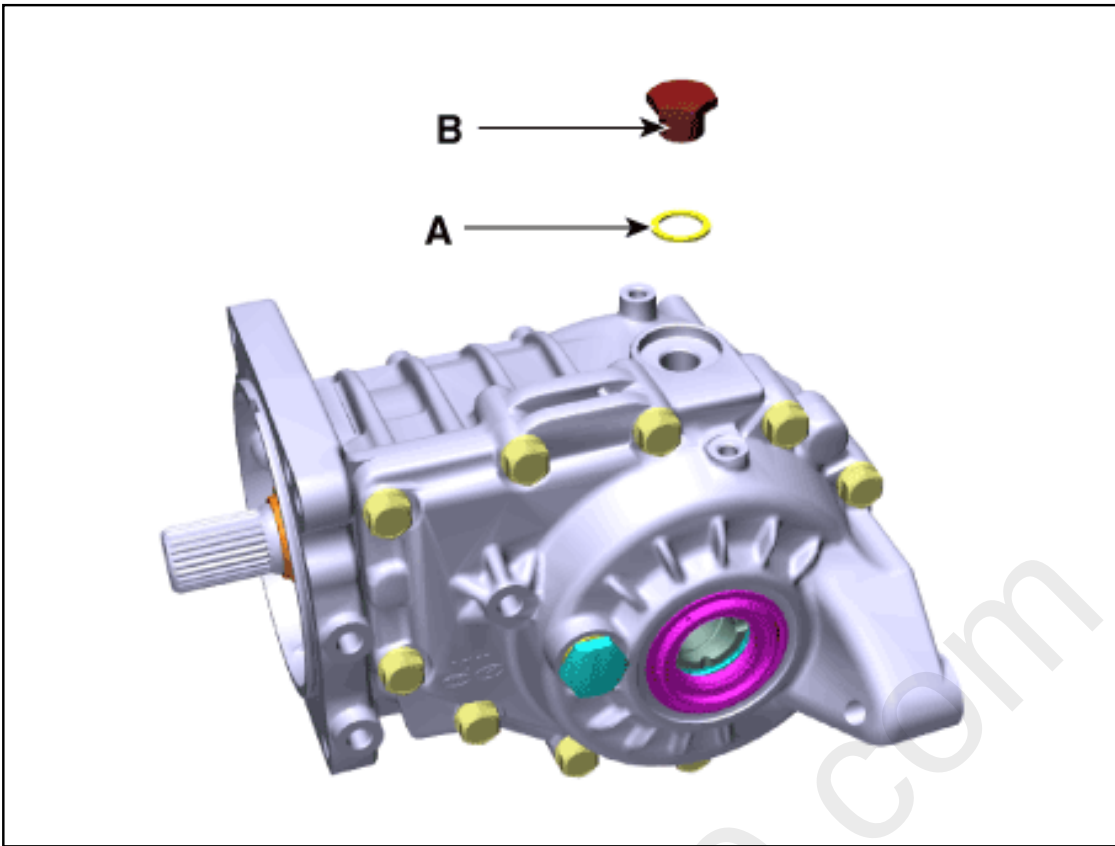
2. Face contact		reposition the drive gear further from the drive pinion.	
3. Toe contact		Decrease the thickness of the pinion height adjusting shim, and position the drive pinion further from the center of the drive gear.	
4. Flank contact		Also, for backlash adjustment, reposition the drive gear closer to the drive pinion.	



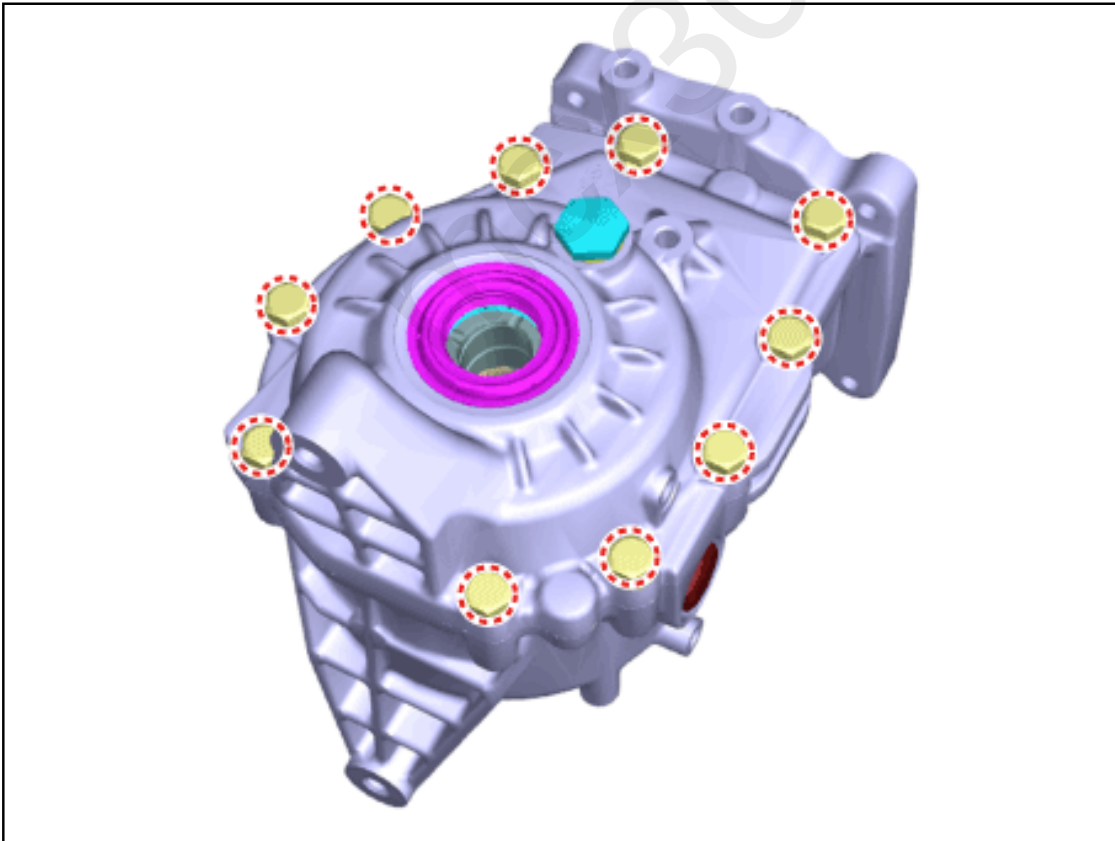
- 1) Tooth contact pattern is a method for judging the result of the adjustment of drive pinion height and final drive gear backlash. The adjustment of drive pinion height and final drive gear backlash should be repeated until the tooth contact patterns are similar to the standard tooth contact pattern.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

Differential gear assembly

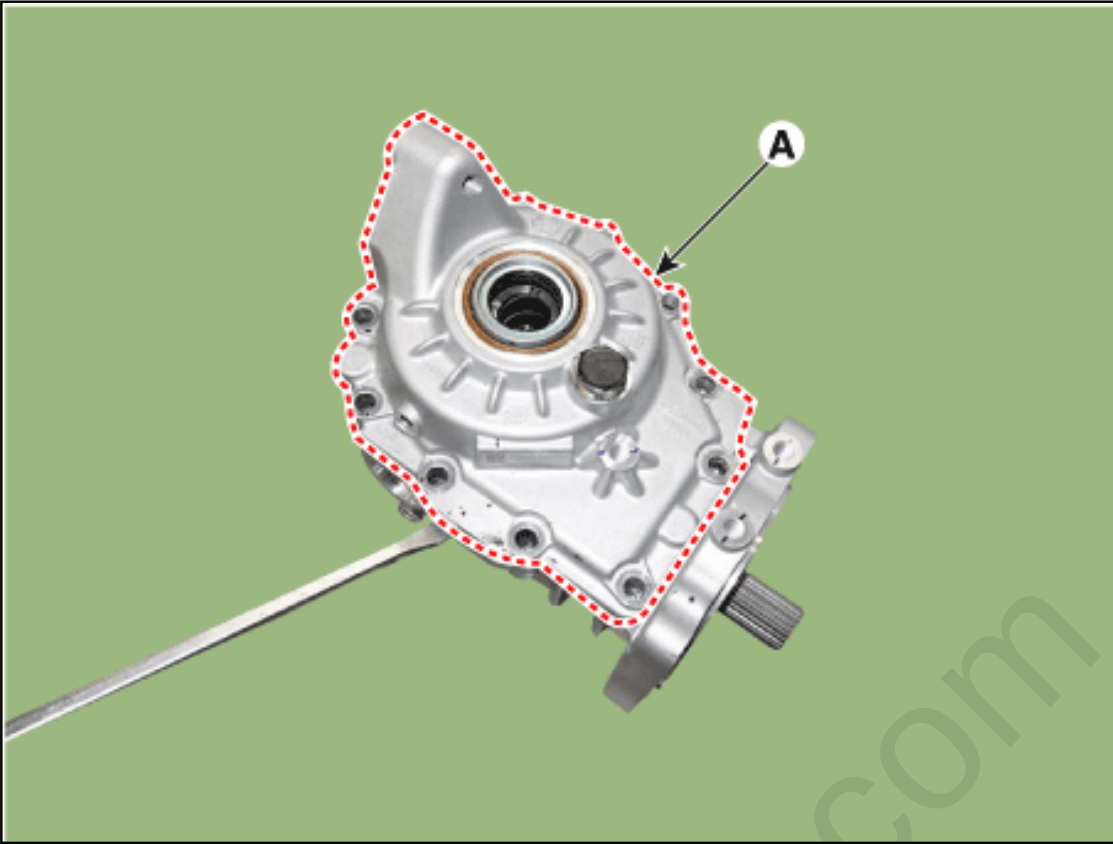
1. Remove the drain plug packing (A) and drain plug (B) to drain the gear oil.



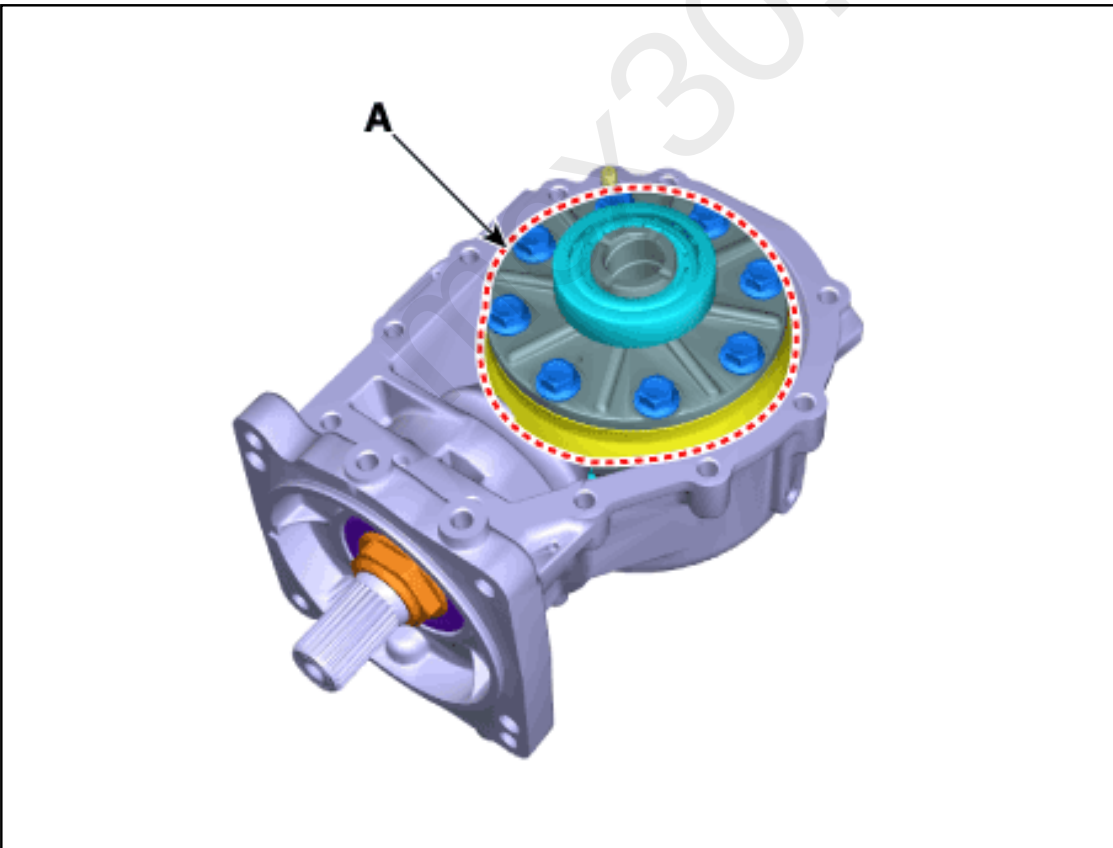
2. Loosen the differential side cover mounting bolts.



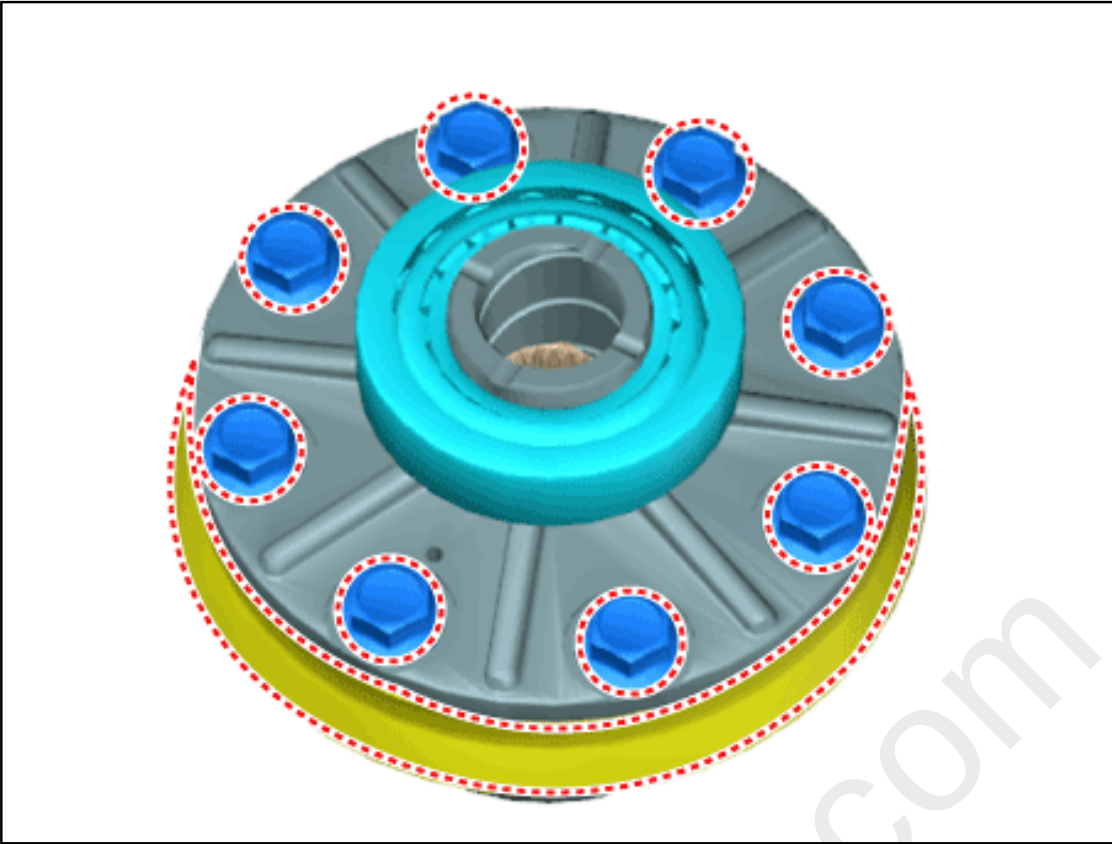
3. Widen the gap between the side cover and the case to remove the side cover (A).



4. Remove the differential gear assembly (A).



5. Remove the ring gear (A) from the gear carrier after loosening the mounting bolts.



6. Remove the differential gear bearing (A) using the SST (09501-C9200) and puller.

[Differential carrier cover side]



[Differential carrier side]



- Do not reuse the removed bearing.

Pinion drive gear assembly

1. Fix the differential carrier assembly using the SST (09501-C9230, 0K530-P2500, 0K501-P2232).

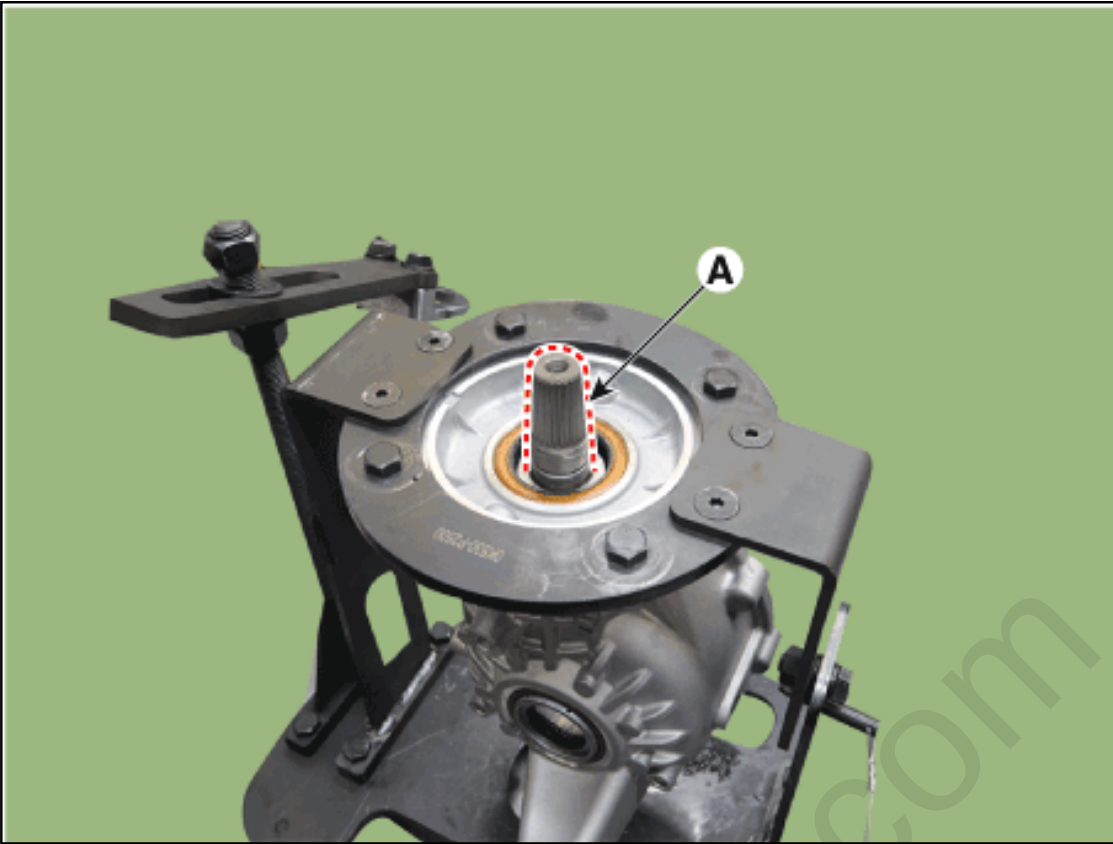


2. Loosen the pinion gear lock nut using the SST (09501-C9230).

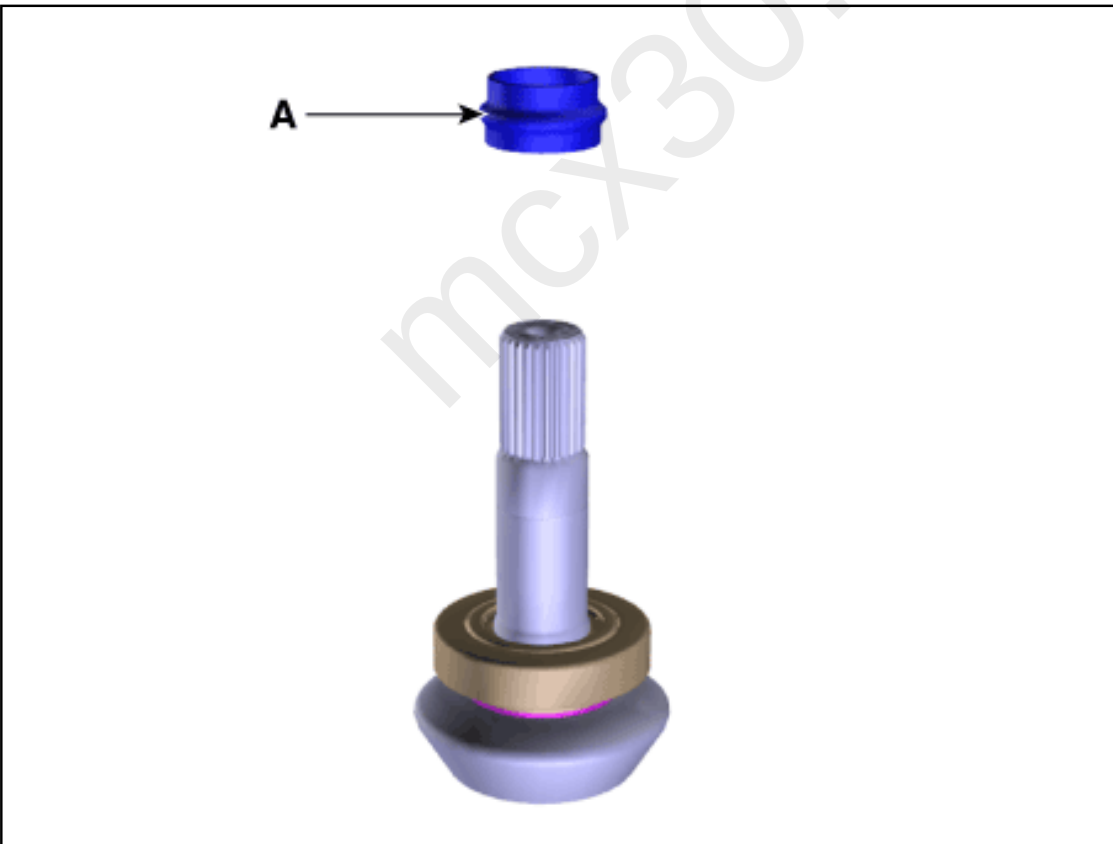


•When installing lock nut, use a new one.

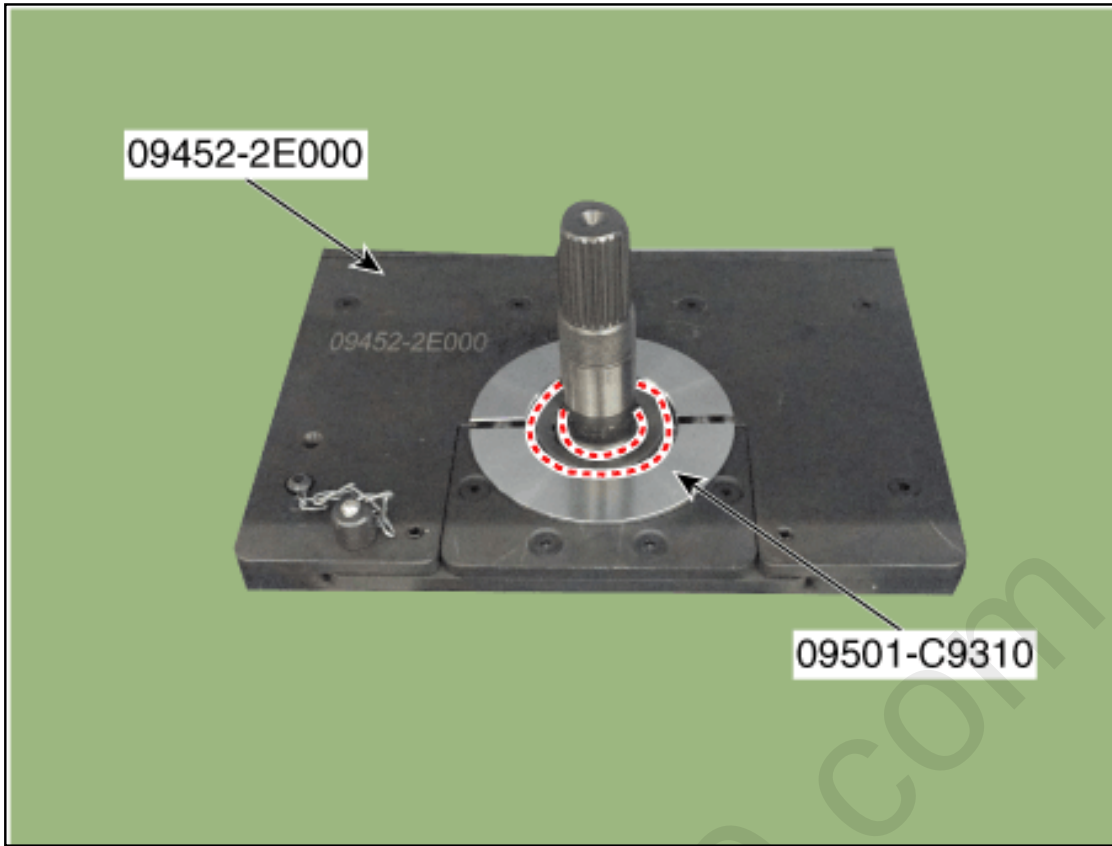
3. Remove the pinion drive gear assembly (A).



4. Remove the spacer (A) from the pinion drive gear assembly.

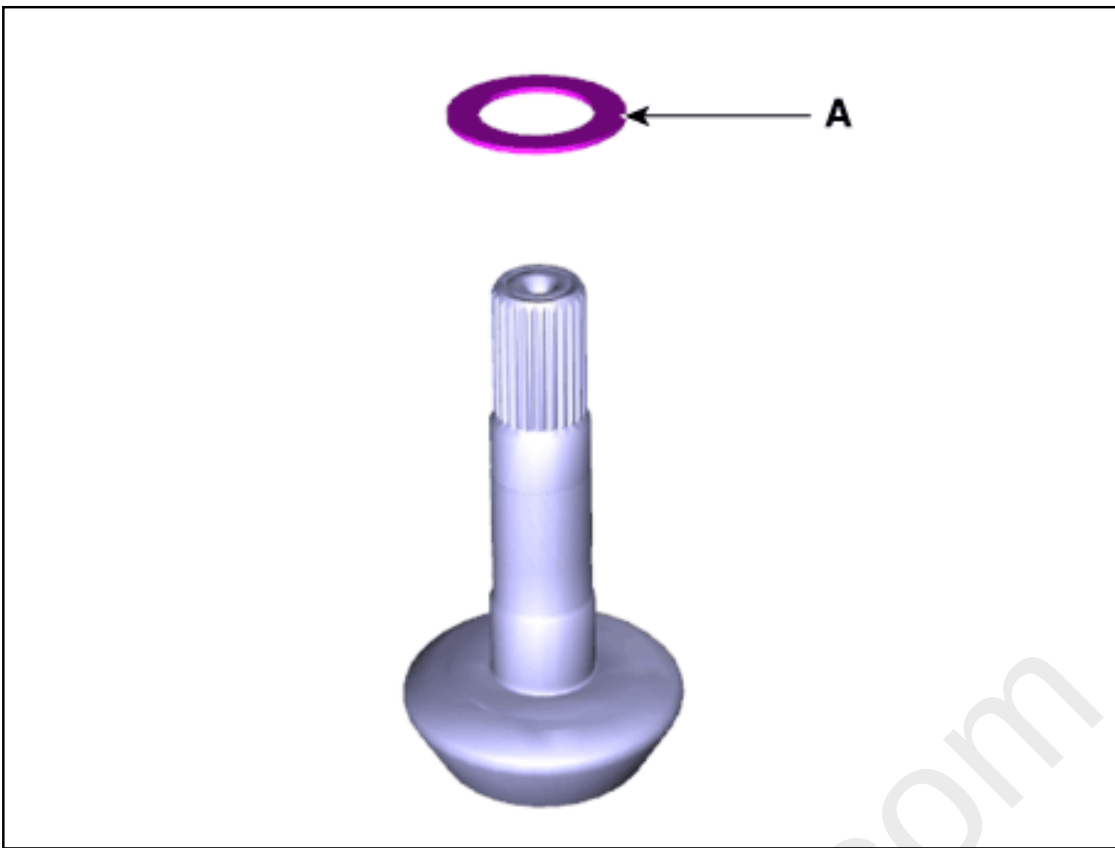


5. Install the SST (09501-C9310, 09452-2E000) and remove the bearing from the pinion drive gear using a press.



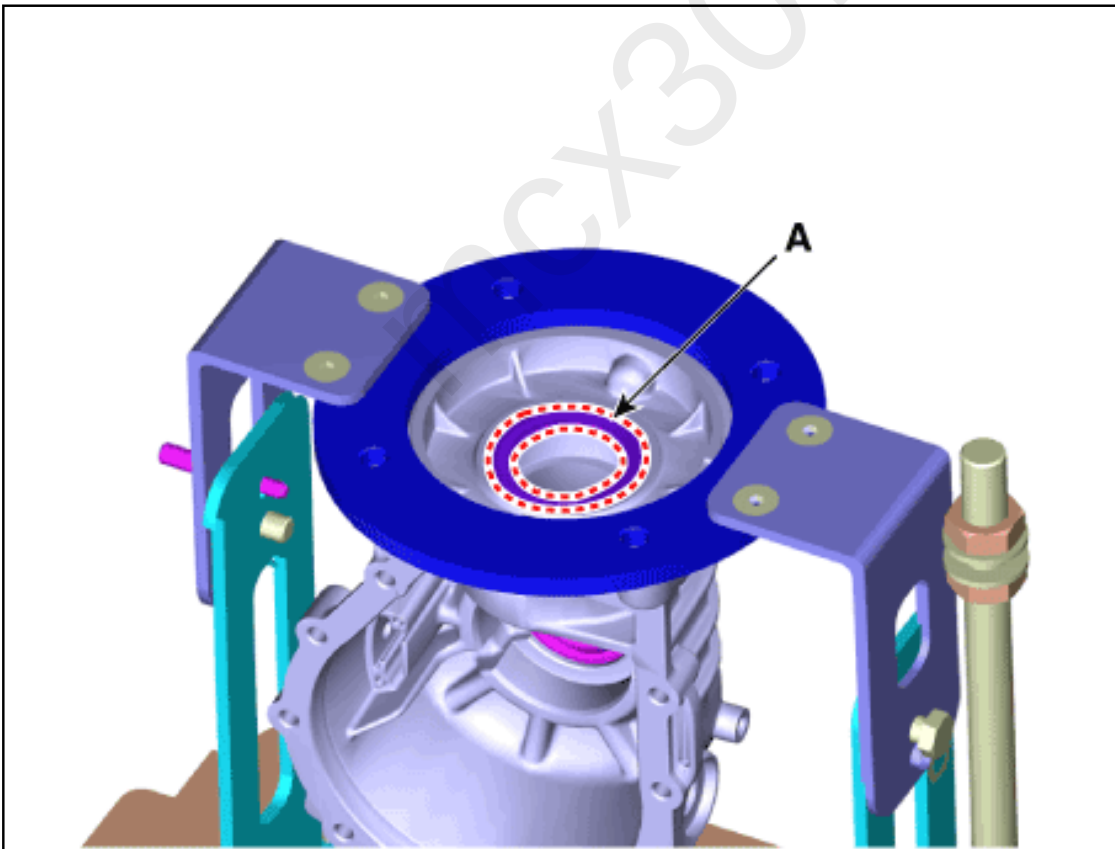
- Do not reuse the removed bearing.

6. Remove the pinion inner bearing adjustment shim (A) from the pinion drive gear.



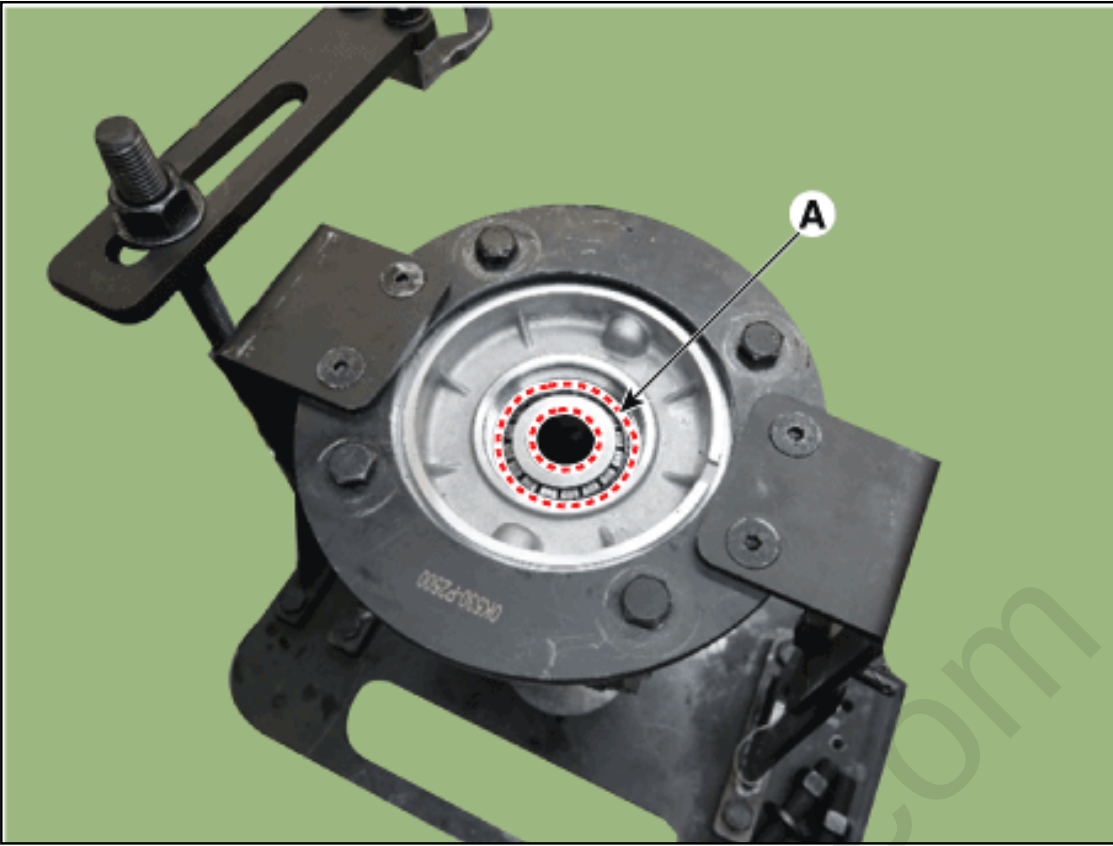
Differential carrier case

1. Remove the pinion oil seal (A).



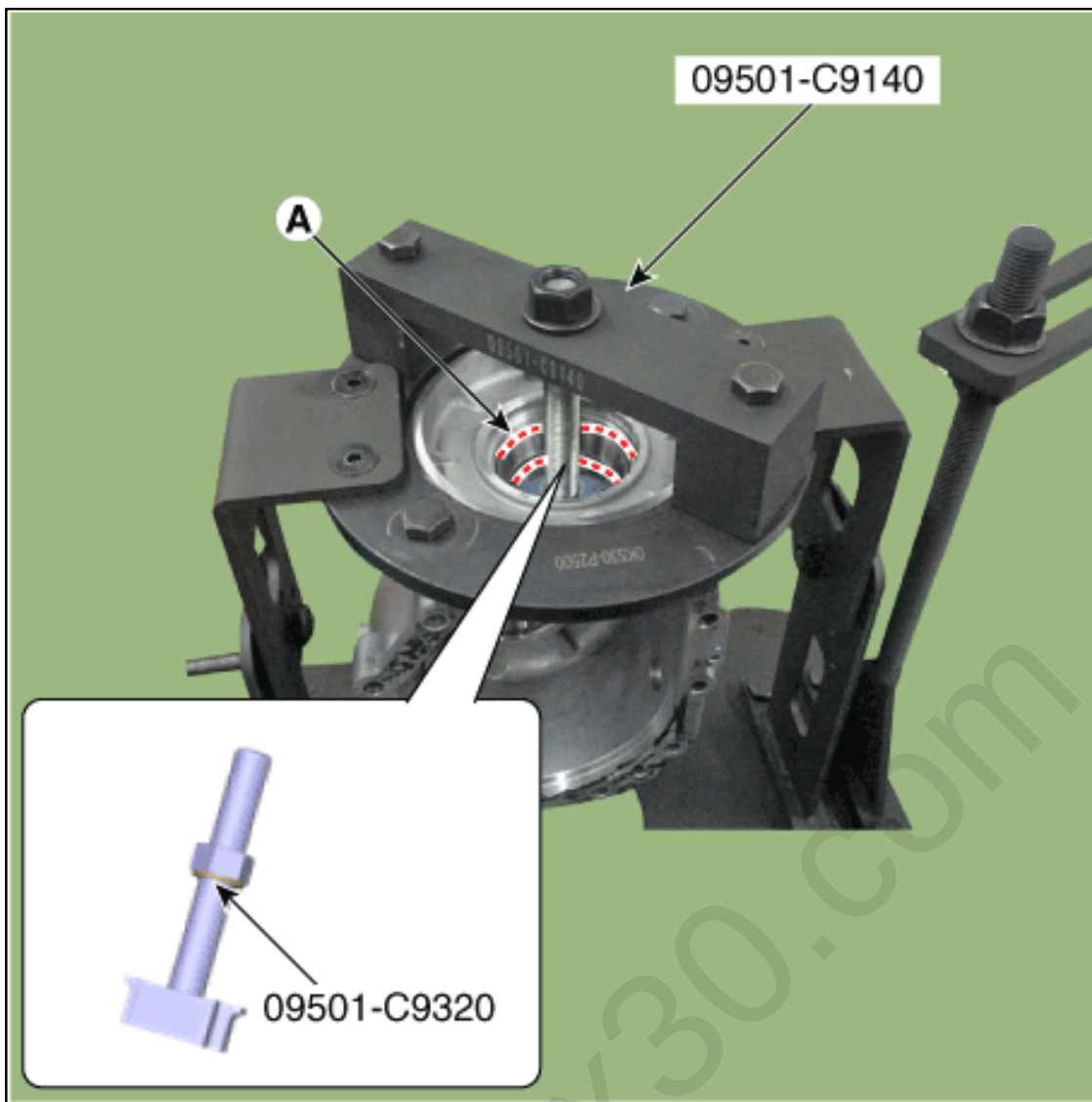
•When installing oil seal (A), replace oil seal with a new one.

2. Remove the outer pinion bearing (A).

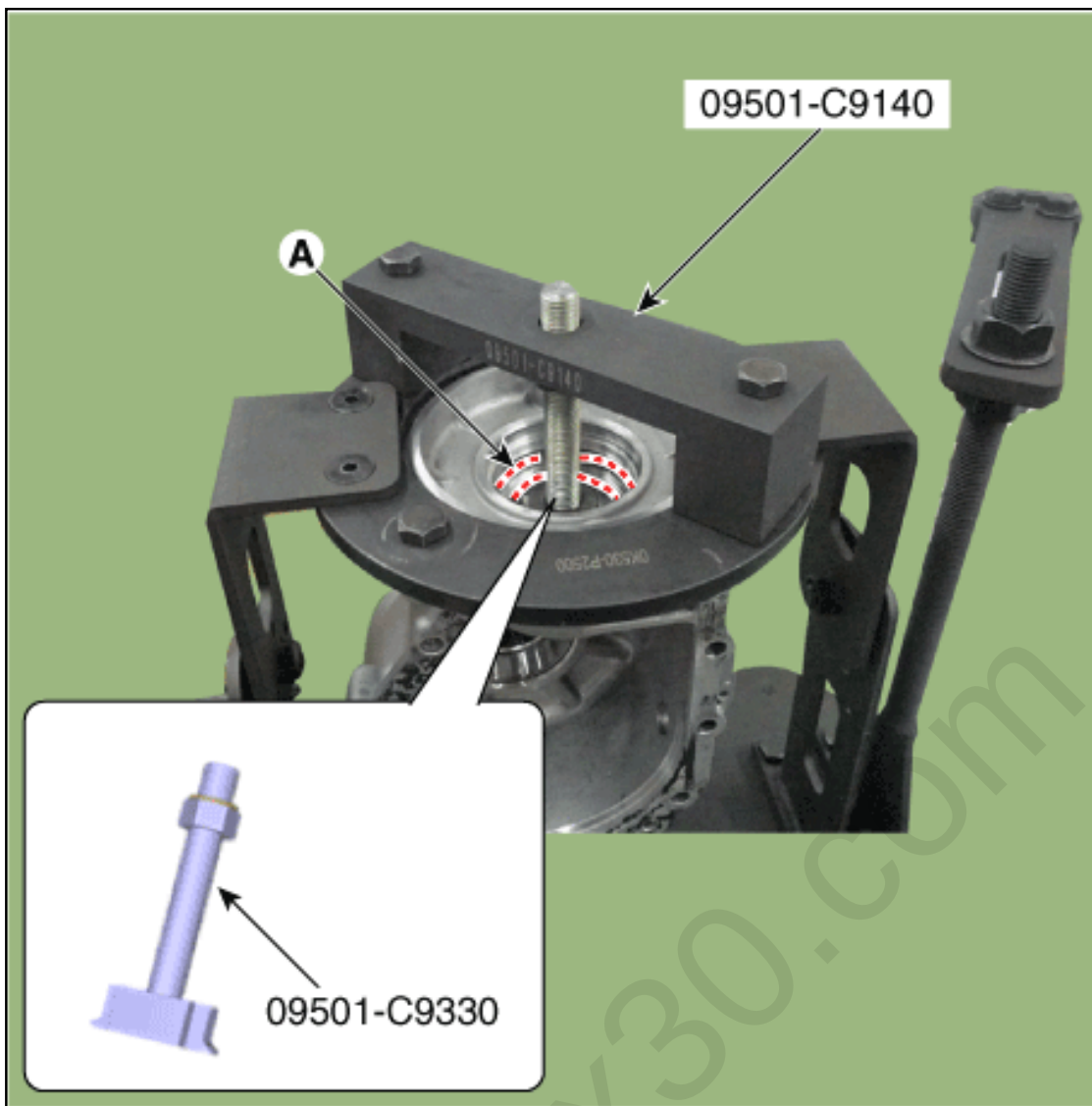


- Do not reuse the removed bearing.

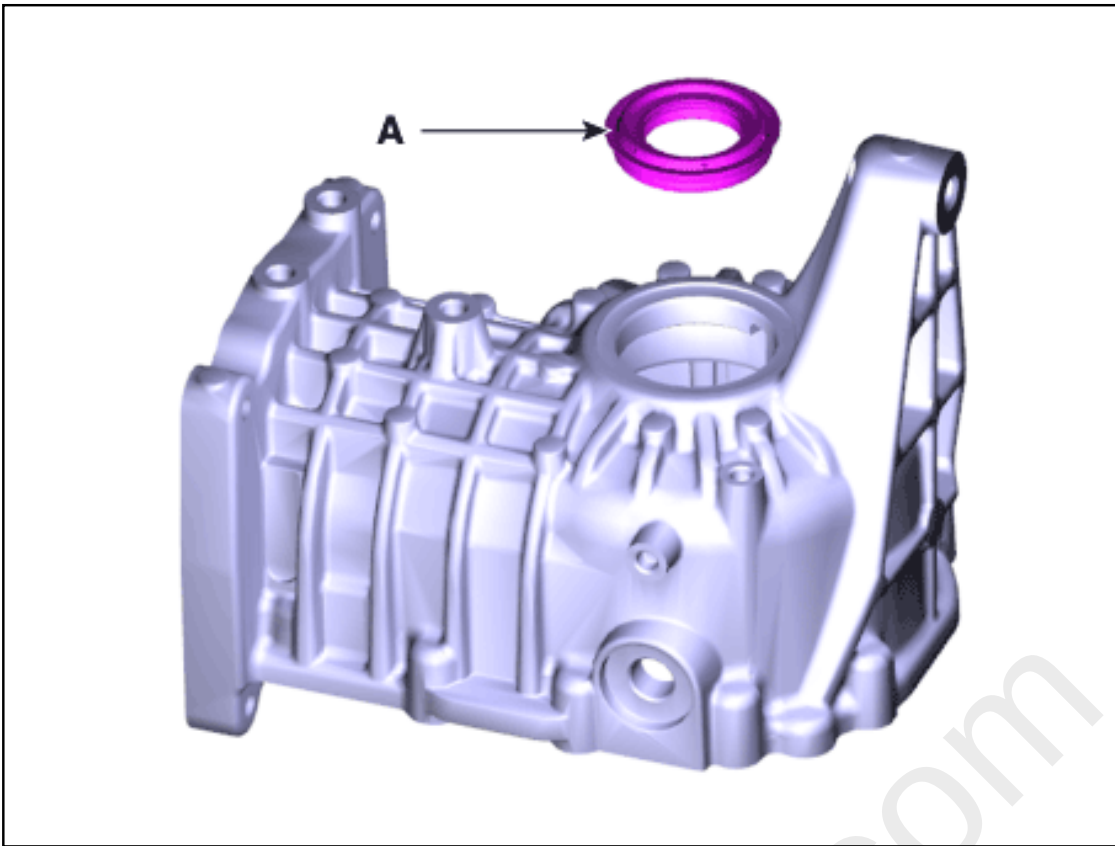
3. Remove the outer pinion bearing race (A) using the SST (09501-C9140, 09501-C9320).



4. Remove the inner pinion bearing race (A) using the SST (09501-C9140, 09501-C9330).

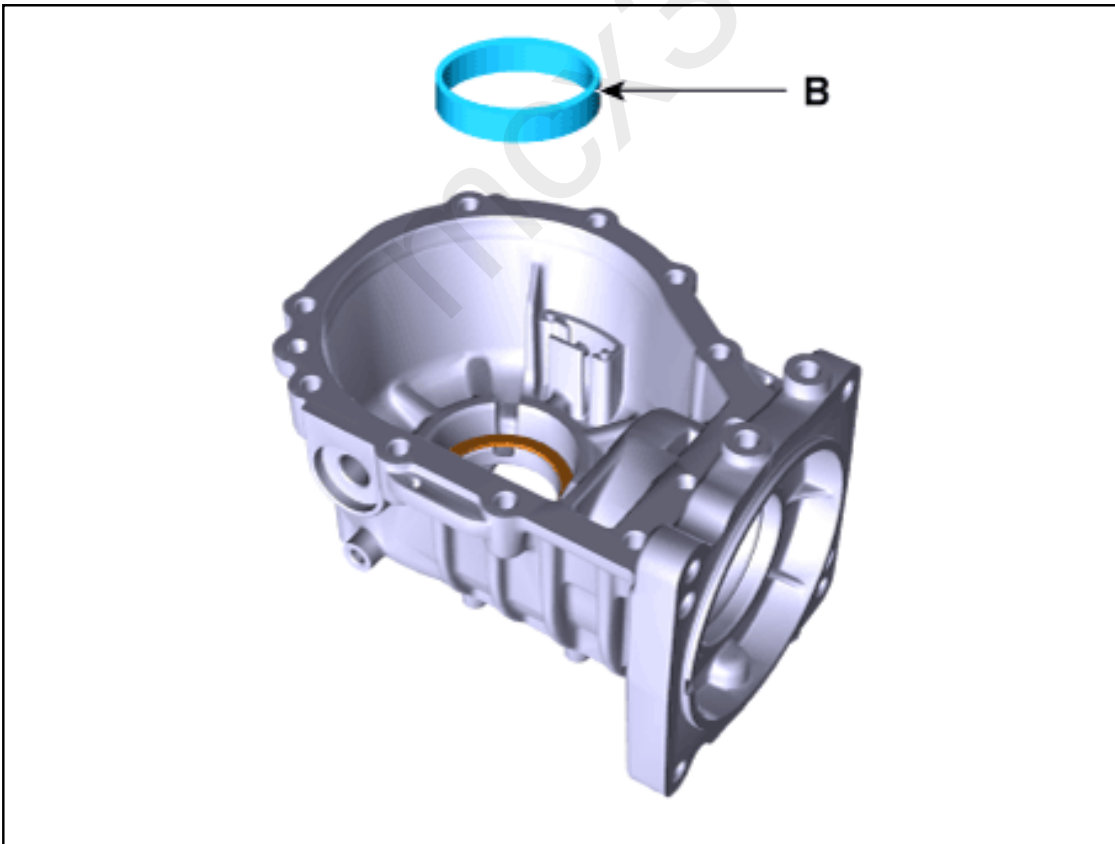


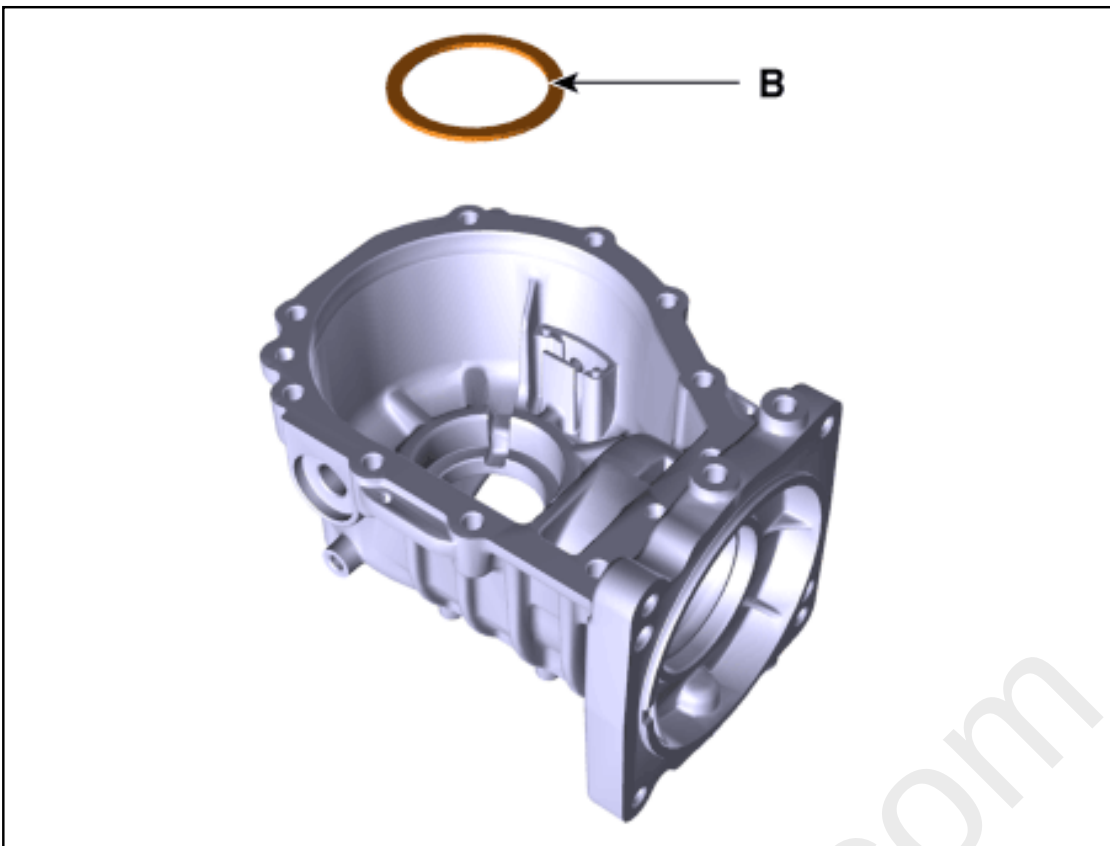
5. Remove the differential carrier case side oil seal (A).



•When installing oil seal (A), replace oil seal with a new one.

6. Remove the differential carrier case side bearing race (A) and adjustment shim (B).

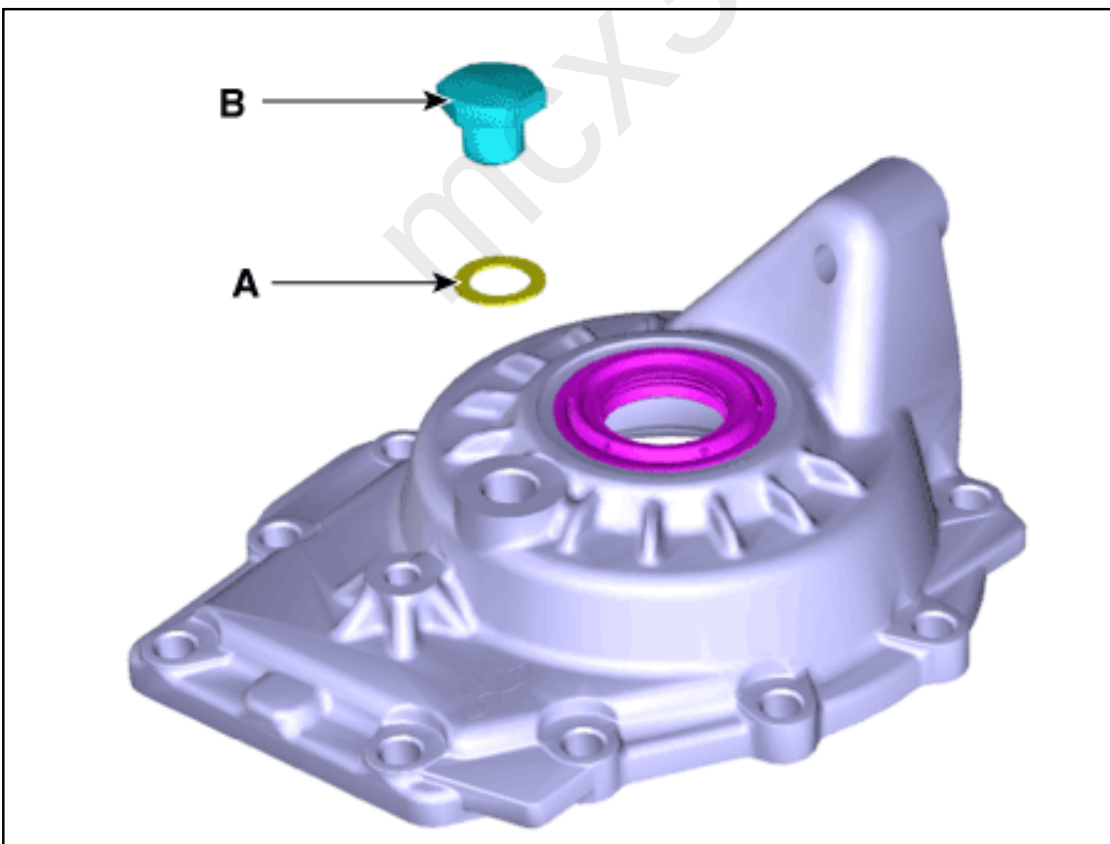




7. Remove the filler gasket (A) and filler plug (B) from the differential carrier case side cover.

Tightening torque :

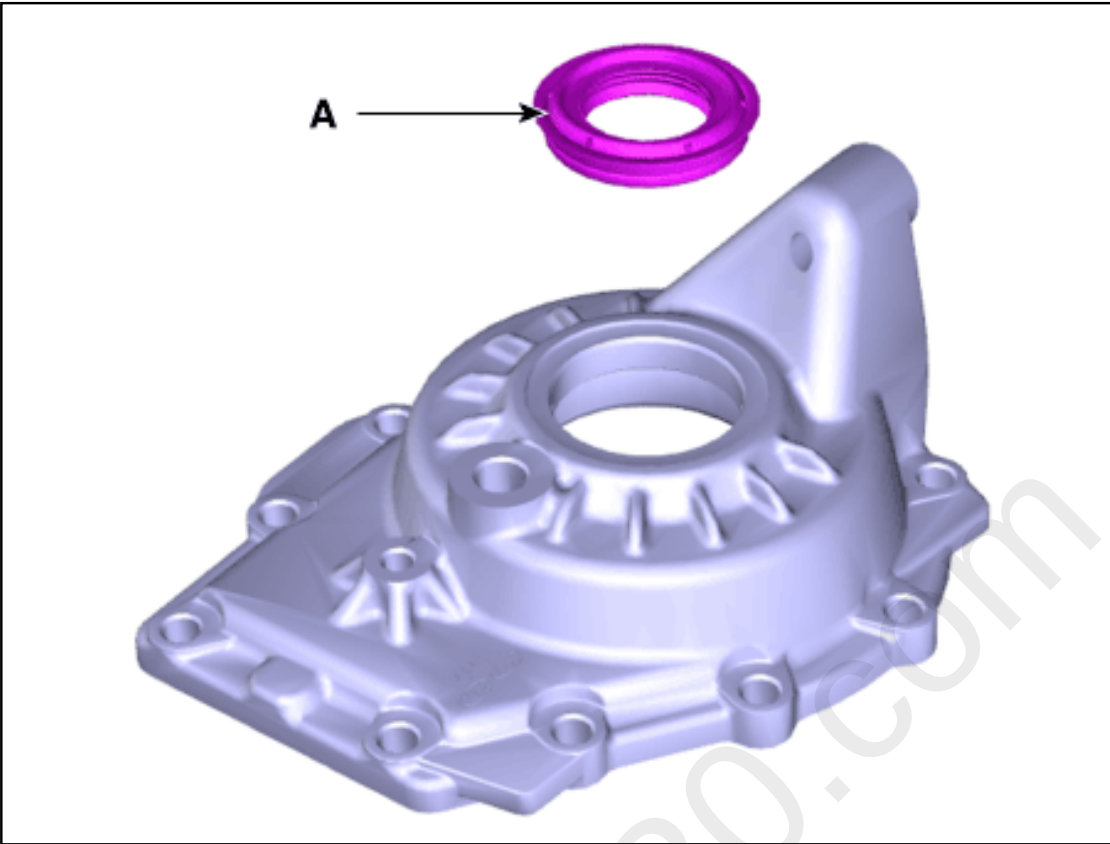
39.2 - 58.8 N·m (4.0 - 6.0 kgf·m, 28.9 - 43.3 lb·ft)





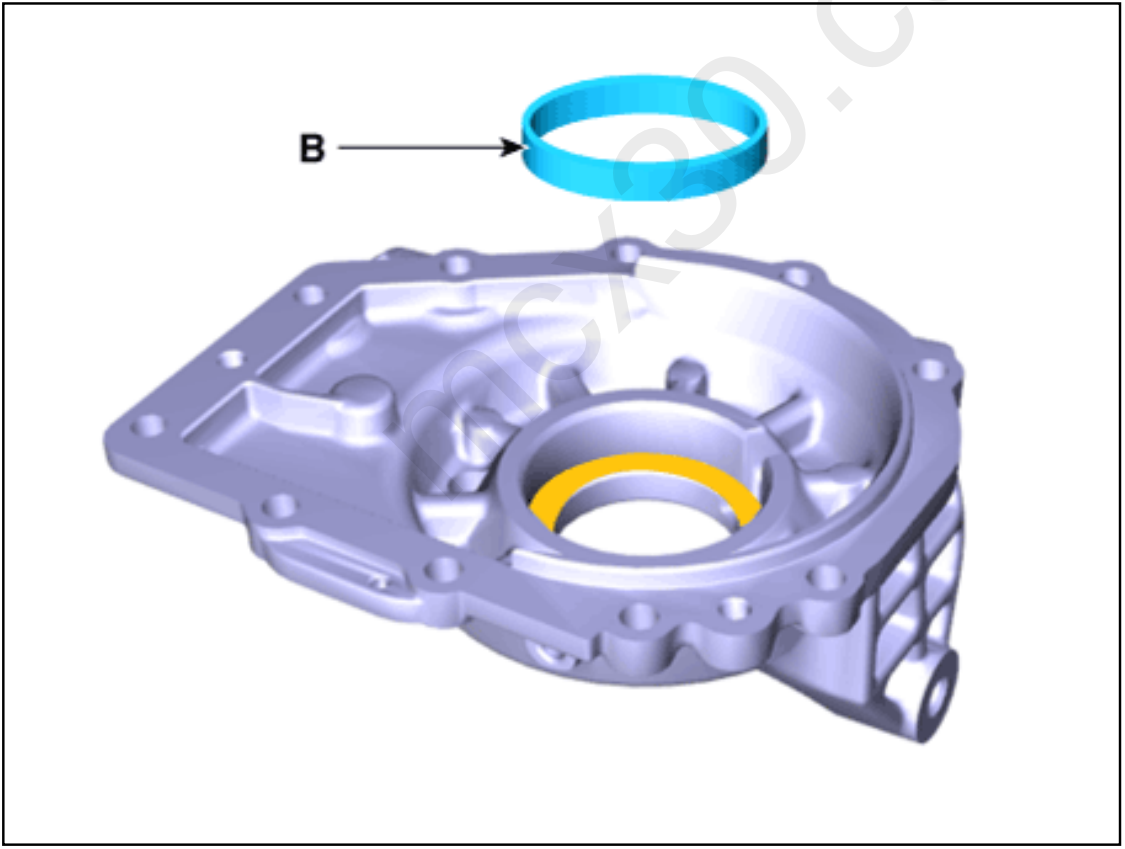
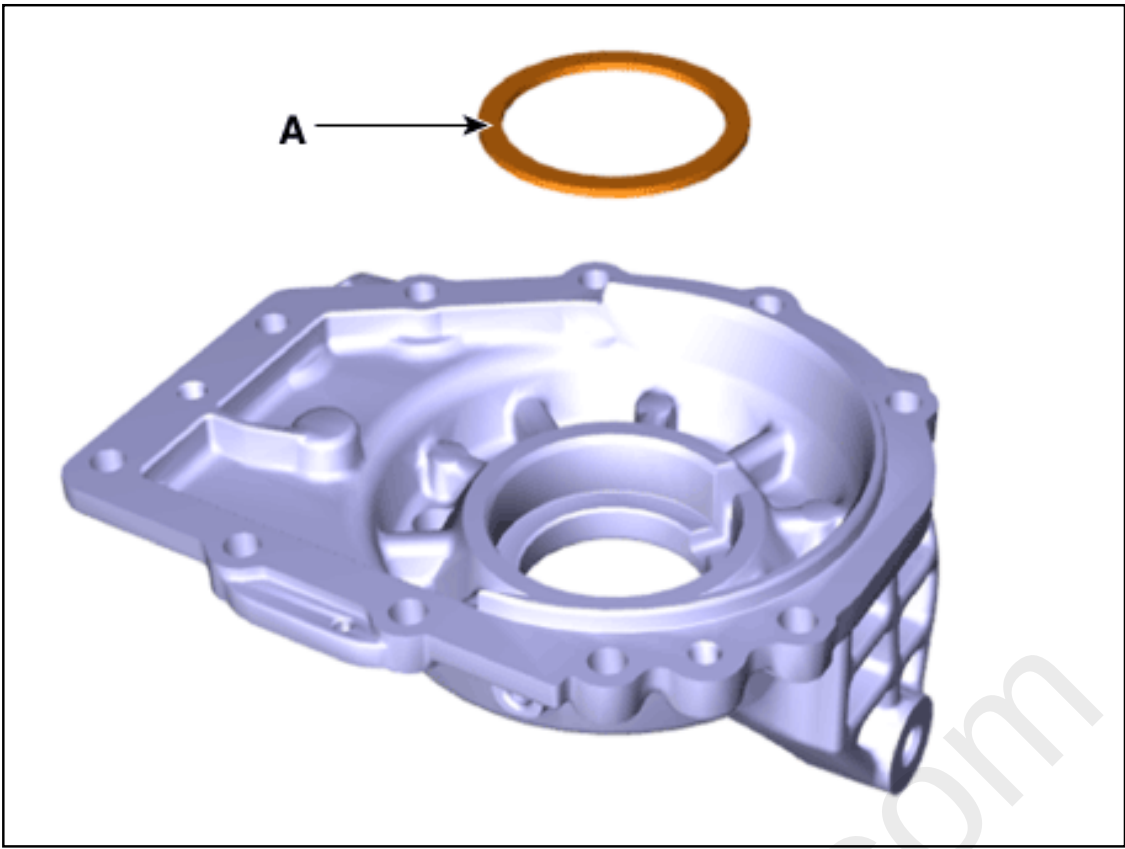
- When installing the filler plug, replace the gasket (A) with a new one.

8. Remove the differential carrier case side cover oil seal (A).



- When installing oil seal (A), replace oil seal with a new one.

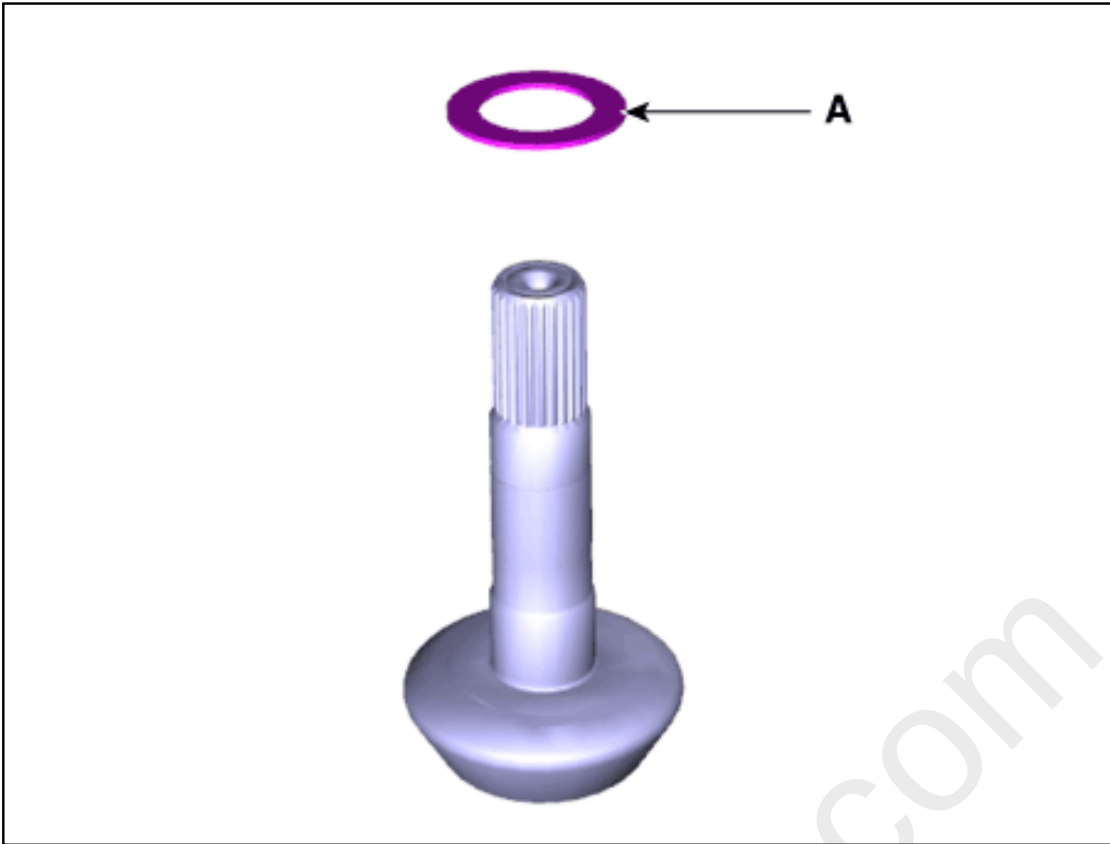
9. Remove the differential carrier case side cover bearing race (A) and adjustment shim (B).



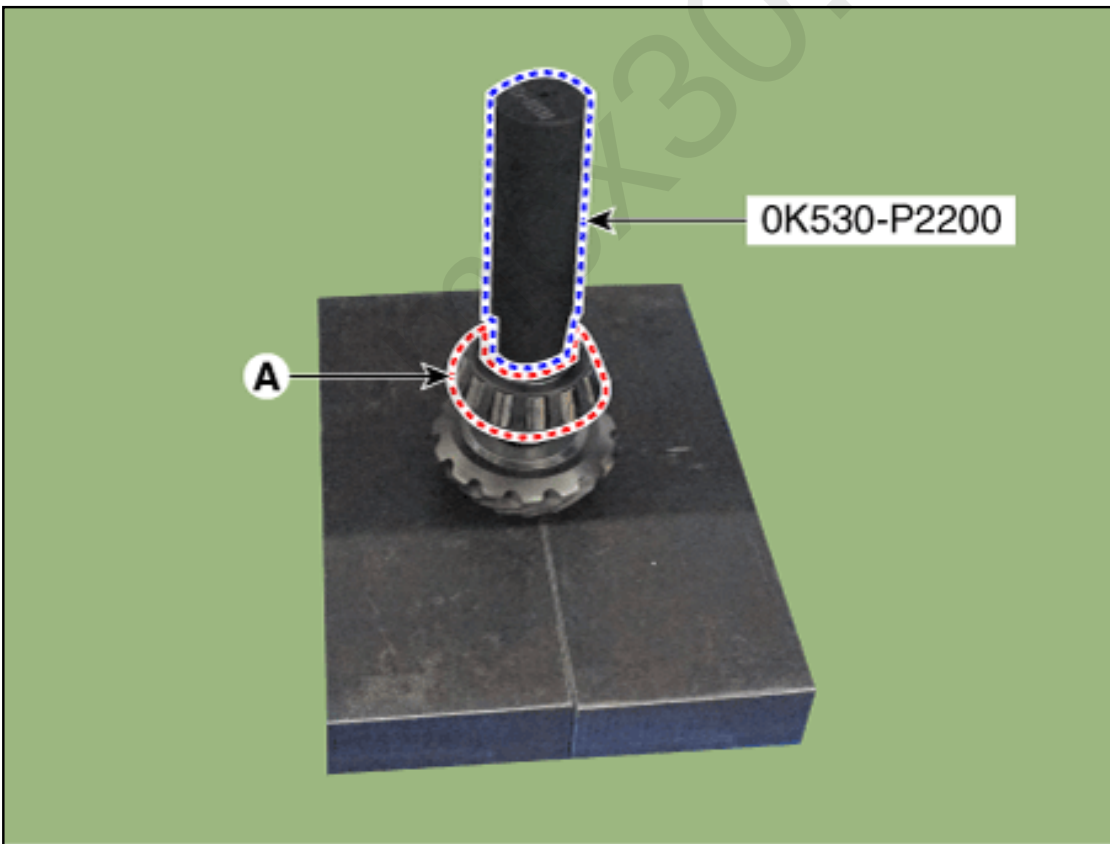
Reassembly

Pinion drive gear assembly

1. Install the inner pinion bearing adjustment shim (A) on the pinion drive gear assembly.

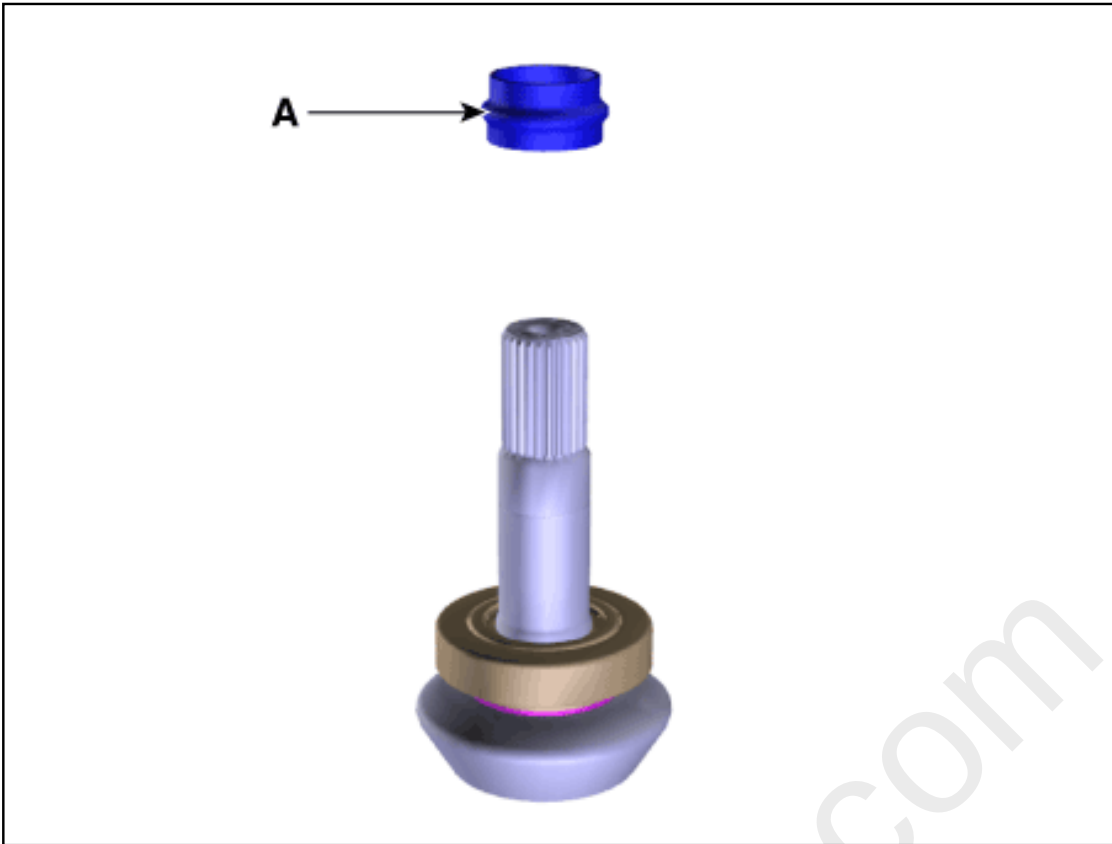


2. Install the inner pinion bearing (A) on the pinion drive gear using SST (0K530-P2200) and press.

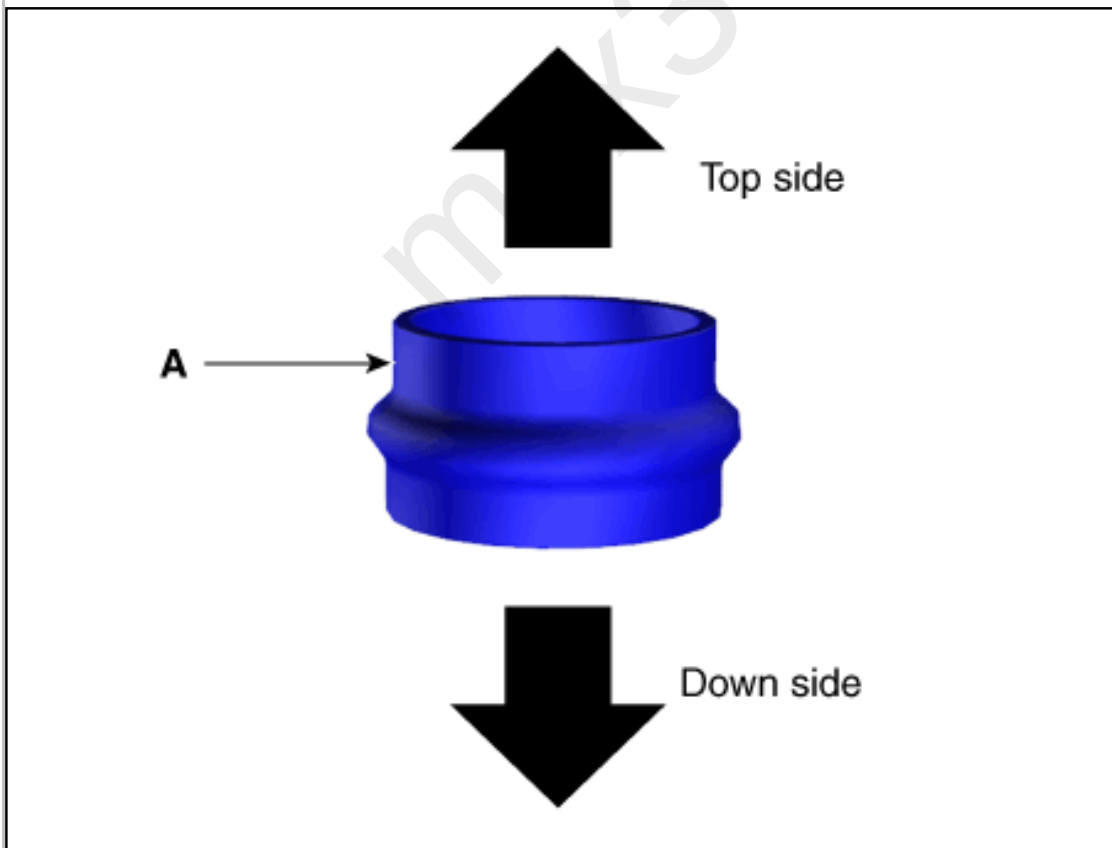


- Do not reuse the removed bearing.

3. Install the spacer (A) in the pinion drive gear assembly.



•When installing, make sure the spacer (A) is in the top side direction.

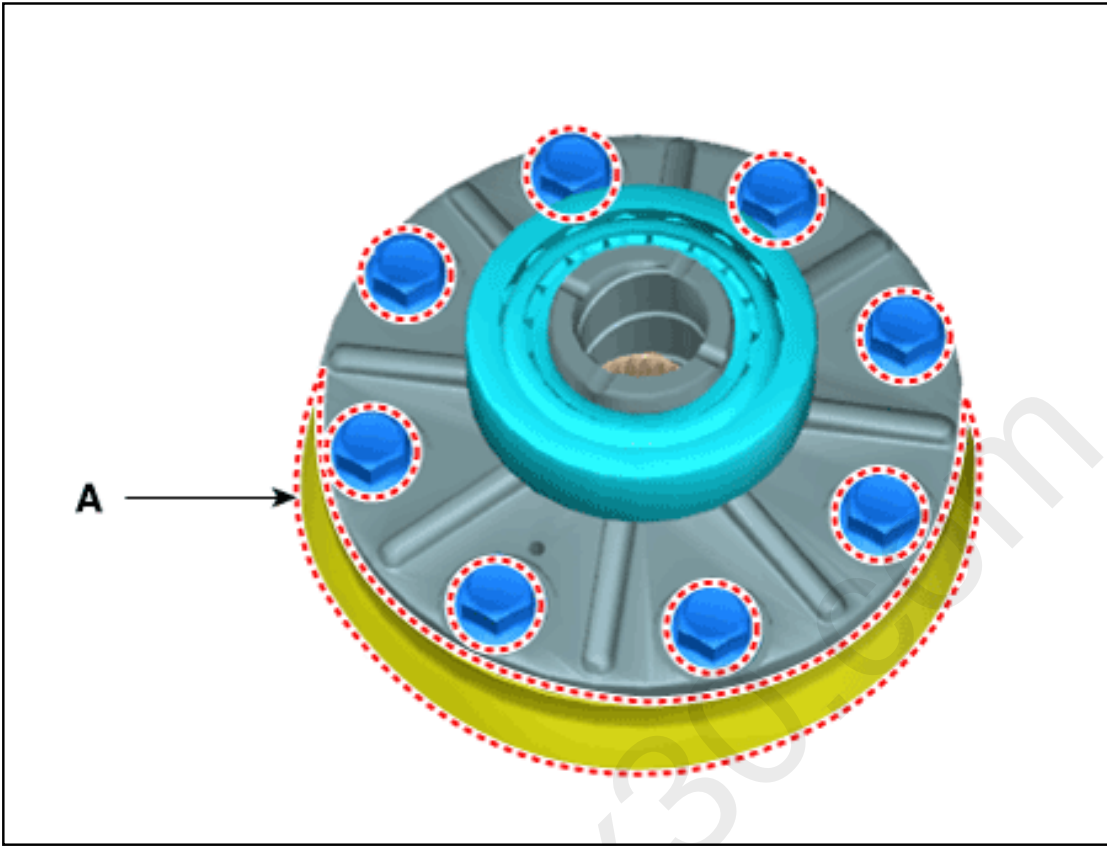


Differential gear assembly

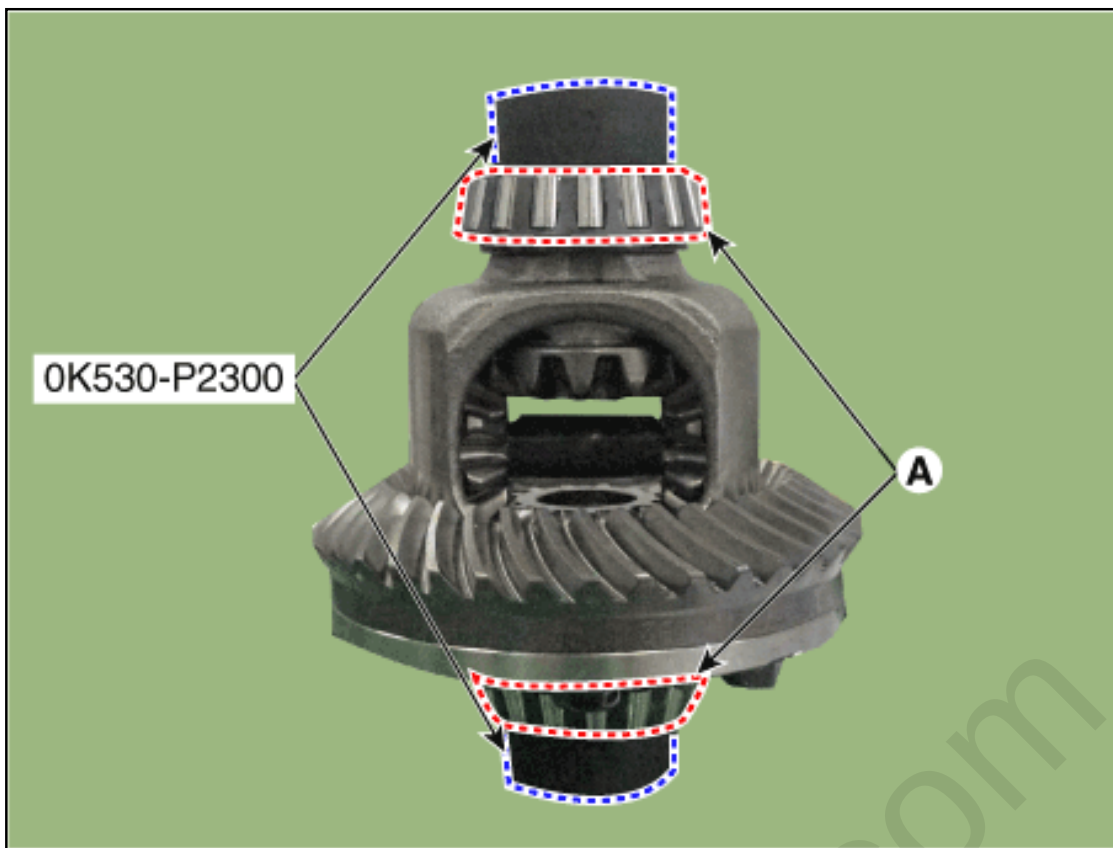
1. Install the ring gear (A) on the gear carrier.

Tightening torque :

78.4 - 88.2 N·m (8.0 - 9.0 kgf·m, 57.8 - 65.0 lb·ft)



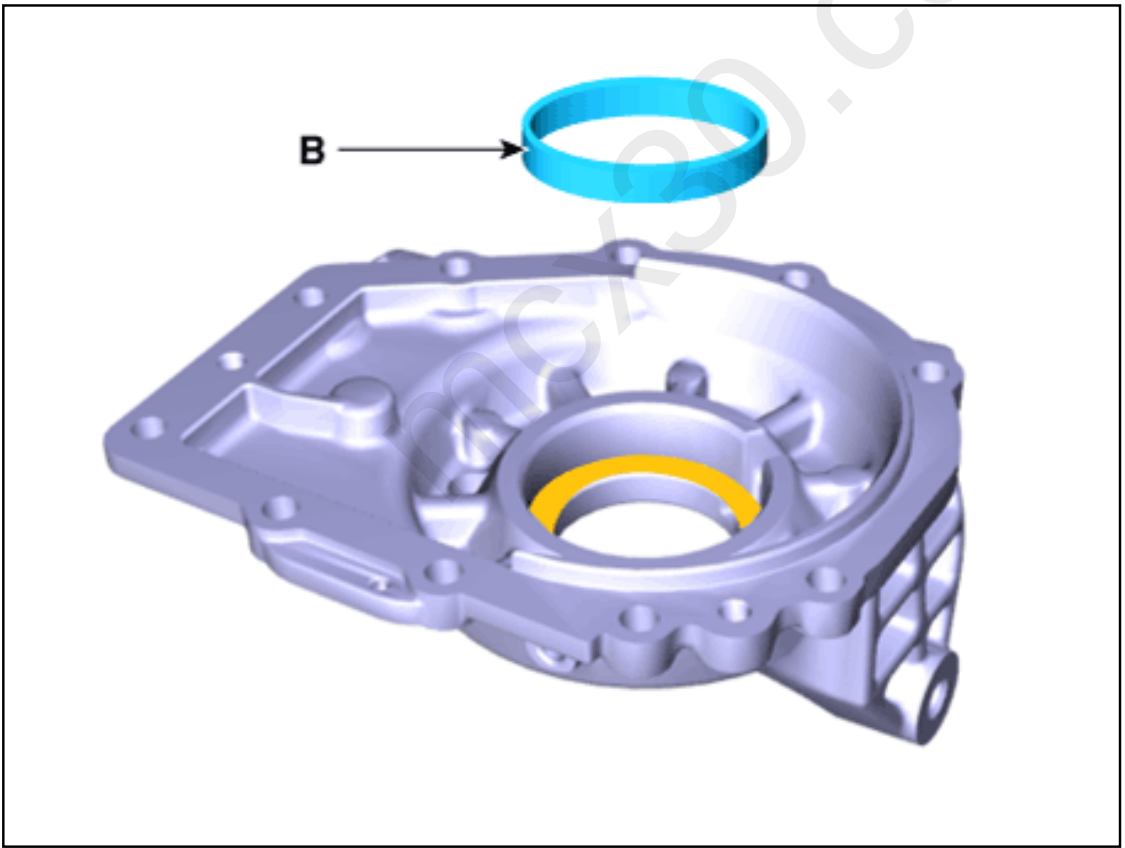
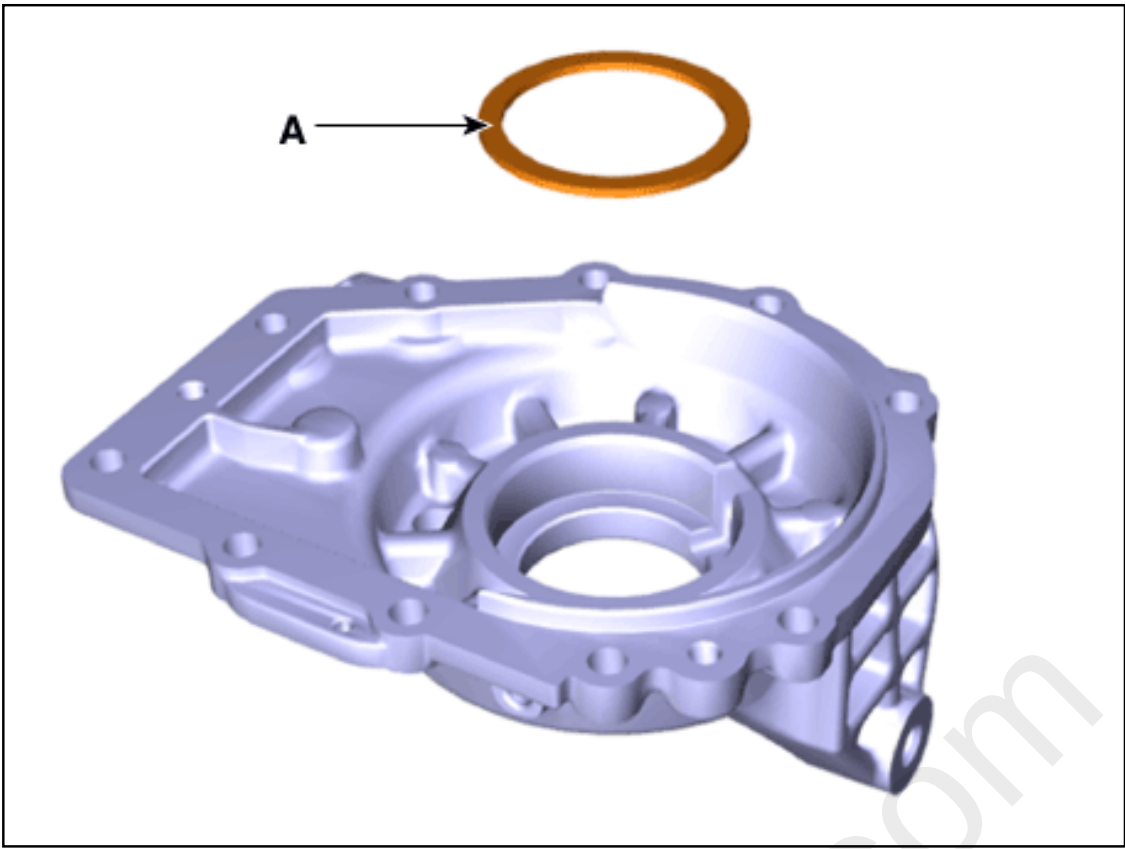
2. Install the differential gear bearings (A) on both sides using the SST (0K530-P2300) and press.



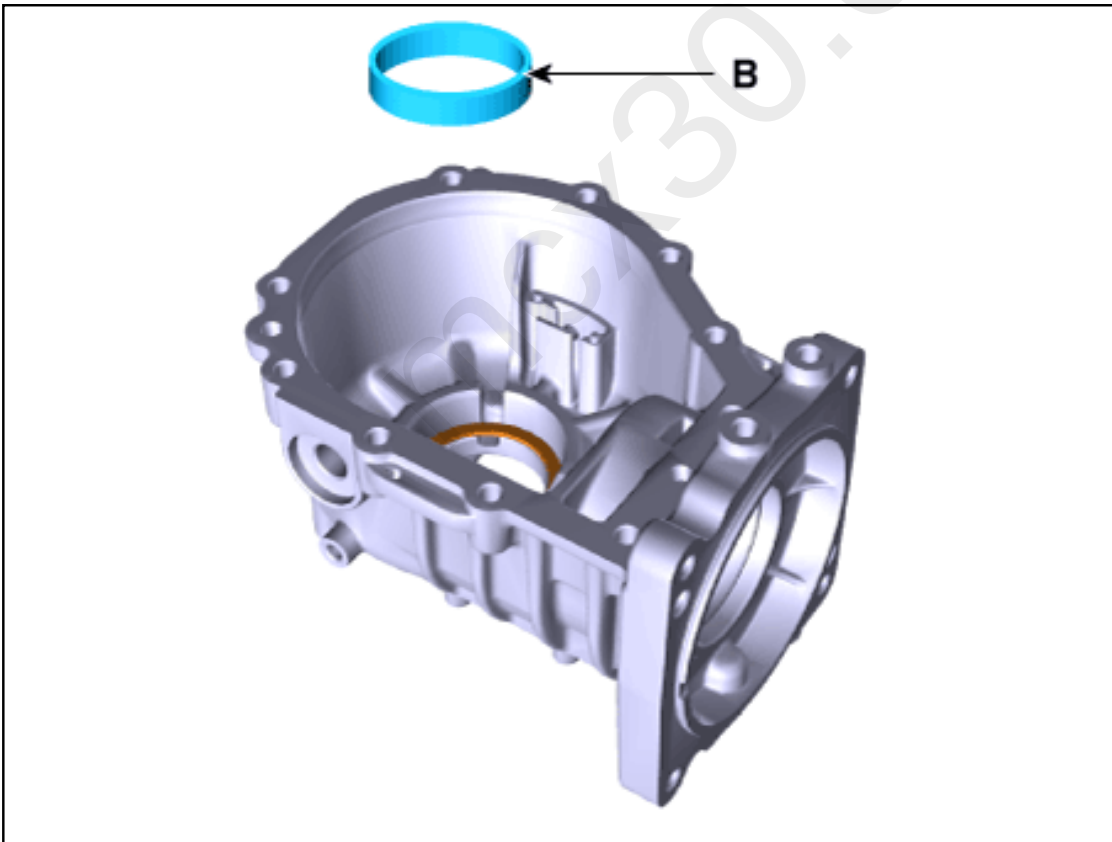
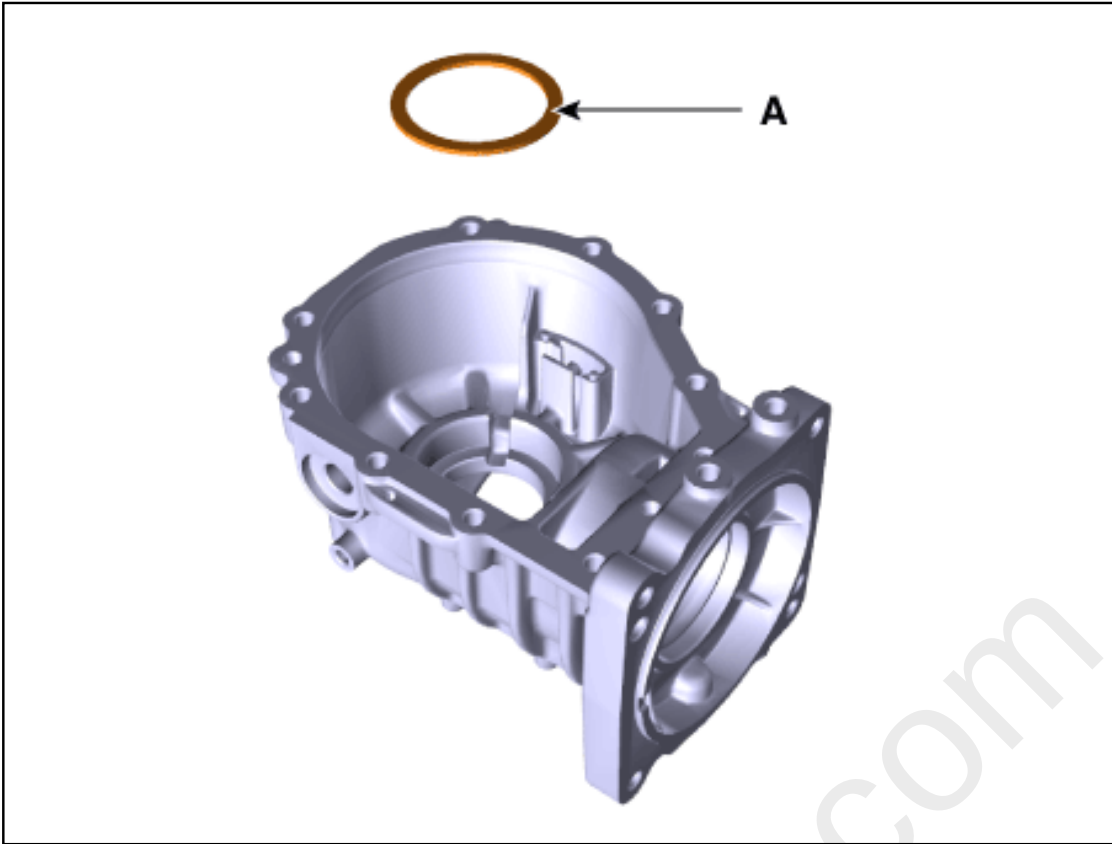
- Do not reuse the removed bearing.

Differential carrier case

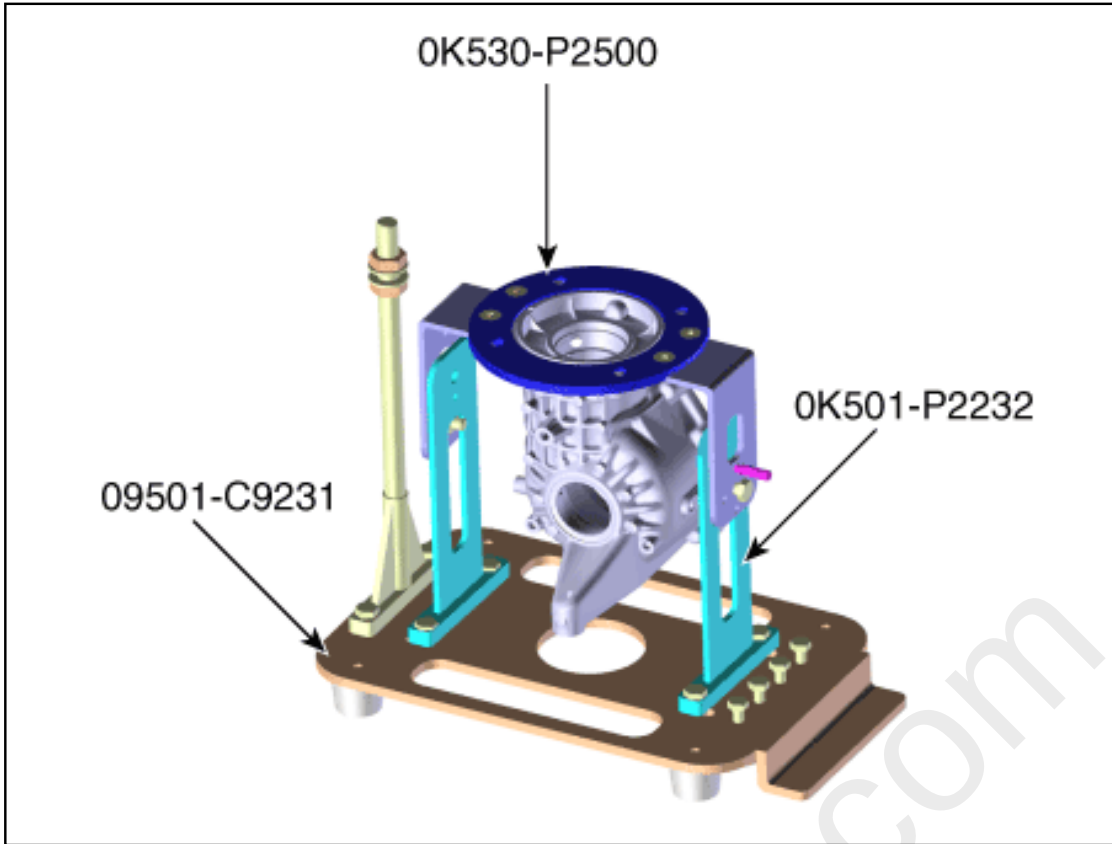
1. Install the differential carrier case side cover bearing adjustment shim (A) and race (B).



2. Install the differential carrier case side bearing adjustment shim (A) and race (B).



3. Hold the differential carrier assembly using the SST (09501-C9231, 0K530-P2500, 0K501-P2232).

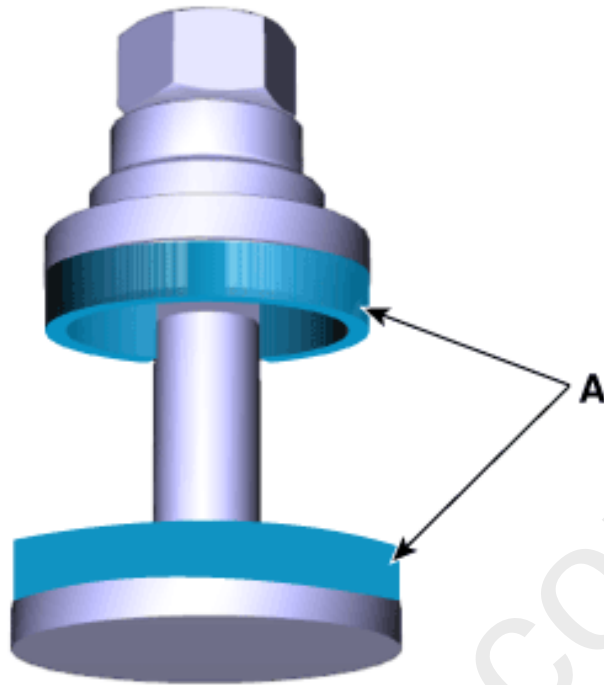


4. Install the outer, inner pinion bearing race using SST (09501-C9340).

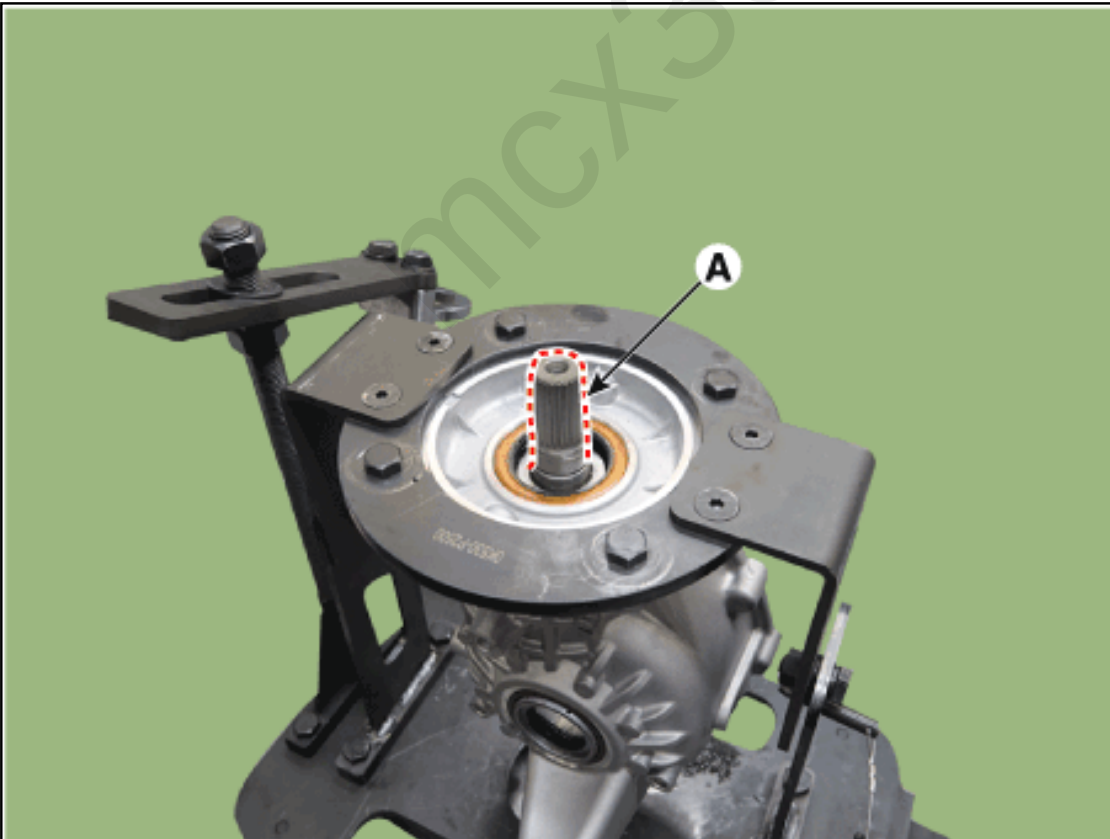




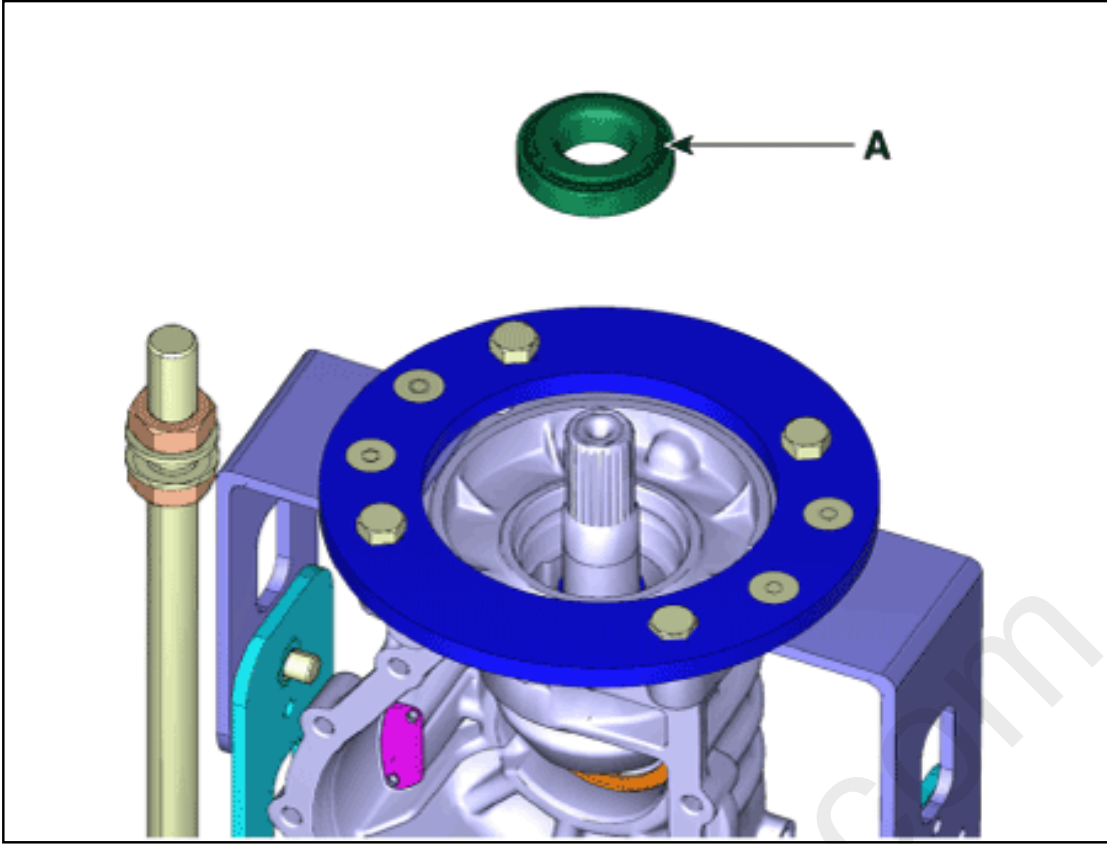
- when installing, attach the race (A) with a special tool as follows.



5. Install the pinion drive gear assembly (A).

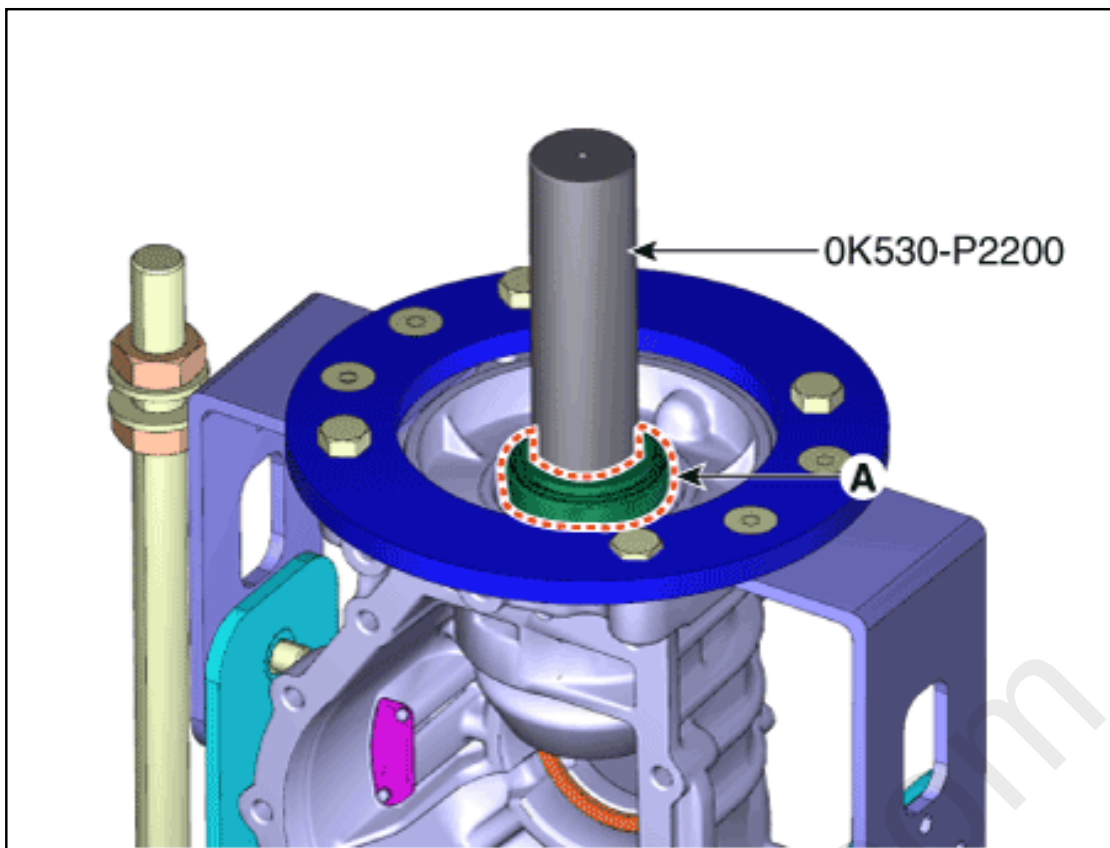


6. Install outer pinion bearing (A) on pinion gear assembly.

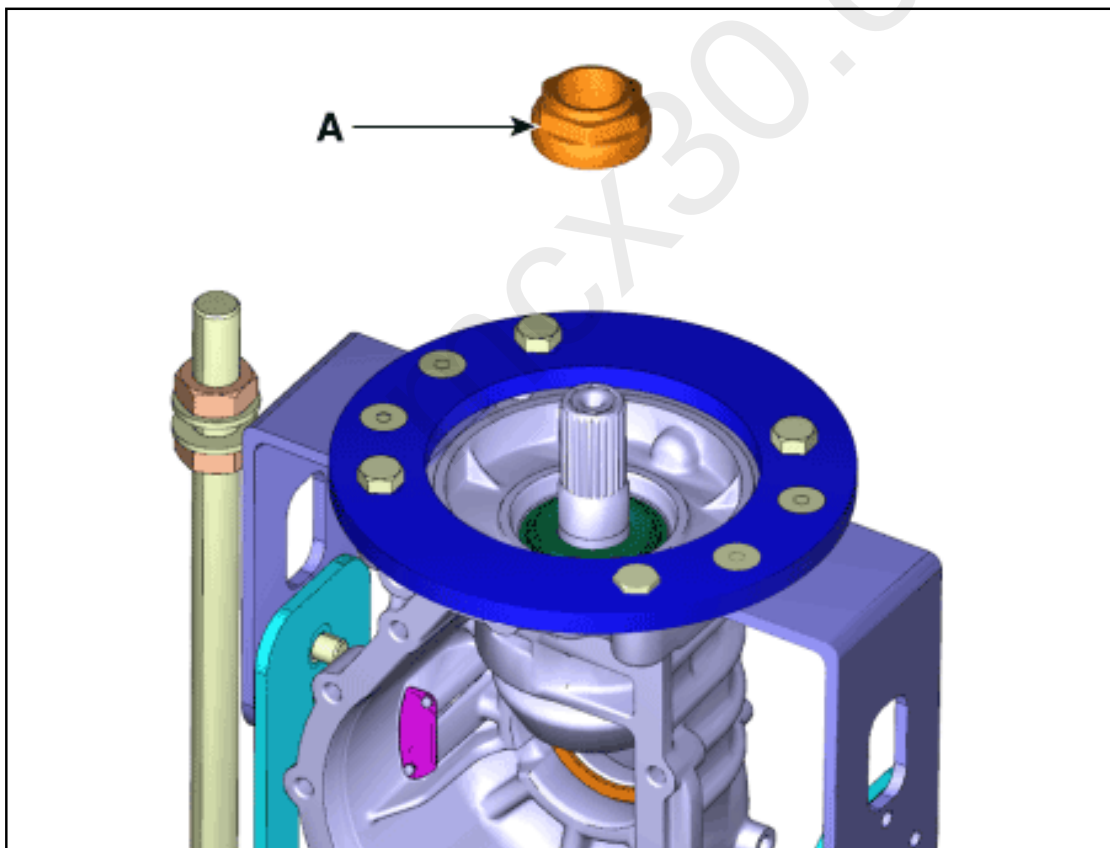


- Do not reuse the removed bearing.

7. Place the SST (0K530-P2200) on the pinion gear spline side and press the bearing (A) of the until the thread can engages the lock nut.

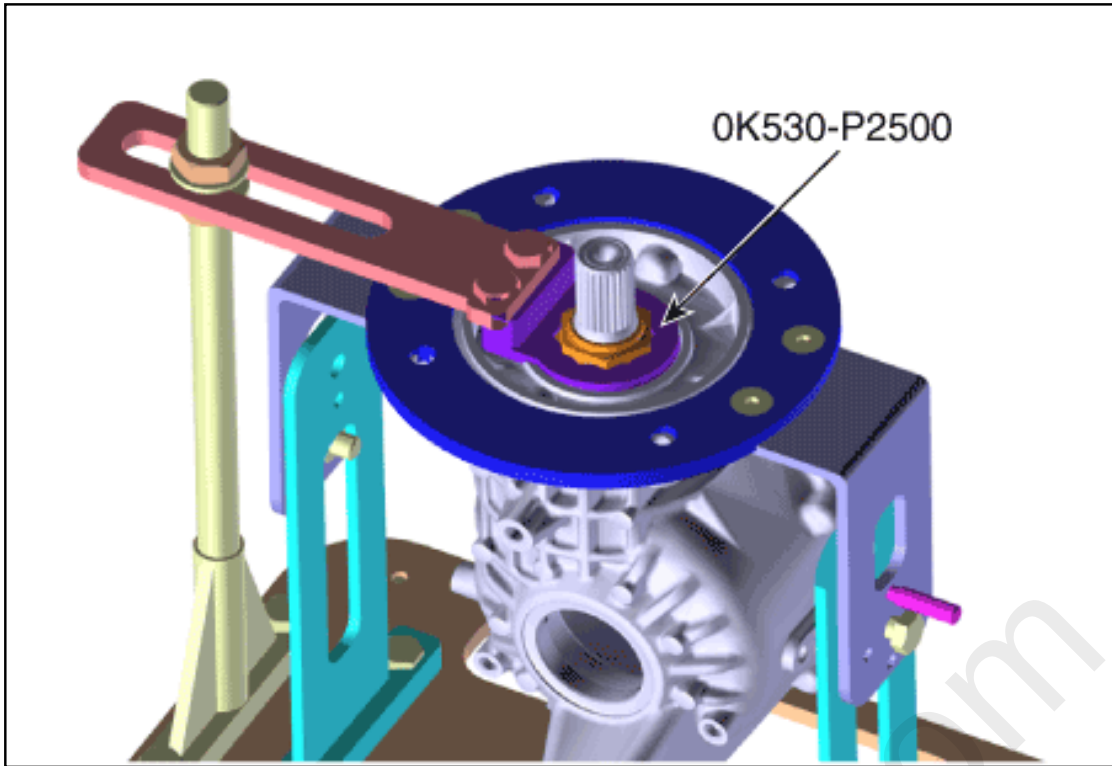


8. Pre-tighten the pinion lock nut (A) to the thread on the side of the pinion gear spline.



•When you installing lock nut (A), replace lock nut with a new one.

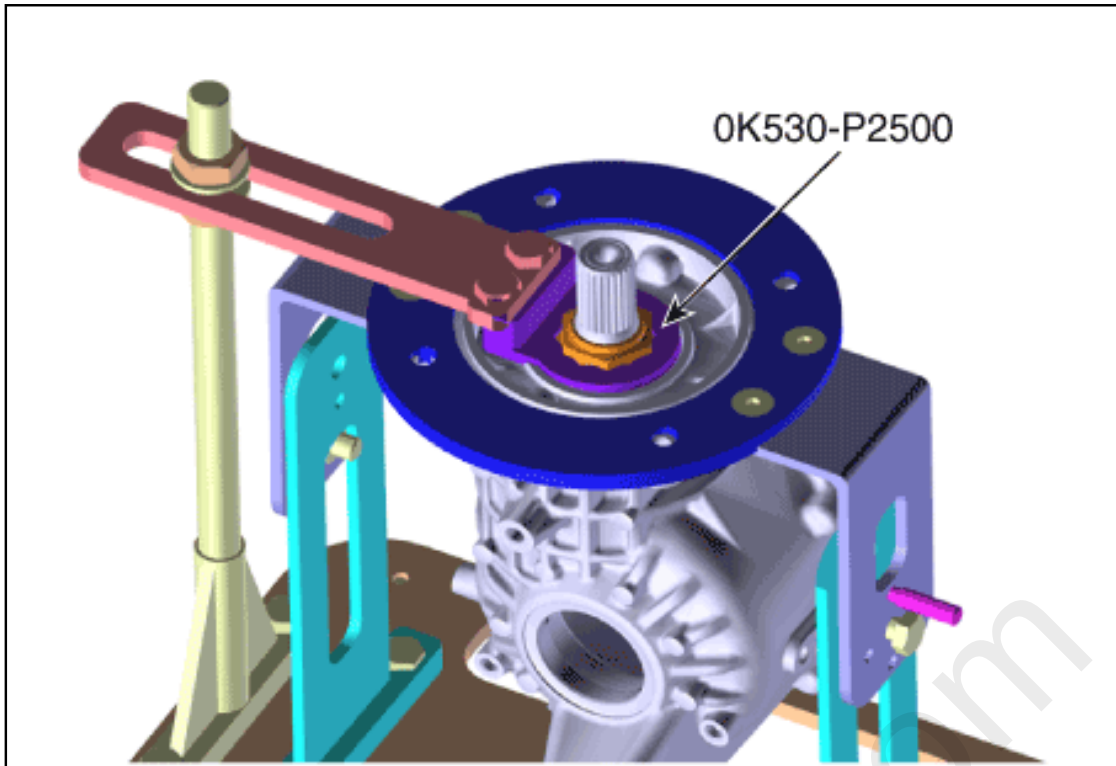
9. Fix the lock nut using the SST (0K530-P2500).



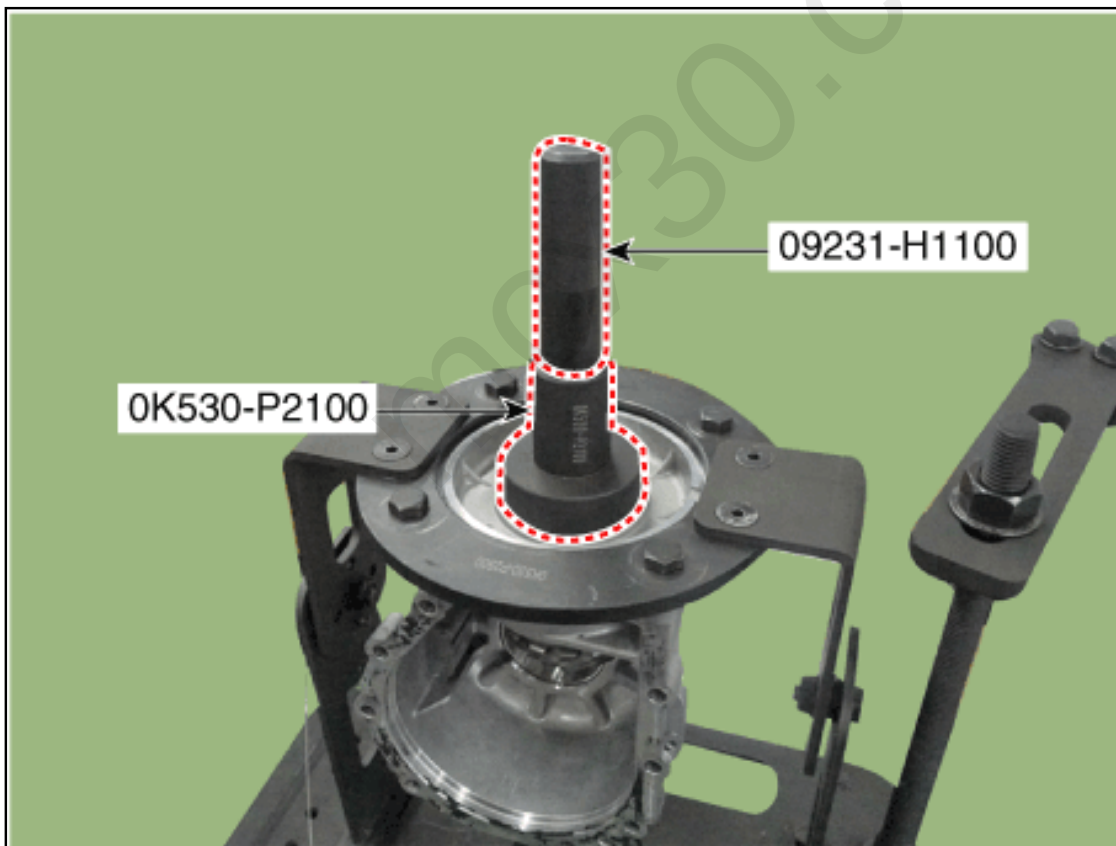
10. Tighten the pinion gear lock nut using SST (09501-C9231) to press the outer bearing.



11. Remove the SST (0K530-P2500).

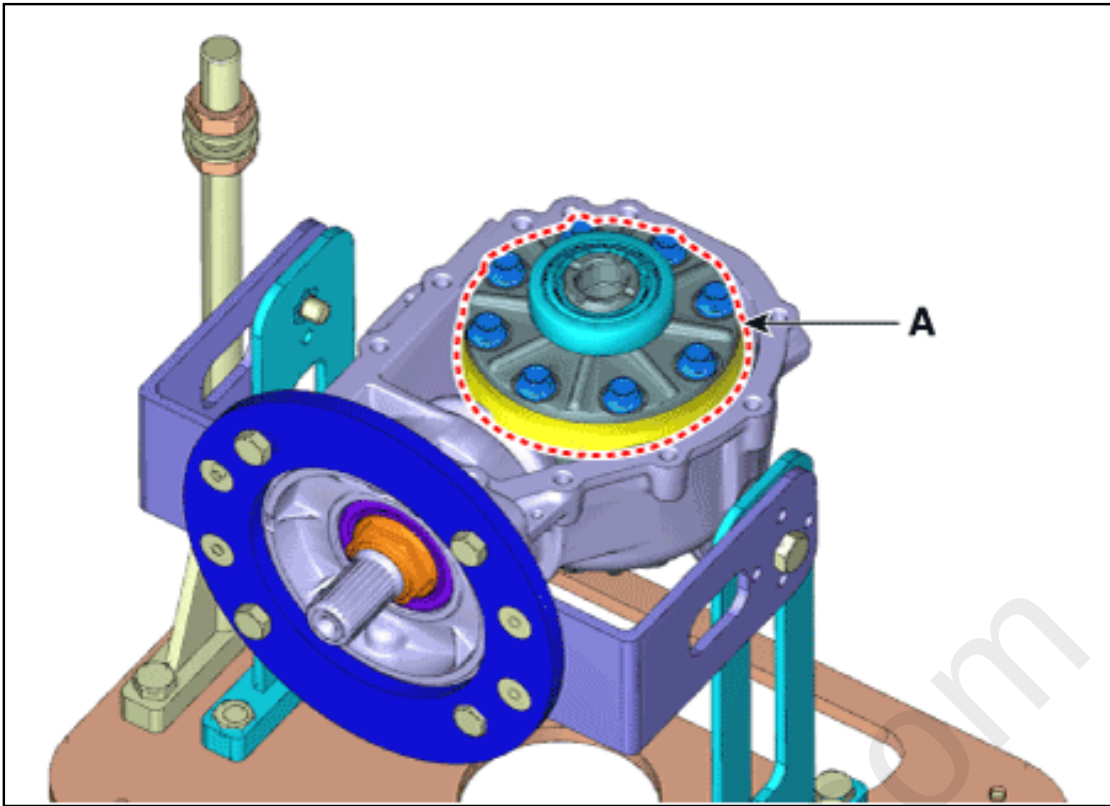


12. Press the pinion oil seal using SST (0K530-P2100, 09231-H1100).



- Make sure that the gap between the differential carrier case and the pinion oil seal is 0 - 0.5 mm.
- When installing oil seal, replace oil seal with a new one.

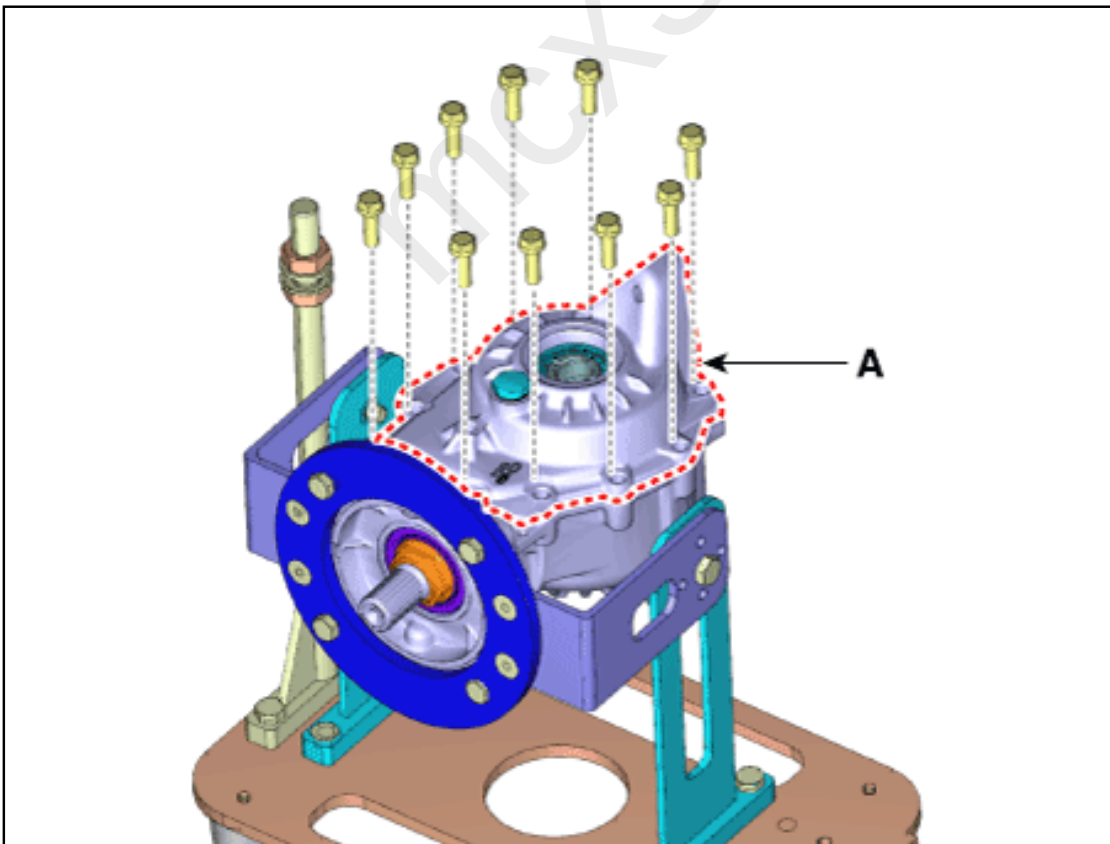
13. Install the differential gear assembly (A) in the differential carrier case.



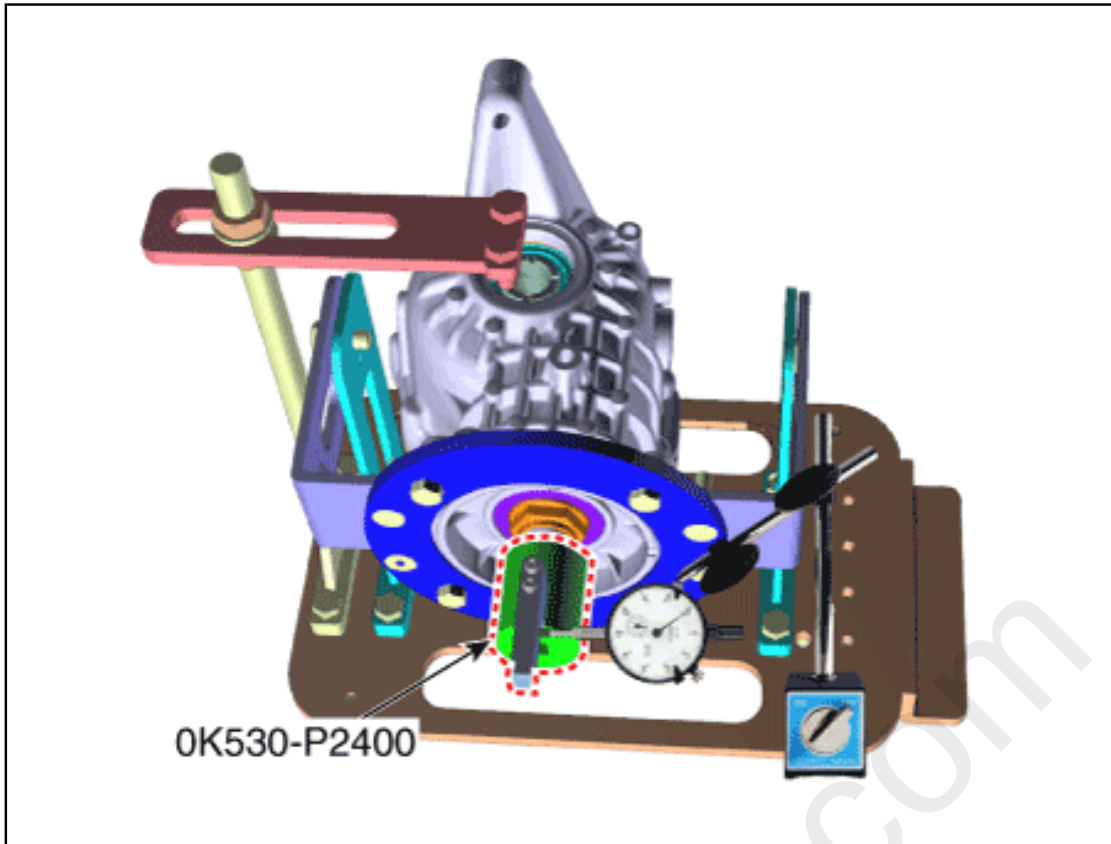
14. Install the differential carrier case side cover (A).

Tightening torque :

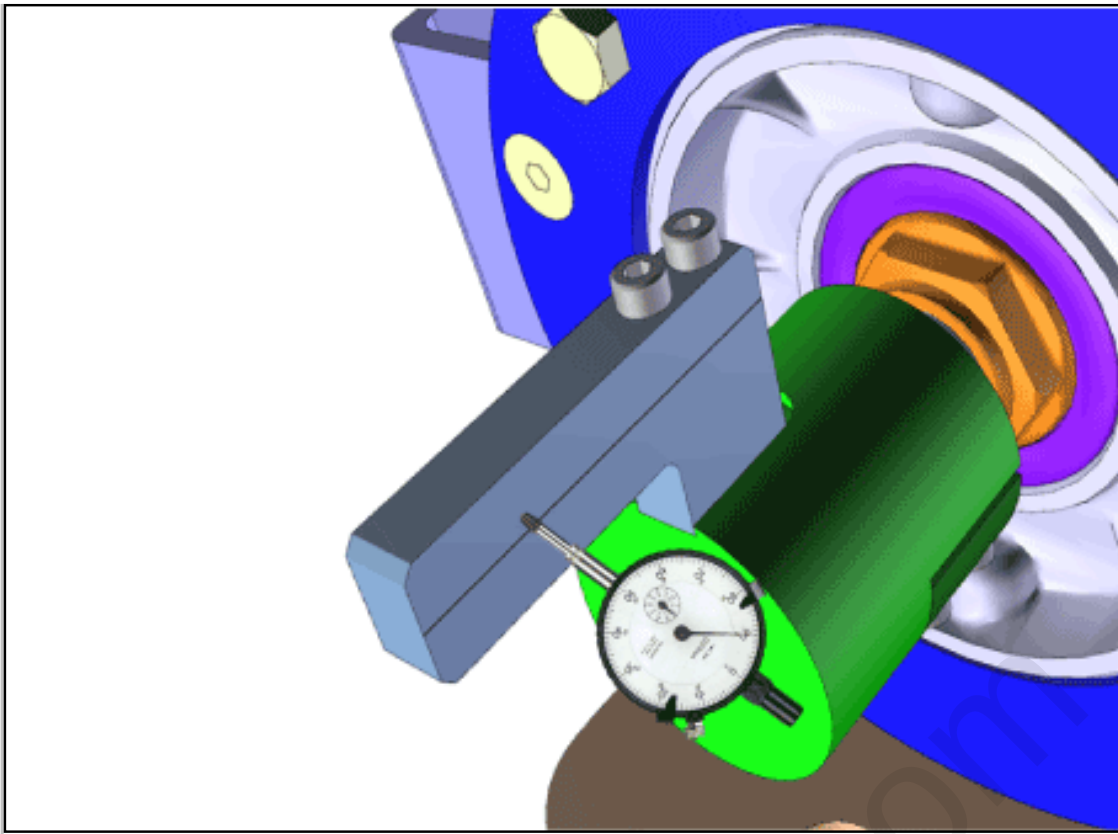
39.2 - 49.0 N·m (4.0 - 5.0 kgf·m, 28.9 - 36.1 lb·ft)



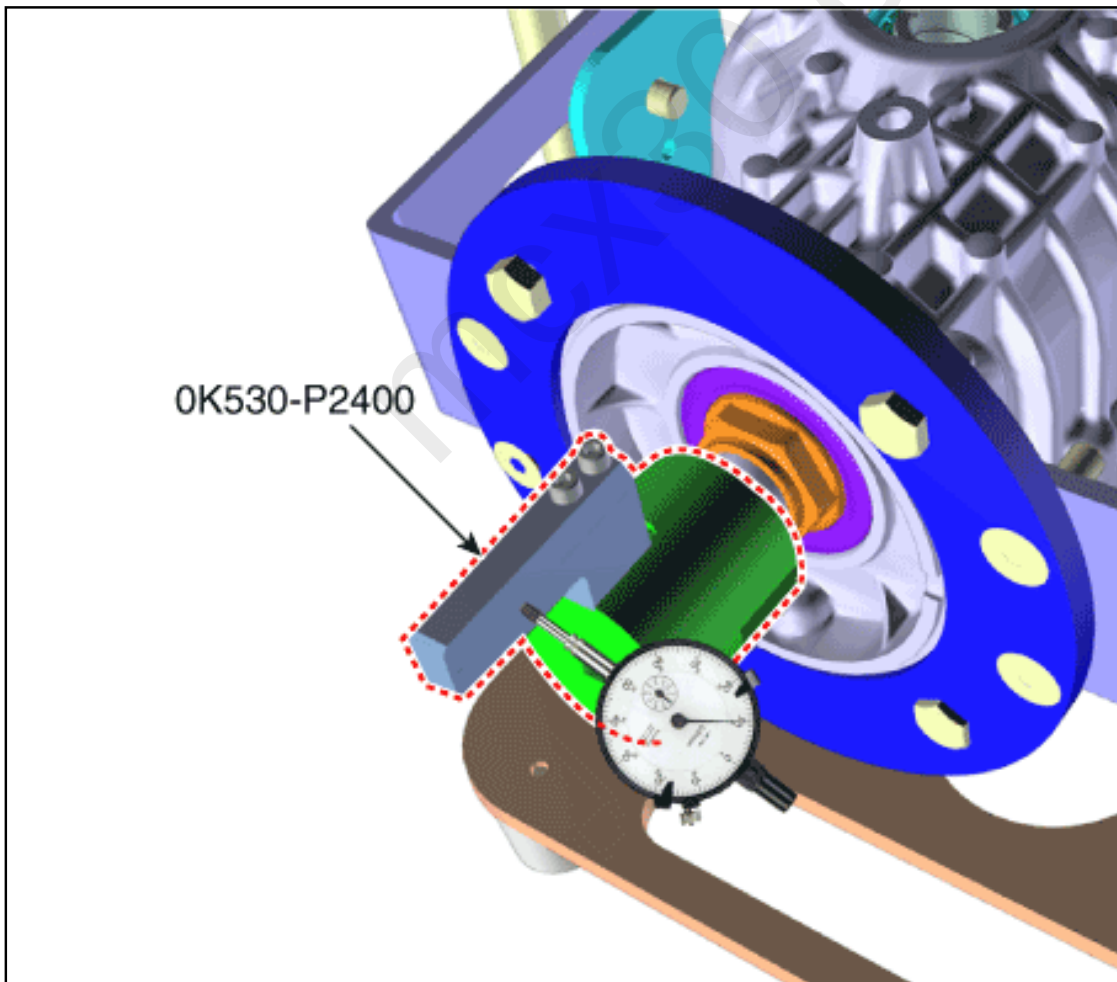
15. Install SST (0K530-P2400) on the pinion drive gear spline side and set the dial gauge on the case.



- After setting the dial gauge on the gear to be measured, adjust the dial gauge to zero.
- Secure the dial gauge to the housing to prevent it from moving or shaking.
- When measuring, be careful that the dial gauge or jig does not interfere with the gear.
- Make the measuring surface part and dial gauge at right angles.



16. After moving the SST (0K530-P2400) left and right, read the dial gauge and measure the backlash.

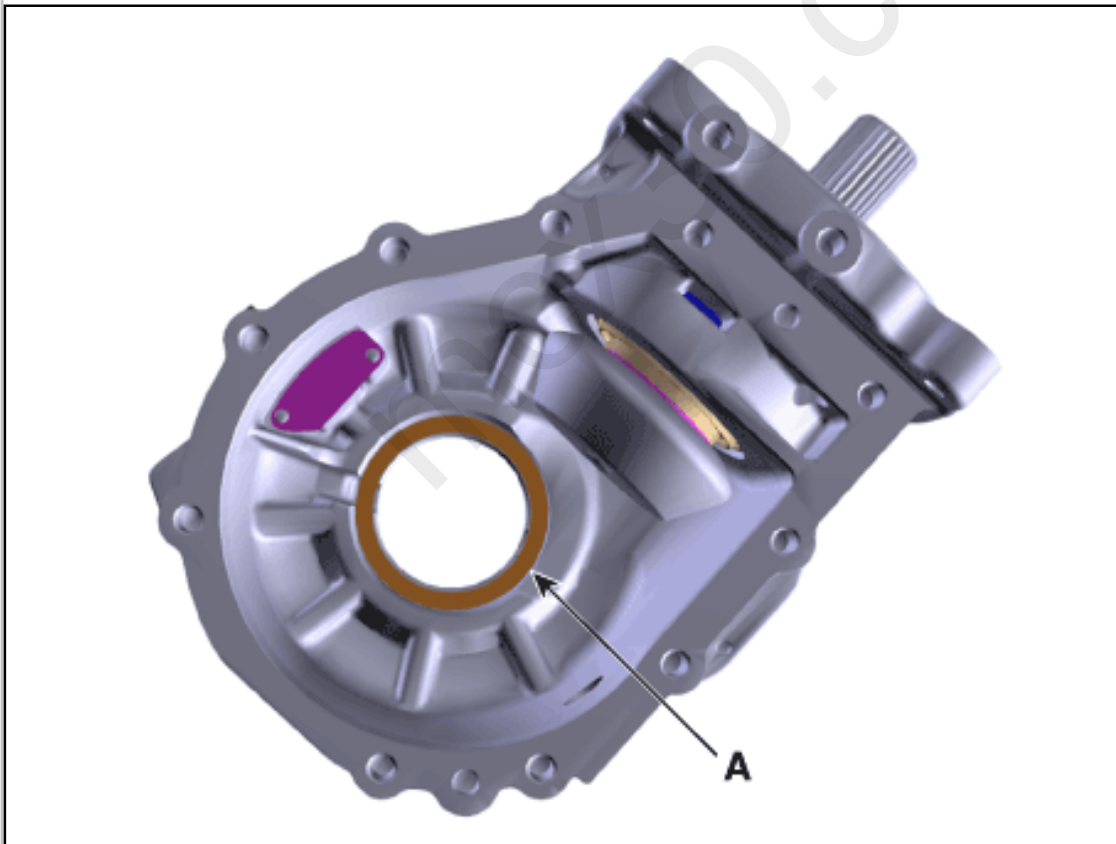




- After reading dial gauge, adjust backlash to be within the standard value range below.

Gear Backlash (mm)	C/FLANGE
0.07	0.16
0.08	0.19
0.09	0.21
0.1	0.23
0.11	0.25
0.12	0.28
0.13	0.3
0.14	0.32
0.15	0.35

- If the measured value deviates from the standard value specification, bearing adjustment shim (A) on the differential carrier case side.



Division	Solution
Out of upper limit	Thinner
Out of lower limit	Thicker

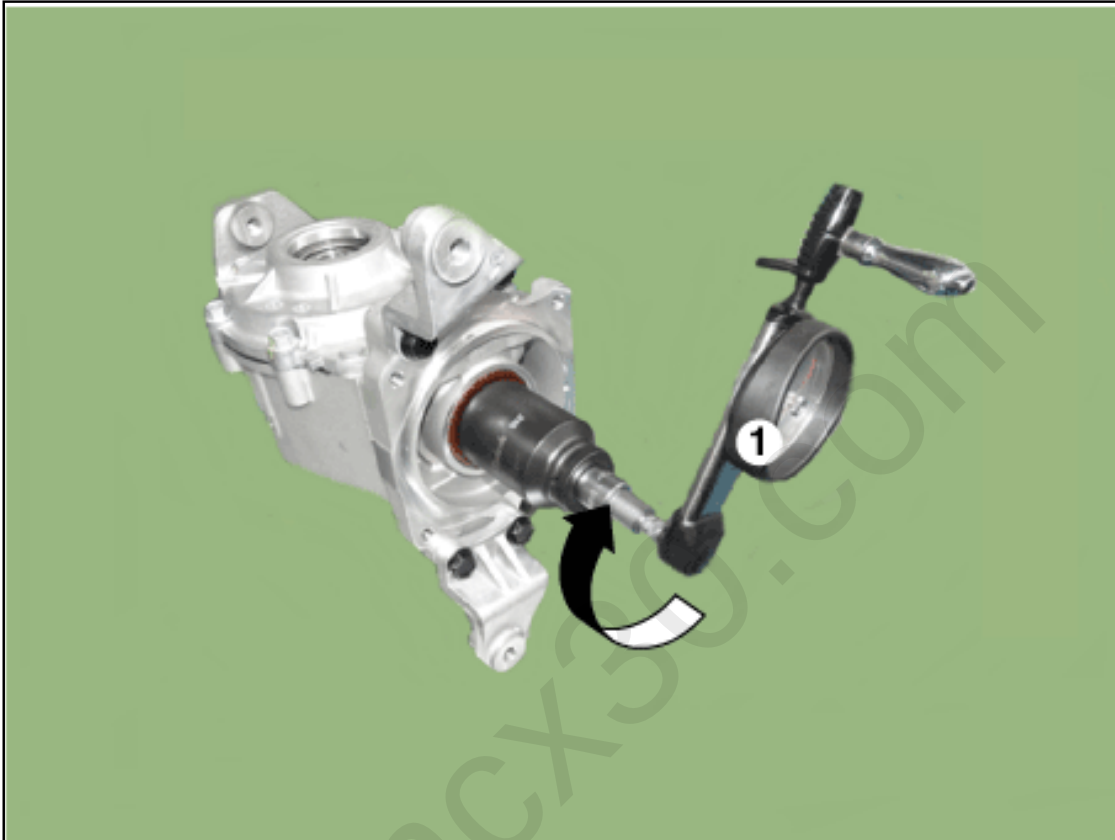
17. Measure the total preload.

Tightening torque :

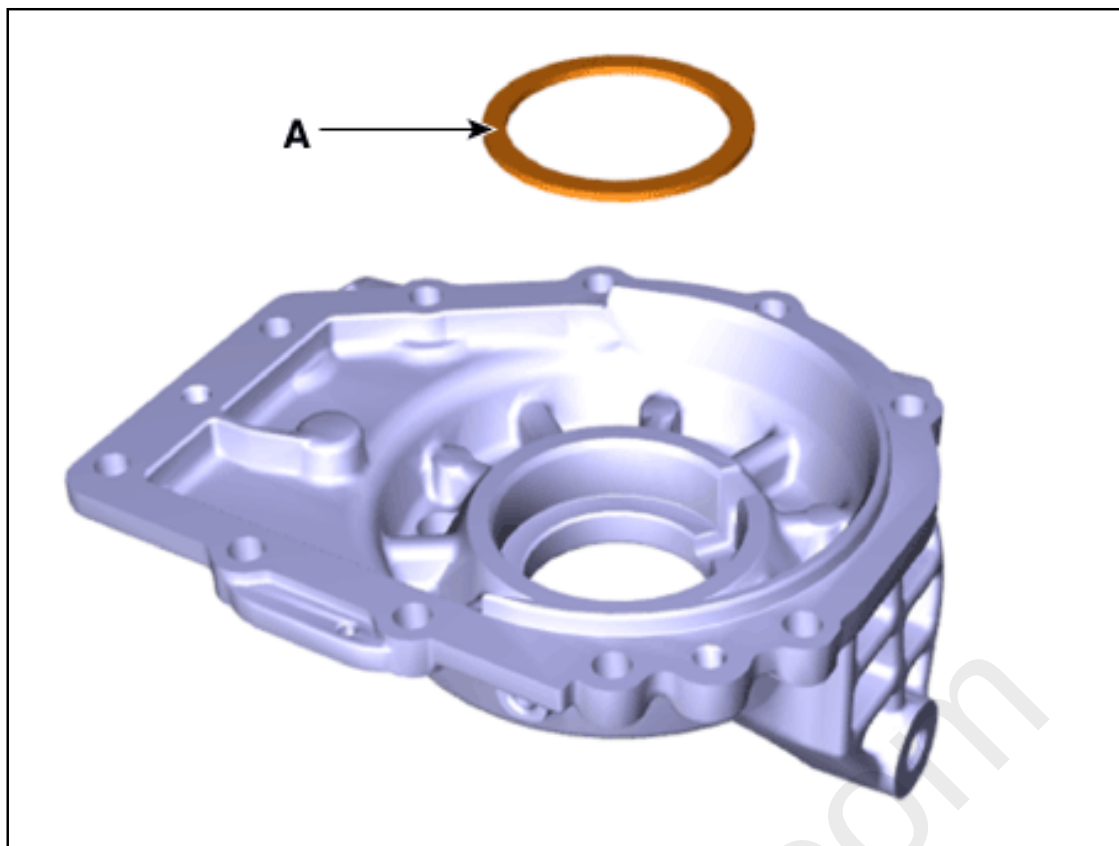
114.7 - 262.8 N·m (11.7 - 26.8 kgf·m, 84.6 - 193.8 lb·ft)



- Maintain constant rotation while measuring (about 60 RPM).



- If the measured value deviates from the standard value specification, bearing adjustment shim (A) on the differential carrier case side.

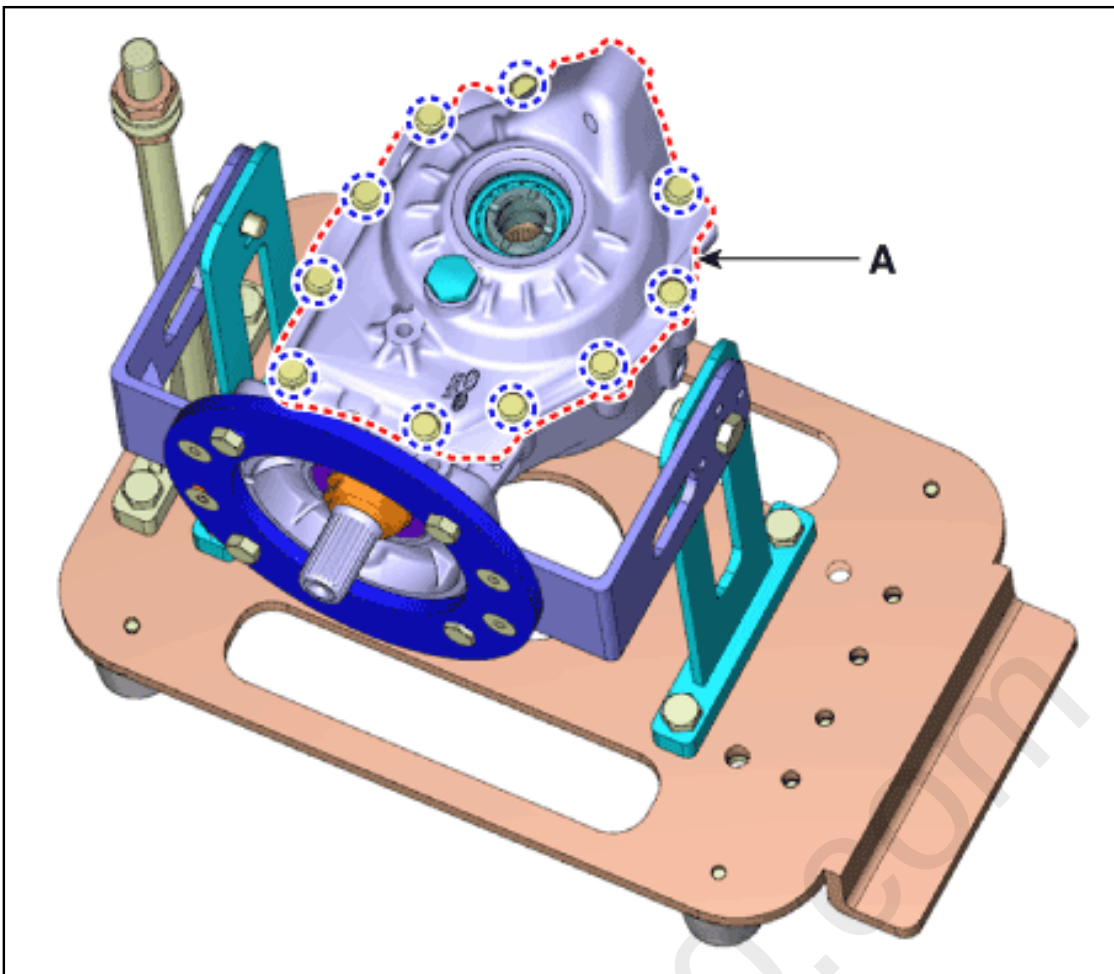


Division	Shim adjustment
Out of upper limit	Thiner
Out of lower limit	Thicker

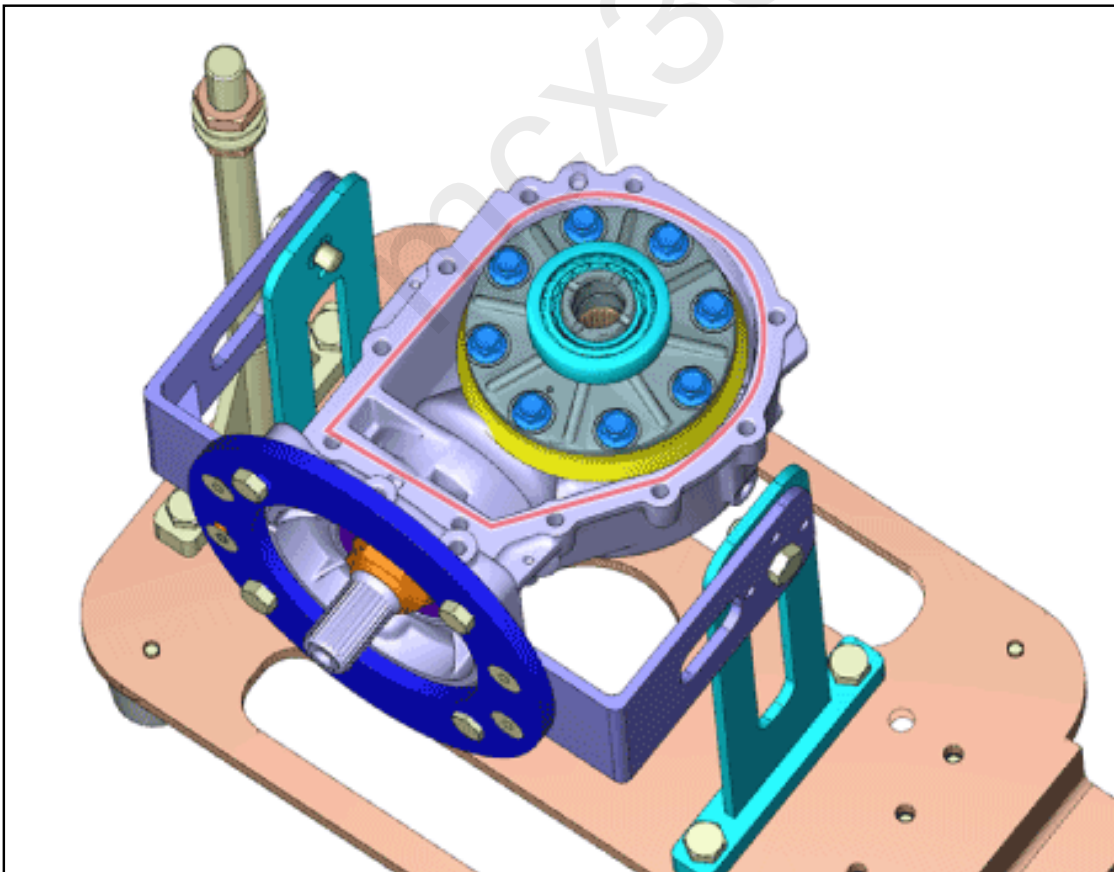
18. Loosen the bolt and remove the differential carrier case side cover (A).

Tightening torque :

39.2 - 49.0 N·m (4.0 - 5.0 kgf·m, 28.9 - 36.1 lb·ft)



19. Apply the sealant on the adhesive side between differential carrier case and side cover.



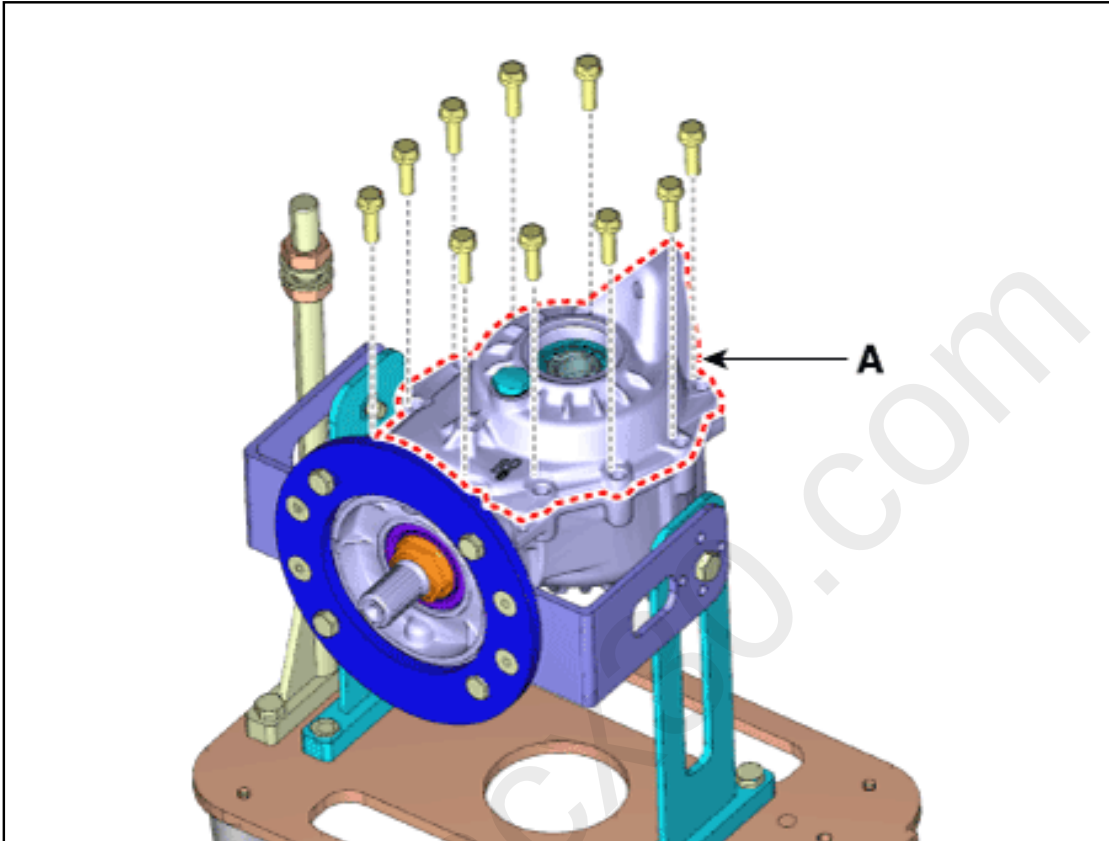


- Remove the used sealant before applying the sealant.
- Apply evenly 2 - 3mm along the surface of the case.

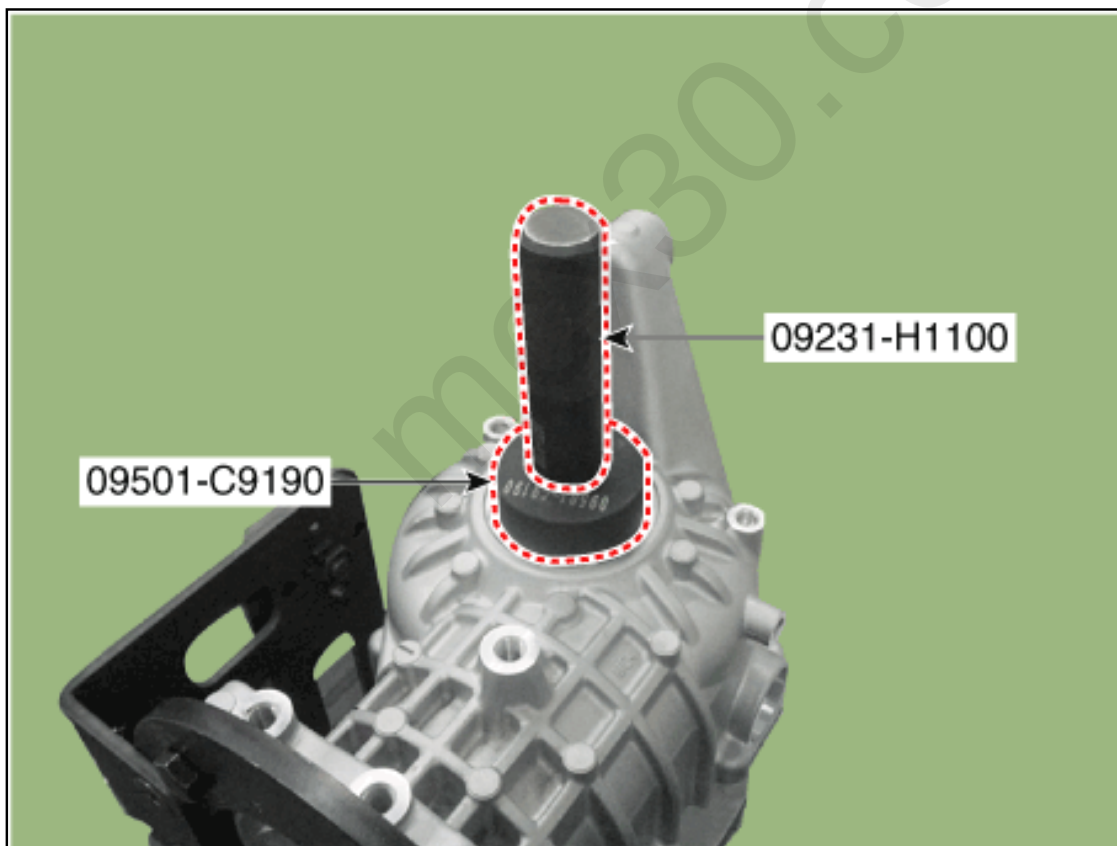
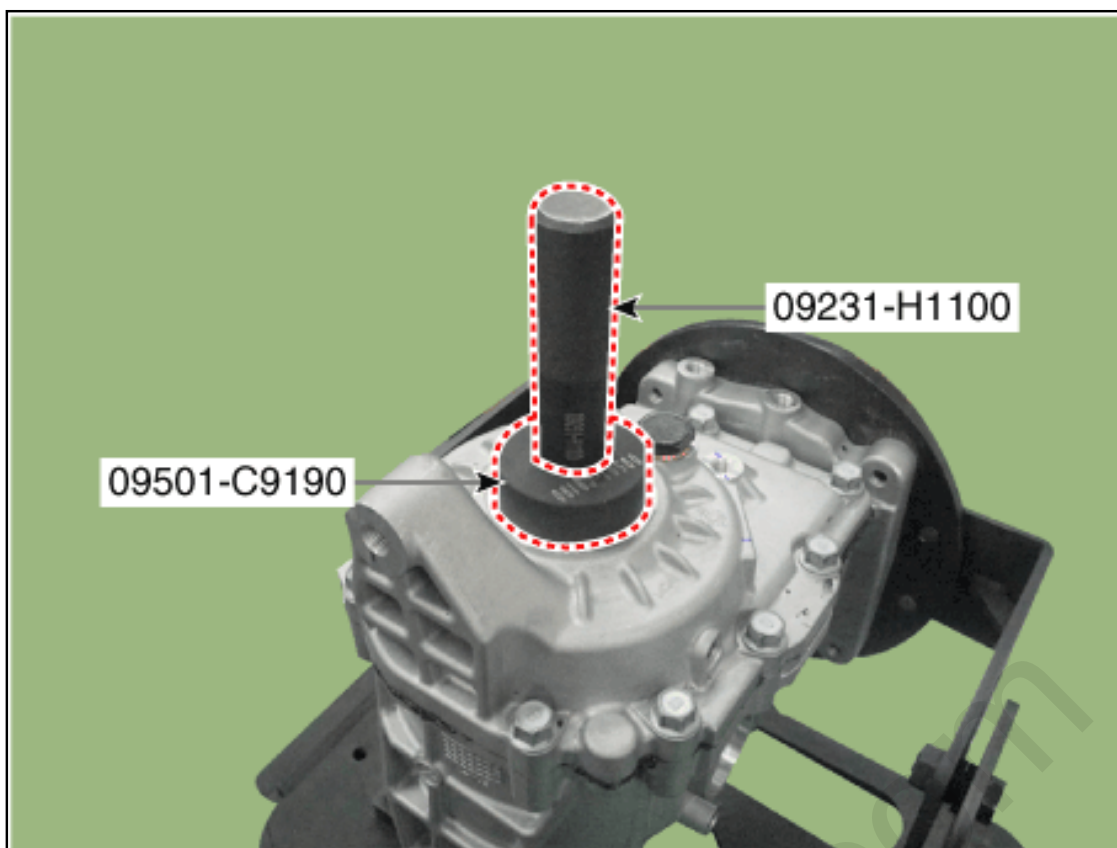
20. Install the differential case side cover (A).

Tightening torque :

39.2 - 49.0 N·m (4.0 - 5.0 kgf·m, 28.9 - 36.1 lb·ft)



21. Install the oil seal on both sides of the differential carrier case using the SST (09501-C9190, 09231-H1100).

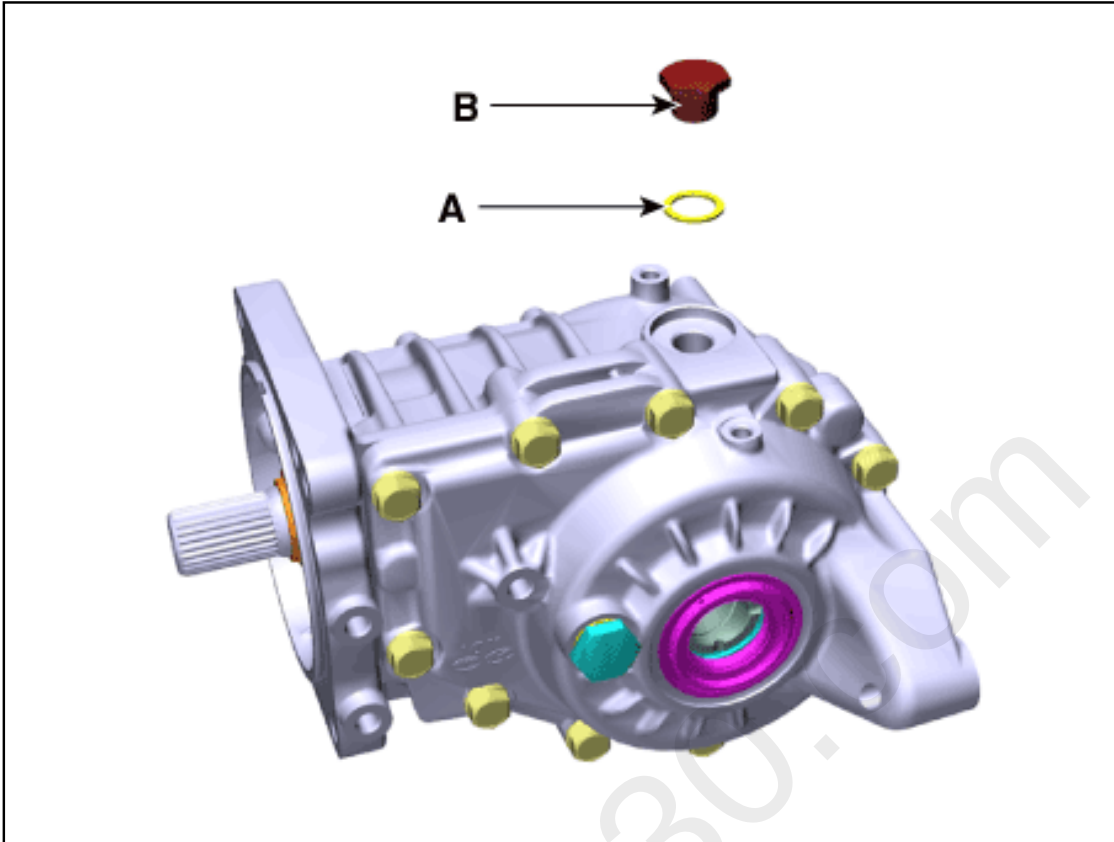


- When installing oil seal, replace oil seal with a new one.

22. Install the drain plug packing (A) and drain plug (B) on the differential carrier case.

Tightening torque :

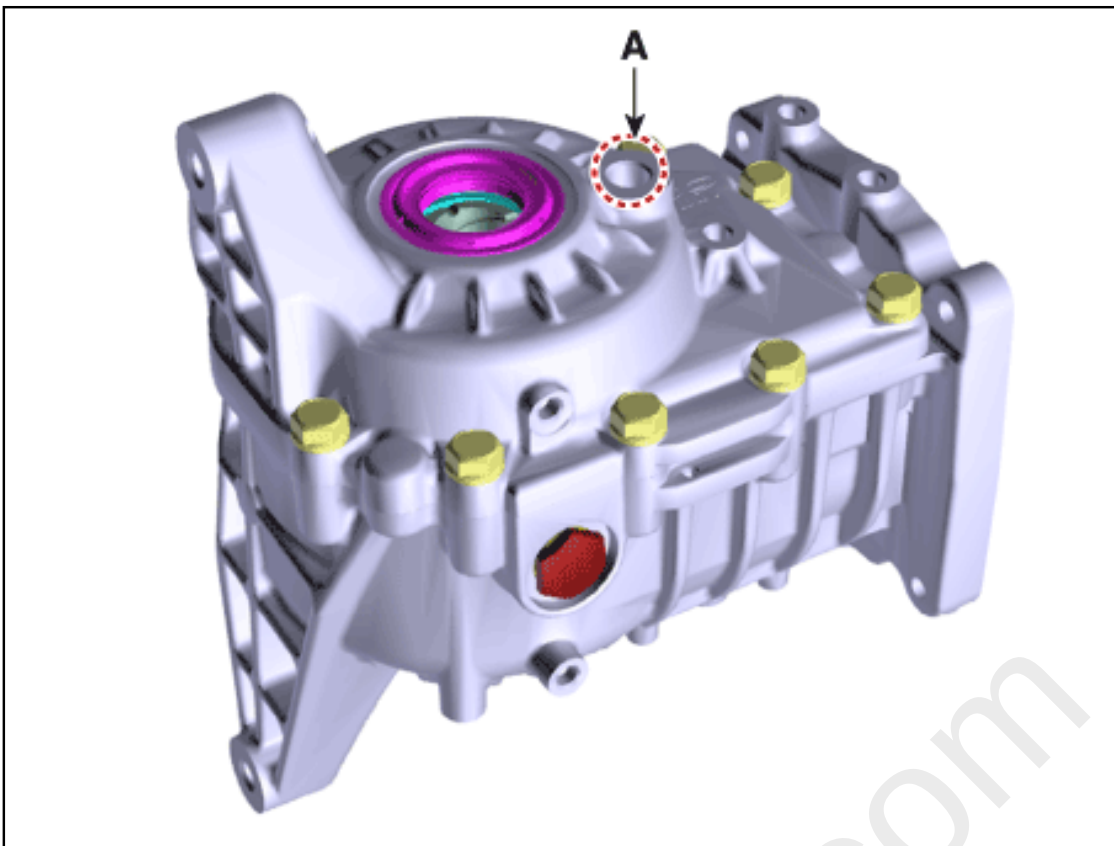
49.0 - 68.6 N·m (5.0 - 7.0 kgf·m, 36.2 - 50.6 lb·ft)



- When installing drain plug packing (A), replace drain plug packing (A) with a new one.

23. Add new gear oil through filler plug hole (A).

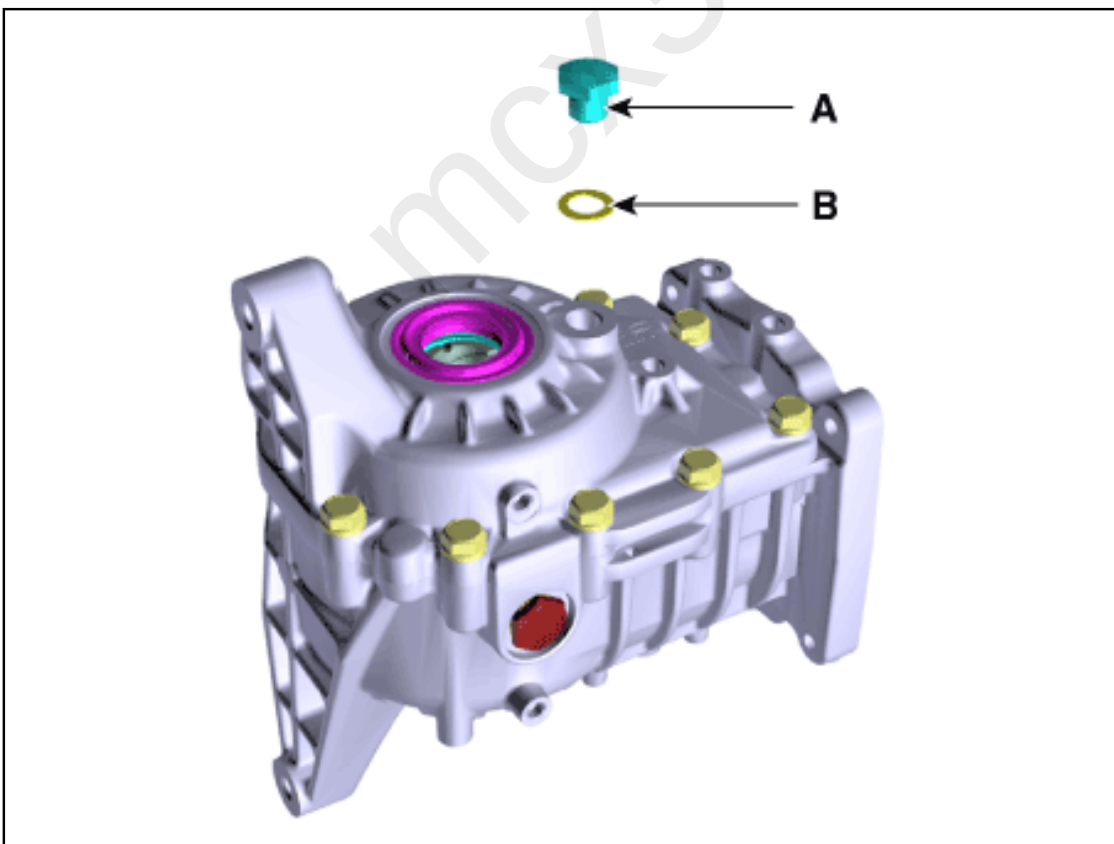
Hypoid gear oil API GL-5, SAE 75W/85
(SK HCT-5 gear oil 75w/85 or equivalent oil)
0.58±0.05



24. Install the filler plug (A) and filler gasket (B).

Tightening torque :

39.2 - 58.8 N·m (4.0 - 6.0 kgf·m, 28.9 - 43.4 lb·ft)





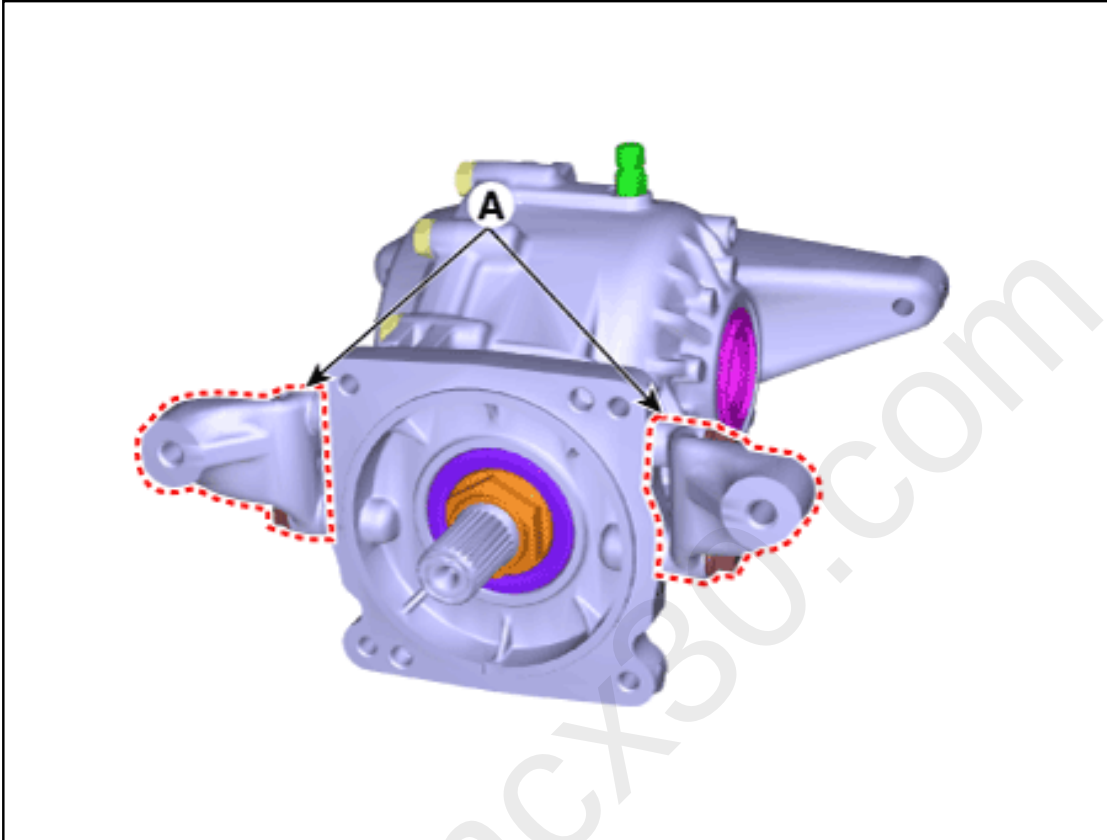
- When installing filler plug gasket (A), replace filler plug gasket (A) with a new one.

Installation

1. Install the differential carrier bracket (A).

Tightening torque :

56.9 - 64.7 N·m (5.8 - 6.6 kgf·m, 42.0 - 47.7 lb·ft)



2. Install the jack and install the differential carrier assembly (A).

Tightening torque :

68.6 - 88.3 N·m (7.0 - 9.0 kgf·m , 50.6 - 65.1 lb·ft)



3. Install the coupling assembly.
(Refer to All Wheel Drive (AWD) System - "Direct Electro Hydraulic Actuator Coupling")
4. Install the propeller shaft.
(Refer to Propeller Shaft Assembly - "Propeller Shaft")
5. Install the rear driveshaft.
(Refer to Rear Driveshaft Assembly - "Rear Driveshaft")
6. Connect the (-) battery terminal.
7. Check the rear alignment.
(Refer to Suspension System - "Alignment")