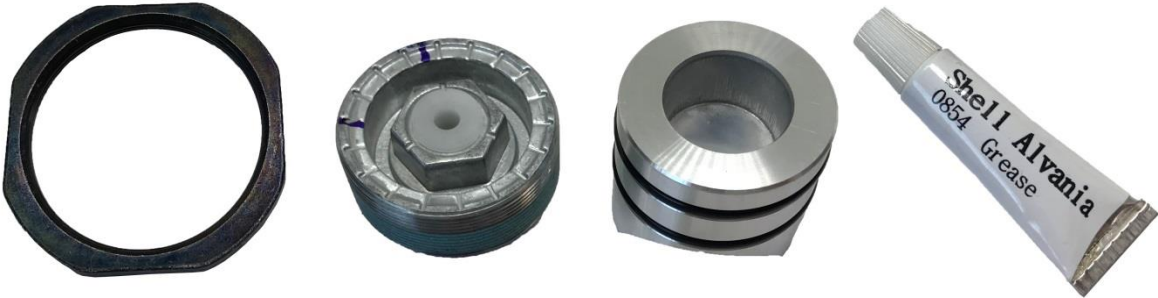
	GROUP CHA	MODEL See List Below
	NUMBER 091	DATE November 2018
TECHNICAL SERVICE BULLETIN		
SUBJECT: STEERING GEAR YOKE PLUG AND ASSEMBLY REPLACEMENT		

This bulletin provides the procedure to replace the steering gear box yoke plug and assembly on some models listed below, which may exhibit a ticking noise while turning the steering wheel with the vehicle stopped. This condition is caused by a worn lining on the steering gear box yoke assembly. Follow the procedure outlined in this bulletin to replace the steering gear box yoke plug and assembly with updated parts.

Models	Production Dates
Optima (QF)	September 2011 through October 2015
Optima (TF)	January 2010 through June 2015
Optima Hybrid (TF HEV)	August 2010 through June 2015
Cadenza (VG)	March 2013 through December 2015



File Under: <Chassis>

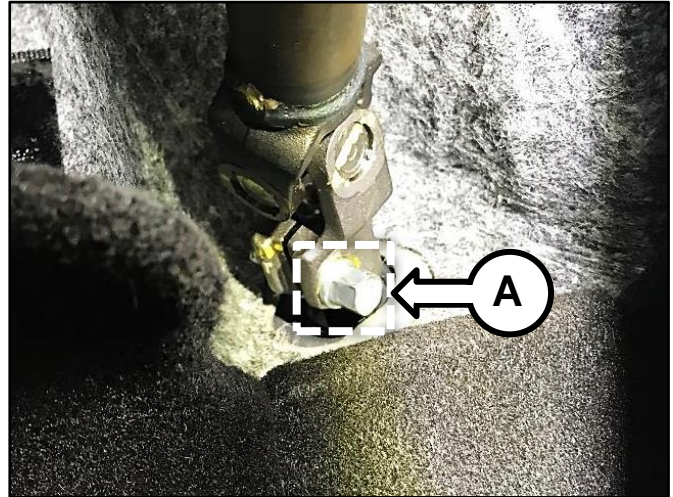
- Circulate To:** **General Manager** **Service Manager** **Parts Manager**
 Service Advisors **Technicians** **Body Shop Manager** **Fleet Repair**

Repair Procedure:

1. With the vehicle in the lowered position on a vehicle lift, mark the universal joint and pinion shaft in series (for reassembly) and then remove the joint retaining bolt (A) and detach the universal joint assembly from the pinion of the steering gear box.

Tightening torque for bolt (A) :

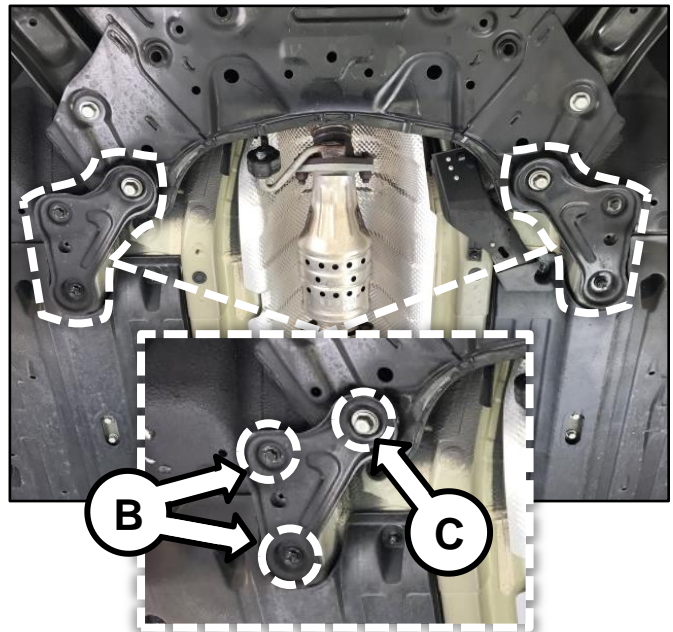
Refer to the “Steering System → Electric Steering Wheel → Steering Gear Box → Repair procedures” chapter in the applicable Shop Manual on KGIS for the tightening torque.



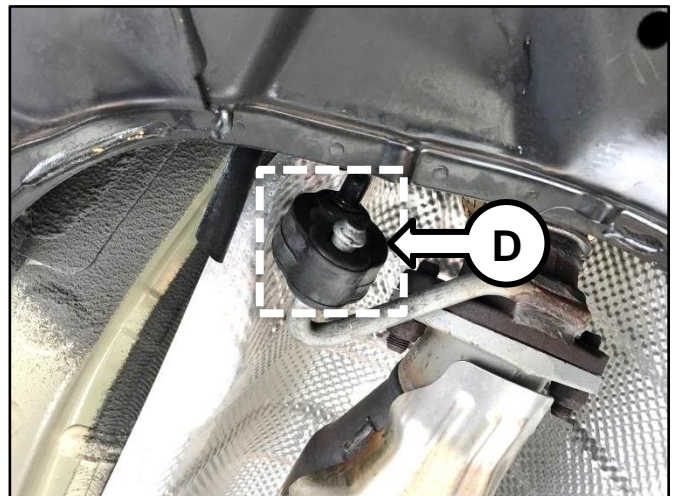
2. Remove the two (2) mounting bolts (B) and one (1) lower control arm mounting bolt (C) on each side and remove the two (2) subframe stays.

Tightening torque for bolts (B & C):

Refer to the “Steering System → Electric Steering Wheel → Steering Gear Box → Repair procedures” chapter in the applicable Shop Manual on KGIS for the tightening torque.



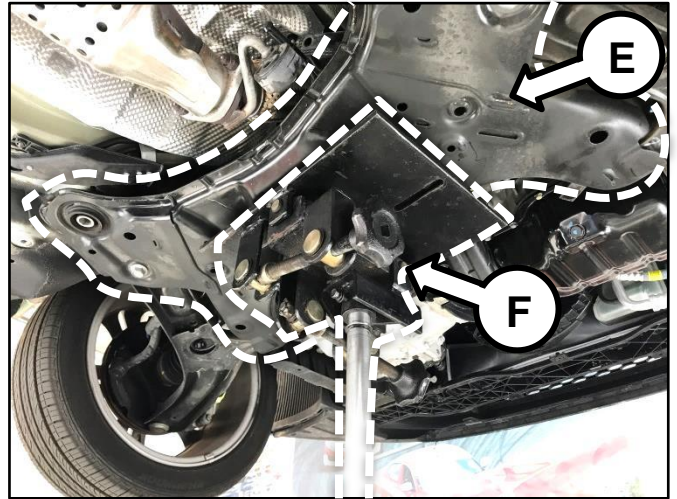
3. If applicable, detach the exhaust pipe hanger (D) from the subframe.



SUBJECT:

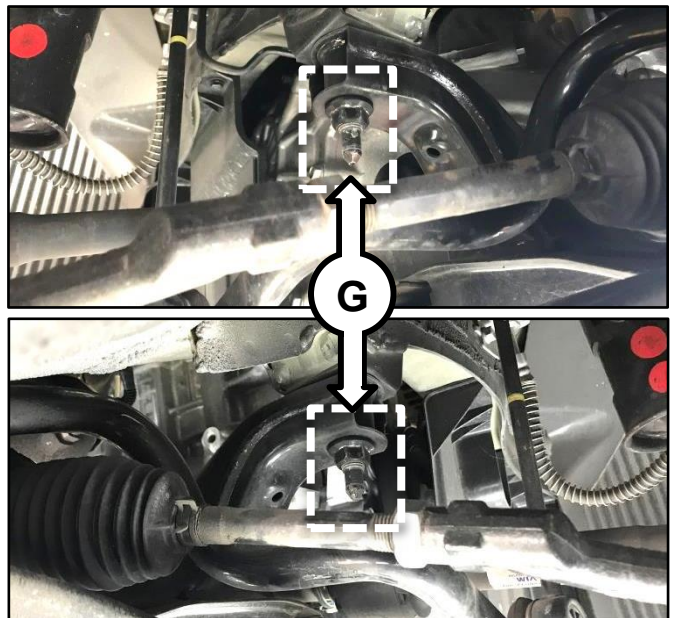
STEERING GEAR YOKE PLUG AND ASSEMBLY REPLACEMENT

- Support the subframe (E) with a suitable powertrain lift (F).

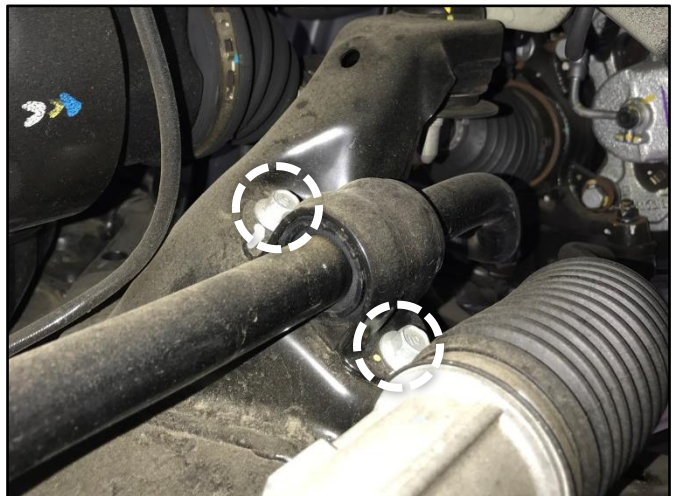


- Remove the two (2) subframe retaining nuts (G) and carefully lower the subframe.

Tightening torque for nuts (G):
 Refer to the “Steering System → Electric Steering Wheel → Steering Gear Box → Repair procedures” chapter in the applicable Shop Manual on KGIS for the tightening torque.



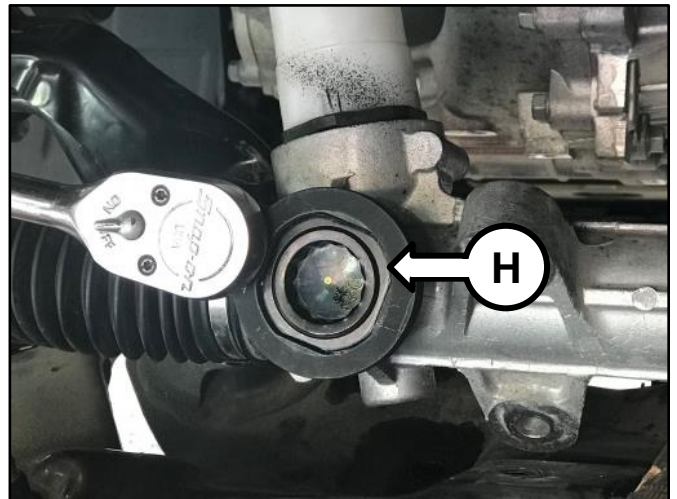
- Remove the four (4) stabilizer bar mounting bolts at the subframe.



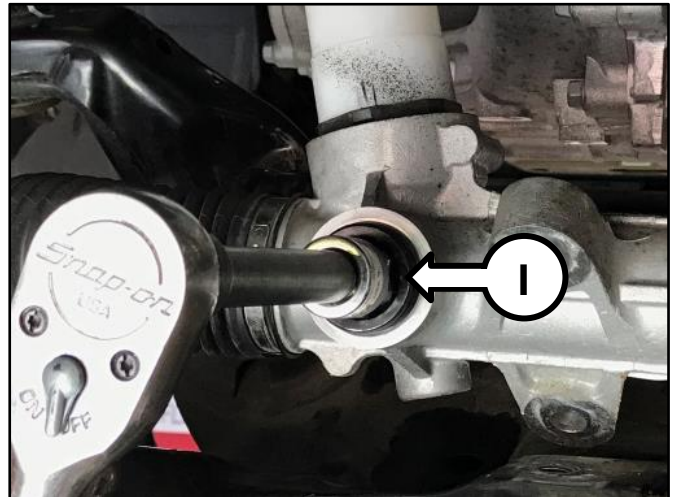
7. With the four (4) steering gear assembly mounting bolts removed, place a 2x4 block of wood underneath the steering gear assembly for stability of the assembly during this repair procedure.



8. Remove the locking nut (H) using the locking nut removal tool (57718 2W009FFF).

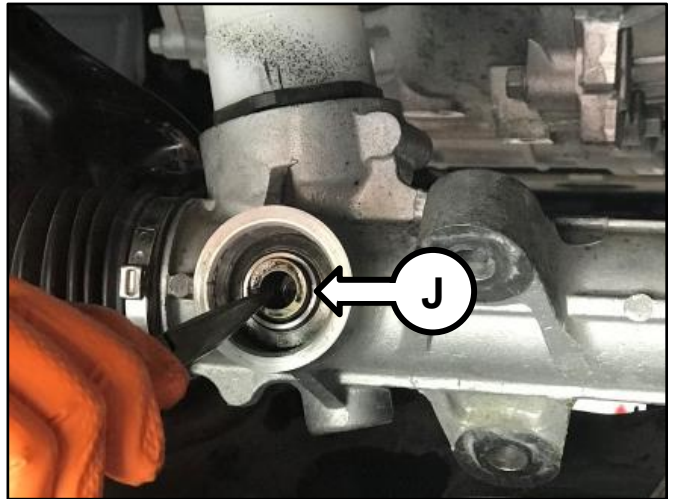


9. Using the 24mm hexagon bit socket (HXD24), remove and discard the yoke plug (I) and discard.

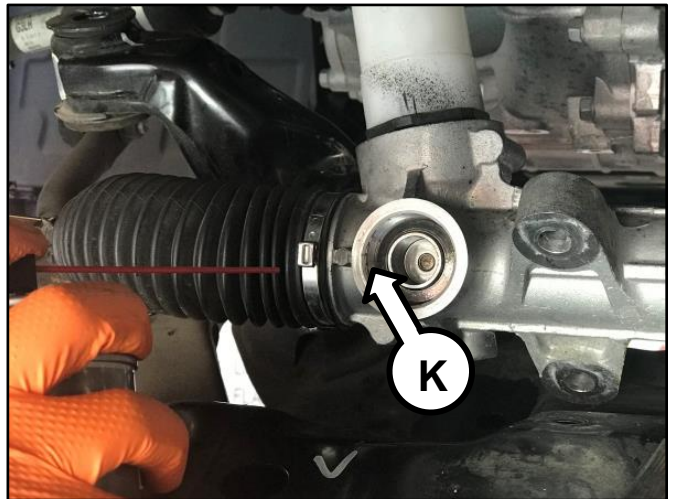


SUBJECT: STEERING GEAR YOKE PLUG AND ASSEMBLY REPLACEMENT

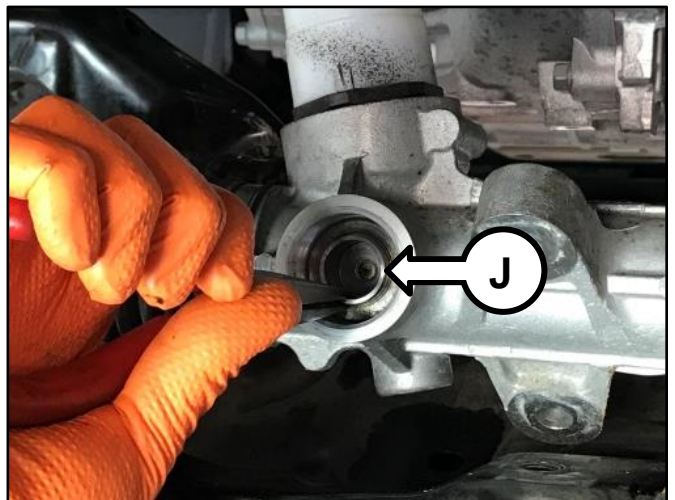
10. Remove the yoke spring (J) and set aside for reinstallation.



11. Clean the threads (K) of the yoke housing with a clean cloth and brake cleaner. Use compressed air to ensure the assembly surface is dry and free of debris.

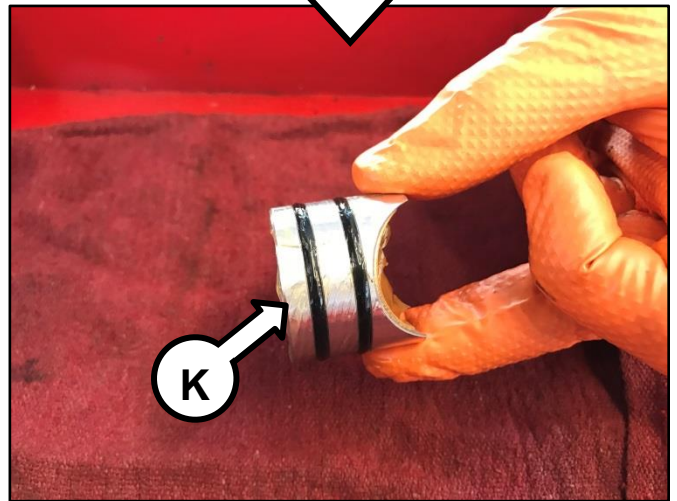
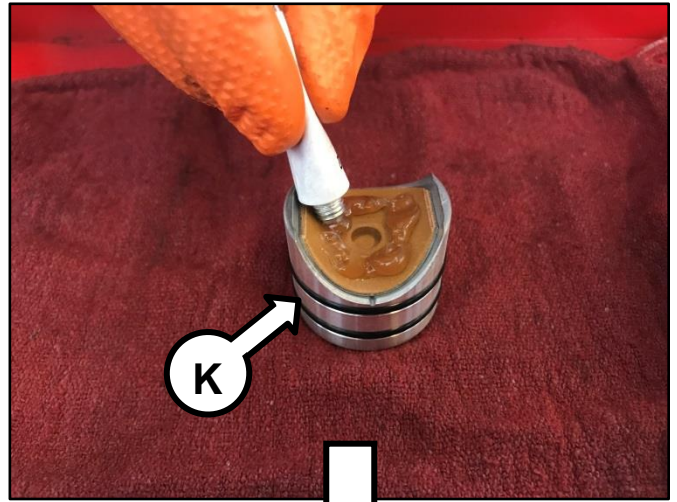


12. Remove the yoke assembly and shims (J) and discard.

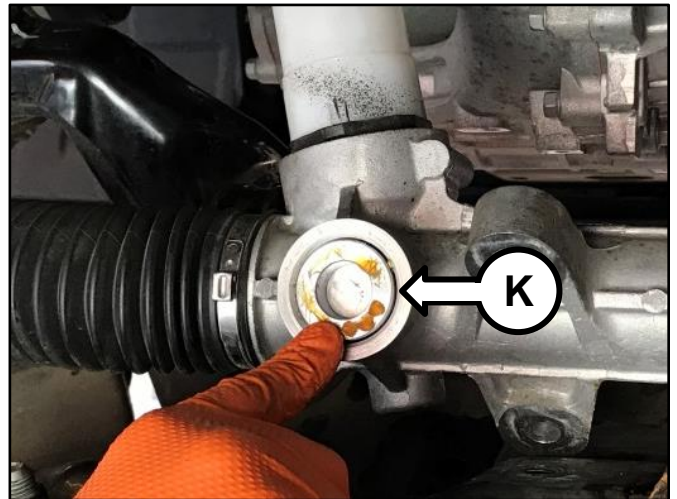


SUBJECT: STEERING GEAR YOKE PLUG AND ASSEMBLY REPLACEMENT

13. Apply lubricant to the bottom and sides of the new improved yoke assembly (K).



14. Install the improved yoke assembly (K) into the yoke housing and then apply a small amount of lubricant to the top of the yoke assembly.

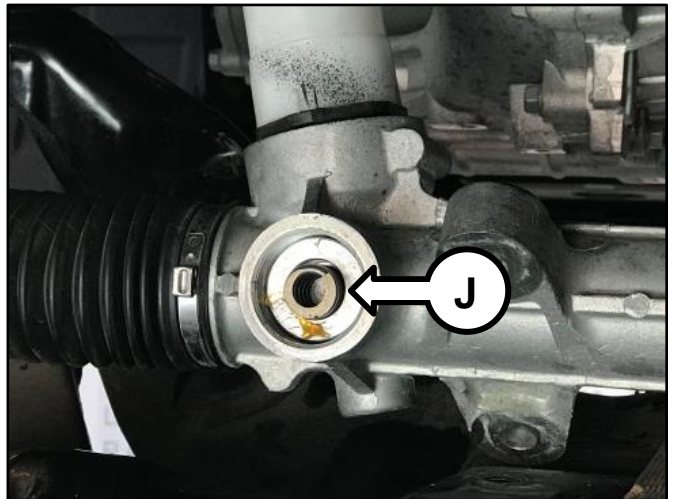


SUBJECT: STEERING GEAR YOKE PLUG AND ASSEMBLY REPLACEMENT

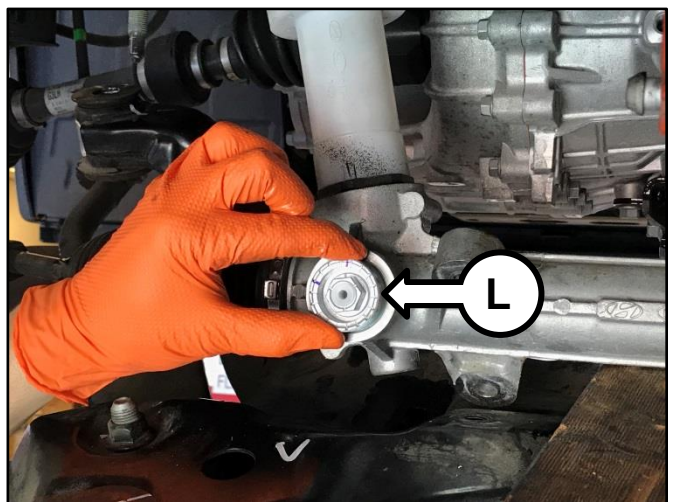
15. If necessary, use a short socket extension and a rubber mallet to seat the yoke assembly (K) fully.



16. Reinstall the yoke spring (J) removed in step 10 of this procedure.



17. Partially install the new yoke plug (L) by hand to prevent cross-threading of the plug and housing threads.



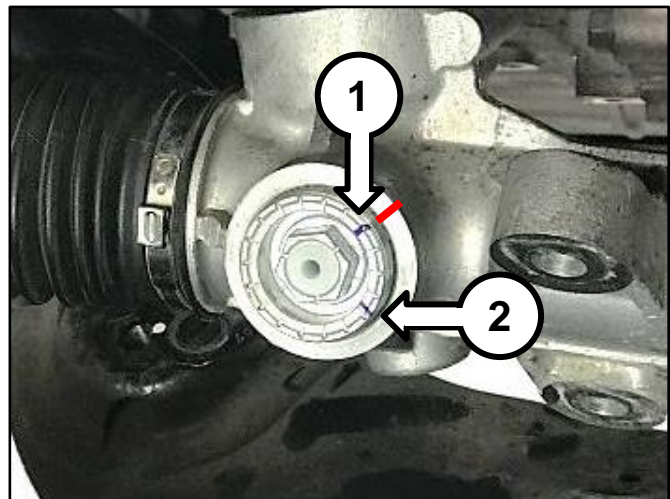
SUBJECT: STEERING GEAR YOKE PLUG AND ASSEMBLY REPLACEMENT

- 18. Tighten and torque the yoke plug (L) to specifications.

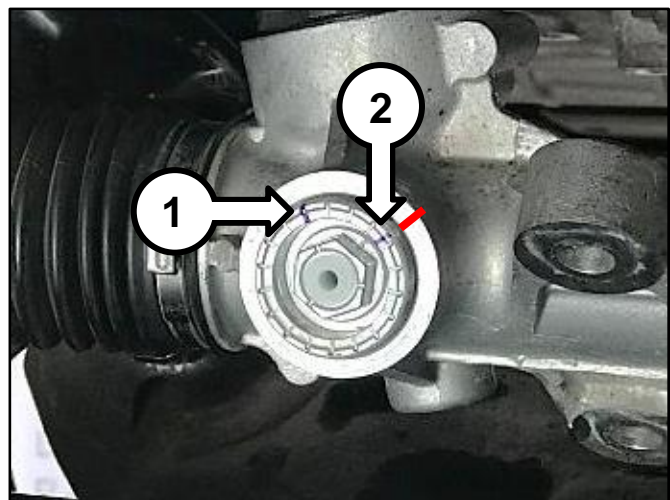
**Tightening torque for plug (L):
36.9 lb.ft (50.0 N.m, 5.1 kgf.m)**



- 19. With a marker, mark a line on the housing in line with groove 1 (blue mark #1) of the plug.

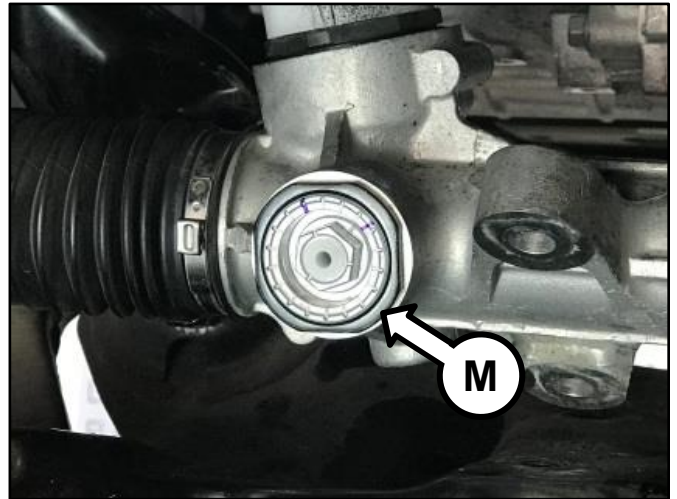


- 20. Loosen the plug approximately 1/4 of an inch and align the mark on the housing with groove 2 (blue mark #2) of the plug.



SUBJECT: STEERING GEAR YOKE PLUG AND ASSEMBLY REPLACEMENT

21. Partially install the new locking nut (M) by hand to prevent cross-threading of the nut and plug threads.



22. While holding the plug in place, torque the locking nut (M) to specifications.

**Tightening torque for plug (M):
36.9 lb.ft (50.0 N.m, 5.1 kgf.m)**





23. Reinstall all removed components in the reverse order of removal.
24. Confirm proper operation of vehicle.

SUBJECT: STEERING GEAR YOKE PLUG AND ASSEMBLY REPLACEMENT

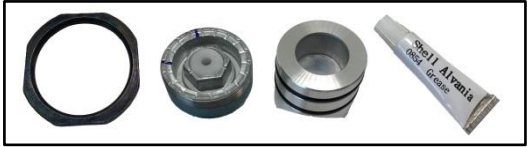
AFFECTED VEHICLE RANGE:

Model	Production Date Range
Optima (QF)	September 2011 through October 2015
Optima (TF)	January 2010 through June 2015
Optima Hybrid (TF HEV)	August 2010 through June 2015
Cadenza (VG)	March 2013 through December 2015

REQUIRED TOOL:

Tool Name	Tool Number	Figure	Comments
Locknut Tool	57718 2W009FFF		Auto-shipped to Dealer. For order or replacement, contact Snap-on Business Solutions at (888) 542-1011.
24mm External Hex Socket	HXD24		For order or replacement, contact Snap-on Business Solutions at (888) 542-1011.

REQUIRED PART:

Part Name	Part Number	Figure
Steering Gear Yoke Plug and Assembly Kit	56570 2W000FFF	

WARRANTY INFORMATION:

N Code: ZZ5 C Code: C24

Model	Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
QF, TF, & TF HEV	W	57719 3Q000	0	Steering Gear Yoke Plug and Assembly Replacement	56500F11	1.7 M/H	56570 2W000FFF	1
VG		57719 3V000	0					