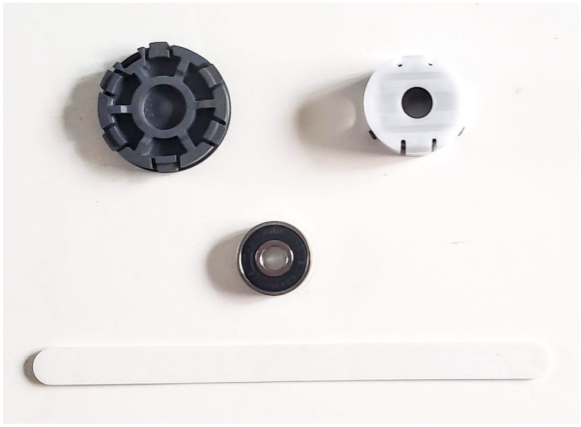
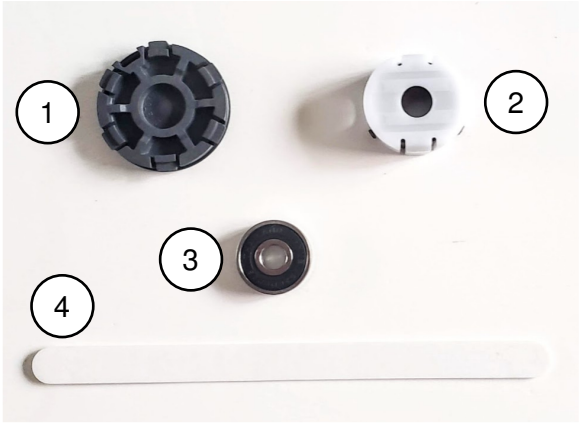
HYUNDAI **Technical Service Bulletin**	GROUP **STEERING**	NUMBER **22-ST-003H**
	DATE **APRIL 2022**	MODEL(S) **Sonata (DN8A)**
SUBJECT: SONATA (DN8A) C-MDPS WORM SHAFT BEARING NOISE		

Description: Certain 2020-2022MY Sonata (DN8A) vehicles may develop a bearing noise within the Motor Driven Power Steering (MDPS) column worm shaft assembly. If bearing noise is heard, follow the procedure in this bulletin to replace the worm shaft bearing.



Applicable Vehicles:
Certain 2020 – 2022MY Sonata (DN8A) produced from October 22, 2019 to December 30, 2021

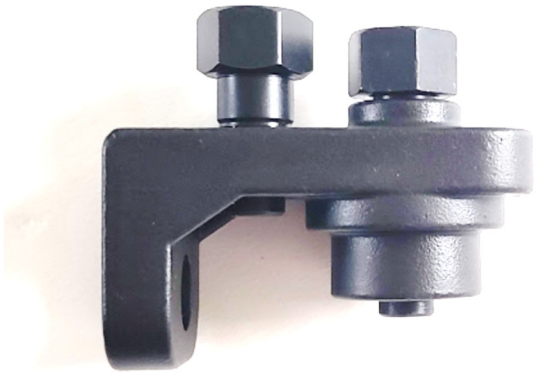
Parts Information:

PART NAME	PART NUMBER	PHOTO	PART DESCRIPTION
SMALL BEARING KIT	56359-L1AAAFFF		1. End cover assy 2. Sliding damper 3. Bearing 4. Paper stick

NOTE: Sonata (DN8A) requires the use of the end cover (part #1).

SUBJECT: SONATA (DN8A) C-MDPS WORM SHAFT BEARING NOISE

SST Information:

PART NAME	PART NUMBER	PHOTO
MDPS SMALL BEARING REMOVAL TOOL	0K563-L2100FFF	
MDPS SMALL BEARING MOUNTING TOOL	0K563-L2200FFF	

NOTE: All dealers were sent one of each tool at the launch of TSB 21-ST-003H in October 2021.
NOTE: The tools sent may or may not have part numbers ending in "FFF" (0K563-L2100/0K563-L2200).

Warranty Information:

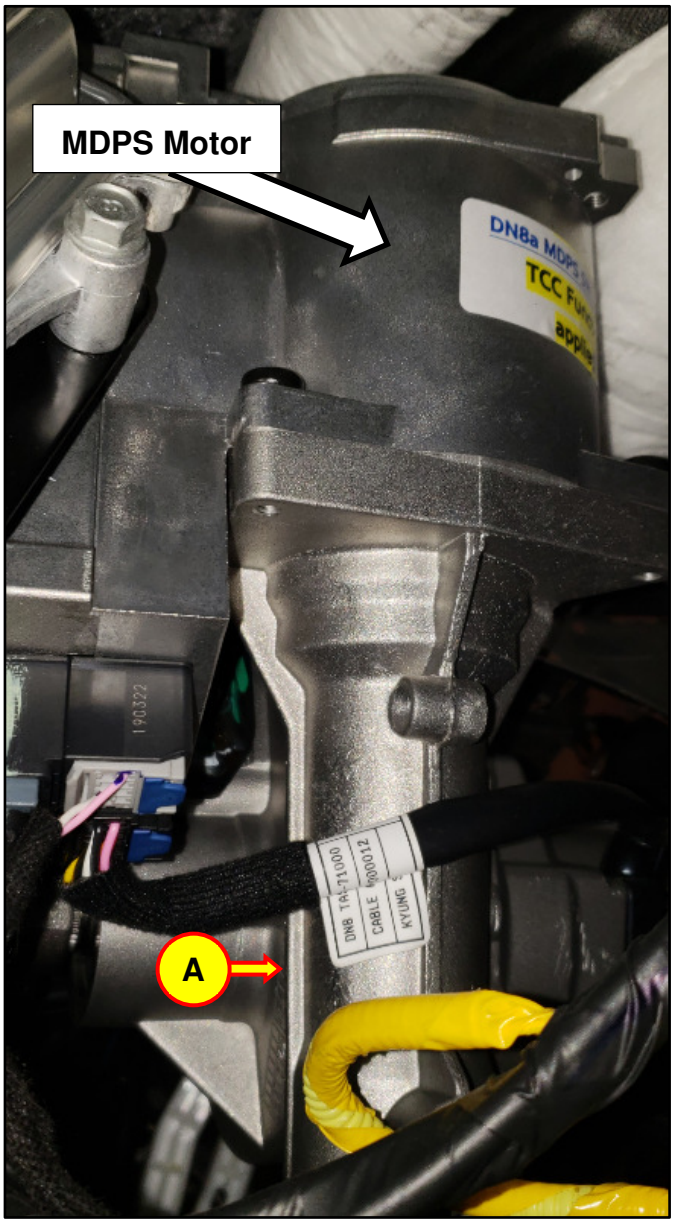
MODEL	OP CODE	OPERATION	OP TIME	CAUSAL PART	NATURE CODE	CAUSE CODE
SONATA (DN8A)	20DA01R0	SMALL BEARING REPLACEMENT	0.6 M/H	56359-L1AAAFFF	Q57	ZZ6

NOTE 1: Submit claim on Campaign Claim Entry Screen.
NOTE 2: If a part that is not covered by this TSB is in need of replacement while performing this TSB, and the affected part is still under warranty, please submit a separate claim using the same repair order. If the part is out of warranty, submit a prior approval request for goodwill consideration prior to performing the work.

Service Procedure:

1. Determine if bearing noise comes from the MDPS column and housing.

   - Start the engine and turn the steering wheel left and right.
   - Listen for the bearing noise occurring from the worm shaft housing (A). This noise will be located near the C-MDPS motor on the steering column.
   - To hear an example of the bearing noise, refer to the link or QR code below.
     https://youtu.be/22Pl3hAEfnk



2. Replace the worm shaft small bearing if noise is heard.

   If noise is not heard in this location, refer to the shop manual for detailed diagnostic and repair service procedures or refer to the most current Column-Mounted MDPS Repair Information TSB for additional information.

3. Ensure the wheels are straight and the steering wheel is level.

4. Record the customer's AM, FM, and SXM radio preset stations.

5. Disconnect the negative (-) battery terminal.

NOTICE

Wait at least 3 minutes before proceeding to ensure voltage is bled off.

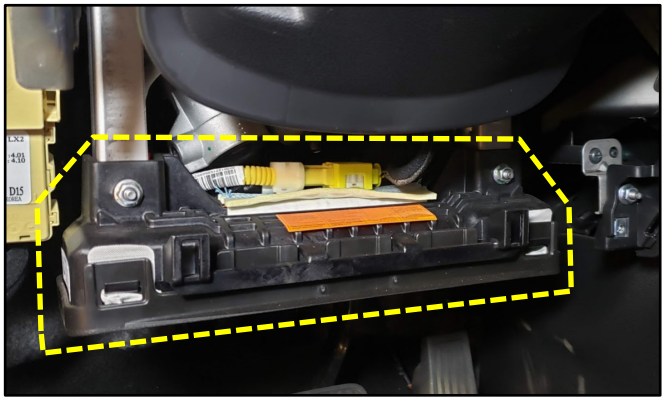
Battery Terminal Tightening Torque

lb-in	• 69.6-86.4
lb-ft	• 5.8-7.2
kgf.m	• 0.1-1.0
N.m	• 7.8-9.8

⚠ CAUTION

Not removing the negative (-) terminal from the battery may result in accidental airbag deployment and possible physical injury.

6. Removal of the MDPS assembly is not required to replace the small bearing located in the MDPS steering column and housing. Several parts might need to be removed to gain access to the small bearing.



If equipped, carefully remove the driver's knee airbag following the procedures in the applicable shop manual.

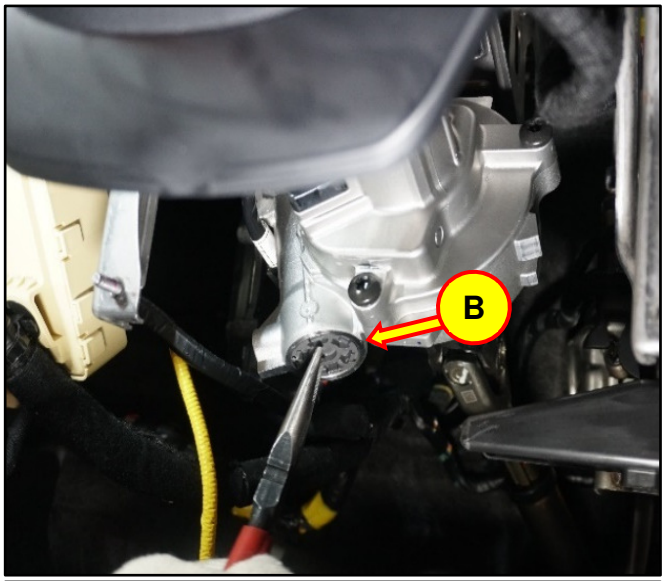
Restraint > Airbag Module > Knee Airbag (KAB) Module

⚠ CAUTION

The airbag may accidently be deployed and possibly cause physical injury. After removing the knee airbag module, position airbag with the cover facing upward.

7. After removing the KAB, additional parts may have to be removed to gain access to the small bearing. Follow the applicable shop manual for part removal procedures.

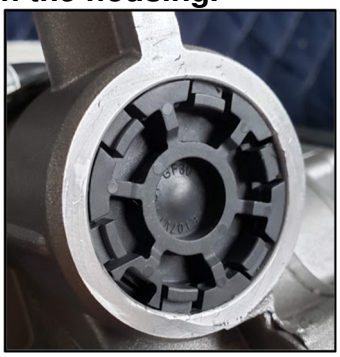
8. **DN8A**
Remove the plastic cover (B) by squeezing/breaking the six cover tabs with pliers.

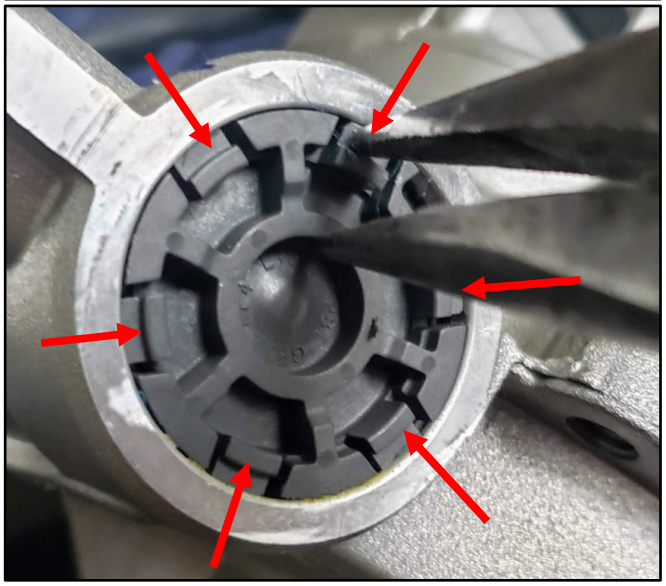


NOTICE

Use the supplied plastic cover during reassembly.

Ensure cover snaps into place and is flush with the housing.

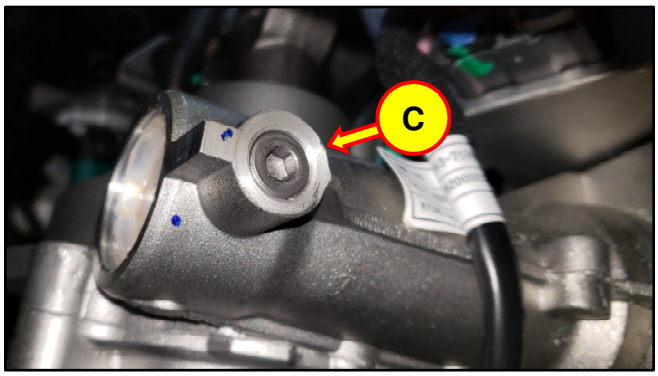




9. Remove the anti-rattle plug (C).

Anti-Rattle Plug Tightening Torque

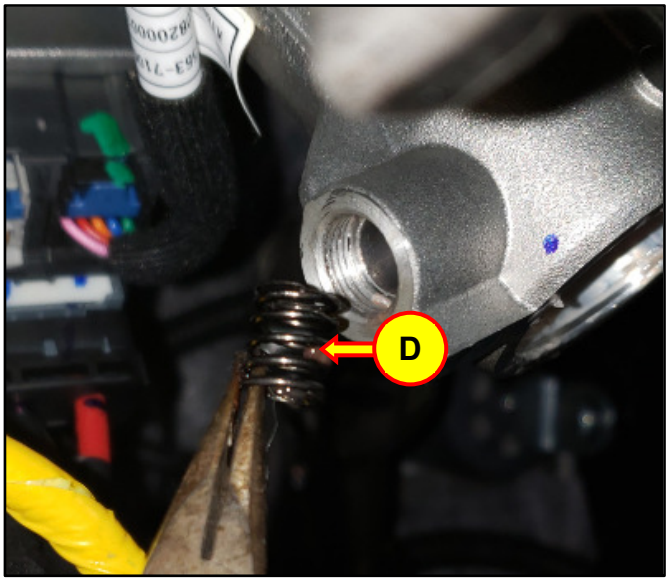
lb-in	• 86.4-112.8
lb-ft	• 7.2-9.4
kgf.m	• 1.0-1.3
N.m	• 9.8-12.8



10. Remove the anti-rattle spring (D).

NOTICE

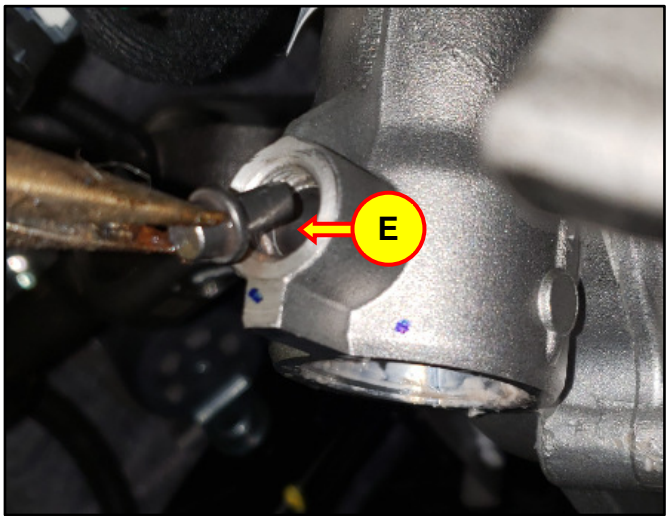
Keep the anti-rattle spring free of debris after removal. Reuse the spring during reassembly.



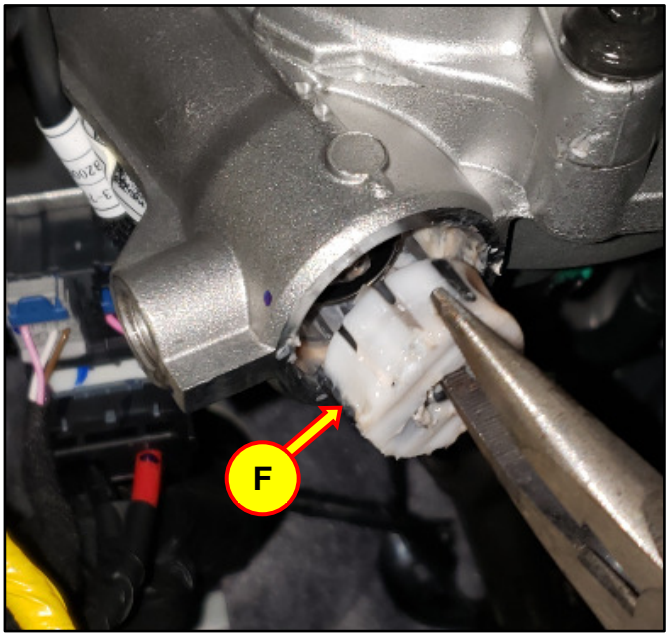
11. Remove the slide pin (E).

NOTICE

Keep the slide pin free of debris after removal. Reuse the slide pin during reassembly.



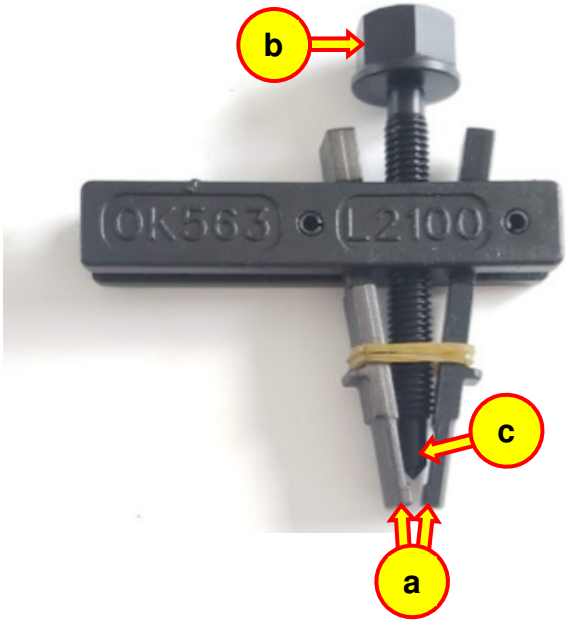
12. Remove the sliding damper (F) and discard.

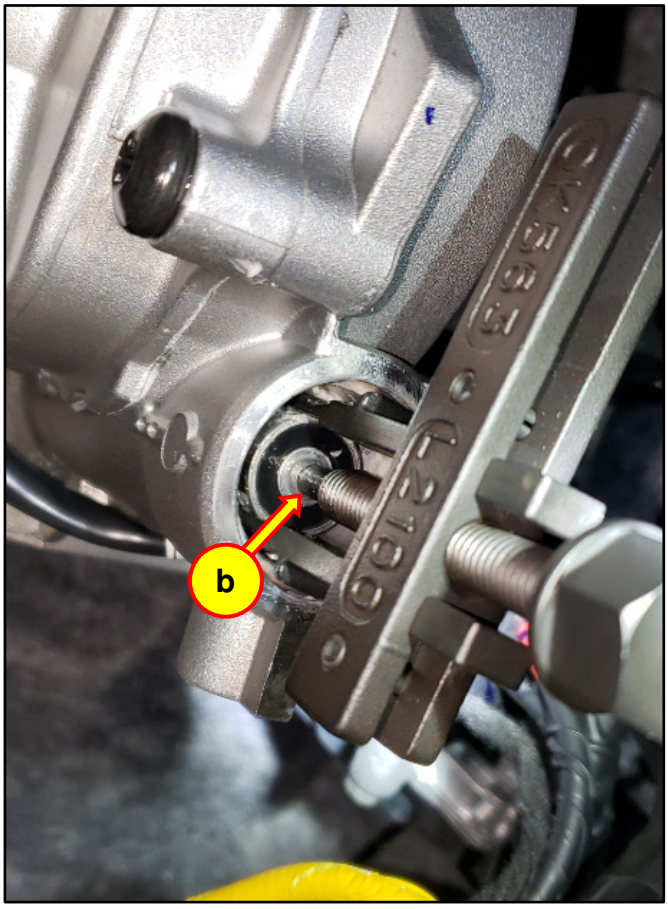


13. Use the MDPS small bearing removal tool, to remove and discard the bearing.

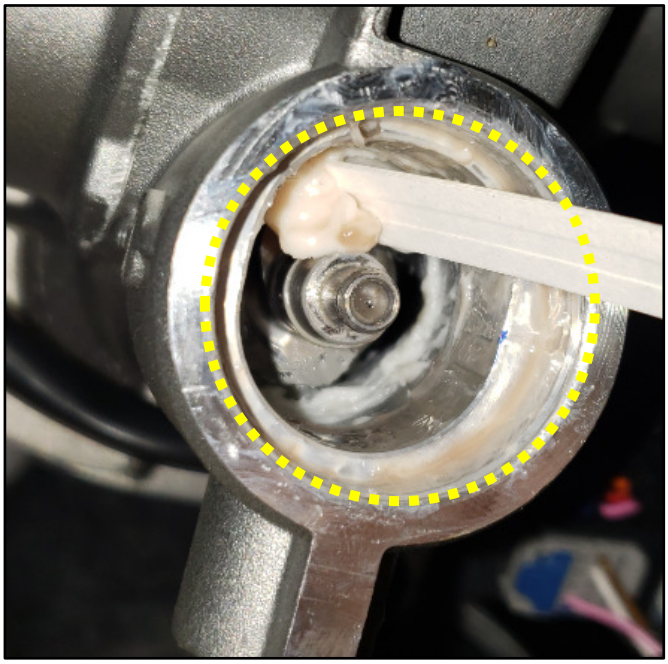
How to use the tool

1. Insert the ends (a) of the tool into the MDPS housing to grasp the outer race of the bearing.
2. Slowly turn the threaded rod (b) until the tip (c) reaches the center of the bearing and worm shaft.
3. Continue to turn the rod slowly until the bearing is pulled off the worm shaft.

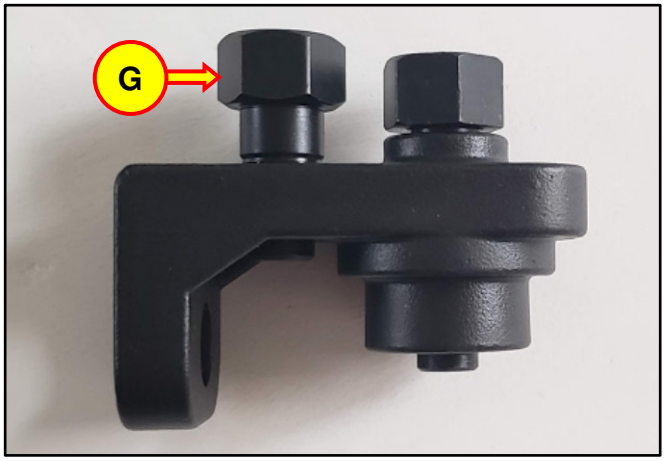




14. Use the supplied paper stick to remove the excess grease.



15. Remove the bolt (G) from the MDPS small bearing mounting tool. This bolt will be used to locate the tool on the MDPS housing.

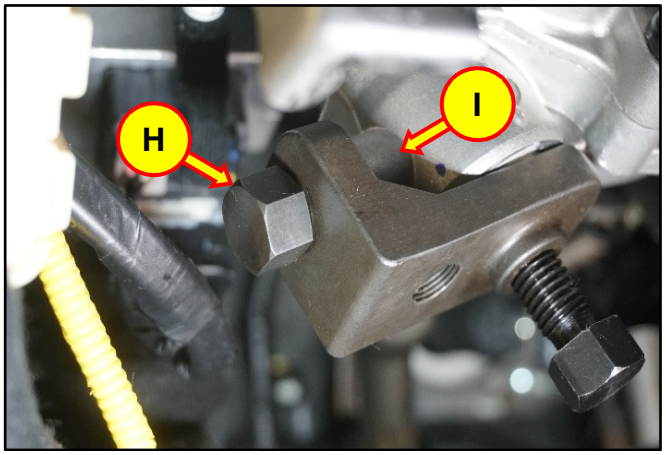


NOTICE

After completing the bearing installation procedure, thread the bolt back into its original position.

16. Insert the new, small bearing into the bearing holder.

17. Place the tool onto the MDPS housing as shown in the photo in the right. Slide the bolt (H) through the hole and then thread the bolt into the anti-rattle plug boss (I). Tighten the bolt (H) until the tool is firmly held onto the MDPS housing.



18. Use a torque wrench to slowly seat the bearing into position on the worm shaft.

Bearing Seating Torque

lb-in	• 26.52
lb-ft	• 2.21
kgf.m	• 0.31
N.m	• 3.0

NOTICE

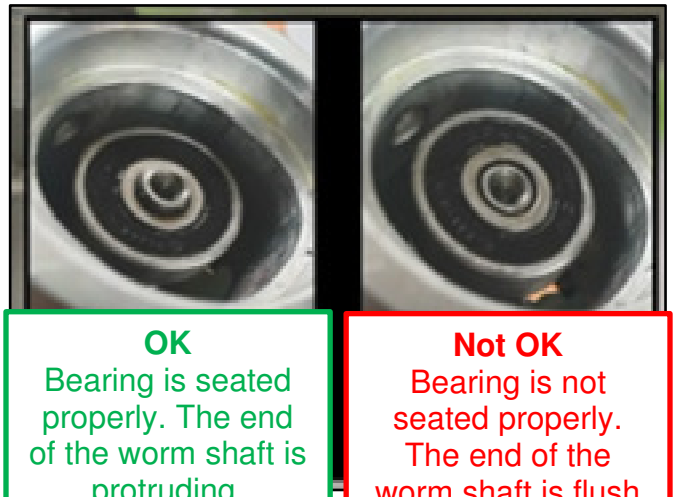
Note the small torque values to seat the bearing.

Only use hand tools. Electric tools may damage the bearing during assembly.

19. Remove the tool from the MDPS housing and inspect the bearing.

Ensure the bearing is fully seated and the end of the worm shaft is protruding approximately 1.2mm (0.047 inch).

If the bearing did not seat as shown in the photo, increase the torque setting on the torque wrench and continue to slowly seat the bearing.



OK
Bearing is seated properly. The end of the worm shaft is protruding.

Not OK
Bearing is not seated properly. The end of the worm shaft is flush with the bearing.

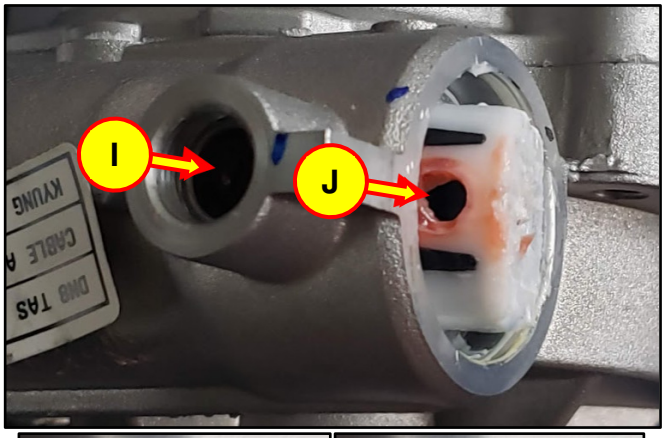
Increased Bearing Seating Torque

lb-in	• 44.28
lb-ft	• 3.69
kgf.m	• 0.51
N.m	• 5.0

NOTICE

If the bearing is removed during this procedure, do not reinstall the bearing as it may be damaged and cause a noise. A new bearing must be used.

20. Install the new sliding damper. Align the hole on the side of the sliding damper (J) with the anti-rattle plug boss (I).



Align this side with the hole with the plug boss.

Not this side.

21. Reinstall parts in the reverse order of removal.

22. Reconnect the negative battery cable after all the components have been reinstalled to the vehicle.

23. If necessary, program the customer's AM, FM, and SXM radio preset stations.

24. The service procedure is now complete.

NOTICE

Use the supplied plastic cover during reassembly.

Ensure cover snaps into place and is flush with the housing.