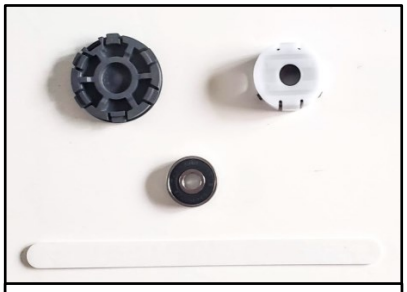
HYUNDAI **Technical Service Bulletin**	GROUP **STEERING**	NUMBER **22-ST-005H-1**
	DATE **JUNE 2022**	MODEL(S) **Multiple**

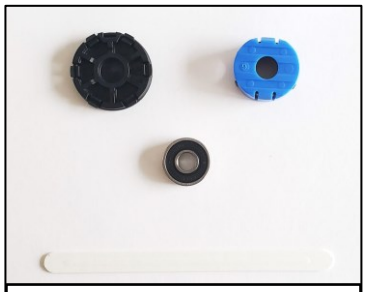
SUBJECT: C-MDPS WORM SHAFT BEARING NOISE

THIS TSB SUPERSEDES 22-ST-005H TO INCLUDE INFORMATION REGARDING A NEW BEARING KIT, A NEW TOOL, AND APPLICABLE MODELS.

Description: Certain 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.



"626" Bearing Kit
56359-L1AAAFFF



"608" Bearing Kit
56358-AAAAAFFF

Applicable Vehicles:
2017 – 2020 MY Elantra (AD, VIN beginning with "KMH")
2017 – 2018 or 2020 MY Elantra (ADA, VIN beginning with "5NP") with production dates between ***January 01, 2017*** and ***February 28, 2018*** or between ***November 07, 2019*** and ***May 03, 2020***
2021 – 2022 MY Elantra (CN7/CN7A)
2021 – 2022 MY Elantra (CN7 HEV)
2018 – 2020 MY Elantra GT (PD)
2017 – 2022 MY Ioniq Hybrid/Plug-In (AE HEV/PHEV)
2017 – 2021 MY Ioniq Electric Vehicle (AE EV)
2018 – 2022 MY Kona (OS)
2019 – 2022 MY Kona EV (OS EV)
2020 – 2022 MY Palisade (LX2)
2017 – 2019 MY Santa Fe/XL (NC)
2017 – 2019 MY Sonata (LFA)
2017 – 2019 MY Sonata Hybrid/Plug-In (LF HEV/PHEV)
2020 – 2022 MY Sonata (DN8, VIN beginning with "KMH")
2020 – 2021 MY Sonata Hybrid (DN8 HEV)
2017 MY Veloster (FS)

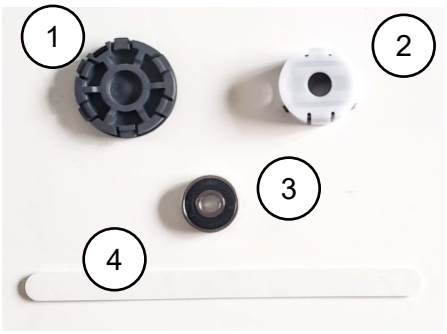
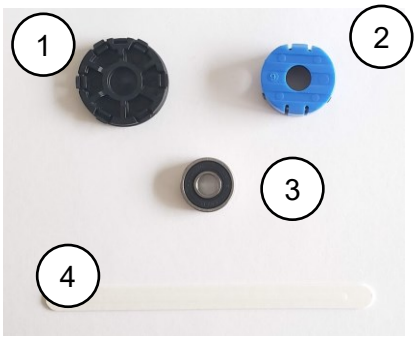
NOTICE

- 2018 – 2020 MY Elantra (ADA, VIN beginning with "5NP"), with production dates between ***March 01, 2018*** and ***November 06, 2019***, please refer to TSB 22-ST-004H.
- 2020 – 2022 MY Sonata (DN8A) produced from SOP to December 30, 2021, please refer to TSB 22-ST-003H.

Circulate To: General Manager, Service Manager, Parts Manager, Warranty Manager, Service Advisors, Technicians, Body Shop Manager, Fleet Repair

SUBJECT: C-MDPS WORM SHAFT BEARING NOISE

Parts Information:

MODEL	PART NAME	PART NUMBER	PHOTO / DESCRIPTION
ELANTRA (AD/ADA) ELANTRA GT (PD) KONA (OS) KONA EV (OS EV) IONIQ (AE EV) IONIQ HEV/PHEV (AE HEV/PHEV) SANTA FE/XL (NC) VELOSTER (FS) SONATA (LFA) SONATA HEV/PHEV (LF HEV/PHEV) PALISADE (LX2) **SONATA HEV** **(DN8 HEV)** **Jan 29, 2020 to Oct 23, 2020**	"626" BEARING KIT	56359-L1AAAFFF	 1. End cover assy 2. Sliding damper 3. **626** Bearing, **OD: 19mm** 4. Paper stick
ELANTRA (CN7/CN7A) ELANTRA HEV (CN7 HEV) SONATA (DN8) **SONATA HEV** **(DN8 HEV)** **Oct 23, 2020 to Jun 30, 2021**	"608" BEARING KIT	56358-AAAAAFFF	 1. End cover assy 2. Sliding damper 3. **608** Bearing, **OD: 22mm** 4. Paper stick

NOTE1: Part 1 is only required for vehicles equipped with a plastic end cover.
NOTE2: The 608 bearing is larger than the 626 bearing.
NOTE3: Sonata HEV (DN8 HEV) part application is split by production date. If the DN8 HEV's vehicle production date is October 23, 2020, verify the required bearing kit by measuring the bearing within the MDPS housing.

NOTICE

The included parts are specific to each kit. Do not mix parts. Using the incorrect parts may damage the parts and/or MDPS housing.

SST Information:

PART NAME	PART NUMBER	PHOTO	DESCRIPTION
MDPS SMALL BEARING REMOVAL TOOL	0K563-L2100FFF		Use for both 626 and 608 bearings. All dealers were sent one of each tool at the launch of the original TSB in October 2021.
"626" MDPS SMALL BEARING MOUNTING TOOL	0K563-L2200FFF		For **626** bearing only. All dealers were sent one of each tool at the launch of the original TSB in October 2021.
"608" MDPS SMALL BEARING MOUNTING TOOL	09563-IB200		For **608** bearing only. All dealers were sent this tool at the launch of this TSB, 22-ST-005H-1, in Junef 2022.

NOTICE

Ensure the correct bearing mount tool is used. Using the incorrect tool can damage the bearing and/or MDPS housing.

SUBJECT: C-MDPS WORM SHAFT BEARING NOISE

Warranty Information:

MODEL	OP CODE	OPERATION	OP TIME	CAUSAL PART	NATURE CODE	CAUSE CODE
ELANTRA (AD/ADA) ELANTRA GT (PD) KONA (OS) KONA EV (OS EV) IONIQ (AE EV) IONIQ HEV/PHEV (AE HEV/PHEV) SANTA FE/XL (NC) VELOSTER (FS) SONATA (LFA) SONATA HEV/PHEV (LF HEV/PHEV) PALISADE (LX2) **SONATA HEV (DN8 HEV) Production Date Range: Jan 29, 2020 to Oct 23, 2020**	56352F00	SMALL BEARING REPLACEMENT	0.6 M/H	56359-L1AAAFFF (“626” kit)	Q57	ZZ6
ELANTRA (CN7/CN7A) ELANTRA HEV (CN7 HEV) SONATA (DN8) **SONATA HEV (DN8 HEV) Production Date Range: Oct 23, 2020 to Jun 30, 2021**				56358-AAAAAFFF (“608” kit)		

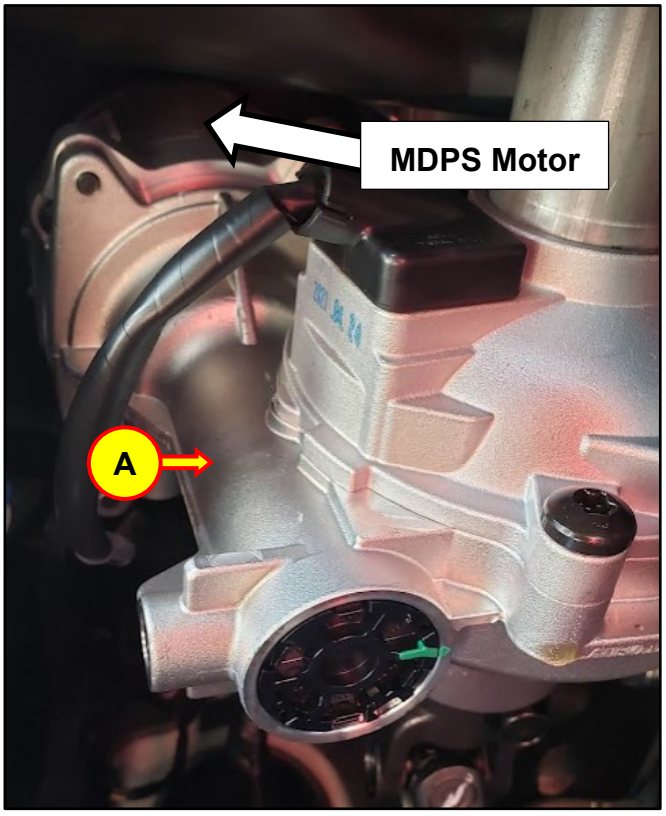
NOTE1: Sonata HEV (DN8 HEV) causal part number is split by vehicle production date. If the DN8 HEV’s vehicle production date is October 23, 2020, use the applicable causal part.
NOTE2: Normal Warranty Applies

Service Procedure:

Procedures are the same for both bearing kits.

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/22PI3hAEfnk



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. Removal of the MDPS assembly is not required to replace the small bearing located in the MDPS steering column and housing.

   Remove the crash pad lower panel following the procedures in the applicable shop manual.

   Body (Interior and Exterior) > Crash Panel > Crash Pad Lower Panel

   Check if vehicle is equipped with a Knew Air Bag

   If repairing a vehicle **without** a Knee Air Bag, go to step 7.

   If repairing a vehicle equipped **with** a Knee Air Bag, continue to step 5.

5. **Equipped with Knee Air Bag**

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

   Disconnect the negative (-) battery terminal.

NOTICE

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

CAUTION

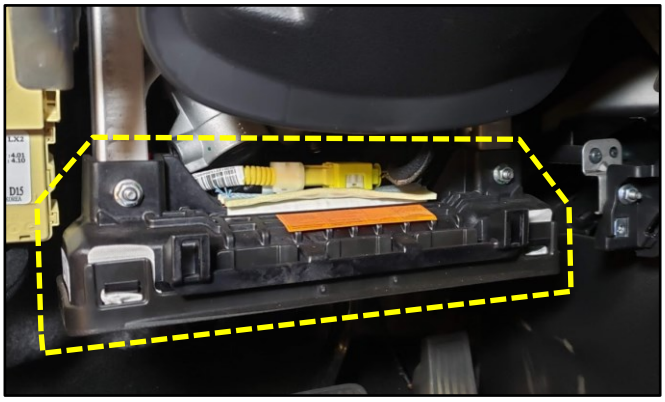
Not removing the negative (-) terminal from the battery may result in accidental airbag deployment and possible physical injury.

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

6. 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.

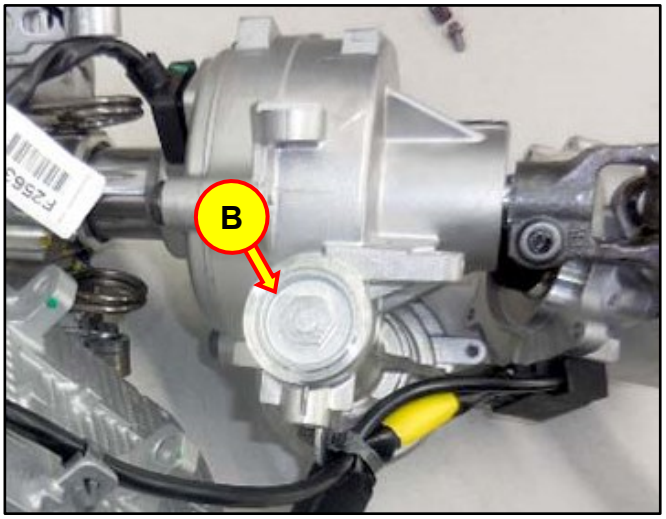
7. Additional parts may have to be removed to gain access to the small bearing. Follow the applicable shop manual for part removal procedures.

8a. **Vehicles with Plug**
Remove the plug (B).

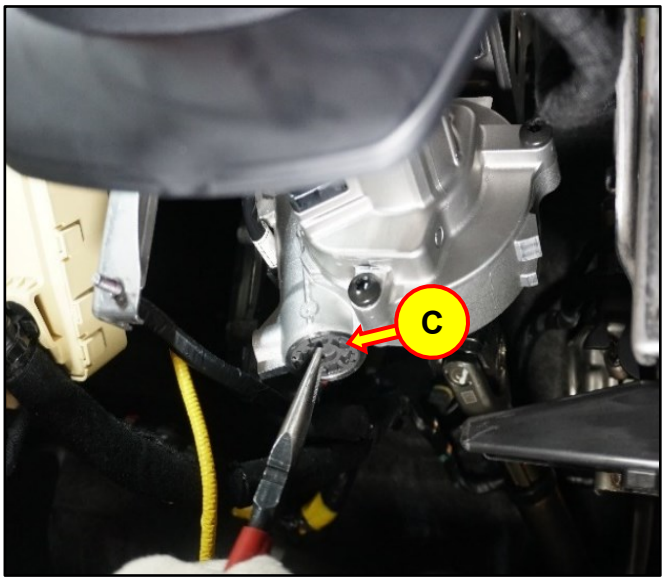
Reuse the plug during reassembly.

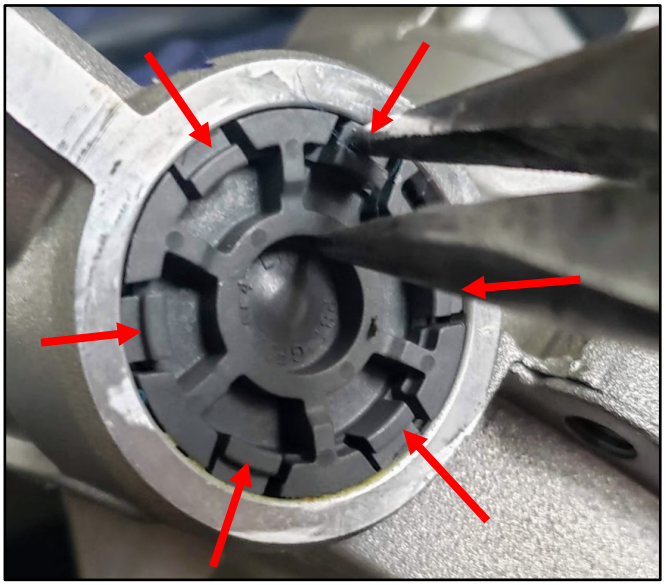
Plug Tightening Torque

lb-ft	• 28.2-35.5
kgf.m	• 3.9-4.9
N.m	• 38.3-48.1



8b. **Vehicles with Plastic Cover**
Remove the plastic cover (C) by breaking the six cover tabs with pliers.

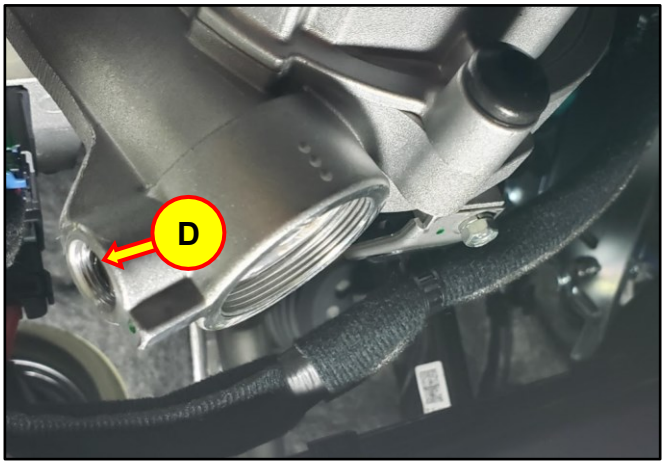




9. Remove the anti-rattle plug (D).

Anti-Rattle Plug Tightening Torque

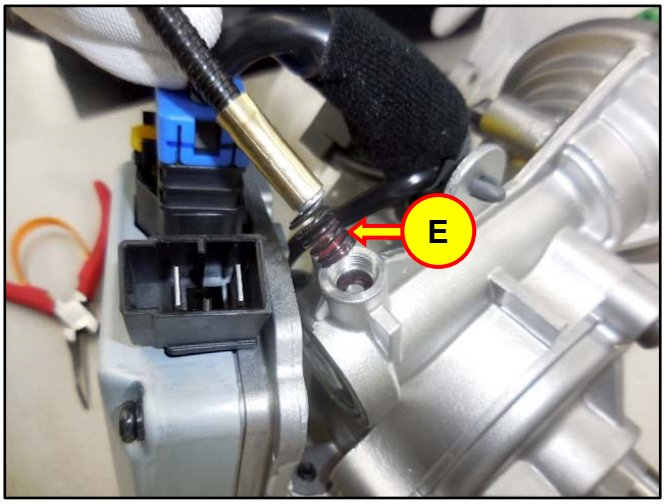
lb-in	• 86.4-112.8
lb-ft	• 7.2-9.4
kgr.m	• 1.0-1.3
N.m	• 9.8-12.8



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

NOTICE

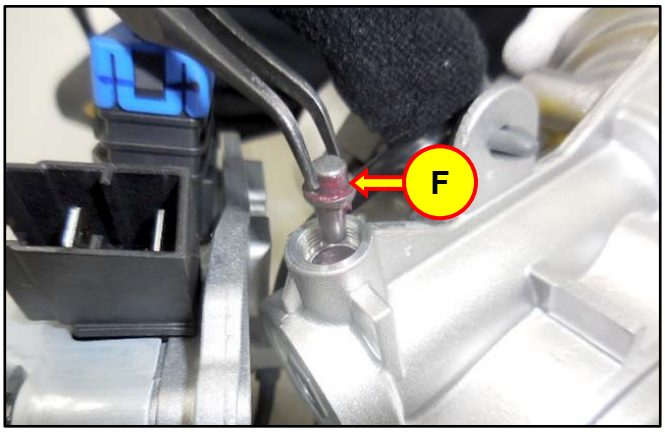
Keep the anti-rattle spring free of debris after removal. Reuse the spring during reassembly.



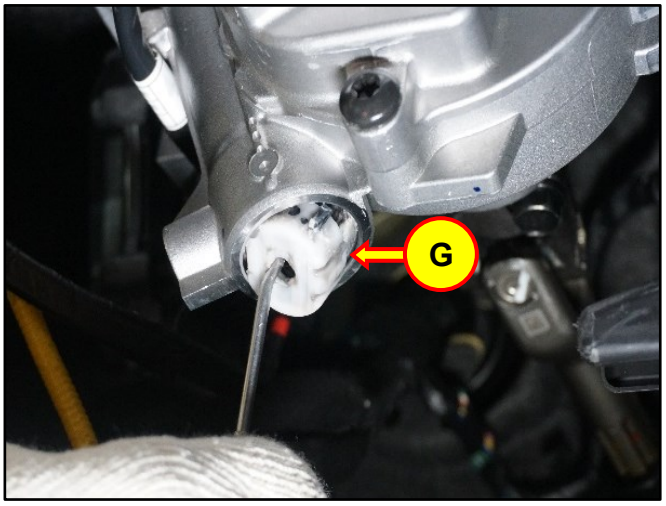
11. Remove the slide pin (F).

NOTICE

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



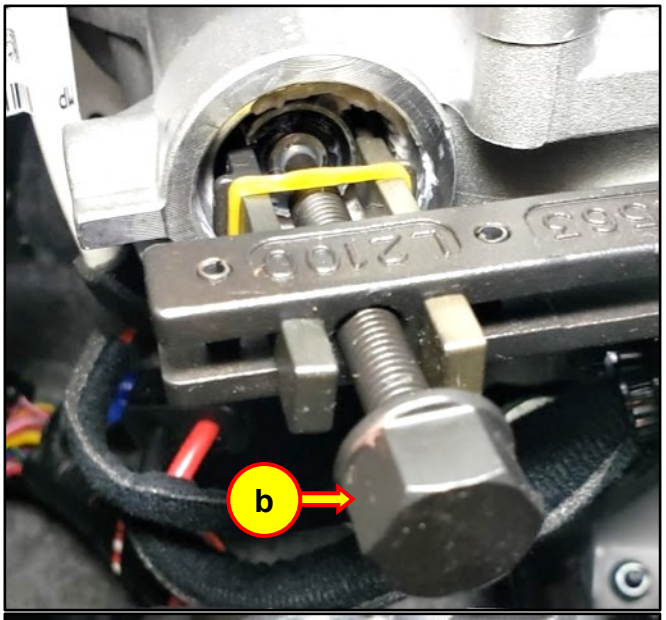
12. Remove the sliding damper (G) and discard.

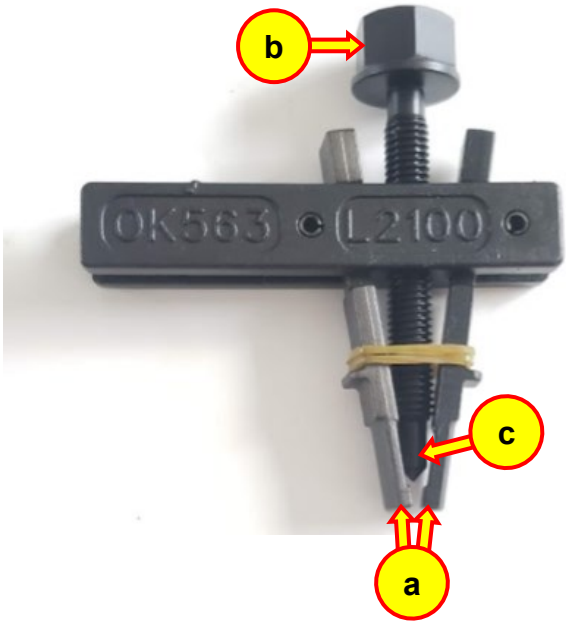


13. Use the MDPS small bearing removal tool, to remove and discard the bearing.

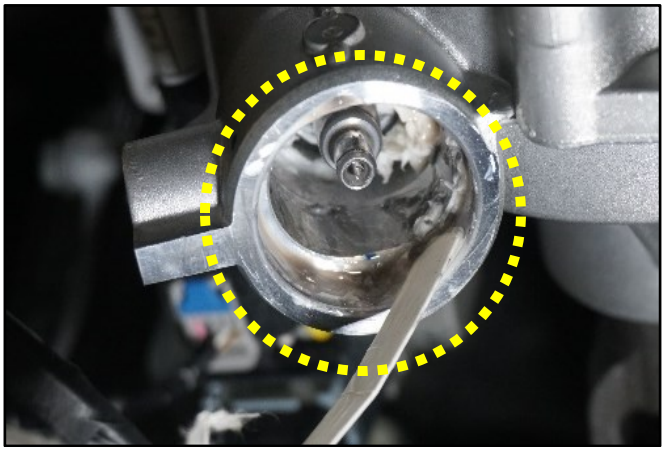
How to use the tool

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.

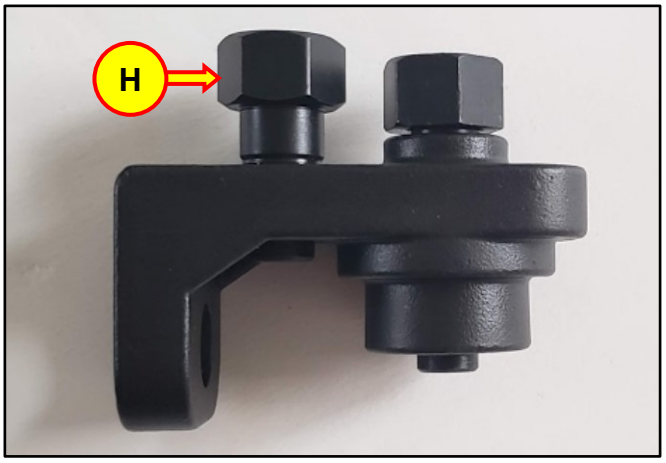




14. Use the supplied paper stick to remove the excess grease.



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



NOTICE

Ensure the correct bearing mount tool is used. Using the incorrect tool can damage the bearing and/or MDPS housing.

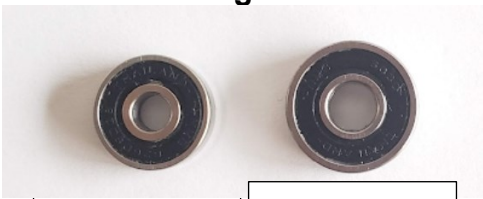
NOTICE

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

16. Insert the new bearing into the bearing holder.

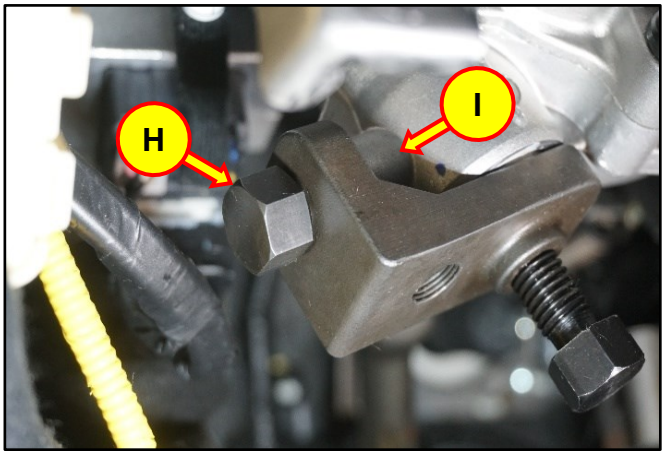
NOTICE

Ensure the correct bearing is used for the vehicle. The 608 bearing is larger than the 626 bearing.



626 OD: 19mm	608 OD: 22mm

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

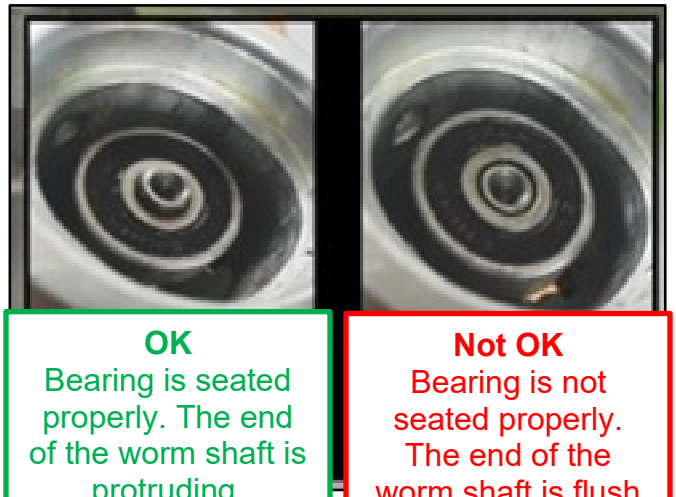
Note the small torque values to seat the bearing.

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

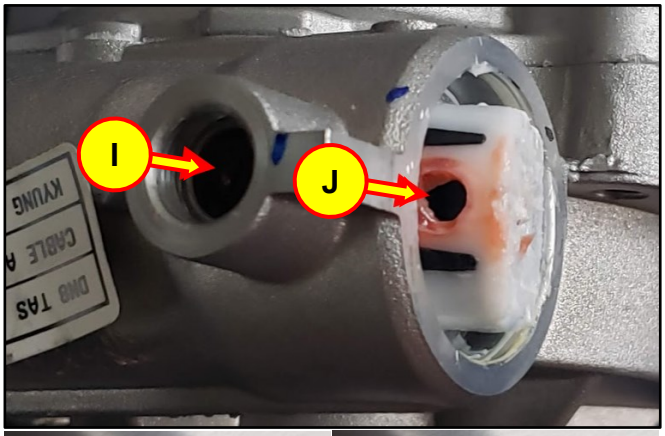
NOTICE

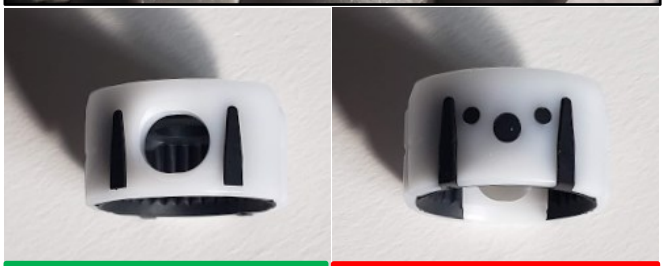
If the bearing is removed during this procedure, do not reinstall the bearing as it might be damaged and cause a noise. A new bearing must be used.

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

NOTICE

Ensure the correct sliding damper is used. Color may vary by kit.





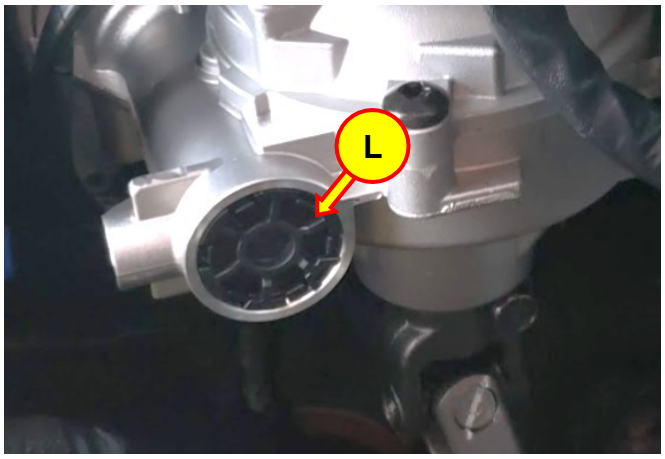
Align this side with the hole with the plug boss.

Not this side.

21. Install the plastic end cover (L). Ensure cover snaps into place and is flush with the housing.

NOTICE

Ensure the correct end cover is used. Color may vary by kit.



22. Reinstall parts in the reverse order of removal.

23. If necessary, reconnect the negative battery cable after all the components have been reinstalled to the vehicle. Program the customer's AM, FM, and SXM radio preset stations.

24. The service procedure is now complete.