HYUNDAI NEW THINKING. NEW POSSIBILITIES. **Technical Service Bulletin**	GROUP **CAMPAIGN**	NUMBER **15-01-018**
	DATE **APRIL 2015**	MODEL(S) **Elantra (HD) Elantra Touring (FD)**

SUBJECT: ELECTRONIC POWER STEERING SYSTEM SOFTWARE UPDATE/REPAIR (RECALL CAMPAIGN 127)

*** IMPORTANT**

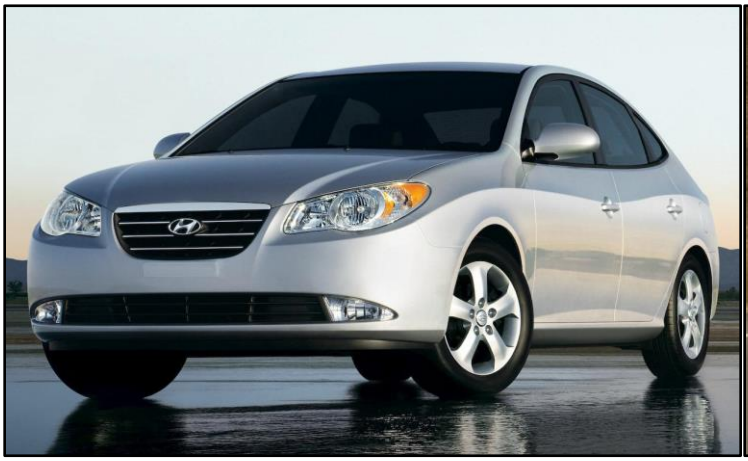
***** Retail Vehicles *****

As required by federal law, dealers must perform all open recalls on used vehicles, demo and rental vehicles prior to placing them into customer use and whenever an affected vehicle is in the shop for any maintenance or repair.

When a vehicle arrives at the service department, access Hyundai Motor America's "Warranty Vehicle Information" screen via WEBDCS to identify open Campaigns.

Description: The affected vehicles are equipped with electronic power steering (EPS). If the EPS electronic control unit senses a discrepancy in the system's circuitry, the EPS warning indicator lamp is illuminated in the instrument cluster and steering assist is no longer provided. Steering control can be maintained; however, the vehicle will revert to a manual steering mode requiring greater driver effort, particularly at low speeds.

This bulletin describes the service procedures to 1) update the software in the EPS control module, or 2) if necessary, replace the electronic power steering (EPS) unit.



Applicable Vehicles:

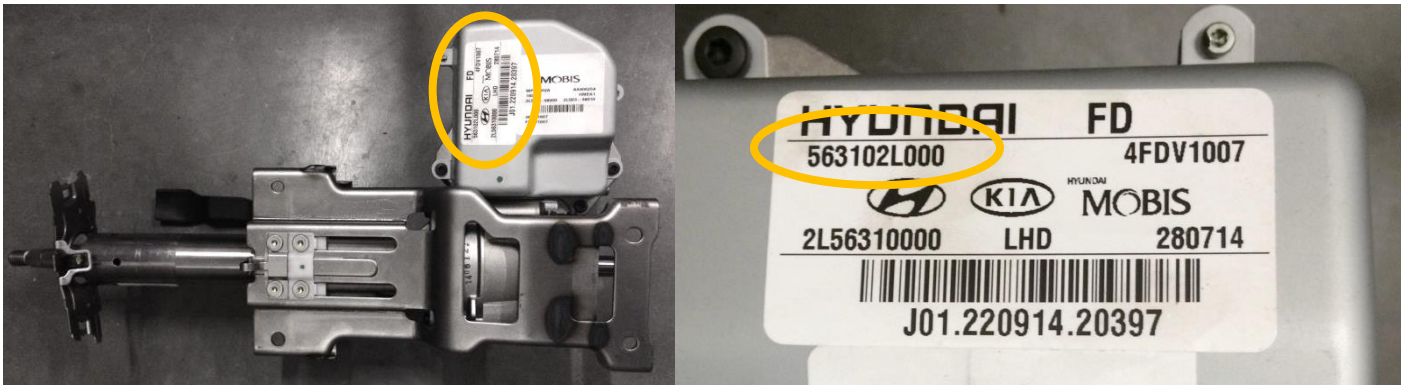
- **2008 – 2010 model year Elantra (HD) sedan vehicles produced beginning on June 1, 2008 through April 30, 2010.**
- **2009 – 2010 model year Elantra Touring (FD) vehicles produced beginning on November 1, 2008 through April 30, 2010.**

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

Parts Information:

Part Name	Model	Previous	New	Type	Remark
EPS	HD	56310-2H200AS	56310-2H200QQH	Tilt	SAS equipped
		56310-2H300AS	56310-2H300QQH	Tilt + Tele	
		56310-2H250	56310-2H250QQH	Tilt	Non SAS
		56310-2H350	56310-2H350QQH	Tilt + Tele	
	FD	56310-2L000	56310-2L000QQH	Tilt	-
		56310-2L300	56310-2L300QQH	Tilt + Tele	-
BOLT	HD/FD	81919-31000		• Must use new bolts during IGN key cylinder reinstallation. • **Order two bolts per EPS replacement.**	

NOTE: If the EPS needs to be replaced, reference the previous part number printed on the EPS control module label to order the replacement.



Warranty Information:

Model	Op Code	Operation	Part Number	Op Time
HD/FD	51C013R0	EPS S/W check and ECU upgrade	-	0.3 M/H
HD	51C013R2	EPS S/W check and replacement – SAS equipped	56310-2H200QQH 56310-2H300QQH	1.6 M/H
HD	51C013R3	EPS S/W check and replacement – Non SAS	56310-2H250QQH 56310-2H350QQH	1.6 M/H
FD	51C013R4	EPS S/W check and replacement	56310-2L000QQH 56310-2L300QQH	1.6 M/H

NOTE: Submit Claim on Campaign Claim Entry Screen

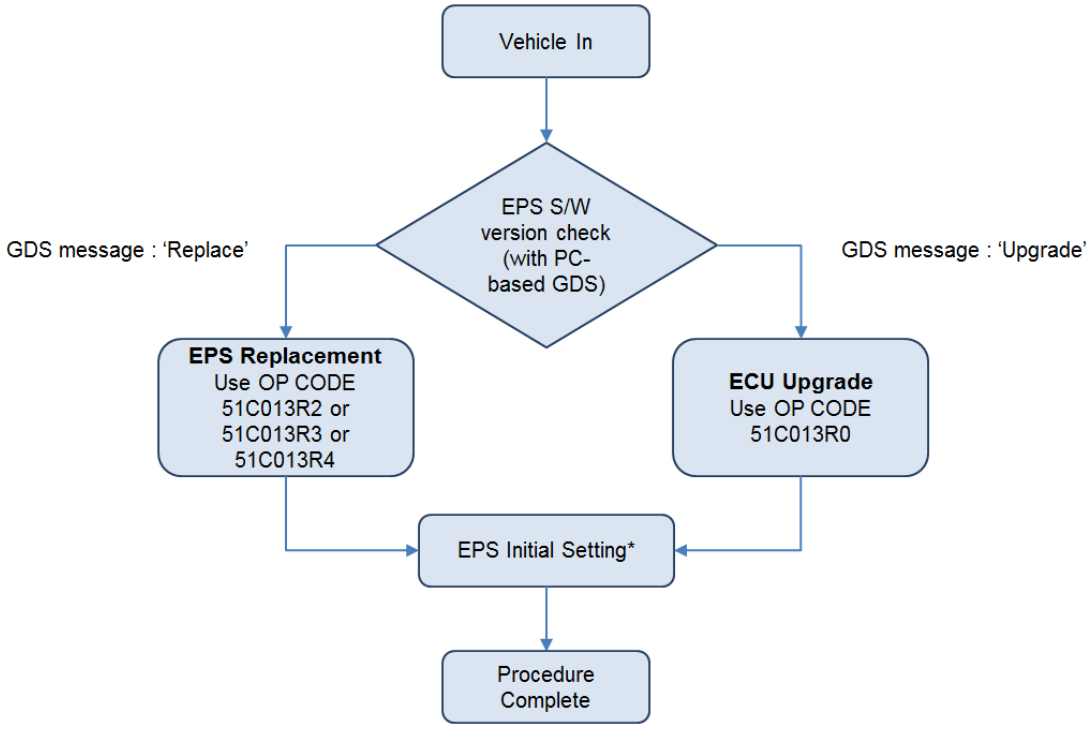
✶ NOTE

This service procedure can only be performed using the PC-based GDS.

- Refer to TSB **15-GI-002** for the PC-based GDS ECU update procedures.

Service Procedure:

Perform the service procedure based on the flow chart below.

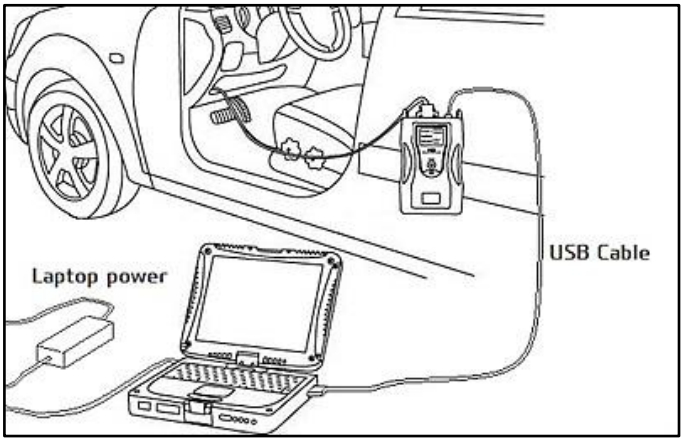


*EPS Initial Setting includes:

- EPS Type recognition
- ASP (Absolute Steering Position) calibration

EPS S/W Version Check (with GDS)

1. Connect the **PC-based** GDS to the vehicle and then turn 'ON' the ignition switch.



✶ NOTE

This service procedure can only be performed using the PC-based GDS.

- Refer to TSB **15-GI-002** for the PC-based GDS ECU update procedures.

2. Input the vehicle information by entering the vehicle's VIN or selecting the vehicle model, model year, engine/fuel type and EPS as the system and then click OK.

3. Select **ECU Upgrade** on the initial screen.

4. Select **Auto Mode** click 'Next' and then select the **EPS** system.

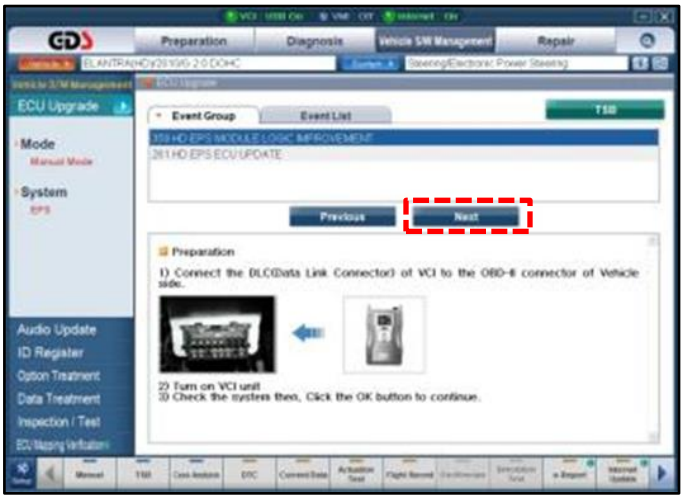
5. Read the 'Preparation' statement on the screen and then click 'OK'.

   The GDS will read the vehicle's MDPS ROM ID.

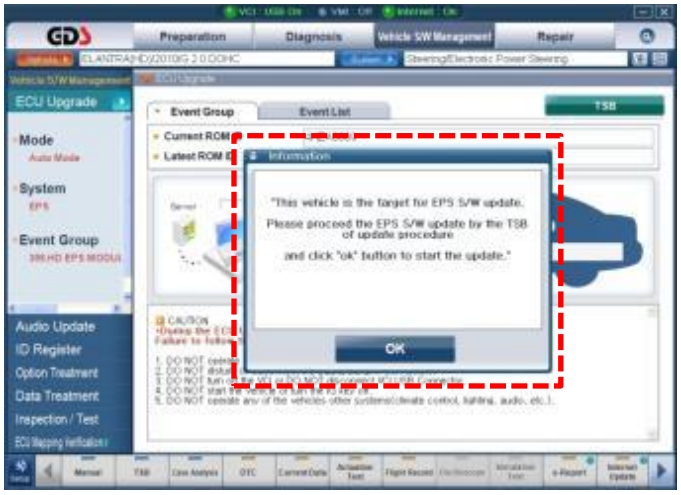
6. After the current ROM ID is displayed, select the upgrade event according to the vehicle model.

   - 359.HD EPS MODULE LOGIC IMPROVEMENT
   - 360.FD EPS MODULE LOGIC IMPROVEMENT

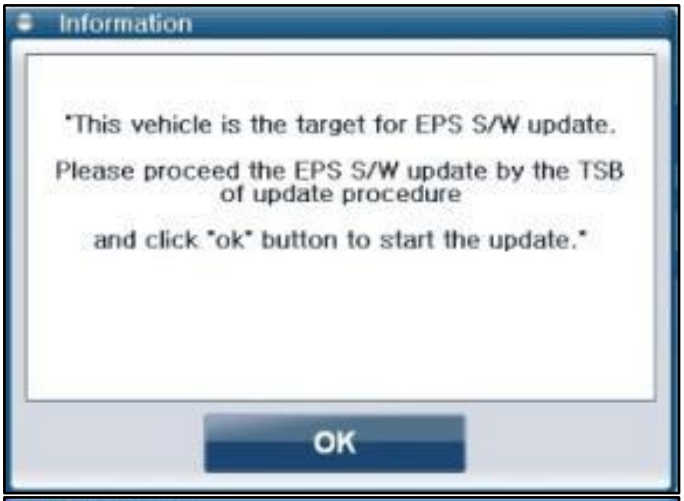
   Click 'Next'.



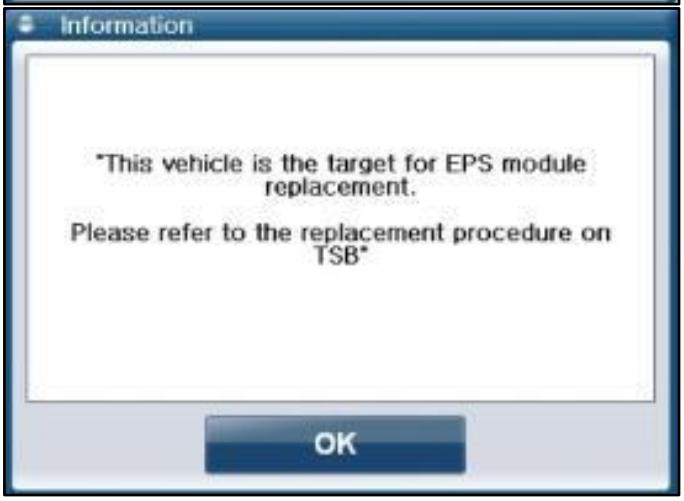
7. Read the message on the GDS screen and then proceed to update the EPS S/W or replace the EPS unit.



Message to update the EPS S/W. Proceed to the EPS S/W Update procedure section on page 7 of this TSB.



Message to replace the EPS unit. Proceed to the EPS Replacement procedure section on page 10 of this TSB.



EPS S/W Update Procedure

GDS Information:

System Selection: **EPS**	
Event #	Description
359	HD EPS MODULE LOGIC IMPROVEMENT
360	FD EPS MODULE LOGIC IMPROVEMENT

NOTE:

- Refer to TSB **15-GI-002** for the PC-based GDS ECU update procedures.
- To verify the vehicle is affected, be sure to check the version of the vehicle's control unit ROM ID with reference to the ROM ID Information Table below before attempting to update the control unit software.

✶ NOTICE

You must initially perform the GDS EPS Update in Auto Mode.

- If the EPS Update starts but then fails in Auto Mode, perform update in the Manual Mode to recover.
- Refer to the General Instructions found in TSB: 15-GI-002 (PC GDS).

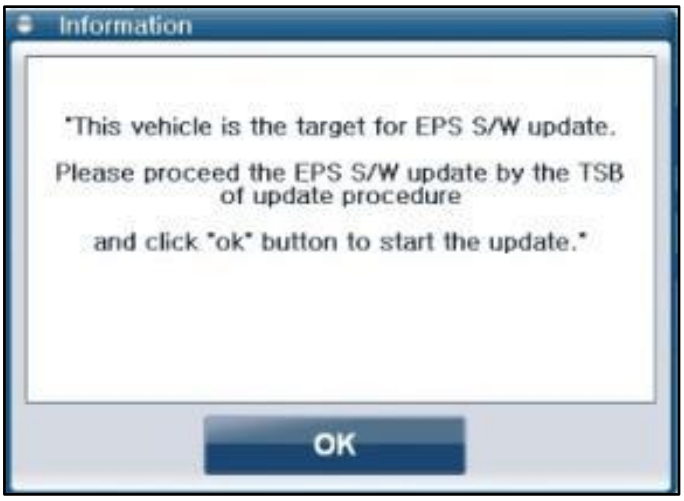
ROM ID Information Table:

Model	P/N	ROM ID	
		OLD	NEW
Elantra (HD)	56310-2H000 56310-2H100 56310-2H200 56310-2H300	4HEA0609 4HEB0609 4HEC0612 4HED0706 4HDASC08 4HDASF08	4HDASK02
	56310-2H001 56310-2H050 56310-2H101 56310-2H150 56310-2H201 56310-2H250 56310-2H301 56310-2H350	4HDA0801 4HDB0803 4HDC0807 4HDD0811 4HDASA08 4HDASD08	4HDASJ02
		4HDE0906 4HDF0910 4HDASB08 4HDASE08	4HDASH02
		4HKA0906 4HKB0910 4HKC1007 4HKD1401	4HDASG02
Elantra Touring (FD)	56310-2L000 56310-2L100 56310-2L300 56310-2L001 56310-2L101 56310-2L301	4FDF0705 4FDG0706 4FDH0707 4FDI0711 4FDJ0711 4FDK0803 4FDL0805 4FDM0808 4FDN0808 4FDO0810 4FDP0901 4FDQ0902 4FDR0904 4FDAS103 4FDAS403	4FDASB02
		4FDS0906 4FDT0907 4FDU0910 4FDV1007 4FDW1403	4FDASA02

Auto Mode Update Procedure Using PC-based GDS

1. Perform the update procedure when the GDS displays the message to the right.

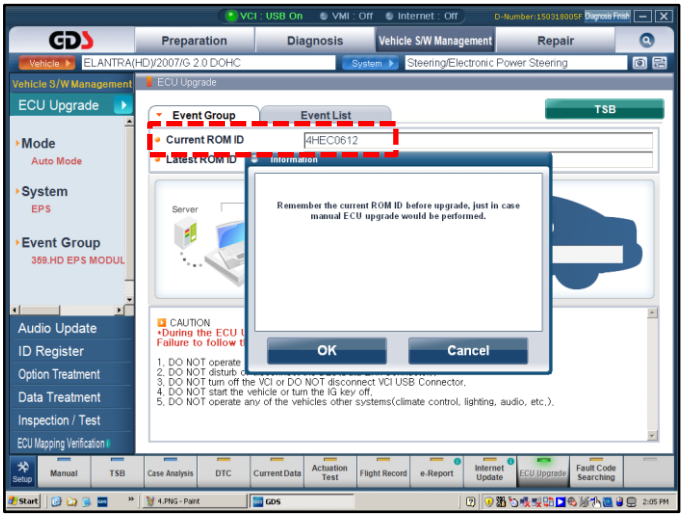
   Click ‘OK’.



2. **Write down the Current ROM ID in case the auto update fails.**

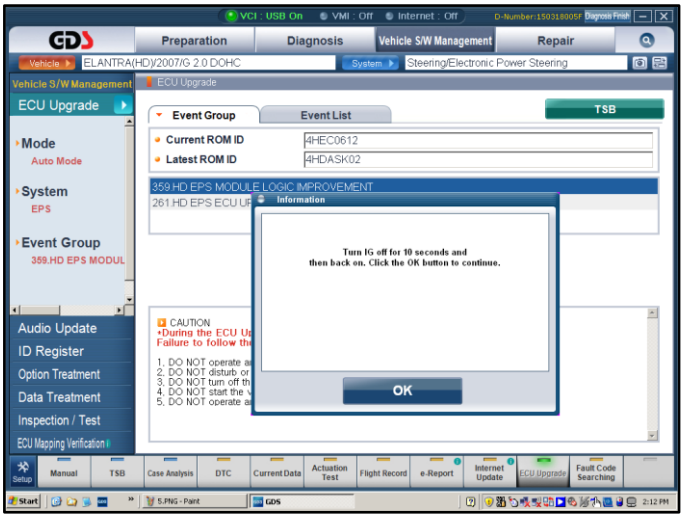
   Click ‘OK’.

   The update will begin and the progress bar will appear. It will take approximately 5 to 10 minutes to complete the upgrade procedure.



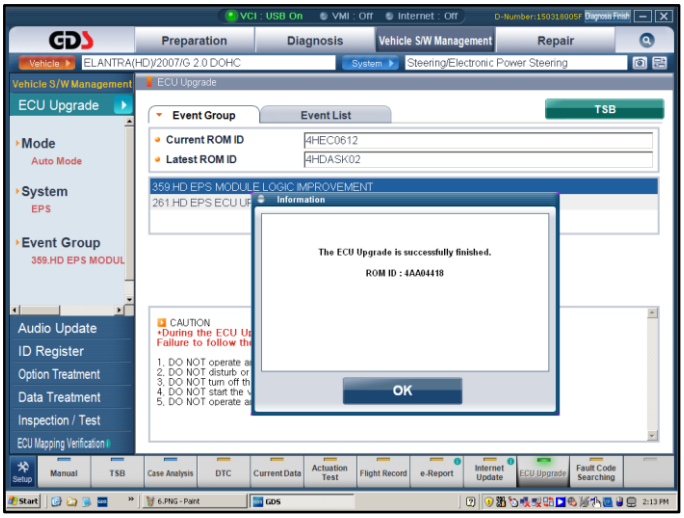
3. After the progress bar reaches 100%, the GDS will instruct to turn the ignition OFF for 10 seconds and then turn it back to the ON position.

   Then click ‘OK’.



4. Click ‘OK’ after the “ECU Upgrade is successfully finished” screen appears.

   Check and clear any diagnostic trouble codes (DTC) that were created during the update.



5. Refer to the applicable workshop manual to perform the ‘EPS Initial Setting’.

★ NOTE

EPS Initial Setting includes:
- EPS Type recognition
- ASP (Absolute Steering Position) calibration

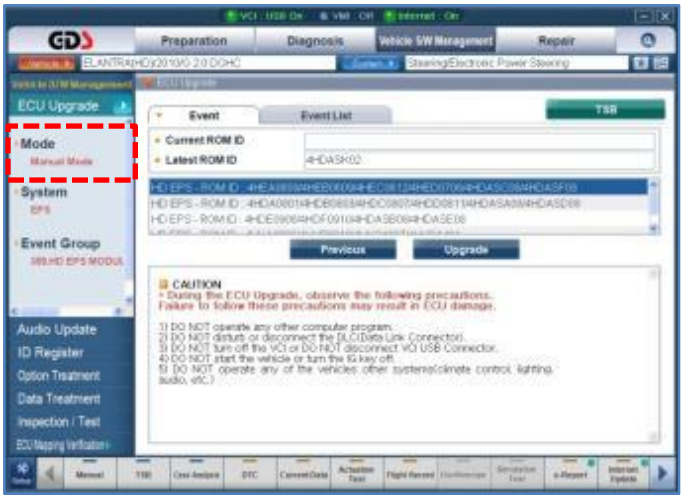
6. Start the vehicle to confirm proper operation of the steering system.

Manual Mode Update Procedure Using PC-based GDS

★ NOTICE

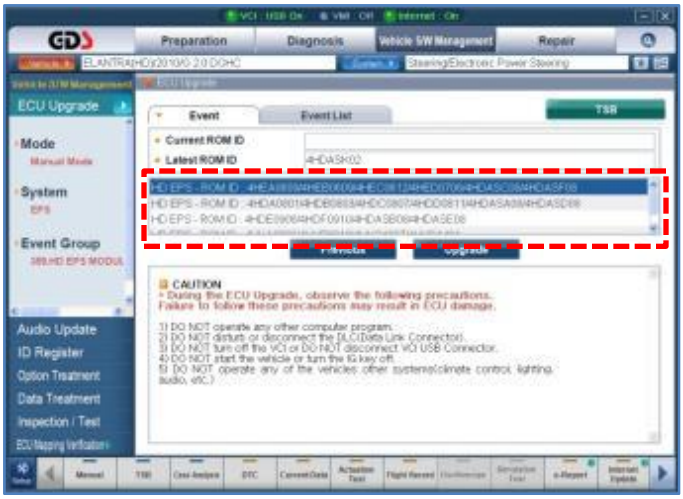
Manual mode update should only be performed if the automatic update failed.
- Refer to the General Instructions found in TSB: 15-GI-002 (PC GDS).

1. If the Auto Mode fails, select Manual Mode within the ECU Upgrade screen.



2. Reference the ROM ID that was noted in the Auto Update procedure above and select the applicable HD or FD EPS – ROM ID in the menu.

   Click ‘Upgrade’.

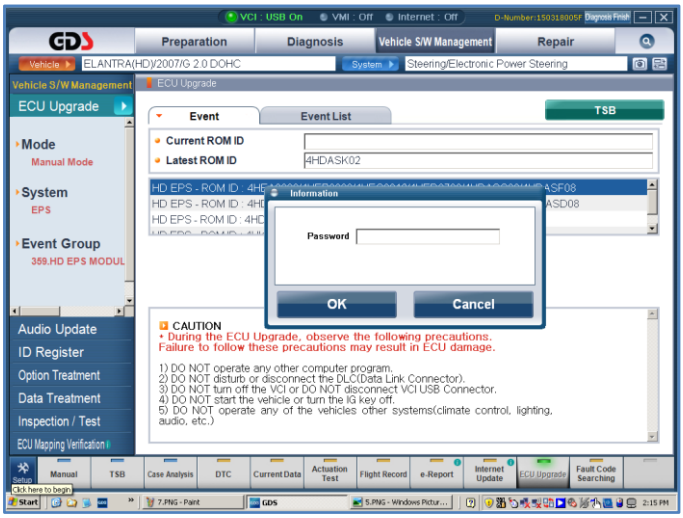


3. Refer to the Manual Mode Password Information Table on page 10.

   Enter the password for the particular ROM ID.

   Click ‘OK’.

   Click ‘OK’ after the voltage check if the results indicate that it is ok.



4. The update will begin and will be completed after the progress bar reaches 100%.

   Continue to follow the instructions on the screens to complete the process.

   Click ‘OK’ after the update successfully finished.

5. Check and clear any diagnostic trouble codes (DTC) that were created during the update.

6. Refer to the applicable workshop manual to perform the ‘EPS Initial Setting’.

7. Start the vehicle to confirm proper operation of the steering system.

Manual Mode Password Information Table:

#359 Elantra (HD)

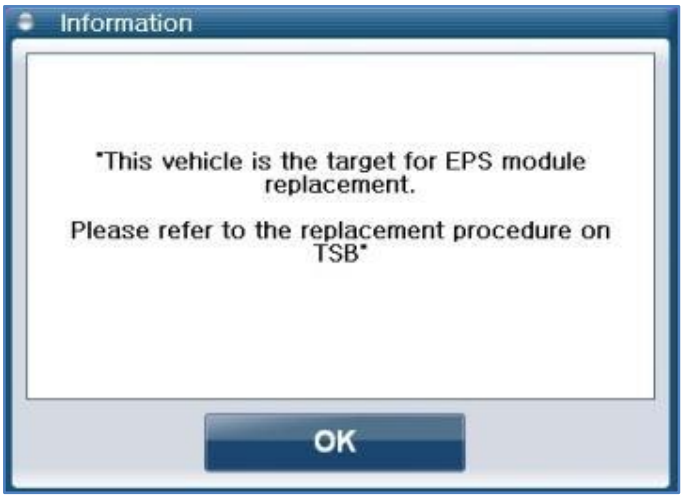
Menu	Password
HD EPS – ROM ID: HEA0609/4HEB0609/4HEC0612/4HED0706/4HDASC08/4HDASF08	**8408**
HD EPS – ROM ID: 4HDA0801/4HDB0803/4HDC0807/4HDD0811/4HDASA08/4HDASD08	**8409**
HD EPS – ROM ID: 4HDE0906/4HDF0910/4HDASB08/4HDASE08	**8410**
HD EPS – ROM ID: 4HKA0906/4HKB0910/4HKC1007/4HKD1401	**1401**

#360 Elantra Touring (FD)

Menu	Password
FD EPS – ROM ID: 4FDF0705/4FDG0706/4FDH0707/4FDI0711/4FDJ0711	**0711**
FD EPS – ROM ID: 4FDK0803/4FDL0805/4FDM0808/4FDN0808/4FDO0810	**0811**
FD EPS – ROM ID: 4FDP0901/4FDQ0902/4FDR0904/4FDAS103/4FDAS403	**4403**
FD EPS - ROM ID : 4FDS0906/4FDT0907/4FDU0910/4FDV1007/4FDW1403	**1403**

EPS Unit Replacement

Replace the EPS unit only if the GDS displays the message on the right during the EPS S/W Version Check.



The procedure below is based on the Elantra (HD). The Elantra Touring (FD) is similar.

Information can also be found in the applicable service manual.

1. Align the steering wheel to the center position.

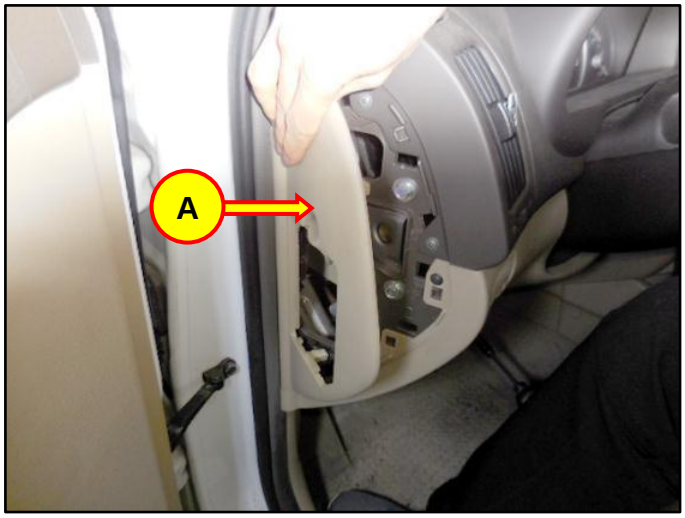
2. Write down the customer's preset radio stations.

   Remove the ground strap from the negative (-) battery terminal.

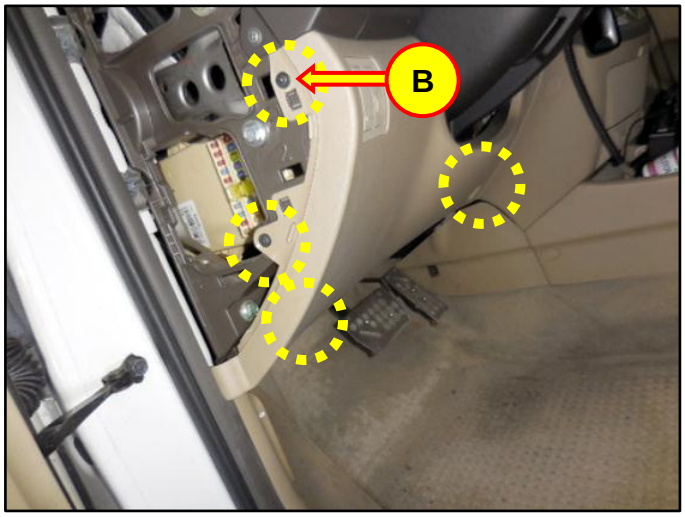
⚠WARNING

Disconnect the negative battery cable and wait 5 minutes prior to any Supplemental Restraint System (SRS) repairs.

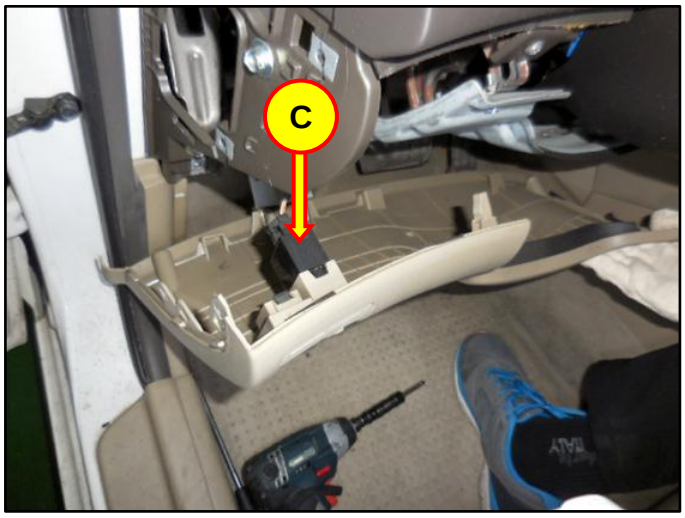
3. Remove the crash pad side cover (A).



4. Remove the lower crash pad mounting screws (B).

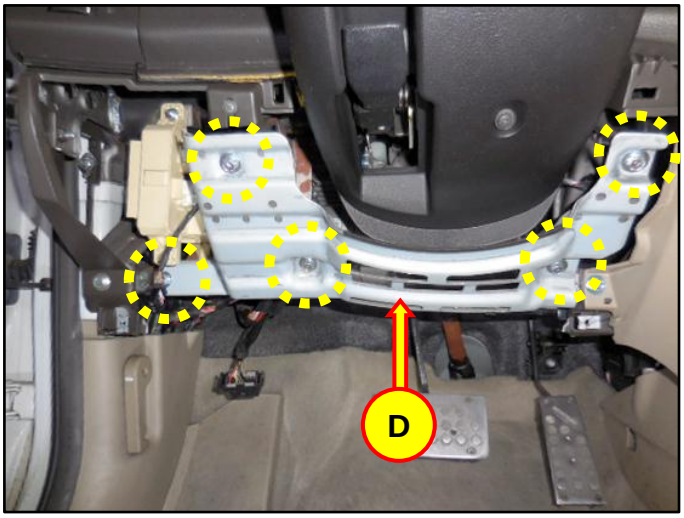


5. Disconnect any connectors (C) and then remove the lower crash pad.



6. Remove the bracket (D) by loosening the mounting bolts.

Tightening torque:
3.9 ~ 5.8 Nm (0.4 ~ 0.6 kgf.m, 2.8 ~ 4.3 lb-ft)

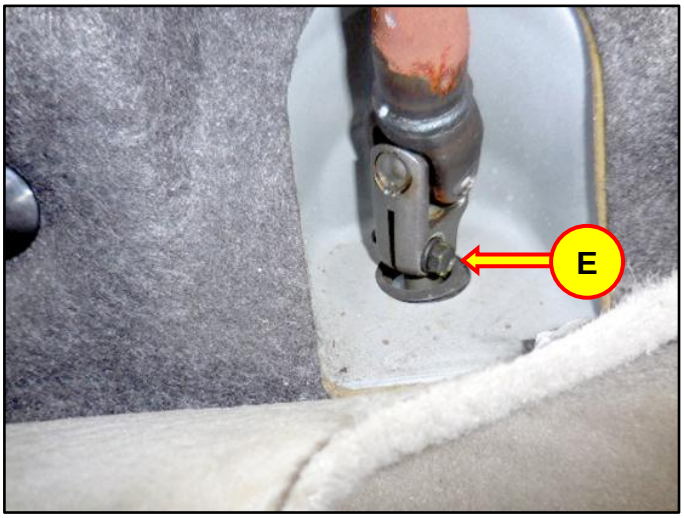


7. Draw a line between the steering column U-joint and the splines of the steering rack gear box with a paint marker.

Use these lines to align the U-joint and steering rack during reinstallation.

Remove the lower pinch bolt (E) and then separate the U-joint from the steering rack.

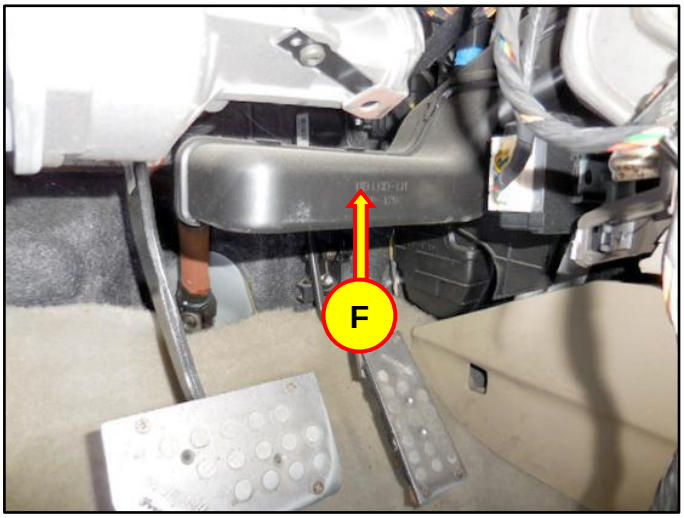
Tightening torque:
32.4 ~ 37.3 Nm (3.3 ~ 3.8 kgf.m, 23.9 ~ 27.5 lb-ft)



✶ NOTE

If you do not reinstall the steering column U-joint and the steering rack in the same orientation as removal, a wheel alignment should be performed.

8. Remove the screws to remove the air duct (F).



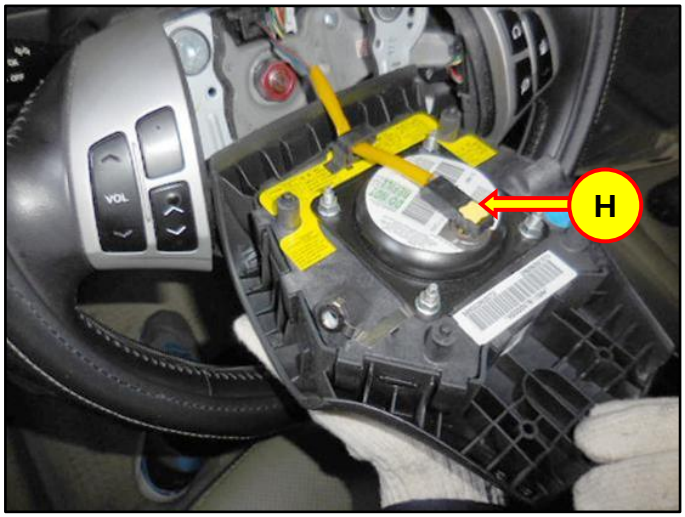
9. Loosen the driver airbag mounting bolt (G) on both sides of the steering wheel.

Tightening torque:
7.9 ~ 10.8 Nm (0.8 ~ 1.1 kgf.m, 5.8 ~ 8.0 lb.ft)

10. Carefully disconnect any connectors (H) on the back of the airbag and then remove the driver's airbag.

✶ NOTE

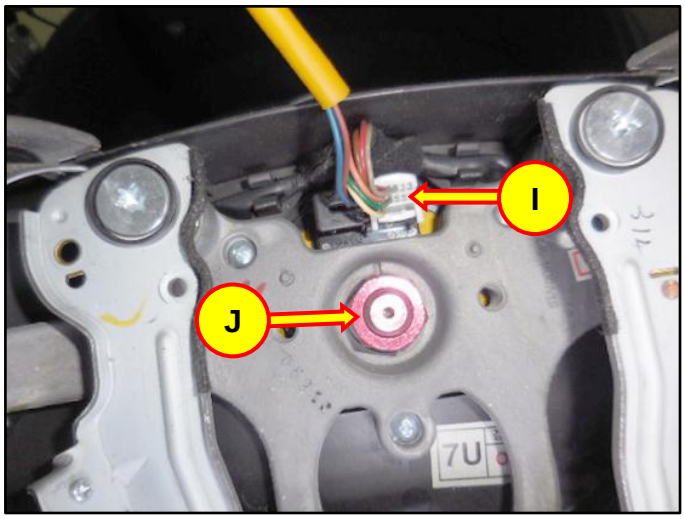
Ensure the locking tab (H) is released prior to separating the connector. Do not pull on the wires to disconnect the harness from the airbag.
Be EXTREMELY careful when removing the locking tab. If the locking tab breaks, the airbag harness will need to be replaced.



11. Disconnect the connector (I).

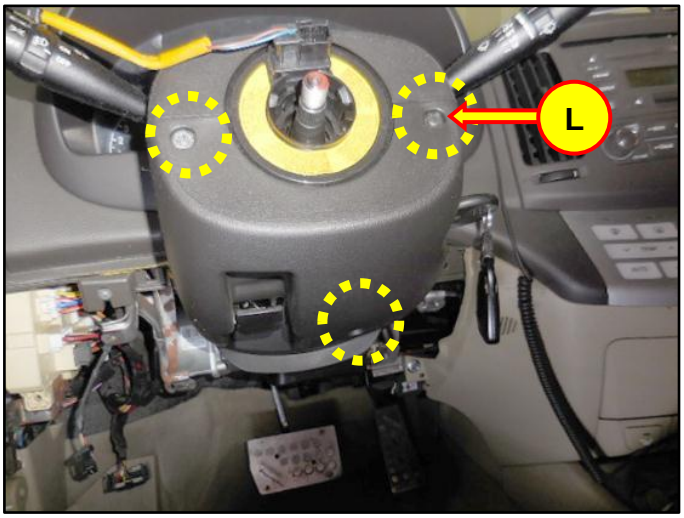
12. Loosen the steering wheel mounting nut (J).

Tightening torque:
39.2 ~ 49.0 Nm (4.0 ~ 5.0 kgf.m, 28.9 ~ 36.1 lb-ft)

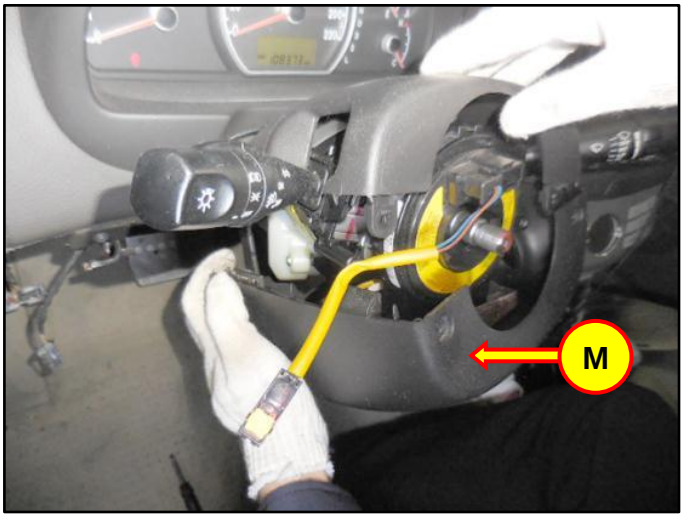


13. Remove steering wheel (K).

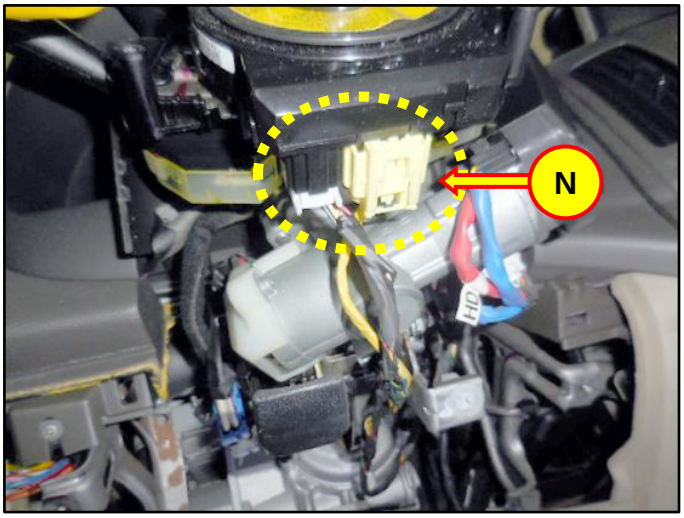
14. Remove the column shroud cover mounting screws (L).



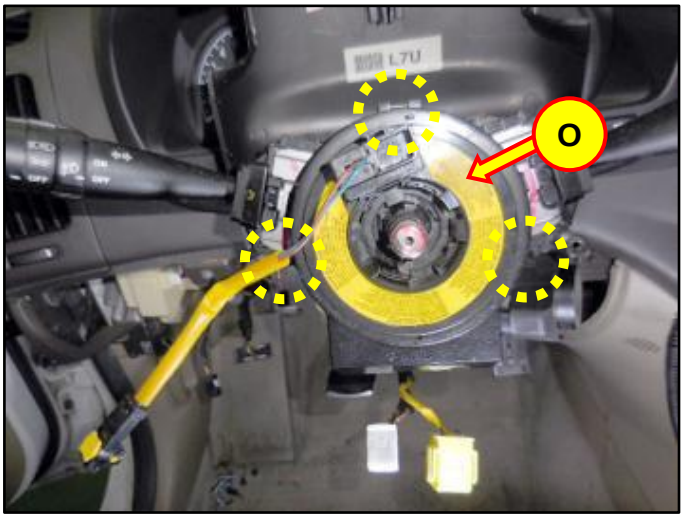
15. Remove the lower column shroud cover (M).



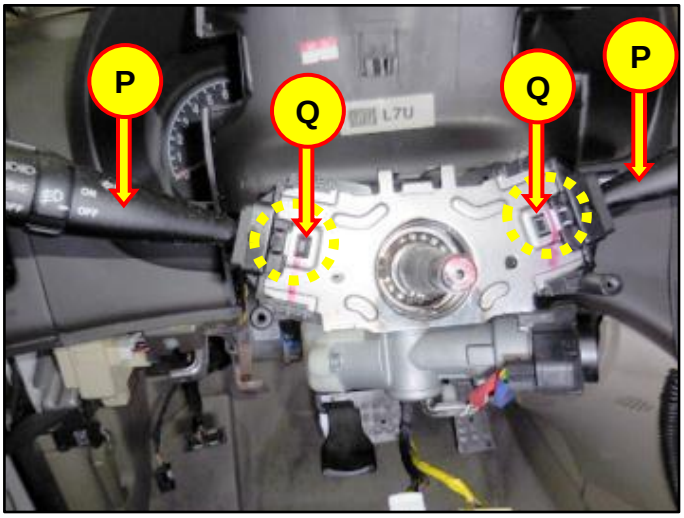
16. Disconnect the clock spring connectors (N).



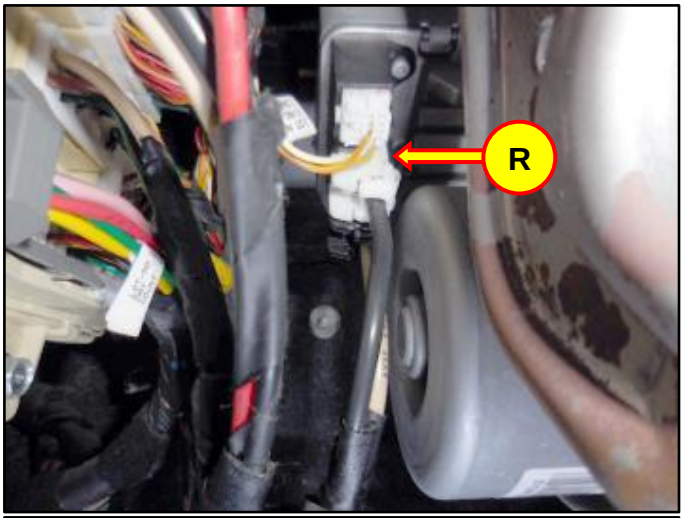
17. Remove the clock spring (O) by releasing the tabs.

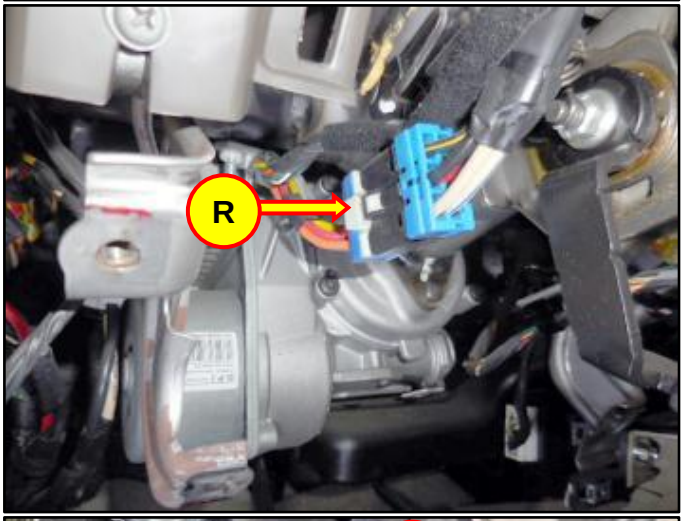


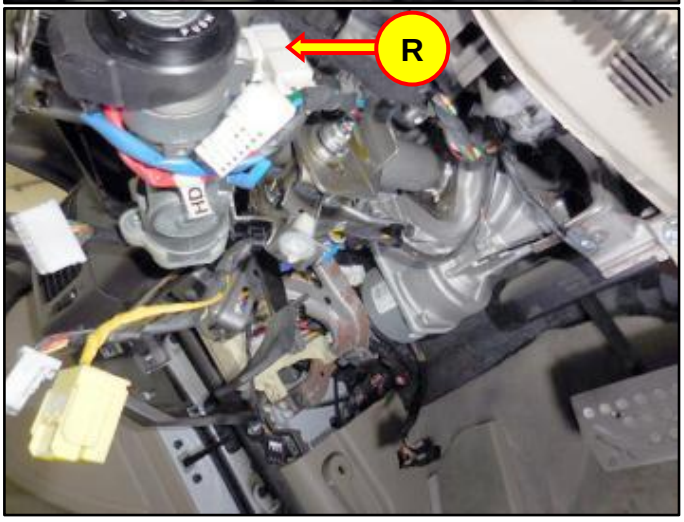
18. Remove both multi-function switches (P) by pressing on the tabs (Q) to unlock from the column.



19. Disconnect all connectors (R) and harness clips from the EPS and ignition key cylinder.



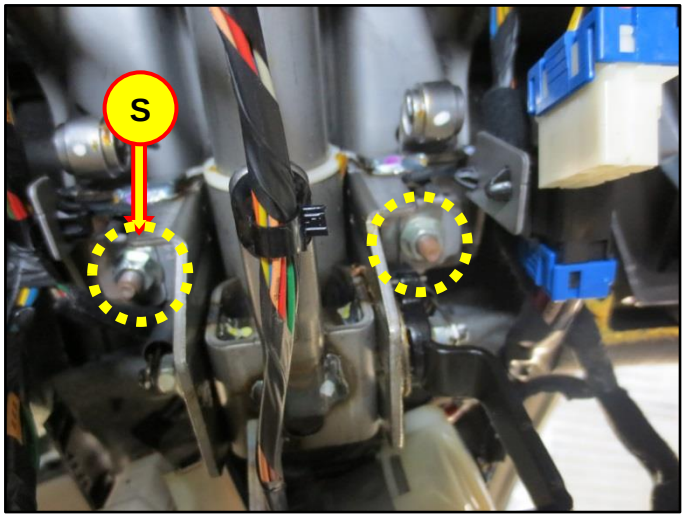




20. Remove the EPS mounting nuts (S).

Tightening torque:
12.7 ~ 17.6 Nm (1.3 ~ 1.8 kgf.m, 9.4 ~ 13.0 lb-ft)

Then carefully remove the EPS unit from the vehicle.



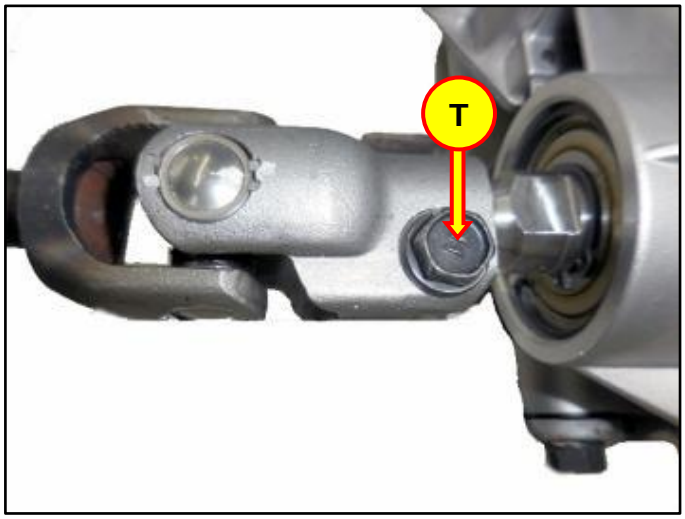
21. Separate the U-joint from the EPS by loosening the pinch bolt (T).

✶ NOTE

Note the orientation of the U-joint assembled to the old EPS. The U-joint should be assembled to the new EPS in the same orientation.

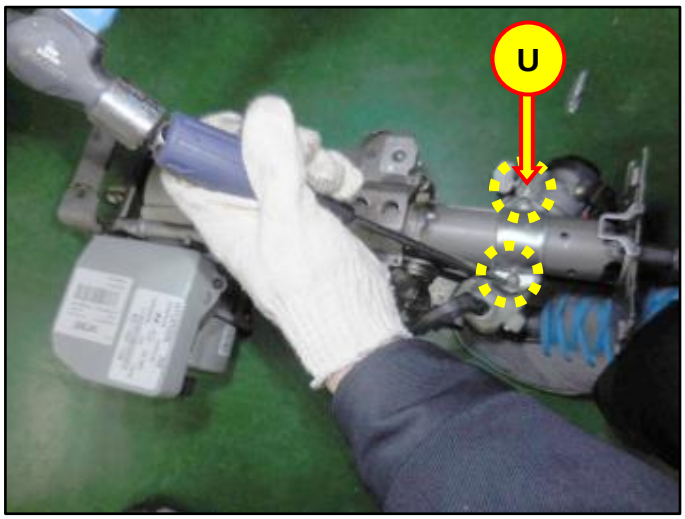
Install the U-joint to the new EPS.

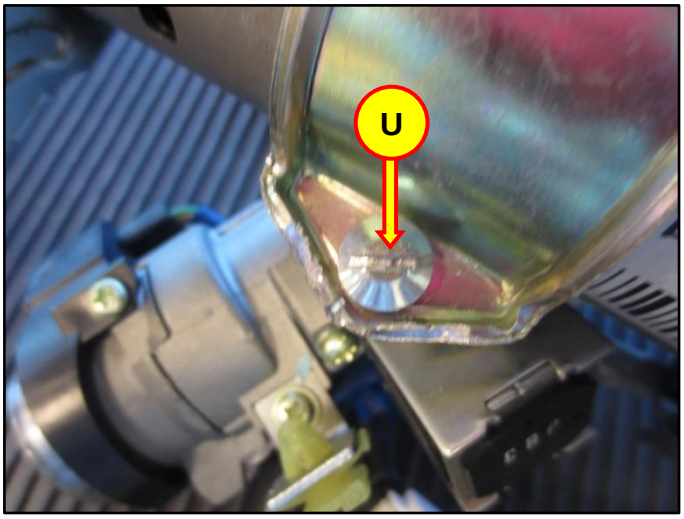
Tightening torque:
29.4 ~ 34.3 Nm (3.0 ~ 3.5 kgf.m, 21.6 ~25.3 lb-ft)



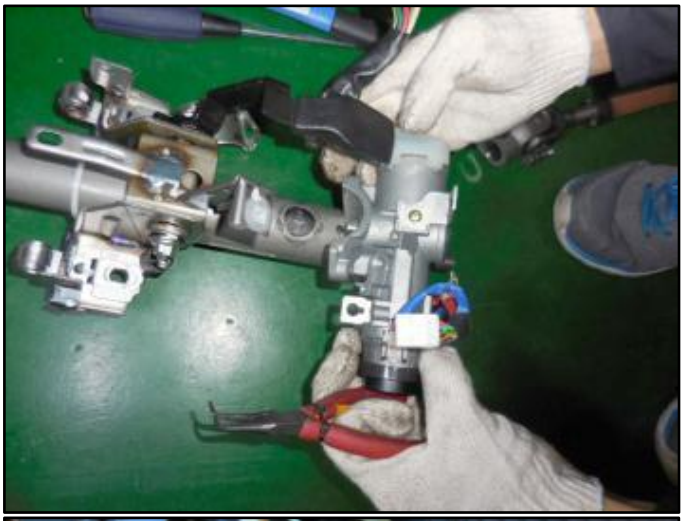
22. Use a hammer and screwdriver to notch the bolt heads (U) that secure the ignition key cylinder to the EPS. Then use the screwdriver to loosen and remove the bolts.

Discard the bolts.





23. Install the removed ignition key cylinder to the new EPS. Torque down the new ignition cylinder bolts until the bolt head breaks off.

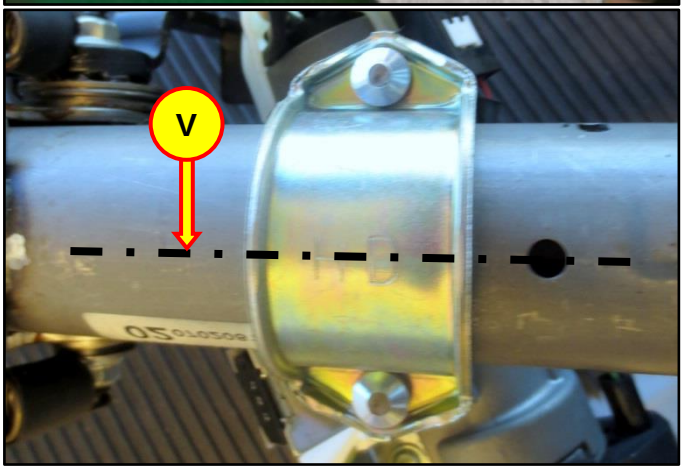


✶ NOTE

New ignition cylinder bolts P/N: 81919-31000, must be used.
Order two bolts per EPS replacement.

✶ NOTE

Align the ignition cylinder and bracket along the centerline (V) of the steering column. If the ignition cylinder is not orientated properly, the lower column shroud cover cannot be installed.



24. Reinstall parts in the reverse order of removal.

25. Reconnect the battery.

Check and clear any diagnostic trouble codes (DTC) that might have been created.

26. Perform the ‘EPS Initial Setting’ referring to the applicable workshop manual.

✶ NOTE

EPS Initial Setting includes:
- EPS Type recognition
- ASP (Absolute Steering Position) calibration

27. Start the vehicle to confirm proper operation of the steering system.

28. Reset the customer’s radio stations.