



Technical Service Bulletin

GROUP CAMPAIGN	NUMBER 23-01-076H
DATE September 2023	MODEL(S) Santa Fe (CM)

SUBJECT: CYLINDER HEAD COVER OIL LEAK REPAIR
WITH OIL PROTECTOR INSTALL AND ALTERNATOR VOLTAGE TEST
(SERVICE CAMPAIGN 976)

This TSB supersedes service campaign 936 to update the cleaner to a Threebond cleaner, add the voltage test, and revise steps to install oil protector for 2007-2009 Santa Fe (CM) vehicles.

★ IMPORTANT

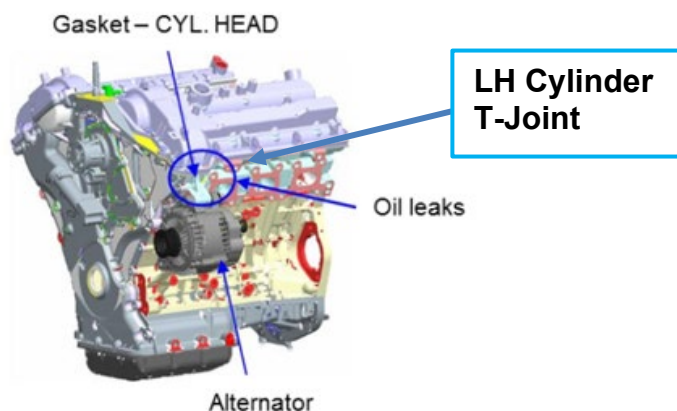
Dealers must perform this service campaign on all affected vehicles prior to customer retail delivery and whenever an affected vehicle is in the shop for any maintenance or repair.

Access the "Vehicle Information" screen via WEBDCS to identify open campaigns.

Description:

Some Santa Fe (CM) vehicles may have an engine that potentially leaks oil from the front cylinder bank's valve cover onto the alternator. Oil could damage the alternator resulting in illumination of the charging system warning lamp and disablement of the charging system. If the vehicle is continually driven without recharging the battery, the engine will eventually shut off, increasing the risk of a crash. This bulletin outlines the procedures to inspect for T-joint leakage and install an oil protector to address this issue.

- 1. If the alternator voltage is less than 14.0V and there is evidence of oil leak at the T-joint, replace the alternator, valve cover gasket, and install the oil protector.
- 2. If the alternator voltage is greater than 14.0V and there is evidence of oil leak at the T-joint, replace the valve cover gasket and install the oil protector. Do not replace the alternator.
- 3. If the alternator voltage is greater than 14.0V and there is no evidence of oil leak at the T-joint, install the oil protector. Do not replace the valve cover gasket or the alternator.



Applicable Vehicles (Certain):

- 2007-2009MY Santa Fe (CM) equipped with 3.3L engines and produced 04/19/2006 - 11/03/2009

Parts Information:

Part Name	Part Number	QTY
Gasket - Rocker Cover LH	22453-3C120QQH	1
Service Kit – Protector, Bolts	22400-3C000QQH	1
Generator Assembly	37300-3C250QQH	* (See below NOTE)

***NOTE: Alternator replacement is required only if alternator voltage test is less than 14.0V and there is evidence of oil leak at the T-joint.**

Additional Materials:

Product Name	Part Number	Note
Gray Liquid RTV Gasket	00232-19061 (or equivalent to TB1217H)	3 Vehicles/bottle
Cleaning Agent (Threebond 2706)	00232-19114 When using cleaning agents other than recommended cleaning agents, side effects such as reduced sealant adhesion may occur.	3 Vehicles/bottle



Warranty Information:

MODEL	OP CODE	OPERATION	OP TIME	CAUSAL PART	NATURE CODE	CAUSAL CODE
Santa Fe (CMA)	20DA06R0	Alternator voltage test (pass), T-joint inspection (no oil leaks found), and oil protector installation	1.1 M/H	22453-3C120QQH	E75	ZZ1
	20DA06R1	Alternator voltage (pass), T-joint inspection (oil leaks found), gasket replacement & oil protector installation	1.1 M/H			
	20DA06R2	Alternator voltage test (fail), T-joint inspection (oil leaks found) & gasket replacement, oil protector installation, & alternator replacement	2.2 M/H			

NOTE 1: Submit claim on Claim Entry Screen as “Campaign” type.

NOTE 2: If a part is found in need of replacement while performing this campaign and the affected part is still under warranty, submit a separate claim using the same repair order. If the affected part is out of warranty, submit a Prior Approval request for goodwill consideration prior to performing the work.

NOTE 3: This TSB includes Repair validation photos. Op times include VIN, Mileage and Repair validation photos as outlined in the Digital Documentation Policy.

NOTE 4: The incident parts are subject to callback through the normal Warranty Technical Center (WTC) parts return process. **Claim is subject to debit if the part is not returned.**

NOTE 5: All three op codes will reimburse the use of Threebond 2706 and Gray Liquid RTV gasket sealant in sublet.

Service Procedure:

STUI

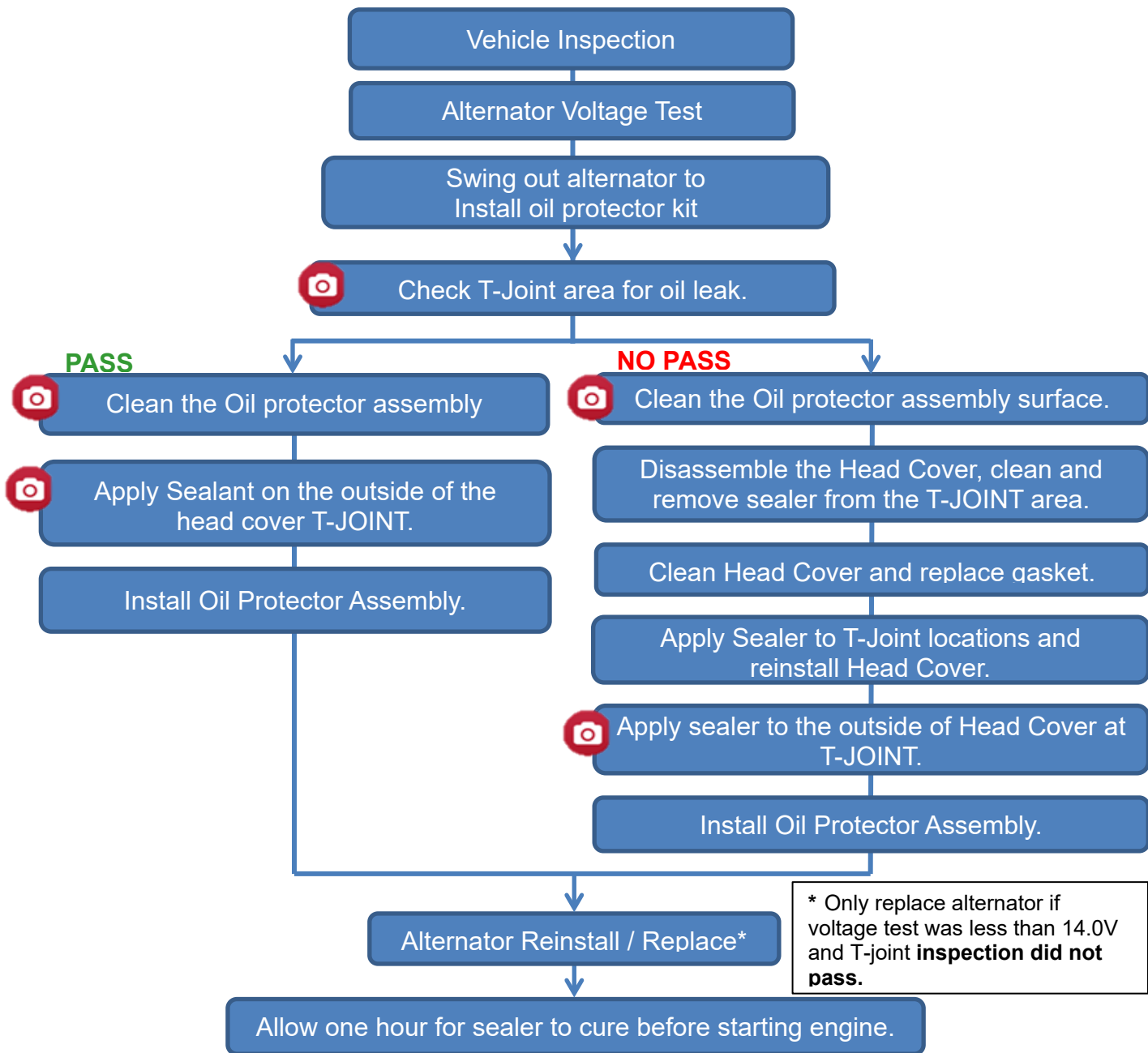


This TSB includes Repair validation photos. Refer to the latest Warranty Digital Documentation Policy for requirements.

*** Perform the service procedure referring to the flow chart below**

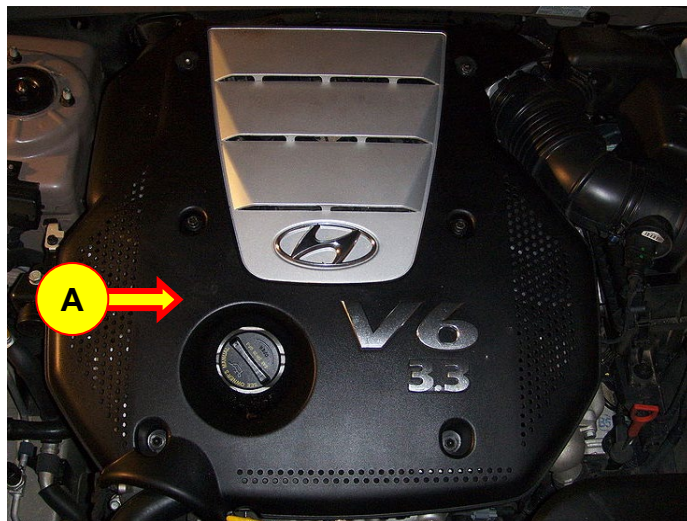


Note: Icon indicates photos/video required for claim submission. Use last 6 digits of VIN & date of repair on a piece of paper.



NOTE: In winter, the vehicle should be stored indoors to perform work on parts at room temperature. Alternator & T-Joint Inspection

1. Remove the engine cover (A).



2. ALTERNATOR INSPECTION

Complete a voltage test of the alternator as described below.

- With the engine running at idle and the headlamps switched on, with no other loads switched on, measure the voltage at B+ terminal of the alternator. In the condition above, **the alternator should be generating 14 volts or higher.**

i Information

If the reading is lower than 14 volts, the alternator may need to be replaced if the T-joint inspection also does not pass.

Voltage Test of Alternator

- Using a multimeter, connect the positive lead of the meter to the B+ terminal (A) of the alternator. Connect the negative lead to a ground, (not the alternator housing). Use the test method written to the left to determine alternator replacement.



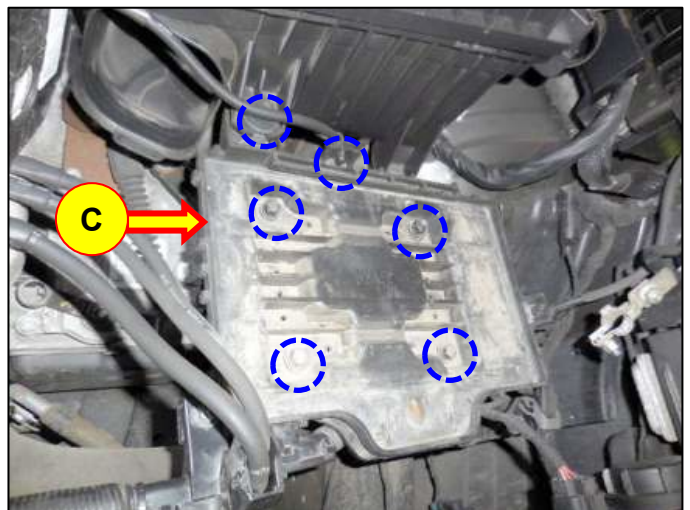
3. Make note of customer radio presets and disconnect the battery (B).



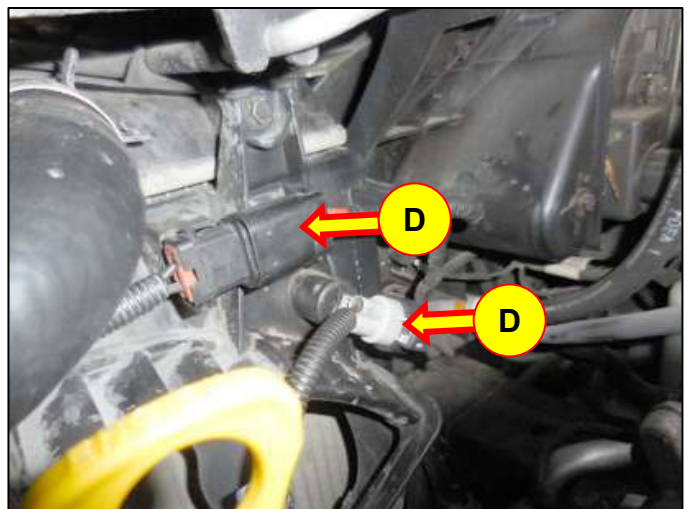
4. Loosen the battery tray mounting fasteners and remove the battery tray (C).

NOTICE

Set aside the removed battery tray (C) to a safe area so that it does not interfere during the alternator removal process.

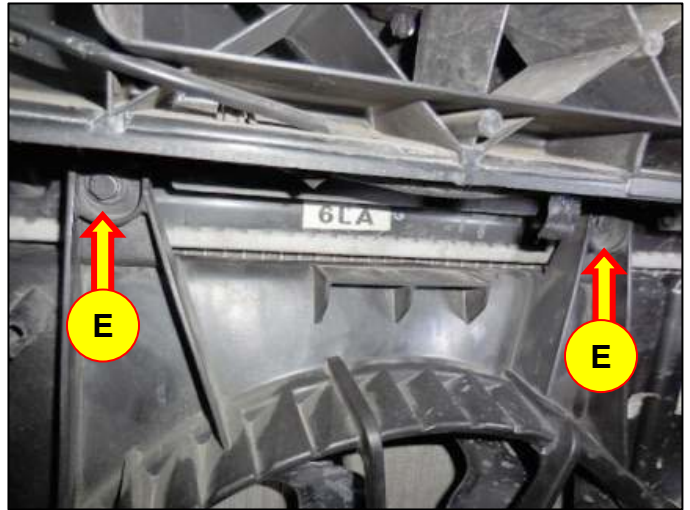


5. Disconnect the fan motor connectors (D).



6. Remove the LH fan shroud bolts (E).

**Tightening torque specification:
5.0 lb-ft (60 lb-in, 6.8 Nm)**



7. Remove the LH fan shroud (F).

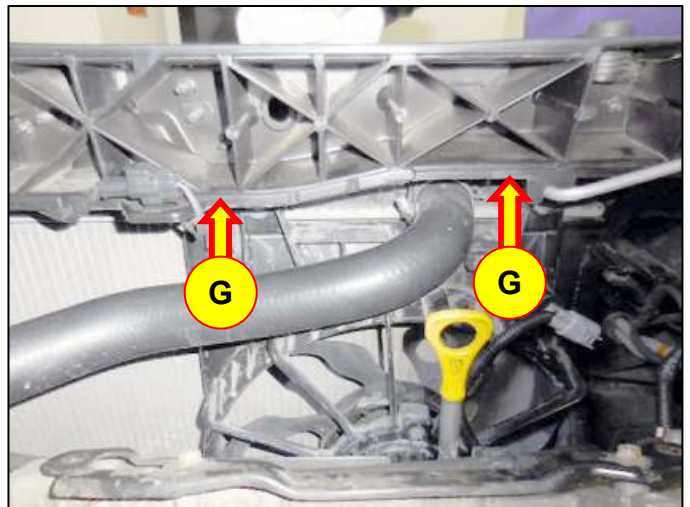
NOTICE

Carefully remove the LH fan shroud (F) so that it does not damage any surrounding parts.

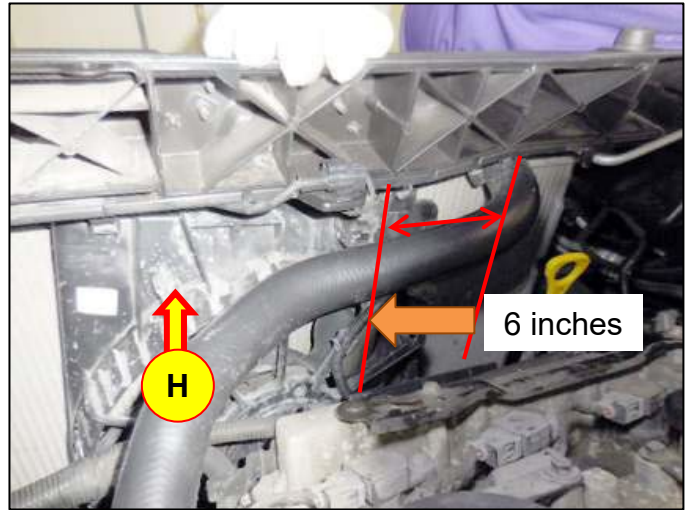


8. Remove the RH fan shroud bolts (G).

**Tightening torque specification:
6.5 lb-ft (78 lb-in, 8.8 Nm)**

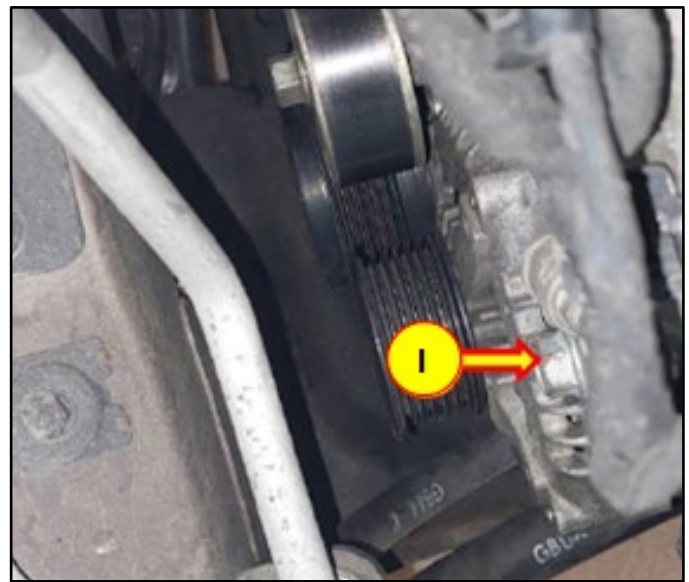


9. Move the RH fan shroud (H) about 6 inches towards the driver's side of the vehicle (as shown by the orange arrow) to provide enough working space to remove.



10. Remove the alternator upper mounting bolt (I).

***Tightening torque specification:
22 lb-ft (29.8 Nm)***

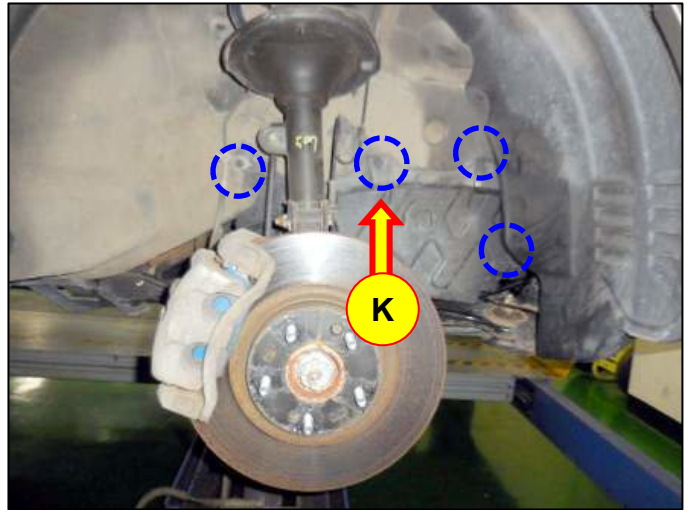


11. Remove the RH wheel and tire by loosening the 5 wheel nuts (J).

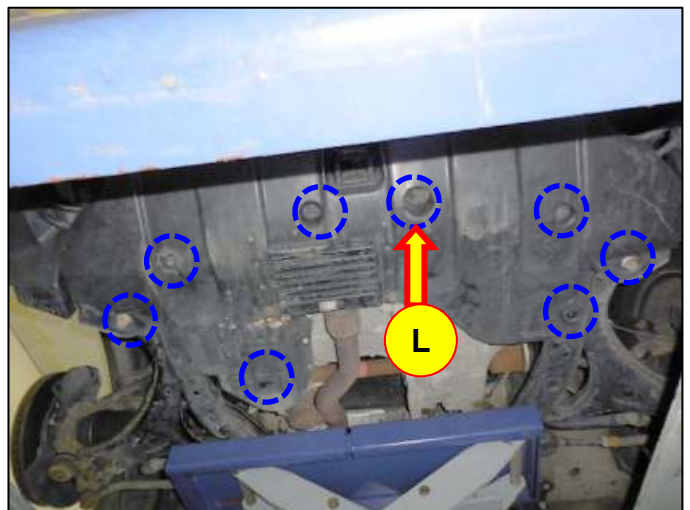
***Tightening torque specification:
75 lb-ft (101.7 Nm)***



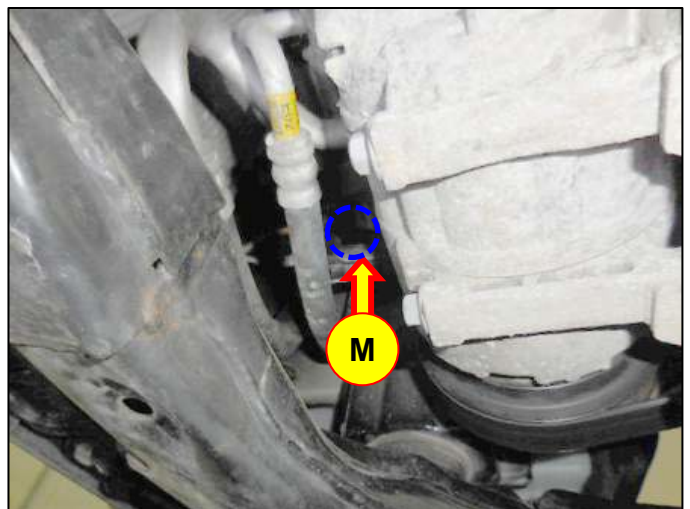
12. Remove the RH engine side cover (K).



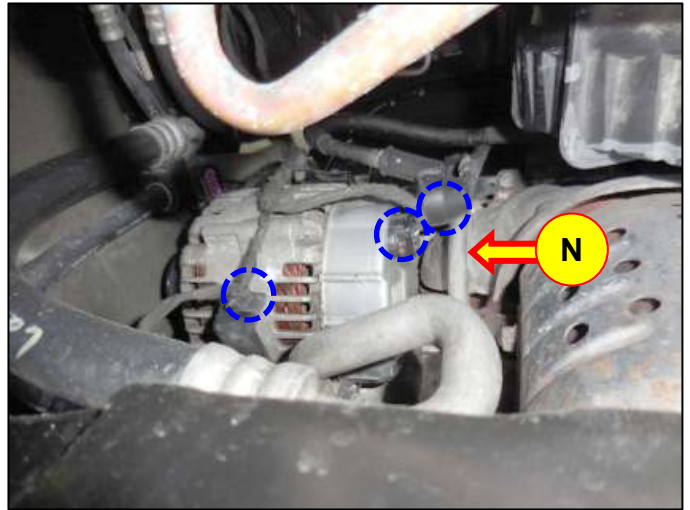
13. Remove the undercover (L).



14. Disconnect the connector (M) from the A/C compressor.



15. Remove the alternator connector and the B+ terminal (N).

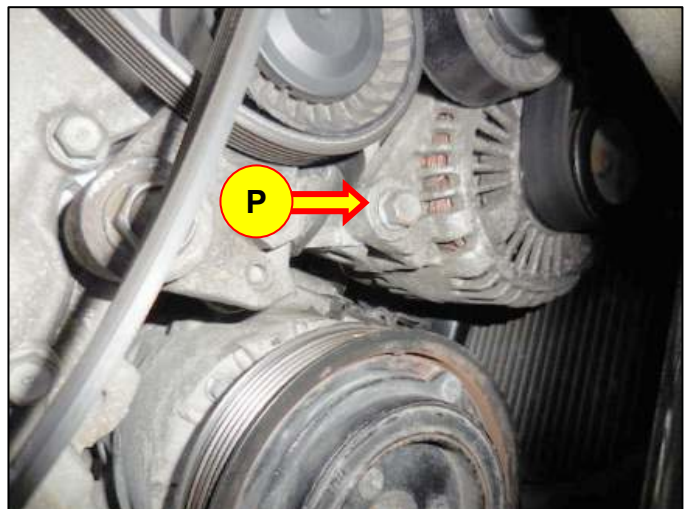


16. Remove the drive belt after relaxing the belt tension by rotating the tensioner pivot bolt (O).



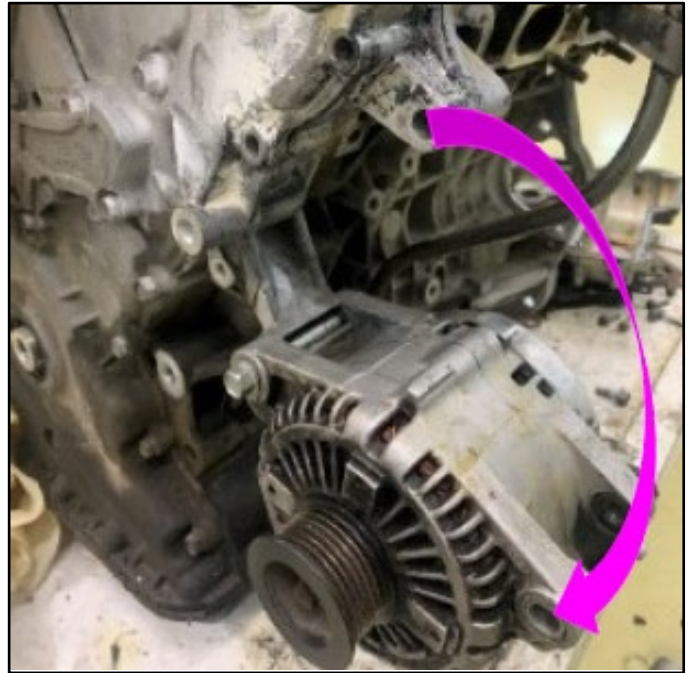
17. Remove the alternator lower mounting bolt (P).

***Tightening torque specification:
22 lb-ft (29.8 Nm)***

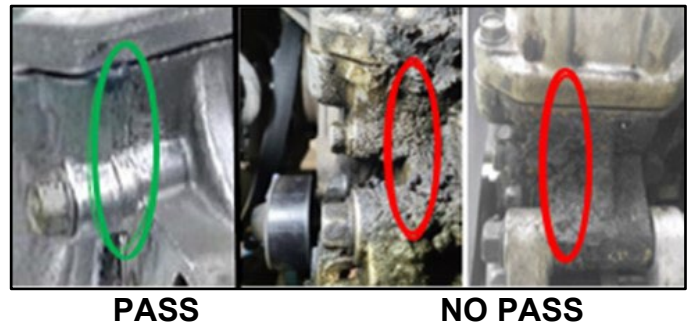


18. Rotate the alternator towards the front of the vehicle (Q).

If the alternator voltage check and t-joint inspection both do not pass, replace the alternator.



19. Inspect the T-Joint area for oil leak. Any oil leakage requires the replacement of the head cover gasket.



20. Take a photo of your work

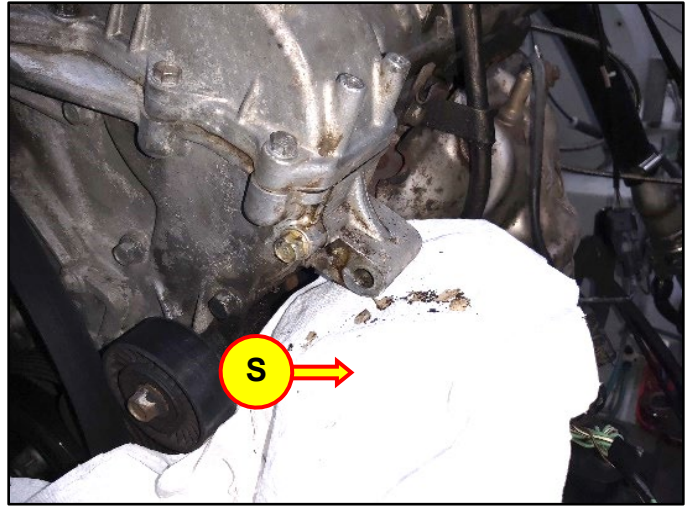
STUI



Using STUI, photograph the T-joint area. Include in the photo a piece of paper containing the last 6 digits of the VIN, and the date of the repair. Ensure the photo is in focus and captures the T-joint. Upload the photo to STUI.



21. Protect the alternator or other components if the alternator was not already removed using a cloth or shop towel.

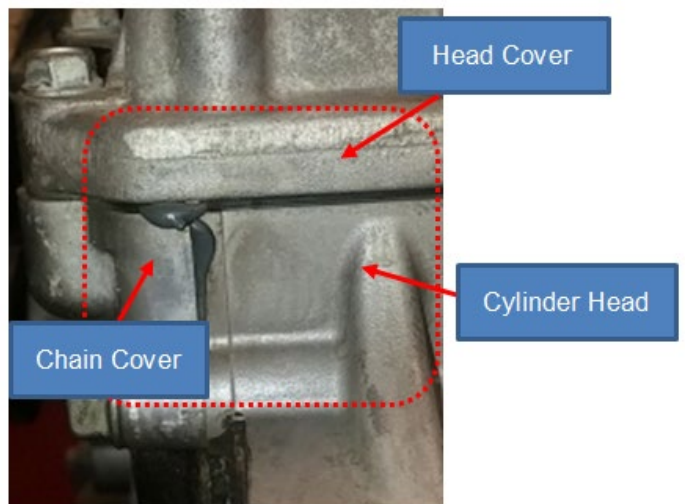


22. Remove any Pre-applied sealant and/or contaminants using an oil and grease removing agent. (Threebond 2706)

Remove all liquid gasket residue (including outside area of the cylinder head and chain cover as shown in the picture below).

NOTE

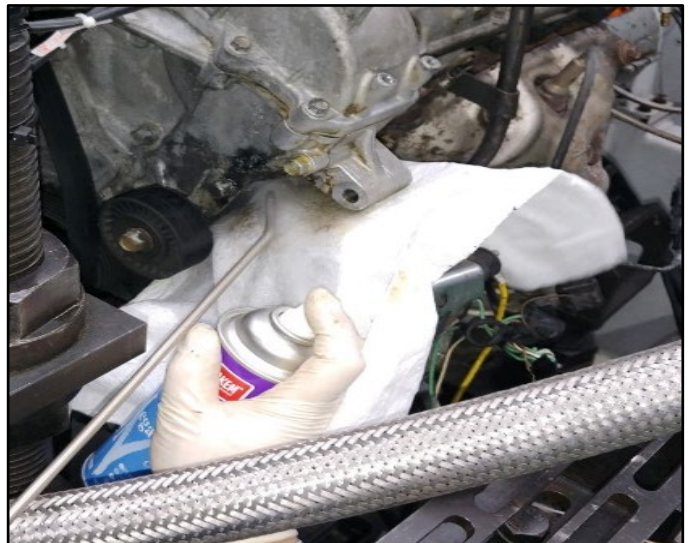
The removed liquid gasket residue should not fall into the engine.



23. Spray the area using cleaner (Threebond 2706) and an air gun at the same time to remove oil and foreign matter.

NOTE

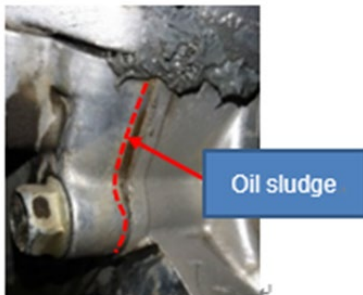
Air gun pneumatic pressure: 14-28psi (1-2 bar). Cover exhaust manifold to prevent cleaner from coming in contact.



24. The oil protector will be sealed to the engine at this point. It is crucial that this area is free from oil and contaminants.
- (T) Area : Head, Head Cover, Chain Cover, and Block.

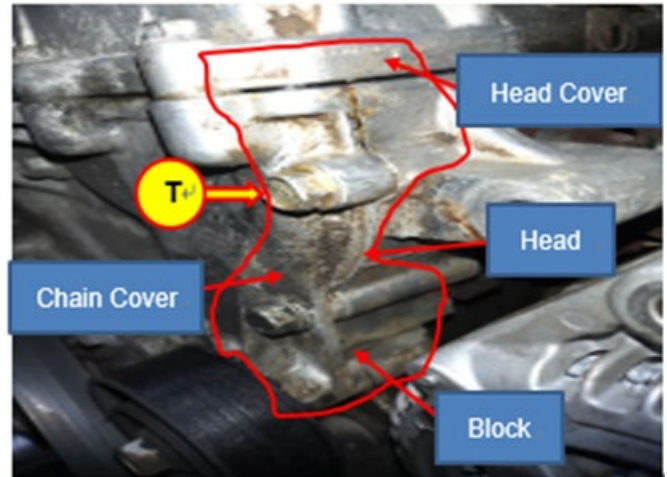
i Information

After cleaning the T-joint of the head cover, scrub with a clean cloth and clean it with a Threebond 2706 if the oil sludge remains between the chain cover and gap in the head.



i Information

If any oil sludge remains even after washing with the Threebond 2706, remove with a brush. Use a mirror/magnifying glass to check the oil sludge removal.



25. Take a photo of your work.

STUI



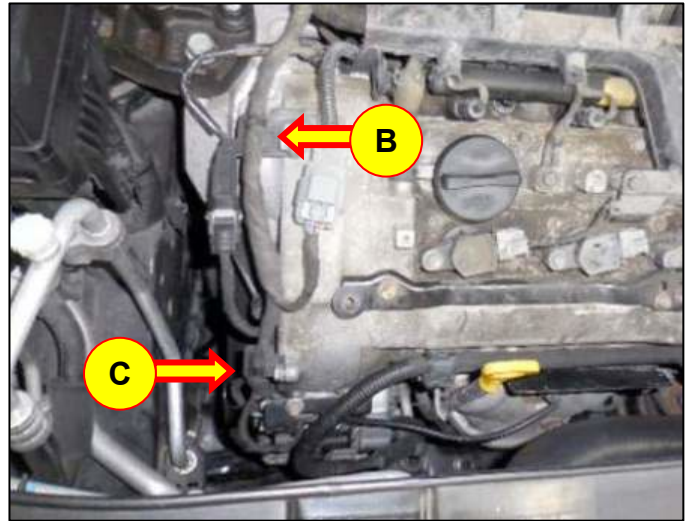
Using STUI, photograph the T-joint area. Include in the photo a piece of paper containing the last 6 digits of the VIN, and the date of the repair. Ensure the photo is in focus and captures the T-joint. Upload the photo to STUI.



26. If no leak was found at T-Joint area on step 19, do not remove head cover and skip steps 27 thru 40 and go to step 41.

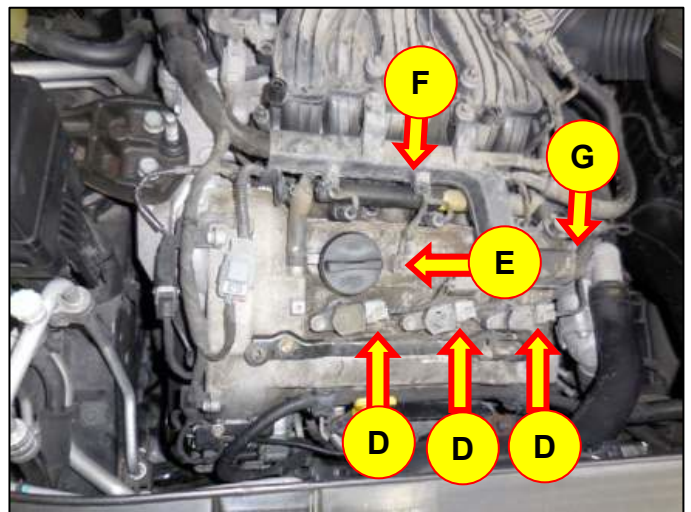
27. Remove the upper mounting bracket bolt (B) near the OCV connector.

28. Remove the lower mounting bracket bolt (C) near the B2S1 oxygen sensor connector.

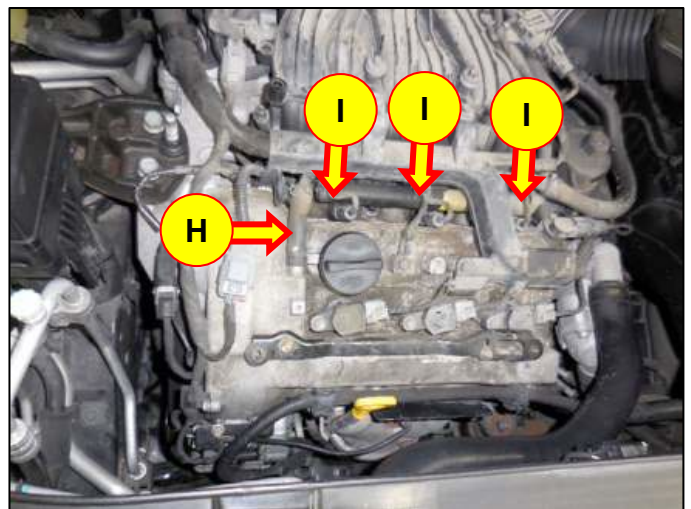


29. Disconnect the bank 2 ignition coil connectors (D), and remove the ground (E), and then remove the wiring harness protector (F).

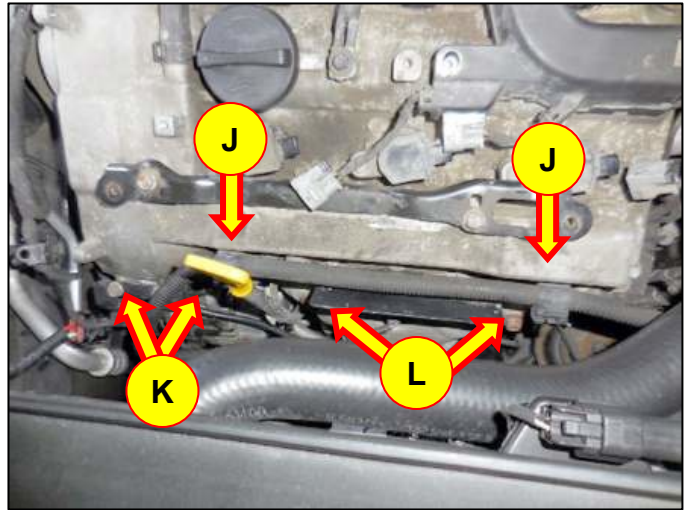
30. Disconnect the bank 2 Camshaft Position Sensor (CMPS) at (G).



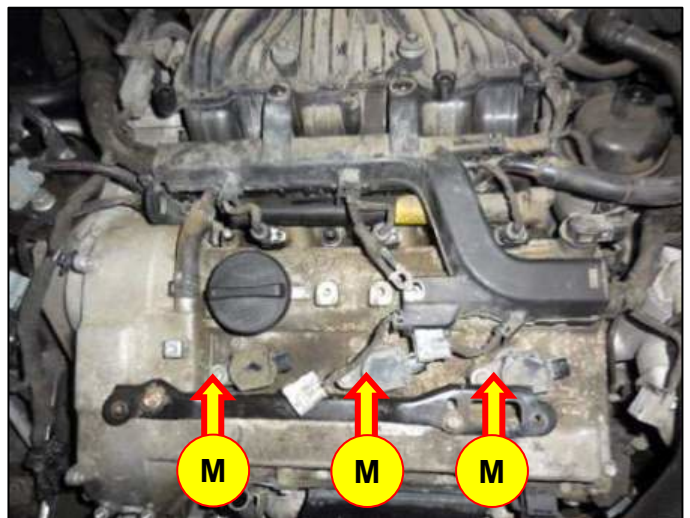
31. Remove the hose (H) and disconnect harness connectors (I) from the bank 2 fuel injectors.



- 32. Unlock the terminal cable clips (J).
- 33. Remove alternator "B" terminal cable mounting bracket bolts (K) and then remove the wire bracket bolts (L).

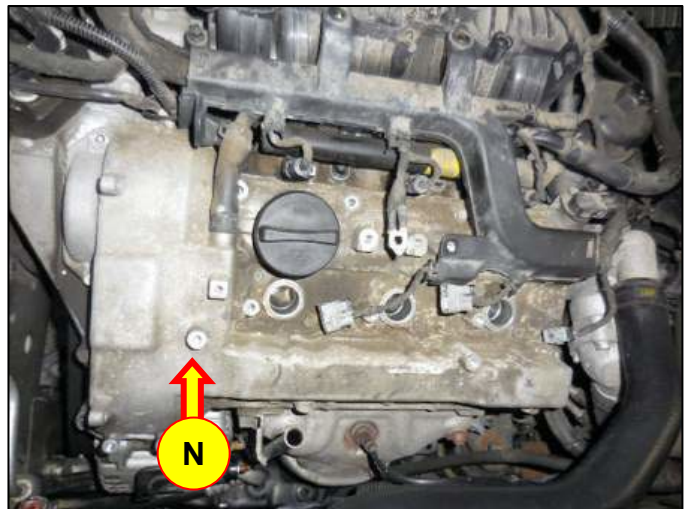


- 34. Remove the bank 2 ignition coils (M).



- 35. Remove the bank 2 (LH) cylinder head cover (N).

***Tightening torque specification:
8.0 lb-ft (96 lb-in, 10.8 Nm)***

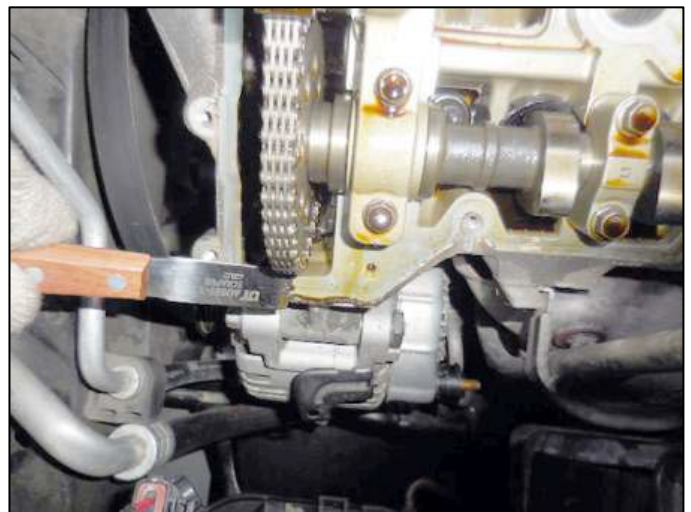


NOTICE

Carefully remove the cylinder head cover to avoid any dirt/debris falling into the engine. Debris falling into the cylinder head can result in engine damage.



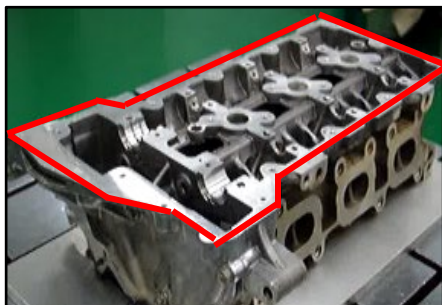
36. Remove all remaining liquid gasket residue (including outside area of the cylinder head and chain cover as shown in the picture below).



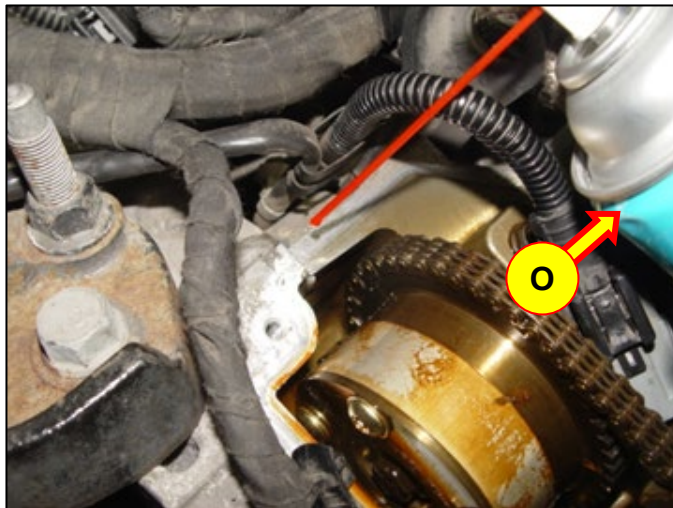
NOTICE

- **Be careful not to damage the surface of the cylinder head cover.**
- **The removed liquid gasket residue should not fall into the engine.**

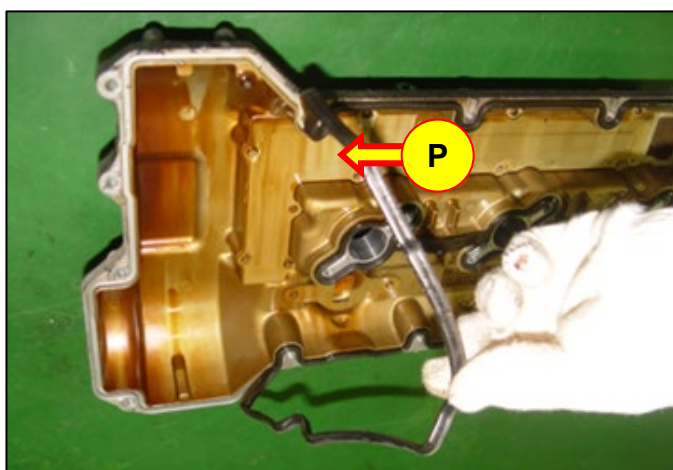
37. Clean the cylinder head and cover with a clean lint-free shop towel referring to the picture of the cleaning area below (highlighted in red).



38. With Threebond 2706, clean off any of the remaining dirt and oil from the cylinder head and cover and then wipe dry with a clean lint-free shop towel.



39. Remove the cylinder head cover gasket (P).



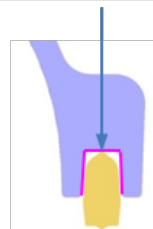
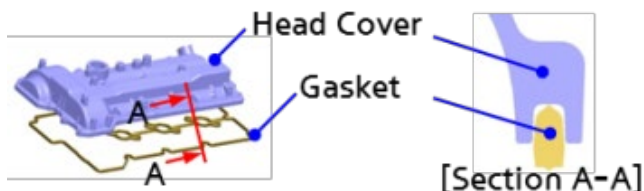
40. Install the new cylinder head cover gasket (Q).

NOTICE

Before installing the new gasket (Q), clean the gasket installing groove with a Threebond 2706 and a clean lint-free shop towel.



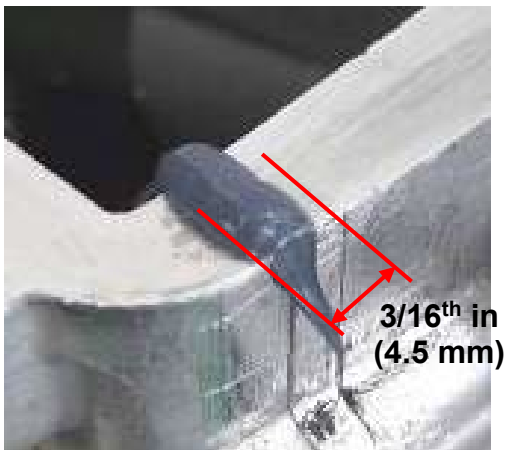
Gasket Installing Groove (Cleaning area)



41. Apply liquid RTV gasket (00232-19061) onto the “T” joints (R), which are the mating points where the front timing chain cover and the cylinder head meet.

NOTICE

When applying the liquid RTV gasket, the applied bead on the surface should be approximately 3/16th in (4.5 mm) wide as shown in the picture below.

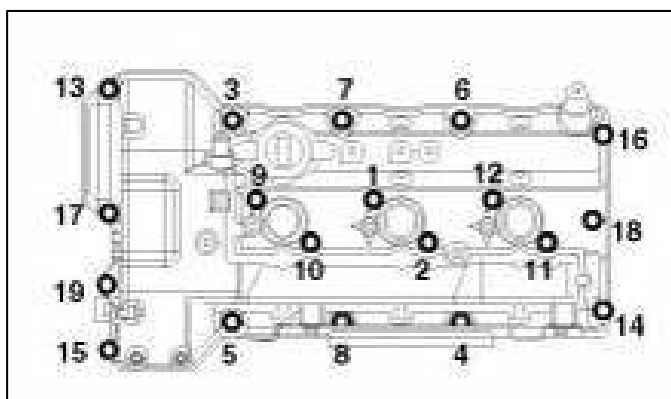


Carefully reinstall the cylinder head cover within the next several minutes before the liquid RTV gasket begins to harden.

Tightening torque specification:
8.0 lb-ft (96 lb-in, 10.8 Nm)

NOTICE

When reinstalling the cylinder head cover, tighten the bolts in the order as shown in the picture at right.



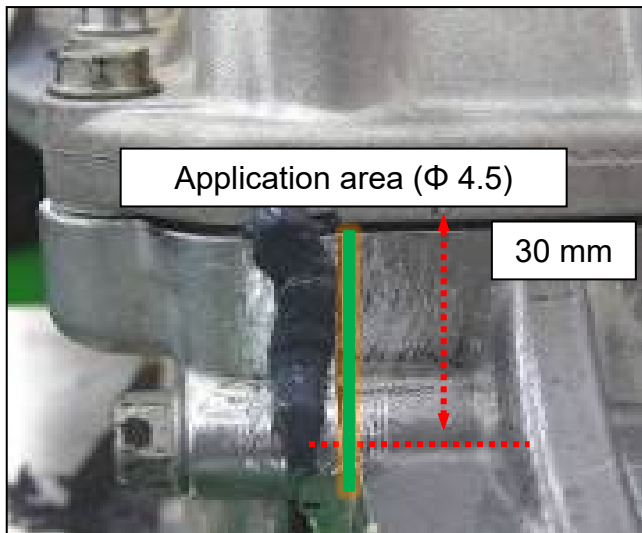
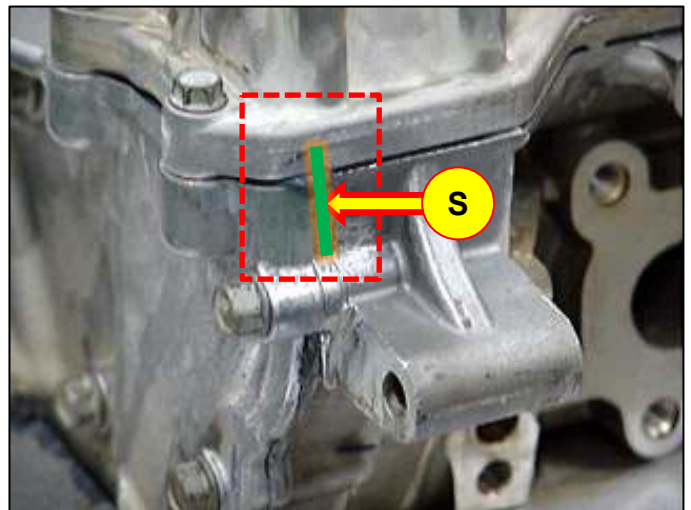
42. Remove (two) chain cover bolts shown here (K).

i Information

When removing the two chain cover bolts it is possible for retained oil to come out. If oil escapes through bolt holes, clean thoroughly with Threebond 2706.



43. Apply liquid RTV gasket onto the outer surface of the "T" joints (S) of the cylinder head and cover.
- Apply the liquid RTV gasket in a line at least 30 mm long, following the green bold line as shown in the picture on the right and below.



- Within several minutes before the liquid RTV gasket begins to harden, spread the gasket evenly as shown in the picture on the right.



i Information

If sealant is applied after using cleaning agent, apply sealant after the surface is dried.

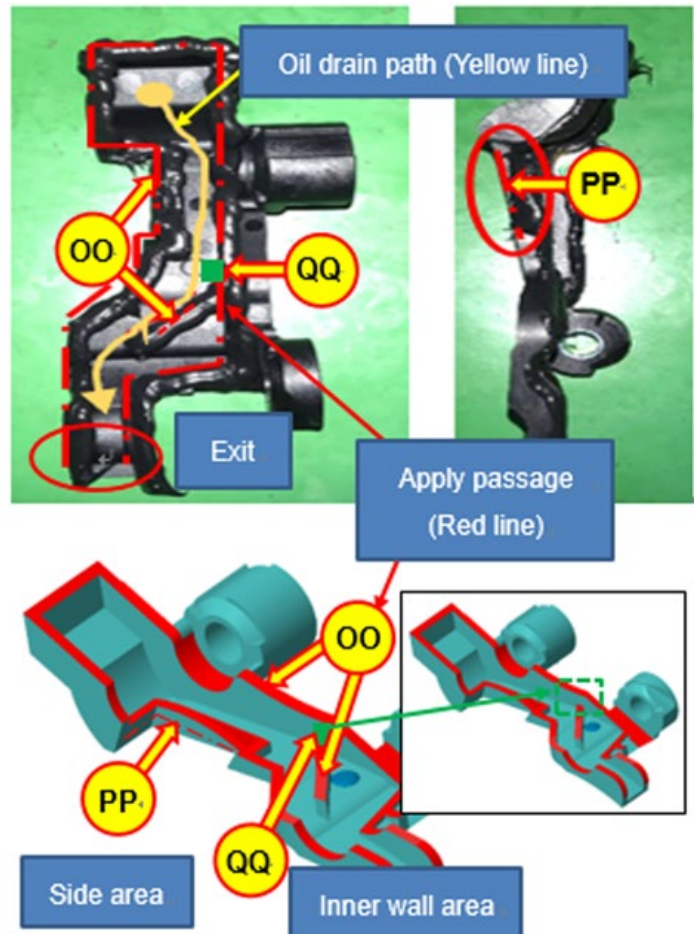
When sealant is applied to the T-Joint, apply it to the head cover.

If it is difficult to visually check the correct position due to the narrow space in the engine room when applying the sealant, use a mirror to check the sealant position and proceed with the operation.

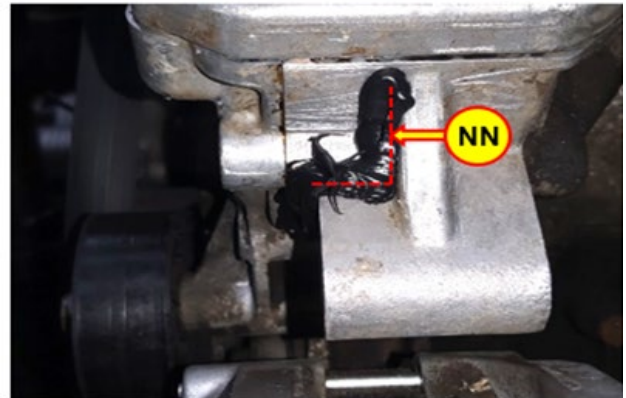
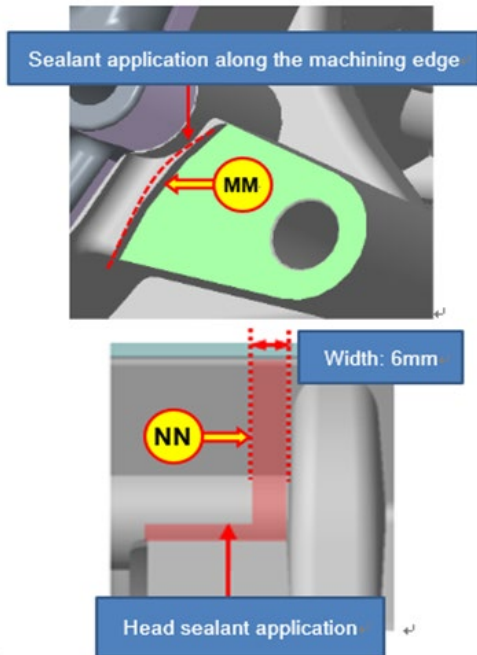
44. Apply sealant onto the oil protector at the indicated areas pictured (OO, PP, QQ).

Note:

Be careful not to block the exit. If sealant falls into the inside of the bottom of the oil protector, thoroughly remove sealant and reapply. (To prevent clogging of the oil drain passage)



45. Apply Sealant onto (MM) and (NN) area as shown in the photo.



46. Take a photo of your work.

STUI



Using STUI, photograph the T-joint area. Include in the photo a piece of paper containing the last 6 digits of the VIN, and the date of the repair. Ensure the photo is in focus and captures the T-joint. Upload the photo to STUI.



47. Place oil protector in place.
- 1.) Install oil protector to the timing chain cover in the indicated angle pictured in (RR).
 - 2.) Be careful not to contact surrounding parts.

Note:

If the sealant is heavily smeared on the surrounding parts, remove the oil protector, thoroughly clean the sealant from surrounding areas and clean the oil protector. Go back to 41 and repeat.



48. Install provided kit bolts into the oil protector.
- Replace with service kit bolts and arrange the oil protector in the correct position by temporarily fastening to chain cover.
 - Bottom bolt (provided): 25124-32C500QQH (M8X35mm)
 - Upper bolt (provided): 11403-08456K (M8X45mm)
 - Check fitment of the oil protector.
 - Firmly press sealing surface by hand.
 - Keep it in loose contact with the engine.

***Tightening Torque:
15.0 lb-ft (20Nm)***

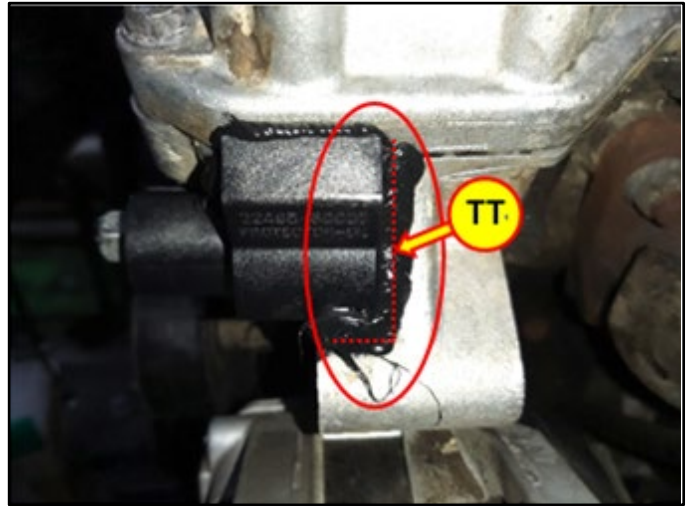
Note:

Do not use original chain cover bolts.

49. Remove sealant from the alternator mount (SS).



50. Apply the sealant to the (TT) area to seal the oil protector to block.



51. Reinstall all removed parts in reverse order of removal.
Refer to Shop Manual:
Engine Mechanical System > Charging System > Alternator > Repair procedures

Only replace alternator if voltage test was less than 14.0V and T-joint inspection did not pass.

NOTICE

- *Allow at least one hour for the liquid RTV gasket to cure before starting the engine.*
- *Reprogram the radio presets recorded from Service Procedure Step 4.*