



**HYUNDAI**  
**Technical Service Bulletin**

|                              |  |
|------------------------------|--|
| GROUP<br><b>CAMPAIGN</b>     | NUMBER<br><b>19-01-006H</b>                  |
| DATE<br><b>FEBRUARY 2019</b> | MODEL(S)<br><b>APPLICABLE VEHICLES BELOW</b> |

**SUBJECT:** THETA GDI ENGINE DTC P1326 - WIRING INSPECTION /  
 INSTALLATION AND ENGINE REPLACEMENT  
 (SERVICE CAMPAIGN T3G)

**This TSB supersedes TSB# 18-01-032-2 and modifies the list of applicable vehicles to add 11-14MY and 16-18MY Sonata, 13-14MY and 16-18MY Santa Fe Sport, 14-15MY and 18MY Tucson.**

**\* IMPORTANT**

**\*\*\* Retail Vehicles \*\*\***



Dealers must perform this Campaign on all affected vehicles whenever an affected vehicle is in the shop for any maintenance or repair.

**Description:** Applicable vehicles with 2.0L Turbo and 2.4L GDI engines may experience the Check Engine warning lamp illuminated with DTC P1326. Follow the procedure to inspect the vehicle and install a wire harness extension or replacement engine based on the inspection results.

**Applicable Vehicles:**



Certain 2011-2014 MY Sonata (YF) vehicles with 2.0L Turbo and 2.4L engines  
 Certain 2015-2018 MY Sonata (LF) vehicles with 2.0L Turbo and 2.4L engines  
 Certain 2013-2018 MY Santa Fe Sport (AN) vehicles with 2.0L Turbo and 2.4L engines  
 Certain 2014-2015 MY Tucson (LM) vehicles with 2.4L engines  
 Certain 2018 MY Tucson (TL) vehicles with 2.4L engines

**SST Information:**

| Part Name                               | Part Number / Figure  | Note  |
|---|---|---|
| Torque Wrench Socket                    | 09314-3Q100   | Only needed if engine replacement is required.                                      |
| Injector Combustion Seal Ring Installer | 09353-2B000   |   |
| Pin Release Tool                        | <br>WRK0010P2R from WRK II<br><b>OR</b><br><br>WRKA40RT04 / GOKHNWR104 from WRK III | These tools are included in Wire Harness Repair Kit II and III provided to dealers. |

**Part Information:**

**Note:** Order the required parts based on the vehicle inspection results. Refer to page 7.

| Model       | MY       | Part Name                        | Part Number / Figure   | Qty | Note   |
|-------------|----------|----------------------------------|--|-----|--|
| Sonata (YF) | 11-13 MY | Wiring harness-knock sensor kit  | <br>91400-C2100QQH   | 1   |  |
|             |          | Engine Assembly-Sub (long block) | <br>2.4L:<br>21101-2GK50QQHRM<br><br>2.0T:<br>21101-2GK60QQHRM | 1   |  |
|             |          | Service Kit 1                    | 2.4L: 21111-2GK50QQH<br>2.0T: 21111-2GK60QQH   | 1   |  |
|             |          | Service Kit 2                    | 2.4L / 2.0T:<br>21111-2GK70QQH   | 1   |  |
|             |          | Wiring harness-knock sensor kit  | 91400-C2100QQH   | 1   |  |
| Sonata (YF) | 14MY     | Engine Assembly-Sub (long block) | 2.4L:<br>21101-2GK70QQHRM<br>or<br>21101-2GK70QQA<br>(IF AVAILABLE)<br><br>2.0T:<br>21101-2GK80QQHRM   | 1   |  |
|             |          | Service Kit 1                    | 2.4L: 21111-2GK50QQH<br>2.0T: 21111-2GK60QQH   | 1   |  |
|             |          | Service Kit 2                    | 2.4L / 2.0T:<br>21111-2GK70QQH   | 1   |  |
|             |          | Oil cooler pipe & hose assy      | 2.4L: 25470-2G050QQH<br>2.0T: 25470-2G650QQH   | 1   | Not required if 21101-2GK70QQA engine is used. |
|             |          | Bolt-Drive Plate                 | 23311-25050  | 7   | Required if 21101-2GK70QQA engine is used.     |
|             |          | Wiring harness-knock sensor kit  | 91400-C2100QQH   | 1   |  |

|                     |          |                                  |  |   |  |
|---------------------|----------|----------------------------------|--|---|--|
| Sonata (LF)         | 15MY     | Wiring harness-knock sensor kit  | 91400-C2000QQH   | 1 |  |
|                     |          | Engine Assembly-Sub (long block) | 2.4L: 21101-2GK31QQH<br>2.0T: 21101-2GK32QQH   | 1 |  |
|                     |          | Service Kit 1                    | 2.4L: 21111-2GK51QQH<br>2.0T: 21111-2GK52QQH   | 1 |  |
|                     |          | Service Kit 2                    | 2.4L: 21111-2GK71QQH<br>2.0T: 21111-2GK72QQH   | 1 |  |
| Sonata (LF)         | 16-18 MY | Wiring harness-knock sensor kit  | 16-18MY 2.4L:<br>91400-C2010QQH<br><br>16-17MY 2.0T:<br>91400-C2000QQH<br><br>18MY 2.0T:<br>91400-C2050QQH                   | 1 |  |
|                     |          | Engine Assembly-Sub (long block) | 2.4L (without ATF warmer):<br>21101-2GK33QQH<br><br>2.4L (with ATF warmer):<br>21101-2GK34QQH<br><br>2.0T:<br>21101-2GK32QQH | 1 |  |
|                     |          | Service Kit 1                    | 2.4L: 21111-2GK51QQH<br>2.0T: 21111-2GK52QQH   | 1 |  |
|                     |          | Service Kit 2                    | 2.4L: 21111-2GK71QQH<br>2.0T: 21111-2GK72QQH   | 1 |  |
| Santa Fe Sport (AN) | 13MY     | Wiring harness-knock sensor kit  | 91400-C2100QQH   | 1 |  |
|                     |          | Engine Assembly-Sub (long block) | 2.4L: 21101-2GK01QQHRM<br>2.0T: 21101-2GK03QQHRM   | 1 |  |
|                     |          | Service Kit 1                    | 2.4L: 21111-2GK50QQH<br>2.0T: 21111-2GK60QQH   | 1 |  |
|                     |          | Service Kit 2                    | 2.4L: 21111-2GK70QQH<br>2.0T: 21111-2GK80QQH   | 1 |  |
|                     |          | Oil cooler pipe & hose assy      | 2.4L: 25470-2G050QQH<br>2.0T: 25470-2G650QQH   | 1 |  |
| Santa Fe Sport (AN) | 14-16 MY | Wiring harness-knock sensor kit  | 91400-C2100QQH   | 1 |  |
|                     |          | Engine Assembly-Sub (long block) | 2.4L: 21101-2GK02QQHRM<br>2.0T: 21101-2GK04QQHRM   | 1 |  |
|                     |          | Service Kit 1                    | 2.4L: 21111-2GK50QQH<br>2.0T: 21111-2GK60QQH   | 1 |  |
|                     |          | Service Kit 2                    | 2.4L: 21111-2GK70QQH<br>2.0T: 21111-2GK80QQH   | 1 |  |
|                     |          | Oil cooler pipe & hose assy      | 2.4L: 25470-2G050QQH<br>2.0T: 25470-2G650QQH   | 1 |  |

|                     |          |                                  |  |   |   |
|---------------------|----------|----------------------------------|--|---|---|
| Santa Fe Sport (AN) | 17-18 MY | Wiring harness-knock sensor kit  | 91400-C2100QQH (BOSCH connector) or 91400-C2010QQH (KET connector) | 1 | Order "BOSCH" or "KET" part based on the connector type. See page 10. |
|                     |          | Engine Assembly-Sub (long block) | 2.4L: 21101-2GK31QQH<br>2.0T: 21101-2GK32QQH                       | 1 |   |
|                     |          | Service Kit 1                    | 2.4L: 21111-2GK51QQH<br>2.0T: 21111-2GK52QQH                       | 1 |   |
|                     |          | Service Kit 2                    | 2.4L: 21111-2GK71QQH<br>2.0T: 21111-2GK73QQH                       | 1 |   |
| Tucson (LM)         | 14-15 MY | Wiring harness-knock sensor kit  | 91400-C2100QQH   | 1 |   |
|                     |          | Engine Assembly-Sub (long block) | 21101-2GK36QQH   | 1 |   |
|                     |          | Service Kit 1                    | 21111-2GK50QQH   | 1 |   |
|                     |          | Service Kit 2                    | 21111-2GK70QQH   | 1 |   |
|                     |          | Oil cooler pipe & hose assy      | 25470-2G050QQH   | 1 |   |
| Tucson (TL)         | 18MY     | Wiring harness-knock sensor kit  | 91400-C2010QQH   | 1 |   |
|                     |          | Engine Assembly-Sub (long block) | 21101-2GK52QQH   | 1 |   |
|                     |          | Service Kit 1                    | 21111-2GK51QQH   | 1 |   |
|                     |          | Service Kit 2                    | 21111-2GK71QQH   | 1 |   |

**Notes:**

- 1) Replacement engines are VIN-specific and should only be installed in the vehicle they were ordered for.
- 2) Use the Parts Catalog to order the appropriate engine assembly (long block) if a QQH/QQHRM long block is not available.

## Warranty Information:

| Model/<br>MY                      | Engine/<br>Drive Type | Op. Code | Operation                                       | Op.<br>Time | Causal<br>Part No.     | Nature<br>Code | Cause<br>Code |
|-----------------------------------|-----------------------|----------|---|-------------|------------------------|----------------|---------------|
| 11-14MY<br>Sonata<br>(YF)         | 2.4L / 2.0T           | 8P1326R6 | WIRING INSPECTION<br>AND WIRING<br>INSTALLATION | 0.5 M/H     | 21101-<br>2GK50Q<br>QH | Q75            | ZZ1           |
|                                   | 2.4L                  | 8P1326B2 | WIRING INSPECTION<br>AND ENGINE<br>REPLACEMENT  | 8.5 M/H     | 21101-<br>2GK50Q<br>QH | Q75            | ZZ1           |
|                                   | 2.0T                  | 8P1326B1 | WIRING INSPECTION<br>AND ENGINE<br>REPLACEMENT  | 8.8 M/H     | 21101-<br>2GK60Q<br>QH | Q75            | ZZ1           |
| 15-18MY<br>Sonata<br>(LF)         | 2.4L / 2.0T           | 8P1326R1 | WIRING INSPECTION<br>AND WIRING<br>INSTALLATION | 0.5 M/H     | 21101-<br>2GK31Q<br>QH | Q75            | ZZ1           |
|                                   | 2.4L                  | 8P1326R2 | WIRING INSPECTION<br>AND ENGINE<br>REPLACEMENT  | 8.5 M/H     | 21101-<br>2GK31Q<br>QH | Q75            | ZZ1           |
|                                   | 2.0T                  | 8P1326R3 | WIRING INSPECTION<br>AND ENGINE<br>REPLACEMENT  | 9.3 M/H     | 21101-<br>2GK32Q<br>QH | Q75            | ZZ1           |
| 13-18MY<br>Santa Fe<br>Sport (AN) | 2.4L / 2.0T           | 8P1326R7 | WIRING INSPECTION<br>AND WIRING<br>INSTALLATION | 0.5 M/H     | 21101-<br>2GK02Q<br>QH | Q75            | ZZ1           |
|                                   | 2.4L<br>(FWD)         | 8P1326R8 | WIRING INSPECTION<br>AND ENGINE<br>REPLACEMENT  | 8.5 M/H     | 21101-<br>2GK02Q<br>QH | Q75            | ZZ1           |
|                                   | 2.0T<br>(FWD)         | 8P1326R9 | WIRING INSPECTION<br>AND ENGINE<br>REPLACEMENT  | 8.7 M/H     | 21101-<br>2GK02Q<br>QH | Q75            | ZZ1           |
|                                   | 2.4L<br>(AWD)         | 8P1326A0 | WIRING INSPECTION<br>AND ENGINE<br>REPLACEMENT  | 8.9 M/H     | 21101-<br>2GK02Q<br>QH | Q75            | ZZ1           |
|                                   | 2.0T<br>(AWD)         | 8P1326A1 | WIRING INSPECTION<br>AND ENGINE<br>REPLACEMENT  | 9.1 M/H     | 21101-<br>2GK02Q<br>QH | Q75            | ZZ1           |
| 14-15MY<br>Tucson<br>(LM)         | 2.4L                  | 8P1326A3 | WIRING INSPECTION<br>AND WIRING<br>INSTALLATION | 0.5 M/H     | 21101-<br>2GK36Q<br>QH | Q75            | ZZ1           |
|                                   | 2.4L<br>(FWD)         | 8P1326A4 | WIRING INSPECTION<br>AND ENGINE<br>REPLACEMENT  | 7.9 M/H     | 21101-<br>2GK36Q<br>QH | Q75            | ZZ1           |

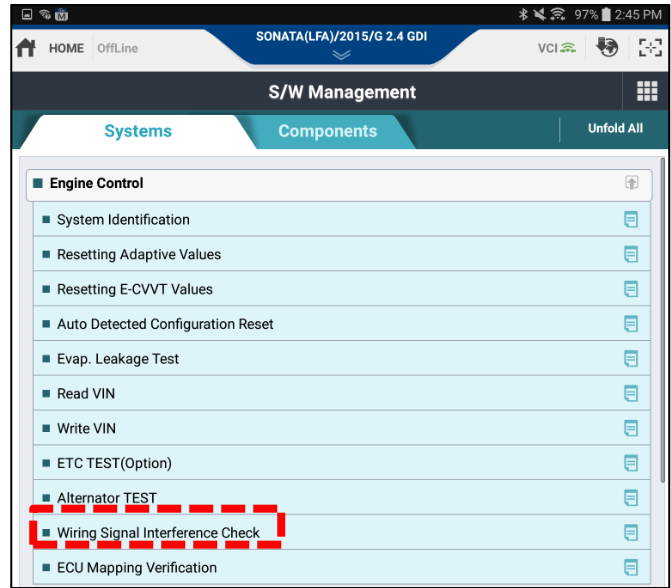
|                        |               |          |   |         |                        |     |     |
|------------------------|---------------|----------|---|---------|------------------------|-----|-----|
|                        | 2.4L<br>(AWD) | 8P1326B4 | WIRING INSPECTION<br>AND ENGINE<br>REPLACEMENT  | 8.3 M/H | 21101-<br>2GK36Q<br>QH | Q75 | ZZ1 |
| 18MY<br>Tucson<br>(TL) | 2.4L          | 8P1326A8 | WIRING INSPECTION<br>AND WIRING<br>INSTALLATION | 0.5 M/H | 21101-<br>2GK52Q<br>QH | Q75 | ZZ1 |
|                        | 2.4L<br>(FWD) | 8P1326A9 | WIRING INSPECTION<br>AND ENGINE<br>REPLACEMENT  | 8.6 M/H | 21101-<br>2GK52Q<br>QH | Q75 | ZZ1 |
|                        | 2.4L<br>(AWD) | 8P1326B3 | WIRING INSPECTION<br>AND ENGINE<br>REPLACEMENT  | 9.0 M/H | 21101-<br>2GK52Q<br>QH | Q75 | ZZ1 |

**Notes:**

- 1) Submit Claim on Campaign Claim Entry Screen
- 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(s) are out of warranty, request a Prior Authorization # for goodwill consideration prior to completing the Campaign.
- 3) PA Approval required for OP Codes for engine replacement.

**Wiring Signal Interference Inspection:**

1. Check for DTCs and perform the appropriate diagnostic service. All DTCs other than P1326 should be resolved before performing the wiring inspection.
2. Warm the engine until the engine oil temperature is 176° F (80° C) or greater.
3. From the GDS main screen, navigate to **S/W Management > Engine Control** and select **Wiring Signal Interference Check**.



**NOTICE**

**If the engine is seized or knocking or the inspection cannot be completed:**

- Submit a PA request for engine replacement with a GDS screenshot showing the VIN # and DTC P1326. When approved, replace the engine with service kits.
- Perform the wiring inspection after engine replacement.

4. Follow the prompts on the GDS to complete the inspection. At the end of the inspection, take a screenshot of the results screen.

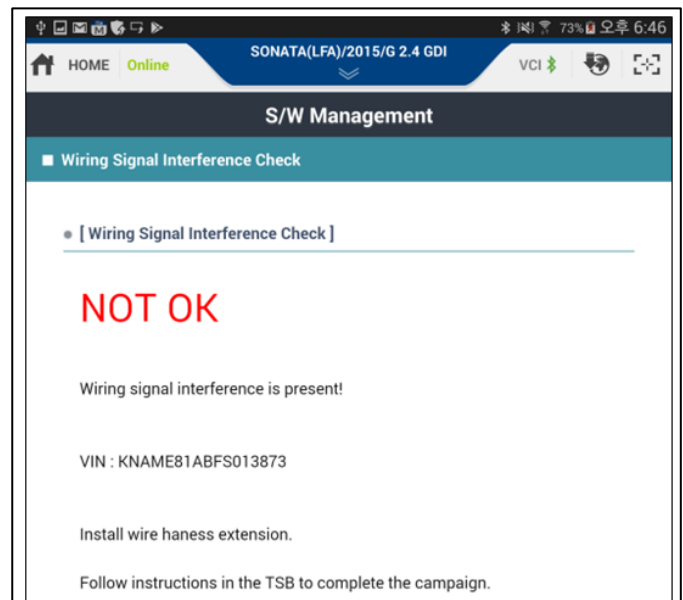
**If the inspection result is OK:**

- Submit a PA request for engine replacement with attachments of:
  - 1) Inspection results screen showing an OK result
  - 2) GDS screenshot showing the VIN # and DTC P1326
- When approved, replace the engine with service kits.

**Note:** If the engine was just replaced due to inability to perform the wiring signal inspection (engine seized/knocking), no further action is required.

**If the inspection result is NOT OK:**

- Install the new wire harness extension kit.





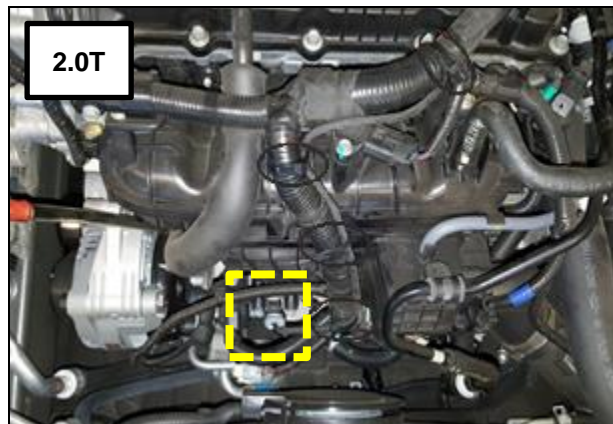
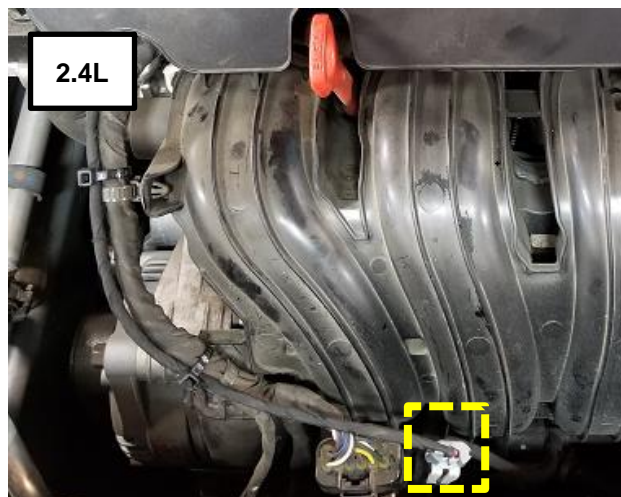
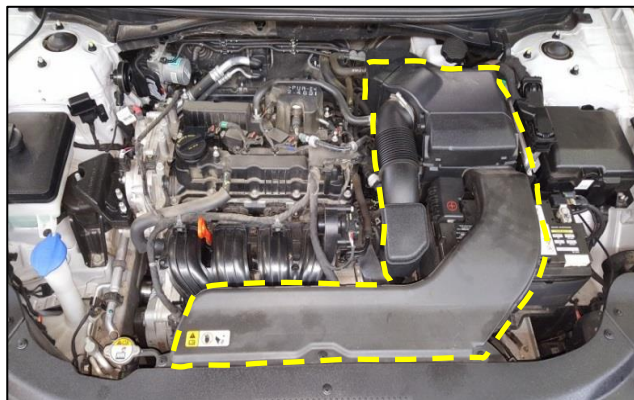
**Wire Harness Extension Installation:**

1. Remove the engine cover, air cleaner assembly, and negative battery terminal. Record vehicle's audio presets.

**NOTICE**

Proceed with wire harness extension installation **ONLY** if deemed necessary by the wiring signal inspection above.

2. Disconnect the knock sensor connector and connect the connector from the new wire harness extension.



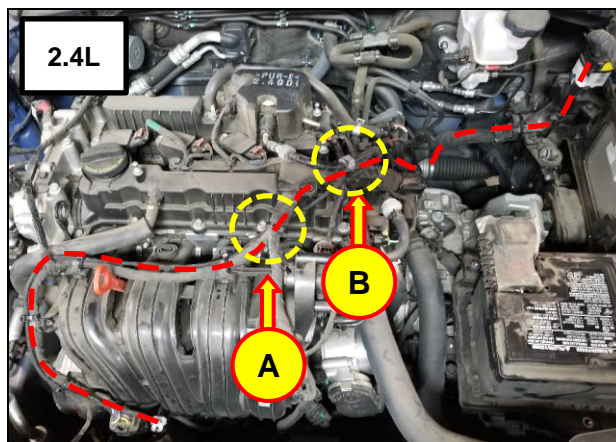


3. Route the new wire harness extension from the knock sensor connector to the engine ECM along the existing path of the engine control wire harness.

**NOTICE**

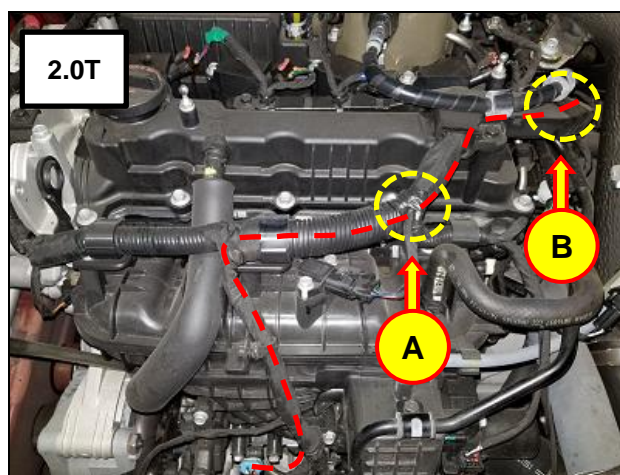
Ensure the new wire harness extension is:

- Underneath the original engine control wire harness at (A).
- On top the original engine control wire harness plastic protector at (B).



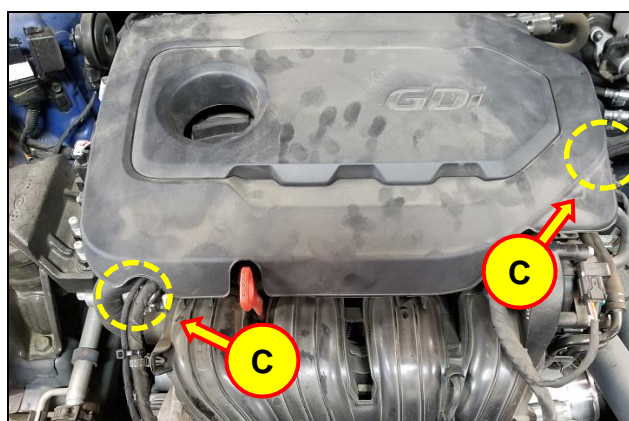
**NOTICE**

15MY Sonata (LF) vehicle is pictured for reference. Routing of the harness on other models is similar.



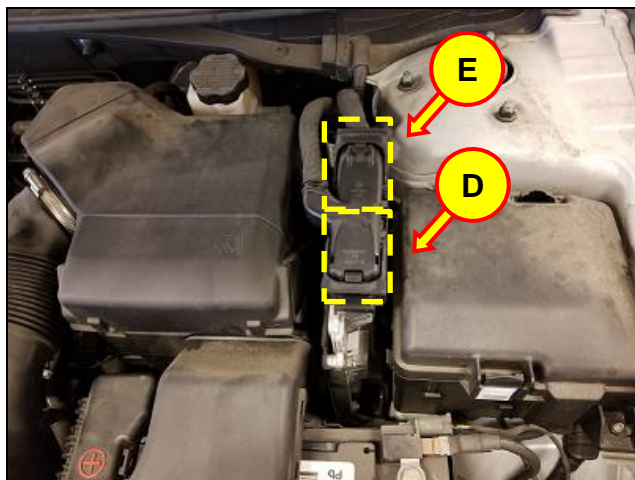
4. Secure the new wire harness extension along the existing control wire harness with zip ties and existing clips.

5. Reinstall the engine cover and ensure the new wire harness extension does not contact the engine cover at (C) and any other areas.



6. Identify the Engine ECM connector (D) or (E) to modify based on vehicle model and MY. Then check the connector’s manufacturer as shown (BOSCH or KET).

| Model / MY  | ECM Connector |
|---|---------------|
| 11-14MY Sonata (YF)<br>13-15MY Santa Fe Sport (AN)<br>14-15MY Tucson (LM) | D             |
| 15-18MY Sonata (LF)<br>16-18MY Santa Fe Sport (AN)<br>18MY Tucson (TL)    | E             |

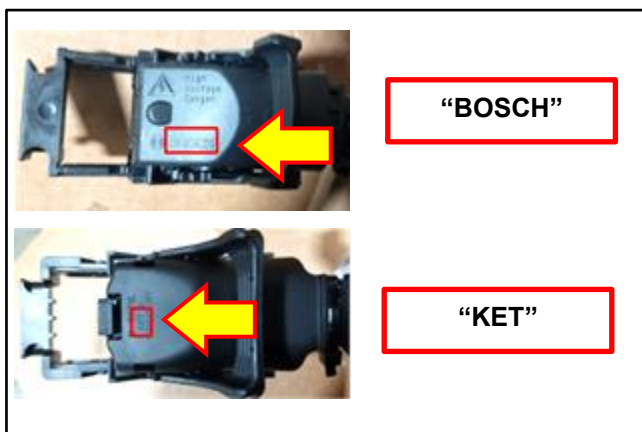


**To Remove Connector (D):**

Remove ECM connector (D) and top cover by gently prying at (F1) or pressing on (F2) based on connector type using a flat head screwdriver.

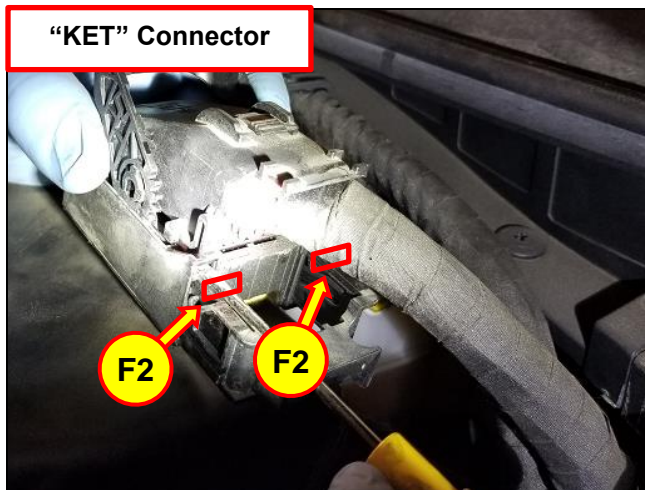
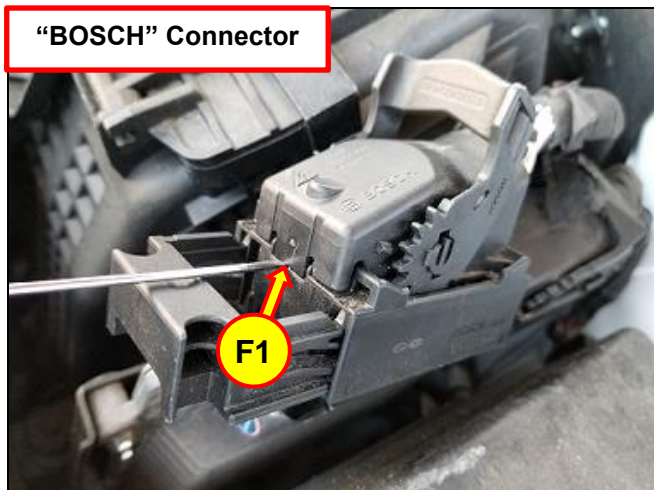
**To Remove Connector (E):**

First remove ECM connector (D) to release ECM connector (E). Then remove ECM connector (E) and top cover by gently prying at (F1) or pressing on (F2) based on connector type using a flat head screwdriver.

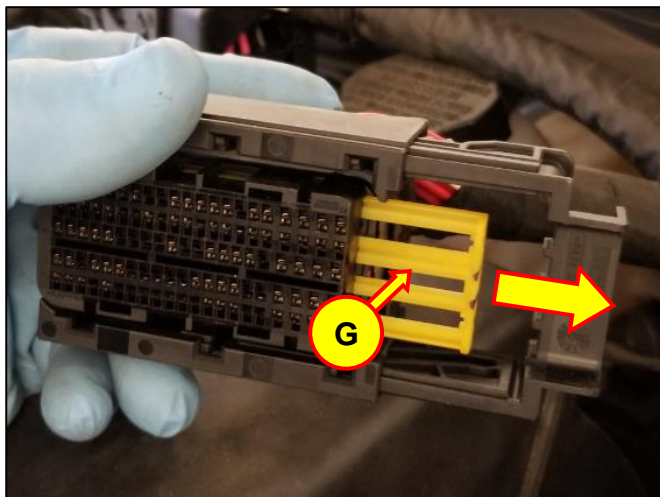


**⚠ CAUTION**

**DO NOT use brute force when removing the ECM connector cover. The cover comes off with minimal effort when using the release tab(s) F1 or F2.**



7. Fully remove the connector retaining clip from the connector by gently prying at (G) using a small flat head screwdriver.



8. Locate the knock sensor pins on the ECM connector (D) or (E) based on vehicle model and MY table above.

**Connector (D)**

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|
| 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | 80 | 79 | 78 | 77 | 76 | 75 |   |   |
| 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 6 | 5 |
| 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 4 | 3 |
| 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 2 | 1 |
| 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9  | 8  | 7  |   |   |

- PIN 44 - shield ground
- PIN 45 - knock sensor ground
- PIN 62 - knock sensor interface

**Connector (E)**

|     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 104 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 |
| 84  | 83  | 82  | 81  | 80  | 79  | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | 64 |
| 63  | 62  | 61  | 60  | 59  | 58  | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | 48 | 47 | 46 | 45 | 44 | 43 |
| 42  | 41  | 40  | 39  | 38  | 37  | 36 | 35 | 34 | 33 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 |
| 21  | 20  | 19  | 18  | 17  | 16  | 15 | 14 | 13 | 12 | 11 | 10 | 9  | 8  | 7  | 6  | 5  | 4  | 3  | 2  | 1  |

- PIN 63 - knock sensor interface
- PIN 62 - knock sensor ground
- PIN 61 - shield ground  
(No PIN 61 for 18MY Sonata 2.0T)

**NOTICE**

**For 17-18MY Santa Fe Sport (AN):**

**Install the appropriate wire harness extension (BOSCH or KET) based on the existing Engine ECM connector manufacturer. Refer to the Parts Information table for part numbers.**



9. Carefully remove the pins for the knock sensor from the ECM connector using the SST. Insert the SST perpendicular (90°) to the surface of the connector at (H) to release each pin (I) and gently pull the wire to remove each pin from the connector.

**NOTICE**

Note the orientation of each pin in the connector. The new pins will be installed in the same orientation in the next step.

The vehicle’s factory wire color(s) may not match the wire color(s) of the new wire harness extension.

**CAUTION**

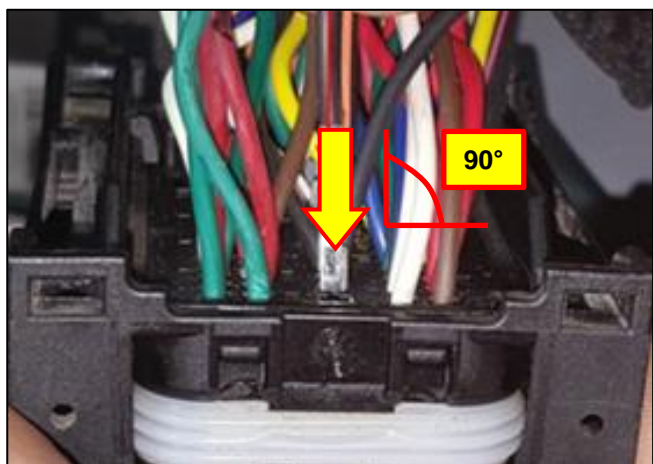
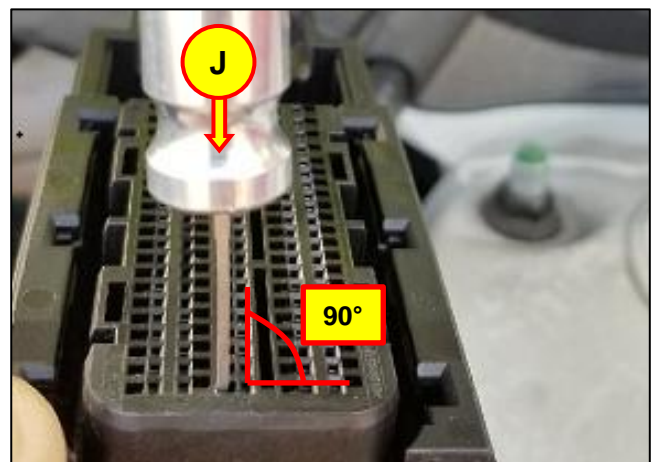
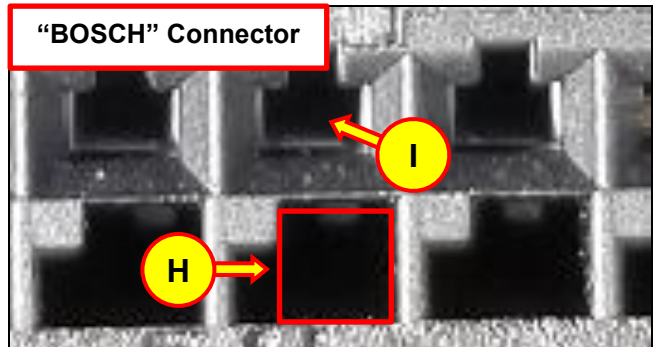
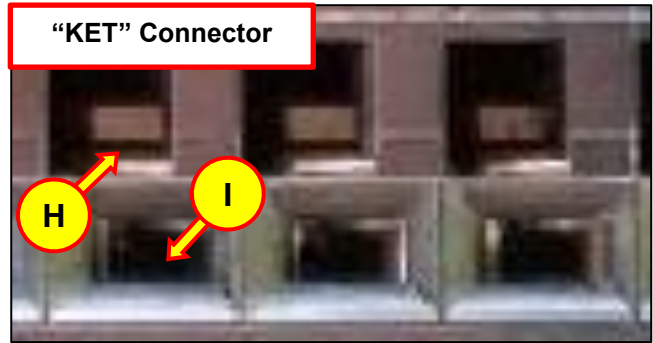
Take caution when removing the pins from the ECM connector. Slowly insert the SST perpendicular (J) to the surface of the connector to release the pins. Do not pry using the SST.

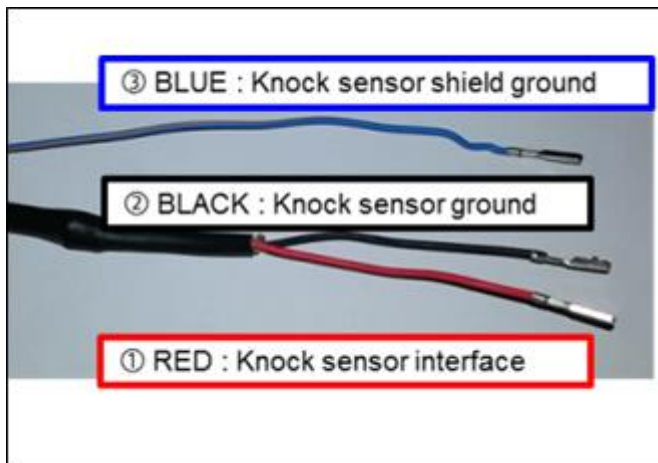
10. Insert each of the pins from the new wire harness extension into the ECM connector until fully seated. A slight click sensation and sound indicates the terminal is fully seated.

- Red – knock sensor interface
  - Black – knock sensor ground
  - Blue – shield ground
- (Not for 18MY Sonata 2.0T)

**NOTICE**

Ensure the new pins are installed in the same orientation as they were removed.





**11. For 18MY Sonata 2.0T only:**

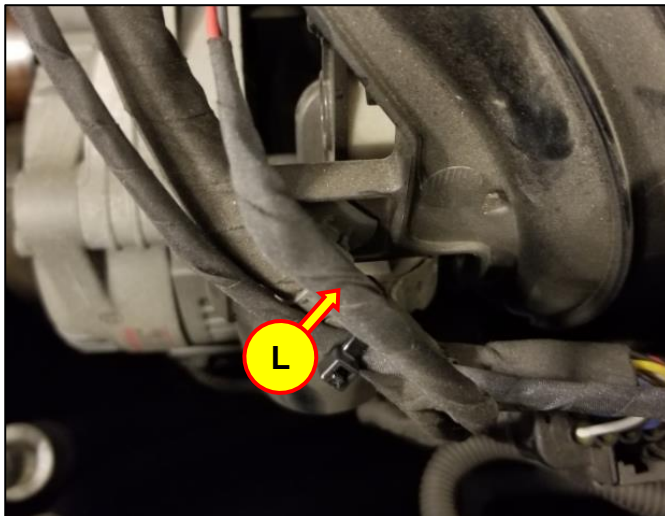
- Loosen the ground bolt on the chassis.
- Connect the new extension wiring's ground terminal to the existing ground terminal. Rotate the new ground terminal clockwise as shown.
- Tighten the ground terminal to the chassis.



12. Cut off and discard the original terminals from the ECM connector and fold the original wires (K) back onto the original engine control wire harness and secure with tape. Secure any excess wire from the new wire harness extension onto the original engine control wire harness with tape.



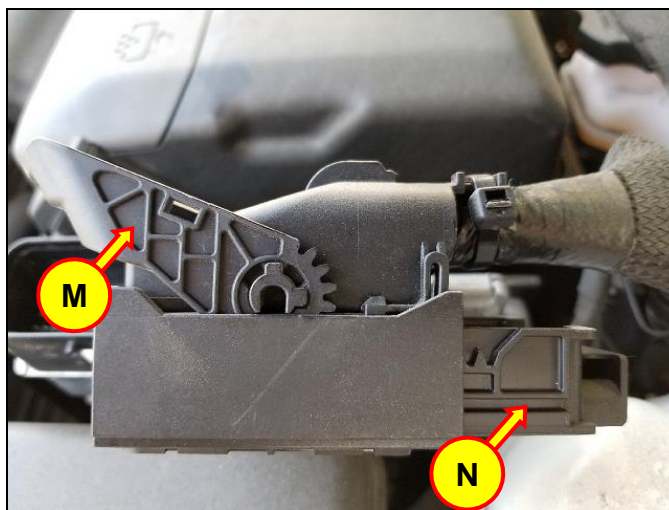
13. Cut off and discard the original knock sensor connector and fold the (2) original wires (L) from the original knock sensor connector back onto the original engine control wire harness and secure with tape.



14. Reinstall all removed parts in reverse order of removal. Restore audio presets.

**⚠ CAUTION**

**DO NOT** use brute force when reinstalling the ECM connector cover. The cover will easily snap onto the connector with minimal effort when properly aligned. Refer to original orientation of the lever (M) and slider (N) and slightly move slider (N) as necessary until the cover easily snaps onto the connector.



15. Reset the engine adaptive values using the GDS and clear DTC P1326. Then check for other DTCs and perform the appropriate diagnostic service. Ensure no warning lights are present to complete the procedure.

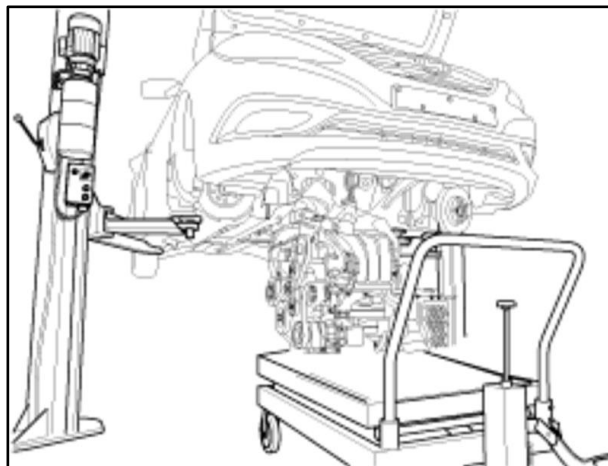


**Engine Replacement:**

1. If DTC P1326 is detected and the wiring signal interference inspection indicates engine replacement is required, replace the Sub Engine Assembly (long block).
2. Follow the published Service Information from the applicable **Shop Manual** to remove the Sub Engine Assembly from the vehicle.

**Shop Manual Section Location:**

Engine Mechanical >  
Engine And Transaxle Assembly >  
Engine And Transaxle Assembly >  
**Repair Procedures**



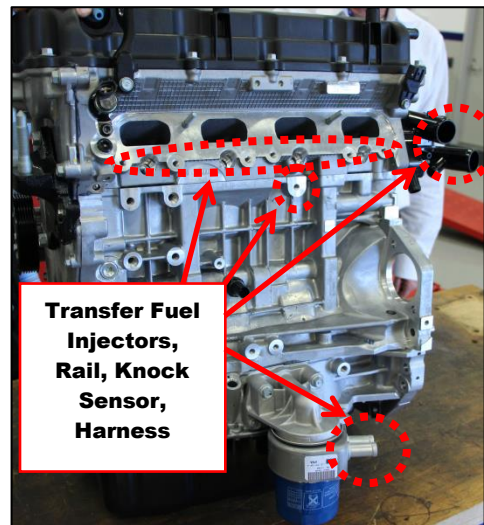
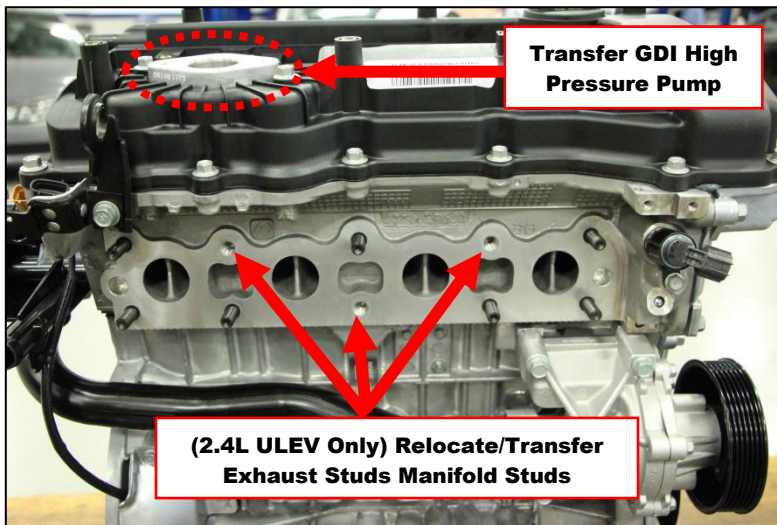
**NOTICE**

Record the audio station presets (XM, AM, FM, etc) prior to disconnecting the battery.

3. Replacement engines must be prepared prior to installation. Some components from the existing engine must be transferred to the new engine.

**NOTICE**

Be careful to preserve the vehicle's original parts for reinstallation on the replacement engine.



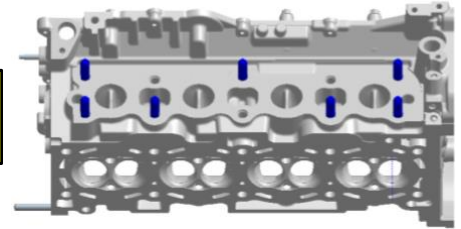


4. **For 2.4L with ULEV / FED emissions only**  
 2.4L replacement engines are produced with the exhaust manifold studs configured for SULEV / CAL emissions package.

Two exhaust studs must be relocated on the new engine and 1 exhaust stud must be transferred from the old engine.

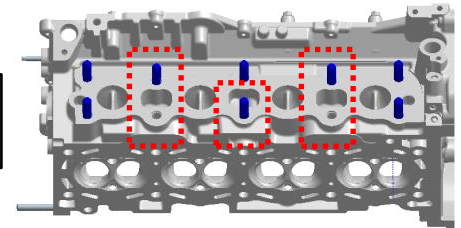
- Use a commercially available stud removal tool or use the double-nut technique to complete this step.

**SULEV / CAL Spec**



**Exhaust Stud Position Relocation Information**

**ULEV / FED Spec**



5. Remove and reinstall the engine knock sensor from the old engine to the new engine.

**Knock Sensor Fastener**  
**Tightening torque: 21Nm (15.5lb-ft)**

**NOTICE**

Ensure the knock sensor is torqued to specification using a torque wrench. Improper installation can result in DTC codes.



6. **If 21101-2GK70QQA engine is used:**

- Install the oil filler cap from the old engine to the new one.
- Install the drive plate/flywheel on the new engine using new bolts (QTY 7).

**Drive Plate Tightening torque :**  
 111.7 ~ 127.5 Nm (86.8 ~ 94.1 lb-ft)



7. Follow the published procedure outlined in **TSB 19-FL-111H** to remove and reinstall the following GDI high pressure fuel system components from the existing engine to the new engine:

- GDI High Pressure Pump
- Fuel Injectors (4)
- Fuel Rail

The corresponding Service Kits will supply the required new parts per TSB 19-FL-111H to complete the transfer of the above existing parts.

### CAUTION

Follow TSB 19-FL-111H carefully and replace the following newly supplied parts from the Service Kits:

- Mounting flange O-ring (for High Pressure Pump)
- O-rings, Backup Rings, Washer Seals, Combustion Seal Rings, and clips (for Fuel Injectors)
- Fuel Pipe (between High Pressure Pump and Fuel Rail)

In addition, the Service Kits include (1) Exhaust Pipe Gasket. Install this new gasket when attaching the front and center muffler assemblies together during the engine installation.

8. Install the new oil cooler hoses if applicable.

9. Reconnect and reinstall the engine front harness.

10. Follow the published Service Information from the applicable **Shop Manual** to reinstall the Sub Engine Assembly.

#### Shop Manual Section Location:

Engine Mechanical >  
 Engine And Transaxle Assembly >  
 Engine And Transaxle Assembly >  
**Repair Procedures**

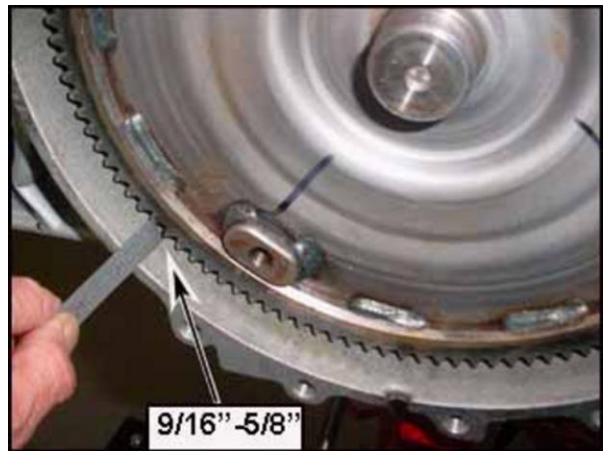
### NOTICE

Be sure to replace the following newly supplied parts from the Service Kit:

- Oil Level Rod & Oil Level Guide Assy.
- Intake Manifold Gaskets (4)
- Exhaust Manifold Gasket
- Fuel Pipe Assembly
- (2.0T Only) Turbo Oil Feed Hose & Pipe
- (2.0T Only) Turbo Oil Drain Gasket (2)
- (2.0T Only) Oil Drain Gasket
- (2.0T Only) Gasket (2)

### NOTICE

If the torque converter has moved from the fully inserted position, carefully push inward and rotate the torque converter until the converter is recessed approximately  $9/16 - 5/8$ " (14 -16 mm) into the transaxle case when reinstalling the automatic transaxle.



11. Connect the (2) oil coolant hoses between the oil cooler and the water temperature control assembly.
  - Fill the cooling system with 50/50 ~ 70/30 (Water/Anti-Freeze) coolant mixture.
12. Use Quaker State 5W-30 engine oil or other brand if not available (conventional, synthetic blend, or full synthetic type with API SM / ILSAC GF-4 or higher service grade) to fill the engine crankcase.
  - Add 5.8 quarts for the **initial dry fill** of the engine.
  - With the fuel system disabled temporarily, crank the engine for several seconds to prime the lubrication system prior to starting the engine.
13. Start the engine to warm it up and begin the cooling system air bleeding process.
  - Check for any leaks during this time.
  - After the engine has warmed up to normal operating temperature, turn the engine off, wait a few minutes, and then **adjust the engine oil level to near the “F” mark as shown.**

**NOTICE**

Perform the Wiring Signal Interference Inspection outlined above if it could not be performed before the engine replacement.

14. When all fluids have been fully filled and all work quality checks are completed:
  - Set the customer's audio station presets.
  - Relearn the Steering Angle Sensor using the GDS.
  - Reset the engine adaptive values using the GDS.
  - Clear DTC P1326. Then check for other DTCs and perform the appropriate diagnostic service. Ensure no warning lights are present.
  - Perform a short road test to confirm normal vehicle drivability.

**NOTICE**

**DO NOT** damage the short block casting / starter motor mounting tab.

**Engine blocks for vehicles affected by this TSB should not be damaged.**